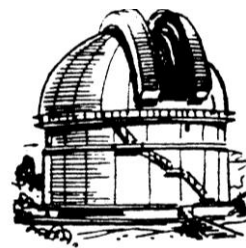

Journal

of the



Nottingham Astronomical Society

September 2010

Inside this issue

- Sky Notes for September
- E-services
- Diary Dates
- Public lecture at Nottingham University
- NTU Open Dome event
- Membership application form
- Society Information

Thursday, 2nd September
at the

British Geological Survey
Nicker Hill, Keyworth
8 pm (doors open at 7.30pm)

Tonight we welcome
Dr Anne Green
of the School of Physics and Astronomy,
University of Nottingham

who will be speaking on
**"WIMP Hunting:
The Search for Dark Matter"**

A PLANETARY SYSTEM LIKE OURS?

Researchers using the European Southern Observatory's High Accuracy Radial velocity Planet Searcher (HARPS) have found a planetary system that contains at least five planets, and possibly two more, one of which could be the lowest-mass planet thus far discovered. This would make the system similar to our own solar system in terms of the number of planets (seven as compared eight in our system). And the team also has evidence that the distances of the planets from their star follow a regular pattern, as also observed in our solar system.

The HARPS spectrograph, attached to a 3.6-metre aperture telescope at La Silla, Chile, was used in a 6-year study of the Sun-like star HD 10180, which is about 127 light-years distant, in the constellation Hydra.

It is believed that the system has five planets with masses comparable to that of Neptune, lying at distances from the star equivalent to no more than the radius of the orbit of Mars. A sixth planet, with a mass similar to that of Saturn, is believed to be orbiting the star every six years or so, and there may also be a seventh planet with only 1.4 Earth-masses, orbiting the star very rapidly. If such a body exists it would cause the parent star to wobble at a mere 2 miles per hour, a speed at the very limit of detection. It would be classed as a hot, rocky planet.

Sky Notes

September 2010

Compiled by Roy Gretton



The Autumnal Equinox, when the Sun will be directly over the terrestrial equator, will occur at nine minutes past four in the morning, British Summer Time, on September 23rd. Thereafter, until December 21st, the Sun will be moving southward in our sky, and daylight hours will continue to decrease.

PHASES OF THE MOON

Last Quarter occurs in the afternoon of September 1st
New Moon occurs on the morning of the 8th
First Quarter occurs on the morning of the 15th
Full Moon occurs on the morning of the 23rd

THE PLANETS

Mercury puts in its best morning apparition of 2010 from mid-September to early October. It reaches greatest western elongation on September 19th, when it will be 18 degrees from the Sun, and greatest elevation (at sunrise) on the 23rd, when it will be shining at magnitude -0.6 in the constellation of Leo.

Venus will be difficult to observe this month, because although bright (magnitude -4.4) it will be very low in the western sky after sunset. On September 11th, the crescent Moon passes within 3 degrees of Venus.

Mars is a tiny, inconspicuous object in the western sky after the Sun has gone down, being little more than four arcseconds in apparent diameter, and only seven degrees above the southwestern horizon at sunset.

Jupiter is *the* planet to observe this month, as it reaches opposition to the Sun on September 21st, and becomes a prominent (magnitude -2.9) off-white “star” in the southeast as the evening progresses. By the end of the month it will be rising at sunset, and be due south at half-past midnight (BST). Jupiter’s apparent equatorial diameter approaches 50 arcseconds, making it a worthwhile target for observation with small telescopes. Astronomers around the world have been keen to look for the reappearance the South Equatorial Belt, which mysteriously disappeared over last winter. Even with small binoculars you should be able to watch the movements of the four Galilean satellites. On the evening of September 10th, for example, they will all be aligned on the east side of the planet.

Saturn is unobservable this month.

Uranus, a magnitude 5.7 object in the constellation of Pisces, reaches opposition on September 21st. It will be particularly easy to find on September 18th, as it will be only one degree away from Jupiter. Of course, Uranus' pale greenish disk, at less than four arcseconds across, will be tiny compared with that of Jupiter.

Neptune is magnitude 7.8 object close to the border of Aquarius and Capricornus.

METEORS

There will be nothing to rival the Perseids this month. The best performance we can expect will be from the **Piscids**, which are predicted to reach maximum activity on September 9th, with perhaps 10 events per hour at best.

COMET 103P/Hartley is approaching perihelion (which occurs on October 28th, when it is expected to reach naked-eye visibility, around magnitude 5). Throughout September it will be moving north of the Great Square of Pegasus, toward the "W" of Cassiopeia. In the first week of the month the comet is expected to be around magnitude 9, but brightens to magnitude 6 by early October.

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.

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

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 2nd September 2010
British Geological Survey, Keyworth
8.00pm (Doors open 7.30pm)

Talk: **"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)

Talk: **"Cosmology and the LHC
(what the LHC might or might not tell us about the universe)"**
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

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

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 lectures at the University of Nottingham

"Big Telescopes and Technology"

Date: Thursday 23rd September 2010

Time: 6-7 pm

Speaker: Professor Mike Merrifield

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

Nottingham Trent University Open Dome Event -

"Apollo 8: The Triumph of the Squares"

Date: 28 September 2010

Time: 8pm - 10pm

Event: Open Dome Event – **Apollo 8: The Triumph of the Squares**

Location: Optical observatory, Clifton campus

Details: This year is the 40th anniversary of Apollo 13 and its sensational rescue we all remember or watched in the cinema. Furthermore, we know about the first Moon landing by Apollo 11 and the enigmatic sentence by Neil Armstrong: "That's one small step for man, one giant leap for mankind." But do you remember other Apollo missions? What about the great achievements of Apollo 8?

The event will start at 8pm with a presentation by Q Hanley (SST) in CEL015. In his talk Apollo 8: The Triumph of the Squares he will elaborate on his father's involvement in the Apollo program: On 21 December 1968, from near the edge of a lake in Florida, Apollo 8 began its journey to the moon and back. It was the longest human journey up to that time, the first time human beings left earth orbit, and the first manned flight of a Saturn V rocket. After its return in early 1969 his father, who was at the time a programme leader in Guidance and Navigation for a subcontractor to NASA gave a talk about the Apollo 8 mission. He will be rereading this talk with some historical background and comments about the Apollo programme and lunar exploration. This talk will be followed a brief introduction on what is visible in this month's sky. Afterwards, visitors will get a tour of the NTU observatory and the chance to see interesting objects in the winter sky with the observatory's 20 and 14 inch telescope, small telescopes, and binoculars if the weather allows it.

If the weather is not good, a small planetarium session will be offered in the observatory pointing out objects of interest.

Booking is required for this event. Please contact [Daniel Brown](#) to register.

For further information about the optical observatory, please visit the [observatory website](#).

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:

Subscription rate:	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:

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:

Fred Hopper

e-mail: fred.w.m.hopper@googlemail.com

VICE PRESIDENT:

Dr Roy Gretton

e-mail: roygretton@hotmail.co.uk

SECRETARY:

Robert Bush

e-mail: info@nottinghamastro.org.uk

TREASURER:

Sam Boote

e-mail: s.boote@bcs.org

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 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

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.