
Journal

of the

Nottingham Astronomical Society

February 2024



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Thursday, February 1st

**Nottingham Emmanuel School
Gresham Park Road,
West Bridgford,
Nottingham, NG2 7YF**

7:45pm (doors open at 7:15pm)

This evening we welcome

Prof Frazer Pearce

who will be speaking on

**Placing the Timelords on the
Kardashev Scale**

Chairman's Message, February 2024

Hello everyone,

A bit of a wet start to the year, followed by cold and wind! Nevertheless we had a good turnout at our first two meetings. The new track at the observatory seems to be holding up – we opened the observatory recently and had a reasonable turnout despite the cold, and got to see Uranus, Jupiter and the moon before the clouds rolled in. We hope to do more of this sort of event now the track lets people get to the observatory more easily and crucially lets them get out too!

We have some interesting talks lined up, the first being about the Kardashev scale, and where Dr Who and the Timelords fit into that, given by Professor Frazer Pearce. So if you aren't up to speed on either of those you will be after this!

Best wishes to everyone,

Julian

NAS Chair

Nottingham Astronomical Society 2024 Membership

Membership subscriptions for 2024 became due for renewal in January. All current members will receive their renewal forms by email detailing your membership rate before the next meeting. In recognition of the rise in cost of living, the membership subscriptions have been frozen at the current rates.

Individual £30 Concessions £5 Family £45*

*A new family rate has been introduced and replaces the old partnership membership. This new category covers a maximum of two Adults, and Children/Students living at the same address.

Details of how to renew your membership will be provided in the renewal notice, but we encourage members to renew their membership using BACS electronic bank transfer.

I hope you have enjoyed the meetings and events we have organised over the past year, and that you are able to renew your membership of the society in 2024.

Richard Severn

Vice Chair and Membership Secretary

Solar Scope Angst

In November 2023, member David Dunford gave us a talk at Plumtree about his journey on deciding what solar scope he should purchase. If you weren't there, his conclusion was that he didn't actually need a dedicated solar scope.

During David's excellent talk he linked to a number of useful online resources and said he would share these with members. Here are those links:

USET – Belgium - <https://www.sidc.be/uset/>

Solar Dynamics Observatory - <https://sdo.gsfc.nasa.gov/data/>

SOHO Archive - <https://soho.nascom.nasa.gov/data/data.html>

CESRA - https://www.astro.gla.ac.uk/users/eduard/cesra/?page_id=187

The Nottingham Astronomical Society: E - SERVICES

Whether or not you are a NAS member, you can keep up to date with details of the Society's meetings and other events by visiting the NAS website: www.nottinghamastro.org.uk

NAS on Facebook

You are welcome to connect with other members and friends of the NAS on Facebook by going to: <http://www.facebook.com/nas.org.uk>

NAS on Twitter

The Society has a Twitter account at <https://twitter.com/NottinghamAstro>

NAS Journal e-mailing list

To register for your monthly e-mailed link to the NAS Journal, and a copy of our SkyNotes, just e-mail secretary@nottinghamastro.org.uk

You don't have to be a Society member to take advantage of this service.

If you happen to change your email address, please remember to inform the Society by emailing us at treasurer@nottinghamastro.org.uk

Sky Notes

February 2024

Compiled by Roy Gretton

All times given below are in Universal Time



PHASES OF THE MOON

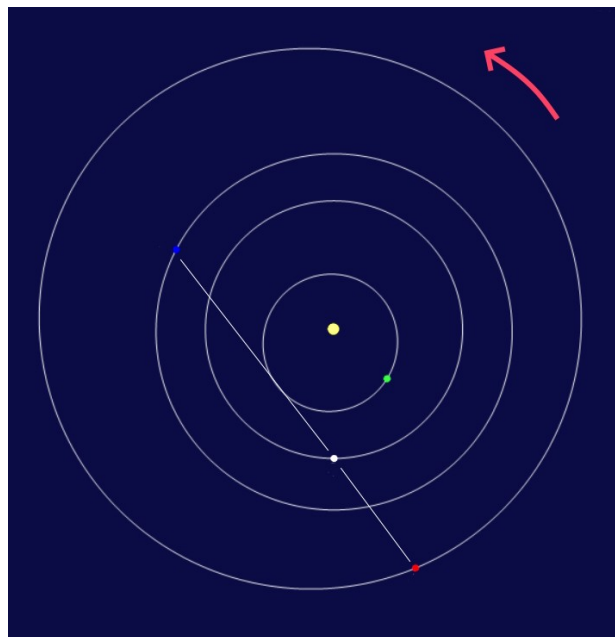
Phase	Date
Last Quarter	February 2 nd
New Moon	February 9 th
First Quarter	February 16 th
Full Moon	February 24 th

This month the Moon is closest to Earth on the 10th, and furthest on the 25th.

THE PLANETS

The Inner Solar System on February 22nd

Mercury (green), Venus (white) and Mars (red) are all to the west of the Sun when viewed from Earth (blue) and are therefore morning objects. Venus and Mars are in conjunction. The red arrow shows the direction of rotation.



Mercury is unobservable this month as it approaches superior conjunction on the 28th.

Venus is now much less prominent in the morning sky, being about 20 degrees south of the celestial equator and rising barely an hour before the Sun.

Mars continues to be very difficult to spot in the dawn glow, as it rises little more than half an hour before the Sun throughout February. On the 22nd it will be just over half a degree to the south of the much brighter Venus.

Jupiter, magnitude -2.2, continues to be prominent in the evening sky, but sets by 11 pm at the end of the month.

Phenomena of Jupiter's satellites

The **reappearance of Jovian satellites from eclipse** is the easiest type of phenomenon to observe with a small telescope (say, 50mm aperture). As we are now viewing Jupiter after opposition, satellites will reappear from eclipse on the east side of the planet (viewed from Earth). Next in ease of observation (with instruments of 100mm aperture and above) are **shadow transits**. In this case, look for a dark spot crossing Jupiter's disk. Lists of eclipse reappearances and shadow transits visible in the evenings this month are given below. *In the case of reappearances, start looking **several minutes ahead** of the stated time, because this refers to the moment when Jupiter's shadow bisects the satellite.*

February	Reappearance from eclipse of
2 nd	Europa 18:56
7 th	Io 22:52
9 th	Europa 21:35
16 th	Io 19:16
23 rd	Io 21:12
29 th	Ganymede 22:00

February	Shadow transit of
1 st	Io ends 18:13
4 th	Ganymede 18:29 to 20:06
8 th	Io 18:00 to 20:09
15 th	Io 19:56 to 22:05
18 th	Europa ends 18:32
24 th	Io ends 18:30
25 th	Europa 18:48 to 21:08
29 th	Io begins 23:47

Saturn has now disappeared into the sunset glow, and will reach solar conjunction on February 28th.

Uranus, in the constellation of Aries, will be setting at midnight at the end of February.

Neptune is now unobservable.

METEORS

There are no notable meteor showers in February.

DIARY DATES 2024

Monthly Meetings of the Nottingham Astronomical Society

1. Meetings at
Nottingham Emmanuel School
Gresham Park Road,
West Bridgford,
Nottingham, NG2 7YF

Held on the **FIRST Thursday** of each month (**unless otherwise stated**)
except **August**

Doors open at 7:15pm for 7:45pm start.

*These events are normally centred around a talk by a visiting speaker,
except Quiz Nights, etc, when NAS members provide the activities.
Normally we have a **Helpdesk** open at each meeting.*

Date	Topic	Speaker
February 1 st	Placing the Timelords on the Kardashev scale	Prof Frazer Pearce
March 7 th	Exploring the distant universe with cosmic explosions: what reionized the universe?	Nial Tanvir University of Leicester
April 4 th	The Search for Dark Matter	Prof Anne Green
May 2 nd	SMILE! Revolutionising our views of the Sun-Earth connection	Dr Jennifer Carter

2. Social and Practical Astronomy Meetings at the Burnside Memorial Hall, Plumtree

Church Hill, Plumtree, Nottingham, NG12 5ND
Held on the **THIRD Thursday** of each month from **7:30pm**

These meetings are of a more informal nature, providing opportunity for members and guests to share their hobby over a cup of tea or coffee, as well as listening to a short talk or discussion

The next meeting will be on **February 15th**

Social and Practical Astronomy, Plumtree, January 2024

The first talk at Plumtree in 2024 was by member Neil Mudford on An Introduction to Astronomy. Neil talked about a number of aspects of astronomy and the various entities inside our solar system and outside of it. Neil has a passion for space exploration and its history and aspects of this got covered too. The talk precipitated a number of questions, some on topics as varied as political history in the 1950s and 1960s. Thanks to Neil for the talk.

Chris made a wonderful cake (right) which didn't last very long.

The topic of the February Plumtree meeting is about the science of science fiction and Julian is leading this and we hope to have a number of people talking about the science in some of the science fiction books and movies. If you want to say something on the topic, let Julian or me know.



In March, member Graham Winstanley will be talking to us about his journey in astronomy and astrophotography which promises to be an interesting talk.

In April, member Joe Colls will be giving us a talk on a space-exploration topic, a must for anyone interested in rockets and space travel.

James Dawson

helpdesk@nottinghamastro.org.uk

David Lukehurst

17th February 1954 – 4th January 2024

A tribute from Marcus Stone

David passed away suddenly and unexpectedly on the evening of the 4th of January, a great shock and loss to Lindsey and his immediate family. I have known David since the mid-1990s through his involvement with the NAS. For some years David was a very active member and was Curator of Instruments as well as leading as President of the Society for some years. He was key to obtaining National Lottery funding for the Observatory project. David put in an enormous amount of work to get this through. He also was involved in projects at the Observatory site.

David's keen interest and work was homeopathy and ran his clinic from his home in Sherwood, he was also an enthusiastic and talented Telescope Maker and his skills were widely recognized and appreciated, nationwide as well as further afield. A few years ago he built the largest telescope in Norway in a private observatory for Knut Aarseth at Komet. He also had commissions in France (several parts of France), Spain and Slovenia.

Many a time when I needed something manufacturing for my telescope or drive system David very helpfully would come up with the goods. In his late 40s and early 50s David took up rock climbing and mountaineering, going on three expeditions to Nepal, inc. Mera peak, Island peak and Kala Patar, all of which are trekking peaks. I recall a good time up in the Lake District with David, walking and scrambling, as well as rock climbing with him and other friends in Majorca and Sardinia. His interest in rock climbing continued right through and he was a regular at the climbing centre. He was an avid fan of Formula 1 Grand Prix. David leaves behind his wife Lindsey, two married sons Paul and Jock and two grandchildren, for whom his passing is a great loss.

Our thoughts and prayers are with them as they grieve and are going to miss him so much.

A tribute from Roy Gretton

David served as President of the NAS from 1998 to 2002. His monthly Journal message to members was always signed off as *El Presidente*. He was very active in developing our observatory and installing the 24-inch Newtonian telescope, making use of his rock-climbing tackle to hoist some of the heavy components into position. He also designed and supervised the installation of the present wooden floor in the observatory.



David working on the floor of the NAS Observatory, May 2005

Committee meetings at David's home were always a pleasure, particularly when the sky was clear, as there were plenty of telescopes available for observing. One of the best views I've had of Saturn was through a refractor in David's garden when, unlike today, the planet was high in the sky due to its northerly declination.

On a personal note, David was a good friend who helped me to remount the 6-inch Newtonian that I'd originally built as a teenager in 1957, this time as a Dobsonian. (If only the Dobsonian design had been available in the 1950s!) He also supplied me with a short focal length eyepiece with which to observe the close approach of Mars in August 2003.



David (nearest the camera) at the official opening of the NAS Observatory
13th May 2006

The Straight Wall

Observatory opening 19th January 2024

This was the first general opening of the observatory of 2024, and despite the forecast looking good the day before, there was a thin layer of cloud and an intermittently very gusty wind from the south west.

Using the Celestron C14, at low power Clavius was nicely illuminated but we centred on Mare Nubium and increased the magnification; the Straight Wall immediately became very evident.



Image of the Moon taken 18:11 19/01/2024 with an iPhone held against a 20mm Plossl on the Skywatcher ED80 refractor, 30x magnification. 9-day old Moon, 67% illuminated. Area marked by red circle shows lower part of Mare Nubium.

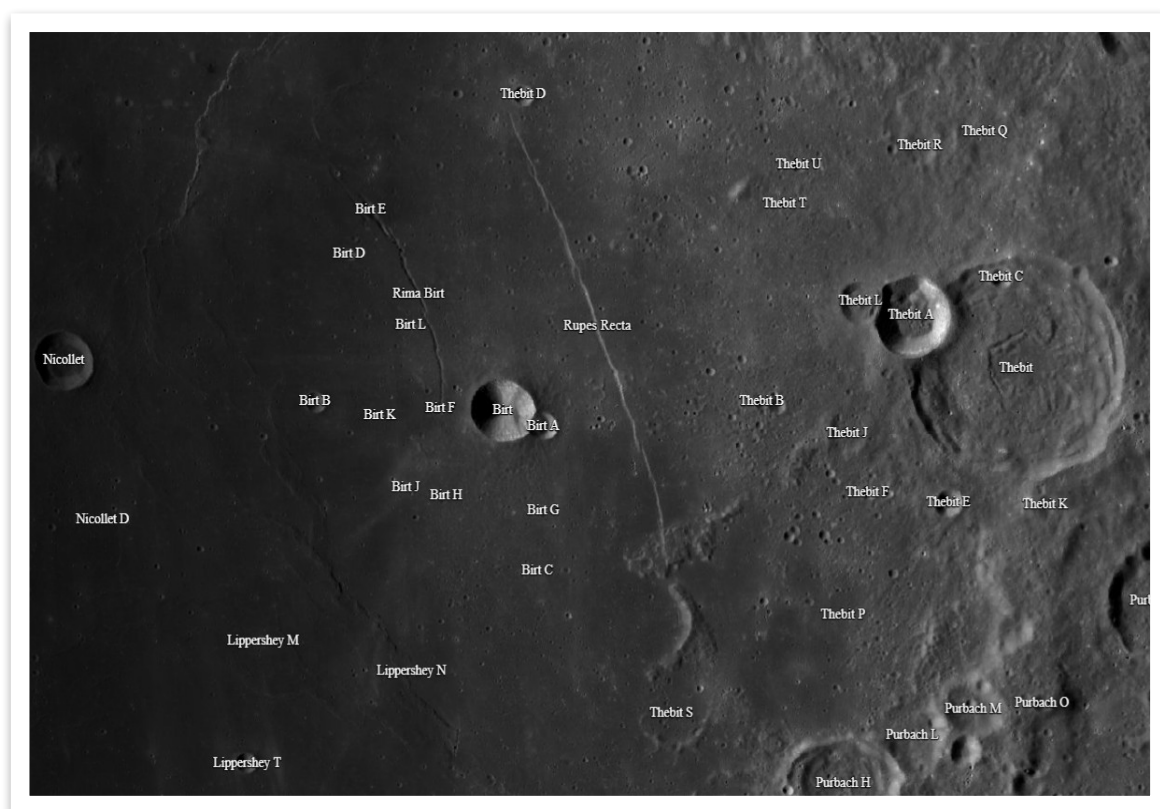
Increasing the magnification further to 315x allowed Birt A to be easily resolved, along with a number of smaller craterlets, Rima Birt, Thebit D and the Staghorn and Thebit S beyond that. Holding an iPhone to the 12.4mm Plossl and adjusting the focus yielded a fairly clean image of the lunar surface. This image was useful to show others and point out the various features to look for when it was their turn at the eyepiece. The image was also useful to talk about the likely chronology of events Ancient Thebit, Birt and the Straight Wall.



Image of Rupes recta taken 18:11 19/01/2024 with an iPhone held against a 12.4mm Plossl on a Celestron C14, 315x magnification. 9 day old Moon, 67% illuminated.

As the cloud thickened the contrast of the Straight Wall fluctuated and it became intermittently less sharply defined, though the seeing remained remarkably stable. Many of the visitors had not observed the Straight Wall before and were fascinated by the concept of how a fault line could be so easily visible from Earth. We were impressed with the relative clarity of the image we captured using a single exposure technique holding a smart phone at the eyepiece.

A labelled view of the region around Rupes Recta and crater Birt obtained from the LROC Quickmap website: <https://quickmap.lroc.asu.edu/>



We weren't sure who the crater Birt had been named after, but a quick search discovers [William Radcliffe Birt](#) was an English amateur astronomer (1804-1881) who had worked with John Herschel and at the Kew Observatory and like many of his time was a polymath in the natural sciences.

I will try and get one of our geology members to give us a talk sometime on some of these interesting lunar features which the amateur can easily observe.

James Dawson

helpdesk@nottinghamastro.org.uk

NAS Meteor Cameras

Since having greater capacity to store power at the observatory and greater generating potential (wind and solar), we've now installed two meteor cameras. These operate after sun set and record transient streaks of light across the night sky. During the day time the Raspberry Pi computers process the data and it gets uploaded to the Global Meteor Network (GMN). Data from various meteor cameras around the country (and over the north of the continent) is compared, and meteors which were captured on several cameras are processed and their trajectory, speed, altitude and both likely impact site on the ground as well as their likely orbit within the solar system is calculated. The more cameras which record an individual meteor allows for more accurate triangulation to be undertaken.

One of our cameras points southeast, and the other points north. The image (right) shows the southeast pointing camera, and the image below shows a composite image of the all of the events captured by the north facing camera a few nights ago. If you zoom in you'll be able to see Polaris and the tracks of the circumpolar stars.

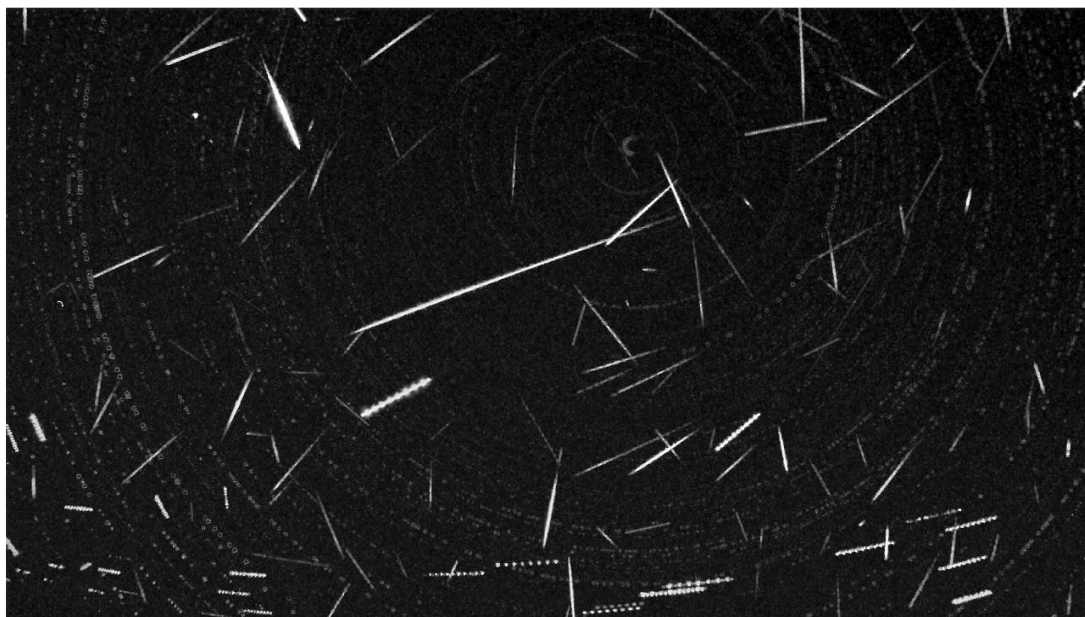
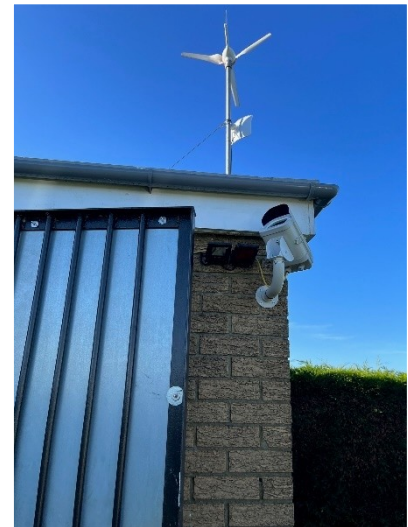
To look at the past data for the NAS meteor cameras go to the GMN website, select UK, and then our cameras have the codes UK00AM and UK00AN.

<https://globalmeteornetwork.org/weblog/>

We will have a talk on this at a future Plumtree meeting.

James Dawson

helpdesk@nottinghamastro.org.uk



Quadrantid Meteor (from the NAS Observatory)

by Mark Fairfax
(Credit: UK Meteor Network)

The Quadrantid meteor shower is a strong shower with the peak on 3rd/4th January and a Zenithal Hourly Rate of 110.

Its origin is 2003 EH1 (an asteroid or a possible “rock comet”)

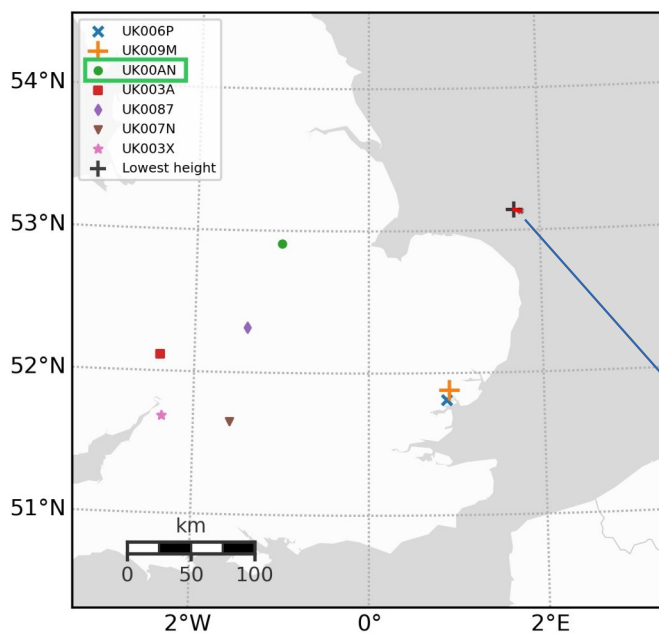
The radiant is in the constellation Bootes, originally Quadrans Muralis (now a defunct constellation) hence the name of the shower.

Activity range: 28 Dec - 12 Jan

Meteor velocity: 41 km/sec

Thank goodness for the meteor cameras during the ‘forever’ rains and clouds in which our poor telescopes are confined indoors and gathering dust.

Captured by the meteor camera set-up at the NAS Observatory in the early hours of Thursday 4th January at 06:51 UTC.



Quadrantid meteor (visual magnitude -1.2; V_g 42.05km/s; mass 0.49g).

Best intersection: Stations UK009M and UK00AN with $Q_{conv} = 67.27^\circ$

NAS Observatory UK Meteor station ID is **UK00AN** and the bold red line on the UK map is the passage of the meteor.

The Moon with my Dobsonian

by Mark Fairfax

The First Quarter Moon on a very cold and clear evening (18th Jan 20:36 GMT) from my back garden. Using my bulkier and heavier StellaLyra 8-inch f/6 Dobsonian telescope with a Baader Hyperion 13mm eyepiece and an iPhone XR. Unfortunately my trusty old iPhone wouldn't focus on the very close-by Jupiter, so I had to settle for visually stunning views only.

(Next attempt with my old and heavy Canon EOS 750D DSLR)



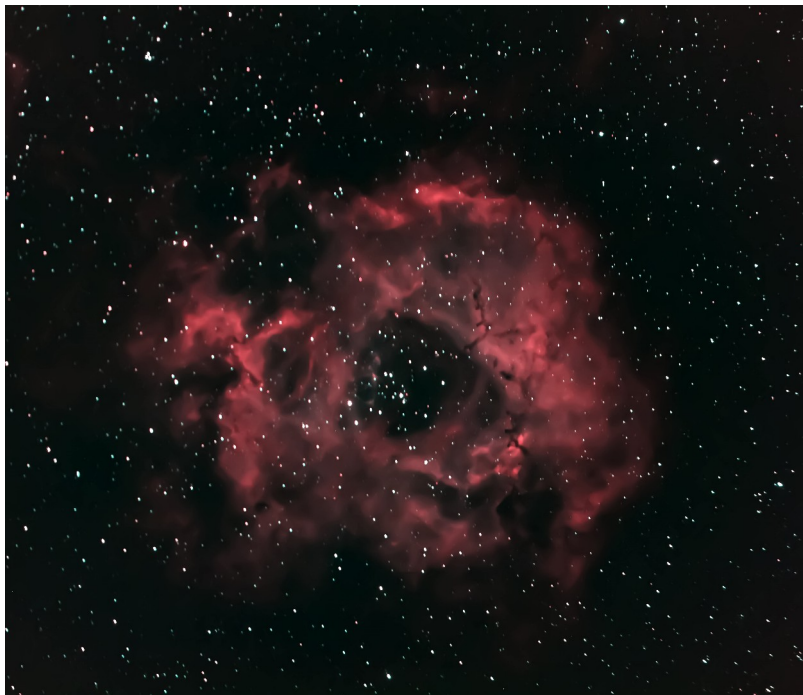
Two Deep Sky Images from Marcus Stone

Both taken with a Canon 60Da camera at the prime focus
of an 80 mm aperture Meade refractor



The Horsehead Nebula

20 min exposure
at ISO 800
on January 14th



The Rosette Nebula

25 min exposure
at ISO 1000
on January 17th

James Bradley, Astronomer Royal

[James Bradley](#) was born in 1692 and was subsequently the third Astronomer Royal, after Flamsteed and Halley, but I suspect he is the least known holder of that position.

In my role as Librarian for the Society for the History of Astronomy (SHA) I am often called on to help find reference material or the like when people are conducting research, writing papers or writing books.

John Fisher is a member of the SHA and he was one of the first to study at the undergraduate level with the Open University. He subsequently worked as a librarian and as a mature student completed a PhD in London 20 years ago, studying James Bradley.

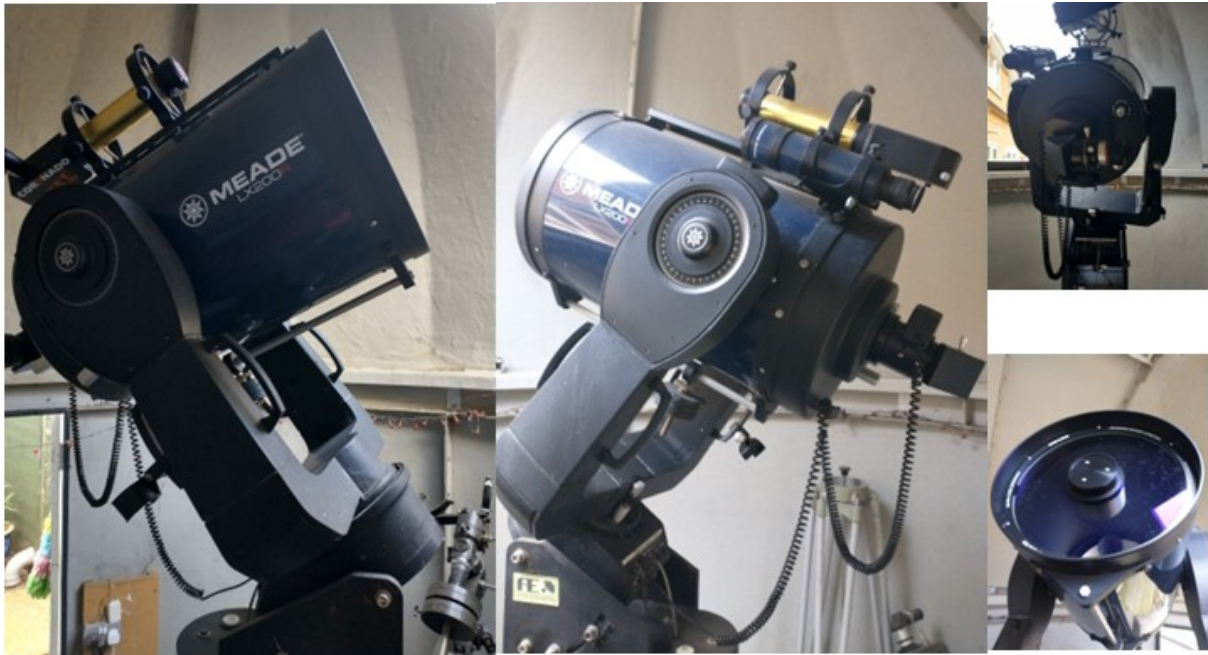
John has continued to research on the life and work of James Bradley and this new book is a most accessible account of all these years of research. John sent me a complimentary copy for the SHA Library. Given its RRP is about £80 it will most likely be found on the shelves in academic institutions rather than public libraries, but if you have an interest in this period of the scientific revolution this will be a book you should put on your Christmas list. With over 550 pages it is a heavy tome, but the font is not too small and the narrative is easy to read.

ISBN: [978-0198884200](#) Cheaper copies can be found online if you hunt around.

James Dawson

helpdesk@nottinghamastro.org.uk

Advertisements



For sale in Loughborough:-

The vendor is "death cleaning" and wanting to sell his under-used astronomical equipment to others who would value it.

Meade LX200R 300mm SCT, purchased new in 2006. It is mounted on a Meade fork mount, with an AE Equatorial Wedge and on an AE Pier. It is GPS enabled and has level north and goto facilities but sadly I never mastered these. Sidereal drive rate is excellent.

A 300mm white light solar filter stopped down to 100mm, a Bahtinov mask and Telrad finderscope are available, along with a selection of eyepieces and a Barlow, at additional cost.

The Pulsar Observatory is 12 feet in diameter, purchased at the same time in 2006, as it was always intended to be user and visitor friendly.

The buyer MUST arrange to dismantle and carry the items away after purchase at their own expense. The Observatory and telescope were delivered and installed by a team of three people (without any cranes or lifting equipment!).

The vendor has a hearing loss so initial contact by text or email is preferred.

Email:- north_star_observatory@hotmail.co.uk

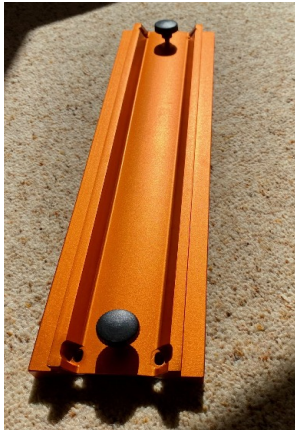
Text:- 0791 442 7387

Visits by potential buyers can be made by mutual arrangement.
Realistic offers for the items are invited. Good luck!



FOR SALE

Celestron dovetail bar to fit C11 telescope.
New, unused **£15**



Celestron 9 x 50mm finderscope and
mounting bracket. New, unused **£45**



20 Assorted Lenses for Eyepiece-making, etc

7 achromatic doublets, 13 biconvex or plano-convex
Diameters 6mm to 25mm
30p each or **£5** the lot



Achromatic object glass
50mm diameter
focal length approx 40 cm

£5



Contact **Roy Gretton**, 07483868162
journal@nottinghamastro.org.uk

Nottingham Astronomical Society

Affiliated to the **British Astronomical Association**
Member of the **Federation of Astronomical Societies**
Supporters of the **Commission for Dark Skies**

CHAIRMAN:

Julian Onions

email: chairman@nottinghamastro.org.uk

VICE CHAIRMAN:

Richard Severn

email: vicechairman@nottinghamastro.org.uk

SECRETARY:

Chris Sneddon

email: secretary@nottinghamastro.org.uk

TREASURER:

Andrew Green

email: treasurer@nottinghamastro.org.uk

JOURNAL EDITOR:

Roy Gretton

email: journal@nottinghamastro.org.uk

MEMBERSHIP SECRETARY

Richard Severn

email: membership@nottinghamastro.org.uk

WEBMASTER:

Leigh Blake

email: leigh@nottinghamastro.org.uk

OBSERVATORY DIRECTOR:

James Dawson

email: observatory@nottinghamastro.org.uk

OTHER COMMITTEE MEMBERS:

Holly Gonzalez McNiven

Mark Fairfax

Meetings

Our formal meetings, often with an illustrated talk by a guest speaker, **normally** are held on the first Thursday of each month (except in August) at:

Nottingham Emmanuel School
Gresham Park Road,
West Bridgford,
Nottingham, NG2 7YF

Doors open 7:15pm

Meetings start 7:45pm

Meetings end 9:15 pm

These meetings are open to the public, and visitors are welcome to attend, subject to a charge of £3 per meeting for adults.

Annual subscriptions 2024

Individual	£30
Family (maximum of two adults, and children/students living at the same address)	£45
Under-18s and full-time students	£5

Subscriptions become due on 1st January. Half-price subscription is charged if joining after 30th June (minimum subscription £5).

Please make cheques payable to:
Nottingham Astronomical Society.

If you would like more information about the **Nottingham Astronomical Society**, or would like to become a member, please contact the Secretary secretary@nottinghamastro.org.uk or speak to any NAS committee member at one of the regular monthly meetings.

The Nottingham Astronomical Society

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