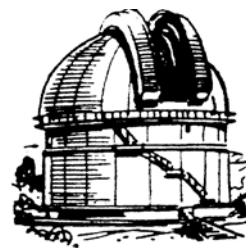


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# Journal

of the



## Nottingham Astronomical Society

February 2015

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***In this issue***

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- NAS e-Services
- Diary Dates
- The NAS on Facebook
- Society Information
- Membership application form

**Thursday, 5<sup>th</sup> February**

British Geological Survey

Nicker Hill, Keyworth

8 pm (doors open at 7.30pm)

Tonight we meet for an

**Open Evening**

with short presentations by members  
and a “telescope surgery”

*All members and friends welcome*

### RECENT NEWS STORIES ON THE WEB

*Follow these links for interesting current news:*

The HST's high resolution panoramic view of M31

<http://astronomynow.com/2015/01/13/hubbles-high-definition-panoramic-view-of-the-andromeda-galaxy/>

Study of Andromeda's stellar disk indicates more violent history than Milky Way

<http://www.sciencedaily.com/releases/2015/01/150108184326.htm>

The IAU opens exoplanet naming contest

<http://astronomynow.com/2015/01/13/international-astronomical-union-opens-exoplanet-naming-contest-today/>

Astronomers seek widest view ever of the universe with new telescope

<http://phys.org/news/2015-01-astronomers-widest-view-universe-telescope.html>

NASA's Dawn spacecraft will introduce us to a strange new world, says the mission director

<http://phys.org/news/2015-01-nasa-dawn-spacecraft-strange-world.html#ajTabs>

Mars Reconnaissance Orbiter photographs a new impact crater twelve metres in diameter on the Red Planet

<http://www.space.com/28252-fresh-mars-crater-mro-photo.html>

# Sky Notes

## February 2015

Compiled by Roy Gretton



*All times given below are in Universal Time (UT), effectively equal to GMT*

### PHASES OF THE MOON

|               |                                      |
|---------------|--------------------------------------|
| Full Moon     | 11:09 pm on February 3 <sup>rd</sup> |
| Last Quarter  | 3:50 am on the 12 <sup>th</sup>      |
| New Moon      | 11:47 pm on the 18 <sup>th</sup>     |
| First Quarter | 5:14 pm on the 25 <sup>th</sup>      |

This month the Moon is closest to the Earth on the 19<sup>th</sup>, and furthest on the 6<sup>th</sup>.

### THE PLANETS

**Mercury** is a morning object throughout February, but almost unobservable from the UK.

**Venus** is an evening object, slowly increasing in brightness to magnitude  $-4.0$ , and moving northward to cross the equator in the final week of this month. By then it will be 29 degrees from the Sun, and more than 20 degrees above the southwestern horizon at sunset.

**Mars** is an inconspicuous object low in the evening sky after sunset. On the 21<sup>st</sup> of this month, Mars and Venus will be only half a degree apart, with a thin crescent Moon a few degrees to the east, all three being in the constellation of Pisces.

**Jupiter** is better placed for observation this month than it will be for almost a decade. It reaches opposition to the Sun at 6 pm on February 6<sup>th</sup>, when it will be 650 million km from Earth, and shining at magnitude  $-2.5$  in our sky. The equatorial diameter of the planet will be 45.4 arcseconds, and the polar diameter 42.4 arcseconds, making it a compelling object for owners of telescopes.



Looking south  
at midnight  
on February 6<sup>th</sup>

The constant movements of the four brightest satellites are fascinating to observe. Interesting phenomena include: **eclipses** (when a satellite disappears as it enters Jupiter's shadow), **occultations** (when a satellite passes behind the body of the planet), **transits** (when a

satellite passes in front of the planet) and **shadow transits** (when a satellite casts its shadow on to the visible surface of Jupiter). Of these, shadow transits are probably easiest to observe with a modest-sized telescope (say 90mm aperture or greater). Look for a dark spot crossing Jupiter's disk. A list of shadow transits visible in the *evenings* this month is given below.

| <b>February</b>  | <b>Shadow transit of</b> |
|------------------|--------------------------|
| 3 <sup>rd</sup>  | Io 19:25 to 21:43        |
| 3 <sup>rd</sup>  | Europa begins 22:22      |
| 9 <sup>th</sup>  | Callisto begins 21:11    |
| 10 <sup>th</sup> | Io 21:19 to 23:37        |
| 16 <sup>th</sup> | Ganymede ends 20:46      |
| 17 <sup>th</sup> | Io begins 23:13          |
| 19 <sup>th</sup> | Io ends 19:59            |
| 23 <sup>rd</sup> | Ganymede begins 21:07    |
| 26 <sup>th</sup> | Callisto ends 19:59      |
| 26 <sup>th</sup> | Io 19:36 to 21:53        |
| 28 <sup>th</sup> | Europa 19:31 to 22:25    |

Interestingly, for the first half of 2015, Jupiter's equator and the orbits of its four large satellites Io, Europa, Ganymede and Callisto are almost edge-on to our line of sight, an alignment that only happens twice in the planet's 11.9-year journey around the Sun. This enables observers to see the satellites regularly eclipsing and occulting *each other* (although greater effort is required than when simply looking for shadow transits).

**Saturn** is a morning object, rising before 4 am in mid-month, and shining at magnitude +0.5. It is, however, not well placed for UK observers due to its southerly declination (-19 degrees).

**Uranus**, magnitude +5.9, is an evening object in the constellation of Pisces. It will be setting at about 9 pm by the end of February.

**Neptune**, an evening object in the constellation of Aquarius, has by now virtually disappeared into the sunset glow.

## METEORS

There are no recognised meteor showers in February.

## COMET C/2014 Q2 Lovejoy

This comet, discovered by the Australian amateur astronomer Terry Lovejoy last year, was brighter than magnitude 5 when it passed closest to Earth in early January, and some reports gave the magnitude as 3.8 in mid-January, making the comet a reasonably easy naked-eye object from a dark site. Perihelion was reached on January 30<sup>th</sup>, and it now begins February in the constellation of Andromeda, 4 degrees southeast of the beautiful second magnitude double star Almach. On the night of February 4<sup>th</sup>-5<sup>th</sup> it will pass within 38 arcminutes of Almach, and by the end of the month will have reached Cassiopeia. Continuing its northward journey, but fading all the time, the comet will pass very close to Ruchbah, the second star from the left in the Cassiopeia 'W', on March 16<sup>th</sup>.

See image below.



**Comet Lovejoy** imaged by  
the Editor at 7:35 pm on  
January 10<sup>th</sup>

Canon 450D at the prime  
focus of a 30-cm Newtonian  
reflector

*If you look very carefully you  
can discern a faint tail  
pointing toward the upper  
left corner of the image*

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## **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](http://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 Journal e-mailing list**

To register for your monthly e-mailed copy of the NAS Journal, just e-mail [secretary@nottinghamastro.org.uk](mailto:secretary@nottinghamastro.org.uk)

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

## DIARY DATES 2014-2015

### Monthly Meetings of the Nottingham Astronomical Society

Our programme for this year is shown below. Check our website: [www.nottinghamastro.org.uk](http://www.nottinghamastro.org.uk) for the latest information about the Society's meetings and for further information about the talks and speakers.

Our meetings are held on the **FIRST THURSDAY** of the month, at the British Geological Survey, Keyworth, Notts, NG12 5GG

(except **August**, when we meet at our observatory site, between Cotgrave and Cropwell Bishop)

Doors open at 7:30pm for 8pm start.

| <u>Date</u>               | <u>Topic</u>   | <u>Speaker</u>   |
|---------------------------|--|--|
| February 5 <sup>th</sup>  | Open Evening<br>Short talks by members, plus a telescope "surgery"         |  |
| March 5 <sup>th</sup>     | "Curiosity and Co – The latest from Mars"                                  | Dr John Bridges<br><i>University Of Leicester</i>                      |
| April 2 <sup>nd</sup>     | "Images of the Universe"   | Paul Money   |
| May 7 <sup>th</sup>       | "Proving Einstein Right"   | Prof. Ian Morison,<br><i>University of Manchester</i>                  |
| June 4 <sup>th</sup>      | "The Microwave Universe"   | Dr Clive Dickinson<br><i>Jodrell Bank Centre for Astrophysics</i>      |
| July 2 <sup>nd</sup>      | "Rosetta - close ups of a comet"   | <i>A scientist from the Open University</i>                            |
| August 6 <sup>th</sup>    | Society BBQ at the observatory, plus solar, radio and night time observing |  |
| September 3 <sup>rd</sup> | Open Evening   | <i>Organised by John Hurst</i>   |
| October 1 <sup>st</sup>   | "How our Galaxy came to be"  | Dr Chris Lintott,<br><i>University of Oxford, and BBC Sky at Night</i> |
| November 5 <sup>th</sup>  | Annual General Meeting   |  |
| December 3 <sup>rd</sup>  | "New Horizons : Pluto and the Kuiper Belt Objects"                         | Dr Chris Arridge,<br><i>University of Lancaster</i>                    |

## Nottingham Astronomical Society on Facebook



The Society launched its Facebook page in March 2013, and since then the number of people who follow us has slowly climbed to its current audience of 121 (at time of writing). Interestingly, not all our followers are within the Nottinghamshire area; we have followers in Italy, Mexico, Australia and The Philippines. Many members will already have Facebook accounts, and know how Facebook works (and we hope you all have liked our Facebook page), but not everyone uses Facebook, and so hopefully this short overview of our Facebook page will be of special interest to them.

The Facebook page is not designed to compete with the website, it is there to complement it, and to promote our activities to our members and to other interested parties. Facebook is very readily accessed on mobile phones and portable devices which allows people to contribute to our Facebook page whilst on the go (or in the field) with ease and with immediacy. Facebook can also be accessed from the warmth and comfort of a computer from home. To date we have many great images submitted to the page which has attracted plenty of comments and questions, and we have also had enquiries about astronomy which we can respond to very quickly.

We are using Facebook to work with other local astronomical groups to share each other's activities, as well as to highlight interesting national and international developments in astronomy and related sciences.

If anyone has any comments or requests about the Facebook page, please do get in touch either via Facebook, or through the secretary. Equally, if anyone is interested to learn more about Facebook but has yet to set up an account, but has questions or concerns, then feel free to contact us and we can talk it over with you.

Finally, please do keep submitting your images and any observing notes, and keep asking questions. It is great to see such engagement from our members and our Facebook followers, and to be able to share this with a wider audience.

James Dawson  
NAS Facebook Administrator

Facebook page: <https://www.facebook.com/nas.org.uk>

# Nottingham Astronomical Society

Affiliated to the **British Astronomical Association**  
Member of the **Federation of Astronomical Societies**  
Member of the **Society for Popular Astronomy**  
Supporters of the **Campaign for Dark Skies**  
**Registered Charity No: 1066645**

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## **PRESIDENT:**

e-mail: [president@nottinghamastro.org](mailto:president@nottinghamastro.org)

## **VICE PRESIDENT:**

**Roy Gretton**

e-mail: [vicepresident@nottinghamastro.org](mailto:vicepresident@nottinghamastro.org)

## **SECRETARY:**

e-mail: [secretary@nottinghamastro.org.uk](mailto:secretary@nottinghamastro.org.uk)

## **TREASURER:**

**David Anderson**

e-mail: [treasurer@nottinghamastro.org](mailto:treasurer@nottinghamastro.org)

## **JOURNAL EDITOR:**

**Roy Gretton**

e-mail: [journal@nottinghamastro.org](mailto:journal@nottinghamastro.org)

## **CURATOR OF INSTRUMENTS:**

**John Hurst**

e-mail: [curator@nottinghamastro.org.uk](mailto:curator@nottinghamastro.org.uk)

## **DIRECTOR OF OBSERVING:**

**John Hurst**

email: [observatory@nottinghamastro.org](mailto:observatory@nottinghamastro.org)

**Observatory line: 07726 940700 (line open during observing sessions)**

## **ORDINARY COMMITTEE MEMBERS:**

**Kevin Greally**

**Richard Myrie**

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### **Meetings**

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

**The British Geological Survey  
Nicker Hill  
Keyworth  
Nottingham NG12 5GG**

Doors open            7.30pm  
**Meetings start        8.00pm**  
Meetings end         10.00pm

Meetings are open to the public, and visitors are always welcome to attend.

### **Annual subscriptions 2015**

|   |     |
|---|-----|
| Full  | £30 |
| Concessions   | £15 |
| Joint rate for partners<br>living at the same address | £45 |

Subscriptions become due on 1<sup>st</sup> January. Half-price subscription is charged if joining after 1<sup>st</sup> July. Please make cheques payable to: Nottingham Astronomical Society.

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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](mailto:secretary@nottinghamastro.org.uk) or speak to any NAS committee member at one of the regular monthly meetings. A membership application form is inside this issue of the Journal.

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### **The Nottingham Astronomical Society**

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# NOTTINGHAM ASTRONOMICAL SOCIETY



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Affiliated to the British Astronomical Association  
Member of the Federation of Astronomical Societies

Registered Charity No. 1066645  
Member of the Society for Popular Astronomy  
Supporter of the Campaign for Dark Skies

## Membership application and Gift Aid declaration

**Title:**

**Full name:**

**Full home address:**

**Postcode:**

**Telephone:**

**e-mail address:**

|                           |             |        |        |        |             |
|---------------------------|-------------|--------|--------|--------|-------------|
| <b>Subscription rate:</b> | Full        | £30.00 | (year) | £15.00 | (half year) |
|                           | Concession  | £15.00 |        | £7.50  |             |
|                           | Partnership | £45.00 |        | £22.50 |             |

Concession = under-18 / full-time student / unemployed and receiving benefits

Partnership = two members living together as a couple at the same address

I wish my subscriptions to be eligible for Gift Aid **Yes / No**

## Gift Aid declaration

**(HMRC reference XR32048)**

I want Nottingham Astronomical Society to treat all subscriptions and donations that I make from the date of this declaration as Gift Aid donations, until I notify you otherwise.

I pay an amount of UK Income Tax and/or Capital Gains Tax at least equal to the tax that Nottingham Astronomical Society reclaims on my donations in the appropriate tax year.

**Signature:**