
Journal

of the

Nottingham Astronomical Society

January 2023



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Thursday, 12th January

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

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

This evening we welcome

**Prof Colin Steele
of Manchester University**

who will be presenting

A Guide to the Nearest Stars

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

Chairman's Message, January 2023

Hello everyone!

Another year done! I hope you all had a good Christmas and a happy New Year. Not very much to report on this time. The observatory road is still very wet, and we are looking into making improvements there. A reminder that the next meeting is the SECOND Thursday of January, on the 12th. We have Professor Colin Steele, going to talk to us about the nearest stars.

Thanks very much to all those who turned up for the AGM at Plumtree. All the business for the year was done and signed off, and we hope to start another productive year for the Society.

Best wishes to all!

Julian,
NAS chair

Nottingham Astronomical Society 2023 Membership

Membership subscriptions for 2023 are 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 recent rise in cost of living, we proposed at the AGM to freeze the membership at the current rates, and this proposal was accepted.

Individual £30 Partnership £45 Concessions £5

Details of how to renew your membership will be provided in the renewal notice, but by far the easiest way to renew your membership for administration by society officers is using BACS electronic bank transfer which we strongly encourage members to choose.

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 2023.

Regards,

Richard Severn
Vice Chair and Membership Secretary

Sky Notes

January 2023

Compiled by Roy Gretton

All times given below are in Universal Time



Earth will be at **perihelion** at 4:16pm on January 4th. The centres of the two bodies will then be separated by 147,098,925 km (*roughly!*)

PHASES OF THE MOON

| <i>Phase</i> | <i>Date</i> |
|---------------|--------------------------|
| Full Moon | January 6 th |
| Last Quarter | January 15 th |
| New Moon | January 21 st |
| First Quarter | January 28 th |

This month the Moon is closest to Earth on the 21st, and furthest on the 8th.

THE PLANETS

Mercury passes through inferior conjunction on January 7th, thereafter emerging into the morning sky and reaching greatest western elongation (25 degrees) on the 30th. Although Mercury will then be more than 21 degrees south of the celestial equator, late January provides one of the best opportunities of the year to see this planet in the morning sky.

Venus is an evening object, very slowly moving away from the Sun. It's elongation will be 20 degrees in mid-January, but this will steadily increase to reach 45 degrees by late May, when it will be a spectacular "evening star".

Mars begins the year with a very useful angular diameter of 14.7 arcseconds, but this will have diminished to 10.8 arcseconds by the close of the month, so planetary observers will be pleased with every clear night in early January. Still in the constellation of Taurus, it ends its retrograde motion on the 12th.

Jupiter (magnitude -2.3) is now past its best, setting at 11pm at the beginning of January, and soon after 9:30pm at the end of the month, so observing opportunities will be at their best as soon as the sky is dark.

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 currently viewing Jupiter after opposition, satellites reappear from Jupiter's shadow on the east side of the planet (viewed from Earth). The satellite is invisible before emerging from shadow, and therefore mysteriously appears out of apparently blank sky some distance away from the body of the planet. 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.

| January | Reappearance from eclipse of |
|------------------|-------------------------------------|
| 3 rd | Io 10:46pm |
| 5 th | Io 5:14pm |
| 7 th | Europa 7:31pm |
| 12 th | Io 7:10pm |
| 14 th | Europa 10:09pm |
| 19 th | Io 9:05pm |
| 26 th | Io 11:01pm |

| January | Shadow transit of |
|------------------|----------------------------|
| 2 nd | Io begins 11:24pm |
| 4 th | Io 5:53pm to 8:05pm |
| 5 th | Europa begins 9:57pm |
| 11 th | Io 7:49pm to 10:00pm |
| 13 th | Ganymede ends 7:24pm |
| 18 th | Io 9:45pm to 11:56pm |
| 20 th | Io ends 6:25pm |
| 20 th | Ganymede 8:57pm to 11:26pm |
| 23 rd | Europa ends 6:55pm |
| 27 th | Io ends 8:21pm |
| 30 th | Europa 7:07pm to 9:32pm |

Saturn is almost unobservable as it heads for conjunction with the Sun on February 16th.

Uranus continues to be well placed for evening observation, as it will be setting at 1:30pm by the end of this month. As the Sun sets Uranus is still fairly high in the constellation of Aries and shining at magnitude 5.7, with an angular diameter of 3.9 arcseconds.

Neptune is an evening object 4 degrees south of the celestial equator, close to the border between Aquarius and Pisces, shining at magnitude 8, but becoming more difficult to observe as it will be setting at 9pm in mid-January.

METEORS

January's outstanding shower is the Quadrantids, which reach maximum activity around midnight on January 4th, coinciding with a nearly-Full Moon, so very unfavourable this year.

DIARY DATES 2023

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 |
|---------------------------|---|---|
| *January 12 th | A Guide to the Nearest Stars | Prof Colin Steele Manchester University |
| February 2 nd | New Science from the JWST | Dr Henrik Melin Leicester University (STFC James Webb Fellow) |
| March 2 nd | Stars and Sensationalism: Searching for the First Stars in the James Webb Space Telescope Era | Dr Emma Chapman Nottingham University |
| **March 30 th | (To be announced) | |
| May 4 th | Cosmic Rays | James Miller |

Note unusual dates: *second Thursday of the month
**** fifth Thursday of the month (no meeting in April)**

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 January 19th

Social and Practical Astronomy, Plumtree, December 2022

The **December** Plumtree meeting was the Annual General Meeting (AGM) where the old committee stands down and a new committee is elected. The only change to the committee this year was Mike Provost has stood down as treasurer and Andrew Green will become the new treasurer. Thanks to Mike for many years of service and good luck to Andrew.

Chris made a lovely Christmas fruit cake and Julian cut it (right).

The **January 2023** Plumtree will be a talk by Neil Mudford called “Much Physical Ado About Nothing Astronomical”. We are grateful to Neil for offering his services and look forward to this intriguingly titled talk.

We are hoping to talk about cameras for astrophotography in **February 2023** at the request of Roy.

If you have ideas for other talks or events at Plumtree, please do let me know.

Happy New Year to everyone and I hope to see you all in 2023.

James Dawson

Observatory Director

observatory@nottinghamastro.org.uk



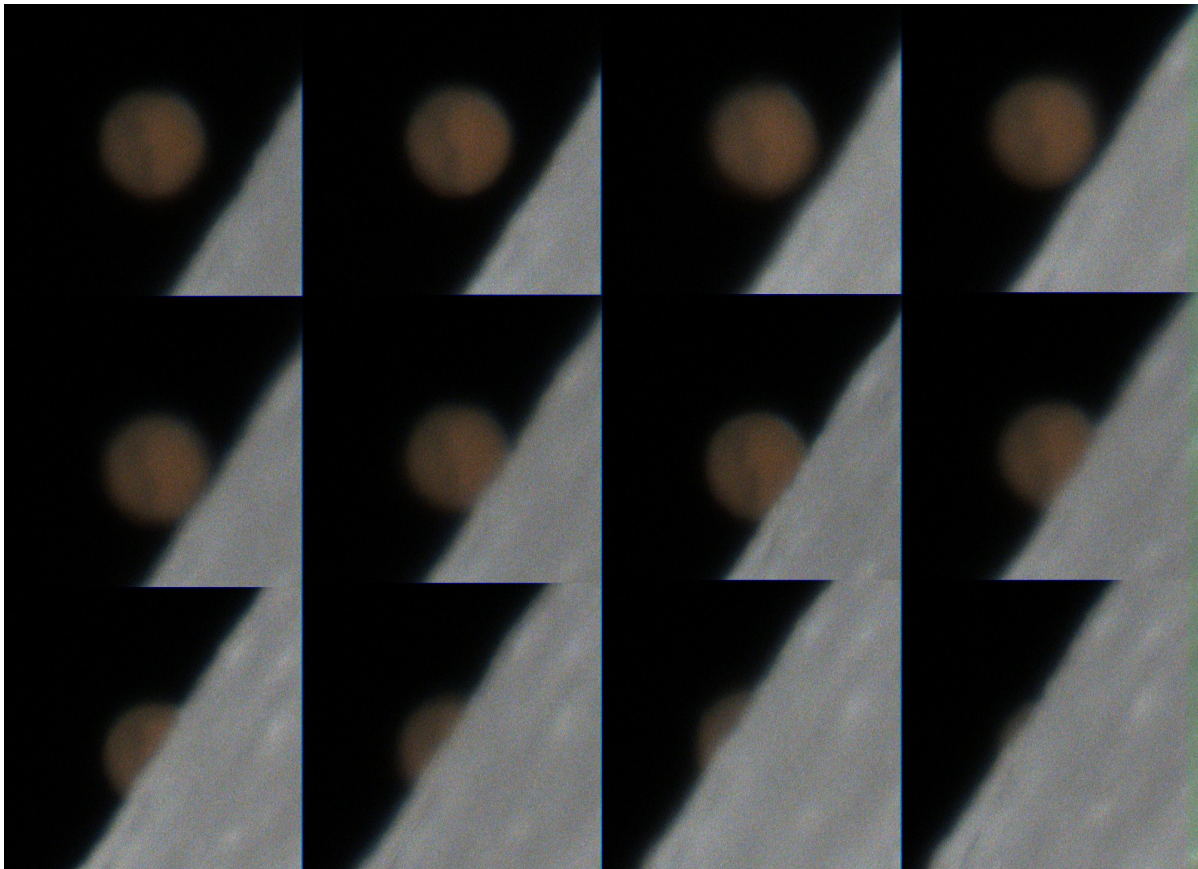
Lunar Occultation of Mars

8th December 2022 04:57 to 05:57 UTC

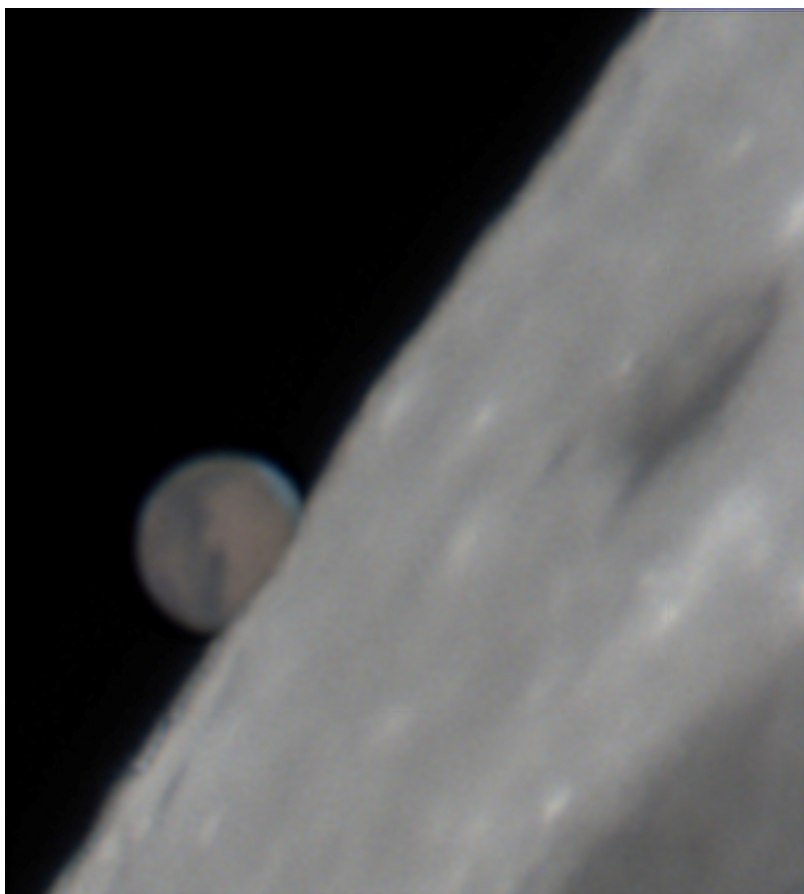
A very rare Lunar Occultation of Mars was visible from Nottingham on the early morning of 8th December 2022. A superb event to observe and image, which was nearly ruined by cloud but I caught the ingress. The images below are taken with a C14 telescope at the Society's observatory in Nottinghamshire, well worth the 4am alarm call in sub zero temperatures. I have uploaded a real-time video of the occultation to the NAS YouTube channel and website home page <https://youtu.be/F29LFRMpGkQ>

The last lunar occultation of Mars visible from the UK was on the evening of 15th May 1972. Do any readers recall observing this event? Please email me if you did. The next such event visible from Nottingham will not be until 18th December 2024, although conditions will be much less favourable than we saw in December with the two bodies being less than 12 degrees above the horizon and in full daylight, which will certainly impact the chances of obtaining any good quality images.

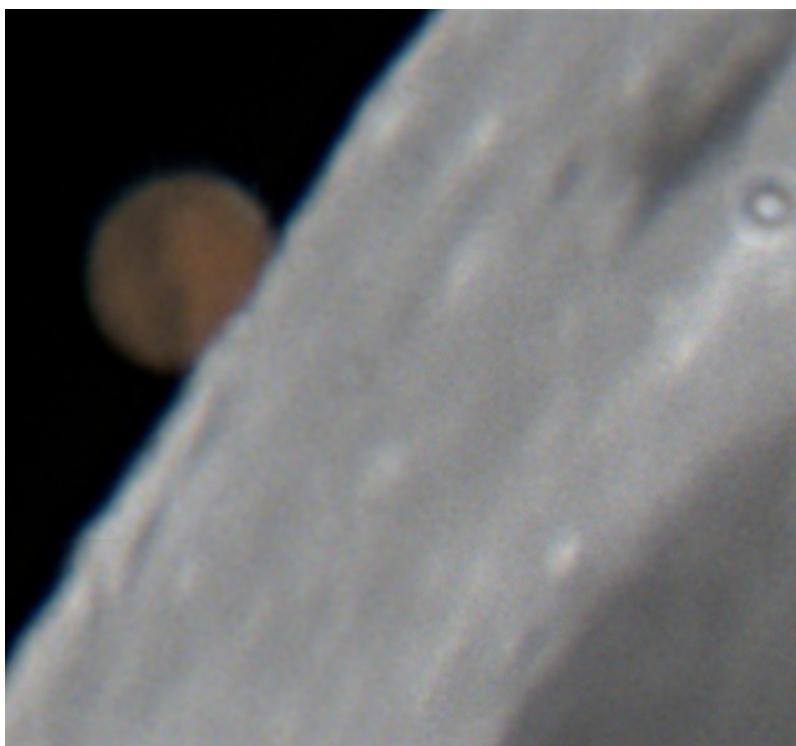
Richard Severn



12 single frame images extracted from the SER video file of the Occultation. Images taken between 04:57:23 to 04:58:17. Images are separated by approx 4 seconds in time.



A composite image with Mars and the moon stacked in AutoStakkert and processed in RegiStax separately and recombined in GIMP



A Raw image, stack of 46 images with the best 75% stacked in AutoStakkert and processed in RegiStax. Image from 04:57:50.8 to 04:57:53.5

Tadpoles and More

IC 410 is an emission nebula 12,000 light years distant. Within this object are NGC 1893, an open star cluster and The Tadpoles, 10 LY long Bok globules. These dense regions of dust and gas are likely sites of star formation.

This image was captured using a 100 mm refractor and a dual band filter on a colour camera. The image comprises 8 hours of integration.



Leigh Blake

Surprises while Astroviewing/Imaging *with a Unistellar eVscope 1*

It always pays to look very carefully at your images from a night of astro viewing as you never know what interesting ‘other stuff’ you may have serendipitously happened upon.

While looking at NGC 7331 as my object of interest at 20:44 on 14th December 2022, I happily alighted on a number of other galaxies too. This NGC 7331 group of galaxies is also known as the Deer Lick Group. The image was recorded with Enhanced Vision over a period of 22 minutes.

The main galaxy NGC 7331 is about 40 million light-years away, while the highlighted background galaxies are far more distant at around 300-350 million light-years.



Mark Fairfax

A Planetarium at Sherwood Observatory?

See [Sherwood Observatory: Plans for planetarium at reservoir submitted - BBC News](#)

Advertisements

FOR SALE

Contact Mark Fairfax at fairf77@icloud.com or at NAS meetings

Celestron accessories:
All in excellent condition

- Celestron X-Cel LX 1.25" eyepieces

Fully multi-coated, wide 60-degree field of view, 6-element optical design, twist-up eyecups giving a generous 16mm eye-relief.

- 9mm £45 [new £89]
- 18mm £45 [new £89]
- 25mm £45 [new £89]

- Celestron Neximage 10 Solar System Colour Imager (model 93708) £180 [new £369]

Easy to use colour camera, provides live video for quick focusing - High performance CMOS imaging sensor with exceptional sensitivity and low noise, High frame rate, Hardware ROI (Region of Interest).

- Celestron Corrector/Reducer f/6.3 (model 94175) £70 [new £139]

Reduces your Focal Length for wider field and brighter images with four-element design to improve field flatness - compatible with all Celestron Schmidt-Cassegrain telescopes.

- Celestron deluxe tele-extender (model 93643) £40 [new £99]

Allows you to use an eyepiece for eyepiece projection photography with your 5 to 14-inch Celestron SCT, to take magnified images of the Solar System.

- Celestron T-adapter for Schmidt-Cassegrain telescopes (model 93633-A) £10 [new £20]

Attaches an SLR or DSLR camera to a Schmidt-Cassegrain telescope for prime focus photography.

Nottingham Astronomical Society

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

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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 2023

| | |
|----------------------------------|-----|
| Full | £30 |
| Joint rate for partners | |
| 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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