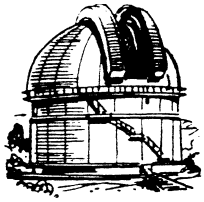
Journal

of the

Nottingham Astronomical Society

March 2017



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Thursday, March 2nd

British Geological Survey
Nicker Hill, Keyworth

8 pm (doors open at 7.30pm)

Tonight we welcome
Dr Peter Wheatley

of the University of Warwick

who will be speaking on

"Finding Exoplanets with Small Telescopes"

Seven Earth-sized planets found orbiting a Jupiter-sized star

An international collaboration has detected a system of seven Earth-sized planets orbiting the Jupiter-sized star Trappist-1, named after the Belgian robotic telescope, Trappist-South, sited in Chile. This instrument has an aperture of 60 cm, which is marginally smaller than the Nottingham Astronomical Society's "large" telescope near Cotgrave. The Trappist telescope initially detected three planets in the system, but follow-up observations with the Liverpool Telescope in the Canary Islands and NASA's Spitzer Space Telescope increased this number to seven, three of which are believed to be in the star's "Goldilocks zone", where liquid water can exist at the surface.
Trappist-1 is a very dim red dwarf star with a mass of only 8 percent of that of the Sun and a surface temperature of less than 2600K. It is 39 light-years from Earth, and all seven planets are closer to the star than Mercury is to our Sun.

The latest results were published in the journal ***Nature*** on February 23rd, under the title *"Seven temperate terrestrial planets around the nearby ultracool dwarf star TRAPPIST-1"*.

A happy coincidence, considering the title of this month's talk!

Sky Notes
March 2017

Compiled by Roy Gretton

All times given below are in Universal Time (Greenwich Mean Time) unless otherwise stated

The Northward Equinox (Spring Equinox in Earth's northern hemisphere) will occur at 10:30 am on March 20th. At that time the Sun will be exactly over the equator.
British Summer Time will begin at 2 am on March 26th. Clocks should be advanced by one hour.

PHASES OF THE MOON

Phase	*Date and time*
First Quarter	11:32 am on March 5th
Full Moon	2:54 pm on the 12th
Last Quarter	3:20 pm on the 20th
New Moon	3:57 am **BST** on the 28th

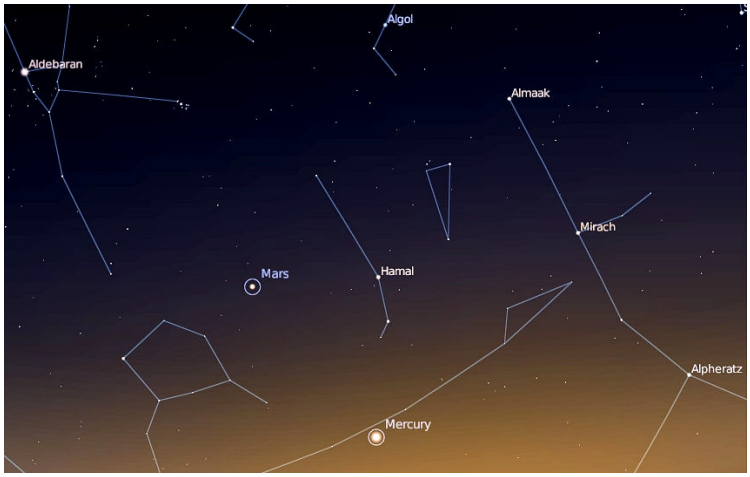
This month the Moon is closest to the Earth on the 3rd, and furthest on the 18th.

THE PLANETS

Late March through to early April will be the best time in the whole of 2017 for observing **Mercury** in the evening sky, as at the end of March it will be 19 degrees from the Sun and 13 degrees north of the celestial equator, and will be setting nearly two hours after the Sun. Chose a location with a low western horizon, and look out for a bright "spark" about 12 degrees high at the end of civil twilight.

Venus is now heading back toward the Sun, with inferior conjunction due on March 25th. But at the beginning of the month it will still be a striking object in the western sky in the early evening, remaining brighter than magnitude –4. Through a telescope it will appear as an ever-thinning crescent.

Mars is a third naked-eye planet visible in the evening sky as this month begins. On March 8th it will leave Venus behind in Pisces, and move into Aries. By the end of the month Mars will have faded to magnitude 1.5 and will appear little more than 4 arcseconds across.



Looking west
at 8:30 pm BST
on March 28th

With Venus moving out of sight, it will soon be **Jupiter**'s turn to be the brightest planet in the night sky. It will be at magnitude –2.4 for most of the month, but will be much less favourably placed for UK observers than it was a few years ago, being now about 7 degrees south of the celestial equator. This month Jupiter is still a planet mainly for early morning observers, because although by the end of March it will be rising at about 8 pm BST, it won't be culminating until after 2 am BST.

Saturn, now in the constellation of Sagittarius, will be rising over four hours before the Sun by the end of March, but being more than 22 degrees south of the equator throughout the month, it will always be very low in our sky, making it somewhat difficult to observe.

Uranus, in the constellation of Pisces, is practically unobservable this month.

Neptune, too, is unobservable.

METEORS

The **Virginids** begin to show weak activity in the second half of March.

"Ask an astrophysicist"

At our **April meeting** of *Social and Practical Astronomy* in Plumtree (Thursday 20th April 2017), Professor Mike Merrifield and Dr Julian Onions from The University of Nottingham have kindly agreed to run an informal question and answer session. Are there things in the world of astronomy and astrophysics you've always wanted to ask about but never had the opportunity? This is your chance.

I'd like to provide our two speakers with some questions in advance to give them chance to prepare some answers and potentially bring along some slides to help. So please do let me have some of your questions by **Sunday 12th March**.

James Dawson
NAS Helpdesk
helpdesk@nottinghamastro.org.uk

DIARY DATES 2017

Monthly Meetings of the Nottingham Astronomical Society

1) Meetings at the British Geological Survey, Keyworth

Nicker Hill, Keyworth, Nottingham, NG12 5GG

Held on the **FIRST** Thursday of each month except **August**

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

*These events are normally centred around a talk by a visiting speaker, except Opening Evenings, when NAS members provide the activities. Normally we have a **Library** and a **Helpdesk** open at each meeting.*

Date	Topic	Speaker
March 2nd	Finding Exoplanets with Small Telescopes	Dr Peter Wheatley University of Warwick
April 6th	The Art of Astrophotography	Prof Ian Morison University of Manchester
May 4th	Juno: Exploring the Mysteries of Jupiter	Prof Emma Bunce University of Leicester
June 1st	Charles Messier	Dr Allan Chapman, FRAS
July 6th	Gravitational Waves	Dr Ed Daw University of Sheffield
August 5th (SATURDAY)	BBQ at the Observatory *(members and guests only)*	
September 7th	Galaxy Evolution revealed by the Hubble Space Telescope	Dr Clive Tadhunter University of Sheffield
October 5th	Space Stations from Salyut to the ISS	Dr Mike Leggett, FRAS
November 2nd	Annual General Meeting	
December 7th	Voyager 40 Years On (Part 1)	Paul Money, FRAS

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.

2) Social and Practical Astronomy Meetings at the Burnside Memorial Hall, Plumtree

Church Hill, Plumtree, Nottingham, NG12 5ND
Held on the **THIRD** Thursday of each month from **7:30pm**
These meetings are of a more informal nature, providing opportunity for members and guests to share their hobby over a cup of tea or coffee, as well as listening to a short talk

The next meeting will be on March 16th

Social and Practical Astronomy

The **February** meeting at Plumtree was a talk on planetary imaging by me, which was well received and generated plenty of discussion as usual. Some of the equipment on display also got people talking and for further information on the items that were on show click on them here:

atmospheric dispersion
atmospheric dispersion corrector (ADC)
flip mirror
motorised focuser motor and control box
Crayford-style focuser for SCT / Maksutovs
ZWO ASI 224MC dedicated colour planetary camera
TeleVue 2.5x 1.25" Powermate

For anyone who didn't attend the meeting let me know and I can send you a copy of the slides.

The **March meeting** is going to focus on our nearest celestial neighbour, The Moon. We'll be learning about the origins of The Moon, its orbit and phases, the commoner lunar features and how they formed, some of the targets for amateur astronomers with binoculars and small telescopes, and learning about some of the manned and unmanned missions to The Moon.
The next meeting is on Thursday 16th March; the doors will open at 7:30pm and the talks will start at 8pm. If it is clear bring your binoculars and we can try and do some observing.

James Dawson
NAS Helpdesk
helpdesk@nottinghamastro.org.uk

Lunar eclipse 28.09.2015, by James Dawson

Advertisement

http://www.npae.net

FOR SALE: Complete Astronomy viewing/astrophotography set up

Everything apart from the HEQ5 Pro was bought new 18-24 months ago

Williams Optics GT102 triplet refractor telescope, a fantastic telescope especially for astrophotography and in immaculate condition; for sale at £1450.

HEQ5 Pro mount with SynScan remote. It also has the extended weight arm and an additional counter balance weight; VGC for sale at £475.

Baader Hyperion 4 eyepiece set with hard case; for sale at £350

A Williams Optics 2” Diagonal (with a reducer to 1.25” if required). For sale at £100

Williams Optics 0.8x Reducer Flattener for the GT102; for sale at £140

Baader Neutral Density filter and Baader UHC-5 Filter Together for £120

An **unused** Starlight Xpress Costar CMOS Autoguider, for sale at £225
Meade Autoguiding scope and DS1 camera
Baader AstroSolar filter to fit the GT102
Kendrick dew heater strip
Solar Filter
Plus, numerous cables and associated ‘stuff’

Total package is £2860 but will accept £2700

I also have a very solid metal pier, as seen above, built specifically for the HEQ5 Pro mount, that I could add to the sale which is available for £100. The pier can be unscrewed but it will need a new base, which can be bought at any tube and pipe fittings company.

Please call
07855 044 267
(in Mansfield)

FOR SALE

Set of four 1¼-inch coloured filters (red, yellow, green, blue)	£20
Celestron lens pen	£2
Micro-fibre cleaning cloth	£2

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

For Sale

1. Celestron Starbright C8 XLT OTA (black tube). As new (with original box), complete with finderscope, 1.25inch diagonal and 25mm eyepiece. Price includes a high quality Antares adaptor for 2inch diagonals and Celestron dewshield, £700.

2. Skywatcher ED100 DS Pro refractor (black diamond tube), complete with 9x50 finderscope, 2 inch diagonal and 28mm eyepiece. Supplied in aluminium carry case, all in excellent condition £500.

Enquiries to Dave Mattison (tel 0115 9260873, EMail dave.mattison@btinternet.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 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.

Nottingham Astronomical Society

Affiliated to the **B**ritish **A**stronomical **A**ssociation
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Member of the **S**ociety for **P**opular **A**stronomy
Supporters of the **C**ommission **f**or **D**ark **S**kies
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email: observatory@nottinghamastro.org.uk
***Observatory line:* 07726 940700 (line open during observing sessions)**

ORDINARY COMMITTEE MEMBERS:

Barrie Chacksfield

Meetings

Our formal 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

These meetings are open to the public, and visitors are welcome to attend.

Annual subscriptions 2017

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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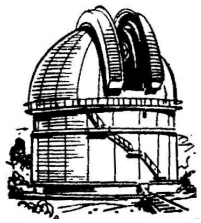
NOTTINGHAM ASTRONOMICAL SOCIETY



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 Commission for Dark Skies

Membership application and Gift Aid declaration

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Subscription rate:	Full	£30.00	(year)	£15.00	(half year)
	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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