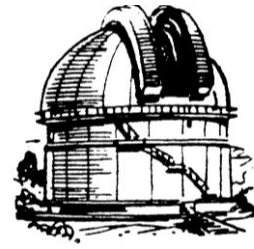

Journal

of the



Nottingham Astronomical Society

April 2010

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Thursday, 1st April

at the

British Geological Survey

Nicker Hill, Keyworth

8 pm (doors open at 7.30pm)

Tonight we welcome

ANDY LOUND

who will be speaking on

**'Saturn, Lord of the
Rings'**

OPPORTUNITY LEARNS TO SELECT ITS OWN ROCKS

Opportunity, the Mars Exploration Rover, is now equipped with new software to allow it to choose its own rocks for investigation. Opportunity's on-board computer examines images taken with its wide-angle camera and selects rocks based on criteria such as shape and colour. It then centres its narrow angle camera on the chosen target and takes multiple images through colour filters. This approach speeds up proceedings on the Martian surface, because without it, follow-up observations would require the transmission of the images to Earth for scientists to consider, before they could send a command back to the rover to examine the selected target on the following day. In a test run of the software, the rover, which is now on its seventh year of operations, successfully picked out a rock from fifty possible candidates, based on its instructions to concentrate on large, dark rocks. The rock has a tan colour and a layered texture, and may have been thrown from a nearby crater.

The team who spent many years developing the software to enable autonomous activity by spacecraft, didn't expect to have the chance to test it out on Opportunity, since the rover was not expected to operate for this amazing length of time on Mars. They hope to incorporate the technique into future planetary landing missions.

Sky Notes

April 2010

Compiled by Roy Gretton



PHASES OF THE MOON

Last Quarter occurs on the morning of April 6th
New Moon occurs close to noon on the 14th
First Quarter occurs in the evening of the 21st
Full Moon occurs close to noon on the 28th

This month the Moon is closest to Earth on the 24th, and furthest from Earth on the 9th.

THE PLANETS

April provides us with the best opportunity of 2010 for observing the elusive planet **Mercury** in the evening sky. Direct your gaze slightly north of west, about 40 minutes after sunset, during the first two weeks of the month. If the sky is clear, you should be able to find Mercury among the stars of Pisces. Greatest eastern elongation occurs on April 8th, when Mercury will be 19 degrees from the Sun, and shining at magnitude zero. At the same time, the more brilliant Venus will be positioned close to Mercury, and you may be able to use it as a guide for finding the fainter planet.

Venus is now making its presence seen in the early evening sky, shining brightly at magnitude -3.8 in the west after sunset. On the 26th, Venus will be a few degrees east of the Pleiades, and by the end of April it will be 26 degrees away from the Sun.

Mars is still prominent in the evening sky in the constellation of Cancer, to the east of Castor and Pollux, but fading noticeably as the Earth moves further away. By the end of April the apparent diameter of Mars will have shrunk to little more than 7 arcseconds (compared with 14 arcseconds at maximum in January), and observation of any surface details will have become extremely challenging.

Jupiter is too close to the Sun in the morning sky for useful observation. In mid-April it will be rising only 45 minutes before the Sun.

Saturn, now an evening object in the constellation of Virgo, is very well placed for observation this month. The planet begins April with an equatorial diameter of nearly 20 arcseconds, with the rings, still inclined at a slender angle to our line of sight, spanning 44 arcseconds.

Both **Uranus** and **Neptune** are extremely difficult to observe this month.

METEORS

The **Virginids** reach maximum activity (about 5 events per hour) on April 12th, with a New Moon, while the **Lyrids** reach their peak on April 22nd, with about 10 meteors per hour.

VARIABLE STAR: Algol

There are **three** minima of this **eclipsing binary** visible from the UK this month. They occur on April 12th (5.40 am **BST**), the 15th (2.30 am), and the 17th (11.20 pm). The star dims from its normal brightness (magnitude 2.1) to magnitude 3.4 over a period of 4.8 hours.

DIARY DATES 2010

Meetings of the Nottingham Astronomical Society

Our programme for the coming months is below. Don't forget to check our website:
www.nottinghamastro.org.uk
for the latest information about the Society's meetings and observing sessions.

Thursday 1st April 2010

British Geological Survey, Keyworth
8.00pm (Doors open 7.30pm)

Talk: '**Saturn Lord of the Rings**'

Andy Lound

Thursday 6th May 2010

British Geological Survey, Keyworth
8.00pm (Doors open 7.30pm)

Talk: '**Astrophotography with a DSLR Camera**'

Dr Roy Gretton
NAS Vice President

Thursday 3rd June 2010

British Geological Survey, Keyworth
8.00pm (Doors open 7.30pm)

Talk: '**Is there or has there been Life on Mars?**'

Prof. Mark Sims
Physics and Astronomy Department
University of Leicester

Thursday 1st July 2010

British Geological Survey, Keyworth
8.00pm (Doors open 7.30pm)

Members Evening, with short talks by members of the NAS, including

**"After the Space Shuttle, What's Next? -
NASA's plans for the future of human spaceflight"**
Paul Stocks

Thursday 2nd September 2010

British Geological Survey, Keyworth
8.00pm (Doors open 7.30pm)

"WIMP Hunting: The Search for Dark Matter"

Dr Anne Green
School of Physics and Astronomy
University of Nottingham

Thursday 7th October 2010
British Geological Survey, Keyworth
8.00pm (Doors open 7.30pm)

Cosmology and the LHC (what the LHC might or might not tell us about the universe)

Dr Susan Cartwright
Department of Physics and Astronomy
University of Sheffield

Thursday 4th November 2010
British Geological Survey, Keyworth
8.00pm (Doors open 7.30pm)
Annual General Meeting 2010

If you know of anyone who is willing to give an astronomy or science-related talk at one of our monthly meetings, please let the Secretary (or any committee member) have their contact details

Public astronomy lecture at the University of Nottingham

"Parallel Worlds"

Speaker: Dr. Tony Padilla

Date: Thursday 22nd April 2010

Time: 6-7 pm

Venue: Maths & Physics Building (B1)
University Park Campus
Nottingham

The Nottingham Astronomical Society: E - SERVICES

'Beehive' Website

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

info@nottinghamastro.org.uk

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

Small Advertisements

FOR SALE

Celestron C11 optical tube assembly	£1250
Losmandy GM-8 equatorial mount with Gemini system	£1200
Tele Vue binoviewer	£450
Celestron dewshield for 11-inch tube	£20

For full details, please contact Sam Boote:

0115 937 4644
s.boote@bcs.org
www.sboote.demon.co.uk/astro

FOR SALE

Vixen single-axis (Right Ascension) drive motor and hand controller to fit Great Polaris or GP-DX equatorial mount.

Also battery case for use with the above.

£28

Email the Editor: roygretton@hotmail.co.uk

NAS Members may submit private advertisements for inclusion free of charge in the Journal. Please email the Editor.

NAS Membership application 2009/10

If you would like to join the Nottingham Astronomical Society, please complete the form below. Hand the slip and payment (cheque or cash) to the Treasurer at any of the Society's meetings.

If paying by cheque, please make it payable to **Nottingham Astronomical Society**. Alternatively, you may post the slip and your cheque (*not cash*) to

Sam Boote, Treasurer
Nottingham Astronomical Society
17 Rannock Gardens
Keyworth
Nottingham NG12 5FQ

Title: _____ Name: _____

Address including postcode: _____

Telephone: _____

e-mail: _____

please tick one box

Subscription rate:	Full	£25.00	<input type="checkbox"/>
	Concession	£12.50	<input type="checkbox"/>
	Half-year*	£12.50	<input type="checkbox"/>
	Concession half-year*	£6.25	<input type="checkbox"/>
	Joint rate for partners living		
	at the same address:	whole year	£37.50 <input type="checkbox"/>
		half year*	£18.75 <input type="checkbox"/>

**Half-year is available from 1 April to 30 September*

Gift Aid

Do you pay Income Tax and/or Capital Gains Tax? If so, would you like to register for Gift Aid? Please ask the Treasurer for a Gift Aid declaration form. You need to fill it in only once. As a registered charity, the Society will get £6.25 from the taxman for each £25 subscription. You have to be a UK tax payer in order to participate in Gift Aid.

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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Dorothy Sowerby

Kevin Greally

David Anderson

Julie Morledge

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 2009/10

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

Subscriptions become due on 1st October. Half-price subscription is charged if joining after 1st April. 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 info@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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