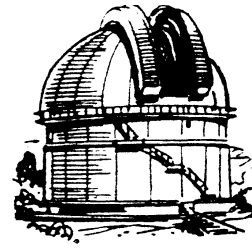

Journal

of the



Nottingham Astronomical Society

December 2012

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Thursday, 6th December

British Geological Survey

Nicker Hill, Keyworth

8 pm (doors open at 7.30pm)

Tonight we welcome

Dr Jim Wild

of the Space Plasma Environment and

Radio Science Group

Lancaster University

who will be speaking on

**“ Climate Change and the
Sun-Earth Connection ”**

First Anniversary of the Launch of Curiosity

November 26th this year marked the first anniversary of the launch of NASA's Mars Science Laboratory, tucked away inside which was the amazing Curiosity rover. On August 6th 2012 the rover was lowered flawlessly on to the Martian surface, and since then it has moved over half a kilometre and sent back more than 23,000 images to Earth. The rover has ten scientific instruments on board, and with these it is intended to build up a detailed picture of the geological history of the surrounding area, and to assess whether conditions were ever favourable for the existence of microbial life there.

The dramatic landing took place inside Gale Crater, and by late November this year the rover had reached a location called Point Lake, overlooking lower ground to the east. The aim now is select a target for the first use of Curiosity's rock-sampling drill. Earlier in November a large dust storm covered much of the southern hemisphere of Mars, but this did not reach Curiosity, and the storm now appears to be dissipating.

To Earth-bound astronomers, Mars is currently very badly placed for observation, approaching the far side of the Sun, but that is no problem to the technical teams communicating with Curiosity via the Deep Space Network using radio frequencies.

Sky Notes

December 2012

Compiled by Roy Gretton



All times given below are in Universal Time (UT), effectively equal to GMT.

The **Winter Solstice**, when the Sun will be directly overhead at the Tropic of Capricorn, will occur on December 21st at 11:02 a.m. On that date the Sun will be less than 14 degrees above the southern horizon at midday at the latitude of Nottingham.

(Our Winter Solstice is, of course, the Summer Solstice to dwellers in the southern hemisphere).

PHASES OF THE MOON

Last Quarter	6 th December, 15:31
New Moon	13 th December, 08:42
First Quarter	20 th December, 05:19
Full Moon	28 th December, 10:21

(Data from the BAA Handbook)

This month the Moon is closest to the Earth on the 12th, and furthest on the 25th.

THE PLANETS

Mercury will be visible very low in the southeast before dawn during the first half of December. It reaches greatest western elongation on the 4th, when it will be 21 degrees from the Sun and shining at magnitude -0.4 . Through a telescope it will appear to be half-illuminated, but less than 7 arcseconds from pole to pole.

Venus will be shining brightly low in the southeast before dawn for the whole of December, but becoming less easy to observe due to its southward movement. By the end of the month it will be more than 22 degrees south of the equator. But before then, in the morning twilight on December 11th and 12th, Venus will be close to Mercury and to the waning crescent Moon, a potentially beautiful combination for an observer with a cloudless sky and a clear eastern horizon.

Mars is unobservable this month.

Jupiter is the celebrated “star” of our winter sky, reaching opposition to the Sun on December 3rd. Shining brightly at magnitude -2.8 in the constellation of Taurus, it will be extremely well placed for observation from the UK, to be enjoyed by observers with telescopes, binoculars, or just the unaided eye.

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 80mm 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.

(Data obtained from the BAA Handbook).

December 4 th	Shadow transit of	Io	16:20 to 18:31
6 th		Europa	beginning 22:27
9 th		Io	beginning 23:46
11 th		Io	18:14 to 20:25
18 th		Io	20:09 to 22:20
24 th		Europa	16:58 to 19:22
25 th		Io	beginning 22:04
27 th		Io	16:33 to 18:44
31 st		Europa	19:34 to 21:58

Saturn has started to become observable once again in the morning sky. It begins the month in the constellation of Virgo, and then moves into Libra, heading ever further south (unfortunately) in our sky. By the end of December it will be rising at 3 a.m. and crossing the meridian at 8 a.m., just before sunrise, so if you happen to be up before 7 a.m. it should be a feasible target for observation. The tilt of the rings will by then be 19 degrees, giving us a good view of their northern face, and a modest-sized telescope should reveal the shadow of the planet on the rings.

Uranus continues to be visible in the evening sky, shining at magnitude 5.7 about two degrees west of the star 44 Piscium.

Neptune, in the constellation of Aquarius, is becoming increasingly difficult to observe in the evening sky.

METEORS

Once again it's time for the glorious **Geminids** to put in their annual appearance in our sky. These meteors are generally brighter and more prolific than the Perseids, but probably less well observed due to the contrast in temperature between August and December! But try not to let the cold deter you; we have very favourable conditions this year, with maximum activity expected to occur on the night of December 13-14th, closely coinciding with the New Moon. Geminid meteors begin to appear around December 7th, and appreciable rates may well be observed for several nights around the maximum, so take advantage of any clear skies, just in case the night of the 13-14th happens to be cloudy. Members with tripod-mounted cameras that allow for long exposures (say 10 seconds or more) may wish to have a go at capturing some of these meteors. Last year, with far less-favourable conditions (the Moon was in the neighbouring constellation of Cancer), I remember seeing a bright Geminid as I drove home through the lights of West Bridgford.

VARIABLE STAR: Algol

There are **four** minima of this **eclipsing binary** visible from the UK this month. They occur on December 9th (05:30), the 12th (02:25), the 14th (23:15), and on the 17th (20:00). The star dims from its normal brightness (magnitude 2.1) magnitude 3.4 over a period of 4.8 hours, and then returns to its normal brightness in a similar length of time.

DIARY DATES 2012

Monthly Meetings of the Nottingham Astronomical Society

Our programme for this year is shown below. Don't forget to 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

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

Thursday 6th December 2012

Talk: “ **Climate Change and the Sun-Earth Connection**”

Dr Jim Wild

Space Plasma Environment and Radio Science Group
Lancaster University

The Nottingham Astronomical Society: E - SERVICES

Whether or not you are a NAS member, you can now keep up to date with details of the Society's meetings and other events by visiting the NAS website:

www.nottinghamastro.org.uk

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.

ADVERTISEMENTS

SKYWATCHER TELESCOPE FOR SALE

SKYWATCHER telescope, 114mm aperture, 1000mm focal length, catadioptric Newtonian reflector, used only once and as new.



The owner reports a new instrument of the same type for sale on Ebay at about £130, but would be willing to accept £60 or near offer in this case.

Contact

Michael Neal
Nottingham Road
Keyworth

Tel: 0115 9375695

FOR SALE

- **Orion** (USA) 6x26 correct image **finderscope**, complete with bracket **£15**

- **Telescope Optics Book** by Rutten and van Venrooij (hardback), in excellent condition
£12

Contact BARRY WINSTON

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Email barrywinston@yahoo.com

WANTED: Eyepieces

I am currently looking for 2nd hand Televue eyepieces to compliment my TV 101.

I am looking for mainly Nagler eyepieces but would be interested in other models in the Televue too.

I am situated close to Alfreton, Derbyshire. Thank you.

Paul Davies

Email: paul@graphic.demon.co.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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Kevin Greally

David Anderson

Victoria Jolly

Phil Heesom

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 2013

Full	£25
Concessions	£12.50
Joint rate for partners living at the same address	£37.50

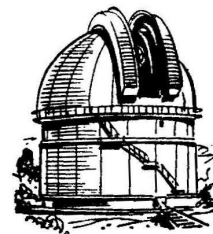
Subscriptions become due on 1st January. Half-price subscription is charged if joining after 1st July. Please make cheques payable to: Nottingham Astronomical Society.

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
Member of the Society for Popular Astronomy
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Gift Aid declaration

(HMRC reference XR32048)

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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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