

GDPR Final Reminder

Unfortunately there are still some members who have not completed the GDPR form included in the last few NZ newsletters.

To ensure you receive future copies and information please complete the form now.

Please return it to the Membership Secretary or drop it in to the observatory.



The 2018 festival takes place over the weekend of 18th & 19th August. **VAS will have a tent/stand at the show between 10am and 6pm each day and there is also a need for site marshals**

The weekend can be conveniently divided into 4 sessions (morning and afternoon on each day) and we would like to have members available for each session.

If you can help over the weekend, please contact Richard Flux for further details.

*Brian Curd
Editor New Zenith*

AGM Approaching!

**Nomination form is on page 11 of this edition.
A strong Committee is essential for the secure future of VAS.**

Please consider volunteering

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.

Registered Charity No 1046091

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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PLEASE NOTE

Monthly meetings are now held at the Newchurch Pavilion next to the Observatory. All meetings start at 19.30 unless stated.

2018 Monthly Meetings

Date	Subject	Speaker
Check http://www.wightastronomy.org/meetings/ for the latest information		
22 June	The Colour of Light and How Astronomers use it	Steve Broadbent
27 Jul	The European Extremely Large Telescope	Dr Aprajita Verma
24 Aug	AGM from 19.00hrs Members BBQ	
28 Sep		
26 Oct	Dark Skies Stargazing Night	VAS/AONB
23 Nov	Noise Effects in Astronomical Processes	Dudley Johnson

Observatory Visits Booked

No current bookings.

BUT

There may be ongoing maintenance, painting and cleaning.

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.

VAS Contacts 2017/18

President	Barry Bates president@wightastronomy.org
Chairman	Bryn Davis chairman@wightastronomy.org
Secretary	Richard Flux secretary@wightastronomy.org
Treasurer	Simon Plumley treasurer@wightastronomy.org
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NZ Editor	Brian Curd editor@wightastronomy.org
Membership Secretary	Norman Osborn members@wightastronomy.org
NZ Distribution	Graham Osborne
Others	Mark Williams, Nigel Lee & Stewart Chambers

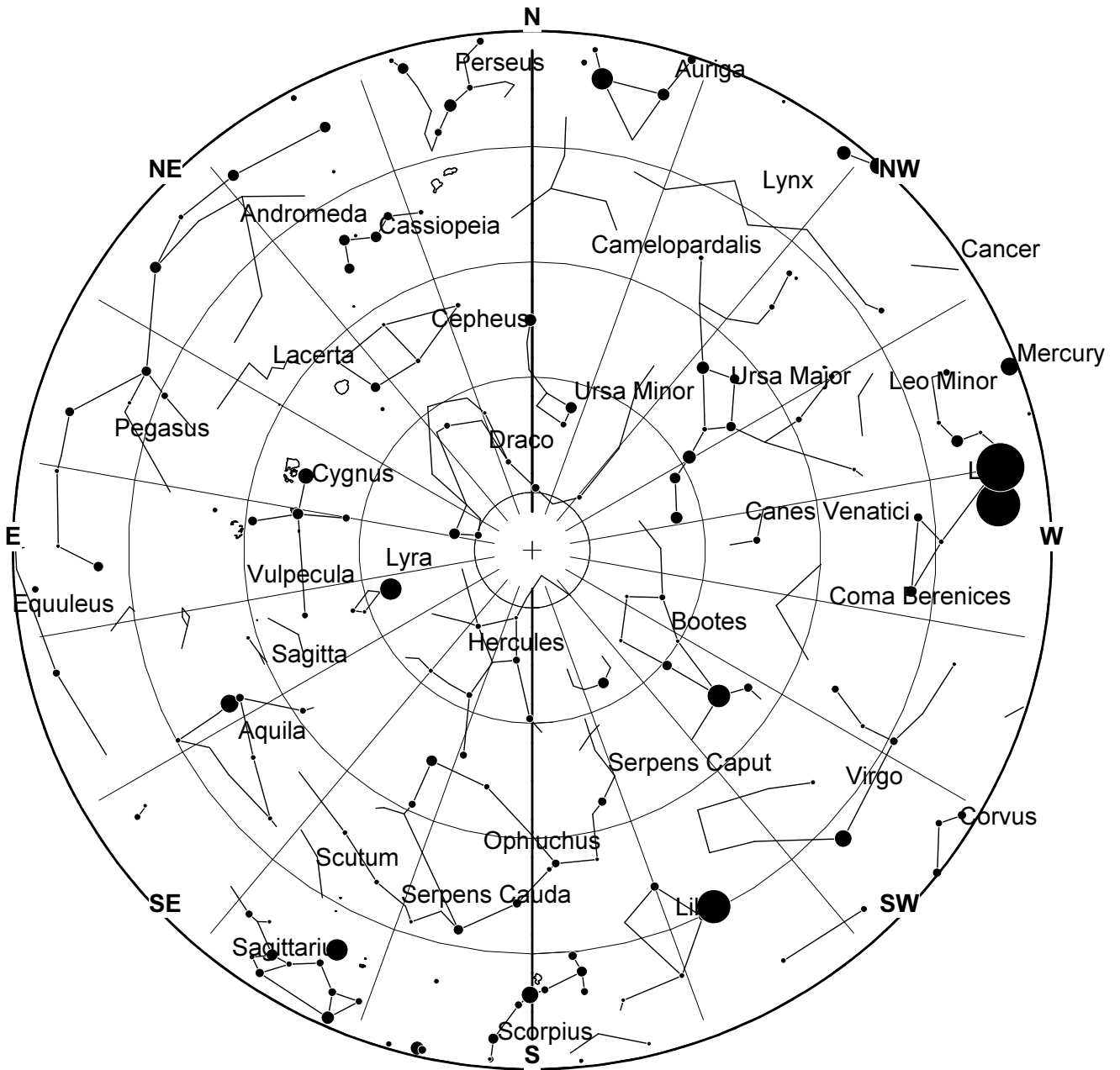
Important

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**.

July 2018 Sky Map



View from Newchurch Isle of Wight UK - 2200hrs - 15 July 2018



Mars is the 4th planet from the Sun and the second-smallest in the Solar System after Mercury. In English, Mars carries a name of the Roman god of war, and is often referred to as the “Red Planet” because the reddish iron oxide prevalent on its surface. Mars is a terrestrial planet with a thin atmosphere, having surface features reminiscent both of the impact craters of the Moon and the valleys, deserts, and polar ice caps of Earth.

Mars is the site of Olympus Mons, the largest volcano and second-highest known mountain in the Solar System, and of Valles Marineris, one of the largest canyons in the Solar System. The smooth Borealis basin in the northern hemisphere covers 40% of the planet and may be a giant impact feature. Mars has two moons, Phobos and Deimos, which are small and irregularly shaped. These may be captured asteroids, similar to 5261 Eureka, a Mars trojan.





This article is licensed under the [GNU Free Documentation License](https://www.gnu.org/licenses/old-licenses/fdl.html). It uses material from the Simple Wikipedia article “Mars”.

July 2018 Night Sky

Summer Solstice

The summer solstice, the point at which the Sun reaches its most northerly point is on June 21 at 11:07UT, from that point on it starts to head back to the south and the days start to shorten again.

Moon Phases

New	First Qtr	Full	Last Qtr
			
13th	19th	27th	6th

Planets

Mercury

Mercury continues the evening apparition started last month but is now fading as its phase shrinks from a full disk to crescent and is becoming a challenging object against the still bright twilight sky. As a guide, on the 14th Mercury is 2.5 degrees to the left of the crescent moon.

Venus

As the month progresses Venus starts to drop towards the horizon and move to the southwest at sunset. Now that we are past the mid summer solstice and the Sun is heading back towards the south, the evening planets mark out this path heading lower in the sky. Conversely planets in the morning sky are riding high where the Sun has just been.

Mars

By the end of the month Mars is at opposition; make the most of the coming few weeks Mars will not be as bright or as large again for at least another two years. Its size increases and decreases again quite dramatically as the Earth passes by and overtakes the slower Mars.

Jupiter

Jupiter is now past its best, but is still worthy of observation. It can be found due south at sun set. It is the brightest object in the southern sky and can be seen shortly after sunset or with binoculars or a telescope can be seen before sunset.

Saturn

Saturn is now at opposition and is a well placed for observation as it will be this year. It is low in the sky

against the stars in the constellation of Aquarius rising at sunset passing through south at midnight and setting at sunrise.

Uranus

Uranus has moved from Pisces to just over the border into Aries. By the time it is high enough above the horizon to be observable the sky has become too bright for the 6th magnitude planet to be visible.

Neptune

Neptune can be found in the early morning 1 degree to the west of the 4th magnitude star Phi Aquarius on a line between Phi and Lambda Aquarius.

Deep Sky

NGC6633 Open Cluster

RA18h 28m Dec 6° 34' mag 4.5

Although it is clearly visible in binoculars it is best viewed through a rich field telescope where the brighter members of this cluster form a rather wavy looking wedge of stars. If viewed before the sky darkens too much restricting the number of visible stars the scene is reminiscent of a miniature Leo, the backward question mark is a little indistinct, but the back and haunches are easily distinguishable.

IC4756 Open Cluster

RA18h 39m Dec 5° 27' mag 4.5

Located a short distance to the southeast of NGC6633 this cluster is also an easy binocular target, but again is best views through a small low magnification telescope. There are a number of long chains of stars throughout the cluster the brighter ones form a rough five pronged Catherine wheel shape covering most of the cluster. The brighter foreground stars form a slight distraction when observing this cluster.

M17 The Omega Nebula

RA18h 21m Dec -16° 11' mag 7

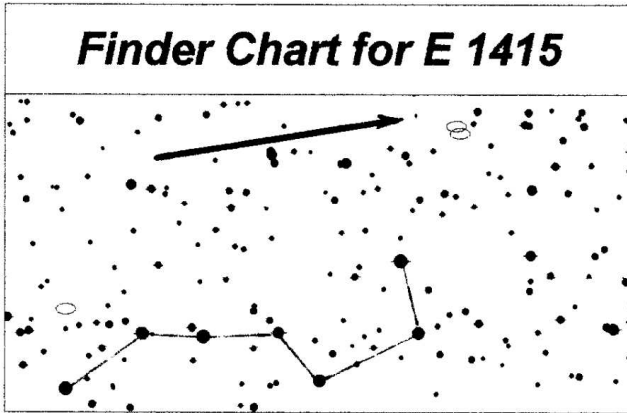
If it were not for the Orion Nebula this would be the great show piece of the sky. Binoculars show the curved shape of this giant glowing gas cloud and stellar nursery. Some times called The Swan nebula, the swan swimming upside down through the Milky Way becomes more obvious through a small telescope.

Peter Burgess

My 100 Best Night Sky Sights

Multiple Star

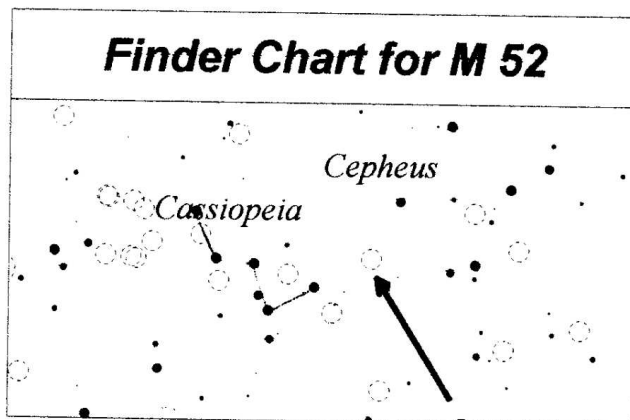
Coordinates: RA 10h 17m 54s, DEC +71' 03"



I'll wager that anyone found lurking in the region above the head of the Great Bear is absorbed in the twin galaxies M81 and M82 and, having had their fill of these will move elsewhere in search of more of similar ilk, oblivious to other delights in the vicinity. A pity really as close by to the NNE lives a triple star as pretty as a picture - $\Sigma 1415$ in **Ursa Major**. A and B are quite close bluish-white and blue stars but it's difficult to identify which of three other slightly less bright stars is the third. Unless you're doing a thesis on the subject this is of little consequence as the trio surround the main pair in a nice triangle incorporating them in the base line almost dead centre and making the triple star appear quintuple. This is well worth a diversion from the more glamorous neighbours and will delay the onset of galactic indigestion. For the best views use powers of 100x to 180x from February to May when the Plough is the 'right side' of the pole although, being high in the sky and circumpolar it can be viewed all year.

Galactic Cluster

Coordinates: RA 23h 24m 12s, DEC+6' 35"

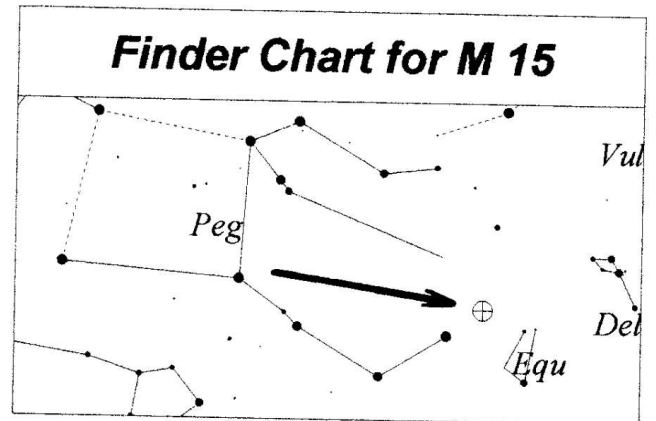


Cassiopeia is happy hunting ground for many amateurs, one reason being the presence of the attractive open cluster, **M52** containing several dozen bright stars in

an area under half that of the Moon. To locate it follow the line of the two right hand stars of the 'W' asterism a similar distance upwards. Almost all are young blue-white stars but the brightest one is distinctly yellow and there are many other fainter members. Any telescope will show M52 well although the fainter stars won't reveal themselves to instruments under 8". At low powers the cluster huddles about the centre of the field appearing tightly packed; at 180x the field is filled with stars blazing forth against an inky black sky but I *think* I prefer the view at 100x or so when the cluster is contained within a border relatively devoid of other stars looking like a picture in its frame - no, I can't make up my mind, all views look great! What's also good is that M52's splendours are well displayed throughout autumn and into midwinter so even with our climate there should be ample opportunity to view them.

Globular Cluster

Coordinates: RA 21h 30m 00s, DEC+12' 10"

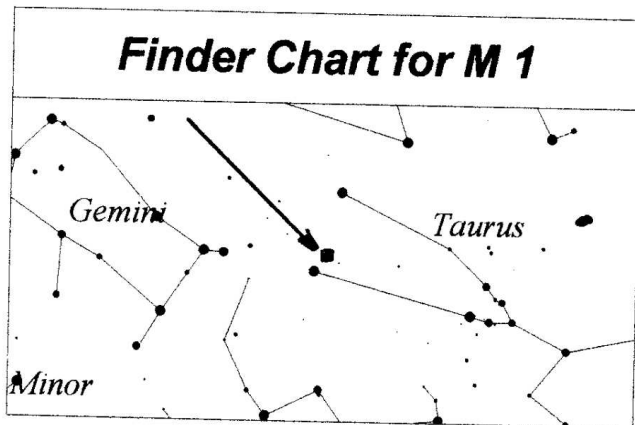


Not a million miles from M52 (metaphorically speaking) is one of the sky's showpieces for small telescopes, the splendid **M15** in the far SW corner of **Pegasus**, the Winged Horse at its border with its colt, Equuleus. One of the easiest globular clusters to find, it's just 4° NW of the bright star Epsilon Pegasi (Enif, the 'nose') visible in binoculars as a fuzzy 'star'. With small telescopes at low powers the cluster takes on the appearance of a tiny, bright disc, but push magnification to over 100x and the edges dissolve into countless sparkling grains. An 8" produces more scintillating speckles closer to the very condensed centre which remains unresolved but glows intensely. A 10" at low power emulates the view through a small telescope at high magnification and an 8" at moderate powers but also can resolve the cluster across the face with magnification pushed to 250x. Two fairly bright stars nestle at the cluster's edge and a third much brighter star hovers nearby, all three adding to the splendour of the scene. On a purely academic note M15 has a unique claim to fame as it's the only globular known to contain a planetary nebula, Pease 1. Alas, at magnitude 14.9 and just 3" across, only instruments over 20" can realistically hope to identify it, and then only in perfect

conditions. Although at a similar right ascension to M52 which is circumpolar, M15 being 50° further from the celestial pole rises and sets therefore spending less time on view but, you still have from October to December in which to feast your eyes.

Supernova Remnant (SNR)

Coordinates: RA 05h 34m 30s, DEC+22° 01"



An interloper this - let me explain. My list of 100 celestial goodies doesn't start with 'The Greatest Spectacle in the Sky' and work down to the 100th best. You'll recall from the July issue of the New Zenith that I use nine different categories of object. When I observe something for the first time I not only note what I see but also tag it with a rating from 10 (superb) to 0 (unseen), but *within each category*. Normally I won't include in this Night Sky series anything ranked less than 7 on the Paice scale but I have a problem with SNRs (my spell checker insisted I change this to *SRNs* but I refused!). Firstly, few attain this ranking and secondly, even though I find it a disappointing object through my 10" telescopes, *everyone* should have at least one look at the most celebrated SNR in the sky, **M1 - the Crab Nebula**. So, for what it's worth, here it is.

High in the winter sky, impaled on the right horn Taurus (perhaps that's why it exploded?) is the remnant of the star which tore itself asunder back in 1054. At mag 9 and spread over a 6' x 4' area of sky, my view is of a large, featureless, grey patch remarkable only for its size although an OIII filter does make it stand out marginally better against the darkened sky. The best (?) view was obtained with a power of 140x on a night of good seeing. Having somewhat dismissed M1, the darker skies of Winford and the 18" would show it more favourably - I look forward to the day.

Incidentally, the Bull faces us which is why his right horn is on the left as we see it.

Bert Paice

Originally published in NZ - February 1999

For Sale

Books - £5.60 each

- The practical astronomer
- A Field guide to the Stars/Planets
- Naked Eye Astronomy
- The constellations and how they came to be

Planisphere - £2.50

Box set of four dvd's - £8.50

- The Universe Season three

Box of Chart Roll size A6 - £3.50

Please contact Elaine Day:

elaineday@btopenworld.com

Welcome to the Quiet Zone

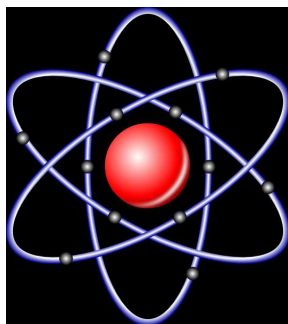
Last week, BBC Radio 4 had an interesting 5 episode series of 15 minute programmes called "The Quiet Zone".

The centre of the story was the Green Bank Radio Telescope in West Virginia and part of Maryland. The area around the telescope is known as the National Radio Quiet Zone (NRQZ) and a place in which radio transmissions are heavily restricted by law to facilitate scientific research and military intelligence.



The programmes are available on the BBC iPlayer at:
<https://www.bbc.co.uk/programmes/b05vpc4g/episodes/player>

<http://www.fizzics.org/>



I stumbled on this website a week or so ago.

Whilst at first it looks a bit glossy with no real content, dig a little deeper and you'll find a useful source of physics notes and video lessons - a large chunk of which are free.

For example, from the site:

Free Physics Video Lessons

The majority of the free physics video lessons in the groups below are suitable for those studying physics from the age of 16 upwards (British A level standard). Many lessons are designed to be preliminary revision of earlier work and are therefore suitable for 14 to 16 year physics (British GCSE). Video lessons are especially useful for quick revision, for filling in gaps in knowledge and understanding due to absence and to consolidate a concept at the end of a session.

or

Astronomy Notes

The astronomy notes below cover the life cycle of a star and the aftermath of the big bang. The measurement of distance is a major task and problem. Various methods are used to estimate and measure nearby planets, stars and more distant galaxies.

or

Digital Imaging and Signalling Notes

Almost all high quality recording and transmission of video and sound uses a digital system. The notes explain the difference between an analogue and a digital system and how an analogue signal can be digitised. The notes explain terms such as sampling, bits and bytes, sample rate, bandwidth and signal noise.

<http://www.fizzics.org/>

Observe Changes on Mars

Ever since mid-2017, Earth has been steadily closing in on Mars. The approach culminates July 27th in opposition. As the closest rocky planet to Earth whose surface is visible in modest telescopes, Mars easily garners the most attention of all the inner planets. The Red Planet often reveals subtle changes from year to year that stand out to the patient observer. But occasionally, big changes can occur from one apparition to the next.



Credit: NASA / ESA / The Hubble Heritage Team (STSCI / AURA) / J. Bell / M. Wolff

Part of the great attraction Mars has for observers is that the planet once looked more like Earth. Even today, with white cirrus clouds, dust storms, and ice caps that grow and shrink with the seasons, Mars is the most Earthlike of any planet in our solar system. Although the planet's thin atmosphere and dry environment make it look desolate, Mars is far from an unchanging, dead world.

As the planet approaches opposition, keep an eye out for some of these differences.

- Shrinking Ice Cap
- Changing Clouds
- Dust Storms
- Changing Albedo

Assuming the current storm on the Red Planet doesn't rage on for several months, a dynamic, changing world beckons observers as it draws relatively close for a few brief months. Let's see what other surprises it has in store for us this year.

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

The Mars dust storms have also been captured by VAS member Simon Plumley and are shown in the annotated image on page 9.

Geoboffins Baffled as Ceres is Crawling with Carbon Organics

Comets might have seeded the surface over millennia



Ceres contains more carbon-based compounds - the chemical building blocks for life - than previously thought, according to a new study.

Last year, scientists discovered that not only was Ceres' surface peppered with patches of organic material, but that it is rich in water ice and its crust contains ice, salts and hydrated materials - a sign that it may have harboured an ancient ocean in its past. Liquid water and carbon are both considered essential ingredients for the creation of life.

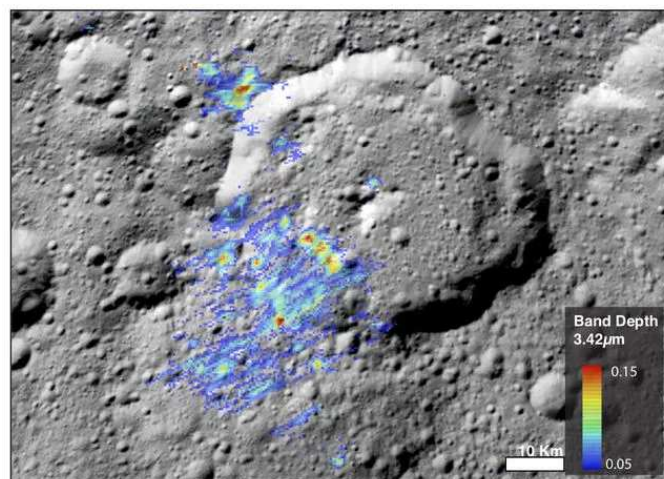
Now, a paper published in *Geophysical Research Letters* shows that there is a higher concentration of carbon-based compounds on its surface than previous estimates. And a team of scientists from Brown University and Carnegie Institution of Washington aren't quite sure why.

"We estimate that as much as 40 to 50 per cent of the spectral signal we see on Ceres is explained by organics. That's a huge difference compared to the 6 to 10 per cent previously reported based on terrestrial organic compounds," said Hannah Kaplan, who led the study when she was a PhD student at Brown University and is now a postdoctoral researcher at the Southwest Research Institute.

Previous measurements looked at the reflectance spectra of the organic material on Ceres and compared it to rocks on Earth. Instead, the new study compares it to meteorites. The spectral reflectance of organic compounds is different between matter on Earth and on meteorites, leading scientists to underestimate the amount.

"What this paper shows is that you can get really different results depending upon the type of organic material you use to compare with and interpret the Ceres data. That's important not only for Ceres, but also for missions that will soon explore asteroids that may also contain organic material," said Kaplan.

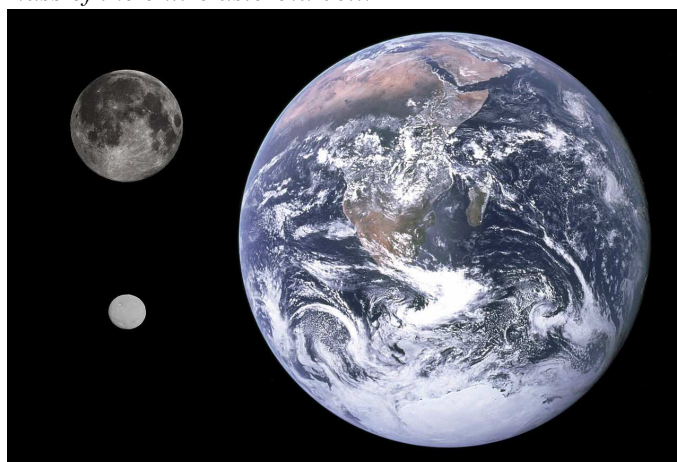
The team are puzzled by what might have led to the higher abundance of organic compounds. They may have been delivered by comets colliding with the dwarf planet or formed directly on Ceres' surface.



Patches of organic material detected near Ernutet crater on Ceres' surface. Image credit: NASA / Hannah Kaplan

From Wikipedia:

Ceres is the largest object in the asteroid belt that lies between the orbits of Mars and Jupiter, slightly closer to Mars' orbit. Its diameter is approximately 945 kilometers (587 miles), making it the largest of the minor planets within the orbit of Neptune. It is the 33rd-largest known body in the Solar System and the only dwarf planet within the orbit of Neptune. Ceres is composed of rock and ice and is estimated to comprise approximately one third of the mass of the entire asteroid belt.



Ceres (bottom left), the Moon and Earth, shown to scale

More at: <https://www.theregister.co.uk/>



Recent image of Mars taken by Simon Plumley

"I dragged myself out of bed yesterday to attempt a go at Mars at its dizzy heights of 17deg in the mire. Wasn't as bad as it could have been but roll on 2020 when its back and high. Mars has a lot of sand storm kicking off all over it at the moment which just shows on one of the images.

"It's very unsociable at 4am peak and now gets bigger but lower as it gets to opposition on the 27th, it doesn't even make 14deg! "

How do You Weigh a Galaxy? Especially the One You're in?

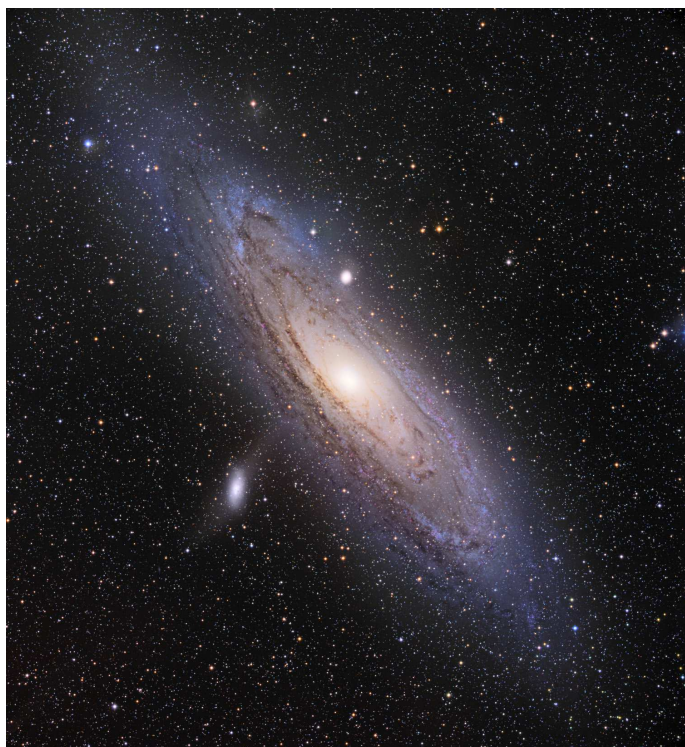
A new technique for estimating the mass of galaxies promises more reliable results, especially when applied to large datasets generated by current and future surveys, according to a research team led by Ekta Patel at the University of Arizona. Published in the *Astrophysical Journal*, the study is the first to combine the observed full three-dimensional motions of several of the Milky Way's satellite galaxies with extensive computer simulations to obtain a high-accuracy estimate for the mass of our home galaxy.

Determining the mass of galaxies plays a crucial part in unravelling fundamental mysteries about the architecture of the universe. According to current cosmological models, a galaxy's visible matter, such as stars, gas and dust, accounts for a mere 15 percent of its mass. The remaining 85 percent is believed to reside in dark matter, a mysterious component that never has been observed and whose physical properties remain largely unknown. The vast majority of a galaxy's mass (mostly dark matter) is located in its halo, a vast, surrounding region containing few, if any, stars and whose shape is largely unknown.

In a widely accepted cosmological model, dark-matter filaments span the entire universe, drawing luminous ("regular") matter with them. Where they intersect, gas and dust accumulate and coalesce into galaxies. Over billions of years, small galaxies merge to form into larger ones, and as those grow in size and their gravitational pull reaches farther and farther into space, they attract a zoo of other small galaxies, which then become satellite galaxies. Their orbits are determined by their host galaxy, much like the sun's gravitational pull directs the movement of planets and bodies in the solar system.

"We now know that the universe is expanding," says Patel, a fourth-year graduate student in the UA's Department of Astronomy and Steward Observatory. "But when two galaxies come close enough, their mutual attraction is greater than the influence of the expanding universe, so they begin to orbit each other around a common center, like our Milky Way and our closest neighbor, the Andromeda Galaxy."

Although Andromeda is approaching the Milky Way at 110 kilometers per second, the two won't merge until about 4.5 billion years from now. According to Patel, tracking Andromeda's motion is "equivalent to watching a human hair grow at the distance of the moon."



The Andromeda Galaxy, spans about 220,000 light-years across. Two of its dwarf satellite galaxies, Messier 110 (bottom left) and Messier 32 (above), are visible as bright white spots in this image.

Credit: Adam Block/University of Arizona

Because it's impossible to “weigh” a galaxy simply by looking at it—much less when the observer happens to be inside of it, as is the case with our Milky Way—researchers deduce a galaxy's mass by studying the motions of celestial objects as they dance around the host galaxy, led by its gravitational pull. Such objects—also called tracers, because they trace the mass of their host galaxy—can be satellite galaxies or streams of stars created from the scattering of former galaxies that came too close to remain intact.

Unlike previous methods commonly used to estimate a galaxy's mass, such as measuring its tracers' velocities and positions, the approach developed by Patel and her co-authors uses their angular momentum, which yields more reliable results because it doesn't change over time. The angular momentum of a body in space depends on both its distance and speed. Since satellite galaxies tend to move around the Milky Way in elliptical orbits, their speeds increase as they get closer to our galaxy and decrease as they get farther away. Because the angular momentum is the product of both position and speed, there is no net change regardless of whether the tracer is at its closest or farthest position in its orbit.

Read more at: <https://phys.org/>

Image: Star-circling Bubble of Gas



Credit: ESA/XMM-Newton; J. Toalá; D.Goldman

This turbulent celestial palette of purple and yellow shows a bubble of gas named NGC 3199, blown by a star known as WR18 (Wolf-Rayet 18).

Wolf-Rayet stars are massive, powerful, and energetic stars that are just about reaching the end of their lives. They flood their surroundings with thick, intense, fast-moving winds that push and sweep at the material found there, carving out weird and wonderful shapes as they do so. These winds can create strong shockwaves when they collide with the comparatively cool interstellar medium, causing them to heat up anything in their vicinity. This process can heat material to such high temperatures that it is capable of emitting X-rays, a type of radiation emitted only by highly energetic phenomena in the Universe.

This is what has happened in the case of NGC 3199. Although this kind of scenario has been seen before, it is still relatively rare; only three other Wolf-Rayet bubbles have been seen to emit X-rays (NGC 2359, NGC 6888, and S308). WR18 is thought to be a star with especially powerful winds; once it has run out of material to fuel these substantial winds it will explode violently as a supernova, creating a final breath-taking blast as it ends its stellar life.

This image was taken by the European Photon Imaging Camera (EPIC) on ESA's XMM-Newton X-ray space observatory, and marks different patches of gas in different colours. The incredibly hot, diffuse, X-ray-emitting gas within the Wolf-Rayet bubble is shown in blue, while a bright arc that is visible in the optical part of the spectrum is traced out in shades of yellow-green (oxygen emission) and red (sulphur emission).

Read more at: <https://phys.org/>

VAS Officers and Committee Nominations 2018/19

For those wishing to stand for election at the AGM of the Society to be held on Friday 24th August 2017 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 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 7 days before the AGM.

THE BACK PAGE

LINKS, COMMENTS AND OBSERVATIONS

AGM - Committee Nominations etc

We are rapidly approaching our AGM in August.

Page 11 has a nomination form for Committee positions.

VAS is your Society and you have the opportunity to help keep it going into the future. We do have a solid core at the moment but there is room for more volunteers either on the Committee or helping out with other jobs. For example, in August, Elaine Spear will be stepping down from the position of Meetings Organiser.

Please consider helping out, without willing volunteers VAS will struggle, with them we can easily grow and thrive - it really is that simple.

Observatory Maintenance Report

Thanks to those who helped out on the maintenance weekend.

The dome, facias and windows all look a lot better. Some tweaking of the door mechanisms and hinges has also stopped the horrible scraping noises from both external doors. Be careful though, as I suspect you may have got used to giving the doors a solid pull or push - *that is not required anymore!*

The next phase is internal painting of walls, ceilings and skirting in the hallway and main room and maybe a coat on the hallway floor.

Please be aware of this work over the next couple of months.

Federation of Astronomical Societies



FAS has recently undergone a some large changes in recent weeks and months. There was even a phase when its entire future was in doubt. I am pleased to say that uncertainty appears to have passed and things seem to have settled.

There are new proposals for the Federation to focus on directly helping member societies with: dealing with HMRC, Charitable status, Constitutions, Codes of Conduct, Health and Safety, GDPR and Fundraising.

There is a small supply of FAS newsletters at the observatory, these are supplied to VAS every month or so, please help yourself.

The Moon Looks Bigger on the Horizon

There is an optical illusion which makes the moon appear to be larger the lower it is in the sky. The apparent magnification is not caused by our atmosphere. It is more of a mind trick. When the moon is closer to the horizon, it is closer to objects like buildings and trees which therefore in comparison makes the moon look bigger. However there are times when the moon really is bigger. During its elliptical orbit the moon has times when it is actually slightly closer to the Earth (Perigee) or further from the Earth (apogee). This happens about once a month, due the moon's orbit around the Earth. Usually is not noticeable to the eye. However when a full moon occurs at the same time of the moon's perigee it can be called a Super moon and appears 12-14% bigger than normal!

Observatory

For your own safety, please bring a torch. Also, please 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. Contact details on page 1.

"You can't study the darkness by flooding it with light"

Edward Abbey

"Man dies of cold, not of darkness"

Miguel de Unamuno

"Light thinks it travels faster than anything but it is wrong. No matter how fast light travels, it finds the darkness has always got there first, and is waiting for it"

Terry Pratchett

"Everything starts somewhere, although many physicists disagree"

Terry Pratchett

"If I had a time machine, I'd visit Marilyn Monroe in her prime or drop in on Galileo as he turned his telescope to the heavens"

Stephen Hawking