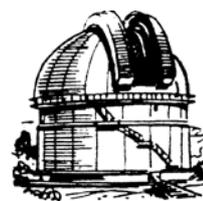

Journal

of the

Nottingham Astronomical Society

April 2016



In this issue

- Sky Notes for April
- E-services
- Diary Dates 2016
- International Astronomy Show 2016
- David Mattison's TED talk
- Book review
- NAS Library
- NAS Helpdesk
- Advertisement
- Society Information
- Membership application form

Thursday, April 7th

British Geological Survey
Nicker Hill, Keyworth

8 pm (doors open at 7.30pm)

Tonight we look forward
to the return of

Prof Ian Morison



of the University of Manchester

who will be asking

“Is There Anyone Out There?”

THE BOSS GREAT WALL

A billion-light-year wide galactic wall, claimed to be discovered recently by a team at the Canary Islands Institute of Astrophysics, may be largest object found thus far in the cosmos. The wall, provisionally called the BOSS Great Wall, is a vast structure of over 800 galaxies, with a total mass perhaps 10,000 times as great as the Milky Way, forming part of a supercluster system at a red-shift of about 0.47, more than 4.5 billion light-years distant. On the largest scales, the universe resembles a cosmic web of matter surrounding huge voids, with these “walls” being the thickest threads in the web. Although there are probably many more of these walls yet to be discovered, the BOSS Great Wall (BGW) looks to be the largest found to date.

The following link will take you to the journal reference:

arxiv.org/abs/1602.08498, and the scientific paper will appear in *Astronomy & Astrophysics*.

The authors claim that “*the BGW is one of the most extended and massive system of superclusters yet found in the Universe*”.

Sky Notes

April 2016

Compiled by Roy Gretton



All times given below are in British Summer Time

PHASES OF THE MOON

<i>Phase</i>	<i>Date and time</i>	<i>Moonrise</i>	<i>Moonset</i>
New Moon	12:24pm on April 7 th	6:35am	7:55pm
First Quarter	4:59am on the 14 th	Noon	2:40am
Full Moon	6:24am on the 22 nd	8:25pm	6:15am
Last Quarter	4:29am on the 30 th	2:30am	12:15pm

This month the Moon is closest to the Earth on the 7th and furthest on the 21st.

THE PLANETS

Mercury puts on the best evening apparition of the year this month (as is typical of the situation in the spring, when the ecliptic makes a steep angle with the western horizon). Due to the relative positions of the Earth and Mercury in their elliptical orbits, this will be by no means the best possible configuration for observing the smallest planet, as greatest eastern elongation (on April 18th) will be only 20 degrees. Even so, between the 12th and the 23rd, Mercury will be more than 10 degrees above the horizon about 30 minutes after the Sun has set – but by the last week on the month this fleet-footed planet will be moving rapidly back toward the Sun.

Venus is unobservable this month.

Mars will be rising at about 1 am at the beginning of April, and by the close of the month will be due south at 3 am – but unfortunately for observers in the UK it will be more than 20 degrees south of the celestial equator, and never more than 17 degrees above our horizon. Perhaps the most noticeable aspect of our view of Mars, even to the naked-eye observer, will be the increase in apparent brightness as Earth draws steadily closer to the Red Planet. At the start of the month it will be shining at magnitude -0.5 , but this will have brightened to magnitude -1.4 by April 30th.

Jupiter is well placed for observation and visible throughout the night this month. Although its brightness and apparent diameter will be diminishing throughout April, Jupiter will still be shining at magnitude -2.3 and exhibiting a disk more than 40 arcseconds across at the end of the month.

For those who enjoy watching the movements of the four brightest satellites, a list of **shadow transits** (the easiest phenomena to observe) visible in the *evenings* this month is given below. Look out for a dark spot crossing Jupiter's disk.

April	Shadow transit of
1 st	Io ends at 11:22pm
1 st	Europa begins at 9:18pm
8 th	Io begins at 10:01pm
8 th	Europa begins at 11:55pm

15 th	Io begins at 11:55pm
24 th	Io ends at 10:33pm
26 th	Europa ends at 9:14pm

If you would like to observe the **Great Red Spot**, it will appear central on Jupiter's disk at the following dates and times in the evening this month:

8:40pm on the 2 nd	10:18pm on the 4 th
11:57pm on the 6 th	9:26pm on the 9 th
11:04pm on the 11 th	10:12pm on the 16 th
11:21pm on the 18 th	9:20pm on the 21 st
10:59pm on the 23 rd	10:07pm on the 28 th
11:46pm on the 30 th	

Saturn spends April moving in a retrograde manner (westwards) in the constellation of Ophiuchus. Being more than 20 degrees south of the celestial equator, Saturn will never be very far above the horizon when viewed from our latitude, so conditions are far from ideal. A view through a telescope will show the ring system very well presented, as Saturn's north pole is tilted toward Earth at an angle of more than 26 degrees.

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

METEORS

The **Lyrids** are the main meteor shower this month, peaking on the night of April 21st-22nd, when up to ten events may be observed per hour under ideal circumstances. Unfortunately the position of the Moon renders this year's conditions highly unfavourable, with maximum activity roughly coinciding with the Full Moon.

The **Virginids** peak on the night of April 12th-13th, when up to five events per hour may be observed under ideal conditions. This year maximum activity occurs before First Quarter, so the Moon will be well out of the way by midnight.

COMET 252P Linear

At magnitude 5.5, this is by far the brightest comet around at present. Surprisingly it has turned out to be about 100 times brighter than had been predicted only last autumn. Comet 252P (Linear) will be moving northward through the constellation of Ophiuchus in the morning sky as April begins. To locate it with binoculars or a telescope, consult the website www.heavens-above.com for the latest positional data and a finder chart.

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 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

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

DIARY DATES 2016

Monthly Meetings of the Nottingham Astronomical Society

Our programme for this year is shown below. Check our website: 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 7 th	Is There Anyone Out There?	Prof Ian Morison <i>University of Manchester</i>
May 5 th	Gamma Ray Bursts	Prof Nial Tanvir <i>University of Leicester</i>
June 2 nd	Gaia: A Billion Pixel Survey of a Billion Stars	Dr Elme Breedt <i>University of Warwick</i>
July 7 th	The Antikythera Mechanism: an Ancient Astronomical Computer	Prof Mike Edmunds <i>University of Cardiff</i>
August 6 th (Saturday)	Society BBQ at the Observatory	
September 1 st	Images of the Universe - 2	Paul Money
October 6 th	Open Evening <i>including a Telescope Surgery</i>	
November 3 rd	Annual General Meeting 2016	
December 1 st	Galactic Monsters: Seyfert Galaxies, Radio Galaxies and Quasars	Dr Marek Kukula <i>Greenwich Observatory</i>

The International Astronomy Show (IAS) 2016, Stoneleigh Park, Warwickshire

The IAS is again in Warwickshire this year and will run from Friday 14th to Saturday 15th October. The event brings together most of the astronomy retailers from around the country (and beyond) under one roof to showcase their products; there are often some discounts on sales available to visitors. A series of lectures are also put on throughout the two days covering a range of academic and practical topics related to astronomy and given by prominent names in the field. Tickets are due to go on sale soon, so keep an eye on the website below for further information:

<http://www.ukastroshow.com/>

Technology, Entertainment and Design (TED)

NAS member David Mattison last year gave a TED talk at the University of Nottingham, in which he spoke about the almost unbelievable scale of the scale of the universe, in a way that was easy for everyone to understand.



The talk was given at a TEDx event using the TED conference format but independently organized by the local community. Find out more at <http://ted.com/tedx>.

You can see David's talk on YouTube by following this link:

<https://www.youtube.com/watch?v=gfedX5qNgCg>

Book review

Philip's Sun Observer's Guide

by Pam Spence

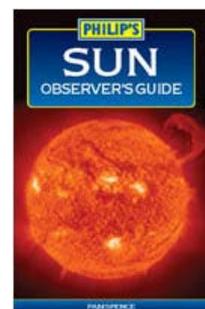
Philip's, 2004, 160 pages, ISBN: [978-0540083930](https://www.isbn-international.org/product/978-0540083930). Out of print but second hand copies available for under £5, ask Librarian for details

I have used a number of Philip's Guides for astronomers over the last few years and all have proved to be excellent sources of reference and learning – this book written by Pam Spence and published in 2004 is no exception.

Many books written about our Sun tend to be quite specialised in content (and sometimes very expensive!). The beauty of this book is that it covers all bases and is useful for the complete amateur but also has content which will satisfy a more advanced observer. It will give guidance to the beginner on safe observation of the Sun, give valuable insight into the physical dynamics of the Sun, but will also give instruction on more advanced observational techniques.

Of particular interest is the chapter on the Sun-Earth connection, all presented in very readable form. As with all the Philip's series of books there are clear diagrams, some great photographs and a comprehensive glossary of terms and index.

A well recommended book written by a professional astronomer and presented in a very handy format.



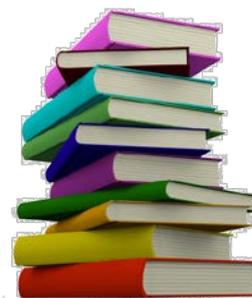
Dave Mattison

March 2016

We have a copy of this book in the library collection, if you would like to borrow it, or get help finding a copy to buy, drop Lorraine and email or speak to her at the monthly meetings: NASlibrarian@hotmail.com

NAS Library

As you will all know, we are once again welcoming Professor Ian Morison as guest speaker at our meeting on 7th April. In view of this, I thought I'd remind everyone that we do have two of his books in our library. The first one, *An Amateur's Guide to Observing the Heavens*, has proved very popular with members. We have recently obtained a copy of *A Journey through the Universe – Gresham Lectures on Astronomy*, published in 2015. This looks a fascinating read for all levels of enthusiasts. The Lectures explore many aspects of our Solar System and the Universe beyond, taken from transcripts of Professor Morison's lectures over four years from 2007, during his tenure as Gresham Professor of Astronomy. These lectures have, of course, been brought right up to date. I'm sure this book will prove just as popular with members as *The Amateur's Guide*.



Look forward to seeing you all on the 7th April.

The full list of books in our lending collection can be found here: [NAS Library Collection](#).

Lorraine NASlibrarian@hotmail.com

NAS Helpdesk



We will be on hand at the April meeting should you have any questions about astronomy equipment or its use, or just for a chat. As always, if there you need some help or advice and are unable to talk to us at a monthly meeting drop us an email, even if we don't know the answer we'll be able to find someone who does.

James Dawson and Bob Richardson

helpdesk@nottinghamastro.org.uk

Advertisement

FOR SALE

Brightstar manual filter wheel (holds up to five 1¼-inch filters)	£30
Set of four 1¼-inch coloured filters (red, yellow, green, blue)	£20
Mars filter 1¼-inch	£10
Moon filter 1¼-inch (25% transmission)	£10
Filter case (holds up to four 1¼-inch filters)	£2
Celestron lens pen	£2
Micro-fibre cleaning cloth	£2

Sam Boote 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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CURATOR OF INSTRUMENTS:

Robert Bush

e-mail: curator@nottinghamastro.org.uk

DIRECTOR OF OBSERVING:

(vacant post; Acting Director: John Hurst)

email: observatory@nottinghamastro.org.uk

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

ORDINARY COMMITTEE MEMBERS:

Sam Boote

Barrie Chacksfield

James Dawson

Lynda Foot

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 welcome to attend.

Annual subscriptions 2016

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. A membership application form is inside this issue of the Journal.

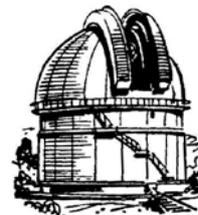
The Nottingham Astronomical Society

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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
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Supporter of the Campaign for Dark Skies



Membership application and Gift Aid declaration

Title:

Full name:

Full home address:

Postcode:

Telephone:

e-mail address:

Subscription rate:	Full	£30.00	(year)	£15.00	(half year)
	Partnership	£45.00	(year)	£22.50	(half year)
	Under-18 and full-time students	£5			

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:

Date: