
Journal

of the

Nottingham Astronomical Society
January 2017



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Thursday, January 5th

**British Geological Survey
Nicker Hill, Keyworth**

8 pm (doors open at 7.30pm)

Tonight we are holding an

Open Evening

**A chance to meet new members,
peruse our library,
seek answers at our Help Desk,
and take part in our**

NEW YEAR QUIZ

RECENT NEWS STORIES ON THE WEB

Follow these links for interesting current news:

“Soupy mix” of minerals identified on Mars

<http://www.astronomy.com/news/2016/12/soupy-mix-of-minerals-a-jackpot-on-mars>

The importance of “Cold Neptunes” in extrasolar systems

<http://www.sci-news.com/astronomy/cold-neptunes-04460.html>

The HST has imaged tenuous filaments of matter in a nearby elliptical galaxy

<http://www.skyandtelescope.com/astronomy-news/hubble-images-tangled-web-nearby-galaxy-ngc-4696/>

It has become apparent that the dwarf planet Ceres contains water in abundance

<http://www.skyandtelescope.com/astronomy-news/ice-is-everywhere-on-ceres/>

Now available: Cassini’s first images of Saturn from its new orbit

<https://www.sciencedaily.com/releases/2016/12/161207155755.htm>

Superb ultra-deepfield images from the HST

<http://www.space.com/34171-hubble-telescope-ultra-deep-field-photos.html>

An amazingly bright flash from a distant galaxy may have been caused by a star falling into a supermassive black hole

<https://astronomynow.com/2016/12/13/spinning-black-hole-swallowing-star-explains-superluminous-event/>

Sky Notes

January 2017

Compiled by Roy Gretton



All times given below are in Universal Time (Greenwich Mean Time)

Earth will be at **perihelion** at 2:18pm on January 4th. The centre of the Earth will then be 147,100,998 km from the centre of the Sun, which happens to be 1.7% closer than their average separation.

PHASES OF THE MOON

<i>Phase</i>	<i>Date and time</i>
First Quarter	7:47pm on January 5 th
Full Moon	11:34am on the 12 th
Last Quarter	10:19pm on the 19 th
New Moon	12:07am on the 28 th

This month the Moon is closest to the Earth on the 10th and furthest on the 22nd.

THE PLANETS

Mercury spends the whole of this month as a morning object, reaching greatest western elongation on January 19th. It will then be 24 degrees from the Sun, but only 6 degrees above the southeastern horizon when civil twilight begins, so not easy to spot in the pre-dawn glow.

Venus is now shining brightly in the southwest after sunset, and by the end of the month will have reached a brilliant magnitude -4.6 , by which time the planet will at last be north of the celestial equator. Greatest eastern elongation (47 degrees) occurs on January 12th, when Venus will still be more than 8 degrees south of the equator, but given a clear evening will be unmissable after sunset. Through a telescope, Venus begins the month showing a gibbous phase, and ends the month as a thinning crescent.

Mars is also moving northward in our sky, beginning January in the constellation of Capricornus and ending in Pisces. The planet will linger in the evening sky for some months yet, but all the while diminishing in brightness and apparent size, ending January a mere 5 arcseconds across.

Jupiter, not far from Spica in the constellation of Virgo, continues to be a target for early morning observers, as it won't rise before midnight until January is almost over. By the end of the month, Jupiter will be shining at magnitude -2.1 , and its equatorial diameter will have grown to almost 40 arcseconds.

Having passes through conjunction with the Sun in early December, **Saturn** now emerges into the morning sky, and will be rising at about 5am at the end of January. Not well placed for observation.

Uranus, shining at magnitude 5.8 in the constellation of Pisces, is well placed for observation in the early evening, being situated due south at about 6 pm in mid-January, and at an elevation of about 45 degrees.

Neptune is now tending to disappear from the evening sky, as it sets in the southwest early in the evening. On the evening of 1st January, Neptune will be less than one-third of a degree away from Mars.

METEORS

Conditions will be favourable for observing the **Quadrantids** this year, as they reach their maximum activity (perhaps 80 events per hour) on January 3rd, when the crescent Moon will be setting well before midnight. These meteors, which appear to radiate from a point in the north of the constellation of Boötes, not far from the handle of the Plough, may show distinct blue or yellow colours, and can be as prolific as the better-known Perseids.

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 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.

NOTE to NAS Members and Journal Subscribers

If you happen to change your email address, please remember to inform the Society by emailing us at treasurer@nottinghamastro.org.uk

**We wish all Members of the NAS, and all who subscribe
to this Journal, a very happy and prosperous 2017.
May the stars shine for you!**

DIARY DATES 2017

Monthly Meetings of the Nottingham Astronomical Society

1) Meetings at the British Geological Survey, Keyworth

Nicker Hill, Keyworth, Nottingham, NG12 5GG

Held on the **FIRST** Thursday of each month except **August**

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

*These events are normally centred around a talk by a visiting speaker, except Opening Evenings, when NAS members provide the activities. Normally we have a **Library** and a **Helpdesk** open at each meeting.*

<u>Date</u>	<u>Topic</u>	<u>Speaker</u>
January 5 th	Open Evening with a New Year Quiz	
February 2 nd	Passage Graves Ancient telescopes without lenses	Dr Dan Brown Nottingham Trent University
March 2 nd	Finding Exoplanets with Small Telescopes	Dr Peter Wheatley University of Warwick
April 6 th	The Art of Astrophotography	Prof Ian Morison University of Manchester
May 4 th	Juno: Exploring the Mysteries of Jupiter	Prof Emma Bunce University of Leicester
June 1 st	Charles Messier	Dr Allan Chapman, FRAS
July 6 th	Gravitational Waves	Dr Ed Daw University of Sheffield
August 5 th (SATURDAY)	BBQ at the Observatory (members and guests only)	
September 7 th	Galaxy Evolution revealed by the Hubble Space Telescope	Dr Clive Tadhunter University of Sheffield
October 5 th	Space Stations from Salyut to the ISS	Dr Mike Leggett, FRAS
November 2 nd	Annual General Meeting	
December 7 th	Voyager 40 Years On (Part 1)	Paul Money, FRAS

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.

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

The next meeting will be on January 19th

Can you help?

The history of Nottingham Astronomical Society

I am trying to piece together information about the history of the society, and at present compiling a list of past venues where the society has met for its monthly indoor meetings. Below is a list of venues I know about, and the date alongside I think the society moved to that venue. If any reader can correct any of this information, or fill in the gaps please contact me. Also if anyone has any stories, photographs or other memorabilia about these venues or the society in general, please do let me know at the meeting or via email.

Mechanics Institute 1946

Scouts Room, North Church Street ?1964

New Mechanics Institute, Birbeck House 1966

YMCA, Shakespeare Street (?)

White Eagle Club, Pelham Road 1971

Djanogly City Technology College, Sherwood Rise 1992

British Geological Survey, Keyworth 2006

James Dawson, NAS Helpdesk

helpdesk@nottinghamastro.org.uk

Social and Practical Astronomy

Whilst I wasn't at the meeting on Thursday December 15th, I hear that both the talk on the use of radio-astronomy to detect meteors and the Star of Bethlehem were interesting and generated plenty of discussion. Thanks for Pete Hill and Lynda Foot for these talks, and to everyone who helped with the event.

The next meeting on Social and Practical Astronomy is on Thursday 19th January 2017 at the Burnside Memorial Hall in Plumtree. Doors will open at 7:30pm.

James Dawson, NAS Helpdesk

helpdesk@nottinghamastro.org.uk

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<http://www.npae.net>

THE CLUSTERS OF CASSIOPEIA

Astronomy magazines list seven *open clusters* in the constellation of Cassiopeia, so I decided to image all of them on the same night, which happened to be 28th November 2016, between 11:10 and 11:30pm. All the images are single 30-second exposures taken at ISO1600 with a Canon 450D camera at the prime focus of my 30cm f/5.3 Newtonian reflector. They are shown below in order of their position west-to-east through the constellation. All the images have each been cropped to some extent.



M52



NGC7789



NGC457



M103



NGC654



NGC659



NGC663

Cassiopeia is almost overhead as darkness falls in January. Brief notes on these clusters may be found below.

M52 was discovered by Charles Messier in 1774, and a rough estimate of its distance from Earth is 5,000 light-years.

NGC7789, which didn't make it into Messier's catalogue, looks slightly bigger than M52, and is a little brighter in sum total.

NGC457, also known as the Owl or Spaceman Cluster, is always a delight to discover through a small telescope. I remember many years ago coming across it unexpectedly when scanning that part of the sky with my old 6-inch Newtonian. Whether you see an owl or a spaceman, the two brightest stars are obviously the eyes.

M103 was discovered in 1781 by Pierre Mechain, and is an easy binocular object. Estimates of its distance from Earth vary from 8000 to 10000 light-years. The brightest star is not in fact a member of M103, but a star situated between us and the cluster. The orange star near the centre of the cluster is a magnitude 10.8 red giant.

NGC654 was discovered by William Herschel in 1787. Its approximate distance is 8000 light-years.

NGC659 was discovered by Caroline Herschel in 1793. It lies at a similar distance to that of NGC654.

NGC663 is a relatively easy binocular object, and it may be surprising that Messier didn't include it in his list. It spans an area of sky about half the diameter of the Moon, and is roughly 7000 light-years distant.

Roy Gretton

Advertisement

FOR SALE

Set of four 1¼-inch coloured filters (red, yellow, green, blue)	£20
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 **Commission for Dark Skies**
Registered Charity No: 1066645

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

ORDINARY COMMITTEE MEMBERS:

Barrie Chacksfield

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 2017

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.

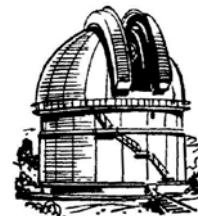
The Nottingham Astronomical Society

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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 Commission for Dark Skies



Membership application and Gift Aid declaration

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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.

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