

Editorial *Clive Davenhall*

Welcome to the fourth issue of the *SHA Newsletter*, and the first to be produced by the editorial team of David Rayner and myself as Joint Editors and Stuart Williams and Madeline Cox as Associate Editors.

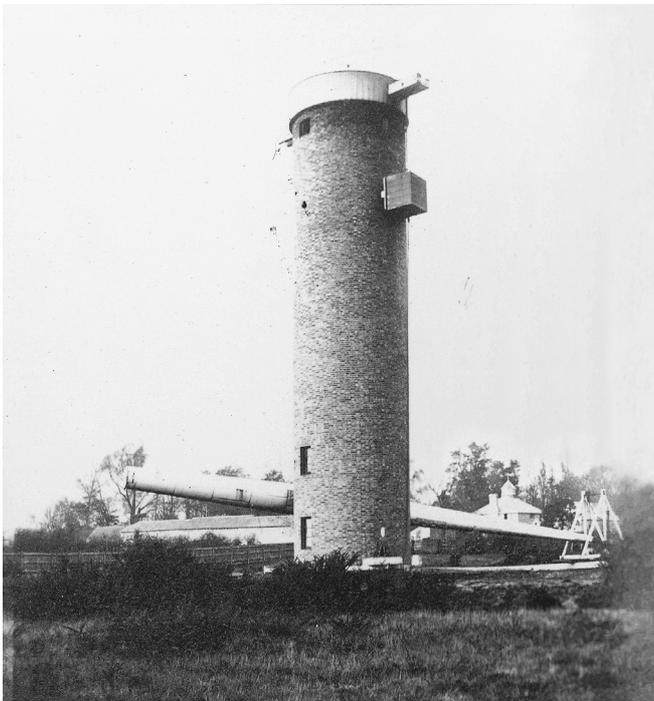
This issue carries reports on the fiftieth anniversary of the last published observations made with the Airy Transit Circle at the Royal Observatory Greenwich and the history of astronomy sessions at the

recent National Astronomy Meeting, as well as the regular material. In the next few months, copies of the first issue of the Society's new Journal, the *Antiquarian Astronomer*, should be dispatched to members. On Tuesday 8 June there will be a transit of Venus, the first since 1882. A number of events are planned to commemorate this event, and we hope to report on some of them in the next issue of the *Newsletter*. In the meantime, or in the case of

cloudy weather, those with Internet access can view a movie of the 1882 transit. There is more on all these topics inside.

Finally, a reminder that articles and letters for the *Newsletter* are always welcome. Guidelines for submitting articles and letters appear on the back page. All contributions will be gratefully received!

Update on Craig Telescope



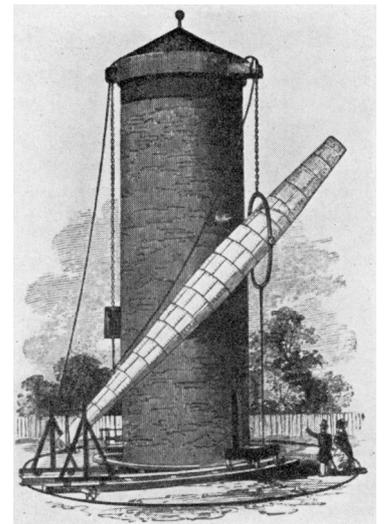
The only known photograph of the Craig Telescope, probably taken late in the autumn of 1855.

Photograph copyright Greg Smye-Rumsby / Bridget Bishop

This photograph was recently rediscovered by Greg Smye-Rumsby following a response to an article about the telescope that he contributed to the *Wandsworth Historian*.

The photograph was taken by Geoffrey Bevington and is now in the private collection of Bridget Bishop, who is his direct descendent.

The Craig Telescope was sited on Wandsworth Common and operated for a few years in the 1850s. It was previously only known from contemporary accounts and illustrations, such as the one also shown here, and the wealth of additional, and more accurate, detail in the photograph is immediately obvious.



Mr Smye-Rumsby presented his investigations into the Craig Telescope at the history of astronomy session at the recent National Astronomy Meeting. A brief report of this meeting appears inside.

The *Newsletter* is grateful to Mr Smye-Rumsby for allowing us to reproduce the photograph.

SHA news in brief April 2004

Stuart Williams FRAS, SHA Secretary

Council meeting May 2004

A meeting of SHA Council & Officers and the SHA Library Committee was held at the Birmingham & Midland Institute, Margaret Street, Birmingham on Saturday 1st May 2004, at 11am (Library Committee) and 1pm (Council & Officers).

The meetings discussed the general business of the SHA and in particular moved forward plans to transfer the SHA Reference Collections to the BMI in the coming months. Initial plans for this have been set in motion and further progress will be reported at the forthcoming AGM on 22nd May.

It is now proposed to have the Reference Collections in place for access within the BMI Library in time for the SHA Annual Conference on 9th October, and a tour of the Library will therefore feature as part of the conference programme.

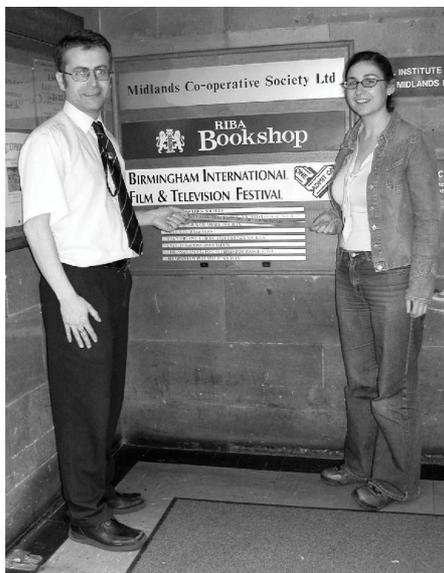


Historic Birmingham & Midland Institute

SHA completes affiliation to BMI

The Society for the History of Astronomy officially brought astronomy back to the historic Birmingham & Midland Institute on Saturday 1st May, when the Society formally affiliated to the Institute.

The Administrator & General Secretary of the BMI, Mr. Philip Fisher, welcomed Council and presented the SHA with a special nameplate celebrating the fact that the BMI is now the Society's centre for activities in the Midlands.



Later in the day Mr. Martin Boyle of the Institute formally handed over the nameplate to SHA Chair Emily Winterburn, when the plate was ceremonially affixed to the entrance of the Institute in Margaret Street, Birmingham.

Affiliation is an important first step to making the SHA Reference Collections directly accessible to visiting members within the BMI Library, and it is hoped that other benefits to the membership will

accrue in due course, subject to further negotiation.

Chair announces resignation

At 1st May's SHA Council & Officers Meeting at the BMI, SHA Chair Emily Winterburn announced that she would be resigning from Council before the Annual General Meeting for family reasons – she is

pregnant! Emily, who is Curator of Astronomy at the Royal Observatory Greenwich and is also working on her Doctorate, felt that she would no longer be able to dedicate the necessary time to serve on Council, for obvious reasons. Council, while sad to lose a fine friend and colleague, nonetheless congratulated Emily on her wonderful news, and thanked her for all her efforts on the Society's behalf since the Founding in 2002. Emily plans to remain a member of the SHA and our first contact with the ROG. Council will now be seeking a new candidate for Chair of the SHA. Until one is selected and in due course appointed or elected, those duties will fall to the Secretary, Stuart Williams.

Speakers invited for SHA annual conference 9th October 2004

SHA Council would like to invite potential speakers interested in lecturing at the forthcoming Annual Conference in Birmingham to contact Secretary Stuart Williams with proposals for talks running for 30 minutes – 1 hour. Lectures should be along the lines of the Conference theme: 'The Solar System in History', relating to the history of planetary observation and exploration at any level, and both popular or academic in tone. The event is being held at the prestigious Birmingham & Midland Institute, and this year will be located in the Dickens Room. Slide and overhead projection facilities will be provided. Please write to Stuart Williams by email if available at secretary@shastro.org.uk or by post to Stuart Williams, 26 Matlock Road, Bloxwich, WS3 3QD.

AGM & Lectures Saturday 22nd May 2004

Members are reminded that the Society's rescheduled Annual General Meeting and programme of lectures takes place on 22nd May 2004, at the Institute of Astronomy, Madingley Road, Cambridge. Admission is free (£2 to non-members, who are welcome), and

there is no need to book – simply turn up with your membership card – but it would be helpful if you would email or write to SHA Treasurer Ken Goward advising him of your intention to attend. The programme is shown in the box below.

Annual picnic Woolsthorpe Manor Saturday 3rd July 2004

The SHA Annual Picnic moves north this year, to the historic 17th century manor house, birthplace and family home of Sir Isaac Newton –

Woolsthorpe Manor, near Grantham, Lincolnshire. A booking form is enclosed with this *Newsletter*, and members planning to attend are encouraged to complete and return this as soon as possible.

Details of the Manor including a location map may be found on the National Trust website: <http://www.nationaltrust.org.uk/>
Venue contact: Woolsthorpe Manor, 23 Newton Way, Woolsthorpe-by-Colsterworth, near Grantham, NG33 5NR. Telephone 01476 860338.

Special thanks are due to SHA Librarian Madeline Cox for planning this year's picnic.

11:00 - 11:30 Registration. Beverages & Biscuits.
11:30 - 11:35 Emily Winterburn & Stuart Williams: Introduction
11:35 - 12:00 Dr David Dewhurst: A Brief History of the Cambridge IoA
12:00 - 13:00: Roger Jones: Sir Robert Stawell Ball
13:00 - 14:30 Lunch – free Cheese & Wine for members.
Guided tours of the IoA & Northumberland Refractor from 13:45
14:30 - 15:40 Annual General Meeting
15:40 - 16:00 Refreshment Break. Beverages & Biscuits
16:00 - 17:00 Dr Michael Hoskin: The Real Caroline Herschel
17:00 Emily Winterburn: Conclusion
17:10 Dispersal

Contact: Ken Goward, SHA Treasurer. Email: treasurer@shastro.org.uk – postal address in your membership card. Venue map on the Internet: <http://www.ast.cam.ac.uk/contact/map/>

The Airy Transit Circle Meeting

Stuart Williams FRAS

On 30th March 2004, an historic reunion took place in Greenwich, to which I had the privilege of being invited as Secretary of the Society for the History of Astronomy. This reunion took place at a very special event – the Airy Transit Circle Meeting at the old Royal Observatory Greenwich in London, the spiritual home of UK astronomy – and reunited four Observers from the old ROG, namely our own Mr. Gilbert Satterthwaite and his former colleagues Dr. Phillip Gething, Mr. Aled Jones and Mr. Andrew Murray (see photo).

The meeting took place fifty years to the day since the last published observations were made using the famous Airy Transit Circle telescope, designed by 7th Astronomer Royal Sir George Biddle Airy in 1843, and which since 1884 has officially defined the Prime Meridian from which longitude and the basis of the world's Time Zones are measured to this day.

The telescope is preserved in its historic location in the Transit Room on the Prime Meridian as part of the old Royal Observatory Greenwich, now part of the National Maritime Museum.

Also present at the meeting were members of the Airy family Mr. James Airy and Miss Nicole Swengley, plus a number of invited guests including SHA members Bill Barton, Garry Coleman, SHA Treasurer Ken Goward, and Emily Winterburn, SHA Chair and Curator of Astronomy at the National Maritime Museum/ROG.

The meeting, which was opened and introduced by Dr. Gloria Clifton, Lead Curator (Navigation and Cartography) of the National Maritime Museum, took place at 2pm in the historic South Building



Observers, guests and speakers of the Airy Transit Circle meeting assemble on the Prime Meridian defined by the Transit. L to R: Ken Goward (SHA), Dr. Phillip Gething, Mr. James Airy, Mr. Gilbert Satterthwaite, Miss Nicole Swengley, Mr. Aled Jones, Mr. Laurence Birnie (NMM) and Mr. Andrew Murray. *Photo by Stuart Williams.*

of the Royal Observatory Greenwich, which now houses the planetarium and offices of the ROG museum, and which is due to be enhanced and transformed as part of the NMM's major 'Time and Space' project over the next few years.

The observers, speakers and guests visited the Airy Transit Circle itself where Gilbert Satterthwaite spoke about its history and operation in his usual inimitable style. There was a rare opportunity to photograph and

examine closely the instrument and its mounting, and this was followed by a photographic session with the observers, speakers and guests outside in the courtyard on the public Meridian line.

Subsequent to the refreshments which followed, excellent and informative short lectures were presented by Conservator Mr. Laurence Birnie of the National Maritime Museum *Conservation, preservation and maintenance of the Airy Transit Circle and other instruments*, SHA Treasurer Mr. Kenneth J. Goward, FRAS *Ransomes of Ipswich and Sir. G.B. Airy*, and Mr. Gilbert Satterthwaite *The Airy Transit Circle, its history, operation and importance to the Observatory*.

The meeting concluded at 5pm with a fascinating round-table discussion of their time at the Observatory by the Observers themselves, plus thanks and congratulations from Rear Admiral Roy Clare, Director of the National Maritime Museum, and Dr. Gloria Clifton.

Brief history of the Airy Transit Circle

The Airy Transit Circle was designed as part of a suite of instruments including the Altazimuth (1847), the Reflex

Zenith Tube (1851), the Transit Circle itself (1851) and the Barrel Chronograph (1854).

It is a refracting transit telescope of 8.05in (204mm) clear aperture and

time of meridian transit, previously observed with the 10-foot transit instrument of 1816, and its Declination from the zenith distance at transit, previously measured with the mural circle of 1812.



The reunited Royal Greenwich Observatory Observers, at the Airy Transit Circle: L to R - Mr. Gilbert Satterthwaite, Dr. Phillip Gething, Mr. Aled Jones, Mr. Andrew Murray. Photo by Stuart Williams.

focal length 11ft 7in (3.52m). The cast-iron tube, mounting and other massive mechanical parts of the telescope were made by Ransomes & May of Ipswich, the optics, micrometers and graduated circle by Troughton & Simms, and the whole assembly mounted between two stone piers which had formerly carried mural circles.

The Transit Circle's purpose was to make accurate measurement of position co-ordinates of fundamental and catalogue stars, and of the Sun, Moon, planets and minor planets. The Right Ascension of an object would be obtained from the sidereal

Positions of the Sun, the Moon, all the planets excepting Pluto (which was too faint) and the principal minor planets were observed through the telescope over a working life of 103 years and three months, the first observation – of a single star, α Ceti being made on 4th January 1851. The Circle's observations provided the basis of the Greenwich Time Service from 1851 to 1927. The final observations, of the Sun, Venus, Jupiter, Juno and Pallas, together with

the necessary stars needed for determining the clock and azimuth errors, were made on 30th March 1954, by SHA Founder Member Gilbert Satterthwaite.

Acknowledgements

Thanks to Gilbert Satterthwaite for general historical information on the Airy Transit Circle. Special thanks are due to Gilbert Satterthwaite, the Observers, and the management and staff of the National Maritime Museum and the Royal Observatory Greenwich for organising such an excellent and truly historic event, for their kind hospitality on the day, and not least to the speakers for their fascinating lectures.

Movie of the 1882 Venus Transit *Clive Davenhall*

You might think that an editor of a history of astronomy *Newsletter* ought to know that movies had not been invented in the 1880s. However, at the time of the 1882 transit of Venus still photography was well established and already being applied to astronomy. Prof. David Peck Todd, an astronomer from Amherst College in Massachusetts, observed the transit from the building site that would become the Lick Observatory on Mount Hamilton, California. The observing conditions were excellent and he exposed a superb series of 147 glass negatives recording the progress of Venus across the

solar disk. The developed plates have been carefully stored in the Lick Observatory plate archive ever since. They were recently rediscovered by Anthony Misch and William Sheehan, who digitised the individual plates and assembled the resulting images into a movie.

This movie was first shown at the IAU's General Assembly in Sydney last year. Courtesy of *Sky and Telescope* magazine, it can now be downloaded via the Internet. (There are two versions and the smaller is 1.2 Megabyte in size, so it is not really suitable for retrieval

through a very slow connection.) See: http://skyandtelescope.com/observing/objects/sun/article_1187_1.asp or *Sky and Telescope* (May 2004, **107**, no 5, p32-37, especially p37).

Strangely, Todd's work is not the first attempt to capture Venus' motion across the solar disk. Pierre Jules Janssen of the Meudon Observatory had previously developed his 'photographic revolver' for recording images of the 1874 transit. A different account of the 1882 transit, as seen from under southern skies, is available at: <http://canopus.sao.ac.za/~wpk/tov1882/tovwell.html>.

Finally, those without Internet access (or those with, for that matter) can read contemporary accounts of the 1874

and 1882 transits in the copy of the short-lived journal *Copernicus* (initially called *Urania*) in the Society's library. There is a report of the solar parallax derived from the American photographic observations of the 1874 transit (1881, **1**, p167-175) and several brief reports of the 1882 transit observed from various Irish and Scottish observatories (1883, **3**, p18-19, p19-20, p75-76, p129-130). However, perhaps the most accessible piece is the report by the Revd S.J. Perry about the British expedition to Madagascar to observe the 1882 transit (1883, **3**, p67-75). This lively and detailed account describes the journey to and from Madagascar as well as the conduct of the actual observations and very much captures the flavour of the expedition.

History of astronomy at the National Astronomy Meeting

Clive Davenhall

The National Astronomy Meeting (NAM) is an annual four-day meeting supported by the Royal Astronomical Society and the Particle Physics and Astronomy Research Council. Its purpose is to provide a forum where UK astronomers can meet, present their work and swap ideas. The meeting is hosted by a different institution each year. Last year it was held in Dublin and for the first time included sessions on the history of astronomy and archaeoastronomy. The SHA was asked to organise the former. These arrangements were repeated this year when the meeting was hosted by the Open University. So it

was that I found myself, having caught an implausibly early flight from Edinburgh, in the Open University's quiet and pleasant campus on the outskirts of Milton Keynes. Both the historical sessions were held in Christodolou Meeting Room 11 on the last day of the conference, 2nd April 2004.



Prof. Clive Ruggles introduces the morning archaeoastronomy session. Dr Michael Hoskin, the first speaker, is seated on the right.

First off was the archaeoastronomy session, which occupied the second of two morning slots. It was chaired by Prof. Clive Ruggles of the University of Leicester. The first talk was by SHA honorary vice-president Dr Michael Hoskin, who spoke on *Tombs and Temples of Southwest Europe*. The talk began with something of a hiccup due a resolutely recalcitrant slide-projector. However, thanks to the able intervention of Mr Frank Prendergast, who loaded the slides manually, things were soon back on track. During the Neolithic settled communities of farmers and herdsmen replaced hunter-gatherers. These settled

communities adopted the practice of burying their dead in communal tombs, or 'dolmens'. This practice was widespread throughout western Europe and many of the monuments are extant. For many years Dr Hoskin has been surveying such dolmens in Iberia, southwest France and elsewhere in the Mediterranean. He has amassed data on about 3000 of them (these researches are reported in his book *Tombs, Temples and Their Orientations* published in 2001 by Ocarina Books, Bognor Regis).

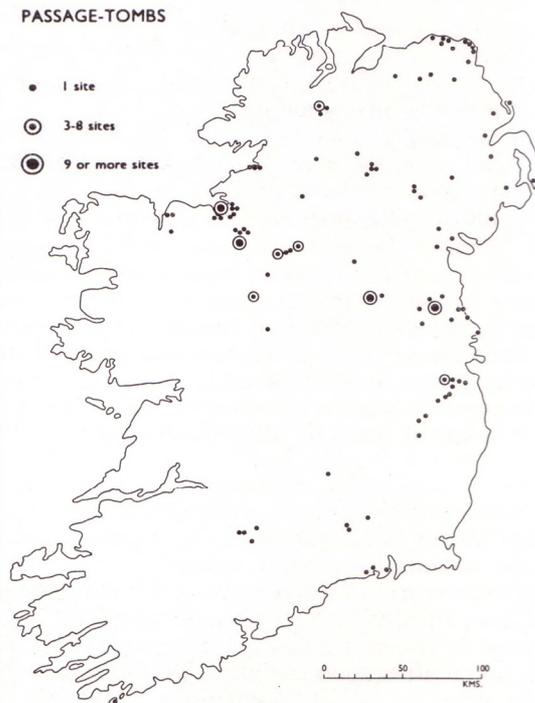
The dolmens vary in design and construction, but all the basic types have entrances and so have an orientation. Thus, statistical analysis



A Menorcan 'taula' sanctuary.

of the surveys of the sites can reveal any preferred orientations. Such analyses show that there was invariably a local custom, expressed in a limited range of preferred orientations. In Spain and western France the tombs usually face sunrise at some time of year. Conversely, further east, and centred on Fontvieille (near Arles), the tombs are of a very different design and are oriented towards sunset. Finally, the 'taula' sanctuaries of the Balearic island of Menorca face roughly south and always have an unimpeded view of the skyline, often out to sea. The most plausible explanation of this orientation is that it gives an uninterrupted view of the Southern Cross and the bright stars of Centaurus. In Greek mythology the constellation Centaurus represented the centaur Chiron, who, amongst other attributes, taught healing. One of the sanctuaries was found to contain a bronze statue, originally from Egypt, bearing a hieroglyphic inscription reading 'I am the god of medicine'. Thus, it is plausible that the sanctuaries may have been healing shrines, but, of course, any such explanation remains speculative.

Following his sterling service with the slide projector, Mr Prendergast now gave his own talk on *Passage Tombs: a Zenith in Prehistoric Cultural Astronomy?* Mr Prendergast, of the Dublin Institute of Technology, has a background in surveying and Global Positioning Systems. He is putting this expertise to good use by conducting a survey of Irish Passage Tombs. These tombs seem to have spread from the Boyne valley, where they appeared with the first farming communities to settle there, after 3400 BC. About 235 survive mostly, though not exclusively, in the northern half of Ireland. A few similar tombs are found on the west coast of Britain, particularly in Anglesey. Almost half the tombs appear in complexes or groups of so-called 'cemeteries'. Passage tombs are distinguished from other tomb types, such as court tombs or portal tombs, by both morphological differences and



The distribution of Irish passage tombs (November 1988; Courtesy Megalithic Survey, reproduced in *Irish Megalithic Tombs*, Elizabeth Shee Twohig, 1990, Shire Publications: Princes Risborough).

distinctive archaeological finds. They are usually found on prominent locations, such as hills and mountain tops, which probably indicates that they were ritual centres of some local or regional significance. The tombs' axes are often aligned with significant solar events, the most famous example being the alignment with the winter solstice at Newgrange. These alignments are consistent with other evidence that the winter solstice was considered significant throughout Europe. The alignments, together with the elaborate artwork often associated with the tombs and the quartz frequently found near their entrances, indicate that they were built by people enjoying an elaborate symbolism and advanced culture.

The next talk was by Prof. Ruggles, who sojourned far from western Europe to speak on *Ancient Hawaiian Astronomy: Recent Research on Maui and Moloka'i*. This talk was a progress report on his recent investigations into astronomical knowledge in Hawaii prior to contact with Europeans.

Traditionally archaeoastronomy has adopted different methodologies in

the old and new worlds. In Europe it has usually been based on statistical and contextual studies of the alignments of monuments.

Conversely, in pre-Columbian Mesoamerica the discipline has more usually used historical and written evidence, both indigenous (where such survives) and reports written by Missionaries and other early European settlers shortly after the Conquest. Hawaii presents an opportunity to combine both these approaches. There are temples and shrines which can be systematically surveyed, written accounts of indigenous beliefs and practices left by nineteenth century European authors

and also an oral tradition which is still extant. Prof. Ruggles' work involves pursuing all these separate aspects.

Astronomy features in two separate aspects of Hawaiian, and more generally Polynesian, culture. On the one hand there is extensive practical knowledge, which is used in navigation at sea; on the other there are astronomical elements in many rituals and ceremonies. Hawaiian religious and cosmological ideas are reflected in complex 'sacred landscapes' containing temples and shrines ('heiau') and natural features named after celestial objects. Hawaiian astronomy cannot be considered in isolation, but rather astronomy must be both one of the means of investigating, and one of the ways of interpreting, Hawaiian culture.

The final talk in the archaeoastronomy session was by SHA Council Member Dr Nicholas Kollerstrom, who spoke on *Astronomy at Stonehenge*. This talk was not a survey of the astronomical aspects of Stonehenge, but rather a report from, and a request for input to, the Royal Astronomical Society's

Stonehenge Committee. The purpose of this committee is to advise English Heritage on which astronomical aspects of Stonehenge should be described in the new Visitor Centre being built at the site.

The primary alignments at Stonehenge, present from the earliest versions of the monument, are with the solstices, and these are well-established and uncontroversial. Various other properties, established with varying degrees of confidence, could also be included: lunar alignments, measures of the lunar month and the 'Station Stone Parallelogram'. If more than coincidence, the latter would imply that the monument was carefully sited at an optimal latitude. The general feeling of the meeting seemed to be that the Visitor Centre should plainly separate well-established alignments from more speculative ideas. It was also suggested that any audio-visual aids should be carefully scrutinised because they can often contain glaring errors.

A final snippet mentioned by Dr Kollerstrom is that the last book by Gerald Hawkins, who in the 1960s stimulated much of the modern debate on astronomical alignments at Stonehenge and who sadly died last year, is to be published posthumously later this year under the title *Stonehenge, Earth and Sky*. It has been written with Hubert Allen and will be published by Wessex Books of Salisbury.

The history of astronomy session occupied the only slot of the afternoon, sandwiched between lunch and the end of the conference. It was chaired by the SHA's own chair, Emily Winterburn and, as it turned out, all the speakers were SHA members.

First up was Mr Greg Smye-Rumsby who gave a spirited and enthusiastic account of his investigations into *The Craig Telescope*. This telescope was erected by the Revd John Craig, a mid-Victorian vicar from the Midlands. The Revd Craig was a somewhat larger than life character who was also rebuilding his parish church in Leamington to be the largest church in England at the same time that he was erecting his telescope. Later he was to spend a spell in gaol for his troubles! The telescope was constructed to an outdated, not to say eccentric, design (see the photograph on the front page). The objective end of the telescope tube was suspended from a chain, itself hanging from a tower, with motion in altitude being provided by raising or lowering the chain. Motion in azimuth was provided by mounting the other end of the tube on a circular track. Nonetheless, the telescope was, for a while, the world's largest refractor. However, both the mechanical design and the optics were flawed, and only a handful of observations were made.

The telescope was erected on Wandsworth Common in 1852.

Observations ceased in 1855 and the derelict tower was demolished in 1871. Nothing of the telescope is now visible at the site, however a great deal is now known about it. Mr Smye-Rumsby reported extensive efforts to recover information about the telescope: an archaeological excavation to locate the precise site (reported in the last issue of the *Newsletter*, no. 3, November 2003, p1-2), searches to find contemporary illustrations and photographs, computer simulations of the telescope's appearance and mechanisms and even a piece of the tower recovered during the excavation.

The next speaker was Mr Martin Lunn, Keeper of Astronomy at the Yorkshire Museum, who spoke on *Thomas Cooke Telescope Maker of York*. Thomas Cooke was an eminent nineteenth century telescope maker whose fine refractors remain famous and, indeed, in use to this day. He was born to a family of shoemakers in Allertorpe in the East Riding of Yorkshire in 1807. It was expected that he would follow into his father's trade, but he had other ideas. Though largely self-taught (he received only two years of formal schooling), he worked for a spell as a teacher. However, soon he began to design and build his own optical instruments. These instruments proved popular and successful, and the firm which he founded built not only telescopes and other optical instruments, but also mathematical and 'philosophical' instruments, turret clocks and even a steam car.

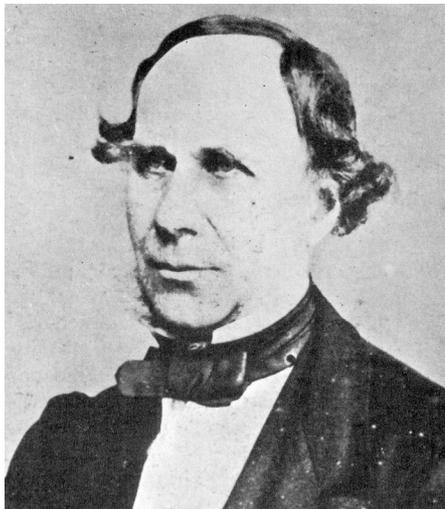
The firm's work was renowned for its precision and craftsmanship. It prospered, and to accommodate its expansion Cooke constructed the first purpose-built telescope factory in Britain, The Buckingham Works. Cooke's final project was the 25-inch Newall refractor, which was for a while the largest refractor in the world. He died in 1868, before it was complete, the strain and anxiety associated with this undertaking having undoubtedly hastened his death. His two sons, Frederick and



SHA Chair Emily Winterburn introduces the afternoon history of astronomy session.

Thomas, took over the business. In 1894 H. Dennis Taylor, an employee of the firm, constructed the Cooke Portrait Lens, a design still used in most photographic lenses.

Over time, and with the demands of the First World War, telescope manufacture took up a dwindling fraction of the firm's business. Its fortunes varied and ultimately waned. Skilled craftsmen were laid off during the Depression which resulted in an Astrograph built for the Royal Observatory Greenwich never performing entirely satisfactorily, a blow from which the firm's telescope manufacturing business never recovered. The firm was taken over by Vickers and finally ceased trading in 1963.



Thomas Cooke (1807-1868)

The final speaker of the day was Dr Kollstrom again, doing double-duty and this time talking on *Early Indian Planetary Periods: a Sidereal Emphasis*. Ptolemy's *Almagest* gives sidereal periods for the outer planets, but not for the inner ones. Complete lists for all the planets only appear in the West during the sixteenth century and are associated with heliocentrism. However, traditional Indian lists contain sidereal periods for all the planets, inner as well as outer. The Indian periods are 'sidereal' as distinct from being 'synodic' or 'tropical' and are expressed using a sidereal measure of time, either the sidereal year or the sidereal day. The lists date from about AD 600 and were transmitted orally before the eighteenth century. For the inner planets the Indian values are more accurate than the Greek ones.

Traditionally much Indian astronomy has been considered to derive from Greek sources. However, it now looks as though some elements, at least, might represent an autonomous, indigenous tradition.

In addition to the talks there were also posters associated with NAM sessions. There was one poster for the history of astronomy session: *Dolphin Watching in Ancient Greece: Pastoral Astronomy and Calendrical Calibration* by Alun Salt and Efrossini Boutsika.

It is well-known from written sources that the Greeks had no single, universal calendar. Rather, a variety of different local calendars were in use, each particular to an individual city. Thus, co-ordinating events between cities was difficult. The Oracle at Delphi provides a case in point because originally there was only a single day in the year when it could be consulted. Using arguments from texts such as Hesiod's *Works and Days* and surviving calendar stelae, the poster argues that worship of Apollo Delphinios at Delphi was connected with the helical rising of the constellation Delphinus. This connection of the ceremony with a helical rising would have assisted in planning journeys to consult the Oracle.

Further study of helical risings and settings could yield more information on the origin of Greek observational astronomy. This poster won a prize for being the second-best at the conference, a considerable accolade at a conference where historical topics were a minority interest.

Finally, it only remains for me to thank Emily Winterburn and Clive Ruggles for useful comments on the draft of this note and, particularly, to thank all the speakers for making an interesting and enjoyable day.

Transit book competition

Publishers Springer-Verlag London Limited have very kindly sponsored a timely competition for SHA members to win a copy of their book *Transit: When Planets Cross the Sun* by Michael Maunder and Sir Patrick Moore.

This softback book looks at all forms of transit, but the first part, 'Transits down the Ages', covers in detail the Venus transits of 1639, 1761, 1769 (and Captain Cook), 1874 and 1882. The book also contains essential practical information about how to make the most of observing the transit of Venus in June. For more information visit the website www.springeronline.com/1-85233-621-8.

SHA member discount: If members wish to order a copy of this book direct from Springer-Verlag at a 20% discount price of £15.20 + postage all they need do is

drop an email to marketing@svl.co.uk or telephone 01483 414113. Postage = £3.00 for the first book and £1 per book thereafter.

To win a copy of this fascinating book, simply send in a postcard or sealed envelope with your name and address and the answer to the following question on the back: "From where did the Revd S.J. Perry observe the 1882 transit of Venus?" Clue: read this issue of the Newsletter carefully! All entries must be received by the end of June 2004 when the winner will be drawn from the correct entries. Send your entry to: Transit Book Competition, SHA, Stuart Williams, 26 Matlock Road, WS3 3QD

Forthcoming meetings and events

The following is a list of forthcoming meetings and events to be held later in the year. Booking is necessary unless noted otherwise. Except where noted the events are organised by the SHA. The details of non-SHA events are checked as far as possible but cannot be guaranteed. Items for inclusion in this list in future issues of the *Newsletter* are welcome. They should be sent to the editorial address given in the *Guidelines for Submitting Articles and Letters* on the back page.

Sat. 3 Apr. to Sat. 22 May. *Copernican Notes*. An exhibition by the Canadian artist Catherine Stewart in which photographic images of moving figures are overlaid on pages from the manuscript of Copernicus' *De revolutionibus*. Note that this item is an exhibition of art incorporating elements from *De revolutionibus*, not an exhibition about Copernicus or his work. Edinburgh Printmakers, 23, Union Street, Edinburgh, EH1 3LR or see <http://www.edinburgh-printmakers.co.uk>. Tue. to Sat. 10:00 am to 6:00 pm, admission free, booking unnecessary (non-SHA event).

Fri. 7 May to Sun. 12 Sep. *The Silk Road*.



Held at the British Library, Kings Cross, one of the themes of this exhibition is *The Silk Road Sky*. There are several astronomical exhibits, including the seventh century Dunhuang star-map which accurately shows 1345 stars.

See <http://www.bl.uk/silkroad>. Admission free, booking unnecessary (non-SHA event).

Sat. 22 May. *SHA AGM*. To be held at the Institute of Astronomy, Madingley Road, Cambridge, CB3 0HA. In addition to the AGM there will be talks by Dr David Dewhirst, Roger Jones and Dr Michael Hoskin and tours of the old Observatory and the Northumberland Refractor. See the *SHA News* item for further details.

Fri. 4 to Sun. 6 June. *Jeremiah Horrocks and Transits Ancient and Modern*. A weekend conference primarily aimed at amateur astronomers and historians. University of Central Lancashire, Preston. About £150, depending on accommodation options. See <http://www.transit-of-venus.org.uk/history-conference/index.htm> or contact Nuala Jones, Department of Physics, Astronomy & Mathematics, University of Central Lancashire, Preston, PR1 2HE (non-SHA event).

Mon. 7 to Fri. 11 June. *Transits of Venus*, IAU Colloquium 196. A conference aimed primarily at

professional astronomers and covering both historical and modern work on distance determinations and dynamical studies in the Solar System and the Galaxy. University of Central Lancashire, Preston. See <http://www.transit-of-venus.org.uk/conference/index.html> (non-SHA event).

Tue. 8 June. *The Transit of Venus*. Weather permitting, there will be arrangements for public viewing of the Transit of Venus from the Courtyard of the Royal Observatory, Greenwich. 6:00 am to 12:30 pm, admission free, booking unnecessary. For further information contact the National Maritime Museum: telephone 020 8312 6747/6648 or see <http://www.nmm.ac.uk/> (non-SHA event).

Fri. 11 June. Dr Allan Chapman will give the William Crabtree Lecture and will talk on the Transits of Venus. Manchester Cathedral, 7:30 pm, booking unnecessary. Telephone 0161 833 2220 or see <http://www.manchestercathedralonline.co.uk/index.html> (non-SHA event).

Sat. 3 July. *SHA Annual Picnic*. To be held at Woolsthorpe Manor, the birthplace of Sir Isaac Newton, near Grantham. See the *SHA News* item for further details. A booking form is enclosed with the *Newsletter*.

Sat. 9 Oct. *The Solar System in History*, SHA annual conference. To be held in the Birmingham & Midland Institute in Birmingham city centre. The theme will be the history of planetary observation and exploration. See the *SHA News* item for further details.

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Library report May 2004 *Madeline Cox, Librarian*

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The following donations have been received since the last *Newsletter*. A heartfelt thanks to all our donors.

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Winterburn,E	The Astronomers Royal	2003	Emily Winterburn
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North, JD	The measure of the universe	1965	Peter Hingley
Stephenson, F R	Application of early astronomical records	1978	Peter Hingley
	Irish Astronomical Journal	1950-2000	Dr David Andrews
Stromgren, H R&B	Tycho Brahe's Description of his instruments and Scientific works	1946	Mark Hurn

Purchases

The following items have been purchased since the last *Newsletter*:

Author	Title	Date
Bevis, John	Uranographia Britannia. Atlas Celeste 1750 CD ROM	2003
Forbes EG (Editor)	The correspondence of John Flamsteed. Volume 1	1995
Hoskin, M	The Cambridge illustrated history of astronomy	1998
Haramunundanis, K (Ed)	Cecilia Payne-Gaposchkin : an autobiography and other..	2nd ed 1996
BAA	History of the BAA : the first 50 years	
DeVorkin, D H	The American Astronomical Society's First Century	
Standage, T	The Neptune file	2000
Uglow, J	The Lunar men	2002

Borrowing books

A full catalogue listing will be given in the next *Newsletter*. Instructions describing how to borrow books from the library appeared in the previous edition of the *Newsletter* (no. 3, November 2003, p8-11) and are available from the Society's Web site. Details of how to contact me appear on the back page.

Suggestions

We have not yet fixed our Library budget for the year but please keep the suggestions for purchase coming in.

Move to the BMI

As you will be aware, plans are afoot to move the reference part of the Library and the journals to the BMI in Birmingham. The Library Committee will be discussing this on May 1st, so hopefully I will have more news to report in the next *Newsletter*.

Aurora

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Le Voyage dans la Lune *Clive Davenhall*

This article is the first, and probably last, review of a science fiction film to appear in the *Newsletter*. And not just any science fiction film, but the very first: Georges Méliès' *Le Voyage dans la Lune* (*A Trip to the Moon*) of 1902. It was screened at the Filmhouse, an Edinburgh 'art-house' cinema, as part of a programme of silent French films. The screening started with some of the very earliest motion pictures, a series of shorts by the Lumière Brothers from 1895, followed by *Le Voyage* and concluded with René Clair's *Paris Qui Dort* of 1923. This programme had a live piano accompaniment of the sort that there would have been at the original screenings. The screening was sold out, though admittedly it was shown in the smallest of the Filmhouse's three theatres.

The film begins with a group of *savants*, dressed as medieval magicians or scholars, arguing about the possibility of lunar flight. Having resolved their differences, they inspect the capsule, still under construction, that is to take them to the Moon. When all is ready the explorers board this craft, which is loaded into a giant gun and fired to the Moon, rather in the fashion of Jules Verne's *From the Earth to the Moon*. The capsule crash lands on the Moon and the travellers emerge to investigate the lunar surface. They walk around in frock coats and carry umbrellas, without being discommoded by any difficulty breathing. The explorers venture underground and have various adventures: they encounter the Moon's inhabitants, are captured and brought before the lunar king, escape, regain their capsule and return to Earth. The craft splashes down in the ocean and is recovered by a steamer, in a manner reminiscent of the Apollo missions. The film concludes with the explorers receiving to a hero's welcome.

Le Voyage is a remarkable piece of work to have appeared so early in the history of the cinema. It lasted an epic twenty minutes at a time when most films were only a few minutes long. It was obviously intended as a magical fantasy, designed to literally take the viewer to a different world, with no attempt to maintain astronomical accuracy (so no change there then). The result is a masterpiece of early cinema that is still delightful and enchanting. A prescient scene where the Earth rises above the lunar horizon still impresses, and must have been spectacular at the time.

The programme was shown as part of a series celebrating the hundredth

anniversary of the signing of the *Entente Cordiale* between Britain and France. This season will culminate around the French Film Festival UK which is to be held for three weeks in late November and early December. The programme does not seem to be available yet, but it is possible that there will be screenings elsewhere in the country (see www.frenchfilmfestival.org.uk).



Le Voyage dans la Lune

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New members *Kenneth Goward FRAS*

The Society for the History of Astronomy extends a very warm welcome to the below mentioned, who have recently been elected to our membership.

- Mr Peter J Nind of Hayling Island, Hampshire.
- Mr William Thomas James Chapman FRAS of Yeovil, Somerset.
- Mr Peter Malcolm Elliston Erwood FRAS of Fleet Hargate, Lincolnshire.
- Dr Cunniffe of County Kildare, Eire.

We also extend a welcome back to Mr Donald Johnston Simpson of Sunderland, who has rejoined the society.

Guidelines for submitting articles and letters to the *Newsletter*

Typical topics for *Newsletter* articles include: progress reports on SHA projects, or member's personal projects, requests for assistance with such projects and short reports of meetings. We also hope to carry 'pen portraits' in which members introduce themselves and describe those aspects of the history of astronomy in which they are interested. Reports presenting significant new work in the history of astronomy should normally be submitted to the *Antiquarian Astronomer*, not the *Newsletter*. Articles should usually be up to about 1500 words long. Electronic submission as an attachment to an e-mail message is strongly preferred. Microsoft Word is the default format, though we can probably handle most common formats. Paper submissions will be considered, but we cannot guarantee to retype manuscripts. Unsolicited articles will usually be accepted, but it is probably a prudent precaution to check with the editors before writing one.

Letters on any aspect of the SHA, its organisation and projects, and, indeed, any topic pertaining to the history of astronomy, are welcome. There is no maximum length for letters, but conciseness is desirable; we prefer not to abridge letters, but reserve the option to do so. Both paper and electronic letters will be accepted, the arrangements for submitting electronic letters being the same as for articles, above. Typed paper letters are preferred to hand-written ones, in order to reduce the likelihood of introducing errors when the letter is typed in.

Articles, letters and *Newsletter* inquiries should be sent to Clive Davenhall. For electronic contributions the e-mail address is: newsletter@shastro.org.uk. For paper contributions see box opposite.

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General communications to the Society should be directed to the Secretary in the first instance.

SHA Website:

<http://www.shastro.org.uk>

The deadline for the next edition of the *Newsletter* is the 1st of October 2004. Please send all items to Clive Davenhall.