

George James Gibbs: Engineer, Astronomer, Inventor and Public Science Lecturer

A history research intern project by
Rory MacDonald for the School of
Education and Social Sciences

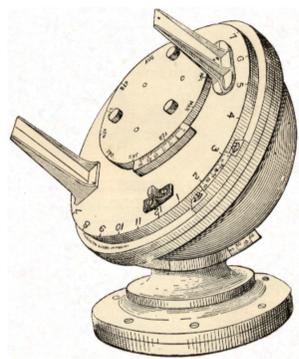
Inventor of the Gibbs Heliochronometer

In 1906 Gibbs applied for a patent for a type of sundial he had designed – the Universal Equinoctial Mean Time Heliochronometer or Gibbs Heliochronometer for short – which was able to accurately determine GMT to within a minute at any time of the year and at any latitude.

The invention filled a gap in the market created by the standardization of time in the 1880s which was only truly alleviated with the broadcast of the BBC pips in the 1920s. Unable to fund the business venture himself he found a willing partner in his then employer, William Renard Pilkington, and together they formed Messrs. Pilkington & Gibbs Ltd. in 1906. The price ranged from £7 10s to £15 15s and promotional material indicates they were supplied to a number of important patrons around the world including HM The King.

They were marketed simultaneously as accurate time-keepers and garden ornaments and were supplied to owners of large, country estates. As an ornament, they fitted into the early twentieth century trends in landscape architecture and were used in garden designs by Mawson and Lutyens.

The lucrative possibilities of the Heliochronometer did not escape the attention of Gibbs' partner who applied for a patent for his own 'Sol Horometer' in 1911 and another two years later. Gibbs obtained a copy of the patents and noted on both: "First [and second] attempt to find a way to escape paying royalties to GJG". Production of sundials by the company ceased with the outbreak of the First World War in 1914 with no record of the partnership continuing in any capacity after 1923. Roughly 1,000 heliochronometers were made before 1914 but many did not survive the recycling of metal in WW2.



Overview of the entire project

The archives of the Preston Municipal Observatory are held by UCLan and the University also owns the Jeremiah Horrocks Observatory, situated at Moor Park. These archives were largely put together by the former curator of the Observatory, George James Gibbs, and contain much astronomical, meteorological and other scientific data. The entire project seeks to put Gibbs' work and the observatory into context, especially given that there were no other municipal observatories in the country where members of the public could view the stars with relative ease.

Introduction

Given how many fields Gibbs was involved with – engineering, astronomy, invention, public science lecturing – there were many potential avenues to research. His invention, the Gibbs Heliochronometer, was the first such avenue but as I researched more, other aspects became as prominent and so the focus altered to include his influence across many of his interests. His professional career was as an engineer but it is his other interests, pursued as an amateur, that the research focused on. The initial brief involved so many aspects – and so much information was found on those below – that I was simply unable to fully follow-up every lead.

Methods

- Archive researching
- Oral interview/testimony
- Digital archiving/resourcing



Astronomer and Curator/Chief Observer of the Preston Municipal Observatory

Gibbs was interested in astronomy from an early age and after moving to Preston he joined the Preston Scientific Society and became the Chairman of the Astronomy and Physics section in 1908. He remained in this position until 1917.

In August 1910 he was appointed Honorary Curator of the Preston Municipal Observatory at Deepdale and introduced a clear and organised programme of observations and in 1912 Gibbs was able to convince Preston Free Library Committee to pay £200 for a telescope that was part of the estate of a recently deceased local enthusiast. The observatory now had a high quality instrument that was superior and easier to use than the previous 18-inch reflector.

In 1912 Gibbs was elected a Fellow of the Royal Astronomical Society. The Deepdale Observatory was in a state of disrepair as early as 1914 but they were unable to start planning for a replacement until after the war. Gibbs began to draw up designs and find a suitable location for a new observatory and chose a site at the north side of Moor Park. Christened 'The Jeremiah Horrocks Observatory', after the 17th century Hoole-based astronomer, it was officially opened on 29th June 1927 to coincide with the solar eclipse on that day and thousands of locals went to Moor Park to observe the eclipse.

The new observatory provided space for public lectures on astronomy and became popular in the region and also began attracting visitors from around the country. He continued to hold the position of Honorary Curator (later Chief Observer) for the rest of his life and he was active in both observations and maintenance up until a couple of months before his death in February 1947.

Member of a Royal Astronomical Society Expedition to Sweden to view the 1914 Solar Eclipse

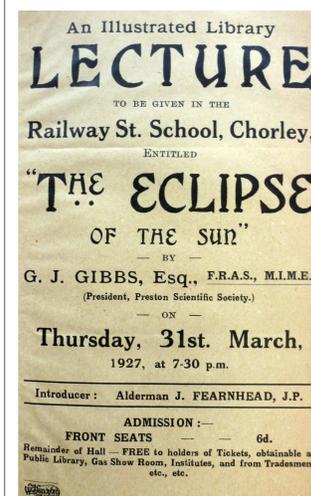
Gibbs was part of an RAS expedition to Hernösand, Sweden to photograph and study the solar eclipse of August 1914 along with Fathers Cortie SJ and O'Connor SJ. They were originally meant to be part of a larger expedition to Kiev but the Russians denied them entry due to their ban on Jesuits. The Great War broke out as they were away and a British Naval cruiser had to collect the party and return them home after they had made their observations.

Conclusions

I was able to find a vast amount of information on Gibbs, the observatory and his work in local area in a number of fields and performing a literature search of potentially relevant articles and books at the beginning of the internship helped to put this into context. Whilst the brief made much of the focus about the Heliochronometer, the research showed it to be just a part of the life work. I personally gained much from this project including honing my skills in practical historical research and also in digital archiving as

Public Science Lecturer in the North West

Gibbs was also a keen lecturer of science and used the Jeremiah Horrocks Observatory as a venue for many of his lectures. He also gave a number of lectures to the Preston Scientific Society and was in demand around the North West of England. He gave lectures on varied scientific subjects to audiences in places such as Chorley, Bolton and also Liverpool University.



His skill was being able to effectively demonstrate scientific principles to a lay audiences and often used very visual aides like slides to achieve this. Frank Holden was regular attendee of the observatory and later had a career as a professional astronomer and in Gibbs' RAS obituary, Holden notes he would have achieved much more in astronomical circles were it not for his sheer enthusiasm for teaching.



much of the material had to be recorded and preserved digitally. I have written a brief biography of Gibbs and an edited version will hopefully get published as an entry in the Oxford Dictionary of National Biographies. I have also tied my dissertation topic in with the research done, and will write it about early 20th Century public science lecturing in and around Preston.