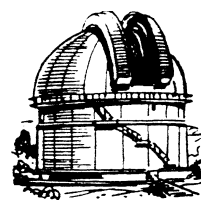

Journal

of the

Nottingham Astronomical Society

December 2017



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Thursday, December 7th

**Gotham Memorial Hall
Gotham, NG11 0HE**

8 pm (doors open at 7 pm)

Tonight we welcome

Paul Money, FRAS



who will be speaking on

Voyager 40 years on – Part 1

The Dawn of the Space Age – 60 years on **1957 – 2017**

Part 3: The Early Earth Satellites

Today we know that there are thousands of artificial satellites in orbit around the Earth.

But in the early years of the Space Age, each new satellite attracted considerable interest, and was given an AES (Artificial Earth Satellite) number, as this BAA Circular from May 1958 shows.

At this stage there had been just two functioning Russian satellites and three American ones placed in orbit.

British Astronomical Association Circular

No. 397

1958

May 6

THE ARTIFICIAL EARTH SATELLITES

The following is a summary of the present position regarding those satellites which have been successfully placed into orbit.

A.E.S. 1. "Sputnik I." Launched from Russia on 1957 October 4. Initial period 96^m.2. Believed to have disintegrated in the atmosphere at beginning of 1958 January. The rocket which launched this "sputnik" was also in orbit and was a naked-eye object, maximum magnitude about -1^m. This rocket was believed to have disintegrated in the atmosphere on 1957 December 1 after about 879 revolutions.

A.E.S. 2. "Sputnik II." Launched from Russia on 1957 November 3. Initial period 103^m.7. Contained the dog 'Laika'. A naked-eye object, maximum magnitude about -3^m. Disintegrated in the atmosphere near N.E. coast of S. America on 1958 April 14^d 02^h, after completing 2368 revolutions.

A.E.S. 3. "Explorer I." Launched from Cape Canaveral, U.S.A., on 1958 February 1. Initial period about 115^m. Likely to remain in orbit for at least 2-3 years.

A.E.S. 4. "Vanguard I." Launched from Cape Canaveral, U.S.A. on 1958 March 17. Initial period about 134^m. It will remain in orbit for many years. The rocket which launched this satellite is also in orbit.

A.E.S. 5. "Explorer III." Launched from Cape Canaveral, U.S.A., on 1958 March 26. Initial period about 120^m. It is still in orbit but its low perigee height indicates that it is unlikely to survive for more than about six months. [G.E.T.]

Sky Notes

December 2017



Compiled by Roy Gretton

All times given below are in Universal Time (UT)

The northern hemisphere **Winter Solstice**, when the Sun reaches its most southerly declination of the year, occurs at 4:29pm on December 21st.

PHASES OF THE MOON

<i>Phase</i>	<i>Date and time</i>
Full Moon	3:47pm on December 4 th
Last Quarter	7:51am on the 10 th
New Moon	6:30am on the 18 th
First Quarter	9:20am on the 26 th

This month the Moon is closest to the Earth on the 4th (so look out for a **BIG** Full Moon as it rises on that date), and furthest on the 19th.

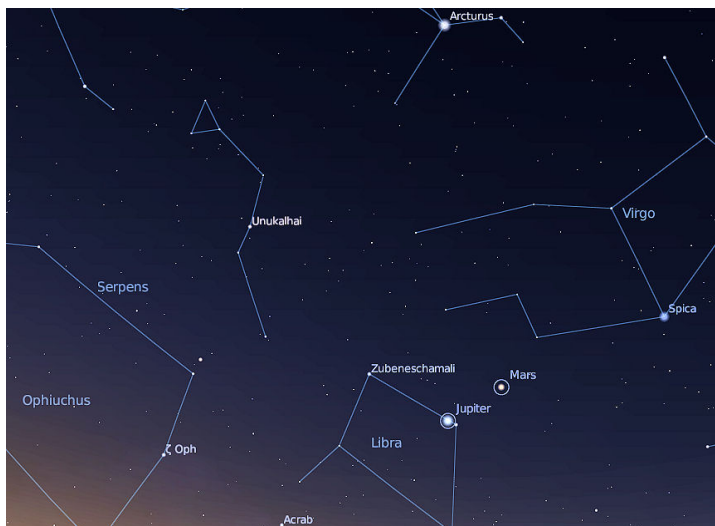
THE PLANETS

Mercury is virtually unobservable this month, as it passes through inferior conjunction on the 13th December.

Venus, too, is unobservable this month, as it approaches superior conjunction in the New Year.

Mars continues to draw away from the Sun in the morning sky, but unfortunately for UK observers is also moving southwards, ending 2017 about 15 degrees south of the celestial equator, with it's angular diameter still short of 5 arcseconds. Near the end of December Mars will be getting very close to Jupiter, as the two planets head toward a very close conjunction on the morning of January 7th, when they will be only one-fifth of a degree apart.

Jupiter, also drawing away from the Sun in the morning sky, will be rising at about 4:30am by the end of December. Like Mars, it is some 15 degrees south of the celestial equator, but at magnitude -1.8 will be shining much more brightly than the Red Planet.



**Looking SSE
at 7 am on
Christmas morning**

Saturn is unobservable this month, as it passes through conjunction with the Sun on December 21st.

Uranus, about 10 degrees north of the celestial equator in the constellation of Pisces, is now an evening object, passing due south at 7pm at the end of December. If you have never seen Uranus before, this month might be a good time to go looking for it. At magnitude 5.8 it is theoretically within the limits of naked eye visibility, but realistically you will need binoculars in order to find it. Through a telescope it appears as a pale greenish disk, a little over three arcseconds across. Take a look!

Neptune is nearly 8 degrees south of the celestial equator in the constellation of Aquarius. Shining at magnitude 8, this distant member of the Solar System is considerably harder to find than Uranus.

METEORS

The **Geminids** are unrivalled as the most abundant meteor shower of the year, producing over 100 events per hour under ideal conditions. Furthermore, the radiant of the shower, close to the star Castor, is above the horizon for the whole night in December, so Geminids may be seen at any time after darkness falls (although the radiant doesn't reach its highest point until after 1 am, so a midnight vigil should yield greater rewards).

This year conditions are very favourable, with maximum meteor activity expected on the night of the **13th-14th**, just four days prior to the New Moon....but note that Geminids may be seen on any night between December 8th and 17th.

Of course there is the small matter of the weather! December nights can be **cloudy** (for which we have no remedy) and if clear may be **cold** (the remedy for which is to wear sufficient layers of warm clothes as you settle into your recliner and gaze skywards). Enjoy!

Inaugural Annual General Meeting – December 7th

The Inaugural AGM of the Charitable Incorporated Organisation to be known as the Nottingham Astronomical Society will take place at 7:45pm on Thursday, 7th December 2017 at Gotham Memorial Hall.

This event is intended to last for a few minutes before the start of our main meeting, which will feature Paul Money, FRAS, speaking on the Voyager spacecraft missions.

DIARY DATES 2017-18

Monthly Meetings of the Nottingham Astronomical Society

1) Meetings at Gotham Memorial Hall

Nottingham Road, Gotham, NG11 0HE

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

Doors open at 7pm 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.*

<u>Date</u>	<u>Topic</u>	<u>Speaker</u>
January 4 th	Open Evening with a New Year Quiz	
February 1 st	Triumphs of Voyager – Part 2 <i>Where no probe has gone before</i>	Paul Money FRAS, FBIS
March 1 st	Dark Future? <i>Can the UK's dark spaces survive?</i>	Bob Mizon, MBE, FRAS BAA Commission for Dark Skies
April 5 th	Jodrell Bank 60 years on	Prof Ian Morison University of Manchester
May 3 rd	Lucky Planet – why Earth is exceptional <i>and what it means for life</i>	Prof David Waltham Royal Holloway, University of London
June 7 th	Diamonds in the Sky <i>White Dwarfs in Modern Astrophysics</i>	Professor Martin Barstow University of Leicester
July 5 th	Cassini's Final Science	Dr Phil Sutton University of Lincoln
August 4 th (Saturday)	Annual Society BBQ at the Observatory	
September 6 th	The Adventures of Curiosity on Mars	Prof Sanjeev Gupta Imperial College, London
October 4 th	Juno – the Answers	Prof Emma Bunce University of Leicester
November 1 st	Annual General Meeting	
December 6 th	Transient Events in Astronomy or things that go bump in the night	Prof Dame Jocelyn Bell Burnell DBE, FRS, FRSE, FRAS

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 December 21st (see article 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

Events in the coming months open to everyone

(follow hyperlinks for more information and how to book)

28th November	Mars Rocks, Traces of Life and Water , Open Dome Event, Clifton
7th December	3D X-ray vision , Nottingham University
9th December	BAA Christmas Lecture , London
20th January	BAA Ordinary Meeting , London
27th January	SPA Quarterly Meeting , London
30th January	Project Adrift , Open Dome Event, Clifton
17th February	Soc History of Astronomy Research Workshop , Birmingham
28th February	A brief history of women in astronomy , Open Dome Event, Clifton
4th March	BAA Deep Sky Section Meeting , Bedford
10th March	BAA Back to Basics Workshop , Bristol
21st April	Society for the History of Astronomy Spring Meeting , Cambridge

Social and Practical Astronomy, Plumtree

The **November** meeting at Plumtree saw Leigh Blake coordinate an number of short talks on things which make our astronomy easier. The evening started with Roy Gretton giving an overview of the planets in the coming years and explaining why, for some time, the superior planets will be poorly placed to observe from the UK.

David Buxton talked about his StarSense device which uses a camera to get feedback from the night sky and gives a very accurate GOTO function. Gareth Davies talked about using the software SharpCap to undertake a very tight polar alignment. Sam Boote talked about his white light solar filter and solar view finder, and a number of other items from his bag of tricks. Leigh spoke about Stellarium and other planetarium software some of which can be used to control astronomical mounts.

The **December** meeting, to be held on **Thursday the 21st**, will be a social event with mince pies and something else astronomical; the keen eyed may have spotted the typographical error from my entry in last month's Journal where I'd suggested our festive treat would include **mice** pies. Don't be put off, there will be no rodent pies.

If there are other topics you would like us to cover at Plumtree, do please let me know.

James Dawson

NAS Helpdesk

helpdesk@nottinghamastro.org.uk

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.

If you happen to change your email address, please remember to inform the Society by emailing us at treasurer@nottinghamastro.org.uk

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PRECISION ASTRO ENGINEERING

REVIEWS

First appearances are certainly impressive. Cut from a single block of aircraft grade aluminium, the cage is bathed in a luscious red livery, nicely offset with the silvered nameplate and dark sextet of eyepiece turrets.

Astronomy Now, August 2017

When the time came to cease using the turret, I actually felt my heart sink the first time I went to switch eyepieces. [...] This was the moment when I realised that not only did the turret really compliment my style of observing, but I actually missed it as well

Alpha-Lyrae, June 2017

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ASTROPHOTOGRAPHY COMPETITION

Four prizes to win in two categories

Category 1: (using nPAE equipment)

1st prize: 4 tickets to Greenwich Observatory
+ £300 cash expenses

2nd prize: £50 nPAE discount voucher

Category 2: Using non nPAE equipment

1st prize: Theia90 diagonal

2nd prize: £50 nPAE discount voucher

FREE to enter • Open to all skill levels •
Group entries welcome • Closing date 31st March 2018
See website for full terms and conditions



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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 Commission for Dark Skies

PROVISIONAL COMMITTEE

(until our AGM on Dec 7th)

CHAIRMAN:

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VICE CHAIRMAN:

Roy Gretton

e-mail: vicepresident@nottinghamastro.org.uk

SECRETARY:

Robert Bush

e-mail: secretary@nottinghamastro.org.uk

TREASURER:

David Anderson

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JOURNAL EDITOR:

Roy Gretton

e-mail: nottinghamastrojournal@gmail.com

CURATOR OF INSTRUMENTS:

Robert Bush

e-mail: curator@nottinghamastro.org.uk

DIRECTOR OF OBSERVING:

(vacant post; Acting Director: John Hurst)

email: observatory@nottinghamastro.org.uk

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

ORDINARY COMMITTEE MEMBERS:

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:

Gotham Memorial Hall
Gotham
Nottingham NG11 0HE

Doors open 7.00pm

Meetings start 8.00pm

Meetings end 10.00pm

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

Annual subscriptions 2018

(to be decided at the AGM on Dec 7th)

Full

Joint rate for partners

living at the same address

Under-18s and full-time students

Subscriptions become due on 1st January.

Half-price subscription is charged if joining after 30th June

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.

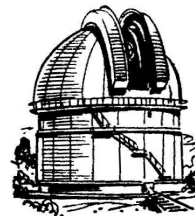
The Nottingham Astronomical Society

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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	(year)	(half year)
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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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