

Federation of Astronomical Societies



Editor: Michael Bryce

Newsletter

No 132: June 2023

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Note: The FAS Council Reserves the Right to publish articles, events and reports submitted to the FAS Newsletter

Supernova in Pinwheel Galaxy M101

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© Pamela Whitfield

*Image Courtesy Pamela Whitfield, West Yorkshire
See page 10*

President

Dr Paul A Daniels
Hon. Member of Guildford AS
Rose Hill
High Green, Bradenham
Thetford, Norfolk
IP25 7RD
president@fedastro.org.uk
07802 324 697

Treasurer

Pat McEvoy
Hampshire Astronomical Group
17 Severn Close
Paulsgrove
Portsmouth
PO6 4BB
treasurer@fedastro.org.uk

Secretary

Richard Stebbing
Guildford AS
secretary@fedastro.org.uk
01372 750 644

Editor

Michael Bryce
Carolian AS & Bromsgrove AS
49 Cortland Way
Stourport-on-Severn
Worcestershire
DY13 8NZ
newsletter@fedastro.org.uk
07821 896 304

Robert Edward (Bob) Mizon MBE FRAS, 1946 – 2023

It is with heavy hearts that we report the very sad news that Bob Mizon, whom many will know from his outstanding efforts to protect the night from the scourge of light pollution, died suddenly at home on 19 April.

For the last few decades, Bob has been the National Co-ordinator of the British Astronomical Association's Commission for Dark Skies (CfDS), which he helped to establish, but his astronomical interests ranged far wider than light pollution, as the many astronomical societies to whom he has given talks will attest.

Bob was born in Dagenham in London and was educated at East Ham Grammar School (London) and Adams Grammar School (Newport, Shropshire). He became passionate about education and, after graduating from King's College, London, where he read French and German, he had a 26-year career as a French teacher. He satisfied his love of astronomy by running the school's astronomy club, translating astronomy books from French, and becoming an active member of the Wessex Astronomical Society. A major change came when, in 1996, he bought a mobile planetarium, which he named the Mizar Travelling Planetarium (Bob loved puns!), with which he took the wonders of dark night skies to nearly 150,000 children and adults all over Britain.



The International Dark-Sky Association awarded Bob its prestigious Galileo Award in 2006 and the David L. Crawford Lifetime Achievement Award in 2016. His work was formally recognised in the UK when he was awarded an MBE with the citation "For voluntary services to Astronomy and the Environment" in the 2010 Birthday Honours.

More recently, Bob was one of the instigators of the All-Party Parliamentary Group for Dark Skies, and was one of the people behind the establishment of

the UK Dark Skies Partnership. He was instrumental in helping Cranborne Chase AONB achieve its status as an International Dark Sky Reserve.

Early in 2023, ill health had caused Bob to cease his planetarium shows, but he continued to advocate for responsible outdoor lighting and represented the CfDS at the BAA's "Winchester Weekend" only the weekend before his death.

His friends knew Bob as a kind, gentle man, who was dedicated to his family. Decades before the term "rewilding" entered common parlance, Bob had applied it to his garden, where he would enjoy the birds and insects that took advantage of this sanctuary that he had allowed to remain for them.

He leaves his wife, Pam, their three children, and a granddaughter ... and the many of us who were privileged to have had our lives touched by his. The stars have lost one of their greatest friends on planet Earth.

**Text: Steve Tonkin
Image Courtesy Pam Mizon**

If you wish to honour Bob's memory, please consider making a donation to one of his favourite charities, <https://www.justgiving.com/fundraising/bobmizonsmile>.

Bob Mizon Message from Somerset Levels Stargazers

The recent passing of Bob Mizon the UK co-Ordinator for the BAA Commission for dark skies was very sad and a great loss to the world of Astronomy, the work he did in in striving to protect our night skies new no bounds. Bob a long-time friend and supporter of our club the Somerset Levels Stargazers often gave talks at our meetings and once invited the village school to his mobile Planetarium and in April 2022 in conjunction with the help of Bob we held a 10th Anniversary event on based on dark skies and light pollution. Our April 2023 meeting was once again to have featured Bob and although we had the option of cancelling, we decided to hold the meeting as a tribute to Him and the subject so close to his heart, we will miss Him.

**Paul Adamson
Chairman
Somerset Levels Stargazers**



Fordingbridge Astronomers

June Meeting: In Memory of Bob Mizon

Our June meeting on Wednesday 21 June, starting at 7.30pm will be held in memory of our dear friend Bob Mizon who sadly passed away in April 2023. It will include a number of short astronomical talks, presentations and memories, given by members, on topics that would have been of interest to Bob.

After this, there will be a short 10-15 minute break to charge glasses and to catch up with everyone. After the break we will have our Chairman's Pick of the Month, followed by the Fordingbridge Astronomers' What to look out for in the sky this month.

We will be holding the meeting in our usual venue at The Elm Tree, Hightown, near Ringwood. The postcode for the Elm Tree is BH24 3DY. We'll be meeting in The Barn at the rear of the pub and, if you've not been before, just ask the bar staff where the meeting is. There is plenty of parking for those who want to come along. Meetings are free to members and £2 each for guests. The Zoom link is included below for those of you who are unable to join us in The Elm Tree.

Fordingbridge Astronomers June Meeting Zoom details

Time: Jun 21, 2023 19:00 London

<https://us06web.zoom.us/j/82760734672?pwd=TnRjY2ZUbXRnc1ZlZnRncHkNGQ2QT09>

Meeting ID: 827 6073 4672

Passcode: 024179

Please note: If you are joining us as a Guest on Zoom, there is a £2 voluntary donation which can be made by BACS (Lloyds Bank - Sort Code: 30-93-94, Account: 34541260) or by PayPal. Our account name for both services is Fordingbridge Astronomers. Please use the reference 'June Meeting'. Please take a moment to add your Astronomical Society to your screen name so we know where you are from. Thank you.

**Clear Skies and Best Regards
Martin Davies. Membership Secretary
Fordingbridge Astronomers**

President's Spot: Dr Paul A. Daniels FRAS

You may recall that the President's Spot in the February issue (#130) of the Newsletter was prompted by a newsfeed to my smartphone. Similarly, this issue's PS has arisen due to a query from a non-astronomer good friend of mine (Hi Arnab!) based on an article he'd seen¹ about Dyson Spheres. I'd seen some fanciful things written about Dyson Spheres and had regarded them as just imaginative Science Fiction raising false hope that they might (eventually) be feasible... and I still do!

So, what are Dyson Spheres?

Imagine you could construct a habitable shell, partially or completely enclosing a star to capture much or all of its output energy [FX: the squeaky sound of FAS eyebrows being raised in incredulity]. Compared with the limitations of mere planetary surfaces, it would provide a vast surface area for a civilisation to live on and expand and would solve the problem of providing energy to sustain that civilisation's ambitions.

The idea originated from a science fiction novel² in 1937 and was developed more fully in 1960 by [Freeman Dyson](#), a British-American mathematician, theoretical physicist and astrophysicist, whilst at the Institute for Advanced Study in Princeton, New Jersey, USA. Rather than specifically 'a sphere', Dyson actually considered an "artificial biosphere" as a shell around the star.

Dyson's suggestion was that a very advanced civilisation might be able to 'dismantle' planetary bodies in orbit around a star and construct panels that could be assembled around that star. He didn't suggest that a full sphere be formed (that came from the musings of others) but that a large number of panels could be used to capture light and provide a surface that could be built on. The inside surfaces of the shell would absorb light from the central star and would re-radiate it as infrared radiation from the outside of the shell and Dyson suggested this might be a way to detect advanced civilisations. He thought³ that, if the shell were to be cool enough on the inside to sustain liquid water (*i.e.* far enough from its host star to be in the '[Goldilocks Zone](#)') then the outside of the shell would have a very strong spectral signature in the 10 μ m band and, if the star were not completely enclosed, this would overlay the star's own spectral signature.

At that time infrared astronomy was an emerging science and hampered by either the fact that molecular water vapour in our atmosphere absorbs some infrared bands or the simple fact that our atmosphere, at a temperature of about 300K, glows in the infrared at about 10 μ m⁴. These early restrictions remained until the IRAS⁵ satellite came along in 1983 and showed that the sky is full of infrared sources. Some young stars are still embedded in the dust and gas that formed them, the dust absorbs the light from the new stars and re-radiates the energy as infrared radiation. Also [carbon stars](#) release free carbon from their outer layers which absorbs light energy from the star and

also re-radiates it as infrared radiation. In short, because of the very large number of strong, naturally occurring, infrared sources, Dyson's suggested method for finding highly advanced civilisations would be of no use whatsoever!

There are clearly some practical considerations surrounding the construction of a Dyson Sphere (of whatever variant) even if it became possible to cannibalise planetary material to make the shell [I leave solving that small problem as an exercise for the reader]. Adding up the mass of the planets in our solar system we get a figure of about 2.7 $\times 10^{27}$ kg. As a completely wet-finger-in-the-air 'guesstimate', let's consider multiplying that by 10 to include the mass of all asteroids, comets, planetary satellites and other interplanetary material and then spreading that out over a full shell of 1AU radius (a surface area of about 2.8 $\times 10^{23}$ m²). This would result in a mass of about 94,300kg allocated to each square metre of the shell's surface. Let's also assume a sufficiently advanced civilisation were able to make suitably strong shell material with a density as low as 1,000kgm⁻³ (the density of water; the density of rock is about 4,000–6,000kgm⁻³). This would lead to a shell thickness of about 94m which is a miniscule fraction (6.3 $\times 10^{-8}$ %) of the radius of the shell – the shell would be more like a bubble around the star and 'flimsy' doesn't even begin to describe it⁶!

The physical problems don't end there⁷: what's to stop the material of the shell just falling into the Sun? The shell could rotate so that the outward centrifugal force at the shell's equator could counteract some of the Sun's gravity but that wouldn't stop the shell's polar regions collapsing inwards unless the shell material could be made rigid enough and that's rather improbable considering the shell's very thin bubble-like nature.

If the shell were not rotated, its inhabitants would have no gravity to keep their feet on the shell-floor and there would be neither atmosphere nor oceans. Rotating the shell might simulate something like weak gravity acting 'downwards' at the equator but there would not only be a reduced effect as one moved away from the equator but the direction wouldn't be vertically downwards towards the shell-floor!

Supposing the shell material could be made strong enough: we'd have to consider 'a few' other problems. If the shell were struck by a large impact from outside (we've seen at least two interstellar objects in the last decade, [Oumuamua \(1/2017 U1\)](#) and [Comet Borisov \(2I/2019 Q4\)](#)) would the shell be pierced, how far would the ripples propagate around the shell and could they disrupt it? Instabilities could develop in the shell; would they dampen out naturally or would they grow until the shell ruptured and fell apart? How would the stability of the shell stand up to the tidal effects of a passing star?

Maybe the ambitions of a full Dyson Sphere could be limited to a simple equatorial band around the Sun in the manner

described in Larry Niven's excellent Ringworld⁸ novel (an iconic SF classic). Less material would be required (maybe *just* the asteroids and planetary satellites would be sufficient – perhaps Mercury too for good luck), any simulated gravity would always be outwards because only the 'equatorial' portion of the Dyson Sphere would be constructed and solving the problem of dynamically dampening any instabilities that may arise in the ring may be more do-able⁹.

We have to conclude that the problems of making and maintaining a Dyson Sphere are insurmountable even for an advanced civilisation. The total energy required to source and move the materials to make such a shell and maintain it in place would not see a viable energy return on energy invested. A Ringworld is also very unlikely but might just be possible for a civilisation advanced enough to break up whole planets!

While I was reading through some of the material for the Dyson Sphere I found a link to Space Elevators. Maybe I was conditioned by the Dyson Sphere stuff to be overly sceptical about Space Elevators but I'm being won around to the idea that they might not be as impossible as I'd first thought.

What are Space Elevators?

...I'll leave them until the next President's Spot! ☺

Stay safe and clear skies!

Paul

Further Reading:

1. [Would building a Dyson sphere be worth it? We ran the numbers](#), Paul Sutter, Ars Technica, 27-Mar-2023
2. [Star Maker](#), Olaf Stapledon, 1937
3. [Dyson Sphere](#), Freeman J. Dyson, Richard Carrigan, Scholarpedia, 2009
4. Infrared astronomy at 10µm is like looking for the heat of a candle flame inside a blast furnace! I also recall the anecdote of early infrared astronomers finding spikes in their data and realising they were the heat emitted from the bodies of moths flying through the open telescope tube!
5. [Introduction to IRAS](#), Infrared Science Archive
6. [Top 5 Giant Bubbles - Unbelievable!](#), Dr Zigs, YouTube, 2019
7. [Could We Ever Really Build a Dyson Sphere?](#), Adam Hadhazy, Popular Mechanics, 7-Mar-2023
8. [Ringworld](#), Larry Niven, 1970
9. [Could We Build a Ringworld?](#), Adam Hadhazy, Popular Mechanics, 4-Sep-2014



Advanced Notice
The FAS AGM is on
Sunday
8 October 2023
at 14:30 hrs

via Zoom

Send Your Name to Europa: NASA Invites Public to Sign Poem That Will Fly Aboard NASA's Europa Clipper Spacecraft

Members of the public are invited to add their names to an original poem dedicated to NASA's Europa Clipper mission before the spacecraft begins its journey to Jupiter's moon Europa in October 2024. The poem and the names will be like a message in a bottle, travelling billions of miles as the mission investigates whether the ocean thought to lie beneath Europa's icy crust could support life.

As part of the "Message in a Bottle" campaign, names received before 11:59 p.m. EST, 31 December 2023, will be stencilled onto a microchip, along with the poem, written by U.S. Poet Laureate Ada Limón and titled "In Praise of Mystery: A Poem for Europa."

To sign, read the poem, and hear Limón recite the poem in an animated video, go to:

<https://go.nasa.gov/MessageInABottle>

Readers' Images

Cath Adams
(Wolverhampton Astronomical Society)

Thanks to Cath Adams of Wolverhampton Astronomical Society for these excellent images. All taken with an iPhone!

Image Right: The Moon on 2 March 2023, taken using iPhone 13 and 8" Skywatcher Dobsonian

Image below: Star Trails, Tuesday 16 May 2023, 00:30 - 01:30, taken using iPhone 13 with the Night Cap Camera App

Image below Right: May's Full Moon taken using iPhone 13 and 8" Skywatcher Dobsonian





Mid Kent Astronomical Society

Forthcoming Meetings

9 June 2023 - 8 pm

Will Hughes - A Quest for Aliens

Have you ever found yourself staring up at the night sky and wondering "Does life really exist elsewhere beyond Earth?". Well, we have absolutely no idea at the moment! However, we could be tantalisingly close to addressing this question within the context of our own Solar System.

Will's talk will examine the current space missions which are attempting to collect the evidence we need to determine the presence of life on key candidates such as Mars, Europa and Titan. He will also explore the potential for discovering life beyond our own Solar System, including the mind-boggling statistical chances of the Earth being the only planet where life exists. Be prepared for a talk filled with some very weird scientific facts, numerous (cheesy) Sci-Fi references and even a few psychological conundrums!

30 June 2023 – 8 pm

Subject and Speaker TBC

14 July 2023 – 8 pm

Doug Edworthy - Internet resources for the amateur astronomer: a review

Doug's talk will cover some of the useful internet resources available to amateur astronomers that he has discovered during his twelve-year amateur astronomy journey from being an interested outsider to someone who knows his way around an equatorial mount.

28 July 2023 – 8 pm

Subject and Speaker TBC

**Meetings take place at Bredhurst Village Hall, Hurstwood Road, Bredhurst,
Gillingham, Kent ME7 3JZ**

Please visit our website for more details:

midkentastro.org.uk/events

Newark Book Festival

Newark Book Festival takes place on the weekend of 6 - 9 July

On Sunday 9 July there is a talk by Emma Chapman:

"Our Galaxy. Our Universe. Putting our Planet in Perspective"

Emma is fellow of the Royal Society & Royal Astronomical Society and is a leading researcher in the search of the first Stars to exist in the universe 13 billion years ago. Her book "Switching on the Stars at the Dawn of Time" offers a first-hand look at searching for the echoes of chaos of the Big bang that created the Universe. Click the following link for tickets:

<https://www.newarkbookfestival.org.uk/event/our-galaxy-our-universe-putting-our-planet-in-perspective-with-emma-chapman>

also on Sunday there is a "pop up Planetarium" at the Palace Theatre: StarLincs Planetarium that is available during most of the day £3 per person so would be a good introduction for children & beginners to Astronomy

<https://www.newarkbookfestival.org.uk/event/starlincs-planetarium/>

Thanks to David Flint for this information



Next Meeting:
Wednesday 14 June
at 8:00pm Live and on Zoom

“Reaching for the Sun”
by Helen Mason

The Sun, our star, is just moving towards the most active phase of its eleven year cycle. We’ve had several large solar flares recently. Many solar space observatories have been watching the Sun over the past few decades: SoHO (Solar and Heliospheric Observatory), Hinode and the Solar Dynamics Observatory. NASA’s Parker Solar Probe was launched in 2018 and ESA’s Solar Orbiter was launched in February 2020. These satellites have travelled closer to the Sun than ever before, to study the solar wind and the source regions on the Sun, producing some fascinating results. This talk will review what we have learnt about our dynamic Sun, in particular, what we know about sunspots, solar active regions, flares, the solar wind and how the Sun affects the Earth’s environment (space weather). SunSpaceArt, led by Helen Mason, is a team of scientists and artists who have worked with thousands of children and teachers across the UK ‘Today, I loved this lesson because the science and art inspired me’ (child).

For more details and to book please visit:
hertsastro.org.uk





Stratford-upon-Avon Astronomical Society

Astronomical Society News

The Stratford upon Avon Astronomical Society meet every 1st and 3rd Tuesdays at 8pm (doors open at 7.30pm) at Alderminster Village Hall. Everyone is welcome, especially beginners and those wanting to learn more. The first Tuesday is a Club Night, in June that will be on 6th June and the speaker on the third Tuesday, which is on 20th June is due to be Steve Tonkin, with a talk called 'Fuzzy Blobs – A guide for the perplexed', which is a talk about nebulae. Please note that the speakers usually start quite promptly at 8pm.

Club nights offer information on what to look out for each month and if it is clear we try observing nearby. There is no charge initially to come along and find out more, but if you do want to become a member the fee is JUST £15 A YEAR and free if you are in full time education. For details go to the website <http://www.astro.org.uk> or contact the Chairman John Waller john.waller@astro.org.uk or on 07703 192188.

Each month one of our members offer pointers to what to look for in the sky during the coming weeks.

Noctilucent Clouds

By June, astronomers are becoming desperate for things to observe, in the night sky. Clouds are normally the bane of observers, but at this time of year, (usually from late May to Mid-August) they are on the look out for Noctilucent Clouds. These clouds come from the Latin for night shining which describe them perfectly.

They appear in the north, about 45mins after sunset or before sunrise. They are electric blue and very shiny, (once seen, you'll recognise them) and come in various patterns (herring bone, wispy etc). They are visible to the naked eye and make great targets for astrophotography.

What are they? They are extremely high clouds, 80 km high (in the Mesosphere) made up of very small crystals (possibly from pollution and/or rockets launches). They shine because they are so high that they still reflect the sunlight when the sun has set at ground level.

Well worth the effort to look for.

Happy Observing.

Space Oddities Live!

We are Space Oddities, a YouTube channel bringing you live astronomy and space exploration news, discussion, special guests, competitions, quizzes and more every Monday evening in a livestream at 8pm UK time on YouTube and Facebook. Each week an international panel of amateur and professional astronomers, who used to work together at the sadly now-defunct internet radio station Astro Radio, get together to chat about anything relating to the Universe and to keep our audience up to date with anything in the news, as well as present interesting presentations on a huge variety of astronomical subjects. We have a lot of fun!

We would like to become more involved helping astronomical societies and clubs in the UK and elsewhere to promote themselves and their activities. At a time when it is becoming more and more difficult to prise people away from their homes and their electronic devices in order to attend meetings, we would like to do our bit to help! If you are a member or official of an astronomical society or club and would like us to advertise your group and its events on our weekly livestream, please send an e-mail to spaceodditieslive@gmail.com with the details. We are also more than happy to show any promotional videos you might have. Promoting your society with Space Oddities is completely free – the only thing we ask in return is that you tell your members about us!

Space Oddities Live YouTube channel can be found at:

www.youtube.com/@spaceodditieslive

Our Facebook Group is at:

www.facebook.com/groups/spaceoddities

Sponsored by Rother Valley Optics

www.rothervalleyoptics.co.uk

Supernova SN2023ixf Gallery

A selection of Readers' Images of the recent supernova in the Pinwheel Galaxy M101 in Ursa Major

Pamela Whitfield (Keighley Astronomical Society)

I'm a bit old-school so I tend to use negative images for this kind of thing and I just collected luminance anyway.

The magnitude estimate is basic one from the program Astap using their V50 photometric database and two comparison stars. A separate Astap analysis of the individual 30 180s calibrated sub-frames seemed to show a consistent brightening with a difference of around 0.1 magnitude from start to finish.

My location is Silsden, West Yorkshire.

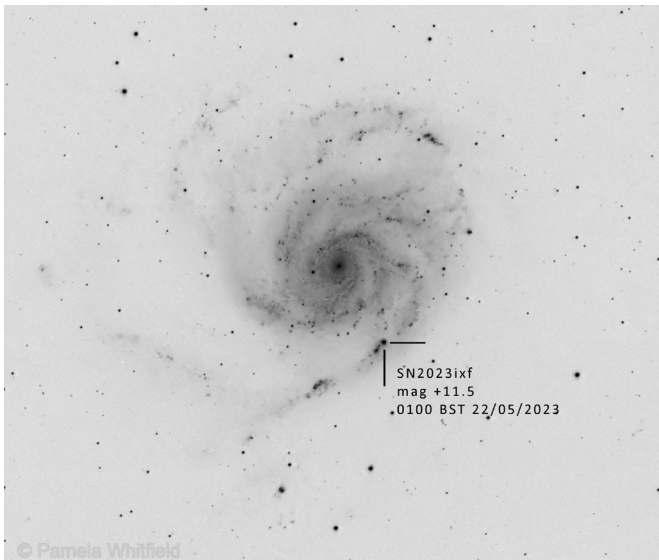
Capture details are:

ED102CF Explore Scientific Triplet
Moonlite CF2 motorised focuser
Hotech field flattener
QHY9 mono CCD (-15degC)
36mm Optolong L-Pro as luminance in QHYCFW2-M filter wheel
Darkframe Optics Stellardrive AZEQ5-GT
Evoguide 50ED guidescope with QHY5L-IIM
NINA 2.2
30x 180s (start 2330 21/5/2023; end 0116 22/5/2023); total 90 minutes

Processing in Pixinsight (with flats, darks and bias) with no subs excluded. x2 Drizzle integration and cropped. Photometry estimate prior to noise reduction step with Astap.

BlurXTerminator and NoiseXTerminator used on integrated image.

Pamela Whitfield



Ross Biddle (Cornwall)

I was fortunate enough to have been imaging M101 immediately before and post the Supernova event. The images are below. Basic details are they were taken with a 250mm Newtonian with Touptek mono 571 camera and LHaRGB filters from Cornwall. I will let the image do the talking. These are heavily compressed files as the originals are 400mb each. Processed in APP, PI with Blur eXterminator and Affinity photo.



Jason Street (Brighton Astronomical Society)

Im a member of Brighton Astro and have been asked to forward you some of the shots I have of the Supernova in M101.

This I took on Saturday night, taken from my back garden in north east Brighton (Bortle 6)

All images used the following equipment:

Skywatcher 120ed; HEQ5 pro; ASI294 MC Pro; ASI120 OAG

47 x 180 second exposures at gain 120 temp -10

20 x darks; 20 x bias; 20 x flats

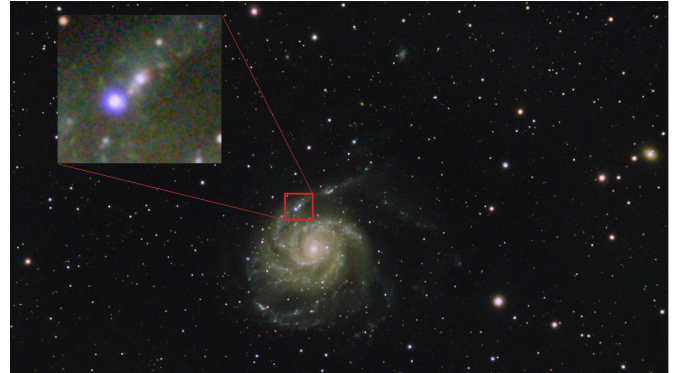
controlled using Astro Photography Tool all processed in Pixinsight

Image Top Left: Taken before SN2023ixf

Image Top Right: Taken on Saturday 20 and Sunday 21 May

Note: Sunday's data is 40 more light frames but the camera has moved slightly, hence the artefact on the right

Image Lower Right: Saturday's image with the supernova highlighted and blown up.



Nick Williams (Loughton Astronomical Society)

StellaMira 90EDT telescope

ZWO 533MC Pro camera & L-Pro filter

HEQ5-Pro mount & ZWO ASlair Plus

35 x 180 second exposures

Stacked in DeepSkyStacker, processed in Adobe Photoshop & Lightroom

Taken 20 May 2023 from Chingford, NE London.

Image Right: Original image

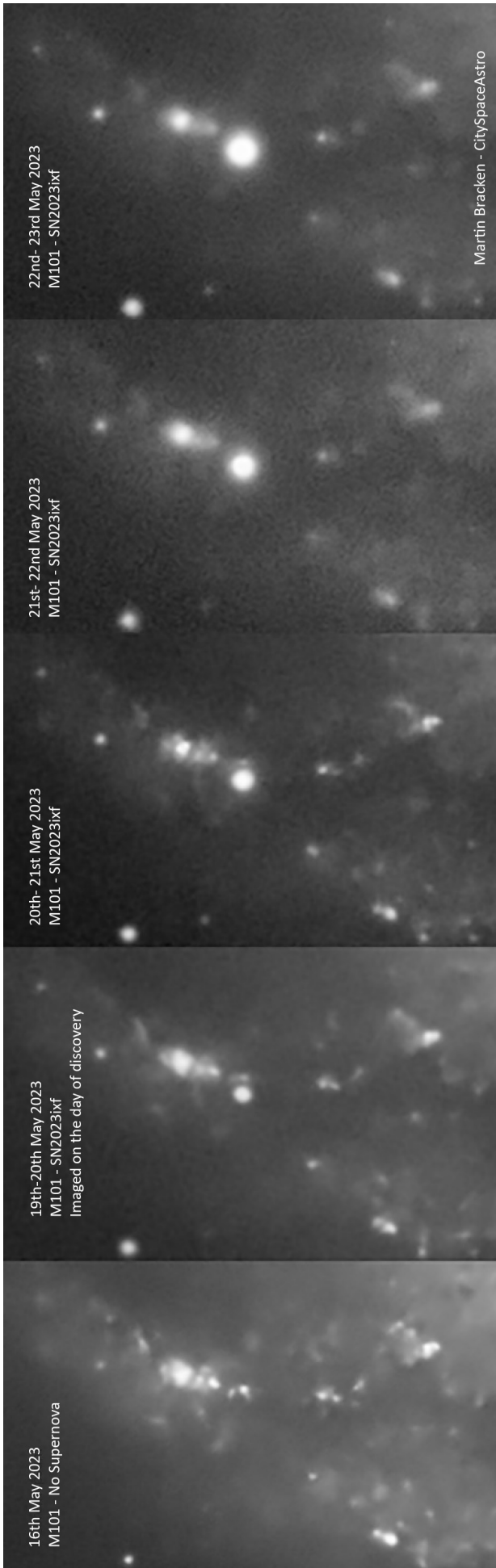
Image below Right: Image including cross hairs marking the position of the Supernova



Martin Howe (Ewell Astronomical Society)



Image Above: This was taken on the 24 of May from Dorking, Surrey, comprising of eleven 4-minute exposures through a 102mm apochromatic refractor with a ZWO ASI294MC camera. Images pre-processed in PIPP, stacked in DSS and finished in Photoshop.



Martin Bracken (North Essex Astronomical Society)

This is a collage of 4 images of the newly discovered Supernova in M101 I was lucky enough to imaging M101 on the day it was discovered and the subsequent 4 days. The image clearly shows the progression of the Supernova over those three days.

I have included an Image with and one with the text removed all taken from my backyard in Chelmsford UK.

Photographer Name – Martin Bracken

4 Imaging sessions – From 16/05/2023- 22/05/2022

Location – Back garden – Chelmsford, Essex UK

Camera – ZWO ASI585MC

Megapixel size of camera – 11.7 megapixels

Gain 252 offset 31

Telescope used Skywatcher Esprit 100ED Triplet Skywatcher HEQ5 pro Mount

Focal Length- 553 mm

Focal ratio -F5.5

Exposure time Each panel 30 X 120s

David Davies (Cambridge Astronomical Society)

Data: 35 x 120s exposures between 22:00 and 23:45 UT on 22nd May 2023.

Equipment:

Telescope: 250mm Ritchey-Chretien with 0.7x reducer, 1454mm focal length

Camera: ZWO ASI 294 MC Pro RGB camera

Mount: Skywatcher EQ8

Acquisition software: NINA, PHD2, GSS

Processing: Astro Pixel Processor, Pixinsight, Spectrophotometric

ColorCalibration using custom-made calibration curves for the ASI 294 camera, BlurXterminator, NoiseXterminator, Photoshop

Location: Cambridge, UK





A Weekend of Solar Observing

By Steve Southern

A very busy weekend for members of the Liverpool Astronomical Society. Plus a very sunny weekend with a myriad of Solar scopes on hand for scrutinising the growing activity on very own star.

Saturday 20 May at UCLan campus Preston for Lancashire Science Festival

The weekend started well with members of the Liverpool Astronomical Society arriving early at the campus of University of Central Lancashire, Preston (UCLan) on Saturday 20 May for the public day of their Lancashire Science Festival. We were warned it would be a busy day – it was, with a reported over 10,000 visitors on the day!

We arrived around 8:30am with a clear blue sky and the Sun blazing down. Perfect for a day of solar observing and showing the public the increasing activity on the Solar disk. We set up our activity and information desk inside the Foster Building with the solar scopes just outside in one of the campus courtyards. Preston and District Astronomical Society also set up adjacent to where we had our solar scopes. We had Lunt H α dedicated solar scopes filtering 656.3 nanometres, the Society Coronado H α scope too and a variety of white light scopes with solar filters or Herschel Wedges being used. Safety of course is always a vital ingredient when showing the public the Sun through our telescopes and we made sure everyone knew the rules about looking at the Sun and using telescopes or binoculars.

I had my Lunt LS50 scope on a Skywatcher SolarQuest which uses GPS to collect its location then hunts for the Sun and tracks it. I decided to place an Altair Astro camera into my solar scope eyepiece holder and we projected the Sun in H α onto the large TV screen inside using my laptop.

Others had a variety of mounts from manual to Equatorial. Chris Banks had his 11" SCT Celestron astounding the visitors with his day time views of Venus and the brightest stars – in daylight!

It was a tremendously busy day with thousands of visitors all day long from 9am up to 4pm when we started packing up. Sandwiches were provided by the university for lunch if you could manage to take a few minutes break.

Inside the Foster building more society members manned the information & activity desks with our displays and 3D Lunar images. The desk had plenty of activities for youngsters including our always very popular meteor collection.

The following gave up their day to kindly help out; Phil Williams, Rob Jameson, Richard Negus, Emma Chapman, Dave Galvin, Brendan Martin, Chris Banks, Gabriel Becerra and myself, Steve Southern.

With brilliant clear blue skies we were able to show the public plenty of solar activity on the Sun's surface including large sun spots, sun spot clusters and filaments with plenty of Solar Prominences including 2 very large prominences.



Image Above: UCLan campus Solar Observing area



Image Above: These aren't the drones you're looking for! Dave Galvin confronts a Star Wars storm trooper at UCLan!



Image Above: White light image from the weekend showing a Sun spot group -

Image credit Colin Murray



Image Above: Outside with the Solar Scopes, Steve and Brendan take a breather!

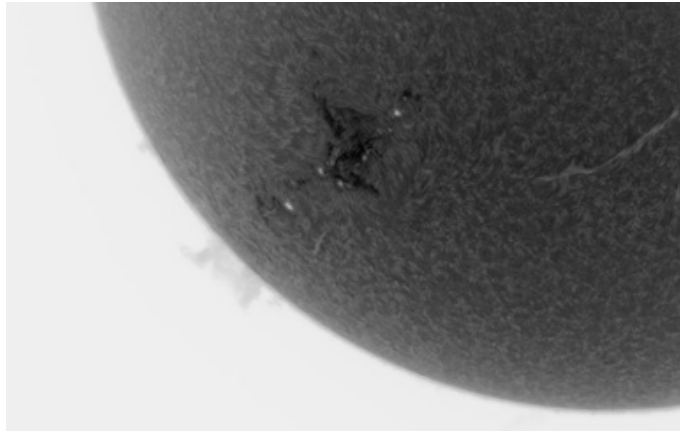


Image Above: Sun in H α from the weekend showing filaments and large prominences

Image Credit Brendan Martin

**Sunday 21 May, Day 2 of a Solar weekend
Members Solar Observing Day at Pex Hill Observatory**



Members of the Liverpool Astronomical Society brought their solar scopes and filters along to an open day at Pex Hill Observatory. A great turnout of Solar filters, Herschel Wedges, Coronado solar scopes and Lunt Solar scopes of varying sizes. Some fantastic images to observe with a very active sun as it starts to approach solar max.

Images seen through 50, 60 and 80mm solar scopes in H α with wonderful prominences at the sun's edge and filaments on the sun's surface. Plenty of white light sun spots too. Chris Banks had his 11" SCT again so we could find Venus and other bright objects in the daytime sky. All safety protocols fully in play with very experienced amateur astronomers.

The sky had a small amount of cloud which occasionally covered the solar disk but mostly we had a day of beautiful weather and the solar observing was enjoyed by all present.

Steve Southern

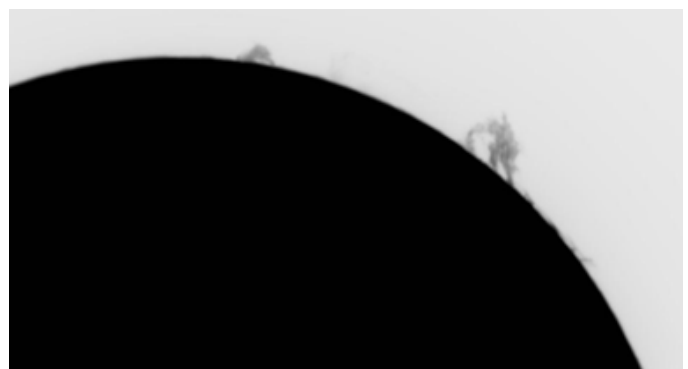


Image Above: Sun in H α - credit Brendan Martin

**FAS Newsletter Copy
Deadline:
Deadline for items for inclusion in the next
FAS Newsletter, No 133, August 2023 is
15 July 2023**