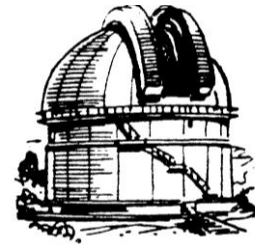


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# Journal

of the



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## Nottingham Astronomical Society

December 2010

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Thursday, 2<sup>nd</sup> December

at the

British Geological Survey

Nicker Hill, Keyworth

8 pm (doors open at 7.30pm)

Tonight we welcome

**Dr Loretta Dunne**

of the School of Physics and Astronomy  
University of Nottingham

who will be speaking on

**"Herschel: seeing the stolen starlight"  
(what the Herschel space telescope is  
showing us about the hidden side of the  
Universe)**

**Inside this issue**

- Sky Notes for December
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- Society Information

### IS JUPITER'S MISSING BELT COMING BACK?

About a year ago, one of Jupiter's belts disappeared. The Southern Equatorial Band (SEB) grew paler and eventually vanished. At the same time, Jupiter's Great Red Spot became darker in colour. Recent images from professional and amateur astronomers are showing some activity in the area of the SEB, suggesting that the vanished stripe may be making a comeback. Researchers believe that they are beginning to understand the processes involved. The visible cloud deck is made up largely of white ammonia ice, and when the white clouds float at a higher altitude than usual, they obscure the lower dark material. Occasionally this causes the South Equatorial Belt to appear completely white for a year or two. This change in appearance has only been seen with the SEB, making it unique on Jupiter, and in the entire solar system. The SEB underwent a slight fade in 2007, just as NASA's New Horizons spacecraft was flying by on its way to Pluto. Then it returned to its usual dark colour a few months later. The last full fade started in 1989 and ended in 1993. Similar fades and restorations have been seen for over a century, so they are probably part of a long-term process in Jupiter's atmosphere. Astronomers are particularly interested in this latest event because of the availability of modern instruments to measure the chemical and physical changes involved.

Anyone with a telescope capable of showing the main belts in the Jovian atmosphere should be able to follow the progress of this fascinating phenomenon in the coming months and years.

# Sky Notes

## December 2010

Compiled by Roy Gretton



The **Winter Solstice** occurs in the final hour of December 21<sup>st</sup>, a date that coincides with the Full Moon, and this month there will also be a total lunar eclipse on the same day, although this will not be easy to observe from the UK (see below).

### PHASES OF THE MOON

New Moon occurs on December 5<sup>th</sup> at 5.36pm

First Quarter occurs on the 13<sup>th</sup> at 2pm

Full Moon occurs on the 21<sup>st</sup> at 8.13am

Last Quarter occurs on the 28<sup>th</sup> at 4.18am

This month the Moon is closest to Earth on Christmas Day, and furthest from Earth on the December 13<sup>th</sup>.

### TOTAL LUNAR ECLIPSE, December 21<sup>st</sup>.

There will be a total lunar eclipse as the Moon is setting on the morning of December 21<sup>st</sup>. First contact with the umbral shadow will occur at 6.32 a.m., when the Moon is 13 degrees above the western horizon, and totality begins at 7.40 a.m., with the Moon only a few degrees above the horizon. The fully-eclipsed Moon will set at about 8.20 a.m.

### THE PLANETS

**Mercury** begins the month at greatest eastern elongation (21 degrees from the Sun), but in spite of this it will be extremely difficult to observe from Britain, due to its southerly declination. After this, Mercury moves toward the Sun, and passes through inferior conjunction on December 20<sup>th</sup>, before becoming a morning object for the remainder of the month.

**Venus**, hardly noticeable at the beginning of the month, will become a prominent object in the pre-dawn sky by the end of December, when it will be nearly 50 degrees from the Sun. With sunrise being after 8 am, you won't need to be up particularly early in order to spot this, the brightest of the planets, shining brilliantly in the east.

**Mars** is unobservable this month.

To a naked-eye observer, **Jupiter** continues to dominate the southern sky after sunset. Early in December it will be due south soon after 7 p.m., but by the end of the month

will be setting before midnight, by which time its apparent diameter will have shrunk to 36 arcseconds (compared with almost 50 arcseconds in late September).

**Saturn** is a morning object in the constellation of Virgo, rising at 1 a.m. by the end of December. The rings, which were edge-on to Earth only a few months ago, are now opening up to give the sort of view of Saturn with which we are all familiar.

**Uranus** is a magnitude 5.8 object in the constellation of Pisces, still fairly close to Jupiter, and therefore easy to find with binoculars.

**Neptune** is virtually unobservable this month.

## **METEORS**

The **Geminids** are December's special treat. Last year, with moonless skies, we had high expectations, but the night of the Geminid maximum was clouded out in the East Midlands. Let's hope for better luck in 2010! This year the maximum activity of the shower occurs shortly after the Moon's First Quarter, which means that moonlight will be a problem in the early evening, but will be virtually gone by midnight. The Geminids show up between December 7<sup>th</sup> and 16<sup>th</sup>, but the night of the 13<sup>th</sup>-14<sup>th</sup> will be the best time to observe these meteors. They tend to be bright and slow-moving, and are therefore good subjects for photography.

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## **Renewing your NAS Subscription**

Members of the Society may, if they wish, renew their annual subscriptions at the December Meeting of the NAS. Subscription rates for 2011 are as follows:

£25.00 for full membership  
£12.50 for concessions and  
£37.50 for two partners living together

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## **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](http://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](mailto:info@nottinghamastro.org.uk)

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

## DIARY DATES 2010-11

### 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](http://www.nottinghamastro.org.uk)  
for the latest information about the Society's meetings and observing sessions.

**Thursday 2nd December 2010**

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

Talk: "**Herschel: seeing the stolen starlight**"  
(what the Herschel space telescope is showing us  
about the hidden side of the Universe.)

**Dr Loretta Dunne**

School of Physics and Astronomy  
University of Nottingham

**Thursday 6<sup>th</sup> January 2011**

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

Talk: "**21<sup>st</sup> Century Telescopes**"

**Prof Mike Merrifield**

School of Physics and Astronomy  
University of Nottingham

**Thursday 3<sup>rd</sup> February 2011**

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

**Members' Evening**

with members' Astronomical Photographs and a Quiz

**Thursday, 3<sup>rd</sup> March 2011**

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

Talk: "**Discovering New Worlds**"  
**Andy Lound**

**Thursday, 7<sup>th</sup> April 2011**

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

**Programme to be announced**

<p><b>Thursday, 5<sup>th</sup> May 2011</b>  British Geological Survey, Keyworth  8.00pm (Doors open 7.30pm)</p> <p>Talk: "<b>Exodus: the Life and Death of Stars</b>"  <b>Paul Money</b></p>
<p><b>Thursday, 2<sup>nd</sup> June 2011</b>  British Geological Survey, Keyworth  8.00pm (Doors open 7.30pm)</p> <p><b>Programme to be announced</b></p>
<p><b>Thursday, 7<sup>th</sup> July 2011</b>  British Geological Survey, Keyworth  8.00pm (Doors open 7.30pm)</p> <p><b>Members' Evening</b></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>

## **Public astronomy lecture at the University of Nottingham**

### **"Sounds of the Universe"**

Date: Thursday December 16th 2010

Time: 6-7 pm

Speakers: Arianna Cortesi & Federica Maglioni

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

## Small Advertisement

### Telescope for sale

Meade 2080 8-inch f/10 Schmidt-Cassegrain with field tripod and wedge. Reflex sight, 6mm, 12.5mm, 25mm and 32mm eyepieces, 2X Barlow, 0.4X telecompressor, two 90° erecting prisms; 45° roof prism. All in excellent condition in fitted trunk/case. Offers. to 0115 937 6333 or [rockvision@btinternet.com](mailto:rockvision@btinternet.com) (Keyworth)

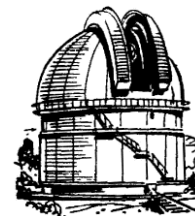
Mike Sumbler

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

# NOTTINGHAM ASTRONOMICAL SOCIETY

Founded in 1946 for all interested in astronomy  
Affiliated to the British Astronomical Association  
Member of the Federation of Astronomical Societies

Registered Charity No. 1066645  
Member of the Society for Popular Astronomy  
Supporter of the Campaign for Dark Skies



## Membership application and Gift Aid declaration

**Title:**

**Full name:**

**Full home address:**

**Postcode:**

**Telephone:**

**e-mail address:**

<b>Subscription rate:</b>	Full	£25.00	(year)	£12.50	(half year)
	Concession	£12.50		£6.25	
	Partnership	£37.50		£18.75	

Concession = under-18 / full-time student / unemployed and receiving benefits  
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:**

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

## **CAMPAIGN FOR DARK SKIES REPRESENTATIVE:**

**Barrie Chacksfield**

email: [b.chacksfield@bgs.ac.uk](mailto:b.chacksfield@bgs.ac.uk)

## **ORDINARY COMMITTEE MEMBERS:**

**Joe Sowerby**

**Dorothy Sowerby**

**Kevin Greally**

**David Anderson**

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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 always welcome to attend.

## **Annual subscriptions 2011**

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

Subscriptions become due on 1<sup>st</sup> January. Half-price subscription is charged if joining after 1<sup>st</sup> July. 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 [info@nottinghamastro.org.uk](mailto: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.

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## **The Nottingham Astronomical Society**

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