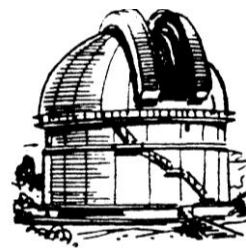


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# Journal

of the



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## Nottingham Astronomical Society

April 2015

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**Thursday, 2<sup>nd</sup> April**

**British Geological Survey**

**Nicker Hill, Keyworth**

**8 pm (doors open at 7.30pm)**

**Tonight we welcome**

**Paul Money**

**who will be speaking**

**“Images of the Universe”**

### **The Planets this Spring**

I hope you are enjoying watching the movements of the bright planets as spring unfolds. Venus is the stand-out object in the western sky after sunset (as it will continue to be well into the early summer), prompting friends and neighbours to enquire as to the identity of this brilliant “star”. I get the impression that we’ve had more than our usual allowance of clear nights over the past couple of months.

Meanwhile Jupiter is an excellent target for observation through binoculars, as the plane of the orbits of its four bright satellites lie almost edge-on to the Earth for the first half of 2015, with the result that they can be seen undergoing a series of mutual alignment events. For example, shortly after 4 am on March 3<sup>rd</sup>, Ganymede passed directly in front of Io, completely hiding the smaller satellite. (No, I wasn’t up at that hour to observe the event – unfortunately!)

And don’t forget little Mercury, which is the third brightest object in the sky (other than the Sun and Moon) and will put on an excellent show for northern hemisphere observers during the last week of April and the first half of May. Relatively few people have ever seen this planet – it is said that even the great Copernicus never saw Mercury – so if this is something you have never done, why not make the effort this spring? You’ll need to look between west and northwest on a clear evening to spot the bright “spark” that is Mercury.

# Sky Notes

## April 2015

Compiled by Roy Gretton



*All times given below are in British Summer Time (BST)*

### PHASES OF THE MOON

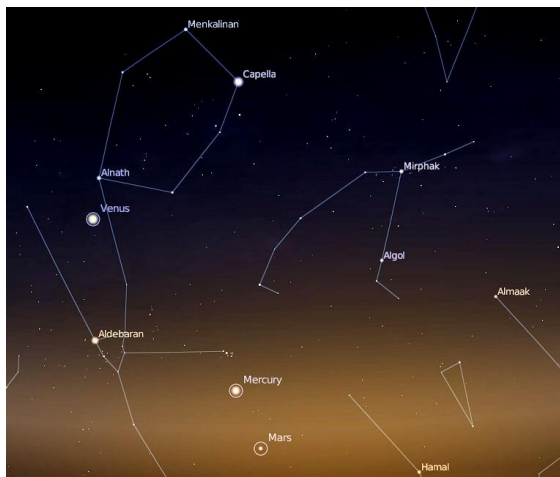
Full Moon	1:06 pm on April 4 <sup>th</sup>
Last Quarter	4:44 am on the 12 <sup>th</sup>
New Moon	7:57 pm on the 18 <sup>th</sup>
First Quarter	12:55 am on the 26 <sup>th</sup>

This month the Moon is closest to the Earth on the 17<sup>th</sup> and furthest on the 1<sup>st</sup>.

### THE PLANETS

**Mercury** passes through superior conjunction on April 10<sup>th</sup>, and emerges as an evening object thereafter. This will be the beginning of Mercury's best evening apparition of 2015. By the last day of the month it will be 10 degrees above the western horizon half an hour after sunset, and shining at magnitude  $-0.3$ , and its visibility will improve even more during the early part of May.

**Venus**, shining at magnitude  $-4.1$ , adorns the western sky after sunset throughout April. By the end of the month it will be setting about four hours after the Sun, and will be visible high in the west well before the sky is dark.



Looking WNW  
at 9:30 pm  
on April 28<sup>th</sup>

*(Venus stealing the show,  
Mercury improving in  
visibility,  
Mars fading away)*

**Mars** is fast disappearing into the sunset glow as it moves toward conjunction with the Sun on June 14<sup>th</sup>.

**Jupiter** continues to be well placed for observation in the evening sky, being high in the south as the Sun sets in the first half of April. Shining at magnitude  $-2.2$ , it is rivalled only by the Moon and Venus in the night sky. The apparent diameter of the planet diminishes from 41 to 38 arcseconds as the month wears on.

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>April</b>	<b>Shadow transit of</b>
1 <sup>st</sup>	Europa 20:16 to 23:09
6 <sup>th</sup>	Io ends at 21:23
7 <sup>th</sup>	Ganymede begins at 22:01
8 <sup>th</sup>	Europa begins at 22:52
13 <sup>th</sup>	Io 21:01 to 23:18
17 <sup>th</sup>	Callisto begins at 22:15
20 <sup>th</sup>	Io begins at 22:56
29 <sup>th</sup>	Io ends at 21:37

Although it reaches opposition next month, **Saturn** is not well placed for observation from our latitudes, being always less than 17 degrees above the southern horizon at culmination. Unfortunately some years will need to pass before the situation improves significantly for UK observers. Having said that, Saturn will brighten to magnitude +0.1 by late April, when the ring system will be nearly 42 arcseconds across, and the planet's disk more than 18 arcseconds across. Saturn's largest satellite, Titan, is due north of the planet on April 2<sup>nd</sup>, and again on the 18<sup>th</sup>.

**Uranus** and **Neptune** are unobservable this month.

## **METEORS**

The **Lyrids** are the main meteor shower this month, peaking on the night of April 22-23<sup>rd</sup>, when about five events may be observed per hour, chiefly in the early morning hours. Conditions this year are favourable, with a fairly thin crescent Moon in the evening.

## **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 on Twitter**

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

### **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>
April 2 <sup>nd</sup>	"Images of the Universe"	Paul Money
May 7 <sup>th</sup>	"Proving Einstein Right"	Prof. Ian Morison, <i>University of Manchester</i>
June 4 <sup>th</sup>	"The Microwave Universe"	Dr Clive Dickinson <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, <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, <i>University of Lancaster</i>

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## Advertisement

### FOR SALE

#### MARS FILTER

(by Orion Telescopes)  
1.25-inch fitting

£10

Sam Boote [s.boote@bcs.org](mailto:s.boote@bcs.org)  
or at Society meetings

## Aurora Borealis over the Vale of Belvoir

17<sup>th</sup> March 2015

Much of the Vale of Belvoir was plagued with fog on the evening when the aurora borealis was at its best, but NAS member Brian Carrington captured this image from a lay-by on the road between Harby and Eastwell, shortly after 11 pm. He was using a Sony A65 camera fitted with a Tamron lens set at a focal length of 18mm. The exposure time was 5 seconds with an ISO setting of 6400. **The green auroral band is clearly visible.**



The bright star near the upper-right corner is Alpha Cephei, Cassiopeia is central, and Perseus to the left of the picture.

Brian comments: *The grey band between the horizon and the green is the fog that was sitting down in the valley.*

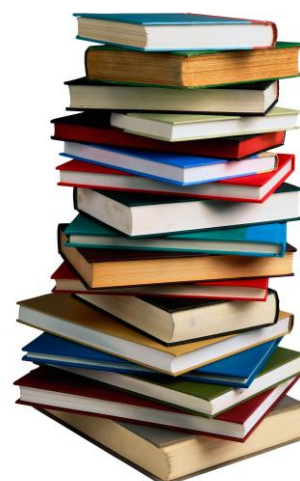
In the absence of the fog, many lamps down in the Vale would have been visible on this image.

**Many thanks, Brian.**

*Did any other members manage to capture this event?*

## The NAS Library

The Society currently owns a number of books, some old, some more modern, covering a range of subjects within the field of astronomy. The Society is keen for members to have access to these books to browse at meetings or to borrow and take home. We are fortunate that one of our members, Lorraine Goss, is willing to look after the books, and act as the Society Librarian; she has yet to declare what the penalty will be for an overdue item(!)



It is not feasible for Lorraine to bring all the books to every meeting, so we would like members to contact her in advance of the meetings to request her to bring along specific books either to be looked at or borrowed. If members are local to the NG2 postal area, arrangements could be made for picking up books or returning them at mutually convenient times.

If there are specific books which members are interested in seeing but which are not listed in the catalogue, then do ask Lorraine and she may be able to find a copy amongst other Society members, or find a second hand copy to purchase for the collection.

If any member has any books they think might be a valuable addition to the library, and which they would be willing to donate, please contact Lorraine.

When a book is borrowed, it would be expected to be returned at the next monthly meeting, unless no one else had requested it; again please contact Lorraine.

To email Lorraine, please use the address: [NASlibrarian@hotmail.com](mailto:NASlibrarian@hotmail.com)

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## NAS Helpdesk: April Update

The Helpdesk was a great success at the March meeting; several Skywatcher handsets and mount motors were updated with the latest firmware, and several people had their questions answered. We are sorry if we didn't get to talk to you but will try and have more people on hand at the April meeting.

We have visited a few members to help them with their equipment at their homes and hope to be able to help others in the future. Do contact us if you need help or advice; no question is too insignificant to ask, and even if we don't know the answer we will try and find it out for you.

We have also put together a list of useful resources that are available online and which members may find useful. *This document is attached to the email containing the April edition of The Journal.* There will be a folder containing all these articles at the April meeting which members and visitors are free to look through.

James Dawson and Bob Richardson

[NAShelpdesk@hotmail.com](mailto:NAShelpdesk@hotmail.com)

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

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## **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**

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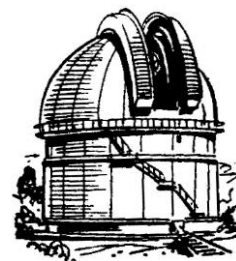
If you would like more information about the **Nottingham Astronomical Society**, or would like to become a member, please contact the Secretary [secretary@nottinghamastro.org.uk](mailto:secretary@nottinghamastro.org.uk) or speak to any NAS committee member at one of the regular monthly meetings. A membership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