
Journal

of the

Nottingham Astronomical Society

February 2023



In this issue

- E-Services
- A Message from the Chairman
- NAS Membership for 2023
- Sky Notes for February, with image of Comet 2022 E3
- Diary Dates for 2023
- Social and Practical Astronomy: meeting report
- Observatory update
- Drawings by Bryan Lilley
- The Pleiades
- Astronomy on cold winter nights
- Light Pollution doubling in less than 8 years
- Advertisements
- Society Information

Thursday, February 2nd

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

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

This evening we welcome

Dr Henrik Melin

Leicester University
(STFC James Webb Fellow)

who will be speaking on

New Science from the JWST

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, February 2023

Dear members,

We've had a good start to the year, with lots of members renewing or joining. The observatory site is still very wet, or frozen depending on the day, but not really suitable for cars yet, but we hope to get some observing in as soon as the conditions allow. We're looking at options to improve the access but most of the more permanent solutions are rather out of our price range. However we will continue to explore what can be done. We have a couple of current talks coming up, with two JWST sessions. The first from Dr Henrik Melin who is a JWST fellow, so should be well versed in the details. The following month is another JWST talk but looking into almost the beginning of the universe, so should also be a different perspective.

We have had some lovely clear skies recently, but perishing cold! I don't know how many of you got to see the planets on view, or even got some imaging done, but conditions were good as long as you wrapped up very well!

Best wishes to all,

Julian,
NAS chair

Nottingham Astronomical Society 2023 Membership

Membership subscriptions for 2023 came due for renewal in January. All current members will have received their renewal forms by email detailing your membership rate.

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

February 2023

Compiled by Roy Gretton

All times given below are in Universal Time



PHASES OF THE MOON

<i>Phase</i>	<i>Date</i>
Full Moon	February 5 th
Last Quarter	February 13 th
New Moon	February 20 th
First Quarter	February 27 th

This month the Moon is closest to Earth on the 19th, and furthest on the 4th.

THE PLANETS

The **inferior planets**, Mercury and Venus, both follow the same cycle of events as viewed from Earth. When on the far side of the Sun they are invisible as they pass through **superior conjunction**, after which they emerge into the **evening sky**, moving away from the Sun until they reach **greatest eastern elongation**. Thereafter they move back in toward the Sun, and in so doing reach their greatest apparent brightness (while exhibiting a crescent phase) before reaching **inferior conjunction**. After this they emerge into the **morning sky**, again reaching their greatest brightness in the crescent phase before they attain **greatest western elongation**, after which they move in toward the next **superior conjunction**, and the cycle begins again. The most rapid (and potentially the most spectacular) changes occur either side of **inferior conjunction**. For **evening** observers (which most of us probably are) spring is always the best time of year to view the inferior planets, as the ecliptic makes the steepest angle with the horizon on spring evenings. In the case of Venus, the most recent spring GEE occurred in 2020 (during the first lockdown), and you may recall in April of that year the planet being visible to the naked eye high in the west, even before the Sun had set. Similar events will occur this year, but about ten weeks later, as Venus won't reach greatest eastern elongation until June 4th (the interval from 2020 GEE corresponding to two times the Synodic Period of Venus).

Mercury was at greatest western elongation on January 30th and will continue to be visible in the morning sky, about 20 degrees south of the celestial equator, during the first half of February.

Venus is an evening object, low down in the southwest after sunset as February begins, but by the close of the month its elongation will have increased to 30 degrees, and it will have crossed the celestial equator into the northern hemisphere. It will then be setting nearly 3 hours after the Sun and be shining at magnitude -3.9.

Mars is now past its best, its angular diameter having diminished to 8 arcseconds by the end of this month – less than half what it was at the start of December – and there will have been

a corresponding dimming to below magnitude zero. Mars will remain high in the constellation of Taurus for the whole of February.

Jupiter is also past its best, and will be setting before 9pm in the second half of the month as it heads for conjunction with the Sun in April. We shall look forward to observing this planet again in late summer/early autumn, when it will 15 degrees north of the celestial equator, higher than it has been for some years.

Saturn is unobservable this month as it passes through solar conjunction on February 16th.

Uranus is an evening object in the constellation of Aries, setting at midnight in late February.

Neptune is an evening object but becoming very difficult to observe, as it will be setting at 7pm in late February.

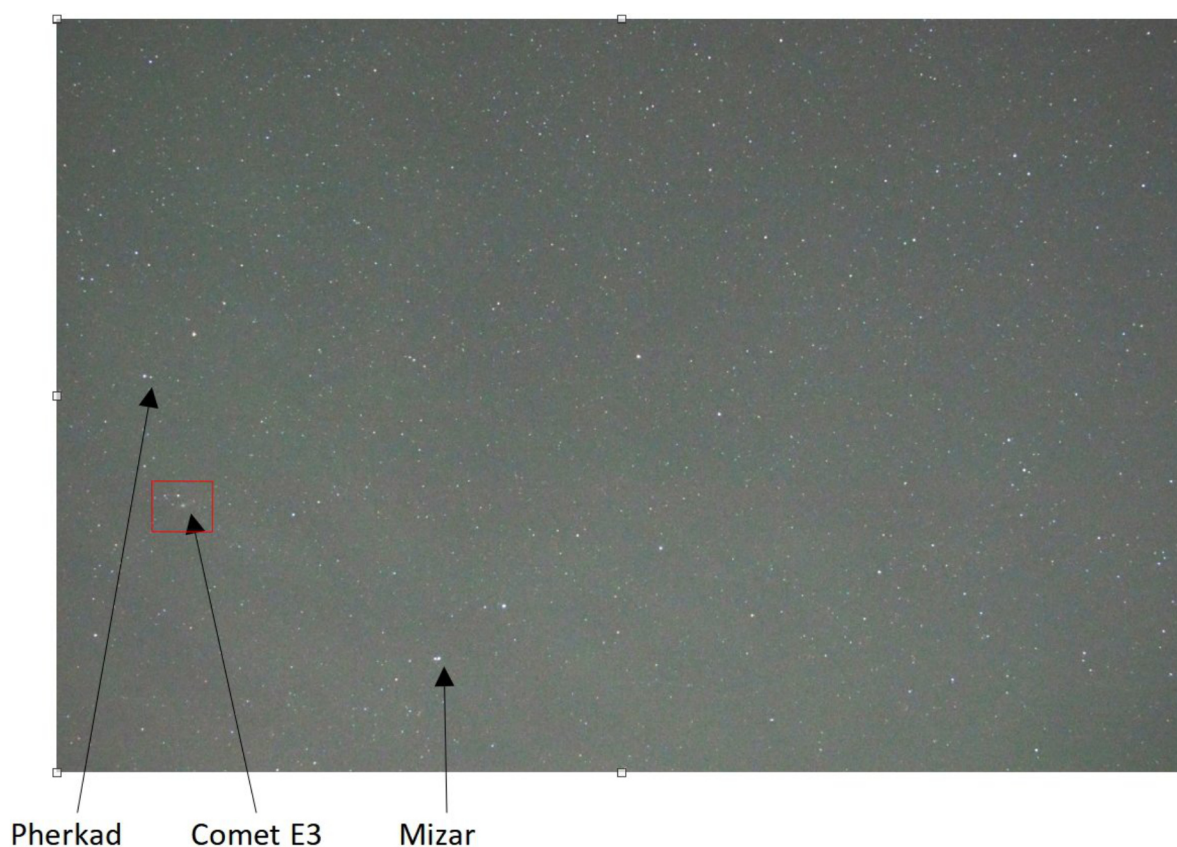
METEORS

There are no notable meteor showers in February.

COMET C/2022 E3 (ZTF)

This visitor from the Oort Cloud was at perhelion on January 12th, and will make its closest approach to Earth on February 1st, when it will be about 26 million miles from us. It is currently north circumpolar and at the time of writing the latest reported magnitude is 6. If you wish to track/observe/image this comet a useful resource is www.heavens-above.com, where you will find charts showing its latest position in the sky.

NAS member **John Dignan** captured this image of the comet on January 25th from Dalby Forest using a Canon D90 with a 22mm lens at ISO 12,800. Exposure time 5.3 sec.



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
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 30th	<i>(To be announced)</i>	
May 4 th	Cosmic Rays	James Miller
* June 8th	Space Debris and Astronomy	Prof Don Pollacco University of Warwick

**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 February 16th

Social and Practical Astronomy, Plumtree, January 2023

The January Social and Practical Astronomy meeting at Plumtree was a talk by member Neil Mudford. He started by sharing the exciting news that broke earlier in the day, that Sherwood Observatory had been awarded over £3 million of the government grants from the Levelling Up fund. He showed us a virtual reality fly through video of the proposed new science & discovery centre and planetarium.



The main talk was titled “Much Physical Ado About Nothing Astronomical”. It featured various topics relating to aviation, including instruments to measure air pressure, altitude and aircraft speed in the cockpit. He detailed the different ground based aids to navigation used by aeroplanes all vital today and in the days before global navigation satellite systems. Many thanks to Neil for providing the evening’s talk.

Richard Severn

Membership Secretary

membership@nottinghamastro.org.uk

Observatory Update

The track to the Observatory remains waterlogged. Even the grass grids we laid a year ago can't cope with the amount of rain we've had. We've undertaken some digging to ascertain the type of soil below the surface and consulted Baz and his geologic friends and provided them with core samples.



Screen shot from the [BGS Geology Viewer](#) showing the geology of the Observatory

Beneath a thin soil layer is a silty boulder clay deposited by glacial activity. This forms a largely waterproof layer and limits any downward drainage of surface water. As the area is largely flat, surface water has no where to run off to, and can't percolate down, hence it just sits on the surface until dried out by wind and the Sun.

Implementing a drainage system would cost thousands and require work to be undertaken on the adjacent farmers fields as well as elsewhere on Severn Trent's land, so we have excluded this option. Digging out a track has some advantages but the clay layer extends many meters below the surface so the dug out trench would fill with and retain water, plus we would need to get rid of maybe a hundred tonnes of spoil. We are currently exploring other options of raising the roadway above the surrounding ground layer, but we will keep you posted. For the time being, there is insufficient space to park many cars on solid ground so the Observatory remains out of action unfortunately.

Thanks to Barrie Chacksfield, Richard Severn and David Owen for their help.

James Dawson

Observatory Director

observatory@nottinghamastro.org.uk

Some drawings by Bryan Lilley



Bryan passed away in November 2021 and a short obituary appeared for him in the December 2022 edition of the NAS Journal. When Richard and I collected his astronomy equipment, Averil also wanted us to take the paperwork in his shed. Amongst the photocopies of interesting articles Bryan had stored in his astronomy shed, were a number of drawings he had made, mostly of the Moon, but also of sunspots, Jupiter, Saturn and some deep space objects. I hadn't appreciated that Bryan was also skilled at sketching. I've scanned most of the sketches and put them in a PDF file, both to share with Bryan's family, but also to share amongst NAS.

Bryan had also made many sunspot observations over the years, and I am in the process of passing these on to the British Astronomical Associations Solar Section who rely on amateur astronomers' observations to maintain a record of sunspot activity going back over 100 years.

To download the PDF use this link: <https://hidrive.ionos.com/lnk/CH2ruign>

James Dawson

Observatory Director

observatory@nottinghamastro.org.uk

M45, The Pleiades

I imaged this nebula just before Christmas. The Pleiades are an open cluster travelling through the Milky Way. They are moving through an area of dust unrelated to their birth, creating a reflection nebula tinged blue-white by the light of the hot B-type stars that the Pleiades consists of.

This image comprises 4 hours of 2-minute exposures, taken with a colour camera on a 100mm refractor.



Leigh Blake

Cold Winter Nights vs Astronomy choices

by Mark Fairfax

Well finally, along came some clear night skies but it was also very cold indeed. Shall I go out with my Dobsonian and have icicles hanging from my nose by night's end or shall I use my Unistellar eVscope - let it brave the cold while I'm snug inside with a coffee & my iPad? Guess which one won out... so here are some Deep Sky doozies from a couple of rare evenings' observing.





NGC 2683 - UFO Galaxy
eVscope 1 - 30mins -
Mark Fairfax
17th Jan 2023 - 00:42
Nottinghamshire UK



NGC 2903 - Barred Spiral Galaxy
eVscope 1 - 15mins
Mark Fairfax
20th Jan 2023 - 01:19
Nottinghamshire UK



LIGHT POLLUTION: GETTING WORSE BY THE YEAR!

An article in the Times newspaper of January 20th highlighted some troubling data from *The Globe at Night* project, the largest citizen science project of its kind, involving over 50,000 people worldwide. Their task was to record the number of stars they could see on clear moonless nights between 2011 and 2022, at 19,000+ locations.

A truly alarming finding (for amateur astronomers) is that whereas previously light pollution was thought to be increasing by 2 percent each year, the true figure is closer to 10 percent. And whereas previously skyglow was thought to be doubling every 40 years, **the true doubling period is now less than 8 years**. This implies that, at the present rate of increase, in 25 years' time skyglow will be about ten times what it is today. One can imagine people needing to go around in sunglasses at night by then!

My own feeling is that a vicious cycle is operating here. Each generation sees fewer stars at night, and so is unable to appreciate what is being lost from view, and therefore is less likely to care about the issue – and probably doesn't even notice that there is a problem.

So, unlike concerns about other environmental issues such as air pollution or marine pollution, there is no popular movement to draw attention to the threat posed by light pollution – let alone do anything about it.

It's ironic that in these days of concern about energy security, society seems to be relaxed about throwing so much of it away into the night sky.

Roy Gretton

Advertisement

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.

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

- Celestron Neximage 10 Solar System Colour Imager (model 93708) £150 [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) £50 [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) £25 [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-adaptor for Schmidt-Cassegrain telescopes (model 93633-A) £7 [new £20]

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

- Solomark 1.25" Moon & Skyglow filter ~ multi-band pass £5 [new £13]

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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