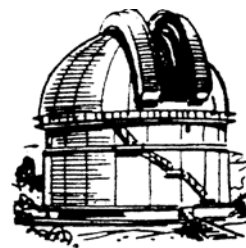


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# Journal

of the



## Nottingham Astronomical Society

May 2015

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**Thursday, 7<sup>th</sup> May**  
British Geological Survey  
Nicker Hill, Keyworth  
8 pm (doors open at 7.30pm)

Tonight we welcome

**Prof. Ian Morison**

who will be

**“Proving Einstein Right”**

### SUMMER IS ALMOST UPON US...

From about May 17<sup>th</sup>, at the latitude of Nottingham, Astronomical Twilight lasts the whole night through, which means that the sky never gets completely dark from then until late July.

**Astronomical Twilight** is defined as that period after sunset, and before sunrise, when the Sun is less than **18 degrees** below the horizon. Under such conditions, the sky isn't completely dark, even overhead, so that magnitude 6 stars cannot be seen with the naked eye.

Astronomical Twilight differs from **Civil Twilight**, during which the Sun is less than **6 degrees** below the horizon, and it is considered light enough to work outside without the aid of artificial lighting.

And there is a third category of twilight, **Nautical Twilight**, during which the Sun is less than **12 degrees** below the horizon, meaning that the horizon can be distinguished at sea.

Of course, all three definitions assume ideal conditions. Actual conditions may vary, as for example, thick cloud may make it too dark for outdoor work even when the Sun is less than six degrees below the horizon; and fog might obscure the marine horizon, even in broad daylight. However, from the astronomical point of view, if your interest is in observing faint nebulae and galaxies from the UK, you have only about two or three weeks left before the “summer” sets in.

# Sky Notes

## May 2015

Compiled by Roy Gretton



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

### PHASES OF THE MOON

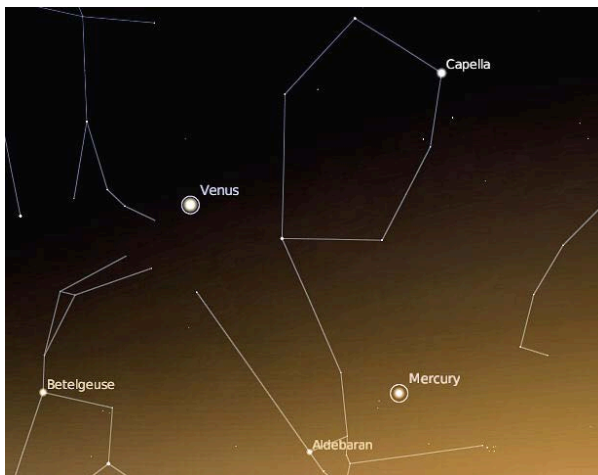
Full Moon	4:42 am on May 4 <sup>th</sup>
Last Quarter	11:36 am on the 11 <sup>th</sup>
New Moon	5:13 am on the 18 <sup>th</sup>
First Quarter	6:19 pm on the 25 <sup>th</sup>

This month the Moon is closest to the Earth on the 15<sup>th</sup> and furthest on the 26<sup>th</sup>.

### THE PLANETS

**Mercury** begins the month very well placed for observation from the northern hemisphere. Still moving out from the Sun, it will reach greatest eastern elongation (21 degrees) on May 7<sup>th</sup>, when it will be 11 degrees above the northwestern horizon at the end of civil twilight. Thereafter the planet moves quickly back toward the Sun, reaching inferior conjunction on May 30<sup>th</sup>.

**Venus**, passing through the constellation of Gemini, and shining at magnitude  $-4.2$ , continues to brighten and adorn the western sky after sunset throughout May. By the end of the month it will be setting over four hours after the Sun, and become visible high in the west well before the sky is dark. Through a telescope its phase will be similar to that of the Moon at First Quarter.



*Looking WNW  
at 9:30 pm  
on May 7<sup>th</sup>*

**Mars** is unobservable this month.

**Jupiter**, whose appearance has delighted us for many months now, will be setting before midnight by the end of May. Its brightness will fade below  $-2$ , and its equatorial diameter will shrink below 35 arcseconds by the close of the month. That said, Jupiter will remain the best planet for telescopic examination (Venus being relatively featureless, and Saturn too low in our sky to be seen to advantage).

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.

May	Shadow transit of
3 <sup>rd</sup>	Europa ends at 22:51
6 <sup>th</sup>	Io ends at 23:32
10 <sup>th</sup>	Europa begins at 22:35
13 <sup>th</sup>	Ganymede ends at 21:36
13 <sup>th</sup>	Io begins at 23:11
20 <sup>th</sup>	Ganymede begins at 21:59
29 <sup>th</sup>	Io ends at 23:47

**Saturn**, in the constellation of Scorpius, reaches opposition to the Sun on May 23<sup>rd</sup>, when it will have brightened to magnitude zero. The ring system will by then be 42 arcseconds across (almost as wide as Jupiter’s disk appeared at opposition), and be presenting us with a superb view, as Saturn’s north pole will be tilted toward us at an angle of 25 degrees. Unfortunately for UK observers, Saturn is about 18 degrees south of the equator, meaning that it will be very low in our sky, so that Earth’s atmosphere is likely to degrade our view of the planet. Saturn’s largest satellite, Titan, is due north of the planet on May 4<sup>th</sup>, and again on the 20<sup>th</sup>.

**Uranus** is a morning object in Pisces, rising two hours before the Sun at the end of May.

**Neptune** is also a morning object. Still located in the constellation of Aquarius, it will rise three hours before the Sun as May ends.

## METEORS

Some weak meteor activity may be observed from southern showers in May: the **Scorpiids** peaking on May 13<sup>th</sup>, and a few **Ophiuchids** putting in an appearance late in the month.

## 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>
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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## Nottingham Astronomical Society on Twitter

Social Media Networks continue to grow in popularity as more and more people keep up to date with current affairs on the move with technology such as smart phones, tablets and the like.

The Society has a very popular [Facebook](#) page (discussed in the February 2015 edition of [The Journal](#)), with members of the society and other followers posting images and reports, and the society able to promote its own activities and publicise meetings and events. The Facebook page has been a portal which has been used for other agencies to communicate with us such as the local press and university departments, and the number of people liking the page grows weekly.

Twitter was introduced in 2006 and is one of the most popular forms of social media. Recent astronomical events such as the 20<sup>th</sup> March Solar #eclipse2015 provided enormous interest on Twitter both in publicising the eclipse and sharing photos of the event.

Many of our guest speakers have accounts and astronomical organisations using Twitter include the Federation of Astronomical Societies [@fedastro](#), the British Astronomical Association [@BritAstro](#), and the Society for Popular Astronomy [@popastro](#).

Following consultation with the committee, we have set up a Twitter account for the Society, to compliment the other methods of engaging with our members and friends, to promote the activities of the Society, and to encourage greater participation of our audience.

Our Twitter feed [@NottinghamAstro](#) will advertise forthcoming meetings and events, and report interesting local, national and international news stories relevant to astronomy.

If you use twitter please follow the Society as we build our online following. If you have any astronomy images we will be happy to add them.

### **Richard Severn**

NAS Twitter Administrator

Twitter account address [@NottinghamAstro](#)



## NAS Library

The Society library now contains over 50 books (and one planisphere) which members are free to borrow. The full catalogue of books can be found via the hyperlink below, else email Lorraine the Librarian (address below) and she will forward you a copy of it:

[Link to library catalogue](#)



### *Featured book:*

[Patrick Moore's Yearbook of Astronomy 2015](#), Moore & Mason.

The first edition of The Yearbook of Astronomy was published in 1961, and there has been one every year since. The format has remained largely unchanged. The book consists of two main parts. The first deals with monthly charts and astronomical phenomena for the given year, outlining the major constellations, activities of the planets and special astronomical events occurring month-by-month - much like the lovely Sky Notes in our own Journal, but with the freedom of greater space so allowing the text to go into greater detail. There's nothing worse than realising a once in a life time astronomical event is happening in four hours time when you have made plans to go to the cinema, so reading about what is occurring in the coming month or two allows observers to plan ahead. The second part of the book has always consisted of articles of an astronomical nature written by experts in the field, not necessarily by Professors or academics, but also by amateurs who have acquired a life-time of knowledge and skill in a particular field which they want to share with others. These essays also usually contain one or more biographical articles about ancient and more modern amateur and professional astronomers. The articles in the 2015 yearbook include an essay by the BBC's Sky At Night presenter Pete Lawrence on Observing and Imaging the Sun, biographical essays on Horace Dell and on Edmond Halley (of the comet fame), an astrophysics article on ripples in space, and essays on the New Horizons mission to Pluto, and the March 2015 Solar Eclipse. The book closes with an appendix of data on variable and double stars.

This is a lovely book, and a great addition to a wonderful series of books. It is great to dip into, or to sit down and read from cover to cover. If you want to borrow this, contact Lorraine.

You might also want to try and find a second hand copy of the edition for the year of your birth, assuming you were born since 1962, and see what astronomical events were happening at the time. If you want help finding a copy, ask Lorraine.

*James Dawson*

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

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

## NAS Helpdesk



The Helpdesk was again a great success at the April meeting; several Skywatcher handsets and mount motors were updated with the latest firmware, and Bob had his equatorial mount set up and talked to several people about it. A demonstration of the free software "[Stellarium](#)" was also on show and we hope to run that again at the May meeting.

If anyone lives in the NG2 area and has some advanced Microsoft Windows skills and would be willing to help one of our members transfer some software/settings from an old PC to a new one, please get in touch with us, that would be very kind.

As always, if there is some specific equipment you'd like to see or ask about, drop us an email. If you need help with your own equipment then again email us or bring it along; we can also come and visit you at your home at a mutually convenient time as long as you are not in the Outer Hebrides.

James Dawson and Bob Richardson  
[NAShelpdesk@hotmail.com](mailto:NAShelpdesk@hotmail.com)

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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

# 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.

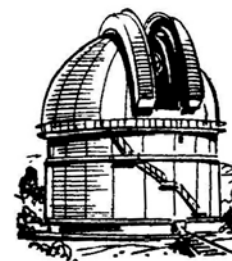
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### **The Nottingham Astronomical Society**

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# NOTTINGHAM ASTRONOMICAL SOCIETY



Founded in 1946 for all interested in astronomy  
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:**