The British Astronomical Association

Historical Section

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Newsletter No. 32 Autumn 2025

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From the Director

Mike Frost

Thanks to all of you who came to Exeter for our Section Meeting. I hope you enjoyed the week-end – I certainly did. The location for our meeting, the Devon and Exeter Institute, was one of the most impressive locations we have ever met at, in a beautiful location overlooking Exeter Cathedral. The DEI is an impressive establishment, recently renovated, and we were given a tour by DEI members John and Shane. The library is particularly impressive; librarian Sonia had set up a display of some of the DEI's astronomical treasures, including the lunar half-globe made by Roger Langdon, the stationmaster astronomer, whose 200th birthday we were celebrating. Thanks to our speakers – Bill Barton, Carolyn Kennett, Bea Steele and Wayne Orchiston – for a memorable set of talks; and to Debbie Manners, who was my contact at the DEI.

Another highlight of the weekend was the visit on Sunday morning to the Norman Lockyer Observatory in Sidmouth. Once again, a big thanks to David Strange for setting up the visit, and to the NLO society members who showed us round. A particular memory for me was seeing the radio echoes of the prolific daylight Arietid meteor shower. The NLO is an extraordinary astronomical resource in the south-west of England.

I am hoping that we will hold a section meeting in the north of England next year. I am still looking for a venue, so please let me know if your society might be able to help. Hopefully, we'll announce our 2026 meeting in the next newsletter.

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I'd like to tell you about a book I read over the summer, "Astronomer Norman Pogson and his amazing family" by Sarita Armstrong, Norman Pogson's great-great-granddaughter. Norman Robert Pogson (1829-1891) was an astronomer at the Radcliffe

Observatory in Oxford, then an assistant at Hartwell House (see my article later in the newsletter); then he became the government astronomer in Madras, India (now Chennai), where he spent most of the rest of his life. Pogson is probably best known to historians of astronomy as the man who standardised the magnitude scale, defining the difference in brightness of one magnitude as a luminosity ratio of the fifth root of a hundred ($\sqrt[5]{100}$, so that five magnitudes is exactly 100 times more luminous). In recent years, Biman Nath has discovered that Pogson observed the spectroscopic D3 line of helium at the eclipse of 1868, ahead of Norman Lockyer and Jules Janssen, who were previously thought to be the discoverers. You might remember Wayne Orchiston telling us this when he gave the section a Zoom lecture about the 1868 eclipse three years ago.

Why wasn't this discovery better known at the time? Because the eclipse report Pogson produced only ran to three copies, and none of the three copies made it back to the UK. The received wisdom is that Pogson was isolated at Madras, given little funding, and largely ignored by George Biddell Airy, the Astronomer Royal. This is held to be due to Pogson's background - he was not a Cambridge mathematics graduate, rather self-educated, so didn't fit in with the astronomical establishment.

Sarita Armstrong broadens the perspective. She points out that Pogson was well-respected in Madras and chose to settle there with his family rather than returning to the UK. Perhaps Pogson had decided that being director of the Madras observatory was status enough. It would have been good to be able to view Pogson's observatory and judge his standing in the city from the building and location, but unfortunately, little remains from Pogson's time in Madras. The observatory was demolished soon after he died - I tried to find the site when I worked in Chennai a few years ago, without success.

I was intrigued to find out more about Pogson's daughter, Elizabeth Isis (known as Isis), who was his assistant for many years in Madras - the book contains the first image I have seen of his daughter. Again, Sarita's book adds considerably more context to her story. Norman Pogson originally wanted his son, Norman Everard Pogson, to be his assistant, but Everard died young from a tropical disease. Isis may have been a second choice, but she was competent at her job, and took on the extra responsibilities as government meteorologist, as well as running her father's household after the early death of his first wife Elizabeth Jane Ambrose (although that ended somewhat awkwardly after Pogson re-married).

You may remember that Isis Pogson was one of the female astronomers for whom the BAA was able to secure the naming of a commemorative asteroid, with the help of Rik Hill, retired from the Catalina Sky Survey. I was keen to honour Isis Pogson, as she was one of the first professional women astronomers; moreover, the first female astronomer to be nominated for RAS fellowship, though she was voted down because of her gender. I was delighted when asteroid 53818 was named for her.

However, it turns out that I was 168 years late! Norman Pogson discovered 8 asteroids during his career, and he gave them the middle names of the eldest eight of his nine daughters. So, Isis Pogson already has asteroid 42, "Isis", named for her in 1856 (and as a fan of the Hitchhiker's Guide to the Galaxy, I can't tell you how pleased I am with that particular number!). She would be by no means the first person to have two asteroids named for her – Dorothea Klumpke of the BAA has two, for example. Pogson's other asteroid discoveries are 43 Ariadne, 46 Hestia, 67 Asia, 80 Sappho, 87 Sylvia, 107 Camilla and 245 Vera.

So, I would commend Sarita's book to you. There are parts which will be a little grating to astronomers – Sarita tends to categorise people by their star-signs, for example, and in places imagines dialogue to move the story along. But this is neither an astronomical book nor an academic biography. Rather, it's a very readable family history, with an astronomer at the heart of it.

There is one further connection to the historical section which I should tell you about. Pogson founded the solar observatory at Kodaikanal, in the hills of southern India, which eventually replaced the Madras observatory; the Pogson family had a summer home nearby, which Sarita visited during her research. The second director of this observatory was John Evershed, and his wife and observing assistant was Mary Acworth Evershed (née Orr), first director of our Historical Section, who I have written about many times before in this newsletter.

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Finally, a quick update on two of the campaigns we have been running. George Seabroke, the keynote speaker at our Historical Section Meeting in Ipswich last year, is working on a proposal to renovate the Clark Refractor at Rugby School and bring the Temple Observatory back to life. He's hoping to get the technologists at the Mullard Space Science Laboratory interested in the renovation. Let's see what happens.

However, there has been no progress on a plaque for William and Margaret Huggins. I guess that I hadn't appreciated that a blue plaque commemorates a building rather than an occupant, even if the reason the building is famous is because of who lived there. As nothing remains of the Huggins' Tulse Hill house and its observatory, I suspect that we are not going to get a plaque. Sorry.

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Hartwell House

Mike Frost

In the last edition of the newsletter, I wrote about my visit to Shuckburgh Hall, to the south of Rugby (the town where I live); a grand old house which once featured a working astronomical observatory on its roof. The owner of the house and the observatory was Sir George Evelyn Shuckburgh, who has a crater named after him on the Moon. Little survives of the observatory, but Sir George is remembered with pride at Shuckburgh.

Visiting Shuckburgh reminded me that there was another house, a little further away from Rugby but still easily visitable for me, which also used to feature an observatory, whose owner was also commemorated by a lunar crater. It's called Hartwell House, and it lies to the west of Aylesbury, Buckinghamshire, about fifty miles south of Warwickshire.

So, of course I went there!

The house dates from around 1660, although both house and estate have been remodeled many times. It was originally built by the Hampden family, who were involved in the English Civil War (1642-1651). After two generations, there was a lack of male heirs, so the family named changed to Lee, after a wealthy London family that the Hampdens had married into. The house remained in the Lee family until 1936, although at times it was

rented out. The most famous tenant of the house was the French King Louis XVIII (1755-1824) who was present in the house from 1809 until his return to France from Exile in 1814. He brought with him a retinue of 140 courtiers and servants, who occupied the house *en masse*, in impoverished circumstances, and took to growing vegetables on the roof.

After King Louis had departed, the Lee family returned. The owner was the sixth Baronet, Sir George Lee, and when he died without children in 1827, the house passed to a distant relative - our astronomer, Dr John Lee.

John Lee (1783-1866) was born John Fiott, the eldest son of John Fiott MP and Harriet, daughter of William Lee of the Lee family. He was orphaned young and brought up by his uncle William Lee Antonie. He studied Mathematics at St John's College, Cambridge, where he was 5th wrangler (i.e. placed 5th in the exams, a considerable achievement) in 1806. He travelled extensively between 1807 and 1815, including the Eastern Mediterranean, where he acquired a collection of antiquities, which he eventually put on display in Hartwell House and the nearby chapel. When William Lee Antonie died in 1815, John inherited his estate, on condition that he took the Lee surname. John Lee married Cecilia Rutter in 1833, and, after Cecilia's death, Louisa Catherine Wilkinson in 1855.

Once John Lee took ownership of the house, it became a place of learning. Lee was a man of modest taste, renowned for dressing simply, and a teetotaller who also eschewed tobacco. But he enjoyed the company of intelligent men and women. He invited up to forty guests each year to Hartwell. Pre-eminent among his guests was Admiral William Henry Smyth of Bedford, the author of the "Cycle of Celestial Objects", and his daughter Henrietta. Henrietta is also well-known as the mother of Robert Baden-Powell, the founder of scouting.

In 1833, Lee decided to build an observatory, as an extension to the library in the south-east corner of the House (the National Trust booklet says "south-west corner" but Lee's own account, below, states south-east corner, which fits in with the present location of the library). The observatory consisted of an anteroom, a transit room allowing observations of transits due south and due north, and an equatorial tower, for observing anywhere in the sky.

In 1839, when Smyth moved to Wales to build the Bute dock in Cardiff, he sold Lee the 5.7-in (145mm) refractor, with optics by Tulley, with which he compiled the Cycle of Celestial Objects (in particular, Volume 2, the "Bedford Catalogue", a comprehensive and evocative list of objects observed from Smyth's home in Bedford). On return from Cardiff, Smyth moved to Stone, the nearest village to Hartwell, and observed with Smyth from his observatory.

In 1851 Smyth wrote a history of Hartwell House and the Lee family, "Aedes Hartwellianae: Notices of the Manor and Mansion of Hartwell", with illustrations of the observatory and its astronomers, and a substantial catalogue of observations. These included meridional measurements of stars by Lee and his assistant Mr James Epps; and positional and colour measurements of double stars, primarily by William Smyth. Of particular interest to Smyth was the double star gamma Virginis, whose position angle changed measurably as the two stars orbited each other over the years. The recently discovered Encke's comet, the first known short-period comet, was another target.

Lee's "Account of the Observatory at Hartwell House", published in the Royal Astronomical Society's Monthly Notices in 1854, gives a further idea of the accomplishments of the observatory. Lee refers to himself and his friends as "The Hartwell Synod", evoking the idea of a church's governing body. The other named members of the synod include opticians Tulley and Dollond, and Vulliamy, the clockmaker. Intriguingly, in Aedes Hartwellianae (p.252), Smyth tells us that there were three other meridional observatories close to Hartwell, so presumably their owners, Rev. J.B. Reade, Rev. Charles Lowndes and Mr. Thomas Dell were other members of the synod. Mike Leggett of the Society for the History of Astronomy, who is compiling a booklet about the Hartwell Synod, tells me that, as local landowner, John Lee had the right to choose who became rector of any church in the locality, and took advice from the Royal Astronomical Society on suitable candidates.

I came across Hartwell when I was researching the life of the Revd George Fisher, who was astronomer chaplain at Greenwich School (before retiring to Rugby). Fisher, who taught navigation, assisted in the calculation of the exact latitude and longitude of several observatories, including Hartwell House. I also knew John Lee as one of the nominees of Revd. Richard Rouse Bloxam, author of Urania's Mirror, to be a Fellow of the Royal Astronomical Society (see "The Reverend Richard Rouse Bloxam and a Box of Stars" in newsletter 23). I also knew about Hartwell through Norman Pogson (see the editorial), who was director of the Observatory from 1859 until Pogson was appointed government astronomer in Madras in 1861. Finally, in my recent contribution to "Who's Who in the Moon", I talked about the campaign, launched by William Radcliffe Birt, to produce a detailed Moon atlas. John Lee and William Smyth did some of the mapping for this from Hartwell, and both have lunar craters named for them.

John Lee was elected a Fellow of the Royal Astronomical Society in 1824 and a Fellow of the Royal Society in 1831. He was also a Fellow of the Society of Antiquaries of London, a Fellow of the Philological Society, and founding president of the London Society of Numismatics (coin-collecting; Lee, of course, had an excellent collection of coins from antiquity). In 1850 he hosted the inaugural meeting of the British Meteorological Society at Hartwell – this later became the Royal Meteorological Society. He was RAS president 1855-1857.

The observatory didn't survive long after John Lee's death in 1866; he left no children; the House passed to another branch of the family and the observatory was dismantled. The only part remaining is Smyth's telescope, which is now on display in the Science Museum in London.

Hartwell Hall stayed in the wider Lee family, until the line died out in 1936. It was sold to Ernest Cook, whose plans to develop the estate were thwarted by World War 2, when troops were billeted there. Cook eventually let Hartwell to the "House of Citizenship", a girls' finishing school. The school, under the unconventional headmistress Dorothy Neville Rolfe, was initially a success, but in 1963 there was a fire which damaged parts of the school. Cook sold the house to Richard Broyd, who turned it into a hotel. In 2008, Broyd gave Hartwell House, and two other hotels, to the National Trust, and the Trust now run the hotel.

So, of course I stayed there for a night! The National Trust advertises a mid-week deal during the winter, so I was able to stay a night in March at a reasonable cost. I pre-warned the hotel that an astronomer was coming, and they gave me a tour round the house.

The most impressive part was the main staircase, which boasts an “honour guard” of wooden statues, built for King Louis (although his queen didn’t like them, and had them taken down). There are conventional military statues, and gargoyles – and a baluster of Winston Churchill, complete with cigar, installed when the staircase was renovated post-war.

The library, the room to which Lee added the observatory as an extension, is still a library, with a collection of antique books protected by wire cages. But there is now no sign that the observatory extension ever existed.

The hotel is a very nice play to stay, with a dining area offering an exquisite (if pricey) dinner menu – I had scallops with pork belly for starters, and beef wellington as a main course, both to be savoured. There is a spa too, so I had a swim before breakfast the next day. The grounds are extensive, and offer some nice strolls, although sadly, there are HS2 excavations just to the east of the estate.

It’s an excellent place to take a short break; the home of the Hartwell Synod.

Sources:

National Trust booklet, “Hartwell House” (2012)

Wikipedia articles for Dr John Lee, William Lee Antonie and William Henry Smyth

John Lee’s obituary in Monthly Notices of the Royal Astronomical Society, Vol. 27, p.97

“Account of the Observatory at Hartwell House”, Lee, J.; Monthly Notices of the Royal Astronomical Society, Vol. 14, p.215

“Aedes Hartwellianae: Notices of the Manor and Mansion of Hartwell”, by Captain W.H. Smyth RN (London, 1851)

“A Cycle of Celestial Objects, for the use of naval, military and private astronomers, observed, reduced and discussed by Captain W. H. Smyth” (1844), in 2 volumes:

Vol. 1

Vol. 2

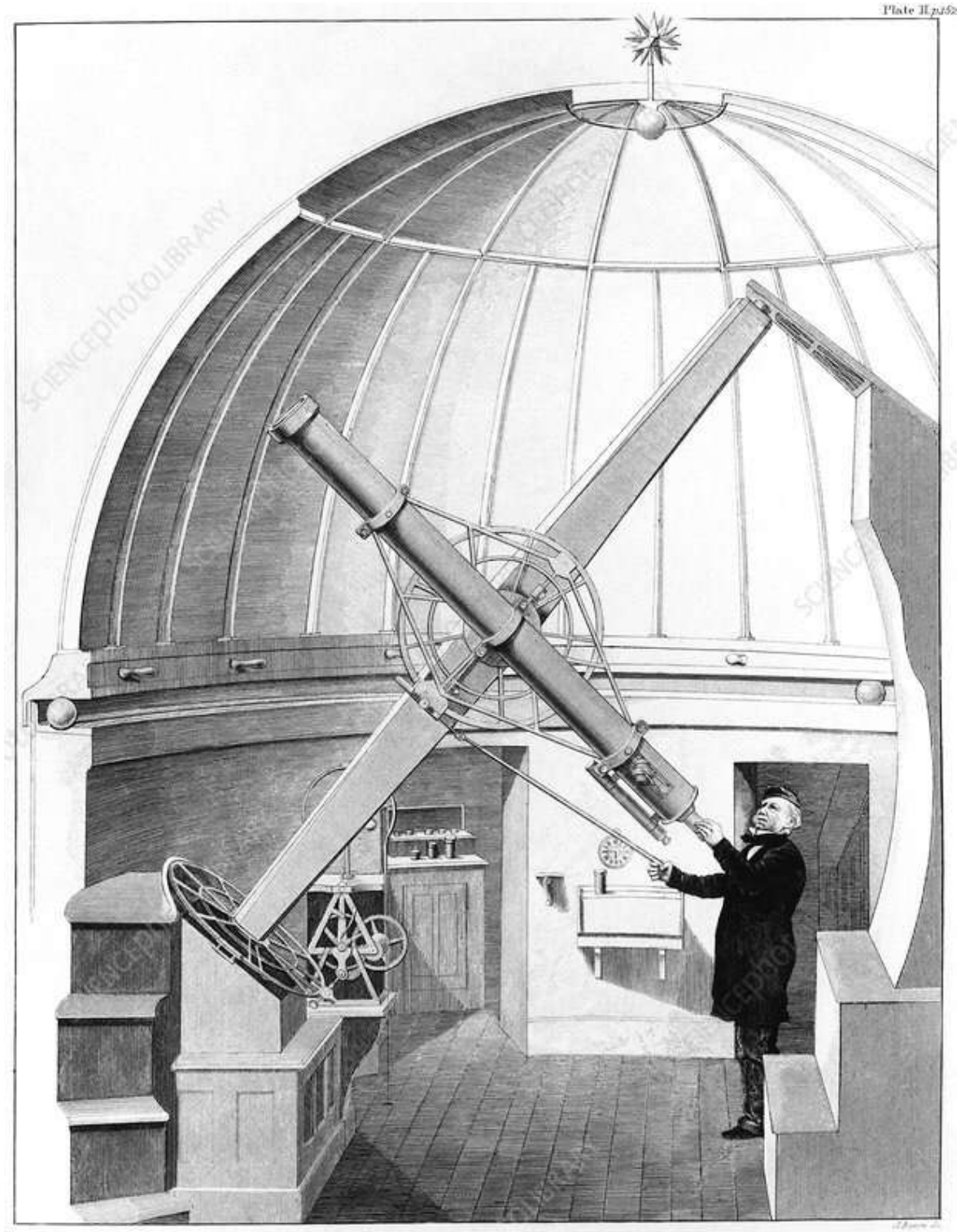
A sequel to the Cycle was “Speculum Hartwellianum: the Cycle of Celestial Objects continued at the Hartwell Observatory to 1859. With a notice of recent discoveries, including details from the Aedes Hartwellianae”, Smyth, W.H. (London, 1860). I haven’t seen a copy of this. The entry for Lee in the BAA’s “Who’s Who in the Moon” (Memoirs of the British Astronomical Association, Vol. 34, p.72) implies that this is where his and Smyth’s lunar observations were recorded.

Hartwell House entrance. The statue is of Prince Frederick, second son of George III.

The southern face of Hartwell House. The observatory was an extension to the library, on the right-hand side.

The main staircase, with a guard of honour for King Louis XVIII.

A later addition to the balustrades – Winston Churchill, complete with cigar.



William Henry Smyth (1788-1865), British astronomer, using a telescope with an equatorial mount in the dome at Hartwell Observatory. Smyth served as a captain in the Napoleonic Wars, reaching the rank of Admiral after he retired. He established a private observatory at Bedford, England, and published many of his observations. He was President of the Royal Astronomical Society (1845-1847). Published in Smyth's 'Aedes Hartwellianae' (1851) on the astronomical history of Hartwell House, Buckinghamshire, England, used as an observatory by the British astronomer John Lee (1783-1866) and by Smyth from 1839 to 1859. Credit: Royal Astronomical Society/Science Photo Library.

Figure 1, plate 4, from the book Aedes Hartwellianae, or notices of the manor and mansion of Hartwell, by W.H. Smyth (London, 1851). Inscribed above right: ‘Plate IV. Inscribed below: ‘Hartwell House & Observatory. (from the South.) (Morning.). J. Basire, Sc

A large observatory telescope at Hartwell House, with an astronomer using a transit telescope. Engraving by James Basire (1851). Credit: The Wellcome Collection.

John Lee. Lithograph by “P.J.”. Reddit: The Wellcome Collection.

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FOLLOWING THE TRAIL OF THE ‘FLETCHER TELESCOPE’

Wayne Orchiston

Introduction

Seeing Mike Frost’s interesting article in the previous *Newsletter* about his visit to Shuckburgh Hall reminded me of another famous historic refractor with an English Equatorial mounting. This is the ‘Fletcher Telescope’ that is now at the Wanganui Observatory in Whanganui, New Zealand.

The Early History of the Telescope

In 1859 Isaac Fletcher (1827-1879), an amateur astronomer living near Carlisle in far NW England, ordered a 9½-inch (240mm) refractor tube assembly from Thomas Cooke & Sons. But he also arranged for his brother, Henry Allason Fletcher (1834-1884), who owned the nearby Lowca Engine Works, to make a cross-axis English equatorial mounting for the telescope. This was the first *all-metal* English Equatorial Mounting ever made; all previous mountings were made of wood. So, in museum parlance, Fletcher's telescope is a 'type specimen' and of international importance.

That said, if you rely on H.C. King's *The History of the Telescope* to learn about this telescope you will be confused. This is because this claims that the first owner of the 9½in Cooke Telescope actually was John Fletcher Miller (1816-1856), and that Fletcher only acquired it in 1859, three years after Miller died. This is not true - Miller never owned the telescope. King (1915–2005) is normally a reliable source, but on this occasion he was mistaken because of an amazing combination of coincidences: Miller and Fletcher were friends and both lived in NW England; 'Fletcher' was a common element in their names; both observed double stars and published in both the *Monthly Notices of the Royal Astronomical Society* and *Memoirs of the Royal Society,* including each other's observations; both also originally owned 4-in (100mm) Cooke refractors; both became *Fellows* in 1849; and both were elected Fellows of the Royal Society. In fact, it was their 4-in Cooke refractors that King mistook for the 9½-in Cooke!

I know from personally checking Cooke & Sons archival records (including order books) that Fletcher commissioned the 9½-inch telescope in 1859. When it arrived at Greysouthern, near Carlisle, he constructed a new observatory for it (see Figure 1 in Orchiston, 2016), and his plan was to link up with William Henry Smyth (1788-1865) and re-observe all the objects in the 'Bedford Catalogue', then publish a new edition of Smyth's 1844 *Cycle of Celestial Objects*. But Smyth died in 1865 and Fletcher soon found that he faced a massive undertaking. This proved too much for him, especially once he became a busy Member of Parliament, and in 1879 he committed suicide. Subsequently, barrister and well-known amateur astronomer George Frederick Chambers (1841-1915) published the new Bedford Catalogue in 1881, retaining Smyth as a co-author.

The Indian Connection?

After Fletcher died the telescope was purchased around 1880 by an engineer named Samuel Chatwood (1833-1907), who built an observatory for it at Worsely, near Manchester. Figures 1 and 2 show Chatwood's observatory, and the telescope mounted in the observatory.

Samuel Chatwood was a successful businessman, and it is clear that he hardly had any time to observe with the telescope, but recently the late Ramesh Kapoor and I have suggested that it may have used by his son Arthur Brunel Chatwood (1866-1915) to gain experience in using a 'moderately-sized' refracting telescope. This then stood him in good stead in 1908 when he was appointed Director of the Nizamiah Observatory in Hyderabad, India, which boasted a 15-inch (380mm) Grubb refractor and 8-inch (200mm) Cooke astrograph (see Figure 3). Currently, this is mere conjecture, so any information BAA Historical Section members or SHA members can provide about Arthur Chatwood's

involvement in astronomy in England prior to moving to India in 1908 would be most welcome (please email me at: wayne.orchiston@gmail.com).

The Final Phase: Transfer to New Zealand

In 1902 one of New Zealand's leading amateur astronomers, Joseph Thomas Ward (1862-1927), purchased the Cooke Telescope for the newly-formed Wanganui Astronomical Society in the coastal North Island city of Whanganui. The following year it was installed in the Society's new observatory near the centre of the city (Figure 4) - where it remains to this day. It is situated on a hill overlooking Cooks Gardens, a sporting facility that achieved international fame in 1962 when the New Zealand middle-distance runner Peter (later Sir Peter) Snell (1938-2018) set a new World Record of 3 minutes 54.4 seconds for the Mile race there and then went on to claim Gold Medals in the 800 metres and the 1500 metres at the 1964 Tokyo Olympics (having earlier won a Gold Medal in the 800 metres at the 1960 Rome Olympics).

The Wanganui telescope was of modest aperture, so initially it was committed to astronomy education and outreach, but Ward realized that it was still capable of some original research. So, in 1904 he and local lawyer and amateur astronomer Thomas Allison (1858-1926) used it to search for new southern double stars. Over the next six years they made 212 discoveries, and today 88 of these are still recognised as Wanganui discoveries and appear with NZO (New Zealand Observatory) designations in international double star catalogues.

Succeeding J.T. Ward as Director of the Wanganui Observatory was his son, William Herschel Ward, who focused on the educational potential of the telescope, a role that continues to this day. Figure 5 shows a recent view of this historic English telescope, which has a special place in the technological history of telescope mountings.

Further Reading

Fletcher, I. 1865. Description of an equatorial mounting. *Monthly Notices of the Royal Astronomical Society*, 25, 241–243.

Hingley, P., 2013. The Shuckburghs of Shuckburgh, Isaac Fletcher, and the history of the English mounting. *Antiquarian Astronomer*, 7, 17–40.

King, H.C., 1979. *The History of the Telescope*. New York, Dover.

Orchiston, W., 2016. *Exploring the History of New Zealand Astronomy: Trials, Tribulations, Telescopes and Transits.* Cham (Switzerland), Springer. See pages 293–313.

Orchiston, W., and Kapoor, R.C., 2023. Indian initiatives to establish 'Western' astronomical observatories prior to independence. 1: The aristocrats. *Journal of Astronomical History and Heritage*, 26(4), 923–952.

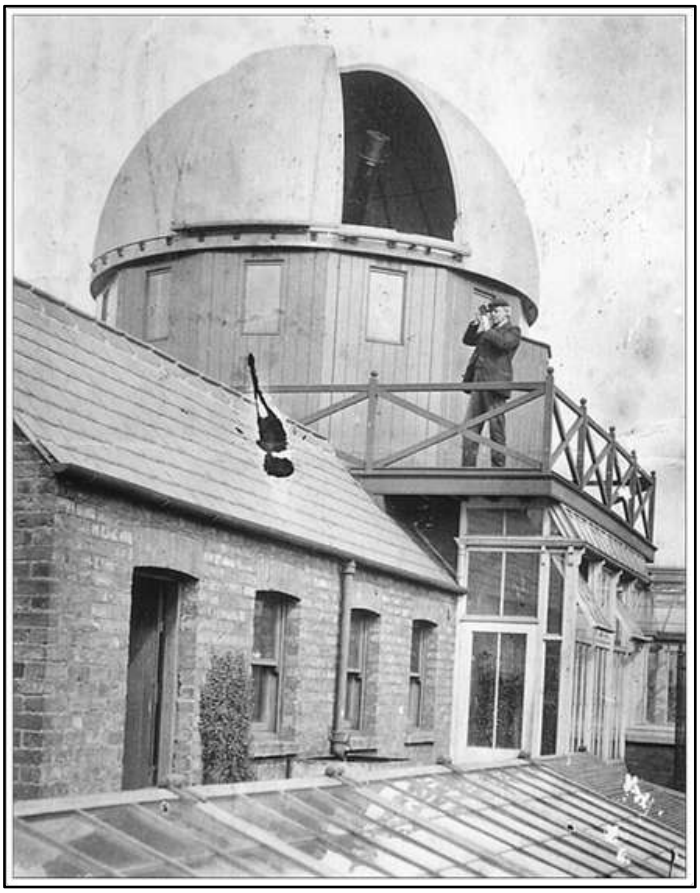

Figure 1: Chatwood's observatory at Worsley, near Manchester. The man on the balcony with a sextant is the London physician and astronomer Dr. Alfred Henry Fison, author of the 1898 book *Recent Adventures in Astronomy* (courtesy: Wanganui Observatory).

Figure 2: A view of the telescope mounted in Chatwood's observatory at Worsley (courtesy: Wanganui Observatory).

Figure 3 (left to right): Arthur Chatwood, Nawab Zafar Jung Shamsul Mulk Bahadur (the Indian aristocrat who owned the Nizamiah Observatory) and Charles Michie Smith (the Director of Kodaikanal Observatory) posing beside the mounting of the 15-inch Grubb telescope (Wikipedia image)

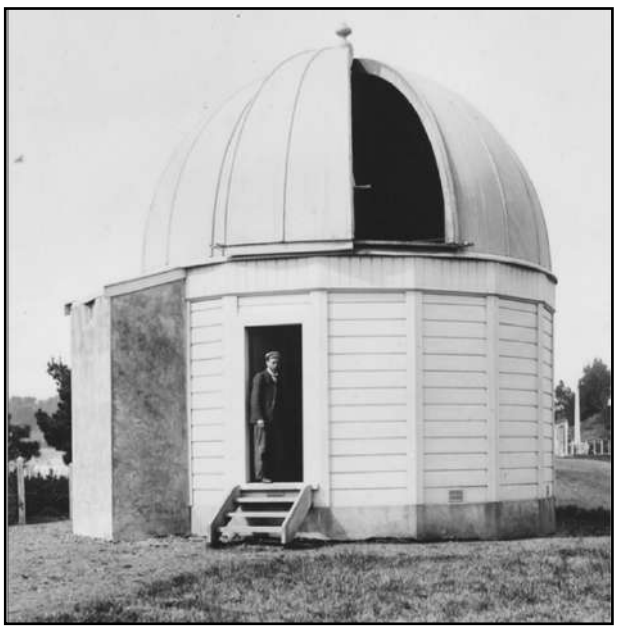

Figure 4: The 20-ft diameter wooden observatory erected to house the Cooke telescope at Cooks Gardens, Whanganui, was opened by the Premier of New Zealand, the Right Honourable Richard Seddon, on 25 May 1903. Later a lecture room and offices were added, along with a second dome for a smaller refractor (courtesy: Wanganui Observatory).

Figure 5: A recent photograph of the telescope in Whanganui (courtesy: Wanganui Astronomical Society).

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CONFERENCES GALORE

Wayne Orchiston

This year really has kept Darunee Lingling Orchiston (henceforth DLO) and me busy with conferences, which in the past four months have taken us from our home in northern Thailand to New Zealand, England, and Australia (in that order). But even before New Zealand we had a Seminar in Sydney (Australia) that we attended virtually, and for two weeks we visited the University of Science and Technology of China in Hefei, in connection with my job as Co-Editor of the *Journal of Astronomical History and Heritage* (the University now owns the journal).

The half-day 2 February seminar will be of interest to readers of this *Newsletter* as it was hosted by the Sydney City Skywatchers at Sydney Observatory to celebrate the founding 130 years ago of the New South Wales Branch of the BAA (the Skywatchers succeeded the Branch). Among the papers was one presented by Professor Nick Lomb

about a Branch stalwart, George Denton Hirst (1846–1915), based on a paper that Nick, Dr. Andrew Jacob (from the Museum of Applied Arts and Sciences, in Sydney) and I published last year in the *Papers and Proceedings of the Royal Society of New South Wales*. At the February 2025 seminar Andrew presented a paper about the restoration of the 18-inch reflector (Figure 1) that was donated to the Branch back in 1919 by George Herbert Hoskins (1883–1953), a keen Sydney amateur astronomer and one of the founders of the Australian steel industry. Colin Bembrick and I (both former Presidents of the NSW Branch) then expanded on Andrew's talk in presenting "George Hoskins and Mark Howarth: Patronage and Personalities in NSW Amateur Astronomy". English-born Mark Howarth (1884–1971) also was involved in the Australian steel industry and was linked to Hoskins by marriage. He lived in the industrial city of Newcastle north of Sydney, and during the 1940s and 1950s was the Branch's leading variable star observer. The paper by Colin and me was based on one with a similar title that was published in the June 2025 *Journal of Astronomical History and Heritage*: "The role of patronage in Australian amateur astronomy: George Hoskins and the New South Wales Branch of the British Astronomical Association" This issue comprised the proceedings of the October 2024 ICOA-10 conference held in Samarkand, Uzbekistan, where the theme was "Patrons and Patronage in Middle Eastern and Asian–Oceanic Astronomy." Actually, by default our *JAHH* paper ended up being the only one on 'Oceanic Astronomy'. I had given a Zoomed presentation on King George III, Cook and the Tahitian 1769 transit of Venus at the Samarkand Conference, but did not have time to convert this into a manuscript and include it in the *JAHH* conference issue.

The conferences DLO and I attended in person began on 9-11 May with the Annual Conference of the Royal Astronomical Society of New Zealand in the coastal North Island city of Whakatane. Since Glen Rowe and I formed the Historical Section of the RASNZ in November 2022 it has gone from strength to strength, as reflected by the number of historically-oriented talks and posters at these annual conferences. This year our Section had four oral presentations and 14 posters in a very full 2-day programme.

One of the Section's valued overseas members, Dr. Hisashi Hiyakawa (Figure 2) from Nagoya University, gave a talk where he explained how New Zealand could make a major contribution to our international understanding of historic space weather events, because of our nation's unique geographical position on the globe, the plethora of regional and local newspapers there, and a relatively large scientifically literate population that was happy to report their observations in these newspapers. This paper built on two posters we displayed at last year's conference. Secondary school science teacher and former RASNZ President and Secretary John Drummond (Figure 3) reported on New Zealand observations of the Great Comet of January 1910, C/1910 A1, which many people later mistakenly remembered as Comet 1P/Halley (which graced New Zealand skies three months later). This study formed part of John's part-time off-campus research on New Zealand cometary astronomy for a PhD with the Centre for Astrophysics at the University of Southern Queensland in Australia, which I am co-supervising. Meanwhile, my own historical conference paper was a review of astronomical history in the Bay of Plenty-Taupo-Coromandel Peninsula region from Māori times through to the present day, co-authored by the presidents or former presidents of the (local) Whakatane, Tauranga and Rotorua Astronomical Societies. The title slide of this ppt presentation is shown in Figure 4. Amongst other topics, we discussed a number of solar eclipses that would have been visible to Māori astronomers (weather-permitting), observations by Cook and Green of the

9 November 1769 transit of Mercury (after their successful observations, in Tahiti, of the June 1769 transit of Venus), astronomical activities of the well-known Thames amateur astronomers Henry Severn and John Grigg, Dr Frank Bateson's Directorship of the Variable Star Section of the RASNZ, and known meteorites from the region.

The historical posters displayed at the Whakatane conference were on the following topics:

"Welcome to the RASNZ's Historical Section: researching the past to understand the present and the future" by Wayne Orchiston and Glen Rowe

"Māori cometary astronomy and the Tarawera [volcanic] eruption" by Wayne Orchiston and John Drummond

"Observations by Cook and Green of the 9 November 1769 transit of Mercury from the Coromandel Peninsula" by Wayne Orchiston, Darunee Lingling Orchiston, and Glen Rowe

"Henry Severn of Thames and his 11-in Newtonian reflector: the largest telescope in New Zealand in 1874" by Wayne Orchiston

"John Grigg: Thames' other talented amateur astronomer" by Wayne Orchiston

"Grigg, Skjellerup and their comet: the Kiwi connection" by Wayne Orchiston and John Drummond

"New Zealand observations of the Great Comet of 1881" by John Drummond and Wayne Orchiston

"The international importance of the 9.5-inch Cooke refractor at the Wanganui Observatory" by Wayne Orchiston and Ross Skilton

"The historic 6-inch refractor at the New Plymouth Observatory: New Zealand's only known Alvan Clark telescope" by Wayne Orchiston and Rod Austin

"The Whakatane Astronomical Society and the historic 8-inch Grubb 'Tebbutt Telescope'" by Wayne Orchiston and Norman Izett

"Carter Observatory's involvement in early New Zealand radio astronomy: Ivan Thomsen's 1948 *Nature* paper" by Wayne Orchiston

"University of Canterbury research in radar meteor astronomy: the Rolleston Field Station" by Jack Baggaley and Wayne Orchiston

"Peter Read and his observations of the Moon and planets: a selection of drawings from his Observations Book" by Wayne Orchiston

"The 1989 Opotiki bolide: in search of a new carbonaceous chondrite from the North Island of Aotearoa/New Zealand", by Wayne Orchiston and John Drummond

A number of these posters have links to England, and one of them is shown in Figure 5. I am happy to send free pdf copies of these posters to anyone interested - just email me (wayne.orchiston@gmail.com)

In addition, at the Whakatane Conference I promoted the collaborative research of the RASNZ's Historical Section and its Fireballs Aotearoa Section by presenting a coauthored

oral paper on “Introducing New Zealand Meteorites: Welcome Visitors From Outer Space”. The authors were members of both Sections, and this paper built on two posters we prepared for last year’s RASNZ Conference.

During and after the conference there were excellent opportunities to discuss some on-going collaborative research projects with Historical and Fireballs Aotearoa Section members, both in Whakatane and in Auckland.

After a brief visit to our home back in Thailand DLO and I were off to Exeter, where for the first time I was able to attend an Annual Meeting of the BAA Historical Section in person, instead of only being represented by posters. This time it was my pleasure to meet Section members and talk about the famous Australian amateur astronomer John Tebbutt (1834-1916), who was the founding President of the New South Wales Branch of the BAA when the Council in London approved its formation on 28 November 1894. Two of the original Windsor Observatory buildings remain, and these have been turned into a small but attractive museum of astronomy and a tribute to Tebbutt’s genius (see Figure 6). While staying in Exeter, DLO and I also enjoyed two visits to the famous Norman Lockyer Observatory (NLO) at nearby Sidmouth, and the talk that Mike Frost gave there. I am sure that Mike or Bill Barton will have more to say in this *Newsletter* about Exeter and the NLO, so I won’t dwell on the other papers presented at the Historical Section Meeting.

After a brief visit to Paris *en route* back to Thailand it was time to head for Melbourne in Australia, where DLO and I attended the 7-11 July IAU-sponsored Oxford XIII Cultural Astronomy Conference. For some years DLO and I have been championing the new field of “Multidisciplinary Ethnoastronomy” where we assimilate disparate data drawn from anthropology, astronomy, genetics (especially mtDNA), geology, hominid paleontology, linguistics, palaeoclimatology and prehistory to trace demographic and environmental changes in the Indian and SE Asian region over the past 70,000 years and try to correlate these with changes that must have taken place in indigenous astronomical systems. In only the second paper of the conference we were able to outline our work and discuss examples drawn from SE Asia and also New Zealand (and its original settlement by Polynesian peoples). We also pointed to future areas of research. I used to live and work in Melbourne 50 years ago, so it was astonishing to see how the city (and suburbs) had changed and grown. One of the highlights of our Melbourne visit was to see Old Melbourne Observatory again, which now functions as a major tourist destination. Meanwhile, we were thrilled to hear the latest news on the plan to soon return the refurnished 48-inch Great Melbourne Telescope to its original roll-off roof building at the Observatory site.

After Melbourne DLO and I flew to Sydney to celebrate my 82nd birthday with most of my siblings (a couple of whom I had not seen for decades). The following evening, I gave a lecture to the Western Sydney Amateur Astronomy Group on “Ken Beames and Linden Observatory: some historical reflections on telescopes and telescope-making in Sydney”. I first met Ken Beames (1899-1989) in 1959, soon after moving from New Zealand to Sydney as a teenager, and at the time was in awe of his achievement as a telescope-maker. He was yet another stalwart of the BAA NSW Branch, and by 1959 had completed impressive-looking 24-inch and 17-inch reflectors and a 6-inch refractor guidescope all on a single massive German equatorial mounting (see Figure 7), and installed this in an observatory at Linden, under the dark skies of the Blue Mountains west of Sydney. After discussing Beames, I talked about earlier ‘large’ telescopes made and/or used by Sydney amateur

astronomers, including three 18-inch reflectors (one being the afore-mentioned ‘Hoskins Telescope’), and the 20-inch Catts Telescope made by Grubb, which after a succession of amateur owners in Sydney ended up at Mt Stromlo Observatory and at Mt. Bingar doing site testing and astrophysical research. I then provided information on some ‘large amateur telescopes’ in other States of Australia. The meeting attracted a good local audience, with an equal number attending on Zoom, including colleagues from Melbourne and even New Zealand. It was a good evening...

As you may have gathered, I really enjoy researching astronomical history, and sharing some of my findings with colleagues at seminars and conferences (both in person, and virtually). Coming up later this year are conferences in the USA, Indonesia and China. Hopefully, I’ll have something to say about these in the next *Newsletter*.

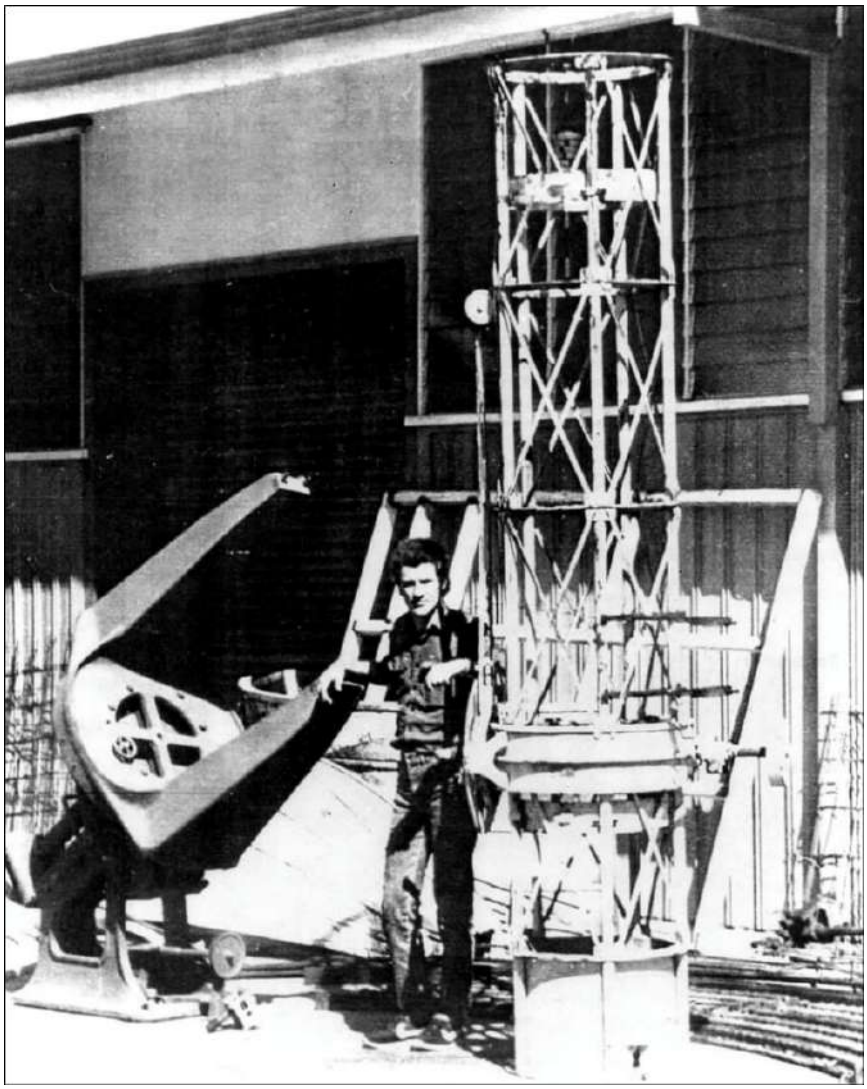

Figure 1: The 18-inch ‘Hoskins Telescope’ was located in pieces - as shown here - I n far northern country New South Wales. It was then returned to Sydney and eventually donated to the Museum of Applied Arts and Sciences (image from the front cover of the *BAA NSW Branch Bulletin*, June/July 1987).

Figure 2: Dr. Hisashi Hiyakawa (courtesy: Nagoya University).

Figure 3: John Drummond (Orchiston Collection).

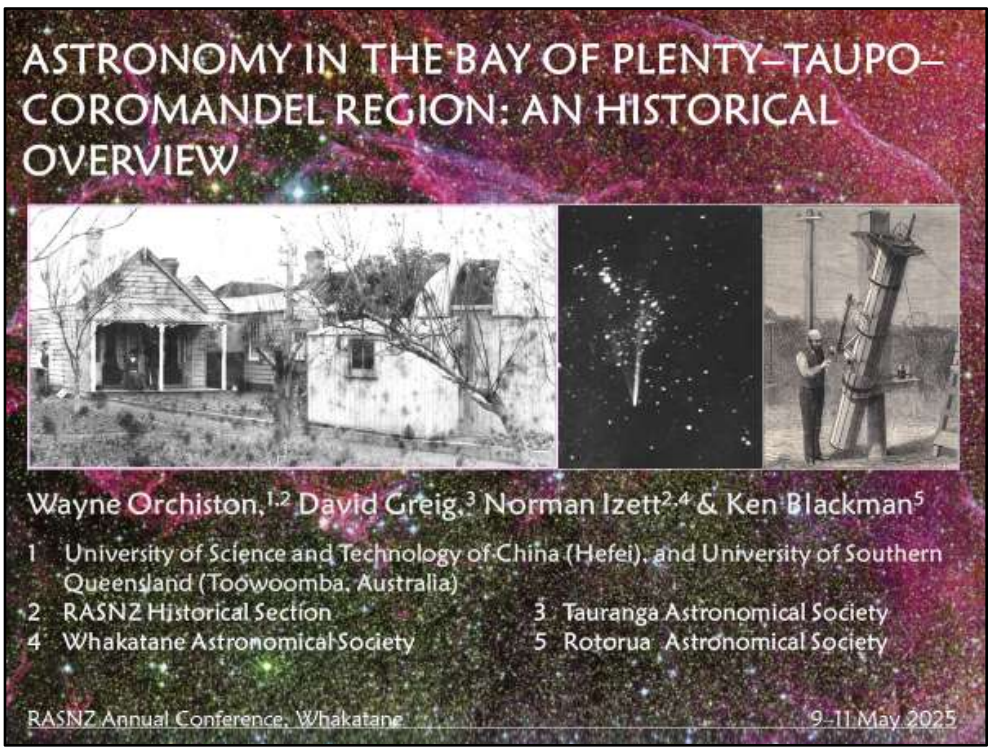

Figure 4: Title page of my RASNZ review paper of the history of astronomy in the Bay of Plenty-Taupo-Coromandel region, showing three images relating to Henry Severn and John Grigg of Thames.

OBSERVATIONS BY COOK AND GREEN OF THE 9 NOVEMBER 1769 TRANSIT OF MERCURY FROM THE COROMANDEL PENINSULA

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ABSTRACT: Following their successful 2 June 1769 observations of the transit of Venus from Tahiti, Cook and the *Endeavour* sailed south, and subsequently westwards, in search in the mooted Great Southern Continent. Instead, they encountered New Zealand, and on 9 November they observed a transit of Mercury from the Coromandel Peninsula.

In this poster we review the observations made by James Cook and Charles Green at what is now known as Mercury Bay. Today a monument marks the site.

1. INTRODUCTION

Transits of Mercury occur when Mercury is seen as a small black dot crossing the surface of the Sun (see the photograph below).

Mercury's orbit is tilted relative to the Earth's, so transits do not occur every time the Sun, Mercury and the Earth are aligned. Instead, there are about 13 transits every century, and these always occur in May or November.

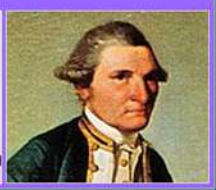
Because of Mercury's smaller size and relative proximity to the Sun, unlike with the much rarer transits the Venus, the transits of Mercury were never used by astronomers to try and determine the Earth–Sun distance (or astronomical unit, a.u.). Instead, during the seventeenth and eighteen centuries they provided a reliable means of establishing the longitude of an observing site.

2. THE ASTRONOMERS AND THEIR INSTRUMENTS

The two official astronomers on Cook's First Voyage to the Pacific were Lieutenant James Cook (1728–1779, shown below on the right) and Royal Greenwich Observatory astronomer, Charles Green (1734–1771; there are no known images of him). Note that Cook had two separate official positions during the voyage: commander of the *Endeavour* and astronomer.

For the Tahitian and New Zealand transit observations Cook and Green were supplied with astronomical clocks and Gregorian reflecting telescopes made by the Scottish instrument-maker James Short (see below centre). When Short's telescopes were used they were placed on the tops of casks that had been filled with sand or other ballast and were partially buried in the sand on the beach (e.g. see the far left-hand re-creation).

One of the primary tasks of the astronomers on all three Cook Voyages was to make accurate latitude and longitude observations, critical for both navigation and coastal mapping.

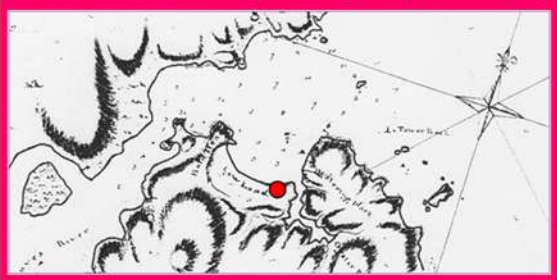


3. THE 9 NOVEMBER 1769 TRANSIT OF MERCURY

On 3 November 1769 the *Endeavour* anchored in what is now known as Mercury Bay on the Coromandel Peninsula with Cook noting that there would be a transit of Mercury visible there (weather permitting) on 9 November, and

"If we should be so fortunate as to Obtain this Observation the Longitude of this place and Country will thereby be very accurately determined." (Orchiston, 2016: 138). So, note that the transit was to be observed in order to accurately determine the longitude of Mercury Bay, not out of astronomical curiosity.

Accordingly, at 7am on 9 November Cook and Green, assisted by Lieutenant Zachary Hicks (1737–1771), second-in-charge on the *Endeavour*, went ashore and set up their telescopes on the beach about 300 metres west of the mouth of the Oyster River. We have marked this site below on a copy of Pickersgill's map of Mercury Bay.

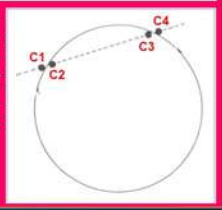


While Green timed the ingress (entry of Mercury onto the Sun, Cook missed this phase as he was making other observations. However, both observers timed the third and fourth contacts during the egress (see the table and the diagram below).

Event	Observer	Local Time
Internal Contact (C3)	Cook	12h 08m 45s
	Green	12h 08m 58s
External Contact (C4)	Cook	12h 09m 43s
	Green	12h 09m 55s

Although Cook's and Green's egress timings differed by 13 and 12 seconds, Green used the contact times to calculate the longitude, while Cook's observations of the Sun's altitude (during C1 and C2) provided the latitude. Their results (disputed by Keir, 2010), were:

Longitude 176°03.5'E
Latitude 36°48'05.2"S



4. FURTHER READING

Keir, B., 2010. Captain Cook's longitude determinations and the transit of Mercury—common assumptions questioned. *Journal of the Royal Society of New Zealand*, 40(2), 27–38.

Orchiston, W., 2016. *Exploring the History of New Zealand Astronomy: Trials, Tribulations, Telescopes and Transits*. Cham (Switzerland), Springer. Pp. 207–226.

Orchiston, W., 2017. Cook, Green, Maskelyne and the 1769 transit of Venus: the legacy of the Tahitian observations. *Journal of Astronomical History and Heritage*, 20, 35–68.

RASNZ Annual Conference, Whakatane, 9–11 May 2025

Figure 5: One of the colourful Historical Section posters displayed at the Whakatane RASNZ Conference. These were all printed out A1 size.

Figure 6: The refurbished Windsor Observatory, near Sydney. The dome on the left houses Tebbutt's 8-inch Grubb refractor which was once owned by the Whakatane Astronomical Society in New Zealand (Orchiston Collection).

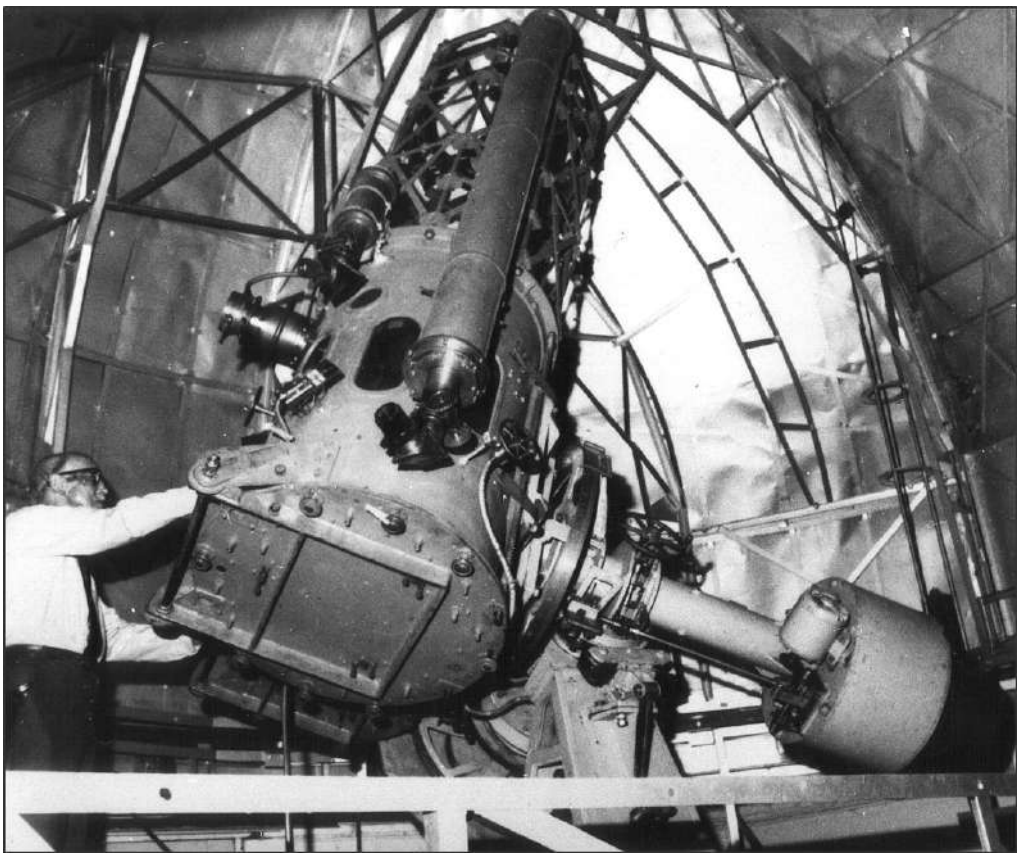


Figure 7: Ken Beames with his equatorially-mounted 24-inch and 17-inch reflectors and 6-inch guidescope. Part of the mirror cell of the 17-inch is just visible below the 24-inch mirror cell and Ken's left arm (Orchiston Collection).

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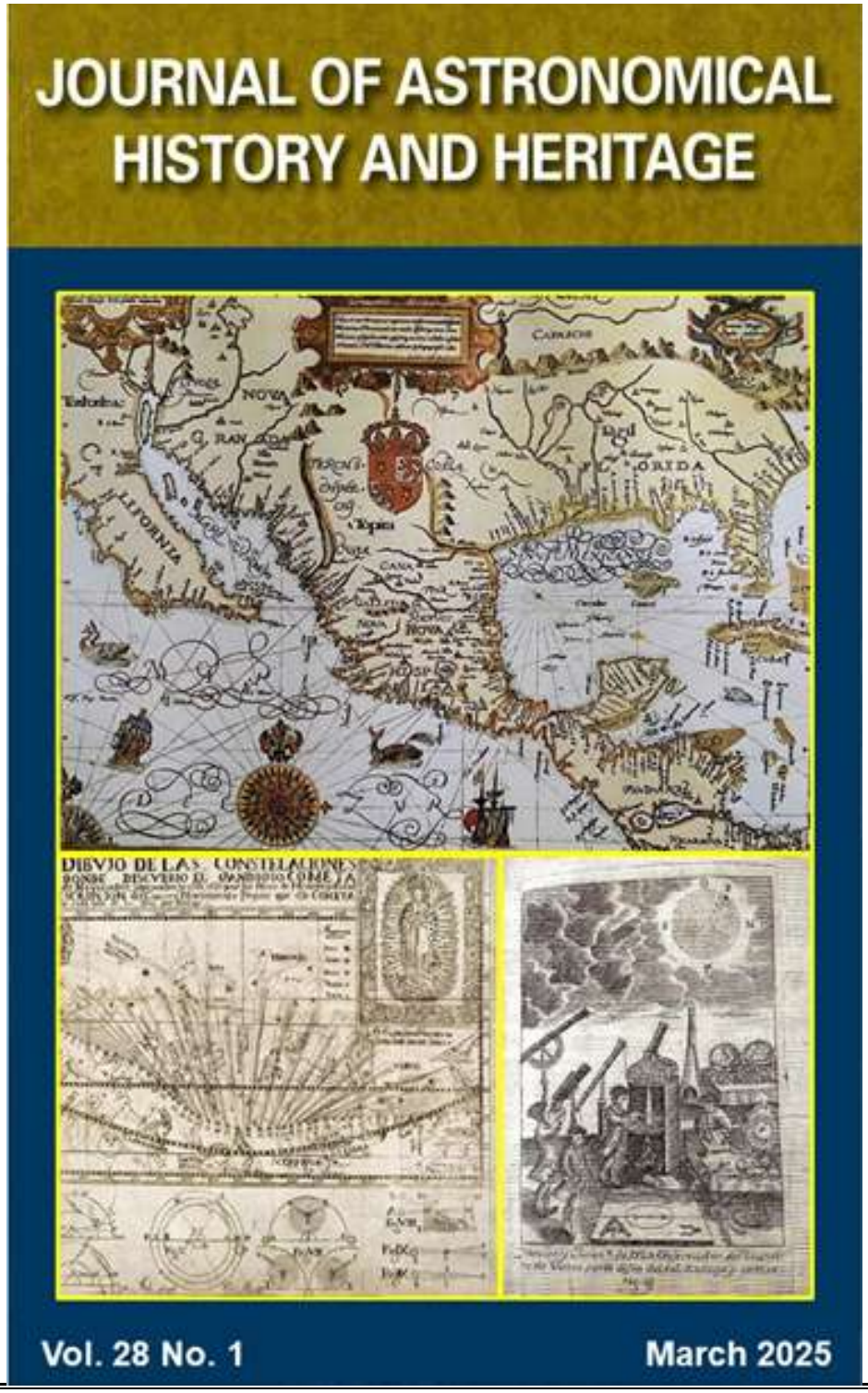
MARCH AND JUNE 2025 ISSUES OF THE *JOURNAL OF ASTRONOMICAL HISTORY AND HERITAGE*

The covers and Contents listings of these two issues of *JAHH* are shown below. Copies of all papers, and the book reviews (and, indeed, entire issues of *JAHH* right back to Volume 1, 1998) can be downloaded free of charge from the *JAHH* web site: https://www.sciengine.com/JAHH/home



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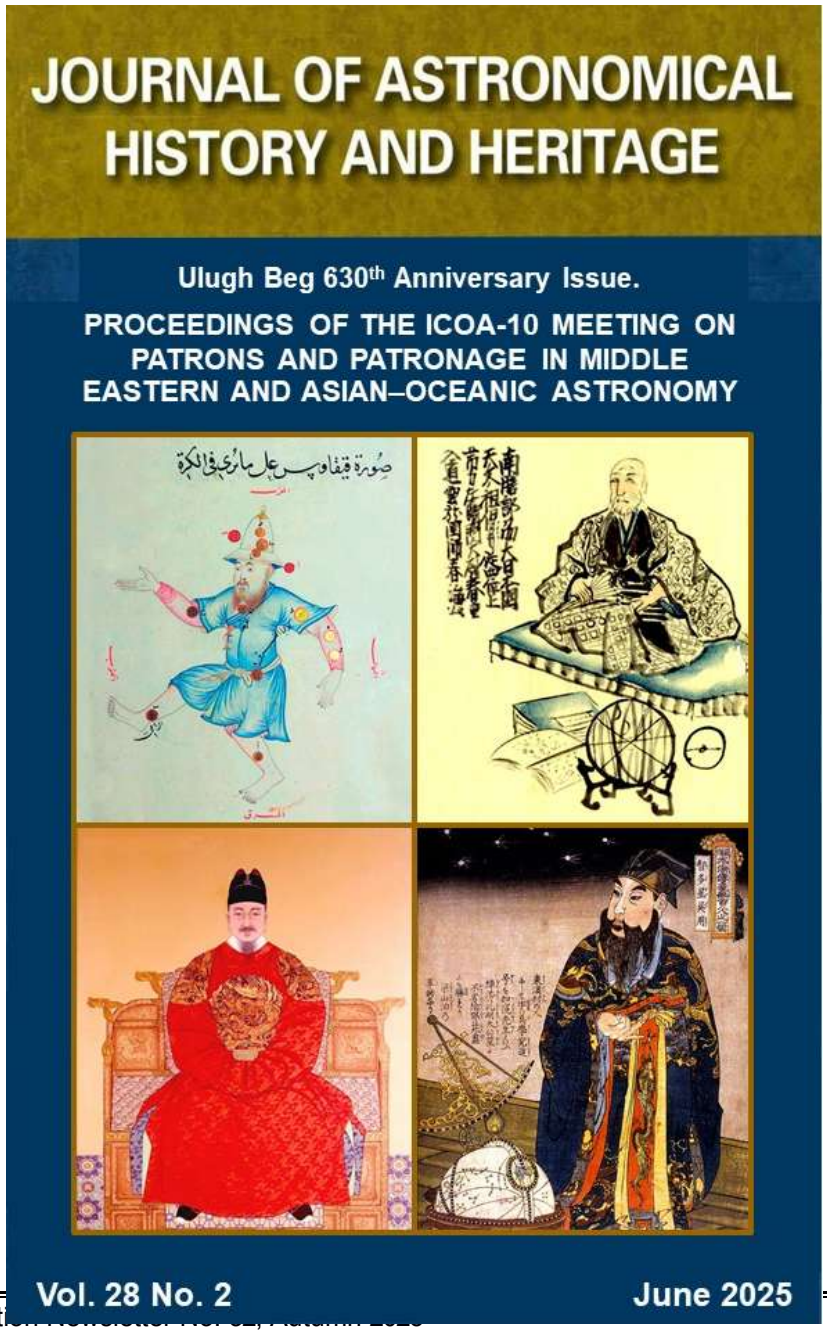

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ULUGH BEG 630TH ANNIVERSARY ISSUE. PROCEEDINGS OF THE ICOA-10 MEETING ON PATRONS AND PATRONAGE IN MIDDLE EASTERN AND ASIAN–OCEANIC ASTRONOMY

CO-EDITORS: SHUHRAT EHGAMBERDIEV, WAYNE ORCHISTON, SHI YUNLI, JI CHEN AND YANG BOSHUN

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Published by The University of Science and Technology of China,

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Dates for your diary

SHA Webinar, 'Research Techniques', Wednesday 8th October, 8 PM. Featuring short talks by Carolyn Bedwell, Bill Barton and Mike Leggett.

SHA Autumn Conference, Birmingham & Midland Institute, Birmingham, Saturday 8th November. Speakers:

Sian Prosser – Charting the Heavens in Type: the oldest astronomical books in the Royal Astronomical Society library.

Mike Leggett – Astronomy and Discovery.

Jacqueline Mitton – The Extraordinary Astronomical Life of Elizabeth Williamson.

Louise Devoy – Observatory Objects (commemorating the 350th anniversary of the Greenwich Observatory).

Further SHA Webinars: -

Wednesday 26th November, Peter Morris will be speaking about Henry Enfield Roscoe, the spectroscopist (and friend of Joseph Baxendell).

Wednesday 14th January, 2026, Dava Sobel will be telling us about Marie Curie and her astronomical connections.

Tuesday 17th March 2026, James Krehbiel will be sharing his research on "Sightlines and site lines: astronomical research in south-east Utah".