

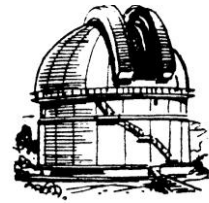
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# Journal

of the

**Nottingham Astronomical Society**  
**July-August 2016**

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**Thursday, July 7<sup>th</sup>**  
**British Geological Survey**  
**Nicker Hill, Keyworth**

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

**This evening we welcome**  
**Prof Mike Edmunds**

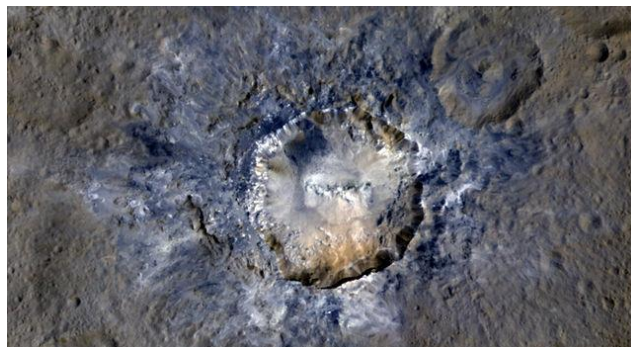


*of the University of Cardiff*  
who will be speaking on

**“The Antikythera Mechanism:  
an Ancient Astronomical Computer”**

### **The Mystery of Ceres**

Ceres is a strange object indeed. Once classified as “the largest asteroid”, it is now seen as a true dwarf planet that has somehow ended up among the debris of the asteroid belt, between the orbits of Mars and Jupiter. Over recent months we have been learning more about this world as findings from the Dawn spacecraft are released. In its lowest-altitude mapping orbit, at a distance of 240 miles from Ceres, Dawn has provided spectacular views of the surface. Ceres is believed to have a large amount of ice and perhaps subsurface liquid water. As it has similarities with the large icy moons of the giant planets and with many Kuiper Belt objects, some scientists now believe that Ceres originated far away in the outer Solar System. However, this idea is controversial, as Ceres is now known to be composed of only 30 to 40 percent ice, unlike, for example, Pluto, which is mainly ice. And so the mystery deepens. Below is a new image of Haulani, a crater with a diameter of 21 miles.



Credit: NASA/JPL-Caltech/UCLA/MPS/DLR/IDA

# Sky Notes

## June 2016

Compiled by Roy Gretton



*All times given below are in British Summer Time*

At 5:24pm on July 4<sup>th</sup> the Earth will further from the Sun than at any other time during 2016, with 152,103,776 km separating the two bodies (more than 5 million kilometres further apart than they were on January 2<sup>nd</sup>).

### PHASES OF THE MOON

	July	August
New Moon	12:01pm on the 4 <sup>th</sup>	9:45pm on the 2 <sup>nd</sup>
First Quarter	1:52am on the 12 <sup>th</sup>	7:21pm on the 10 <sup>th</sup>
Full Moon	11:57pm on the 19 <sup>th</sup>	10:27am on the 18 <sup>th</sup>
Last Quarter	Midnight on the 27 <sup>th</sup>	4:41am on the 25 <sup>th</sup>

In July the Moon is closest to the Earth on the 27<sup>th</sup>, and furthest on the 13<sup>th</sup>. In August the Moon is closest to the Earth on the 22<sup>nd</sup>, and furthest on the 10<sup>th</sup>.

### THE PLANETS

**Mercury** begins July on the far side of the Sun, passing through superior conjunction on the 7<sup>th</sup>, and thereafter becoming an evening object (but extremely difficult to observe from Britain) until September. Greatest eastern elongation occurs on August 16<sup>th</sup>, but even though Mercury will then be 27 degrees from the Sun, observation from northern latitudes will be almost impossible.

**Venus** passed through superior conjunction in June, and has now emerged into the evening sky. On July 16<sup>th</sup> it will be half a degree south of Mercury, a nice pairing for observers in the southern hemisphere, but not visible from Britain. It will not be until the second half of August that Venus will begin to be observable from the UK. On August 27<sup>th</sup> Venus will pass within 4 arcminutes of Jupiter (in daylight), but the two planets will be 8 arcminutes apart by the time the Sun sets.

**Mars**, with its orange hue, can be seen low in the south in the constellation of Libra as darkness falls on July 1<sup>st</sup>. As happens quickly after every opposition, Mars is already fading quite noticeably. It begins July at magnitude  $-1.4$ , but by the end of August this will have faded to magnitude  $-0.3$ . Its angular diameter during this period will diminish from 16.3 to 10.5 arcseconds, and thus the useful observing season for the planet will be nearing its end early in the autumn.

**Jupiter**, in the constellation of Leo, is now less bright than magnitude  $-2$ , and much less prominent than it was a few months ago. It can still be seen low in the west after sunset, but will become more difficult to observe as the summer weeks wear on.

**Saturn**, shining at magnitude  $+0.2$  in the constellation of Ophiuchus, is due south at about 11pm as July begins. Although very low in our sky, it is slightly higher than Mars, and could be well worth observing through a telescope if you get the opportunity. Saturn's north pole is tilted toward Earth at an angle of 26 degrees, so the rings continue to be well seen.

**Uranus** (in Pisces) and **Neptune** (in Aquarius) are both morning objects, and by the close of August will be well placed for observation in the morning sky.

## METEORS

There are three meteor showers visible in August: the **Alpha Capricornids**, which peak on the night of the 2<sup>nd</sup>-3<sup>rd</sup>, close to New Moon, so conditions will be very favourable; the **Iota Aquarids**, which peak on the 6<sup>th</sup> (conditions again favourable) and may produce a handful of faint meteors per hour; and of course the **Perseids**, which this year will peak under less than ideal conditions, with a 10-day-old Moon. However the Moon will be out of the way in the pre-dawn period, and this year there are hopes that we shall see enhanced rates of meteor activity. Maximum activity is expected around midday on August 12<sup>th</sup>, so the nights of the 11<sup>th</sup>-12<sup>th</sup> and 12<sup>th</sup>-13<sup>th</sup> should produce the greatest number of events. Bear in mind that the Perseids are active for a number of days either side of August 12<sup>th</sup>, so you can also make use of these dates.

## 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](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>
July 7 <sup>th</sup>	The Antikythera Mechanism: an Ancient Astronomical Computer	Prof Mike Edmunds <i>University of Cardiff</i>
August 6 <sup>th</sup> (Saturday)	Society BBQ at the Observatory	
September 1 <sup>st</sup>	Images of the Universe - 2	Paul Money
October 6 <sup>th</sup>	Open Evening <i>including a Telescope Surgery</i>	
November 3 <sup>rd</sup>	Annual General Meeting 2016	
December 1 <sup>st</sup>	Galactic Monsters: Seyfert Galaxies, Radio Galaxies and Quasars	Dr Marek Kukula <i>Greenwich Observatory</i>



This year is the 70th year for Nottingham Astronomical Society, and those who use social media may have seen the banner above advertising the fact.

We are going to use the **Summer BBQ** to celebrate our 70th year and hope as many members as possible will be able to come along. The BBQ will be free to attend and is going to be held on Saturday 6th August at the observatory in Cotgrave. Doors open at 2pm and we'll be cutting the cake at 4pm. We plan to have some solar telescopes set up, a display of society activities, tours of the observatory, some party games for those who either are young or still young at heart, and hopefully some members from the Society from the very early days of the Society.

It would be helpful to us if you could let us provisionally know if you would like to attend the BBQ, and we would be grateful if you could drop us an email at [helpdesk@nottinghamastro.org.uk](mailto:helpdesk@nottinghamastro.org.uk) informing us how many tickets you are likely to require; this by no means commits you to the event but does help us in our planning.

### **The Committee**

Nottingham Astronomical Society



*The sunset over the observatory at the 2014 summer BBQ*

# *Stargazing Secrets* by Andrew Vamplew

## A review by Rhiannon Coupe

Stargazing Secrets is an extremely useful book for the beginner and amateur astronomer. It is very informative and explains how to navigate the night skies in both Northern and Southern Hemispheres.

The book contains very handy star charts with suggestions on what to observe (such as Messier objects and Variable Stars just to name a couple) and how to find them. The author also focuses on individual constellations such as the famous Ursa Major (The Plough) and Orion.

Vamplew weighs up the Pros & Cons of reflector and refractor telescopes, the advantages each size of telescope has and their resolutions. This is particularly helpful if the reader is considering buying their first telescope or looking to upgrade their current one. It contains all the vital information, for example whether the telescope is easy to transport and the amount of maintenance required to ensure the performance of the telescope remains high.

Stargazing Secrets also contains information on identifying different types and classes of stars and where to find them in the Cosmos. Not only that but it also provides a very useful guide on the different types of nebulae and again where to find them. An example of this is the Orion Nebula, a type of Emission Nebula located in Orion's Sword.

I would recommend this book to anyone with an interest in astronomy. All the information in the book is both useful and fascinating - an outstanding book, full of interesting facts and tips to understanding the night sky.

Truly Astronomical!

**Rhiannon Coupe**

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### NAS Helpdesk

We look forward to seeing you at the July meeting. As always we are happy to try and help you solve your astronomy issues, or just to have a chat.



James Dawson, Bob Richardson and Richard Severn

[helpdesk@nottinghamastro.org.uk](mailto:helpdesk@nottinghamastro.org.uk)

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## Advertisement

### FOR SALE

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

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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 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](mailto:secretary@nottinghamastro.org.uk)

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

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### **\*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](mailto:treasurer@nottinghamastro.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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**(vacant post; Acting Director: John Hurst)**

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

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

## **ORDINARY COMMITTEE MEMBERS:**

**Sam Boote**

**Barrie Chacksfield**

**James Dawson**

**Lynda Foot**

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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 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 1<sup>st</sup> January. Half-price subscription is charged if joining after 30<sup>th</sup> June (minimum subscription £5).

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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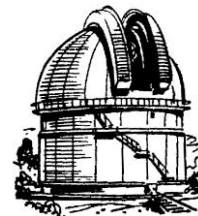
### **The Nottingham Astronomical Society**

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# NOTTINGHAM ASTRONOMICAL SOCIETY

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Affiliated to the British Astronomical Association  
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## 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)
	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:**