
Journal

of the

Nottingham Astronomical Society

March 2022



In this issue

- A Message from the Chairman
- Sky Notes for March
- Diary Dates for 2022
- Something interesting (!)
- Social and Practical Astronomy: meeting report
- Free online courses
- E-Services
- Unistellar Citizen Science Asteroid Occultations
 - Astrophotography with Automated Telescopes
- Advertisements
- Society Information

Thursday, March 10th
Nottingham Emmanuel School
Gresham Park Road,
West Bridgford,
Nottingham, NG2 7YF

8pm (doors open at 7:30pm)

This evening we welcome

Dr Don Pollacco

of the University of Warwick

who will be speaking on

Exoplanets

Chairman's Message – March 2022

Dear all,

Welcome to March! I hope everyone survived the storms with roofs intact! We had a quick trip to the observatory to check it was still there, and that nothing had blown away. The field is very wet at the moment, but the new roadway seems to be working out as we all got in and out again!

We hope to be back in person for the talk in March at the school, although this is scheduled to be on the SECOND Thursday of the month for this one, as access to the school reopens then. We hope nothing will come up to stop access this time! It should be an interesting talk from one of the top exoplanet researchers telling us what is new in the field. Anyway - we will keep you up to date on any changes as they happen.

Julian,
NAS chair

Sky Notes

March 2022

Compiled by Roy Gretton

All times given below are in Universal Time



The Northward Equinox (Spring Equinox in the Northern Hemisphere) occurs on the afternoon of March 20th.

British Summer Time begins on the morning of March 27th.

PHASES OF THE MOON

<i>Phase</i>	<i>Date</i>
New Moon	March 2 nd
First Quarter	March 10 th
Full Moon	March 18 th
Last Quarter	March 25 th

This month the Moon is closest to Earth on the 23rd, and furthest on the 10th.

THE PLANETS

Again we have a dearth of planets to report, as this month there are no truly naked-eye planets visible in the evening sky, and those that are visible in the morning aren't seen in a dark sky, as twilight begins before they rise. The only planet to be anything like easily visible will be Venus.

For most practical purposes, **Mercury** should be regarded as unobservable this month. After ending February as a morning object it moves toward the Sun, heading toward superior conjunction on April 2nd.

Venus reaches greatest western elongation (47 degrees) on March 20th. Although a brilliant object (magnitude -4.4 before sunrise) most people won't even notice it because of its low elevation, being 15 degrees south of the celestial equator.

Mars continues the slow journey that will bring it to its next opposition in December of this year. In mid-March it will be a magnitude 1.2 object 20 degrees south of the celestial equator, rising in a twilight sky about an hour before sunrise.

Jupiter is unobservable this month as it passes through conjunction with the Sun on March 5th.

Saturn has now emerged into the morning sky, but remains too close to the Sun for useful observation.

Uranus, in the constellation of Aries, is still observable in the evening sky. In mid-March it will be setting about 10pm.

Neptune is unobservable this month.

METEORS: There are no notable meteor showers in March.

DIARY DATES 2022

Monthly Meetings of the Nottingham Astronomical Society

1. Meetings at
Nottingham Emmanuel School
Gresham Park Road,
West Bridgford,
Nottingham, NG2 7YF

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 Quiz Nights, etc, when NAS members provide the activities.
Normally we have a **Helpdesk** open at each meeting.*

Date	Topic	Speaker
March 10 th *	Exoplanets	Dr Don Pollacco University of Warwick
April 7 th	Our Island Universe: the Milky Way, its place in time and space	Prof Ian Morrison Emeritus Gresham Professor of Astronomy
May 5 th	Supernovae	Dr Matt Nicholl University of Birmingham
June 9 th **	Imaging from light polluted sites	Peter Jenkins FRAS
July 7 th	Mars	Richard McKim Director of the BAA Mars Section

* Note: the **SECOND Thursday** of the month

** June 2nd is a national holiday

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 or discussion

The next meeting will be on March 17th

Something interesting...

Something caught my eye the other day which was the discovery of a potential planetary nebula by an amateur astronomer. Looking deeper into this, Laurent Huet the French amateur has discovered several deep sky objects, and provisionally has a catalogue of objects named after him.

Huet 5, or Hu 5, was first identified by Laurent a couple of years ago, but the image below seems to be the most detailed of it in the public domain. The nebula is in the constellation of Canis Minor, and this image is a composite image of over 13 hours of exposure time, which shows how faint the object is. Peter Goodhew who took the image below comments that there was no trace of hydrogen alpha in the target despite 7 hours of exposure. And if you are thinking of having a go yourself at imaging Hu 5, you may need to set aside a number of clear nights as Peter imaged this with a 150mm superED triplet refractor from Fregenal de la Sierra in Spain.



A possible planetary nebula in Canis Minor found by French amateur astronomer Laurent Huet, and imaged here by [Peter Goodhew](#), reproduced with permission.

James Dawson

Social and Practical Astronomy, Plumtree, February 2022

Our February Plumtree meeting was back face to face and hopefully, they can now stay face to face.

Julian prepared and delivered a talk on how science can help amateur astronomers. We looked at a number of phenomena the amateur astronomer observes and Julian explained some of the physics behind these, including aurora, double stars, and planetary orbits and Kepler's Law. We also learned how to make an oil spot photometer; here is a link to that video: <https://www.exploratorium.edu/snacks/oil-spot-photometer>

There were numerous questions and comments from the audience which kept Julian on his toes.



Julian also shared some links to free online courses on astronomy topics, many from the Open University. Julian is going to share these in the Journal (see below).

Chris made a lovely cake which didn't last very long. Yum yum. We had a few new people turn up to the meeting which was great and we hope they enjoyed themselves and were made to feel welcome and hope to see them again.

The theme for the March Plumtree meeting is yet to be decided, but we will email out the details before the event. If there are topics you would like discussing at Plumtree please let me know, or if you have an idea of a talk or demonstration or another form of meeting you could deliver or help deliver also please do let me know.

James Dawson

helpdesk@nottinghamastro.org.uk

Free online courses on astronomical topics

At the last Plumtree meeting I gave a talk about how amateur astronomers could use science to work things out and measure various things, such as solar radiation, orbits and so on. I ended the talk by giving some resources about learning astronomy. There are a number of free online courses that I mentioned in the talk, so here are some links to those, with a bit of discussion.

There are a number of places you can find online courses, some free and some you have to pay for. The ones I'm showing here are all free and come from the Open University. The open university allows you to do an online degree (with no prerequisites) although that does cost money - but grants and other options may be applicable. Anyway, these courses I'm going to describe come from some of their taster courses, or courses that have been retired. In general they are very good.

You can find the full catalogue here: <https://www.open.edu/openlearn/free-courses/full-catalogue> - this covers everything from history, art to science and money. I've picked out some of those I've either done or been an assistant on.

The one I would definitely recommend is "In the night sky: Orion".

<https://www.open.edu/openlearn/science-maths-technology/the-night-sky-orion/content-section-overview?active-tab=description-tab>

This is an entry level course, requires nothing more than a pair of binoculars and requires about 24 hours to complete spread over about 4 weeks. You read some text, watch some videos, do some small amount of observing, and complete little tests to check you have understood things. This is common to all the courses.

Free course

In the night sky: Orion



Free statement
of participation
on completion



Another one I have helped out with in the past is "Moons of our Solar System" which looks at the various moons around the planets. It has astronomy and some geology in it. It also takes about 24 hours spread over 8 weeks and is again at the introductory level.

<https://www.open.edu/openlearn/science-maths-technology/moons-our-solar-system/content-section-overview?active-tab=description-tab>

If you want to do some more in depth astronomy, there is another introductory course which makes use of a robotic telescope. "Astronomy with an online telescope"

<https://www.open.edu/openlearn/science-maths-technology/astronomy/astronomy-online-telescope/content-section-overview?active-tab=description-tab>

There are also introductory courses on exoplanets, the Sun, the mMoon and galaxies stars and planets. If the introductory courses are too easy for you, then there are some more advanced courses that you can also try your hand at. As they are free, you can drop out if they are not for you.

I'm sure there will be something there to interest you on the cold cloud covered nights. If you would be interested in studying as a group, let me know and we could arrange a time scale over when a group of us could go through one of these courses together.

Julian

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 link to the NAS Journal, and a copy of our SkyNotes, 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

Unistellar Citizen Science Asteroid Occultations - spotting the shadow of an asteroid on Earth with my eVscope

Millions of asteroids exist in our Solar System. Mostly unknown or poorly known, these rocky objects hold key information about the birth of planets and even about how life appeared on Earth.

From time to time, one of these asteroids will pass in front of a distant star, slightly dimming its light. This event, called an occultation, can be recorded by the Unistellar network.

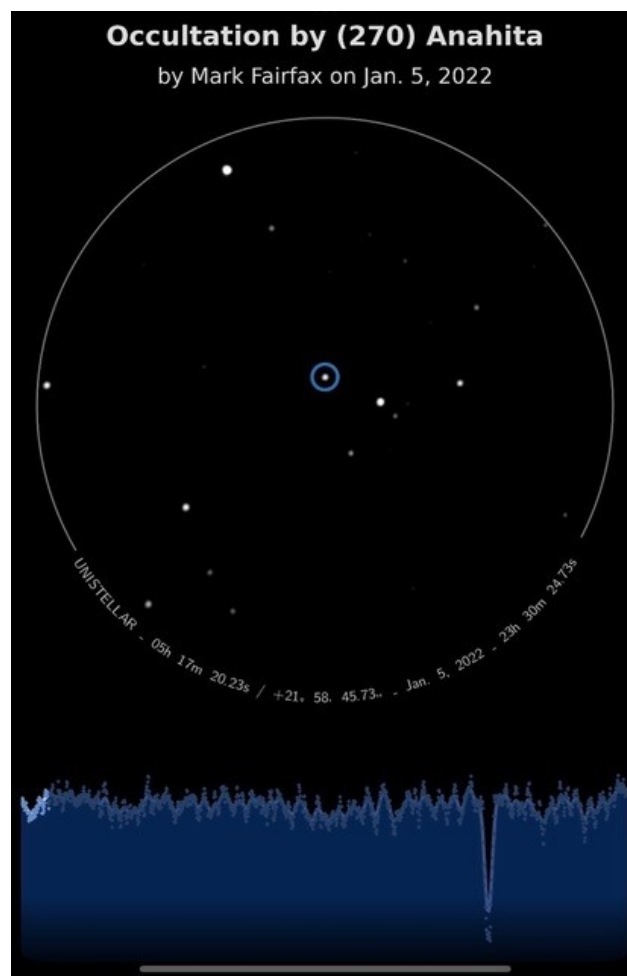
Unistellar works with IOTA and EURASTER, groups of experienced shadow hunters, to include the results into their own database which will be used by professional astronomers to better understand the shape, size and environment of asteroids.

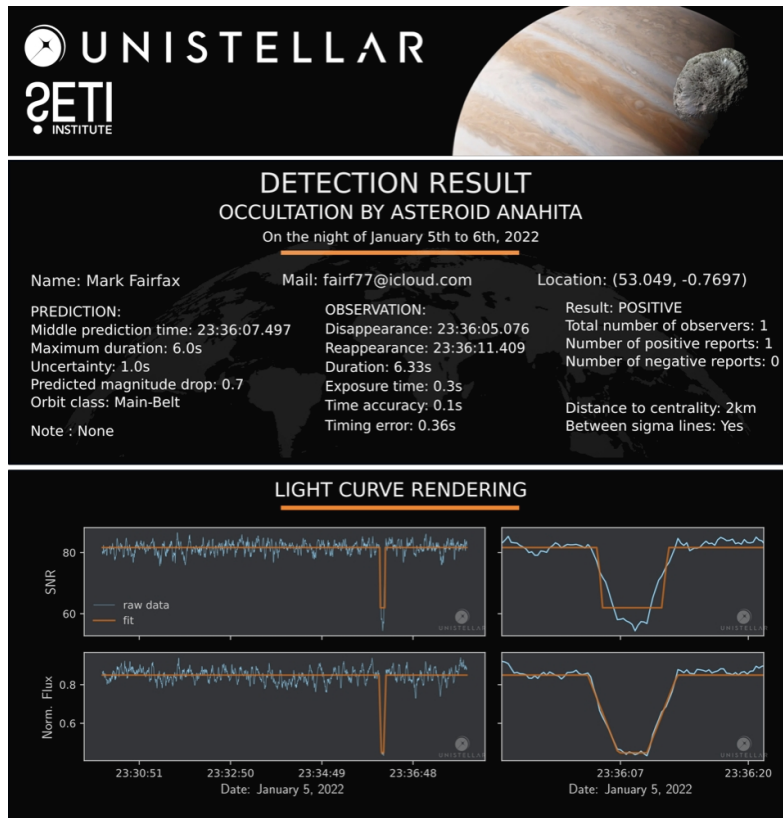
I'm over the Moon and very proud as I have not only the FIRST but also the SECOND **positive** asteroid occultations in the UK for Unistellar scope users! And the results/data will be officially recorded under my name.

(You have to be in the right location, timing & positioning must be perfect, it has to be within the viewable sky window for my back garden and of course the British weather has to be kind).

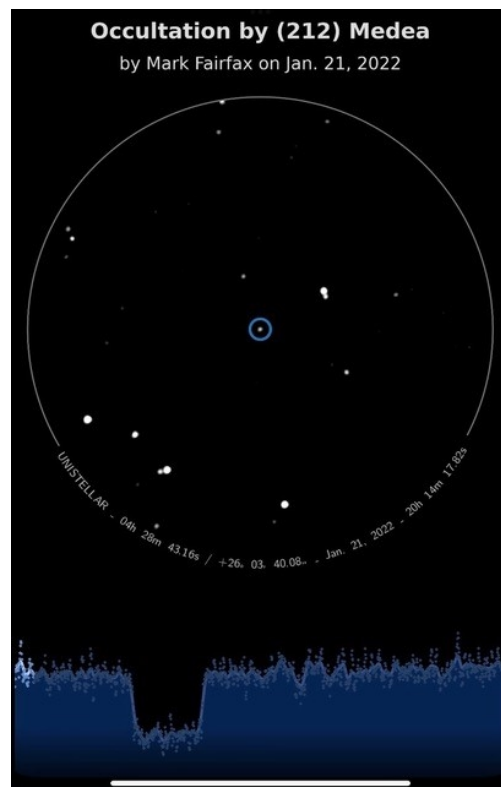
FIRST - Wednesday 5th January 2022 @ 23:30 UTC & local time (duration 8m00s).

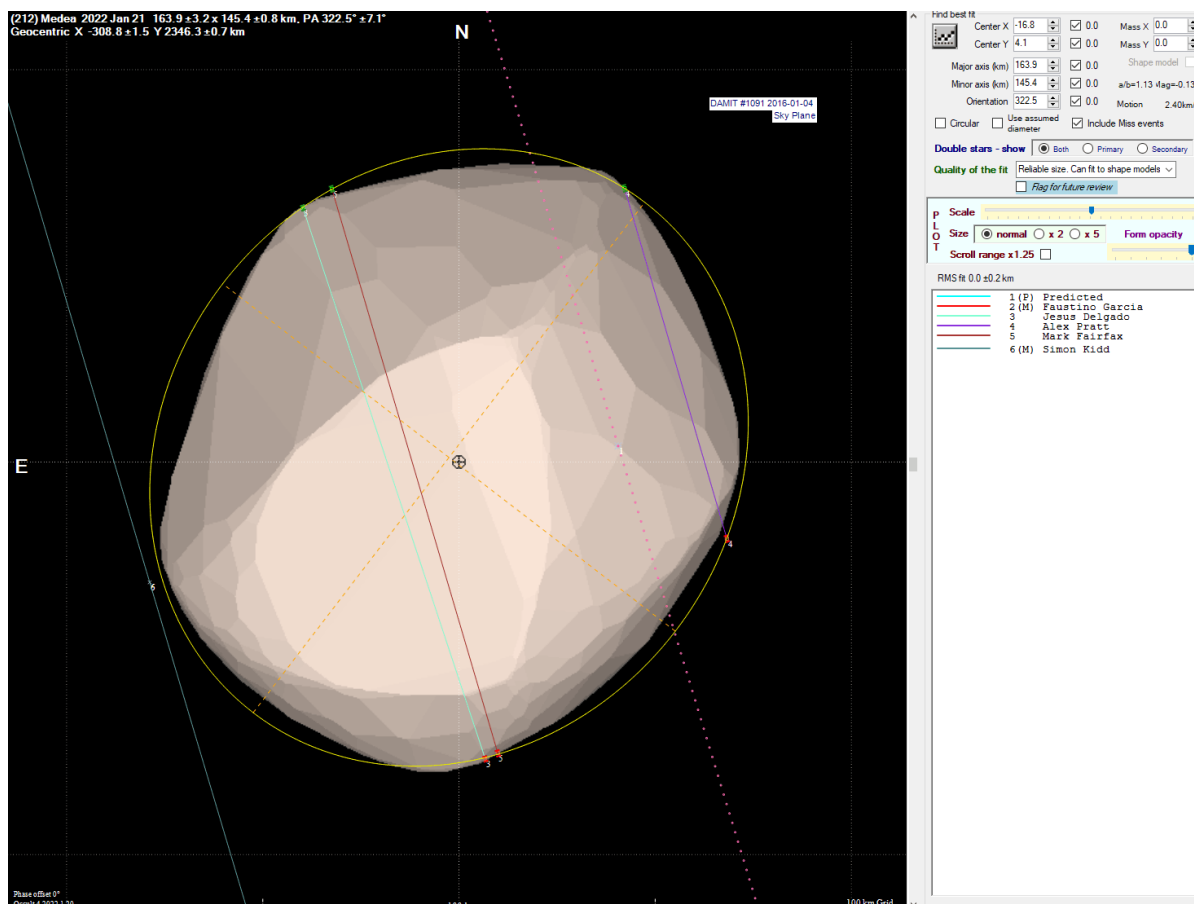
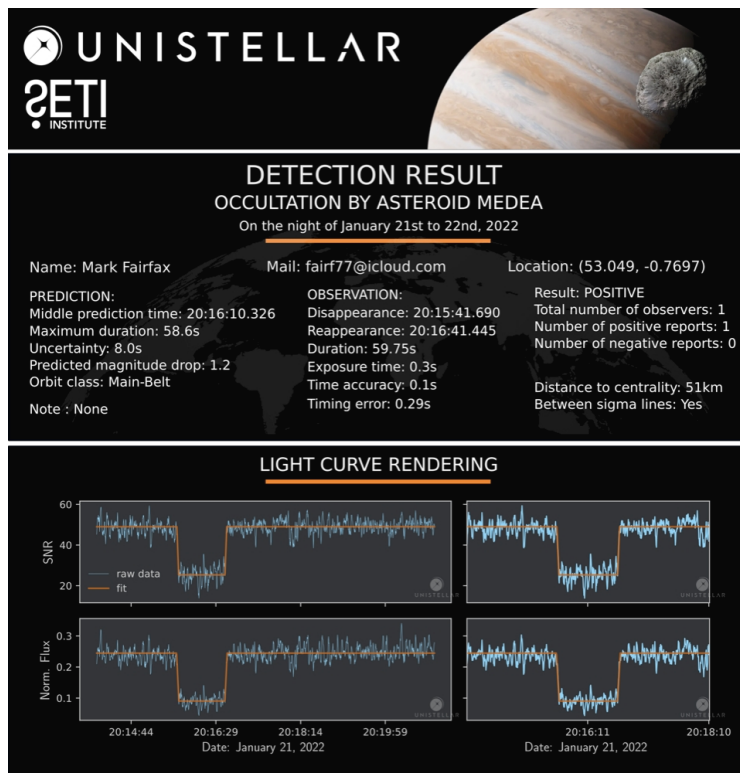
270 Anahita is an 11th magnitude asteroid in the constellation Taurus. It is a small, main-belt asteroid, 49.4 km diameter and occulted star TYC 1295-01742-1 (12.0 magnitude).





SECOND - Friday 21st January 2022 @ 20:14 UTC & local time (duration 15m00s).
(212) Medea is a 13th magnitude asteroid in the constellation Taurus. It is a main-belt asteroid, a large object 136-145 km in diameter and occulted (long-duration) star UCAC4 581-011811 (12.4 magnitude).





ASTROPHOTOGRAPHY WITH AUTOMATED TELESCOPES

Stellina and Vespera

The two automated telescopes, Stellina, an 80mm ED doublet, f5 refractor and Vespera, a 50mm Apochromatic quadruplet, f4 refractor are both made by Vaonis, a French firm set up by ex-professional astronomers. Both are operated by an app, Singularity, available on Apple and Android platforms.

They are not cheap! Stellina costs €3999, but this includes postage, by UPS, and import duties. Vespera costs €1499, though I am not sure about import costs etc. on this, as I got mine through the Kickstarter scheme. Stellina weighs in at 11.2kg without a battery (a rechargeable one comes with it and fits inside a side compartment where two USB thumb drives can also be added). It can be carried in an optional rucksack, but at 48.5x38.5x12.6cm, it is bulky for long distance carrying! Vespera weighs in at 5kg, including a fixed internal rechargeable battery, and at 40x20x9cm is easily portable – I keep it in a Peak Design 15L Everyday Backpack Zip bag, which can also hold its tripod and charger. Stellina comes with a Gitzo low level tripod, but I avoided paying for that and use my own Gitzo Series 4 carbon fibre tripod, which I usually use with two sections extended for height.

STELLINA, VESPERA by my Observatory



You will probably have noticed by now that both are on alt-az mounts! However, they also have GPS receivers internally to get your latitude and longitude, local time etc. Stellina has a hardware field de-rotator and Vespera has a software enabled de-rotator, so that with 10s, or 20s for sub images there is little movement and no star images rotate into open circles – they are perfect small circular images, but without diffraction spikes!

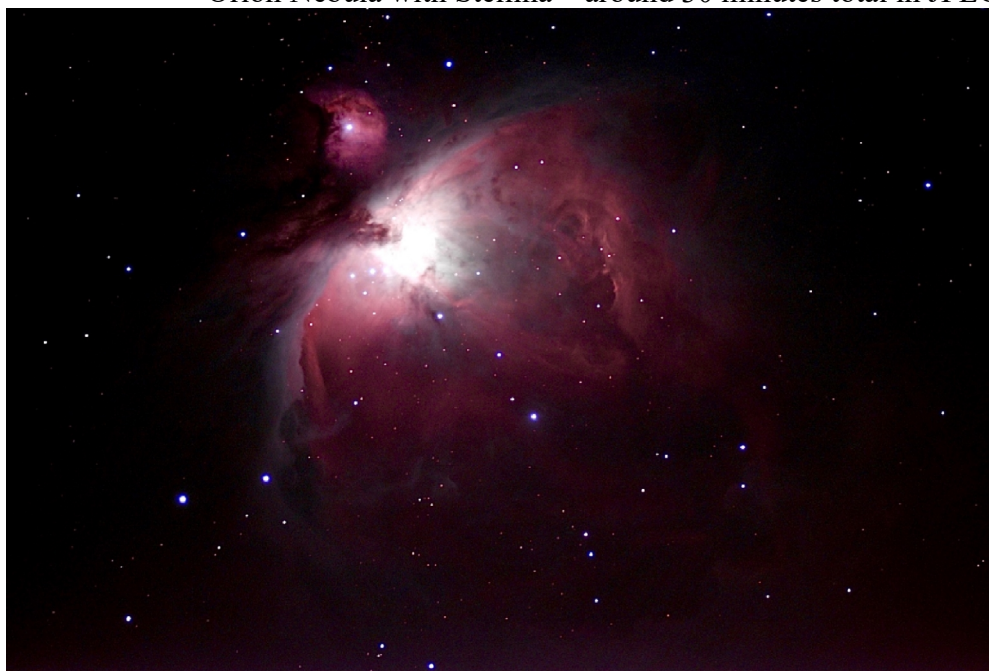
Stellina has a levelling spirit level bubble built into its tripod mount, but Vespera has a magnetic one, which fits into its charging point (same type used in Apple Mac portable computers). They both require levelling for accurate observations.

The Singularity app allows you to open your tablet's wifi settings to link by bluetooth to the telescopes once the side button has been pressed. This displays a bright blue circle which goes on and off until linked, when it stays on. You can then initialize the telescope and it opens-up, aims for a star pattern, which it can recognize and then it goes to autofocus, which takes a short while. All completed, you can now select an object to image from a comprehensive library of solar system, galaxies, nebulae, star clusters etc. Once selected, the telescope spins around on both axes until the body is recognised and properly in the field of view. Then it starts building up the image. Various interesting facts display as you wait, then a series of bright "stars" move from the periphery of your screen to a central blue ring, which when complete, changes to your image as it builds up 10s subs at a time. This time is adjustable, but more than 20s subs are not advised. A gauge on the bottom right of the screen indicates the total number of subs and these can be saved to your tablet photos, or as TIFFS, or FITS. On Stellina, these are saved to the external thumb drives, Vespera uses its internal memory only.

I have used the editing available on my ipad to adjust focus and saturation, exposure etc. I have not yet stacked the Tiffs, or Fits separately.

Notice the wider field of view with Vespera and the HD, 1920x1080 format from its Sony 2.1 megapixel, 1/2.8" colour CMOS sensor. Stellina uses a 3096x2080 pixel format from its 6.4 megapixel, 1/1.8" colour CMOS sensor. Stellina has an integrated anti-pollution filter, whereas Vespera has optional filters available.

Orion Nebula with Stellina – around 30 minutes total in JPEG.



Orion Nebula with Vespera – around 30 minutes in JPEG.



My intention is to take both up to Patterdale in the Lake District, where I know there are dark skies and little light pollution. I can then take Vespera higher – up to Angle Tarn, or similar – for better all-round views.

A nice comparison is shown by the Moon, taken a week apart, but in similar conditions.
With Stellina and adjusted in iPad photos Editing Controls.



With Vespera and again adjusted with iPad Editing Controls.



The Crab Nebula, one hour exposure with Stellina



With Vespera, showing the different colour palette.



Richard Field

ADVERTISEMENTS

A seller called Scotty has two items for sale, located at Leicester, near Junction 21 of the M1. He is open to offers for each of the items. Contact: bigman00008@hotmail.com

1. An Observatory





2. A Skywatcher EQ3-2 mount





FOR SALE

Now that I have sold my telescope and gone over to electronically assisted observing, I still have some bits and pieces for sale. [The following are currently available:](#)

Tele Vue solar finder
set of four coloured 1.25-inch filters
1.25-inch oxygen-III filter
1.25-inch 13% Moon filter
2-inch 13% Moon filter
2-inch broad-band light pollution filter
2-inch narrow-band light pollution filter
Geoptik variable artificial star for collimation

By the time you read this, some items may have been sold via my adverts on astrobuysell.com.

Please contact Sam Boote
sam@boote.myzen.co.uk or at Society meetings

Telescope for Sale

I'm trying to find a home for a Sky-Watcher Mak 90EQ/TA telescope that a friend is passing along due to it not being used. It's mounted on a short tabletop mount, and all the parts are present.

Open to sensible offers. Contact me for more information.



Thank you,

Michelle Barnett

michellesbarnett@hotmail.com

Nottingham Astronomical Society

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

CHAIRMAN:

Julian Onions

email: chairman@nottinghamastro.org.uk

VICE CHAIRMAN:

Richard Severn

email: vicechairman@nottinghamastro.org.uk

SECRETARY:

Chris Sneddon

email: secretary@nottinghamastro.org.uk

TREASURER:

Mike Provost

email: treasurer@nottinghamastro.org.uk

JOURNAL EDITOR:

Roy Gretton

email: journal@nottinghamastro.org.uk

MEMBERSHIP SECRETARY

Richard Severn

email: membership@nottinghamastro.org.uk

WEBMASTER:

Leigh Blake

email: leigh@nottinghamastro.org.uk

OBSERVATORY DIRECTOR:

James Dawson

email: observatory@nottinghamastro.org.uk

ORDINARY COMMITTEE MEMBER:

Andrew Green

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:

**Nottingham Emmanuel School
Gresham Park Road,
West Bridgford,
Nottingham, NG2 7YF**

Doors open 7:30pm

Meetings start 8:00pm

Meetings end 9:30 pm

These meetings are open to the public, and visitors are welcome to attend, subject to a charge of £3 per meeting for adults.

Annual subscriptions 2022

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.

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.