
Journal

of the

Nottingham Astronomical Society

December 2025



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Thursday, December 4th

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

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

This evening we welcome

Dr Connor Byrne

University of Warwick

who will be speaking on

**Unlocking the Secrets of the
Universe with Binary Stars**

Chairman's Message, December 2025

Dear Members,

The end of the year is in sight, and we have the dark skies and also the cold! We've had some interesting talks, Supermassive black holes at the last main meeting, and you all had to endure me on special relativity at the last Plumtree meeting. Coming up we have a talk about binary stars and what we can find from them.

The final meeting at Plumtree is our AGM followed by drinks and snacks. As Chris mentioned at the last meeting we had a lot of contributions to the snacks last year, for which we were extremely grateful. If you would like to bring something this year we would be equally grateful, but could you send a quick note to Chris letting her know so we can balance things.

Julian

NAS Chair

Sky Notes

December 2025

Compiled by Roy Gretton



All times given below are in Universal Time

The **Winter Solstice** occurs at 3 pm on December 21st. On that date sunrise in Nottingham will be at 8:15 am, and sunset at 3:50 pm, with astronomical twilight ending about 6 pm.

PHASES OF THE MOON

Phase	Date
Full Moon	December 4 th
Last Quarter	December 11 th
New Moon	December 20 th
First Quarter	December 27 th

This month the Moon is closest to Earth on the 4th (so yet another “**supermoon**” on that date) and furthest from Earth on the 17th.

THE PLANETS

Mercury will be a morning object throughout the month, passing through greatest western elongation on the 19th, when it will be just under 19 degrees from the Sun but difficult to observe, being 21 degrees south of the celestial equator.

After a long morning apparition, **Venus** finally disappears into the solar glow this month.

Mars remains unobservable this month.

Jupiter will be the outstanding planet this winter, rising at 7 pm at the beginning of December and at sunset at the end of the month, during which time it will brighten from magnitude -2.6 to -2.7. Throughout the month it will be in retrograde motion in the constellation of Gemini.

Phenomena of Jupiter's satellites

The **disappearance** of Jovian satellites **into eclipse** is the easiest type of phenomenon to observe with a small telescope (say, 50mm aperture). As we are currently viewing Jupiter before opposition, satellites disappear into Jupiter's shadow on the west 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 disappearances and shadow transits visible in the *evenings* this month are given below.

*In the case of **disappearances**, start looking **several minutes ahead** of the stated time, because this refers to the moment when Jupiter's shadow bisects the satellite.*

December	Disappearance into eclipse of
1	Europa 20:38
5	Ganymede 20:01
7	Io 21:05
8	Europa 23:12
14	Io 22:59
16	Io 17:28
23	Io 19:22
26	Europa 17:37
30	Io 21:16

December	Shadow transit of
1	Io ends at 18:37
3	Europa ends at 18:26
6	Io begins at 23:47
7	Callisto 19:02 to 22:40
8	Io 18:16 to 20:31
10	Europa 18:12 to 21:02
15	Io 20:09 to 22:24
17	Europa 20:48 to 23:39
22	Io begins at 22:03
23	Ganymede 18:06 to 21:20
24	Io ends at 18:47
24	Europa begins at 23:24
29	Io begins at 23:56
30	Ganymede begins at 22:04
31	Io 18:25 to 20:41

Saturn will be setting soon after midnight at the start of December, and soon after 10 pm as the month ends. There will be a shadow-transit of Saturn's largest moon, **Titan**, from 17:38 to 23:36 on December 8th, and again from 16:58 to 22:42 on December 24th.

Uranus, magnitude 5.6, is visible all night in the constellation of Taurus.

Neptune is a magnitude 8 object in Pisces, about 4 degrees northeast of Saturn.

METEORS

The **Geminids**, the most prolific of our annual meteor showers, can be seen from December 4th to the 17th, with their peak occurring in the early hours of the 14th, coinciding with a waning Moon that will provide very little interference with observations – so a great night to go meteor-spotting if the sky is clear!

The **Ursids** reach their maximum activity on December 22nd, coinciding with a 2 day-old Moon, so also favoured this year – although the meteors will be far less prolific than the Geminids.

DIARY DATES 2025-2026

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
4 th December	Unlocking the Secrets of the Universe with Binary Stars	Dr Connor Byrne University of Warwick
8 th January	<i>To be announced</i>	<i>To be announced</i>
5 th February	Black Hole Astronomy 101	Dr Jiachen Jiang University of Warwick
5 th March	Forecasting Weather on Extrasolar Worlds	Dr Vatsal Panwar University of Birmingham
2 nd April	<i>To be announced</i>	<i>To be announced</i>

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 **December 18th** and will be our

Annual General Meeting

followed by

**a festive social with mulled wine,
mince pies and Christmas cake**

Social and Practical Astronomy, Plumtree, November 2025

Our **November** Plumtree was a talk by our chairman, **Julian Onions**, on special relativity. We had been pestering Julian for some time to try and explain special relativity to us in very simple terms, and Julian did a really good job at this. Part of the presentation required a helper, and Anvi stepped up and was able to throw up a ball and catch it again as Julian pushed her along in an office chair, describing the different forces and momentums at play. I am still a bit baffled about how to get a ladder into a shed which is shorter than the ladder, though apparently if I am moving quick enough it will fit... As for the general relatively Julian tried to explain to us at the end of the talk, well that was just another level of weirdness!

The topic generated a lot of discussion, and it was one of the best attended Plumtree meetings we've had a long time. Thank you, Julian, we are all now a little bit more informed. Thanks also to Chris for a fantastic coffee cake which can be seen here just before Julian made the first cut; it didn't last very long.

The next Plumtree meeting is the **Annual General Meeting** on Thursday 18th December 2025, with mulled wine, some food and a quiz. We look forward seeing you there. The January 2026 Plumtree will be a presentation on some aspects of mythology in astronomy by member Diya; I am greatly looking forward to this.

James Dawson

helpdesk@nottinghamastro.org.uk



A Tale of Two Dumbbells

The planetary nebula **M27** has long been known as the Dumbbell Nebula, so it was perhaps inevitable that a similar object, **M76**, would acquire the appellation Little Dumbbell, which partly reflects its actual size, together with the fact that it is considerably further from Earth and therefore looks much smaller than M27.

The approximate data are as follows:

Object	Distance	Radius	Angular Size
M27	1300 LY	1.4 LY	8 arcmin
M76	2500 LY	0.6 LY	2 arcmin

The following images were acquired using a Canon 700Da camera at the f/10 focus of an 11-inch SCT. Multiple 30-second exposures were combined using Deep Sky Stacker, and the resulting images processed and cropped using Gimp.



M27 (The Dumbbell Nebula)

138 minutes of data at ISO1600

M76 (The Little Dumbbell Nebula)

70 minutes of data at ISO1600



Roy Gretton

Comet C/2025 A6 (Lemmon)

John Dignan captured this image from Barrow-on-Soar on October 25th using his ZWO Seestar S50 with a 250mm lens. It is the result of eighteen 10-second stacked images taken over a 3 minute period.



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

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 X

The Society has an X account at <https://twitter.com/NottinghamAstro>

NAS Journal e-mailing list

To register for your monthly e-mailed link to the NAS Journal, just e-mail membership@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 membership@nottinghamastro.org.uk

Deep-Sky Images from David Buxton

The Pleiades imaged with a Dwarf 3 smart telescope. A combination of 300 light frames of 15 seconds duration.



M27 imaged with a Seestar smart telescope



Advertisements

FOR SALE

Celestron Astro Fi 5" Schmidt-Cassegrain telescope



Excellent condition. **£285** ono.

Also have a selection of eyepieces which could be included, and a Celestron NexYZ 3-axis universal smartphone adapter.

Seller lives in Bottesford but could deliver to the Nottingham area.

Contact Roger on 07960911804 or rbrogerblackburn@gmail.com

FOR SALE

Meade Series 4000 Super-Plossl Eyepieces

Standard 1.25-inch diameter. Both in mint condition



15 mm focal length **£20** (list price £34)
40 mm focal length **£35** (list £65)

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

Telescope for Sale

Genuine reason for sale, due to shoulder injury I find it difficult to cope with this large scope. Price are negotiable , but comes as a complete package, delivery can be arranged. I am based near Burton on Trent.

£200 ono

Sky Watcher D=200mm F=1000mm Parabolic Reflector (200PDS)
Crayford dual speed focuser with electric control
35mm extension eyepiece tube and Coma corrector
Bahtinov Mask
Dew Shield
Finder scope
Telrad Base and Telrad
Kendrik Baader film solar filter
Seymour glass solar filter
Celestron collimating eyepiece, Next Gen Laser Collimator.

Contact Pete Hill at peter_j_hill@hotmail.com

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:

James Dawson

email: vicechairman@nottinghamastro.org.uk

SECRETARY:

Chris Sneddon

email: secretary@nottinghamastro.org.uk

TREASURER:

Richard Severn

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

LIBRARIAN:

Holly McNiven

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 £5 per meeting for adults (£1 for concessions).

Annual subscriptions 2025

Individual	£40
Family (maximum of two adults, and children/students living at the same address)	£55
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 membership@nottinghamastro.org.uk or speak to any NAS committee member at one of our regular monthly meetings.

The Nottingham Astronomical Society

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