

SIRIUS ASTRONOMER

www.ocastronomers.org The Newsletter of the Orange County Astronomers

General information and contacts for the Orange County Astronomers club can be found at www.ocastronomers.org

August 2026

Free to members, subscriptions \$12 for 12 issues

Volume 53, Number 8



NGC772 presents as a teardrop shape in this image from Sam Saeed. It was taken at our Anza site in November 2016 using a 10 inch Ritchey-Chretien telescope and QSI683 mono camera.

Upcoming Events - free and open to the public

Beginner's class	Monday, 4 September at 7:00 to 9:00 PM This is session 1 of the class: Overview of celestial objects, current scientific understanding of the Universe's beginning, present and future.	ONLINE
Club Meeting	Friday, 14 August at 7:30 to 9:30 PM "What's Up": Michael Beckage from OCA Main speaker: Carina Poulin from NASA Whose talk will be "From Data to Discovery: Communicating PACE Science to the World"	ONLINE ONLINE ONLINE
Astro-Physics SIG	Friday, 21 August, at 7:00 PM to 9 PM Orange Coast College, Building 40, Astronomy House	IN PERSON
Star Parties	Saturday, 8 and 15 August at the OCA Anza site. No Irvine site star party will be held in August.	

The monthly club meeting is viewable in progress on Zoom and our social media platforms. The recording is available on these platforms after the meeting is over.

<https://www.facebook.com/OrangeCountyAstronomers>
<https://www.youtube.com/@ocastronomers>

Please consult the calendar on the OCA website to RSVP online meetings (required)

President's Message

By Barbara Toy

Status on Our General Meetings

We're still in discussions with our contacts at Chapman University, trying to work out a way to continue having the in-person portions of our general meetings in the Chapman Auditorium, but the results so far have been inconclusive. We're also looking at some alternative locations in case we aren't able to continue meeting at Chapman. Unfortunately, we have not been able to arrange an in-person location for our meeting on August 14, so that will be entirely on-line again. We're hopeful that we'll have a location in time for the September meeting.

Last month I said we had been meeting at Chapman for at least thirty-five years, but that was an underestimate. When Charlie Oostdyk attended his first club meeting in 1978, they were already well established there, so our relationship with Chapman goes back over 50 years. That is truly amazing – we're very grateful to the university, and especially to the Physics Department, whose members sponsored us through that eventful half century, for allowing us to meet there and for the many wonderful interactions we've had with them over the years. Naturally, we hope this long-established relationship can continue, but even if the time has come to move our meetings elsewhere, we will always have a warm place in our hearts for Chapman.

Once we know where we will be meeting, we'll post the information on the website and send it out through the email groups as well as giving notice in the Sirius Astronomer. Liam Kennedy has kindly agreed to post items on our Facebook account, so you may see it there, as well.

Orange County Star Parties

After the promising start for our Orange County Star Parties in the new location that OC Parks found for us in June, we hit some unexpected problems and were not able to schedule nights that would work for us in July, August and September. Ultimately, we were able to reserve third-quarter moon nights in October, November and December, and, if those go well, that should put us in a better position with the Irvine Conservancy to schedule events more regularly in 2027.

If these scheduled star parties don't work out, we'll have to think about other alternatives for star parties in Orange County. In the past, these have been popular with club members who wanted a safe location for viewing or imaging that was closer to home than Anza. They were also good for introducing new members to the pleasures of viewing with fellow club members, for getting helpful advice on setting up and possible targets to look for, and for trying out new equipment. Because they have historically been more compact events than Anza star parties, they have also been good for getting to know other club members.

Finding reasonably dark skies in Orange County is a challenge, and we've been fortunate that the Irvine Company, and subsequently the Irvine Conservancy and OC Parks allowed us to use various sites around Santiago and Irvine Lake for our local star parties, pre-Covid. If we aren't able to arrange regular star parties in that area under their current policies, we will have to look for other reasonably dark areas elsewhere. It would be good to start an inventory of possible locations, in case we have to go that route, and if you know of any that we should consider, please email Alan Smallbone or me.

Western Amateur Astronomers (WAA)

WAA is a regional group of amateur astronomy clubs that was started in 1949 (per their website, <https://www.waastro.org/>). The activity most people know them for is the G. Bruce Blair award, given to recognize those who have made important contributions to amateur astronomy, and which several of our members have received over the years, including Chris Butler in 2006, Bob Buchheim in 2010, Jim Benet in 2012, Wally Pacholka in 2018, and Tim Hogle in 2022.

Our club has been a long-standing member of WAA, and Tim Hogle has been our representative to WAA for most of the last three decades, maybe longer (his award was given during one of the periods when he was not acting as our representative). Although he tells me there are several new people taking leadership positions in WAA who are bringing new excitement and planning new directions for the organization, he has reached the point when he has to leave the position of WAA representative permanently due health concerns and other commitments.

We therefore need a volunteer to be our new representative to WAA. If you are interested, please email me at btoy@cox.net or Alan Smallbone at Alan@ocastronomers.org. If you have questions about the organization or what our representative does, please email me and I will have Tim contact you if I'm not able to answer them.

The 2026 Starbecue

As you may have noticed, the weather forecast for the night of our Starbecue was not good, and there were clouds moving across the sky through the whole evening. The clouds seemed to keep people away, so the group that met up for the potluck was a bit smaller than for most years, but there was plenty of good food and good company. Unfortunately, I was so busy talking, eating and enjoying myself that I didn't think about taking pictures, and I don't recall anyone else taking pictures, either. If anyone there did take pictures, please share them!

Thank you to everyone who came out to the Starbecue and helped make it a success! And to those who missed it – we'll hope to see you out there next year!

© Barbara Toy, July 2026

Help Wanted

- OCA representative to the Western Amateur Astronomers
- Anza Maintenance Coordinator
- Orange County Star Party assistants

Both you and the club can benefit with your participation. For the WAA coordinator position, please send Barbara an email and give her a chance to tell you about it.

For the Anza Maintenance coordinator and Orange County Star Party assistants, Alan Smallbone at alan@ocastronomers.org is the person to contact. He can describe the jobs.

News About Our Anza Site

Upper Pads Area

A load of gravel will be spread over some of the areas that were cleared of vegetation last year to limit erosion and make the area less prone to mud following rain and snow. This will happen sometime during the next couple of months.

Anza House

A second air conditioner has been installed to improve cooling performance.

Fence Repair

A small section of fencing on the northern border of our site has been taken down for conversion into an informal gate enabling foot access from that side.

From the Editor

Has anybody an idea for a new article or interesting column of articles for the newsletter ? The NASA column will no longer be available.

The newsletter is once again looking for front cover picture contributions. We have had one suggestion that is being looked into and are very open to additional ones.

Due dates for submission of articles, pictures and advertisements are generally 13 days prior to the subsequent general club meeting.

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AstroSpace Update

August 2026

Astronomy and space news summarized by Don Lynn from NASA and other sources

Exoplanet Survived Red Giant – A gas giant exoplanet designated WD 1856 b closely orbits its white dwarf star, taking only 34 hours for each orbit. Stars in the white dwarf phase always follow the red giant phase, at which time the star should have expanded to swallow the planet. The James Webb Space Telescope (JWST) observed the planet pass in front of (transit) its star to better understand the planet. The observation yielded a rough mass estimate, temperature, and identified atmospheric constituents. Computer simulations of the planet evolving to its observed orbit best matched the newly measured temperature if the planet had orbited much farther during the red giant phase, thus avoided being swallowed, and later migrated inward to its present close orbit. The migration could have been caused by gravitational effects of the white dwarf's companion stars, of which there are two. Cloud particles and hydrocarbons, likely methane, were detected in the planet's atmosphere. This is the first time astronomers have detected atmosphere on a planet transiting a white dwarf star.

Reverse Rotation Exoplanet – CoRoT-2b is a hot Jupiter, that is, it is an exoplanet roughly the size and mass of Jupiter, but orbits so close to its star that it is quite hot. Most hot Jupiters are tidally locked to their star, that is, they present the same face toward their star throughout their orbiting. CoRoT-2b, however, was recently found to rotate very slowly in the reverse direction as compared to its orbital motion. This causes its day to be about double the length of its year (which is about 1.7 Earth days). It is believed that CoRoT-2b, like most hot Jupiters, formed much farther from its star, but migrated inward while still embedded in the protoplanetary disk in which the planet formed.

Improbable Planetary System – A new study of a brown dwarf known as TOI-201 c, that transits the star it orbits, has found it to be part of an unusual planetary system, containing two exoplanets and the brown dwarf all orbiting in the same plane, with the brown dwarf in a highly elliptical orbit, taking 2881 Earth days per orbit. The two planets have much shorter periods (about 6 and 53 Earth days), and thus orbit within the brown dwarf's orbit. Planetary orbits much larger are shown by calculations to be unstable due to the gravitational disturbances of the brown dwarf. How this system formed in this improbable configuration is being debated by astronomers. The brown dwarf is the first celestial body whose orbit has been measured by 4 methods: transit, transit timing variation, radial velocity, and astrometry.

Beta Pictoris Exoplanet – JWST discovered a third exoplanet orbiting the star Beta Pictoris. It was also spotted almost simultaneously using the Very Large Telescope in Chile. The first two exoplanets found there have been known for years. The new discovery orbits farther out from the star than the previous two, near the inner edge of the debris disk that surrounds Beta. In fact, the sharp inner edge of the disk had long been interpreted as an effect of an undiscovered (until now) planet nearby. The JWST observations included spectra that indicate the presence of carbon monoxide, water vapor and methane in the planet's atmosphere.

Rocky Exoplanet Atmosphere – Astronomers discovered helium escaping from an exoplanet known as LHS 1140b, which is 49 light-years away. It is known to be a rocky planet and to lie in the habitable zone of its star, that is, at a distance where temperatures could allow liquid water to exist on its surface. Because its star is a dim red dwarf, the habitable zone lies near the star, resulting in the planet's orbit taking only 25 Earth days. This is the first ever discovery of an atmosphere on a rocky planet in a habitable zone. It is estimated that 220 tons of helium per second are escaping from the planet. Radiation from its star is what is blowing away the escaping helium. It forms a tail behind the planet, which was seen in the observations. It is believed that some planets are born with an atmosphere of hydrogen and helium, and that such planets that are close enough to their star will have first the hydrogen and then the helium blown away. Some of the observations did not show the helium tail, which implies that the rate of helium loss varies with conditions, such as radiation levels and stellar winds. Astronomers are continuing to search for atmospheres on rocky exoplanets.

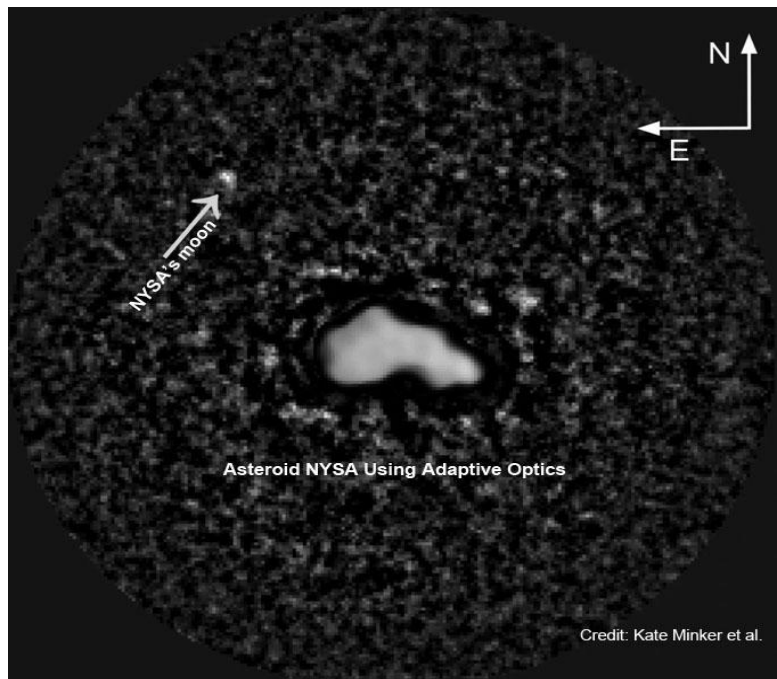
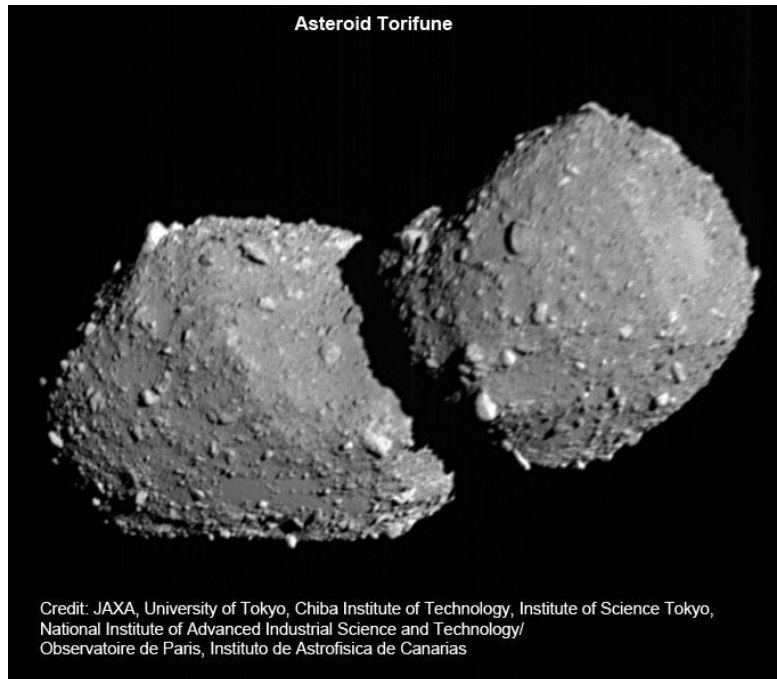
Nearby White Dwarfs Found – Four nearby (within 65 light-years) white dwarf stars were found hiding in the glare of brighter companion stars (all red dwarf stars). They were found, not by seeing them, but by detecting the wobble they gravitationally induced on their companions. All four are post-common envelope binaries, meaning that when the white dwarf went through its red giant phase, it was so close to its companion that material could pass between the pair. The wobbles were detected using HST's spectrograph. Astronomers hope to observe more red dwarfs to try to find more white dwarfs hiding in their glare.

Torifune – The Hayabusa2 spacecraft was launched by Japan in late 2014. It took samples of the asteroid Ryugu and returned them to Earth in 2020. Since then, it has been on an extended mission to flyby asteroid Torifune, which it accomplished July 5. The spacecraft used its instruments, including 2 imagers and an infrared spectrometer, to observe the asteroid during the flyby.

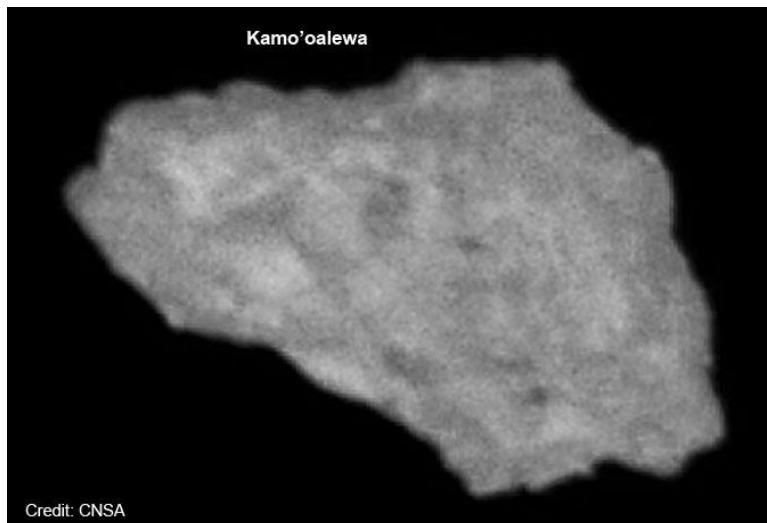
Milky Way Size – Using data from the Chandra and XMM-Newton X-ray space telescopes, astronomers have measured the distances to dust clouds in the outer arms of the Milky Way galaxy with greater precision than ever before. The new distance measures are based on measuring rings created by light echoes. The result appears to show that our galaxy's outer arms are about 10% farther than previous estimates, meaning the galaxy is larger than thought previously. Because calculations of the mass of the Milky Way depended on its size, the galaxy's mass may have to be revised.

Ancient Bright Star Explained – Two astronomical sources from about 1 and 2 millennia ago (Ptolemy and al-Sufi) claim that the star now known as Theta Eridani was one of the 13 brightest stars in the sky. It's a whole lot dimmer than that currently. The star is now known to be a closely orbiting triple star. A new paper says that mass transfer between the component stars and a transition to red giant could have caused the star to appear bright enough to match the ancient sources. Mass transfer and a red giant phase are consistent with the best available data on the 3 component stars and their orbits. This would match well with the star becoming about 2.7 magnitudes brighter for a millennium or so.

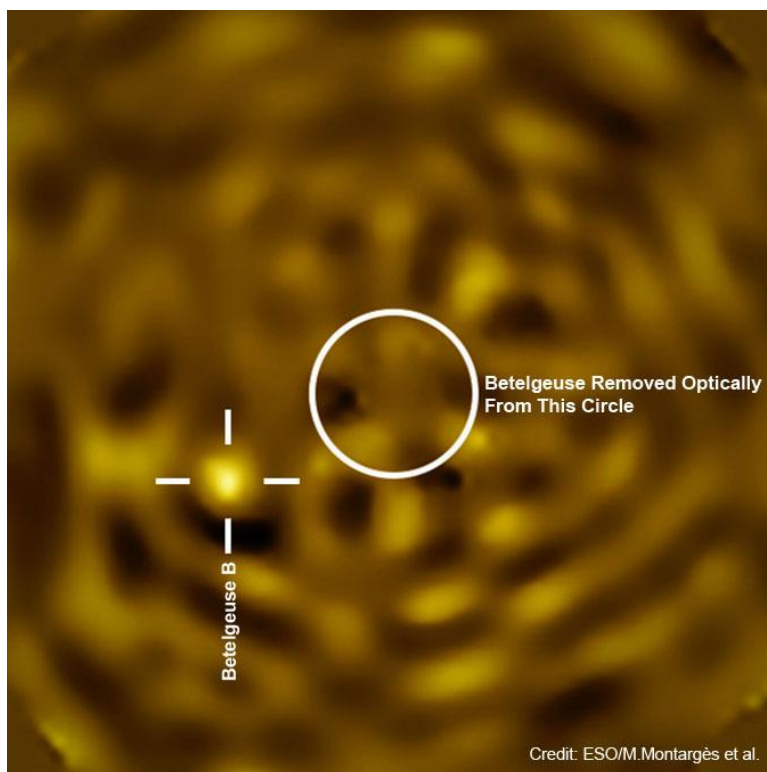
Nysa – Images were taken of asteroid 44 Nysa using the adaptive optics system on the Large Binocular Telescope in Arizona. Nysa appears to consist of three lumps stuck together. A number of other asteroids have a shape like two lumps stuck together, but this is the only triple. As multi-lump asteroids go, Nysa is quite large, at 70 miles in the long direction. How this shape formed and how the asteroid has avoided coming apart is puzzling astronomers. Nysa was found to have a tiny (less than a mile across) moon orbiting about 110 miles away. Nysa is also unusual in that it is an enstatite asteroid. Enstatite is a magnesium-rich mineral found on its surface. The asteroid is denser than rock, so must consist of a mixture of rock and metal.



Sample Return Mission – China's Tianwen 2 spacecraft has rendezvoused with Kamo'olewa, which is classified as a quasi-moon of Earth. A quasi-moon is defined as an asteroid that orbits the Sun, but remains in synchrony with the orbiting Earth, so that it appears to be orbiting Earth. The spacecraft will over the next several months take a sample of the quasi-moon's surface and return that sample to Earth in late 2027. Kamo'olewa is only about 90 feet in length, and rotates every 28 minutes. It appears to be a solid jagged rock rather than a rubble pile that some small bodies are. After returning the sample, the spacecraft will be directed toward Comet 311P/Pan-STARRS.

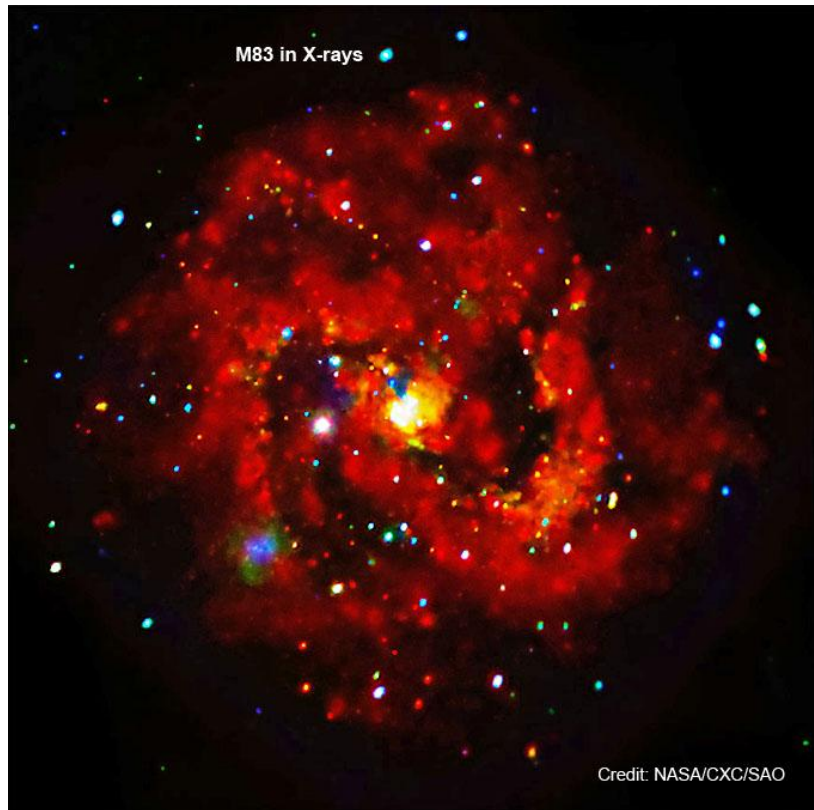


Betelgeuse Companion – In 1908 astronomers noted that one of the periods of brightness variation exhibited by Betelgeuse (the star in Orion's shoulder) was likely caused by a binary star companion orbiting about it. Since then, astronomers have been trying to take an image of the purported companion, designated Betelgeuse B. Last year, astronomers may have succeeded when an image taken with the Gemini North telescope in Hawaii showed a smudge next to Betelgeuse. Now an image has just been released that was taken with the Very Large Telescope (VLT) in Chile clearly showing a star in about the same place as the smudge. The instrument on the VLT used for the image is able to block out light from Betelgeuse itself. The instrument used was developed to image exoplanets hidden in the glare of their stars but it works on hidden companion stars too. Previous work had predicted that B would in its orbit appear farthest from Betelgeuse about the time that the Gemini and VLT images were taken. The separation of B in the images was only 0.052 arc seconds.



Polarized GRB – The VLA radiotelescope array in New Mexico was used to observe the afterglow of a gamma-ray burst (GRB). Such bursts are the most powerful events in the Universe. Polarized radio was detected, meaning the radio waves vibrated in a particular direction, for the first time ever in a GRB afterglow. This indicates the radio signal passed through a strong magnetic field. It was determined that the magnetic field had to be near the GRB source, meaning the magnetic field is likely associated with the conditions that produce GRBs. The burst, designated GRB 260310A, was relatively nearby for a GRB (about 2 billion light-years away), making details of it easier to observe. The conditions observed by the VLA near the GRB source support the theory that GRBs are caused by the death of very massive stars.

Varying Supernova Remnants – Ordinarily the gas thrown off by a supernova explosion just continues to expand and cool for tens of thousands of years. But an examination of years of observations of known supernova remnants in the galaxy M83, made by the Chandra X-ray space telescope, showed that roughly half of the remnants displayed substantial changes in brightness over time. Only one of 22 varying supernova remnants showed signs of the remnant colliding with surrounding material, which would cause changes in brightness. The other 21 needed a different explanation for the varying brightness. The best explanation is that the stars that exploded were binary stars, and those companion stars survived the nearby explosion and remained orbiting the black hole or neutron star that remained from the explosion. The companion star then dumps material onto the black hole or neutron star, causing outbursts of X-rays. Such binaries involving supernova remnants have been occasionally seen before, but not 22 of them in a single galaxy. Astronomers now need to determine how they became so concentrated in M83.



Omega Centauri Black Hole – In theory, Omega Centauri, like other old star clusters, should have for billions of years had massive stars within it reach the ends of their lives and explode as supernovas, leaving behind thousands of stellar-size black holes. Yet no such black holes have been found in Omega, until now. Using archived observations of Omega from the Hubble Space Telescope (HST) and JWST, astronomers found by astrometry a star that was orbiting about an invisible object with a mass that had to belong to a stellar-size black hole. Previous searches of Omega for black holes, all of which came up empty, had used the radial velocity method to look for a star orbiting a massive object, or had searched for X-rays or radio emitted by material falling into a black hole. Apparently, material falling into black holes in Omega is quite rare, causing the previous searches to fail. The new discovery was dubbed oMEGACat BH-2. The mass of the black hole was near the small end of the range that can be produced by a supernova. Its orbital period is the longest of any known black hole binary, at 94 Earth years.

Non-Central Black Hole – Supermassive black holes are normally found at the centers of galaxies. It is thought that under certain circumstances such a black hole could be thrown from this location, but this is almost never seen, probably because black holes are invisible except when they are actively consuming matter. The Zwicky Transient Facility (ZTF), which scans the sky from Palomar Mountain for (you guessed it) transients, found an object that lit up, which further examination showed to be a supermassive black hole consuming a star. It is located in the outskirts of a galaxy, not the center. Its mass was measured at about 4 million times the Sun's mass, which puts it in the range of supermassive black holes. Consuming a star is referred to as a tidal disruption event because tidal gravitational forces tear the star apart as it is consumed. Archived images showed that before ZTF spotted it, the object was invisible. This confirms belief that astronomers just can't see black holes that are not actively feeding.

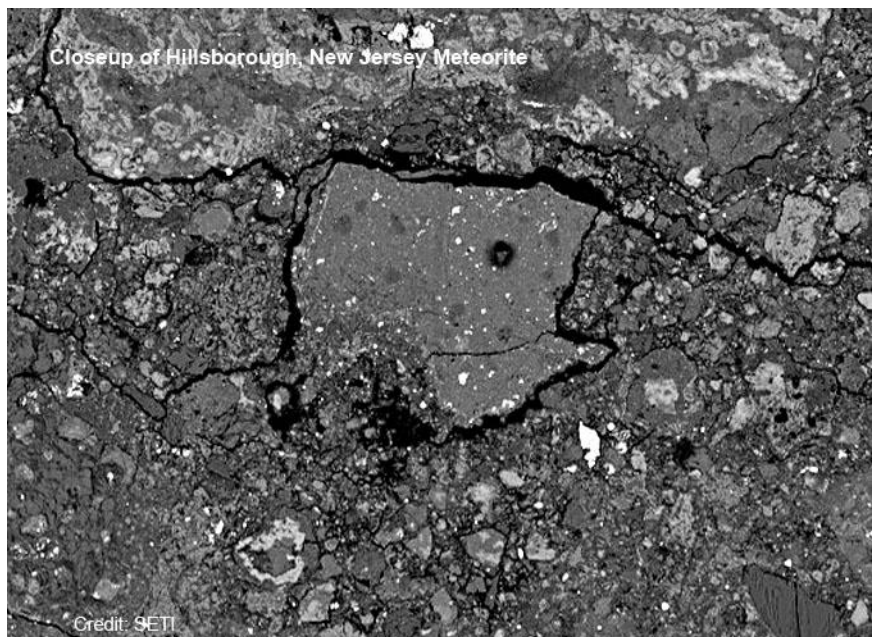
Black Hole Collisions – Theoretically when a massive star reaches the end of its life and explodes as a supernova, it will leave behind a black hole, unless the star was extremely massive, in which case the explosion blows all the star's matter away. So, no exploding stars should form black holes with more than 45 times the Sun's mass. But the gravitational wave detectors (LIGO, etc.) have detected collisions of black holes that were more massive than 45. This has led astronomers to conclude that some black holes collide more than once, the first collision raising the resulting mass above the 45 limit. A team of astronomers studied 153 recent black hole collisions detected through gravitational waves and judged whether they were likely a first or a second collision. The judgment was based on mass and spin. The conclusion was that 14% of black hole collisions involve the second collision of a black hole. This implies that larger mass black holes (perhaps on their way to becoming supermassive black holes) likely form from repeated black hole collisions, not by continued consumption of ordinary matter.

Radio Background – Radiotelescopes operating at low frequencies (below 500 MHz) are becoming more common. However, the background radio (signal received from all directions between any radio objects) at these frequencies has never been precisely measured, until now. The background must be subtracted from observations of individual radio emitting objects to obtain accurate images. A wide field survey made with the ASKAP radiotelescope array in Australia has produced a new standard of low frequency background, which is found to be 20% to 50% brighter than previous estimates. The main source of low frequency background is electrons spiraling about the magnetic field lines in the Milky Way, known as synchrotron radiation.



Extremely Distant Quasars – The European Euclid space telescope has discovered 31 extremely distant quasars. Quasars are supermassive black holes that are feeding on huge amounts of matter, causing them to glow extremely brightly as the matter heats to extreme temperature on its way to the black hole. Because of the time their light takes to get to us, we are seeing the quasars as they were soon (within 830 million years) after the Big Bang. The expansion of the Universe gives these quasars a redshift of 6 or more. The astronomers involved trained a computer program to identify very distant objects in Euclid images, and in this way found a few thousand candidates, which were trimmed down to 123 by inspection. Spectra of these were taken with various ground-based telescopes to determine their redshifts, and therefore distances, yielding the 31 extremely distant quasars. This search more than doubled the number of known extremely distant quasars. The newly discovered objects are not as bright on average as the previously known ones. This is a selection effect: Previous search had found only the very brightest quasars.

Well-Preserved Meteorite – A meteorite fell through the roof of a home in Hillsborough, New Jersey 2 years ago. The homeowner handled the meteorite fragments with gloves and sealed them in jars. Professional examination showed that the meteorite is a CM1 carbonaceous chondrite, a rare and fragile type. This type is known to contain water-rich minerals that degrade with exposure to air. This was the best preserved meteorite of this type ever recovered. Analysis showed the meteorite to be rich in salts and came from near the surface of a parent body asteroid. It contains evaporites, minerals that crystallized from a brine. It also contained serpentine, which forms from water and volcanic minerals. Also found are carbon-chain molecules up to 11 carbon atoms long, longer than the carbon chains previously found in this type of meteorite.



Lunar History – The first (and so far only) soil and rock samples from the far side of our Moon were obtained by the Chinese Chang'e-6 mission about 2 years ago. Continuing study of this sample is overturning some of astronomers' beliefs regarding the history of our Moon. In particular, it is now thought that the Late Heavy Bombardment, which was deduced from impact craters of age 3.8 to 4.1 billion years, was more of a lengthy event with a gradual decline rather than a short burst of impacts.

Impacts on Mars – The Perseverance Mars rover has found that a 245-foot thick pile of rock was built by repeated asteroid impacts. It was nicknamed "Broom Point member". It probably formed more than 3.9 billion years ago. It lies just outside of Jezero Crater, in which the rover landed in early 2021. The repetition of rock types in the pile indicates that repeated high-energy impacts occurred here. Some of the layers here are nearly vertical, indicating the layers likely were pushed up by the formation of Isidis Basin, one of the largest impacts on Mars. Jezero Crater apparently formed from a later impact.

Rubin Starts Full Operation – The Vera C. Rubin Observatory in Chile has completed its testing and has begun its LSST (Legacy Survey of Space and Time). It is imaging the entire observable sky through 6 different color filters, from ultraviolet to infrared, every 3 nights, weather willing, with its 8.4-meter primary mirror and the largest digital camera ever built. It automatically compares every image with previous images and makes a list of every object that has changed (moved, brightened, or dimmed). It is estimated that the changed list every night will have about 10 million objects, including thousands of supernovas. Within the next year of operation, Rubin will produce more visible-light images of celestial objects than all telescopes in history combined.

Starship Test Flight – SpaceX's Starship with Super Heavy booster flew its 13th test flight successfully, though this was only the 2nd test of the new V3 version. Starship is by far the largest and most powerful rocket ever launched. The first stage safely landed in the Gulf of Mexico, as did the second stage in the Indian Ocean. The flight also successfully tested deploying Starlink communications satellites. It is important that Starship becomes completely operational soon, because NASA is likely going to use a version of Starship to land astronauts on the Moon as part of the Artemis program.

LHC Upgrade – The Large Hadron Collider (LHC), the world's most powerful particle accelerator, is going offline for about 4 years for a massive upgrade. The result is being called High-Luminosity LHC. Upgrades include next-generation magnets that will better focus particles and rebuilt particle detectors that will handle over 5 billion interactions per second. The greatest achievement of the LHC was its discovery of the Higgs boson, which explains the masses of the other subatomic particles. High-Luminosity LHC will continue studying how the Higgs works, and will search for other particles, such as supersymmetric ones and dark matter particles.

LINK – I reported here in the June issue that NASA hired the Katalyst company to provide a spacecraft (called LINK) that will rendezvous with the Neil Gehrels Swift gamma-ray/X-ray/UV/visible-light space telescope and lift it into a higher orbit, thus extending its life. Without this boost, Swift is expected to be dropped down by atmospheric drag and burn up within this year. LINK was indeed launched and was approaching Swift when it suffered a problem with its reaction wheels, which caused it to tumble. As of the publishing deadline for this column, controllers had not completely solved LINK's problems.

From the Editor

Has anybody an idea for a new article or interesting column of articles for the newsletter ? The NASA column will no longer be available.

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Build Your Own Binocular Chair, Anyone?

David Selinger
Vermont Astronomical Society

A bino-chair built by Vermont Astronomical Society member, Dave Selinger, was popular at the University's Space Club star party. It is also the subject of the Astronomer's Workbench column in the July 2026 issue of Sky & Telescope. Dave says that this bino-chair really enhances binocular observing, by providing easy access to the full sky in comfort. Basically, you turn yourself into a Dob mount; your left hand controls azimuth while your right hand fine-tunes the altitude.

Many binocular observers use a reclining outdoor chair. These chairs can usually be converted into a full binocular chair. It has been said that "comfortable seated viewing is like adding aperture". This is assumed to be true for most of us, because energy and attention are not being diverted away from the process of observing.

The smooth operation of the simple drive wheel was especially coveted at the 2023 Stellafane mechanical competition. A large turntable bearing is attached to the underside of the chair platform. With pressure from just one or two fingers, the drive wheel runs along the base track and finely turns the entire chair. It was so smooth that a friction mechanism was later added to help keep the viewing direction stable.

Imagine now that you're ready to take your new bino-chair for a spin. Before getting into the chair, you do some coarse adjustment so that later when viewing, virtually no adjustment is required. Adjust for height, head size and use of eyeglasses. Also adjust so that the binoculars remain at the optimum distance to your eyes as the viewing angle changes. Your only prerequisite now is the ability to operate a standard zero-gravity chair.



You get into the chair behind the binoculars and lean the chair back to gain some viewing elevation. Fine-tune the elevation with one hand, while panning with the other hand. You have access to the full $360^\circ \times 90^\circ$ sky. As the viewing direction is changed, the binoculars remain correctly placed in relation to your eyes. When intending to view an entirely different portion of the sky, there is no need to get up and shift any equipment - compare that to using a parallelogram that hovers over a reclining chair. Since the nape of your neck is supported with a cushion, viewing near the zenith is especially comfortable. The viewing direction remains steady wherever it is set since all moving parts have the appropriate amount of stiction and friction. The equipment will seem to disappear from your mind while you are viewing. You can push the binocular holder up out of the way to take a break or to look at a planetarium app.

Bino-chairs are especially suitable for viewing close to the zenith. The upper reaches of the sky are generally clearer and darker, with less sky glow, and with less effective atmospheric thickness along the line of sight. Here there are also fewer obstructions to the view. Cruising way up in Cygnus is just incredible in the late summer. It can be wonderful to coast through an entire stretch of the Milky Way, visiting familiar clusters and nebulae along the way. Another situation may commonly occur: clouds can roll in and obscure the view in one direction for a while. It's then effortless to slew over and continue exploring in other directions. Bino-chairs are known for ease and comfort. For anyone, especially those of us with neck and back issues, a bino-chair can be very accommodating.

There is one perennial concern that many backyard astronomers have: "What about the nighttime equipment setup and teardown?" This can be important to binocular users that often like the convenience of unscripted observing sessions. To answer this, here is the typical five to ten minute assembly after the sections have been taken outside.



1. Lay the octagonal base on a tarp and adjust its leveling legs. The top of this base has a large friction cavity.

2. The chair platform has a turntable bearing installed on its underside. Simply set the platform's bearing into the friction cavity of the base.

3. The chair has typically been collapsed and stored together with its mounted bino-holder. Open up this collapsed chair, with its attached bino-holder, and set it on the four guides on the platform.

4. Attach the drive wheel to the side of the chair, by tightening two wingnuts.

5. Clamp the counterweight board to the front of the chair. When the chair is balanced, it is much easier and safer to use.

6. Finally, slide in your binoculars, and add small sandbag weights to balance the rear of the binocular holder.

Dave has picked up a lot of star-hopping practice with his bino-chair. This easy navigation of the sky increases awareness of star patterns and enhances star-hopping ability. He finds it rewarding to build up the skills to find the objects, even if it is with the occasional help from his SkySafari app.

As written in the Sky & Telescope article: "... a piece of observing gear that all but disappears when you use it, leaving just the magnified sky and the comfort of a cozy chair."

Anyone can reach Dave at contact@milkywaylounge.com to get free access to the build plan PDFs.

[this article originally appeared in the Vermont Astronomical Society summer 2026 newsletter]

Advertisements

Buy, Sell or Trade some of your gear? This is where club members can place advertisements. Please contact the editor at newsletter@ocastronomers.org to place an advertisement or to learn more about placing one. There is no cost to club members for non-commercial advertisements in the newsletter. The editor may resize and re-arrange ad content to fit and will feed back the formatted ad for approval prior to publishing.

Some policy changes have been made to reflect the expanded capacity of the electronically published newsletter.

- Each advertisement may now occupy up to 1/2 of a printed page and may include small pictures within the space permitted. The editor may resize and re-arrange ad content to fit and will feed back the formatted ad for approval prior to publishing.
- Each advertisement may be run for 3 consecutive issues, after which it will be removed unless the advertiser requests extension of the ad by contacting the editor of the newsletter.

Want to Buy contact Norbert Ulbrich janmaatcalifornia@yahoo.com 650-507-9944 Cell

- Aerospace Engineer is looking for a vintage 4-inch refracting telescope from the 1950s or 1960s that was made by the **GOTO Kogaku Company of Tokyo, Japan**. The refractor can be in any condition.

I will do personal pick-up and pay a fair price. Please, contact Norbert by email or via my cell phone - text anytime, call after 8:00pm.

For Sale contact Jerry Floyd jlfloyd720@gmail.com

- Stellarvue **SV80L** super apochromatic triplet refractor. 80mm aperture, 600mm focal, f/7.5 \$ 500

2" Feathertouch focuser

Has a single large tube ring with base plate for mounting

Included are 2" star diagonal, Stellarvue red-dot finder, and padded case.

Pick up in Hemet, at OCA Anza site, or I will deliver locally in Southern California area, within approx. 100 mile radius.



J. L. Floyd © 2025

For Sale contact Jerry Floyd jlfloyd720@gmail.com

- 11" Celestron Rowe-Ackermann Schmidt Astrograph v2 \$ 2900
- Aperture 11" (279mm), Focal Length 620mm, f/2.2, Ultra-Stable Focus System
OTA Weight 43 lbs/19.5kg.

Includes top and bottom mounting rails,
42 and 48mm T-thread camera adapters,
dust cover, dew shield, Pegasus focus motor.
Does NOT include camera or guide scope.



Pick up in Hemet, at OCA Anza site, or I will deliver locally in Southern California area, within approx. 100 mile radius.

For Sale contact Ron Choi rchoi1983@gmail.com

- | | |
|--|--------|
| • Orion EON 115mm f/7 Triplet APO Refractor with Orion 3" Field Flatteners | \$1100 |
| • Celestron 8" Edge HD Optical Tube with Celestron Padded Soft Case – Like New condition | \$1200 |
| • Sky-Watcher EQ6R Pro Equatorial Mount | \$1000 |
| • Optcorp TRIAD Filter 2" Ultra | \$ 750 |
| • Altair 2 inch Magnetic Filter Drawer | \$ 70 |
| • ZWO ASI071MC PRO | \$ 700 |
| • ZWO ASI533MC PRO | \$ 550 |
| • ZWO ASI174mm Mini | \$ 320 |
| • ZWO ASI224MC | \$ 100 |
| • QHYCCD Pole Master | \$ 190 |
| • ASIAIR PLUS 256 GB – Like-New condition | \$ 280 |
| • Tele Vue Delite 11mm | \$ 200 |
| • Tele Vue Plossl 32mm | \$ 100 |
| • Tele Vue Plossl 8mm | \$ 70 |
| • Tele Vue 2x 1.25" Barlow | \$ 90 |
| • Orion OAG Off Axis Guider | \$ 240 |
| • Orion 9x50 mm Correct-Image Right Angle Finder Scope | \$ 100 |

For Sale contact David Pearson (714) 293-5684

- SBIG STF-8300m CCD camera with case and 8 position filter wheel (no filters) \$300
- Orion slow-motion control mount with RA axis polar scope, tripod, and counterweights \$ 50
Great for small scopes including SeeStar and Dwarf lab



For Sale contact Larry McDavid lmcdavid@lmceng.com Cell 714-390-9655

- Heavy duty steel pier for German Equatorial mount. Fits Anza 10-inch pier bolt pattern. \$ 100
Pier is 12 inches diameter and 30 inches tall. Very heavy weldment is made from 3/4-inch pipe and includes azimuth adjuster plate. Ready for sand blast and paint. There is a large hole in the pier side wall and in the 14-inch square pier base plate for access to route an electrical conduit up from the Anza pad.

This is a very heavy pier as one should expect from its wall thickness and diameter.

Call or email if questions



MVUSD Reach for the Stars Observatory

Investing in the Next Generation of Explorers

Murrieta Valley USD Telescope Observatory Project



Greetings OCA members from the Inland Empire

I am grateful to have been offered access to your newsletter venue to advise club members of an opportunity to personally support an exciting educational project.

Murrieta Valley Unified School District and the Temecula Valley Astronomers are building a unique grassroots window to the universe and we invite you to become a founding partner and sponsor of this extraordinary STEM initiative.

As a community, we are developing a professional-grade observatory complex utilizing previously donated 16" telescopes located between Dorothy McElhinney middle school and Lisa J. Mails elementary school that will inspire curiosity for scientific discovery, today and for future generations. Through this immersive, hands-on experience, students will not simply observe the cosmos but will help engineer and maintain instruments that make exploration viable.

We plan to add solar capability to the high aperture optical and digital instruments to expose students and community members to as much of the research spectrum as possible. Note that every classroom in the District will be able to digitally access research results, including live displays of the Sun and its activity. Phase 2 is planned to make such access available to ALL local districts and community members also!

We are seeking sponsorships and community investment partners to help fund the ongoing procurement of observatory components and infrastructure. As someone with a passion for investing in the next generation of explorers and innovators, your support would provide more than just equipment. It would create transformative "First Light" moments for students who may become tomorrow's astronomers, physicists, and engineers!

As a valued partner and sponsor, you will be duly recognized as a Champion of STEM education, innovation, and opportunity, by having your name added to the Wall of Fame at the facility.

I have included the sponsor form but feel free to contact me via email at:

shknbk13@gmail.com

Thank you for your consideration in investing in the next generation of explorers. Together, we can help students reach beyond the classroom and toward the stars!

Clear, Dark Skies,

Mark V Baker

President Emeritus, Temecula Valley Astronomers

Investing in the Next Generation of Explorers

Murrieta Valley USD Telescope Observatory Project



Murrieta Valley USD, in partnership with the Temecula Valley Astronomers Club, is creating a unique window to the universe. We invite you to become a founding partner in our professional-grade telescope observatory project located between Lisa J. Mails Elementary School and Dorothy McElhinney Middle School.

This one-of-a-kind STEM initiative will provide students with hands-on opportunities in engineering, astronomy, optics, and scientific discovery while creating a lasting educational resource for southwest Riverside County.

Donations are tax-deductible and may be made online.

Partnership Opportunities:

- **Founding Galaxy (\$5,000+):** Naming rights on the telescope's primary housing cover and prominent logo placement in the observatory/housing area, Board of Education recognition and logo and links on project website.
- **Planet Sponsor (\$2,500):** Prominent logo placement in the observatory/housing area, invitation to lead a "Star Chat" at teacher lead star parties, logo on project website.
- **Constellation Sponsor (\$1,000 - \$2,499):** Logo placement in observation deck area and project website.
- **Star Maker (\$50 - \$1,000):** Name listed on observation deck area and certificate of recognition.

Sponsorship Commitment Form

Please return this donation form to: mvusdinfo@mvusd.org

My Sponsorship level:

☐

Founding Galaxy

☐

Planet Sponsor

☐

Constellation Sponsor

☐

Star Maker

Total Amount of Donation: \$

Contact Person:

Telephone #:

Mailing Address:

City and Zip Code:

Email Address:

Signature of Donor:

Date:

Checks may be made payable to the Murrieta Valley Unified School District. **Please send donation checks to: Murrieta Valley USD**, Attn: Telescope Project, 41870 McAlby Court, Murrieta, CA 92562