The CHESTERFIELD ASTRONOMICAL SOCIETY

Newsletter November 2026

CAS website: chesterfield-observatory.co.uk Registered Charity No. 514048

Our Facebook page: Our Facebook Page Our e-mail address: cas@chesterfield-observatory.co.uk

Newsletter Editor: Sue Silver

Chairman – Brian Quinney; Secretary – Beverley Carr; Treasurer – Catherine Wood.

Committee Members: - Sue Silver, John Wheeldon, Rob McGregor, Ben Broad

If you wish to contact any member of the Committee or ask advice on any matter please use the e-mail above.

Subscriptions - full membership £70
or £7 per month by Standing Order (10 months)

Senior citizens (60 yrs and over) and students (18 yrs and over) £50
or £5 per month by Standing Order (10 months)

Juniors members - (17 yrs and under) £0.
(All juniors must be accompanied by an adult who must be a fully paid up member).

Andromeda Galaxy by Dave Frost

Please check out our Facebook page by following this link:- Our Facebook Page

Welcome to the November issue of the CAS newsletter.

CAS News

Communication:-

The last couple of months have been a busy time for the committee.

DBS requirement changes have resulted in significant amounts of work but we're pleased to say that all relevant volunteers now have completed checks.

Note that only members with completed DBS checks will be allowed to volunteer for children's group visits.

CAS committee

(Thanks Brian)

De-clutter the Shed

We are still asking for volunteers to make some clearance in the shed. Once again it is full to overflowing. Some pieces of equipment are still in reasonable order and maybe of use to somebody.

The ones that maybe now are not so good, need disposing of. Of these, if anyone can use some of the parts or can use it for something, then please come forward. We have done this in the past but it seems to have filled up again!

If any of you can help out please contact someone on the committee. It will probably be a Saturday but we do need to offload some of the items in the shed.

Thank you!

On pages 20/21/22 … STAR TREK ***something for all fans …***

Another of the original cast (crew) passes away.

Then 28th October2026 Sir Patrick Stewart passed away.

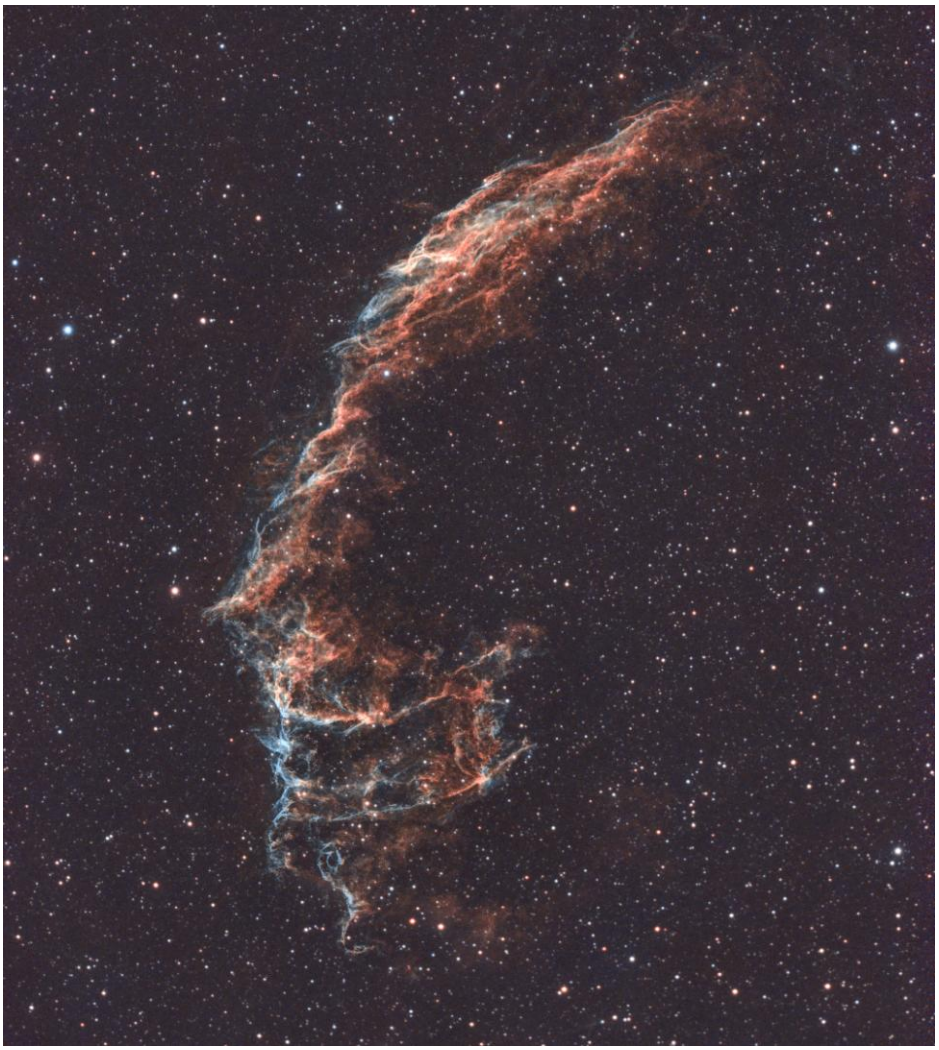


Photo Gallery.....

This is from Ben Broad….NGC 6992 The Eastern Veil Nebula

Here is NGC 6992 The Eastern Veil Nebula, about 5.5 hours on my Seestar S50 Pro.
I originally intended to do the Western part as well but decided to focus on the Eastern side first.

Oh, very nice Ben!!



These are mine … Moon 300926

I just saw it popping up "at the bottom of the road", "growing" out of the trees.

These were taken at approximately 21:16 on the 30th September. Just a hand held Canon 1100d.

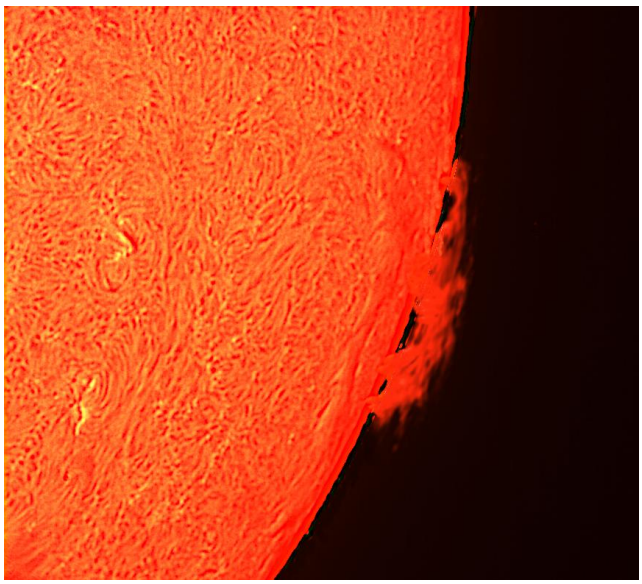




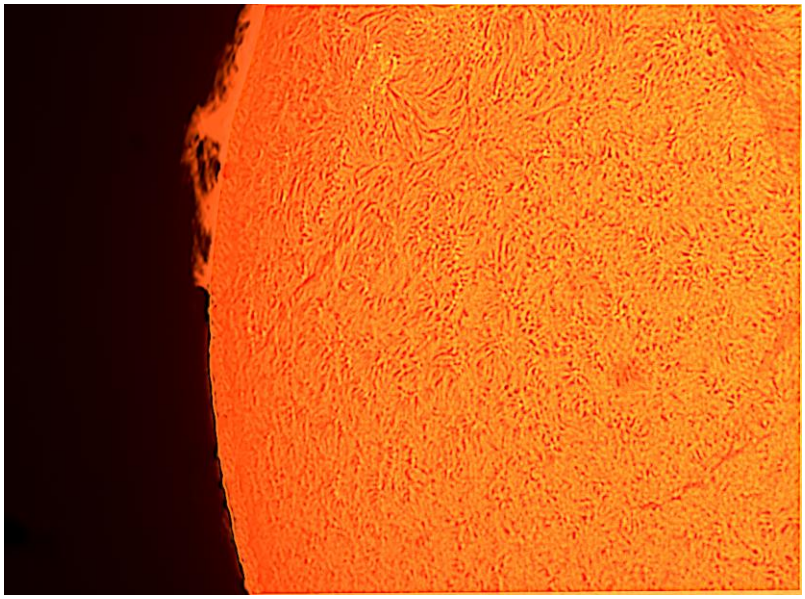
…more from me … The Sun 220926

I got the proper kit out for these using the 60mm Lunt.

HEQ5 Pro; ZWO120 ASI MC-S; Lunt LS60THaB600



Exp: 7.9040ms
Gain: 70
Duration: 120.160s
Frame count: 3423
Frame rate: 28.4871 fps



Exposure: 11.0640ms
Gain: 70
Duration: 120.062s
Frame Count: 3420
Frame Rate: 28.4853 fps



… also …

A daytime Moon today, 031026

This was taken around 11:30am using my Dwarf3.

1/200th sec, gain 2, 50 stacked

*This is from Dave Frost….*M31 Through the new CAS astro gear

Taken last week from home using the CAS astro gear, including the 26000MC-DUO camera.

206* 30 second subs or 103 minutes of data, no filters. Processed using PixInsight and Photoshop. My PC took seven hours to stack these huge files. Worth it though, can't believe the size of the file, or the quality. A snip at 100% is also attached to show that quality.



That's a stunning image Dave!!

So much detail with stars, the dust lanes and the two companion galaxies!



These are mine….Waning Crescent Moon in the dawn light 081026

A lovely, cold morning this morning. I was lucky enough to just catch this before it got too light. A beautiful waning crescent Moon as the dawn was breaking, you can just see the dark area as well. I also spotted a bright, twinkling Sirius over in the south!



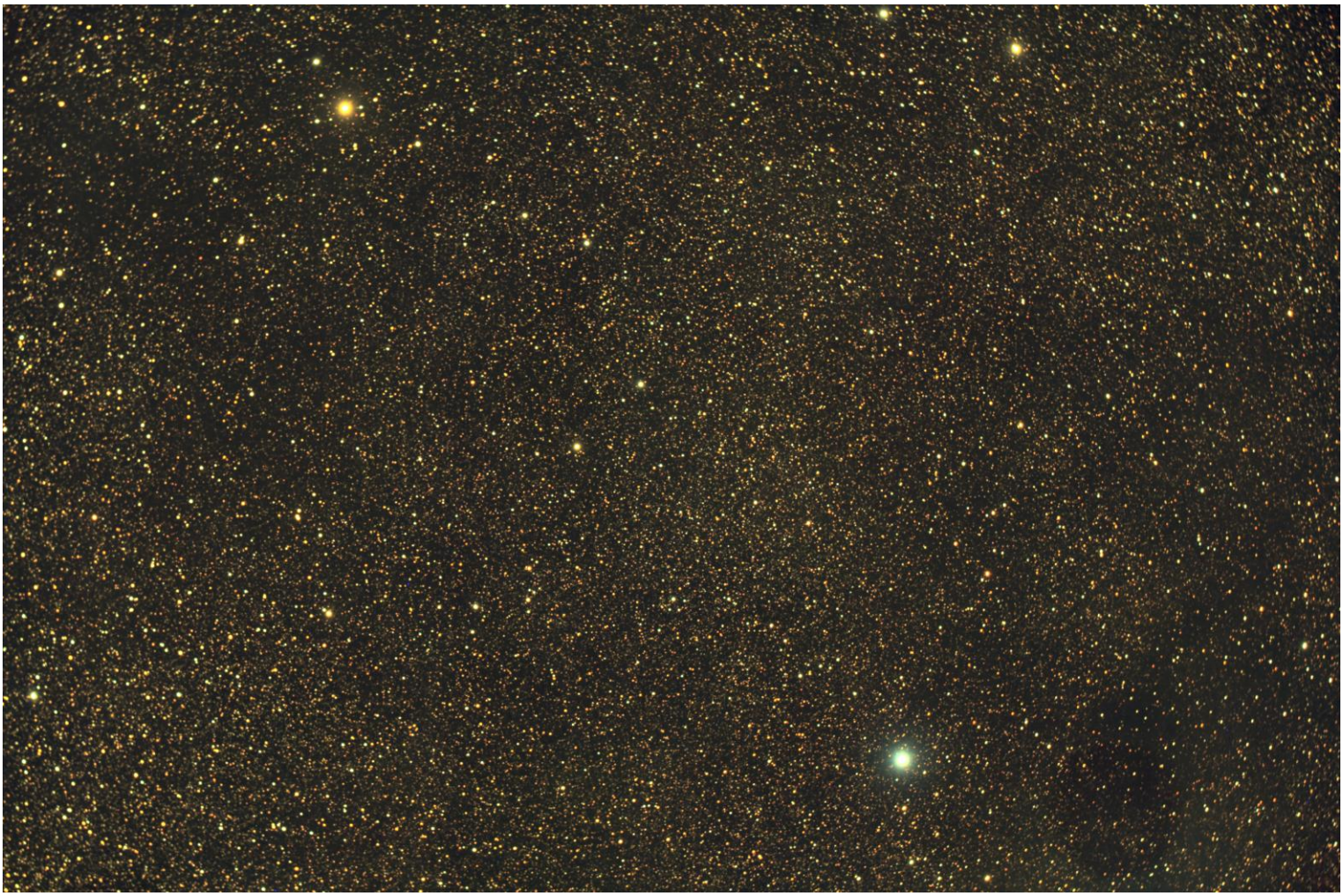


This is from Matthew Hyman… Last's night bounty [16/10/26]

Just a quick process of the data obtained last night from the observatory using the CAS imaging kit.

The region around Zeta Aquilae in Aquila.

ASI2900MC Air, Bin2, 58 x 60sec. (No calibration frames!)

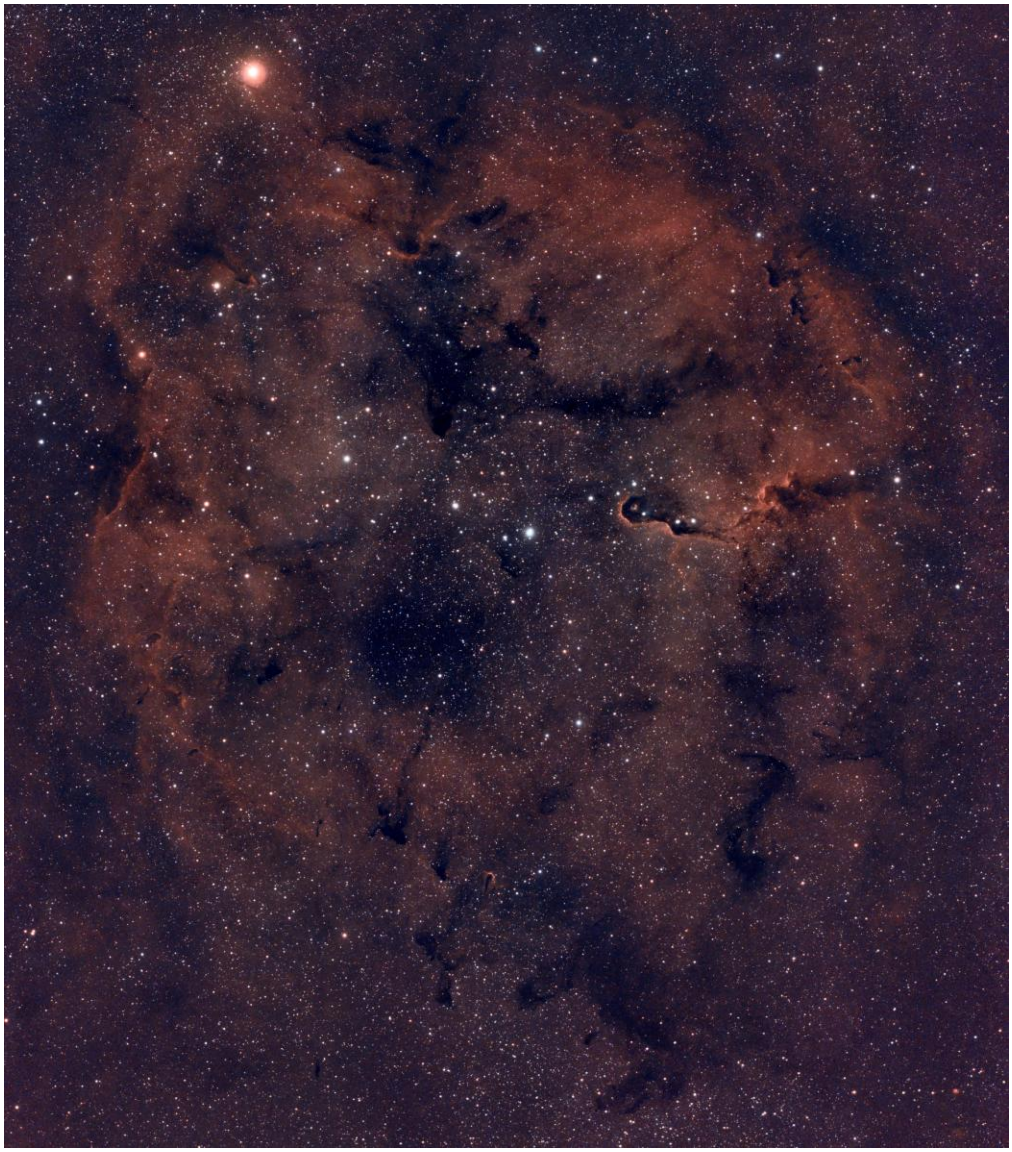


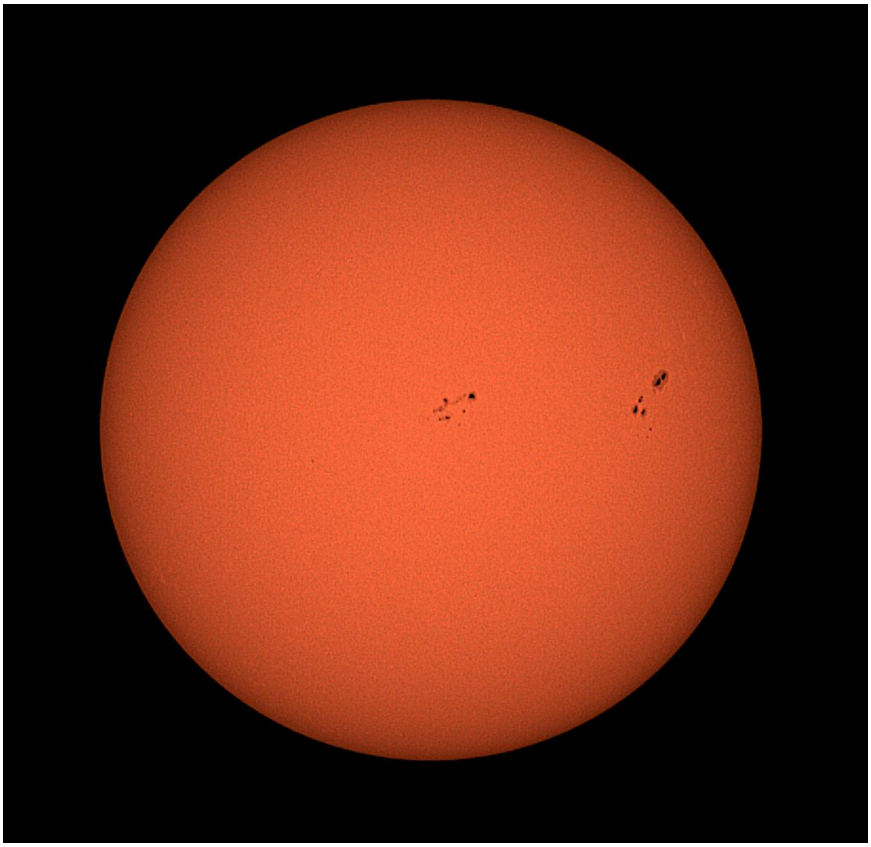
That is a busy part of the sky!! Very impressive Matthew!!

This is from Ben Broad …
IC 1396 Elephant's Trunk Nebula

Finished gathering a bit more data last night at the Observatory for this, certainly like the detail but not sure about the grainy look.

Lots of detail in this image, shows up the nebula quite well and colours!





This is one of mine… 181026 … The Sun

Nice spot areas on the Sun today.

Dwarf3; 1/500th sec; gain 20; 25 stacked.

A little enhancement in GIMP.

This is from Dave Frost…..Dwarf M31 Mosaic

Taken Friday, this is my first attempt at using the mosaic feature in the Dwarf 3. Processed in PixInsight and Photoshop



That's a great image Dave!!

(It's an interesting comparison seeing your previous image taken with the CAS new kit (page 6) and this one using a Dwarf 3 (page 10).

This is mine from 25/10/26

A very gibbous Moon

Hand held Canon 1100d
ISO 100; f/13; 1/50th sec.



These are also mine –
Red Sky in a Morning …. 261026

I was up early, still pretty dark. Went downstairs, opened up the back door and this is what I saw!!

Using Canon 1100d, hand held with a wide angle lens.

Still fairly dark at this stage.
ISO 100; f/13, 1/4th sec.





Starting to get lighter.
ISO 100; f/10, 1/13th sec.

Finally turning into a firey sky

ISO 100; f/10, 1/8th sec.

All before breakfast and a swim!!



… another one of mine … This is the Full Moon from 261026



This time this is a Dwarf image taken at 21:34 hrs.

Exp; 1/500th; gain 20; 41 stacked.

… later I captured a just past full Moon with the clouds scudding across it. This is a composite image



… another one from me …

M31 Andromeda Galaxy with M32 and M110 (2.5m light years away)

This is my first "proper" attempt at deep sky objects with the Dwarf3. After a few trials and tribulations as is to be expected I managed to find my way through the technology.

I didn't use EQ mode, just put it in Astro mode but tilted it to 53° (approximately!).
I set it to take 575 images but I have 399 only stacked. Two reasons for this, we had a patch of cloud at some stage so some takes failed but the main cause of the problem was … Dwarf ran out of battery!!

I set it at 15 seconds (as I wasn't in EQ mode) and a gain of 60.

I had another hiccup when I tried to use Stella Studio as this Dwarf likes its own wifi so I had to try again picking up my home wifi which finally let me use Stella Studio.

After the teething problems I am somewhat surprised at the outcome and more than a bit pleased!!



*This is from Matthew Hyman….*Messier 15 in Pegasus

A little gem from last night - M15 in Pegasus.

One of the oldest known Globular Clusters at a mere 12 billion years old! Discovered by Jean-Dominique Maraldi in 1746 and added to Charles Messier's catalogue in 1764.

60 x 60sec. plus calibration frames.
Even though it was still quite breezy, guiding seemed to be mainly OK.



Beautiful image Matthew. So many stars tightly packed in the cluster.

Things to see in November…….

Monday 2nd Impressive morning line-up with mag. +1.3 Regulus, mag. -1.9 Jupiter, +0.9 Mars and a 46% lit waning crescent Moon, all in a line spanning 16°.

Tuesday 3rd This morning the 36% lit waning Moon sits 2.2° southeast of Jupiter.
At 09:00 UT under daylight conditions Regulus is 1.5° north of the 33% lit waning crescent Moon.

Wednesday 4th The evening terminator is moving in on the beautiful Bay of Rainbows, Sinus Iridum.

Saturday 7th At 6:30 under brightening dawn twilight, mag. -4.3 Venus isn't alone. Sitting 2° to its right (as seen from the UK) is a slender 4% lit waning crescent Moon, while 1.3° to its left is mag. +1.0 Spica.

Thursday 12th Peak of the Northern Taurid meteor shower (ZHR 5 meteors per hour). Despite its low rate the absence of moonlight inference will make this year's abroad peak favourable.

Sunday 15th It may still technically be autumn but winter's Orion constellation reaches its peak altitude due south at 02:00 UT – a glorious sight with Mars and Jupiter together to its east and Saturn approaching setting to its west.

Monday 16th Mars sits 1.2° north of Jupiter, a dramatic pairing visible in the morning sky.

The Lunar X and Y clair-obscur effects are visible on the Moon this evening from 20:00 UT.

Tuesday 17th Tonight and into tomorrow morning, the Leonid meteor shower reaches peak activity. The first quarter Moon won't interfere as it sets as the Leonid radiant rises. Best rates are likely in the morning when the radiant gains altitude.

Friday 20th Mag -0.4 Mercury reaches greatest western elongation, 19.6 from the Sun, rising two hours before sunrise.

This evening's 81% lit waxing Moon sits 5.4° north of mag. +0.4 Saturn.

Tuesday 24th Today's full Moon occurs approximately a day ahead of lunar perigee, making this a perigee full Moon or supermoon, one that's slightly larger and brighter than an average full Moon.

Wednesday 25th Uranus reaches opposition today, shining at mag. +5.6 and located just to the south of the Pleiades open cluster.

Saturday 28th From around 21:30 UT, a 74% lit waning gibbous Moon can be seen occulting M44, the Beehive Cluster.

Monday 30th See an interesting arrangement at 05:40 UT as a 61% lit waning Moon sits 2.1° southwest of Mag. -2.1 Jupiter, which itself lies 3.5° northwest of mag. +1.3 Regulus, whilst mag. 0.5 Mars sits 2.3° northeast of Regulus.

Coming up….

Talk at the Observatory:-

Dr Julian Onions University of Nottingham

13th November 8pm – in person

Observing using the Isaac Newton Telescope, You just press the button, right?

An observing trip to the Isaac Newton telescope.

I got a chance to do some observing with the 2.5 m Isaac Newton telescope, should be straightforward? Just click and point? Not quite! So what does it actually take to set up and use a professional telescope? How do you plan and execute an observing run?

Things to remember.....

Amazon.....

Please remember if you are ordering anything from Amazon follow the link on our website – this earns us commission!!!

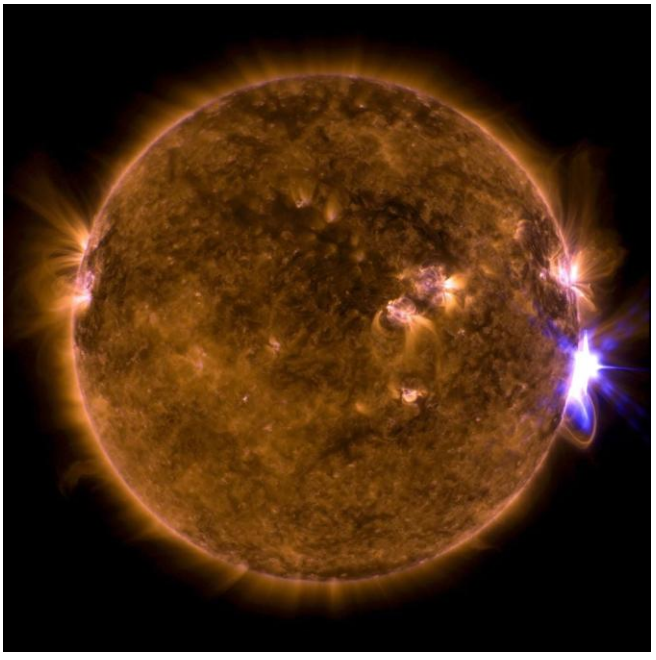
Thank you.

Also

Please check out our Facebook page by following the link below:

Our Facebook Page

ASTROSTUFF



How Flare Ribbons Reveal Hidden Solar Explosions on the Sun

By Evan Gough - October 21, 2026 11:18 PM UTC | Solar Astronomy - 5.4K reads

NASA’s Solar Dynamics Observatory captured this image of a solar flare – as seen in the bright flash on the right side – on Sept. 10, 2017. The image shows a combination of wavelengths of extreme ultraviolet light that highlights the extremely hot material in flares, which has been colorised. There's a lot to learn about flaring, and

the ever-changing Sun itself, and new research made progress in understanding its flaring behaviour. Image Credit: NASA/SDO

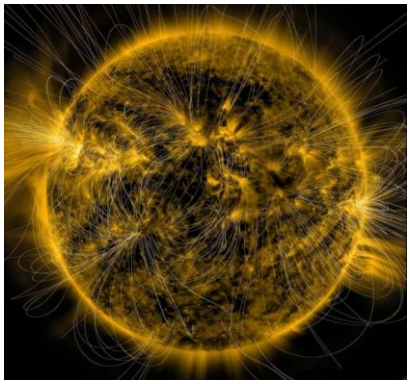
Many topics in astronomy and astrophysics are esoteric. There's not much of a relationship between something like the supermassive black hole at the centre of the Milky Way and the life of a regular person going about their business. But the Sun is different. Its presence in our lives is inescapable. Its behaviour, especially its flaring, has an impact.

Solar flaring makes itself known on Earth when their accompanying coronal mass ejections (CME) strike Earth and create mesmerising aurorae. But they can be more than beautiful manifestations of light and magnetic fields. They can pack a punch, especially when they're really powerful.

Astrophysicists classify solar flares by their X-ray brightness. From least energetic to most energetic they're placed in categories A, B, C, M, and X. Each letter indicates a ten-fold increase in energy output.

A solar flare is actually a kind of explosion, and they're the most powerful explosions in the Solar System. They release an enormous amount of energy, equivalent to the simultaneous detonation of millions or even billions of hydrogen bombs. They dwarf supervolcano eruptions on Earth, and even the huge asteroid that ended the dinosaurs.

They're caused by the Sun's powerful magnetic fields, which are constantly twisted and rotated. Their specific trigger is reconnection, when the magnetic fields can no longer put up with the twisting and rotating and finally snap. They reconnect into a more straightforward and stable configuration. When that happens, some of the Sun's energy is released from its magnetic restraints and emitted as a solar flare.



This is a depiction of the Sun's magnetic fields overlaid on an image of the Sun captured in extreme ultraviolet light by NASA's Solar Dynamics Observatory on March 12, 2016. The churning, rotating fields eventually break, and then reconnect to the Sun in a more stable and straightforward configuration, releasing flares. Image Credit: NASA/SDO/AIA/LMSAL

Solar flares can cause radio blackouts when they strike the ionosphere, disrupting aviation and maritime communications. They can introduce inaccuracies in GPS systems by altering the altitude of satellites. They can sometimes create malfunctions in electronics on spacecraft. Their accompanying CMEs can also disrupt our power grids.

There's an ongoing effort to understand solar flares, and research published in The Astrophysical Journal is part of the effort. It's titled "Evolution of Spatial Complexity in Flare Ribbon Substructure and Its Relationship to Magnetic Reconnection Dynamics." The lead author is Marcel Corchado Albelo from the U.S. National Science Foundation and an ambassador for the Daniel K. Inouye Solar Telescope.

"It's a beautiful example of theory, observation, and collaboration coming together..." - Maria Kazachenko, co-author, National Solar Observatory.

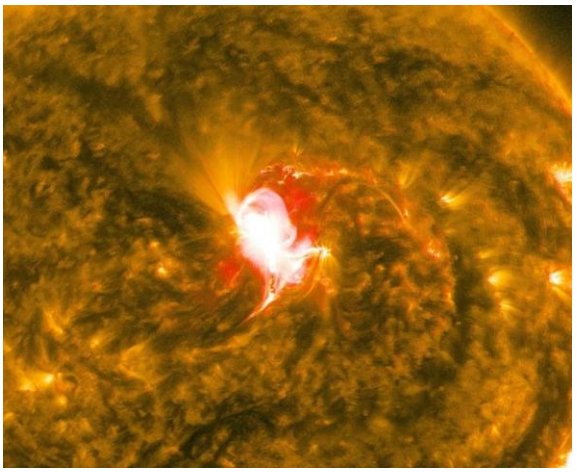
Flares originate in the Sun's outermost layer, the corona, which is hidden by the Sun's glare, and they're difficult to observe there. But in this research, the authors focused on flare ribbons. These are kind of like a flare's footprints, made of plasma and high-energy particles that slam back into the Sun during

reconnection. They follow magnetic field lines, and when they collide with the Sun's chromosphere, they light up brilliantly.

"Recent three-dimensional flare models suggest that flare ribbon substructure is linked to the fragmentation of the reconnecting current sheet in the corona," the authors write. "Flare ribbon substructure can therefore potentially serve as a unique diagnostic tool for physical processes in the flare current sheet."

The researchers figured out how to quantify the evolution of these flare ribbons and their substructure by looking at small details of the flare ribbons where they deposit their energy in the chromosphere. These details provided clues to what's happening far above.

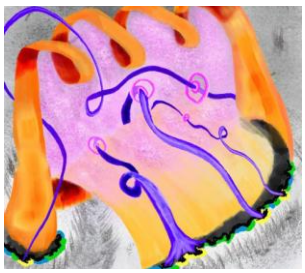
They created a model and tested it against synthetic observations. Then they applied it to a real flare. "We then apply it to an M6.5-class solar flare on 2015 June 22 observed by the Interface Region Imaging Spectrograph (IRIS)," the authors write. IRIS is a solar observation satellite launched in 2013.



This is the mid-level flare referred to in the research. This image is from the Solar Dynamics Observatory, not IRIS. Image Credit: NASA/SDO

They found that when the flares deposit their energy, it's not a smooth or uniform process. Instead of one big energetic event, the flare ribbon breaks apart into different sized fragments and deposits its energy in bursts.

"For the first time we have experimentally shown a physical relationship between the irregular shapes we observe, and the structure of the energy conversion region," lead author Corchado Albelo said in a press release.



This illustration helps explain the findings. The structure of the black boundary (dark gray–flare energy deposition site) is connected to a multi layer reconnection site (magenta–energy conversion site). Specifically, the smallest details (black–irregular shapes) suggest the inner region can be broken up into additional regions (darker magenta blobs), connected by special magnetic fields (purple). The mustard yellow region highlights the relaxed magnetic loops (post reconnected). The orange region highlights the erupting flux rope—i.e., a Coronal Mass Ejection (CME). Image Credit: Artistic Rendition by Corchado Albelo.

"For years, simulations have suggested that flare ribbon boundaries should behave a particular way," said Maria Kazachenko, study co-author and National Solar Observatory scientist. Up until now, there's been no way to confirm it with observations. "In this work, for the first time, we provided a quantitative observational test of those simulations. By applying a novel tool, adapted from a completely different field, Corchado Albelo was able to show that ribbon complexity increased with reconnection rate."

"It's a beautiful example of theory, observation, and collaboration coming together, driven by the persistence and creativity of a graduate student," added Kazachenko, who also advises Corchado Albelo's graduate work.

The basic idea is that visible patterns below offer clues to difficult to observe processes above. "We can diagnose what's happening in the energy conversion region by studying the irregularities of these shapes," Corchado Albelo said.

"We conclude that the build-up of the spatial complexity of the ribbons at multiple spatial scales can serve as an observational proxy for current-sheet fragmentation in the corona," the authors write.

This work won't help forecast flaring on its own but it makes a contribution to the overall understanding of flares. It helps explain how flares release their energy, and will inform better models of flaring.

"Altogether, our analysis is a first step toward quantitative linking of flare ribbon morphology to reconnection dynamics," the authors conclude.

MORE ASTROSTUFF

Webb captures stars in the early stages of life in a nearby stellar nursery

by Matthew Williams, Universe Today

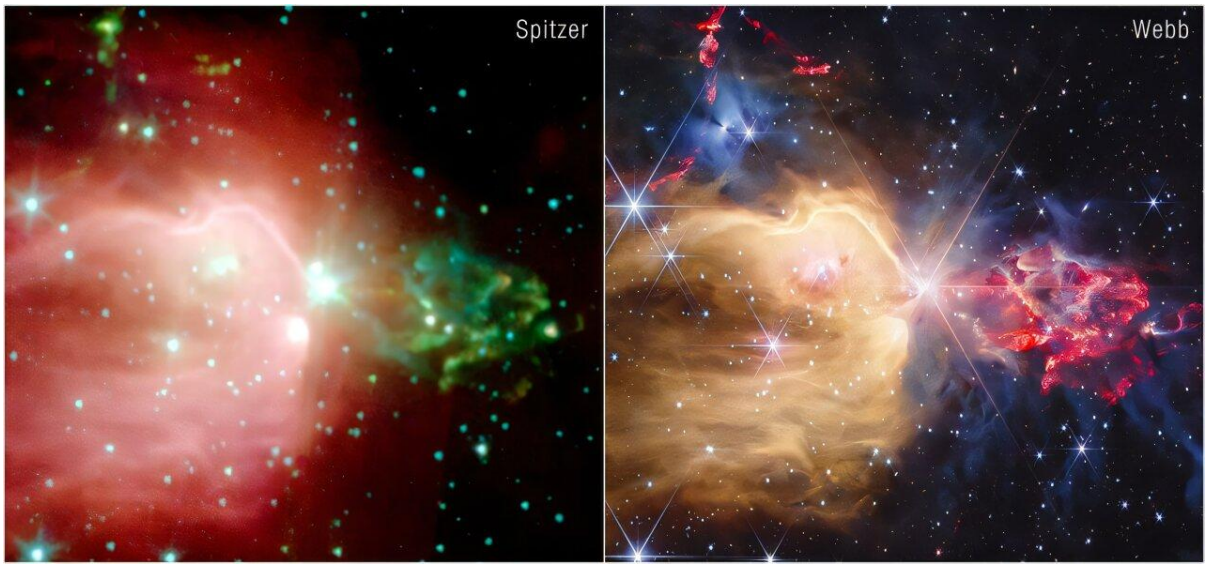


The NASA/ESA/CSA James Webb Space Telescope has revealed many protostars and stars within the glowing gases of NGC 7129. Credit: NASA/ESA/CSA/STScI/Alyssa Pagan

The NASA/ESA/CSA James Webb Space Telescope continues to reveal hidden parts of the cosmos with its advanced suite of infrared instruments. In a newly released image, Webb revealed many stars previously hidden by the dust clouds of NGC 7129, a stellar nursery about 3,300 light-years from Earth in the constellation Cepheus. The image is already improving our understanding of how new stars are born and evolve with time.

The life cycle of stars begins in dense molecular clouds of cold dust and gas, otherwise known as nebulae. Within these cocoons, the gas and dust slowly coalesce and build up mass, eventually triggering gravitational collapse and the birth of a new star. Because of the dusty environment, young stars are often impossible to see with telescopes that cannot capture infrared light. Thanks to Webb's sensitivity to the near- and mid-infrared parts of the spectrum, astronomers could peek inside NGC 7129 and see many stars less than 1 million years old.

Over 130 stars have been identified in this cluster. They are in different stages of development based on their mass, with the more massive stars evolving faster and exiting their main sequence sooner. The most massive and mature is the region's central star, LkH(alpha) 234, a pre-main-sequence star of about 5 to 8 solar masses. As the name suggests, stars at this stage have largely finished gathering mass and begin fusing hydrogen in their interiors shortly thereafter.



Images of NGC 7129 taken by NASA's retired Spitzer Space Telescope and the NASA/ESA/CSA JWST. Webb's

This raises their temperatures, warming the surrounding gas and dust and illuminating it enough for astronomers to see inside. In the image above, hot atomic hydrogen gas appears in the golden region to the left. Cooler gas, shocked by outflows from embedded protostars, appears in red to the right, with smaller clouds lingering in the upper left. Outflows triggered by LkH(alpha) 234's birth also created the cavity visible on the left side of the image. The shock of these outflows largely dispersed the hydrogen gas but also compressed regions, causing more stars to form within the cavity.

Several of these stars are also pre-main-sequence and emit stellar winds, creating nearby bow shocks that lead to other smaller cavities. The stellar winds also push against the colder, denser gas outside the cavity, creating the sharp ridge visible at the top. Beyond the cavity, the pressure creates a boundary known as the photodissociation region, where hydrogen molecules are broken down into atoms.

To the upper left, a bright blue nebula is illuminated by a protostar surrounded by a torus-shaped disk of material, with outflows also visible nearby. Webb's high-resolution optics also identified many rich structures in the stellar nursery, which builds on previous research by NASA's now-retired *Spitzer Space Telescope*. The ongoing study of this region will offer insight into how these stars and protostars shape their surroundings, eventually eroding the molecular clouds over the coming eons.

FOR ALL STAR TREK FANS



STAR TREK has lost another member of its legendary original Enterprise crew. Walter Koenig, the beloved actor who brought Pavel Chekov to life, has passed away at the age of 90.

Koenig joined STAR TREK: THE ORIGINAL SERIES in 1967 during its second season, playing the young Russian navigator who quickly became one of the most recognizable members of Captain Kirk's crew. He later returned as Chekov in seven STAR TREK movies.



Just one remaining member now!

Beyond the franchise, he delivered another memorable science fiction performance as Alfred Bester in BABYLON 5. His final STAR TREK contribution came in 2023, when he voiced President Anton Chekov in the series finale of STAR TREK: PICARD.

His passing was confirmed on October 26, with representatives revealing that he was surrounded by his daughter and niece at his North Hollywood home. George Takei, who had known Koenig for nearly six decades and even had him as his best man in 2008, shared an emotional tribute remembering his longtime friend.

For nearly 60 years, Walter Koenig was part of something that became much bigger than a television series. From the bridge of the original Enterprise to generations of unforgettable STAR TREK memories, his place in the franchise will never be forgotten. Another beloved member of that legendary crew is gone, and the Enterprise feels a little emptier today.



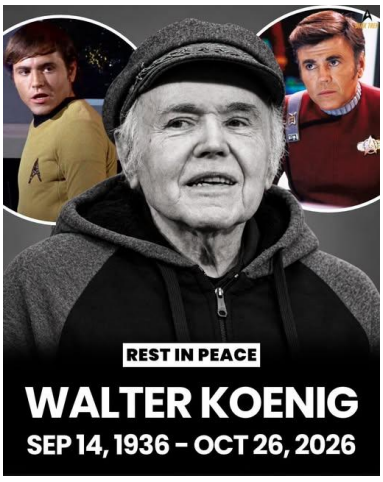
From George Takei ….

"My heart is heavy. Walter Koenig, our Ensign Pavel Chekov, passed away early today.

Walter and I met on the bridge of the Enterprise in the 1960s, and we stayed friends for nearly six decades. When Brad and I married in 2008, Walter stood beside us as our best man. Just last month, on Sept. 14, he turned 90, on the same day Brad and I celebrated our 18th wedding anniversary. I will always treasure that he and I shared that date.

Walter was more than Chekov. He was a writer, a teacher, a thoughtful man, and a loyal friend. To the fans who loved him for so many years, thank you. He loved you too.

Rest well, my dear friend. Keep navigating a steady course."



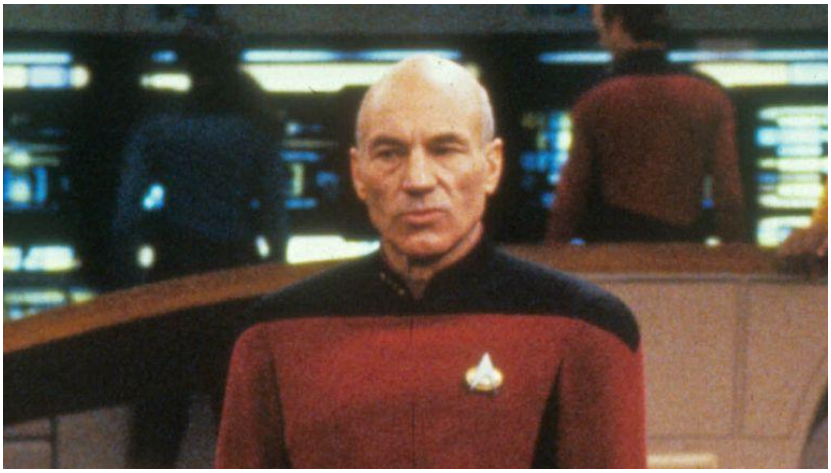
"2nd star on the left and straight on 'till morning, Mr Checov"

… and then, two days later, 28th October Sir Patrick Stewart passed away.

William Shatner remembers Patrick Stewart

Two legendary Star Trek captains, one heartbreaking goodbye. William Shatner, who shared the screen with Patrick Stewart in Star Trek Generations in 1994, remembered him as a magnificent actor and dear friend. At 95, Shatner expressed his deep admiration for Stewart and offered his condolences to his wife Sunny and family, saying he would be deeply missed.





Tributes:-

William Shatner: Noted that Captain Picard and the man who played him both stood for the best of us.

George Takei: Remembered him as an irreplaceable legend who inspired future generations.

Patrick Stewart, the Shakespearean actor who became an icon as “Star Trek’s” Jean-Luc Picard and “X-Men’s” Professor Charles Xavier, has died at 86 at his Los Angeles home.

Hugh Jackman, Jonathan Frakes and others remembered Stewart as a gifted performer, generous colleague and friend whose six-decade career touched audiences around the world.

That’s all folks.

Sue

This newsletter is sent out to all present members without whom the Society could not survive. Also to previous members and people with an interest in astronomy, in the hope that they may wish to join/re-join the Society.

If you no longer wish to receive this newsletter by e-mail please let us know. Thank you.