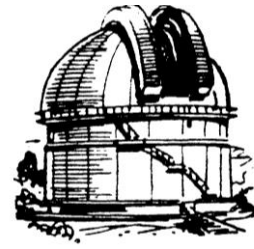

Journal

of the



Nottingham Astronomical Society

December 2009

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Thursday, 3rd December

at the

British Geological Survey

Nicker Hill, Keyworth

8 pm (doors open at 7.30pm)

Tonight we welcome

Asa Bluck

of the **School of Physics & Astronomy**

University of Nottingham

who will be speaking on

**'Our Never-Ending Universe:
What Caused the Big Bang?'**

DECEMBER'S TREAT: THE GEMINIDS

The Geminid meteors, which are active from December 7th to 16th, are the most prolific of our annual showers, although they are generally less well observed (due to the prevailing temperature!) than the Perseids, which grace our skies in the warm nights of August. The Geminids can be expected to outstrip even those summer meteors in their intensity, particularly on the night of December 13th-14th (a Sunday night this year).

The Geminids are unusual in that they are associated with an asteroid (Phaethon) rather than a comet. The shower has become more active in the last twenty years because the meteor stream is being dragged outwards across the Earth's orbit. Geminid meteors enter our atmosphere relatively slowly (at about 35 km per second) and their average particle size is thought to be larger than that of the Perseids, so they are brighter and are visible for longer. If the night is clear and you are prepared to wrap up warmly, you could be in for a treat this year, as there will be negligible interference from moonlight. And if you have a camera capable of taking long exposures, you may be able to capture some of these bright events photographically.

Sky Notes

December 2009

Compiled by Roy Gretton



The **WINTER SOLSTICE**, when the Sun reaches its most southerly position, occurs on December 21st, making this the shortest day of the year.

PHASES OF THE MOON

Full Moon occurs on the morning of December 2nd and again on the 31st

(which by one reckoning makes this a Blue Moon month)

Last Quarter occurs shortly after midnight on the 9th

New Moon at midday on the 16th

First Quarter occurs in the early evening of the 24th

A **PARTIAL ECLIPSE OF THE MOON** occurs on New Year's Eve. The umbral phase of the eclipse begins at 6.52 pm and ends at 7.54 pm, with maximum eclipse at 7.23 pm. If the sky is clear you will notice an 8 percent "bite" taken out of the top left limb of the Moon, which will be in the constellation of Gemini.

THE PLANETS

Mercury reaches greatest eastern elongation on December 18th, when it will be 20 degrees from the Sun. Mercury is seldom easy to find, but on this date you may be helped by the fact that the planet is just three degrees west of the thin crescent Moon.

Venus is getting too close to the Sun in the morning sky to be observable this month.

By the end of December, the apparent diameter of **Mars** will have grown to almost 13 arcseconds, making it well worthwhile observing through a moderately-sized telescope. The most obvious feature on the planet's surface should be the bright northern polar cap. To the naked eye, Mars appears as a bright orange star in the southeast in mid-evening, close to the border of Gemini and Leo.

Jupiter continues to shine as a bright off-white object low in the southwest after sunset as December begins, but will become increasingly difficult to observe as the month progresses. On the 21st it will be four degrees away from the crescent Moon.

Saturn, in the constellation of Virgo, is becoming easier to observe in the morning sky, and by the close of December will be rising at midnight. The northern face of the famous ring system has now begun to tilt toward the Earth, and should be visible in modest-sized telescopes.

Uranus is still visible in the early evening in the constellation of Aquarius, but will become harder to observe as time passes. At magnitude 5.8 it is brighter than any of the surrounding stars in a low-magnification field.

Neptune is virtually unobservable this month.

METEORS

The **Geminids** are likely to provide **the best meteor display of the year**, giving around 100 events per hour at maximum activity, which is expected between 2 a.m. and dawn on the morning of December 14th. But don't assume that you will need to be up into the small hours to see anything; it should be worth watching out for these meteors from mid-evening on December 13th. They tend to be bright and slow-moving, and conditions are near perfect, with New Moon occurring on the 16th.

VARIABLE STAR: Algol

There are no fewer than **six** minima of this **eclipsing binary** visible from the UK this month. They occur on December 4th (3.55 am), the 7th (12.40 am), the 9th (9.30 pm), the 24th (5.35 am), the 27th (2.25 am) and the 29th (11.10 pm). The star dims from its normal brightness (magnitude 2.1) to magnitude 3.4 over a period of 4.8 hours.

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 'Beehive' website:

<http://beehive.thisisnottingham.co.uk/nottinghamastro>

NAS Journal e-mailing list

To register for your monthly e-mailed copy of the NAS Journal, just e-mail

nottinghamastro@yahoo.co.uk

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

DIARY DATES 2009/2010

Meetings of the Nottingham Astronomical Society

Our programme for the coming months is below. Don't forget to check our website: <http://beehive.thisisnottingham.co.uk/nottinghamastro> for the latest information about the Society's meetings and observing sessions.

Thursday 3rd December 2009

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

Talk: '**Our Never-Ending Universe: What Caused the Big Bang?**'

Asa Bluck

School of Physics & Astronomy
University of Nottingham

Thursday 7th January 2010

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

Members Evening, with short talks by members of the NAS, including
'Astrophotography with a DSLR Camera'

Thursday 4th February 2010

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

Talk: '**Observatories without Telescopes**'

Dr. Daniel Brown

from the **School of Science & Technology**
Nottingham Trent University

Thursday 4th March 2010

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

Talk: '**Observing Orion**'

Paul Money

Thursday 1st April 2010

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

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

Andy Lound

<p>Thursday 6th May 2010 British Geological Survey, Keyworth 8.00pm (Doors open 7.30pm)</p> <p>Topic to be confirmed</p>
<p>Thursday 3rd June 2010 British Geological Survey, Keyworth 8.00pm (Doors open 7.30pm)</p> <p>Talk: 'Is there or has there been Life on Mars?' Prof. Mark Sims Physics and Astronomy Department University of Leicester</p>
<p>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</p>

The Future of Human Space Exploration

When	Tue, 8 Dec 2009, 18:15 – 20:15
Where	David Wilson Library Lecture Theatre, University of Leicester, University Road, Leicester LE1 7RH
Event Title	The Future of Human Space Exploration
Speaker(s)	Dr Jeff Hoffman
Organised by	Midland Branch and Physics Centre
	Requires Registration
Contact	Kiri Rhodes or Dr Darren Wright.
Contact Details	Tel: 0116 252 3570 (during office hours) Email: kr124@le.ac.uk Email: dmw7@ion.le.ac.uk
Note	NASA Astronaut Jeff Hoffman, a member of the team on the first rescue mission to repair the Hubble Space Telescope, a vital tool in uncovering some of the secrets of the universe, will present us with a talk on its history. He will include highlights of the most recent mission. He will further discuss the potential future of NASA's human spaceflight program, such as returning to the moon, going to Mars and, in view of the retirement of the space shuttle, the new vehicles that will take us there.

**Are you new to Astronomy? The BAA "Back to Basics"
Workshop is for YOU!
30th January 2010
University of Nottingham NG7 2RD**

The **British Astronomical Association** has designed a programme of talks and practical sessions to help you learn basic techniques and develop your interest to its full potential. Experienced people will be on hand to answer your questions. The cost of this event is £11.00 to BAA members and £13.50 to non-members (price includes all refreshments and a buffet Lunch, vegetarian option available). The day starts at 09:30 with registration and finishes at 17:30.

Bookings with remittance should be sent no later than **11th January 2010** to: -The British Astronomical Association, Burlington House, Piccadilly, London, W1J 0DU.

**University Park Campus,
Cripps Centre for Astronomy & Particle Theory
From Nottingham (approximately 3 miles)
By Bus:**

University Park Services

Nottingham City Transport, Uni Link service 34 – A direct service between Nottingham City Centre and University Park – term time only

University Boulevard Services

Nottingham City Transport, Service 13 – Every 20 minutes during day time peak

Nottingham City Transport, Service 14

Trent Barton, Rainbow 5 service

Trent Barton, service 18

Trent Barton, service 20

Derby Road Services

Trent Barton, service 36

Trent Barton, service 35

Further detail on buses can be found at: <http://www.nottingham.ac.uk/estate/transport.htm>

From M1 Motorway:

Leave the M1 motorway at Junction 25 to join the A52 to Nottingham. Turn right at The Priory roundabout (about 4 miles from M1), then left at next roundabout to enter the University's West Entrance.

By Taxi:

There are taxi ranks throughout the City Centre and adjacent to the main railway and bus station

Our Hosts: –

The Nottingham Astronomical Society was founded in 1946 and the membership now exceeds 50. The Society is grateful to the British Geological Survey for providing a well-equipped meeting room on a permanent basis for our meetings.

The BAA "Back to Basics" Workshop BOOKING FORM

BOOKING FORM

Name of member	Name of guest
Address	
Phone no.	E-mail

Lunch: Vegetarian option. Yes/No.

PAYMENT METHOD (Please tick appropriate box):

I enclose cheque or postal order payable to: THE BRITISH ASTRONOMICAL ASSOCIATION <input style="float: right; margin-left: 20px;" type="checkbox"/>																														
Please charge my Visa / MasterCard / Switch / Delta / Maestro / Amex account <input style="float: right; margin-left: 20px;" type="checkbox"/>																														
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Please complete this form and send it to: The British Astronomical Association, Burlington House, Piccadilly, London W1J 0DU by the closing date of **11th January 2010** (Telephone: 020 7734 4145).

Programme - All details correct at the time of printing.

09.30	Registration – Tea/coffee
10:00	Official welcome – BAA President, Dr David Boyd
10:05	So what astronomy can I do? – BAA Speaker, Hazel Collett.
10:15	Lunar observing – BAA Speaker, Martin Morgan-Taylor
10:45	Time to circulate and visit the retailers
11:00	Solar observing – BAA Speaker, Peter Meadows
11.30	What equipment & books do I need? – BAA Speaker, Dr Stewart Moore
12.15	Lunch
13:30	Observing Saturn & Jupiter – BAA Saturn Section Director, Mike Foulkes
14.00	Observing Double Stars – John McCue
14:30	Time to circulate and visit the retailers
14.45	2 × 30 minute workshop sessions
15.45	Afternoon Tea & Time to circulate and visit the retailers
16:30	2 × 30 minute workshop sessions
17:30	Feedback and Q&A session
17.35	Closing address – BAA President, Dr David Boyd

Lecture at Nottingham University

Nebulae: The Most Beautiful Objects in Astronomy

Keith Smith

17th December, 6-7pm.
Maths and Physics Building (B1)
University Park Campus
Nottingham

Derby and District Astronomical Society

Talk: **In Pursuit of Pulsars**
Guest speaker: **Dame Jocelyn Bell Burnell DBE, FRS, FRAS**
Venue: The Friend's Meeting House, Derby
Date: Friday December 4th 2009
Time: 7:30 pm

Annual Flamsteed Lecture Wednesday 9th December 2009 The Hubble Space Telescope - Past, Present And Future Guest Speaker - Dr Jeff Hoffman

Join us to celebrate the 40th anniversary of NASA's first mission to land on the Moon with Dr Jeff Hoffman. Dr Hoffman, is not only a hugely experienced veteran of NASA's Space Shuttle programme but one of the men who famously fixed the defective mirror in the Hubble Space Telescope in 1993. He first became a NASA astronaut in 1979 and flew on five Shuttle missions, travelling more than 20 million miles and becoming the first person to clock up 1,000 hours in space. This free annual public lecture series is named after the 17th century Derbyshire scientist John Flamsteed, Britain's first Astronomer Royal. The series started in 1996, past speakers have included Sir Martin (now Lord) Rees, President of the Royal Society, and in 2007 Professor Colin Pillinger, former head of the European Mars Express mission Beagle 2.

The event is free, open to all and will be held in:

The Courtroom,
University of Derby
Kedleston Road site,
start time: 6.15pm.

You can book online or contact:

Angela Drinkwater,
Marketing Department,
University of Derby,
Kedleston Road,
Derby DE22 1GB

Small Advertisements

BIG CLEAR-OUT

I need to dispose of some Tele Vue, Losmandy, Meade and Celestron telescopes and other equipment. For a full detailed list, 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

For Sale

Meade Telescope with GOTO control system £100

4.5" (114mm) equatorial reflecting telescope, with Starfinder
Electronic Hand Controller
910mm focal length, f/8
precision polished 4.5" aluminized mirror
5x24mm viewfinder

Contact John Aitken

Tel: 01476 577599

Email: j_aitken@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

PRESIDENT:

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Sam Boote

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JOURNAL EDITOR:

Dr Roy Gretton

e-mail: roygretton@hotmail.co.uk

DIRECTOR OF OBSERVING and CURATOR OF INSTRUMENTS:

John Hurst

email: jmhurst@hotmail.co.uk

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

CAMPAIGN FOR DARK SKIES REPRESENTATIVE:

Barrie Chacksfield

email: b.chacksfield@bgs.ac.uk

ORDINARY COMMITTEE MEMBERS:

Joe Sowerby

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 nottinghamastro@yahoo.co.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

The Nottingham Astronomical Society, and/or the Editor accept no responsibility for any errors that may occur within this publication. Any views expressed in the **NAS Journal** are those of the individual authors and not necessarily endorsed by the Nottingham Astronomical Society, its Committee or Members.