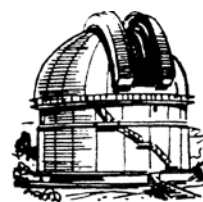

Journal

of the

Nottingham Astronomical Society
February 2016



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Thursday, 4th February

**British Geological Survey
Nicker Hill, Keyworth**

8 pm (doors open at 7.30pm)

Tonight we welcome

Dr Richard Alexander

of the University of Leicester



who will be speaking on

**“The Formation of
Planetary Systems”**

An Amazingly Wide Star-Planet System

A team of astronomers from the UK, the USA and Australia have discovered that a particular “lonely” planet, previously thought to be a free-floating planet, is actually in a huge orbit around a star. The planet, designated 2MASS J2126, is about 1 trillion kilometres from the star, that is, about 7,000 Astronomical Units, and takes a breathtaking 900,000 years to complete one orbit.

A number of true “free-floating” planets have been found in recent years: objects too small and cool to ever become stars – not even “brown dwarfs”. They are genuine low-mass objects which are not in orbit around any star. 2MASS J2126 is not one of these, but apparently a genuine planet, orbiting a parent star.

2MASS J2126 originally seemed to be a member of a 45 million-year-old group of stars and brown dwarfs known as the Tucana Horologium Association. In the same region of the sky, a star designated TYC 9486-927-1 had been identified as being young, but not as a member of any known group of stars. It has now been established that TYC 9486-927-1 and 2MASS J2126 *are moving through space together* at a distance of about 104 light-years from the Sun, suggesting that they are associated with each other, and if so, are the widest star-planet system yet known.

2MASS J2126 is believed to have a mass somewhere between 11.6 and 15 times the mass of Jupiter, placing it close to the boundary between planets and brown dwarfs.

Sky Notes

February 2016

Compiled by Roy Gretton



All times given below are in Greenwich Mean Time (GMT)

PHASES OF THE MOON

<i>Phase</i>	<i>Date and time</i>	<i>Moonrise</i>	<i>Moonset</i>
Last Quarter	3:28am on February 1 st	12:55am	11:05am
New Moon	2:39pm on the 8 th	7:05am	5:10pm
First Quarter	7:46am on the 15 th	10:50am	1:00am
Full Moon	6:20pm on the 22 nd	5:25pm	6:45am

This month the Moon is closest to the Earth on the 11th and furthest on the 27th.

THE PLANETS

Mercury begins the month as a morning object, but quite difficult to observe. It reaches greatest western elongation on February 7th, when it will be 25 degrees from the Sun in the twilight sky.

Venus, having put on a glorious show in the morning sky for some months, is now becoming much less prominent as it moves toward the Sun. Although it is still shining at magnitude -4.0 , it doesn't rise until after the pre-dawn glow has spread across the sky.

Mars, continuing its southward journey, now moves from Virgo into Libra, and passes one degree to the north of Alpha Librae on February 1st. By the end of the month it will be rising before 1 am, shining at magnitude $+0.3$, and presenting a disk more than 8 arcseconds across, so moderate-sized telescopes may begin to reveal some surface markings.

Jupiter is now unrivalled as the planet to observe this month. By the end of the first week of February it will be rising at about 8 pm and will be 43 arcseconds across, making it an excellent subject for telescopic examination.

For those who enjoy watching the movements of the four brightest satellites, a list of shadow transits (the easiest phenomena to observe) visible in the *evenings* this month is given below. Look out for a dark spot crossing Jupiter's disk.

February	Shadow transit of
2 nd	Ganymede 8:01pm to 11:23pm
4 th	Europa begins at 11:26pm
6 th	Io begins at 10:26pm
9 th	Ganymede begins at 11:59pm
15 th	Io ends at 9:03pm
22 nd	Europa ends at 8:45pm
22 nd	Io 8:41pm to 10:56pm
29 th	Europa 8:33pm to 11:21pm
29 th	Io begins at 10:34pm

Saturn is gradually pulling away from the Sun in the pre-dawn sky, and by the end of February will be rising before 2 am, and shining at magnitude +0.5. However, at a declination of -21 degrees, it will be very low in the sky when viewed from the UK.



Looking south at 6 am on February 8th

Uranus is an evening object but poorly placed for observation.

Neptune is unobservable this month, as it reaches solar conjunction on the 26th.

METEORS

There are no notable meteor showers in February.

COMET Catalina (C/2013 US₁₀)

This comet will be circumpolar from the latitude of the UK throughout the whole of February. Moving on from Ursa Minor into Camelopardalis, it will pass close to the open cluster NGC 1502 on the night of February 22-23rd. After passing closest to Earth on January 17th, the comet is now receding from both the Earth and the Sun, and consequently fading. However, it will still be close to magnitude 7 as the month begins, so will continue to be visible through binoculars.



Comet C/2013 US₁₀
imaged by the Editor
at 6 am on January 13th

A 30-second exposure
at ISO1600 using a
Canon 450D at the
prime focus of a
30-cm f/5.3
Newtonian reflector

DIARY DATES 2016

Monthly Meetings of the Nottingham Astronomical Society

Our programme for this year is shown below. 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

(except **August**, when we meet at our observatory site, between Cotgrave and Cropwell Bishop)

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

<u>Date</u>	<u>Topic</u>	<u>Speaker</u>
February 4 th	The Formation of Planetary Systems	Dr Richard Alexander <i>University of Leicester</i>
March 3 rd	Rosetta: Anatomy of a Comet	Dr Colin Snodgrass <i>The Open University</i>
April 7 th	Is There Anyone Out There?	Prof Ian Morison <i>University of Manchester</i>
May 5 th	Gamma Ray Bursts	Prof Nial Tanvir <i>University of Leicester</i>
June 2 nd	Gaia: A Billion Pixel Survey of a Billion Stars	Dr Elme Breedt <i>University of Warwick</i>
July 7 th	The Antikythera Mechanism: an Ancient Astronomical Computer	Prof Mike Edmunds <i>University of Cardiff</i>
August 6 th (Saturday)	Society BBQ at the Observatory	
September 1 st	Images of the Universe - 2	Paul Money
October 6 th	Open Evening <i>including a Telescope Surgery</i>	
November 3 rd	Annual General Meeting 2016	
December 1 st	Galactic Monsters: Seyfert Galaxies, Radio Galaxies and Quasars	Dr Marek Kukula <i>Greenwich Observatory</i>

Lunar Imaging through an 80-mm (3.15-inch) refractor

You don't need a large telescope in order to obtain very satisfying images of the Moon. I captured these images in December by attaching a Canon DSLR to a small Vixen refractor (aperture 80mm, focal length 910mm).

The first two images were taken at the prime focus of the telescope:



The ones below were taken by projection through a 10mm eyepiece:



Roy Gretton

The History of Nottingham Astronomical Society

2016 marks the 70th year for Nottingham Astronomical Society

Although it seems the idea for a society in Nottingham for individuals interested in astronomy was conceived in the late 1930s and an inaugural meeting was planned for September 1939, the outbreak of war resulted in the cancellation of this meeting and all plans were put on hold. In 1946 the first meeting of Nottingham Astronomical Society was held and we are still going strong today.

An article about Nottingham Astronomical Society appeared in the Journal of the British Astronomical Association in 1951 [1] and it gives an account of the early days of the Society. With kind permission of the British Astronomical Association (BAA) this article has been circulated with this edition of the Journal.

The article mentions that the monthly *Bulletin* of the early Society was sent to the BAA Library, and by the time of publication of the article in 1951, 48 issues of the Bulletin had been produced. We have several copies of these Bulletin's on the society's [website](#) [2] but we do not have a complete collection. I have contacted the archivist at the BAA and it seems they no longer, unfortunately, have the copies which were sent to them.

I am interested in the history of astronomy, and I would be fascinating to learn more about the history of our own society. I have contacted Alan Heath, who some will know was active in the Society from the 1950s,

and I have recently met up with him; he has given me copies of photographs and articles relating to the Society and I am hoping to meet up with Alan again in the near future once I've had time to study these. This image, which Alan gave me, was taken on April 6th, 1961 and shows a young Patrick Moore on a visit to the Society, together with the then secretary, Miss Mott, and A W Lane Hall who was a founder member of the Society and long-standing Director of Observing as well as prominent figure in the British Astronomical Association.



I would love to track down all the old copies of our monthly publications and build an archive of these on the website for all to access. I wonder if any readers of this current edition of the Journal have old photographs or documents relating to the Society which they would be willing to let me take copies of? If so I would really love to hear from you.

James Dawson, NAS Helpdesk
NAShelpdesk@hotmail.com

[1] Ashmore, AJ. The Nottingham Astronomical Society. Journal of the British Astronomical Association, 1951, volume 61, number 4, pages 114-116.

[2] http://nottinghamastro.org.uk/?page_id=31

NAS Helpdesk

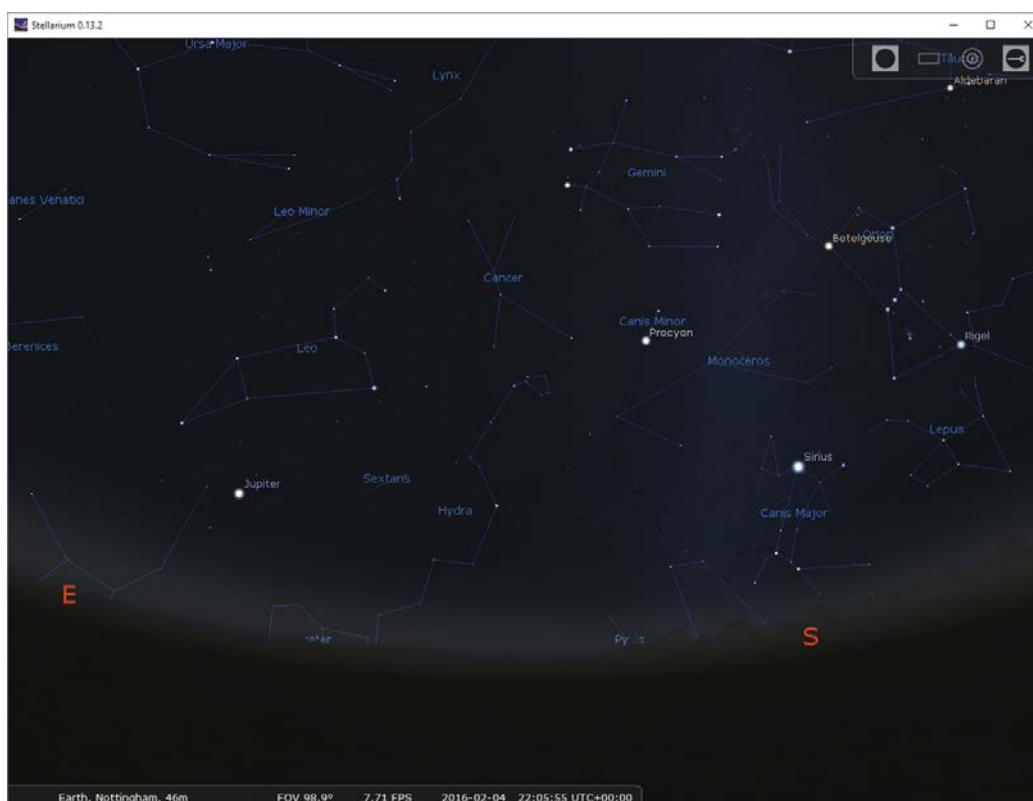
We will be on hand at the February meeting should you have any questions about astronomy equipment or its use, or just for a chat.

We'll have a demonstration of the software package "[Stellarium](http://www.stellarium.org/en_GB/)" at the meeting. This software is free to download and functions as a planetarium on your own computer. The observer's location can be altered, and any time and date (from the past or in the future) set and the positions of the stars and solar system residents are shown. There are many other functions of the software, and it can even be set up to control a telescope's mount.



A screen shot from Stellarium is shown below and shows how the sky would look at just after 10pm on Thursday 4th February 2016 (the night of the NAS meeting) looking south east from Nottingham; Orion is seen to the right, and Jupiter rising on the left just below Leo. The software is useful in helping to plan an observing session, or to help determine what was observed. The software will also overlay lines, if you wish, to show the outlines of the constellations, and their names.

The software can be downloaded from here: http://www.stellarium.org/en_GB/



If you want any help installing or using Stellarium, come and see us or drop us an email.

James Dawson and Bob Richardson
NAShelpdesk@hotmail.com

NAS Library

Just to remind everyone to check out our list of books via the link below. If there are any on there that you particularly like the look of, please email me and I'll make sure I bring them along to the next meeting. We would also welcome any suggestions for books you think we should try and get for our library – beginner or advanced. James D is a genius at sourcing books. No pressure James! Look forward to seeing you all on the 4th Feb.



The full list of books in our lending collection can be found here: [NAS Library Collection](#).

Lorraine

NASlibrarian@hotmail.com

The Nottingham Astronomical Society: E - SERVICES

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

NAS on Facebook

You are welcome to connect with other members and friends of the NAS on Facebook by going to: <http://www.facebook.com/nas.org.uk>

NAS on Twitter

The Society now has a Twitter account at <https://twitter.com/NottinghamAstro>

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.

Advertisement

FOR SALE

Brightstar manual filter wheel (holds up to five 1¼-inch filters)	£30
Set of four 1¼-inch coloured filters (red, yellow, green, blue)	£20
Mars filter 1¼-inch	£10
Moon filter 1¼-inch (25% transmission)	£10
Filter case (holds up to four 1¼-inch filters)	£2
Celestron lens pen	£2
Micro-fibre cleaning cloth	£2

Sam Boote s.boote@bcs.org or at Society meetings

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)

ORDINARY COMMITTEE MEMBERS:

Sam Boote

Barrie Chacksfield

James Dawson

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 welcome to attend.

Annual subscriptions 2016

Full	£30
Joint rate for partners living at the same address	£45
Under-18s and full-time students	£5

Subscriptions become due on 1st January. Half-price subscription is charged if joining after 30th June (minimum subscription £5).

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.

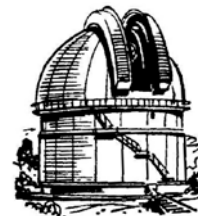
The Nottingham Astronomical Society

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NOTTINGHAM ASTRONOMICAL SOCIETY

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	Partnership	£45.00	(year)	£22.50	(half year)
	Under-18 and full-time students	£5			

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.

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