

Society News

AGM Nominations

Please see page 11 for a nomination form.

Good news though, as it seems everyone currently on the committee is happy to stand again. Anyone who can't has already sought and found a replacement. Please come along, this AGM should be a formality and over quite quickly. We can then all enjoy a "bring your own" barbecue and social get together.

VAS will provide soft drinks, bread rolls, sauces etc.

Garlic Festival 2019

Committee have decided that VAS will not have a stand/tent at this year's Garlic Festival but we will certainly be providing marshals for the event.

Instead of relying on the financial vagaries of a telescope raffle, marshalling allows us to be sure of raising funds.

If you can help at any of the four sessions across the am and pm of 17-18 August, please contact Richard Flux.

Come on, wearing a hi-viz jacket for the day makes you feel important, and you really only need to know where the toilets, first aid and lost children's tents are!

Wolverton Manor

The Wolverton weekend (31st Aug-1st Sept) is a lot more relaxed than the Garlic Festival. For a start VAS share a large tent with AONB and others which means we only have to supply people, a table or two and some enthusiasm.

Any member who fancies a day out knowing that VAS will benefit should contact a member of the committee.

*Brian Curd
Observatory Director and NZ Editor*

VAS Website: wightastronomy.org

Submissions or letters to New Zenith are always welcome and should be sent to:

**The Editor, New Zenith
Carpenter's Cottage
Dennett Road
Bembridge
Isle of Wight PO35 5XF**

Tel: **01983 872875** or email: editor@wightastronomy.org

Material for the next issue by the 6th of the month please.

The Vectis Astronomical Society and the Editor of the New Zenith accept no responsibility for advice, information or opinion expressed by contributors.

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Observatory Diary

Monday, 19.30hrs	Members Only and by arrangement Telescope and night sky training. Please contact Martyn Weaver 07855 116490
Thursday	Members (19.30hrs) and Public (20.00hrs). Informal meeting and observing

VAS Website: wightastronomy.org

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2019 Monthly Meetings

Date	Subject	Speaker
Check http://www.wightastronomy.org/meetings/ for the latest information		
23 Aug	AGM and Barbecue	
27 Sept	A transportable/deployable radio telescope for hydrogen line observation	Alan and Martin Thompson
25 Oct	Dark Skies Event	
22 Nov	TBA	TBA

Observatory Visits Booked

No bookings so far

Please phone me for the current situation (number on the front page)

It would be appreciated if members could avoid using the observatory at these times.

Important

Could all VAS members please ensure they notify the Membership Secretary of any change of address.

To ensure our compliance with GDPR rules, we must maintain accurate membership records.

This applies to all information held but is especially important for email and physical addresses.

VAS Contacts 2018/19

President	Barry Bates president@wightastronomy.org
Chairman	Bryn Davis chairman@wightastronomy.org
Secretary	Richard Flux secretary@wightastronomy.org
Treasurer	Stewart Chambers treasurer@wightastronomy.org
Observatory Director	Brian Curd director@wightastronomy.org
Programme Organiser	Vacant Position progorg@wightastronomy.org
Astro Photography	Simon Plumley ap@wightastronomy.org
Outreach	Elaine Spear outreach@wightastronomy.org
NZ Editor	Brian Curd editor@wightastronomy.org
Membership Secretary	Mark Williams members@wightastronomy.org
NZ Distribution	Graham Osborne distribution@wightastronomy.org
Others	Vacant Positions

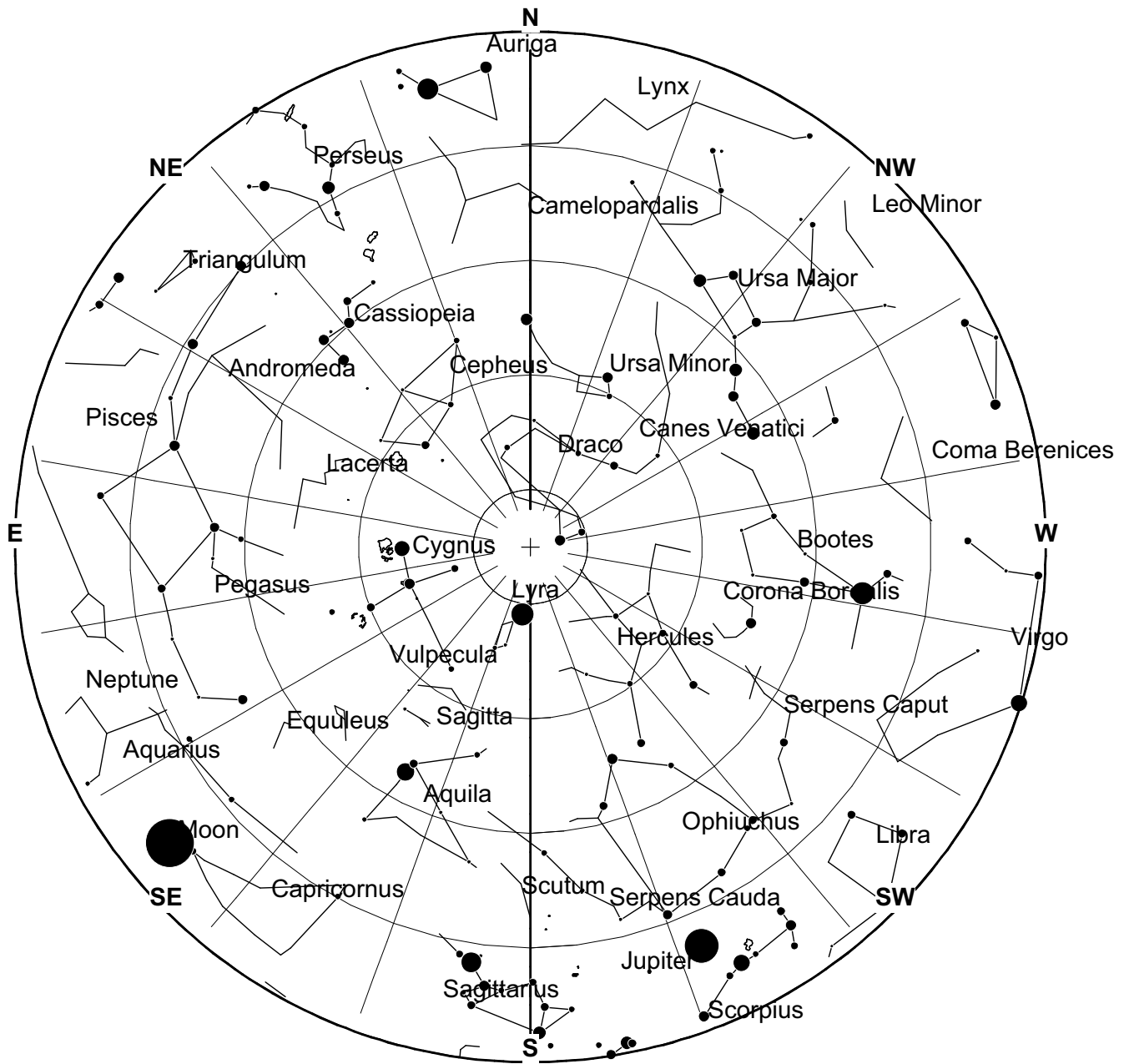
Important

Members using the observatory **MUST** enter a line or two in the Observatory Log Book.

On several occasions, lights, heaters and the Meade LX200 have been left on!

When leaving, please ensure all is secure and all lights, heaters and telescopes are **TURNT OFF**.

August 2019 Sky Map



View from Newchurch Isle of Wight UK - 2200hrs - 15 August 2019







The Perseids are a prolific meteor shower associated with the comet Swift–Tuttle. The meteors are called the Perseids because the point from which they appear to hail (called the radiant) lies in the constellation Perseus.

The stream of debris is called the Perseid cloud and stretches along the orbit of the comet Swift–Tuttle. The cloud consists of particles ejected by the comet on its 133-year orbit. Most of the particles have been part of the cloud for around a thousand years. However, there is also a relatively young filament of dust in the stream that formed in 1865, this can give an early mini-peak the day before the maximum shower. The dimensions of the cloud in the vicinity of the Earth are estimated to be approximately 0.1 astronomical units (AU) across and 0.8 AU along the latter's orbit, spread out by annual interactions with the Earth's gravity.

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August 2019 Night Sky

Moon Phases

New	First Qtr	Full	Last Qtr
			
30th	7th	15th	23rd

Planets

Mercury

Mercury puts a moderately good in the early morning during the last half of the month. The table shows the altitude and azimuth at 05:30.

Date	Az	Alt	Date	Az	Alt
10th	73	11	22nd	70	7
12th	73	11	24th	69	5
14th	73	11	26th	69	4
18th	72	10	28th	68	1
20th	71	9			

Venus

This month Venus passes between us and the Sun and so is not visible.

Mars

Mars is on the far side of the Sun and is not visible this month, it will return to the morning sky in October.

Jupiter

Just after sunset Jupiter can be seen due south, it is quite bright so can be seen before the sky if completely dark.

Saturn

Saturn is at opposition this month and can be seen throughout the night. It is best observed from about 2 hours after sunset, by when it will have had time to clear the haze on the south eastern horizon. At this part of its orbit it is not high in our skies so observation will be hampered by atmospheric turbulence.

Uranus

Uranus is in a part of the sky devoid of any nearby guide stars. It is in the constellation of Aries about 8 degrees south of the magnitude 3.8 star Mesarthim, and 5 degrees north of the fourth magnitude Xi2 Ceti.

Neptune

Neptune draws closer to the fourth magnitude star Phi Aquarii as the month progresses. At the start of the month it lies at the centre of the triangle made by Phi, 96 Aquarii and an unnamed magnitude 6 star, by the end of the month it is just to the east of Phi. There is also a star of similar brightness to Neptune close by; Neptune is the more northerly of the two. It also changes its position each night.

Perseids Meteor Shower

Although Perseid meteors can be seen from mid July until late August at a low level the shower peaks this year on the night of the 12/13th; the display will however be diminished somewhat by the bright waxing gibbous moon that is rising just as the sky begins to darken.

This is usually a reliable meteor shower giving a Zenith Hourly Rate (ZHR) of about 100 meteors. This is a much higher rate that you will likely see if you go out observing; it represents the number of meteors that could be seen if they were all directly overhead. This is of course not the case; they can occur anywhere in the sky and the nearer they are to the horizon the fainter they will be making many of that 100 too dim to be seen. Despite this there are usually plenty of 'shooting stars' to be seen if the weather is good.

Looking directly at the radiant point in the constellation of Perseus is not the best direction to look the meteors will appear small as they are coming at you head on; about 45 to 90 degrees away should show the brightest and longest trails. Early morning, between about 2 and 6am is generally a good time for observing meteors because the speed of rotation of the Earth and its orbit around the Sun add together making the meteors enter the atmosphere at a higher speed making them burn brighter.

Deep Sky

M29 Open Cluster

RA 20h 24m Dec 38° 32' mag 6.6

Located in the Cygnus arm of the Milky Way this cluster is somewhat over shadowed by the surrounding star fields. It is also dimmed by the dust along our line of sight. Despite all this it is a worthwhile cluster to observe; its brightest members form two opposing arcs that give the impression of a miniature version of the Pleiades.

NGC7207 Planetary Nebula

RA 21h 7m Dec 42° 16' Mag 8.5

This is a small rectangular shaped planetary nebula that is more difficult to see than its magnitude would imply. It

is a better target for visual observers with larger telescopes or those with CCD cameras.

M57 The Ring Nebula **RA 18h 54m Dec 33°2' mag 9.5**

This tiny smoke ring in the sky is easily found with a small telescope between Sulafat and Sheliak, the bottom two stars in Lyra. A planetary nebula is the last display of a star similar in size to our Sun. As the star runs out of fuel the core shrinks and as it does so heats up boiling off the outer layers of the star leaving behind a white dwarf. The intense ultra violet radiation from the white dwarf causes the surrounding gas to glow as it slowly dissipates into space. In stellar life times this is just a fleeting moment. The ring nebula formed approximately 20,000 years ago and may already be half way through its life before the gas becomes too tenuous it fades away.

Peter Burgess

Image: 10 Million Star Puzzle



When observed with the unaided eye, Omega Centauri, the object in this image, appears as a fuzzy, faint star. But the blue orb we see here is, in fact, a collection of stars - 10 million of them. You cannot count them all, but in this sharp, beautiful image you can see a few of the numerous pinpoints of bright light that make up this unique cluster.

The image was taken by Wouter van Reeve, a software engineer at ESA's European Space Astronomy Centre near Madrid, Spain, during his recent visit to Chile to observe the July total solar eclipse. From his home base in Spain

the cluster only grazes the horizon, making it near-impossible to image, but from the La Silla Observatory in Chile it was high in the sky, presenting the ideal opportunity to photograph it.



Omega Centauri is a picture-perfect example of a globular cluster: tightly bound by gravity, it has a very high density of stars at its center and a nearly perfect spherical shape (the name “globular cluster” comes from the Latin word for small sphere, globulus). It lives in the halo of the Milky Way, at a distance of about 15 800 light years from Earth.

As other globular clusters, Omega Centauri is made up of very old stars and it is almost devoid of gas and dust, indicating star formation in the cluster has long ceased. Its stars have a low proportion of elements heavier than hydrogen and helium, signalling they were formed earlier in the history of the Universe than stars like our Sun. Unlike in many other globular clusters, however, the stars in Omega Centauri don't all have the same age and chemical abundances, making astronomers puzzle over the formation and evolution of this cluster. Some scientists have even suggested that Omega Centauri may not be a true cluster at all, but rather the leftovers of a dwarf galaxy that collided with the Milky Way.

Omega Centauri is also special in many other ways, not least because of the sheer number of stars it contains. It is the largest globular cluster in our galaxy, at about 150 light years in diameter, and is also the brightest and most massive of its type, its stars having a combined mass of about four million solar masses.

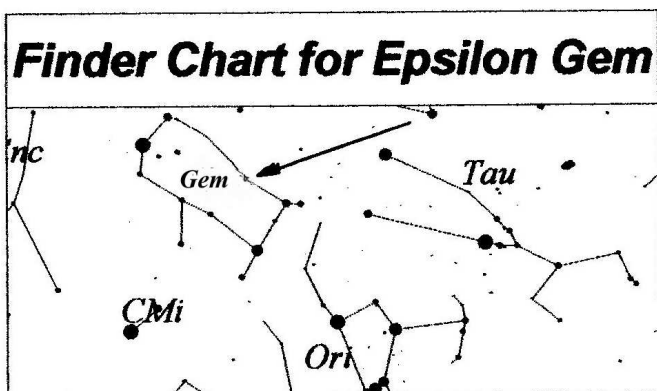
Omega Centauri can be seen with the naked eye under dark skies and imaging it doesn't require long exposure times. To create the composition we see here, Wouter combined eight images taken with an exposure time of 10 seconds, seven images of 30 seconds each and another seven images of 60 seconds each. He used a SkyWatcher Esprit 80 ED telescope and a Canon EOS 200D camera.

More with links at: <https://phys.org/news/2019-07-image-million-star-puzzle.html>

My 100 Best Night Sky Sights

Coloured Star

Coordinates: RA 06h 44m, Dec: +25° 10'



Epsilon Geminorum (Mebstuta) is a binary star with a dim mag 9.2 secondary keeping a large, 111" distance from the brighter primary and only gets a passing reference in most guides to the night sky which, as a double, is all it deserves as it isn't very impressive. If the primary is described at all it's usually just to note that it's a yellow supergiant, and this is where you get short changed for the guides should be singing it's praises to the heavens. ϵ Gem isn't just a yellow supergiant, it's a **YELLOW** supergiant, arguably the best example of an orange-yellow star you'll ever see.

Many are disappointed with their first attempts to see colour in deep sky objects – a result of the eye's weakness in detecting colour in the dark. You won't be disappointed with Mebstuta and I'd be surprised if your first sight of it through any telescope is not accompanied by a sharp intake of breath followed immediately by annoyed reprimands from your neighbours as your loud 'WOW' interrupts their viewing of EastEnders.

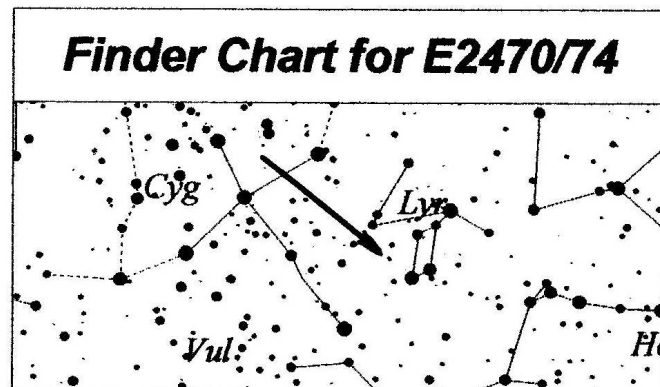
This magnificent star radiates with a brilliant orange hue that is particularly impressive with low magnification and which shades off towards yellow with increasing powers. If you time your observation right between 17.45 and 20.30 early in February you have the choice of disrupting Neighbours, EastEnders or Coronation Street. If you're an aficionado of any of these yourself, Gemini is well displayed later on January evenings with Epsilon sitting on the knee of the rightmost twin.

Double Stars

Coordinates: RA 19h 09m, Dec: +34° 36'

Talking of twins here's another pair. The small summer constellation of Lyra is remarkable in many ways, not least of all for its symmetry. The four stars, Beta, Gamma, Delta and Zeta, not only are all double or multiple systems but

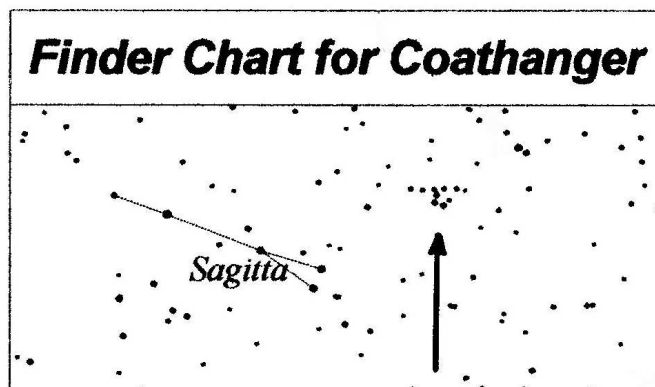
also form a perfect parallelogram. Close to the eastern two of these and doing their utmost to mimic them are two double stars *Struve 2470* and *2474* either of which on their own would be quite a pleasing sight. However these are not just twin doubles but near-identical twins in every respect. Both have mag 6.6 blue-white primaries, both have mag 8.7 white companions and both are aligned in the same direction so forming a diminutive, somewhat elongated version of their parent constellation's geometrical shape.



There's another celebrated 'pair of doubles' in Lyra which attracts most visitors to the constellation but don't let it make you miss out on Σ 2470/74.

Asterism

Coordinates: RA 19h 27m, Dec: +20°



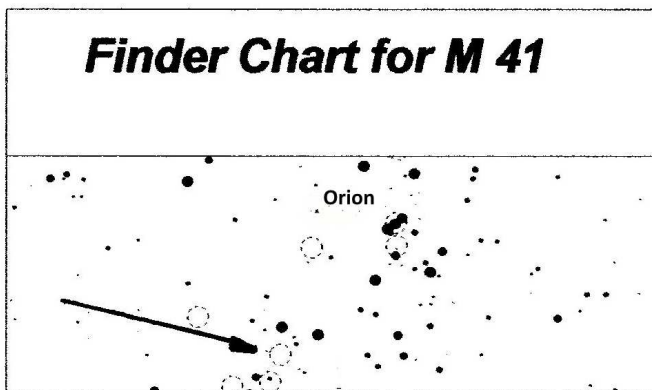
For binoculars only, well, more or less. Astronomy is not generally regarded as an amusing activity but one sight guaranteed to bring a smile to the face is the little group of stars with the designation *Collinder 399* or *Brocchi's Cluster* or, the name by which it is most popularly known, the *Coathanger*. Situated slightly NW of the diminutive constellation of Sagitta, the Arrow therefore nicely placed in August the group is collectively just bright enough to be spotted with the unaided eye although too small for its shape to be recognised. But train your binoculars on it and the unmistakable form of a coathanger leaps into view, enhanced by its seemingly three-dimensional appearance, each member of the group being significantly brighter than surrounding stars. Six stars in a row of military precision

are underhung by four others in a near-perfect hook shape. Gazing at this oddity one can't help pondering whether a celestial joke is being played upon us.

If you possess rich field telescope it may just be possible to encompass the whole of the Coathanger in the field of view in which case it will be an incredible sight. Suitable instruments would be a 4" or smaller refractor with a focal length of f9 or less, or a 6" or smaller Newtonian reflector at f6 or less, used with a 40mm eyepiece.

Galactic Cluster

Coordinates: RA 06h 47m, Dec:



If in January you can bear to drag yourself away from Orion, take a trip to Canis Major and the open cluster **M41** – you won't regret the diversion. This is not just a group of related stars but an assemblage that has a variety of things to offer those who linger a while. It's a very 'open' cluster occupying over a moon-sized chunk of space, 14 of whose 50 or so stars are bright. Undoubtedly the best of these occupies centre stage and is not only bright but red, although it's not the only one as several other red stars are scattered around along with a smattering of blue ones which give this cluster its colourful appearance.

M41 abounds with double and multiple stars including triples in neat triangular formations – not really surprising as there's only one other figure that can be formed by three points and that's a straight line. However, there's also one of these containing not three, but four stars together with a few neat semicircles, one of which mimics the Pleiades with seven stars in a the shape of a sickle.

Best viewed in low powers that encompass the whole, M41 is guaranteed to dispel the mid-winter blues.

*Originally published December 1999
Bert Paice*

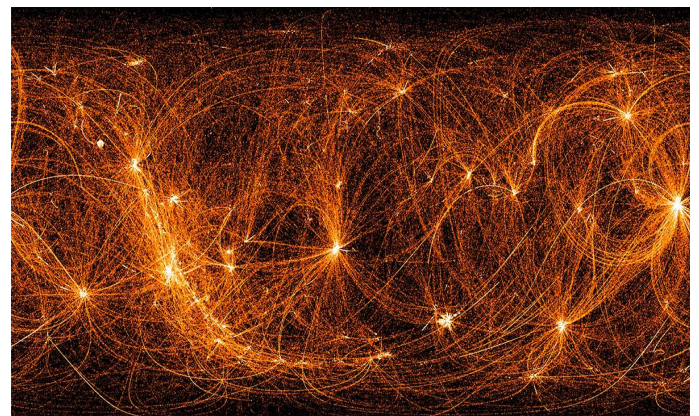
It's Nicer in Orbit



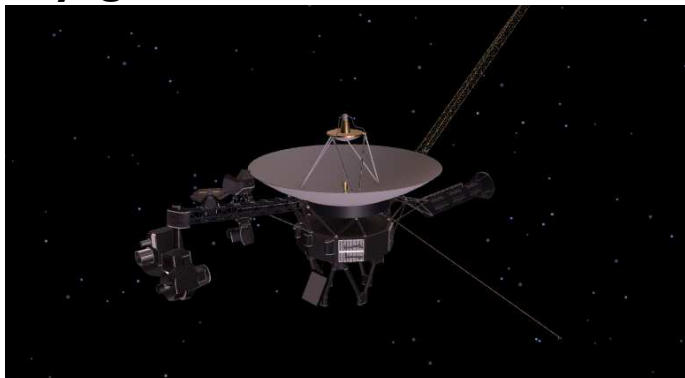
Given the sheer volume of science going on as the International Space Station circles above our heads every 90 minutes or so, it would be hard for any one experiment to stand out. ISS expeditions conduct experiments on everything from space medicine to astrophysics and beyond, and the instruments needed to do the science have been slowly accreting over the years. There's so much stuff up there that almost everywhere you turn there's a box or pallet stuck down with hook-and-loop fasteners or bolted to some bulkhead, each one of them doing something interesting.

The science on the ISS isn't contained completely within the hull, of course. The outside of the station fairly bristles with science, with packages nestled in among the solar panels and other infrastructure needed to run the spacecraft. Peering off into space and swivelling around to track targets is an instrument with the friendly name **NICER**, for "Neutron Star Interior Composition Explorer." What it does and how it does it is interesting stuff, and what it's learning about the mysteries of neutron stars could end up having practical uses as humanity pushes out into the solar system and beyond.

More Links, Info etc at: <https://hackaday.com/>



Voyager Twins Refuse to Die



Almost 42 years ago NASA sent its two Voyager spacecraft on record-breaking missions, and both of the decades-old robots are still alive. Voyager 1 and 2 are 13.5 billion and 11.1 billion miles from Earth, respectively, and it's up to NASA engineers to ensure they remain up and running for as long as possible.

As the agency reveals in *a new update*, mission managers recently decided to shut down one of the heaters on Voyager 2 which is designed to keep its cosmic ray subsystem (CRS) instrument at a comfortable temperature. This was done to conserve energy, but the CRS itself miraculously still works, despite dipping well below the temperatures it was tested at over four decades ago.

As both of the Voyager spacecraft venture deeper into space than any man-made objects before them, NASA has to grapple with some unfortunate realities. Space is cold, and the more distance the Voyager twins put between themselves and the Sun, the colder it gets. After almost 42 years, both machines are now enduring frigid temperatures well below the presumed limits of their instruments.

Onboard heaters keep some of the tools safe from the cold, but the mission team has slowly switched some of those heaters and several Voyager instruments off in the name of power conservation. The fact that Voyager 2's cosmic ray instrument is still running despite not being heated is something of a pleasant surprise for the Voyager science team.

"It's incredible that Voyagers' instruments have proved so hardy," Voyager Project Manager Suzanne Dodd said in a statement. "We're proud they've withstood the test of time. The long lifetimes of the spacecraft mean we're dealing with scenarios we never thought we'd encounter. We will continue to explore every option we have in order to keep the Voyagers doing the best science possible."

Even with dwindling power reserves and instrument temperatures as low as minus 74° F, the Voyager twins are expected to continue shedding light on the secrets of the cosmos for several more years before they ultimately go silent.

Gigantic Golden Asteroid Could Make Everyone on Earth a Billionaire

An asteroid filled with gold and enough precious metals to turn everyone on Earth into a billionaire is being studied by Nasa.



*Artist's concept of the asteroid 16 Psyche, which is thought to be a stripped planetary core
(Maxar/ASU/P. Rubin/NASA/JPL-Caltech)*

The asteroid – known as 16 Psyche – has a mass of less than 1% of our moon and it contains heaps of platinum, iron and nickel alongside the gold. The combined total value of all those precious metals would equal out at something like \$700 quintillion.

If you brought it back to Earth and shared out the profits equally, it would make all seven billion of us a billionaire many times over. Sadly enough, it's an economically impossibility. The combined world economy is £59.9 trillion – so injecting several quintillion (a one with 18 zeroes behind it) into it would cause the whole thing to come crashing down.

Logistically speaking, bringing back the whole asteroid would take some doing. It's currently sitting out there somewhere between Mars and Jupiter.

Psyche measures about 140 miles across and NASA has known about it for a while. The space agency is planning to launch a craft in August 2022 to visit the asteroid. The plan is to arrive there by 2026 and spend 21 months in orbit, conducting a full study of the rock with equipment like an ultispectral imager, a gamma ray and neutron spectrometer and a magnetometer.

More at: <https://metro.co.uk/>

Very Rare Meteor Cluster Recorded in Maranhão, Brazil



A very rare cluster of meteors was registered in the early hours of June 26 from the BRAMON EMM2/MA Station managed by Edgar Merizio in São José do Ribamar, Maranhão, Brazil. Where at least 9 meteors registered simultaneously in less than 1 second, all parallel to each other.

Meteor clusters like these originate from the same meteoroid that broke apart before it hit Earth. Usually this fragmentation occurs a few hours, perhaps days, before its encounter with the terrestrial atmosphere.

There are several possible origins for the fragmentation that generates a cluster of meteors like this. It's possible that the meteoroids originated from a recent common ejection of a comet or asteroid passing close to the Earth, it may have been a low cohesive meteoroid that has been fragmented by the collision of a microparticle, or may have originated from a meteoroid with volatile material in its composition that has been vaporized due to the action of the Sun, dispersing the rocky fragments shortly before its encounter with the Earth.

Meteor groupings have been recorded previously, most of them during the outburst of the Leonids meteor shower in the early part of this century. This one recorded by Edgar appears a very rare type of cluster recorded out of a period of a great shower and its preliminary calculated radiant does not seem to be associated to any known meteor shower.

Article and Video at: <https://www.sott.net/>

New Safer, Inexpensive Way to Propel Small Satellites

Finding inexpensive solutions for propelling CubeSats is one of the most critical components of the rapidly growing industry of commercial launches of satellites the size of a loaf of bread. The small size and relatively low cost have made CubeSats popular choices for commercial launches in recent years.

The first CubeSat was launched in 1999. Since then, more than 1,000 have been launched. The rapid development and application of nanosatellite technology has vastly accelerated mission complexity -- sparking interest in robust, low-power and high-specific impulse micropropulsion systems.

Purdue University researchers have created a novel micropropulsion system for nanosatellite applications using a liquid fed pulsed-plasma thruster. It uses a liquid propellant for Lorentz-force pulsed-plasma accelerator and extended lifetime ignition system driven by nanosecond long pulses.

“Our innovation helps address current challenges with CubeSat micropropulsion systems, including short operational lifetimes, contamination risks and economic challenges,” said Alexey Shashurin, an assistant professor of aeronautics and astronautics in Purdue's College of Engineering. “Our system is better able to operate reliably for the entire mission and the liquid propellant we use does not create the contamination risks to the subsystems that we see with current options.”

The Purdue team's work was presented in June at the 2019 IEEE Pulsed Power and Plasma Science Conference in Orlando, Florida.

Overall popularity of the CubeSats is driven heavily by the great advancement in miniaturization of electronic components and sensors that allows for new kinds of space missions and measurements using a CubeSat.

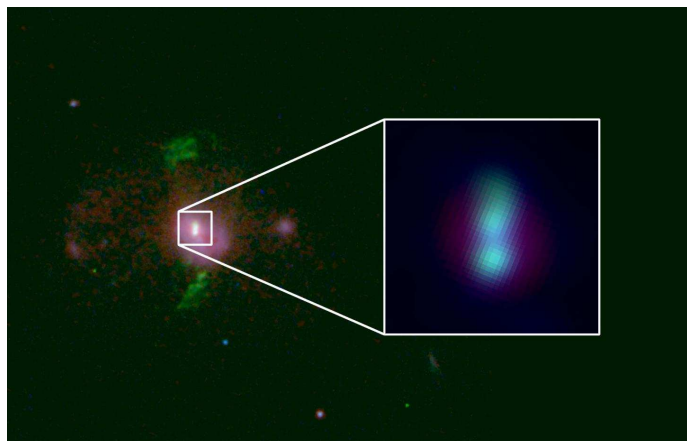
“We have taken the next step toward developing a robust propulsion system for CubeSats to provide for necessary manoeuvring during missions,” Shashurin said. “Developing innovative technologies like this is one of my passions.”

One of the student researchers who worked on the technology, Adam Patel, was named one of “Tomorrow's Engineering Leaders” by Aviation Week Network and the American Institute of Aeronautics and Astronautics. Patel is a senior in the School of Aeronautics and Astronautics.

More at: <https://www.sciencedaily.com/>

Pair of Supermassive Black Holes Discovered on a Collision Course

The titanic duo can help astronomers predict when the historic first detection of the background 'hum' of gravitational waves from supermassive black holes will be made and whether there truly is a 'final parsec problem'



A galaxy roughly 2.5 billion light-years away has a pair of supermassive black holes (inset). The locations of the black holes are lit up by warm gas and bright stars that surround the objects. The finding improves estimates of when astronomers will first detect gravitational wave background generated by supermassive black holes.

CREDIT: A.D. Goulding et al./Astrophysical Journal Letters 2019

Astronomers have spotted a distant pair of titanic black holes headed for a collision. Each black hole's mass is more than 800 million times that of our sun. As the two gradually draw closer together in a death spiral, they will begin sending gravitational waves rippling through space-time. Those cosmic ripples will join the as-yet-undetected background noise of gravitational waves from other supermassive black holes.

Even before the destined collision, the gravitational waves emanating from the supermassive black hole pair will dwarf those previously detected from the mergers of much smaller black holes and neutron stars.

“Supermassive black hole binaries produce the loudest gravitational waves in the universe,” says co-discoverer Chiara Mingarelli, an associate research scientist at the Flatiron Institute's Center for Computational Astrophysics in New York City. Gravitational waves from supermassive black hole pairs “are a million times louder than those detected by LIGO.”

The study was led by Andy Goulding, an associate research scholar at Princeton University. Goulding, Mingarelli and collaborators from Princeton and the U.S.

Naval Research Laboratory in Washington, D.C., report the discovery July 10 in *The Astrophysical Journal Letters*.

The two supermassive black holes are especially interesting because they are around 2.5 billion light-years away from Earth. Since looking at distant objects in astronomy is like looking back in time, the pair belong to a universe 2.5 billion years younger than our own. Coincidentally, that's roughly the same amount of time the astronomers estimate the black holes will take to begin producing powerful gravitational waves.

In the present-day universe, the black holes are already emitting these gravitational waves, but even at light speed the waves won't reach us for billions of years. The duo is still useful, though. Their discovery can help scientists estimate how many nearby supermassive black holes are emitting gravitational waves that we could detect right now.

Detecting the gravitational wave background will help resolve some of the biggest unknowns in astronomy, such as how often galaxies merge and whether supermassive black hole pairs merge at all or become stuck in a near-endless waltz around each other.

“It's a major embarrassment for astronomy that we don't know if supermassive black holes merge,” says study co-author Jenny Greene, a professor of astrophysical sciences at Princeton. “For everyone in black hole physics, observationally this is a long-standing puzzle that we need to solve.”

Supermassive black holes contain millions or even billions of suns' worth of mass. Nearly all galaxies, including the Milky Way, contain at least one of the behemoths at their core. When galaxies merge, their supermassive black holes meet up and begin orbiting one another. Over time, this orbit tightens as gas and stars pass between the black holes and steal energy.

Once the supermassive black holes get close enough, though, this energy theft all but stops. Some theoretical studies suggest that black holes then stall at around 1 parsec (roughly 3.2 light-years) apart. This slowdown lasts nearly indefinitely and is known as the final parsec problem. In this scenario, only very rare groups of three or more supermassive black holes result in mergers.

Astronomers can't just look for stalled pairs because long before the black holes are 1 parsec apart, they're too close to distinguish as two separate objects. Moreover, they don't produce strong gravitational waves until they overcome the final-parsec hurdle and get closer together. (Observed as they were 2.5 billion years ago, the newfound supermassive black holes appear about 430 parsecs apart.)

More at: <https://www.eurekaalert.org/>

VAS Officers and Committee Nominations 2019/20

For those wishing to stand for election at the AGM of the Society to be held on Friday 23rd August 2019 at 7.00pm.

Name and Address of Nominee:

Standing for

- Chairman
- Treasurer.....
- Secretary.....
- Observatory Director.....
- Membership Secretary.....
- Programme Organiser.....
- Committee

Proposed by:

Seconded by:

Signature of Nominee:.....

Notes

- The Committee meets once each month usually on a Thursday evening at 18.30 before the usual club night.
- No person can be elected to more than one position.
- Only adult fully paid-up members may stand for election (or propose or second).
- All completed nomination forms to be received by the Secretary at least 14 days before the AGM.

THE BACK PAGE

LINKS, COMMENTS AND OBSERVATIONS

Isle of Wight Space Camps



A few months back we were contacted by a teacher from Broadlea Primary School in Lake to ask if we could help with their Space Camps. Claire Loizos, previous winner of Primary Science Teacher Award, wanted help with the telescopes she had been donated from the Stephen Hawking Trust.

Space Camps are a two day, 1 night residential experience, with children sleeping over in the school hall, or field as it got warmer, and learn all about Space.

Each school took part in Space Science activities, including Astronaut Training, making model lunar landing modules and constellation charts to name a few.

The Children were exposed to: Astronaut Activities, Art, Science and Engineering challenges. The aim was to provide children with an inspiring opportunity to explore areas of interest they are no longer exposed to in the school curriculum.

We provided the schools with Stargazing and planet sessions along with Astronomy Presentations. As we approached summer and the lighter evenings, there was less 'Stargazing', but the children still enjoyed the experience of looking through and handling a telescope. With clear skies, John Slinn, brought along his Solar Scope and wowed both children and teaching staff, who had never experienced viewing the sun in this safe environment.

We attended 10 Space Camps in all, including St.Helens, Ryde, Wootton, Newport, Lake, Gurnard, Ningwood and Freshwater.

Special thanks go to John Slinn, Bert Paice, Mark Taylor and myself, who attended nearly all of them. John gave an exiting talk on 'The Sun' as well.

Thanks also to Brian Curd, Bryn Davis, Richard Flux, Mark Williams and Dudley Johnson who attended one or two each. Brian also gave talks on the Universe and size comparisons.

These Space Camps are extremely popular, and one school had 30 names booked within an hour of advertising it. Schools are now set to repeat the Camps annually, and are already setting dates for next school year. We shall endeavour to support the Space Camps as much as we are able.



Elaine Spear

At The Observatory

For your own safety, please bring a torch.

Make sure you close and lock the car park gate if you are the last to leave (if you need the combination to the lock, please contact a member of the committee)

Articles Needed

NZ needs letters, articles, reviews or pictures related to astronomy.

*"I don't believe in astrology;
I'm a Sagittarian and we're
skeptical"*

Arthur C Clarke

*"We only have to look at
ourselves to see how
intelligent life might develop
into something we wouldn't
want to meet"*

Stephen Hawking

*"If all of mathematics
disappeared, physics would
be set back by exactly one
week"*

Richard Feynman

*"Quantum physics is a bit
of a passion of mine.
It's extraordinary. There's a
branch of mathematics that is
based on lunacy, and that's
wonderful"*

Bob Hoskins

*"When you hear a physicist
invoke the uncertainty
principle, keep a hand on
your wallet"*

David Griffiths