

**Towards an Understanding of the Astro Tourist:  
A Conceptual and Empirical Study**

**By**

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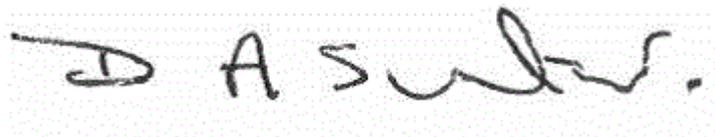
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## **Towards an Understanding of the Astro Tourist: A Conceptual and Empirical Study**

### **Abstract**

It is well documented that mankind has been intrigued by the stars in the sky above for centuries. The stars traditionally represented a means of navigation, symbolised the gods and, to this day, inspire scientific examination and the creative imagination. However, few attempts have been made to conceptualise and empirically analyse the link between stargazers and tourism, thus creating a necessity for exploration. Stargazers (known as astro tourists throughout study) vary widely from those interested in the moon; the discovery of new planets; to those interested in the constellations, particularly as their motivations and preferences for being in the dark are varied and multidimensional. Therefore, the purpose of this ethnographic study was to critically explore the experiences and behaviours of the astro tourists as they are instrumental in providing an understanding of this emerging special interest form of tourism in the real world.

Specifically, the location of the case study was the first UK Dark Sky Park in Dumfries and Galloway, Scotland, a landscape that embodies the darkness required to observe the stars in the sky above with the naked eye. Dark sky designation is a contemporary construct designed to protect the night sky from light pollution, it offers the astro tourist the opportunity to see the Milkyway on a cloud free, moonless night. It also offers tourists the chance to experience true darkness, an experience that is denied to many due to light pollution.

To date, literature related to astro tourism has focused predominantly upon the management of the destination. For example, a few studies are related to the astro tourist as an environmentalist who seeks to protect the night sky, whereas others relate to the pursuit of science. As a result, a gap has emerged in the understanding of the needs and experiences of the aforementioned astro tourist. In addressing this gap, this research provides a critical exploration of the astro tourist as it identifies the experiences, the spiritual nature of being in the dark, and the significance that outer-space has on the contemporary tourist. This study is instrumental in developing a contextual framework that reflects the dynamic relationships between need satisfaction, space embodiment and place significance as it critically discusses how these three concepts link to understanding the astro tourist experience.

This thesis is an ethnographic study that contains a complex interplay with a phenomenographic approach, thus a dual methodology is applied. Consequently, this study focuses upon the use of qualitative research methods within an interpretative/constructive paradigm, whilst seeking to explore the 'different ways' in which 'people experience something' or 'think about something' (Ryan, 1995:53). This study is framed by psychogeographic ideology, employed initially to develop an

environmental understanding of the astro tourist experience via observation, it aimed to ascertain the sensory motives experienced by the participants via survey, and finally to delve deeper into the behaviours and experiences of participants via interviews. Throughout the study, reflexivity is employed to portray the journey from darkness to light.

The findings add to the body of knowledge by illustrating that astro tourists are interested in far more than learning about the stars, they visit the destination to look up, usually with family and friends; the dark has a significant effect upon their experience as for many it is existential; the weather and the presence of others at the event enhance the experience due to their physicality. Many astro tourists do not have an interest in the forest park or their Earthly surroundings at place, they focus upon the night-sky; outer space plays a significant role in their experience, whereas place is an enabler, a means to an end, this adds a hitherto unexplored dimension to the tourists' experience and behaviour research, which traditionally placed the destination central to the visitor experience – making astro tourism a none destination experience. Sensory dimensions of the experience are created by a tripartite relationship which incorporates the dark, space and the senses, these combine to give significance to the astro tourist experience.

## **Preface**

This study stems from a personal and academic interest in the Dark Sky Park near to Newton Stewart in Dumfries and Galloway, a place I now live. I was born and brought up in Blackburn, Lancashire, a former mill town with a multi-cultural population of approx. 147,000 (Census, 2011), characterised by dense terraced housing stock and manufacturing industry. Located in East Lancashire, there are areas of woodland, hills, waterways and parks, however, light pollution pervades these areas due to its industrial heritage. In 2005, my husband and I decided we wanted something different for our family, so we bought a derelict school house in Newton Stewart, Dumfries and Galloway, Scotland and were instantly amazed by the true darkness of the night sky. In contrast to Blackburn, Newton Stewart has a population of 4092 (Census, 2011) with a landscape that can change from one mile to the next, there are high mountains, waterfalls, turbulent rivers, shallow meandering rivers, rock formations, deep valleys, meadows and coastal views and as a result light pollution is low which appeared, at the time, to explain why the sky was so dark.

After renovating the schoolhouse in 2010, my husband and I contemplated opening a bed and breakfast, at this point it became evident from reading local tourist literature, to better understand the tourism market, that there was more to the darkness than the low population. After discussions with residents, and with the Visit Scotland Information Centre I discovered that in 2009 the Galloway Forest had been awarded Dark Sky Park status by the IDA (International Dark-Sky Association), fuelling my desire to find out more.

As a potential source of customers for the bed and breakfast venture, I started to investigate whether demand existed for Dark Sky tourism. On initial exploration, I found that there was a lack of academic research in this area, however there was research to support experience-related holiday destination appeal. I also noted that there was an abundant range of travel markets which provide experience orientated, special interest tourism holidays such as wine tourism (Dodd, 1995; Charters and Ali-Knight, 2002), slow tourism (Matos, 2004; Dickinson and Lumsdon, 2010), re-enactment site tourism (Strauss, 2003) etc. As these markets seemed to be expanding, I could not help but think that there is always a gap in the market for something new: Dark Sky Tourism or, as my knowledge and understanding emerged, astro tourism.

Not being a stargazer myself I asked, 'Why would someone travel to look up at the sky when the sky is above us all the time?' This and other questions intrigued me: Does true darkness really make that much difference to tourists? Who would want to book onto an event that takes place at night in the cold? Particularly, as such an event is weather dependent, the weather cannot be anticipated or planned in advance, so why take the risk? How serious do these visitors have to be? What can they

actually see? As these initial questions could not be answered, I decided to embark on this research journey.

### **Abbreviation**

Apps	Applications
BBC	British Broadcasting Company
BCNP	Bryce Canyon National Park
CAQDAS	Computer Assisted Qualitative Data Analysis Software
CIPP	Context, Inputs, Processes and Products
DMO	Destination Marketing Organisation
Ed/s	Editors
Ed	Edition
ESA	European Space Agency
HRM	Human Resource Management
IDA	International Dark-sky Association
LED	Light-Emitting Diode
Ltd	Limited
MSP	Motivate for Sensory Pleasure
N	Number
NASA	National Aeronautics and Space Administration
NC	Knowledge Acquisition
ND	No Date
NP	No Page
R	Reverse
SIT	Special Interest Tourism
SPSS	Statistical Package for Social Science
SS	Sensation seeking
TV	Television
UK	United Kingdom
UNSPs	Urban Night Sky Places
USA	United State of America
WTO	World Tourism Organisation

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# Thesis Title: Towards an Understanding of the Astro Tourist: A Conceptual and Empirical Study

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## Chapter One

### 1.1 Thesis Introduction

Although people have always looked at the stars, stargazing as a tourist activity is relatively new and has been largely overlooked by the academic community, rendering the need to explore the behaviour and experiences of this hitherto neglected emergent tourist. Exploration leads to understanding, thus exploring the astro tourist behaviour and experience will shed light on: their need for looking-up at the night sky; any differentiation in level of interest; the social complexities of attending a dark sky event; the amount of time spent travelling and gazing; as well as uncovering what these tourists experience, whilst highlighting any significance that leads to the love of Stargazing – a kind of Astrophilia.

### 1.2 The Complexities of Astro Tourism

The phenomenon, whereby people travel to areas where light pollution is low to gaze at the stars, is known in tourism marketing literature and the academic community as astro tourism (Collison, 2012; Spennemann, 2008). Several definitions of astro tourism have emerged over the past decade, each of which highlight aspects of the activity and illustrate the complex nature of this emergent form of tourism, but none individually captures the full breadth and complexity of the subject.

Reviewing these definitions highlights that Spennemann (2008:9), defines astro tourism as ‘astro tourism is the travelling of private individuals to specific locations to satisfy a desire to view the planets and stars either unaided (naked eye) or with the aid of an optical device, e.g. telescope’. However, this definition lacks the breadth of the astrological experience and the spiritual connection that astro tourists can experience when gazing at the night sky. Cater (2010:11) referred simply to astro tourism as space travel, neglecting terrestrial (land based) astro tourism in his definition. Ingle (2010:4) refers to astro tourism, as ‘creating a tourism asset from nothingness’, one could argue that the night sky is far from nothing as the universe is inextricably linked to life on this planet. In contrast, Collison (2012) viewed the phenomenon of stargazing as people travelling to a destination where dark skies, free from artificial light pollution, can be enjoyed, naming it astronomical tourism or simply astro tourism, a simple but accurate description of the activity. Najafabadi (2012:1) refers to astronomical tourism, as

the potential of sites to attract astro tourists to a particular destination, focusing on the destination rather than the activity. Whereas, Fayos-Sola, Marin and Jafari, (2014:6) define astro tourism as an activity of 'travellers wishing to use the natural resource of well-kept nightscapes for astronomy-related leisure and knowledge', relating more to issues of destination management and governance systems and lacking acknowledgement of astrology diversity. In Leary's (2015:14) work, astro tourism is identified as 'starlight reserves' and destinations as 'locations for observation', although it can be argued that these are places to view the stars from, they are by no means the only ones. Whereas, Iwaniszewski (2015:11) views astro tourism and Archeoastronomy as the scientific and cultural value attached to the night sky, in doing so he dismisses aspects of the mystical value of the experience. Most of these studies have been conceptual, they tend to adopt an arguably descriptive approach to the importance of the astro tourism as a topic in contemporary tourism studies - thus they create a distorted mask of who the astro tourist is, as few have meaningfully explored the actual motives and experiences of those that visit dark sky sites.

Although the motive for travel is important in determining the astro tourists' initial interest, it is the experience of those tourists at dark sky events which will lead to a better understanding of them as an emerging tourist group. Understanding what they do and how they experience each event will also enable stakeholders to target their market specifically to satisfy the astro tourist.

As a geographical location a dark sky park (place) provides the physicality in the landscape which has defining factors that differentiate it from one place to another. As a subjective reason for a journey, place can meet the demands of the astro tourist as place represents both the tangible and the intangible need for travel. For example, to experience the dark and to observe the stars a place must have the right environmental conditions, i.e. it requires very low levels of light pollution, a true darkness, not experienced in urban environments.

Whereas space, traditionally the domain of environmental science and geographical psychology literature, now informs a wide range of disciplines including tourism. Space has several meanings, it can be seen from a physical perspective - place, as empty not embodied – outer space, but it can also be used to develop spatial mathematics – geometry (Cresswell, 2004:18), an argument often used in astronomical science to measure time and space (distance) which is of interest to astronomers but beyond the limits of this study.

In tourism literature, destination provides the travel objective (Relph, 1976; Taun, 1977; Agnew, 2005), but the astro tourist may prove to be different insofar as the destination is the cosmos, an infinite destination, and the final frontier in terms of tourism travel. There are few places on earth

that people cannot travel to, therefore outer space represents the untouchable, the out-of-reach, the obscure in life, consequentially it is a desirable destination.

### 1.3 Aims and Objectives

As outlined above, exploring the astro tourist experience has the potential to reveal a unique form of tourism which adds a new dimension to tourism research, for this study provides a unique insight into the relationship between the environment (specifically at a dark sky park) and the activity of stargazing as experienced by astro tourists. It is anticipated that this empirical study will lead to the development of knowledge which will form the basis of future academic astro tourism research. Thus, the overall aim is to critically explore the experiences and behaviours of the astro tourist.

Specifically, the objectives of this study are:

1. To investigate how the tourist's perception of place and cosmic space affects their decision to travel
2. To explore the sensory significance of astro tourists' experience in relation to the environment at place, when viewing cosmic space
3. To investigate the existence of an astro tourist typology
4. To consider a collective definition of astro tourism and the astro tourist
5. To assess the implications of the findings in relation to the promotion of astro tourism at Dark Sky designated sites to inform destination marketing and management.

The research objectives are achieved by adopting a case study approach (Yin, 1994). The case discussed briefly here, latterly in Chapter Two, is the first British Dark Sky designated park in Dumfries and Galloway – The Galloway Forest Park.

### 1.4 A Case Study Approach

Exploration of this relatively new tourist destination, a Dark Sky Park was founded by the International Dark-Sky Association (IDA) in 2001 by David Crawford and Tim Hunter. They identified that a conservation program was needed to encourage communities around the world to preserve and protect darkness, not only for the sake of humankind but also for the sake of nocturnal animals. They pioneered responsible lighting polices and the public education of light pollution. The International Dark Sky Places program led to six different types of designation (Dark Sky, ND), as follows:

#### 1. International Dark Sky Communities

Communities are legally organised cities and towns that adopt quality outdoor lighting ordinances and undertake efforts to educate residents about the importance of dark skies.

#### 2. International Dark Sky Parks

Parks are publicly- or privately-owned spaces protected for natural conservation that implement good outdoor lighting and provide dark sky programs for visitors.

### **3. International Dark Sky Reserves**

Reserves consist of a dark core zone surrounded by a populated periphery where policy controls are enacted to protect the darkness of the core.

### **4. International Dark Sky Sanctuaries**

Sanctuaries are the most remote (and often darkest) places in the world whose conservation state is most fragile.

### **5. Urban Night Sky Places (UNSPs)**

UNSPs are sites surrounded by large urban environs whose planning and design actively promote an authentic night-time experience in the midst of significant artificial light at night, and that otherwise do not qualify for designation within any other International Dark Sky Places category.

### **6. Dark Sky Friendly Developments of Distinction**

Dark Sky Friendly Developments of Distinction recognise subdivisions, master planned communities and unincorporated neighbourhoods and townships whose planning actively promotes a more natural night sky but does not qualify them for the International Dark Sky Community designation. (Dark Sky, ND)

The Galloway Forest Park falls into designation 2. – an International Dark Sky Park. Due to its extraordinary dark clarity it was awarded ‘gold’ designation by the IDA as it is recognised as one of only a few places in the UK that a visitor, on a clear night, can witness the Milky Way with the naked eye.

The following map (Figure 1.1), illustrates the extent of the Dark Sky Park (highlighted in purple with a black border), and the locations of the events where the empirical study was carried out: Clatteringshaw Dame, Sanctuary and Kirroughtree Visitor’s Centre:

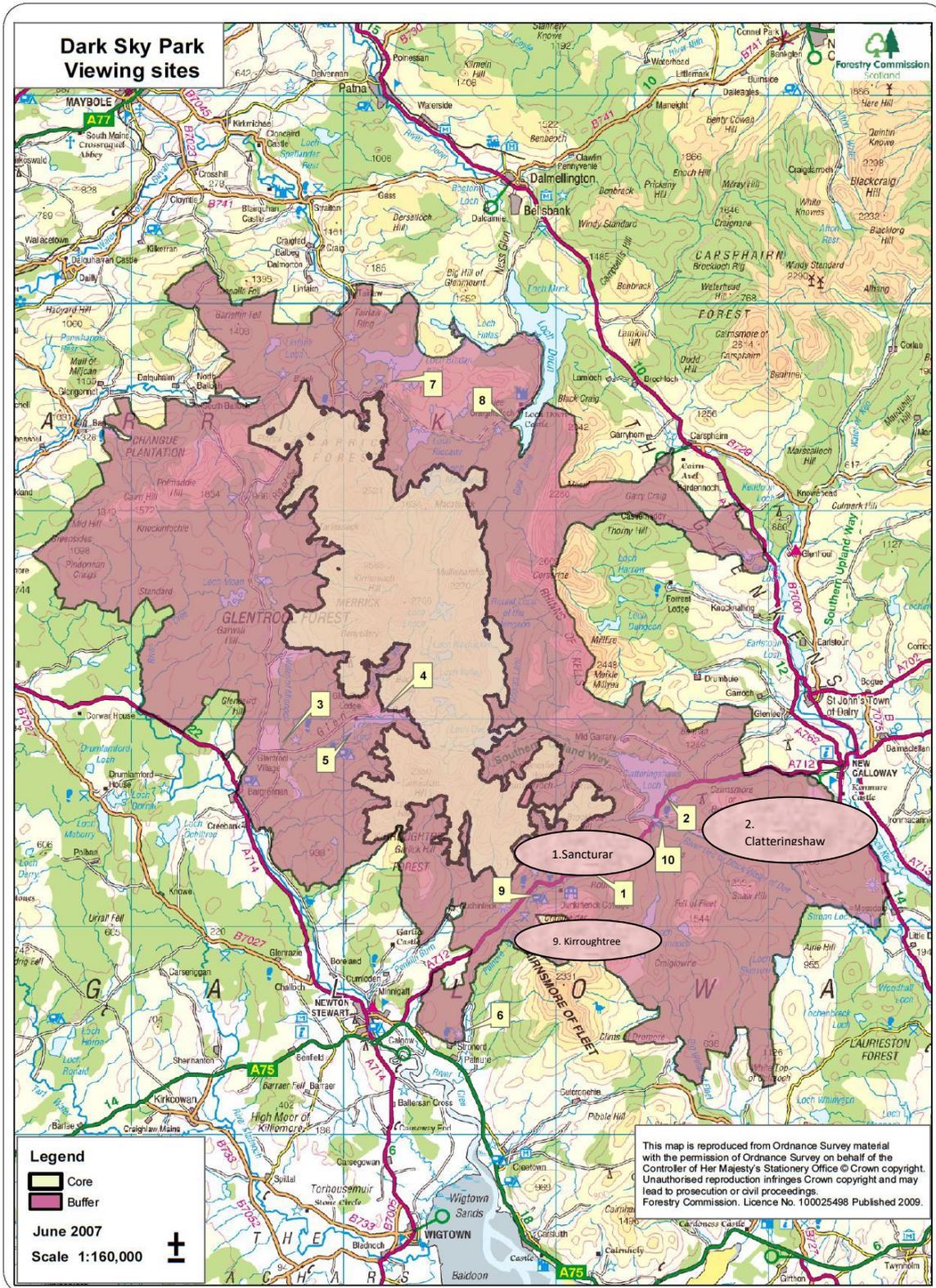


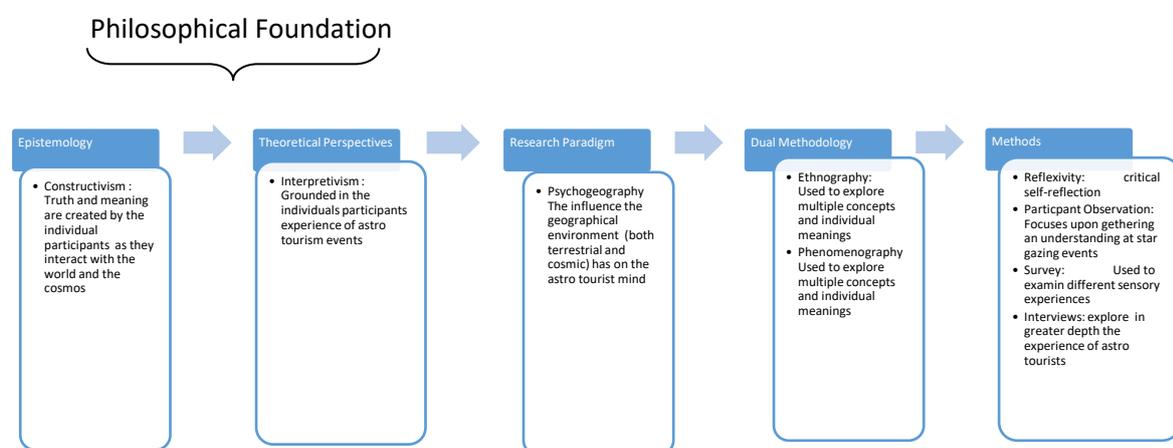
Figure 1.1 Dark Sky Park Map

In 2015, light pollution covered 77% of the United Kingdom (UK), only 23% of the population had the clarity of sky to visibly access the Milky Way with the naked eye, and it was believed that only 3% of the UK population would ever see the Milky Way (Sample, 2014). Particularly poignant, these environmental facts belie the simple fact that just by changing the type of artificial light used would result in a substantial increase in cosmic visibility across the UK. The ‘luminous fog that prevents most of Earth’s population from having the opportunity to observe our galaxy’ would be lifted and the cosmic gaze could be enjoyed by all (Sample, 2014). The dark is essential to all living parts of the natural World as the Circadian Rhythms that control daily cycles affect sleep, wake, hunger, activity levels and much more, illustrating that light pollution is a contemporary phenomenon which has rendered the stars invisible to many across the world and may be having a detrimental impact on life on Earth. Although such issues are beyond the scope of this research, they represent an area of sustainable research that requires further investigation.

### 1.5 Research Approach

This thesis integrates tourism studies with astrological science, each of which are complex disciplines of study that are not generally married together. Thus, the challenge here is to present a critical analysis of these disciplines whilst keeping a firm grasp on the importance of people and the way they experience the environment. Essentially this study, presents several theories as useful tools, as Layton (2000:101) observes, ‘theory guides the way in which we separate the interesting from trivial events during fieldwork’ thus creating a dialogue between theory. Consequently, due to the complexity of this study there is a need for a dual methodological approach of ethnography and phenomenography. Each provide methodological flexibility of data collection processes which require both an interpretative and constructionist approach, leading to the research approach adopted within this study, as seen in figure 1.2 below and discussed in more detail in Chapter Two:

Figure 1.2 Research Approach



This research is a 'psychogeographic study of how issues, experiences, and processes that result from growing up in a human body are symbolised and played out in the wider social and natural worlds' (Fewkes, 2014:xvii, cited Mcphie, 2019:103). It takes a signifying psychoanalytic (and sometimes anthropological) perspective with which to interpret the world. (Stein and Niederland, 1987, 1989, cited Mcphie, 2019:103). However, in practice, psychogeography, and consequentially this study, resists any definitive narrow definition of the approach to be taken, as it encompasses a range of diverse activities that raise the awareness of the nocturnal natural environment. This study is attentive to the senses and the emotions of the astro tourist as they relate to place and the environment, this may at times be very serious and at others be fun, thus the social and political views may collide to create a phenomenographic view of the individual astro tourist (see Chapter 4, section 4.4 for wider discussion). This view is echoed by Morrow (2007:214) who argues that expecting a research project to fit within the boundaries of a single paradigm would be to 'oversimplify the beliefs', and that paradigms can be crossed if determined appropriate by the research question and emerging data. Thus, this study acknowledges that there is 'fuzziness', as the journey to discover the experiences of individual astro tourists.

Much of the current research on astro tourism looks solely at the physical space needed to appreciate the night sky (Collinson, 2012; Ingle, 2010; Fayos-Sola, Marin and Jafari, 2014; Najafabadi, 2012), this may be due to the fact that carrying out empirical research late at night, in a natural environment, is both complex and, seen by research institutions as, dangerous – given the uneven terrain, the potential for nefarious deeds and the fear of legal action if some mis-adventure were to befall the researcher. Even so, to get inside the heads of astro tourists requires a physical presence by the researcher, therefore taking an ethnographic approach is vital to understanding the astro tourist.

Dark sky events are of limited duration and provide only a fleeting presence of participants, which allows even the assiduous ethnographer a brief opportunity to carry out in-depth fieldwork. Given this temporal constraint, the only way to amass suitable data is to be reflexive whilst using multiple approaches to data collection to ensure that the stories told by the participants, and the journey taken by the researcher are entwined in such a way that contextualisation can take place and emergent themes can be discovered.

It is also acknowledged that the research approach taken will influence the tone of thesis, insofar as the narrative will reflect inter-subjective stories related to the researcher's journey and the astro tourist experience. This is particularly relevant, as the researcher is critical of the emotional

investment in the research relationships. Consequentially, during the fieldwork observations notes pertaining to personal experiences, thoughts and sensory stimuli will be recorded in a research diary to aid the reflexive account. In keeping with this approach, all personal reflections made throughout this thesis are written in first person, italics and situated in a callout, as seen below:

*In the context of such academic understanding and expression of self-awareness, it should made clear that I am concerned with relating the behaviours and experience of dark sky event participants to better understand astro tourists, my own journey provides context to the study.*

Although existing evidence of the astro tourist experience is scarce, it was identified that by also adopting a phenomenographic methodology when using multiple methods of observing, surveying and interviewing participants at dark sky events that methodological triangulation would occur, thus providing a holistic picture of the multi-dimensional concepts will emerge. (See Chapter 2 for a wider methodological discussion and Chapter 6 for a critical review of the methods).

*My approach to this project was to start with ethnography as a way of explaining the significance of astro tourism experiences whilst integrating theory and providing a reflexive account. However, reflexivity is not just about reflection or 'confessional writing', but rather a methodological approach embraced throughout the entire study (Cohen, 2013:335). It illustrates the research journey taken whilst linking the conceptual themes. Hence, the change from third person to first person throughout.*

## 1.6 Overview of Methods

This thesis is based on 30 months of fieldwork carried out from October 2013 to March 2016, it provides ethnographic and phenomenographic accounts of Dark Sky events in the first British Dark Sky Park in Dumfries and Galloway, using multiple qualitative data collection techniques to gather data that deals with behaviours and experiences of participants at a particular time, in a particular place, so as to enrich an understanding of the astro tourist. It should be noted that this study is individual and unique to the visitors attending Dark Sky Events in the Galloway Forest, it is not replicable but according to Lincoln and Guba (1985:126) still credible, transferable, dependable and confirmable.

In total, four research stages have emerged, as follows in Figure 1.3:

Figure 1.3: Research Stages

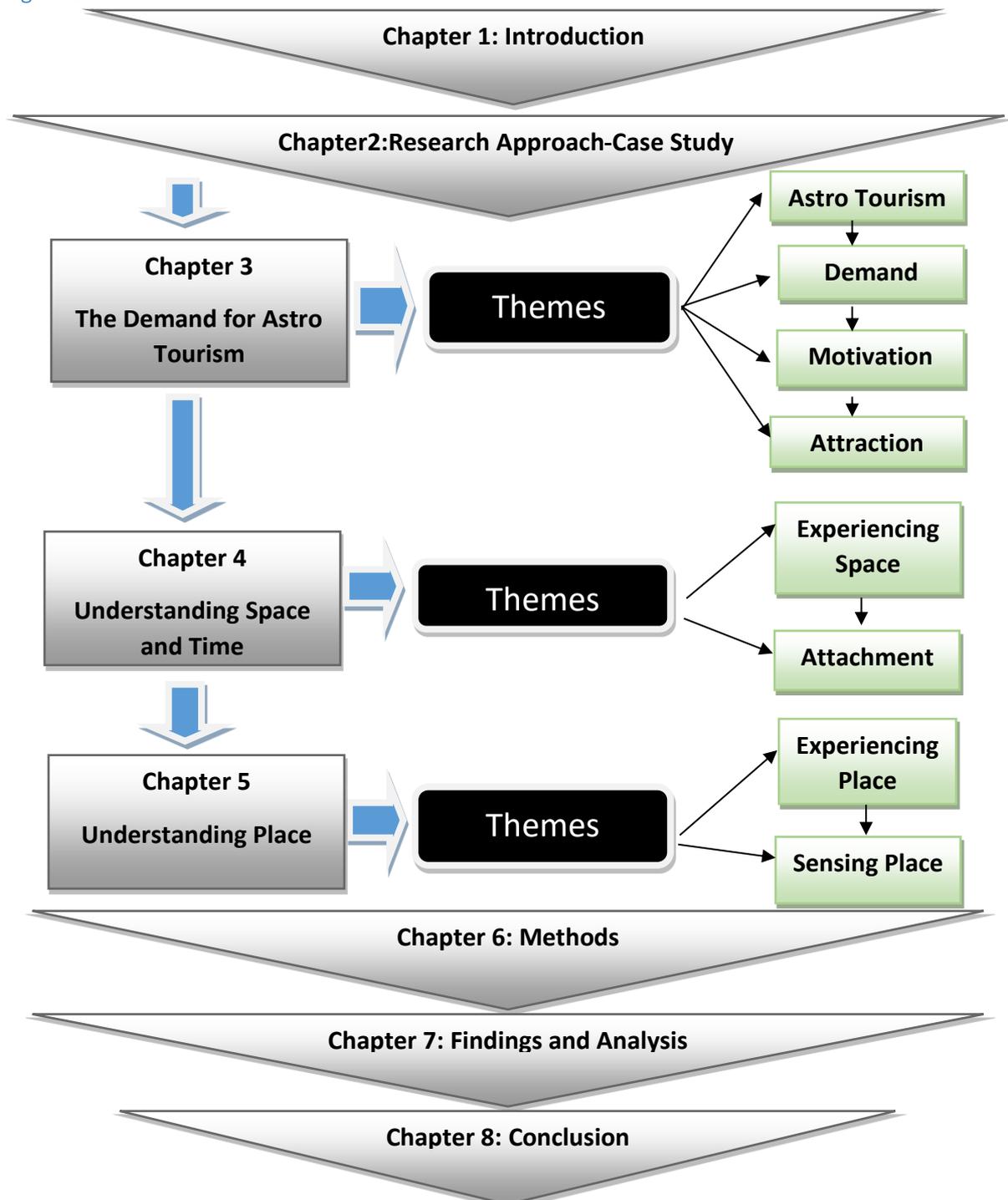


The argument for this approach is outlined in Chapter Six.

## 1.7 Thesis framework

In addressing the aims and objectives, the research design employs qualitative techniques of enquiry, whereby each instrument was chosen to compliment the subsequent stage. Each stage of this study is designed to draw upon emergent themes from the previous, delving deeper will elicit a greater level of understanding of the astro tourist, their experiences and behaviours. The following Figure 1.4, illustrates the framework for the study:

Figure 1.4: Thesis Framework



### **1.7.1 Chapter 2: Research Approach – Case Study**

This chapter begins by clarifying the ontological and epistemological stance taken. The chapter then goes on to outline the ethnographic formation of a Dark Sky Park case study, it illustrates the merits and limits of the destination chosen in a reflexive manner. It continues by outlining the phenomenographic research philosophy adopted -, which presents the assumption that each astro tourist is different as they construe different meanings from their experiences based on the environment and the significance they place on stargazing. It recognises Ryan's (2000:129) ground breaking research into the application of phenomenographic approach, and sets out how this approach is used in this study, particularly when associated with the use of categorical or neural software, and the importance of gaining a closer relationship between the transcripts and the researcher, which permits the construction of consensual realities, thus utilising qualitative techniques of enquiry to add depth of perspective to the study.

### **1.7.2 Chapter 3: The Demand for Astro Tourism**

This chapter introduces the intertwined and complex concepts that gazing at the stars represents an emergent form of special interest tourism within a sub-niche market, astro tourism. Astro tourism has served as a source of aesthetic inspiration, religious following, education and mystical power which generates complex feelings, scientific investigation along with religious following. The literature review begins with an overview of products and services available which leads to an understanding of the demand for astro tourism. It also explores the postmodern motives for travel as a basis to examining aspects of experiencing the dark which in turn may provide a better understanding of the astro tourist's need for sensory pleasure.

### **1.7.3 Chapter 4: Understanding Space and Time**

This chapter commences with the philosophical link to space as the architect or the vessel of place in any specific time. It highlights the various ontological positions that have been taken in relation to space to conclude that it is the humanistic perspective that renders space visible, not only in terms of observing the geographic landscape but in terms of developing experience. It goes on to present the significance of time within space and considers the power of stargazing on behaviour and the human desire to explore time and outer space at place.

### **1.7.4 Chapter 5: Understanding Place**

This chapter presents the argument that not all places have the same meaning to tourists, particularly those that are dark, where the landscape is invisible resulting in the spacescape becoming the dominant feature. For, sensing in place explores the internal human experience as both a cognitive and a psychological experience that can create bonds within various environments, thus illustrating how senses are essential to creating connections to destinations, even when the destination is not the

focus of the observation. Throughout this chapter attention is drawn to the psychogeographical environmental aspect of the astro tourist experience with its primarily visual connotations to argue that a holistic approach to the five senses is essential to creating meaning and thus attachment. Embodied within it, this chapter contains the social, psychological, emotional, symbolic and sensory dimensions of experience.

#### **1.7.5 Chapter 6: Research Methods**

This chapter discusses the methods used to gather empirical data related to the astro tourist experience. It analyses the use of participant observation, a survey method and the importance of delving deeper by using interviews. This chapter also explores how coding is used in NVivo 10 and 11 as a method of sifting through data to look for key-words which can assess frequency, correlations and the formation of categories to identify emergent themes which, when explored further by the use of semi-structured interviews, can lead towards an understanding of the astro tourist.

#### **1.7.6 Chapter 7: Research Findings and Discussion**

This chapter presents the data from the qualitative techniques used (participant observation, survey and semi structured interview) in a reflexive manner. The data from each stage will be analysed in conjunction with the previously discussed academic literature. This approach is intended to add depth to the exploration as it has the potential to yield a deeper understanding of the world of the astro tourist. Observations, profile data and positive and negative quotes from participants will be included to generate any emergent themes which will be produced using NVivo.

#### **1.7.7 Chapter 8: Conclusion: Towards an Understanding**

This chapter will address the aims and objectives of this study, in conjunction with the literature review. The structure is to address each objective individually so as to critically discuss whether or not they have addressed the overall aim. It will specifically focus upon developing an understanding of astro tourist demand; motivation; sensory experience; and the significance of space and place. Future research potential will be discussed to bridge any further gaps in literature identified along with an overview of the limitations of this study. This study will end with a self-evaluation which represents the developments and observations of the researcher.

## Chapter Two

### 2.0 Research Approach – The Case Study

#### 2.1 Introduction

This chapter begins by outlining the philosophical foundation and various research approaches followed. It explores an emerging phenomenon, astro tourism, by reviewing destination related documentation and by exploring the natural setting whilst observing star gazers, as proposed by Yin (2003). The research methods adopted are not discussed here, they are outlined fully in Chapter 6 which proceeds the literature review.

#### 2.2 Philosophical Foundation

When considering that an ontological position is a 'collection of general theoretical beliefs about the way things are' (Jennings, 2001: 129), it was crucial to identify that as well as focusing upon the individual experience of participants, that in this study meaning and understanding is developed through experience of a natural phenomena in a light pollution protected place.

Hollinshead (2004:75) defined ontology as 'those concerns and outlooks which help determine or designate the nature of knowledge', illustrating the nature of reality in terms of being, becoming and meaning. In other words, a person cannot understand something unless they have an accurate account of what it is they wish to comprehend. However, 'exploratory research is conducted when very little or no data exists on the tourism phenomenon being investigated' (Jennings, 2001:17), as this is such a study it seeks to establish possible categories and concepts related to both astro tourism and the astro tourist.

Given the complexity of the integration of the environment, terrestrial and astral, along with psychological connections with place, it is important that the researcher accounts for her own subjectivity, values, ethics and research stance in a reflexive manner. The researcher, holds the basic world view that humans 'construct knowledge by way of interaction', thus a constructive/interpretivist paradigm is the best fit to meet the aims and objectives of this study (Guba and Lincoln, 1989), within which, the best way to increase insight is to use relevant interrelated interpretive methods so as to increase insight into the research problem (Phillimore and Goodson, 2004: 34). The premise being that there are multiple realities originating in the minds of people and instead of explaining that an independent social reality exists, the researcher constructs and interprets their version of that reality. As reality is an individual concept and open to interpretation this research has been conducted in accordance with a strict adherence to ethical guidelines of complete disclosure (see section 6.6.4 for

more details), this is achieved by transcribing all participant interactions, researcher notes and then inputting the data into NVivo 10 (Resnik, 2011; Smith, 2003).

The resultant design has been adopted within this study, as can be seen in figure 2.1:

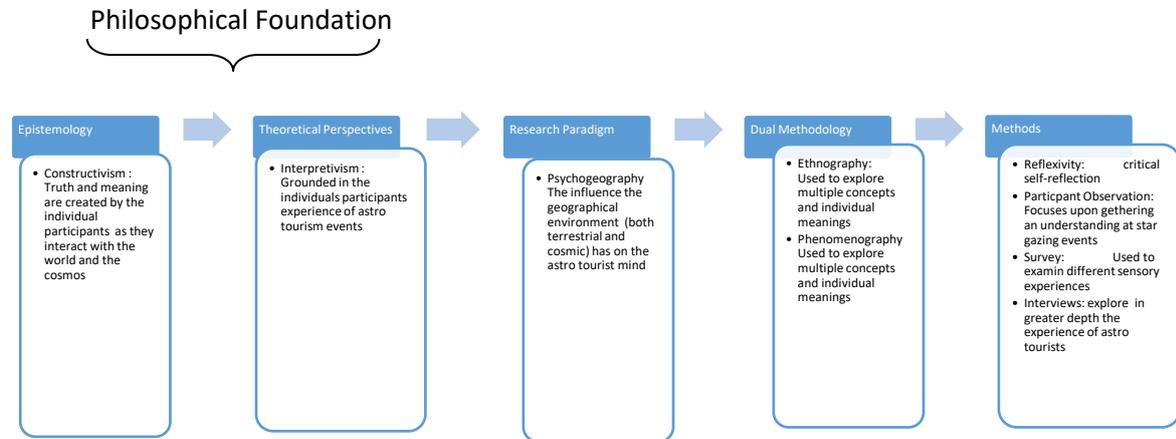


Figure 2.1 Research Approach

### 2.2.1 Research Paradigm

This study takes a psychogeographical view and uses a dual methodological approach which is a non-dualist ontology, whereby the person and the World are viewed and studied in relation to each other. Marton (2000) explains further by identifying that:

There are not two worlds: a real, objective world, on the one hand, and a subjective world of mental representations, on the other. There is only one world, a really existing world, which is experienced and understood in different ways by human beings. It is simultaneously objective and subjective (Marton, 2000:105).

Consequentially, doing *dérive* research in a dark, rural environment, outside the confined of academic space is quite different. Importantly, psychogeographical walking has the potential to shape and change the ways in which people think of themselves, their relationships with others, and the environment (Bridger, 2013).

### 2.2.1 A Psychogeographical View

As all the empirical data for this study is to be gathered within a natural environment, whereby participants wandered both physically and visually through the night sky, a psychogeographical point of view is taken, this view has the potential to focus on how different places make people feel and behave. Particularly, as a natural nocturnal environment has the ability to deprive some senses and enhance others, arguably making the flora and fauna appear alien thus giving rise to the feeling of surrealism, fear and wonder.

Looking at the development of psychogeography as a research approach, it is evident that there is a dichotomy between social and political genres (McPhie, 2019). Starting with the early political writing of Engels (1845), in his account of the poverty he encountered when wandering through the streets of the working classes in Manchester and London, feeling a desire to change the way it is. Whereas, De Quincy (1821, 1849, 1886) discusses his walking around the streets of London and Paris in an opium induced haze which he believed: 'first revealed the glory of motion: suggesting an under sense, not unpleasurable, of possible indefinite danger (1821); and second, the grand effect for the eye, between lamp-light and the darkness upon solitary roads'. He observed the splendour of business, with its opulent glass windows and mighty structures, against the harshness of social deprivation, with their foggy streets, streetwalkers and neglected children, and pondered on why this is (1849). Although psychogeography is not mentioned at this stage it is apparent that the effects of the environment on a subjective individual are evident and denote mankind's natural inclination to feel 'out of place' but it is the 'why this is' or the 'does it need to be changed' that makes their observation psychogeographic and, arguably, political.

Jesse Walter Fewkes, wrote the first published term that refers to psychogeography for the Bureau of American Ethnology in 1905, he stated that 'The science of anthropogeography, or more properly speaking, psychogeography, deals with the influence of geographical environment on the human mind' (NP).

Fewkes (*ibid*) examined the strong connection that the Hopi people (Native Americans) had with their arid landscape, which in-turn led them to developing set beliefs, practices and rituals to appeal to the sky gods to deliver rain. Similar in many ways to the Australian Aboriginal people who also worship the gods using symbols to represent water, sun, earth and fertility. At this point, there is reference to aspects of spirituality in relation to the effects of the landscape and environment on the human-mind, however since then there have not been many further references to existentialism in psychogeographic literature. That is, until now, for within this thesis the linkage between the natural environment and wandering through place, and visually, through outer-space will be made as the connection between Earth's nocturnal environment and cosmic space may affect the astro tourists' mind both emotionally and spiritually.

At a similar time, the 19<sup>th</sup> century, Charles Baudelaire (cited in Benjamin, 2006) introduced the concept of the 'flâneur', the casual social wanderer, observer and reporter of street-life. Identified as an aesthete and a dandy who wandered the streets of 19<sup>th</sup> century Paris looking at, and listening to, the diversity of life in a modern city with the goal of achieving a form of transcendence (Friedberg, 1991). Considered to coincide with the introduction of department stores and packaged tourism, there is the

notion that an ideal meander through the streets would allow a gaze to fall systematically on commodities, sold to consumer-spectators during this period of post modernity (Friedberg, 1991). However, tourists are not always a flâneur, in fact they are more likely to stick to the tourist track, following maps and 'clutching guide books' (Mack, 2010: np) whereas, the seasoned traveller has the characteristics of the flâneur, as they are likely to have a sense of curiosity, they like to go everywhere and anywhere, they are not afraid to reconnoitre all the environment has to offer.

Much later, Guy Debord in 1958, one of the leading members of Letterist International and founding member of the later Situationist International, derived the first definition of Psychogeography as 'the study of the precise laws and specific effects of the geographical environment, consciously organised or not, on the emotions and behaviours of individuals' (*ibid:np*). This definition is congruent with Fewkes observation of the Hopi people, as it includes the essence of being in space. However, according to Hodgett *et al.*, (2010:287) the definition serves as a mere 'backdrop to social processes', as the definition is not connected with a political and historical located analysis of spaces and places (*ibid*). Although Debord struggled to stipulate the finer points of this theoretical paradox in his early definition, later he produced the 'theory of the Dérive' (Andreotti and Cota, 1996), a revolutionary strategy, a kind of psychogeographic procedure, which promotes drifting through various ambiances, consisting of walking through the city and being drawn to attractions in the urban environment or encounters found there, thus allowing emotions to select the passage.

Debord (1958: NP) wrote that:

*'Dérives (essentially a psychogeographic method) involve playful-constructive behaviour and awareness of psychogeographical effects, and are thus quite different from the classic notions of journey or stroll. In a dérive one or more persons, during a certain period, drop their relations, their work and leisure activities, and all their other usual motives for movement and action, and let themselves be drawn by the attractions of the terrain and the encounters they find there.'*

Being drawn, aimlessly to encounters and attractions in a city centre location, may be viewed as vagrancy as it is not common for people to walk without a purpose. For example, people tend to be shopping or doing business, those who do not may be seen by the authorities to be deviant. This underpins the argument that Psychogeography can be viewed as political, for it advocates social change.

In the field of spatial cognition and psychogeography, Gould's (1966: 4-5) work is important as it provides a view of the consensual images of space. Gould (*ibid*) highlighted that things, concepts, attitudes and beliefs have a bearing on the cognition of space, even though they themselves are not spatial, they are unique to the individual mind, a place where 'being' exists. When Gould (1966:5) discuss space and the components that it consists of he makes explicit the fact that his concern is with space containing more than distance, size, shape and direction, as he touches on the mental pictures of geographic space (*ibid*:6). This illustrates that, he was interested in the cognition of space and place. This contrasts with the work of Moore (*ND*), who saw space as a kind of vacuum, where space allows for size, shape, direction and measurement, it is devoid of human emotion in the field of astro tourism, Gould's work is important as it identifies variable preferences and the importance of verbal information.

Illustrated further, by the work of Kevin Lynch (1960, 1972, 1976) a city planner whose work has informed four motives on the image of the city: 'an interest in the connection between psychology and the urban environment; fascination with the aesthetics of the city at a time when most planners dismissed them as a 'matter of taste'; a wonder about how to evaluate a city; and a commitment to pay 'more attention to those who live in a place – to the actual human experience of a city' (cited in Wood, 2010:186). Lynch's work focused on a series of map-drawing tasks he derived for local residents with the aim of ascertaining the image of the city which formed the basis of his book 'The Image of the City' (*ibid*). He focused on the perceptions of the environment and the cognition of space via the use of individual generated sketched maps – simple, accessible and very effective. Lynches work showed the dichotomy of what people need and want, in contrast to what people get from society. His methodological approach was to get a representative sample of a population and then use an individual map drawing technique consisting of allowing the participants to take photographs of structures, draw maps of walks through the city and then add questions so as to produce a mental map. He then undertook content analysis to produce his results in two consensual images, one from the verbal information and the other from a sketched map. Using these maps, Lynch went on to determine the orientation, navigation and symbolism of three American cities with the aim of illustrating how they could be transformed into ideal cities. An effort to come to grips with the 'visual quality of American cities by studying the mental images of them held by their inhabitants, and the sense that these maps were in some way mental maps that gave them an autocratic power that Lynch had surely never anticipated' (cited in Wood, 2010:187), thus illustrating that Lynch's work on the ambiance of spaces, and their ability to invoke feelings in the body of perception, as evoked by the senses create mental images much more in tune with the city than cartography itself as they are a form of wayfinding.

The difference between my work and Lynch's is that in this study participants' behaviour is observed and then questions are asked which invoke narratives of their experiences. These provide a consensual map of the nocturnal stargaze and their experience of the environment. This study also uses content analysis; however, computer aided technologies are utilised, whereby maps contain verbal descriptions and external behaviours are created in the form of logic trees, my work offers a contemporary view of a nocturnal landscape, an area of study which is emerging and requires a different kind of gaze.

Since the 1990s contemporary psychogeography has taken a turn towards academic circles such as Pinder's (1996) geographical view; Sadler's (1998) urban theory; Burnett *et al.*, (2004) critical psychology view, which include the more avant-garde such as Sheller and Urry's (2006) new 'motilities paradigm' which documents people's experience of walking in urban environments as they develop the psychogeographical praxis in different ways. This is supported, auto ethnographically, in the work of Edensor (2008, pp.136–137) who says, walking 'is suffused with a kaleidoscope of intermingling thoughts, experiences and sensations, so that the character of the walk is constantly shifting'. Other examples include Ian Borden (2001) book 'Skateboarding, space and the city: architecture and the body', it showed how skateboarders suggest that the city is not just a place for working and shopping but a true pleasure ground, a place where the human body, emotions and energy can be expressed to the full'; alternatively, information technology can foster a change in behaviour towards city living as if suffering the web enables wandering new social services as a more passive consumer can move freely in active pursuit of new experiences (Nova, 2003). Thus, the terrain of psychogeography has been expanded, to move beyond urban design and architectural performance to social concerns and contemporary ways of gazing.

The 'gaze', whilst systematic and socially organised, involves what may be referred to as the 'spectacle' which is self-indulgent and reminiscent of the flâneur, not the mass tourist who is part of the crowd (Urry, 1990: 86-93). The astro tourist, arguably requires the spectacle whilst viewing the cosmos in a natural terrain, for the tourist engages with nature but retains the individual identity of the flâneur for the spectacle is individual and personal.

Thus, this study is a compendium of Gould's and Baudelaire's work, for their approach to psychogeography represent a best fit for an ethnographic study of the individual lived experience of the astro tourist as they are perceived to have the curiosity that is required to participate in an emerging tourist pursuit. 'Psychogeography is the study of how issues, experiences, and processes that result from growing up in a human body are symbolised and played out in the wider social and natural worlds' (p. xvii) and takes a signifying psychoanalytic (and sometimes anthropological)

perspective with which to interpret the world.’ (Stein and Niederland, 1987, 1989, cited in Mcphie, 2019, p. 103).

However, in practice, psychogeography, and consequentially this study, resists any definitive narrow definition of the approach to be taken, as it encompasses a range of diverse activities that raise the awareness of the nocturnal natural environment. This study is attentive to the senses and the emotions of the astro tourist as they relate to place and the environment, this may at times be very serious and at others be fun, thus the social and political views may collide to create a phenomenographic view of the individual astro tourist.

*My pre-conception is that the astro tourist wants to be seen to gaze at the stars, is not afraid of being in an unfamiliar environment – in-fact seeks it out and may in some ways be voyeuristic as they have a desire to see something new; or culturally; or socially obscure. It is assumed that the astro tourist will be travelling to the dark sky from a place of light pollution, therefore they will be outsiders, a characteristic of the flâneur (Mack, 2010). They may also have limited, or no knowledge, of astronomy which may impair the astro tourist’s ability to understand what is happening in both the natural environment and/or the cosmos for their attitudes and beliefs have a bearing on the cognition of space. The astro tourist flâneur may see more because his/her purpose is to star gaze as it is a visual activity. The flâneur historically has been a solitary figure, although according to Mack (2010) it is possible for two or more, of like minds to flâne together if their interaction isn’t too much of a distraction, another characteristic that the astro tourist may demonstrate in their gaze.*

To explore these potential changes a dual methodological approach is needed, ethnography and phenomengraphy has been chosen as follows:

### 2.2.3 An Ethnographic Design

Originating in anthropology, ethnography was primarily used to study small groups of indigenous people (Marcus, 1986, Bryman, 2004), however it has proved to be an effective methodology in many disciplines: Hospitality: casual dining (Becker and Murrmann, 1999); Tourism: customer satisfaction (Bowen, 2002); Tourism Development: traditions of a small island (Butler, 1993) and Environmental Studies: people natural setting (Othman, 2004). Even so, an ethnographic lens has not been previously fully applied to astro tourism so other studies undertaken in a nocturnal environment and beyond have been drawn upon to provide inspiration. For example: Ek *et al.*’s (2008) ‘Dynamic Framework of the Tourist Experience’, viewed the tourist as an active performer and producer of space, which

created the notion that dark sky visitors might be the instigators of their own experience. Wearing and Wearing (1996) 'Refocusing the Tourist Experience' observed tourists as increasing agents of interaction and creativity, highlighting the desire for something new – niche. Cook and Edensor (2014) discussed the experience of night cycling in 'Cycling through Dark Spaces: Apprehending Landscapes Otherwise', revealing a sensory aspect to experience at night and a desire to experience danger of speed and darkness. Whereas, Palmer's (2009) 'Reflections on the Practice of Ethnography within Heritage Tourism', explored and reflected upon how meaning is made through tourism, thus giving rise to areas of investigation such as the liminal, spirituality and nostalgia. I contend that each of these studies provides, to a greater or lesser extent, an insight into the pre-representational understanding of place by the tourists, illustrating the power of ethnography to highlight the felt, rather than purely seen experiences of the astro tourist.

However, it should be acknowledged that ethnographic research is *emic* in design (i.e. it attempts to describe occurrences as they are experienced by the subjects in a particular place at a specific time {Arnould and Wallendorf, 1994}), resulting in a lack of objectivity in most ethnographic research (Atkinson, 1992). In accepting the subjective, partial and local nature of analysis in this study I acknowledge that any claims I make are interpretation of the behaviours and experiences of astro tourists at the events attended. However, this is justifiable, for as the relationship unfolds between the astro tourists and the researcher a more accurate apprehension of their behaviour and experience will emerge, for when using an ethnographic approach deeper insight emerges.

#### 2.2.4 Phenomenography

To meet the aims and objectives of the research problem set out earlier, a deep level of engagement with the participant is required to get inside the heads of the participants, thus the design adopted is born out of an ethnographic context, in so far as this study takes an interpretive stance to collect socially derived data, thus leading to social discovery. In short, this research focuses on the meaning and the reasons why visitors go to Dark Sky Parks to star gaze. However, ethnography alone would not fulfil the aim, as this research goes beyond the culture of the participants to delve deeper into the multiple concepts, and meanings of a particular group of people. Therefore, the best fit for this level of insight is to adopt both an ethnographic and a phenomenographic methodology in a hybrid approach to suit the research goals.

Phenomenography was chosen as a post-phenomenological qualitative research position within the interpretative/constructionist paradigm, which explores the different ways in which people experience something or think about something as it is particularly suited to ethnographic research (Ryan, 2000). Phenomenography, attributed to the Gothenburg School of Researchers (Marton, and

Saljo, 1976.), has, over the past two decades, become one of the key orientations in research within teaching and learning in higher education (Entwistle, 1997). A phenomenographic approach seeks to generate data on the individual's meanings, uniqueness related to their understanding. In this study, the phenomenographic approach is applied to space, place, time and the motive for sensory pleasure within a nocturnal environment. It was anticipated that phenomenography would lead to better understanding of the behaviour and experiences of a phenomenon, while phenomenology would only lead to a better understanding of the phenomenon itself. In this regard, phenomenography is a conceptual and methodological line of thought that can be used for exploring in-depth perceptions and experiences of individual participants at Dark Sky events.

A Phenomenographic approach seeks to generate data on the individual's meanings, the actual experiences and thought of participant's related to the understanding of space, place and darkness and the significance they place on stargazing (Marton, 1986). Therefore, phenomenography helps to gain a better understanding of the perceptions and experiences of a phenomenon, while phenomenology would lead to a better understanding of the phenomenon itself.

Considering that the research aim is to critically explore the experiences and behaviours of the astro tourist, for whom it can be assumed reality is constructed inter-subjectively through meanings and understandings developed socially and experientially, an interpretive ontology it therefore justified as it is the most logical fit. Interpretivism within an ethnographic study allows for an understanding of 'the world of human experience' (Cohen and Manion, 1994:36). Thomas (2003:6) holds the view that interpretivists use qualitative methods to 'portray a world in which reality is socially constructed, complex, and ever changing'. Therefore, to understand the types of experiences that astro tourists have, it is essential to watch, record and learn about the astro tourist's gaze at the dark night sky and which astral phenomena being observed as an ethnographer but to also acknowledge the thoughts of astro tourists so as to reduce incorrect interpretations that the researcher might have (Barnard *et al.*, 1999).

Phenomenography as discussed by Forester (2015), reports on importance of short narratives of experience which allow for context-sensitive and complexity-sensitive structures. These structures are subtle variations with radical differences in complexity in which there is the potential to distinguish between similarity and variation of experience and to identify congruent and divergent themes with the overall of aim of knowledge creation (Forester, 2017). The initial focus was placed on the immediate conscious experience as it can be recorded and interpreted through on-site, real-time observation of the participant's experience (Gratton and Jones, 2004:29). Trigwell (2000: 68) describes this as 'exploring at greater and greater depths of thinking without leading. Although this

data it is not replicable, according to Lincoln and Guba (1985:126), 'it is still credible, transferable, dependable, and confirmable as a method and instrument that can be used and repeated'.

As Phenomenography is an empirical research tradition designed to answer questions, its aim is to discover the qualitatively different ways in which people think of the world (Marton, 1986). In other words, it uses qualitative techniques to uncover the experiences of people, by way of determining the conceptual, real and sensory practices in which people think of various aspects of a phenomena in the world around (Martin *et al.*, 1992). This study intends to extend this concept further to include what they (the astro tourist) thinks about the universe and their place in it. Importantly, in Phenomenographic research, the researcher chooses to study how people experience a given phenomenon from a non-dualistic ontological perspective; i.e. the object and the subject are not separate and independent of each other (Walker, 1998). For example, a star is not just a star it has meaning for the observer. Consequentially, it is not possible to deal with an object without experiencing or conceptualising it in some way.

Taking on the role of Phenomenographer, my role is to open-mindedly, seek to identify the numerous ways in which people experience the dark sky events, and to represent their awareness and reflections as accurately as possible (Orgill, 2002). This approach is also congruent with ethnography, as the study seeks to explore and report on the behaviour of astro tourists at dark sky events. This will include any behaviour that is shaped and constrained by the nocturnal and natural environment, along with my understanding and interpretation of that behaviour (Wilson and Chaddha, 2010). This will be supplemented, at a later stage, by recording and reporting data from a sensory questionnaire and summatively, by carrying out *interviews with participants*.

*The participants will be encouraged to reflect on their experiences and then relate them to me in such a way that we mutually understand the meaning of the experiences (or of the account given of the experiences, Orgill, 2002).*

The data generated from this study will be interpreted as 'clusters' of experiences for each person, thus it will provide more scope for the development of an understanding of the astro tourist.

Marton and Booth illustrate the significance of gaining understanding about human experience stating that:

'... in order to make sense of how people handle problems, situations, the world, we have to understand the way in which they experience the problems, the situations, the world that they are handling or in relation to which they are acting'. (Marton and Booth, 1997:111).

Illustrating, that phenomenography provides a means through which knowledge about the ways in which people experience astro tourism can be revealed. In gathering this data from participants in a sequential manner, the data is then analysed by following Marton, Carlsson and Halasz (1992) detailed four stage approaches. These stages involve: 1) identifying relevant data as pools of meaning; 2) sorting data into 'pools of meaning' based on similarity and exclusive of reference to individual participants; 3) contrasting groups of similar data and writing a category of description for each; and finally 4) verifying a portion of the data to establish the outcome space.

The outcome of this phenomenographic research study involves the representation of categories of description in an outcome space (Barnard, McCosker and Gerber, 1999; Bruce, 1997; Marton, 1994). Outcome space portrays the complex experiences of the participants in the same way that categories of description represent connections. Marton (2000: 105) describes outcome space as being 'the logically structured complex of the different ways of experiencing an object, acting as a synonym for phenomenon'. In this study, the outcome space represents both the phenomenon as well as the various ways in which it can be experienced. For example, in a geographic location (the Galloway Forest) which has the ideal conditions for stargazing (dark sky designation), but where the object of the gaze is the cosmic landscape, thus the observer is psychologically transported beyond the horizon to the astral plain.

#### 2.2.5 Reflexivity

Using qualitative techniques, such as participant observation and interviews in a real-world setting, as part of a social study, raises the issue of subjectivity and bias in the portrayal of the findings, it is therefore important to carry out the research reflexivity. Whereby 'the researcher has the ability to reflect back and forth on the research process whilst challenging their perception and influence on it' thus laying it bare for all to see (Marshall, *et al.*, 2010:21). Lipson (1991) asserts that reflexivity requires critical self-reflection of the researcher's social background. Their personal assumptions, position and behaviour can impact on the research process, particularly the collection and analysis of data.

Lipp (2007) identified that there are several variants of reflexivity:

- Reflexivity as Introspection - whereby the researcher's personal experience and interests are made explicit (see Adey, 2004, Surveillance at the airport: surveilling mobility/mobilising surveillance)
- Reflexivity as collaboration - where two or more researchers facilitate and participate in the observation in order to establish a team of equal co-researchers with multiple voices and

opinions (see Palmer and Grecic, 2014, You can't buy love at TESCO: observation filed notes of a coach education event)

- Reflexivity as social critique – whereby there is an imbalance of power that needs to be re-calibrated between the researcher and participants so that a voice is provided to the unheard (see Finlay, 2002, negotiating the swamp: the opportunity and challenge of reflexivity in research practice)
- Reflexivity as inter-subjective reflection – whereby the focus is on the situated, emergent, and negotiated nature of the research (see Sartre, 1969, 'Being and Nothingness').

There is great value in carrying out fieldwork that explores the behaviour and experiences of dark sky visitors as insights gained can provide an understanding of the complexity, the beliefs, attitudes, perceptions, emotions, and patterned use of space and time in a challenging environment. Within the traditions of ethnography and reflexivity, fieldwork forms the corner stone of the research activity hence in this study participant observation draws on a mix of mainly qualitative research techniques such as structured and conversational interviews, questionnaires and a collection of written and digital sources, all of which provide rich data for analysis (Dahles, 2015).

### 2.3 Research Design: Case Study

Research design is a blueprint for the connection of research philosophy to the methods for collecting and analysing data. In essence, it comprises of the 'skills, assumptions, and practices that the researcher employs as he or she moves paradigm to the empirical world' (Densin and Lincoln, 2000:22). In general, when, how or why questions are posed, as in this study, Yin (2003:1) believes that 'case studies should be the preferred strategy as they allow the researcher to explore a contemporary phenomenon in a real-life context'. Most pertinently, a case study design is important in explaining the causal links in real-life interventions that are too complex for a survey or experimental strategies alone (Yin, 2009). Therefore, in an attempt to understand the astro tourist and their psychogeographical link to the terrestrial and astral environment the study focused on the first designated dark sky site, the Dark Sky Park in the Galloway Forest and its events participants.

By focusing upon one place, this case study enables a thorough understanding of the location, the phenomena and the participants, as qualitative techniques are used to delve deeper into the experiences of astro tourists. However, Hammersley and Atkinson (1995) caution that ethnographers should resist any attempt to see, hear, and participate in everything that goes on. Even so when embodying a commitment to understand the complexities of astro tourist types: their relationship with place, space and time, whilst attempting to remove any unconscious bias by the researcher requires observation and thorough notetaking. It is also acknowledged that case study research is

criticised by Hoaglin *et al.* (1982) and Beeton (2005) as being riddled with the value system of the researcher who is responsible for presenting the facts and carrying out the analysis. Notwithstanding, Bryman (2004) recognises that bias is not just restricted to case study design as most fields of enquiry contain elements of unconscious bias, having said that, in this instance, case studies are ideal in terms of getting up close with participants in an attempt to explore the human psyche, the terrestrial and cosmic world/s around them.

### 2.3.1 Presenting Place: The Dark Sky Park, Galloway Forest, Dumfries and Galloway, Scotland

As identified in the Preface, the site chosen for this study was both personal and instrumental as it represents a unique kind of darkness, the likes of which became identifiable in 2009 when the first Dark Sky Park in the UK was designated. Scotland itself is located in the north of the UK, it has a visitor economy worth £11 billion with direct and indirect spending estimated to represent 4.5% of the overall economy (Visit Scotland, 2017).

### 2.3.2 Geography and Economy: Tourism in Scotland

According to the Tourism Attitudes Survey (2005) Scottish tourism depends heavily on the country's landscape, with 92% of the visitors stating that scenery was important in their choice of Scotland as a holiday destination, the natural environment being 89% important to visitors. This demand must be managed throughout the year, as areas such as Dumfries and Galloway (see figure 2.2, component 4) primarily visited during peak season when the weather is much more appealing to visitors as identified by Fakeye and Crompton (1991) who posited that most visitors are fair weather travellers.

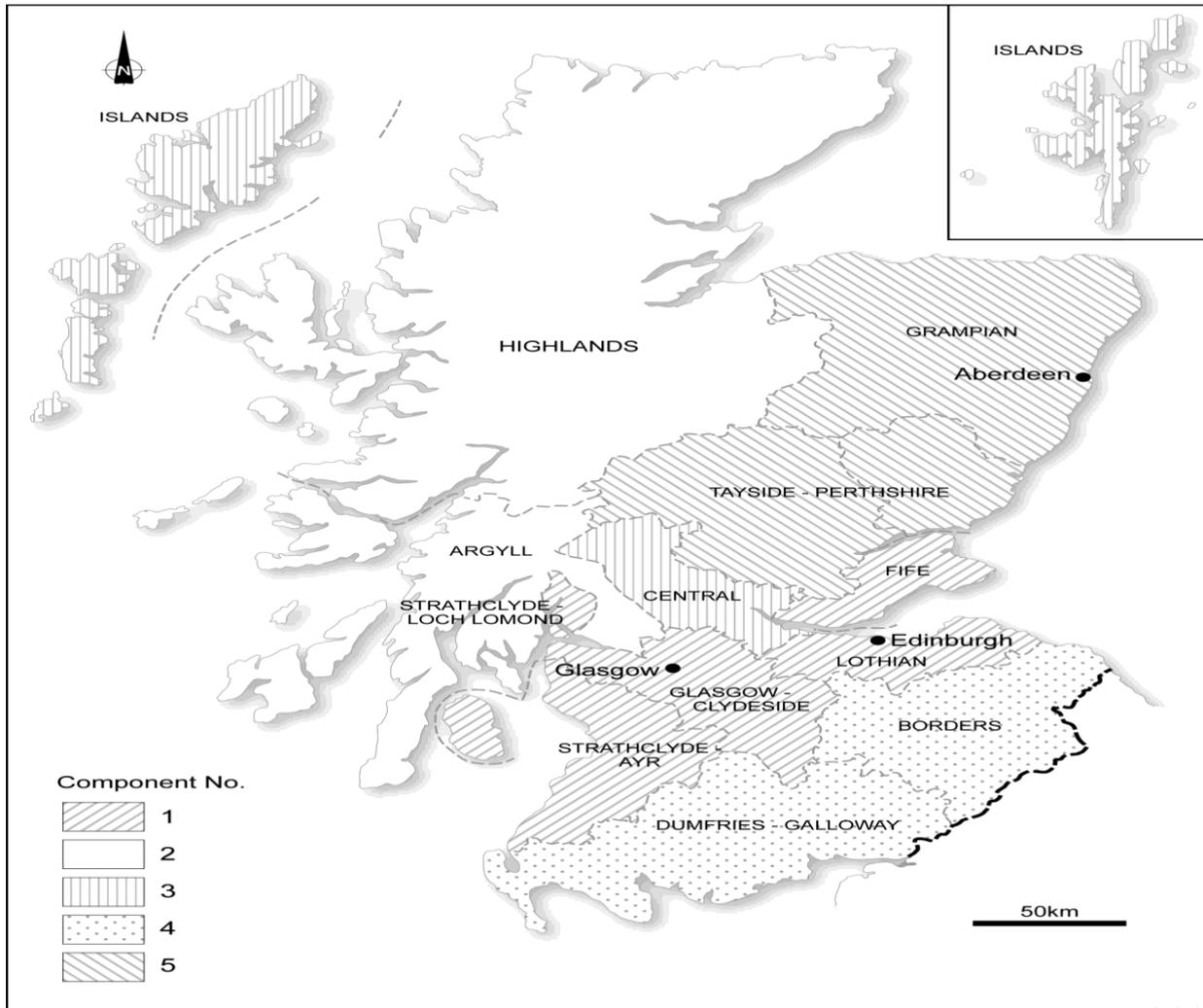


Figure 2.2: Scotland: components

Research by Coshall, *et al.* (2013:2) identified that ‘seasonality was one of the primary causes of low occupancy’, as seasonality structures and shapes human activity in time and space, particularly the consumption of the built and natural environment for tourism and leisure (Palang, Soovali, and Printsman, 2010). Although, seasonality can translate into a mismatch of supply and demand, it can also be due to a lack of investment, leadership and/or scope of opportunities. However, it should be noted that Scotland has received major investment in the public sector from Visit Scotland, formally known as Destination Marketing Organisation (DMO), with investments of £24 million in 2000 (DMO) to £58 million in 2012 (Visit Scotland) (Coshall *et al.*, 2013).

Speaking at the 2007 Green Tourism Business Scheme Conference at Gleneagles, Peter Lederer, the then Chairman of Visit Scotland argued that, *‘Consumers across the world are increasingly well-educated and looking for new experiences, they are also more concerned about the environment. Highlighting that the growth of eco-tourism, is only really emerging*

*today, by 2030 it will probably be the norm as destinations take on business practices which minimise tourists' environmental footprints. Lederer continued that 'We have to be at the forefront of this movement to take advantage of it, people want to gain experiences and products that are original,' he said. 'The growing popularity of green, wildlife and eco-tourism mean that Scotland - with its abundance of beautiful landscapes, natural attractions and wildlife - has much to offer consumers.'*

Dark Sky designation adds to the diversity of natural attractions by providing a new experience of a nocturnal activity which is growing in interest as identified in Chapter 3. Crompton and McKay (1997) argue that attractions can appeal to multiple markets simultaneously because different people may visit to satisfy different motives. Richards (1996:203) cautioned that 'not all tourists visiting cultural attractions can automatically be classified as cultural tourists, for their visits may not be driven by cultural reasons'. He stated that 'many consume these types of attractions as part of a wider experience' - a concept that is investigated further in the next stage, when looking at the primary motives for travel.

Woodlands and forests cover one-sixth of Scotland, with the publicly owned National Forest Estate managed by the Forestry Commission Scotland making up about a third of the woodland. The estate hosts over 10 million visitors each year as it plays a significant part in generating £165 million of forest-related tourism and around £94 million of expenditure on day visits each year. (Forestry Commission Scotland, ND). The activities undertaken in woodlands and forests, according to the Scottish Natural Heritage Commissioned Report (No.398), consist of:

- Cycling – defined as incorporating all types and abilities of cycling within forests, ranging across short family rides, cross-country rides, single-track mountain biking, downhill, four-cross and dirt-jumps
- Horse-riding – defined to include all types of riding that take place in the forest, from leisure riding to endurance riding
- Nature-watching – defined to include all nature-watching activities, including guided walks, viewing centres, and nature trails
- General forest visitors – defined as a catch-all group, including walkers/hikers, play, and day trippers, as well as people who visit forests for multi-activities (Scottish Natural Heritage Report, 2010)

Tourists participate in a wide variety of activities when they travel (Fakeye and Crompton, 1991). No doubt, some are directly related to their trip purpose; but many more are ancillary or peripheral to the reason for travel, and the consumption of them complements the total trip experience. Indeed, the decision to participate in many activities is not made until after arrival at the destination (Lew, 1987; McKercher, 1996; Pearce and Wilson, 1995). So, when attending a Dark Sky event, is the decision made before the time of travel, during the planning time or impulsive? These questions need addressing during the subsequent stage of research which addresses the motive for travel.

### 2.3.3 Geography and Economy: Dumfries and Galloway

Dumfries and Galloway is predominantly a rural region with large areas classified as remote or very remote (Gov.Uk, 2013). The area has a very low population density, mainly derived from small towns and villages such as: Kirkcubright, Gate House of Fleet and Newton Stewart. The topography of large hills, mountains and agricultural land is congruent with a poor infrastructure, there are no direct train routes from Dumfries to Stranraer, and main A road, the A75 meanders across the south west of Scotland from Gretna Green to Stranraer. The result being that tourists attracted to the area need to have access to a motor vehicle or use the public bus system which has a limited schedule due to low population and geographical spread making cost effectiveness less attractive for commercial providers. Chacko and Fenich (2000) suggest that this would detract first time visitors as they are complicated - they rely heavily on marketing information which must stress the positive aspects of travel.

The latest tourism strategy for Scotland (2006-2016) suggested, the main types of authentic vacation/break that have seen an increasing demand in rural locations are linked to:

- Interest in good health
- The use of a break as a personal reward or well-being experience (spa/pampering experience, good food and drink and other hedonistic activities)
- Interest in extended education (a demand for history and cultural related holidays are identified but there is no mention of stargazing, as this report is pre-Dark Sky Park designation)

(Scottish Natural Heritage Report, 2012)

The report went on to suggest that many visitors want a truly authentic experience when they visit a place. According to Chambers (2000:98) authenticity should be defined according to the degree to which 'people have significant control over their affairs, to the extent that they are able to play an

active role in determining how changes occur in their social setting'. Within Scotland, the range of diverse activities available provides a level of control as choice certainly out-strips demand.

#### 2.3.4 Geography and Economy: Galloway Forest, Dark Sky Park

The Galloway Forest Park (see Map 2, below), managed by the Forestry Commission identified a truly authentic experience when they realised that the forest had the potential to become the UK's first Dark Sky Park. The park covers three hundred square miles, it attracts 800,000 visitors every year of which 150,000 visit the Forestry Commission visitor centres at Glentworth, Kirroughtree and Clatteringshaw each of which host Dark Sky events related to stargazing (Galloway Forest Park, ND).

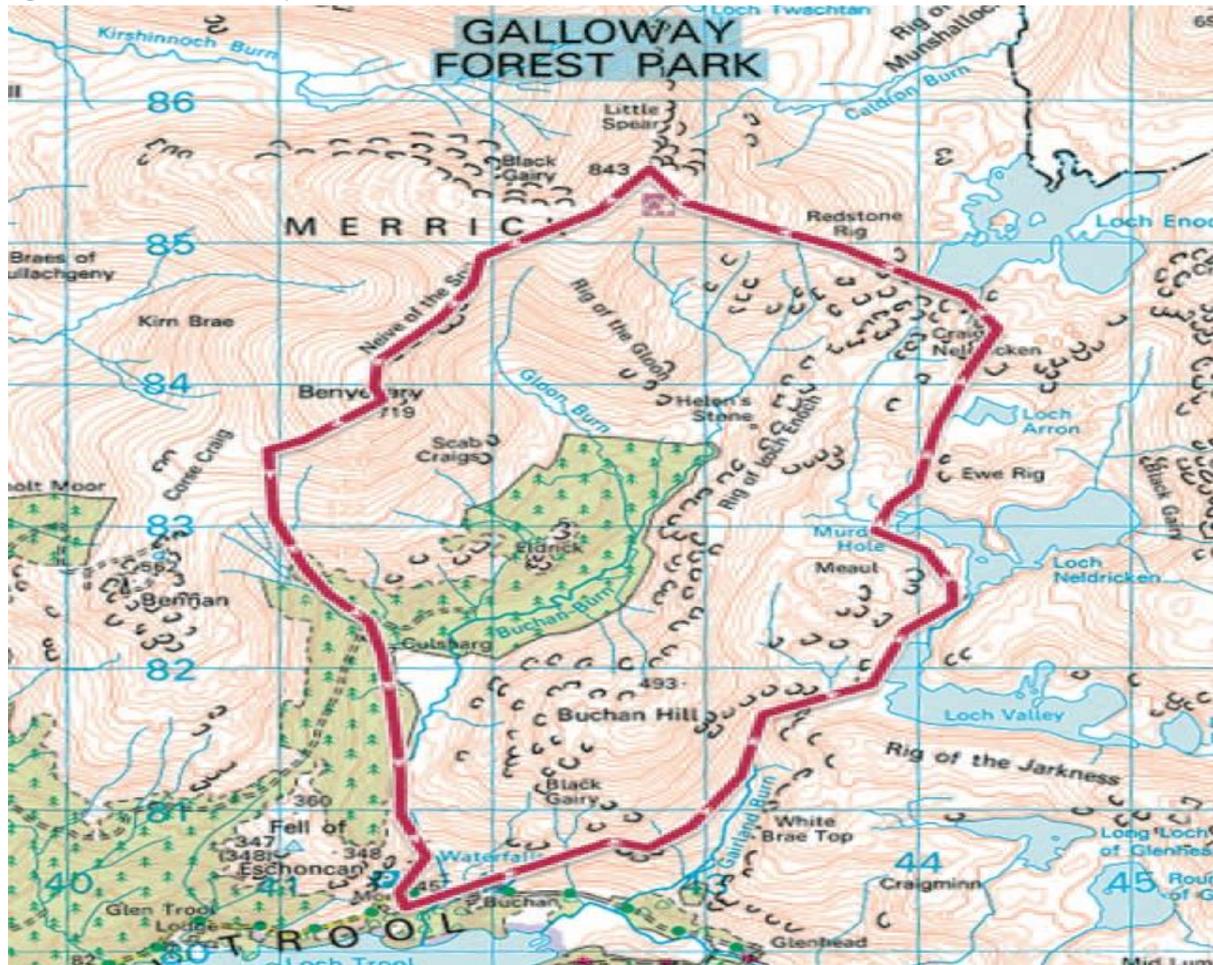
As an authentic experience the Forestry Commission discovered that a precious natural resource, was the darkness of the night sky, this could be harnessed, to not only protect the Forest and its wildlife from light pollution but it could also provide a tourist attraction. The destination had the potential to attract those interested in stargazing, Eco-friendly visitors and those who wanted to experience the dark in a safe, managed event.

#### 2.3.5 Dark Sky Park Designation

IDA documentation recognised in 2001, that the night time environment is under threat of uncontrolled light pollution, Keith Muir, Head of the Forestry Commission in Newton Stewart, sought to establish Dark Sky designation for the Galloway Forest, in 2009 the application was successful and gold standard designation afforded (as discussed in the introduction).

The economic impact of the Galloway Forest to tourism in Dumfries and Galloway is estimated between £1.7 and £2 million (Aberdeenshire.Gov, ND). The management of the forest park (see Figure 2.3) focuses on designing spaces for visitors; mountain bikers, hill walkers, star gazers, wildlife observers and bird watchers, all of whom are 'quiet enjoyment seekers', as classified by Urry (1970).

Figure 2.3: The Galloway Forest Park



(The Great Outdoors, ND)

Although the majority of visitors to the Galloway Forest venture into the area to explore its forests, wildlife and shorelines, geographically the location also represents a unique spot in the universe. It provides a darkness which is truly rare in a light polluted Britain, thus presenting a host of opportunities. According to the New Shorter Oxford Dictionary (1993) a destination is defined as 'the place to which a person or thing is going, the intended end of a journey.' It can be argued that the Dark Sky Park is not the final destination for the astro tourist, in fact it is a place to explore cosmic space, a destination without visible boundaries and with limitless possibilities.

The World Tourism Organisation re-defined a destination as 'a physical space in which visitors spend at least one night and is made up of tourism products such as support services and attractions, and tourism resources with physical and administrative boundaries that define its management, images/perceptions of market competitiveness' (World Tourism Organisation, 2003:NP). Visit Scotland and the Forestry Commission have extended these boundaries by using cosmic images to attract visitors to the area. For example, from a visitor perception point of view, using the following chart to illustrate the shades of darkness in the Dark Sky Park can be seen to provide market advantage, as few places

in the UK offer the opportunity to experience true darkness, as illustrated in zone 1 of Figure 2.4, below.

The following Figure 2.4 illustrates light pollution from inner city sky (zone 9) to the Dark Sky Park (zone1):

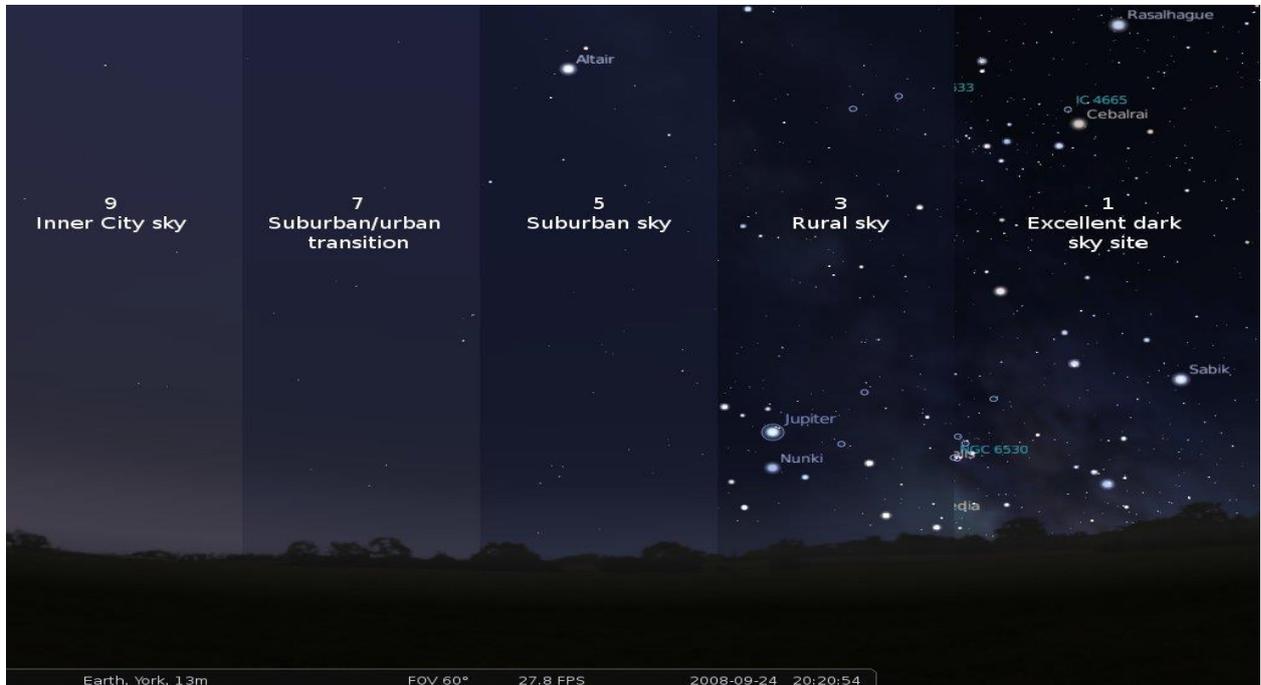


Figure 2.4: Light Pollution Chart

This demonstrates that the uniqueness of this environment is an enabler in the latest tourism strategy for Scotland (2006-2016) as it fits in with the main types of vacation/break that have seen an increasing demand in rural locations linked to:

- Interest in good health
- The use of a break in time as a personal reward or well-being experience (spa/pampering experience, good food and drink and other hedonistic activities)
- Interest in extended education (a demand for history and cultural related holidays are identified but no mention of stargazing as this report is pre-Dark Sky Park designation)

(Scottish Natural Heritage Report, 2012)

The Scottish Natural Heritage Report (2012:) clarified that ‘many visitors want a truly authentic experience when they visit a place’ strengthening earlier findings by Lin, *et al.* (2007) that illustrate the importance of the unique experience, as offered by dark sky designation and highlighting that

tourism spaces, destination are deliberately constructed to fulfil specific tourist expectations (Meethan, 2006).

## 2.4 Case Review

Existing literature indicates that the dark sky park is becoming an increasingly important part of the tourism economy in Dumfries and Galloway. The environmental sustainability agenda to reduce light pollution has provided a unique opportunity for the Galloway Forest to attract out of season visitors which consequentially extends the tourism offering and has the potential to provide stakeholders with a new source of revenue.

Although the current literature related to the tourism in Dumfries and Galloway provides an overview of the tourism offering and the designation of the Dark Sky Parkit does not provide an understanding of the demand for astro tourism or the needs of astro tourists. Therefore, chapter three will focus on these issues.

## Chapter Three

### 3.0 The Demand for Astro Tourism

#### 3.1 Introduction

This chapter introduces the conceptual theme for understanding astro tourism which is fundamental to this thesis. It begins by outlining tourism, its sectors and the need to escape routine by considering the relationship between tourism processes and man's need to experience space. It continues with an exploration of the origins of astro tourism interest by outlining astronomy and astrology, as it is believed that these two special interest groups form the basis of astro tourism. It goes on to introduce the concept of the commodification of dark places and space within a consumer oriented micro-niche market by exploring the products that have been supplied to satisfy the demands and expectations of tourists with special interests at dark sky sites. It highlights that astro tourism is a complex and multifaceted activity requiring further understanding of the demands and motivations for travel. This chapter includes a critical examination of tourist motivation as it emphasises the difficulties in identifying true motives, focusing on factors that create needs that lead to goal-oriented behaviour. Furthermore, it considers the role of sensory stimuli – the significance of the experience on the body as a motive for sensory pleasure. In order to understand the motives and demands for astro tourism in the context of this study, the final section explores the interest in space as tourists seek out places to view space from for educational purposes; and/or as response to (post) modern alienation; and/or as a search for connectedness and/or as a means of existentialism - as it provides a place whereby meaning can be found in a dark/black space.

#### 3.2 Tourism: Towards an Understanding of Astro Tourism

Tourism can provide a place to work, a time to play and a space for wellbeing, as it contributes to altering the daily routine of constant communication, work, family and life balance. It is argued by Smith (1992:87) that tourism involves mobility, '...the mobility of people from one place to another'. However, tourism is about far more. For some it provides a career, a place to achieve professional growth and flourish, for others it represents a break from daily routine, a chance to enjoy the company of family and friends, whereas for others it is time to experience something new, exciting, and possibly an opportunity to learn something and/or a life affirming experience, thus illustrating that contemporary tourism can be 'all things to all people' (Sharpley, 2018:1).

For the residents, local indigenous population, of tourist destinations, particularly in rural locales, tourism can be a welcome boost to the economy as tourists spend on food, accommodation, celebrations, attending conferences, renting vehicles, taxi's, shopping, currency exchange etc. (Griffiths, 2010; Wallace, 2009). Research by Wallace (2009: 187)- indicates that 'tourism is viewed as

an easy way of generating much needed income, particularly foreign exchange...the economic spin-offs and benefits of tourism are viewed as the most important aspects of tourism'. Even so, tourism can also be a 'blight on daily life' as it is associated with increased crime, vandalism, traffic congestion, erosion of the environment and modernisation etc. (Mathieson and Wall, 1982; Wallace, 2006; Mak, 2004). Research by Croall (1995: 1) states that 'a spectre is haunting our planet: the spectre of tourism. It is believed that travel broadens the mind. Today, in the modern guise of tourism, it can also ruin landscapes, destroy communities, pollute air and water, trivialise cultures, bring about uniformity, and generally contribute to the continuing degradation of life on our planet'.

Not all forms of tourism are so pervasive, in fact some enhance the planet, the local pollution and life in general, bringing the main focus of this study back to astro tourism. Astro tourism, as previously mentioned, has been viewed as a form of nature-based tourism and, as such, it can also be associated with biodiversity tourism, which 'is the variety/range of difference among all living things, the places they inhabit, and the interaction between the two. Interactions between the various components of biodiversity make the Earth inhabitable for all species, including humans. Biodiversity is directly responsible for around 40% of the world's economy, particularly in sectors such as agriculture, forestry and pharmaceuticals, and for services such as clean water, soil fertility and temperature regulation' (Biodiversity:www.cbd, accessed 11/08/2018). For poor urban and rural communities, biodiversity and nature-based tourism can provide a source of livelihood and of wellbeing as it is intricately linked to health, culture and social habits. Without tourism funding, such conservation projects would be scarce as government assistance is limited. However, this relationship is not one-sided, tourists, with or without a special interest in biodiversity, nature or astro tourism, can learn about the environment they experience. They have the opportunity to gain an understanding of the natural history, flora, fauna, wildlife species, astronomical/astrological phenomena, conservation efforts, and the integral part that mankind has on preserving the planet for future generations.

*Having presented an academic debate which suggests that astro tourism contains 'learning about self' in relation to our place and impact on Earth. I have also noted there are tensions that exist between tourism and the delicate balance of nature and the environment. Although tourism enables travel, not all tourism is related to learning, modern interests are transient so other new forms of tourism attract individuals in the pursuit of experience.*

### 3.2.1 Special Interest Tourism

Due to the growth of these types of tourist activities special interest tourism (SIT) has emerged as an adjunct to other forms of tourism. Other researchers have made a conceptual link to astro tourism as a subset of special interest tourism (Beard and Raghed, 1983; Collison and Poe, 2013; Keller, 2010), highlighting that special interest tourism can contain categories within a single special interest, for example moon watching within the broader field of a niche market astro tourism. When there is a specific interest, such as moon watching, the result is that new patterns of travel market can emerge – as the moon can only be fully observed at certain times during the celestial calendar. Brotherton, and Himmetođlub (2011:97) concur that ‘special interest tourism results in visits to a specific destination for a specific purpose or a particular activity or experience’, they select tourism products or services to satisfy their individual interest and needs. Derrett (2001:11) adds that special interest tourists travel ‘to satisfy their curiosity, learn more, appreciate beauty, collect things, improve themselves, express their personality and receive approval from other’. A special interest may relate to a wider niche market and it can relate to the primary motive of the tourist to participate in a trip and then an activity.

### 3.2.2 Niche Markets

Within the broader field of niche tourism there are several relatively large market sectors (macro-niches – e.g. cultural tourism, rural tourism, sport tourism each capable of further segmentation (micro-niches – e.g. wine tourism, gastronomy tourism, astro tourism) (Novelli, 2005). For example, dark sky destinations can use an interest in stargazing to position themselves as a niche destination. Offering stargazing activities to those interested in astronomy and astrology can act as a pull to increase visitation to the region (discussed further in 2.5). Therefore, niche tourism can be seen as a response to an increasing number of more discerning customers who demand a specialist tourism product such as astro tourism.

### 3.2.3 Nocturnal Tourism

Dark Sky designation is a 21<sup>st</sup> century phenomena and, as such, it has the potential to host a variety of tourism and other related activities, some of which have been studied in other fields of research. For example; within the field of environmental health Bell et al (2014:1-14) highlighted the importance of nocturnal environments and the benefits of human wellbeing, however they concluded wider research and a greater understanding was required into of the benefits of the nocturnal environment. Whilst within the field of leisure, geographic research tends to focus on autoethnographic accounts of experiences that take place at night. For example; mountaineer Robert MacFarlane recounts an experience of walking alone at night and how, when sight is impaired, he experiences a multi-sensory wildness (MacFalane, 2007:193). MacFalane’s account provides a very vivid depiction of the

landscape, the textures and colours encountered. Adopting a very similar writing style, Tim Edensor in 'Reconnecting with Darkness: Experiencing Landscapes and Sites of Gloom' (2013: 446-465) provides a subjective impression of the sensory apprehension of gloom. Edensor (2013: 459), critically appraised two very different attractions: one in New York, 'Dialogue in the Dark' by Andreas Heinecke, a unique visitor attraction housed in the South Street Seaport and the other was Glen Troom, a completely un-illuminated landscape in the Dark Sky Park in Dumfries and Scotland, where they seek to reinstate the experience of darkness by illuminating the problem of light pollution. Edensor established that there are 'perils and constraints when operating in the dark', he comments on how he needed to 'focus on how it might be conversely considered to offer an alternative experience of landscape and place as it resonates with the resurgence of desires to become reacquainted with the dark' (*ibid*: 462).

Although, autoethnography provides the researcher's embodied analysis of experiencing the dark, it does not convey the multiple experiences of other participants that is essential when conveying a more complete ethnography. Alternatively, the work of Rodrigues *et al.* (2014: 292-302) presents a case study of a dark sky reserve in Alqueva, Portugal, which shows how products in a destination that use the night sky as a main attraction diversify the tourism offering. This study used a mixed methods approach during the implementation of the project, namely in meetings and activities related to the development of the Dark Sky Reserve. It did not focus on the experience of tourists in the dark, but it does reveal the importance of sustainability and light pollution to the tourism sector. More specifically, Nina Morris's study 'Night Walking: darkness and sensory perception in a night-time landscape installation' (2011: 315-342) provides a partial ethnographic and autoethnographic account of 'The Storr', a contemporary art theory installation in the dark. Morris's work explores how The Storr is designed to allow participants to navigate the art installations in the dark, when the dark is an influential part of the experience, for the dark enhances the sensation of 'being' in a challenging nocturnal environment. As an approach to ethnography, Morris's work provides an insight. However, this study, explores a somewhat different landscape in that it is a protected dark environment where events are designed predominately to gaze at natural cosmic phenomena not manmade installations (Sanctuary being the exception, as parallels can be drawn with The Storr). This study also focuses on the narratives/life stories as experienced by participants whilst providing a reflexive reflective element which gives the researcher a voice with regards to the evolution of her research journey.

### 3.3 Astronomy and Astrology - Origins

Those who participate in astro tourism will invariably have an interest in the night sky. This is nothing new, early cave drawings from approx. 30,000 years ago depict the night sky constellations and portray the power the moon and sun have had on society since the dawn of recorded time (Martin and Jafari, 2007). Monuments constructed across the globe from Stonehenge to the Machu Piccu, bear witness to humanity's ancient fascination with the stars. Some of the oldest astronomical documents aided our ancestor's ability to track time in-line with the agricultural seasons (Karrunen, *et al*, 2016). Notably, ancient religions have been attributed to the location of celestial bodies and the rituals performed – such as paganism, which is believed to have influenced early Christianity, amongst other religions, as they adopt many elements of national cult and folk religion (Barna and Viola, 2008).

*Arguably, this interest is primal, a desire to connect with something greater than self, the unknown. Mankind is a wanton animal, constantly striving to reach one's potential, something I feel personally akin to as I undertook this study to prove I could do it.*

Much later, mankind's interest in the cosmic phenomena began to alter perceptions of the world as man began to explore using the stars to navigate the globe. Scientist, Galileo Galilei who developed the first telescope in late 1609, was astounded by what he saw in the night sky. Quinn (2008:2) notes that 'all the unexpected sights revealed through Galileo's instrument transformed his life and the World at large'. Quinn identified that when Galileo first observed the Moon, as he surveyed and mapped its contours, he was drawn to other objects in the night sky, just as people do today. Galileo's telescope could easily see Jupiter as it shone brightly in the evening sky, a planet that can still be seen today on a dark night by the naked eye.

Since Galileo's inventions, many scientific leaps have taken place however, science, for many, may be seen as an elitist subject that only the extraordinarily talented can fully appreciate but this has not deterred interest or speculation in space. This illustrates that there is a long-standing association with this field of science, it provides mental stimuli in the form of learning, exploring, discovering, creating or imaging (Beard and Raghed, 1983; Collison and Poe, 2013; Keller, 2010).

Within a postmodern consumer culture, interest in astronomy and space in general, can be seen to be fuelled by human cultural and literary backgrounds, such as story telling based on extra-terrestrial life (Collison and Poe, 2013); television programmes such as: Sky at Night, which began back in April 1957 with Patrick Moore (now deceased) and is still showing monthly on the BBC throughout the World today; Stargazing Live, which began in 2011 is presented by Brian Cox and Dar 'O Brian and attracts a global audience; along with cult international films such as Star Wars (aired in 1977) and The War of the Worlds (first published in 1898, aired in Cinemas in July 1952).

*Reaching for the stars is the basis for poems, songs and films alike. As I move through the research process of linking concepts, which co-exist to form experience, I find that I have a rather romanticised view of astro.*

Whereas astrological interest is far more socio-psychological, it requires belief and a connection to nature, as it provides the search for human meaning in the sky; it seeks to understand, general and specific human behaviour through the influences of planets and celestial objects (Holden, 1996). Astrology is believed to be older than astronomy (Campion, 2008) as early cave drawings depict lunar cycles and have been attributed to the creation of the communal calendar (Barton, 1994). In postmodern consumer culture, astrology can be linked to literature and media portrayal of the supernatural: vampires and witchcraft, which again has a cult following. 'Astrology offers a number of things which many people find very desirable, such as: information and assurance about the future, a way to be absolved of a current situation and future decisions, and a way to feel connected to the entire cosmos', Cline (2018:1). It is a catch-all for when things go wrong or right in life, but it is just as powerful a science, to those who believe, as astronomy. Consequently, astrologists may also be interested in going to dark sky sites to view the constellations in nature - a possibility that has been overlooked in astro tourism literature.

Neither, astronomy or astrology requires a physical presence to observe the stars as mass media and applications (Apps) bring these sciences into the home, so who are these people who feel the need to be present in a dark sky place to observe the stars? In this study, those who travel, long or short distances to observe the night sky and astronomical phenomenon will be known as astro tourists. An astro tourist in this study comprise of amateurs, the general public (star gazers) and those with a special interest in the night sky, however they could equally include professionals and scientists all of whom conceivably engage in astro tourism.

*My simple categorisation of an astro tourist, at this stage, is designed to capture all, however as the study progresses more distinction may be made.*

### 3.4 Astro Tourism

As discussed in the introduction, astro tourism has been defined in many ways, from a form of space tourism, nature tourism and conservation tourism to a destination management objective which distinguishes it as a niche product related to a special interest in stargazing. Given the breadth of the definitions that already exist, Caters (2010) Typology of Space Tourism (illustrated in Figure 3.1) provides some clarity in relation to the field of study. Caters' work is based upon data collected from interviews, published in the media, of the experiences of those who have been to space who he names

astro tourists, it highlights three distinct types of Space Tourism: Astrotourism, Atmospheric Space Tourism and Terrestrial Space Tourism, and can be illustrated as follows:

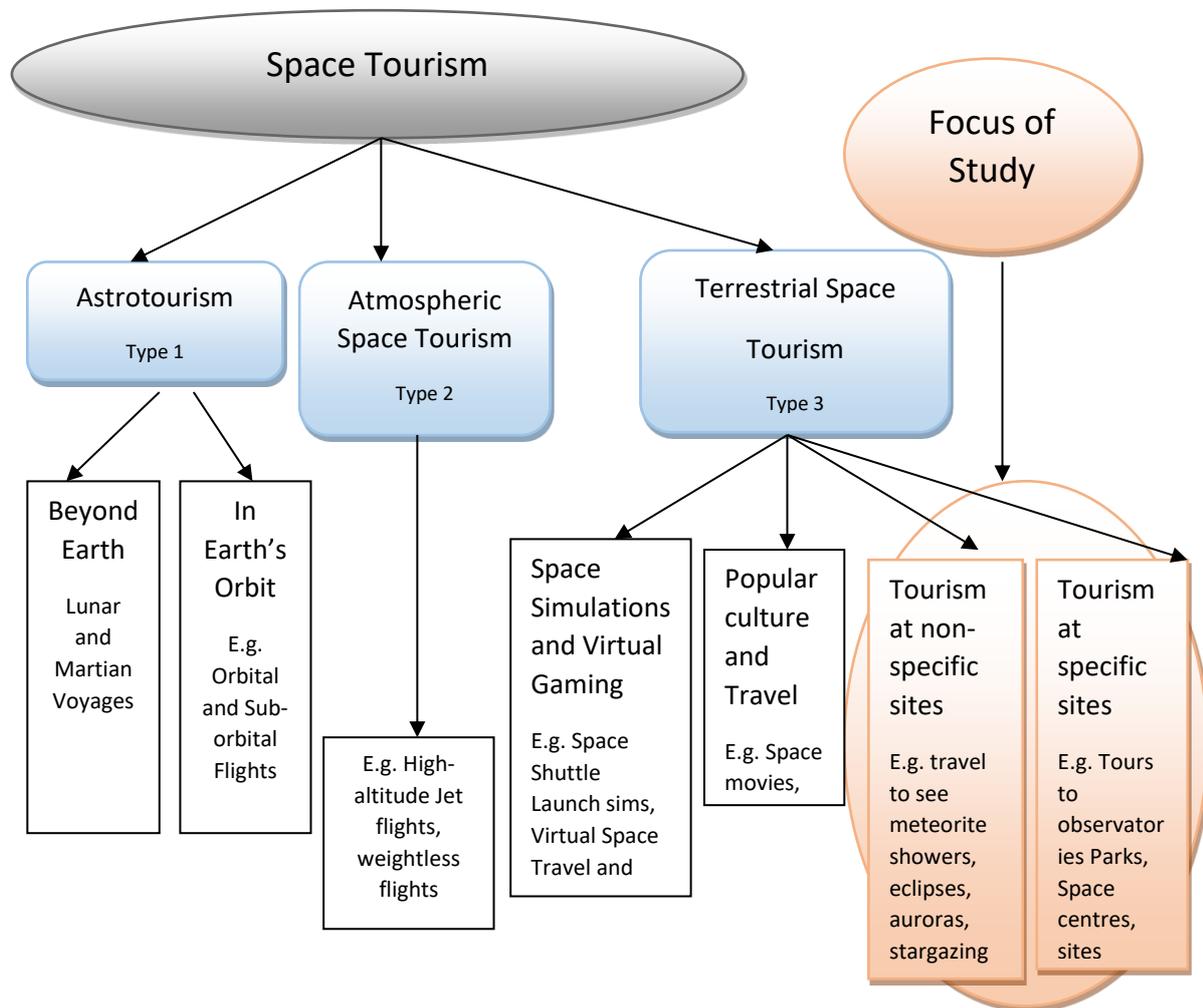


Figure 3.1: Typology of Space Tourism – Adapted, Caters (2010)

Type 1, *Astrotourism* outlines the Lunar and Martian voyages, orbital voyages and sub-orbital flights, as he asserts that Astro Tourists are those who have travelled beyond Earth; Type 2, signify *Atmospheric Space Tourism* which includes high altitude jet flights and weightless flights. Whereas, the Type 3, are *Terrestrial Space Tourism* types which are Earth based and relate to a wide array of activities such as simulation, virtual reality, popular culture, tourism specific sites (dark sky sites, observatories), and non-specific sites (predictable sites of astronomical events: eclipses, meteor showers). However, each type is based on aeronautic terminology (space) which brings into question its transferability into tourism. Even so as an illustration of the entire market, it allows the focus of this study to be identified, as this study falls within the context of *Terrestrial Space Tourism* under the heading of specific sites – Parks (highlighted in pink in figure 3.1, discussed later in the Methodology).

Cater (2010: 2) and the Space Frontier Foundation (2009) argue that, the term astro tourism should be adopted as a classification 'for those who have truly escaped the confines of this world'. Believing that *Space Tourism* is better suited to represent all other forms Earth bound space experience. Whereas Collison and Poe's (2013) study of astro tourism, is nature based within the special interest group astronomy. It examines the less studied segment of sustainable tourism at the Dark Sky National Park in Bryce Canyon National Park (BCNP) located in the south west of the United States. Applying a literature review and case study method to assess the astro tourism programme Collison and Poe identified, from a random sampling survey of 626 returned responses, that dark sky designation is a significant resource to the park. They, calculated that astro-tourists made-up 10% of the visitors, although in terms of 'learning whilst in the park', 56% believed that they had learned about 'night skies/astronomy', illustrating that the topic is of interest to a large proportion of visitors (Collison and Poe, 2013: 13). They recommended examination of the visitor experience and a more precise understanding of the visitor economic impact to inform destination managers.

Fayos-Sola, Martin, and Jafari, (2014) go on to conceptualise that the importance of the natural environment pertains to 'two key human urges that must be properly addressed in destinations: the life drive, 'Eros' includes the appetite for content, enjoyment, sharing, and satisfaction; the knowledge drive 'epistemophilia' the compulsion for information, education and understanding towards deep existential questions' (*ibid*:664). They go on to note that hundreds of amateur and professional astronomers travel to different places to see astronomical phenomena resulting in the need for adequate governance and the development of a specific tourism policy plan for astro tourism. When addressing a specific type of Astro tourism observation, governance and planning is an elementary component of niche market management. For example, Weaver's (2011) study of locations with aurora display highlights that these destinations receive a high volume of visitors at certain times during the year – a consequence of seasonality. These astro tourists require locations to observe from, they must be away from light pollution where they can learn more about the phenomena this requires expertise and co-ordination. Similarly, the solar eclipse chasers, these tourists plan years in advance to visit a place where an eclipse is predicted. Events of this nature can be mega, for example the Total Solar Eclipse Festival proposed for January 2020 is expected to attract hundreds of thousands of visitors to Mexico.

Debates, pertaining to the nature of astro tourism and specific activities are subjective based upon the lens applied to undertake the study. However, those with an academic interest in tourism studies would argue that astro tourism refers to nature-based tourism within a sub-segment of a SIT situated within a sub-niche market of astro tourism, in which tourists are interested in observing astronomical phenomena from Earth (Collison and Poe, 2013; Fayos-Sola, Martin, and Jafari, 2014; Weaver, 2011).

In contemporary society, niche and sub-niche markets, such as nature tourism and astro tourism have the potential to attract a high yield as these tourists are viewed by Keefe (2002), Mackay, Andereck and Vogt (2002), and Stronge (2000) as tourists who stay longer, spend more and participate in more activities, making them an ideal target market. However, in the case of the astro tourist this assertion is unfounded as there is a lack of empirical study related to who the astro tourist is.

#### 3.4.1 The Commodification of Space

As the scene has been set by portraying astro tourism as a micro-niche market with the potential to attract special interest tourists who pursue astronomical phenomena, there is the potential to target this relatively homogenous group of consumers based on their special interest in stargazing. However, as well as those with a special interest there is also the possibility that there are individuals who are spontaneous and unpredictable with a casual interest and/or those looking for 'short lived pleasure' who might also pursue activities that include the night sky, and/or space, and who may wish to individualise their experience. In essence, they may have *utilitarian values towards nocturnal experiences which is modernist* (Stebbins, 1982), particularly as the starry night sky, once experienced by all, is only visible to one-third of the world's population due to light pollution (Bakich, 2004:42). Making it a scarce commodity in a highly consumer orientated society which requires protection by international law. The bodies that have been empowered to protest the night sky are: The IDA, Starlight Reserves and World Heritage; The Declaration in Defence of the Night Sky; and, The Right to Starlight. Each have a 'commitment to defend the night sky quality and access to starlight' as they believe in the intrinsic value of nature (Marin and Orlando, 2009:21).

The defence of the night sky has resulted in destination developments based on new ideas and initiatives as they are as much to do with attractions and services as experiencing the dark (Godfrey and Clarke, 2000). The development of specific tailored products at a destination level has therefore resulted in marketing and promotion of personalised niche services for example, astro tourism holiday, events, day trips all designed to entice the astro tourist which cater to the utilitarian values. A diverse array of organisations and companies around the World now offer space tourism and astro tourism experiences which commodify space for it appears that almost anything and everything can be sold. Using Figure 3.1 – The Space Astro Tourism Typology, as a reference point, the following headings highlight the ways in which each product is sold:

#### 3.4.2 Space Tourism Products

Leaving the ground to travel to a destination on Earth is commonplace as there are thousands of flights that leave airports every-day, however flights beyond earth's orbit and within sub-orbital trajectories are rare and limited to those with extremely high disposable incomes. Nevertheless, it is argued later, that space tourism products may influence the development of astro tourism products.

#### 3.4.2.1 Beyond Earth's Orbit

The only company currently offering spaceflights to private citizens is Space Adventures', founded in 1998 it has taken 24 people out of Earth's orbit. Their next mission is scheduled for launch in early 2020 and will take one or two customers within 100km of the Moon's surface. (*Space Adventure, ND*).

#### 3.4.2.2 In Earth's Orbit

Sub-orbital flights are those with a trajectory that lies within an altitude between 100 and 200 Km of Earth's surface. Several companies are in the race to provide commercially viable flights with Virgin Galactic being at the forefront:

*'We are at the vanguard of a new industry determined to pioneer twenty-first century spacecraft, which will open space to everybody — and change the world for good'.*

(Branson, 2018)

Images of space products focus on well-known brands such as the NASA and the Virgin symbol etc., with the aim of enticing future generations of space tourist, for 'the space industry is regarded by many as the next 'new-generation sector, on the cusp of lift-off' (Diamandis, 2007; Musk, 2009)

#### 3.4.2.3 Atmospheric Space Tourism Products

There are a few opportunities to experience space without leaving the ground. Zero gravity flight is the closest many will get to experiencing space. This product is a zero-G experience of weightless whereby the Space Tourist gets the chance to float as if in space, the experiences are short lived and price sensitive, putting them out of the reach of most tourists. However, images of private individuals enjoying the experience of floating make the experience appear to be more accessible than it actually is.

### 3.4.3 Terrestrial Space Tourism

Although actual experiences of space are not accessible to all, the virtual experience is, with the aid of technology, it can be just as authentic as virtual reality immerses the user in a fully artificial digital environment. In the world of simulation, the programs developed draw on existing knowledge of real space exploration from the data collected during flights whilst adding a creative dimension to the experience. Many of the images used are futuristic, colourful and highly animated.

#### 3.4.3.1 Space Simulations

Many software game developers offer space flight simulator games which provide entertainment for different audiences on different platforms. For example, in 1987 the first Apollo 18 flight simulation was released on Commodore 64. More recently in 2017 a spaceflight simulator was released on App Store and Google Playstore, each of these games have space flight simulation features which have the ability to roll, pitch and fly whilst others can provide the opportunity to add combat (e.g. Starfighter a 2017 simulator on Windows), a popular feature in the gaming world. In addition, there

are also a plethora of pay-per-view, real-time, webcam telescope images of the night skies available' (Ingle, 2010:101)

Although virtual reality can provide a realistic experience in the mind, this experience is enhanced by augmented reality, which overlays virtual objects on the real-world environment. These are created in popular culture and experienced via media devices etc.

#### 3.4.3.2 Popular Culture Travel

Space exploration engages human beings on an emotional level, it has the capacity to influence popular culture. For example, in the world of literature (the works of Jules Verne, novelist and poet, who wrote *From the Earth to the Moon* in 1865), movies (such as *War of the Worlds*' first aired 1953, *Star Wars* first aired 1977), the visual arts (Alan Bean's artwork displayed at the Smithsonian National Air and Space Museum), music (David Bowie's 1969 song 'Space Oddity' and REM's 1999 song 'Man on the Moon' etc.), and modern architecture (upswept wing-like roofs, satellite shapes and starbursts that have become the dominant visual language in hotel, restaurants and modern public building design). All of which influence travel, tourism and leisure providers to offer tours and experiences related to space, for example Disney World in America has several space related rides some dating back to the 1950s, before the moon landing when the space race was highly competitive (see, [www.thisdaydisney](http://www.thisdaydisney), for more details). Popular culture, it is argued later, can act as the trigger to demand and a desire to travel to places that provide a concrete experience of observing space. These can be at non-specific and specific sites:

#### 3.4.4 Tourism at Non Specific Sites

The night sky can be viewed from anywhere, spontaneously (as long as it is dark) but to see astronomical phenomena fully, it is necessary to travel to a place where the light pollution is as low as possible. Typically, these sites are located away from the general population in rural areas, or mountainous regions, scarcely populated islands, or at sea. At these sites there is the opportunity to gaze at astronomical phenomena, which it is argued, can generate a textual narrative of personal involvement in the skyscape and naturescapes. 'There are some who can live without wild things, and some who cannot ... Like winds and sunsets, wild things were taken for granted until progress began to do away with them ... For us of the minority, the opportunity to see geese is more important than television, and the chances to find a pasque-flower is a right as inalienable as free speech' (Leopold, 1949: 93). Thus, the desire to observe space from place has opened up an array of tourism products which include, flights, accommodation, etc. to destinations where tourists can see auroras, meteor showers and eclipses:

#### 3.4.4.1 Auroras

Easily viewed with the naked eye as a light show, the aurora borealis can be seen in the dark night sky near the North Pole, whereas the Aurora Australis can be viewed near the South Pole. An Aurora is solar storm of gases which interact with Earth's atmosphere resulting in a light display - Oxygen gives off green and red light, whereas Nitrogen glows blue and purple (National Aeronautics and Space Administration [NASA], 2016b). Cruise line operators, such as P & O, offer Aurora cruises between September and April, as this period of the year offers the best chance to see an Aurora. However, as with any astronomical related phenomena, that is influenced by other factors, such as the sun, cloud cover and weather conditions, the display is not guaranteed. Although, there are apps that can predict Auroras such, Aurora Forecast and Northern Lights, at best these are an indicator of possibility, not a certainty. The images used to attract visitors are generally enhanced images of the Aurora whereby a filter is used on a camera which intensifies the colours of the display.

#### 3.4.4.2 Meteor showers

Every August, the Perseid Meteor shower enters Earth's atmosphere, it is watched by tens of thousands of people who gather at dark sky sites, in the Northern Hemisphere, to view the display. Draconids and Orionids meteor showers, are also viewed in the Northern Hemisphere, they too are annual but take place in October. Meteor showers occur when dust or particles from asteroids or comets enter Earth's atmosphere at very high speed. When they hit the atmosphere, meteors rub against air particles and create friction, heating the meteors. The heat vaporizes most meteors, creating what many believe to be a shooting star (Meteor Showers, 2017). Images of shooting stars have been used in children's literature and the media to portray luck e.g., wishing upon a star, thus creating a positive association with a natural phenomenon.

#### 3.4.4.3 Eclipses

An eclipse is an astronomical event whereby a celestial body transits another celestial object, either partially or completely. Essentially, there are two types of eclipse: 1, of the Sun (solar eclipse), and 2, an eclipse of the Moon (lunar eclipse). Eclipses are predictable events as they relate to lunar cycles. They can be viewed in various places at various times of the day (not just at night) so they are accessible to all. On the Internet, eclipse predictions by Fred Espenak, Emeritus of NASA are displayed for all to see, allowing stakeholders and astro tourists to plan for the year's activities (Eclipses, 2018).

Tourism at non-specific sites of astronomical phenomena is drawn from a wide range of the population, from the enthusiast to the beginner. As well as appealing to the seasoned stargazer the displays have the potential to impress new audiences, thus creating demand for more specific sites of interest.

### 3.4.5 Tourism at Specific Sites

These sites are easy to locate as they tend to be managed by specialist providers who have a sustainable interest in the biodiversity of a place, its nocturnal environment and/or the science value of space, they use branding images associated with dark sky protection bodies (discussed above) to promote their activities. According to Fayos-Solá *et al.* (2014:11) they have the potential to 'serve as a form of meaningful tourism, ... conservation of essential resources.., and the protection and promotion of Heritage monuments'. They attract day visitors and tourists to observatories, archaeoastronomical sites, space centres, planetariums, and dark sky designated islands, reserves, parks and sites:

#### 3.4.5.1 Astronomical Observatories

These are structures that contain telescopes and auxiliary instruments to observe celestial objects. They tend to be based on a hill, in a location with low levels of light pollution they can accommodate groups of people and usually have an educational element to the experience. They provide the observer with real-time observations; therefore, they appeal to scientists, the general public, school children and tourists. Observatories have a long history, one of the oldest Earth-based being Al-Shammisiyyah Observatory, Baghdad, Iraq, in 825 AD; one of the newest is an airborne Stratospheric Observatory, The Sofia established in 2010. Needless to say, there are thousands of Earth-based observatories located around the World each focused on providing astronomical activities.

#### 3.4.5.2 Archaeoastronomy Sites

The predecessors of the astronomical observatories are monolithic structures; these tracked the position of the Sun, Moon, and other celestial bodies for the use of timekeeping or for calendrical purposes. The most famous of these structures is Stonehenge in the United Kingdom (UK), constructed over a period of 3000 to 1520 BC. They are symbolically rich cultural interpretations of phenomena in the sky (astrological symbolism) as well as a predecessor of modern astronomy. (Astronomical Observatory: 2018)

#### 3.4.5.3 Space Centres

National space centres tend to cover the fields of space science and astronomy, some house museums but many are predominately used as an educational resource or research facility. To attract families during the holiday periods, many add educational science projects related to space activities to entertain whilst learning something new.

#### 3.4.5.4 Planetariums

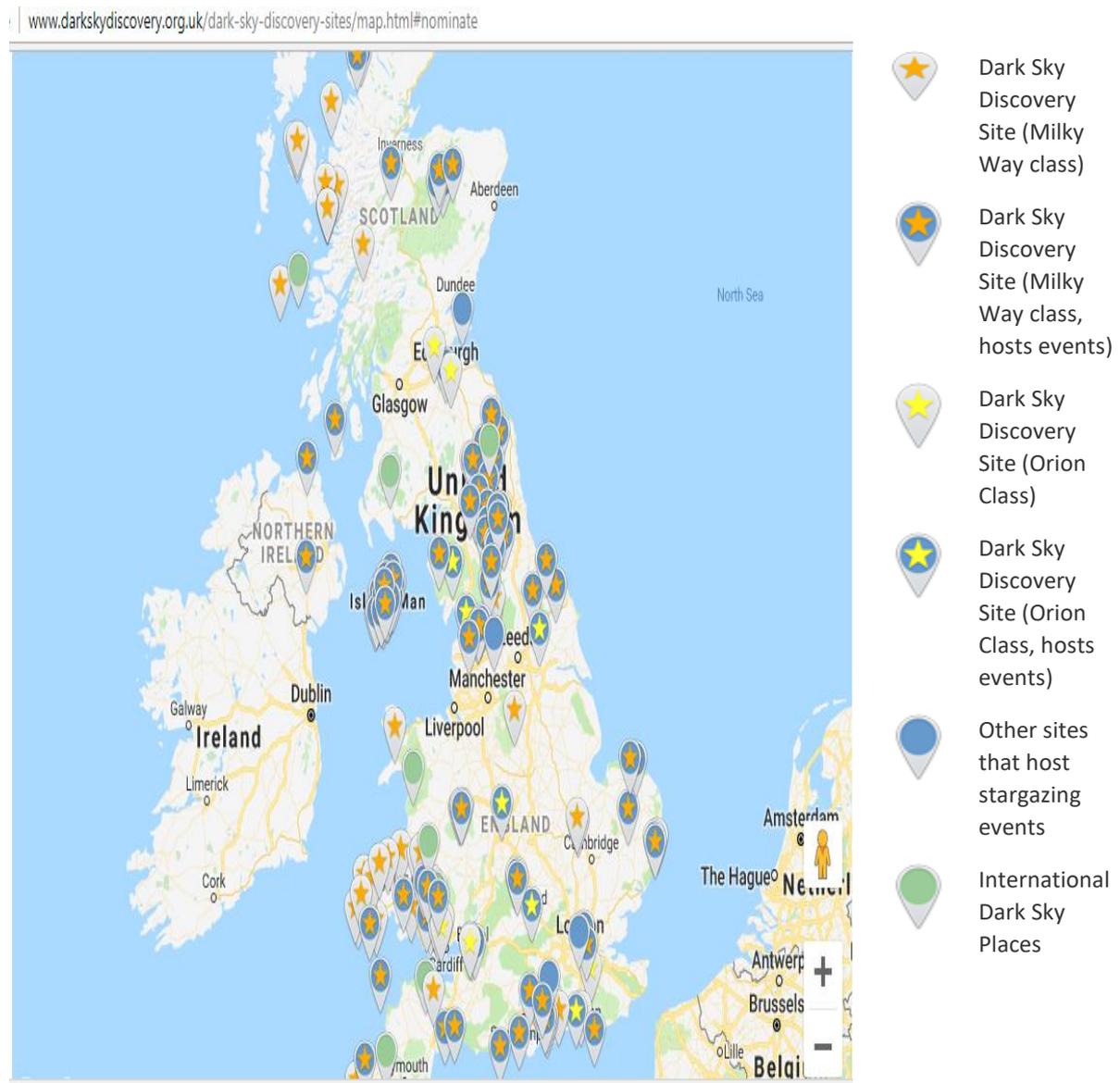
On a similar vein, Planetariums are designed to educate and entertain. However, they are primarily a theatre, which provides tours of the Universe and an opportunity to experience the wonders of the night sky at any time of the day in a light free, warm and safe environment.

#### 3.4.5.5 Dark Sky Reserves, Islands, Parks, and Sites

Since 2007, The IDA has been working to protect and preserve the night sky for future generations by recognising areas with natural and protected dark sky. There are three tiers that indicate the quality of night sky: Gold represents the highest award, these are the darkest skies; Silver and Bronze designations have a degree of light pollution as outlined in the Dark Sky Quality Table (see appendix 1: IDA Dark Sky Quality Table).

Although many parks are situated in the United State of America (USA) and have Gold or Silver status (see appendix 2: Certificated International Dark Sky Parks), there are over 100 Dark Sky areas around the UK in rural and urban location which can be marketed and promoted as offering Dark Sky products (see figure 3.2: Dark Sky areas across the UK).

Figure 3.2: Dark Sky Areas Across the UK



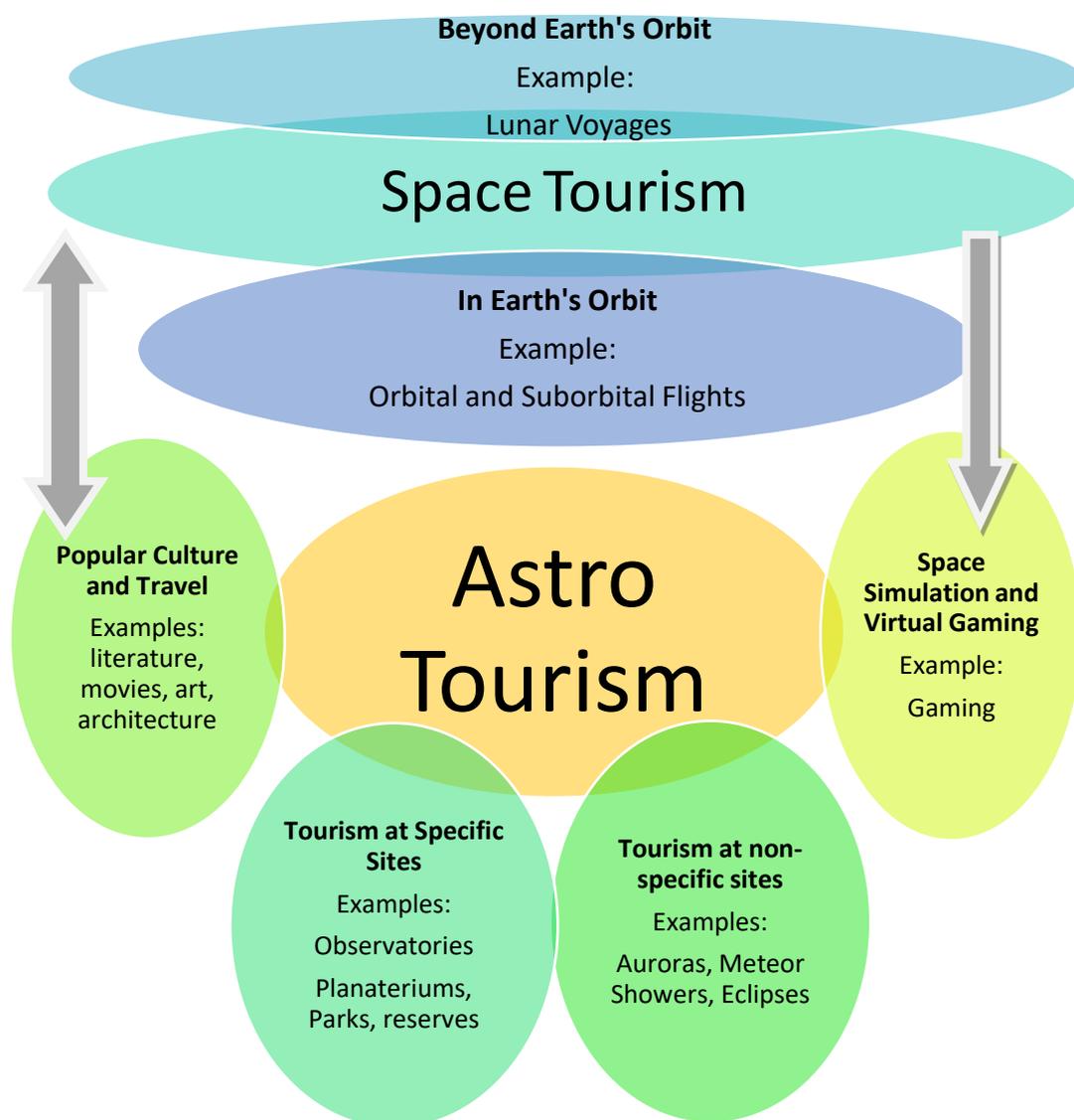
### Dark Sky Discovery (ND)

The products offered differ in relation to the clarity of the night sky but in general, Dark Sky Parks, of which there are now five in the UK (see figure 3.2), offer a diverse range of cosmic gazing activities and experiences. For example: the Galloway Dark Sky Park promotes stargazing for beginners, Moon watching and the Persied Shower observation; Northumberland promote accommodation facilities, events at the observatory, and ‘Get Outside and Feel’ – a slowdown and discover experience. Illustrating that, there is an appetite for both conserving darkness and stargazing.

### 3.4.6 Summary

After considering the supply side (the products and services outlined above) it is evident that there is a clear interplay between the development of space products and subsequent links to astro tourism products. Space products are currently only available to a few, therefore to make space more accessible astro tourism products which link to virtual gaming and popular culture and travel, via astro tourism at specific and non-specific sites, have been developed to fill the gap and thus commodify a resource that is natural, i.e. cosmic space. Commodification enables the astro tourist to have the opportunity to experience space at home, on the move, or in place. The products can be categorised by adapting Caters (2010) typology table further, to illustrate the link between space tourism and astro tourism, as follows (see Figure 3.3):

Figure 3.3 – The Commodification of Space



As illustrated above, in a post-modern era developing economies based on space, with different products of consumption and imagery, can lead to a process of overlap with more accessible areas of astro tourism. Although space products have had an influence on astro tourism, it is postulated that popular culture and travel fuelled the space race as it inspired the intellectual desire to rise above the Earth and explore space. This, in-turn allowed for the further developments of the creative arts as knowledge gained from space enabled leaps in technology and understanding which is needed in games design.

Commodification, particularly in astro tourism specific and non-specific sites is further enabled by the use of branding commodities as these have the potential to attract investors and the expertise of private businesses to an area with a specific feature such as low levels of light pollution. Marketing local uniqueness, the landscape, skyscape, spacescape, and darkness, along with local attractions, events, heritage and structures, belie the rich abundance of resources to place promotion. Many astro tourism specific and non-specific sites are based in rural, natural environments where there has been a decline in the importance of agriculture, both in terms of its economic output and employment levels, therefore re-packaging these areas to new audiences makes economic sense (Cloke, 1992). Particularly as there has been an increase of 10 per cent in leisure time in the last 25 years (Tribe, 2005), which when linked to popular culture and travel, and space simulation and gaming, has the potential to generate an interest in dark sky and space related activities at sites around the World.

With an emphasis on local distinctiveness and attempts to utilise branding and imagery with the commodification of space, astro tourism has become a commercialised cultural product, whereby it is deemed appropriate and arguably desirable to be seen as an astro tourist. Consequently, this presents implications related to the perceived demand for such products and services, leading to questions such as, what would motivate an astro tourist to travel to an astro tourism site? Do the products and service meet their needs? Is there a need to offer something that might be entertaining or educational or authentic? The next section (3.4) addresses some of these questions by recognising that people may be drawn (pulled) to the dark and space, just as a moth is drawn to the light. For 'moths are positively phototactic' (Moths and light, ND), they are charmed by light just as humans are charmed by the movements of the stars in the night sky (Attraction to light, ND).

*A central point in exploring the commodification of space is related to my worldview. I believe that darkness and the cosmos have a right to exist for themselves and future generations, therefore it requires protection. I also believe that there is an intrinsic value to astro tourism, not just for mankind but for all living organisms on our World. In contrast, I conceive that those who want to sell the experience to others may hold a utilitarian view, as they see the night sky as being all about human use. However, I acknowledge that even the utilitarian's value aspects of conservation as protecting the night sky provides them with the ability to sell star gaze and may also represent their own personal interest. A more significant view, in relation to this study, is that of the astro tourists themselves.*

### 3.5 Tourist Demand

As the purpose of this thesis is to work towards an understanding of the astro tourist it is necessary to assess their possible motives for attending dark sky events. Motivation to participate in behaviour has occupied researchers and scholars for many years, long before it was investigated in the tourism domain (Page and Connell, 2006). Nevertheless, it is important to determine the foundation of such research. Motivation theory establishes a vital role in the understanding of why, what and how that leads to tourist travel motives. To answer such questions, it is fundamental to start with exploring demand, as it is an element in the production and consumption of any product or service in any system of business: tourism and events are no exception (Johnson and Thomas, 1992). As demand is a multifaceted concept, public policy makers, entrepreneurs and other stakeholders must examine trends in demand so as to inform policy, deploy resources and manage expectations.

Demand analysis has the longest history in tourism research and has undergone remarkable developments in terms of diversity of interests, depth of theoretical foundations, and advances in research methods (Li, Song, and Witt, 2005). Butler's (1980) 'Growth Style of Tourism Demand' model has received increasing research attention over recent years. Based on the methodological developments of Markov's regime switching process to test the tourism lifecycle, it identifies that a destination goes through six stages: exploration, involvement, development, consolidation, stagnation, and decline and/or rejuvenation. As astro tourism is an emerging field, it can reasonably be assumed, from the products already available in the marketplace that it is within the first three stages: exploration, involvement and development. It can also be assumed that the exploration of products and services is still within its innovative phase, as over the past six years astro tourism products have increased substantially, thus the needs and desires of the astro tourists require further understanding to further establish this micro niche market.

Notwithstanding, the fundamental characteristics of tourism demand illustrates that emerging tourism markets will continue to change and evolve as the market matures (Prosser, 1994). Schwaninger (1989) predicted these changes in tourism demand as follows:

- Tourism demand will continue to grow and become increasingly differentiated.
- There will be greater market specialisation and segmentation with a stronger emphasis on more active pastimes rather than passive holidays.
- Packaged holidays will be customised to accommodate greater individual freedom through a modular product design.

Consequentially, tourism demand is usually regarded as a measure of a visitors' use of goods or services (Frechtling, 2001). Kim (1988:25) categorized the measurement criteria for all types of travel and tourism demand into four groups:

- (i) a door criterion: such as the number of tourist arrivals, the number of tourist visits and the visit rate;
- (ii) a pecuniary criterion: for example, the level of tourist expenditure (receipts) and share of expenditure (receipts) in income;
- (iii) a time-consumed criterion: such as tourist-days, tourist-nights;
- (iv) a distance-travelled criterion: for instance, the distance travelled in miles or kilometres.

Among the above four categories, the door criterion and pecuniary criterion dominate international tourism demand studies (Lim, 1997). Particularly as statistical data related to tourist arrivals and receipts from money spent is a readily available data source. However, as this study pertains to one destination which is limited in numbers of attendees, the empirical data collected will relate to a time-consumed criterion and a distance-travelled criterion when determining demand.

In their conceptual study, Fayos-Sola, Marin, and Jafari, (2014:665), believe that the demand for astro tourism is 'quite varied, ranging from the general public to amateurs and even professional astronomers'. Given this wide spectrum of customers and the supply side, discussed earlier, it is hardly surprising that demand has created a need for places which offer optimal conditions to view the night sky from. Such activities have the potential to extend the tourist experience from day to night, thus potentially adding to the desirability of a destination. However, one problem with the existing literature on tourism demand is the lack of attention paid to nocturnal destinations and viewing the cosmos as an attraction, begging the question what is important to these visitors? Why do they travel to visit astro tourism sites? As an understanding of these tourists is required, the next section will examine other aspects related to the motivation to travel, for new forms of tourism are

associated with changing patterns of tourist motivation and activity which require investigation (Moscardo, 1999).

### 3.6 Motivation: Overview and Critique

The struggle to understand the astro tourist begins by accepting that there is demand for astro tourism and acknowledging that it is about far more than just looking for light in the night sky, it represents a myriad of experiences and behaviours that require exploration. To gain a more informed understanding of these experiences requires an initial understanding of the motives for travel that create demand and thus lead to need satisfaction. Many frameworks exist to explain travel motives (discussed further in Chapter 3), most of which lead to demand for a tourism product or service. Sharpley (2018:125) asserts that ‘the demand for tourism is, generally neither a one-off event nor a simple, uni-directional circular process whereby previous travel experiences influence the motivation ... to travel’

Motivation is a force that influences desire and demand towards a specific behaviour (Dann, 1981; Witt and Wright, 1992). Human beings are complex creatures, their moods, desires and general behaviour change constantly. Even so, motivation forms a central concept to studying experience, even though it is acknowledged that motivation cannot be observed or even articulated fully (Sharpley, 1994). Fundamentally, when examining motivation theory(s) it consists of two approaches: content and process theories:

#### 3.6.1 Content Theories

As astro tourism is an emerging market, content theories are considered as they investigate what the human psychological and physiological needs are and how these needs change over time. Studies by Maslow, (1943) and McClelland (1955) have been instrumental in shaping this work. Initially developed in the field of clinical psychology, Maslow’s (1943) ‘Hierarchical Needs Theory’ (see Figure 3.4) has become one of the most influential and best-known general theories of motivation. The theory has been applied to explain many social disciplines in areas such as business, marketing and tourism. The Hierarchy of Needs has also been applied to niche markets for example, Sheldon and Bettencourt (2002) study on well-being, found that psychological need satisfaction was an intrinsic aspect of positive mood and commitment to group activities and leisure pursuits. Whereas Lepp and Gibson’s (2003) exploration of international tourism identified that more experienced tourists satisfy higher order needs, whilst less experienced tourists are more likely to be occupied by lower order needs for food and safety. However, there are many criticisms of Maslow’s theory: Mowen and Minor (1998) question whether needs conform to Maslow’s proposed propensity hierarchy; Maslow, himself, even questioned his hierarchy propensity whilst adding aesthetic needs in 1954; whereas, Schiffman and Kanuk (1997) criticised the ability to replicate Maslow’s study as it was based on blue

collar workers in a production environment. Another drawback to this theory is that people live normally without satisfying their needs. Therefore, Maslow's theory is not adequate for dealing with all facts and needs (Ventegodt, Joav and Jorgen, 2003). Even so, the strengths of Maslow's work lie in the fact that it is sufficiently generic to cover most lists of human needs as when studying an emerging niche it can be used to determine in behavioural characteristics.

Maslow's research was not the first to look at needs, a few years earlier in 1938, Murray classified psychological need construction in an extensive list of physiological and psychological needs (Murray, 1938). Murray's research stimulated further research into specific needs for achievement, affiliation and power (McClelland, 1955); along with, dominance, abasement, play and aggression (Witt and Wright, 1992); and the heroic and altruistic (Schiffman and Kanuk, 1997:44). Nevertheless, Witt and Wright (1992) concluded that 'the study of needs can at best only provide a partial explanation of motivational behaviour'. Other factors must be taken into consideration to explain tourist motivation, especially if trying to predict behaviour which is multi-dimensional as it is believed astro tourist behaviour is (Sharpley, 1994).

### 3.6.1.1 Travel Career Ladder (TCL)

Influenced by Maslow's five level needs hierarchy (figure 3.4), Pearce's Travel Career ladder (figure 3.5) was formulated in three stages by Pearce (1988, 1991, 1993), Pearce and Caltabiano (1983) and Moscardo and Pearce (1986) to represent 'five different levels: relaxation, needs, safety/security needs, relationship needs, self-esteem and development needs, and self- actualisation/fulfilment needs' (Pearce, 2005:52).



Figure 3.4: Maslow's Hierarchy of Needs

Figure 3.5: Pearce's Travel Career Ladder

By dividing each need into self-directed or other directed, Pearce identified that the tourist experiences are met within each level as they ascend the ladder and the next need becomes important. Pearce's (1988) Ladder, however, illustrates that some people seek to combine activities in pursuit of a trip motivated by a multitude of interests or aspirations which are significant in educational leisure-based activities such as astro tourism. Highlighting, approaches in tourism motivation seek to understand preferences of, and choices made by tourists, but they do not sufficiently provide an in-depth understanding of the needs of niche markets such as astro tourism.

### 3.6.2 Travel Motivation Frameworks

In an attempt to understand further, a review of tourism motivational literature revealed that there are several existing frameworks that can that illustrate the internal and external desire to travel, three of which are (i) Sun Lust and Wanderlust theory (McIntosh and Goeldner, 1990; Bothma, 2009; Hins, 2009); (ii) Push and Pull theory (Dann, 1977; Hallab, 1999) and (iii) inter-directed and outer-direct theory (Gnoth, 1977).

#### 3.6.2.1 Sun Lust and Wanderlust

As a concept, sun lust refers to the fact that travellers are attracted to places that can provide them with specific facilities that do not exist in their home location (Hins, 2009) which is akin to dark sky as these places lie beyond urban environments. Their socio-psychological motives include: 'escape from a perceived mundane environment; exploration and evaluation of self; relaxation; prestige; regression; enhancement of kinship relationships; and facilitation of social interaction (Crompton, 1979:408). These motives can be investigated at Dark Sky sites as they may provide an insight into what may be referred to as space lust, a desire to travel visually from Earth to space, whereas as 'wonder lust' refers to the desire to travel from the known to unknown place (McIntosh and Goeldner, 1990), each contain an element of mystery, desire and exploration. These goals may reflect avoidance motives: escaping the personal (personal issues, perceived personal failures etc.) or interpersonal world (co-workers, families, neighbours); or approach motives involving seeking tourist experiences which are personal (including relaxation, education or ego-enhancement) or interpersonal (interaction with friends, new friends, fellow travellers or the local residents of the destination). When combined with sun lust – or in this case space lust, there is the opportunity to explore the true meaning of the experience to astro tourists. Iso-Ahola (1982) surmises that a tourist may travel to a certain destination or seek a certain activity based on a combination of one approach motive and one avoidance motive. They may also act on a different combination of each motive for different tourist activities, depending on outside factors affecting them at the time. It is also possible that an individual will be affected by all four of the potential motives at any one time. In the case of

the astro tourist this requires further investigation as the extent of these motives requires further investigation within an empirical setting.

#### 3.6.2.2 Push v Pull

Similarly, the concept of push refers to the fact that tourists travel to satisfy a need. For example, the astro tourist may need to learn more about science, need to be in the dark to experience something new etc. Dann's initial research in 1977, related to push factors, explores anomie and ego-enhancement. Anomie being the escape from everyday routine in a person's life; and the Ego-enhancement: the psychological boost that reality or fantasies have on a tourist's decision to travel to a destination (Dann, 1977). Whereas the concept of pull refers to tourism destination attributes as they are designed to attract visitors such as the things that lured the tourists to travel, for example; the dark, the stars, relaxation and friendly natives. Dann (1977) also claimed that a possible push factor for travel lies in the desire to transcend the feeling of isolation obtained in everyday life, where the tourist simply wishes 'to get away from it all' (1977: 191). The astro tourist may also want to transcend Earth by gazing at the night sky.

Jang and Cai (2002) clarified six push factors and five pull factors influencing peoples'/tourists' decisions to travel. The six push factors are novel experiences, escape, knowledge seeking, fun and excitement, rest and relaxation, and family and friend's togetherness. The five pull factors are natural and historical environments, cleanliness and safety, easy to access, outdoor activities, and sunny and exotic atmosphere (Jang and Cai, 2002:124). These factors have been incorporated into the research questions to determine which factors influence the astro tourists to travel to Dark Sky Places. Overall, Dann (1981) concludes that the pull factors reinforced the push factors in motivating tourists to travel this view will be explored further in relation to the astro tourist experience.

#### 3.6.2.3 Inter-directed and Outer-directed Theory

Those who pursue niche forms of tourism may do so to fulfil inner-directed reasons which are predominantly emotions for example, love, nostalgia, a sense of belonging, whilst outer-directed reasons are cognitive for example the desire to learn (Gnoth, 1977). One such factor is that of self-determination as it is fundamentally self-determination theory that seeks to investigate different types of motivation: intrinsic and extrinsic motivation (Deci and Ryan, 1985:2000):

**Intrinsic motivation** is when people act with full self-direction and autonomy, they are free from external forces. For example, while people are involved in an act, they feel aroused and do so wholly and volitionally, it is therefore 'prototypically autonomous' (Gagne and Deci, 2005: 334). Resulting from stimulus which stems from the physical or social environment (forest and events) or the organism (prior positive experiences of such environments) (Iso-Ahola, 1982).

**Extrinsic motivation** is associated with a person's desire to act in a certain way to obtain some external rewards or outcomes. Although many arguments state that extrinsic motivation lacks autonomy (Alderfer, 1972; McClelland, 1995; Herzberg, 2003), whereas self-determination theory indicates that extrinsic motivation is at variance with the degree of the autonomy.

Essentially self-determination theory is the basic needs of autonomy, competence, and relatedness (Alderfer, 1972). They are the 'innate psychological nutrients that are essential for ongoing psychological growth, integrity, and well-being' (Deci and Ryan, 1985:72). In a tourism context, Pearce (1988), Crompton (1979) and Iso-Ahola (1982) all provide examples of content theory but Ryan (1995) makes a contrast with holidaymakers who, he hypothesises; go on holiday as a way to compensate for the stress and boredom of everyday working life, this results in the passive consumption of mass tourist products. Whereas in contrast, if their work was interesting (to them) it would generate heightened interest in leisure activity, they would participate in more active travel behaviour such as niche tourism (astro tourism) which, is a response to an increasing number of more sophisticated tourist demanding specialist tourism products. As demand for specialist niche products has been established, it is now possible to turn attention to the process by which individuals make decisions.

### 3.6.3 Process Theory

Whereas, content theories concentrate on why human needs change; process theories address issues relating to 'how' the process works and sustains itself over time, such as the degree of effort required. Expectancy theory or VIE (Valence, Instrumentality, Expectancy) examines the process of motivation (Vroom, 1964; Deci, 1985). Vroom (1964) applied expectancy theory to workplace motivation by putting forward two equations, the first is used to explain or predict occupational preference and job satisfaction, the second explains or predicts occupational choice, remaining in work and job effort expended. Expectancy theory, through the concepts of valence (attractiveness), instrumentality (for achieving other outcomes) and expectancy expresses the idea that motivation is a function of the attractiveness of the outcome i.e. expectancy of achieving that outcome is related to the reward given. Process theories are, in effect, working models of the decision-making processes that individuals perform in order to determine whether they will be motivated to pursue a certain activity (Chiang and Jang, 2008).

Applying the expectancy model of holiday preference and choice was proposed by Witt and Wright (1992). The model incorporates needs, attractiveness (valence) of holiday attributes, relative preference of different holidays, and the influencing factors of knowledge of holiday destination characteristics; limiting factors such as cost, others' preferences etcetera; expectations; and instrumentality of holidays for providing attributes, all of which are influenced by a variety of sources

e.g. brochures, guide books and other people's experience, and the individual's own experience of previous holidays of the same or a similar type, resulting in feedback loops of past experiences. However, 'the complexity of expectancy theory makes it difficult to use the model to predict individual behaviour' and is therefore inappropriate for this study as niche products are looking for something more specialised, although the use of enhanced imagery may be a determinant when pursuing astro tourism (Pearce, Morrison and Rutledge, 1998: 412).

### 3.7 Physical and Psychological Attraction to the Stars

As a sub-niche market, astro tourism has the potential to look beyond some typical tourist interests e.g. mass tourist destinations such as resorts, beaches, theme parks and historical attractions, towards the external natural environment and the potential it has to amaze, trigger curiosity and engage the soul. As a comparison to astro tourism with its vast open space when looking beyond the horizon, Jarratt (2015a) uncovered how the British seaside (specifically Morecombe, in the North of England) has the power to provoke uplifting and spiritual connections to blue spaces, in what he calls 'seasideness' (*ibid*:148). Discussing the physical elements such as the promenade, the beach, the view across the bay and the leisure activities identified that among 200 visitors, 77% focused on walking along the promenade but significantly all respondents commented on the psychological aspects of contemplation, feelings of connectedness and re-connection to the environment along with the spiritual nature of the experience (Jarratt, 2015b). Nevertheless, Sharpley and Jepson (2011) found that tourists who visit destinations (their example was the Lake District, again in the North of England) found that most tourists did not visit purposefully for spiritual reasons, but their visit often embraced this dimension.

Astro tourism has a similar potential to attract and engage tourists, as the physical rural environment has low light pollution, a wide mixture of accommodation stock, local food production, forests, archaeological sites and churches along with green spaces such as parks, botanical or zoological gardens (Cianga, 2013). As astro tourism sites tend to be peripheral, from a touristic viewpoint they are secluded, peaceful places but as they are dark and as such they may be perceived as dangerous places which attract anti-social behaviour. Thus, they may have the potential to attract hedonistic tourists who seek thrills and excitement along with those looking for a slower pace of life therefore there is the potential for conflict of interest.

Notwithstanding, from a psychological point of view astro tourism may attract tourists who seek sensory pleasure, as discussed later, and those who wish to feel connected to life beyond earth or a spiritual connection. O'Brianin (2012: np) believes that 'astronomy sparks the imagination,' he says. 'One of the great universal sources of wonder is just to tilt your head back and gawp at this incredible

show unfolding above you’... it gives you an amazing sense of perspective. Looking up at the stars makes us realise that we are nothing. And there is nothing wrong with the odd injection of perspective in our lives.’ Thus, physical boundaries are placed side by side with psychological ones.

Astro tourism showcases a Dark Sky in a protected rural environment, whereby the local community benefits from increased tourism off-peak. It is multifaceted, as it entails Dark Sky events, nature tourism, eco-tourism, along with education and an element of spirituality. Many people have an intimate connection with the landscape and a sense of wonder created by place that are sublime (Schopenhauer, 2010), as discussed later in Chapter 4. This sense of wonder may explain why almost four million people watched the first Stargazing Live program in 2011 and why many now seek out places where the programme was broadcast from to experience the sky for themselves. Highlighting the psychological power media coverage has, and the desire some tourists have to physically see for themselves, for in doing so, they can display a symbiotic relationship between the attraction and their own goal orientated behaviour (Korstanje, 2011). Fundamentally, when considering niche market motives ‘most visitors are seen to be driven by differing intensities of interest or fascination...’ (Stone and Sharpley, 2008:575).

*Without any limitations, tourism has an infinite attraction for those tourists who can go everywhere and experience anything. Therefore, trying to limit this study to a few motives is proving to be difficult, especially as experience is highly individual, subjectively interpreted, intangible, ephemeral, and inestimable. Even so, astro tourism takes place in a nocturnal environment where some senses are restricted (sight) and others may be enhanced, therefore it is possible to access the motives for sensory pleasure.*

### 3.8 The Motivation for Sensory Pleasure

There is an implicit assumption in all the studies of tourist motivation discussed above that the consumer will choose the destination, or type of holiday that will best satisfy his/her desires or needs. Pleasure is goal-directed, humans aim to satisfy unmet needs thus creating an equilibrium due to a part of the human brain, known as the olfactory bulb, which processes the signals detecting smell and taste, which pass information to the limbic system, that deals with other parts of the nervous system that detect touch, hearing and sight. Scientists believe that the limbic system play a major role in controlling mood, memory, behaviour and emotions such as motivation (Boeree, ND). As astro tourism takes place in a nocturnal environment there is the potential to consider how the senses influence the experience and provide a motive for sensory pleasure.

### 3.8.1 Sensory Motivation

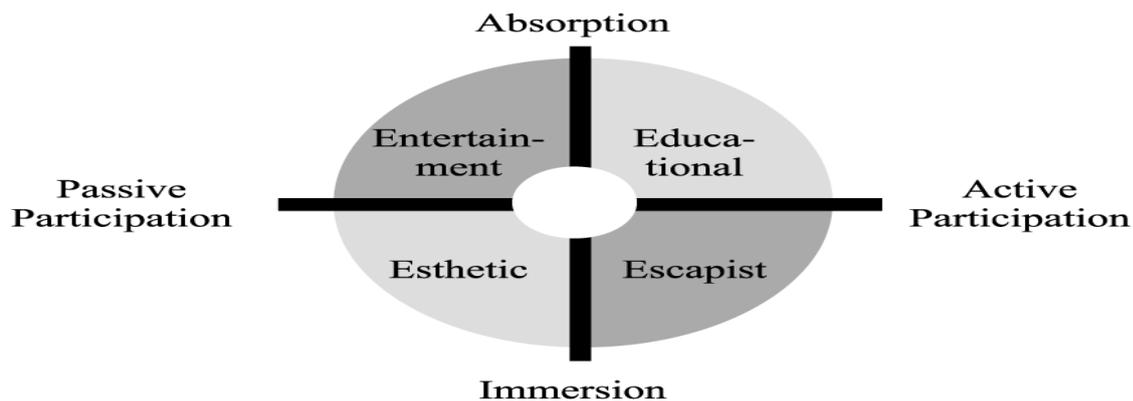
A multidisciplinary view of the literature shows that the human senses provide information appertaining to the surrounding world resulting in a mediating effect of motivation on everyday experiences, allowing individuals to make sense of the world. In fact, researchers in human geography, anthropology and history claim perception as corporeal (of the body), involving a set of interactions within an environment (space and place) in a specific period (time, past present or future), and being a learned behaviour (cultural) (Classen, 1997; Howes, 2005; Rodaway, 1994; Smith, 2007; Tuan, 1977). Under the experiential paradigm there are numerous studies related to marketers in tourism who have identified that the multisensory stimuli intensify the consumer experiences therefore the leisure and tourism industries are designing and creating conditions to enhance the experience (Rodaway, 1994; Krishna, 2010; Morgan, Lugosi and Ritchie, 2010). For example, allowing 'touch' to engage tourists at museums, to create a sense of connectedness of mind, body and the environment. This can be related to the relationship between body, people and places in relation to Porteous's (1985:356) term *sensescapes* (explored further in Chapter Three). Porteous (*ibid*) argues that, similar to the notion of landscape, with its primarily visual connotations, other senses can be spatially ordered or place-related, such as smellscape, soundscape, tastescape, or the geography of touch (Macnaghten and Urry, 1998; Urry, 2002).

Motivation to experience the moment-by-moment lived experience and the evaluated experience state, is subject to reflection and prescribed meaning (Highmore, 2002). Individuals are arguably engaged on an emotional, physical, intellectual, or even spiritual level, by the stimulation of a variety of human senses when interacting with the natural nocturnal environment. According to Schmitt (1999:59) 'experiences can be characterized by five strategic experience modules: sensory (sense), affective (feel), creative cognitive (think), physical/behaviours and lifestyles (act), and social-identity (social)', whereby motivation to engage in these experiences, may lie in the primal urge to explore their surrounds with the intention of knowledge acquisition or the validation of the meaning of life (see Chapter 4, 'Experiencing Place and Space' for a wider understanding).

Oh *et al.*, (2007) proposed an instrument to measure experience constructs in the tourism context (education, aesthetics, entertainment, escapism, arousal, memory, overall perceived quality, and customer satisfaction), creating the aesthetics realm which assesses the sensory stimuli. Based on Pine and Gilmore's (1999) four realms of experience: namely; entertainment, education, aesthetics and escape' (see figure 3.6), Oh *et al.* (2007) developed a measuring scale and applied it to lodgings. However, their model does not consider the tourists' decision making in determining whether the purpose for travel is central (primary) or peripheral (secondary) to the destination (place). Also, it

does not consider that the aesthetic motivation may be less associated with the place and more with the activity to leads to cosmic space, and that the depth of this motivation may be surface or deep, thus further investigation is required.

Figure 3.6: Four Realms of Experience



**Source: Pine and Gilmore (1999, p. 30)**

Sensory motivation and connectedness originated in Renaissance Italy with the naturalistic and romanticism movement and was popularised later (1782/1995) in France and America by transcendentalists Emerson and Thoreau (Toreau and Harding, 1995 cited in Eisenberger, 2010). Contemporary views of sensory pleasure by Moital and Gandara (2012); Bueno, (2008); Barbosa, (2005) illustrate that events are places where people from different backgrounds can be found and where social, physical and ideological differences are often forgotten as events are orientated towards celebrating life, sexual freedom, fostering happiness and challenging pre-conceived values and rules.

According to Eisenberger *et al.*, (2010:599) 'the pursuit and enjoyment of natural sensory experience are widespread'. They argue that 'there is a general disposition, differing in strength across individuals, to find pleasure in pleasant nature-related experiences motive for sensory pleasure' (*ibid*: 600). Assessing the motive for sensory pleasure (MSP), may discover the general disposition to enjoy the nocturnal environment whilst stargazing. Personality theorists Chapman *et al.*'s 1976; Chapman and Chapman, 1985; Cacioppo, Petty, and Kao, 1984; Zuckerman, Kuhlman, and Camac, 1988 examined differences in the enjoyment and motivation for sensory experiences related to nature and suggested that basic sensory pleasures are factors important to life. Their study highlights the possibility that individuals' can find pleasure in the environment on Earth, thus there may be potential to also find pleasure in the Cosmos, as star gazer's arguably have an impressionistic and ideological view of the horizon, nocturnal environments and the possibility of what lies beyond Earth's boundaries. According to Jackson (1984:7), the highly sentient person 'notices smells, sounds, sights,

tastes, and the way things feel; remembers these sensations and believes they are an important part of 'life'; are sensitive to many forms of experience; may maintain an essentially hedonistic or aesthetic view of life' (discussed further in Chapter 5).

Alternatively, individuals can have negative sensory responses which lead to what could be described as unpleasant natural themes such as death, the grotesque, sickness, injury or fear. Research carried out by Rawlings (2003) in painting literature exposed that openness to these feelings was associated with an increased liking for paintings depicting aggression, death, or despair, suggesting that the perception of a negative responses to dark themes such as death may in fact have the opposite reaction as people may seek out the grotesque. This may be similar to those who seek out nocturnal environments and the fear that darkness can invoke.

Humans have a strong capacity for visual imagery, referred to as 'mindfulness' by Langer (1977), which allows them to evoke images from their imagination via music, linguistics and colour, thus creating scenarios or even worlds in their minds. Heidegger (1977) pointed to the modern era as the source of the idea that it is possible to step back from the world and see it as though it is a picture, one comprehensively visible to the individual gaze. Just the enjoyment or disgust that is evoked from seeing a glimpse of this world or even hearing a sound could potentially create a relationship with MSP, and the openness to feel a connection to an experience all of which will be explored via a survey as discussed in Chapter 6: Methodology.

### 3.9 Conclusion

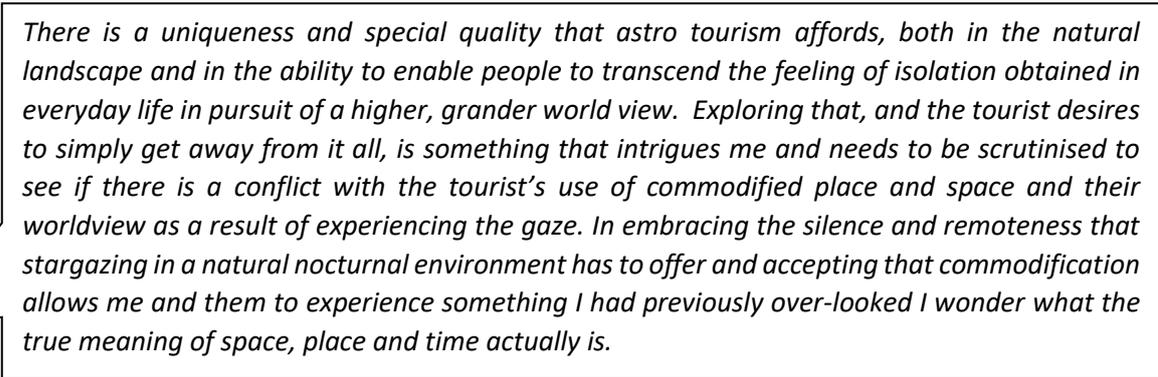
In an attempt to understand the astro tourist, this chapter began by considering the growth of astro tourism, its place within a rural niche as a sub-niche sector and the products that have been developed to attract tourists. It consolidates space tourism, as it focuses on astro tourism at terrestrial specific and non-specific sites and endorses the view that demand is driven by needs, motivations and expectations along with the desire to escape from the mundane and routine nature of life.

Reviewing tourist motivation literature, offered an insight into the factors that may impact upon astro tourism participation, such as: why do astro tourists behave as they do? Inherently, it also provided some consensus, with regard to the continuing significant factors which push and pull tourists to a destination, particularly those that are rural, on the periphery where light pollution is controlled. However, it also conceded that the broad spectrum of theoretical work has led to the belief that there is still fuzziness to the approaches taken.

The questions researched relate to the environmental psychological needs satisfied by the consumption of Dark Sky Events. However, it has been identified that Dark Sky destinations have become increasingly interchangeable, whereby tourists seek different and new experiences, as they

begin to enjoy the movement across different experiences in a single journey giving rise to sensory motivational diversity and intensity. Exploring the sensory motivation to stargazing in a nocturnal environment arguably provides an opportunity to explore and develop further a model which could measure the five senses in a nocturnal environment.

Adopting a multi-disciplinary approach to motivation and the five human senses in tourist experience has the potential to lead towards a deeper understanding of the astro tourist as experiencing nocturnal environment can generate a holistic tourist experience in a rural environment.



*There is a uniqueness and special quality that astro tourism affords, both in the natural landscape and in the ability to enable people to transcend the feeling of isolation obtained in everyday life in pursuit of a higher, grander world view. Exploring that, and the tourist desires to simply get away from it all, is something that intrigues me and needs to be scrutinised to see if there is a conflict with the tourist's use of commodified place and space and their worldview as a result of experiencing the gaze. In embracing the silence and remoteness that stargazing in a natural nocturnal environment has to offer and accepting that commodification allows me and them to experience something I had previously over-looked I wonder what the true meaning of space, place and time actually is.*

## Chapter Four

### 4.0 Understanding Space, Place and Time

#### 4.1 Introduction

This chapter commences with the philosophical link to space as the architect or the vessel of place in any specific time. It highlights the various ontological positions that have been taken in relation to space to conclude - that it is the humanistic perspective that renders space visible, not only in terms of observing the geographic landscape but in terms of developing experience. It goes on to present the significance of time within space and place and considers the power of stargazing on behaviour and the human desire to explore time and outer space at place.

When considering potential impacts of space, place and time, it is identified that issues such as well-being, a flourishing area of research which is multi-disciplinary, and sensory experience are linked to 'psychogeography' (Edgerton, Romice and Spencer, 2007:2). Within the realm of this research, psychogeography practice has been used to determine the motives for travel and to identify links to natural environment. Notwithstanding, this chapter goes on to explore another aspect of psychogeographic research: that of attachment. Thus, this chapter by exploring space, place and time literature illustrates how individuals determine meaning. In space and place through being in time, in doing so they create their own ripples in time which have meaning; illustrating that space and (outer) space can merge together to create a new view of the world based on their experience of stargazing in a dark place so as to give meaning and thus form an attachment to place as an enabler to view the cosmos.

The final section relates to psycho-geographical portrayal of space, as a distinction is drawn between space on Earth, cosmic space and headspace. The chapter then progresses to lay the foundation for the next chapter which presents a conceptualisation of place and the examination of the significance of experiencing space from place, its meanings and the bonds developed from mediating experience to place. Throughout this chapter, reference is made to the landscape: earth-bound and cosmic, with its primarily visual connotations, to argue that a holistic approach to the five senses is essential to creating meaning and thus attachment.

#### 4.2 Being in Space

Heidegger (1927), refers to the human state of existence as 'dasein', i.e. 'being there', being where?, in a space?, in reality?, in imagination?, in time?, or in a fantasy?, these questions according to the Stanford Encyclopedia of Philosophy 'take the following form: does x (where x = some particular kind of thing) exist? Questions of this form presuppose that it is already known what 'to exist' means. We

typically don't even notice this presupposition, but Heidegger does, which is why he raises the more fundamental question: what does 'to exist' mean? This is one way of asking what Heidegger calls the question of the meaning of 'Being', and 'Being and Time' (Stanford Encyclopedia of Philosophy, ND). Stefanovic's (1998) review of Heidegger, claims that we exist and to exist means to be in place but to what extent is that true? In the world of virtual reality, pilots use the technology to take-off and land aeroplanes; geologists are using it to survey vast landscapes remotely on earth and in the solar system as they get a sense of being there (The Rough Guide, ND), which renders space the architect of place whereby virtual worlds can exist in the mind. Although ambiguous, along with many characteristics of motivation as seen in chapter 3, the argument presented here, is that space and place are created by the specific individual who is the determinate of meaning in time, which is akin to the phenomenographic view. As in phenomenography, meaning is described as a relationship formed between the individual and the world.

#### 4.2.1 Time

Exploring the concept of time in relation to astro tourism can be divided into both a physical and social construct. First, the physical dimension is viewed as something that can be measured precisely (Hall, 2008). Astronomers use time to measure distance and speed, as discussed previously, but within tourism it is also used to conduct time-series analysis and to understand tourism systems in terms of destination management. Second, time is seen as a social construct, i.e. time with content which can determine meaning and attachment.

Time to travel is limited when people work or have limited funds but a far more interesting topic in terms of the cultural link to astro tourism is time-travel. Time-travel stories can create fantasy worlds and have been the subject of many films, books and television series but do they have meaning in that sense that leave a lasting impression? Is time-travel to other worlds or places possible, if not why does literature and films related to such subjects have cult following? Do people who star gaze desire travel to other worlds? Do star gazers believe they will see signs of life on other planets by looking at the cosmos? The essence of the phenomenographic approach adopted here focuses on the analysis of empirical research to ascertain the answer to these questions, as well as discovering the outcome of second-order perspectives of describing the world as it is experienced and understood.

#### 4.3 Understanding Space

The focal point of understanding space is to reveal an understanding of what space means to tourists and how this may differ for astro tourists. At the heart of any geography discipline and practice is space and spatiality, which draws on eclectic subject matter ranging from sociology, physical processes and natural environments (Thrift, 2009). Underpinning the different approaches to space and

spatiality are various ontological assumptions which separate philosophical approaches and practices in geography. Debates relating to the nature and the existence of space date back to the *Timaeus* of Plato, which speculate on the nature of the physical world and human beings; Socrates circa, 470-399 BC, and his reflections on what the Greeks called *Khora* (i.e. Space) and Aristotle in his definition of *topos* (i.e. place) (Planck, 2013). This illustrates that although space is complex it is constantly being examined and interpreted in various fields of study from physics to tourism. Each represents space as an un-bound phenomenon (Ettlinger, 2007), synonymous with vastness, nature and history. Given the scientific significance and understanding of space from both its cosmic and Earth-bound realms, space has predominately appeared in literature with a stronger presence.

Heidegger encapsulates this by focusing on the concept of 'Dasein', which is also referred to as 'an interested human being, situated in a particular place and a particular time' (Heidegger, 1927:102), thus providing a temporality of the past-present-future, as well as a situatedness in space. Heidegger explains, 'Space, which is discovered in circumspect being-in-the-world as the spatiality of a totality of useful things, belongs to beings themselves as their place'. (Heidegger, 1927:104). As a reflective filter, perception and experience illustrates that individuals live to experience, but experience is dynamic and has multiple meanings dependent upon understanding and its ability to transform the individual.

Notwithstanding, Chombart de Lauwe (1960) recognised that individuals perceive space in two ways through its objective and subjective use, clarifying that interactions between space and people produce intrinsic meaning which can be derived from passive/active involvement in their surroundings whether that be actual/virtual reality or imagination. Even so, Auge (1995:82) argues that space is an abstract term that refers to 'the non-symbolised surfaces of the planet'. He goes on to stress that the word space has become a 'catch-all', used widely to mean many different things because it is often applied to 'a distance between two things' as well as being 'a temporal expanse' (the space of a week) (*ibid*:81). In defence, Lefebvre (2003:38) attaches importance to place as a 'symbolised space' and non-place as a 'product of mobility' as we constantly move through places like airports, bus terminals and city streets to get to somewhere. In each case, experience is referred to as a means understanding and a potential source of attachment to space, as space is integral to being and living in time.

#### 4.3.1 The Formation of Attachment

Attachment to space and place can be traced back to the early studies such as the work of Bowlby. In his studies in medicine and psychiatry in the early 1940s, he focused upon mother-child separation to determine emotional connection. The studies were pivotal in identifying the clear-cut and undeniable attachment of parent and child (Bowlby, 1969), thus illustrating that mankind's embryological

development, at a behavioural and psychological level, is formed in the early stages of life and continues to develop due to observing and experiencing human interactions in their natural environment. The bonds and relationships that form shape and guide human interactions contribute to individual identity. These bonds can be formed with grandparents, parents, other family members and friends all of whom have interests that may influence future participation in activities as attachment is formed.

Ainsworth's (1973) studies focused upon the major tenets of security theory and identified that children need to develop a secure dependence on parents before experiencing the unfamiliar. This level of security creates attachment and enables the child to take risks in safe knowledge that they are protected and cared for. Later during the various phases of the life of the child, as they mature to adulthood, if that sense of security remains there will be a capacity in space and time to experience environments, cultivate impulses and allow ego to flourish which may create attachment to space, place and relationships. This in turn moulds the individual self, as imprints of experience and narratives create 'persona', which is the 'outward or social personality' of an individual (Dictionary, ND). This might be significant, as childhood bonds with the natural environment and stargazing may have been formed in formative years thus leading to a desire to reconnect with the past activities when leisure time and money become available.

Reductions in cost and the increase in time to move over space, has significantly increased the possibility to form new attachments as there has been a growth in mobility. These new interactions result from increased mobility that brings the life paths of others with small space-time prisms into contact with those that are significantly larger (Hall, 2008:6), thus creating a new dialectic of social relations and ways of looking at the others that are tied up with the notion of the impact of various worldviews or gazes on how the world is perceived and understood (Urry, 1990).

#### 4.4 Ontological Perspectives of Space

In recent decades it has been considered that space and spatiality are social and cultural quasi-material productions focusing on time-space or space-time (Massey, 2005; Harvey, 2001; Castells, 2004; Lefebvre, 1947). Massey (2005: 47-57) has outlined how space and time 'are integral to one another', they are 'distinct' but 'co-implicated', 'it is on both of them, together that rests the liveliness of the world'. Massey's argument was that rational approaches to time-space can enable a reconnection to the spatial and the political as well as forming the basic for dialogue between human and physical geographers (Massey, 2005). Space and time are seen in Massey's work as 'dimensions of the world in which humans inhabit', whereby geographers concentrate on the way things are arranged geographically, such as urban space and rural space. Massey believed that geographers think

of space as 'a kind of flat surface out there – we cross space – and space is therefore devoid of temporality: it is without time, it is without dynamism, it is a kind of flat, inert given' but she argues that 'space is dynamic, it is like a pincushion of a million stories' (Massey, 2013). Massey interprets this when she speaks about an example from Raymond Williams who spoke about

*'looking out of a train window and there was this woman clearing the grate, and he speeds on and forever in his mind she's stuck in that moment. But actually, of course, that woman is in the middle of doing something, it's a story. Maybe she's going away tomorrow to see her sister, but really before she goes, she really must clean that grate out because she's been meaning to do it for ages. So, I want to see space as a cut through the myriad stories in which we are all living at any one moment. Space and time become intimately connected' (cited in Massey, 2013: NP).*

This view infers that space is social, time is ethereal and virtual, without materiality, the two together create ripples which result in narratives. Narratives are the formation of past and present events apparently these events stay in the mind as they arguably appear to 'touch' the person in some way which in turn creates meaning and lasting memories.

In an attempt to rescue space from the conceptual domain and provide a practical or real bias, Lefebvre (1991:90) highlighted the notion of social space as 'space is materially important to how we live our lives' here on Earth. In describing people who exist in space, Lefebvre (1991: 33-34) distinguishes that the 'behaviour of their space is at once vital and mortal: within it they develop, give expression to themselves, and encounter prohibitions; then they perish, and that the same space contains their graves'. From this philosophical stance it is apparent that space is seen as cognitive and that the experience of space is essential for the very existence of mankind. According to Giorbran (2007:13) 'basic fact of existence is that space stands between me and you, everything that you and I have encountered and will encounter takes place in space, as space holds us together amidst all the things that go on in and around the world we inhabit'. Space can also bind people together as people visit places to share time, interests, hobbies or intimate moments with family and friends.

Ingold (2011:145) opposed to the basic fact of existence as stated above, arguing that 'space is nothing, and because it is nothing it cannot truly be inhabited at all'. As space is nothing more than a container of more than one place, for places are like a Russian doll, as places are nestled inside other places (Ingold, 2011:146). In taking this view Ingold highlights the tensions that exist between space and place as there is a perceived division between how human-beings perceive the world in everyday life. Ingold (2011:148) argues 'that when people refer to everyday events they do not use the word

'space' instead they favour more specific terms such as environment, landscape, field, forest, sky, place, site or room'. These terms are linked more to experience and the inhabitation of Earth than the empty, abstract and vastness of space, thus drawing a distinction that space is more adept to the concept of outer-space. This conceptualisation separates space from place and reduces the power of space in everyday life. However, this thesis takes the view that space and place have no boundaries, they merge together as shared and meaningful experiences in the everyday to create connections in space, place and time through the senses. This view would support Massey's, (2010:9) argument that the lack of life in space, purposed by Ingold (2011:159), is simply a by-product of a certain epistemology, 'for if space appears lifeless then it is only a temporary situation until it becomes detached from that epistemology'.

Space from a sociological perspective can illustrate the study of a person's spatial feelings and ideas are based in the stream of experience (Taun, 1977). Human's come to know the world by experiencing it in its totality, through senses (feelings), perceptions and conceptions (Dardel, 1952; Gendlin, 1962; Gilbert, 1972). As a consequence being in space is sense-bound as humans respond to existential cues within everyday life and unfamiliar space creating a web of biological, social, physical and cultural dimensions, which aligns with the perspective taken in the study.

Considering the cultural aspects of space, space can also be seen to be the basis for self and identity as assumptions that there is a reciprocal relationship between self and society are developed in the context of where people live, the places they visit and the impact that these interactions have on them (Mead, 1934; McCall and Simmons, 1978; Stryker, 1980;). It takes time in various places to form the identity of a person, for identity is shaped by amongst other things, environments, interests, situational factors, and society, thus creating distinctive environmental narratives rich with memories of spaces and places that have created the person-scape.

Although the geographers, anthropologists and sociologists may understand the world from various ontological positions it is arguably in conjunction with the humanistic perspective. The exploration of deficits in the understanding of the relationship between physical, conceptual and abstract space have demonstrated that space is important in rendering it visible, not only in terms of observing the geographic landscape but in terms knowledge and understanding of the world and the arguably the universe as it is experienced by individuals.

## 4.5 Tourism's Final Frontier 'Space'

As discussed in Chapter two, people want to go somewhere they have never been or seen before, cosmic space represents that desire. As this is denied to the vast majority of people, Dark Sky was identified earlier as an enabler to be close to space and something that is being sold in increasingly creative ways. As a fundamental part of human desire, night sky culture has been part of mankind's existence for thousands of years, so knowing when an interest in stargazing and the night sky began, and then sharing it, is a central tenant to the experience of the astro tourist. Considering the growing interest in astro tourism it is important to clarify further the difference between astronomical space and astrological space as experienced by tourists, for both have the potential to render the observer mystified and enchanted. This was commented on in March 2018 by an article in The Guardian which reported that 'there is a growing familiarity with the patterns and positions of the planets, it's not uncommon to hear people in their late teens and 20's talking about 'Mercury in retrograde and Saturn returns' with confidence and authority (Nicolson, 2018:1). Contributors to the article attribute this increasing interest and confidence to a loss of religious belief and the need to turn to mysticism, spirituality and the occult in times of uncertainty. This illustrates that the notion that existing science and belief systems can fill a void that has become apparent in modern society, this can be explored further by considering the extent to which tourists have the potential to become attached to astronomical space and astrological space.

### 4.5.1 Astronomical Space

As indicated in the discussion earlier, space on Earth is a contested and somewhat ambiguous term, whereas outer space and cosmic space are understood by the laws of physics which measure distance over time via light and are located in the realm of science. The universe is believed to be made of three substances: normal matter (atoms that make up stars, planets and human beings), dark matter (unidentified type of matter) and dark energy (an unknown form of energy which is hypothesised to permeate all of space) (United Space in Europe, ND). However, space itself is also unknown, it is said to exist and contain atoms, it is affected by gravitation, it is also expanding (Reiland, 2015). So why is mankind so interested in exploring cosmic space when it is essentially described as a giant vacuum?

Foucault (1970: 196) offers one possibility, he asserts that knowledge (savoir) leads to an explanation of 'where we came from', he also recognised that history provides answers to current situations. Therefore, looking into outer space, at history, may provide the answers that mankind seeks in relation to mankind's origins and the potential existence of other life forms thus addressing the desire and interest mankind has on space. President George W. Bush on Feb 4<sup>th</sup>, 2003 said 'The cause of exploration and discovery is not an option we choose; it is a desire written in the human heart' (NASA,

ND). As humanity seeks answers to the most fundamental questions posed about the existence of life beyond Earth the exploration of space is seen as quintessential to its understanding. Telescopes have found planets around other stars which may be capable of supporting life, known commonly as Goldilocks planets (not too hot, not too cold, and capable of sustaining life). Robotic probes have identified potential resources on the Moon, evidence of water – a key ingredient of life, water has also been found on Mars and the moons of Jupiter. All of which suggests that there is the possibility that we are not alone, human beings may not be the only species in the universe or that humanity may have originated elsewhere thus fuelling curiosity.

Mankind is curious by nature as many desire travel to outer space, as discussed earlier, but

*'Space tourism can be defined to include not only the vehicles that take public passengers into space, but also from the perspective of the "destination" paradigm. As such, the industry can be envisioned to include not only earth-based attractions that simulate the space experience such as space theme parks, space training camps, virtual reality facilities, multi-media interactive games and tele-robotic moon rovers controlled from Earth, but also parabolic flights, vertical suborbital flights, orbital flights lasting up to 3 days, or week-long stays at a floating space hotel, including participatory educational, research and entertainment experiences as well as space sports competitions (i.e. space Olympics).'* (Space Policy Institute, 2002).

The majority of mankind, who do not have access to these prohibitively expensive forms of travel outlined above, seek to explore space from earth-bound destinations which provide natural attractions. Exploring space from Earth is the central tenant of this thesis as Dark Sky Parks provide a starry sky, shooting stars, the occasional glimpse of the northern lights, eclipses of the sun or moon and asteroid showers.

Astronomical space contains energy and forces which can only be identified by their effects on space (Lefebvre, 1947). Whereas Foucault never explains what space is, nor how he bridges the gap between the theoretical (epistemological) realm and the practical one; between mental and social; between the space of the philosophers and the space of people who deal with material things, he does explain the scientific attitude, understood as the application of epistemological thinking to acquired knowledge, as it is assumed to be structurally linked to the spatial sphere (Lefebvre, 1947:127). However, it can be argued that science does not sufficiently address space and its meaning, as it is even more complex than space on Earth due to the lack of an experiential sensory term of reference.

Moreover, Space travel and space tourism is quite different to other forms of world travel as a perceived packaged opportunity to touch space is out of reach. In 2004 Virgin Galactic’s ‘Spaceship One’ took its inaugural flight, designed to provide suborbital flights, by privately funded operated vehicles, however due to cost and legal issues these flights are still in the experimental phases (ESA, ND). Without the capability to touch space, virtual reality, television, films, cosmic gazing and other technological forms are used as substitutes for space experience. All these forms of space interaction rely on the senses and the extraordinary capacity that humans have to believe not only in what they see but in what they can imagine. They also have the ability to have strong beliefs in what must be true, such as the existence of life beyond earth in space, without substantive evidence.

#### 4.5.2 Astronomical Attachment

Attachment is a deep and enduring emotional bond that connects one person to another across time and space (Ainsworth, 1973; Bowlby, 1969; Bailey, 1979; Jung, 1933; Oken 1990). Understanding and improving that bond is a central goal for most tourism providers as they seek repeat custom but, to attain this, they must have an understanding of attitudes of their target group. Traditionally, the magnetism of place, in terms of place attachment, has been measured in relation to their attributes such as accessibility, attractiveness, engagement, and emotional connection (Vaske and Kobrin, 2001; Warzecha and Lime, 2001; Williams *et al.*, 1992). However, places to view the stars from are measured using different criteria as they must be sufficiently dark to view the cosmic phenomena (as outlined in the introduction and discussed in further detail in the case study in Chapter 6).

Astronomy is an observational science based upon the laws of the physical universe: mathematics, physics and chemistry. Current classifications of astronomers as identified by the Cornell University are illustrated in Table 4.1:

Table 4.1: Classifications of Astronomers

Observationalist	Record data with telescopes or spacecraft and then explain what it means based on current knowledge
Theorist	Use physics to make computer models or simulations of thing in the universe whilst developing new explanations or predictions of astrophysical phenomena.
Planetary Scientist	Study the planets and the moons
Stellar Astronomers	Study the stars

Solar Astronomers	Study the sun
Galactic Astronomers	Study the galaxy
Extra Astronomers	Study all different galaxies and structure within the universe
Cosmologists	Study the origins and evolution of the universe

(Ask the Astrologer, 2015)

Although the classification provided by Cornell offers some guidance of specialist interest, it should be noted that there is no clear-cut distinction in viewing the stars by those who view the stars for pleasure, leisure or tourism which is something this research intends to investigate whilst working towards an understanding of the astro tourist. Not all astro tourists are purposeful star gazer's, they may simply be drifters which is essential to psychogeography.

#### 4.5.3 Astrological Space: Astro-geography

'Astro-geography is the astrology of where' (Astro Geography, 2016: NP), 'where' relates to the astrological map as it is possible to compare a person's birth chart to the astro-geographical positions of places using symbols, arguably providing answers to the questions such as: Why does a person feel that they belong in some places and not in others. The answers can be derived by studying the movements and relative positions of celestial symbols (Astrology Weekly, 2016).

There are 360 symbolic images on the astrological map, known as the Sabian Symbols, associated to each of the 360 degrees of the zodiacal circle. The symbols were created in 1925 by Marc Edmund Jones with the assistance of Elsie Wheeler. Today, the 360 symbols are widely used in astrology in order to gain a deeper understanding of the influence of a planet located at that degree (McClung, 2001). The chart (see appendix 3: Sabian Symbols) is used to correlate the 360 symbols and the 360 degrees of longitude of the globe, each one is associated with one of the 12 zodiacal signs.

#### 4.5.4 Astrological Attachment

Attachment to outer space via Astrology is an ancient concept. Bailey (1979:53) makes an assertion that astrology is 'esoteric' as it is 'soul-centred' based on the understanding that there is a spark of divinity or soul within each of us, which in turn creates a personal attachment to the cosmos. There is a belief in the field of astrology that humans can be influenced by their star signs, as the Zodiac is seen to hold the mysteries of the universe (Orion, 2007).

Worldwide, there are many branches (languages) of astrology, each are based upon ancient philosophy within religious communities, for example:

- **Mayan Astrology** is an ancient astrology branch based up a variation of the Mesoamerican astrology, The Mayan Calendar is also known as Tzolk'in. This branch focuses upon the intangible evolution of creation and cosmic energy. It is comprised of 20 Day Signs and 13 Galactic Numbers, making a 260-day calendar year. The Mayan symbols (represented in Appendix 5: Mayan Calendar), are said to create an amazingly accurate interpretation and analysis of personality (Myansigns, 2016). Analysis and interpretation are based upon sophisticated mathematical calculations and steeped in religion and omens passed down by priests who discern the natural phenomena into everyday life. This branch of astrology has as much to do with date of birth as with time. This is particularly relevant when considering attachment, as attachment requires a variety of affective bonds with places – rootedness, belongingness, insideness, embeddedness, affiliation, appropriation, commitment, investment, dependence, identity, etc. each of which arguably begin with place and time of birth.
- **Vedic Astrology** is associated with Hindu and Indian astrology, it is also known as 'Jyotisha' which represents astrology of the East. Vedic astrology uses sidereal zodiac, fixed in space but tied to Spika, (a star) that defines the opposing point of the beginning of Aries (as seen appendix 6: the Vedic Birth Chart). The ability to read this chart is limited, as the houses rise and descend in conjunction with the time of day, week, month and year.

Astrology is a language of its own. 'If you understand this language, the sky is said to speak to you' (Rudhyar, 2016: NP). For example, an enthusiast who is attached to their chart and lives by it, will base significant events in their life on whether the astro-geographical chart reads favourably; for example, if a marriage should take place when Saturn is in the seventh house, or whether one should start a new job when Aries is descending in the fourth house. Importantly, these symbols and maps can be seen as a transition from intuitive awareness to the existence of affective bonds with others and place. This gives rise to place identity as an individual will incorporate place and events of life into the larger concept of self (Taun, 1980; Relph, 1976; Buttimer, 1980)

In the west, astro-geography also explains how the natal birth chart (date, time, and place) can be a guide (map) for life (see appendix 4 for symbols); for example, each Astrological Sign illustrated in Table 4.2 below, are said to have a quality and field:

Table 4.2 Astrological Signs

Sign	Quality and Field
Aries	Strong energy and proactive nature. It is a field of action.
Taurus	Sensory, practical and persistent. It is a field of fertility.
Gemini	Analytic and observant. It is a field of quick movement.
Cancer	Emotional and nurturing. It is a field of security and cohesion.
Leo	Confident with integrity. It is a field of actualisation.
Virgo	Adaptive, efficient and self-critical. It is a field of organisation.
Libra	Aesthetic and interpersonal. It is a field of relation.
Scorpio	Secretive, dramatic, serious and inquisitive. It is a field of transformation.
Sagittarius	Idealistic and changeable. It is a field of integration.
Capricorn	Authoritative and objective. It is a field of efficiency.
Aquarius	Social and unconventional. It is a field of experimentation.
Pisces	Transcendent and empathic. It is a field of evolution.

The qualities and fields are believed to demonstrate characteristics of the star sign, which are also believed, by some, to be sparked in the soul as they are related to personality. This gives credence to the notion that a person is born with attachment to the stars, but it is by no means a scientific fact, as such notions are impossible to validate to non believers. (For an example see Appendix 7: Astrological Prediction)

The meanings attached by individuals to these charts are believed by followers to illuminate the secrets of self. They arguably provide an understanding that leads to the scrutiny of relationships and are believed to provide a glimpse into the future (Orion, 2007). The allure of the unknown is seductive, it helps to move away from the reality of everyday towards the illusion of a new identity based on symbols and associated interpretation of meaning.

In Jung's (1933:89) book 'Modern Man in Search of a Soul' he discusses mankind's link to astrological predictions in the identification of deep insights, peace, awe, wonder, grace, love, and comments that there is a 'spiritual attachment to space' due to these experiences which are esoteric'. Esoteric astrology views attachment to the cosmos via the identification of life; the lives people live in relation

to the point of light within the universe (Bailey, 1979:11). Although, astrology is based upon ancient beliefs that the Earth was the centre of the solar system, and that around it revolved the sun and all the planets, which has been disproved by science, astrology is still seen as a powerful force. It is used, by some, on a daily basis to determine why a person may feel that they belong in some places and not in others. Seeing these symbols in the night sky in a Dark Sky Park, where they are visible, may forge a strong bond with the Park.

Each of the charts represented above are grounded within the cultures of very different societies but each share a common belief that the cosmos does speak to those who are prepared to listen and that shared effective meanings are associated with cosmic phenomena. Arguably, this form of attachment is based on the landscape of the stars rather than the landscape of Earth, with headspace used to develop psychogeographic connection. Although it should be acknowledged that the geographical significance of a dark landscape is just as significant as the cultural beliefs, and that all experiences influence environmental perception which in turn creates meaning, identity and attachment (Rose, 1995).

*Whilst carrying out this research I was surprised by the animosity of astronomers towards the study of astrology. Astronomers viewed astrology as a pseudoscience, mostly because Astrologer's make claims which cannot be backed up by science, for example medical cures, ranging from the use of magnetic bracelets to crystals with mystical powers (Seeds and Backman, 2011:24). Personally, I found both areas to be interesting and suspected that events participants may also have a diverse interest.*

#### 4.6 Headspace: Scapes

If it is accepted, that physical space exists on Earth and that outer space holds mystique and value as a realm of tourism curiosity, astrological mystic and scientific exploration, then headspace is the spatial awareness that the brain uses internally to determine experience from the external environment (Blesser and Salter, 2007). According to Blesser and Salter (2007:131) all life experiences are influenced by scapes of the places in which they occur. Blesser and Salter (2007:131) described how buildings, with their numerous surfaces, objects and geometries, create aural architecture, as people hear how sound from multiple sources interact with spatial elements to create aural personality. Although their work focuses upon sound in particular, they accept that vision, touch and smell can align and reinforce experience within headspace of the external environment which is arguably where an individual's understanding of the sublime and liminal exist, for what is sublime or liminal to one person may be quite ordinary, everyday, to another.

Space is never neutral, for history and spatiality can be profoundly ideological (Soja, 1989), as space has a great deal to do with the individual's own position in it: the view from above or whilst on the move. Whilst moving through space the senses are engaged to navigate relationships of both terrain and personal wellbeing which entails a careful weaving between the known and unknown thus leading to subliminal connections.

#### 4.6.1 Sublime Space

Geographical landscapes can create an intimate connection with visitors through the mind, body and spirit whether the visitors are 'quiet enjoyment seekers' observing the stars, wildlife or the flora and fauna, or adrenalin seeking, mountain bikers or skiers. Contemplation of scenic splendour can often reinforce the view that a place is special, unique and can create intense emotions which are sublime. Edmund Burke (1729-1797) commented that 'the *sublime*; that is, it is productive of the strongest emotion which the mind is capable of feeling' other than that of pain or terror, which is much more intense. Gayton (1996: 167) observes further that the 'vastness of landscapes offer him, and perhaps many others, a secular epiphany'. He explains that the spiritual nature and appeal of the natural landscapes, 'the sense of insignificance that nature can provide is liberating; without reassuring vastness of geologic time and space, we are simply alone, with our brief and gnawing consciousness' (1996: 75).

Schopenhauer (2010: 200) produced a type of sliding scale between the beautiful to fully sublime; to identify that as one moves through the scale one becomes more aware of one's own fragility and the object appears more antagonistic. This scale is summarised below:

1. A feeling of beauty as experienced when we see light reflected off a flower. The pleasure derives from a mere perception of a harmless object.
2. The weakest feeling of sublime: for example, light reflected off stones. Pleasure is taken from beholding objects, devoid of life, that pose no threat.
3. A weaker feeling of sublime: as characterised by a still expanse of desert. The pleasure here is from seeing objects or an environment that could not sustain the observer.
4. The sublime: turbulent nature. Pleasure derives from perceiving objects that have the potential to harm the observer.
5. The full feeling of sublime: overpowering turbulent Nature. Pleasure is taken from experiencing extreme, violent and destructive objects.
6. The fullest feeling of sublime: immensity of the Universe's extent or duration and so the timeless universe is of great relevance here. Pleasure arises from knowledge of the

observer's lack of relative significance and/or a connection or oneness with nature. Things are put into a new perspective (Schopenhauer 2010: 227).

Thus, to create a sublime feeling requires a geographical landscape, which in the words of Roberts (2012:2) is 'beautiful and picturesque' but, however important the visual might be to the creation of the feeling of sublime, other senses can, arguably, create an equally powerful feeling. The geography of space on Earth relates to the feel of the terrain underfoot, the sounds that are created and synonymous with that environment and the odour that emulate from the surroundings - arguably particularly significant in the dark park where the forest impinges on the senses.

Edmund Burke (1757: nd) stated that:

*'in utter darkness it is impossible to know in what degree of safety we stand; we are ignorant of the objects that surround us; we may every moment strike against some dangerous obstruction; we may fall down a precipice the first step we take; and if an enemy approach, we know not in what quarter to defend ourselves; in such a case strength is no sure protection; wisdom can only act by guess; the boldest are staggered, and he, who would pray for nothing else towards his defence, is forced to pray for light' making the experience 'sublime' as it is capable of generating terror at the immensity of darkness'*

Thus, illustrating that extremes of feeling based on a lack of vision and the intense feeling of danger can create the sublime in headspace and place. As human emotions make sense of strong and often unexpected, profound or even exhilarating moments in time, experiences are often created which are arguably sublime.

Generating the sublime can also be linked to the work of artisans, such as Immanuel Kant and William Wordsworths, who portrayed romance as a cultural climax of beauty and pain, with an interplay of inner conflict. Whereas, Wang (1999) highlights that romantic/sublime has linked to the search for the authentic self and existential authenticity. This is emphasised further by ecologist Don Gayton (1996: 122) as he identifies that natural landscapes are 'fountains of spirituality'. He describes himself as a non-religious sceptic with no sympathy for new age ideas. Nonetheless, he states that natural landscapes 'attract the non-rational side of my human nature and give me leave for spirituality'. This view is echoed by Tuan (2013: 11) - who describes how 'God is seen to be light', 'light is intellectual illumination or spiritual enlightenment' whereas 'darkness and death pervaded the house of god: literal darkness in the musty, cavernous crypt and figurative darkness in the monstrous gargoyles' (*ibid*, 12). This illustrates further that extremes in the environment, as highlighted by Burke, create

the sublime in the mind as romantic notions are strong and arguably remain in the memory as love and death are inextricably linked.

Contemporary observer, De Botton's (2002: 178) view is that sublime landscapes have a useful semi-religious role for mankind, 'Sublime landscapes, (and arguably space scapes) through their natural beauty, grandeur and power, retain a symbolic role in bringing us to accept without bitterness or lamentation the obstacles we cannot overcome and events we cannot make sense of'. However, debates related to natural beauty and the aesthetic qualities of a landscape are often contested (Officer, 2008; Roberts, 2012) resulting in the misinterpretation of what constitutes natural beauty. For some (Kant, 1764, cited in Crowther, 1989:19) the built environment has a natural beauty as it has 'purposefulness of thing'. The form, structure and purpose provide lines and angles not only in sight but touch, which are seen to be sublime by some as they are also sensory and aesthetically stimulating such as buildings and manmade objects such as telescopes. However, the roots of the sublime are also entwined within another state of mind that is beyond the quantifiable: the 'Liminal'.

#### 4.6.2 Liminal Space

The word liminal originates from the Latin '*limen*' which means threshold; it generally refers to something that is on a boundary of some kind (Shields, 1991:84). The concept of liminality was introduced in 1909 by the ethnologist Arnold van Gennep in his '*Les rites de passage*', however Van Gennep did not make clear from which Latin word he derived it. In his theory, liminality refers to a state of in betweenness during rites of passage. Such rites are accompanied by a territorial passage, such as crossing a threshold (Van Gennep, 1960:192). Within this study, the term liminality is used to encompass a range of behaviours that lie slightly outside of the norm for liminality, it is a concept which refers to feelings, or a state of being in between as created in headspace. As the liminal is exactly the transition moment when the person does not belong to their previous experience nor to their new status, group or lifestyle (Czarniawska and Mazza, 2003).

The liminal can be quite different from the sublime, which due to its eighteenth-century usage holds a more romantic and perhaps positive connotation as it is specifically associated with landscapes. The term liminal can be used in a broader range of contexts, such as particular social practices. Liminality is usually associated with a temporary and partial change to one's sense of identity and behaviour, but can also be used to describe places.

Shields' (1991: 84) notes that 'liminality represents liberation from the regimes of normative practices and performance codes of mundane life because of its interstitial nature'. Places come to be defined as liminal or marginal for a number of reasons. First, they may be situated in hard-to-reach

geographical locations, such as the Galloway Forest, they may be 'a site of unlawful social activities', and may exist on the 'periphery of cultural systems of space and carry an image, and stigma of their marginality' (Shields, 1991: 3). Shields (1991), uses Brighton Beach (a UK seaside resort) as an example to explore the notion of liminality and space. He argues that the geographical location of Brighton Beach is on 'the edge of the British Isles, rendering it geographically marginal' (Shields, 1991). Brighton Beach is known as a zone which is appropriate for specific behaviours and interactions outside of the norms of everyday life. Its liminal status came from its 'shifting nature between high and low tide', the 'absence of private property' and its 'unterritorialised status' (Shields, 1991: 84). Brighton beach, as a liminal place, also emerged from its transitioning nature from a health resort to a space of 'dirty weekends'. People travelled to Brighton Beach to escape the routines of everyday life and to 'let loose' (Shields, 1991, 84). Although Shields' work is specifically related to a seaside resort it illustrates that when tourist spaces are geographically marginal they take the tourist further away from the everyday and thus create a sense of being in-between. Cosmic space, it is argued here, is even further away from the everyday, it is beyond the horizon, beyond the reach of many human beings, as few get the chance to travel to outer space when escaping the everyday. Therefore, it is not the place that engenders liminal experiences – but rather the experience of what lies above. Thus, a distinction can be drawn between astral liminality and other tourism-based experiences.

#### 4.7 Tourism Space

In escaping from everyday life to unfamiliar or in-between spaces, the majority of tourists set out on a journey to discover the landscape whether that be astronomical or terrestrial. 'When landscape (in this context) refers to the surface of the Earth, or part thereof, and thus to the chosen field of geographical enquiry, it incorporates far more than merely the visual and functional of natural and human phenomena which the discipline can identify, classify, map and analyse' (Cosgrove, 1984:13), thus illustrating that landscape's may be physically constructed and rendered apparent by social interpretation. The implications are that the physical landscape the tourist wants to experience, represents more than the aggregate scenery.

Arguably, the allocation of meaning associated with landscape, in the eyes of the tourist, is dependent upon the individuals' experience of that landscape. For example, the cityscape can vary in meaning dependent upon individual preferences and values that exist during interaction which are based on the interpretation of the built surroundings. Lukermann, (1964:168) asserts that geography is knowledge of the World as it exists in place, denoting 'knowledge of place as a simple fact of experience'. When there is no term of reference to place the experience becomes luminal, for

example, the cosmos as seen from the Dark Sky Park, for observing the cosmos is a means of being an ambulatory time traveller.

As experience can be based upon tangible and/or intangible relationships, tourism spaces are likely to be designed dynamically. Societal, cultural and symbolic considerations are particularly important when associated with geographical spaces, as it is said that they characterise a way of seeing the world (Cosgrove, 1984; Relph, 1976; Mullins, 1991; Tuan, 1998). This is particularly poignant in rural environments where the growth of a visitor economy is dependent on harmony with local communities and where culture and symbolism may be the motivating factor to visit a particular destination, even if the destination may simply be an enabler to participate in another activity such as stargazing. For example, the following Figure 4.1 represents how Tourism Scotland perceive their strategic growth by 2020 (Visit Scotland, 2013).

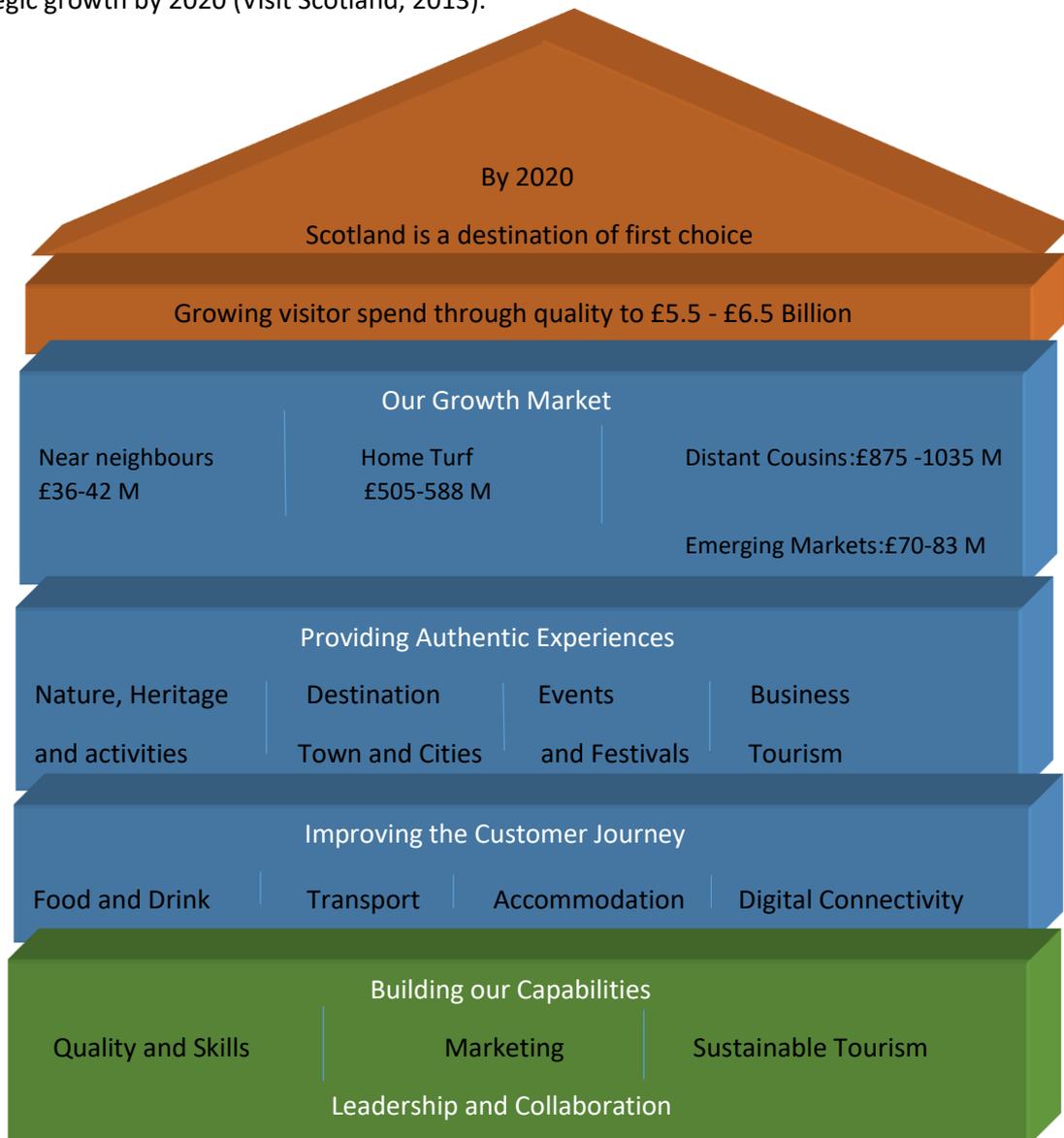


Figure 4.1 Tourism Scotland: Strategic Growth

In terms of space usage in Scotland, the emphasis is placed on authentic experiences to attract tourists, as this type of experience has been identified as 'having growth potential' by Visit Scotland (2013:NP). Given the limited infrastructure of rural south Scotland, it is expected that authenticity will, in part, take the form of themed towns and Dark Sky designation. Three towns were chosen to have a specific brand identity, Wigtown, the 'Book Town'; Kirkcubright, the 'Artist Town'; and Castle Douglas, the 'Food Town' (Macleod, 2009). This type of branding relies on a mix of both tangible and intangible values that appeal to the visitor's expectation of the 'clear, green, unspoilt environment which has natural products, dramatic scenery, romantic heritage, different culture and friendly people' (Seaton and Hay, 1998: 134). However, creating themes has obvious limitations, themes will only attract those who have an interest in that area, i.e. if Wigtown is a book town, and a visitor has limited, or no interest, in literature then why would they visit Wigtown?

In relation to creating the authentic, as outlined in the Tourism Scotland: Strategic Growth figure 4.1 above, it can be argued that Dark Sky Park in Dumfries and Galloway is also an attempt to represent an authentic tourist space whereby stargazing can be experienced in a truly dark place, particularly as it was the first Dark Sky Park to be designated in 2009. In conjunction with this unique status, is the notion that woodlands are often hard-to-reach geographical locations with limited infrastructure. This may have appealed to tourists as it can be argued that authenticity requires a degree of exclusion (Buller, 2004; Carr, 2004; Chang, 2006; Fodness, 1990) and liminality. There is also the element of unreliable weather which creates a barrier to participation in certain activities such as stargazing, as cloud cover obscures the cosmos and makes the expectation of seeing the stars un-predictable as it is a natural phenomenon. A further consideration is the belief that the forest is, or can be a site of unlawful social activities, a place to fear. This is deeply embedded in cultural myth and is fed by media stories such as 'Body Found in Woodland' headlines in national newspapers. However, this may be beneficial, from the point of view of adding meaning to space, as the deep sensory experiences of fear may arguably produce meaning, sublime or otherwise. For example, a tourist who eats a scorpion for the first time: they observe, they taste and then consume, they then feel satisfied by the experience of taking a risk (Andersson *et al.*, 2014; Bell, 2005; Bell, 2010).

#### 4.7.1 Tourism Space Attachment

Notwithstanding, when considering attachment to tourism spaces, the urban, and rural environment it is particularly significant that meanings emerge from experiences, situations and relationships which form attachment. Person-to-place bonds evolve through emotional connection, meaning and understanding of a specific space, place and/or feature(s). These connections can result from childhood experiences which create a person-place bond that evolves due to a specific memory

(Sebba, 1991; Tuan, 1980). For example, if a person lives in one place during childhood the attachments created in that place are often stronger than memories and experience formed within new environments in later life (Morgan, 2009). These memories are created as a result of emotional or symbolic meanings assigned by the individual. As such, the physical landscape (space) or the place becomes part of the person's identity (Proshansky *et al.*, 1983; Warzecha, and Lime, 2001). An extreme example of this would be the Eco-Warrior who holds radical environmental views and will, on occasion, defend the environment at all cost. Green spaces have been identified as places which encourage individuals to actively protect and engage in pro-environmental behaviour as a bond to nature can be deep (Vaske and Kobrin, 2001).

Tuan (1974; 1977:14) defines place attachment as 'a space that has been given meaning through knowing and experiencing the place'. Tuan used the term, 'topophilia', to describe an affectionate bond between people and places, which he believes contributed to the formation of values. However, 'topophilia' was a term coined by W.H. Auden in 1948, who introduced the concept in John Betjeman's poetry book 'Slick but not streamlined' (cited in Ogunseitan, 2005:145). 'Topophilia was seen as a strong sense of place, which often becomes mixed with the sense of cultural identity among certain peoples and a love of certain aspects of such a place' (Tuan, 1974).

Giuliani and Feldman (1993) identified that place attachment is understood to be developed over time as a bond takes time to be created. Giuliani, (2003) also recognised that when attachment to place grows, we start to identify ourselves with these places, both on a larger scale (country, city) and at a smaller scale, i.e. community, neighbourhood, homes, rooms.

The converse is also true: in Georgian and Victorian eras it was evident that places are also influenced by people's identities as people personalise their homes with decorations, so that their houses and gardens reflect and communicate who they are to a wider social community just as clothing and the way people speak do (Relph, 1976). But it is the influence place has on identity that can be seen as a result of a holistic interaction between people and their physical environment that is focused upon here because, people affect places – built or natural, and places influence how people see themselves for example, amateur, professional, enjoyment seekers. The extent of the affect that place has on identity is complex for as Giuliani (2003) stressed, the difficulty of deciding exactly when place attachment becomes strong enough to be defined as an aspect of identity or "place-identity" is not clear.

Although Harvard Biologist, Edward Wilson would disagree, as he explains 'attachment is a deep connection with nature that is ingrained within us all' (cited in Johnson, 1994). Place attachment is more likely to be related to a cultural infinity, part of a person's genetic make-up.

#### 4.8 Place on Earth

The word place does not sound like a typical research term, but instead sounds more philosophic or poetic (Speller, 2000): 'I visited many places, some of them quite exotic and far away, but I always returned to myself' (Dejan Stojanovic, ND). Although this is from a poem, the reader could observe that 'myself' is also a place and thus wherever the person is in place, their being is place bound.

To define the concept of place Relph (1976:2) theorises that 'places in existential space can be understood as centres of meaning or focuses of intention and purpose'. Thus, the essence of place lies in 'unselfconscious intentionality' as 'places are centres of human existence' (Relph, 1976:43). As a humanistic geographer, Relph (*ibid*) perceives 'place plays an integral role in human experience and existence'. However, the word place remains dimensionless; it can apply to any scale, from an individual home, to any part of the globe; for example, provinces and countries are places (May, 1970:210). Place, denotes human and physical environments combined, yet when a place is not part of Earth, but the Universe, does it have the same meaning? It can be argued that place is distinguishable from the concept of outer space as outer space is perceived as space until it is bestowed identity and meaning. For example, through the naming of objects within space, such as the Moon, the Sun, Mars, etc. identity is bestowed. Images from starlight provide a visual frame of reference as they show structure or a recognisable feature such as a creator. These objects then have a meaning to the observer for example: when a person looks at the Sun they know, through their terms of reference, that the Sun keeps the Earth warm, they are taught in school that the Sun can be beneficial to life but that it can also be harmful if they are exposed to its rays for too long, even so the same people may view the sun as necessary for a good holiday as they search for a sun tan. This may be as a result of marketing images in magazines which depict people having fun on a beach in the sun, in fact finding a marketing image of a holiday in the rain would probably prove to be impossible. Another possible reason could be to do with the memory of having fun in the sun with family and/or friends.

The importance of memory and memorable experience in place is well recognised in academic literature (Roediger, Dudai, and Fitzpatrick, 2007: Tung, and Ritchie, 2011). However, the original experience often differs to the reconstruction of a person's memory. Aho (2001:34) illustrates that the formation of experience has a time dimension, so immediate recall of a destination is not always reliable in the long term. Larsen (2007:14) clarifies further by explaining how a remembered

experience may in fact be 'superior to an original experience'. This may be a result of the activation of sensory arousal, which is said by Mather and Sutherland (2011:128) to be essential for long-term memory, and arguably highly important for place attachment and sensing place along with the potential impact of nostalgia and wellbeing.

#### 4.8.1 Tourism Place Attachment

So far it has been argued that place attachment is usually considered to express a bond between place and people. The bond is subjective, as each individual has a sensory or emotional bond to the space or place they experience, which in some way can be said to create identity and may indeed form place attachment dependence. However, Tuan (1977) makes the argument that place attachment is also connected to the length of time that a person is associated with a place. Smaldone (2006) stresses the difference between attachment and what is probably experienced more by tourist attraction. Attraction can be an almost instantaneous appreciation of a particular place, whereas attachment takes longer to develop. Giuliani and Feldman, (1993:270) found that bonding with place is a temporal activity, usually emergent over time and often related to past experiences. Manzo's study (2005:82) supports this view as he found that 'places of importance have been shown to act as bridges to the past supporting the idea of continuity over the life-path'. Significantly this gives the strength of the emotional connection to place and related activities at a location a stronger meaning to a tourist or visitor. As a result, it is argued that attachment to place increases in intensity with positive evaluations of setting and experiences (Gross and Brown, 2008), leading to a dynamic process of identity development. Typically, it appears that attraction will develop into attachment over a period of some years, as discussed next. At best, a tourist will remain in a place for a limited period of time, usually two weeks, which is not enough time, according to Tuan (1977) and Smaldone (2006), to develop a bond or attachment. As yet, it is unknown if stargazing attachment is also time bound, or if the stimulation of the senses can create the bond instantaneously.

#### 4.9 Reflections on Space and Place

As suggested during the introduction of this chapter, the transition of space, place and time from one use to another can be superimposed on the practice of psychogeographical research. The interrogation of space meaning in relation to astronomy and astrology has highlighted that, as a tourism pursuit, astro tourism has the potential to create strong bonds of attachment. Whereby, attachment denotes the emotional engagement with space and place. For example, the bond in relations to topographical features, such as; the forest, monuments, landscape, astronomy, astrology; along with the interplay with people. However, it is also argued that that the sense of connectedness

to space, experienced by some astro tourists, may be associated with their beliefs, spirituality or relationship with the past which in turn renders place an enabler to observe space.

*The idea of praxis, as it relates to astro tourism, space, place and time, is that there is a merging between theory and landscape experience. Consequentially, I feel that at times my focus has been too broad, in my attempt to set the scene many concepts have emerged, all of which have the possibility to shed light on the experience of the astro tourist.*

In the next chapter Experiencing Space from Place is explored to create an understanding of how scape literature can be linked to the five human senses as they have the potential to create an extraordinary richness of topographic engagement with the space, from place.

## Chapter Five

### 5.0 Experiencing Space in Place

#### 5.1 Introduction

This chapter acknowledges the traditional view (presented briefly in chapter 3) that tourists know place through their entanglement with it, for to 'be' is quite simply to 'be in place' (Casey, 1993:13). This chapter considers that not all places have the same meaning to tourists, particularly those that are dark, where the landscape is invisible resulting in spacescapes becoming the dominant feature. The sensory nature of being in a nocturnal environment has something more to offer, simply put, the other, what that is, is different to each individual person who experiences it, as it is the psychogeographical connection that humans have with nature that illuminates the other. As a consequence human existence can be defined by relationships with place, space and people.

This chapter commences with the psychological link that humans have to place, on both Earth and to the cosmos. It highlights that given the various ontological positions that have been taken in relation to place research, and the vast amounts of information on place, theorists are still not necessarily able to grasp place. The world of the astro tourist goes beyond the horizon into the cosmos and places that have yet to be fully explored. It goes on to outline that, as with any relationship, the intensity of feelings towards place is dependent upon attachment (as discussed in chapter 4), identity, dependence, bonding and a sense of, with the latter being of particular relevance to this chapter (Stedman, 2003). For it is argued throughout that to experience space requires a place that not only meets the environmental conditions but also creates an atmosphere that fulfils the senses.

The later section of this chapter reveals that the 'sensing' of place has the potential to allow the tourists to explore their experiences internally whilst experiencing the physicality of the destination. Both physical and psychological experiences can create bonds within various environments, thus illustrating how senses are essential to creating profound connections to destinations whether that be terrestrial or astronomical. Nevertheless, sensing place is a comprehensive concept as it relates to experiencing space at place in such a way that meaning is attached. To feel something requires a sensory cue, therefore an example would be the smell of the ocean, or the sound of birds. Due to the sensory and emotional elements used in descriptions, both terms tend to be used in literature interchangeably. Nevertheless, by drawing a distinction it is possible to understand the meaning the senses have on an experience, highlighting that place is a geographical loci for astro tourism activities, however it may not be the final destination in the astro tourist journey.

Place is a dynamic and nuanced environment that is associated with its ability to attract visitors, businesses and residents to an area. Being in place relates to a holistic approach to the sensing of place, the environment, the aesthetics, the ambiance, the branding of the commodified products and the marketing of a destination. At the heart of these inter-related ways of experiencing place is the relative importance of the conscious and unconscious experience, and more importantly, an understanding of engagement with place in creating an experience. Having said that, to be in place is not necessarily to be place bound, in fact it is argued that place is multi-dimensional, with regards to the astro tourist, for being in place is relative to time and space.

## 5.2 The Ontological Position of Place

When considering the ontological position of place to this study, it is important to illustrate that interdisciplinary approaches play a predominant role in tourism literature: Human Geography; Environmental Social Psychology; Social Anthropology:

The Human Geographers' movement of the 1970s and 80s draws on the philosophical tradition of phenomenology which approaches a sense of place, through the experience of tourists, by asserting that landscapes and buildings do not exist completely externally to the way people use and enjoy them (Creswell, 2007: 59). This approach allows the individual to describe the importance of place to them, rather than through direction or questioning, this yields rich data on feelings, beliefs and the environment. When considering the research approach taken for this research, this way of gaining data presents some positive advantages and will be considered.

Environmental Social Psychologists, on the other hand, although influenced by Human Geographers, have turned the importance of place into indicators which can be explored in quantitative terms, and thus create positivist knowledge for practical application by organisations (Jacobs, 2011). For example, the Forestry Commission in Scotland has used such data to gain designation of Dark Sky Park in 2009. Designation required the application of three levels of analysis:

- 1 The management of social and personal space, issues related to crowding and privacy, and complex everyday behaviour such as working, learning, living in a community.
- 2 A fundamental psychological process, such as perception of the environment, spatial cognition, human experience and behaviour along with personality
- 3 Human interactions with nature and the role of psychology in climate change. (Gifford, 2008)

Although the environmental social aspects of designation would have been required to secure funding for the bid, another significant requirement is the level of darkness which meets IDA requirements (discussed earlier in the case study in Chapter 2). This approach, although necessary from a fact-finding point of view, would not yield the information necessary to gain an understanding of the astro tourist.

Social Anthropologists explore a sense of place through the phenomenology approach which can be viewed as hermeneutic, as it requires a thick description to be recorded for the aim is to understand the individual visitor's behaviour in context (Willis, 2007:104). Due to scepticism of statistical data and measurement, the Social Anthropologists seek proximity to the visitor as they hang around, observe and record individual behaviour and comments, the aim being to clarify meanings, interpret experiences in place and typically record the unnoticed beneath a level of conscious awareness which gets to the heart of sensing. This approach has the potential to be extremely influential as it can aid understanding, for the researcher can get up close to the astro tourist, for being in the dark makes hanging around less intrusive.

The differences represented by the Human Geographers, Environmental Social Psychologists and Social Anthropologists demonstrate the approaches to a sense of place that permeate throughout tourism literature by illustrating the philosophical question about what kind of knowledge is produced and how the social experience is represented. Human Geographers are concerned with the imposition of categories, such as typologies or taxonomies, with or without consent of those being observed or participating, and the consciousness or unconsciousness of the visitor's experience of place. In contrast Environmental Social Psychologists place emphasis on the size of the sample and the development of surveys. Careful consideration is given to the variable usability of the data. Social Anthropologists criticise Environmental Social Psychologists' approach as they believe that statistical data diminishes the complexity of everyday life to a dataset, everyday life should be observed and recorded without inference. Thus, illustrating that although each have something to offer to this study none offer the emotional connection to the environment that is believed to be required to understand the astro tourist.

### **5.2.1 Astro tourism and Psychogeography**

As previously discussed, this study takes a less trodden path towards place and sense of place, through the lens of psychogeography as this approach blends the fields of psychology and geography which Debord (1955:36) states is 'the study of the precise laws and specific effects of the geographical environment, consciously organised or not, on the emotions and behaviour of individuals'. Debord, was a critical theorist whose research focused upon the degradation of human life and commodity

fetishism. His view of how the spectacle, is a confluence between advanced capitalism and mass media, and how social relationships between people are mediated by images. This is particularly relevant to astro tourism as interest in the night sky is on the increase and it is argued, is partly as a result of media attention. The perception also being that this group could be responding to the mass marketing of cosmic events, they could be from an older generation with free time and money to spend, the true consumers of capitalism who want to display wealth and knowledge via scientific pursuits. For them, it can be argued, that spectacle is a social relation among people and mediated by images' (Debord, 1995: 4).

Debord (1992:35) clarifies that 'the spectacle cannot be understood as a mere visual excess produced by mass-media technologies. It is a worldview that has actually been materialised, a view of a world that has become objective' and therefore is unique to the individual. Psychogeography encourages individuals to buck the rut, to follow some new logic that lets them experience the landscape anew, that forces them to truly see what otherwise is ignored for chance and randomness are exciting. This is quintessential when studying the astro tourist as the activity of stargazing is to view the spectacle, for it is argued that mankind has an enduring fascination with the night sky and its ability to dazzle, bewitch and beguile.

Images of space (cosmic) and stories of place can create an allure, as there is a yearning by mankind to discover and explore. For example, in the 15<sup>th</sup> and 16<sup>th</sup> centuries, transatlantic voyages by Christopher Columbus were made by ships which carried the inscription 'following the light of the sun, we left the Old World' (Jarvis and Dix, 2011: 252). In discovering the New World (the Americas) Columbus was principally a seagoing entrepreneur, a celebrity of his time with royal endorsement, and a considerable influence on future explorers. Similarly, during the 20<sup>th</sup> and in the 21<sup>st</sup> century NASA astronauts sought to explore cosmic space, as they followed the light of the planets and the stars into new worlds in search of pastures new and an alternative home for mankind via space exploration. Humanities interest in outer space has been enduring, as discussed earlier, but NASA believes that mankind has the desire to be bolder and explore the solar system (NASA, 2016). In searching cosmic space mankind is taken into the unknown, similar to the view of psychogeography.

Hart (2004:10) contends that psychogeography is 'a slightly stuffy term that's been applied to a whole toy box full of playful, inventive strategies for exploring cities. Psychogeography includes just about anything that takes pedestrians off their predictable paths and jolts them into a new awareness of the (urban) landscape'. There is a vagueness to this relevant concept of psychogeography with regards to the impact of awareness, which consists merely from walking and observing, an activity that arguably

the astro tourist does before stopping and gazing. As the astro tourists' gaze wanders from Earth to the horizon and beyond they are likely to take in significant images and feelings.

Cresswell (2004:18), argues that 'space was not embodied but empty and this empty space could then be used to develop a kind of spatial mathematics – a geometry' as seen in scientific studies such as astronomy. Relph's (1976:6) seminal study of space and place dismisses the idea that space is a void, to argue space 'provides the context for places'. For example, in the void of space sits Earth, the Moon and the Sun, plus other planets and moons, to provide greater context to our place in the wider Universe. This can be linked to the work of Cresswell (2004:21) who suggests a continuum 'which has place at one end, and space at the other, alongside this continuum is linked experience to abstraction'. Experiences are usually associated with a particular place and time and recorded in photographs giving the experience and place meaning, particularly on Earth. However, Agnew (2011) takes the view that we cannot have place without space as we use the terms interchangeably in everyday language, but this is not the case when space is related to the cosmos which has quite a distinct meaning but limited actual experience. Notwithstanding, in tourism literature the inter-changeability of the words space and place are evident in so much as there is more emphasis given to place, as place is packaged, marketed, sold, and visually recorded whilst space appears to be too ambiguous to be packaged thus it is largely overlooked, until now (as discussed in chapter three, space has been commodified for the astro tourist).

The vast amount of information related to place does not necessarily mean a better grasp on the world; it can mean the opposite as it highlights the unknown. An ability to gaze everywhere has destabilised, rather than cemented the idea of the quantifiable world, it is as though, it is truly forbidden to gaze at place as it merges into space without asking why and gaining answers. However, in a world filled with possibilities and social mobility, mankind needs a constant, it is argued here that that constant is the sky as it has been a guiding influence in many societies since recorded time and continues to inspire, inform and intrigue mankind. An increased interest in stargazing has brought about new possibilities for tourists as they consider which destination to choose to visit and experience.

### 5.3 The Tourist Experience of Place

Research into the tourist experience has been developed since the 1960s when Clawson (1963) reviewed the recreation experiences; Boorstin (1964) considered the growth of pseudo-events and the role of authentic experiences. In the 1970s Smith (1977) focussed on the experience of guest interactions with hosts. Later Iso-Ahola's (1980, 1982) studies focused on three experience perspectives: conceptual, post-hoc satisfaction, and indirect. Subsequently, in the 1990s, Urry (1990) examined the role of authenticity in relation to the tourist experience and the use of the gaze as a

lens. It wasn't until a new millennium that Ryan (2000) explicitly addressed the tourist experience with conceptual links to motivation theories, since then research into experience has been prolific as new niche markets have opened up.

In considering the tourist experience, within the context of the niche market of natural tourism and the sub niche of astro tourism, it is necessary to consider the role of the senses on the holistic experience. On one hand, the natural environment and astro tourism consist of commodified products and services which generate multiple experiences in their consumption (Quan and Wang, 2004). On the other hand, a psychological and physical body of experience related to place, may exist that is capable of generating a multi-sensory experience (Rodaway, 1994; Taun, 1977). Nevertheless, the lack of studies related to astro tourism reveals the need to develop an empirical understanding which can provide a holistic view of experiencing scapes and the five sense which renders this research necessary.

### 5.3.1 Experiencing Scapes: Land and Space

The focus upon scapes that individuals create for themselves are a key feature of this chapter as links are drawn with Debord (1955) in relation to Psychogeography, and the precise laws and specific effects of geographical environments, whether consciously organised or not, on the emotions and behaviour of individuals. This is in tandem with Behavioural Geography which Pickles (1988:39) acknowledges is 'experience which is shared with other people, in both the past and present', which form meaningful encounters. Thus, there is an acknowledgement that the individual experience paradigm may be both personal and/or shared with others. Although, for it to be profound and meaningful, it will be argued that individuals need to create a 'sense of' and that this is created by a multi-sensory experience. Psychogeography focuses on 'how different places make us feel and behave' (Keiller, 2010:7). As feelings placed in time and space utilises the senses, creating atmosphere and mood along with unleashing the subconscious imagination required in the appreciation of distant untouchable forces. In doing so, the dichotomy between space and (outer) space is realised, for as it is argued here that by looking up we see Earth differently. This connection between Earth and space is partially explained in the study of astro-geography as the importance of astrology and birth are arguably significant in attachment to space, whilst astronomy defines (maps) space not only as Earth bound but cosmic/astro space, i.e. space beyond the horizon (as discussed previously in chapter 4).

Experiencing a tourist destination, for whatever reason, entails an 'amalgam of individual products and experience opportunities' (Murphy, Pritchard and Smith, 2000:44). This is referred to by Dwyer *et al.*, (2004:98) as the 'total experience', it is the result of a variety of stakeholders each of whom contribute to the visitor experience. Although a fuzzy notion, the complication associated with how

motivation is created, is added to by the use of the senses that a tourist experiences when making sense of scapes. Traditionally speaking, much scape-based literature started with landscape in some way.

Literature related to landscape denotes two meanings: the first is literal, where landscape is understood as a set of natural and anthropogenic features characteristic of a given area. In other words, landscape is everything we see when looking at an area, i.e. a part of the earth as seen from a given position (Oxford Dictionary, 2007). According to Forman (1987), one of the founders of the discipline of landscape ecology, a landscape may be defined as: ' . . . a heterogeneous land area composed of a cluster of interacting ecosystems that is repeated in similar form throughout'. Thus, in a forest landscape the cluster might include spruce-fir woods, stream corridor, bog, rock outcrop, and aspen stand. This definition also indicates that the ecosystems in the cluster are interacting. Thus, animals, plants, water, mineral nutrients and energy are flowing from one ecosystem to another in a cluster. Each cluster is both a source and an agent for different moving objects. The second is metaphorical, where landscape is defined as a set of factors creating a given phenomenon, e.g. the political situation forms a political landscape, cultural life – cultural landscape, etc. (Sell, *et al.*, 1984). Both meanings illustrate the fundamental structural elements and their inter-relationships as they have the potential to illuminate the landscape change in relation to activities and diversity.

Mavric and Urry's (2009: 648) describe scapes as being 'complex, enduring, predictable networks of machines, technologies, organizations, texts and actors that constitute various interconnected nodes along which flows can be enjoyed'. One significant category of scape-based forms of literature is that which focuses on tourism activities. The concept of tourism-scapes requires a cross disciplinary discourse in relation to the ways in which tourism is reshaping the urban and rural scenes, affecting social life, penetrating economic activities and affecting the agenda of decision makers both public and private (Van der Duim, 2007). As a consequence of this diversity there has been an increase in the range of niche scape forms, for example thrill-scape (Gyimothy, 2009) hospitality-scape (Bell, 2009), myth-scape (Bell, 2003), sport-scape (Frohlick, 2003), death-scape (Maddrell and Sidway, 2010) and nostalgia-scape (Gyimothy, 2005), each of which represent a specialisation or compartmentalisation of the basic scape. Astro tourism and spacescapes would add an emerging interest as they could be classified as those that can be seen by either the naked eye or viewing equipment such as binoculars or a telescope. The object of a spacescape gaze would then be the starfield above, the moon, nebula, planets, zodiac and orbiting satellites.

### 5.3.2 Place Identity

Given that scapes are 'complex, enduring, predictable networks of machines, technologies, organizations, texts and actors that constitute various interconnected nodes along which flows can be enjoyed' they represent and identify what can be associated with place (Mavric and Urry's, 2009: 648). When reviewing the interdisciplinary literature related to identity, it is apparent that each discipline has its own definition used in accordance with their own traditions. Even within the same discipline, identity may be seen as a term with indistinct borders (Breakwell, 1986), for example, psychodynamic theories, focus on unconscious conflicts and motivation, inferiority feelings, defence mechanisms, and psychosocial crisis; Cognitive theories, focus on how self-relevant information is stored, structured and retrieved (Leary and Tangney, 2003); Social learning theories focus on agency, self-efficacy, locus of control, and self-regulation; similarly, humanistic/existential theories, focus on self-actualization, personal constructs, meaning, responsibility, and personal myths (McMartin, 1995); Whilst interpersonal aspects of identity focus on the social and cultural influence on how we see ourselves (Leary and Tangney, 2003). As there are many common features associated with each of these theories the boundaries blur, notwithstanding the humanistic theories with a focus on meaning and personal construct prevail and provide another possible direction in relation to the astro tourist.

By way of application to tourism literature, it is clear that place identity, although also a versatile concept, has been applied to many psychological theories of human environment (Kaminoff, 1983). Smaldone (2006:45) argues that place identity can be symbolic of the impact and intensity of involvement with place. However, identity can be tied up with more than one place, including places that are travelled to, but there needs to be a powerful association with each place that reinforces our sense of self (Suvantola, 2002). It is rare that such an attachment can be made to place when visiting, as the stay may be short in duration, unless there is an emotional response to place.

*I felt an emotional response when visiting an observatory, Jodrell Bank (located in rural Northwest England) as a child. The memory of the big telescopes and the wide-open spaces spring to mind. Holding my dad's hand (he has since passed away) whilst we walked around the harsh manmade structure to look at the sky (it was daylight), there where clouds, and the moon was slowly rising. As we walked our footsteps echoed, and I remember feeling scared by the sounds but excited by looking through the smaller telescopes that were available for public use. The response I felt to that place was strong, for when my own children were old enough, my husband and I took them.*

Place identity may be portrayed as the individual's incorporation of place into the larger concept of self. Proshansky, Fabian and Kaminoff, (1983:60), defined it as a 'potpourri of memories, conceptions,

interpretations, ideas, and related feelings about specific physical settings, as well as types of settings'. Place identity, it can be argued, is a substructure of self-identity, much like gender or social class it is comprised of perceptions and comprehensions regarding the environment. These perceptions and conceptions can be organized into two types of clusters; one type consists of memories, thoughts, values and settings. These tend to be the places people live and are associated with the roles they undertake in life such as mother, wife, cook, career etc. roles which create a mundane everyday identity. The second type consists of the relationship among different settings all of which can create a new identity which can be potentially meaningful.

New identity from what is observed and consumed can be linked to McDonaldisation and cultural homogenisation. For example, a tourist's view of a destination before they travel for pleasure, they then enjoy the setting and experience so much that they associate self-identity to positive feelings and images (Proshansky and Fabian, 1987). This is done in much the same way as the 'horns' and 'halo' effect, which create positive and negative bias to actions and beliefs, just as experiences of new places can have a positive or a negative influence which affect the chances of re-visit.

If television programming is any indication of a positive influence, astronomy is increasingly becoming more prominent, and profitable, in popular culture as it is seen to be a positive, pleasurable activity, associated with scientific knowledge and exploration. In 1969, 600 million people - one fifth of the world's population - watched Neil Armstrong take the first step on the Moon on July 20<sup>th</sup>. By winning the space race with the Soviet Union, Apollo had given a boost to the nation's prestige in the world and, for many Americans, a heightened a sense of national pride and inspired identity as subsequent generations have pursued careers in science and engineering (Chaikin, ND). Such giant steps for mankind have fuelled the imagination of generations who see off world travel as a possibility.

As a place is never merely a singular point but part of a larger whole that is being felt through experiences and meaningful events, as the literature above suggests, other factors such as inspirational figures can provide a positive inspiration in conjunction with place identity. Consequently, place identity can be invoked by famous people who are associated with place, this is known as 'personification', whereby a figure is intended to represent an abstract quality embodiment (Bernardo and Palma-Oliveira, 2013: 167-179). For example, the ancient Greeks believed that every place has its own Tyche or consciousness of place, given a form in a god or goddess of fortune (Peres, 2007) i.e. Zeus, God of Sky and Thunder.

Most ancient cultures believed they saw pictures in the stars of their gods. Artefacts dating back approximately 6000 years found in the Euphrates River valley suggest that the ancients observing the

night sky saw the lion, the bull, and the scorpion in the star (Harmansah, ND), undoubtedly these are known now as the constellations. However, the night sky is now seen as a compendium of images from a number of different societies such as the ancient Greek, Roman and Chinese - all of whom have their own mythological chart each providing place identity to space.

Initially the constellations were not associated with any particular myth, god or hero, they were simply objects or animals which ancestors believed to be represented by the stars. By the 5<sup>th</sup> century B.C. most of the constellations had become associated with myths (Bell, ND). The fusion between astronomy and mythology is now so complete in modern culture that no further distinction is made between them - they are what they are, for the constellations are, a way of life shared by members of many communities i.e. the Dasein, as viewed by Heidegger in 'Being in Time' (1927).

Commonly, symbols are associated with positive attributes that guide and protect. Referring back to the role of the Tyche of a city, it was believed that the Tyche was a presiding deity and focus of civic loyalty. However, the Tyche in later years became more tangible, as it was believed that the Tyche should be touched by common people. This was done, by impressing images of the Tyche onto coins or creating a focal point such as a status, just as we do today when we impress the image of the Queen of United Kingdom on coins, put images of Robert Burns on Scottish £5 notes and erect statues of famous figures such as Eric Morecambe on the Promenade at Morecambe (a British seaside resort in the north of England). These modernday Tyche personify the identity of a place and give it a sense of significance and meaning to locals and visitors alike, which then leads to place attachment. Another variable in attachment to place is dependence.

### 5.3.3 Place Dependence

Bacharach and Lawler (1980) believe that dependence (or interdependence) is an inherent feature of social life. Only parties operating in total isolation can stay independent. The notion of place dependence is associated with place attachment but relates more to the practical or useful aspects of place. According to Gross and Brown (2008:3) place dependence is seen as 'the functional attachment of a place', this may be particularly relevant to stargazing, as the Dark Sky park is a vehicle to the true destination i.e. the cosmos.

Stokols and Shumaker (1981) suggested that there are two factors that individuals and groups employ to determine place dependency. The first is quality of current place and the second is the relative quality of comparable alternatives. Generic place dependence suggests that an individual or group is attached to a particular category of places for functional reasons. An example of generic place dependence could be a star gazer who can only achieve his or her preferred goals and activities in a place that has little or no light pollution. In Skotlos and Shumaker's study, the value or satisfaction

derived from undertaking an activity or behavioural practice in a specific physical location establishes the degree of place dependency. Place dependent individuals can be attached to areas that they have never visited because the area may afford them a unique setting in which to achieve their goals. These places may be inspirational places to visit, often costly or hard to reach, such as Mount Everest for a mountaineer or Outerspace for an astronomer.

As place dependence can be associated with either a group or an individual, and tends to be activity related, it is therefore commonly associated with leisure interests. Each setting, for example, a Dark Sky Park or a Forest, will have specific characteristics that pull the visitor in. However, modern society, with its vast array of technology and the ability to observe leisure pursuits on television or mobile devices may be creating a generation of disembodiment or placelessness as dependency is arguably related to technology and not to place. It is evident from walking around the streets of a city or a park, that the environment does not have the same pull as a mobile phone. People appear to be far more dependent upon technology, as an addict is said to be dependent on drugs (Kirschner, 2013). A simple reality of any identified addiction is that some will want to break the habit - stargazing in an area where connectivity is poor or none existent may provide such a break.

#### 5.3.4 Placelessness

Outer space is dotted with specific places but as a destination it can be said to be placeless. Agnew (2011:5) argues that, the 'modern world has become increasingly placeless... as space is conquering place'. With the homogenisation of landscapes and the ability of modern society to travel the world, it is argued that there has been a destruction of meaning of place and consequently a weakening in the relationship people have towards place (Relph, 1976; Tuan, 1977; Altman and Low, 1992; Cresswell, 2004).

Core beliefs, traditions and community spirit appear to be devalued in modern society as mobility and the power of global communication has made the world a much smaller place. Home is no-longer within 15 miles of a person's birthplace it is wherever their desire takes them. In Durkheim's text 'Suicide' (1897) he introduces the 'Theory of a Good Society' within which there lays the concept of anomie. Anomie takes the view that man, unlike other species, is not satisfied when their biological needs are fulfilled. The more one has, the more one wants, since satisfaction received only stimulates needs it does not fulfil. However, anomie does not refer to a state of mind, but to a property of social structure. It characterises a condition in which individual desires are no longer regulated by common norms and where, as a consequence, individuals are left without moral guidance in the pursuit of their goals (Durkheim, 1897). This is not something new, since mankind first looked up at the sky and saw the stars, it is believed that a desire was fuelled to travel to them, as mankind asked the questions

why?, what? and how? (Newton and Teece, 1998). Parsamian (ND) observes that 'the cosmos is infinity'. Within the human mind 'there has to be limits, humans need to know what is it? How is it? But the universe is not limited, and we will never fully understand it.' (Ney, 2016: NP). Consequently, it is the diversity of place concepts which are likely to reflect the multidimensionality of the construct, which researchers have described in emotional, cognitive, and behavioural terms, each of which are related to the sense of (Altman and Low 1992).

#### 5.4 Sensing Place

Literature related to sensing place illustrates that the human senses can provide information on their surroundings that mediate everyday experiences, thus allowing individuals to make sense of the world (Rodaway, 1994). Human Geographers and Anthropologists claim that perception is corporeal as it involves interactions with the environment (place), in a specific time, and is a learned behaviour (cultural), (Classen, 1997; Rodaway, 1994; Taun, 1977). This implies the integration of mind and body and suggests that there is a sensory relationship between the body, mind and environment (Rodman, 1992; Taun 1977).

Stedman (2002:563) defines sense of place 'as a collection of symbolic meanings, attachment, and satisfaction with a spatial setting held by a group or individual. Stokowski (2002:369), reflecting on the nostalgia of place, views sense of place as 'an individual's ability to develop feelings of attachment to particular settings based on a combination of use, attentiveness and emotion' thus considering a temporal aspect to sense of place. Galliano and Loeffler (1999:43) refers to it as 'the perception people have of a physical area with which they interact, whether for a few minutes, or a lifetime, that gives that area special meaning to them, their community, or their culture'. In short, a sense of place has layers of meaning, each dependent upon the extent of feeling held by the individual.

Relph (1976) provides a distinction between seven different degrees of sensing place which relate to outsidership and insidership, both present ways of sensing a place which set a compelling argument, for Relph (*ibid*) identifies that feelings towards places vary. On the one extreme, there is 'alienation', 'homelessness', and 'not belonging' (Relph, 1976: 51). For this group, Tyche are beyond their reach, their focal points are based in modern society, they live suburban lives, they are unconnected with fame, power or prestige, and thus, are less likely to identify self with place, even when they can touch or see a visual imaginary. For Tyche may represent the ideal but may not represent 'insidership' due to factors such as age, social demographic, religion, sexuality or gender. In fact, sensing place may represent a gap in circumstances which brings feelings of dissatisfaction and anger with personal situation thus resulting in a sense of 'outsidership' and the defacing of statues of people, as these are potentially seen a more personal, than say an obelisk. Barker (1979:164) concurs that sensing place is

‘one of the most abstract and illusive concepts’ unique to individuals and cannot be easily created. On the other extreme, there is ‘belonging to a place and a deep and complete identity with a place’ (Relph, 1976:55). These deep senses of emotional significance to place or ‘love of place’ are referred to by Tuan (1974) as topophilia.

According to Yi-Fu Tuan (1974:126), ‘Topophilia is the affective bond between people and place or setting.’ These ties vary in intensity, subtlety, and mode of expression. Responses to the environment may be aesthetic, tactile, or emotional. It is also ‘the sentimental warmth which people have for a specific spot’ (Tuan, 1974:126). Tourism destinations are particular places that require visitors to like them, therefore they need the visitor to make profound topophilic connections. It is argued by Hay (1998) that a sense of place of local indigenous people is deeply rooted, whereas the tourist’s sense of place is rather superficial. This is due to the different residential status and different ancestral and cultural connections. Ogunseitani (2005) hypothesised that there are four domains which destinations might seek to achieve the creation of cacophony connections:

- Scene Diversity – A place ought to contain an assortment of distinctive scene highlights that are mixed together to offer visual and other tactile incitement.
- Tangible Coherence – Colours, smells, sounds, light, touch all should be considered and should be mixed in a consistent and satisfying way.
- Ecological Familiarity – Tourists going to a place need experiences that ground them and which make them feel good and safe, including significant identifiable items and spaces of protection.
- Psychological Challenges – Tourists should be assessed by the places that they visit, through differing multifaceted degrees of nature: secret places and desires, astonishment and invigoration.

(Ogunseitani, 2005)

In creating profound topophilic connections tourism destinations seek to sell an experience, which according to Pine and Gilmore (1999), can touch people better than products or services, as experiences are intangible and immaterial. But, can these created experiences truly produce the profound topophilic connections and sense of place? Is a sense of place created only at a specific spot/destination? Where is the destination? These questions, though profound, are similarly relevant to the special interest tourism market of astro tourism and will be explored in greater depth in chapter 6 where place may be seen as an ‘enabler’ to understanding the World and the Cosmos.

Arguably, an extraordinary richness exists between peoples' engagement with places, landscapes and, in particular, with open spatial settings of forests and woodlands. The psychogeographer's view illustrates this well, in rich descriptive text. For example, in *Hookland: Folklore, landscape and psychogeography*, the author (not named) describes 'how for me place is where the imagination begins, where stories live' (Channel View, ND). The author goes on to express how 'originally I come from Essex, a landscape rich with trees, carves a bone tattoo in you through stinging salt kisses and tides of mud.....you have walked through a whole English myth cycle of smuggler's tunnels, black dogs running corpse roads, royal ghosts, witchcraft and UFOs' (Channel View, ND). Many places try to create this sense by seeking out authentic or special interest tourism markets, as discussed earlier, as 'it is much easier to see the results of a sense of place in human behaviour than it is to define it in precise terms' (Lewis, 1979:28), particularly when the feelings relate to personal belief systems such as spirituality.

Sharpley and Jepson (2011:53) explore the concept of tourism as a spiritual journey within the rurality of the Lake District (England's largest national park) and state that 'experiencing nature in the Lake District invokes profound feelings that many participants of their focus group were eager to point out'. Tales of how they engaged both physically and emotionally on a deep level, with reference to nostalgic memories of childhood experiences quiet simply demonstrated Tuan's (1961) view of sentimental warmth as it is seen as essential to a sense of place and place attachment or topophilia.

So far, a deep sense of belonging and attachment to space and place has been outlined in this chapter and the subsequent one (Chapter 5), which attempts to explain mankind's need and desire to experience the physical landscape in order to make sense of the environment both on Earth and in space. These views are all products of rational and abstract thought, the next section relates, in more detail, to the senses. Porteous (1985) concurs, by devising the term 'sensescapes', he argued that similar to landscape, with its visual connotations, other senses can be spatially ordered or place related, such as smellscape, soundscape, tastescape, or the geography of touch (cited in Urry 1998, 2002). This is particularly relevant as a holistic approach to the five senses (sight, sound, touch, taste and smell) can develop an understanding of the tourist experience which may shed some light on stargazing at dark sky sites.

#### 5.4.1 Sight

It is rarely contested that sight remains the most significant sense of them all. Typically, the five human senses are well documented in consumer behaviour literature (Krishna, 2010) but are rarely explored in other disciplines. Looking through the lens of sensory marketing in the hospitality industry, strategies have been developed to provide a positive environmental experience e.g. the dark

restaurant experience which aims to deprive customers of the sense of vision in order to stimulate other senses. Thus, transforming the act of having a meal into a new sensory experience, where taste and sound are enhanced as the body tries to compensate for the lack of sight (Binkshorst and Dekker, 2009). Notwithstanding, this is an artificial setting as light is needed to see the food which you eat with your eyes, something which is deeply rooted in human evolution (Kawakami, cited in Pettit, 2017). Whereas, events held in the dark, where vision is naturally reduced and essential for stargazing, have the potential to awaken the brain as the light from the stars can stimulate neurons which trigger memory in the hippocampus, known for its role in learning and memory, especially when discriminating places (Dougherty, 2012). Although light has the power to stimulate it can also detract from the luminosity of the stars, as artificial light makes them less visible, resulting in light pollution, a topic which deserves far more attention but is beyond the scope of this research (see the IDA web site, this site provides hundreds of links to light pollution articles).

Much of what is visually known about outerspace is based upon scientific exploration via observation and scientific measurement. As humans are predominantly earth bound, very few have travelled beyond Earth's orbit therefore the naked eye provides a lens on the night sky. Before space travel was possible, telescopes were used to look at places within our solar system i.e. the Moon or Mars. Since the advent of space travel in 1957 when the Soviet Union sent the first artificial satellite into orbit images have been beamed back to Earth which are said to be asteroids and comets, black holes, dwarf planets and galaxies.

Images can create a physical reality pertaining to space, as they show distant places (see Figure 5.1: planets) each of which may be capable of supporting life, thus giving hope and feeding a belief that we are not alone (see Figure 5.2: we are not alone), as for many, seeing is believing.



Figure 5.1: Planets



Figure 5.2: We are not alone:

(We are not alone, ND)

Sceptics, on the other hand, ask questions related to seeing cosmic images, for example in relation to the Moon landings they asked are these images real? Did the Moon landing on July 20<sup>th</sup>1969 take place? Or, was it a set in a studio somewhere in America as depicted below? (See Figure 5.3: Hoax Moon Landing)

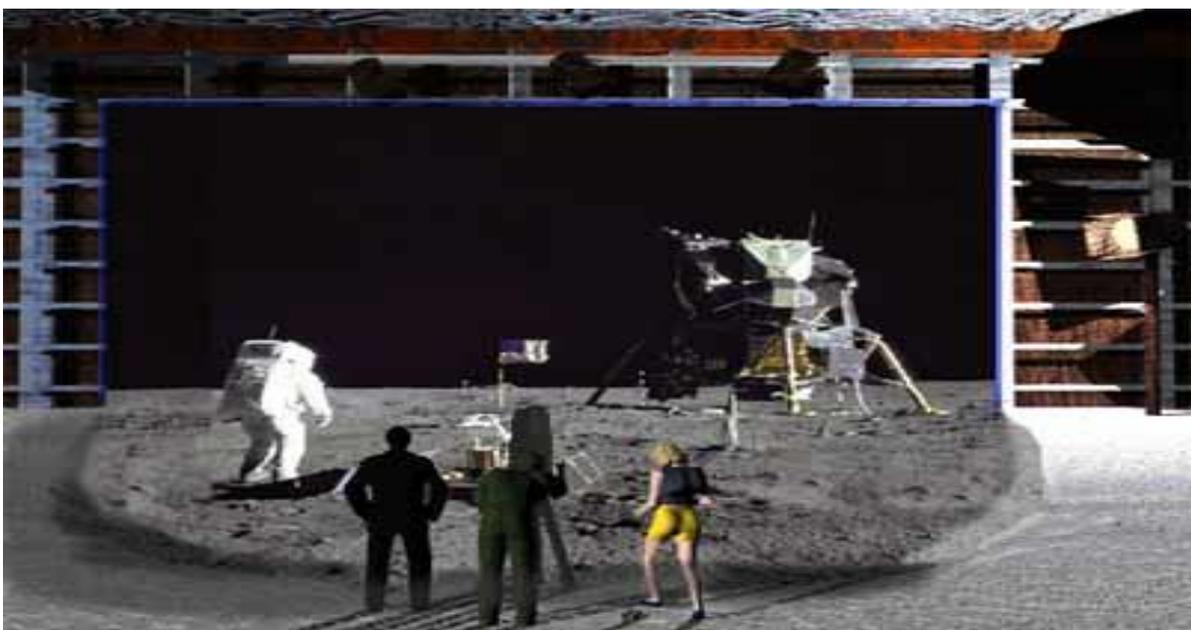


Figure 5.3: Hoax moon landing set

(Hoax Moon Landing, ND)

As sight is only one of the senses used to confirm the physical reality in these cases, it can be manipulated. This poses the question: if you have never been to the North Pole or the Grand Canyon how do you know that they exist? It is true to say that many people have now travelled to these places so word of mouth can add to the images produced but even if a place has never been visited in person or by someone else should its existence be questioned? Just because something can't be seen or measured, does it mean it does not exist? Do people star gaze so that they can seek proof of existence of other life forms, a higher being or just to see cosmic phenomena? Sell *et al.* (1984:75), would have us believe that 'experience is felt through all the senses (sight, hearing, smell, taste, and touch), and that place experience is in fact a total sensory experience' but place could be so distant, evasive, obstructed or existing in another time, in another dimension that it cannot be seen therefore senses fail and belief is required.

In this psychological orientated discussion, the concept of sense of place 'is too frequently seen as a free-floating phenomenon' (Pred, 1983:50). The terms employed are used very loosely, but senses which create meaning, such as the existence of a higher being, are arguably crucial for astro tourism. As participants will never touch, hear, feel or smell the Cosmos and places that exist in other galaxies, but they should not be ignored as a sense of other places is, for some, central to life. Life is not limited to that of human beings on Earth, as discussed earlier, animals, insects, birds, fish and other species should be considered, as it has been proven that other species use sight to navigate the stars. Robin Lockley, a Welsh ornithologist, spent 70 years studying and writing about the navigation of birds and found that some birds look to the stars for directions. No matter how he rotated the projections of stars inside a planetarium, the warblers (birds) all turned to face toward the stars in the South, even if he put the Southern stars on the actual North side of the planetarium. So, he knew the warblers must be actually looking at the stars and not following Earth's magnetic field (Lockley, 1953). This illustrates that the human lens is not the only lens used to see the cosmos in the night sky and not the only one enchanted by its light. Notwithstanding, the focus of this research is upon human tourists as they use sight to gaze upon sights that cannot be sensed in any other way, for example the Milkyway and the moon etc. The human lens requires an understanding of what Foucault (1963:196) calls the gaze.

#### 5.4.2 The Gaze

As a process of transactional thinking, the gaze was initially examined by Foucault (1926-1984) during his review of 17<sup>th</sup> and 18<sup>th</sup> century constructs of contemporary clinical practice, Foucault's notion of the gaze was based on how doctors view their patients internally (1963:196). The doctor's gaze, as suggested by Shapiro (2002) in reviewing Foucault, included x-rays, magnetic resonance imaging, computed axial tomography scans, and laboratory testing, as the gaze culminates in diagnosis.

Diagnosis presents a moment of insight, whereby the patient gains access to the knowledge and experience of the doctor as the gaze reveals the physical problem.

Urry (1999) later aligned Foucault's (1963) gaze to tourism studies, the external gaze, thus mediating what the tourist perceives as they see. For the tourist gaze expresses the dynamics associated with the construction of the tourist experience. It also suggests that the tourist experience involves a particular way of seeing. For example, images captured in a photograph which depict a couple kissing can signify a particular fantasy, a notion of romance. Similarly, pictures of distant planets do not merely depict the cosmic geography but the idea of alien beauty. Such gazes may create anticipation and the desire to see and experience particular imaginaries.

Urry, stresses the importance of visual consumption and sees the gaze as the most important tourist activity, in nature or sightseeing. Urry (1990; 202) further distinguishes different kinds of tourist gaze:

- *Romantic Gaze*: the most powerful, assumes individual or intimate engagement, and results in a 'semi-spiritual relationship with the object
- *Collective gaze*: which involves large-scale consumption of the object, and may give a sense of occasion, even carnival
- *Spectatorial gaze*: involves fleeting glances, such as from a tourist bus window
- *Reverential gaze*: involves intense, spiritual consumption of an object with sacred or mystical significance
- *Anthropological gaze*: the activity of looking is embedded into a historical array of meanings and symbols, sometimes with the support of a tourist guide.
- *Mediatized gaze*, which is another collective activity, in which tourists direct their attention to sites made famous by media events, such as the locations for Hollywood films

Stargazing does not have to be a collective activity it can be more intimate than the Stargazing Live series (abc.net) would have us believe. Stargazing can be a lone pursuit but tends to be seen (at events) to be seen as an activity carried out in couples or with family and friends.

Urry identifies this as a romantic form of the tourist gaze, whereby emphasis is upon solitude, privacy and a personal, semi-spiritual relationship with the object of the gaze (Urry, 1990:45). A Dark Sky park is arguably perceived to be a pristine, untouched scene within the Scottish landscape, the remoteness of the location, the lack of artificial light and silhouettes on the landscape offer an aura of the romantic and reverential. Urry (1990) concurs, that the tourist gaze should expand into a holistic consumption of sensory rhythms: sounds, touch, smells and even tastes.

Although what is seen is important, visual information can clash with that from sound, touch and smell creating a sensory kaleidoscope which provides impressions of the world. However, these impressions are based upon expectations so when confronted by unfamiliar experiences how do humans make sense of what they see? When stargazing, the gazer needs more time to adapt to changes in light level as the area in which the objects are seen (the visual field) gets smaller. To appreciate the darkness at a dark sky park the human eye needs to discern aspects of place and landscape in virtually no light. The eye has a convex lens which focuses light to produce an image of the scene on the retina; this is then sent to the brain to process the data. However, there can be a loss of peripheral vision, as the cones and rods in the eye struggle to detect light and colour (reducing the ability to see things outside the direct line of vision), resulting in a problem with depth perception (the ability to judge distance), all of which impacts on the perception of what is being seen and experienced, resulting in the use of other senses such as sound which is intensified when vision is limited.

#### 5.4.3 Sound

'Sound is actually a pressure wave. When an object vibrates, it creates a mechanical disturbance in the medium in which it is directly adjacent to. Usually, the medium is air. The medium then carries the disturbance in the form of oscillating and propagating pressure waves' (Villanueva, 2010:1)

Similar to light pollution, noise pollution is now a World problem. Schafer (1994:3) believes that 'the word 'soundscape' has reached an apex of vulgarity within our time', and states that 'many experts have predicted universal deafness as the ultimate consequence unless the problem can be brought quickly under control'. As with light pollution, noise pollution is a phenomenon to rectify. Researchers into soundscapes pose the question: what is the relationship between man and the sounds of his/her environment?

According to Gammon (2014:121) 'the experience of sound contributes powerfully to an individual's sense of place' as a soundscape consists of events heard not objects seen. Emotions that are elicited by sound focus on experiential responses, often aroused by music or a sound that is recognisable (Cohen, 1993). Duffy *et al.* (2007:7) would agree as they argue that 'at street parades, there are instances that result in feelings of belonging, these rely upon moments where actions, performances, emotions come together in a particular rhythm to create a sense of being special, or of social camaraderie'. The very nature of a parade is to create joyful emotions, music creates an intensity to the event 'generating a rhythmic time-space' (Duffy *et al.*, 2007). However, the Cosmos has no sound as 'in empty space, there is no air, and what we call sound is actually vibrations in the air' (Ask the Astronomer, ND). A lack of sound can also stimulate the senses as it can be eerie, as sound creates

mood but as a destination to view the cosmos from the Dark Sky Park is set in a forest landscape which has a sound of its own.

For example, sounds in a forest depends upon weather conditions, the time of day, and the number of people in the vicinity. Yet it is safe to say the crunch of leaves and twigs underfoot, the rustling of bushes and trees in the breeze, the running of water in a stream and the song of birds on high, are what most people would associate with a forest. At night, darkness renders a different soundscape, as nocturnal animals come to life and the mood changes, this is in conjunction with vision as it reveals objects beyond planet Earth – galaxies, some seen millions of years in delay (Lanthy, 2012). Although darkness impairs sight, it allows the residual senses, such as hearing, to become much more sensitive and thus open to distortion (Visionaware, ND). For example, a flash of light, a screech and the cry of a person might leave the hearer believing that there is something amiss but, in reality, it is more likely to be a mountain biker enjoying their extreme sport at night. The conclusion that there was something amiss may be based on an experience of watching horror films which invariably lead the viewer to believe that dark deeds happen at night, so it is natural to think the worst.

The role sound has on emotions can affect encounters between places, individuals, and things as emotions are a social projection of an individual's feelings. These can be enhanced further by touch.

#### 5.4.4 Touch

Touch is to 'come into or be in contact with' and is described as 'the most fundamental means of contact with the World' (Barnett, 1972:102). Since Roman times and the emergence of spas, touch has been seen as essential to sensory experience, it promotes wellness and creates feelings of need, desire and belonging. According to psychologist Matthew Hertenstein's study, 'participants communicated eight distinct emotions via touch: anger, fear, disgust, love, gratitude, sympathy, happiness and sadness' (Hertenstein', 2009: NP), suggesting that the power of touch is such that it can create connections. For example, in the leisure business Doctor Fish Spas provide a sensory, touch, experience as clients put their feet in water tanks which contain hundreds of tiny fish that eat the dead skin. Whereas, in hospitality it is reported that waiting-on staff yield bigger tips if they use insignificant touch with customer i.e. touch a shoulder or the brush of a hand while delivering the bill (Hertenstein', 2009). Touches of this nature can create a gesture of connection, familiarity that many customers appreciate, although it can also be seen as intrusive and un-desirable. Even when it is desired, it is not possible to touch the stars due to distance and the fact that stars are exploding balls of gas i.e. the Sun.

A hand's-on experience can create a deep connection with people and place. Touch can be cold, hot, smooth, rough, pressure, tickle, itch, pain, vibrations, and more each of which stimulate the senses in

different ways. Gammon (2014:122) argues that ‘through touch a deeper connection with place is sought, as if to channel the great deeds of the past or to somehow get closer to the spirit of the place’. This is evident when looking at some statues, visitors may touch them for luck, although visitors do not necessarily expect luck, it is merely a tradition (Candlin, 2017). It is not clear where such traditions originated but it can be associated with the worship of saints. Touch gives the worshipper the possibility to make a connection with divinity as it enhances the sensation.

Religious worship is only one possible reason, but Figure 5.4 signifies Sidne Rome Kiss: Guidarello Guidarelli statue (a 15<sup>th</sup> century knight) in the film *La Ragazza de Latta* (1970). Since the film was aired the statue has had to be placed under glass as tourists flock to kiss the lips of the knight, believing that they would become lucky in love and find a husband in a year.



Figure 5.4: *Sidne Rome Kiss* (ND)



Although touching in museums is frowned upon and not part of museum etiquette, some tourist destinations make use of statue touching to attract visitors. For example, the famous statue of Juliet (See figure 5.5 - left) in Verona where tourists are activity encouraged to touch Juliet's right breast as the legend is that it will give one good fortune in love. Just as children are told, from an early age, that they can wish upon a star and their dreams will come true. Perpetuating the embodiment of luck and creating a positive image of stars which can be argued to be an obscure reality.

Figure 5.5: *Juliet's Cultural Encounter* (ND)

A tourist seeking a touch of luxury also seeks the obscure, as with the other sensory perceptions a touch of luxury means different things to different people (Smith, 2015), who hosts comments on a social media platform, highlights:

- *'Many appreciate the luxury of "insider" access to touch castles, farms, fishing vessels, kitchens and artisan studios – incredible places that help them get under the skin of Irish society in a way that is personally meaningful'. Andrew Carr, Managing Director, Kennedy and Carr Ireland Travel'.*
- *'... indulging in the very best levels of personal and attentive service, lavish and sumptuous accommodation, exquisite and unrivalled levels of gastronomy and informative and educational guides. It is travel without stress, pressure of time or daily routine, where your every need is pre-empted, and your every expectation is met and exceeded.'* – Gareth Harding, Sales Director at The Cruise Line Ltd.'

Words such as sumptuous denote textures which feel expensive, whilst getting under the skin portrays deep meaning thus creating a sense of place. Stargazing expressions such as 'shining like a diamond in the sky' also possess a feel of luxury whilst signifying the allusive nature of stars. As touch and gaze (sight) are both expressions of intimacy it seems logical to associate them with a sense of belonging or meaning but smell and taste do not appear on first examination to be so profound.

#### 5.4.5 Smell

Smell is 'the faculty or power of perceiving odours or scents by means of the organs in the nose' (Low, 2005:397-417). Usually smell is associated in a geographical encounter, a food or natural odour (Rodaway, 1994).

A rational belief that humans need to eat and be sociable has been the subject of numerous studies, particularly marketing, for many years. The use of odours of food and drink in areas with slot-machines increased usage (Hirsch, 1995). There has also been a positive effect of ambient scent on social interaction (Zemke and Showmaker, 2006) and the increase of sales (Morrin and Chebat, 2005) in supermarkets, all demonstrate that smell is a persuasive sense.

At the 4<sup>th</sup> International Scientific Conference 2009, it was noted that:

*'The scents are registered in the brains faster than other senses, as the distance between the nose and the brain is short. We can identify scents with 65 % accuracy whereas the visual picture is 50 % already after three months. There are approximately about 6-10 million cells in a human nose through which we can identify 2000-4000 different aromas. In comparison a*

*shepherd dog nose consists of approximately 220 million cells. Up to 75 % of people remember a smell even after one year' (Österberg 2009).*

Scents can of course be produced naturally but, as with sight, scents can be manufactured to manipulate people. The link with a sense of place and odour has made the manufacture of smellscapes profitable but the unmistakable smell of the outdoors, has a crispness that an artificial creation struggles to replicate. However, the sensory relationship between tourists and destinations would suggest that smell and taste are literally adding to a sense of place that tourists often search for familiarity not only with their eyes but with their ears, nose and hands.

#### 5.4.6 Taste

Taste is the sensation of flavour perceived in the mouth and throat on contact with a substance. The four basic types are sourness, bitterness, saltiness and sweetness: they are detected from the most subtle to the most intense taste receptor. Taste is believed to be indispensable in setting emotional tones in a cultural dining experience (Pan and Ryan, 2009:625-639). Nevertheless, how relevant is taste in relation to a nocturnal environment? Hartig (1993) believes that each sense acts to define the other and is thus interconnected. This view is supported by several decades of research on environmental emotion (such as Ulrich 1981), in which positive emotions were associated with natural environments. For it is possible to taste the moisture of the night air with its mossy undertones just as it is believed that the connection an individual feels with nature is implicit or unconscious (Schultz *et al.*, 2004).

As the sensory rhythm changes from sight to sound to touch and finally to taste and smell it is argued that all amalgamate through embodied perception to create a sense of place. Lefebvre (1991:362) described 'lived space: the concrete, subjective space of users, the space of everyday activities where 'the private realm asserts itself, albeit more or less vigorously, and always in a conflictual way, against the public one'. As the tourist travels simultaneously, both the physically world and in the mind, they are creating an interplay of the senses within a state of flux as they experience new places, witness new sites, taste and smell new things which become an ever changing frame of reference. Each and every one of these new sensory stimuli generate an ephemeral, intrinsic space experience.

The rural environment, when contrasted with the everyday environment, can play an important role in the intensity of the tourists' experience (Sharpley and Jepson, 2010) as the senses become stimulated and new meaningful connections are formed. The lack of studies pertaining to the holistic role of the five human senses in the tourist experience of space, place, and time reveals that there is a need to develop research in order to understand how the senses interact (Rodaway, 1994). It has become evident that the senses are not the final destination, they are part of the journey towards

experience that lead to a sense of place and thus deserve to be explored further. Particularly, the essence of where the desire to explore the sensory experience of place comes from, one possible answer could be from mass media another could be the desire to explore.

When considering the five senses and their influence on the tourist experience in a natural environment it becomes apparent that there is an organised bombardment of the senses, each has its role to play in the enjoyment and appreciation of the stargazing experience. Consequently, the sense of, for the astro tourist has the potential to represent more than a sum of its' parts, its emotional value can provide the mental nutrients to engage with cosmic viewing on a deeper level of existence.

## 5.5 Senseing

As discussed, the five basic senses provide a starting point when working towards understanding the astro tourist, however it is argued by Cohen (1997) that in eco-science there are 53 senses. For example, when in a natural place, our sensations of thirst, motion, trust, belonging, colour, place, taste, temperature, beauty and community are all natural system connections and non-language communications that we experience through our senses (*ibid*). These senses cumulate in a rich source of sensory stimuli which in turn, can be attributed to experience memories. Consequentially, it is argued here that this can lead to emotional attachment and other senses such as a sense of belief, a sense of place evoked by media and a sense of the past.

### 5.5.1 Senses of Belief

Belief systems are structures of norms in society they are created via stories which are told to define a personal sense of reality and existence. Humans tend to use belief systems to varying degrees to cope with events in everyday life, for example a wedding, symbolizing love, commitment and union, or death which symbolises different things to different religious groups, for some it is final for others it is a time of transcendence. Ultimately humans need the world to make sense at some level as they use a mental process to support aspects of reality.

Heidegger, in his seminal essay on 'The age of the world picture' (1927) points to the modern era as a time when the world makes sense as he identifies the notion that it is possible to step back from the world and see it as though it is a picture, one comprehensively visible to the individual gaze. Heidegger discussed the need to think deeply, to ponder, to contemplate one ultimate question: the being of beings essentially, the origins of mankind and the existence of life on this planet and in other galaxies. Such ponderings are the stuff of beliefs, so here the question is: is it logical to believe in something we cannot see but that our senses tell us is true? For example, a belief in God does not require a physical presence or an image to give the belief a sense of meaning to a person, it is an act of faith. Essentially, it is accepted that the reality of God cannot be scientifically measured and therefore there is a chance

that such an entity does not exist but other pieces of evidence such as beauty, kindness, compassion are all said to support levels of faith. Therefore, there is a tangible acceptance of something currently intangible, which may suggest that life could exist on other planets, as it would be very arrogant to assume that out of the thousands and thousands of planets that exist, Earth is the only one that supports life, making the search for signs of extra-terrestrial life at Dark Sky events seneschal.

### 5.5.2 Sense of Places Evoked by Television Programmes

The distant nature of galaxies and other cosmic phenomena is brought into homes and everyday life not only by looking up at the night sky but by the broader and pervasive use of media, in particular, television (TV) programmes and films. Hudson and Ritchie (2006) list Goathland's Heartbeat tourism as an important example of the increasingly global phenomenon of TV and film-induced tourism with impacts from the USA, Europe, Australia, Africa and the Far East. Hudson and Ritchie (2006: 395) say, 'film tourism is a complex and dynamic concept ... (which) depends on a number of factors outside the control of a destination'. Goathland's Heartbeat is set in idyllic countryside away from urbanised and industrial England thus creating a sense that it is special, there is a feeling of a better life, kinder people, and an honesty which is hard to find in real life (Humphreys, 1995:216). Although the place is real, it exists, the characters and the story are fictional but still have meaning to tourists who travel to see where it was filmed. These places have become, what MacCannell (1999) refers to, as famous for being famous, much like many other attractions (cited in Gammon, 2014). The significance of TV locations as symbols of place and/or event has certainly been global as visitors to such tours come from far and wide to experience the place of their favourite programme. TV programmes related to stargazing also have a similar effect as the Stargazing Live programme (a UK ITV production) report over 3.6 million viewers on the first night, 3.2 million on the second night, with thousands of participants at live events scattered throughout the UK. At one event hosted by the University of Portsmouth at the Portsmouth Historic Dockland Dr Gupta (2016) commented that 'It was a bit overwhelming to see the event sell out so fast – we had over 1,100 booked on and 250 on the waiting list, with half of the tickets snapped up within a week of sales going live', thus endorsing the argument made by Schroeder (2002), of the importance of maintaining special places, which are areas in the natural environment that a person values for aesthetic or emotional reasons (or both).

On Astronomy Blog (ND), participant bloggers report that they visit different sites to star gaze to see the quality of the night sky and how the events are staged. According to Gammon (2014:120) 'tourists are happy to collect gazes, where a tour represents no more than a ticked-off box of places to visit and things to do'. In this instance there is little attachment to place but a strong attachment to the activity as demonstrated by the #BBCStargazing hashtag, which was trending worldwide. According to Urry (1990:45) this is known as the collective gaze which 'gives atmosphere or a sense of carnival to a

place' whereby people express a desire to be seen as participating in an event. As events take place at a destination at a particular time, place and time take on a significant meaning for astro tourist, as to see the stars at a Dark Sky Event an event must be booked, paid for and attended but the environment conditions must also align as cloud cover obscures the view.

### 5.5.3 Sensing the Past

To be present in place, is to be present in time, yet time itself is an illusion as it flows and merges from past to present, memories fill the senses and pervade everyday life. Yearning for an attachment to the past is inherent throughout modern society, Candlin (2017:251-266) notes that almost the entire understanding of the world is experienced through the senses. Our senses are our link to memory that can trigger a specific emotion, or previous point of reference in our lives. Taste and smell remain closely connected, as previously discussed, although smell is 10,000 times more sensitive as it taps right into our memory, leading us to places in time which hold emotional significance (Kennedy, 2008:34). Thus, tourist places are established by psychological connections, various objects and imaginative processes culminate in moments of pleasure to be remembered and recorded.

Aspects of the natural landscape may also hold an emotional significance to time for example, trees, as discussed earlier, can also locate us in time and place. Harrison's (1991:135), describes the huge old trees in his local landscape as, 'to stand beneath one of these maimed colossi is to be overwhelmed by its powerful, resonant presence'. These oak trees are 'the living tissue of time' and therefore they meet a need, which Harrison believes 'to be indispensable, for parochial monuments, landmarks, milestones and other points of reference by which each person can take his or her own bearings in time and place' (*ibid*). Harrison goes onto view the oak tree in the churchyard which he describes is 'part of the material and cultural nexus through which the continuities of time and place are made visible, immediate and above all, tangible' (Harrison, 1991:135-139, cited in Jones, 2010). As touching an ancient tree can be seen as a link to the collective memories of all have who have been there before. Memories however, become more significant when linked to a loved one, as they evoke an allusive and arguably symbolic meaning which is nostalgic.

Although senses can create a strong nostalgic link to time and place, emotions can create a longing for the past. For example, a lost youth: the face in the mirror is looking old, a family member: who showed you the wonders of stargazing, or a place which carried happier memories. Sharpley (2003) discusses how people can become dissatisfied with the present so the past represents what Dann (2005:90) refers to as a 'tonic to the ills of society'. Nostalgia from a contemporary standpoint may however be linked to missed opportunities. For example, studying a subject such as astronomy at

school may have seemed beyond a person's capabilities as a child, but as an adult such pursuits may be seen as existential.

Nostalgia is linked to past time, but Rojek and Urry (1997:15) observe that some places appear as 'empty of time, slowed down, lacking speed resulting in a drudgery of place'. Harsh, as a slower pace of life is often yearned for in modern society. Seeking destinations away from media connectivity is one example of how tourists enjoy the timeless nature of an environment. Rojek and Urry (1997:17) consider that 'some places do attract visitors because they are timeless, they have (it seems) not been ravaged by time'... 'they represent what is termed as glacial time'. Dark Sky Park represents this description as it appears un-touched by man, timeless and arguably sublime. Even more glacial would be the sky above a designated dark sky park, with its ink black pallet and the twinkling of thousands of stars creating memories of childhood songs, fairy-tales and ghostly stories, but also the possibility of extra-terrestrial life.

When stargazing, the astro tourist is looking up into the Dark Sky at light, light which takes time to reach Earth. For example, the moon is approximately 240,000 miles from Earth resulting in a 1.3 second time delay, the Sun is 93 million miles from Earth resulting in an 8.3minute time delay, whereas, Pluto is 5,913 million miles away so it takes 4.6 hours for its light to reach Earth (Ask the Astronomer, ND). Minutes and hours do not seem much time, however, planets in the Milky Way, which have the potential for life, often referred in contemporary society as Goldilocks Planets, i.e. a planet capable of sustaining life and approximately 52,000 years from Earth, which is an un-realistic distance to travel, thus making Earth even more precious.

As a backdrop, Dark Sky may represent a constant for the observer, both metaphorically and literally, as Earth is the home of mankind. Gazing at a particular constellation may allow for reflection on the significance of life, for example, the first stargazing experience as a child with a family member or friend, which can provide a nostalgic and romantic view of the past. Or it may be a source of identity from everyday life i.e. retail assistant by day, amateur astronomer by night.

Gouldring (1999), drawing on her findings from a consumer behavioural study of elderly visitors to a living industrial museum, found that there are two distinguishable type of nostalgia: Recreational and existential. Obviously, the rose-tinted glasses approach demonstrated is a combination of a recreational activity and existential, but is there is a third type of nostalgia, one that relates to perceptions of time, as it can, and does, reach further back than lived experiences.

It is said that 'Space and time are simultaneous phenomena and together form the fabric of the universe' (Astronomy Trek, ND). This fabric is believed to be dimensional, something which is

illustrated in science fictional work on the screen and in literature. For example, H. G. Wells (1895) wrote 'The Time Machine', a classic work of fiction and a popular book with children, hypothesized that a machine could be created that allowed mankind to travel back in time, this notion has fuelled the dream of time travel, as a link to the past might provide the answer to who we are, as we would be informed by who we were, and where we came from. Stargazing, although Earth bound, allows a glimpse of worlds as they appear in the night sky as light sources or are commonly known as stars. As already outlined, the light from these planets has taken thousands of years to travel to Earth, it could be argued that stargazing is a form of time travel but in reality, it is headspace travel as it not conceivable that with present technology that mankind will be able to physically travel in time.

Francis Bacon (cited, Anderson, 1980:34) said that *'dizzily vast as the universe is, it is just the right size to be home for the human mind. To our body, the Earth and its subdivisions are the right size, but to our mind and its incomparable reach, anything smaller than the universe would feel confining'*. For the mind is infinitely capable of creating its own reality and beliefs in space, place and time.

## 5.6 Destination

Moving on from place to look at destination, it soon becomes apparent that attachment, identity and dependence are interpersonal and intangible, whereas destination is a physical space with or without boundaries. A destination is defined as 'the place to which a person or thing is going, the intended end of a journey' (Echtner and Richie, 1993:3). In relation to astro tourism, two journeys are made, the physical one to the destination – and the imagined one to the cosmos. When applied to other forms of tourism, a destination is the cluster (co-location) of products and services, and of activities and experiences along the tourism value chain and a basic unit of analysis of tourism (Formica, 2001). A tourist destination incorporates various stakeholders and can network to form larger destinations. It also has intangible elements, such as images and identity, which influence its attractiveness and market competitiveness (D'Hautesserre, 2001; Dwyer, Forsyth and Rao, 2002; Formica, 2001; WTO 2003). To increase the attractiveness of astro tourism images of potential cosmic sights are displayed on destination websites to lure the tourists to the area.

### 5.6.1 Space Image Promoted by Destination

In the early 1970s destination image research was introduced to tourism by Hunt (1971, 1975), Mayo (1973) and Gunn (1972), over that last two decades it became a vastly researched topic with the main contributors being Echtner and Richie (1991, 1993), Beerli and Martin (2004) and Chi, C. G. Qing, and Qu, H. (2008). They each used a series of quantitative techniques to categorise attributes when measuring the destination image, see table 5.1.

Table 5.1 Destination Image Research

1	Natural Resources	i.e. weather, temperature, rainfall, hours of sunshine, beaches, quality of seawater, length of beaches, overcrowding of beaches, wealth of countryside, protected natural reserves, lakes, mountains, deserts, variety and uniqueness of flora and fauna
2	Tourist, Leisure and Recreation	i.e. accommodation, number of beds, categories, quality, restaurants number, quality, bars, discos and clubs, hotels and self-catering, ease of access, excursions at destination, tourist centres and network of tourist information
3	Natural Environment	i.e. beauty of the scenery, attractiveness, cleanliness, overcrowding, air and noise pollution and traffic congestion
4	General Infrastructure	development and quality of roads, airports and ports, private and public transport facilities, development of health services, development of telecommunications, development of commercial infrastructure, extent of building development
5	Culture, History, and Art	i.e. festivals, concerts, handicraft, gastronomy, folklore, religion, museums, historical buildings, monuments, customs and ways of life
6	Social Environment	i.e. quality of life, underprivileged and poverty, language barriers, hospitality and friendliness of the local residents
7	Tourist Infrastructure	i.e. accommodation, number of beds, categories, quality, restaurants number, quality, bars, discos and clubs, hotels and self-catering, ease of access, excursions at destination, tourist centres, network of tourist information
8	Political and Economic Factors	i.e. political stability, political tendencies, terrorist attacks, safety, crime rate, economic development and prices
9	Leisure and Recreations	i.e. golf, fishing, hunting, skiing, entertainment and sports activities, scuba diving, trekking, adventure activities, theme parks, water parks, zoos, casinos, nightlife and shopping

These attributes also represent a common dimension of a destination, as tourism literature identifies that every destination can be evaluated on the basis of these general criteria (Beerli and Martin, 2004).

Each classification mentioned above demonstrates the abundance of ways in which destination image can be determined. It is evident that there are many common features such as accommodation/hotels, each of which adopted a Likert and/or semantic differential scale to measure the image construct. However, Crompton (1979:18) argues that 'the sum of beliefs, ideas and impressions that a person has of a destination' is key to understanding destination image. In these studies, destination in place relate to the individual, whereas destinations are generally acknowledged to be shared or group experiences. More people travel with family and friends, than as individuals, the shared experience of a destination is felt differently in conjunction with the primary purpose for travel. For those who visit a place to see something, have a different experience to those who go to the destination do something.

Various researchers have identified that there are several other factors which influence image formation. Hunt (1975) and Scott *et al.* (1978) showed that destination image formation is determined partly by distance from the destination, because people are more likely to have visited the destinations near their homes and to have been exposed to information about them through the media and from friends and relatives if the location is close by. They concluded that people are likely to have stronger and more realistic images of a destination if it is near their home. Destinations further away which are visited infrequently fade over time (Phelps, 1986; Narayana, 1976). This conforms with some aspects of attachment whereby time and destination image can create a nostalgic feeling and a love for that destination, although this may be a common perception, there are destinations which are beyond Earth and therefore, cannot be measured or visited in the same way.

Fewer studies have measured destination image based upon qualitative techniques such as unstructured or semi structured interviews and content analysis (Dilley, 1986; Prebensen, 2007; Echtner and Ritchie, 1991). Dilley (1986) for example, analysed the images used by different national tourist organisations to project their destination to a North American market, brochures from 21 countries were analysed and images were categorised according to the type of information conveyed. Dilley (*ibid*:98) comments on the cliché of 'a picture, being worth a thousand words', noting that over half the brochures gave over 75% of their space to pictures. Dilley (*ibid*), found there were clear regional patterns in the types of images projected. For example, with brochures for old world countries (e.g. Britain, India, Japan, and Portugal) they showed a clear dominance of history and art type images. Whereas brochures for islands (e.g. Bahamas, Trinidad and Tobago) showed pictures of recreational pursuits and coastal landscapes, with some islands focusing on the exotic with images of local people, history and art (e.g. Jamaica and Tahiti, cited in Jenkins, 1999:1-15). Thus, illustrating that visual-stimuli related to any destination may influence image, as the memory of a destination may be formed, retained, stored and used when making future decisions to travel.

In behavioural geography the concept of image is more holistic as it includes all of the associated impressions, knowledge, emotions, values and beliefs. It focuses upon the cognitive process which underlies spatial reasoning and decisionmaking behaviour. As an approach closely linked to psychology, behavioural geography is 'wayfinding' as it includes the environmental mapping process. For example, the cosmic map forms shapes such as Orion, these are perceived as symbols when looking at the map, however no distinctive image actually appears for the interruption is based upon numerous topics and astrological knowledge which form an illusion of Orion the warrior with his belt and sword.

### 5.6.2 Destination Attractiveness for Viewing Space

First impressions are key in the modern world, as destinations seek to diversify so as not to succumb to falling out of fashion particularly as consumer behaviour changes and their perception of attractiveness evolves. Mayo and Jarvis (1980) define attractiveness as, 'the perceived ability of the destination to deliver individual benefits'. Consequentially, to be successfully promoted in a particular market 'a destination must be favourably differentiated from its competition, or positively positioned in the minds of the consumers' (Echtner and Ritchie, 2003:37). For example, the first Dark Sky designated Park is positioned favourably in terms of uniqueness (being first) but the rural location and poor infrastructure can affect attractiveness as the destination is hard to reach. It is the role of Marketers to position destinations so as to attract receptive consumers therefore Dark Sky is sold on the basis of its uniqueness and special interest tourism. As Morgan and Pritchard (2001:275) pointed out, a country's 'clichéd identity can ... be reshaped and given greater complexity through effective and consistent marketing'. Nevertheless, word of mouth recommendations are seen to be more successful in promoting destination attractiveness in a competitive marketplace as they appeal to the lived experience of participants.

### 5.6.3 Competing for Astro Tourism

The search for forces and factors that determine the competitiveness of the tourism industry is an area that has not been fully explored (Dwyer *et al.*, 2003). In a tourism context, the concept of competitiveness has been applied to different settings for example, themed towns such as the book town etc. Various authors have linked competitiveness between destinations, and then to the demand for tourism products and services from economic, marketing, strategic, price, quality and satisfaction perspectives (Bienkowski, 2006; Keller, 2005; Page and Connell, 2006). Notwithstanding this creates a duality of competition forms with the following implications which may be adopted in astro tourism:

- the competitiveness of destinations is an essential topic, and it can depend, for instance, on the existence of specific attractions visitors are willing to pay for;

- the tourism firms that contribute to the formation of the package of goods and services consumed by visitors on arrival benefit from the uniqueness of the destination;
- at a certain destination, firms (e.g., hotels) can be competitive on the basis of specific attributes that differentiate them from the rivals and give them an advantage (Ioncic, *et al.*, 2009)

Adopting the right behaviour, when considering astro tourism competitiveness, is dynamic and requires wider research.

## 5.7 Summary

In summary, it has been argued that by having a constant 'the night sky' in an ever-changing modern society, mankind can re-establish the need for stability and reconnect with place via merging with cosmic space through the gaze. Cosmic space and place itself is arguably now even more essential to human existence in combating anomie, for viewing cosmic space provides a means of making sense of the world and mankind's place in it. This is acknowledged by Cresswell (2004: 48-49) who argues that 'the world and the psychological and emotional links to place have been asserted to be a necessary part of the human condition'. There has been erosion in relationships, in community and with family in modern society and this has given rise to a need for the 'other' to emerge. It has been argued that this can be found in the cosmos as there is stability and a sense of place both on Earth and as part of a wider universe. Whereby, attachments, identity and dependence to a geographical position leads to a sense of belonging to both space (as seen in chapter three) and place.

The study of place is a multi-faceted construct, it is the sum of interrelated emotional, cognitive and psychological processes that can effect a person's evaluation of a destination and the activity they pursue - the sum of which is a holistic view of the destination image, whereby image, is associated with everyday life as Mayo (1973: 19) defines image as 'people hold a way of organizing the different stimuli received on a daily basis and help make sense of the world in which we live'. Destination image has also been demarcated as 'the sum of beliefs, impressions, ideas and perceptions that people hold of objects, behaviours and events' (Crompton, 1979: 56).

A tourist's understanding of scapes is complex, consequentially there are a myriad of disciplines which can be called upon to shape this study. However, in studying the construction and use of scape-based literature it has become apparent that although there is an absence of consistency in purpose and perspective there is a rich and diverse sensory stimuli associated with place. This is captured by destination image, it is not inconceivable that the desire to experience the visual representation of space is part of a psychological process which is made up of personal feelings, memories, conscious decisions and multi-behaviours each of which have the potential of culminating in the lived experience

of the astro tourist. Holbrook and Hirschman (1982:132) concur that experiences reflect an emotional state, consisting of a 'steady flow of fantasies, feelings and fun'. This is echoed in the work of Kotler *et al.* (2001) and Pine and Gilmore (1998) each of whom highlight that experiences are personal; they comprise of emotions and exist in the mind of an individual. So, when travelling to a particular destination which has the optimal conditions for stargazing, some astro tourists may experience a multi-sensory, fantasy and emotional experience that has the potential to engage with them on multiple levels.

In tourism literature, this interdisciplinary research approach to astro tourism has received little attention for often there is an indefinable and intangible reason for an individual to travel and thus experience any specific destination. In Chapter Two individuals' motives were explored and found to be also multi-faceted, as they encompass both push and pull factors to illustrate the driving forces behind some aspects of human behaviour. Yet, it can be argued, that one is left wanting in terms of fully appreciating the individual human desire to travel, even though astro-geography could provide an explanation of some of the spiritual awakening to the motivation to be at a certain location. It is evident from the studies of Dann (1977), Pearce (2005), Pearce and Lee (2005), and Gnoth (1997) that there is an indisputable significance in the need to understand motivation yet, it is only one variable that gives explanation to tourist behaviour. Linkages, with other philosophical and psychological factors seek to address in a more comprehensive way, the personal nature of environmental experience such as the way in which Churches install a sense of reverence, or trees create an attachment to time but without an empirical understanding of the astro tourist the link to space remains obscure even with the theoretical understanding presented thus far.

The next chapter, The Methods, justifies the methods used to meet the aim and objectives of this study.

## Chapter 6

### 6.0 Methodology: Working in the Dark

#### 6.1 Introduction

The literature review identified that, to fulfil the aim and objectives of the research, an exploratory study was required. To acquire the data necessary to achieve the aim of the study, it was identified that outcomes such as defining the astro tourist would lead to a better understanding of the astro tourist. To achieve this, eight Dark Sky events, and one dark sky festival were attended to gather the data needed. Each event took place in the first Dark Sky designated Park in the UK, based in the Galloway Forest, Dumfries and Galloway, Scotland. The eight events are each hosted by the Forestry Commission and marketed as Dark Sky Events whereas the Dark Sky festival is marketed as Sanctuary, a cultural dark sky event, hosted by a group of dark inspired artists in conjunction with the Scottish Forestry Commission. To focus discussion, the overall aim and objectives restated are:

Aim: To critically explore the experiences and behaviours of the astro tourist

Specifically, the objectives of this study are:

1. To investigate how tourist perceptions of 'place' and 'cosmic space' affects their decision to travel
2. To explore the sensory significance of astro tourist experience in relation to the environment at place, when viewing cosmic space
3. To investigate the existence of an astro tourist typology
4. To consider a collective definition of astro tourism and the astro tourist
5. To assess the implications of the findings in relation to the promotion of astro tourism at Dark Sky designated sites to inform destination marketing and management.

As stargazing is carried out in a real world setting with the potential for human nature inquiry (Guba and Lincoln, 1989) the subsequent three stages were chosen to gather motives, profile data and narratives of the participants at each of the events in the Galloway Forest, over a 30 month period from October 2013 - September 2016. During this period, research data collection was carried out by use of a variety of methods at one designated site, thus applying Yin (2003) and Stake's (1994) case study design requirements (discussed in Chapter two), which was to explain unique or rare situations and/or to describe and explain a case in any detail. Thus, this study focuses upon exploring, experiences, meanings, situatedness, sensory stimuli, emotions and behaviour, via ethnographic and

phenomenographic methodologies, highlighting that, this research is suited in an interpretivist's and a constructivism epistemology. Exploration using this approach is structured in such a way as to enable the mapping of individual conceptual variations to reveal overlapping features, and any unique aspects relating to sense of space and place, the notion of time, and sensory motives and experiences of the participants.

For the purpose of clarity, this chapter outlines the multiple techniques used, along with the data analysis process and the consideration of research determinants, all of which will contribute towards gather data to ascertain an understanding the astro tourist experience. It should also be reiterated that throughout this and subsequent chapters that the narrative changes from third person to first person at various stages as the journey taken by the researcher is just as important as the research itself.

## 6.2 Research Methods: Mapping the Galaxy

As an exploratory study the gathering of empirical evidence was carried out through the sequential use of qualitative techniques involve a research design which is complex but may enable better measurement whilst endeavouring to reveal differences in interpretation and meaning of lived experiences (Olsen, 2003).

In total four research stages have emerged, as follows in Figure 6.1

Figure 6.1: Research Stages



Following an extensive literature review, Fakeye and Crompton (1991), Chacko and Fenich (2000), Wu and Weber (2005), Lin, Morais, Kerstetter and Hou (2007), Lee and Back (2007), recommend that to reveal that destination attributes, when developing a case study, a diverse range of sources need to be viewed. Therefore, the first stage was to gather and review data relevant to the Dark Sky Park in Dumfries and Galloway using historical texts, location images, tourist destinations marketing literature, Dark Sky development reports, impact studies, accommodation reports, transportation network data, NASA public information sheets, popular culture reviews and leisure facilities literature.

Although attributes can provide an overview of place, they cannot provide a sense of people, their behaviours, wants, needs and experiences, therefore the second stage 'participant observation' was

the technique chosen to focus upon gathering an understanding of stargazing (the activity), the destination (the locations in the Dark Sky Park), the terminology (astronomy, astrology, the names of the stars, planets, constellations etc.), the equipment (telescopes, binoculars and Apps), the facilitators (the dark Sky rangers and the Forestry Commission Manager and his staff) and, most importantly, the visitors (the astro tourists themselves). The events provided a perfect habitat from which to observe the astro tourists’ interactions freely. Access to the events was provided by the Forestry Commission who welcomed, and fully supported, the research aim and objectives as they too wished to understand the astro tourists.

The third stage utilises a sensory motivation survey constructed by adapting research from personality theorists Chapman *et al.*'s (1976); Chapman and Chapman (1985); Cacioppo, Petty and Kao (1984); Zuckerman, Kuhlman, and Camac (1988) to examine differences in the enjoyment and motivation for sensory experiences in relation to nature and the arts. This approach was seen as essential as it provides time specific data on who the astro tourist is, whilst ascertaining the significance of how they experience and behave in a nocturnal environment – are they there for education, pleasure seeking, scientific knowledge etc.?

The fourth and final stage focuses upon exploring, in greater depth, the main themes generated by each stage of the study. Semi-structured interviews have the potential to encourage participants to disclose their personal feelings about the stargazing; their private observations, as well as allowing them time to provide stories related to their past and present experiences.

The qualitative techniques approach in this study can be broken down further by adapting Stufflebeams mixed methods approach, see table 6.1 below:

Table 6.1: Qualitative Techniques: adapted from Stufflebeam’s Sequential Mixed Methods approach (2000)

Research questions	Evaluation Stage		Research Method Adopted
RQ 1: To what extent are visitors/tourists attracted (Pushed/Pulled) to visit the Dark Sky Park?	Context	Evaluate context in which Dark Sky events exist.  Evaluate the destination attributes  Determine primary and sensory motives for visit.	<b>Stage 1:</b> Developing the case study: review documentary and online search for destination data which justified the site choice.  <b>Stages 2:</b> participant observation at three Forestry Commission events:  Clatteringshaw Damn: October 2013

			<p>Kirroughtree Visitor Centre:</p> <p>November 2013</p> <p>December 2013, and Sanctuary 2014 to obtain data.</p> <p>From the review data on motivation, develop a survey to pilot in the next stage</p>
RQ2: What does the tourist's sense of space, place and time at the Dark Sky Park consist of?	Input	Comparison of motives with existing motivational models and concepts	<p><b>Stage 3:</b> Survey adapted from the work of Crompton, 1979; Eisenberger, <i>et al.</i>, 2010, was administered in Jan 2015 and adapted further to include primary motives.</p> <p>Survey administered to 75 participants, n=69 usable completed returns, October – December 2015</p>
RQ3: Do factors such as a sense of space, place and time create an astro tourist?	Process Evaluation	Determine the Dark Sky experience and if a typology of astro tourism could be extrapolated from the data	<p><b>Stage 4:</b> Semi-structured interviews carried out with 19 participants who attended 1 of 6 Forestry Commission Events: October 2015-December 2016 and completed the survey. Purposeful sampling was used to approach those who represented a diverse population, who spent a varying amount of time stargazing, who had travelled varying degrees of distance to participate in the event and who had expressed an interest to be involved in the next stages of the research.</p>

Table 6.1 illustrates the adoption of 4 stages of analysing data which was obtained from literature and documentary analysis carried out over the first 30 month period. This included participant observation - carried out during the first 6 months (qualitative); a pilot study survey – undertaken over the following 6 months, followed by the final survey (quantitative) for 6 months; then finally, semi-structured interviews, 12 months (qualitative). These qualitative techniques were used to

understand complex relationships and interactions as this emerging form of tourism requires an in-depth understanding of the participants' behaviours and experiences (Beeton, 2005).

Within this study, there were several reasons for employing a qualitative techniques approach for the data collection. First, to provide a descriptive explanation of the destination from which the astro tourist explores the cosmos. Second, to assess the motives for attending stargazing events at the Dark Sky Park and develop profiles of participants. Third, to explore the sensory nature of stargazing in a nocturnal environment at the destination; fourth, to consolidate the ontology and philosophy stance taken (ethnography and phenomenography), concerned with the phenomena (stargazing) and the social interaction (lived experience) related to the constructionist approach (Burrell and Morgan, 1979).

The inherent weaknesses in using qualitative techniques are outlined by Creswell and Plano-Clark (2007) as the amount of time needed to carry out the study and the multiple skills needed to implement and analyse of qualitative and quantitative data. Nevertheless, a multiple technique approach allows for greater flexibility when conducting complex research questions (Powell *et al.*, 2008). Its strengths lie in that it offsets any inherent weaknesses in both qualitative and quantitative research. Freshwater (2007:191) would support this view, claiming that 'there should be no methodological gap in research conducted using a mixed method (technique) approach'. Hammersley (2006:3) also argues that 'ethnographic work sometimes includes the use of quantitative data and analysis, so that it may not be purely qualitative in character'.

The sequential and concurrent nature of the research design fits logically into a multiple technique approach, as the study requires the exploration and investigation of relationships between constructs. There needs to be a basic understanding of cause and effect between relationships early on so as to develop the empirical study; however, the use of a survey technique could have potentially overlooked meaning; some variables are better interpreted in a descriptive way; the sensory nature of the study requires in-depth appreciation (Creswell, 2009:17). Thus, using qualitative techniques allowed for the observation of the experience from several angles rather than one angle, with each angle providing a deeper understanding (Neuman, 2003). Using methodological qualitative techniques strengthens and enhances a case study producing rich results as each technique digs deeper into the experience (Greene and Caracelli, 1997).

### 6.3 Stage Two: Participant Observation

To develop an understanding of the astro tourist it requires learning about the participants at Dark Sky events, as Hammersley and Atkinson (1995:124) acknowledge that 'ethnographers amplify their voices'. Observation is intrinsic to the development of the human psyche, for from the moment a

person is born they learn from analysing and processing observations of the World around them. Astro tourists are also in the process of learning about the nocturnal environment and other worlds within our solar system, along with other astrological phenomena, all of which are drawn together in one place over a short period of time.

In employing a field work technique there was a commitment to get close to participants being observed in a natural setting as well as to understand stargazing and the unique attraction of Dark Sky. Participant observation follows the traditions of ethnography as 'ethnography literally means 'a portrait of a people' (Harris and Johnson, 2000:56), something that was particularly important to capture. Ethnography is 'a written description of a particular culture - the customs, beliefs, and behaviour' (*ibid*:58).

Although humans have an intimate relationship with nature and the cosmos, psychogeographic research tends to focus on urban areas, cities and hedonistic tourist destinations which are predominately enacted during the day (see Fuller and Irvine, 2010; Fuller *et al.*, 2010; Kaplan, 2001; Maas *et al.*, 2006).

In the dark there are some important decisions to be made about observational approaches given the obvious restriction of light which hampers vision and thus restricts some important elements of human behaviour research such as the role of body language, facial recognition etc. Given the restrictions, a fundamental question was: should the observer also be a participant in the event? (Agar, 1996). In this study the answer was 'yes', a holistic view of the experience was needed to educate the researcher, to get to know the participants and to understand the complex environment. Observations focused on participants' behaviour during the event, listening to conversations between participants themselves and between the stakeholders and participants. These conversations are recorded, with the aid of a Dictaphone, notes were written up in the car where the light was adequate enough to do so and narratives produced to explain the situational factors in a reflexive manner.

In a nocturnal landscape the tourism experience becomes sensory, as the body is obliged to compensate for this loss of visual acuity by drawing on the other senses (Morris, 2011; Bell *et al.* 2014). Darkness forces the body to consider boundaries, as walking without sight becomes unfamiliar and arguably intimidating. This makes it essential to understand the shapes of objects, feel the path underfoot, the sounds which pervade an outdoor environment, and the feeling of being surrounded by unknown people, who, once they are in the dark tend to whisper rather than speak at a normal level. The impact of this experience magnifies feelings and senses as outlined in a sample of the transcripts of the participants (see appendix 12).

### 6.3.1 Data Management and Analysis

Participant observation notes and transcripts have been transcribed and coded using NVivo software. NVivo allows for the storage of large amounts of text from transcripts so as to easily link concepts together when coding, as it provides a manageable and accessible format. Coding in an NVivo interface is a bottom up approach (Pidgeon *et al.*, 1991), whereby transcription leads to the construction of codes which in turn identifies relationships in the data. Open coding was employed to produce categories within data, which are numerous. The linkage of categories into clusters results in emergent themes in the data, presented in the next chapter (6), which inform the subsequent stages of the study.

### 6.3.2 Stage Three: Survey

Motivation to travel, particularly the driving forces (see Chapter Three), provided an insight into possible tourist motivation and demand (Crompton, 1979; Dann 1977; Iso-Ahola, 1980; Lundberg, 1990; Plog, 2002; Ryan 2002). In the pilot survey Crompton’s classification of travelling motives (1979), identified nine motives for travel: seven of which were socio-psychological or push motives, and two cultural pull motives, novelty and education. In this study, push factors refer to the specific forces that influence a person’s decision to take a vacation, while pull factors refer to the forces that influence the person’s decision of which specific destination should be selected. The seven socio-psychological desires to travel are: 1. escaping from weekday routines, 2. relaxing, 3. escaping from socially acceptable roles, 4. self-evaluation and contemplation, 5. raising status, 6. improving relationships in family and 7. increasing social intercourse (Crompton 1979:). From these 7 travel motives, 9 questions have been designed and used in the first section of this pilot survey. It was essential to word the questions carefully and avoid long and ambiguous, leading, biased questions, as well as jargon. The following are the questions used which relate directly to the first question in the study:

Figure 6.2: Motivation to Travel Survey

Section One – Motivation to travel						
<b>1</b>	<b>Escaping from weekday routines</b> I have a desire to experience new and different places	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>2</b>	<b>Relaxing</b> I want to view life at a slower pace	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree

<b>3</b>	<b>Escaping from socially acceptable roles</b> I want to be seen as an astronomer	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>4</b>	<b>Self evaluation and contemplation</b> I want to express myself	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>5</b>	<b>Raising status</b> I want to show other people my skills	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>6</b>	<b>Improving relationships in family</b> I want to share experiences with family and friends	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>7</b>	<b>Increasing social intercourse</b> I would like to make new friends	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>8</b>	<b>Novelty</b> I have never visited a Dark Sky designated area	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>9</b>	<b>Education</b> I want to learn new things	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree

The second section of the survey consisted of 30 points related to motives for sensory pleasure. Taken from a psychology study which relates to the enjoyment of nature and its representation in painting, music, and literature, Eisenberger *et al.* (2010: 500-638) undertook eight studies of motive for sensory pleasure. The studies provided a series of 53 statements concerning preferences for a variety of sensory experiences involving vision, hearing, touch, and smell (adapted from Chapman *et al.*, 1976; Cacioppo, Petty, and Kao, 1984; Zuckerman, Kuhlman, and Camac, 1988). Thirty of these statements have been adapted for this study. The adaptations represent observed characteristics drawn from participant observation stage. In this study taste was not assessed, the opportunity to consume forest food or food that could be associated with the dark sky was not available.

An additional 18 questions identified from the research by Eisenberger, *et al.* (2010: 500-638), represent every day connections with nature (Questions 1-15, 20, 23, 27), these are prefixed with MSP=motives for sensory pleasure; and R which represents reversing the question to control for

agreement bias and have been used on various questions. The origins of Eisenberger *et al's* (*ibid*) research is based upon the mental health work of:

- Chapman *et al.* (1976) who created the Anhedonia Scale which assessed the inability of depressed patients to experience a variety of pleasures in everyday activities.
- Cacioppo, Petty, and Kao (1984) research into engaging in effortful cognitive endeavours, explored elements of knowledge acquisition, prefixed by (NC). The statements chosen in signify the desire for learning and problem solving which are intended to represent the dark sky event presentation. In choosing these questions the value of the presentations is evaluated.
- Zuckerman, Kuhlman, and Camac (1988) present the final category of questions related to Sensation Seeking (SS). Constructed to demonstrate the need for arousal that can be satisfied by a varied or intense stimulation, they contain items from the Impulsive un-socialised sensation seeking subscale. These questions have been chosen based on diverse content and adapted so that they satisfy the need for arousal that can be satisfied by experiences in the dark.

Figure 6.3: Sensory Motives

1	Beautiful scenery has always been a significant part of my life (MSP)	<div style="display: flex; justify-content: space-around; text-align: center;"> <span>① Strongly Agree</span> <span>② Agree</span> <span>③ Neither</span> <span>④ Disagree</span> <span>⑤ Strongly Disagree</span> </div>
2	People always exaggerate the beauty of nature (R) (MSP)	<div style="display: flex; justify-content: space-around; text-align: center;"> <span>① Strongly Agree</span> <span>② Agree</span> <span>③ Neither</span> <span>④ Disagree</span> <span>⑤ Strongly Disagree</span> </div>
3	The smell of the outdoors is different at night (R) (MSP)	<div style="display: flex; justify-content: space-around; text-align: center;"> <span>① Strongly Agree</span> <span>② Agree</span> <span>③ Neither</span> <span>④ Disagree</span> <span>⑤ Strongly Disagree</span> </div>
4	I spend a lot of time looking at things around me (MSP)	<div style="display: flex; justify-content: space-around; text-align: center;"> <span>① Strongly Agree</span> <span>② Agree</span> <span>③ Neither</span> <span>④ Disagree</span> <span>⑤ Strongly Disagree</span> </div>

<b>5</b>	Looking at the stars sometimes makes me feel excited (MSP)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>6</b>	Experiencing nature is central to my life (MSP)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>7</b>	I have found the sound of rustling leaves to be scary in the dark (MSP)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>8</b>	I enjoy silence (MSP)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>9</b>	The beauty of sunsets is greatly overrated (R) (MSP)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>10</b>	I think standing in the dark looking up is silly (R)(MSP)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>11</b>	I don't understand why people enjoy looking at the stars at night (R) (MSP)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>12</b>	I enjoy walking in the dark (MSP)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>13</b>	I enjoy the sound of wildlife at night (MSP)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>14</b>	New sights and sounds are very enjoyable (MSP) (SS)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree

<b>15</b>	I sometimes like to do things that are a little frightening (SS)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>16</b>	The notion of learning about the stars is appealing to me (NC)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>17</b>	I have been fascinated by the stars above (MSP)(NC)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>18</b>	I like doing new things just for the thrill of it (SS)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>19</b>	I'd rather do something that is sure to challenge my ability (NC)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>20</b>	The natural environment brings me closer to God (SS)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>21</b>	I feel a connection to this place (MSP) (SS)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>22</b>	The sounds of the forest scare me (SS)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>23</b>	I feel small when I gaze at the stars (MSP) (SS)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
<b>24</b>	I live in a light polluted environment (NC)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree

25	I don't feel safe in the dark (R) (SS)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
26	I have a serious interest in the night sky (MSP) (NC)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
27	Looking at the stars is life affirming (SS)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
29	I feel calmer after stargazing (SS)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
30	I am drawn to the light when I am in the dark (MSP)	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree

The third section of the survey focused on trip length, days versus overnight, type of accommodation, groupings of visitors, and time spent stargazing along with biographical data all of which can aid in determining a the possibility of different types of astro tourists as they may illustrate different needs, see Figure 6.4: Profile Data.

Figure 6.4: Profile Data

Gender? Please tick where appropriate	Female	Male
Date of Birth?	19	Age:
How many people are in your party, including you?	Females:	Males:
How Much time did you spend stargazing? ----- Mins	How many nights will you spend in this area? ----- night/s	How many Dark Sky sites/parks have you visited previously? ---
<p>If staying overnight in the area, what type of accommodation are you using?</p> <p>Mark all that apply. (Leave blank if not staying in the area)</p> <p> <input type="checkbox"/> Hotel    <input type="checkbox"/> Bed and Breakfast    <input type="checkbox"/> Home of family and friends    <input type="checkbox"/> Caravan    <input type="checkbox"/> Campsite    <input type="checkbox"/> </p>		

Other, please state: \_\_\_\_\_

How far have you travelled to attend this event? \_\_\_\_\_ Miles

The measure utilised was scored on a 5-point Likert scale: 1, strongly agree; 2, agree; 3, neither; 4, Disagree; 5, strongly disagree. Likert-type scales are the most frequently used type of scale to measure travellers' cognitive image (Bernard, 2000; DeVellis, 2003). When considering the use of this scale, Kozak (2002) was observed to have used a similar scale, in his study 'Factors for taking an overseas vacation survey', 1 – was not important at all; 2 - very unimportant; 3 - slightly unimportant; 4 - neither important nor unimportant; 5 - slightly important; 6 - very important; and 7 - extremely important. Kozak (2002:222) argued that 'multidimensional measures of motivation with a continuous scaling format (i.e., Likert) are most appropriate for tourist-based studies'. A five-point scale was chosen to in favour of the 7 seven point scale to reduce the time spent completing the survey as the events are time fixed. This is affirmed, by Babakus and Mangold (1992) who stress that a 5 - point Likert-type scale is used to increase response rate and response quality along with reducing respondents' frustration level. The summated value allowed all responses to be easily quantified and readily coded within NVivo.

### 6.3.3 Sampling Strategy: Pilot Motives Study

A small-scale pilot survey was carried out at the first Forestry Commission event of 2014, January. Those who attended the event (19 respondents) sat at tables around the visitor centre, mainly in small groups: families, couples, friends, and a few individuals. Approaching these groups or individuals was easy, as the events always started with a few sandwiches and soft drinks which relaxed people.

As a matter of convenience, each table was approached systematically, the respondents were asked if they would like to participate in the research, whilst their reason for attending the event was ascertained. An information sheet, a consent sheet and the survey were issued to each person on each table. Respondents were asked to complete the questionnaire once they had participated in the stargazing experience but to read the advisor information before. The information sheet detailed the aims of the study and provided storage and confidentially information (see appendix 8: Compliance Forms). Following the presentation, all respondents went outside to view the night sky, each person returned after between 10-30 minutes to complete the survey, all 19 respondents completed the survey. Time spent outside was recorded on each survey to ascertain commitment and engagement

to stargazing, as it is perceived that those who spent a longer period of time stargazing have a higher level of interest.

Following the pilot study, it was identified that the travel motivations related to the primary reason for travel are important. They identify the psychological construct which have multidimensional underlying needs and desires for travel. Although the Dark Sky event may conceivably be a pull factor it may not be the primary reason. In determining the different types of astro tourist it is important to assess the level of interest in the activity, particularly as this geographical location and the destination has so much to offer.

By better understanding the diversity of reasons for travel to a dark sky event there is the potential that tourism managers will be able to take advantage of demand characteristics as they have a great deal of control of destination attributes. This is particularly relevant given the escalating importance of this emerging form of tourism. To capture this, the following categories have been added to the study as seen in Figure 6.5: Primary Motives.

Figure 6.5: Primary Motives

Section One up-dated– Primary Motivation to travel						
1	I want to see the stars	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
2	I want to learn about the cosmos	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
3	I have an interest in witchcraft	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
4	I have an interest in walking	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
5	I have an interest in nature	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree
6	I wanted to experience local food	① Strongly Agree	② Agree	③ Neither	④ Disagree	⑤ Strongly Disagree

7	I have seen the Dark Sky advertised in the media and wanted to see it for myself	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">① Strongly Agree</div> <div style="text-align: center;">② Agree</div> <div style="text-align: center;">③ Neither</div> <div style="text-align: center;">④ Disagree</div> <div style="text-align: center;">⑤ Strongly Disagree</div> </div>
8	Please add any additional reason you might have for being in the area and attending this event:	

#### 6.3.4 Survey

Following the pilot study, it was evident that the questions developed, reflected the theoretical concepts as they could establish the motivation (primary and secondary) and sensory experience of star gazers at dark sky events. They also focused upon the demographic details, thus enabling the development of profiles and allowed participants to identify if they would be interested in being contacted to participate in the study further. The principle objective being to investigate the tourists' perception of place and space and how motives affect the decision to travel and the experiences they have.

#### 6.3.5 Survey Data Collection Approach

Subsequently data collection began at the Sanctuary event, 46 surveys were administered, with a return of 37 usable surveys collected, which equates to 88%. Additionally, surveys were distributed at 6 Forestry Commission events (September 2014-December 2015), 32 were used, totalling n=69 completed returns. Nineteen of those who completed the survey and who expressed an interest to be involved further were chosen for the purposeful sample – the participants identified represented a diverse population, with mixed interests, varying amounts of time spent stargazing, and varying amounts of distance travelled.

Dark Sky events are advertised on the Forestry Commission website, participants are required to book in advance, possibly denoting that visitors are likely to have an existing interest in either the dark sky park or stargazing. Awareness of these predisposed determinants highlights some limitations of bias; therefore, the Sanctuary event was identified as being integral to the study due to it being open to all, no booking requirements existed, participants were from a diverse range of interests.

#### 6.3.6 Survey Data Analysis

The data was initially analysed using Excel 10, as this particular programme aids in determining the relationship between a dependent or outcome variable, and another independent variable in any given population (Hathaway, 1995; McCullough, 1997). In this case, the dependent variables being investigated are the primary and sensory motivation factors that influence the decision-making process to travel and that illustrate commitment to stargazing. SPSS was utilised to identify the

structural relationships between variables and identify themes of significance pertaining to dark sky events participants. These emergent themes would then go onto inform the subsequent, final stage of research, semi structured interviews.

#### 6.4 Stage Four – Semi Structured interviews

In many respects it may seem obvious that stargazing is a nature-based activity as it is carried out outdoors in a nocturnal environment therefore interviews take place in the dark. In the dark there is a lack of visual clues as to how the participant is feeling. As a result, a semi-structured interview approach was employed to gain data appropriate to the phenomenographic view of uncovering different qualitative ways in which the participants viewed, experienced and/or sensed the phenomenon (Marton, 1994). The focus was on understanding and exploring the conceptual stance of the participants when engaging in stargazing which can be seen as engaging with the cosmos at a distance.

*It was anticipated that participants would be at the destination to star gaze in a dark sky designated park, therefore the importance of a dark sky place in the natural environment was not dismissed. However, to gain further insight into the astro tourist experience interviews were the next logical method to be used as they have the capability to provide context and meaning in relation to the astro tourist experience, particularly as probing questions will encourage story telling which are rich in data.*

Although there are no recipes for effective interviewing, there are some useful guidelines that were considered and followed, loosely. These guidelines, which have been developed by Patton (1987), are summarized in appendix 9. By using these guidelines, the aim was to 'probe deeply, to uncover new clues, open up new dimensions of a problem and to secure vivid, accurate inclusive accounts that are based on personal experience' (Easterby-Smith *et al.* 2008:144). Strauss and Corbin (1998) suggest using initial or sensitising questions, to help the researcher grasp what the data might be indicating for example: 'Who are the participants involved?', 'What are the participants' definitions and meaning of these phenomena or situations?' (Strauss and Corbin, 1998:77). These types of questions link favourably to exploring experience as highlighted in table 6.4.

However, there are several disadvantages of interviews, for example, bias responses by the researcher and difficulty in comparing the evidence due to different participants having their own responses (Creswell, 2009). The issue of researcher bias was addressed early in the study by engaging in reflexivity, as this study enabled me to write with a degree of self-awareness, thus *I was able to provide critical self-accounts of my research journey*. However, as Finlay (2002: 212) notes:

*'In some ways, embarking on reflexivity is akin to entering uncertain terrain where solid ground can all too easily give way to swamp and mire. The challenge is to negotiate a path through this complicated landscape – one that exposes the traveller to interesting discoveries while ensuring a route out the other side. Researchers have to negotiate the 'swamp' of interminable self analysis and self disclosure. On their journey, they can all too easily fall into the mire of the infinite regress of excessive self analysis and deconstructions at the expense of focusing on the research participants and developing understanding. Reflexive analysis is always problematic'*

However, DeVault (1997) and Hertz (1997) offer a life-line to the swamp, in acknowledging that a balance is needed between personal revelations and their link to the broader study. In general, this study seeks to emphasize a way of interpreting a wider social world to reduce bias from the more self-indulgent approach of autoethnography which emphasises the self much more.

The survey allowed for the identification of further probing questions to be posed to the participants. The issue of comparison and bias was addressed with the use of NVivo coding for variables as hyperlinks between retrieved segments and the source documents, i.e.: literature, interview transcripts, and surveys.

Phenomenographic data collection is primarily face-to-face interviews within the field of education studies (Ashworth and Lucas, 2000; Dall'Alba, 1996; Marton, 1986, 1996) and research psychology (Kvale, 1983, 1996, 1997; Bruce, 1984). More recently it has been used to study human competence at work (Sandberg, 2000), in service research (Di Mascio, 2010) and in tourism management (Novais, *et al.* 2018; Ryan, 2000)

Kvale (1983) and Bruce (1994: 49) noted several qualities shared between the Phenomenographic and qualitative research interview. These qualities are:

- they are centred on the interviewee's life-world;
- they seek to understand the meaning of phenomenon in the interviewee's life-world;
- they are qualitative, descriptive, specific and pre-suppositionless;
- they are focused on certain themes;
- they are open to ambiguities and change;
- they take place in an interpersonal interaction;
- they may be a positive experience.

In an attempt to discover the qualitative ways in which people experience, conceptualise, realise and understand various aspects of stargazing (Dark Sky Park), this case explores variations in how the participants experience or understand the phenomenon of interest. Hence the focus of the interviews is on the relationship between the participants and the research object of interest, rather than the participant or the research object itself (Bruce, 1997). This study rejected any attempt to objectify reality, as there is the belief that people have varying conceptions and experiences of reality (Ryan, 1995) thus when considering if different types of astro tourist exist it would be based upon clusters of motives and behaviours. Phenomenography enables the mapping of variations in experience of the visitors to dark sky parks (Dunkin, 2000). The choice of a phenomenographic approach was based on the most appropriate fit with respect to the aims of the study and the nature of the phenomenon being studied. A phenomenographic approach also fits with the use of NVivo software as it facilitates the coding of interviews to gain an insight into meaningful information.

As this study has a phenomenographic orientation, there was no attempt to generalise the results to a wider population, although a different type of astro tourist may exist, they will be based on clusters of similarity. Therefore, it was not necessary to employ a random sampling method in participant selection for interviewing or to identify empirical statistical significance as suggested by Corbin and Strauss (2008). Instead, trustworthiness lies in the accurate identification of a range of experience around the phenomena to create clusters, not the frequency of occurrence of those experiences (Ryan, 2003). Therefore, the use of semi structured interviews was seen to be the most appropriate method of data collection as it allowed the respondents to expand on the topic introduced by the researcher whilst exploring new ones (Kvale, 1997). Thus, allowing the participants the opportunity to reveal intangible aspects of their experience by ascribing words or emotions of personal relevance to them.

Notwithstanding the lack of previous empirical research in astro tourism which utilises the phenomenographic approach, the above provides both ontologically and epistemologically appropriate for the exploration of astro tourist experience. Demonstrating that phenomenographical methods of investigation facilitate a researchers' understanding of the sensory experiences of participants as viewed through a psychogeographical lens. More specifically, qualitative technique inquiry has generated rich, thick data on the experience of cosmic space as viewed in place and the dichotomies that exist between place and space.

*Importantly, this process of collecting data allowed me to freely communicate on a personal, meaningful level with the participants, as it afforded me the opportunity to wholly engage with the astro tourists and to 'recognise the self within the meaning-making process' (Schmidt, 2005:122). I became aware of my own feelings in relation to place and cosmic space and the sensory aspects of being in the dark with strangers, thus recognising that knowledge is inevitably affected by the knower.*

#### 6.4.1 Sampling Strategy

The method employed for sampling in this stage of the study is purposeful theoretical (Maxwell, 1992; Maykut and Morehouse, 1994; Corbin and Strauss, 2008). Purposeful sampling allows the researcher to use their own judgement in choosing the participants who are identified as being able to answer the research questions that meet the studies aim and objectives (Finn and Elliott-Walton, 2000). Recognising the subjective nature of this approach, purposeful sampling involved the selection of participants that are broad enough to represent a range of views, and theoretical diversity as each respondent was chosen based on an assessment of whether they could contribute to expanding the knowledge on Dark Sky Event participants. For,

*'Phenomenography is focused on the ways of experiencing different phenomena, ways of seeing them, knowing about them and having skills related to them. However, the aim is not to find the singular essence, but the variation and the architecture of this variation by different aspects that define the phenomena' (Walker, 1998:9).*

Variations were sought in terms of age range, time spent observing and distance travelled to the event along with primary interests, all of which would provide an insight into the practical activity of stargazing and the level of commitment and engagement. The number of interviews carried out was 19, varying in length from 20 to 40 minutes, all with the same semi-structured approach. Interviews ceased once empirical saturation was reached and little new knowledge emerged. See appendix 10: for semi-structured questions.

#### 6.4.2 Profiling the Interview Participants

At the end of each survey, the participants socio-demographic characteristics (home location, age, gender, level of interest in stargazing, attending with family members, friends or alone) along with travel characteristics (first or other site visits, length of stay in the area, source of information about event) data was gathered. It was believed that this data would provide a better understanding of the types of people who participate in astro tourism. This set of questions is usually used for profiling as

it yields purposeful data and was essential to identify participants to approach in order to take part in the interview stage (Jonsson and Devonish, 2008; Molera and Pilar Albaladejo, 2007). Table 6.2 illustrates the profiles of the 19 interview participants and shows that by purposeful sampling a cross section of participants were chosen for the study. Most of the participants were interviewed after the event, whereby the surveys were quickly screened by the researcher and participant approached. The screening process was based on time spent stargazing, distance travelled, age and gender, as previously mentioned.

*It became apparent, even before the screening process, who the participants would be as each spoke freely (with hushed voices) about their interests and social circumstances whilst queuing to use the telescope.*

Table 6.2: Profile of Interview Participants

Interviewee	Duration of time stargazing	Number of other sites visited	Gender	Age	Distance travelled Miles	Nights in area
Morag	12 mins	0	Female	83	25	resident
Dan	47 mins	3	Male	22	200	2
Steph	30 mins	2	Female	48	200	2
Ronnie	40 mins	3	Female	57	245	4
Jackie	10 mins	0	Female	45	112	3
Graham	34 mins	0	Male	46	112	3
David	26 mins	0	Male	43	75	2
Adam	21 mins	0	Male	20	12	1
Robyn	30 mins	0	Female	71	56	2
Hazel	9 mins	0	Female	32	98	1
Stuart	35 mins	1	Male	37	260	3
Nicole	35 mins	0	Female	33	260	3
Douglas	30 mins	0	Male	19	54	1
Pat	30 mins	0	female	20	54	1
Ollia	22 mins	0	Female	26	? Spain 600	2
Alf	22mins	0	Male	74	7	resident

Dan	35 mins	0	Male	25	189	2
Tina	15 mins	0	Female	19	189	2
Mark	23 mins	0	Male	62	78	1

To investigate the why and the how of decision making, in relation to the experience of Dark Sky events participants, emphasis was attached to words rather than the quantification of data of the what, where, who and when as gathered during stage three. The why and the how are explored via personal interactions of the interviewees with the Dark Sky Event through a process of open-ended semi-structured questions. This process encouraged participants to explore a variety of stories without being led by the researcher. The questions posed were focused, simple, and open-ended allowing the participants to speak freely about their experiences whilst encouraging the sharing of feelings and senses associated with stargazing and being in the dark (see table 6.3 for sample).

Following the collection of the interview data on a digital recording device, Interview transcripts were produced which required the content to be unpacked. To accomplish an understanding of sensitive tourism issues revealed during the interviews, discourse analysis was conducted.

#### 6.4.3 Discourse Analysis

Discourse analysis is a content analysis process, whereby identification of key units of content in utterances are summarised leading to the making of inferences out of those summaries (Holstic, 1969; Gibson, 2002). Discourse analysis is particularly suitable when the discussed issue is sensitive in nature and thus 'would more likely be expressed in an implicit rather than explicit manner' (Gibson, 2002:12). Many scholars have used (or supported the use of) discourse analysis to address sensitive tourism issues (Gibson, 2002; Hollinshead and Jamal, 2001; Pritchard and Morgan, 2001; Tribe, 2005).

There are a variety of different methods used by scholars to analyze discourses. Gibson (2002) outlines four which illustrate making inferences out of the discourses collected: 1, Editing; 2, Identifying and summarising keyword (s); 3, Key phrases; 4, grouping inferences under common theme (s) and sub-themes (categorisation). The need for editing the discourse is often a pre-requisite which precedes other steps and stem from the fact that many discourses (interview transcriptions in particular) are not in a perfect useable format i.e. they contain meaningless verbal expressions such as: 'er', 'so', 'you know', and 'ok'. Editing allows for streamlining to make it usable without changing the fundamental meaning(s), a process which was carried out before inputting the transcript data into NVivo 10.

The process of identifying and summarizing keyword(s) or phrases is similar in nature to the creation of Nodes in NVivo. Interview transcripts were saved in rich text files, each question was highlighted with a different heading, files were then imported into NVivo ready for coding with the use of NVivo free node facility. Nodes are containers for text, each relating to or illustrating categories within the data, e.g., feelings, senses etc which are formed from keywords/ phrases and inferences. Table 6.3 identifies the key semi structured interview questions as mentioned above, these were supplemented with probing questions, together with the nodes used during the initial coding. The numbers identified in keywords/phrases and inferences illustrate the amount of time these were stated by the participants in during the interview process.

Table 6.3 Semi Structured Interview Questions

Node/Theme	Interview Questions	Understanding Sought	Keywords/ phrases	Inferences
Attachment	Why did you choose to attend an Event in a Dark Sky Park?  What did you expect to find?	Expectation and understanding of what a Dark Sky Park has to offer before they came	15	7
Place	What made you choose this destination?	There are other Dark Skies, why this one. Was the place the most important determinant or the event?	23	9
Experience	Tell me about your visit, the high points, any low points, memories you will take away?	Stories, narrative about the experience, any encounters they have had, memorable moments. Any disappointments?	37	25
Sensory Motive	If someone at home were to ask about Dark Sky what would you tell them?  Were there any times during your visit that you felt your senses were stimulated?	What senses are stimulated by being in the Dark	36	28

Space	What attracts you to looking at the Cosmos	Whether the participants are new to stargazing, level of interest, are they interested in astronomy or astrology? Are there any spiritual, extraterrestrial or other associations to space	26	12
Time	Tell me what does time mean to you?  Does being in this place remind you of anything?  Do you have any memories of stargazing?	How does the image of time change when looking into space through time	41	28

#### 6.4.4 Interview Data Analysis

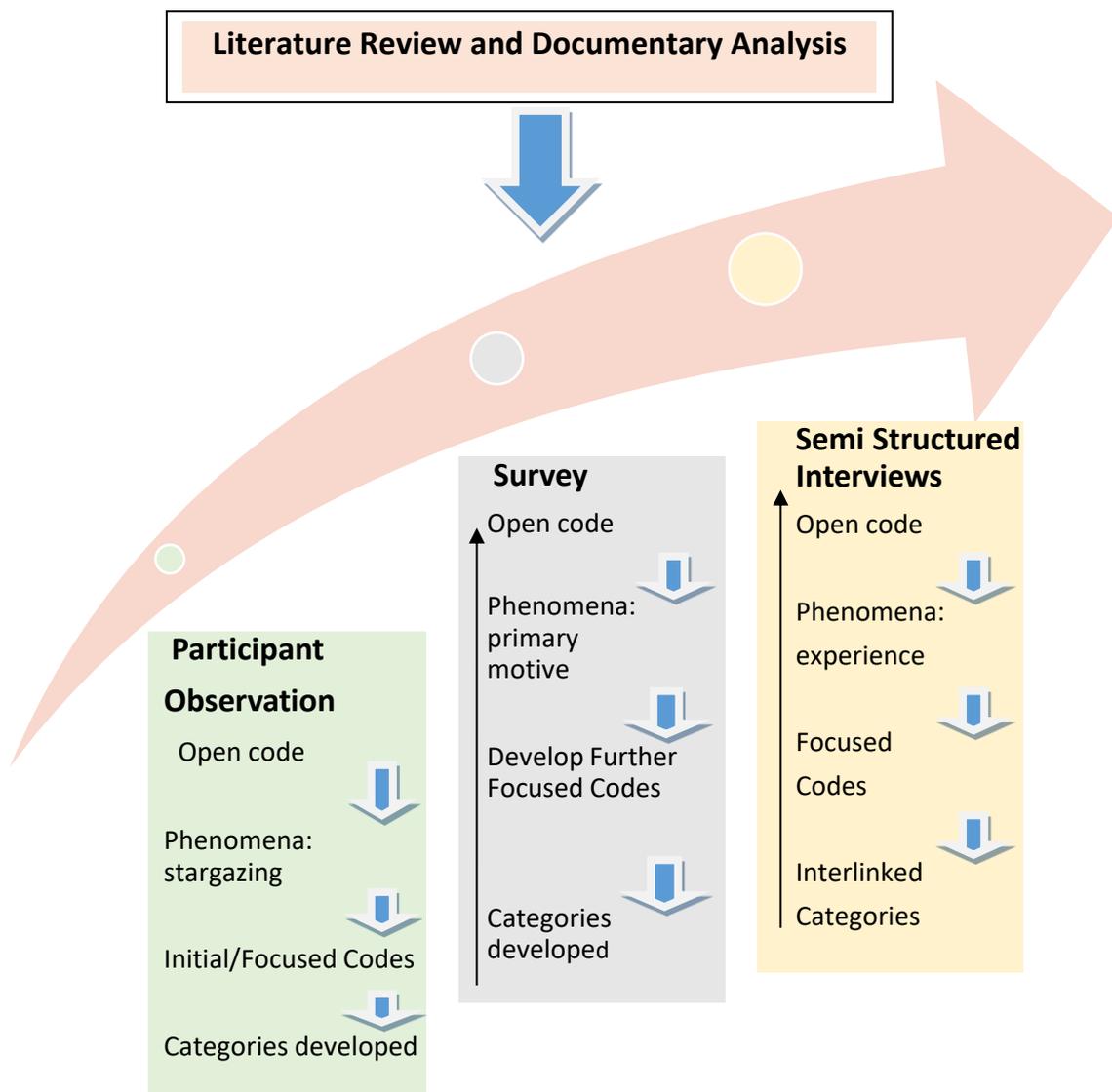
The qualitative data collected during interviews were analysed by using NVivo 10, a software tool which enables the researcher to organise, interrogate and analyse qualitative data – a data base. NVivo 10 is a computer assisted qualitative data analysis software package (CAQDAS) which has been designed to counter some of the criticism levied by the academic community against qualitative methods, i.e. subjectivity, descriptive, lacking transparency, and that they cannot be replicated (Boulton and Hammersley, 1996; Robson, 2002). CAQDAS advocates (Kelle and Laurie, 1995; Marshall, 1999) argues that it enhances the data analysis as it is more transparent and systematic.

As a code-based theory building program, NVivo 10 provides the flexibility to support qualitative techniques. It offered a particularly helpful way of storing project data (participant observation notes, survey data, interview transcripts, individual transcripts and media data) so that the analytical process could take advantage of the attributes of inputting a variety of data, particularly reading and re-reading interviews. The significance of this CAQDAS is in the applicability to identify significant meaning and thus creating themes that supported the shaping of different astro tourist types.

Nevertheless, NVivo does not claim to do qualitative data analysis; it is a software tool which assists the researcher to organise, interrogate and analyse qualitative data (Bazeley, 2013). As with any tool, effective use relies upon a good understanding of how it operates, gained either through training or simply spending time becoming familiar with its capabilities, which are extensive. Coding qualitative interview data in order to make sense of the participant experiences and act on required the input of interview data into NVivo 10. This closeness to the data is essential as Lee and Esterhuizen (2000)

identify. Each interview was recorded and transcribed. Coding was then the first step of data analysis, it was instrumental in the movement away from particular statements to more abstract interpretations of the interview data (Charmaz, 2006). Constituting the start of the process, codes were assigned to the participants' statements and words to develop concepts. To identify initial phenomena and produce a list of themes of importance to the participant open coding, also known as line-by-line coding utilised. Every line of the interview was conceptually labelled to capture what has been said. These labels corresponded too closely to the interview context so when taken from the participants own words the statements develop concepts which constitute the start of the analytic process. The second stage is abstract, known as focused coding, whereby codes are applied to paragraphs or lines in the transcripts. Here the researcher identifies the most telling codes which represent the participant's voice. The third stage is axial coding, defined by Strauss and Corbin as 'the act of relating categories to subcategories along the lines of their properties and dimensions' (Strauss and Corbin, 1998:123). During this stage, depth and structure is added to existing codes. The following (Figure6.6) illustrates the general process of how coding from participant observation informed the survey and lead to the development of interview questions:

Figure 6.6: Coding Process



By following a detailed and meticulous process of content analysis, open coding the transcripts, analysing the surveys and open coding the interview transcripts, the researcher’s assumptions were tested, and emergent themes investigated. Notwithstanding, the principles of credibility and dependability were observed as follows.

## 6.5 Research Determinants

### 6.5.1 Verification Strategies

Morse, *et al.* (2002: 17) expressed their concerns that ‘there has been a tendency for qualitative researchers to focus on the tangible outcomes of the research rather than demonstrating how verification strategies are used to shape and direct the research during its development’. As this research is qualitative, strategies were used that ascertained trustworthiness in evaluating the study

as suggested by Whiteley (cited in Joungtrakul, 2010) which concentrate on four major strategies: (1) authenticity; (2) triangulation; (3) audit trail and (4) familiarization study. Bashir, *et al.* (2008) indicated that in qualitative studies were multi-techniques have been employed by the researcher to enhance the research that 'researcher bias is able to be minimized if the researcher spends enough time in the field employing multiple data collection strategies to corroborate their findings' (*ibid*:41).

### 6.5.2 Credibility

Patton (2002) notes that, in qualitative research, the credibility issue depends on three different elements: 1. methodical techniques for gathering data that is carefully analysed, 2. The credibility of the researcher depends on training and experience, 3. Belief in naturalistic examination and qualitative methods. Patton adds that 'the credibility of qualitative inquiry is especially dependent on the credibility of the researcher because the researcher is the instrument of data collection and the centre of analytic process' (*ibid*: 461).

*Although I did not have a great deal of experience or skills in this research area, a world view based upon based upon the belief that reality is constructed by sensory encounters with others and place in relation to the environment allowed for the development of skills which would render the empirical analysis credible. In carrying out participant observation, I ensured that there would be prolonged engagement between the investigator and the participants in order to adequate understand the events and to establish a relationship of trust Lincoln and Guba, 1985).*

### 6.5.3 Dependability

In addressing the issue of dependability Lincoln and Guba (1985) stress that there are close ties between credibility and dependability, arguing that, in practice, a demonstration of the former goes some distance in ensuring the latter. This was achieved by using sequential qualitative techniques which were reported in detail, and analysed using NVivo 10 software, thereby enabling any future researcher to repeat the work, if not necessarily to gain the exact same results. Thus, this research design may be viewed as a prototype model which allows the reader to assess the extent of the investigation carried out.

### 6.5.4 Ethics

One of the most important issues in research where humans are involved is ethics, for the rights of participants (privacy and confidentiality) must be protected (Neuman, 2003). Care was taken throughout to follow the University of Central Lancashire's ethical guidelines particularly with regards to carrying out the participant observations, survey and semi-structured interviews. As part of the

guidelines a risk assessment was carried – working in a nocturnal environment presents some challenges but these are made safe by working with key stakeholders and observing personal safety requirements. The next stage was to produce a participant information sheet which: introduced the researcher; the purpose of the study; explanation of what is expected of participants; the subjects rights; the data storage information; confidentiality and anonymity compliance; researcher contact details. Within this study the names of participants have been changed but all other biographical data remains accurate.

#### 6.5.5 Covert Research

During the early stages of this study, covert participation was undertaken at Dark Sky Events. This approach would be criticised on ethical grounds by Bulmer (1982) and Punch (1986) as they believe it is deceptive. Deception in research occurs when the researcher's actions are misrepresented to the research subject, in this study there was no attempt to be deceptive, it was simply a case that there was not an opportunity to disclose. However, disclosure is not a dichotomous concept, something that is done or not done, but a spectrum activity, sometimes I revealed nothing (during the first observation), other times I revealed a little (at the second observation), ultimately, I provided full disclosure (all subsequent observations and interviews where consent forms were completed). This is not unusual, as Lugosi (2006) recognised that overt research often has covert elements.

#### 6.5.6 Authenticity

Working using the lens of several disciplines: tourism, education studies, astronomy and astrological, enabled a variety of research studies to be considered which are not normally synthesised into a tourism experience study, thus providing authenticity. Conducting this complex multifocal research on the experience of dark sky event participants within a natural nocturnal environment, an area of research that is usually studied from a conceptual stance due to the obvious limitations of light and the safety of the researcher, is also authentic. In this study unprecedented access to participate was afforded by the Forestry Commission who hosted the events and encouraged proximity to the astro tourists, making the choice of the sequential qualitative techniques not only authentic but also serendipitous and achievable.

Fine and Deegan, (1996:76) suggest that serendipity is an identifiable component of good qualitative research. Understood 'as the unique and contingent mix of insight coupled with chance,' this research has been serendipitous from the outset. Fine and Deegan (*ibid*) state: The direction of a course of analysis and the research questions asked can be influenced by the alliances a researcher makes in the early stages of a project. It is not sufficient that one makes contact (good fortune), but one must also be able to capitalise on this contact (serendipity). The intimacy of having a home in the area, open access to the research sight and an interest in the dark sky environment meant that the

timeliness of dark sky designation resulted in what the researcher believes to be Goldilock zone: a perfect combination of all the necessary components that make the research both viable and successful.

## 6.6 Summary of the Research Approach

The research process outlined above consists of a number of interrelated stages where data was gathered in the UK's first Dark Sky Park in Dumfries and Galloway – The Galloway Forest. As an integrated piece of research related to the astro tourist experience a dual methodological approach was taken, ethnography and phenomenography, as discussed in Chapter 2. The research comprises of four stages in total, with an overall objective to produce a holistic view of the astro tourist. Consequentially, the research is designed to investigate a social phenomena (cosmic gazing), in a nocturnal natural environment. However, the research process is adaptable to change, especially as the study is exploratory and qualitative methods of enquiry have been employed.

## Chapter Seven

### 7.0 Findings and Analysis: Searching for the Light

#### 7.1 Introduction

The purpose of this chapter is to examine the findings of this ethnographic and phenomenographic study. In particular, this chapter identifies and considers the themes and implications that have emerged from analysis of qualitative data. This chapter commences with a re-iteration of the chapter stages before providing a context for the research findings by way of the motives for visiting the Dark Sky Park.

The research was undertaken over a thirty-month period at eight Dark Sky events, this was carried out utilising sequential qualitative techniques as identified in chapter 6, which follow an interpretivist and constructivist philosophy. As this chapter explores the psychogeographic experiences of astro tourists in a nocturnal environment the approach taken acknowledges that the empirical data has the potential to create clusters - which in-turn may lead to a wider understanding of the astro tourist.

As the focus of this enquiry is to explore the behaviour and experiences of participants at the dark sky events, the stages represented in figure 7.1 illustrate that there are three more different, but sequential, ways the data was collected, analysed and reflected upon. To clarify, the first stage was to review documents and reports etc. as they were instrumental in producing the case study pertaining to the 1<sup>st</sup> Dark Sky Park in Dumfries and Galloway. The review of stage one provided the conceptual nature of the study with regards to the environmental attributes which are likely to pull participants to dark sky events to star gaze. It went onto provide an interpretation of the spatial significance of the Dark Sky Park, as stage one constructed and validates the psychogeographical stance taken that a nocturnal environment is sensory, authentic and (for many) a new experience.

Figure 7.1: Chapter Structure



Stage two, focuses on the process of understanding the astro tourist's behaviour, this is achieved via covert and overt participant observation, thus taking a traditional ethnographic approach by

representing and interpreting the behaviour of astro tourists and their displayed emotions in a reflexive manner.

Subsequently stage three, having identified some emergent characteristics and gained knowledge, via a behavioural analysis of the participants in the nocturnal environment in stage two, provides emergent themes related to the motives and sensory nature of the participants experience. Digging deeper in stage three, a survey technique is adopted. The work of Crompton (1979), Iso-Ahola (1980) and Eisenberger (2010) was adapted to enable the motives for sensory pleasure at Dark Sky events to be ascertained. In conjunction with understanding their motives for sensory pleasure the survey also provides an understanding of the participants via the collection of profile data. The survey is designed to shed further light on the astro tourist experience so that analysis can be undertaken to ascertain the emergent themes required to conduct interviews.

The fourth and final stage poses semi-structured interview questions based upon the data generated via participant observation and the survey. The interviews were designed by utilising guidelines presented by Patton (1987), Strauss and Corbin (1998) and Easterby-Smith (2008) as they provide a structure for delving deeper into the experiences of tourists.

The structure of this thesis conveys the logical approach taken to address the aim and objectives of the study. As each stage builds, cumulatively upon the previous, it was decided it would be the most appropriate way to present the analysis of results and the subsequent discussions in the same sequential manner thus illustrating how the cumulative summaries set the scene for the next stage of the research, rather than following a traditional approach of findings and then discussion.

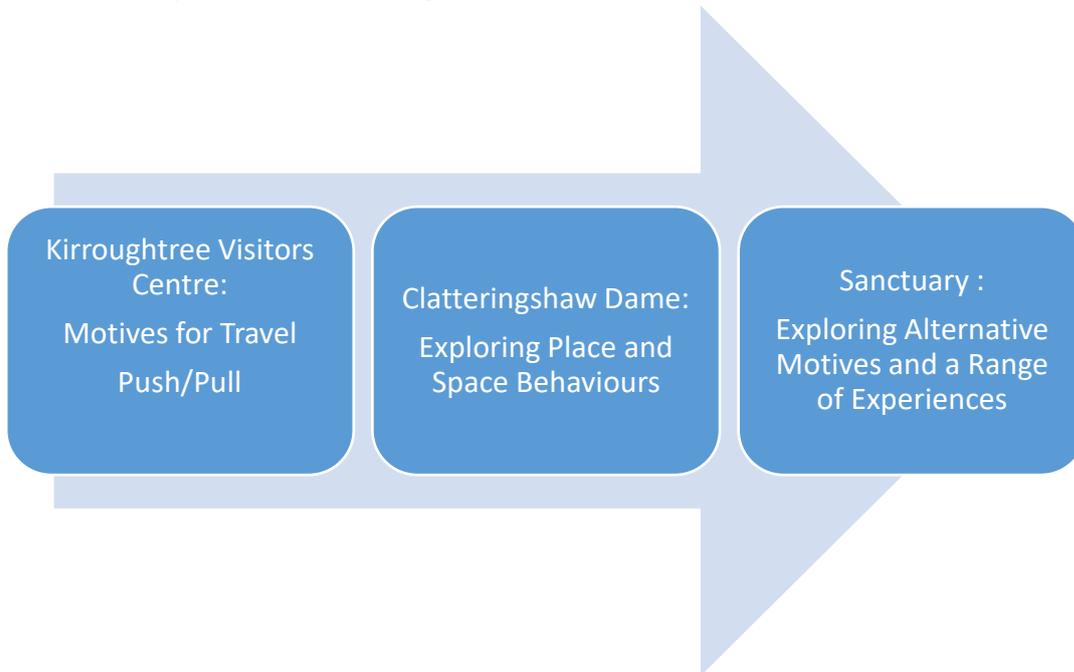
## 7.2 The Mask: The Astro Tourist

Whilst the literature review and documentary analysis provided an appreciation for tourism and astro tourism, it also conveyed the lack of coherent literature related to astro tourism and the complexities of the environment as this is a dynamic study. The methodology identified that a sequential qualitative technique approach was the most appropriate to meet the aim and objectives of this study. Stage two employs such a technique by way of participant observation, it draws upon comments from participant at dark sky events (covertly and overtly) to initiate an understanding of the astro tourist and to address the following objective:

- 1 To investigate how the tourist's perception of place and cosmic space affects their decision to travel

The following Figure 7.2 illustrates the process by which data was gathered via participant observations:

Figure 7.2: Participant Observation Stages



### 7.3 Dark Sky Events

As Dark Sky spaces are marketed not as a particular place or product, but rather an enhanced interpretation of a media image of a place (Young, 1999:375), they attract visitors who want to experience that enhanced vision of the cosmic gaze. Even in ideal circumstances in a Dark Sky, i.e. no cloud cover and with a Waxing or a Waning Crescent Moon, some of the images portrayed of cosmic phenomena such as an Aurora Borealis cannot be seen as the images portray, as these images are produced with camera filters, they not visible to the naked eye. The Forestry Commission deliver the first impression of one of their events as a traditional romanticised view of a cabin in the woods. (see figure 7.3: Glentool Visitors Centre).

Figure 7.3: Glentroot Visitors Centre in the Dark Sky Park



Two of the Visitor Centres are more modern but retain a rustic charm (see Kirroughtree Visitors Centre: Figure 7.4 and Clatteringshaw Dam: Figure 7.5 i.e. log burners, wood clad walls, and the smell of pine in the air). In total, three sites host the Dark Sky Events: Kirroughtree Visitors Centre (figure 7.4), Clatteringshaw Dame (figure 7.5), and Glentroot Visitor Centre (figure 7.3): not visited during this stage. These events are limited in number of participants to approx. 30; they all contain a similar format in that participants' book online in advance, they arrive at 7pm when they are ushered into the visitors' centre for a presentation, which lasts for approx. an hour. Following the presentation, the participants go outside to gaze at the stars using powerful binoculars; weather permitting therefore the climate influences the experience.

Figure 7.4: Kirroughtree Visitors Centre



The visitor centres are located off country roads but easily accessible to all with transportation. The parking facilities are of a good standard, allowing wheelchair accessibility and ample facilities for all participants. The nocturnal environment is truly dark, with only a few downward facing Light-Emitting Diode (LED) streetlights to illuminate the participants to the visitors' centre. The visitors' centre have blackout blinds so they appear to be unoccupied on approach but as you enter the room you are welcomed by a roaring log fire and a selection of food and drink, all of which is included in the package price for the event, the cost is minimal (£10 -£15 per person; 2014-2016).

Figure 7.5: Clatteringshaw Dam Visitor Centre



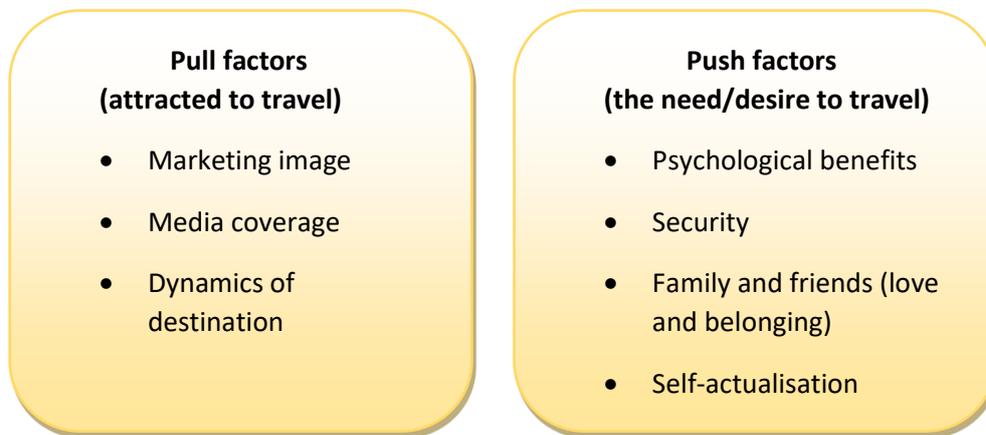
During this stage of the research 3 Dark Sky events were attended (Autumn/Winter of 2014-2015), the first two were hosted by the Forestry Commission at Kirroughtree Visitor Centre, the second at Clatteringshaw Dam Visitor Centre, the third 'Sanctuary' is hosted by a cultural arts groups but supported by the Forestry Commission (discussed in more detail later). At each of these events, covert and overt observation provided an insight into the behaviour, opinions and motives of Dark Sky event participants. Qualitative data of this type is suitable where variables have not yet been identified or a theory not yet built (Morrow, 2007). The data gathered at this stage is textual; it is collected via participant observation, stories and words used, along with behaviour displayed. As this data is rich, the data analysis is deep, as it went beyond content analysis to develop an understanding of the theoretical base in practice, which then went on to inform the subsequent stage, which is consistent with constructivism and the objectives of this study. It was believed that there are many realities, as these participants are all individuals with different interests and desires (Creswell and Plano Clark, 2007; Morrow, 2007).

To unmask the astro tourist, the data collection method pertained to observing and working alongside the participants at Dark Sky events. Participant observers commonly gathers data through casual conversations, with later stages going onto gather in-depth, informal, and semi-structured interviews data, as well as formally structured questionnaires (Jorgensen, 1989:8-24). Participant observation meant logging activities in the field related to the behaviour and experiences of as many participants as possible. Therefore, written records have been kept, along with some tape-recorded observations in the field, assumptions were made in relation to gender and age range of participants almost all observation notes were written up in the car due to lighting conditions.

As a way of seeding for the next stage I (whilst gaining an understanding of the activity, the terminology used, the setting, and the views of the participants) investigated the motives for travel, i.e. the Push and Pull factors as illustrated in figure 7.6. These provide a starting point, as it is possible to view the literature and media coverage that the participants have access to before they attend the

event (pull factors). It was then possible to see and record the interactions and behaviours of those at the event and take note of any particular reference to the push factors. Other comments made in relation to motivation theory at the event are recorded for analysis.

Figure 7.6: Push and Pull Factors



(adapted from, Uysal and Juowski, 1993: 844)

The narrative in this stage of the research is designed to engage the reader, it allows the reader to feel as though they are part of a lived experience, however this requires an overtly honest outlook therefore particular attention during the observations was paid to environmental factors, which according to Ward and Russell (1981) 'impinge' upon the visitor experience and sense of destination. The activities and behaviours of the visitors and facilities respectively were the main environmental components of this stage of the research.

### 7.3.1 Observation One: Motives

Arriving at the Kirroughtree Visitors Centre for the first time, I observed that it was truly dark but there were a couple of cars parked on the car park with their interior lights on. As a first-time stargazer, this experience was intimidating, were these people attending the same event or doing something of a sexual nature? The media had influenced my perception of what people get up to in car parks. There was also an intermittent flash of bright lights coming from the surrounding forest, these were intriguing but also suspicious. At this point, I must confess, that I thought of leaving and coming back with my husband – my senses were telling me to run, I might be in danger, but my gut was telling me to stand firm, I overcame my fear when I saw a couple getting out of their car and heading for the visitor centre door. Digital recorder in pocket, I made my way purposefully out of the car and across the car park. I began to wonder if the other participants felt nervous or was it just the fact that I was alone in a strange place at night.

On greeting a couple in their 40s, I entered into conversation very easily. Their motives for travel were based on seeing the Dark Sky Park and the Milky Way as featured on a 'Look Around' programme a

few weeks ago and wanting to find out more. They were surprised at how dark it was and commented that I must be brave coming out on my own. The fact that it was cold and wet was mentioned, environmental conditions seemed to focus the conversation as cloud cover was discussed whilst we waited for the host of the event (Keith Muir) to unlock the Visitor Centre door.

As the room filled up it became apparent that participants came from a diverse range of ages, most appeared to be in couples or pairs, with a scattering of several family groups dotted around the room – there were 26 people in total. Variances in individuals and families are discussed further in stage 3 where profile data is much clearer than assumptions. From observation, it was not possible to identify occupations, countries of origin or life experience. It was evident that there was a variety of age groups, an equal mix of genders and an air of anticipation with regard to seeing the stars. However, cloud cover was discussed at many of the tables, suggesting that the environmental impact of the experience was of paramount importance.

Not being a stargazer myself, I had never considered the environmental conditions, just the nocturnal environment (naïve), the two go hand in hand, cloud cover obscures the light from the stars and the opportunity to star gaze. Accordingly, research into the environmental significance illustrated that the bortal scale dictates the darkness level for Dark Sky designation, as identified earlier. This information was presented to the participants at each event. Each event began with a presentation lasting approximately 1 hour; questions tended to flow freely throughout as the presentation was pitched at a beginner level participant were encouraged to interact. The presentation focused upon the size of planets, the time taken to travel to planets and the observable cosmic landscape above the visitor centre, i.e. the constellations, planets, moon as of which could be seen with the naked eye.

As the presentation came to an end the participants started to make their way outside for the main event, the observation. Once all participants were gathered together outside, the doors of the centre were closed, the lights switched off and darkness descended. After gathering my bearings and listening to the opening introduction by the rangers (there were 2), who were hosting the stargazing section of the event, the group ventured down the main thoroughfare to where the focus of all the action – a set of very large binoculars on top of a tripod stand. All the participants wandered around whispering to each other and then suddenly began to queue up to use the binoculars. The change in voice tone intrigued me, why did the dark make people whisper? (this process was carried out at all events).

*At this stage in my research journey, I was not comfortable or able to declare my true intent with regards to attending the event, therefore my observation was covert. I wanted the participants to believe I was 'one of them' so I could discover the social reality of being an astro tourist. In many respects, I was one of them, as I was new to stargazing and being in the dark. I had never experienced an event of this nature but rather than wanting to learn about the cosmos I wanted to learn about the people.*

As I mingled with the participants, I spoke with them and listened to conversations. From observation, I noted gender and ages (which, as mentioned earlier, are approximate and based upon appearance, which is judgemental on my part) to make field notes. It seemed apparent that novice stargazers, like me, were frequently in awe, and deferred to the opinions of the host rangers and those participants who presented themselves as knowledgeable by pinpointing planets and constellations. All those I spoke with stated they knew very little about stargazing but some, when they were outside talking to those who had never star gazed before, demonstrated their knowledge with enthusiasm, illustrating that they are a complex group; illustrating that the astro tourist may wear many masks (one, as a beginner, another as an enthusiast, along with others) as is outlined in many of the comments below:

One female tourist in her mid-30s commented that *'some people know so much about the stars, I feel a little out of my depth'*. Often less knowledgeable tourists attributed the acquisition of knowledge to wanting to achieve self-fulfilment by asking which web site to access to learn more about star maps, asking about courses in astronomy and cosmic phenomena. This was illustrated, by a comment from the same female as above, who said *'it would be good to learn more about the stars... so that I can help my niece with her science projects'*.

A few participants expressed a desire to attend more events, and dissatisfaction from being excluded due to the lack of tickets available which appeared to make the events appear exclusive in some way to the participants. This may reflect a particular enduring desire in which social stratifications are simultaneously constructed and denied in deference to a commonly held, yet mythical notion of egalitarianism (Belich, 1996; Roper, 2005). These notions could also be derisive or inspirational.

Whilst integrating with those at the event by experiencing walking in the dark, it was noted that the participants were encouraged by the rangers, to express their personal interests in the cosmos. This was done, in part, to assess their previous experience of stargazing and their cosmic gaze preferences so that an appropriate pitch could be made to enhance the experience and fulfil the participant's expectations. At times, divergent interests were expressed in areas such as extra-terrestrial life or spirituality. For example, a woman in her mid-50s commented to her friend and the rangers that she believed that *'there's God in the sky'*, her friend did not reply, but asked a ranger *'if the object passing quickly by in the night sky was normal'*, he pointed out that it was a Satellite. She enquired as to the

*'number of Satellites?'* and then asked the question that she obviously was more interested in, which was *'have you seen any UFOs'*, he laughed and said *'no'*. She looked disappointed and moved away from the observation area. This illustrates that the motives for attendance at the event appear to be even more *'diverse and complex'* than initially anticipated, thus requiring further study - are these people looking for astronomy knowledge, spirituality, extra-terrestrial life? Although such notions appear to function as an unassailable default position, they do in fact celebrate distinction and the autonomous self, which is significant in a phenomenographic study.

Whilst queuing to use the telescope it was possible to interact socially with the participants, asking each person basic questions like *'why they attended the event?'*, *'what did you find most interesting?'* in an informal, introductory manner. During this stage, the goal was to clarify motives for travel and any significant differences in tourist needs and expectations. A female, late 20s commented, *'it is great to see more stars... , at home I don't notice them, why can't all places be this dark?'*. Identifying that locations that are light polluted are obviously undesirable for stargazing, whereas a dark sky park offers much more stargazing opportunities which identifies the need for education and knowledge on issue of light pollution. Although light pollution is an important aspect of being in a dark sky park it was not the focus of this study.

A male in his late 20s noted that *'we want to experience something new..., it's a pity we don't have enough time to see everything!'* suggesting that authenticity of experience is important to this visitor. The response provided an understanding of what the experience means to participants, as Maslow (1966:45) asserts *'there is no substitute for experience, none at all'*. Particularly, an authentic experience which is a complex multi-faceted phenomenon, as it consists of personal contextual factors that influence perception of the individual (Chhabra *et al.*, 2003).

A couple in their 50s discussed the darkness in comparison to where they lived in the highlands of Scotland, they discussed the shortcomings of the Dark Sky Park, saying that they could *'see the milky Way most nights' but here they couldn't, 'the sky is not clear enough'*. There was in fact some cloud cover therefore the Milky Way was not visible. Comparing destinations appeared to satisfy the couple as they affirmed that where they lived was better than a designated site. Trinh (1994:22) would suggest that *'not only do tourists find the 'other' in different place, but travellers aim to differentiate themselves from fellow tourists'*. Do these tourists want to be seen a superior because they perceive they live in a better place? Alternatively, are they collecting destinations to compare them? Could this in fact represent a type of astro tourist? By not meeting the expectations of these participants are they more likely to go elsewhere and compare, as they are looking for constructive authenticity which is referred to by Wang (1999) as being determined by visitor's experience backgrounds, and personal

feelings, for their view of the experience may be a negotiable concept rather than a social construct (Cohen, 1988).

Sometimes tourists expressed dissatisfaction at the experience: Female, late 30s commented on the cloud cover and cold weather, many times *'I'm ..... freezin' When is it going to clear up?' 'why is it so cold?' 'is anyone else cold?'*. She was wearing jeans and a short jacket, no hat, gloves or scarf and the temperature was approx. 3 degrees with a light wind, the ground was wet underfoot, a typical evening for stargazing. She appeared dissatisfied with the experience as the sensation brought about by the weather conditions appeared to have a negative effect, illustrating that the reason for travel tends to be a response to what is lacking yet desired (Cooper, 2005:56). So, when what is desired is also lacking, does a dialectical relationship between place and experience separate the participants from their surroundings or bring them together? Her dissatisfied response was met with opposition by other tourists, who were wearing warm layers: gloves scarves, hats, although they did not lead to any significant social censure, schism or expulsion, their responses did further clarify the autonomous self. This participant was attending with a friend, her own interest in stargazing was limited to moments of observation rather than a desire to gaze and savour. She was dressed much more appropriately, suggesting that she had booked the event and brought her friend along.

*This observation was instrumental in developing an understanding of the sensory importance of the astro tourist experience as it illustrated how emotions and the environment are closely linked to each other.*

Another observation of a female, mid 40s said *'I don't know what I'm looking at'*, she appeared frustrated, the rangers attempted to outline Oriens Belt, at which point she made excited noises and started pushing her partner with enthusiasm trying to get him to look at the same time as her. Once she moved aside, he looked through the binoculars and appeared less overwhelmed by the experience, but he did look through the binoculars for the longest period of time.

*This observation introduced the concept that time spent stargazing could conceivably indicate level of interest.*

Once both participants moved away, they hugged each other and whispered something to each other. Depicting, that along with understanding and knowledge there is an intimacy to the experience that needed further probing in a later stage of the research.

*This observation denoted a social and sharing interest in astro tourism.*

### 7.3.2 Observation Two: Exploring Place and Space Experiences

Attending the second event at Clatteringshaw Dam Visitor Centre emphasised a dichotomy between urban and rural environments as illustrated by a male in his early 60s commented that: *Glasgow is approximately 2-hour drive away by car; you couldn't attend these events without a car. When you drive over the coastal road past Girvan towards Clatteringshaw you encounter windy roads, all you can see is forest for miles, it's quite black, you really feel as though you have left the world behind..... As we approached the Dam, the lake was lit by the moon, which reflects a lot of light onto the road... a welcome sight after taking all those crazy bends... I'd like to live around here, if I ever retire....., it's peaceful....*. Other participants commented on 'silence' but very few commented on the scenery and the landscape, in fact they didn't seem to look around them at all, they focused their gaze beyond the horizon to the night sky, highlighting, during this very early stage in the research that the destination was not necessarily Clatteringshaw Dam, it was the Cosmos. Even space as a destination, appeared to be shrouded in time, as the light from distant planets takes thousands of years to travel to Earth, making virtual time travel another possible destination for some astro tourists. As observed by a young male in his early 20s, who commented, *'just think someone from one of those planets could be looking at Earth now and seeing it at a time when dinosaurs roamed....., mind blowing!*

*Time travel is a seductive concept, television has brought the concept into our homes, but the reality is that at present it does not exist except in terms of light and distance.*

A further insight into the significance of cosmic space was provided by a Female, mid 80s, who commented that *'the moon looks smaller than when I was a girl'*, and asked the rangers, *'why?'* The rangers afforded an explanation, that *'the moon moves away from the Earth each year by a fraction therefore it does appear to be getting smaller each year.'* The lady went on to talk about living in the area and never knowing what she was looking at but thinking about times gone by. This resonated with a comment from Buzz Aldrin who reflected that *'Whenever I gaze up at the Moon, I feel like I'm on a time machine. I am back to that precious pinpoint of time, standing on the foreboding - yet beautiful - Sea of Tranquillity. I could see our shining blue planet Earth poised in the darkness of space'* (Aldrin, nd). The capacity to articulate sights and wonder in experiences was highly valued by other participants who tended to join in, spotting moving objects across the sky or a particular planet/star such as Vaga, these conversations illustrated a need for belonging via their capacity to be included in moments of wonder and to enhance knowledge.

*This observation provided a link between scientific knowledge and nostalgia, for whilst gazing at the cosmic map, which is particularly poignant to psychogeography, you learn how these events are apprehended, mentally processed and acted upon. It is also possible to map the nocturnal gaze, as the participants focus on the known and then move onto the unknown.*

A male in his 30s, was busy setting up an expensive looking camera on a tripod for about 30 minutes. He asked the female ranger *'can you point out key astronomical sights'*; she was very happy to help and asked to view the pictures taken. They continued their conversation by discussing the technical merits of photography at night, i.e. speed of shutter, lens type, lighting, positioning, all of which was beyond my understanding, but it was apparent that there was a social connection with like-minded people. This illustrated that the reason he was attending the event was to partake in photography in a complex environment, a branch of astrophotography and an area worthy of study in its own right. His friend, a male of similar age, was more interested in the constellations and locating his star sign, Cancer. His enthusiasm for astrology was infectious as he asked the rangers to point out his birth sign, others around him also wanted to see theirs. The ranger demonstrated, on an application on his tablet (Skyview), which constellations could be seen just by pointing the device at the sky.

Astrology, although viewed by some as superstition nonsense, has the capacity to pull people together as most know their own birth sign and professed an interest in it. However, even if they do not apprehend the complexities of the readings associated with each symbol, they did seem to come together in tribes once each symbol was identified as they shared a bond beyond their own companions.

A lady in her 60s, asked the male ranger *'can you focus the binoculars on the Moon'* as she wanted to see the craters on the Moon. She then asked *'is it true that you could see the abandoned Moon buggy?',* the ranger confirmed that *'with a powerful telescope it is even possible to see the steering wheel of the Moon buggy and the position of the wheels'*. She didn't appear to believe him and asked, *'who told you that?'* the explanation was brief as he referred her to a web site. This tourist may principally be expressing a nostalgic desire for a supposed lost golden age of meaningful and harmonious social relations (she was with family when she observed the first Moon landing in 1969), (Bell 1996, 1997; Belich 2001). However, this may be an illusion, a romanticised view of stargazing, and social relationships take place at night when emotions are sensitised.

Observing families interact highlighted the simultaneous personal interests of some members of the group. A father and daughter were heard to say: Daughter: *'I thought we should view the stargazing app; it will tell us what we are looking at'*. Father: *'We agreed not to use the app and to talk to the rangers....'* The need for social affiliation, as associated within Maslow's hierarchy of needs, typically recognises that satisfaction derived from belonging, leads to the development of other needs. In this instance, the need for quality family time was expressed clearly as the father felt his daughter spent

too much time using technological devices. However, as I wandered around the event, I observed other families coming together with the aid of technology as they shared moments of the gaze with each other.

In conversation with other tourists at the event they provided utterances such as *I feel..., I believe..., I hate ..., I love ...*, which led to exploring sensory motives in the next stage of the research. As Crompton (1979) noted, it is possible to describe the, who, when, where, and how of travel motivation but there is no answer to the question of why. Sensory motives identify feelings which are closely linked to the pull factors which focus upon the natural environment, amongst other things. It was noted that those who had low expectation, or an initial lack of interest were those who expressed more excitement in the experience. One obvious reason could be that those with previous experience knew what to expect whereas friends and family found each sensation new and stimulating.

Male, mid 50s commented *'I always like to keep an eye on what's going on in the sky above, you never know when you might see something new'* I asked, what do you mean? *'You know, spaceships, little green men, you know'*. *'When I go along to look at the stars around here you get to share information with those from the Astrological society, 'nerds' most of em but some share their information – moving objects and the like.... I'm just trying to get local knowledge of the latest activity'*. This alternative reason for attending a dark sky event related to stargazing was unexpected. It was anticipated that there would be people with different interest levels in stargazing but alternative reasons for being in the dark were not fully considered until that moment. According to Maslow's (1970), elements of self-actualisation can be related to creativity and the acceptance of facts. This participant exhibited belief in facts he had been exposed to, and a creative spirit as installed by mass media and popular culture. Acknowledgement of life beyond our planet, can also be related to Maslow (1943) and Pearce (1988) who both, propose the existence of growth needs in the exploration of self, a wanderlust and the need for education.

### 7.3.3 Sequential Summary

During this stage of the research, psychogeography approach explores the transaction between people and the physical environment, and the feelings that the experience provides. Focusing on the astro tourist's emotions, senses, cognition and behaviour as situated in the geographic landscape both terrestrial and astrological, as they are in place related and place-dependent environment. In the case of astro tourism, place dependent can mean that the Dark Sky Park is an enabler to space, for designation provides the appropriate environmental conditions to observe the stars.

Dichotomies between place and space were highly noticeable during this observation, participants would occasionally compare and contrast place with place, or neglect place all together and focus on

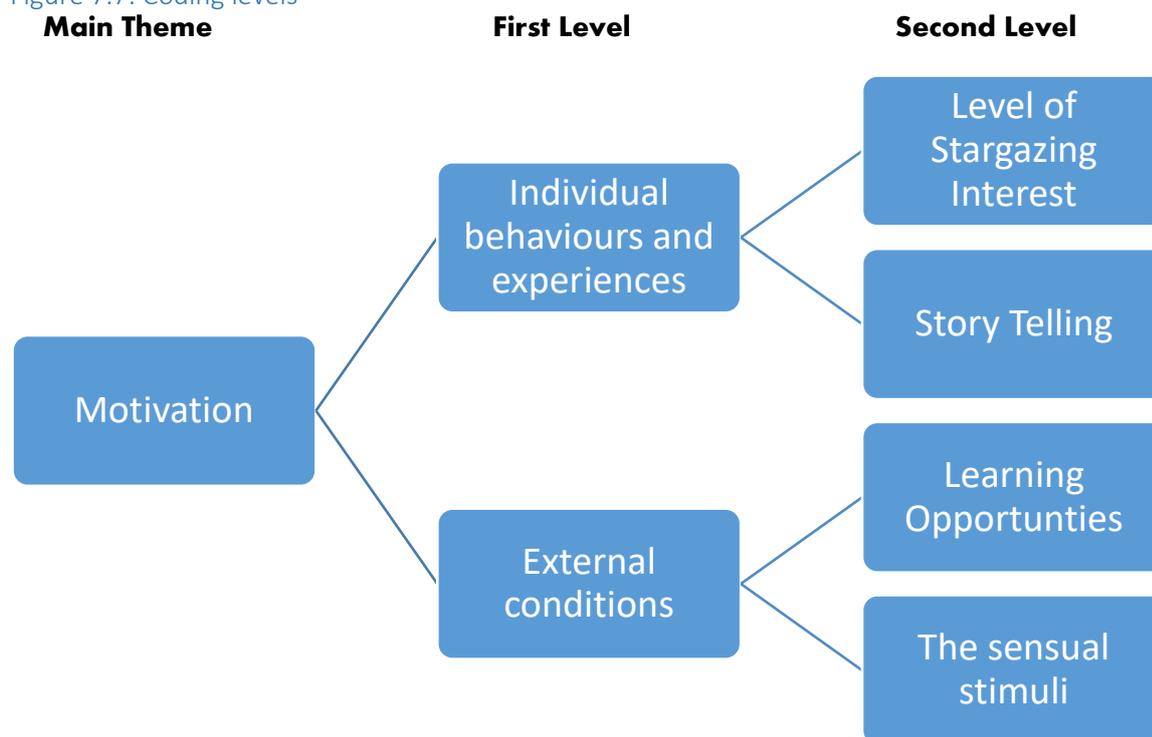
space. Tuan (1977:6) argued that 'place does not exist of observable boundaries as it is a visible expression of a specific time period, giving examples of art, monuments and architecture', thus, illustrating that people derive meaning from the world's geography and the objects around them. In contrast, observing cosmic space from place goes beyond the world of the participants into a realm of timeless possibilities and the geography of the cosmic landscape. Links to the past appeared to be triggered by the experience of gazing into the night sky. Participants appeared transported to an earlier period in their lives, these experiences tended to be associated with lost loved ones or friends, which manifested in a significant attachment to space and not to place. The emotions expressed were related to looking into the past and not being in the present. With this series of observations in mind, the next observation would focus on the behaviours and experiences of astro tourist at a larger and more diverse event to ascertain if they exhibited similar motives and feelings about time, place and space.

#### 7.3.4 Analysis

The data derived from the first two participant observations was analysed qualitatively using coding techniques with the aid of NVivo 10. Microanalysis coding, sometimes referred to as line by line coding, was carried out (Straus and Corbin, 1998). This involved transcribing the recordings made in the field, analysing them: word for word, along with the field notes from the observations. Each phrase, sentence, and paragraph were then open-coded by breaking the data down into discrete parts, which are compared for similarities and differences (Strauss and Corbin, 1998). Behaviours and expressions found to be similar in nature and related meaning were grouped together in categories – emergent themes. Many entries received different categories, as behaviour is multi-dimensional. For example, a person in their 20s, who was part of a family group, had a passion for astronomy, and spent over 20 minutes stargazing, was placed in 4 different categories. The subsequent participant observation has the potential to reveal even more categories. This stage allowed me to integrate and refine categories to inform the survey, with particular regards to motives for travel, whilst also enabling the reporting on the behaviour and experiences of the astro tourists. Subsequently, this would inform the interview question design, which would allow the aim of the study, which is to gain a deeper understanding of the astro tourist.

As illustrated below (Figure 7.7: Coding Levels) the emergent themes indicate that an astro tourist has a variety of motives each of which pertain to their individual needs:

Figure 7.7: Coding levels



#### 7.3.4.1 Emergent Themes:

1. **Motivation of astro tourists:** As a top-level code observation of the push and pull factors to attending the dark sky event provided an insight into the differences and similarities of these participants and the potential of different types of astro tourist: Three possible types emerged, those pulled by 1= Science, 2= Spirituality, 3 = Friends and Family
2. **Environmental influence on behaviours:** Details of the observed behaviours of these participants revealed those with a need for science want to share their experience with family and friends; family and friends have a need to belong, for social interaction and are more open to the sensory effects that the environment has to offer the participants.
3. **Level of attachment:** The Dark Sky events draw from a wide-ranging demographic, their level of engagement with the event appears on a spectrum of being completely emerged in the activity to being supportive of family and friends.

These observations laid the foundation for the next, as they illustrated the complexity of needs and level of interest at Dark Sky events, which are hosted by the Forestry Commission. However, they do not provide an understanding of a broader range of astro tourists, therefore Sanctuary was chosen, as it is marketed via television and radio to a wider population.

### 7.3.5 Observation Three: Sanctuary

The process of gathering further contextual information, was provided by attending and observing at Sanctuary, a Dark Sky Event held annually. Sanctuary grew out of a wide-open artist residency in the Dark Sky Park (2012/13) developed in conjunction with the Forestry Commission Scotland and Creative Scotland. During the residency, artists Robbie Coleman and Joe Hodges explored the human relationship with darkness through performance, installation and sound. Sanctuary has taken place every September since 2012, the theme for 2014 was 'Exploring the Unseen and In-between', a title that inspired me when observing the event participants as they wandered around the event taking in the landscape, the environmental conditions, along with the sounds and textures that exist in a Forest. The event attracted approximately 500 people from a wide range of ages and locations in 2014.

Sanctuary offered the full camping experience for Dark Sky tourists. As a novice dark sky participant this was my first experience camping at an event. The people encountered were from diverse and unfamiliar backgrounds to myself, for example: long tangled/knotted hair, lots of body piercings, prone to bursting into instant song, whilst others appeared to be wearing designer clothing, these observations are judgemental and subjective on my part. As these distinctions were made during daylight, they represent a view that was not able to be made at the other events I attended, for all the other events began in the dark. At this event there were amenities such as porta-loo's, showers, and a fully functional catering van with some general groceries all of which is designed to make the participant feel more comfortable.

I checked into the campsite around 1:00 PM on Friday afternoon, other than the event organisers who were busy setting up the light installations and the broadcasting station, I was one of the first to arrive. The campsite was set out over two fields and divided up into sections; general tent camping, car camping, recreational vehicles with a view to the campers remaining for the weekend. Once I got a parking spot, I was warmly greeted by the incredibly helpful volunteer. I got a personal tour of the campground and the event main areas, some of which were situated at the edge of a stream that had waterfall with mud around it. Paper lanterns were strung across the treetops, with the view of turning the whole area into a night-time playground.

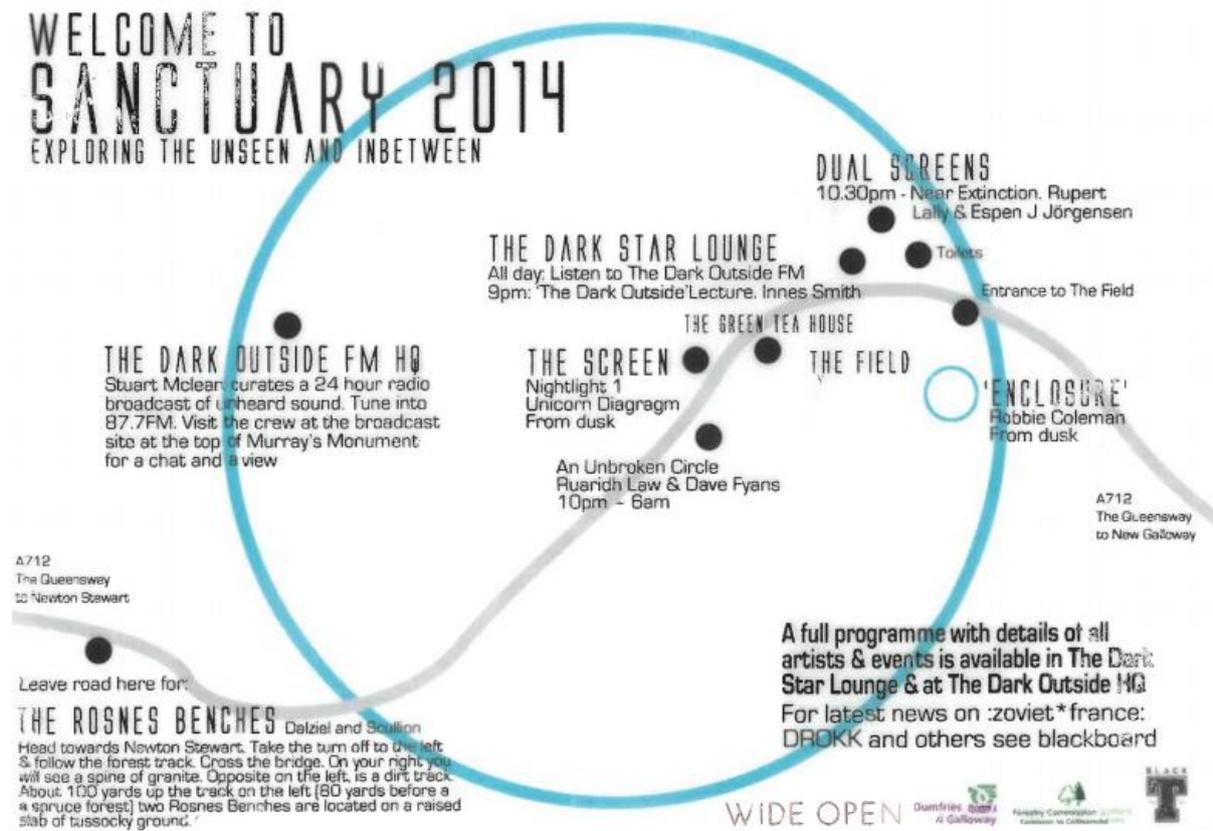


Figure 7.8: Sanctuary 2014.

It took until 6pm for the campsite to fill up however, once it did, a line of event goers started moving slowly towards the main areas. Toilet and concessions were conveniently located right on the side of the road. From there, small marquees were dotted around the area, they were surrounded by black light hoops and bunting. During the daytime, the event did not appear to have much to offer, but once the sun set, it truly came to life. I made myself familiar with the layout of the event (see Figure 7.8: Map of Sanctuary, 2014). To the north east side was the main hill housing the dark star lounge, and the broadcasting tower (although Fig 7.8 show the tower in the north east), a large cushioned seating area, with bean bags and blow-up couches, overlooked the forest and the light installations. In the main marquee (located near the Rosnes Benches), there was another seating area and a lectern set up for guest speakers, near to the camp site was another marquee housing some retail craft items and a beer tent.

Figure 7.9: *The Dark Outside FM*

(Sanctuary, 2014)



Figure 7.10: *Dark Sky Light Installation*

(Sanctuary, 2014)



Among the attractions on offer is a 100ft neon light sculpture by Robbie Coleman, called *Enclosure* (as seen in Figure 7.10). The installation in the dark drew the attention of the visitors as many appeared to associate circles in the dark with spacecraft, commenting that it looked alien. Male, 20s stated, that *'What really keeps me coming back and sharing it with others is the moments of discovery. Sometimes the discovery far exceeds how it was imagined, sometimes the discovery comes at a totally unexpected moment and sometimes ... both!'* Exploration and socialisation are primal instincts, since early evolutionary psychology and biology have been viewed as the manifestations of the quest for security and new understandings (Jaffe, 2010). The fascination with alien landscapes was prolific at this event, as if stargazing could magically conjure up a species from another world. After gathering my bearings and listening to *Darkness*, a light inspired music broadcast on the top of the hill, where *Murray's Monument* is cited (Figure 7.11), I ventured down to the main thoroughfare of the event,

which was a rather steep, a tricky hill that led back to the main activities, the ground was wet and beginning to get muddy. However, the focus of all the action as the sun went down was Murrays Monument, the broad casting station, so back up I went. As the sun set over the Merrick, a silence descended as people watched on, in what I would describe as a silent reverence.



Figure 7.11: Murray's Monument

(Sanctuary, 2014)

Silence can create a profound feeling of reverence. Here, a comparison with how Duff (2009:1) considers the increase in church tourism and states that 'churches are hidden giants of tourism, overlooked in favour of stately homes' and claims that 'even though churches are first and foremost places of worship (silent) they are the tangible expression of the evolution of British culture'. Even non-secular worshippers of the church go to gaze in silence at the magnificence of the architecture and artefacts. Simon Jenkins (1999:76), author of England's Thousand Best Churches expresses this well: 'To make the acquaintance of an English church is to witness the breeze of history as it makes its imprint on stone, brick, wood and plaster'. The silent reverence afforded to churches belies the magnificence of their construction and presence on the landscape; this is echoed at Dark sky events, where the stargazers observe the cosmos quietly, making only hushed sounds of appreciation when shooting stars or satellites pass by.

#### 7.3.5.1 A Diverse Experience

By 9pm, I made my way down the hill again to the main marquee to listen to an hour's lecture on Vampirism. The audience was a mixture of Dark enthusiasts (death and disaster – Thana, see Stone, 2014 for more details), vampire hunters, witches and the curious. The presentation was stimulating as it in my opinion, brought vampirism to life with a light-hearted mixture of the historical

understanding of why people believe in vampires and the modern-day interaction of vampires in literature, TV and movies.

*Obsessions come in all shape and sizes; some can provide an uncomfortable experience whereas others ignite behaviour that is not mainstream. The covert approach taken enabled me to document the naturalistic behaviour of these participants allowing for an understanding of the complex interplay between the occult, the dark and the cosmic significance of the behaviour and experience.*

There was a large crowd with standing room only. Most people appeared to engage with the speaker, asking questions, challenging views and discussing their opinions, as visitors recounted their own experience. One female participant discussed how she enjoyed the event by telling a story of how she had seen a white figure on her way to the event, which she believed, could have been a vampire, the headlights of her car caught the eyes of the figure and they appeared to be red. For this participant there was an emotional engagement, which made other's smile, but from her expressions and enthusiasm had a significant meaning to her. Some participants reported gender differences, with female participants noticing that they were more interested in alternative views of life in the dark than males; men clearly seemed to be indifferent or un-interested in vampires and witches. However, I did not detect any significant difference in interest, there seemed to be an equal mix of male and females, but the males did ask more challenging and dismissive comments than the females.

The atmosphere was friendly, with a diverse and enjoyable mixture of individuals, young families and couples. I was inspired by the incredible sense of togetherness that the crowd displayed, in the caring approach helping to get everyone up the steep hill safely, making seating available for the less able and older participants, whilst sharing food and drink – one participant commented that it was biblical, another out of this world, illustrating that there are a wide range of psychological responses to the nocturnal environment. There also appeared to be physical engagement with the experience, as connection with the environment and the participants was illustrated by feeling objects or via reassuring touches when the terrain was tricky.

The second talk of the evening was a dark sky awareness presentation, reporting on the significance of dark Sky designation, the astronomical field of observation over the site, and the time distance comparison of other planets in the solar system. It was noted that more males identifying with astronomy and intellectual stimuli as they tended to comment that it was a key contributor to their experience of a Dark Sky. Several participants spoke positively of the impact of learning more about the stars and the designated site. For some, it was the first time they had visited and learnt about light pollution. A female, aged in her 20s pointed out that '*stargazing is plain fun, and that is a very great purpose. The only thing in life to be taken seriously is happiness*, expressing overall satisfaction

in the level of information given and the meaning that stargazing has for some participants. A male of similar age who accompanied the female above, confirmed that *'I agree, I'd distinguish between our own little self and the infinite cosmic... Stargazing is so selfish and unselfish, because it makes us more one with God'*. Addressing issues related to spirituality was interesting component of this event, as it was anticipated that vampires and witches would feature due to the presentations, but none of the event activities related to religion. Although, it could be argued that the silence experienced at the monument earlier was perceived to be a form of reverence which could be related to religion and/or spirituality as nature is as good a place as any to worship.

Comments related to religion enforced the diverse nature of dark sky event participants. This was illustrated further by a participant in her mid-50s who explained that, *'stargazing is a simple and uncomplicated pleasure, just like everything divine. In our man-made environments the sky is often the only God-made thing around us, so I think there's great meaning and purpose to stargazing, if only to remind our own bodies of their divine origin and heal them in the process!'* A rather profound proclamation but, considering the issue of healing, provides a link to aspects of wellbeing in nature, which can be linked to the sensory qualities of the experience. However, healing and well-being go beyond the scope of this research as they involve several dimensions including physical, mental, social, sexual, emotional, cultural, spiritual, occupational, financial, ethical, and the existential, all of which deserve wider consideration (Bell, *et al.* 2014)

Following the presentations it was time to make the trek up the hill back to the broadcasting station to view the stars in the night sky. Many people who were wandering back up to the monument observed a display of lights, hoops, and event organisers dressed in brightly coloured costumes', making their way around the event site, dancing to the sound of non commercial music. I asked one participant, a male in his early twenties, how does stargazing make you feel? *'You can't really describe your feelings properly, you're happy, you're amazed, and you're sad: so many things are going on, it's hard to take it all in.... I couldn't describe how this experience makes me feel, you have to feel it yourself to understand'*. Many tourist attractions (the Grand Canyon, the Lake District etc.) have this ethereal, un-describable quality. Referred to by Tuan, (2013:14) as a *'romantic geographic sublime landscape'*.

One interesting observation: none of the participants took photographs. The experience was expressed as being 'profound', but none seemed to want to capture it, very unusual for tourists. Obviously, the nocturnal environment presents challenges for photography but with modern technologies I would have expected some people to try to capture the moment. Particularly, as images are believed to provide a set of values, ideas and ideologies, related to experiences, knowledge

and individual subjective perceptions built in the minds of tourists (Faycke and Crompton, 1991; Garrod, 2009).

#### 7.3.5.2 A Sensory Experience

After an hour of chatting and listening to participants, it was time again to walk back down the hill, on the way down people looked in awe at the light installations and commented on the alien landscape that the night sky inspired. Next, there were a number of stargazing group tours, each of which set off, away from the light installations, to truly dark areas. The energy during the stargazing experience differed substantially in relation to the silence and slow movement along the paths that were only interrupted by the movement of wildlife in the undergrowth, which made people screech. The experience was like no other, I spent most of the time staring at the back of the person in front of me as we moved in the pitch black through the forest. Concentrating on my footing and trying to listen to what was going on around me was challenging. Once we reached our destination, which appeared to be a small clearing (*although I must admit it was very dark and I had no idea where I was*) we were asked to look up. The moon was quite large in the night sky, so as my eyes adjusted to the darkness there was what I can only describe as an Avatar moment (a consciousness of life after a vale of darkness has been lifted, referred to as an Avatar moment because of the American movie Avatar). At this point it was possible to see things I have never noticed before, such as the subtle shades of darkness from foliage, rocks, fallen trees, and water, all illuminated by the moons light. Many objects took on new alien colours as the light bounced off peoples' clothing creating unfamiliar sights.

*Although in the dark this very visual response to the natural environment provided an explanation as to the importance of light and our intrinsic need to seek it.*

The smells that lingered in the air were the usual pine needles, foliage, freshwater, with the addition of cannabis, perfumes, and body odours, making for a pungent cocktail, all of which added to the experience. The proximity of the participants resulted in stray touches, as people helped each other over rocks and other obstacles these touches were reassuring and did not feel in anyway intrusive. Touching objects such as tree trunks, stones and water somehow felt different, the textures of wood and stone seemed courser and the water felt crisp and colder than expected. This, sensory awakening, was an unexpected outcome and something that needed much deeper investigation, so as a precursor to the next stage of the research a few basic questions were asked to those at the event. The responses related to how the astro tourists feel about their surroundings and are augmented below:

What can you see?: The answers were predominantly '*shadows*' and '*light*', many people searched for the light in the dark. The light manifests itself as a beacon toward which people tended to move, interesting as they were attending the event to be in the dark!

What can you hear?: *Mysterious sounds, nature, pigeons, owls, pecking sounds, the rustling of bushes.*

Do you taste anything?: *Moisture in the air, beer, smoke from the fire.*

What can you feel?: *uneven ground, crunching of twigs, slimy things on rocks, wet, cold, touches, and reassurance.*

What do you feel?: *excited, scared, love, peace, quiet, apprehensive, I don't know but it's nice.*

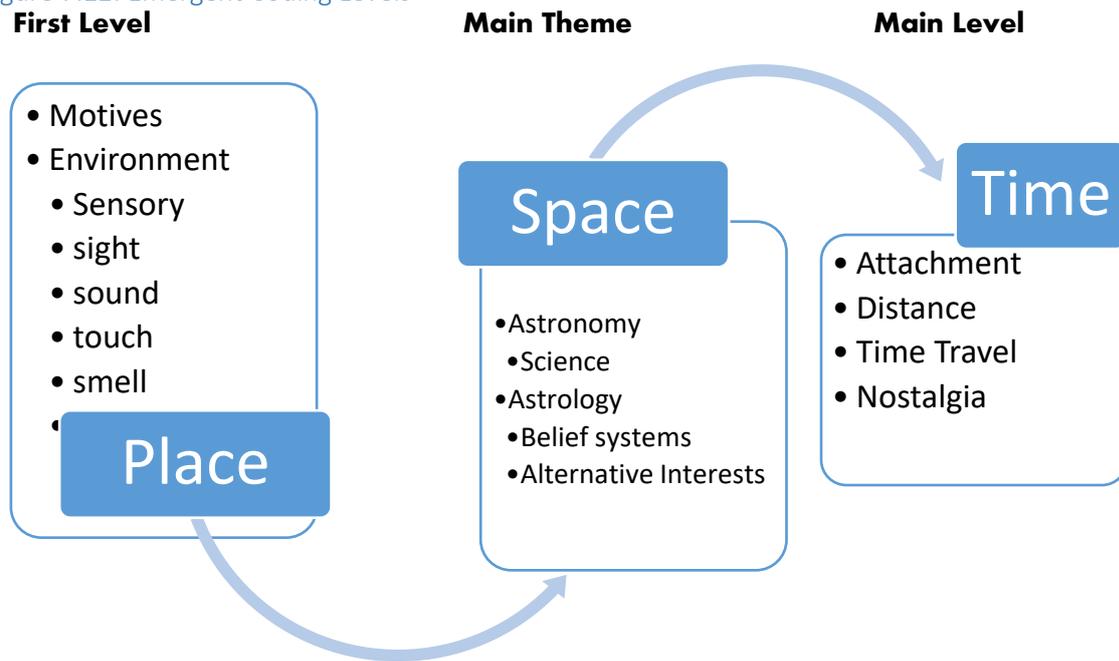
Following the event, Keith Muir, Head of Tourism for Galloway Forest Dark Sky Park, said '*the on-site radio - the Dark Outside FM - provides a unique experience*'. Non commercial radio, provides a new dimension to the experience, as the sounds and melody is not mainstream. Keith asked '*How often do you get a good reason to take a drive to the countryside in total darkness and listen to music?...*' he added. '*For the Dark Sky Park, art is proving to be one of the best ways to communicate the importance of light and darkness*'.

Although light and dark represent a stark contrast in the landscape it was also evident that there is a contrast provided by atmospheric conditions and a sepia view of the world. Something, that is usually illustrated in old photographs or movies and can be associated with a bygone time. This may provide a link to the past in the present – a psychological form of time travel and an area of further investigation in a subsequent stage of this research.

#### 7.3.5.3 Analysis

The data derived from the third participant observation was again analysed using coding techniques with the aid of NVivo 10. Microanalysis coding was carried out (Straus and Corbin, 1998) to determine if this observation added any significant themes in terms of motives, and in relation to the significance of cosmic space, place and time. The outcome can be seen in Figure 7.12, which illustrates that the emergent themes now have three specific dimension of interest which flow from place to cosmic space and then to time, as follows:

Figure 7.12: Emergent Coding Levels



#### 7.3.5.4 Emergent Themes:

1. **Place:** A first level code focuses on observing and analysing the meaning of place to those attending the Dark Sky events provided an insight to the true significance of place. For some there was a need to compare darkness at destination or to collection dark sky experiences, for others it was related to connections with the past and the present.
2. **Space:** A top level code focuses on sight beyond the horizon as illustrated in the interest of the cosmos that can be related to a variety of cosmic phenomena.
3. **Time:** A top-level code focuses on the distance between the stars, within and outside the Galaxy, which represents time, how long it takes light to travel to the Earth and the ability of participants to use headspace to travel back in time to a bygone era.

#### 7.3.5.5 Emergent Cross Cutting Themes:

Within the top level codes relating to behaviour and characteristics, two significant themes emerged which cross through all themes:

1. A core theme relating to individual interest level in astronomy and astrology was apparent
2. The initial findings suggest that there are different types of astro tourist, not all participants are looking for the same kind of experience when they visit a Dark Sky Park

#### 7.3.5.6 Contextual Themes:

It became apparent throughout the observations, that certain themes emerged related to the contextual background as follows:

- First, individual's motives for travel and behavioural characteristics at each event related to togetherness; the need for social affiliation was high.
- Second, the sensory stimuli were both stimulating and disturbing dependent upon individual perspectives.
- Third, knowledge related to astronomy and darkness stimulated participants dependent on the primary interests.
- Fourth, The Dark Sky Park was an enabling place to view and the cosmos and participate in wider experiences.

#### 7.3.5.7 Reflexive Themes:

My observations and interactions with the event participants provided a perspective on the research sample as follows:

- Personal experience: the participants at each event were supportive of each other, darkness installs caring, it did not prove to be the place of deviance or valance as portrayed by the media.
- Research experience: Covert observations allowed me to participate in the experience without having to constantly explain my interest and intent thus providing open access to all. Dialogue between the participants and I was open. The limitation with this approach is that at times the conversations were not associated with the focus of the research.

#### 7.3.5.8 Sequential Summary

During this early stage of observations and data gathering, the first level and top-level codes had emergent next-level codes. As the top-level codes were sub-divided into new themes, each of which are nuanced as they illustrated individual experiences, which were diverse. The observations involved spending a great deal of time with the participants, however this provided insights into behaviour, characteristics and preferences, all of which illustrated that there are potentially different types of astro tourist, each of whom have their own individual level of interest and experience.

In many cases, the participants at the first two events were much more focused on stargazing, would generally display an interest in either astrology or astronomy. Their interest in the designation of the Dark Sky Park was either engaged or fuelled dependent upon who had booked the event or their purpose for attending. However, the diversity of participant interest helped to create a multi-faceted perspective of the astro tourist. Several topics arose in terms of interest, which included, time travel, distance, astrological signs, space travel, the weather, the emotions and sensations experienced by the participants.

*My initial review of experience-based literature identified a wide range of concepts that can affect the experience of tourists', the observations justified this range of topics.*

In general, the participants at the first two events expressed a more focused interest in astro tourism. They tended to gaze more often and for longer periods, their silent reverence whilst observing was a prominent feature at these events. The expectations of these participants were easy to observe: when they were not met participants voiced them (usually related to temperature and cloud cover) but when they were met audible signs of pleasure were evident (usually related to moving objects in the night sky, the identification of a planet or constellation).

A small number of the participants at these two events expressed a nostalgic interest in stargazing, they provided narrative related to a bygone time, a loss or a family member or a fond memory of a moment in time. A larger number of participants demonstrated a keen interest in using, and sharing, apps on technological devices. Astrological maps provided a sense of place in space, as stars could easily be positioned neatly into an identifiable pattern.

At the third event, Sanctuary, there was a difference in participant interest, some more mainstream: astronomy and astrology, others less so, the effects of stargazing on the occult and the lunar cycles. This added to the complexity of the research, as the primary interest for attending dark sky events needs to be clearer, therefore demographic data is needed for the creation of, as they have the potential to provide distinctions regarding participation motives which would allow for the categorisation of the astro tourist.

One prominent feature at all events was that astro tourists appeared to travel with family or as young adults with friends or as groups from clubs, few travelled individually. There is a sense of adventure in experiencing a rural nocturnal environment, for some: it was exciting and hedonistic, for others, there was a sense of wellbeing, whilst for others it was a way of searching for the light, as it provided a form of escapism or spiritual communion. This sentiment is supported by Crompton (1979) who found that, tourists might travel to escape the dreariness of their everyday lives they do this in the pursuit of an authentic experience, something which astro tourism appears to provide.

At all events it was observed that human beings are highly visual animals, when their visual acuity is reduced, due to low illumination, they find it hard to judge depth and distance, detail is obscured and colours become muted (Mac Farlane, 2007, Sorensen, 2004). Consequentially, participants at each event were forced to see using other senses such as touch, smell, and hearing. The challenge of not being able to see the landscape focused the human senses on bodily presence and boundaries make

the journey feel mysterious or hazardous depending upon the individual perspective. Whereas, in daylight the journey provides a fullness in the relationship with distance and a capacity to understand the landscape (Minkowski, 1993:82).

Observations, at all events uncovered that place, for some astro tourists, can be merely a means to an end, i.e. an enabler to view space from, therefore its significance is very low. For other astro tourists, place has meaning, not only as a destination but, as a means of interconnectedness of life on Earth, for Earth itself is a place in the universe, it is the 'home planet' from which the cosmos is observed. Consequentially, astro tourism presents a unique perspective in tourism literature especially as place is commonly linked to destination.

#### 7.3.5.9 Stage 2: Reflexive Summary

As identified in Chapter 4, Working in the Dark: Research Methodology, fieldwork was seen to be an essential way of grasping and coming to terms with the place, people and terminology used when stargazing. DeLyser and Starrs (2001:66) view this as a 'rite of passage for the novice researcher'. Whilst Edwards and Ribbens (1998:5) view the process of doctoral research as 'a training ground for real research' and a 'crucial time, as the individual is poised at the moment of entry into the public world of academic as an active participant, in transition between different social world' (*ibid*:67). However lofty this may sound, the reality is intimidating, as I entered into fieldwork with many preconceptions of the people I would encounter and my own lack of skill and confidence to overcome. However, this was the most fulfilling part of the experience, the social interaction, the realisation of my own unconscious bias and the stimulation of mind and body throughout the fieldwork, participant observation, was liberating.

On reflection, it should be noted that my stance at this point were related to ethnography as a philosophical methodology in which the philosopher was engaged in investigating her own experiences in conjunction with reporting on the experiences of others. Whereas, a phenomenographer would have adopted an empirical orientation and investigated the experiences of others completely, something that will be done during the next stage of the research. During this early stage, the focus was one of interpretive ethnography and the essence of the phenomenon (being a Dark sky event participant observing the star and the participant's behaviour). It was not until the next stage of the research, that the focus of a truly phenomenographic approach was placed upon the essence of the experiences and the subsequent perceptions of the phenomenon (Hitchcock, 2006).

Despite the difficulties in experience of the researcher, the interpretation of expression and the diversity of dark sky event participants, four major questions emerged which reflect the participants experiences so far:

1. Motivation to travel to a Dark Sky event is confirmed as being diverse; are all these tourists astro tourists?
2. The feeling of being in the dark creates a sensory experience; how does this manifest itself in relation to the tourist experience and in conjunction with different types of astro tourist?
3. Can spirituality and/or religion provide solace or fulfil a desire to explore the existential for certain types of astro tourist?
4. Place and final destination are not the same, a dichotomy between place and cosmic space provides an authentic dimension which requires further exploration

Thus far, the data has revealed that individual motives, attitudes and perceptions require further investigation. Considering the emergent themes related to the sensory experience and diverse motives, the next stage is focused on the essence of the experience, by way of a survey.

#### 7.4 Stage 3: Motives and Profiles

The next stage of the study is designed to collect data related to objective 2, which is ‘to explore the sensory significance of astro tourist experience in relation to the environment at place’. Considering the emergent themes from stage 2, it was identified that there is a need to better understand the Dark Sky Event participant’s backgrounds and their primary interest for travel. It was also noted that a large proportion of the experience is sensory; therefore, to capture as much data as possible a survey technique was seen to be the best fit for gathering individual profile data of this nature.

*Hales and Watkins (ND:NP) argued that ‘attention to gender sensitive questioning techniques and the attention to the gendered construction of disciplinary knowledge whilst categorising and analysing the data are vitally important to improvement in the outcomes of the outcomes space’. Therefore, when selecting questions, I was mindful of the feminine ways of knowing and thus asked for male input whilst testing the survey with the forestry commission.*

This stage details the theoretical base for the survey design, for when creating a survey, it is essential to identify tools that can undercover the characteristics and segmentation of astro tourists. Due to a lack of expertise in survey design it was decided that tried and tested surveys would be analysed and adapted to best fit this study. NVivo 10 was used to identify themes related to the characteristics of the participants that required greater clarity as illustrated in table 7.1, below:

Table 7.1: Individual Characteristic Gaps

Emergent Themes	Data Required
Demographic data was based on subjective views	<ul style="list-style-type: none"> <li>• Age,</li> <li>• Gender</li> <li>• Family Orientation</li> </ul>
Previous experience was vague	<ul style="list-style-type: none"> <li>• Number of times visited a Dark Sky Park</li> <li>• Astronomy Knowledge</li> <li>• Astrology Interest</li> <li>• Shared experience</li> <li>• Memories</li> </ul>
Interests were complex and not always evident	<ul style="list-style-type: none"> <li>• Level of interest in Stargazing</li> <li>• Other related activities</li> <li>• Seriousness - Casual</li> </ul>
Motives for Travel are not observable	<ul style="list-style-type: none"> <li>• Escapism</li> <li>• Education</li> </ul>

Sensory Stimuli was commented upon frequently, but the extent of their individual influence required understanding	<ul style="list-style-type: none"> <li>• Novelty</li> <li>• Improving relationships</li> <li>• Sight</li> <li>• Sound</li> <li>• Touch</li> <li>• Vision</li> <li>• Taste</li> </ul>
External Influences effected expectations	<ul style="list-style-type: none"> <li>• Sensations</li> <li>• Weather</li> </ul>

As the identified gaps in data are diverse, the survey draws on several survey sources. First, referring back to the literature review, research carried out by Crompton (1979) which embraced seven socio-psychological motivation domains (novelty, socialisation, rest and relaxation, education value, enhancing kinship and regression) appeared to be the most appropriate for representing this situation and was used to guide development of this study. In conjunction, Iso-Ahola's (1980) escape seeking dichotomy model was influential in developing questions related to this study. If these motives are identified, then an understanding of the practical setting and the context of astro tourism events can be determined.

Building upon the underlying concepts identified thus far, the survey is developed further by drawing on the more specific influence of sensory motivation. Observation revealed that the senses impact upon the experience of astro tourist as scapes can be linked to attachment. When considering research related to motivation the work of Eisenberger, *et al.* (2010) was analysed and found to be the most appropriate fit, as it represents variables related to the motives for sensory pleasure. Eisenberger, *et al.* (2010: 500-638) undertook eight psychological studies related to the 'motives for sensory pleasure', which pertain to the enjoyment of nature in the representation of painting, music and literature. The studies provided a series of 53 statements concerning preferences for a variety of sensory experiences involving vision, hearing, touch, and smell (adapted from Chapman *et al.*, 1976; Cacioppo, Petty, and Kao, 1984; Zuckerman, Kuhlman, and Camac, 1988). Although this study is not related to the arts, it is related to enjoyment of the natural environment. Thus, by adapting Eisenberger *et al.* study to dark sky events enables the development of a survey that represents a nocturnal environment in its true state, i.e. a terrestrial experience of viewing space from place. The importance of using such an integrative framework, according to Pearce, 'is that without some guiding

motivational framework with which to differentiate travel samples, it is difficult to explore and interrelate traveller characteristics in anything but a descriptive manner' (1982:62).

In summary, the survey produced represents the main theoretical concepts and experiences of astro tourists as observed at Dark Sky Events. It focuses upon filling the gap in relation to data collection as it will provide details of astro tourists, their motives, demographic and sensory experience of being in a natural dark landscape. To test the accessibility of the survey it was administered as a pilot study to 19 respondents (discussed earlier in chapter 5), each of whom completed it without any complication.

Respondents to the survey were asked to rate a number of statements using a 5 point Likert-type rating scale, whereby opinions are rated from strongly agree to strongly disagree. A comprehensive description of the various sample profiles obtained through the survey is given using graphs and charts as a visual aid, as follows. Subsequently, this is supported by comparative analysis of sensory motivation factors using tabulation against dark sky event experiences, as well as filtering variables for cross tabulation of specific samples. Primarily this was designed to address the following objective: investigate the tourist's perception of place and space, how these constructs affect the decision to travel, and the experiences they have. The survey results will be analysed and synthesized to create semi-structured interview questions.

#### 7.4.1 Data Collection

Quantitative research tends to traditionally emphasise measurement and accuracy (Strauss and Corbin, 1998), however although a statistical method is being used, this study is qualitative and thus focuses upon causality, which has the capacity to generate primary influences that will further this study. The survey itself was administered to participants at 7 dark sky events (1 = Sanctuary, 6 = Forestry Commission events), the sites were chosen based on convenience (Dark Sky events at this location were monthly from September to February, 2014-2016), to encapsulate as many participants as possible. However, it was recognised that forestry commission events would not necessarily attract the diversity required to observe a wide range of astro tourists, therefore Sanctuary was chosen, as it does have a larger range of participants and a broader appeal.

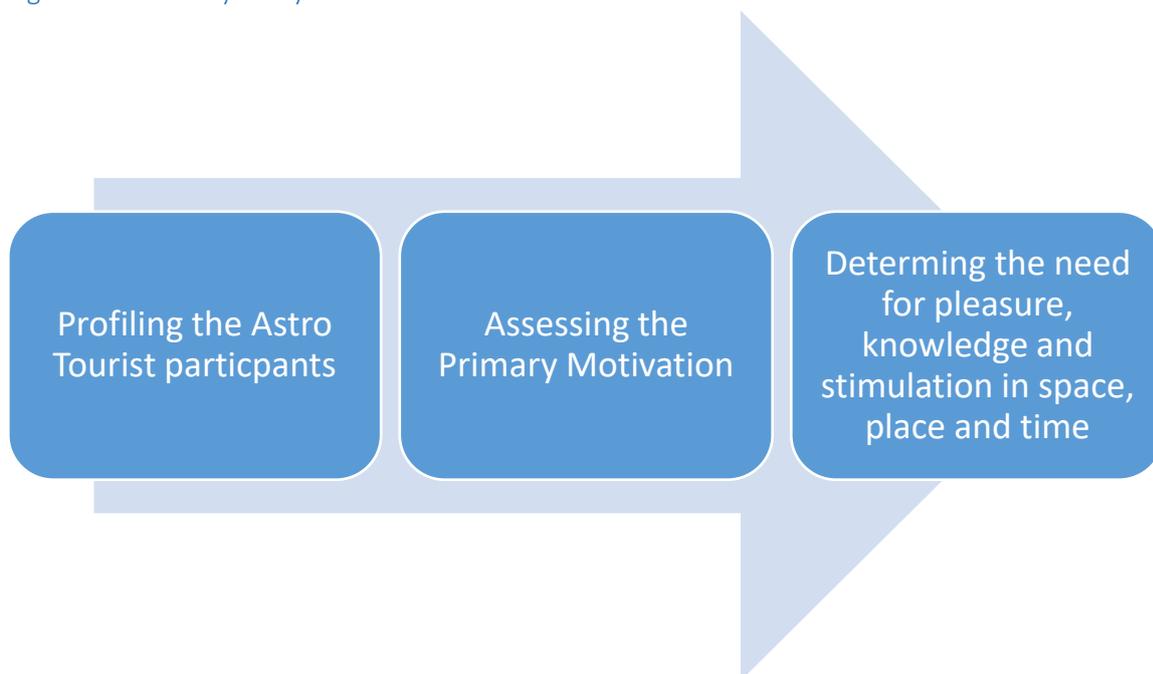
Consequentially, n= 69 surveys were completed with all participants acknowledging their interest in being involved in future studies. As the researcher was present throughout the completion of each survey there was a guaranteed response, particularly as each survey only took an average of 7 minutes to complete. Using a self-completion survey approach at a Dark Sky events did have one drawback, as time was needed to build rapport to ensure completion, however it also offered the potential for further insight and future participation.

### 7.4.2 Survey Analysis

This stage of the research allows the researcher to look at questions related to why, where, when, and how, along with demographic data essential for understanding the astro tourist (Strauss and Corbin, 1998). Statistical packages NVivo 10 and SPSS were used to analyse the survey data which is explored using factor and cluster analysis. The use of cluster analysis and factor analysis is common in small scale studies such as this, as the data is driven by a segmentation approach with dependency between variables (Dolnicar, 2002: 143). Using SPSS, a relative value (scale) was created to provide a visual cluster of behaviours, experiences and feelings related to the astro tourist experience (Verna, 2012: 332) thus providing an explorative method which is dependent upon the parameters set by the researcher. It should be noted that with only 69 respondents to the questionnaire that the statistical significance is low, the real benefit of the survey is clarification and representation.

The software provides a means to store and manage data in a comprehensive way, as this study follows a qualitative technique approach the process illustrated in Figure 7.13 was carried out related data collection and analysis:

Figure 7.13: Survey Analysis Process



### 7.4.3 Profiling the Participants Characteristics

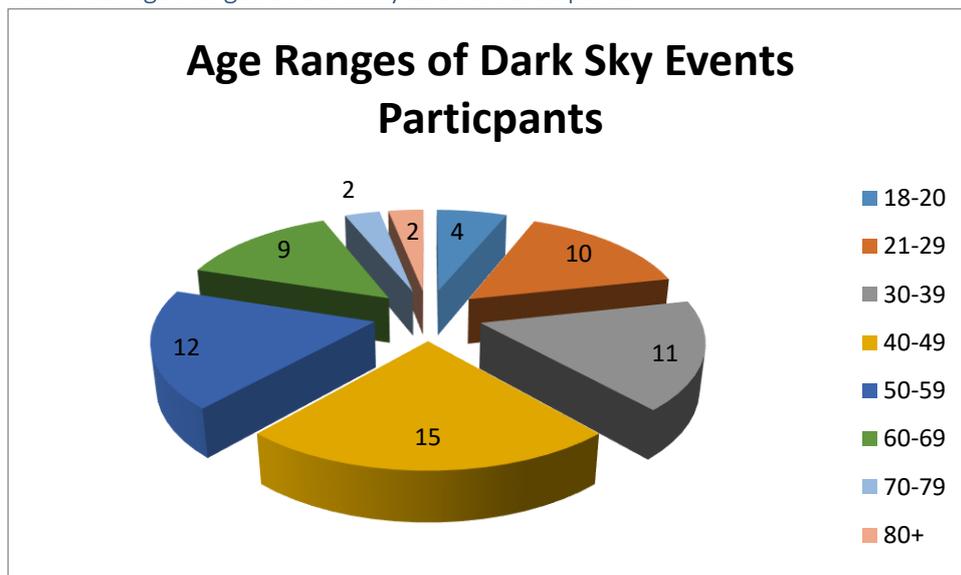
Based upon participant observation, various assumptions were made in relation to age, gender, level of interest and sensory significance, this next stage seeks to provide clarity as individual characteristics (demographics), behaviour characteristics which illustrate level of interest and motives (sensory and tourism related) are accessed. These encompass the psychogeographical and physical characteristics

of the astro tourist’s experience which seeks to determine, i.e, sensory experience, gender, age, time spent stargazing, nights spent in the area, number of parks visited, and accommodation type create (doesn’t make sense). However, it should be noted that the statistical significance of this data is low due to the low number of astro tourist participants.

#### 7.4.3.1 Age

Analysis of each variable was carried out in full. Demographic questions related to age (closed questions) are considered useful in identifying the age range of participants, as it was initially perceived by the researcher that Stargazing was an older person pursuit, although the previous participant observations illustrated otherwise. The demographic distribution displayed in table 7.2 supports the observation stage, as it indicated that there is a representation from all adult age ranges, the majority of respondents are between the ages of 21-69 with the slightly higher number being between 40-49 signifying that there is a wide spread of age groups who participate in stargazing activities. It should be noted that children were present at the events but were not included in the sample for ethical reasons.

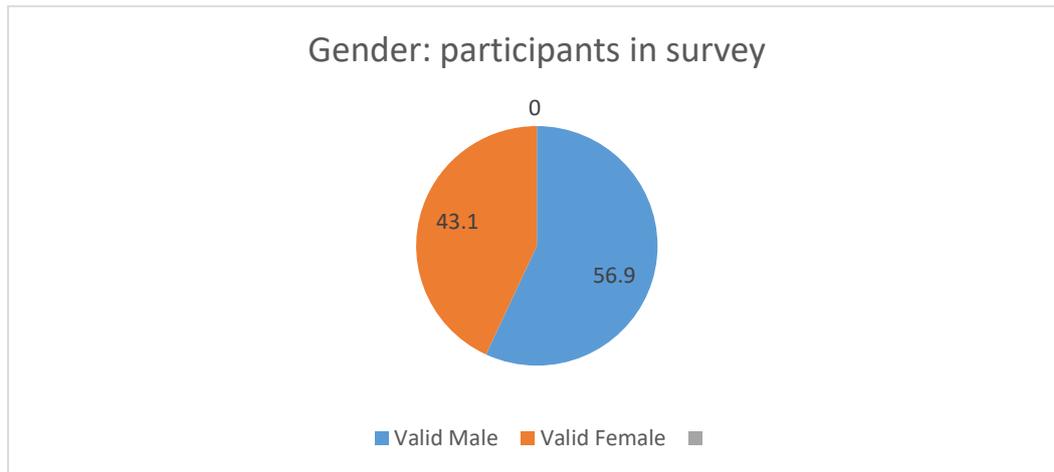
Table 7.2: Age Ranges of Dark Sky Events Participants



#### 7.4.3.2 Gender

A demographic question related to gender was incorporated into the survey as the researcher had initially perceived that stargazing would be a mainly male activity, although participant observation seemed to illustrate that there was a slightly higher participation by males, the differential was not significant to denote any special gender implication. The survey supported this as the distribution, regarding gender, see Table 7.3, displays that out of the 69 participants who completed the survey the gender split was n= 28 females (43%) and n=37 males (57%).

Table 7.3: Gender

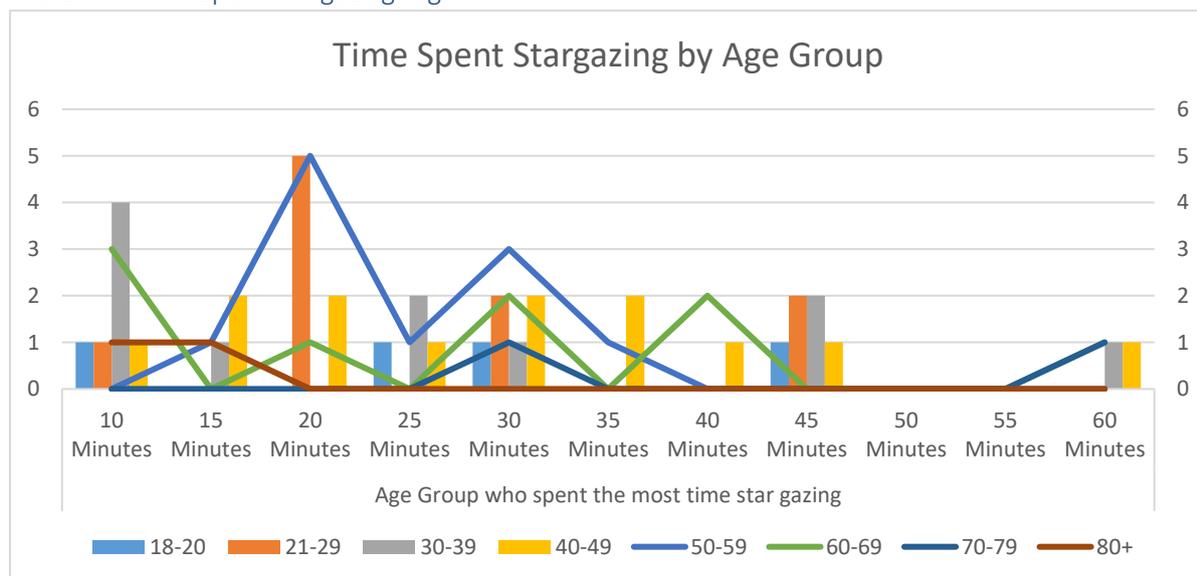


This sample illustrates that there is a small majority of males who completed the survey at the events but even so, females are just as likely to attend stargazing events as males, although females are less likely to attend alone. During the next stage a positive sample approach is taken which will seek to interview an equal number of males and females to identify any specific gender astro tourist interest.

#### 7.4.3.3 Time Spent Stargazing - Age Group

The next question tested a number of variables related to the comparison between age and time spent stargazing. These are used as an indicator to illustrate intensity of interest, although there is no evidence to confirm this assumption it is argued that if a person is interested in something, they will spend more time pursuing that interest (Urry, 1970).

Table 7.4: Time Spent Stargazing -Age



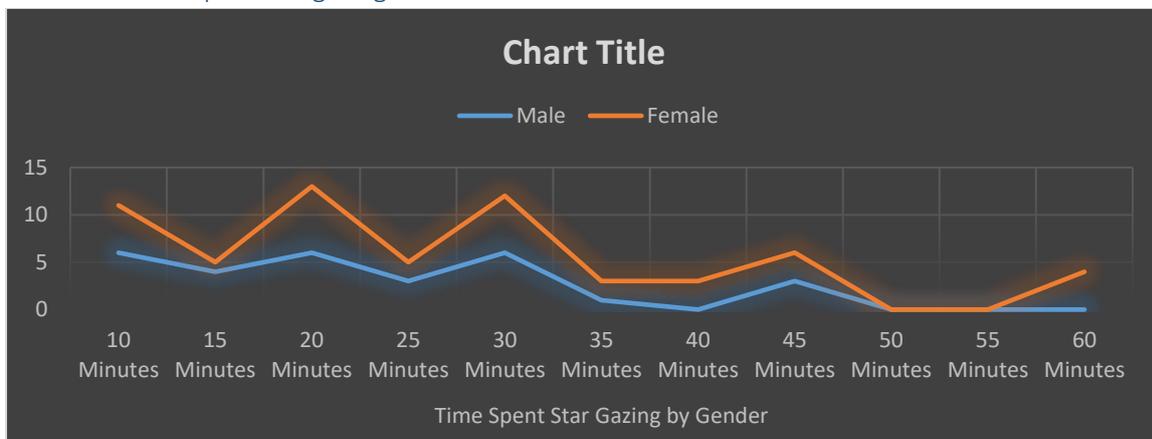
The level of interest in stargazing accredited to the time spent experiencing cosmic gazing is illustrated in Table 7.4. The highest proportion of time by most participants was 20 minutes. However, a few participants between the ages of 30-39, 40-49 and 70-79 spent 40 plus minutes stargazing, illustrating

a higher level of interest. This level of interest may be categorised as ‘serious’ in relation to Stebbins Serious Leisure Perspective (1982) as discussed in chapter 3. However, the results do not indicate the nature of the gaze i.e. the moon, the astronomical field or the constellations, they only reflect the time spent gazing, therefore further investigate is required.

#### 7.4.3.4 Time Spent Stargazing – Gender

When the variables are changed to separate male and female time spent gazing it was that females spent significantly more time outside stargazing compared to male participants, see table 7.5. This may illustrate that the females in the sample have a more serious interest in cosmic gazing, although this does require further investigation.

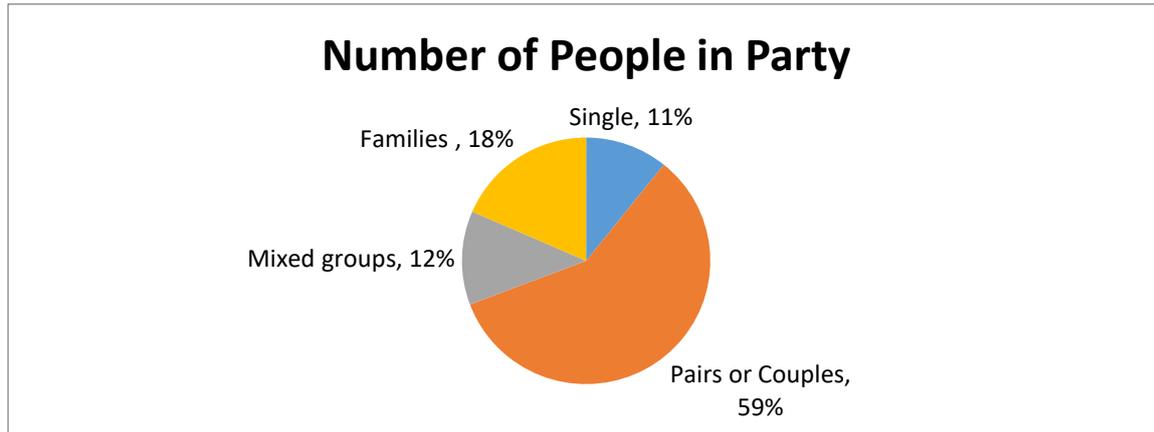
Table 7.5: Time Spent Stargazing – Gender



#### 7.3.3.5 Number of People in Party – Social Grouping

As seen in table 7.6 a small percentage of participant’s star gaze alone, the majority of participants gaze in pairs. People who travel together tend to influence each other in relation to decision making, thus the dynamics of the participants needs to be taken into consideration as they have the potential to be a different and distinct group of astro tourist. This is also true of those who travel with family or mixed groups, as attending a dark sky event is booked in advance and therefore may be given as a gift thus an interest in stargazing may be of particular interest to one of the party - but not to the other members. So, can these other participants be classed as astro tourists?

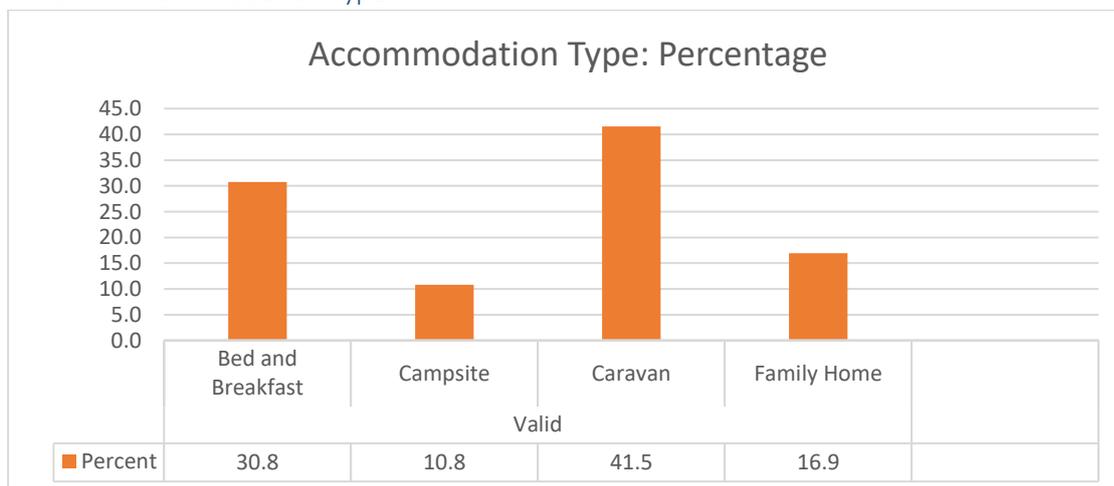
Table 7.6: Number of People in Party



#### 7.4.3.6 Accommodation Profile

As identified earlier in Chapter 6, the accommodation stock near to the Dark Sky Park is dominated by privately owned small business operators, along with budget accommodation such as Caravans and Campsites. Therefore, it was no surprise when looking at the responses in table 7.7 that caravans are the preferred form of accommodation at 41.5%. This type of accommodation is particularly suited to Dark Sky events participants as they are not restricted to time constraints often imposed by bed and breakfast providers who may have locked door policies. A Dark Sky event can finish at any time from 11pm onwards, the participant then has to travel, on average, over 25 miles back to their accommodation provider down rural roads which reduce the speed of travel and can be difficult to negotiate given the light conditions and the wildlife considerations.

Table 7.7: Accommodation Types

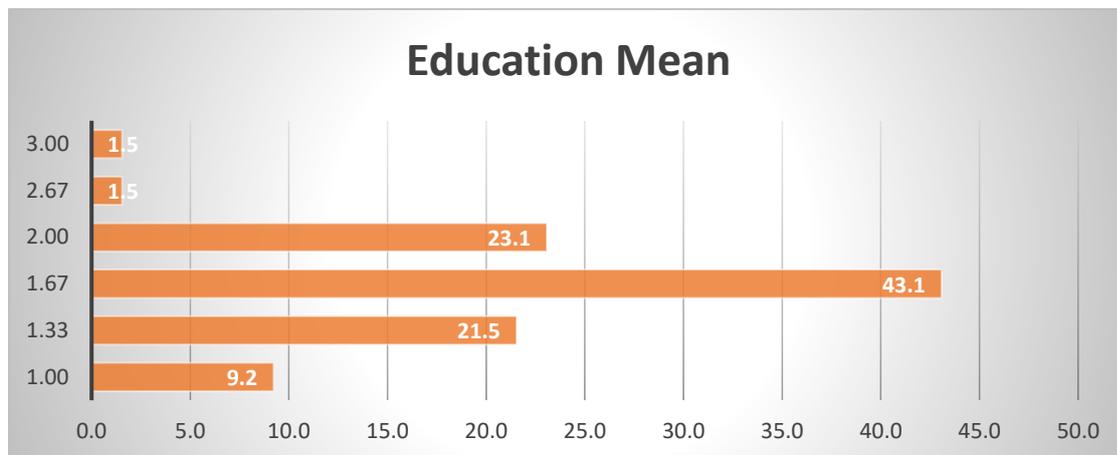


The second most popular form of accommodation is bed and breakfast, illustrating that there are opportunities in the marketplace for stakeholders who can provide for the demands of an astro tourism market. Campsites have the lowest score, all those who stayed on campsites attended the Sanctuary event, none of the beginner events participants stayed at a campsite. Time of year and climate prohibits camping activities.

#### 7.4.3.7 Need for Education

As identified in chapter three many tourist attractions (museums, monuments, stately homes and churches) believe that they are more accountable for educating visitors, (Graham, 2005:10). According to empirical research carried by Waltl (2006:5) visitors have a high percentage (48%) for intellectual stimulation. This is confirmed further by data collected in the survey which sought to gauge Dark Sky event participant's interest in education. Table 7.8 illustrates that 43% of participants went to the Dark Sky Event to learn about astronomy in a dark sky designated park from the Forestry Commission.

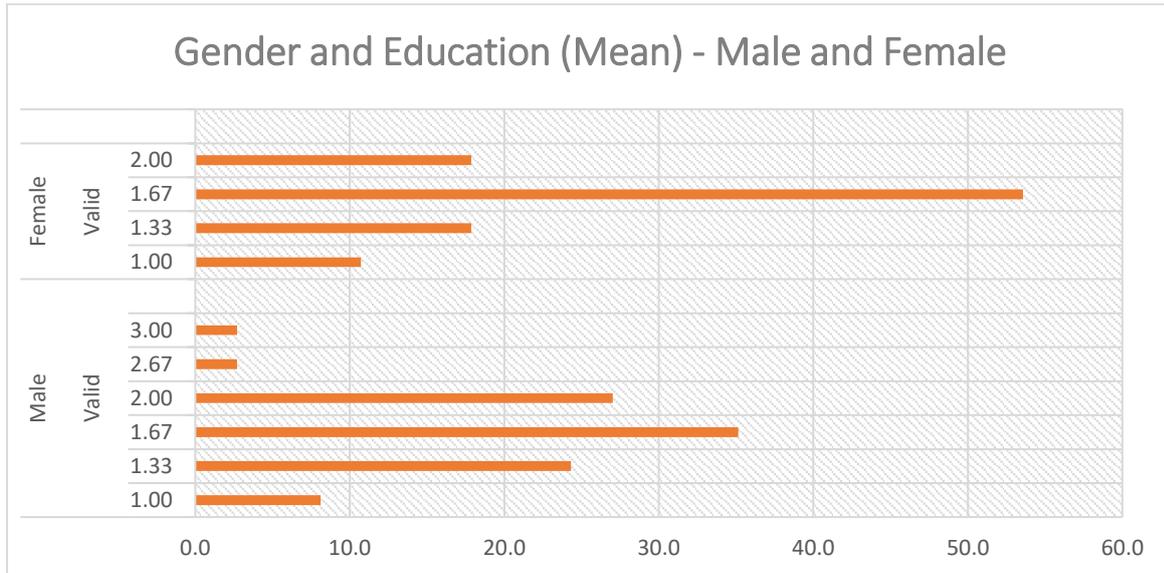
Table 7.8: Need for Education



#### 7.4.3.8 Gender and Need for Education

Table 7.9 distinguishes between gender differences in relation to the need for education unexpectedly it revealed that females were more interested in the educational element of the event, whereas at Sanctuary males demonstrated a greater interest education. During the next stage, semi-structure interviews, of the research it may be revealing to identify which gender was responsible for booking on to the event and the specific educational interest, i.e. astronomy, dark sky designation or something else.

Table 7.9: Gender and Education



#### 7.4.3.9 Expressed Motives to Travel

The travel motivation factors being analysed are taken from Crompton’s (1979) seven socio-psychological desires to travel with the addition of two further categories: Novelty and Education, these illustrate two areas of enquiry that revealed themselves during the participant observation stage and are associated with Iso-Ahola’s (1982) theory of seeking and escaping.

As displayed in Table 7.10, almost all the respondents (n=61) were travelling with either family or friends. All respondents (n=69) were on a break of 7 days or less, with the majority (n=52) spending less than 3 days in the area. Of those who travelled for the event only n=7 travelled from city locations, mainly Glasgow (n=5) which is just over an hour and a half away from the Dark Sky park.

Table 7.10: Motivation to Travel

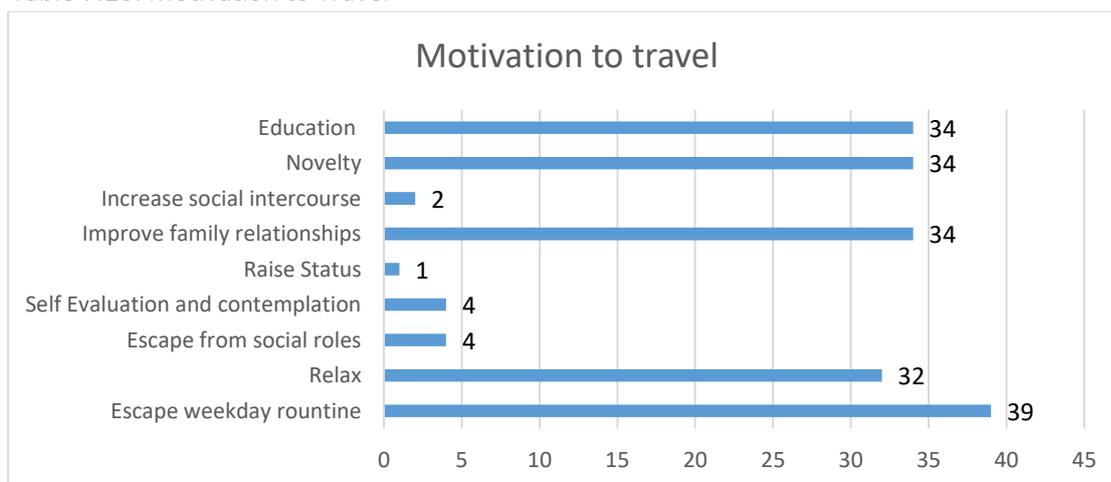


Table 7.10 also displays the push and pull factors. Taking the push factors first: improving family relationships (n=34), relaxation (n=32), escaping weekday routine (n=39), it is evident that over 50% of the respondents perceive that attending the dark sky event is a deciding factor when travelling but

more importantly that it will enhance self or relationships in some way. These factors are highlighted in various tourism motivation theory studies (Dann, 1981; Crompton, 1979; Iso-Ahola, 1982; Pearce, 2011) with empirical results identified in the previous research of Backman, Backman, Uysal, and Sunshine, (1995), Crompton (1979) and Dann (1981). The highest score in relation to this study, n=39, relates to the need to escape this is consistent with the general findings by Uysal and Hagan (1993) as 'escape' it is seen as a primary reason for travel.

With regards to improving family relationships, n=34 expressed a desire to be with family, these findings deviate from studies by Baxter (2011) and Ryan *et al.* (2010), who identify that most tourists travel for their own fun (pleasure) or enjoyment, for this is the prominent reason for 'being a tourist' (Urry and Larsen, 2011; Cohen, 2008). Whereas the respondents in this study predominately want to escape by being together with family and friends.

Table 7.10 also recognises that there are significant pull factors associated with education and novelty at dark sky events, with an equal weighting of n=34 respondents each highlighting that the astronomy presentation was a significant pull as it provided information that is suitably different to attract participants. Another pull factor related to improving relationships was also influential. This added an unexpected dimension, as looking up at the cosmos was believed to be a singular experience, whereas it seems that in reality it is an experience that could be shared, this will be explored further during the interview stage of the research. N=34 respondents also recognised that they have a need for novelty, demonstrating that these participants are seeking new experiences through new places (Crompton, 1979). These findings are significant as they represent new destination attributes, i.e. darkness, stargazing, family friendly activities which are both relaxing and stimulating all of which can be combined to create a novel experience. This desire for novelty is consistent with other studies in rural contexts, although the attributes are subtly different (Kozak, 2002).

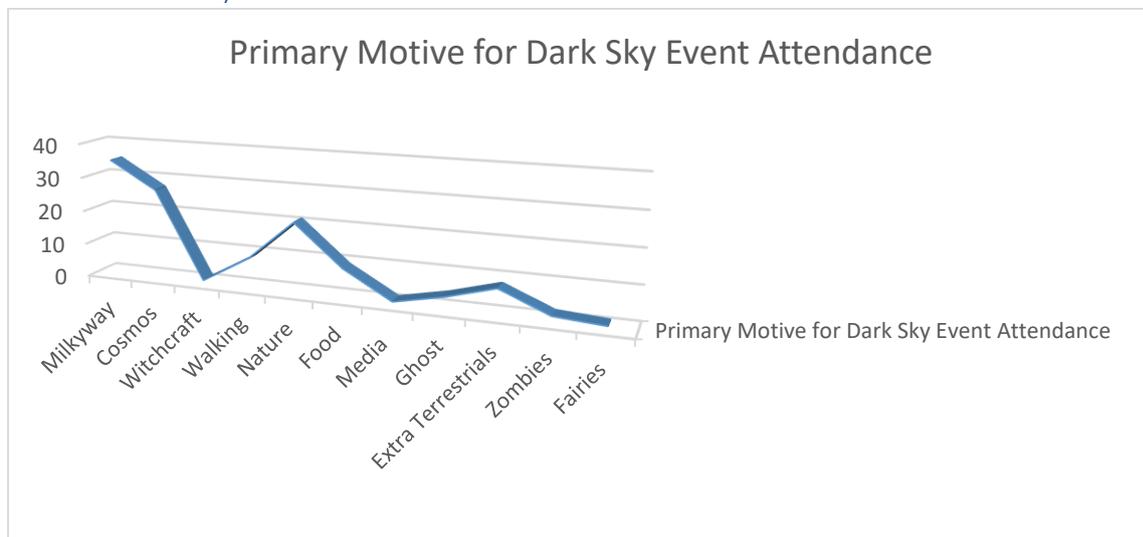
The need to learn whilst with family and friends was recognised by n=34 respondents as important, this is interesting in so far as learning is usually a personal need, not a shared need. Although Maslow (1970) does recognise that within the Hierarchy of Needs there is personal growth desires in all. The results in this study do refute one notion proposed by Moscardo (1999) that tourists are mindless who follow routines and pay limited attention, instead astro tourists are motivated by curiosity in the way in which they explore both their surroundings and the cosmos. This supports the notion of research undertaken by Iso-Ahola, (1991) and Crompton (1979) that suggests that, epistemic curiosity is an important tourist motivator.

#### 7.4.3.10 Expressed Primary Motives

The primary motives that make up a destinations appeal consist of a mixture of activities and attractions as each provide key motivators which pull visitors to a destination (Crouch and Ritchie, 1999). Within the sub-niche special interest group of astro tourism the desire to travel is complex, as the primary motives which provide the initial stimuli for the visit signify the level of meaning participants place on stargazing. For some, as seen in table 7.11, the initial stimuli maybe nature for others it may be food etc. thus, stargazing is an additional activity within the wider visit experience.

Dark Sky Events are by their very nature nocturnal activities; thus, they are unlikely to sustain an astro tourist who is staying in the area for a number of days. Therefore, daytime activities are fundamental in attracting prospective Dark Sky events visitors to one destination as opposed to another. These attractions have been grouped, classified and categorised differently by researchers. For example, Goeldner *et al.* (2000: 217) categorised attractions into five main groups; cultural, natural, events, recreation and entertainment, all of which are represented in the primary reason for travel in table 7.11 signifying that, the range of these activities at the Galloway Forest is an important pull factor as they represent the destinations wider appeal. These activities are important as tourists increasingly seek experiences ‘that go beyond the more passive visitation practices of the past’ as tourist are far more complex, particularly when travel in pairs and groups (Crouch and Ritchie 1999:1).

Table 7.11: Primary Motive for Travel



As anticipated, the primary motive for attending a dark sky event favoured stargazing activities such as seeing the Milky Way (30%) and the Cosmos (23%) with 18% expressing an interest in nature. Illustrating, that there is a predominance for the environment both cosmic space and at the destination. However, other primary motives for travel displayed in table 7.11, pertained to Extra Terrestrials (7%); Witchcraft (1%); Walking (7%); Food (7%); Media (1%); Ghosts (3%); Zombies (2%) and Fairies (1%), some of these motives appear obscure but given the rise in popular culture in relation

to fiction and mythology a Dark Sky event does have the potential to provide a safe space to explore alternative interests.

When trying to understand the different types of astro tourists the following question was asked: does what we see depend mainly on what we look for? For Aristotle and Copernicus, both of whom observed the sun rising and setting, but both came to different conclusions (the former geocentric, the later heliocentric), they both observed the same phenomenon from different ontological positions. So, do, for example, the astronomers see the Dark Sky differently to those with an interest in extra-terrestrials? If so, will these participants be distinct types or form part of a broad cluster? The questions to be asked during the next stage is, what level of interest do these participants have in stargazing, and how do they identify with stargazing and the dark sky? Probing deeper during the next stage should elicit a better understanding of these participants as some may not be astro tourists at all.

It is recognised that not all tourists have control over attending the Dark Sky event. Some participants are given the experience as a gift, others attend with family or friends, whilst others may simply be looking for something to do in the evening, therefore any typology produced needs to recognise that attending a dark sky event may not necessarily be a personally sought desire. Although, astro tourism may be of secondary interest or a way of being with family and friends, there may still be a sensory response to the experience that renders it more meaningful. During the participant observation stage, it was evident that even the friends of those who were interested in stargazing had some connection to the experience as they expressed feelings of awe or sensory responses to the environment that sparked conversation. To gain a better understanding of these feelings the following explores the five senses: sight, sound, touch, taste, smell, to ascertain the relevance of sensory stimuli to the overall experience.

#### 7.4.3.11 Motives for Sensory Pleasure (MSP)

As discussed in chapters two, three and four, sensory awareness is heightened in unfamiliar surrounds which according to Rojek (1993) is categorised by 'general or specific associations to place'. It was observed in stage two, that tourists tend to touch, listen, smell and speak differently at tourist attractions as they try to make sense of their surroundings. For example, Rodaway (1994) considers that people decipher sounds within unfamiliar settings as they differentiate environmental noise from what they hear (generally) or listen (specifically) to, illustrating that there is a personal interpretation and direct emphasis to either external or internal experiences. Drawing further on MSP research by Zuckerman, 1994; Cacioppo *et al.*, 1996; Eisenberger *et al.*, 2010, as discussed in chapter two, sensory enjoyment can be related to the natural environment. In this study, how the environment and the dark is experienced simultaneously is important, thus meaning that is placed upon place, space and

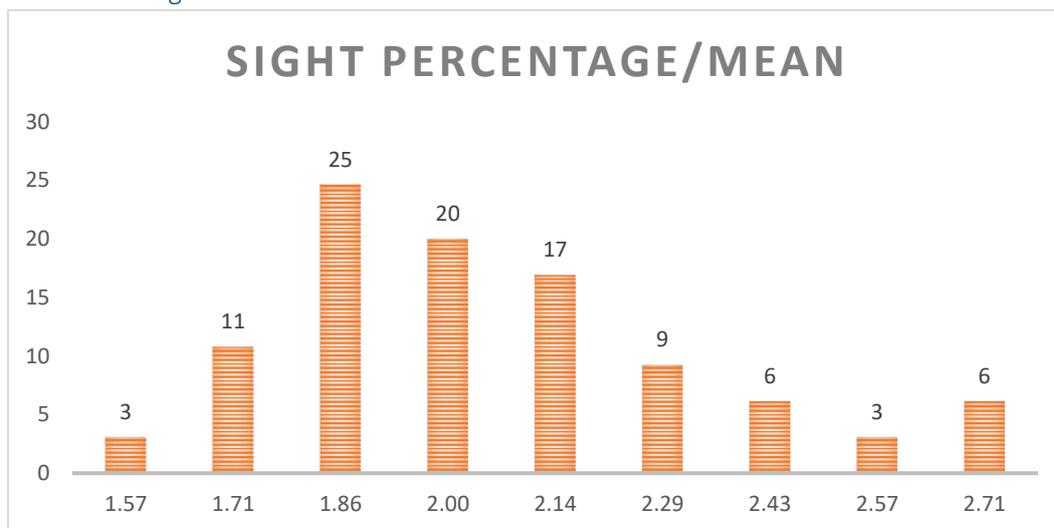
time highlights that stargazer's have an impressionistic and ideological view of the horizon, nocturnal environments and the possibility of what lies beyond Earth's boundaries. These views are stimulated by the destination's surroundings and the sensory stimuli.

*It was keenly observed, that hanging-out with the participants provided endless opportunities for participant observation and to gain knowledge about dark sky designation. This resulted in developing an 'infinity' with the participants as it was also a new experience for me.*

#### 7.4.3.12 Sight

As discussed previously, sight is a primary medium for knowing place it has a spatial scale which allows the tourist to embrace the experience. However, within a nocturnal environment sight is impaired, until the eyes adjust to the dark, usually taking approximately 20 minutes, once the adjustment has occurred new sights and subtle tone become apparent. To represent sight in the MSP survey 9 questions were specifically associated to being in the Dark Sky Park (questions: 1; 21; 22; 26; 27; 28; 40; 44; 45)

Table 7.12: Sight



The significance in relation to sight was placed on viewing the stars, as seen in Table 7.12, 25% of the respondents looked for light (stars) in the dark rather than looking at things around them at 11%. The majority of the participants appeared to be realistic about what they would see when stargazing as only 3% believed they would see the Milky Way. This contradicts the view presented earlier that tourists are drawn to enhanced marketing images as it demonstrates that tourists are able to access independent reality and imagery.

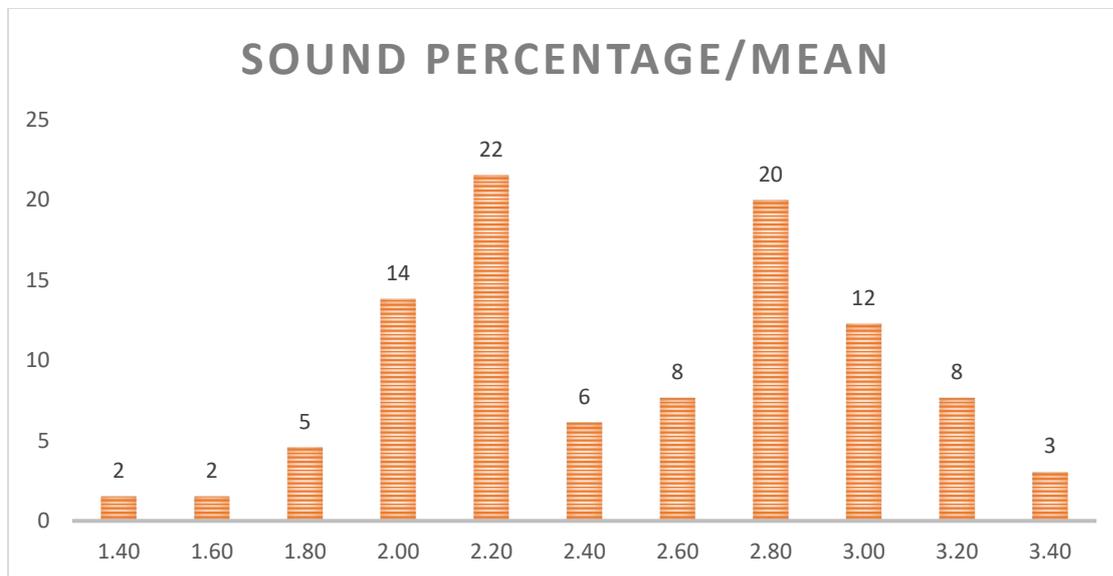
Of the 9 questions asked, 3 (questions: 26; 27; 28) were related to the negative aspects of gazing at night, notably these questions had a 6% or less agreement. During the next stages of the research,

interviewing via positive sampling, 3 participants were chosen who did not choose the stargazing events, i.e. those who accompanied friends or family to ascertain if their experiences constituted an astro tourist type, and to ascertain their experience of seeing in the dark.

#### 7.4.3.13 Sound

Within a nocturnal environment auditory senses are acute as the body adjusts its olfactory processes to compensate for the lack of sight. The unfamiliarity of place, the presence of sounds associated with wildlife, and the close proximity of other tourists stimulate primal awareness, similar to the fight or flee instincts. To represent sound in the MSP survey, 5 questions were specifically associated to being in the Dark Sky Park (questions: 24; 25; 30; 31; 39)

Table 7.13: Sound



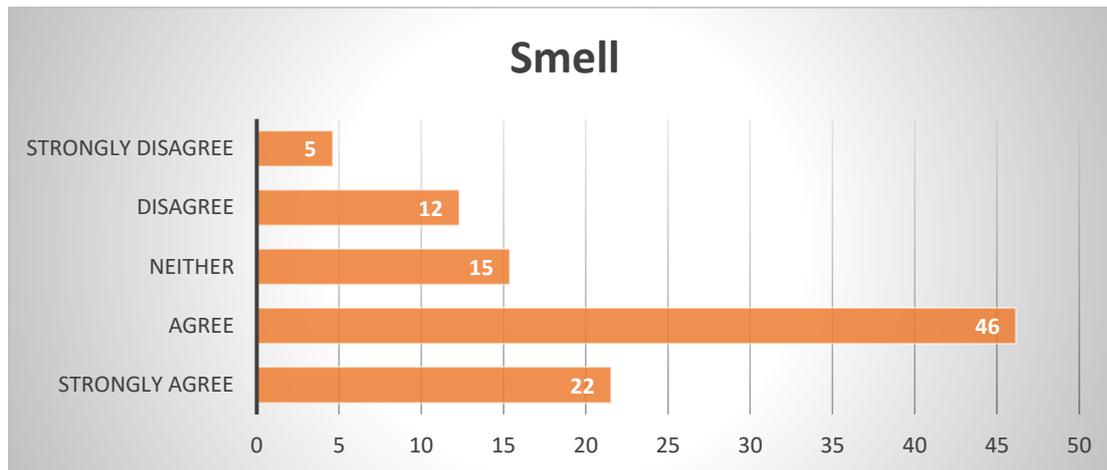
As seen in Table 7.13, 22% of the participants identified that the sound of wildlife was enjoyable, with only 3% saying they felt scared by the sound of rustling leaves. As movement in the forest is reflected through associated sounds e.g. wildlife in the undergrowth, snapping of twigs underfoot and the rustling of leaves, which are amplified in the dark, a higher rate of fear was anticipated. Why the participants found the sounds enjoyable will be investigated further during the interviews.

The survey did not consider the sounds made by other participants; therefore, the passive appreciation of whispering could not be assessed at this stage. However, the effects sound has on relaxation was considered when participants were asked about feeling calmer? n=41 of the n=65 believed they felt calmer in their environment. This may be a result of one of the distinct features of a Dark Sky event, where there is the lack of ability to use mobile devices due to poor or no signal, making some of the events network dark, the result being no ambient tapping or buzzing phones resulting in a feeling of being disconnected from the outside world.

#### 7.4.3.14 Smell

Rodaway (1994) classified smell as being either pleasant or unpleasant in nature. Smell is also one of the intimate primal senses which when in a new environment become enhanced. Although only one question was asked in relation to smell, it was apparent 68% of the participants believed that smell at night is different.

Table 7.14: Smell

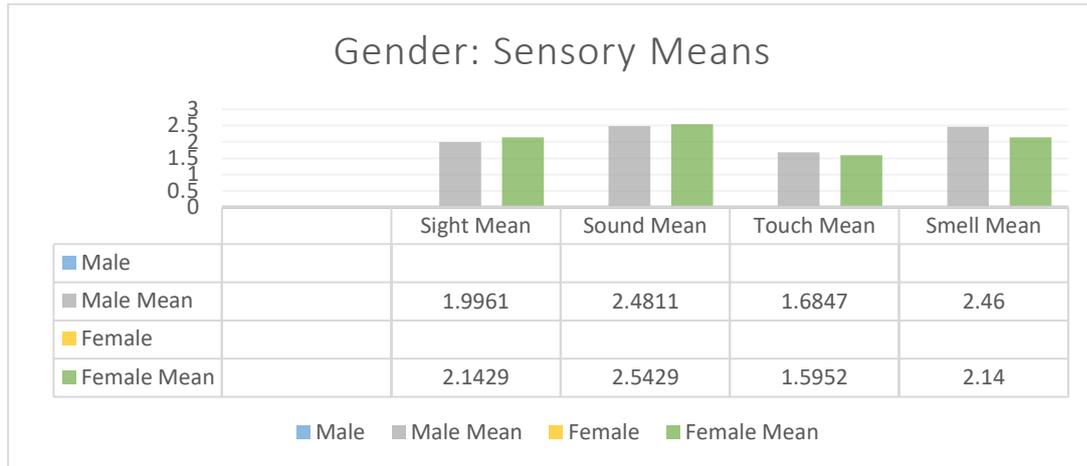


There are two types of smell that the participants may be experiencing, ethereal or pungent but none are associated with being calm (Golledge, 1991). Ethereal odours represent less pervasive smells that are often associated perfume, smoke or car exhausts - artificial, whereas as pungent smells denote the heavier, dense and more constant smells such as coffee, animal waste, damp foliage (organic). Subsequent questions during the interview stage could ascertain if the smell was pleasant or not.

#### 7.4.3.15 Touch

Typically, tourists want to touch objects at a destination which are significant to place so they can feel something special, e.g. an association with remnants from the past, historical artefact, monuments that represent luck (Barnett, 1972). Touch also forms part of feeling sensations with intensity they can also form an association of hedonistic experience (Candlin, 2017). However, touch can be experienced by males and females in different ways, as seen in Table 7.15, touch was experienced more by males, and one of the least felt senses of the experience.

Table 7.15: Touch



7.4.3.16 Taste

Food has the potential to broaden a destination’s appeal which in turn increases visitor yield, enhances visitor experience and has the potential of strengthening regional identity (Hall and Mitchell, 2006). Local food can be an important component of the experience that can help create a sense of place and heighten destination appeal (Haven-Tang and Jones, 2006). Local produce adds authenticity to the tourist experience and provides motivation for visitors to come to a location (Sims, 2009). However, as seen in table 7.16, 63% disagreed that they wanted to experience local food, although it was evident during the participation observation stage that they appreciated the food served, i.e. sandwiches, soup and hot chocolate element of the event. It should be noted that no attempt is made to add an authentic Scottish dish or dark sky associated food to the experience, consequentially taste does not signify who the the astro tourist is.

Table 7.16: Taste



However, as seen in chart 7.16, 20% did believe that food (taste) enhances a destinations appeal. Of the 20% identified all stayed at local bed and breakfast accommodation providers, some of whom may

cater for food connoisseurs as Castle Douglas (cited within 15 miles of the Dark Sky Park) is Dumfries and Galloway’s regional Food Town.

#### 7.4.3.17 Senses -Gender

As seen in Table 7.17, the differences between males and females in relation to sight, sound, touch and smell was most significant in relation to males with regards to smell and touch as they had a positive response to each. Whereas females had a higher positive response with regards to sight and sound. In each case the statistical significance is low due to the number of participants, although there is the possibility to reflect upon this further during the next stage of the research.

Table 7.17: Senses: Gender Difference

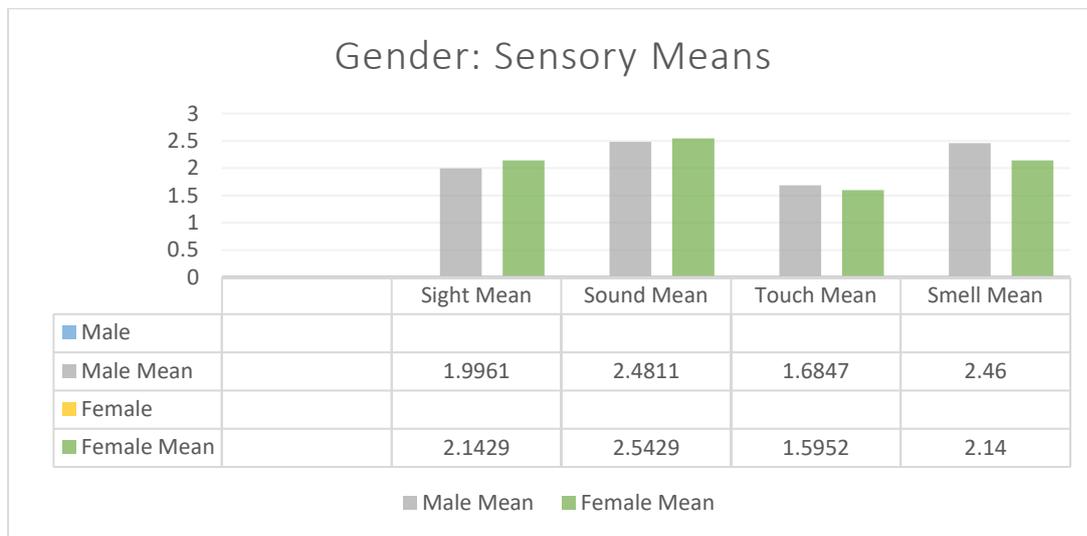
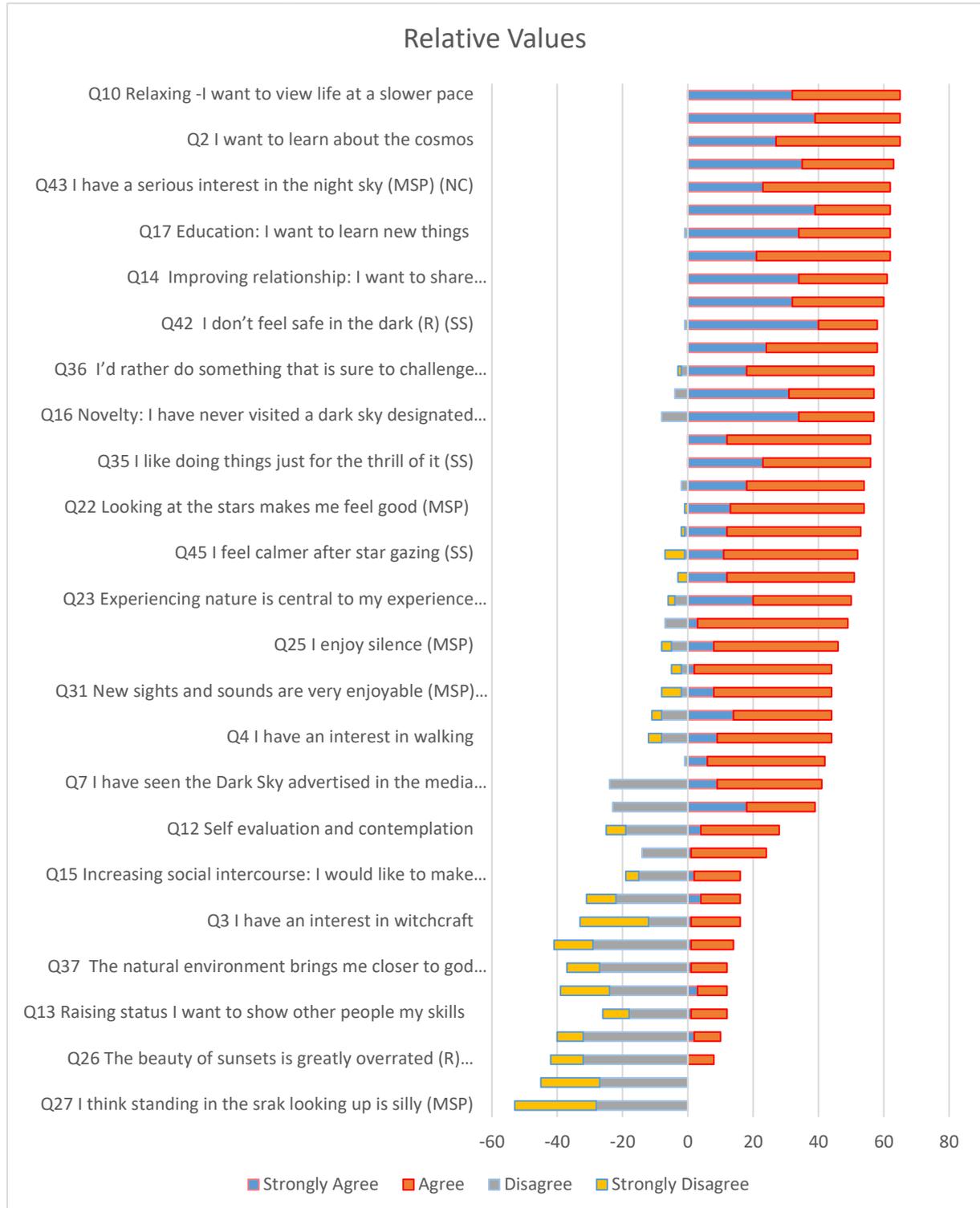


Table 7.18 below, provides a complete breakdown of the relative values in relation to all the questions on the survey. The significance of the table is illustrated in the grouping of positive and negative responses to each question. It highlights that the reserve negative responses were recognised as each received a low score.

*The usefulness of data collected from the survey was largely dependent on the profiles that could be derived from the data. On examining the data, I found that even those with other primary interests acknowledged a connection (feeling, sense) with the astronomical gaze.*

Table 7.18: Motive for Sensory Pleasure Survey Relative Values



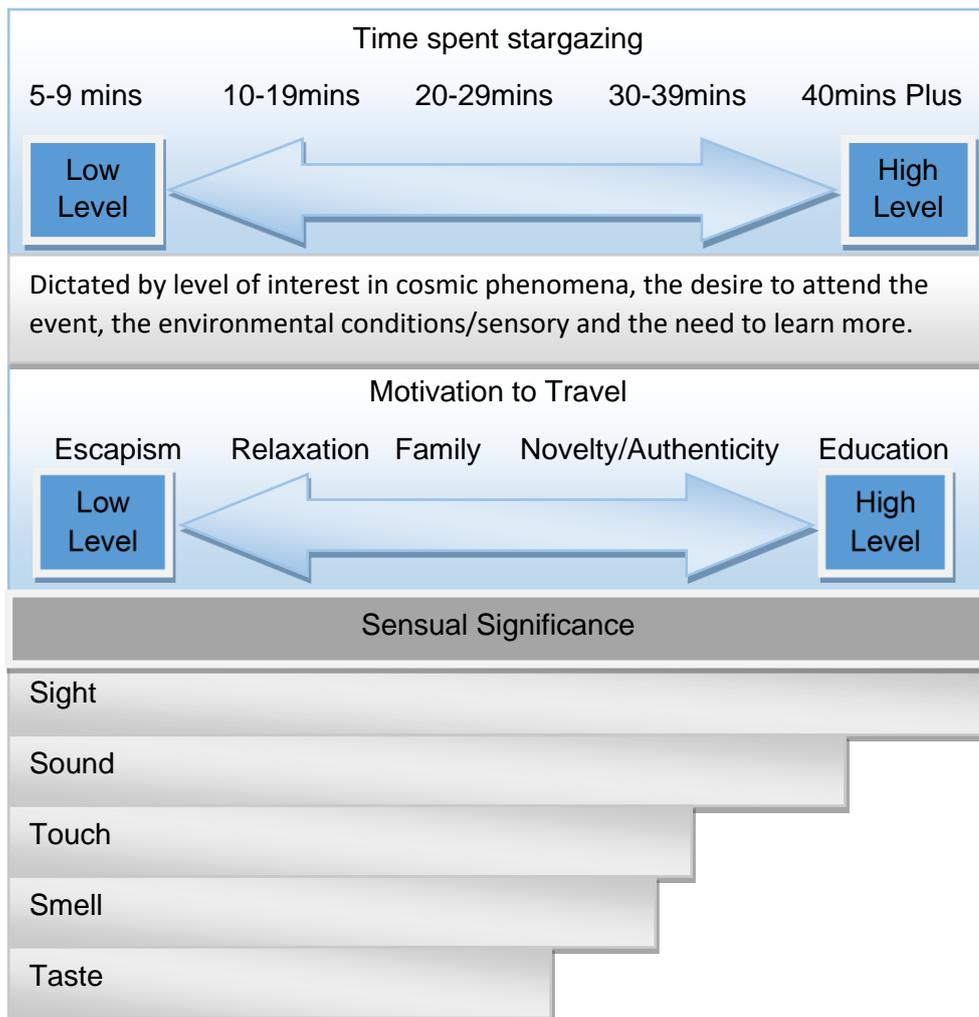
### 7.5 Stage Three - Findings

The relative values listed above, illustrate that pleasure is a subjective experience, it depends upon the purpose for the visit, the level of interest and the senses used by the astro tourists as to how much pleasure they derive. Aristotle believed that happiness consists of two aspects: hedonic (pleasure) and eudemonia (a life well-lived), (cited in Waterman, 1993). Whilst, some astro tourists display the need for the hedonic as the thrill and intense feeling they experience in the dark stimulates feelings

of fear and joy simultaneously which according to Schopenhauer (2010: 200) is also 'sublime'. Whereas, eudemonia (which derives from Aristotle's essentialist understanding of human nature and a life well-lived) is displayed in the overwhelming feeling of their own significance in the world and the potential of other life elsewhere in the Galaxy above, which is also 'liminal', according to Shields (1991:84).

Particularly pertinent in the survey results is the sense of tactile experiences which progress into associations formed by the respondents related to being in the dark and wandering visually through space. In the tactile sense, the nature of inherent sensitivities is considered to be either internally or externally driven towards the Dark Sky environment. Internal responses relate to how the dark makes the astro tourist intrinsically feel. External-driven responses illustrate how the event itself feels to the astro tourist as it may exemplify the personal experience of viewing space versus the place specific experience of being in a dark sky designated park. The overall significance of the experience is represented in Figure 7.14

Figure 7.14: Significance of Cosmic Viewing Experience



Taking a step back to review my progress, I note that many of my assumptions have been slain: there is no gender bias, age groups are varied, and although some participants may seem to have alternative primary interest almost all have a primal and curious interest in stargazing.

### 7.5.1 Time Spent Stargazing

According to the survey results, the predisposition of those who spent more time stargazing was that they were more likely to be serious about either astronomy or astrology, as the correlation between time spent gazing, the need for education, and the significance of sight to the experience combined to illustrate that n=6 people fell into the serious category. At the opposite end of the scale another cluster emerged, when combining the participant observation data with the survey data in NVivo 10, as depicted in Figure 7.14, those who spent less time stargazing were more likely to be open to a fuller sensory experience, as well as looking for a form of escapism. Those who fell between both extremes of time spent stargazing were less identifiable in terms of clusters, as they appeared to be scattered, therefore further understanding is required during the next stage of the study.

### 7.5.2 Sight Perception at the Dark Sky Event

Sight is represented by both push and pull factors. In particular, the Dark Sky designation logo, the natural environment (trees, shrubs, rocks), forestry logo, astronomical sights, and the intensity of darkness, all attract tourists. The unusual darkness, combined with the stimulation of other senses, makes sight a significant sense for all participants in both the motive for sensory pleasure and the meaning attached to stargazing even though sight is impaired, it plays a significant role in the experience.

### 7.5.3 Sound Perception at the Dark Sky Event

Sound is represented by wildlife, such as bird song, animal movements in the undergrowth, the whispering of other participants, and silence. Sounds can be profoundly associated to reverence, as illustrated in Chapter 3, they allow information from the outside world to be incorporated into the inner self thus providing MSP whilst contributing to sensation seeking and the creation of meaning, very similar to the way in which music can evoke strong emotions. By impairing sight, it was evident from the majority of participants, that sound was amplified particularly for those new to the experience.

### 7.5.4 Touch Perception at the Dark Sky Event

Touch was significant to all but the very serious cosmic gazer, this was represented by the need to hold electronic stargazing devices and other equipment such as binoculars, along with intimate and stray touches, and the feel of terrain both underfoot. These sensations are felt in the body but can

trigger feelings of affirmation, spirituality and love. Touch was often seen to provide a form of comfort when sight was impaired which is also a form of reassurance associated with belonging.

#### 7.5.5 Smell Perception at the Dark Sky Event

Smell was represented by the odour of vegetation, wildlife, and moisture i.e. the smell of moss, along with a fresh evening odour which consists of a cold air, wood burning from the stove, and the smell of sweet hot chocolate, which was present at most Dark Sky events.

#### 7.5.6 Taste Perception at the Dark Sky Event

It should be noted that taste at dark sky events was related to the moist air and the hospitality provided by the event organisers. Taste tended to be associated with other primary interests and not a significant feature of dark sky events. For taste, for those with an interest in food (n=4) can evoke all sorts of images and memories, it can also be associated with a variety of different authentic dishes, for example, haggis (a savoury pudding made with spices, and oatmeal), or Cullen (a rich, creamy smoked fish soup), Scotch broth (stewed lamb, cabbage and pearl barley soup). These Scottish national dishes can contribute to the image of place but did not play a role in this study.

#### 7.5.7 Sensation Seeking at the Dark Sky Event

Sensation seeking in relation to dark sky events involved novel and complex feelings and experiences, along with the willingness to take physical and social risks (Zuckerman, 1979). The feeling of being in the dark in unfamiliar surroundings with strangers adds to the excitement, as it provides a sense of danger which is hedonistic, thus allowing the participants to be stimulated by the experience. Whilst for others, they become immersed in cosmic viewing as they pay little or no attention to place, as they focus solely upon astronomic gaze. When completing the sensation seeking questions in the survey, all, but the most serious, n=6, identified with sensory stimuli, this supports Zuckerman's (1994) construct of sensation seeking as it illustrates the need for arousal via novel or intense stimuli.

#### 7.5.8 Knowledge Seeking at the Dark Sky Event

The positive relationship between enjoyment and knowledge is distinct at Dark Sky Events. The appreciation of the cosmic gaze provides pleasure via the stimulation of scientific curiosity and appreciation, believed by Taun (1974:95) to be the 'most enduring form of motivation as it resonates in the memory of human incidents'. This supports Cacioppo's *et al.* (1996:198) view that participants 'seek out and reflect on information because of their strong desire to understand events and relationships'. Even those with a limited interest in astronomy did identify with aspects of cognition as learning is involved with engagement and curiosity about this planet and the galaxy beyond.

Although the survey has provided a deeper understanding in relation to the extremes, i.e. the serious astronomer, astrologist, etc. and those wishing to escape, it does illustrate that there is a gap in

relation to understanding those who fall between the two extremes when it comes to distinguishing between astro tourist types. Therefore, during the next stage, which utilises semi-structured interviews from a purposeful sample, more focus will be placed upon the gap in understanding,

*Multiple behaviours and motives provide a conundrum as individuals' exhibit complex overlapping interests both in cosmic phenomena, the dark, nature and spiritual interests. As a new stargazer and researcher, I found some of the overlaps contradictory, for example one person expressed an interest in the occult but showed an educational interest in the cycles of the moon and its impact on the Earth. An interview will allow me to delve into this participant's psychogeographic story, so that I may uncover the true tourism interest, astro or otherwise.*

### 7.6 Stage Four: More Than Just Light

This final stage of investigation takes a phenomenographic view of the dark sky event participants who agreed to participate further in the study. The emergent themes from the previous stages of the study brought into focus the need to investigate the individual narratives of the participants. From the previous cluster analysis, it was identified that those who fall between the two extremes of serious to escapism, are less clear. This stage seeks to add clarity by way of identifying whether any further distinctive types exist. Continuing, with an interpretative qualitative approach the emergent themes that have been identified thus far, are illustrated in Table 7.19, these provide the background upon which the interview questions have been developed for this subsequent stage of exploration.

Table 7.19: Summary of Core Themes

Level One Code	
Characteristics of Dark Sky Event Participants	
Drawing from the data collected during the participant observation stage, the similarities and differences between individual participants engagement with Dark Sky Events activities was identified	
Level Two Code	
The Behaviour and Experiences of Dark Sky Events Participants	External Influences
This theme deals with aspects related to planning to attend the event, the equipment purchased, the different characteristics in terms of the amount of time spent in the area and the accommodation type. It draws upon	Consideration is given to the environment and how it affects the experience. For example, the weather, the time of day, the season, and the other tourism/leisure activities available to participants, along a myriad of other

data collected during stages two and three of primary data collection. Identifying that anticipation and expectations are constructed prior to travel, although there is a strong influence with past experience and popular culture.

potential influences as identified by the participants. Identifying that when considering the astro tourist experience there is a holistic and multiphase process which is interconnected to a broad range of environmental, sensory and intellectual stimuli.

Level Three Code			
Stargazing experience/knowledge	Time	Family and Friends	Media
Space and Place			
Each event has an element of information giving/knowledge transfer, this theme identifies the level of engagement with the Dark Sky park and stargazing.	As an indicator, each participant's time spent outside stargazing was recorded and their comments of why they engaged in the activity for that period of time also recorded. The meaning of time was also ascertained.	There are a myriad of shared stargazing activities and experiences, along with a series of stories related to the experiences	The media has an influence on stargazing location activities and interests

Taking the research findings from each subsequent stage addresses the emergent themes in a transparent manner, it provides a critical understanding of the tourist's experience, the destination features from the tourist's perspective, the meaning they attach to space, place and time. By carrying out purposeful sampling, narratives have been analysed using NVivo 11 to reveal the lived experiences of the Dark Sky event participants.

### 7.6.1 Data Collection

Put simply the participants were chosen:

- In an attempt to understand the 'other' in terms of the astro tourist type, four participants expressed alternative primary interest.
- As no significance has emerged in relation to age participation at dark sky events, eight participants were chosen based upon age groups, thus proving full representation.
- Time spent was determined as an indicator in relation to 'seriousness', therefore four participants were selected based on time spent stargazing.

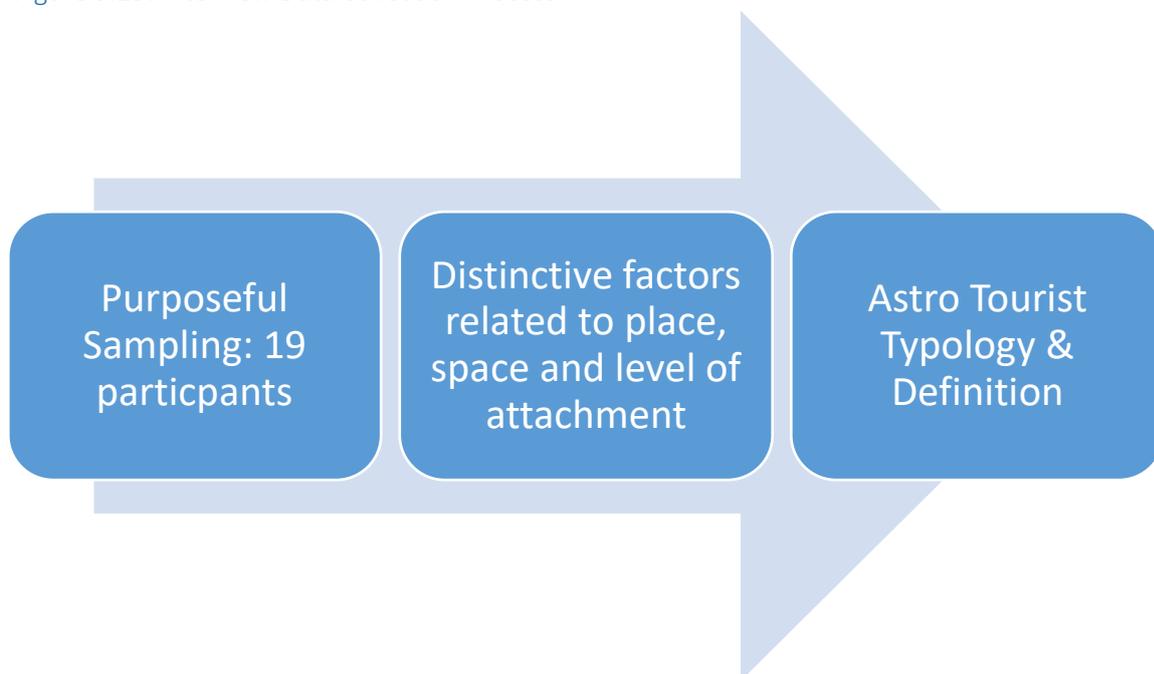
- Distanced travel could also be an indicator to level of seriousness in stargazing therefore three participants were chosen based upon distance travelled.

Two of the objectives of this study are: to investigate the tourist’s perception of place and space, how these constructs affect the decision to travel, and the experiences they have; and, to consider a collective definition of astro tourism, the participants are perceived to add depth and clarity which would allow a range of types to emerge.

*Providing a reflexive lens, whilst utilising a phenomenographic approach can be challenging, as phenomenography emphasises the stories of participants not the researcher. Even so, Groenewald (2004:7) asserts that it is not possible to be detached from one’s suppositions and that the researcher should not pretend otherwise. Therefore, the way I conduct the research and carryout the interviews should add richness to the data.*

The process by which data was gathered for the semi-structured interview method can be seen in figure 7.15, below:

Figure 7.15: Interview Data Collection Process



The richness of the data gathered can also be attributed to the purposeful sampling approach adopted, as the participants were from a diverse range of ages and of mixed gender as seen in the participant’s profiles in table 7.20 below. However, it must be stressed that disability, ethnic origin, occupation, sexual orientation, and religion were not measured, as their significance to the study was not deemed relevant at this time – future studies may develop understanding further. In general,

many of the respondents travelled with others – partner, family or friends, they stayed in the area for at least one night and spent more than 9 minutes stargazing. None of the participants engaged in stargazing as a profession, whereas 5 had visited other dark sky sites. One resident was chosen as this person had visited another Dark Sky site as an astro tourist.

Table 7.20: Participant Profiles

Participant	Duration of time stargazing	Number of other sites visited	Gender	Age	Distance travelled Miles	Nights in area
1 - Morag	12 mins	0	Female	83	52	1
2 - Dan	47 mins	3	Male	22	200	2
3 - Steph	30 mins	2	Female	48	200	2
4 - Ronnie	40 mins	0	Female	67	24	1
5 - Jackie	10 mins	0	Female	45	112	3
6 - Graham	34 mins	0	Male	51	112	3
7 - David	26 mins	0	Male	43	57	2
8 - Adam	21 mins	0	Male	20	12	1
9 - Tom	30 mins	0	Male	71	56	2
10 -Beth	9 mins	0	Female	32	26	1
11 - Stuart	35 mins	5	Male	37	260	3
12 - Nicole	35 mins	0	Female	33	260	3
13 - Douglas	30 mins	1	Male	19	54	1
14 - Pat	30 mins	0	female	20	54	1
15 - Ollia	22 mins	0	Female	26	Spain	2
16 -Alf	22mins	1	Male	74	7	resident
17 - Dan	35 mins	0	Male	25	189	2
18 - Tina	15 mins	0	Female	19	189	2
19 - Mark	23 mins	0	Male	62	98	1

(all names are purposefully fictional to protect the identity of participants)

### 7.6.2 Interviewing

Table 7.21 displays the origins of the semi structured interview questions, these emerged from themes identified during the previous two stages of the study and are supplemented with probing questions

(a sample of the transcripts can be found in appendix 12). The data identified 6 themes, each correspond with the research questions and are classified as the containers/nodes used to structure the interview analysis.

The focus of this research was on the astro tourists and their experiences relevant to the research aims and objectives. Each interview began with gaining informed consent as part of the ethic process. Each participant’s willingness and authorisation were sought, in the form of a written consent form, which also contained the participant’s right to withdraw from the study. Interviews were recorded digitally, later they were transcribed by the researcher which ensured closeness to the data. Each transcript was up-loaded to NVivo 11 and SPSS for coding and analysis.

Table 7.21: Correlation between Nodes and Interview Questions

Node/Theme	Interview Questions	Understanding Sought
Attachment	Why did you choose to attend an Event in a Dark Sky Park?	Expectation and understanding of what a Dark Sky Park has to offer before they came
	What did you expect to find?	
Place	What made you choose this destination?	There are other Dark Skies, why this one. Was the place the most important determinant or the event?
Experience	Tell me about your visit, the high points, any low points, memories you will take away?	Stories, narrative about the experience, any encounters they have had, memorable moments. Any disappointments?
Sensory Motive	If someone at home were to ask about visiting a Dark Sky site what would you tell them?	What senses are stimulated by being in the Dark
	Where there any times during your visit that you felt your senses were stimulated?	
Space	What attracts you to looking at the Cosmos	Whether the participants are new to stargazing, level of interest, are they interested in Astronomy or Astrology? Are there any spiritual, extraterrestrial or other associations to space
Time	Tell me what does time mean to you?	How does the image of time change when looking into space through time
	Does being in this place remind you of anything?	
	Do you have any memories of stargazing?	

### 7.6.3 Semi-Structured Interviews

The purposeful sampling approach yielded 19 semi structured interviews which provided a rich varied range of qualitative data for analysis. Each interview transcript was analysed consecutively, and concurrently in tandem with the data collection. As previously mentioned, the structure for presenting the data relates to 6 themes: Place, Experience, Sensory Motives, Space and Time as follows:

#### 7.6.3.1 Place

The relationship astro tourists have to place is a prominent theme, it has emerged that those with a strong interest in astronomy have no/or very little interest in place as illustrated by Male in his 30s, *'stargazing is one of the most profoundly human things you can do. I should do it more often, but the conditions elsewhere prevent me.... When you look into infinity, you realise that there are more important things than what you do all day'*. Humans have a natural affinity for other forms of life. Wilson (1986), called this affinity 'biophilia' and defined it as 'an innate love of living systems'. Although his quote related to earthly life, it can equally be applied to life on other planets, for one of the goals of an astronomer maybe to seek out new life on new planets. However, this particular participant was recounting another love, that of stargazing which is referred to as 'Astrophilia: a (rare) love of and/or obsession with planets, stars, and outer space' (Yourdictionary).

Whereas a Female in her 40s commented *'There's something about the night sky, it's kinda mysterious..., this place makes you feel you are on a strange planet. The ground feels very different in the dark, unfamiliar, a little scary ..'*, According to Pizam and Mansfeld (2005), a travellers choice of destination is influenced by a variety of personal and environmental factors. These can be shrouded with the intrinsic need for feelings that are hedonistic in nature, pleasure gained from fear or the unknown, life-fulfilling and affirming. Anomie represents this desire to transcend feelings of isolation in everyday life.

Whereas a female in her 80s recalled, *'I've been coming here since I was a girl and always knew the sky was dark, designation has attracted more people and events like this'*. Although attachment theory was originally designed to explain the emotional bond between infants and their primary caregivers, Bowlby (1979) believed that attachment representations exerted their influence beyond childhood experiences. He proposed that internal working models of self, provide a template for subsequent relationships by guiding the cognitive processes and behaviours consistent with an individual's expectations. Re-visiting a place to experience darkness is a distinct feature of being an astro tourist as some collect memories in a way that other tourists collect souvenirs.

A male in his 70s, who said this was his first time stargazing in a dark sky park, related his experience to observing the moving lights, *'I feel less lonely now I know how many planets out there could have life on them'*, his observation opened his mind up to the benign indifference of the universe. This was captured further by a female in her 20s who observed, when asked the same question, that *'I love the atmosphere... the anticipation and the halos that appear in the dark... unique to this place'*. Another female in her 20s affirmed the difference in the landscape stating that *'I suppose, it is a bit scary, not knowing where to walk, but its more fascinating than scary, when I saw the event advertised, I didn't realise how different it would be here... I should have brought my wellies'*. This highlights that people can hold several contradictory feelings about a place at the same time, some see it as an enabler to view cosmic space, others associate strongly with the dark and the uniqueness of experiencing a nocturnal environment in a light polluted society. According to Van Ham (2008) images and reputation of tourist destination in tourists' minds have always been important as media has a big influence, but a lack of accurate information, until quite recently, has had a significant influence on experience (cited in Csaba and Stöber, 2011).

Some of the participants attracted to dark sky designated sites illustrated that they have a passion to visit, as stated by a male in his 50s *'We've done it before a couple of times in Northumberland, and here,... it was also a good opportunity to come back with friends and have a weekend ..we've been up to Dumfries, we've stayed here before as well, we love the place.'* This demonstrates that for some, a destination exists as a place that nourishes the mind, as it promotes feelings and experiences of wellbeing. Although complex these experiences can have a significant effect on the attachment to the destination, particularly when choosing a holiday where family and friends are seen as being just as much of an attractive pull as the place itself.

#### 7.6.3.2 Space

In many of the observations and interviews, participants expressed a strong emotional attachment to stargazing or space. This is observed by a female in her 40s who commented that *'space exploration is a fantasy, jumping into a spaceship and flying to outer space, who wouldn't, it's something I've wanted to do all my life'*. Whereas another female, in her 30s, commented that *'cold winter nights are my favourite time to stargaze, the cold, somehow compounds this feeling. I love the intensity of the experience'*. The female's male friend then observed that, *'You're feeling a wonderful phenomenon known as the sublime. Space really does it for me, too'*. Sensation seeking in a hazardous environment generates the sublime as it provides the risk perception required by astro tourists who seek thrills and value feeling of pleasure and power that are found both in the dark and in the night sky.

#### 7.6.3.3 Time

A Female in her late teens commented her experience by stating that, *'For me, the feeling of looking into the night sky, with only the wind in my ears, is one of the most intimate moments I have ever lived through...., it's rare,....your transported in time to distant worlds, it makes me feel insignificant....but glad to be alive'*. This feeling of awakening and transcendence was echoed in the stray comments of many of those observed during the participant observation stage. An older relative of the female in his 50s commented that he had always wanted to travel back in time, *'wouldn't it be amazing to see the dinosaurs, or our ancestors, the things we could change ... a chance to make the World a better place'*. An appreciation of distance and time was highlighted further when asking participants when they first became interested in the cosmos? For some, they linked time travel to watching Dr Who as a child, for others Star trek, illustrating a compelling link to popular culture in contemporary society.

#### 7.6.3.4 Attachment (Astronomy)

Attachment contains sub-dimensions related to the place that the astro tourist is attracted to the Dark Sky Park, as it encompasses a wide range of concepts which are based upon place attributes such as the dark, nature, the elements, observing the cosmos, which are holistic concepts of the place that lead to attachment. This is illustrated by a Male in his mid 30s, *'It's perfect for observing here..., on a good night anyways'*, the environmental conditions allow the astro tourist to observe the cosmic landscape. Wandering visually through that landscape provides an array of gazes, each of which is structured differently both in physicality and headspace, thus providing a psychogeographic experience. This is further illustrated by a male in his mid 30s *'I haven't been to this park before, but I have visited other parks in America: Death Valley Park; Grand Canyon National Park; Kissimmee Preserve; Newport State Park, and of course Northumberland National Park. I've also visited a few of the dark sites, there not as good but you can meet a few interesting people in the night sky'*. Place attachment refers to the idea that people develop special bonds with certain settings that hold deep meaning to the individual (Low and Altman, 1992). This is enhanced when the activity undertaken interplays with emotions, knowledge, beliefs and behaviours at place (Proshansky, Fabian and Kaminoff, 1983). This is acknowledged by a female who was stargazing for the first time, she commented that a significant experience for her was in *'.... seeing the stars for the first time in my life outside the city, is one of the most surreal moments of my life'*. She had not anticipated the true darkness that can be experienced, as she had never encountered it before. Although she had visited with family and friends, she had expressed limitations in knowing what to expect, she had not booked the event and just wanted to tag along. The experience had 'opened her eyes' to the wonders of stargazing, her behaviour and facial expressions illustrated joy and excitement at this new experience, she spoke with passion and enthusiasm. This is echoed by a male who stated that, *'Stargazing has become part of my life... it's not just about astronomy it's about people... the people you meet are*

*different from those at work, they have passion, a genuine interest.*' This was an unanticipated outcome, therefore the work of Unger and Wandersman (1985) was reviewed as they discussed the importance of community to the human social, emotional, and cognitive experiences, highlighting, that the earliest attachment bonds, although formed between infants and their primary caregivers, are subsequently developed as a person matures and develops wider interests. Altman and Low (1992:7) postulate, *'attachments may not only be to landscapes solely as physical entities but may be primarily associated with the meanings of and experiences in place – which often involve relationships with other people'*. In line with previous studies (George and George, 2004; Gitelson and Crompton, 1984; Ryan, 1995), place attachment also has a direct effect on tourists' intention to revisit a destination, highlighting the role of tourists' emotional bond with tourism destinations. Although in the case of astro tourism, place attachment is not the key factor, cosmic (space) attachment, the need to observe a dark sky forms the basis of attachment. This is related to astrophilia (the love of the stars), it can be also related to the need for understanding places that may never be visited by mankind due to distance and the lack technological advances, thus, making the unreachable very desirable.

#### 7.6.3.5 Attachment (Astrology)

Henry David Thoreau (1817–1862), in the midst of the industrial revolution, believed that people were desperate to escape the meaningless and trivial prison that characterises most human civilisation. So lost were they in the daily pursuit of material things, that they had forgotten their need for nature's cure (cited in Thoreau, 2001). Astrology has provided a means of cure, fortune telling, mystical amusement and intrigue for centuries.

Attachment to Astrology is evident by the observation of a male mid 30s when asked about his interests commented that *'The constellations are pretty much recognisable from Dark Sky areas; I've been to a few places and this is the next on my list. They (stars) are a little distorted with the cloud cover but still recognizable. Oh, and there's an additional quite bright star in the general direction of Cassiopeia, and one missing from Centaurus... I'm no astronomer and I only got a mediocre grade at physics in school, but I'm really passionate to explore the universe whenever I get the opportunity'*, This illustrates, a unique combination of interpretation and tourist experiences which elicit feelings of wonderment, awe and engagement, portraying a sensory impression of an emotional connection to the dark sky environment. The modest view presented towards being an astronomer was common at each Dark Sky event, as many would profess to being extremely interested and not experts. The link to science seemed to be the underlying influence, as the majority of participants would shy away from any inference of scholarly achievement in preference of being an enthusiast.

A female in her 50s reflecting on her experience observed that, *'although a big problem with stargazing is the weather, it's very cloudy and wet, I think I can still see the constellations with the aid*

*of the Ranger's app. A few years ago things like this did not exist, technology is the bane of my life but now I can see my future when I want... looking at the light (Stars) is looking into the past at a time gone by, a time to be treasured ... but having a handle on the future gives comfort..'* . Wandering visually, emotionally and sensory through the dichotomy of place and space creates memories which portray one aspect of astrological attachment unique to each individual, as for many astrology, is seen as fanciful.

Theory behind Astrological prediction has not been scientifically proven, it contains many falsifiable hypotheses about the world and unverified and un-theorized claims about life, but as with religion, many claims are associated with faith of a higher power. Astrology has long had its believers and cynics but as a craft, rather than a science, it is often seen as a way of making people feel safe, as it provides boundaries and sequences which are used to predict events. Thus, the purpose of natal charts, horoscopes, are as a spiritual touchstone (Levine, 2017). Attachment is reflected in the meaning attached to the experience, the satisfaction and enjoyment and a sense of security and attraction which is displayed by a female participant in her 40s, who claimed that *'I believe that our future is written in the stars, a kinda cosmic map. Each day I check my horoscope, looking for any signs of peril or love, I know it sounds far-fetched, but I can prove it works from the things I've experienced. The cosmic rhythms make you feel like you are floating when you are just looking up, but the constellations follow patterns which move in cycles of luck and misfortune, the trick is to avoid the misfortune but the signs are not always precise so it is not always possible'*. These participants illustrated that, much of life can be explained and fit into a plan if the desire is strong enough. However, the techniques used to read charts and interpret the future are given credibility when predications are given truth, and a sense of security. Additional attachment to astrology is given when the charts illustrate love and romantic possibility as these are positive feelings, when fulfilled they provide satisfaction and enjoyment which meet the needs of higher-level satisfiers. Schroeder (1996:81) concurs that the deepest and strongest attachments between people and natural occurrences give rise to spiritual experiences in which people feel a sense of connection with a larger reality that helps give meaning to their own lives.

#### 7.6.3.6 Sensing the Past (Nostalgia)

One of the earliest texts related to nostalgia is the Bible, a passage from the King James Version Psalms (p137:1) reads 'by the waters of Babylon where we sat down, yea we wept when we remembered Zion', illustrating the desire in mankind for the past can be bitter. However, The New Oxford Dictionary of English (1998) defines it simply as —a sentimental longing or wistful affection for the past, typically for a period or place with happy personal associations (p1266). Therefore, the association can also be sweet. Humans have the capacity to remember with joy or pain, sometimes these feelings collide as

clearly illustrated by a female participant *'as I get older, my eyes still see the beauty of the dark sky, my ears still hear the voices of loved ones and my heart still feels the past'*. These feelings can be associated with Neuroscience, as it is known that nostalgia can be triggered by the olfactory system – sight, smell, touch etc (Orth and Bourrain, 2008) and other emotions, all of which are stimulated further by being in the dark. A kind of ghost, in headspace, that rises when familiarity is triggered.

A Lady in her 80s reminisced about the Moon, ... *'when I was a lot younger a lot of the times you felt it was bigger than it is now. ... my perception's different but I always remember times at school when it seemed to be huge and not so long ago they were talking about the Moon being big but it wasn't as big as I remember'*. It follows that to understand the wonder of nature, one has to have direct experience of it and to be inspired to feel the personal significance of that experience (Bulbeck, 2005; Kals, Schumacher and Montada, 1999; Milton, 2002). Nostalgia is a complex emotion with a combination of many different memories intertwined to create meaning to the individual. Those who told stories about the past which related to lost loved ones tended to be family and friends of those who booked the experience. As they spoke, they appeared to be lost in time, as reality and the present collided to stimulate a memory of love, loss, regret, joy, fear and happiness. In contrast, those who had a more serious interest in astronomy would tell stories of who inspired them to star gaze. For example, a male in his 60s revealed *'I have re-embraced my interest in the moon since a friend showed me some lunar image processing techniques, so now I can get the very best images from my equipment'*. Another male in his 40s commented that, *'since starting proper astronomy at the age of 9, I have seen a lot of changes in the night sky, my brother and I go to amateur clubs, when the wife will let me. It's great to see how much we know and many new places we can visit'*. Self-reflection of moving through time and the dark landscape can endow self-reliance and a sensory experience of place which invokes a sense of self through corporeal experiences. This experience of self within the practice of stargazing in a tourist setting is in need of greater research attention in the future.

#### 7.6.3.7 Summary of Interviews

To summarise, Phenomenography analysis provided a strong foundation to explore the experience of astro tourists as they wandered, physically and/or mentally, through the geographic landscapes of place and the cosmos. The astro tourist's accounts of their experiences formed a significant part of this study. Their accounts reflect the connections between the astro tourist experience, and their behaviour with particular reference to attachment as a means of determining an emergent astro tourist typology.

*Reviewing my reflexive journal, I note that initially the interviews acted as a learning opportunity, however as I improved my interview skills, such as paying attention to speaking: tone and pitch, and listening for subtle signs of hesitation, excitement and reflection, I began to enjoy the experience and found myself looking forward to my next interview. Each interview revealed an insight into the astro experience as they provided a window into the participant's feelings.*

*Some of my early notes revealed that I held preconceptions towards gender, believing that males would be far more interested in astronomy than females; however, I subsequently adjusted my parameters by documenting first-hand the accounts of the participants and the interviewer bias.*

The data from this stage, when correlated with the 6 top level themes illustrate the amount of times these keywords and phrases were stated by the participants during the interviews as seen in table 7.22.

Table 7.22: Re-occurrence of Keywords

Node/Theme	Interview Questions	Understanding Sought	Keywords/ phrases	Inferences
Attachment	Why did you choose to attend an Event in a Dark Sky Park? What did you expect to find?	Expectation and understanding of what a Dark Sky Park has to offer before they came	5	7
Place	What made you choose this destination?	There are other Dark Skies, why this one. Was the place the most important determinant or the event?	13	9
Experience	Tell me about your visit, the high points, any low points, memories you will take away?	Stories, narrative about the experience, any encounters they have had, memorable moments. Any disappointments?	15	25
Sensory Motive	If someone at home were to ask about visiting a Dark Sky site what would you tell them? Where there any times during your visit that you felt	What senses are stimulated by being in the Dark	6	28

	your senses were stimulated?			
Space	What attracts you to looking at the Cosmos	Whether the participants are new to stargazing, level of interest, are they interested in Astronomy or Astrology? Are there any spiritual, extra-terrestrial or other associations to space	16	12
Time	Tell me what does time mean to you?  Does being in this place remind you of anything?  Do you have any memories of stargazing?	How does the image of time change when looking into space through time	11	28

Therefore, the interviews added to an understanding of the motives for travel which are sometimes unexpected and occasionally questionable in terms of the participants being astro tourists, although the classification will be qualified later. Participants recalled excitement and the ability of participants to connect with their sensory experiences, in short, the lived experiences of astro tourism participants embodied the dynamic nature of the experience and highlighted the importance of the unexpected in creating a tourist experience.

Tourism of this nature, which occurs in natural, aesthetically pleasing environments, is observed to lift the soul, and has great potential to reawaken human connection with the natural world both on Earth and in cosmic space which in turn can create an attachment. Such emotional connections with cosmic phenomena derive from observation and contemplation of the un-known along with a desire to reach places that are inaccessible to most people. By seeing the stars from a natural environment, it is possible to see life in terms of the mortality of having a limited human life span (time) and of being less significant in the great scheme of things, it can, in effect, ground the observer in place and time. It is also possible to see the impacts that humans are having on the environment as light pollution is more pronounced when standing in a dark place thus enlightening the astro tourist and providing a sense of sublime in the gaze. Kaplan (1993) asserts that snapshot experiences of beautiful landscapes can temporarily lift one's moods and provide a sense of wellbeing. These snapshots are placed in time

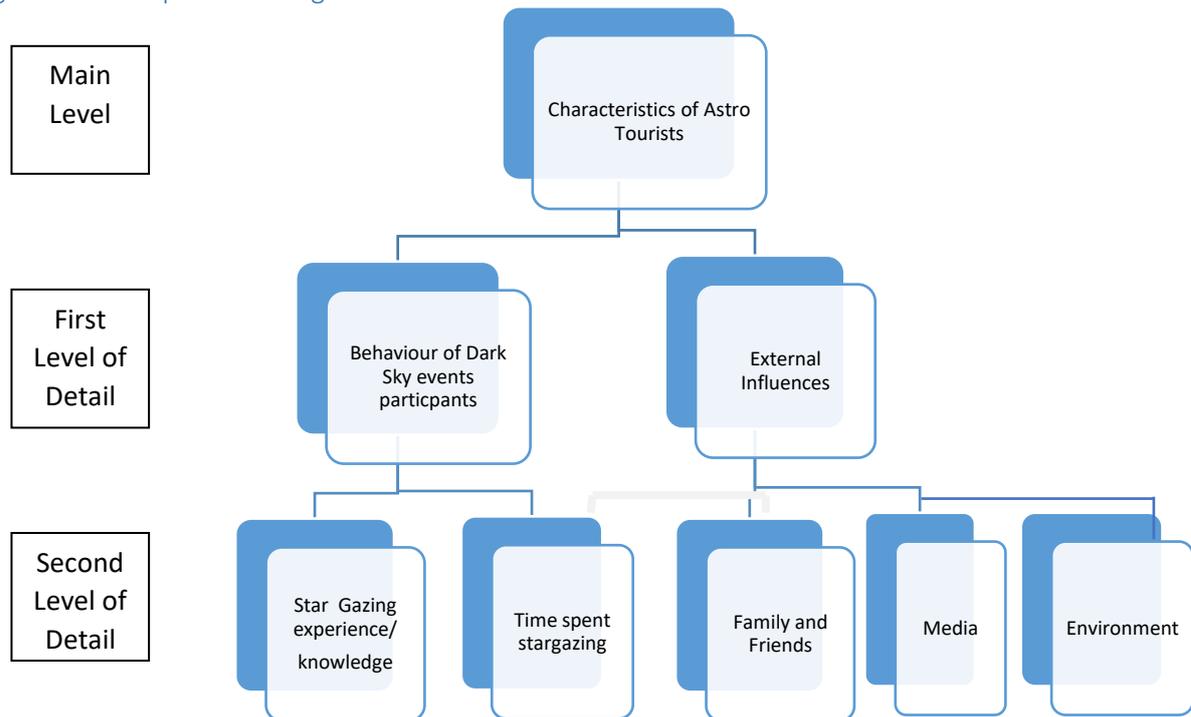
and referred to in later life, they can be positive or negative experiences although each are powerful in terms of attachment.

With regards to gaining a better understanding of the types of astro tourists that exist, the interviews revealed that there are a further three clusters, those interested in time/travel; those interested collecting experiences of the dark, and those with an astrological interest in the occult. To clarify this, analysis was undertaken using NVivo Coding.

#### 7.6.4 NVivo Coding

Using a social research software package, NVivo 11, each interview was consecutively analysed to produce bottom-up coding known as nodes, usually associated with grounded theory, although congruent with Phenomenography as feelings and experiences are explored to allow for the development of core themes. The process of analysis was deliberately semi-structured resulting in an exploration of key themes related to the main research focus, as illustrated on the simplified coding tree (Figure 7.16) below:

Figure 7.16: Simplified Coding Tree



##### 7.6.4.1 Breakdown of Main Level Themes

With regards to the research questions three main themes emerged:

**Characteristics of Astro Tourists:** A top level code which draws from observation at events, the comments from participants and the profile data which includes similarities and difference in relation to the creation of a typology.

**Behaviour of Dark Sky Event Participants:** This code deals with the general behaviour of the astro tourists, such as distance travelled, time spent stargazing and level of involvement with astronomy and astrology. Aspects of behaviour can be associated with influence from family and friends although this is usually a two-way shared experience which is personal and/or intimate.

**External influences:** This theme was specific to the environmental significance in relation to stimulating the sensory experience. A nocturnal environment tends for many to be sensory in nature therefore family and friend participation is significant. The role media has on the astro tourist experience is varied, it can raise expectations and ignite interest, it can also be misleading and lack the practical aspects related to climate and terrain, as marketing images use filters to enhance colour-ways and do not highlight that cloud cover obscures vision.

#### 7.6.4.2 Reflective themes

In relations to the characteristics of Dark Sky event participants, a further two themes emerged which crossed all other themes:

1. Attachment to stargazing was illustrated in stories told by participants and suggests that a combination of factors influence the experience. What most participants recalled was personal experiences which served to differentiate their lived experiences.
2. Nostalgia was significant in many motives for travel, particularly in relation to the passing of a loved one and past shared experiences. Some of the strongest memories related to a notion of existential authenticity as a central travel experience (Wang, 1999)

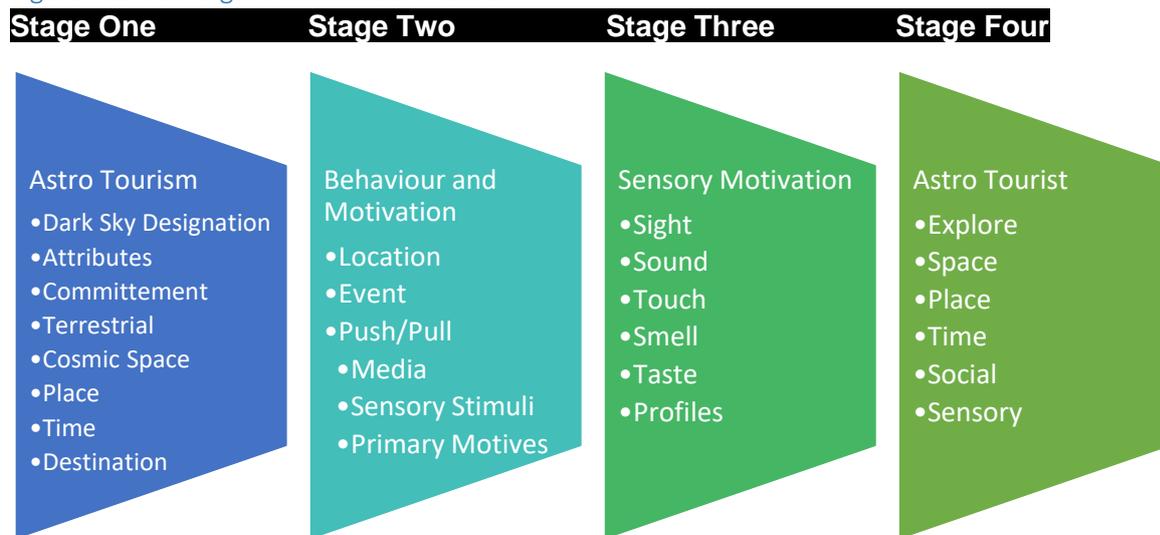
These two themes appeared to signify the intensity of the experience as the participants often waxed lyrically about their experience of the Dark Sky Park and/or their interest in astro tourism. Consequentially, family and friends who had no previous interest in stargazing demonstrated a newfound love for the star, a form of astrophilia.

#### 7.6.5 Towards an Astro Tourist Typology

Social science disciplines have a rich tradition of typologies, as they are essentially a systematic illustration of how social phenomena varies or is similar along a number of selected dimensions or attributes (Waddock, 1989). The following astro tourist typology was constructed following empirical study which first, identified the diverse range of motives that push and pull astro tourists to events. The second stage was to determine the sensory motives related to a nocturnal environment whilst

viewing the cosmos. The third was to delve into the participants' experience of space, place and time. Finally, emergent themes were plotted against dark sky attributes and various dimensions of motivation, place, space/cosmic, time, attachment, and nostalgia. The purpose was to identify if there are any significant dimensions of the astro tourist experience that can be distinguished to create a typology significantly different to other tourist typologies. Using NVivo 11 and the data generated in SPSS and Excel, an analytical tool, as illustrated in figure 7.17, a number of emergent contextual themes in the form of nodes emerged.

Figure 7.17: Emergent Contextual Themes



The astronomer and astrologer seek knowledge, challenging experiences and a natural/authentic way to view the stars. Whilst those with no previous experience of stargazing were motivated to attend to accompany family and/or friends, most then went on to have an experience that was in some way transformational thus they became an astro tourist. Subsequently, motives can be broken down into other types, one type related to the need to experience time travel, links were made to popular culture and cult television programmes, Doctor Who. Whereas others linked their experience, again to popular culture but to the Star Trek movies, denoting the need to explore space travel. The last motive that emerged related to an unexpected type, those who had a supernatural, extra-terrestrial or spiritual need. As an astro tourist type they also displayed behaviour related to an affiliation with stargazing education and the authentic experience. The Witches and the vampire hunter were not classified as astro tourists as they had no interest in the stars, for these individuals the dark/ nocturnal environment is far more important than outer space, as the Galloway forest has been home to many a battles, therefore being in the dark, looking into space, opens up the bridge between supernatural forces here on Earth and the spirit world.

In this study, cluster analysis was used to categorise astro tourists, based upon five constructs. Cornell's (2015) classification of an Astronomer was considered when creating the clusters to determine if there were any commonality, it was identified that two of the classifications (Stellar and Cosmologist) could be adapted for this study - The Stellar Explorers: this cluster consists of those who want to explore the stars, solar systems and galaxies). Whilst, the Inquisitors (those who want to study the origins of the universe), can be extrapolated further to includes those who have an interest or passion for astrology, supernatural, spiritual and extra-terrestrial. This type also seeks out a designated dark site to engage in other activities such as education. Three completely new types also emerged, these are:

The Transtemporals: those with a desire to explore time and space, consisting of the serious astronomer/ammeter astronomers and the determined time travel enthusiast

The Collectors: those who seek out new experiences and/or things and/or places to add to a list of dark sky designated places visited

The Socialisers: those who are not sure what they are going to experience but are happy to tag along with friends and/or family in the hope that they might enjoy themselves, they are classed as astro tourists as they are developing an attachment to stargazing due to the transformational aspect of the experience.

The main challenge with designing these clusters was that the variables defined could end up being highly correlated. Therefore, Lorr (1983) suggested the use of an exploratory factor analysis technique (principle component analysis) to reduce the number of variables. Cluster analysis is an exploratory technique, it was followed up by another statistical method, SPSS, to confirm the cluster grouping, discriminate analysis. This process determined the accuracy of the original cluster groupings by categorising individuals in the sample into homogenous subgroups on the basis more than one measure. Although these techniques are more often used in quantitative studies they can be used in qualitative studies, such as this one, when a CAQDSA application is utilised in the coding and sorting of data.

Initially, the discourse revealed universal motives for astro tourism travel and engagement with dark sky events related to escape from the everyday, interaction with family and friends, enjoyment of the environment, media inspiration, romantic depiction of the forest, the stars and the desire for protection (as seen in stage 4). Subsequently, evidence emerged related to the environmental characteristics displayed by astro tourists, these are influenced by environmental variables which impact on their sensory experience, as displayed in Table 7.23, below:

Table 7.23: Influential Environmental Variables

Environmental Variables	Reported Experiences
<b>Quality</b>	A Bortle Scale score between 1-3, ensures the lowest level of light pollution. Enabling cosmic gazing from a dark place. The darkness stimulates the senses to enhance the experience. The colour (shades) of darkness provides texture to the experience.
<b>Social</b>	Darkness encourages social proximity, the boundaries associated with personal space are negated. There is a universal attraction to cosmic gazing. The event has the potential to stimulate or bore.
<b>Predictability</b>	Expecting or startled by the experience.
<b>Communication</b>	Knowledge delivered pertaining to astronomy/time/distance/ astrology.  Level of sound and type of noises vary in relation to other tourism activities
<b>Consequences</b>	Positive: There is a series of positive rewards (incentives) associated with stargazing – amazement, wonder, discovery, sensory stimuli, social bonding.  Negative: Climate can seriously affect the experience – cloud cover, cold, rain, full moon reduces darkness, other night-time activities can produce intrusive light.

These variables can be used, in part, to explain why different participants behave differently even when they are experiencing the same situation and seemingly have the same experience. It was apparent that personal and environmental factors combined to cause individual participants to behave in certain ways. These, in some cases, were influenced by their primary interest and the purpose for travel. However, each participant classified as an astro tourist presents behaviour associated with an appreciation of the dark sky cosmic experience, not with place thus setting the astro tourist apart from other tourist types. It was easy to understand how this appreciation manifested itself by observing and questioning their experiences of cosmic gazing. In relation to the environment, it is apparent that it played a significant role in the behaviour and experience of the participants as their comments were related to sensory stimuli. Consequentially, the coding and critical analysis of astro tourist experiences revealed that in terms of those with serious astro tourism interest they have no concept of place other than that it is enabler to the cosmic gaze, their true destination. Whereas those who travel to collect places or to be with family and friends take in the whole experience of place both terrestrial and cosmic as they wander physically and psychologically through the respective landscapes.

In terms of the creation of an astro tourist typology it has already been established that five types exist, see Figure 7.18, below for a deeper understanding of the astro tourist:

Figure 7.18: Astro Tourist Typology

The Stellar Explorers	The Transtemporal	The Inquisitors	The Collectors	The Socialiser
<ul style="list-style-type: none"> <li>• Interested/passionate about Astronomy</li> <li>• Study the Stars</li> <li>• Tend to begin with a stellar interest</li> <li>• Have a scientific interest - astro physical</li> </ul>	<ul style="list-style-type: none"> <li>• Have a desire to travel to space</li> <li>• Going back in time</li> <li>• Going forward in time</li> </ul>	<ul style="list-style-type: none"> <li>• Interested in Astrology</li> <li>• Interpret cosmic maps</li> <li>• Spiritual</li> <li>• Mysticism</li> <li>• Includes those with an Extraterrestrial interest</li> </ul>	<ul style="list-style-type: none"> <li>• Compare dark sky destination</li> <li>• Collect experiences</li> <li>• Seek out new challenges</li> <li>• Share experiences</li> </ul>	<ul style="list-style-type: none"> <li>• Socialable</li> <li>• serendipitous</li> <li>• Transformed by the experience</li> <li>• fun-loving</li> </ul>

Astro Tourist Typology				
The Stellar Explorers	The Transtemporal	The Inquisitors	The Collectors	The Socialiser
<p>These types are pulled to the Dark Sky event by the desire to gaze at planets and stars as represented by marketing images and media coverage. They demonstrate their love of cosmic gazing by spending the longest period of time stargazing at events.</p> <p>They have a need for self-actualisation via the acquisition of knowledge.</p>	<p>These types are fascinated by distance, and the size of planets. They show a keen interest in the amount of time taken for light to travel from stars to Earth. They have a desire to travel in space and time.</p>	<p>These types are pulled to the Dark Sky event by a desire to see the constellations in the night sky. Marketing images and media coverage play a role in attracting this type. The Dark Sky event represents (in the headspace of some) an opportunity to predict the future. Members of this type may also be pushed by the psychological benefits of being in the dark, they experience a closeness to nature. Some believe that by being in a dark sky place they will see signs of other life forms</p>	<p>These types are pushed to Dark Sky events by the desire to experience the darkness in a designated place. Often, they have experienced other Dark Sky designated sites and feel the need to compare and contrast their experiences. For these types the destination is an amalgamation of products, services, natural resources artificial elements and information that attracted them to the first dark sky park.</p>	<p>These types are pushed to Dark sky events by a need to be with family and/or friends or a need to experience something completely different. This type seeks love and belonging by taking part in activities with family and friends but is later seen to exhibit a newfound appreciation of cosmic gazing (the excitement they feel is audible). The psychological benefits gained by this type add to the experience of the dark which enhances the new sights and sounds experienced adding a feeling of awe and safety.</p>

Motivation

## Astro Tourist Typology

The Stellar Explorers	The Transtemporal	The Inquisitors	The Collectors	The Socialiser
<p>The Dark Sky park represents significance, in so far as it is a place where these astro tourists can see cosmic phenomena clearly. However, the Park could be anywhere as few of these visitors experience the Park during daylight (unless with family and friends) and take no or limited interest in the surrounding area, their interest is in the darkness as an aid for cosmic gazing at the cosmic landscape.</p>	<p>The Dark Sky event presents a place to learn more about designation and astronomy. This type has an interest in exploring other places, beyond earth. Their interest in place can be categorised in a similar way to that of the Stellar Explorers's.</p>	<p>The Dark Sky Park represent an array of different meanings to these astro tourists: the darkness offers more chance to see the constellations within a cosmic landscape; the darkness conjures up an air of mystery and intrigue; the forest stimulates the senses which makes the mind more susceptible to possible sightings of paranormal activity; the natural environment adds to a sense of wellbeing; these astro tourists are more likely to also visit the Park during daylight and explore the landscape as they tend to have a strong link to natural environments.</p>	<p>These astro tourists are Dark Sky designation wanders, they collect Dark Sky experience at various places nationally and/or internationally. Their attachment to place is more specifically related to darkness, as they have little interest in day-time activities.</p>	<p>These types are more likely to be on a holiday in the area. Therefore, this type has a serendipitous opportunity to star gaze. As these astro tourists are attending the event as part of a wider vacation, they are more likely to want to experience the landscape, at place, alongside the cosmic landscape. The primary interests of this type are likely to differ from the event focus, therefore place is likely to offer other activities akin to these astro tourists.</p>

## Astro Tourist Typology

The Stellar Explorers	The Transtemporal	The Inquisitors	The Collectors	The Socialiser
<p>For these astro tourists, outer space is the final destination. They gaze frequently and for long periods of time both at the event and whenever they get the chance to. Cosmic space can be a potential home and provide a chance to pursue space travel.</p>	<p>For these astro tourists the size of planets, the speed of light, and the relativity of time provides a visual and psychological way to travel in time.</p>	<p>The Inquisitorss view space as a source of predication. The multiple ways in which the future may hold fortune or-misfortune to the reader of astrological charts determine a course to be chartered. For those in search of extra-terrestrial life outer space is something to be either embraced for potential, or feared for the disruptive forces that may be brought from distant planets</p>	<p>These types compare and contrast Dark Sky designated sites/parks/ reserves and islands. They tend to profess a limited knowledge of astronomy, but their behaviour denotes a high level of knowledge in astronomical phenomena. They relish the opportunity to share their experiences of other places and the cosmic landscape</p>	<p>A sense of wonderment in outer space is experienced by many first time astro tourists. They tend to want to use technology or be guided, so that they can identify what they see in the night sky.</p>

## Astro Tourist Typology

The Stellar Explorers	The Transtemporal	The Inquisitors	The Collectors	The Socialiser
<p>The vastness of the universe in terms of distance requires scientific quantification. The ability to travel to different Goldilocks planets is made less feasible by distance which tends to result in a greater appreciation for Earth</p>	<p>Time travel, whether actual or virtual intrigues this type of astro tourist.</p>	<p>These astro tourists see time as overlapping dimensions, whereby one can see the past, present and future if you have the skill/art to read the signs. Those who seek out ghosts view time as immortal, a way of extending life.</p>	<p>Time spent at each destination allows for great comparison and the opportunity to share experiences with others.</p>	<p>Time spent with family and friends is significant to these astro tourist as they share experiences. They are intrigued by time travel, in so far as the vastness is hard to comprehend and it makes them question their own significance.</p>
<p>These astro tourists have a special bond with looking beyond the horizon at space, as it is there that they find the answers they are looking for. Therefore, the Dark Sky Park provides a certain setting that holds deep meaning as an enabler to these individuals</p>	<p>These astro tourists are optimists that want to travel to other places, beyond Earth if possible. They are attached to space as a highway to new destinations</p>	<p>These astro tourists, frequently expressed that cosmic gazing lifts the sole, it has a great potential to reawaken human connection with the natural world both on Earth and in space, thus they have a powerful spiritual attachment.</p>	<p>These astro tourists have little attachment to place but a strong attachment to darkness. They tend to gather images of the experience to illustrate their wanderlust.</p>	<p>These new astro tourists demonstrate a unique combination of awakening and enthusiasm in their new experiences which elicit feelings of wonderment, awe, and engagement portraying a sensory impression of an emotional connection to the dark sky environment</p>

Time

Attachment

## Astro Tourist Typology

The Stellar Explorers	The Transtemporal	The Inquisitors	The Collectors	The Socialiser
<p>Sight is the primary sense used by these explorers of the galaxy. They tend to use equipment such as binoculars or telescopes to enhance their gaze and savour the experience. Their need for knowledge is evident as they ask many questions, but they also like to portray their own understanding to those new to the experience as they sometimes act as unofficial guides to family and friends.</p> <p>Strong associations to the person who introduced these astro tourists to Astronomy was evident in the stories they told about observing for the first time, and their awakening to the wonders of the night sky.</p>	<p>Similar to the Stellar Explorers, this type uses sight to compare size and distance. Although sound was identified as providing atmosphere to a dark alien landscape</p> <p>The desire to travel to the past was a significant feature for this type. They tended to be nostalgic about the environment rather than people, in their need to see extinct species or less industrial environments – a simpler way of life.</p>	<p>Olfactory senses are essential to these astro tourists. They draw upon their spirituality to see beyond the dark, to feel the forces around them and to listen to the spirits. Scientific knowledge has little meaning but mystical knowledge is embraced.</p> <p>Loss and grief play a significant role for some of these astro tourists. Links to the past are based upon happy memories and a feeling of association with spirits that come from being in the dark. For others, cosmic stories tended to relate to spiritual/religious association with heaven.</p>	<p>These astro tourists tend to be less attuned to sensory shock as they have previously experienced the dark, but they do appreciate the entire experience as it adds to their wanderlust</p> <p>These tourists shared their past experiences of places visited with other event participants. They compared northern and southern hemispheres in relation to sights and climate.</p>	<p>Sensation seeking in the dark provides meaning to the experience as without sensations these astro tourists become disappointed as the cold weather overtakes their feelings. Knowledge seeking provides stimuli for these newcomers, but they must be entertained or they become bored.</p> <p>Memories can be triggered as ghosts from the past awaken an interest in stargazing, moon watching. Old television programs were associated with the experience, such as Star Trek or Dr Who, these were random but poignant.</p>

Sensory

Nostalgia



During the initial stages of this study, it became apparent from observing the dark sky events participants that a new definition of astro tourism is required, as the previous definitions are found to be lacking inclusion of various aspect of the experience (see chapter 1 for a re-cap). Taking into consideration research carried out in stages two and four which investigate the lived experience of participants, the following definition of astro tourism has been created as it consists of the defining elements that make up this emerging field of study:

**Astro Tourism: a natural environment sub niche tourism activity which involves gazing beyond the horizon at cosmic and celestial phenomena in a 'place' that has optimal cosmic space gazing conditions.**

In developing a new definition, there is the opportunity to create a fresh mind-set that identifies the astro tourist as a diverse person. This diversity should be thoroughly understood by private business owners, public run organisations and other stakeholders so that they can anticipate their needs, such as providing stargazing packs: flasks of hot beverage, a torch, binoculars, along with access to accommodation throughout the night. This group of tourists is distinct from the other tourists as their main travel activity is generally carried out at night in off peak season.

The significance of this definition also lies in its contribution to astro tourism literature, both specific to Dark Sky and in general to holidays which have a cosmic element. More importantly, this definition sheds some lights on the interests of astro tourists who arrive at destinations that specifically cater for this special interest, tourism group of visitors, raising the attention of policy makers, stakeholders and tourists, allowing for the implementation of resources and promotion in the future. Astro tourism can be used as a promotional tool or slogan to promote the viewing of cosmic phenomena, this will complement the Dark Sky Logo (IDA, 2009) (see appendix 13: IDA Logo) as it will identify tourist groups who would be interested in this type of event or with this holiday focus.

#### 7.6.7 Summary of Stage Four

As identified in Chapter 6, Methods: Working in the Dark, a sequential use of qualitative techniques was undertaken to build up a profile of the astro tourist with the goal being to determine if a Typology of the astro tourist could be extrapolated from the data. To begin, participant observation allowed the researcher to create an understanding of the participants, the place and the activity of stargazing. Observing participants in the dark highlighted the relationship between place and the experience of looking beyond the horizon to outer space, illustrating that there are sensory elements to the experience of stargazing that required exploration in order to understand these tourists.

During stage one (Chapter 2) the attractiveness of the Dark Sky Park was established as the destination was identified as being able to meet the needs of tourist with a range of diverse attractions and

activities. Mayo and Jarvis (1980), define attractiveness as, 'the perceived ability of the destination to deliver individual benefits'. This is a demand side perspective which consist of push factors i.e. those components that make up a destination attribute. Importance is placed upon these attributes by tourists who make choices based upon the information from media sources.

Theoretically, it was noted that there is a 'fuzziness' in the literature with regards to tourists' motives, preferences, characteristics and behaviours, and a lack of understanding in relation to the astro tourist themselves. The data revealed that there are a number of characteristics in tourism literature that share common ground with the astro tourist such as destination marketing and image; push and pull factors and the sensory significance of the experience. There are also a number of distinguishing features, such as the dichotomy between place and space. The fundamental distinction between place destination and final destination, space and the relativity of time; the extraordinary attachment that the participants have to cosmic and celestial phenomena, and the intensity of sensory stimuli whilst in a nocturnal environment which although predominantly sight based is secondly affected by sound.

The attractiveness of the Dark Sky Park encourages people to visit and spend time at, or near to, the destination. Therefore, the major value of the Dark Sky Park is the pull effect it has on tourists. Without the attractiveness, tourism does not exist and there could be little or no need for tourist facilities and services. It is only when people are attracted to a destination that facilities and services follow (Ferrario 1979). However attractive a destination may be, attachment to the destination is developed by a form of intimacy associated with place, where place is a central for emotional and physical exchange and a felt experience of sensory intensity and complexity (Tuan, 1977; Williams, Patterson, Roggenbuck, and Watson, 1992; Li, 2000). Where the sharing of place with loved ones suggests romance within the tourism experience, here the place becomes a means by which personal inter-relationships are reinforced. However, this study has found that not all tourist destinations have the same pull, Dark Sky Parks are enablers to view cosmic space which has been identified as have an equally significant pull.

During the participant observation, the majority of participants expressed a basic knowledge of astronomy, as they could identify Orion Belt and the North Star, however some who professed limited knowledge exhibited a much higher level of engagement in astronomy. For most participants, their interest in stargazing tended to be developed during childhood with family members or at school as part of the science curriculum, others had seen the 'Stargazing Live' programmes on television and wanted to experience stargazing for themselves. For some, stargazing was not initially of great

interest, they were at the event due to a family member, or a friend's interest however these participants had the greatest behavioural reaction to the experience.

The exploration of the tourist's motives for sensory experience was subsequently investigated by use of a survey, this method provided a further understanding of both motives for visits, the sensory nature of the experience and an insight into the diversity of the astro tourist profiles. This information provided a building block to then go onto gain a deeper into understanding the behaviour of astro tourist during the interview stage. The common theme in each stage of the analysis was to predominately qualify, and occasionally quantify, dimensions that move between aggregate to individual understanding of the astro tourist's experience of place, space and time in accordance with a Phenomenographic framework utilised as the most appropriate method to explore the aim and objectives.

The survey revealed two main clusters in relation to developing the typology, the Stellar Explorers and the Socialisers, their answers were polarised at opposite ends of the typology with the tie being in a (new) interest/love for the stars above. The survey also revealed a sensory significance in relation to sound, as it set mood when vision was impaired. Thus, illustrating that sensory dimensions of the experience are created by a tri-partite relationship which incorporates the dark, space and the senses, these combine to give significance to the astro tourist experience.

The semi-structured interviews provided an understanding in relation to the creation of an astro tourist typology. The participant's contribution during this stage was significant in the way in which it reflected the complexity of the study. Themes were seen to merge and reoccur, as the individual's experience is a holistic and personal one. The use of coding allowed for separation of experiences into nodes which formed clusters that shaped the astro tourist typology further, revealing three further clusters the Transtemporals the Inquisitors, and the Collectors, each of whom had varying interests in the cosmos, some stronger than others but all exhibited and expressed interest in viewing the stars from a designated Dark Sky.

The social aspects of astro tourism have been unpacked to reveal a need to be together, alluding to a desire to share experiences that are existential, awe inspiring and sensory in nature. Exploring the similarities and differences between astro tourists has led to a greater understanding of their interests and needs which are diverse. Astro tourists are not homogenous, they are attached to cosmic space for very different reasons, as many see place as an enabler to view and/or learn about astronomy.

The sensory factors which emerged from the interaction of the brain and the nervous system in the body, illustrated ways in which the human psychology see's the physical and social world from the

view of the participants. Head space or mind-behaviour-world, also known as psychogeographic, connect with space and place resulted in a bi-directional interrelationship which is unique to each individual sensory experience. Those who exhibited this relationship were deemed as astro tourists as they showed signs of creating a love for cosmic gazing – known as astrophila.

## Chapter Eight

### 8.0 Conclusion: Towards an Understanding

#### 8.1 Introduction

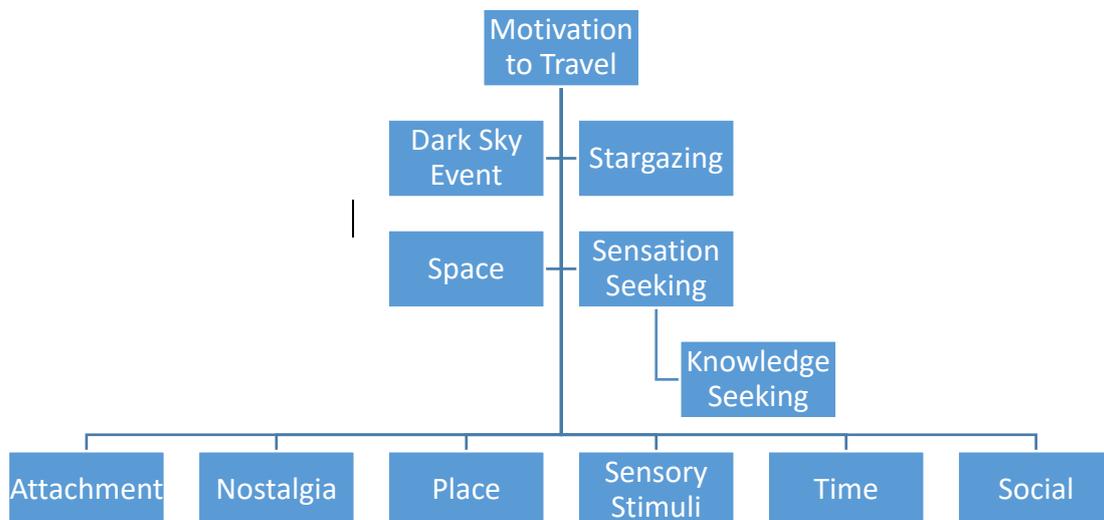
This chapter draws the thesis to a conclusion, as it recaps the research processes undertaken in addressing the objectives and the aim of the study, thus highlighting the significance of this exploratory study to the wider community. In particular, it reveals a clear picture of the astro tourist's experience at dark sky events hosted (in full or part) by the Forestry Commission, in the Galloway Forest, Dumfries and Galloway. More specifically, the study has focused on the motivational dimensions for participating in astro tourism events along with the sensory experience of astro tourist themselves, as these are expressed as a way of sensing place, space and time.

Subsequently, this chapter goes on to claim the importance of the research in terms of its contribution to knowledge both academic and commercial, whilst also recognising the limitations of a single case study approach and the challenges that need to be overcome when working in the dark within a forest location. This chapter concludes with a personal reflection of the overall experience of undertaking a PhD thesis, and considers the growth of the researcher in terms of her academic ability, skill enhancement and personal understanding.

#### 8.2 Working in the Dark: Seeing the Light

Developing a better understanding of the astro tourist experience began with one principle aim - to 'critically explore the experiences and behaviours of astro tourists. This was achieved by developing a conceptual framework, as seen in Figure 8.1 which illustrates the drivers in the Astro Tourist experience at Dark Sky Events.

Figure 8.1: Conceptual Model of Astro Tourist Experience

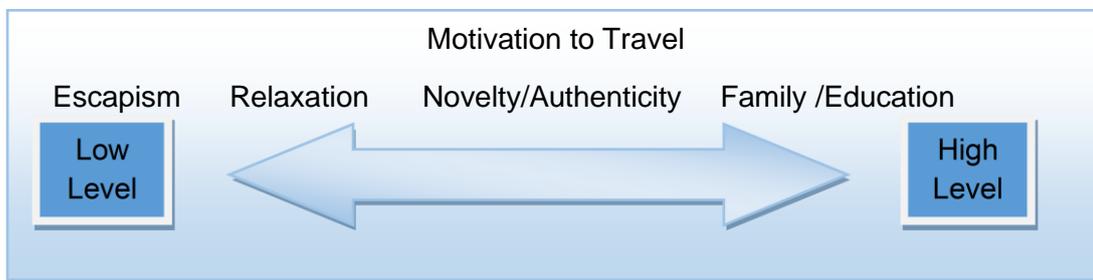


The conceptual model fills a gap in the lack of a current integrated approach to astro tourism. It draws together academic literature from a praxis of inter-related and diverse areas of study as it seeks to stimulate the development of an understanding of the astro tourist experience. It provides a conceptual contribution in relation to the major variables: travel motivation, dark sky events, stargazing, space, place, time, attachment, nostalgia, social, knowledge seeking and sensory seeking, each of which are discussed below with reference to the aim and objectives of the study.

### 8.3 The Decision to Travel

Essentially, exploration began with the pre-visit motives to address the first principle objective which is to investigate how the tourist's perception of place and space affects their decision to travel. In addressing this, the following questions emerged: How are these tourists attracted to place and/or space? What is it about stargazing that makes these tourists travel when the sky is above wherever you are? Where is the destination, the Park, the event or the cosmos? In considering the research outcomes it has been established that astro tourists are drawn to dark sky events based upon differing levels of interest in cosmic phenomena. Their motives, as shown in Figure 8.2, relate on a continuum of just wanting to escape daily life at one end, to the need for education related to astronomy on the other.

Figure 8.2: Astro Tourist Motivation to Travel



This illustrates that at one extreme, there are those who demonstrate a more serious interest as they are there to see the cosmic phenomena from a place that provides optimal conditions, they have little or no interest in the surrounding area, as they stay for the event and then leave the following morning. These astro tourists tend to be attracted to the cosmos not to place, for place is a means to an end, an enabler to view space. They represent a challenge for stakeholders in the locality, as they are looking for accommodation which caters for their un-characteristic tourist behaviour, of experiencing tourism at night. Notwithstanding, these tourists will arrive in the afternoon and leave, the next day, late in the morning. Individually, the extent to which these tourists can be moved to expand their experience to encapsulate relaxation or novelty is dependent upon those they travel with.

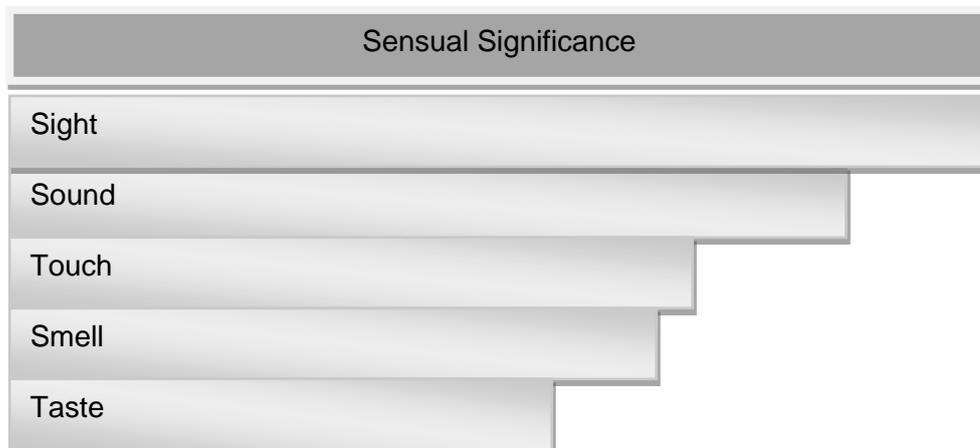
At the same end of the continuum are those who consciously wanted to be with friends or family as they engaged with stargazing as a wider tourism experience, however, on a subconscious level they tended to stargaze as a form of relaxation or escapism. It was only as the event unfolded that a more conscious attempt was made to engage with stargazing. In many cases this was stimulated by external forces, such as the environment, but also by the encouragement shown by family and friends who wanted to share their knowledge, experience, and enthusiasm for astronomy or astrology.

In clarifying the initial motive for travel, those serious about astronomy (the Stellar Explorers) and those with an interest in time/space travel (The Transtemporals) were pulled to the dark sky events by the marketing images and media coverage which illustrated the extent of the darkness and the opportunities that the dark represents. Astrologists, or those interested in spirituality (The Cosmologists), along with those interested in experiencing as many Dark Sky places as possible (The Collectors) are pulled to attend dark sky events by both the media portrayal, along with the psychological benefits of being in the dark, which provides a sense of closeness to nature or alternative forms of life. This was echoed by friends and family (The Socialisers) who also experienced the psychological benefits in their need for belonging and safety, so often expressed behaviourally by proximity, whispering, love and silence.

#### 8.4 Sensory Significance

Fundamentally, the second objective was to explore the sensory significance of astro tourist experience in relation to the environment at place, when viewing cosmic space. It was evidenced in all stages of the study that astro tourism provides a sensory experience that affects each astro tourist in different, but subtly similar, ways. Testing this premise was undertaken during stage two, whilst carrying out participant observations, the manifold ways in which the environment stimulates the participants was evident by their fixation with climate and their audible delight when a stray sound happened or movement across the sky occurred. As a consequence, a survey was developed and administered which addressed five sensual dimensions: sight, sound, touch, taste and hearing. Using a principle component factor analysis, the relative value of each sense was evaluated to determine the motivation for sensual pleasure in conjunction with sensation seeking and the need for knowledge. The survey illustrated that seeking pleasure from sensory stimuli remained predominantly visual, even though this sense was impaired by darkness as illustrated in Figure 8.3: Astro Tourist Sensory Significance.

Figure 8.3: Astro Tourist Sensory Significance



To compensate for loss of some sight, other senses were stimulated, particularly in those who had not experienced stargazing previously. Of all the senses commented upon, sound resonated with feelings of fear and excitement whereas touch fulfilled the psychological need for safety. This represents a unique attribute in relation to the astro tourist experience, as previous research places smell as second to sight in the olfactory system (Krishna, 2010). Whereas Edensor (2008) argued that touch, and the feeling of the landscape underfoot, was of importance to him.

The survey results also identified that the Astro Tourists' association with cosmic space is far stronger than their association with place, although place provides the stimuli. That is, it is important to understand the paradigm of emplacement which illustrates the relationship between the sensory interrelationship between the environment, the olfactory senses and the mind.

Typically, descriptive data analysis gave a picture of the characteristics of the participant's, this was a precursor to the development of semi-structured interview questions for the subsequent phase of the study. The descriptive data gathered during this phase, 'helps in making judgements when there is insufficient information to be certain of what will happen' (Bryars, 1983: intro). Although, it must be stressed that this research avoids attributing cause to statistically significant results, it does however acknowledge the relationship does exist as it adds to an understanding of the astro tourist experience.

### 8.5 Astro Tourist Typology

The underlying assumption of this thesis is that the case study strategy adopted, and the gathering of sequential data from qualitative techniques, will produce clusters of motives and behaviours which allow for typology formation. Typologies supported by empirical studies seek to determine the factors that determine unique construct groups or clusters. Clusters analysis is designed to determine which divergent characteristics exist in a sample that can be combined therefore the sampled population are placed into mutually exclusive subgroups (Romesburg, 1984). Cluster analysis is used here to develop

an astro tourist profile which can be segmented. In previous tourism studies, cluster analysis was used to segment individuals into a variety of different activities such as hunting, adventure tourism, ecotourism, tourism development, and lifestyle segmentation (Vaske, Timmons, Beaman and Petchenik, 2004; Vyncke, 2002; Weaver and Lawron, 2004).

#### 8.5.1 Typology Data Analysis

Ryan (1995:58) recommends the use of neutral software when using a Phenomenographic approach to observation and interviews as the analytical process is iterative and comparative'. To create a typology, different content related clusters (pools of meaning) illustrate the differences in other people's way of experiencing and conceiving their world. Bruce (1997:87) describes 'the outcome space as a diagrammatic representation of the categories of description', while Säljö (1988:44) suggests it reflects a 'map of a territory' interpreting how people conceive a particular aspect of reality. To create this vision within the context of Dark Sky event experience, a detailed analysis of the description from individuals was analysed using NVivo (Welsh, 2002) version 10. Clusters of responses were created to generate a typology of participants at dark sky events.

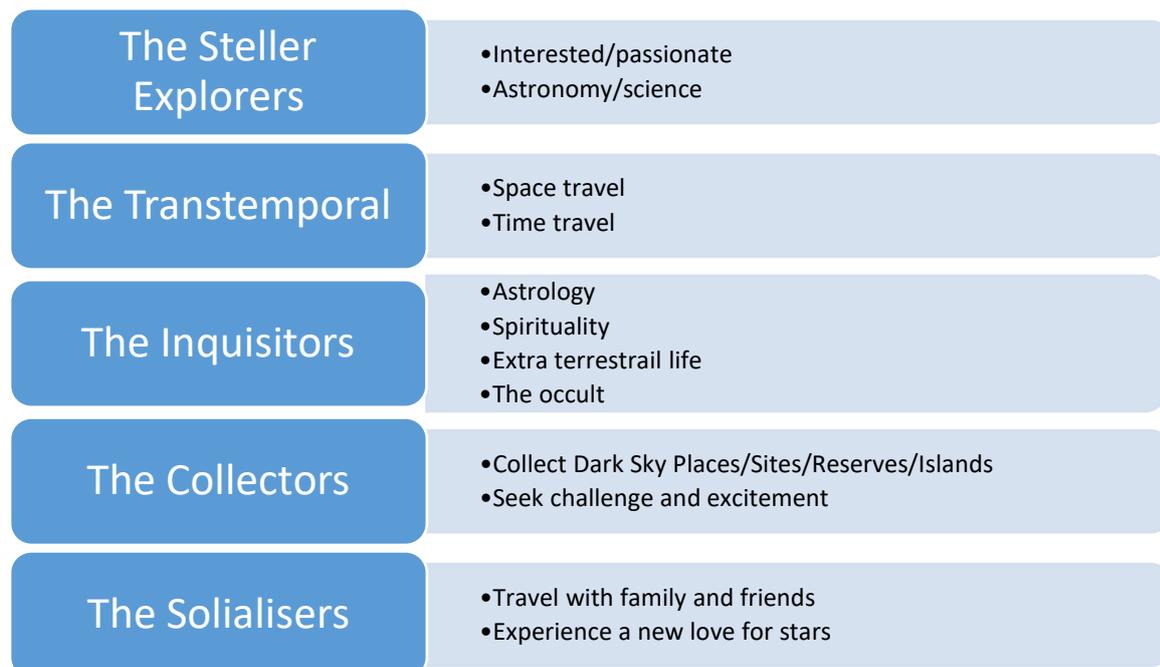
To support the use of NVivo, primary statistical data analysis was undertaken by inputting survey data into Excel 10 and the Statistical Package for Social Science (SPSS), the data sets produced a sample profile for each stage and identified distributions of variables. This suggests that, even though star gazers see many worlds when cosmic gazing they are making mental representation of what they see in their world, illustrating that the anatomy of experiencing a phenomenon is central. This is explained further, as it was unexpected, by drawing again upon an example from Marton and Booth (1997:86-87) 'imagine that you notice a bird (the phenomenon) it is sitting in a tree while you are walking through a park. To see the bird, you need to distinguish it from the surrounding trees and the broader environment, the surrounding trees and the broader environment from the external horizon of the experience'. Discerning the bird, its wings, beak and feathers and 'the ability to relate these parts together to form a bird is the internal horizon of an experience' (*ibid*). Together the external horizon and internal horizon comprise the structural aspect of the experience whereby there is 'discernment of the whole from the context on one hand and discernment of the parts and their relationships within the whole on the other' (Marton and Booth, 1997: 87).

As this research is predominately interpretivists, the central theme is that human beings are complex and non-predictable, it is also relativist as it investigates meanings placed on space - terrestrial and cosmic - and the realities that the participants hold when constructing meanings and understanding. A Phenomenographic approach allows the researcher to address complex individual meaning to

discern consensual realities which can be used to develop clusters thus creating a typology of the astro tourism.

In addressing the third objective, which is to investigate the existence of an astro tourist typology, it was necessary to create a rich picture of the astro tourists. As this study adopted a case study approach it was essential to draw upon as wide a population as possible, however limitations were identified as discussed in section 8.8. Nevertheless, the use of qualitative techniques is to provide a significant means of reaching a range of participants as purposeful sampling was used to discriminate difference and thus reach a wider audience. Given that the dark sky events are principally aimed at tourists there was a steady supply (monthly) of events. The data used to determine the typology formation was drawn specifically from interaction between tourists, the environment and engagement with cosmic gazing. The resulting data from observations, the survey and the semi structured interviews highlighted types as illustrated in the previous chapter (see Figure 7.14) and the simplified in Figure 8.4, below:

Figure 8.4: Simplified Astro Tourist Typology



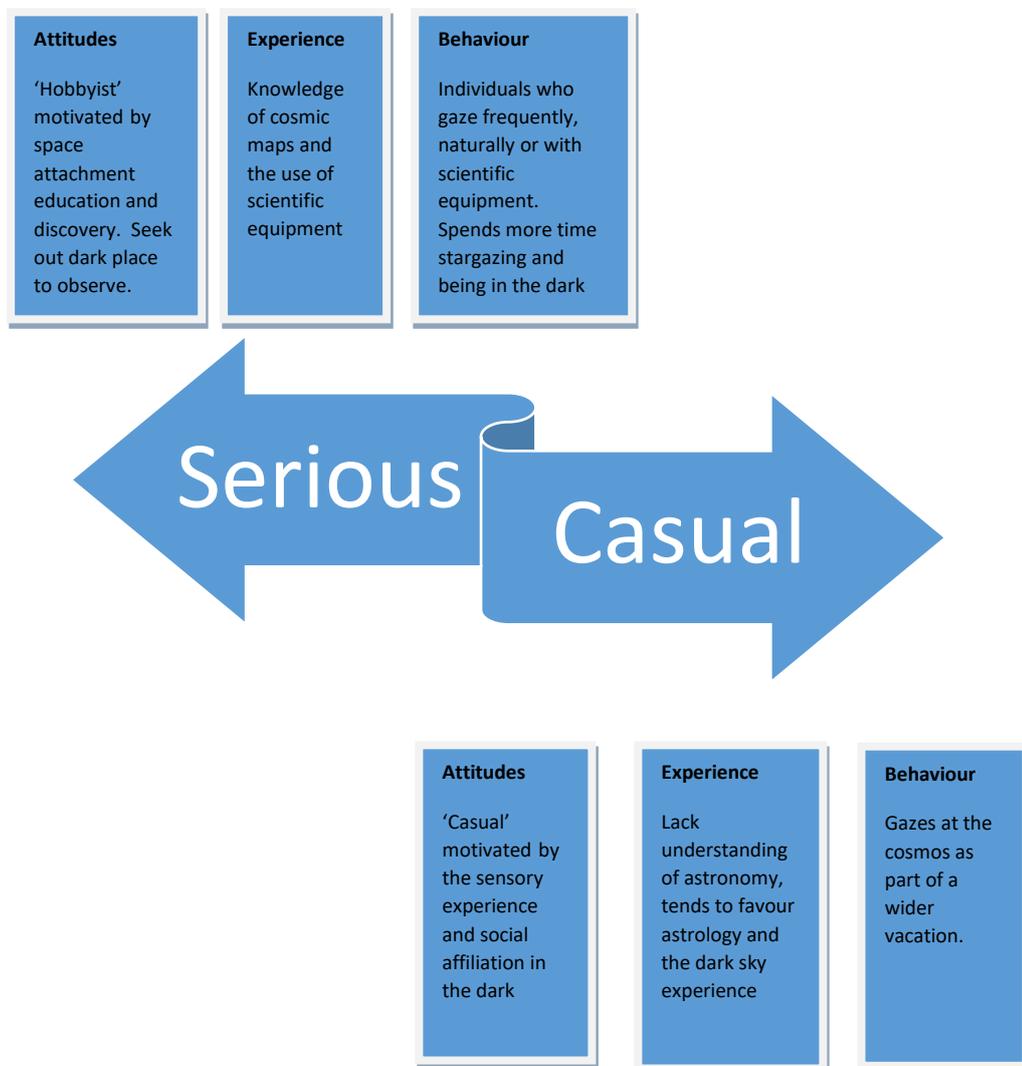
Representing the key finding of this study, the astro tourist typology encompasses conceptual and empirical study, resulting in a differentiation between astro tourist characteristics and behaviour. The most pronounced differences are in attitudes towards:

- Goal seeking; from education to relaxation
- Sensory significance; from predominately visual to olfactory
- Attachment; from space to place

- Social, from individual to family/group.

The Stellar Explorers and Transtemporals displayed characteristics consistent with the work of Stebbins (1997), who identified that those more serious about leisure are focused upon the acquisition of knowledge and experience. Whereas, the Inquisitors and the Collectors seek natural challenge, consistent with Stebbins (2005:15) view of the hobbyist. Stebbins (2005:15) also argues that the hobbyist is characterised by the adventure, extremism and sensation seeking, the results of this study demonstrated that new astro tourists (The Socialisers) have these characteristics. They also have their own interests in both the environment and cosmic gazing along with social attraction, self-enrichment, consistent with casual leisure (Stebbins, 1997), illustrated in Figure 8.5:

Figure 8.5: Conceptual Model of Serious and Casual Astro Tourists



Referring to Figure 8.5 above, the continuum illustrates that the serious astro tourist is likely to engage with astro tourism and/or stargazing frequently, they are more likely to be lone travellers and they

spend longer periods of time gazing. The problem with the creation of this continuum is that the Collectors also engage with astro tourism frequently, illustrating that there is an overlap, for although they may not be serious in relation to astronomy they are serious in relation to being in a dark sky park and attending dark sky events. Family vacations can also impact upon the time spent stargazing as those who are casual, are less likely to endure cold weather conditions, revealing that there is fluidity between experience, attitude and behaviour, although it is recognised that darkness ties the concepts together as all are attracted to it to observe. Additionally, there is also agreement placed on the use of equipment that aided star discovery and/observation, as equipment helped in fostering interest and excitement, especially for new astro tourists, whereas for the more serious equipment was used to map the cosmos and demonstrate knowledge. Certainly, this illustrates the social aspect of the experience as coming together over a piece of equipment encompasses all generation in a contemporary society.

## 8.6 Collective Definitions

Objective four, was to consider a collective definition of astro tourism and the astro tourist, from empirical study two definitions were developed as seen in Chapter 7. These definitions have the capacity to provide clarity in relation to the activity, cosmic gazing and the tourist characteristics, which are broad as they go beyond the astronomer to encapsulate a diverse range of tourist interest, thus allowing stakeholders with a protected dark resource on their door step to develop their tourism offering.

## 8.7 Promoting Astro Tourism

The final objective (5) was to assess the implications of the findings in relation to the promotion of astro tourism at Dark Sky designated sites so as to inform destination marketing and management. It was established in the case study that the Galloway Forest and its surrounding area face challenges in economic growth and development. There is a strong argument that astro tourism can provide an off-peak regeneration opportunity as it is able to attract a growing number of amateurs, enthusiasts and families to the area. Each group have different needs, but the binding characteristic is the natural landscape with its dark sky designation.

With domestic tourism in growth since the Brexit debate began in 2015, and with the trigger of Article 50 in June 2016, rural communities have a golden opportunity to capitalise on their offering by marketing a popular cultural activity which is accessible to all - cosmic gazing. Astro tourism has the potential to be a powerful engine for economic growth, transferring capital, income, and employment from industrial urban developed areas to the rural host community. The British Tourism Survey 2015 recorded that in the 'first quarter of 2015 there was an increase to 28.7 million recorded, this represents an 18% increase since 2014' (British Tourism Survey, 2016). However, it was observed in

chapter two, that although there is a host of commodified experiences that the astro tourist can access, without understanding of the astro tourist themselves, these would flounder as marketing needs to reach its target audience. Given the developed definitions and the astro tourist typology in this study, marketers and destinations managers are now in a better position to target their audience in a strategic manner.

The study provides an in-situ insight into how to create a memorable experience for Astro Tourists as it draws on how the destination image is an antecedent of the perceived trip value. Therefore, Dark sky designation is seen as a guarantee that when weather conditions are optimal the Milky Way will be visible, thus satisfying the astro tourists' overall experience. It also identifies that although the experience is primarily visual, there are other ways in which a dark sky can be promoted, e.g. through the use of technologies that aid in seeing the cosmos, and through the promotion of other sensory experience opportunities such as sound and touch.

The typology also provides information which can be used to be creative in the use of the facilities, service and products. For example, a family group, who want different things from the experience, could be offered an area for the children to use apps and binoculars with relatives whilst a slightly separate area is set up with a telescope for couples or single astro tourist. However, it should be noted that the sharing of experience(s) was significant, so whatever creative measures are introduced this should remain an aspect to capitalise upon.

Efforts should continue to be paid to promoting education in relation to astronomy, however separate events may be used to attract those interested in astrology, spirituality or extra-terrestrial beings. This is supported by the literature and research findings, as it is indicated that tourists' level of emotional involvement with a destination would change when they perceived pleasure, importance, signs of engagement, or an aspect of risk during their visit, as this stimulates the senses (Laurent and Kaperfer, 1985).

## 8.8 Methodological Contribution

Working in the dark is challenging, it provides the researcher with an embodied sensory experience, which no doubt feeds into subsequent analysis of the Dark Sky event experience thus providing a degree of subjectivity. Whilst reflexivity, within this ethnographic study, accepts both the specific situational nature of the study and the wider discursive frames, it also acknowledges the intimate nature of working in the dark with astro tourists. As deep reflexivity provided a critical reflection of the researcher's emotions, embodiment and unconscious processes that helped to bring the study to life. Typically, there is a developed understanding of traditional tourist experiences of the landscape during daylight hours, and the urban night-time economy. This study, in reconceptualising tourism as

astro tourism at Dark Sky events illuminated the understanding of a natural nocturnal environment, thus providing a deeper understanding of both astro tourism and the astro tourist. Working with the Forestry Commission and astro tourists themselves, at dark Sky events provided an opportunity to gain an insight into their worlds.

The Phenomenographic approach taken to gather data, using qualitative techniques and approaches, in conjunction with the CAQDAS systems NVivo 10 and 11, proved to be the most appropriate approach to take, as it allowed for investigation of the complex environmental characteristics at Dark Sky events, whilst also exploring the diversity of the astro tourist. There was a reliance on individual personal accounts throughout the research, this afforded an insight into the transition from light to darkness thus revealing sensory corporeal connections which allow the participants to appreciate the dark. As a textured realm, the forest at night engenders the psychogeographical sense of self which develops a sense of wellbeing and a love for cosmic gazing.

The use of NVivo, Excel and SPSS macro processes facilitated the testing and re-testing of motives for sensory pleasure, the evaluation of distinctive attributes and the development of participant profiles. These analytical tools enabled a level of quantitative analysis which add depth and multiple layers to the study. These are supplemented further by a purposeful sample of semi-structured interviews designed to gain an in-depth individual understanding which is congruent with a phenomenographic approach.

Acknowledging that the methodological strengths are:

- The responses are representative in terms of the Dark Sky Park in Dumfries and Galloway.
- The sample size is an adequate representation of the events held in the Dark Sky Park.
- The use of digital recording devices in the dark enabled a thorough collection of data, which could be transcribed in full thus ensuring closeness to content.
- The use of a CAQDAS provides transparency of data collection at different points in time so as to compare people with different view-points. Thus, illuminating blind spots in interpretive analysis.
- The qualitative techniques adopted illustrate a thorough approach to data collection
- Qualitative techniques allow for the checking of consistency of the findings and elucidated complementary aspects of the experience.
- Personal accounts of conducting research present a methodological accuracy

This research also tested the survey instrument, in relation to its ability to correctly ascertain sensory motivation data proposed by Eisenberger *et al.* (2010), it was found to be highly successful in

highlighting the significance of the senses in relation to the Dark Sky experience, the interaction with family and friends and the subsequent development of an interest in stargazing.

## 8.9 Theoretical Contribution

This research contributes to a body of knowledge in relation to the tourist experience by providing a new definition of astro tourism that encompasses the diversity and complexity of this emerging area of research. It also provides an astro tourist definition which is equally diverse but based on empirical data. The most significant contribution is the astro tourist typology which highlights their behaviour and characteristics, thus addressing the aim of this study.

This research makes a noticeable contribution to several areas of research; its primary contribution is to bring into focus astro tourism and the significance of the astro tourist experience to phenomenographic studies. The second contribution is to highlight the attributes of Dark Sky Parks as emerging tourist destinations and an emerging supplementary source of off-peak seasonal tourism. The third contribution is to highlight that studies into tourist motivation behaviour have typically adopted a sociological and psychological approach based on daytime activities, as the impact on cultural relationships within physical environments has been primarily concerned with built environments and coastal locations. This research provides a nocturnal natural geographic stance based on the motivation to look beyond the horizon. The fourth contribution is the psychogeographical study of space, place and time literature, whereby it is argued that space has universal implications as opposed to Earth bound limitations; place is no longer the only destination; time is the fourth dimension not just in terms of Earth's past, present and future but in terms of the Universe and its existence. The fifth and final contribution is gaining a better understanding of how the environmental impact on the senses and the primal nature of darkness on the Astro Tourist experience is significant and requires further study.

### 8.9.1 Astro Tourism

Astro Tourism has been clearly identified as being a sub-niche within the niche market of nature tourism which attracts a broad range of tourists from the serious to the socialiser, all of whom desire darkness so that they can gaze at sights in the cosmic landscape. Terrestrial astro tourism is predominantly off-peak, thus it can extend the traditional tourist season in areas where light pollution is low. Astro tourism can be experienced at specific designated sites such as parks, reserves, islands; at specific places such as planetariums and observatories or at non-specific places where predicted events can be observed such as auroras, meteor showers and eclipses. Astro tourism also attracts those interested in astro photography and other dark sky related pursuits such as extra-terrestrial life hunters and/or those interested in spirituality.

### 8.9.2 Astro Tourists

Astro tourists wander visually, they exhibit behaviour akin to that of the *Flaures* in that they want to be free to observe different astronomical phenomenon and tend to attach meaning to their experiences. To understand the astro tourist the content of thinking, rather than the process of thought or perception, was sought so that a typology could emerge, this is congruent with phenomenographic research which seeks to describe the actual experience and thoughts of participants (Marton, 1986:32). Thus, the contribution was in using different methods to illustrate how the astro tourists make sense of experiences and understanding of darkness in the world around them, along with the universe above them. Similar to the phenomenographic health care study carried out by Barnard *et al.*, (1999), discussed previously, as this study did not seek to formulate general principles but to create clusters from the holistic experience.

Psychogeography was used in this study to explore experiences in relation to the mediating effects of a nocturnal geographical environment on the emotions and behaviours of astro tourists as they wander visually through the cosmos. Traditionally used in urban geography, in relation to wandering through built environments (Debord, 1955), astro tourists use cosmic phenomena as astral landmarks. They begin by fixing their gaze on the North Star (Polaris), then seek out other notable stars which can then be pointed out to family and friends. As they share sights, these experiences invoke the joy of discovery and wonderment, thus enabling two of the goals of tourism which are 'to get away from it all' whilst experiencing 'pleasure' (Dann, 1977: 191).

### 8.9.3 Dark Sky Attributes

As tourism changes continuously, astro tourism has emerged as a sub-niche supplementary source of off-peak nature tourism, requiring classification in terms of its diversity and this study highlights some unique dark sky attributes. Much of tourism literature (Warzecha and Lime, 2001; Chacko and Fenich 2000; Dwyer, *et al.*, 2004) ascribes place as a destination attribute, however, in relation to astro tourism (for some) place is only relevant insofar as it provides the optimal observation conditions in relation to dark sky designation. Astro tourist participants, in this study, have identified that dark sky events have other attributes, for example it provides the opportunity for goal-seeking in terms of cosmic gazing, something which can be carried out anywhere but must be travelled to experience a true dark sky and the cosmos. It also provides, an element of risk and adventure with regards to the unfamiliarity of darkness, something that few people get to experience on a daily basis due to light pollution. The experience can provide thrill and inspiration as gazing at the cosmos can be spiritual, a form of time travel and a way of pursuing an interest in extra-terrestrial life forms. It can also be a way of pursuing education in relation to astro physics and/or astrological sights something that many participants of this study desired but wanted to pursue as a form of entertainment.

Dark sky attributes have the potential, according to Stedman (2002), to lead to an emotional attachment to place as they attract repeat visitors. In the case of astro tourism, attachment can be formed in relation to space (cosmic). However, it should also be mentioned that people are also drawn to dark skies at different times of day, some may start their visit during the day as they wish to look around and then return/remain at night when they will look up, into night sky.

#### 8.9.4 Astro Tourist Motives

Previous studies on motivation (Pearce, 1988; Pearce and Lee, 2005) identified that motivation to travel mainly happened during the pre-visit period, identifying that as a mediating cognition process motivation is stimulated by the senses during the visit to motivate repeat visits. In the dark the olfactory senses are triggered to form intense feelings which have been linked to attachment to stargazing rather than to the destination. Whereas, previous studies (Kim and Brown, 2012; Mansfeld, 1992; Weaver, Weber and McCleary, 2007) suggested that attachment was formed to destination and linked to overall satisfaction. It should be noted that dark sky events provide the means by which stargazing takes place therefore darkness is essential to the overall experience which ultimately means that destination has an important role to play.

Beyond general motivation the role of 'knowledge seeking' and 'sensation seeking' are specific influences as noted in literature by Cacioppo *et al.*, (1996); Olson, Camp and Fuller (1994); Kellert (1993, 1996) to the dark sky experience. It was identified that darkness intensified the need for knowledge as the unknown adds to the desire to attend dark sky events whereas the sensations created by being in the dark are, to those unfamiliar with stargazing, hedonistic which can create meanings which are often linked to nostalgic memories, ghosts in the headspace of the Astro Tourists.

#### 8.9.5 Place, Space (cosmic) and Time

Geographically, the dark sky events at the Dark Sky Park in the Galloway Forest take full advantage of the rural environment and their designated Dark Sky Park status, thus they provide an interconnected amalgamation of the natural characteristic ideal for observing space. The events create a specific atmosphere related to their uniqueness as they attract a diverse range of people, provide an authentic dark and sensory experience, and they allow participants to experience time from several dimensions. Therefore, astro tourism at the first UK Dark Sky Park has a considerable value for many:

- As the place provides optimum dark sky conditions to view the cosmos;
- As it has a variety of environmental stimuli which provide a sensory experience to participants;
- As it contains mountains, trees, gorges and lochs all of which provide natural environmental interest for the casual astro tourist;

- As it allows the rural environment to overcome some of the protracted elements of seasonality by drawing astro tourists to dark sky.

Whereas space is an enabler to journey beyond Earth - to a periphery which encompasses a range of sights, viewing cosmic space as part of an event is dependent upon variables beyond the control of the organisers thus it represents a challenge; it has to attract astro tourists from a diverse population such as the serious, couples, families, and those seeking socialising opportunities. Education, by way of a presentation, contributes to the attraction of the event for when the main event, the comic gaze, is obscured by cloud. The presentation, and the use of technologies, provides a suitable alternative as it covers a wide spectrum of astronomical phenomena, as recommended by Swarbrooke (2002:5) in relation to the need for diverse visitor attractions. Consequentially, time provided the spatial distribution of the attraction in so far as it represented a pattern of gateways to other dimensions, starting with the present, whereby the climate provides the initial impact on the sensory perception of time the cold slows time down whilst igniting other senses. Travelling in time mentally to the past was represented in terms of light speed between planets in the solar systems all of which are illustrated as scientific facts but require imagination to ignite the senses.

#### 8.9.6 Sensory Environmental Impacts

Considering the experiential paradigm within a rural environment, the five senses were seen to be important factors in the interaction with place, space and time. As highlighted in the work of Rodaway (1994), Quan and Wang (2004) and Pine and Gilmore (1998) the senses add value to the consumers overall experience as, in this case, they provide context to the sights observed in the cosmos that cannot be physically experienced. Thus, a nocturnal Galloway Forest provides a conduit to experience a perceived alien environment which is a composite of the attributes of the dark sky events. This study enhances the work of Rodaway (1994) as it demonstrates a variation in the hierarchical relationship of the senses whereby touch is promoted to second place, whilst including some elements of emotional and symbolic attachment to aspects of memorable experiences.

#### 8.10 Limitations of Study

Perfect data collection within a perfect research environment is never possible, as results are always interoperated by imperfect beings – humans (Van Zyl, 2002). This research is no exception as although qualitative techniques were used to reduce limitations, they cannot be fully illuminated. The following represent the limitations identified:

- The use of one destination, The Galloway Forest as a case study cannot necessarily imply that the same universal application of the typology can be applied to other astro tourists at other sites.

- Issues related to the participant's interest in sustainability may have enhanced the study but were not assessed.
- There is a degree of subjective experience reflected in the study which may have shaped the level of interest in astro tourism as participants travelled, and were interviewed with others. As Madison (2005: 34) notes, subjectivity becomes a vessel, lens, and filter of every telling of a story'. Thus, just as generalisations can be problematic in the claims made they can be problematic in terms of broader implications' (Madison, *ibid*)
- It is recognised that emotional stimuli of on-site participant experiences were immediate, and arguably raw. Thus, it is this rawness of experience and the potential for emotional stimuli that may skew this study as I acknowledge the very personal associate of being in a stimulating environment.
- There is an Anglophile bias in this study as cultural diversity was not recognised or built into the study, neither were issues of disability. This can be problematic as other cultures and members of society may have a deeper affinity with cosmic space or they may have expressed spirituality or sensory experience differently.

Nevertheless, the study provides an attempt to understand the astro tourist motives, behaviours and experiences, for it provides rich data that sought to strike a reasonable balance between the participant's number and depth of interest. Additionally, the study reaffirms that tourists are driven by internal and external factors whilst acknowledging that astro tourists have the capacity to be transformed by the sensory nature of their experience as they have the capacity to create a new love for cosmic gazing.

### 8.11 Recommendations for Future Studies

As an empirical ethnographic and phenomenographic study this thesis provides a deeper understanding of the astro tourist, however future research could address in more detail aspects relating to nostalgia, the sublime and the marketing of astro tourism products and service. Particular questions could also be asked about any cross-cultural or gender issues at other sites. What role does health play in contemplating astrological phenomena? What is the role of wellbeing for the astro tourist? How do astro tourists consume other destination attributes? What wider benefits do the community experience from having a designated Dark Sky Park? Do light installations draw people to dark sky sites, if so, are they really appropriate?

Consequentially, the relationship between the astro tourist and the environment is one which requires further study, particularly as there are a variety of places that are designated as having optimal

conditions for comic gazing, such as Death Valley in the USA with its vast desert or Pic du Midi de Bigorre, a mountain in the French Pyrenees .

Astro tourism provides us with a glimpse of worlds in the cosmos that may never be touched but are still desired and aspired too. One truth (my truth) is that our time on Earth is brief and precious, whilst Earth itself is delicate and needs to be protected for future generations. Escaping to inhabit other planets is currently beyond mankind's capabilities therefore more needs to be done to conserve and reinstate darkness so that the rhythms of life can be sustained. Future research agendas in relation to astro tourism need to not only address sustainability, but also need to explore the consequences of doing nothing. However, it should be noted that if true darkness was to be restored then there would be no need for astro tourism as all could experience the night sky.

The Dark Sky Park is not only relevant to astro tourists as it can be studied from many perspectives as darkness has a broad appeal. Therefore, to appreciate all the park has to offer to other tourism, activities should be explored, such as: night fishing, extreme forest bicycle riding, and wildlife observations, by expanding the parks appeal the conservation argument will grow in strength and the general public will become re-connected with true darkness.

## 8.12 Reflection

Many social scientists undertake research in fields that they know about as they are familiar with the literature and the terminology used in the field they are studying. When a compelling topic attracted my attention and caught my imagination, I felt the need to explore it even though it was 'flying in the face of all good advice...' which is 'to use insider status to help insights' (DeLyser, 2001:441) i.e. to pick a topic of research closely related to the areas I teach - employability and human resource management (HRM). By pursuing research at Dark Sky events, and exploring the experience of the astro tourist, I was straying in to the fields of tourism and psychology. However, this meant that it was possible, to some extent, to separate the field work from professional practice, although I do work in the division of Tourism, Hospitality and Events at the University of Central Lancashire, I have always taught management related topics.

It was evident throughout this experience that I had to confront, what Sanders (2001:93) refers to as, 'the very personal nature of fieldwork'. From time to time, there were spaces of isolation and uncertainty, which led to an acknowledgement that fieldwork influenced home and work, providing a disjunction between the field and everyday life, it was confusing, emotional, and at times exciting. Vail (2001:718) refers to this as messy as it challenges us, both professionally and personally.

Nevertheless, as an academic I learnt new skills, my ability to undertake self-reflexivity has unmasked some complex political/ideological agendas hidden in my writing (Richardson, 1994: 523). I have also

developed an affiliation with new star gazers, The Socialisers (as I name them), and an appreciation for both astronomy and astrology which in turn has allowed me to appreciate Earth far more than I had previously done, particularly as this is the only planet with the correct primal soup to create human life as we know it. Personally, the journey has been a roller coaster, and I do not like roller coasters! I have learnt that I prefer field work to writing but that I am tenacious and have what one participant in the study referred to as 'true grit', I will get the job done whatever the cost. I have also developed strong links with industry and formed associations with colleagues and experts who work in fields that I had never encountered before. I have delivered conference papers and shared my research with academics and practitioners alike, all of whom have been welcoming and encouraging, thus resulting in my love for astro tourism.

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## Appendix

Appendix 1: IDA Dark Sky Quality Table

	 Gold	 Silver	 Bronze
<b>Artificial Light and Sky glow</b>	Typical observer is not distracted by glaring light sources. Light domes are only dim and restricted to sky close to horizon.	Point light sources and glaring lights do not dominate night-time scene. Light domes present around horizon but do not stretch to zenith.	Areas with greater artificial light and sky glow than Silver, but where aspects of the natural sky are still visible.
<b>Visual Limiting Magnitude</b>	Equal or greater than 6.8 under clear skies and good seeing conditions	6.0 to 6.7 under clear skies and good conditions	5.0-5.9 under clear skies and good seeing conditions
<b>Bartle Sky Class</b>	1-3	3-5	5-6
<b>Observable Sky Phenomena</b>	The full array of visible sky phenomena can be viewed—e.g. aurora, airglow, Milky Way, zodiacal light, and faint meteors	Brighter sky phenomena can be regularly viewed, with fainter ones sometimes visible. Milky Way is visible in summer and winter.	Many sky phenomena cannot be seen. Milky Way is faintly seen when pointed out, as is Andromeda Galaxy.
<b>Unihedron Sky Quality Meter</b>	21.75 or above	21.00 or above	20.00 or above

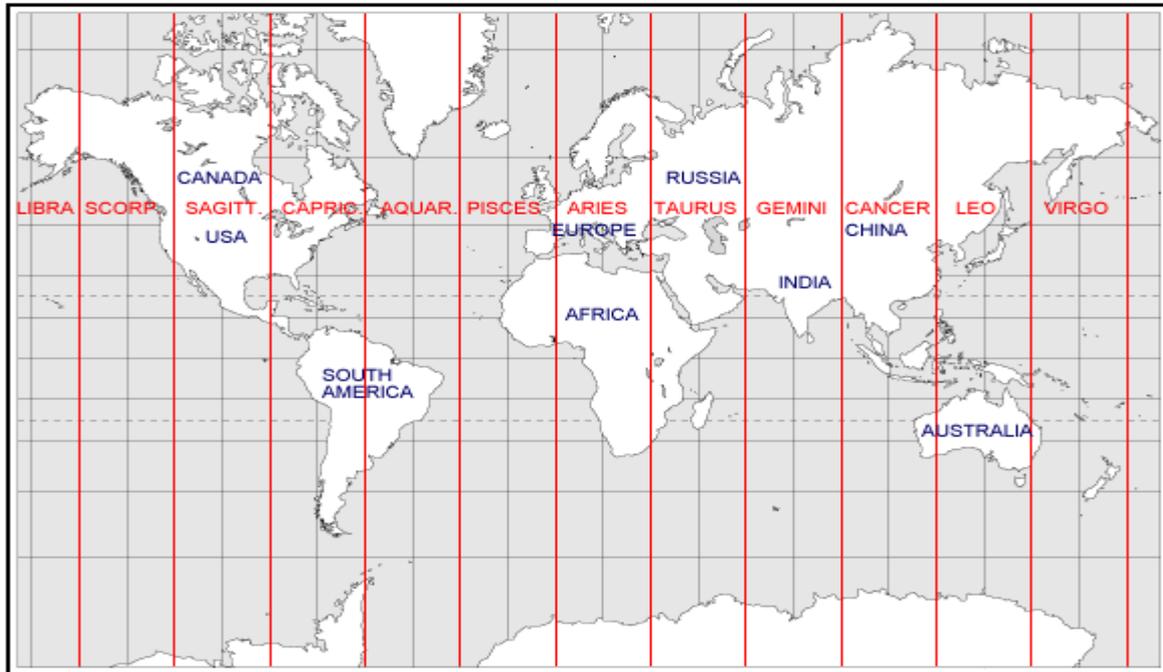
[www.darksky.org/international-dark-sky-places](http://www.darksky.org/international-dark-sky-places): accessed August 4<sup>th</sup> 2014

Appendix 2: Certified International Dark Sky Parks

Name	Location	Year Established	Tier
<a href="#"><u>Natural Bridges National Monument</u></a>	Utah, USA	2007	
<a href="#"><u>Cherry Springs State Park</u></a>	Pennsylvania, USA	2008	
<a href="#"><u>Galloway Forest Park</u></a>	Scotland, UK	2009	
<a href="#"><u>Zselic National Landscape Protection Area</u></a>	Hungary	2009	
<a href="#"><u>Goldendale Observatory Park</u></a>	Washington, USA	2010	
<a href="#"><u>Clayton Lake State Park</u></a>	New Mexico, USA	2010	
<a href="#"><u>Hortobagy National Park</u></a>	Hungary	2011	
<a href="#"><u>Observatory Park</u></a>	Ohio, USA	2011	
<a href="#"><u>The Headlands</u></a>	Michigan, USA	2011	
<a href="#"><u>Big Bend National Park</u></a>	Texas, USA	2012	
<a href="#"><u>Death Valley National Park</u></a>	California, USA	2013	
<a href="#"><u>Chaco Culture National Historical Park</u></a>	New Mexico, USA	2013	
<a href="#"><u>Northumberland National Park and Kielder Water Forest Park</u></a>	Northumberland, England	2013	
<a href="#"><u>Eifel International Dark Sky Park</u></a>	North Rhine-Westphalia, Germany	2014	Provisional
<a href="#"><u>Mayland Community College Blue Ridge Observatory and Star Park</u></a>	North Carolina, USA	2014	
<a href="#"><u>Parashant International Night Sky Province</u></a>	Arizona, USA	2014	
<a href="#"><u>Hovenweep National Monument</u></a>	Utah-Colorado, USA	2014	

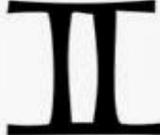
([www.darksky.org/international-dark-sky-places](http://www.darksky.org/international-dark-sky-places): accessed August 4<sup>th</sup> 2014))

Appendix 3: Sabian Symbols



([www.astrologyweekly.com](http://www.astrologyweekly.com), accessed 22/10/2016)

Appendix 4: Natal Birth Chart

<p>Capricorn</p>  <p>22 Dec - 20 Jan</p>	<p>Aquarius</p>  <p>21 Jan - 19 Feb</p>	<p>Pisces</p>  <p>20 Feb - 20 Mar</p>	<p>Aries</p>  <p>21 Mar- 19 Apr</p>
<p>Taurus</p>  <p>20 Apr - 20 May</p>	<p>Gemini</p>  <p>21 May - 21 Jun</p>	<p>Cancer</p>  <p>22 Jun - 23 Jul</p>	<p>Leo</p>  <p>24 Jul - 23 Aug</p>
<p>Virgo</p>  <p>24 Aug - 22 Sept</p>	<p>Libra</p>  <p>23 Sept - 22 Oct</p>	<p>Scorpio</p>  <p>23 Oct - 22 Nov</p>	<p>Sagittarius</p>  <p>23 Nov - 20 Dec</p>

## Daykeeper & Tone Energy Key

 <p><b>Red Dragon:</b> primal trust in divine nurturance, giving/receiving love, communicate your dreams and desires.</p>	 <p><b>Blue Monkey:</b> balancing the serious/fun axis, play, spontaneousness, laughter, inner child, transparency.</p>	<ul style="list-style-type: none"> <li>● <b>Magnetic:</b> independence, unity, growing essence self.</li> <li>●● <b>Lunar:</b> polarity, co-operation, relationship.</li> <li>●●● <b>Electric:</b> change, movement, flow, creativity, trinity, integration.</li> <li>●●●● <b>Self-Existing:</b> manifest your dreams, give your ideas discipline and form.</li> <li>— <b>Overtone:</b> core purpose, foundation, central intent.</li> <li>—● <b>Rhythmic:</b> organic balance, bring heaven to earth, roots.</li> <li>—●● <b>Resonant:</b> practical application of your mystical power, mystical alignment.</li> <li>—●●● <b>Galactic:</b> New Golden Octave of harmony! Empowerment, harmonic resonance, one heart</li> <li>—●●●● <b>Solar:</b> shine the light for others, expansion, mastery, complete.</li> <li>— — <b>Planetary:</b> what does your heart desire to manifest? intention, motivation.</li> <li>— —● <b>Spectral:</b> stripping away, disintegration, letting go.</li> <li>— —●● <b>Crystal:</b> stability in expansion, union of polarity, framework of connectedness, wisdom.</li> <li>— —●●● <b>Cosmic:</b> universal movement, wild card, unexpected change, mix things up, synchronicities.</li> </ul>
 <p><b>White Wind:</b> present moment, going with the flow, inspiration, truth, simplicity, co-creator of reality.</p>	 <p><b>Yellow Human:</b> re-wiring in order to receive higher frequencies, cleansing, abundance, harvest, cornucopia.</p>	
 <p><b>Blue Night:</b> Being a Conscious Dreamer, co-creating, abyss, journey into self, dream exploration.</p>	 <p><b>Red Skywalker:</b> bringing heaven to earth, loosening your moorings, stepping into the Unknown, courage.</p>	
 <p><b>Yellow Seed:</b> seeding new possibilities, entelechy, growth, self-germination, creation, opening.</p>	 <p><b>White Wizard:</b> integrity, aligning your will with divine will, allowing magic to happen, heart-knowing.</p>	
 <p><b>Red Serpent:</b> passion, intimacy, sexual and creative energy, body wisdom, desire, instinct, kundalini.</p>	 <p><b>Blue Eagle:</b> dreams and visions, compassionate service, belief in oneself, planetary server, commitment, hope.</p>	
 <p><b>White World Bridger:</b> death, rebirth, release, forgive, let go, surrender, ease, humility, revelation.</p>	 <p><b>Yellow Warrior:</b> intelligence, grace, galactic conduit, trusting your inner guidance, divine communication.</p>	
 <p><b>Blue Hand:</b> spiritual tools and gifts, healer, completion, being powerful and beautiful allows others to be the same.</p>	 <p><b>Red Earth:</b> being centered, grounded, Earth keeper, crystal healing, barefeet, synchronicity, loving nature!</p>	
 <p><b>Yellow Star:</b> new harmonic vibration for the Earth, expanded love, harmony, way-shower, radiant influence, starseed.</p>	 <p><b>White Mirror:</b> shadow examination, discrimination, clarity, honesty, clear mirror for others, spiritual warriorship.</p>	
 <p><b>Red Moon:</b> self-remembrance, intuition, cosmic communication, inner master, beacon, signs and signals.</p>	 <p><b>Blue Storm:</b> purification, intensity of feeling, transformation, breakdown and breakthrough, freedom.</p>	
 <p><b>White Dog:</b> heart chakra, companions of destiny, resonating with others, breakthrough, new beginnings, guides.</p>	 <p><b>Yellow Sun:</b> bliss, unconditional love, ecstasy, union, crown, radiance, pure conscious awareness, enlightenment.</p>	

([http://www.astrodreamadvisor.com/images/Mayan\\_Astrology\\_Key.jpg](http://www.astrodreamadvisor.com/images/Mayan_Astrology_Key.jpg), accessed 27/10/2016)

Appendix 6: Vedic Birth chart

### How to Read Your Vedic Birth Chart

Your birth chart is depicted in the North Indian style of Vedic astrology. The example below shows you the positions of the Houses. Each House is a triangle in the chart, which is read from right to left, counterclockwise. The numbers shown on the chart represent the 12 signs of the zodiac and rotate according to the ascendant for each individual chart. Abbreviated letters, a key for which appears below, shows the location of planets in the Houses.

**Abbreviation Key for the Planets in the Houses:**

Asc - Ascendant	Me - Mercury	Sa - Saturn	Ra - Rahu or North Node
Su - Sun	Ve - Venus	Ju - Jupiter	Ke - Ketu or South Node
Mo - Moon	Ma - Mars		

**Number Key for Signs of the Zodiac in the Houses:**

- 1 Aries
- 2 Taurus
- 3 Gemini
- 4 Cancer
- 5 Leo
- 6 Virgo
- 7 Libra
- 8 Scorpio
- 9 Sagittarius
- 10 Capricorn
- 11 Aquarius
- 12 Pisces

[www.pinterest.com/pin/263953228133347471/](http://www.pinterest.com/pin/263953228133347471/), accessed 28/10/2016

Appendix 7: Astrological Predictions



Fixed signs i.e. Leo, Taurus, Aquarius and Scorpio are said to understand that 'steadiness is the key, as those influenced by this quality are happy to forge ahead with their projects, calmly working away until they have achieved their objectives. These individuals are stable, determined and resolute. They want to get to the finish line and have the persistence and ability to concentrate, characteristics that are said to get them there.'

<http://www.astrology.com/article/qualities-fixed.html>, Accessed 27/10/2016

Appendix 8: Compliance Forms (information sheet and consent form - samples)

**CONSENT FORM**

**Title: Towards an understanding of the astro tourist**

For further information please contact:

Deborah Salter

School of Sport, Tourism and the Outdoors

University of Central Lancashire

E-mail: [daslater1@uclan.ac.uk](mailto:daslater1@uclan.ac.uk)

Tel: 01772 894911

**Please initial box**

- |                                                                                                                                                                              |                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions.                                        | <input type="checkbox"/> |
| 2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving reason.                                                        | <input type="checkbox"/> |
| 3. I agree to take part in the above study.                                                                                                                                  | <input type="checkbox"/> |
| 4. I agree to any data collection method being audio recorded                                                                                                                | <input type="checkbox"/> |
| 5. I agree to the use of anonymised quotes in publications                                                                                                                   | <input type="checkbox"/> |
| 6. I agree that my data gathered in this study may be stored (after it has been anonymised) in a specialist data centre and may be used for future research.                 | <input type="checkbox"/> |
| 7. I understand that I am able to withdraw from this research at any time by contacting either the research student or principal investigator by any means of communication. | <input type="checkbox"/> |

I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions

---

Name of Participant

---

Date

---

Signature

---

Name of Researcher

---

Date

---

Signature

If you have any concerns regarding any element of this research or your involvement within the research you can contact the Principal Investigator directly using the details below:

Dr Sean Gammon

School of Sport, Tourism and THE Outdoors

University of Central Lancashire

E-mail: [sigammon@uclan.ac.uk](mailto:sigammon@uclan.ac.uk)

Tel: 01772 894919

## Participant Information Sheet

### About the Project

The aim of this research is to explore of the reasons and experiences of visitors to Dark Sky events so as to determine an Astro Tourism typology. In order to fulfil the aim of this research, it is important to explore and consider the various motives of the visitors and interact with the participants before the event starts, whilst they are stargazing and once the event has taken place.

### Participant Request

If you agree to be a participant there would be a requirement to first, complete a survey which will take approx... 5 minutes and then to take part in a short 1:1 interview. The interview will involve participants being asked semi-structured questions relating to their interest in stargazing, the importance of Dark Sky and the experience they have encountered. These will be audio recorded for accuracy and auditing purposes. There may also be occasions when verification is needed and therefore the research student may need to revisit the sample source to check authenticity. All active participants will be required to sign a consent form stating that any data provided will be anonymised and can be used for publishing. Observation by the researcher of interactions and comments by the participants may be recorded

### How is the information used?

The information gathered will be anonymised and used to establish themes of collected data. Any data published will remain anonymised. The findings from this research will be used primarily for the successful completion of the research student's PhD submission, but may also be used for publishing in journals or books.

### Data Stored

Only members of the research team will have access to the data collected. All data and information collected will be password protected and held on a secure network. Backup procedures are in place on external hard drives, again password protected.

### Withdrawal Procedure

As a voluntary participant, you have the right to withdraw at any time during this study. In order to withdraw simply contact either the researcher or principal investigator by any means of communication you see fit. Please be aware that if you withdraw, we still have permission to use the data collected prior to the withdrawal (as indicated in the consent form).

### Contact Information

If you have any questions/queries or concerns, please contact the research student directly:

Deborah Slater Email: [daslater1@uclan.ac.uk](mailto:daslater1@uclan.ac.uk)

Telephone: 01772 894911

Thank you for taking the time to read this information sheet and thank you for being part of this research.  
**Deborah Slater (Research Student), The University of Central Lancashire, Preston, PR1 2HE**

## Patton (1987:287) Interview guidelines

1. Throughout all phases of interviewing, from planning through data collection to analysis, keep centred on the purpose of the research endeavour. Let that purpose guide the interviewing process.

As the purpose was to gain a broad range of experiences, individual portraits were obtained to ascertain the demographics and sensual motivation of participants of space, place and time.

2. The fundamental principle of qualitative interviewing is to provide a framework within which respondents can express their own understandings in their own terms.

Exploring the experience of space, place and time from a sensual stance required an understanding of the principles of both 'surface' and 'deep' learning and meanings. Hassenlgrén and Beach (1997:194) describe this Phenomenographic approach to research as 'layered, with complex conceptions subsuming those that are fundamental or basic'

3. Understand the strengths and weaknesses of different types of interviews: the informal conversational interview; the interview guide approach; and the standardized open-ended interview.

4. Select the type of interview (or combination of types) that is most appropriate to the purposes of the research effort.

Undertaken with the use of semi structure interview questions which sought to understand 'how' and 'what' (a copy of the semi structured questions can be found in appendices?)

5. Understand the different kinds of information one can collect through interviews: behavioural data; opinions; feelings; knowledge; sensory data; and background information.

6. Think about and plan how these different kinds of questions can be most appropriately sequenced for each interview topic, including past, present, and future questions.

7. Ask truly open-ended questions.

8. Ask clear questions, using understandable and appropriate language.

9. Ask one question at a time.

10. Use probes and follow-up questions to solicit depth and detail.

11. Communicate clearly what information is desired, why that information is important, and let the interviewee know how the interview is progressing.

12. Listen attentively and respond appropriately to let the person know he or she is being heard.

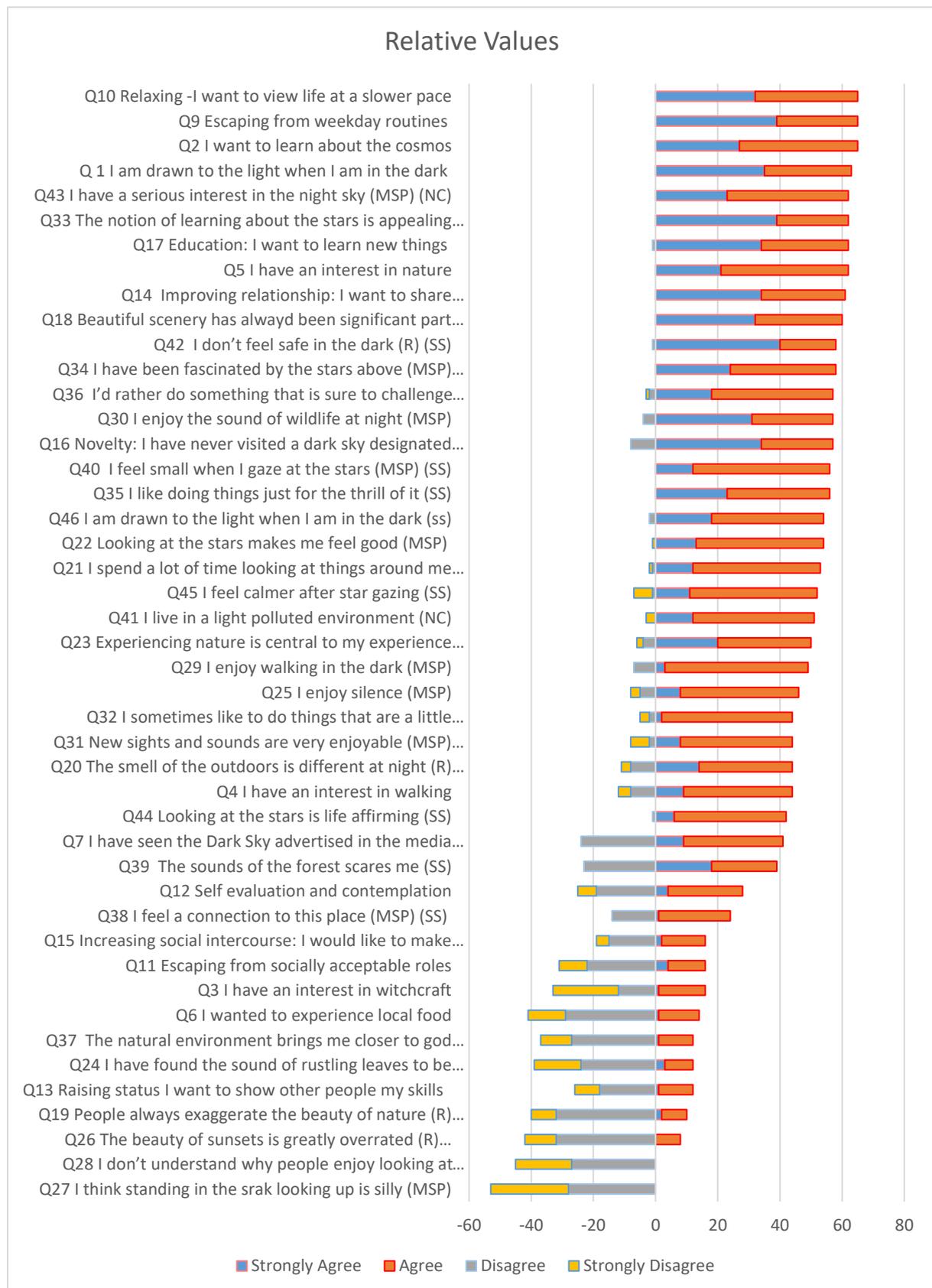
13. Avoid leading questions.

14. Understand the difference between a depth interview and an interrogation. Qualitative evaluators conduct depth interviews; police investigators and tax auditors conduct interrogations.
15. Establish personal rapport and a sense of mutual interest.
16. Maintain neutrality toward the specific content of responses. You are there to collect information not to make judgments about that person.
17. Observe while interviewing. Be aware of and sensitive to how the person is affected by and responds to different questions.
18. Maintain control of the interview.
19. Tape record whenever possible to capture full and exact quotations for analysis and reporting.
20. Take notes to capture and highlight major points as the interview progresses.
21. As soon as possible after the interview check the recording for malfunctions; review notes for clarity; elaborate where necessary; and record observations.
22. Take whatever steps are appropriate and necessary to gather valid and reliable information.
23. Treat the person being interviewed with respect. Keep in mind that it is a privilege and responsibility to peer into another person's experience.
24. Practice interviewing. Develop your skills.
25. Enjoy interviewing. Take the time along the way to stop and "hear" the roses.

## Appendix 10: Semi-structured Interview Questions

1. Why are you visiting the Dark Sky Park today?
2. Was this event your main reason for travel?
  - a. Are you staying in the area?
3. Stargazing, Past Knowledge and experience
4. What do you know about Astronomy/Astrology?
5. Have you any previous experience of stargazing?
  - a. Have you attended a dark sky event before?
6. Which senses do you feel are stimulated?
  - a. How did that make you feel?
7. What are the Positives experiences you can take away for the event? and,
8. Where there any Negatives?
9. Feelings about time and place
  - a. Did looking up make you feel any differently about time?
  - b. What do you think about this place – visit during day, scenery etc.?

Appendix 11: Relative Values



## Appendix 12: Sample of Interview Transcripts

Eight transcripts have been chosen for the sample as they represent a broad spectrum of participants who took part in both the Forestry Commission Events and the Sanctuary Events. They provide an accurate picture of the characteristics that make up each type of astro tourist. Each interview was carried out in two stages:

The Forestry Commission events observation, each participants was approached, informed of the purpose of the study and asked if they would like to participate, they were given an information sheet, consent form and the survey, they were then asked a few basic questions on motives.

Participant observation was carried out when they had finished stargazing – sometimes in the visitors centre, other times outside in the dark. Each participant was asked a series of semi-structured questions, followed by probing questions

The Sanctuary Events: observation, participants were approached on the car park or at the campsite. They were informed of the purpose of the study and asked if they would like to participate, they were given an information sheet, consent form and the survey, they were then asked a few basic questions on motives and if they could return later for more questions or if they would participate the next morning before leaving.

Interviews tended to last between 10-20 minutes when in the dark, and 30 minutes when in the visitor centre. This may be related to comfort, as standing outside in the cold made responses quick but the atmosphere was always friendly. Participant numbering is in no particular order of interviewing, it represents that order in which the data was input into NVivo.

Each interview began with a similar preliminary introduction:

### ***Introduction Example***

*Hi, I'm from the University of Central Lancashire in Preston and my name is Debbie Slater (at this point I would show my student ID card) I'm here today to carry out research related to the personal experiences of people who participate in stargazing related events, to determine if they/you are astro tourists. My hope is to build up personal profiles of participant characteristics which will lead to a better understanding of astro tourists. So, what I would like to do is to ask if you would like to participate first in the survey? Here is some information on the study and a consent form. Your role would be to complete this form and a survey. I am looking for a diverse range of people, so I will review the answers you put on the survey and then after you have star gazed, if you are identified as a person who can add to the study I would like to ask you some questions related to your experience. I anticipate that the interview should take no more than 30 minutes of your time, but I am happy to talk for longer if you want to share your experiences in more detail.*

*Throughout the study I will be taking notes and recording answers, this is so I do not miss anything, as I want to build an accurate picture – please say if you are not happy with that.*

(Each semi-structured question acts as a prompt – these are not always asked in chronological order)

**Participant One: represents those attracted to the event by the media with a mixed interest in cosmic gazing**

IQ01 Motivation to visit the Dark Sky Park?

RESEARCHER: So, to begin, I'd like you to think about what your reason is for visiting the Dark Sky Event tonight?

P01: Simple, the event, it's definitely something that we wanted to visit to see the stars.

RESEARCHER: So, when you say see the stars, are you more interested in Astrology or Astronomy?

P01: Astronomy, I think... Although I do like to read my chart signs occasionally... I think being here in the dark is probably the best way to see the stars, they look different on the telly ... brighter but less real.

RESEARCHER: Ok, why do you think that is?

P01: Not sure, probably they use filters or something. Looking up as we arrived just seemed different.

RESEARCHER: Ok, how far in advance did you book this event?

P01: Just before we left for our holiday... Yes, on Google, a few weeks ago, I think.

IQ02 Was this event your main reason for travel?

RESEARCHER: So, I guess this event was not your main reason for travel then?

P01: It is part of the holiday, something to do at night, and I was very interested in stargazing as a child, still am. I wanted to see how it really was and maybe learn more details that I didn't know before. It is listed as one of the main things to do in the region, on the Visit Scotland Website. Galloway Forest is well known and we all only learned about it from stories, books and various media outlets from a distance so being in the area and being in a dark place where you can

actually see the star is something, I was thinking of bring my family to see – it felt like a must to go see it.

RESEARCHER: Summarising, it was to get to know the Dark Sky Park and more about astronomy?

P01: Yes, I think I wouldn't have tried it, if I hadn't seen the advertisements and wanted to learn more, I'd feel ignorant for not giving it a go. I'd feel like I didn't care about our planet if I ignored it. That just doesn't seem right.

#### IQ04 What do you know about astronomy

RESEARCHER: You mentioned caring about the planet. Maybe you could explain that feeling further?

P01: I mean light pollution is affecting the way we live; it is stopping us from seeing the sky above. We humans do things now that we didn't so long ago. Somehow it feels like people are still blind to what's on their doorsteps. They want to travel to distant planets but don't want to take care of the one they live on.... it's an issue for our children and theirs. It's obvious to me, I wanted to go see something related to the distance needed to travel to get somewhere else. Travelling and learning is what keeps my need to learn alive. Well, I don't know if this makes any sense...

#### IQ03 Stargazing or Knowledge

RESEARCHER: Yes, that is good. Would you say it was out of need for knowledge or a passion for stargazing that you came?

P01: Yeah, I guess one could say that, I am keen to learn more about the star because I want to explore our universe from Earth.

#### IQ05 Previous Experience

RESEARCHER: What was your experience of the event?

P01: It is really amazing, I would say. Because you know, the things that you already know, the facts and you know, but also how far away everything really is and how we, in our lifetime, will never get

to see other worlds for ourselves. It is really different when you are actually thinking of time, how it travels and how short a life we actually have.

I felt like asking 'but why can't I go?' ... I don't know how to describe how it made me feel. I guess surprised... in a bad way that we are not as advanced as we think we are

RESEARCHER: Did you perceive the Dark Sky to be authentic?

P01: Yes, I had a feeling that this is a new experience. Of course, you are put into situations that are not normal, walking in the dark is challenging. At any other tourist attraction it is normal to be there to look around you, at statues, or buildings but here you come to look up not at a tourist attraction but that is the thing why you are here and that's what you want to see that, the sky.

RESEARCHER: If you had the chance to visit another Dark Sky, would you? If so, why?

P01: I would definitely choose The Isle of Sky, the Island looks beautiful, unspoilt. You can't really tell what's it like here, it's too dark but it is beautiful, there stars paint the sky with shades of light.

#### IQ06 Which senses do you feel are stimulated

RESEARCHER: When you say, it's beautiful, which senses make you feel it is beautiful?

P01: Sight, you see something beautiful... although there is also a feeling of calm, tranquil... it's a peaceful place

#### IQ07 Positives and Negatives

RESEARCHER:

#### IQ04 Would you recommend this event to friends/family?

P01: Yes definitely. The presentation, food and the rangers are all worth the money but it's the dark sky that is the best bit, you really don't get it anywhere else

RESEARCHER: Would you visit it again if travelling here a second time?

P01: Not necessarily. If I came again with somebody else who hasn't been I would. On my own, I'd probably attend a different talk since I've seen this once was.

RESEARCHER: Where there any negatives about tonight?

P01: The cloud cover at times... some of the standing around waiting to use the binoculars... but on the whole it's been very good ... yes, very good.

#### IQ08 Feelings about time and place

RESEARCHER: How do you feel about this place?

P01: Inspired, to learn a more... It is dark here but that doesn't guarantee anything.

RESEARCHER: Keith mentioned during his presentation that when we look at the star we are looking back into time, how does that make you feel?

P01: Pause... Not sure really...I don't suppose I believe it... although he did seem to know his stuff. I think we should treasure the here and now, the where and when is all a bit confusing.

RESEARCHER: Thank you for answering my questions, it was lovely to meet you

P01: Likewise. Good luck with your studies.

RESEARCHER: Thank you

**Participant two: represents someone with previous dark sky experience, a collector of experiences**

#### IQ01 Motivation to visit the Dark Sky Park?

RESEARCHER: Thank you for coming back in for the interview, it much warmer in here, so can I ask a few questions about your experience tonight.

P02: I know, well it's just how it goes when your stargazing? You just can't predict the weather, but the presentation was excellent, that's why I came again

RESEARCHER: It was, it was really good, wasn't it?

P02: I was saying that to Alan (husband) when I came in, Keith was really passionate about what he was talking about. Nice to hear.

RESEARCHER: It brings it alive doesn't it?

P02: I know it does.

RESEARCHER: So apart from your previous visit, is there any other reason why you choose to attend a stargazing event?

P02: I'm really interested in the moon and my husband is a keen astronomer. He has set up a telescope in his man cave .... Shed, I don't care for it much, and I'd rather just look up.

IQ02 Was this event your main reason for travel?

RESEARCHER: Was this event your main reason for coming?

P02: Yes the moon watch, it's lovely to see.... cos when I was driving up it was just coming over the hill although now it's getting cloudy.

RESEARCHER: There are only a few clouds so as long as it doesn't rain we'll be alright

P02: It was raining when I came in that's why I came in earlier in case it absolutely tipped it down

RESEARCHER: Oh no it was fine when I was coming out but it rained earlier today, it may clear up after the talk

P02: Yes, fingers crossed.

### IQ03 Stargazing or Knowledge

RESEARCHER: So, what do you like about the moon?

P02: Oh, I've just always been fascinated with the moon

RESEARCHER: Why? I've got to be honest I don't know anything about it

P02: It's not always there even when we can't see it, the phases are truly fascinating, they affect the tides and the weather. The mountains and contours on it represent a whole different world.

RESEARCHER: So, you already know quite a bit

P02: I can always learn more, that's why I came. I think they also talk about the planet distances and their moons. Ours isn't that moon far away, it's just something that's always fascinated me. The phases, the equinox the cycles, as old as time. What it's seen, just imagine the stories it could tell...

### IQ05 Experience

RESEARCHER: Yeah, do you think it's mystical in any way?

P02: Yes, I suppose so

RESEARCHER: Ok, in what way

P02: It's changing all the time, cos when I was a lot younger a lot of the times you felt it was bigger than it is now.

RESEARCHER: Oh, ok right, so maybe it felt nearer?

P02: Yeah, I think it probably was nearer

RESEARCHER: Right, wonder if it's moving further away?

P02: I think it could be but I don't know for sure but it feels that way..., you know I don't know enough about it so that's why I came here.

#### IQ04 What do you know about astronomy

RESEARCHER: Keith will tell us.....

Keith explained the fact that moon moves further away by a fraction each year but that it shouldn't be that noticeable, maybe it has something to do with growing up, everything looks smaller when you're old

P02: I remember times at school when it seemed to be huge and not so long ago they were talking about the moon being big but it wasn't as big as I remember

RESEARCHER: How do you remember it

P02: I remember you felt you could touch it, it was that big. My father used to take us up to the top of the hill to see if we could touch it

RESEARCHER: Right I've never thought about it that way to be honest

P02: I've always lived in the countryside, so I know so I like to look at the moon in different parts of the country

RESEARCHER: Which parts of the world

P02: Wherever I go on holiday, I spend time looking up

RESEARCHER: Are you interested in other sites?

P02: Things are changing so fast that I like to focus on the moon because it grounds me in the here and now... although it does provide a bridge to the past...

#### IQ06 Positives and Negatives

RESEARCHER: That's interesting, I never really thought of it like that. So, are you coming to any more of the events?

P02: Well now that I've kinda got in contact, we' Alan I, will be able to know what's on, before I didn't know these events were on, maybe there weren't many I don't know.

RESEARCHER: They tend to have every four weeks, but you really need to book, they are popular.

P02: Ah well, I seem to have missed out on them before, it's great that it's on Face book now; I can let my friends know.

RESEARCHER: So, what are the positive benefits of this event?

P02: So, I'm only about twenty, twenty five miles away so it's close. The presentation it gets a lot across, it's easy to understand. The room is cosy, and the hot chocolate is great.

RESEARCHER: Not bad is it, although that road's really windy.

P02: Yes, but I'm used to living in the country so not that bad, really.

When are you finishing your course?

RESEARCHER: Oh gosh it lasts for 6 years, I'm in my fourth year so I plan to finish March 2018.

So, which senses do you feel are stimulated when you are here?

P02: My sight isn't much good these days, but once you are outside with the binoculars you can see a lot. Although it is difficult to walk in the dark, everything feels soft underfoot, fresh, very cold, I think.

RESEARCHER: I know we have talked about the bad weather, but would you say that is a negative aspect of these events?

P02: Not really, you know you might get bad weather so it shouldn't dampen the spirits, we just tend to focus on what we can see don't we. In fact, being too hot is worse for me, as I just want to open the door but have to wait for someone else to do it.

RESEARCHER: Yes, I can get very hot in here, especially when you come in from the cold.

What would you say are the best bits about this evening?

P02: The moon was amazing, it is some impressive tonight, I particularly enjoyed my time with the binoculars – even looking at the moon you are looking back in time by a few seconds. Yes amazing!

#### IQ08 Feelings about time and place

RESEARCHER: You mention looking back in time, why is that important?

P02: I have good memories of the past... but I think it is just that seeing into the past means one day you will be able to see into the future

RESEARCHER: Would you want to see your future?

P02: ... no, not really, although I often wished I know something was going to happen before it did so I could have been prepared.

RESEARCHER: Not to change it then?

P02: No, you can't cheat time. Yes, I have people I miss but ... that's life

RESEARCHER: So, to finish off, do you think this place is special?

P02: Of course, you can see so much of the sky on a good night, you can't do that anywhere else I have been. I miss it when I'm off on my travels on city breaks – I don't tend to sleep well when the dark is replaced by artificial light.

RESEARCHER: Thank you for answering my questions, it was lovely to meet you

P02: Let me know if you need to ask anything else. Good Luck with your studying

**Participant Three: represents an amateur astronomer – with a serious interest**

#### IQ01 Motivation to visit the Dark Sky Park

RESEARCHER: What motivated you to visit the Dark Sky Park?

P03: I'm a bit of an amateur astronomy and I love finding things ...mostly nebulae or double stars with my telescope

#### IQ02 Was this event your main reason for travel?

RESEARCHER: Ok, can you tell me about your previous experience of the Park/Stargazing?

PO3: I haven't been to this park before, but I have visited other parks in America : Death Valley Park; Grand Canyon National Park; Kissimmee Preserve; Newport State Park, and of course Northumberland National Park. I've also visited a few of the dark sites, there not as good but you can meet a few interesting people.

Stargazing has become part of my life... it's not just about astronomy it's about people... the people you meet are different from those at work, they have passion, a genuine interest...

RESEARCHER: So, would you come to this dark sky park during the day, or to star gaze again?

PO3: Yes, I suppose I would if I was in the area, but I would make a special journey

#### IQ03 Cosmic Knowledge

RESEARCHER: How much do you know about the cosmos?

PO3: The constellations are pretty much recognisable from Dark Sky areas; I've been to a few and this is the next on my list. They are a little distorted with the cloud cover but still recognizable. Oh, and there's an additional quite bright star in the general direction of Cassiopeia, and one missing from Centaurus... I'm no astronomer and I only got a mediocre grade at physics in school, but I really like to explore the universe whenever I get the opportunity.

#### IQ04 What do you know about astronomy

RESEARCHER: Would you like to learn more about the Park or the Cosmos?

PO3: It's perfect for observing here..., on good night anyways. The presentation is good but aimed at beginners I think, I have some knowledge so I don't feel I really learnt anything today, but it was good, Keith makes it all accessible.

## IQ05 Experience

RESEARCHER: Can you tell me about your experience tonight?

PO3: As the sky clears the viewpoint was perfect for observing one of the most recognisable groups of stars in the galaxy, the Orion constellation. Later in the year, the mythological giant beams across the winter sky will become clearer... You can even notice the contrast in colours at the edges of the stars: the reddish Betelgeuse in the shoulder of the giant and the blue Rigel in his foot. I showed a few of the kids these on my app..., the binoculars aren't good enough to see the colours, but you could make out the constellations.

Most people want to see Orion's Belt, the iconic asterism formed by three massive stars. Hanging below Orion's belt, three more small stars form part of the Great Orion Nebula, the most brilliant nebulae visible to the naked eye. Obviously, they would prefer to see the Milky Way but the moon is too bright and there is some cloud cover, making it impossible.

RESEARCHER: You say you're no expert but you appear to know a lot, how much time do you spend stargazing?

PO3: well, I do most of it on the computer as I live in Glasgow but whenever I get the chance I go outside and look through my telescope .... probably about twice a week on average, more if I'm in a place like this.

## IQ06 Which Senses do you feel are stimulated

RESEARCHER: Ok, that's interesting, so when you were stargazing tonight which senses do you feel you used?

PO3: There are things you never see unless you are in a dark sky, my eyes sense the world around me but there are all sorts of things to feel in the dark. As your eyes adjust to the dark you feel your senses

becoming sharper. I tend to listen to what's going on around me but stay focused on the stars as I start my journey with Orion and then move on.....

RESEARCHER: You say it's a journey, what do you mean by that?

PO3: Some sights are brighter than others, it's important to get your bearings then look for stars that are less visible in other places.... It makes the trip worthwhile when you see something that you can't see elsewhere.

#### IQ07 Positives and Negatives

RESEARCHER: If you were to recommend this event to a friend what would you tell them?

PO3: Well... I'm sure they would like the fact that the presentation is pitched at an accessible level. Some of my friends might find that boring but I know a few who would appreciate it. The food is good but we could do with more time to eat it.

RESEARCHER: are there any negative aspects about the event?

PO3: Not really

#### IQ08 Feelings about time and place

RESEARCHER: When looking into the sky what did you think about this place and time?

PO3: Well, the time it would take a conventional rocket to reach a Goldilocks planet... Gliese 581g is about 100,000, or so, years away, and practically nothing in astronomy terms.

Dark Sky designated parks are important to our environment... At the rate that light pollution is taking over the Earth these sites are a beacon for star gazers. It's not that long ago that people lived their lives by cosmic forces now they're endangered ....it's interesting that endangered animals get a lot of press but the darkness that effects them doesn't don't you think.

RESEARCHER: Yes, I suppose it's due to a lack of knowledge and ignorance, I know attending these events has opened my eyes. Well, thank you for answering my questions I hope you enjoy the rest of the evening.

**Participants Four: represents a tourist in the area interested in astrology**

RESEARCHER: thank you for participating in the study

[IQ01 Motivation to visit the Dark Sky Park](#)

So, do you think you could tell me what motivated you to attend the Dark Sky Event?

PO4: Partly because it's pretty, I don't know... (Inaudible). There's something about the night, it's kinda mysterious

RESEARCHER: Mysterious? Yeah? Can you tell me what you mean by that?

PO4: What's out there, you know

RESEARCHER: Do you mean something scary or something different?

PO4: both I suppose, it is a bit scary but it's more fascinating than scary.

RESEARCHER: Have you been stargazing before?

PO4: No, first visit.

RESEARCHER: First visit, have you come a long way?

PO4: From Manchester

RESEARCHER: Manchester oh gosh that is a long way isn't it? Cos I live in Newton Stewart which is only down the road but I work in Preston so not too far away from Manchester. So yeah that's quite a distance. Are you here for a few days?

PO4: Yeah, just for a long weekend

RESEARCHER: A long weekend? So, when did you book onto this, was it some time ago?

PO4: Last week

RESEARCHER: Last week yeah? Looking for things to do in the area?

PO4: Just to see where to find a place, a good spot to find dark skies

RESEARCHER: Right, so it wasn't the stargazing that attracted you then? How did you know about the dark sky?

PO4: We wanted to see what you could see in the Dark. Well you found it (Speaking to Friend) but how did you find it?

PO4: (friend of P04) Google

RESEARCHER: Google right, oh ok is it because you're interested in astronomy or..?

PO4: Well I am quite interested astrology (inaudible).

IQ02 Was this event your main reason for travel?

RESEARCHER: Is this something that you regularly do, go away for a few days?

PO4: Oh no it's more, you know a holiday, you know have a break from work, from life, be with family and share some good times

RESEARCHER: It's nice to get away isn't it sometimes? I know how you feel, I think that's why I live up here. Nice and peaceful and quiet

PO4: Yeah but I've got to work to be able to afford to get away, catch 22

RESEARCHER: Got to pay the bills.

IQ03 and IQ04 Cosmic Knowledge

RESEARCHER: So, how much do you know about the cosmos?

PO4: (Inaudible)..... But yeah, no it's ... something I want to do

RESEARCHER: Yeah? Do you know anything about the stars and the moon at all?

PO4: Well no, only basic things, I like to read my horoscope, but I never really make a conscious attempt to star gaze, so it's something new, something we can all do.

RESEARCHER: Oh ok, are you hoping to learn anything today? Hopefully we'll see something as well if the skies are kind to us.

PO4: It would be nice to learn more, as long as it's not too sciency, the kids like all that, I just want to recognise some of the stars, that's all really.

#### IQ05 Experience

RESEARCHER: Can you tell me about your experience tonight?

PO4: We came on holiday just last night, we got stuck behind some wagons, got lost (inaudible), ironic really, we came to see the dark but got lost because we could not see the signs... laugh...

RESEARCHER: That is the problem isn't it?

PO4: The landscape is beautiful though

RESEARCHER: Yes it's beautiful round these parts? Are you stopping in a B and B or..?

PO4: Yeah, we are glamping

RESEARCHER: Glamping? Oohh that sounds posh whereabouts?

PO4: Near (inaudible)

RESEARCHER: Is that a long way from here?

PO4: No, it's about 40 minutes (Inaudible)

RESEARCHER: Oh, ok that's not too bad is it? (A dog approaches us), they have brought their dog

PO4: Mine would be all over the place right now, he's not well trained but we love him to bits. I didn't realise you could bring dogs.

RESEARCHER: (Inaudible) you'd think near the sea though

PO4: eh but there's that many streetlights I mean it's a huge city. Takes about half an hour ¾ of an hour to cross it so, there's a lot of lights

#### IQ06 Senses

RESEARCHER: So, being here is an escape from the light? How does it make you feel being in the dark?

PO4: Strangely alone, although my family is with me, this is my son he's 13.

RESEARCHER: And at 13 they're inquisitive, aren't they?

PO4: Well they bring it a lot into the schools as well now, not like when we were young.

RESEARCHER: Right into the curriculum? Ok. There were two little boys here last time and they said they weren't that keen, dad had brought them, but when they got outside and they got the tablet out they could see star constellation they were hooked, they were really enthralled so the technology got them quite interested. Different generation though isn't it?

PO4: That's right (pause) Oh well, I'm feeling a bit hungry now!

RESEARCHER: They've put a lot of food on, so I will see you later.

#### IQ07 Positives and Negatives

RESEARCHER: If you were to recommend this event to a friend what would you tell them?

PO4: its well worth the money... it is really dark and even with the cloud cover the tablets allow you to see what's out there. The food is good and the visitors centre is warm. The weathers a bit hit and miss but we are in Scotland so what do you expect...

#### IQ08 Feelings about time and place

RESEARCHER: Yes you're right. So, what do you feel about this place?

PO4: There's a lot to see, the cosmic map is extraordinary, but the environment make you feel cold and like time is slowing down..... the talk went really quickly. Not sure really... it's all a bit confusing.

RESEARCHER: Ok, Well thank you for your time, I'll not keep you any longer, enjoy your break.

PO4: It's alright don't worry. Good luck with your work.

**Participant Five: represents someone who is interested in astronomy but who is enjoying sharing his experience with family**

#### IQ01 Motivation to visit the Dark Sky Park

RESEARCHER: So, you're here tonight with your family, so why have you decided to attend the event, are you all interested in astronomy, do you like the stars?

P05: Yeah, I suppose. My wife booked it as a surprise for me, my birthday

RESEARCHER: Oh, congratulation, so did you want to come tonight?

P05: Yeah, we've been to a few of these and there always different

RESEARCHER: Oh, that's good I think you'll enjoy yourself. So how far have you come?

P05: from Edinburgh

RESEARCHER: are you staying locally tonight?

P05: Yeah other side of Newton Stewart

RESEARCHER: Ok and are you just here for the one night or ....

P05: Two nights

RESEARCHER: 2 nights, ok, so you have been stargazing before in other dark sky place?

P05: We've done it before a couple of times in Northumberland and here, but it is also a good opportunity to come back with friends and have a weekend away, we've been up to Dumfries, we've stayed here before as well.

#### IQ02 Was this event your main reason for travel?

RESEARCHER: Right ok so you have experienced it before, so you know something about it which is good. When did you first get interested in stargazing?

P05: We tried to do event three years ago here, it was put off because of bad weather, we didn't actually have the event, it's obviously changed slightly since then, and the visitor's centres are much nicer.

RESEARCHER: Yeah they used to be much smaller, not as welcoming.

P05: I think it was Clatteringshaw damn we went to though not here. I think we were going to be there, if I remember rightly.

RESEARCHER: They've got a nice visitor centre now as well with a log burner in it, so it's nice, all the events tend to go ahead now cos he does the talk and everything else. Ok, so, were you interested in stargazing when you were younger?

P05: Yes, you could say that. My parents decorated my room with planets and constellations. I've always found it fascinating, I grew up watching it on the telly and now I go to dark places whenever I can.

#### IQ05 Experience

RESEARCHER: How do you feel when you are looking up at the stars?

P05: Well we've been blessed with a good night, it's nice to see my family enjoying event. Well worth it. It would have been nice to show them the Milky Way but that's never guaranteed is it.

#### IQ06 Senses

RESEARCHER: did you feel you used your senses differently to night

P05: no, it's always very visual, hence the word stargazing but it can be exciting when something new appears, not tonight though, there is a little too much cloud cover for discovery. Are you an Astronomer?

RESEARCHER: No, I'm interested in the tourist experience, although I do find it very calming and interesting.

### IQ07 Positives and Negatives

RESEARCHER: So, could you tell me if you were to recommend this event to a friend what would you say?

P05: well, bring the family, they will love it. It might be a struggle to convince them but there really is something for everyone. Oh, and don't eat before you come there is plenty of food.

RESEARCHER: Would there be any negatives?

P05: not really, just wrap up, some people really don't have a clue how cold it gets when it's dark... you'd think they were on a night out, not in the middle of a forest.

### IQ08 Feelings about time and place

RESEARCHER: So, what are you feeling about time and place?

P05: I'm more interested in space and time, travelling between planets is not possible and will not be in my lifetime but travelling to mars or Venus might be so the ability to see those Planets is very interesting.

RESEARCHER: Well, thank you for your time, I'll let you get back to your family. I hope you enjoy the rest of your birthday

**Participant Six: represents an alternative interest in the dark but illustrates a newfound interest in the stars**

IQ01 Motivation to visit the Dark Sky Park

RESEARCHER: Did you know about the Dark Sky Park before arrived in Dumfries and Galloway?

P06: No, not at all, I never knew myself, but my friends did, she heard it on the radio.

IQ02 Was this event your main reason for travel?

RESEARCHER: So, was it a spontaneous visit?

P06: Exactly, my friend is interested in Witchcraft, so when she heard there was an event this weekend for 24 hours in the Dark Sky she rang and asked me to come along. I bought a tent in the summer so thought it would be kinda like a festival... although I had no idea really (laugh).

IQ03 Cosmic Knowledge

RESEARCHER: So, you don't really have any interest in stargazing then?

P06: Not really, she made it sound like a laugh... I do remember my brother's friend having a telescope that I used to look through a few years ago but I don't know much about em.

RESEARCHER: Ok, so will you be attending the presentations this evening, there is one on Witchcraft, one on Vampires and one on stargazing?

P06: not sure really, my friend will want to do the witchcraft one, I'd probably like the vampire one, I love Van Heisling and all that, we may go along to the stargazing but it really depends on when they are, do they clash?

RESEARCHER: no, there's a good gap between them all, at the sensory tent there is a schedule of the events

P06: Oh, Ok, we will go and pick one up. Is there a beer tent?

RESEARCHER: Yes, there are a few food and drink stands off the road near the sensory tent. Can I come back and see you in the morning to find out what you enjoyed about the event?

P06: Yes, but we won't be up until 10ish so don't come too early.

#### IQ4 Experience

RESEARCHER: Ok, before I go can I ask if you or your friend have visited any other dark sky parks?

P06: No, never even heard of them

RESEARCHER: Ok, thank you, see you in the morning.

Next day

#### IQ05 Experience

RESEARCHER: Thank you for doing this, did you have a good night?

P06: It was cold, camping in September is not a good idea.

RESEARCHER: Did you manage to attend any of the presentations?

P06: Yes, we did them all, the vampire thing was shit, he talked about gases and dead bodies, the myth of vampires, the origins and all that... The Witches talk was good, she made it feel real, we had a long chat after about my interest in the arts, she recommended a really good book and a few web sites. I will add her to my face book when I get a signal. I never realised that the forest was not only dark, as in black, but also dark as in no mobile signal, it's funny how you miss all that ... access. I also liked the moon watch stuff... it was quite bright last night, did you stay?

RESEARCHER: yes, I have an old campervan so stayed and talked to people

P06: oh, I didn't see you but it's hard to spot anyone in the dark.

### IQ06 Senses

RESEARCHER: Yes, how does it make you feel being in the dark?

P06: Free... we kept coming across groups of people who seemed to be really friendly. I struggled getting to the monument, but a group of lads helped me up the rocks, another girl fell and broke her ankle, yeh know, so I was glad of the help.

RESEARCHER: Yes, I saw the ambulance, she was OK, it was just a sprain!

P06: I love these festivals, you meet so many interesting people who have travelled so much, I don't know how they do it, they don't have jobs, but they have the money to travel. I'm jealous really!

### IQ03 Knowledge

RESEARCHER: So, you say you liked the moon watch can you tell me why?

P06: As the clouds passed over it seemed very mystical, the facts about the sea and all that made me think about Earth differently... If the moon was destroyed would we be destroyed? I suppose I take too much for granted, I never realised how fragile life on this planet is... I mean I knew about the theories about dinosaurs' and a meteor striking the Earth, but it happened such a long time ago. I guess I need to learn more. I might ask Aaron (RESEARCHER: Aaron? P06: my brother's friend) to lend me his books and telescope. The distance of the planets amazed me but it's not really my thing. There's enough to explore here.

### IQ07 Positives and Negatives

RESEARCHER: Would you recommend this event to friend and family?

P06: Definitely, I didn't know what to expect but it was well organised and free, you don't get anything for free these days... although I did spend a fortune on drink and stuff ....

RESEARCHER: So, to summarise, can you tell me the best bit and the worst bits?

P06: The cost, the people, the talks, are all good, the cold was the only bad bit for me. My friend didn't like the vampire shit, and the slippery ground... although I suppose it was fun, the people we met were all friendly, and the Dark made the event really sick... Oh and the cold tent, camping is so not me.  
(Laugh)

#### IQ08 Feelings about time and place

RESEARCHER: When looking into the sky what did you think about this place and time?

P06: it's certainly different... the people are friendly and seem to care about each other. I've always found Scottish people to be friendly... although not everyone here is Scottish so maybe it's something else (snort), the darkness draws people together, bon Amie and all that. Time goes much slower when it's cold, it felt like the longest night of my life.

RESEARCHER: (laugh) Well, thank you for your time, I hope you have a safe journey home.

**Participant 8: This participant represents an alternative interest related to astro photography, a subset of astro tourism**

IQ01 Motivation to visit the Dark Sky Park

RESEARCHER: Thank you for doing this, so can I ask where are you from and how far have you travelled?

P08: Hazel from Glasgow, I'm from Straven.

RESEARCHER: Sorry, where?

P08: Straven

RESEARCHER: How far is that?

P08: About 70- 80 miles.

RESEARCHER: Oh ok, so where are you stopping tonight?

P08: We're stopping the night in a BandB.

IQ02 Was this event your main reason for travel?

RESEARCHER: Ok, So, how long ago did you book on this event?

P08: About 5 weeks

RESEARCHER: About 5 week's right, why did you choose to come here?

P08: For the stars

RESEARCHER: Just for the stars

P08: I think, it's the only place that I've heard of that's got this good an experience and we want to take photos. We've never tried to take photos in the dark before so it will be a challenge

RESEARCHER: Right oh, so, you're keen photographers? Right ok, oh well hopefully you'll get some good pictures....

P08: I'd like to get some star photos but just being in the dark is awesome.

#### IQ03 and IQ04 Cosmic Knowledge/astronomy

RESEARCHER: Oh, that's good. Right so your interest in astronomy really is just from the point of view of photography?

P08: I find it interesting, but I wouldn't really go to an event just to watch the stars (inaudible) ... I'm more into astro photography – you need to know about astronomy to do that. My friend prefers Astrology, cosmic maps, predicting the future – crazy but it takes all sorts, laugh...

RESEARCHER: Do you remember when you were younger being interested in the stars at all?

P08: I remember being interested in terms of just loving to look up at them and wondering what their names were, how many there were, but I wasn't sort of thinking what do they mean where do they go? I was probably just a casual observer. I became interested in my late teens

RESEARCHER: Right ok, that's good. Have you been here during the day?

P08: No

RESEARCHER: No, so you've not seen the natural environment here?

P08: I drove through it a few months ago, (inaudible) just trees, my interest is related to the dark sky rather than the park itself

#### IQ06 Senses

RESEARCHER: Just trees yeah not really that interesting, that's about it. So, when you were looking up at the stars which senses did you use?

P08: my sight is always important for the pictures

RESEARCHER: The sky was quite clear so did you get some good pictures on your camera.

P08: I hope so, they look good on the screen but its dark so hard to say

#### IQ05 Experience

RESEARCHER: Right and obviously if you're doing photography the big thing is actually seeing them rather than the talk of it then, you want the talk as well obviously?

P08: Oh yeah, I'm interested in that just in terms of what I'd like to get out of tonight is probably to get a couple of photos rather than that. What about the rest of the group?

#### IQ03 Learning

RESEARCHER: Most of the people I've spoken to are really interested in just finding out about what they can see. They're all beginners so they've no other interest other than that and then some of them say that they might, you know if they enjoy it, might come again but who knows. Some of them are quite well travelled. So, you haven't been to any other dark sky parks?

P08: I was on a national park tour in America and went to two dark skies to take photos

RESEARCHER: Oh, ok, they've got quite a lot of dark sky parks, haven't they? So, photography in the dark is a real passion

P08: Yes, but I'm only got to do a couple of nights. One night there was a massive storm and another night the campsite was just too bright, so it was quite disappointing. So, this is quite good to get to see them here without the cost.

#### IQ07 Positives and Negatives

RESEARCHER: Ok, so what are the positive experiences from tonight?

P08: I've been able to take a few good photos, I've learnt quite a lot about astronomy in terms of travel and distance which is really thought provoking. Cloud cover has now stopped me from taking more so I think next time I will have to go freelance

RESEARCHER: Freelance?

P08: no event, wild, just going out when there's a good night and finding a good stop, probably here but maybe somewhere else.

IQ08 Feelings about time and place

RESEARCHER: Ok, thank you. So, one final question, does looking up make you feel differently about place and time?

P08: as I've said, distance and time travel is interesting. I remember watching Dr Who as a child and hoped one day it would be possible to travel in time, see the future and all that, but I don't think it will be anytime soon. However, Photos provide a great link to the past, a catalogue of memories, and another way of time travel. I collect old pictures, you never see any of the dark, so I'm trying to create a catalogue for future generations.

RESEARCHER: That sounds interesting, the basis of a good art show, good luck with that. Thank you again for your time.

**Participant Nine: represents someone with a day and night interest in the natural environment**

IQ01 Motivation to visit the Dark Sky Park

RESEARCHER: Did you know about the Dark Sky Park before arrived at this event?

P09: Yes, I had seen it on the local news and always wanted to come and see it for myself, so when I heard this event was on and that there was going to be a professional talk about Vampires I thought it was a way to combine the two. My daughter, here, is very interested in Vampires so I thought it would be something nice for her. (The participant's daughter (Sophie) was 15 so she was not included in the interview transcript)

RESEARCHER: So, why had you always wanted to come to the Dark Sky?

P09: I have a telescope which I put out in the garden, we tend to look at the stars whenever we want to but you can't see much where we live, only about 10, which is OK, but I heard you can see the Milkyway from here, I've never seen it, well I have on the telly and on the Visit Scotland web site. I'm sure she would love it but it might be in the early hours of the morning as there is a little cloud cover tonight.

RESEARCHER: I'm sure she would, it's worth staying up for if there's a chance.

IQ02 Cosmic Knowledge

RESEARCHER: How much do you know about the cosmos?

P09: Since it caught my attention, I have been reading a few books and trying to spot various stars in the sky, I would say I am a keen enthusiast really... a know a little about a few of the recognisable planets

IQ03 Learning

RESEARCHER: This event has a lot of presenters so there are a lot of opportunities to learn about the stars, the park, witchcraft and vampires, which would you like to learn more about?

P09: The stars... Sophie is interested in vampires but I'm sure we will go to them all. There's a star walk later and we're definitely up for that aren't we (talking to daughter – she nods)

#### IQ06 Experience

RESEARCHER: Can you tell me about your previous experience of the Dark Sky Park?

P09: Limited, I've driven through the park a few times during the day, never at night.

RESEARCHER: Is there any particular reason you have not visited at night:

P09: Not really, just not had the chance before. I tend to like doing things with my daughter rather than on my own, and I'm the one with the stargazing interest so the event had to offer something for both of us.

RESEARCHER: would it be OK, for me to come and talk to you tomorrow to learn more about your experience?

P09: yes, anytime, we're not leaving until about 11am so just pop by.

#### **Next Day**

#### IQ04 Experience

RESEARCHER: Can you tell me about your experience last night?

P09: The atmosphere was definitely different. It was very quiet and serious at times, but then it seemed really friendly and light hearted at other times, ... a nice mix, it gave you a sense of being at ease. It wasn't like you couldn't laugh or talk loud as you walked around but the ambiance was definitely silent at times. There were a lot of people, which made it seem even quieter – because a lot

of people should be noisy and it just wasn't. It is not comparable with any other event I've been to as the atmosphere is very different, but it was a good night.

RESEARCHER: Did you feel like the event was authentic?

P09: Yes definitely. The presentation stimulated a lot of conversations around the campfire, the only place where the noise level seemed to rise. Sophie particularly liked some of the characters sat in the tents ... one lady had a jar of twigs, she said she had to collect a few fairies (laugh) not sure which planet she was on but she had some very interested stories that she told Sophie. It made me realize how real some things are to some people, while it was still rather far away for us. It felt distinctly different to me.

#### IQ07 Positives and Negatives

RESEARCHER: Would you recommend this event to family and friends?

P09: Definitely. It's rather small as an event, which is the reason I think it appeals to families, my sister would definitely like it. You don't spend all your time doing one thing, there's a lot to see and if it's not your thing you can move on and see something else, the best bit is the stargazing of course.

#### IQ06 Experience

RESEARCHER: Would you visit the event next year

P09: Yes, I think so. It was very cold here at night, but I would still come back since the speakers change and there might be another chance to see the Milky Way. There are a lot of stories told by those who are here – some want to see aliens, others fairies, a bit mad but fun, Sophie loved it.

RESEARCHER: Would you visit other events in the Dark Sky Park?

P09: Not sure, it would depend upon when, I work full-time so I would need to get time off, I mainly work weekends... most events seem to be on at the end of the week. I would need to be something special, like this one.

## IQ08 Feelings about time and place

When looking into the sky what did you think about this place and time?

P09: This place is special... it has a lot to offer, I can see us coming back during the day to see some of the monuments and wildlife.... We spent our time looking up at the moon and a few stars, but I did get a sense of time being slower on Earth than it is in the sky.... we lay on a blanket and looked up; we could see clearly how quickly the Earth moves. Taking time to do that alone was worth the visit....

RESEARCHER: So, would you say that this place is special or that the sky is special?

P09: ...Um, the sky! Sophie? (The sky).

RESEARCHER: Well thank you for sharing some of your time with me

**Researcher observations:**

Each participant spoke freely with very minimal prompting, demonstrating that the interview approach was effective as rapport was created easily. Each interview was full transcribed using coding headings – these are not represented here as they would affect the generation of the contents pages which relies on references headings. Thus, coloured text has been substituted to highlight interviewee’s responses. Using line-by-line coding in NVivo, categories began to form in each interview. This is in line with the Phenomenographic approach which places individual feeling and meaning at the heart of the study. Each interview followed a similar format, although questions were not always asked sequentially as the process was led by the interviewee with the questions only acting as prompts.

**Interpretation:**

The climate was a significant feature of each interview, as it stimulated feelings and responses in conjunctions with cosmic and terrestrial landscapes. Wandering visually allowed parallels to be drawn with psychogeographic research

Appendix 13: IDA Logo

