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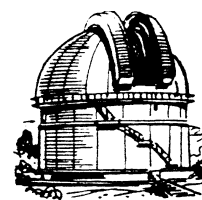
# Journal

of the

## Nottingham Astronomical Society

**May 2019**

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**Thursday, May 2<sup>nd</sup>**

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

**8 pm (doors open at 7 pm)**

**Tonight we welcome  
Prof Ian Morison**  
of the University of Manchester



who will be speaking on

**It's About Time**

***Time's Arrow and Time Travel***

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### Strange Lights over Norway



These effects were produced one night in late March by the Auroral Zone Upwelling Rocket Experiment (AZURE). A mixture of vapours was released into the ionosphere from two rockets, and the patterns of dispersal were observed from several ground stations, with the aim of better understanding of how the solar wind transfers energy to the atmosphere and produces aurorae.

# Sky Notes

## May 2019

Compiled by Roy Gretton

*All times given below are in British Summer Time*



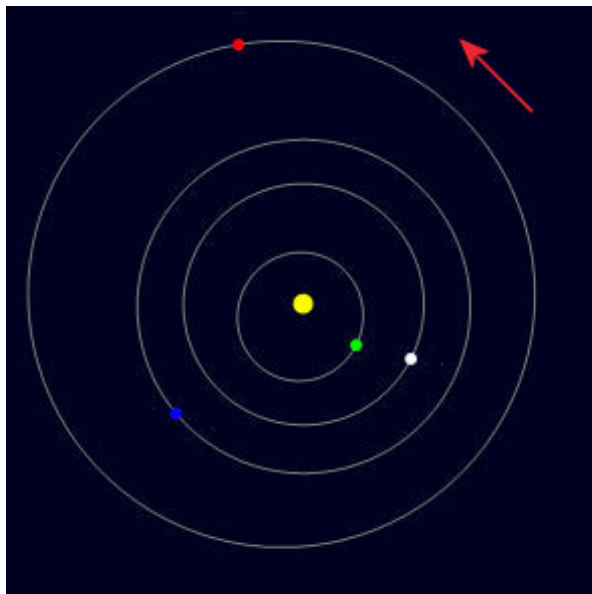
### PHASES OF THE MOON

<i>Phase</i>	<i>Date</i>
New Moon	May 4 <sup>th</sup>
First Quarter	May 12 <sup>th</sup>
Full Moon	May 18 <sup>th</sup>
Last Quarter	May 26 <sup>th</sup>

This month the Moon is closest to Earth on the 13<sup>th</sup> and furthest on the 26<sup>th</sup>.

### THE PLANETS

**The inner Solar System viewed from above the north pole on 1<sup>st</sup> May 2019**  
*(the red arrow shows the direction of rotation)*



*As viewed from **Earth** [shown as the **blue dot**] the inferior planets **Mercury**[**green dot**] and **Venus** [white dot] are both to the west of the Sun, and therefore are morning objects.*

***Mars** [**red dot**] is to the east of the Sun, and therefore an evening object.*

***Mercury**, moving fastest, will have reached superior conjunction by May 21<sup>st</sup>, while **Venus** won't reach a similar point until mid-August. By early September, **Earth** will have moved to a point where it will be **Mars'** turn to be at superior conjunction.*

**Mercury**, shining at magnitude  $-0.3$ , begins May as a morning object 21 degrees west of the Sun, but will be very difficult to observe due to its low elevation. It then moves in toward the Sun, reaching superior conjunction on the 21<sup>st</sup>, and emerging as an evening object thereafter.

**Venus** also begins the month as a morning object, 28 degrees from the Sun and shining at magnitude  $-3.9$ . Again, this planet will be very low down before sunrise.

**Mars**, now shining at magnitude +1.7, continues in the slow, declining tail of its present apparition, as the Earth leaves it further and further behind. By the end of May its angular diameter will have fallen below 4 arcseconds, so it will be presenting a disk comparable in size to that of Uranus. As the Sun sets at the beginning of the month, Mars forms a triangle with two other orange stars, Aldebaran and Betelgeuse, low in the west.



Looking west  
at 10pm  
on May 1<sup>st</sup>

Throughout May, **Jupiter** will be moving westward (retrograde motion) in the southern portion of the constellation of Ophiuchus. It will be rising at about 10pm at the end of May, and shining at magnitude  $-2.6$ , making it by far the brightest “star” in this part of the sky.

**Saturn**, shining at magnitude +0.4, is low down in the southern constellation of Sagittarius, where it will remain for the rest of 2019. By the close of May it will be rising at around midnight.



Looking south  
at 2 am  
on May 31<sup>st</sup>

**Uranus** (in Aries) is unobservable this month.

**Neptune** (in Aquarius) is a morning object rising over two hours before the Sun.

## METEORS

May isn't a great month for meteor showers. Some weak activity may be observed from southern radiants, but difficult to observe from the UK. The best chance might be the Eta-Aquarids, which peak on May 7<sup>th</sup> when the Moon is only 3 days old, and may possibly give up to 40 events per hour under ideal conditions.

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### At our observatory site

the grass is growing rapidly at this time of year...



Richard Severn  
checking out James  
Dawson's new solar  
telescope at the  
observatory after  
mowing the grass –  
there have to be some  
perks to all that  
mowing!

...but spring flowers are also blooming



An image captured  
by James at Easter

## DIARY DATES 2019

### 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 Open 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>
<b>May 2<sup>nd</sup></b>	<b>It's About Time</b> <i>Time's Arrow and Time Travel</i>	<b>Prof Ian Morison</b> University of Manchester
<b>June 6<sup>th</sup></b>	<b>From Tycho to Newton</b> <i>Foundations of modern astronomy</i>	<b>Dr Allan Chapman</b> FRAS
<b>July 4<sup>th</sup></b>	<b>Metal Detecting</b> <i>What are metals to astronomers?</i>	<b>Dr Julian Onions</b> University of Nottingham
<b>August 3<sup>rd</sup></b> (Saturday)	<b>Annual Barbecue at the Observatory</b> (Members and their guests only)	
<b>September 5<sup>th</sup></b>	<b>Where Are the Aliens?</b> <i>Might we be alone?</i>	<b>Prof Brad Gibson</b> University of Hull
<b>October 3<sup>rd</sup></b>	<b>The 200 at 70</b> <i>The Hale Telescope</i>	<b>Dr Steve Barrett</b> University of Liverpool
<b>November 7<sup>th</sup></b>	<b>Annual General Meeting</b> with a Wine and Cheese Social	
<b>December 5<sup>th</sup></b>	<b>Voyages to the Sun</b> <i>Probing our nearest star</i>	<b>Prof Lucie Green</b> University College London

#### 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**

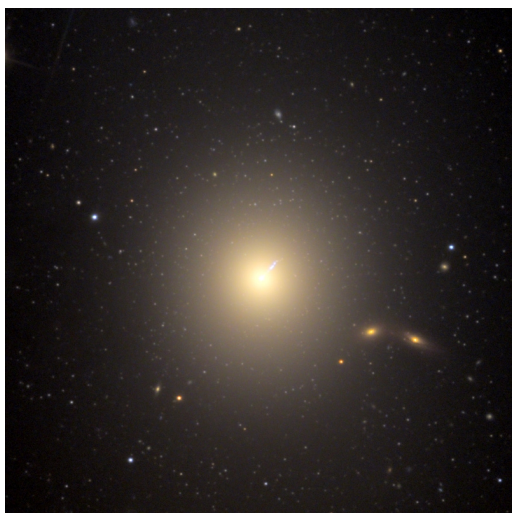
*These meetings are of a more informal nature, providing opportunity for members and guests to share their hobby over a cup of tea or coffee, as well as listening to a short talk.*

**The next meeting will be on May 16<sup>th</sup> (see further details below)**

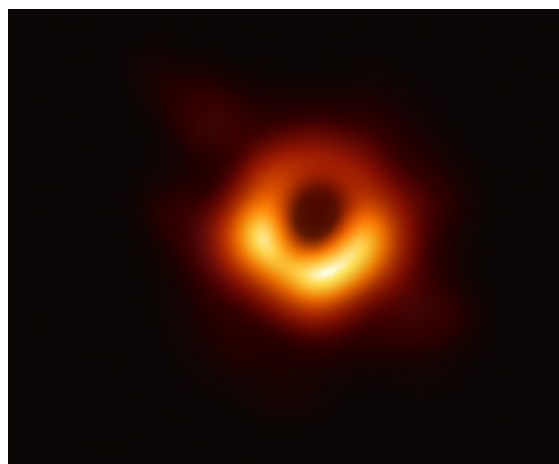


## Social and Practical Astronomy, Plumtree

The **April** meeting at Plumtree opened with Julian Onions describing the recent press release about the imaging of the [black hole](#) at the centre of the M87, which resides 55 million light-years from Earth.



Optical image of M87, a giant elliptical galaxy in the constellation of Virgo



Radio image of the black hole at the centre of M87

John Hurst and Barrie Chacksfield then delivered a talk about the principles of binoculars and some basics about their use in amateur astronomy. One of the key messages was to not get carried away at buying large binoculars if you are going to have to hold them; anything more than 10x50 binoculars need to be supported with something other than your hands. More information about binoculars can be obtained from the [Sky at Night Magazine Website](#).

Following on from the talk, there was an opportunity to observe the Moon outside through Bryan Lilley's large binoculars and a number of other binoculars people had brought along. It was great to see so many people observing and chatting.

The **May** meeting at Plumtree will see Dave Hilton be running a session on "first steps in radio astronomy"; Dave will be giving an explanation of the basic of radio astronomy and will be bringing along some gadgets to show how it all works. It looks to be a fascinating event.

**James Dawson**

NAS Helpdesk

[helpdesk@nottinghamastro.org.uk](mailto:helpdesk@nottinghamastro.org.uk)

## A lifetime of astronomical observations

Dr Dan Brown, Associate Professor at Nottingham Trent University, runs a monthly programme of talks for the public on astronomy topics. Dan often gets his students involved in describing the night sky for the month and if it is clear they often open their observatory to the public to look at something through one of their telescopes, else put on a show undercover.

I'd approached Dan a few months ago to see if he would be interested in **Alan Heath** giving a talk to the audience about his life in amateur astronomy. Dan was really keen on this and after some planning Mr Heath will be giving his talk on Wednesday 24<sup>th</sup> April at 8pm. As many will know, Mr Heath first joined Nottingham Astronomical Society in 1952 and remains a life-long honorary member.

Booking is required, but the event is free to attend. More information can be found here: <https://www.ntu.ac.uk/about-us/events/events/2019/04/open-dome-event-a-life-time-of-astronomical-observations>

NOTTINGHAM  
TRENT UNIVERSITY



### School of Science and Technology The Observatory

Hello James

Amateur astronomers come from all walks of life and allocate a huge amount of their time to astronomy. They contribute to astronomy in many ways and inspire others to look into the sky. Nottingham boasts several astronomy societies that link up keen astronomers and offer access to observatories.

Mr A Heath (NAS) is one example of such a dedicated amateur astronomer and the longest serving member of the Nottingham Astronomical Society (NAS). He travelled the world with Sir P Moore and has an asteroid named after him. Together with Mr J Dawson (NAS), Mr A Heath (NAS) will be telling us more about his life in his talk titled A life time of astronomical observations.

When: **Wednesday 24 April 2019, 8 pm - 10 pm**

Where: **CELS, Nottingham Trent University, Clifton Campus**

## Some recent meetings attended – James Dawson reports

Spring is always busy for me in terms of amateur astronomy events and this year has been no different.

Kettering – [Practical Astronomy Show](#). 9<sup>th</sup> March 2019. This is a new event which is free to enter to look around and the talks are free too. Most of the astronomy retailers were at the event demonstrating new equipment and with number items on offer for sale. There were a number of astronomical talks throughout the day on a range of topics relevant to the amateur astronomer, including talks by Gary Palmer (solar astronomy), Damian Peach (planetary astronomy) and others. A really good day out.

Cheltenham – [BAA Deep Sky Meeting](#). 23<sup>rd</sup> March 2019. The BAA's Deep Sky Section meets every two years and this year met in Shurdington near Cheltenham. The day was packed with talks on projects amateur astronomers have undertaken and on techniques and methods employed. The closing lecture is usually by a professional astronomer and this year it was a talk on Edwin Hubble to the Hubble Space Telescope. A lovely summer spring day with a host of fascinating talks.

Cambridge – [Society for Popular Astronomy](#). 30<sup>th</sup> March 2019. This event occurs every two years and is an opportunity to attend a number of excellent talks and meet the various section directors of the SPA. A number of vendors also attend. A really good day out.

Winchester – [BAA Winchester Weekend](#). 5-7<sup>th</sup> April 2019. This residential event is held in Winchester every year and is a highlight in the BAA's annual calendar. The event consists mostly of talks but there is also a huge social side where attendees and speakers can chat over dinner or in the bar. The BAA Mars Section held a meeting too during the event and it was great to hear how the amateur astronomer has been making contributions to planetary science; many great speakers including Paul Abel and Damian Peach.

Oxford – [Society for the History of Astronomy](#). 12-13<sup>th</sup> April 2019. The Spring Meeting of the SHA was a two day event in Oxford. The first day consisted of a tour on foot of various venues of interest in the history of astronomy in Oxford, including a behind the scenes look inside the Museum for the History of Science and its Library, as well at the Radcliffe Observatory at Green Templeton College. The second day was hosted at St Anne's College, jointly with the Paris Observatory and the Astronomical Society of France and consisted of a number of talks. Another lovely couple of days in great surroundings.



Radcliffe Observatory at Green Templeton College, Oxford



Barrie in a tie on the guided tour of Oxford – he'll hate me for this!



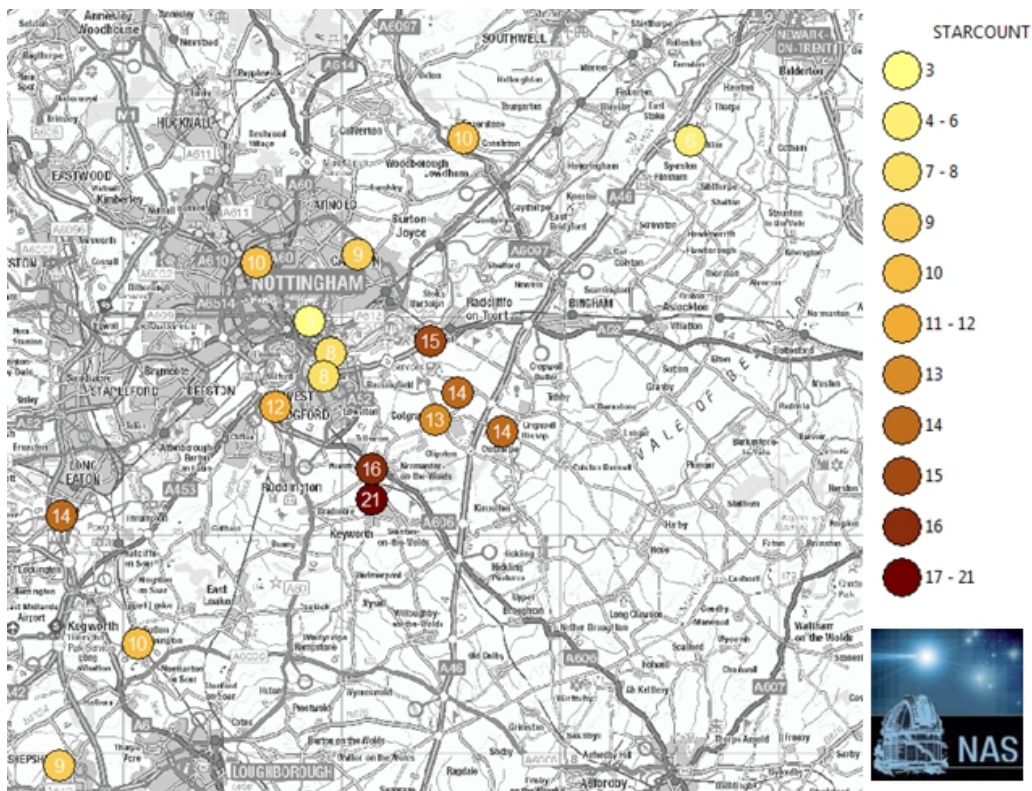
## Star Count 2019 - Nottingham Results

During February we asked our members to take part in the 2019 Star Count jointly run by the Campaign to Protect Rural England and the British Astronomical Association.



Nottingham Astronomical Society members were tasked to count the number of stars they could see with the naked eye in the Orion Constellation, contained within a rectangle of the four outer stars Betelgeuse, Bellatrix, Saiph and Rigel. The count took place between 2nd and 23rd February.

In total we received 17 observations, mainly south of the city. One observation from close to the city centre recorded only 3 stars. An observation from Keyworth recorded the greatest number of stars observed, with a total of 21 stars counted. The map below shows the distribution of the observations and the recorded count.



All observations were submitted to the official CPRE website. We aim to repeat the count next year and hopefully increase the number of observations. Many thanks to all who took time to take part.

The National results for Star Count 2019 can be found on the CPRE website at <http://cpre.org.uk/starcountmap>

**Richard Severn**

# THE OWL NEBULA, M97

by Marcus Stone

This can be a challenge to see visually through even a moderately sized telescope, especially from heavily light polluted suburbia.

About 6 weeks ago I gave it a try, the night was of course moonless, but not especially good seeing-wise. Usually trying to track down faintish objects like this I will star hop or else use rudimentary setting circles which work quite well. I find it satisfying to track down deep sky objects in this way, and although sometimes it is laborious, it is also rewarding to finally spot them. I do not have a Go To system on the mount, so I am dependent on these methods.

This particular night I didn't hold out much hope of being able to spot it, even in my 300 mm telescope, as the sky was a little hazy. Having recently purchased an Astronomik U.H.C. filter I screwed this on to my Chinese-made UW 30 mm Moonfish lens eyepiece and was rewarded with a clear view of the nebula, in fact it seemed to leap out of the background, even allowing me to observe the owl-like appearance. Having centred the Nebula, the next natural step for me was to capture it with my DSLR 60 Da camera. I imaged the wide view first of all with my Meade 80 mm F6, which also shows galaxy M108 in the same field. I then placed the camera at prime focus on the main scope and captured the nebula in more detail, totalling 30 minutes of data. Using the Orion deep sky filter I captured 7 x 3 min light exposures and finally 10 minutes with an H-alpha Astronomik filter, which captured extra detail and also picked up the 16<sup>th</sup> magnitude central star.

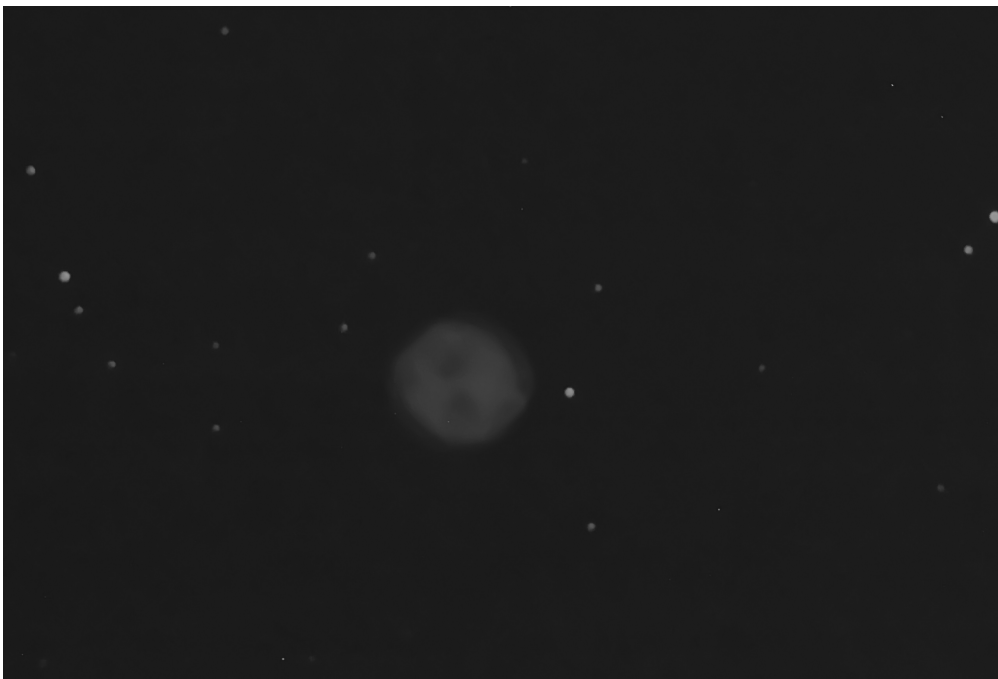
Spring is the best time to observe M97, it's a great little nebula to track down, and a good opportunity to observe it while it is so well placed.



Wide-field view, showing the Owl Nebula just right of centre, and the galaxy M108 near the right-hand edge.



The Owl Nebula, imaged at the prime focus of a 300mm reflector



The Owl Nebula, imaged at the prime focus of a 300mm reflector,  
through a hydrogen-alpha filter

*M97 is a planetary nebula in the constellation of Ursa Major, close to the star Merak, the more southerly of the “Pointers” in the Plough*

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



# Nottingham Astronomical Society

Affiliated to the **British Astronomical Association**  
Member of the **Federation of Astronomical Societies**  
Supporters of the **Commission for Dark Skies**

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e-mail: [observatory@nottinghamastro.org.uk](mailto:observatory@nottinghamastro.org.uk)

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

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## **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 2019**

Full £30

Joint rate for partners living at the same address £45

Under-18s and full-time students £5

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

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 [secretary@nottinghamastro.org.uk](mailto: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.

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## **The Nottingham Astronomical Society**

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