



## Contents:

- p.1 From the Director - Mike Frost
- p.4 Minor Planet Named After Pioneering Solar Photographer - Lee Macdonald
- p.6 Asteroids and the BAA - Mike Frost
- p.11 The 1973 June 30 Total Solar Eclipse - Bill Barton
- p.12 “The Journal of Astronomical History and Heritage” and the Astronomical History and Astronomers of the British Isles - Wayne Orchiston & Shi Yunli
- p.18 Observational Astronomy (can you identify the signatures?) - James Dawson
- p.19 Dates for your diary

## From the Director

*Mike Frost*

Our next section meeting will be on Saturday May 20th 2023, at the Birmingham and Midland Institute, Margaret Street, central Birmingham. You might remember it as the location of our 2016 meeting. The BMI is conveniently located in the city centre, about ten minutes' walk from New Street Station. There is parking close by (Paradise Circus or Snow Hill) although the venue is in the Birmingham clean air zone, so if you are coming by car, you should check online to see if you have to pay a clean air charge.

The BMI is also the meeting place of our sister society, the Society for the History of Astronomy, and the home of its superb Sir Robert Stawell Ball library, perhaps the finest collection of books on the history of astronomy outside the copyright libraries; I'm hoping that the librarians will be able to open up the library for us (it has moved in the building from its location in 2016). We will be meeting in the largest of the BMI's lecture theatres, so there will be plenty of room for attendees who are nervous about social distancing. Unfortunately we are not able to broadcast the meeting, sorry.

Our keynote speaker is someone I have been hoping to invite to talk to us for many years. Andrew Lound is a renowned speaker on many subjects, including astronomical history, Birmingham history, and the history of the Titanic. Andrew's style is theatrical and his talks are performances rather than lectures. I'm sure you will enjoy him talking about “William Herschel and his Lunatic friends”.

We also have Mark Edwards, who spoke to us in 2016 about astronomy in the works of JMW Turner; this time he will be talking about the early days of Jodrell Bank, where he was a PhD student in the 1960s, working with Ian Morison. Marie-Louise Archer will be

telling us about her visit to Ulugh Beg's observatory in Samarkand. Dr Pauline Norris will be telling us about ancient Egyptian Astronomy and Dr Lee Macdonald about his latest research into the Greenwich Observatory.

The full line-up:

Mark Edwards – The Early Years of Jodrell Bank.

Mark's talk explores the unlikely events which led Sir Bernard Lovell to establish a radio observatory in the Cheshire countryside and how it evolved from using scrap army radars to the building of the Lovell Telescope and its use in the space race of the 1950s.

Mary-Louise Archer - Ulugh Beg: sultan, astronomer, mathematician and visionary.

Ulugh Beg's life is one of the most extraordinary in the history of astronomy. A highly intelligent and cultured man and renowned astronomer, he juggled a life as ruler, administrator, scientist and promoter of the arts and education. This talk examines his legacy and the notable contributions he made to both the scientific and arts world of 15th century central Asia.

Pauline Norris - Ancient Egyptians and their Astronomy.

Why have we only recently begun to take an interest in ancient Egyptian astronomy? What did the Egyptians see and how did they relate this to their belief system? These questions and -inevitably- something about Tutankhamun and meteoritic iron will be discussed.

Lee Macdonald – Refugees, Star Clusters and Relativity: Astronomy at Greenwich Observatory in the First World War.

Based on original research in the Royal Greenwich Observatory archives, this talk tells the story of how the Royal Observatory at Greenwich not only kept running during the First World War but continued doing important astronomical research while contributing to the war effort. The story culminates with the Royal Observatory's essential contribution to the 1919 solar eclipse observations that confirmed Einstein's general theory of relativity.

Andrew Lound – “Herschel's Lunatic Friends”.

William Herschel became the most famous astronomer of the 18th century with his discovery of the planet we now call Uranus. Herschel communicated with many scientists and engineers and was on the fringe of one of the most influential groups of the 18th century – the Lunar Society. This group comprised the likes of Matthew Boulton, James Watt, James Keir, Joseph Priestley and William Withering, to name but a few. The group networked across Britain, linking scientists and engineers together. Based on his own research, Andrew takes us through Herschel's links with the group, which are more profound than imagined.

Tickets are £7.50 for BAA members, £10.00 for non-members. Please book through the BAA website: <https://britastro.org/event/historical-section-meeting-2023>

\*\*\*

I hope you have enjoyed the Christmas Quizzes which have appeared in the Journal for the last three years. Bill Barton and I have had a lot of fun dreaming up questions. I think it's easier for the historical section to come up with questions than some of the other sections, so although we have already thought of potential questions for the "next" quiz, it might be a while before other sections can catch up with us!

One question that we considered asking, but eventually passed on, was about the military ranks held by Presidents of the Association. The reason why we decided not to proceed with the question was because we had found so many presidents who had served in the armed forces. I guess I simply hadn't thought about this – but clearly in the years following the two world wars, many of those who became president had been conscripted, and one or two were professional soldiers.

Here is the best list we've got of military ranks held by BAA presidents. Have we missed anyone? Can you supply more details on those where we're not sure of the rank?

Captain:

Captain William Noble, first president,  
Captain William Herbert Steavenson  
Captain Bertrand Meigh Peek

Instructor Captain:

Instructor Captain Maurice Anderson Ainslie

Major:

Major Colin Ronan, former historical section director,  
Major Patrick Henry Hepburn,  
Major Arthur Everard Levin

Colonel:

Colonel Ernest Elliott Markwick, former variable star section director

Lieutenant Commander:

Lieutenant Commander Derek Howse, former historical section director

Commander:

Commander Henry Hatfield

Flying Officer:

Flying Officer Patrick Moore

There are other presidents (Harold Spencer Jones, Gerald Merton, Reggie Waterfield, Robert d'Escourt Atkinson, Harold Ridley) whose obituary mentions military service but is not clear with what rank. Does anyone know?

\*\*\*

Late last year came news of the passing of a towering figure in the study of the history of astronomy – Professor Jay Pasachoff of Williams College, Massachusetts. Jay was a speaker at the joint meeting we held with the SHA in March 2015 at the National Maritime, Greenwich, when he spoke about Galileo Galilei and Simon Marius: their 1609 and 1610 discoveries about our Moon and Jupiter's Moons. Jay began that lecture by showing images from the Svalbard eclipse of March 21st 2015 (an eclipse I was also privileged to see), which he had just returned from, as his main area of research was solar physics, in particular the physics of the solar corona. Jay led a research team from Williams to that eclipse, as he usually did, and probably saw more total solar eclipses than

anyone else in history, though he always played down that statistic. The day after the conference, Jay, his wife Naomi and I went to find Edmond Halley's grave; I have written about that adventure in "Hunting Halley" in newsletter number 6.

Jay and I were both working on chapters for a cross-cultural book on solar eclipses, which I'll say more about in the next newsletter. For now, I'll pay tribute to a knowledgeable, urbane man, great company, who it was a privilege to meet.

\*\*\*

In the last edition of the newsletter, we ran an article by Robert Persse on "Following Kepler". Robert wrote about how Johannes Kepler was able to deduce his three laws of planetary motion from the observations made by Tycho Brahe.

Robert carefully tabulated data which he then plotted to show how Kepler teased out the laws. Unfortunately, however, when we transcribed the data for display in the newsletter, we lost some of the information, making Robert's analysis more difficult to follow. We have re-instated Robert's original data in the online version of the newsletter (which can be downloaded).

Sorry about that, Robert.

What particularly frustrates me about this is that I'm a fan of articles that explain "how we know what we know".

So, I'd encourage you to download the updated version of the article to work through the calculations. It's worth the effort to achieve a better understanding of how Kepler came to his revolutionary discoveries.

\*\*\*

## **Minor Planet Named After Pioneering Solar Photographer** *Lee Macdonald*

In August 2022, the International Astronomical Union officially designated minor planet 2000 EG143, originally discovered on 3 March 2000, as minor planet 50723 Beckley. The minor planet was named in honour of Elizabeth Beckley (c. 1846-1927), one of the first women to do astronomical photography.

Elizabeth Beckley worked at Kew Observatory to the west of London. In the 1850s, members of the British Association for the Advancement of Science (BAAS), the body then responsible for running Kew Observatory, set up a 'photoheliograph', a small refracting telescope dedicated to solar photography. Its purpose was to photograph the Sun regularly in order to examine the relationship between sunspots and the variations in the Earth's magnetic field, which had recently been discovered to rise and fall in tandem with the sunspot cycle.

The photoheliograph used a then new photographic technology called 'wet collodion', which enabled sharp images of the Sun to be taken using snapshot exposures. However, the wet collodion process required two people to take the photographs. One person had to prepare the photographic plate immediately before exposure and then develop the exposed plate while it was still wet. Someone else had to aim the telescope and take the pictures. However, the BAAS was not a rich organisation and the observatory did not have funds to employ two people.

This was where Elizabeth Beckley came in. Elizabeth was the daughter of Kew Observatory's mechanical engineer, Robert Beckley, who was himself important for his role in developing the familiar cup anemometer that measures wind speeds on the tops of buildings. Elizabeth Beckley was still in her teens when she began photographing the Sun. It is likely that Robert Beckley employed his daughter to assist him with the solar photography without straining the budget. Elizabeth's name does not appear on any of the observatory's official salary lists. Yet a diary kept at Kew in the 1860s reveals occasional payments of £5 to 'Miss Beckley', suggesting that she was paid piecemeal.

Elizabeth Beckley's role in the Kew solar photography programme was acknowledged at the time by another pioneer of wet collodion astrophotography, Warren De La Rue (1815-1889). In 1865, De La Rue claimed that solar photography 'seems to be a work peculiarly fitting to a lady. During the day she watches for opportunities for photographing the Sun with that patience for which the sex is distinguished, and she never lets an opportunity escape her.' De La Rue's remarks suggest that Elizabeth might have watched for intervals of clear sky and operated the photoheliograph, while her father prepared and developed the plates. While it is possible that this father-daughter partnership worked the other way round, a photograph of the Sun taken with the Kew photoheliograph and preserved at the Science Museum in London is inscribed as having been taken by Elizabeth Beckley, suggesting that Elizabeth actually took the pictures at least some of the time.

In the early 1870s, the BAAS finally decided to stop supporting Kew Observatory and the solar photography programme was terminated. By then, Elizabeth had married a colleague at Kew Observatory, George Mathews Whipple (1842-1893), who became the observatory's superintendent (director) in 1876. The couple had two sons, of whom the oldest, Robert Stewart Whipple (1871-1953) became a director of the Cambridge Scientific Instrument Company and was also a collector of antique scientific instruments. His collection became the founding donation of the Whipple Museum of the History of Science at the University of Cambridge.

Elizabeth Beckley's solar work lived on after Astronomer Royal George Airy relaunched the Kew solar photography programme at the Royal Observatory, Greenwich in 1873. The Sun was photographed on every clear day at Greenwich, and then Herstmonceux, until 1976. There is also archival evidence suggesting that in the 1870s, Elizabeth helped to analyse the results of the solar photographs taken at Kew.

From the late nineteenth century onwards, women 'computers' played an important role in astronomical photography in observatories like Harvard and Greenwich. However, Elizabeth Beckley's work at Kew preceded them by at least two decades. It is good to see this pioneering astronomical photographer now being honoured among the great and the good of astronomy.





**Figure:** Citation certificate for minor planet 50723 Beckley. Courtesy Richard Hill.

\*\*\*

## Asteroids and the BAA

### Mike Frost

There is an interesting backstory to the preceding article. As I have said many times before, one of the perks of being section director is the amazing correspondence that arrives in my inbox. Even when I can't answer a query myself, I am often able to direct an enquiry to someone who can answer. Rik Hill of the Catalina Sky Survey contacted me to find out about Elizabeth Beckley of the Kew Observatory, and I was able to put him in touch with Lee Macdonald. Lee had researched the history of that institution, and knew Elizabeth's story, which he has now shared with us.

Rik emailed me to thank me for establishing the connection and revealed that his intention was to nominate Elizabeth Beckley to have an asteroid named after her. The Catalina Sky Survey, based in Tucson Arizona, is a US government-mandated project to find near-Earth objects. The survey has discovered thousands of asteroids. The International Astronomical Union rules that the discoverer of an asteroid has naming rights. So, it is one of Rik's retirement projects to find suitable names for the asteroids discovered by the survey.

Rik concluded his thanks by asking if I could suggest any more candidates for asteroid naming. I resisted the temptation to say “Meeeeeeee!” (I’d like a nice Earth-crossing asteroid which has a smallish chance of wiping out civilisation in a few hundred years’ time, please). Instead, I thought of the research we have been doing in the section over the last few years to highlight the achievements of our pioneering women, the female astronomers who joined the BAA in its first quarter-century, when the RAS did not allow women to join. I give a popular lecture on the “Pioneering women of the BAA” and so I was immediately able to reel off a list of a dozen women, all richly deserving of having an asteroid named after them.

Actually, that’s not quite correct. I was able to use the Asteroid Name/Citation search: <https://sbnmpc.astro.umd.edu/mpccitations/index.shtml> to check if my candidates had already been honoured. It turns out that Agnes Clerke, one of the greatest of all astronomical historians, already has an asteroid (number 9583). So does my predecessor Mary Evershed (nee Orr), the first director of the historical section, although the citation for asteroid 12628 Ackworthorr mis-spells her middle name as Ackworth rather than the correct Acworth. And Dorothea Klumpke, perhaps the first woman astronomer to hold a managerial post (as the director of the Bureau of Measurements at the Paris Observatory) has two asteroids named for her, 339 Dorothea and 1040 Klumpkea.

However, my other nominations went forward. And earlier this year, Rik emailed me to say that the first tranche of three names had been approved. 50724 Elizabeth Brown (first director of the solar section), 50725 Margaret Huggins (pioneering spectroscopist) and 50726 Annie Maunder (solar astronomer par excellence and early editor of the Journal). In February, we added 50727 Aliceverett, 50728 Catherinestevens and 50729 Fiammetta, to commemorate Alice Everett (astronomer, physicist, electrical engineer, TV pioneer), Catherine Octavia Stevens (director of the BAA meteor section 1905-11, researcher into solar eclipse shadow bands) and Fiammetta Wilson (prolific meteor observer, mandolin virtuoso). More names are in progress.

Which leads to another very interesting question. How many BAA members, past and present, have asteroids named for them? I contacted Richard Miles, director of the Asteroids and Remote Planets section, who had compiled a catalogue of around 120 members. Simply by trying names in the asteroid name search website, I was able to find another dozen candidates. Rik Hill was able to provide another 15 or so names (including 118945 Rik Hill).

Below is the list we have at the moment. We have identified 159 asteroids, commemorating 157 BAA members, plus asteroid 4522 Britastra. Two asteroids are named for more than one BAA member (784 Pickeringia, named for William and Edward Pickering, and 4027 Mitton, for Simon and Jacqueline Mitton). Four BAA members have two asteroids named after them (Dorothea Klumpke, Edward Singleton Holden, Jose Comas Sola and Gustav Stracke). The early names in the list are evocative of great names from the

Association's early history – Edward Emerson Barnard, George Ellery Hale, Cecilia Payne-Gaposchkin. Later entries, on the other hand, are often familiar names who one might bump into at the next meeting.

No.	Name	Named For
339	Dorothea	Dorothea Klumpke
366	Vincentina	Vincenzo Cerulli
708	Raphaela	Raphael Louis Bischoffsheim
784	Pickeringia	William and Edward Pickering
819	Barnardiana	Edward Emerson Barnard
872	Holda	Edward Singleton Holden
922	Schlutia	Henry Tiarks
992	Swasey	Ambrose Swasey
1019	Strackea	Gustav Stracke
1021	Flammario	Camille Flammarion
1024	Hale	George Ellery Hale
1040	Klumpkea	Dorothea Klumpke
1058	Grubba	Howard Grubb
1102	Pepita	Jose Comas Sola
1186	Turnera	Herbert Hall Turner
1201	Strenua	Gustav Stracke
1241	Dysona	Frank Dyson
1299	Mertona	Gerald Merton
1422	Stromgrenia	Elis Stromgren
1560	Strattonia	Frederick Stratton
1613	Smiley	Charles High Smiley
1616	Filipoff	Lionel Filipoff
1619	Ueta	Joh Ueta
1636	Porter	John Guy Porter (& Jermaine Gilversleeve Porter)
1637	Swings	Pol Swings
1645	Waterfield	Reggie Waterfield
1655	Comas Sola	Jose Comas Sola
1657	Roemera	Elizabeth Roemer
1658	Innes	Robert Innes
1660	Wood	Harry Edwin Wood
1754	Cunningham	Leland Cunningham
1826	Miller	John Anthony Miller
1827	Atkinson	Robert D'Escourt Atkinson
1877	Marsden	Brian Marsden
1898	Cowell	Philip Cowell
1899	Crommelin	Andrew Claude Crommelin
2039	Payne-Gaposchkin	Cecilia Payne Gaposchkin
2064	Thomsen	Ivan Thomsen
2157	Ashbrook	Joseph Ashbrook
2213	Meeus	Jean Meeus
2246	Bowell	Edward Leonard George Bowell
2249	Yamamoto	Issei Yamamoto
2261	Keeler	James Keeler
2378	Pannekoek	Antoine Pannekoek
2409	Chapman	Clark Russell Chapman
2465	Wilson	Robert Wilson



2543	Machado	Luis Machado
2549	Baker	James G Baker
2590	Mourao	Ronaldo Freitas Mourao
2602	Moore	Patrick Moore
2603	Taylor	Gordon Taylor
2635	Huggins	William Huggins
2863	Benmayer	Ben Mayer
2974	Holden	Edward Singleton Holden
3015	Candy	Mike Candy
3032	Evans	Robert Evans
3123	Dunham	David Dunham
3125	Hay	Will Hay
3152	Jones	Albert Jones
3173	McNaught	Rob McNaught
3174	Alcock	George Alcock
3202	Graff	Gareth (Graff) Vaughan Williams
3220	Murayama	Sadao Murayama
3222	Liller	William Liller
3431	Nakano	Sivichi Nakano
3487	Edgeworth	Kenneth Edgeworth
3521	Comrie	Leslie Comrie
3673	Levy	David Levy
3697	Guyhurst	Guy Hurst
3698	Manning	Brian Manning
3783	Morris	Charles Stanton Morris
3795	Nigel	Nigel Henbest
3853	Haas	Walter Haas
3869	Norton	Arthur Philip Norton
3922	Couper	Heather Couper
4024	Ronan	Colin Ronan
4025	Ridley	Harold Ridley
4026	Beet	Ernest Beet
4027	Mitton	Simon & Jacqueline Mitton
4030	Archenhold	F S Archenhold
4036	Whitehouse	David Whitehouse
4050	Mebailey	Mark Bailey
4084	Hollis	Andrew John Hollis
4099	Wiggins	Patrick Wiggins
4119	Miles	Howard Miles
4205	Hughes	David Hughes
4220	Flood	Thomas Flood
4239	Goodman	Neville Goodman
4326	McNally	Derek McNally
4522	Britastra	British Astronomical Association
4606	Saheki	Tsuneo Saheki
4614	Masamura	Kazutada Masamura
4648	Tirion	Wil Tirion
4923	Clarke	Arthur C Clarke
5392	Parker	Donald Parker
5502	Brashear	John A Brashear
5691	Fredwatson	FrederickWatson
5692	Shirao	Motomaro Shirao

5861	Glynjones	Glyn Jones
5862	Sakanoue	Tsutomu Sakanoue
6287	Lenham	Alan Pennell Lenham
6809	Sakuma	Seiichi Sakuma
6905	Miyazaki	Isao Miyazaki
6907	Harryford	Harry Ford
7102	Neilbone	Neil Bone
7120	Davidgavine	Dave Gavine
7170	Livesey	Ron Livesey
7177	Melvintaylor	Melvyn Taylor
7239	Mobberley	Martin Mobberley
7526	Ohtsuka	Katsuhito Ohtsuka
7648	Tomboles	Tom Boles
7845	McKim	Richard McKim
7955	Ogiwara	Tetsuo Ogiwara
7966	Richardbaum	Richard Baum
8078	Carolejordan	Carole Jordan
8079	Bernardlovell	Bernard Lovell
8166	Buczynski	Denis Buczynski
8377	Elmerreese	Elmer J Reese
8545	McGee	Hazel McGee
9432	Iba	Yasuaki Iba
9583	Clerke	Agnes Clerke
10381	Malinsmith	Konrad Malin-Smith
10737	Bruck	Hermann Bruck
10773	Jamespaton	James Paton
11378	Dauria	Tippy D'Auria
12498	Dragesco	Jean Dragesco
12628	Ackworthorr	Mary Acworth Evershed (nee Orr)
13390	Bouska	Jiri Bouska
13500	Viscardy	Jean Viscardy
13551	Gadsden	Michael Gadsden
16693	Moseley	Terry Moseley
17555	Kenkennedy	Ken Kennedy
20141	Markkidger	Mark Kidger
27412	Teague	Edward Thomas Henry Teague
28601	Benton	Julius Lanier Benton Jr
28602	Westfall	John Edward Westfall
30042	Schmude	Richard Willis Schmude Jr
31844	Mattwill	Matthew Will
31862	Garfinkle	Robert Allen Garfinkle
44473	Randytatum	Randy Tatum
45689	Brianjones	Brian Jones
47843	Maxson	Paul Maxson
50721	Waynebailey	Wayne Bailey
50724	ElizabethBrown	Elizabeth Brown
50725	MargaretHuggins	Margaret Huggins
50726	AnnieMaunder	Annie Maunder (nee Russell)
50727	Aliceverett	Alice Everett
50728	Catherinestevens	Catherine Octavia Stevens
50729	Fiammetta	Fiammetta Wilson (nee Helen
	Worthington)	

95824	Elger	Thomas Gwyn Empey Elger
95852	Leatherbarrow	Bill Leatherbarrow
95882	Longshaw	Nigel Longshaw
95928	Tonycook	Tony Cook
95935	Grego	Peter Grego
95980	HaroldHill	Harold Hill
95982	Beish	Jeffrey Donald Beish
102224	RaffaelloLena	Raffaello Lena
118945	Rikhill	Rik Hill
389293	Hasubick	Werner Hasubick

160 total

1 corporate: Britastra

2 shared by 2 people: Mittons and Pickerings

4 people have 2 asteroids named after them: Klumpke, Holden, Comas Sola, Stracke

Have we got everyone? I doubt it - every time I ask someone new for suggestions, they come up with another name I hadn't thought of. So, it's over to you. Don't be shy! Do you have an asteroid named after you? Are you on the list? If not – sorry! – let us know. Likewise, can you think of anyone past or present who we have missed off the list?

Once we have a more definitive list, we will publish it in the Journal. We hope to include orbital elements, so that BAA members can locate the asteroids.

All yours ...

\*\*\*

## ***1973 June 30 Total Solar Eclipse*** **Bill Barton**

Fifty years ago this summer, an unusual total solar eclipse occurred. Perhaps the date is a clue, only a few days before aphelion when the Sun appears at its smallest. A Moon near perigee would produce an unusually long duration eclipse and this is exactly what happened fifty years ago this summer.

Transolar Travel Ltd, of 6 Church Road, Bebington, Cheshire chartered the mv Monte Umbe (14,400 ton displacement, 508 ft long, which entered service in 1959, before being decommissioned in 1975 and broken up in 1979), the flagship of the Spanish Aznar line, Captain Vicente Mirallave, to carry around 300 BAA members and friends in a single class of accommodation, for 16 days at sea, to experience six minutes and forty seconds of totality. She cast off at 6:00pm on Friday 22 June 1973 from Liverpool and docked back there on July 2. Fares started at £88:00. She called at Las Palmas in the Canary Islands on the way to visit a NASA tracking station and solar observatory. The ship was headed to a point twenty miles off the west African country Mauritania (19° 37' 30" N, 16° 55' 12" W to be exact). The only navigational charts available for the area gave conflicting information. However, it was later determined that the ship had dropped anchor less than 1545ft (515yd, 471m) from the centre line of the eclipse. The track being 159 miles (256km) wide. Long duration eclipses are exceeding rare and the previous total eclipse over 7 minutes duration was on July 1, 1098, which lasted 7 minutes and 5 seconds. There will not be a longer total solar eclipse until June 25, 2150. A dress rehearsal took place the day before totality. A film

was produced under the title A Line to the Sun by Alan Sidi which is still available on Martin Mobberley's YouTube channel in four parts. The Sky at Night team were also aboard. Patrick Moore was so impressed by a west African port the ship called at he penned a song which was performed aboard under the title "Bo Bo Nouadhibou". A subsequent Sky at Night programme "The African Eclipse" was first broadcast on BBC One at 23:35 on Wednesday 11th July 1973. Images of the cruise can be found at Andrew Wells' Flickr Album:

<https://www.flickr.com/photos/69740479@N05/albums/72157629559729457>

An Air France testbed Concorde also flew from Las Palmas to travel under the shadow of the Moon. It achieved 74 minutes of totality. It just so happens that the Moon's shadow moves over the Earth's surface at something like 1500 mph (2400 kmph, Mach 1.95), the cruising speed of Concorde. An altitude of 52,000 ft (9.8 miles, 15.8km) allowed those aboard to get really well dark-adapted and so they could see far more of the corona than those on the Monte Umbe or other observing stations. An account of this flight can be found in the book "Racing the Moon's Shadow with Concorde 001", by Pierre Léna. A written account of the eclipse can be found on pages 126-134 of Patrick Moore's "TV Astronomer, thirty years of 'The Sky at Night'". Readers might like to look out for another piece on this eclipse in a future edition of the Journal.

\*\*\*

## **"The Journal of Astronomical History and Heritage" and the Astronomical History and Astronomers of the British Isles** *Wayne Orchiston & Shi Yunli*

The *Journal of Astronomical History and Heritage (JAHH)* was co-founded in 1998 by the New Zealander Wayne Orchiston and the late John Perdrix (from Australia), to provide an outlet other than the *Journal for the History of Astronomy* for those researching astronomical history after the RAS closed down its *Quarterly Journal* and the new owners of *Vistas in Astronomy* decided to no longer publish papers on historical topics. The *JAHH* was launched with the blessing of IAU Commission 41 (History of Astronomy), and the first number featured papers by well-known astronomers, Steve Dick (USA, who was then the President of C41), the late Mary Brück (Scotland), the late Jay Pasachoff (USA) and Wayne Orchiston (Australia).

From those humble beginnings the *JAHH* has grown into an open access international e-journal that is now published four times a year (in March, June, September and December), and can be downloaded (free of charge) from the ADS and Rizal Technological University (Philippines) web sites and its own dedicated web site. All papers are refereed prior to publication, and there are no page charges. On 1 August 2022 ownership of *JAHH* transferred from Wayne Orchiston to the University of Science and Technology of China, which has a strong History of Science and Scientific Archaeology Department, led by the astronomer, Professor Shi Yunli. Professors Shi and Orchiston were appointed as Co-Editors of the journal.

The aim of the *JAHH* is to courage worldwide research on archaeoastronomy, ethnoastronomy and the history of astronomy, and provide an avenue for publication of such research. Although the *JAHH* is happy to accommodate papers on any aspect of these topics, we have a special interest in ethnoastronomy, historic solar and lunar

eclipses, historic transits of Venus, cometary astronomy, observatory histories, nautical astronomy, and the history of radio astronomy.

The *JAHH* has an Editorial Board of well-known astronomers from Argentina, Australia, Canada, England, Germany, Greece, Honduras, India, Indonesia, Japan, Netherlands, South Africa, South Korea, Sweden, the USA and Uzbekistan. The Co-Editors, Professors Wayne Orchiston (Thailand) and Shi Yunli (China) are supported by six Associate Editors: Dr Clifford Cunningham (USA), Professor Richard de Grijs (Australia), Associate Professor Duane Hamacher (Australia), Dr James Lequeux (France), Professor Mohammad Mozaffari (China) and Dr Peter Robertson (Australia). Before joining the 'Editorial Team', Richard, James and Peter all had many years of experience editing highly regarded astronomical or physics journals.

Over the years, many papers of special interest to BAA members have been published in the *JAHH*; including the following:-

- Bailey, M.E., 2007. Eric Melvyn Lindsay and astronomy in Ireland. 10(3), [163-166](#)
- Batten, A.H., 2013. From the death of the solarisians to the birth of astrophysics. 16(3), [287-294](#)
- Batten, A.H., 2014. The beginnings of modern astronomy at the University of St. Andrews. 17(1), [39-44](#)
- Batten, A.H., 2016. Comte, Mach, Planck, and Eddington: a study of influence across generations. 19(1), [51-60](#)
- Batten, A.H., 2017. On the history of the argument for design in astronomy. 20(1), [119-125](#)
- Becker, B.J., 2010. From dilettante to serious amateur: William Huggins' move into the inner circle. 13(2), [112-119](#)
- Bianchi, S., 2021. Where was mean solar time first adopted? 24(2), [337-344](#) [In England.]
- Brandt, J.C., 2010. St. Helena, Edmond Halley, the discovery of stellar proper motion, and the mystery of Aldebaran. 13(2), [149-158](#)
- Brück, H.A., & Brück, M.T., 2000. Reflections of life as a student and a young astronomer in Germany in the 1920. 3(2), [115-129](#)
- Brück, M.T., 1998. Mary Ackworth Evershed née Orr (1867-1949), solar physicist and Dante scholar. 1(1), [45-59](#)
- Brück, M.T., 2003. An astronomer calls: extracts from the diaries of Charles Piazzi Smyth. 6(1), [37-45](#)
- Brück, M., 2007. Armagh, Dunsink and the early days of the Irish Astronomical Society. 10(3), [167-172](#)
- Butler, C.J., 2007. The Armagh-Dunsink-Harvard Telescope: from dream to oblivion. 10(3), [173-178](#)
- Chapman, A., 2003. Porters, watchmen, and the crime of William Sayers: the non-scientific staff of the Royal Observatory, Greenwich, in Victorian times. 6(1), [27-36](#)
- Chapman, A., 2007. Sir Robert Stawell Ball (1840-1913): Royal Astronomer in Ireland and astronomy's public voice. 10(3), [198-210](#)
- Clarke, D., & Kinns, R., 2012. Some new insights into the history of the Glasgow time ball and time guns. 15(1), [59-67](#)
- Corvan, P., 2007. Under Irish skies. 10(3), [179-186](#)
- Cunningham, C.J., & Orchiston, W., 2011. Who invented the word asteroid: William Herschel or Stephen Weston? 14(3), [230-234](#)
- Cunningham, C., 2020. Herschel's spurious moons of Uranus: their impact on satellite orbital theory, celestial cartography and literature. 23(1), [119-162](#)
- Davenhall, C., 2009. Obituary: Dr. Mary Brück (1925-2008). 12(1), [81-83](#)
- Davenhall, C., 2010. James Ferguson: a commemoration. 13(3), [179-186](#)



- Davenhall, C., 2012. James Ferguson remembered. 15(1), [57-58](#)
- de Asúa, M., 2006. Sir David Brewster's changing ideas on the plurality of worlds. 9(1), [83-92](#)
- de Grijs, R., 2020. Alexander Bruce: Scotland's accidental 'scientific revolutionary'. 23(2), [267-280](#)
- de Grijs, R., 2021a. European longitude prizes. 4: Thomas Axe's impossible terms. 24(3), [739-750](#)
- de Grijs, R., 2021b. William Dawes: practical astronomy on the 'First Fleet' from England to Australia. 24(1), [7-40](#)
- de Grijs, R., 2022. Gravitational conundrum: confusing clock-rate measurements on the 'First Fleet' from England to Australia. 25(4), [737-744](#)
- Duerbeck, H.W., & Beer, P., 2006. Arthur Beer and his relations with Einstein and the Warburg Institute. 9(1), [93-98](#)
- Gargano, M., 2012. The development of astronomy in Naples: the tale of two large telescopes made by William Herschel. 15(1), [30-41](#)
- Hughes, D.W., & Cartwright, S., 2007. John Michell, the Pleiades, and odds of 496,000 to 1. 10(2), [93-99](#)
- Johnson, K., 2006. A glimpse at the astronomy heritage of the Science Museum, London. 9(2), [159-165](#)
- Kinns, R., 2010. Time balls, time guns and Glasgow's quest for a reliable local time service. 13(3), [194-206](#)
- Kinns, R., Fuller, P., & Bateman, D., 2021. Exploring the Portsmouth time balls. 24(3), [751-769](#)
- Kinns, R., 2022. Visual time signals for mariners between their introduction and 1947: a new perspective. 25(4), [601-713](#)
- Kollerstrom, N., 2006. John Herschel on the discovery of Neptune. 9(2), [151-158](#)
- Kollerstrom, N., 2009. The naming of Neptune. 12(1), [66-71](#)
- Latas, J., Pape, D., and Simões, A., 2020. Where exactly did A.S. Eddington observe the total solar eclipse of 29 May 1919? (Onde, exactamente, A.S. Eddington observou o eclipse solar de 29 Maio de 1919?). 23(3), [614-627](#)
- Latusseck, A., 2008. William Herschel's fifty-two fields of extensive diffused nebulosity - a revision. 11(3), [235-246](#)
- Lequeux, J., 2020. Geodetic arc, pendulums and the shape of the Earth. 23(2), [297-326](#)
- Lindsay, R., Lindsay, J. & Lindsay M., 2007. Family memories of very special uncle. 10(3), [187-189](#)
- McConnell, J.C., 2007. Dr Eric Melvyn Lindsay (1907-1974): a personal view. 10(3), [190-192](#)
- McNally, D., 2007. Dr Eric Lindsay: personal recollections. 10(3), [193](#)
- Mestel, L., 2004. Arthur Stanley Eddington: pioneer of stellar structure theory. 7(2), [65-73](#)
- Montgomery, C., Orchiston, W., & Whittingham, I., 2009. Michell, Laplace and the origin of the black hole concept. 12(2), [90-96](#)
- Moore, P., 1998. Obituary: Lieutenant-Commander H. Derek Howse, 1919 - 1998. 1(2), [155](#)
- Moseley, T., 2007. Dr Eric Lindsay: A, B, C, D ... to Z. A personal recollection. 10(3), [194-196](#)
- Nicholson, D.S., 2007. Remembering Eric and Sylvia Lindsay during the war years. 10(3), [197](#)
- Orchiston, W., 2001. The English Equatorial Mounting and the history of the Fletcher telescope. 4(1), [29-42](#)
- Orchiston, W., 2010. The changing role of the 'Catts Telescope': the life and times of a nineteenth century 20-inch Grubb reflector. 13(3), [235-254](#)
- Orchiston, W., 2017. Cook, Green, Maskelyne and the 1769 transit of Venus: the legacy of the Tahitian observations. 20(1), [35-68](#)

- Orchiston, W., & Darlington, V., 2017. A tale of two telescopes: North Queensland and the 1882 transit of Venus. 20(2), [223-253](#)
- Orchiston, W., & Rowe, G., 2021. New Zealand's first scientific observatories: the tent observatories used on Cook's second and third voyages to the Pacific. 24(4), [1033-1056](#)
- Orchiston, W., & Wells, W., 2020. Cook's third voyage to the Pacific and early scientific astronomy on the north-western coast of America: the sojourn at Nootka Sound in April 1778. 23(1), [174-208](#)
- Pasachoff, J.M., 1999. Halley and his maps of the total eclipses of 1715 and 1724. 2(1), [39-54](#)
- Perkins, A., 2001. 'Extraneous Government Business': the Astronomer Royal as government scientist: George Airy and his work on the Commissions of State and other bodies, 1838-1880. 4(2), [143-154](#)
- Satterthwaite, G.E., 2001a. The life and times of George Biddell Airy: a symposium. 4(2), [99-100](#)
- Satterthwaite, G.E., 2001b. Airy and positional astronomy. 4(2), [101-113](#)
- Satterthwaite, G.E., 2001c. Airy's transit circle. 4(2), [115-141](#)
- Satterthwaite, G.E., 2003. Airy's zenith telescopes and "the birth-star of modern astronomy". 6(1), [13-26](#)
- Sheehan, W., & Lockwood, G.W., 2020. Seeking an inconstant constant: the quest to discover the variability of the Sun from William Herschel to Andrew Ellicott Douglass. 23(1), [63-88](#)
- Spencer Jones, J., 2022. The 1922 solar eclipse at Christmas Island: "Our disappointment it is impossible to describe." 25(3), [469-480](#)
- Steinicke, W., 2012. The M51 mystery: Lord Rosse, Robinson, South and the discovery of spiral structure in 1845. 15(1), [19-29](#)
- Steinicke, W., 2015. William Herschel and the 'garnet' stars:  $\mu$  Cephei and more. 18(2), [199-217](#)
- Steinicke, W., 2016. William Herschel's 'Hole in the Sky' and the discovery of dark nebulae. 19(3), [305-326](#)
- Ward, F., 2001. The Airys at Greenwich. 4(2), [155-161](#)

Notwithstanding the foregoing listing, the four issues of the *JAHH* published in any one year cover a much wider range of topics, as illustrated by the following Contents Pages of the last three issues published in 2022. Note that each issue of the *JAHH* has a dedicated cover, and the three covers on the 2022 issues are shown below. In addition to research papers, each issue of the *JAHH* contains a selection of book reviews, and from time-to-time reports are published of IAU Commission C3 (History of Astronomy) and its Working Groups and Project Groups, along with reports of other groups. The *JAHH* is a valuable resource available free of charge to members of the Historical Section of the BAA (and others). We invite you to plunge into this pool of information and make full use of it in your research projects.

At the time of writing (February 2023) the University of Science and Technology of China was in the process of establishing a new web site. We expect this to be up and running by the end of March 2023 and easily accessed via a web search on "Journal of Astronomical History and Heritage". All future issues of the journal will be posted on this web site and continue to be available also on the ADS and Rizal Technological University web sites but note that the National Astronomical Research Institute of Thailand ceased posting new issues of the *JAHH* on its web site after the first author of this article left that Institute on 30 September 2021.

CONTENTS

Page

Papers Etc.

Pieter Johannes van Rhijn, Kapteyn's Astronomical Laboratory and the <i>Plan of Selected Areas</i> <i>Pieter C. van der Kruit</i>	341
The origins and legacy of 'Kepler's Gap' <i>Clifford J. Cunningham</i>	439
In search of the <i>Promontorium Somnii</i> <i>William Tobin and James Lequeux</i>	457
Papers on the History of French Astronomy Published in the <i>Journal of Astronomical History and Heritage</i>	468
The 1922 solar eclipse at Christmas Island: "Our disappointment it is impossible to describe" <i>Jonathan Spencer Jones</i>	469
John Beebe and the development of astronomy in Queensland, Australia <i>Peter E. Anderson and Wayne Orchiston</i>	481
Notes for a chronology of the telescope-making activities of the Neapolitan optician Francesco Fontana <i>Paolo Del Santo</i>	503
On the origin of the Keplerian Telescope <i>Paolo Molaro</i>	511
Tales from India. 1: Meteor showers in Classical and Colonial sources <i>R.C. Kapoor</i>	518
Henri Deslandres: from molecular to solar physics <i>James Lequeux (with an Appendix by Jean-Marie Malherbe)</i>	553

Obituary

Obituary: William Tobin (1953–2022) <i>James Lequeux</i>	576
---	-----

IAU and Other Reports

IAU Project Group on Asian Astronomy: Report 2019–2021 <i>Wayne Orchiston and B.S. Shylaja</i>	577
---	-----

Book Reviews Etc.

<i>Astrobiology: Science, Ethics, and Public Policy</i> , edited by Octavio Chon Torres, Ted Peters, Joseph Seckbach, and Richard Gordon <i>Steven J. Dick</i>	584
<i>Extraterrestrial Intelligence: Academic and Societal Implications</i> , edited by Jensine Andresen and Octavio A. Chon Torres <i>Steven J. Dick</i>	584
<i>The Sky is for Everyone</i> , edited by Virginia Trimble and David A. Weintraub <i>Kenneth S. Rumstay</i>	587
<i>Michael Maestlin's Manuscript Treatise on the Comet of 1618: An Edition and Translation of Manuscript WLB Stuttgart, Cod. Math. 4° 15b, Nr 8</i> , edited by Miguel Granada and Patrick Boner <i>Clifford Cunningham</i>	589
<i>Investigating Art, History and Literature with Astronomy: Determining Time, Place, and Other Hidden Details Linked to the Stars</i> , by Donald W. Olsen <i>Marion Dolan</i>	591
<i>Ganitagannad: Mirror of Mathematics. An Astronomy Text of 1604 CE in Kannada by Sankaranārāyaṇa Joisaru of Sringeri</i> , translated and with a mathematical analysis by B.S. Shylaja and Seetharama Javagal <i>S. Balachandra Rao</i>	592
<i>A Treatise on Moon Maps: Visual Studies on Paper, 1610-1910</i> , by Francis J. Manasek <i>Wayne Orchiston</i>	593
<i>Golden Years of Australian Radio Astronomy: An Illustrated History</i> , by Wayne Orchiston, Peter Robertson and Woodruff T. Sullivan III <i>Harry Wendt</i>	596

Papers on the History of East Asian Astronomy Published in the <i>Journal of Astronomical History and Heritage</i>	598
--	-----

CONTENTS

Page

Papers

Visual time signals for mariners between their introduction and 1947: a new perspective <i>Roger Kinns</i>	601
Importance of Bhāskara's <i>Karāṇakūṭīhala</i> as an algorithmic handbook <i>K. Rupa, Padmaja Venugopal, Anita Udagatti, S.K. Uma and S. Balachandra Rao</i>	714
The stellar photometers of Harold L. Johnson, and the first years of the Mexican National Astronomical Observatory at San Pedro Mártir <i>William J. Schuster, Antolin Cordova, Marco Arturo Moreno Corral and Cristina Eugenia Siqueiros Valencia</i>	721
Gravitational conundrum: confusing clock-rate measurements on the 'First Fleet' from England to Australia <i>Richard de Grijs</i>	737
Ancient and Renaissance astronomers in Shakespeare's <i>The Tragedy of Hamlet</i> <i>Enrico Massaro and Peter D. Usher</i>	745
The role of astronomy in determining the locations of geographical features during the eleventh to seventeenth centuries: a case study from the Thai–Malay Peninsula <i>Peeravit Koad and Thatdao Rakmak</i>	760
Govind Swarup, Potts Hill and the Kalyan Array: India's first radio telescope <i>Wayne Orchiston</i>	773
A hidden volvelle in Petrus Apianus' <i>Astronomicum Caesareum</i> <i>Lars Gisién</i>	802

Book Reviews

<i>Beyond Paradigms in Cultural Astronomy: Proceedings of the 27<sup>th</sup> SEAC Conference Held Together with the EAA</i> , edited by A. César González-García, Roslyn M. Frank, Lionel D. Sims, Michael A. Rappenglück, Georg Zotti, Juan A. Belmonte, and Ivan Šprajc <i>Marion Dolan and Clifford Cunningham</i>	811
<i>Cosmic Odyssey: How Intrepid Astronomers at Palomar Observatory Changed our View of the Universe</i> , by Linda Schweizer <i>Samantha M. Thompson</i>	815
<i>Shakespeare's Knowledge of Astronomy and the Birth of Modern Cosmology</i> , by Peter D. Usher <i>Clifford Cunningham</i>	816
<i>Publishing Sacrobosco's De Sphaera in Early Modern Europe: Modes of Material and Scientific Exchange</i> , edited by Matteo Valleriani and Andrea Ottone, <i>Miguel A. Granada</i>	817
<i>Venus</i> , by William Sheehan and Sanjay Shridhar Limaye <i>Clifford Cunningham</i>	822
<i>Mystery of the Ashen Light of Venus</i> , by John C. Barentine. <i>Clifford Cunningham</i>	822
<i>Isaac Newton and the Study of Chronology: Prophecy, History, and Method</i> , by Cornelius J. Schilt <i>Steven J. Dick</i>	824
<i>Flashes of Creation: George Gamow, Fred Hoyle, and the Great Big Bang Debate</i> , by Paul Halpern <i>Cormac O'Riagain</i>	827

Index

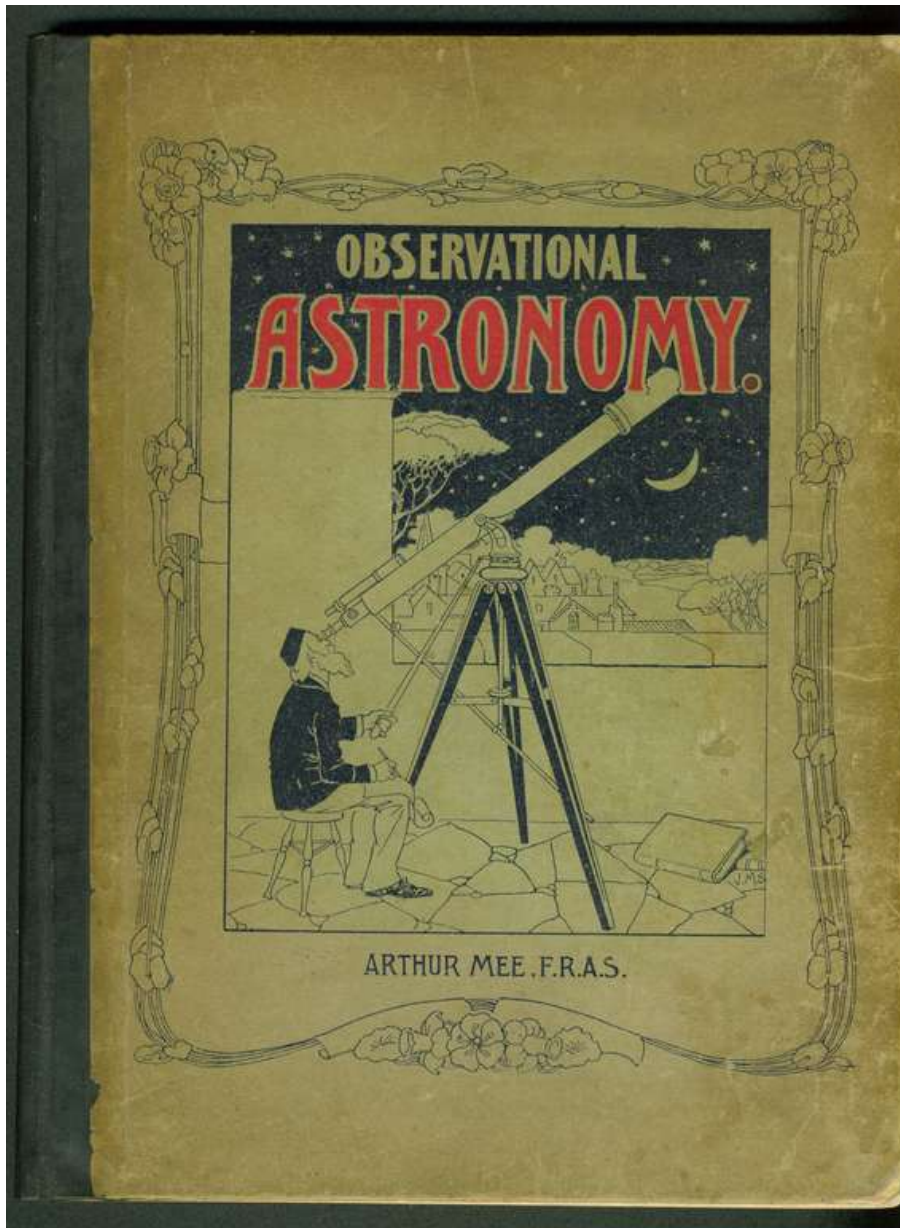
829



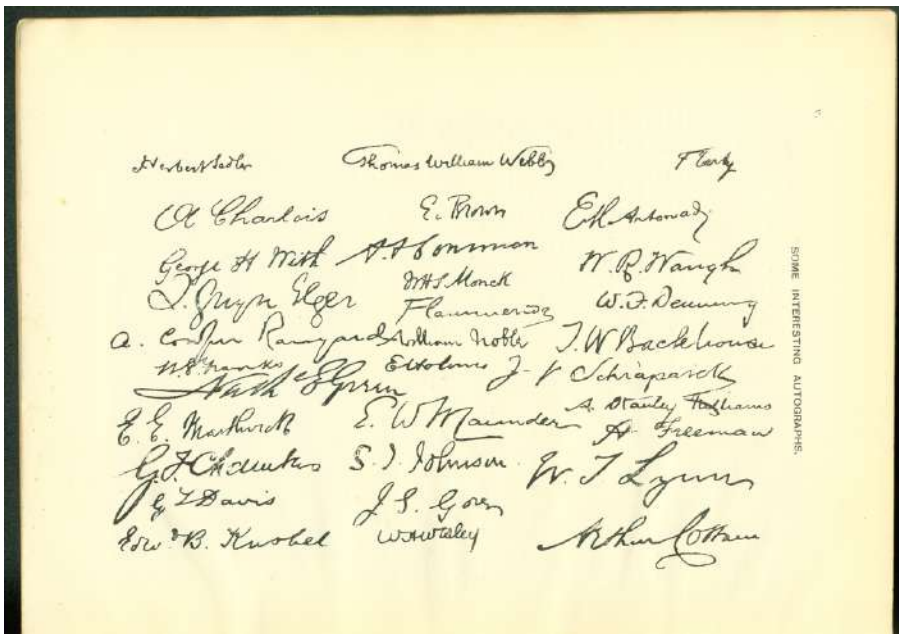


**Observational Astronomy, second (thoroughly revised) edition,  
Arthur Mee, 1897**  
*James Dawson*

This book ends with a page of printed signatures. How many do our readers recognise?







## Dates for your diary

SHA Webinar, Wednesday March 8 2023, 8:00pm, Society Members' Short Presentations, email [meetings@shastro.org.uk](mailto:meetings@shastro.org.uk) to attend.

SHA Spring Conference, Saturday April 1 2023, 1:00pm to 5:00pm, online Zoom Meeting due to national rail strike. Booking essential, entrance fee, email [meetings@shastro.org.uk](mailto:meetings@shastro.org.uk) to attend.

SHA Webinar, Wednesday May 10 2023, 8:00pm, "Becoming Astronomers", by Bernie Taylor, email [meetings@shastro.org.uk](mailto:meetings@shastro.org.uk) to attend.

Historical Section Meeting, also at the Birmingham & Midland Institute, 9 Margaret St., Birmingham, but on Saturday May 20, 2023. Booking essential, through the BAA website.

SHA Summer Picnic, Saturday July 1<sup>st</sup> from 12:00 noon at the Jeremiah Horrocks Observatory, Moor Park, Preston, email [meetings@shastro.org.uk](mailto:meetings@shastro.org.uk) to attend.