SIRIUS ASTRONOMER

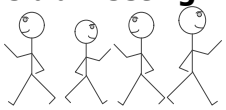
www.ocastronomers.org — The Newsletter of the Orange County Astronomers

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

September 2026 Free to members, subscriptions $12 for 12 issues **Volume 53, Number 9**

OCA will meet in Lecture Hall 1 – which is in Building 40 shown (in orange) just above the planetarium in this rotated campus map.

Upcoming Events - free and open to the public

Beginner's class	Monday, 2 October at 7:00 to 9:00 PM **ONLINE** This is the 2nd session of the Beginners Astronomy Class. It covers the different types of equipment used to observe the night sky, including telescopes, mounts, eyepieces, filters, and advantages and disadvantages of different options.
Club Meeting 	Friday, 11 September at 7:30 to 9:30 PM **IN PERSON, ONLINE** "What's Up": John Garrett from TVA **IN PERSON** Main speaker: Dr. Jim Fuller from Caltech **ONLINE** Whose talk will be "Sounds of the Stars: Journey to the Center of a Star" **Orange Coast College, Lecture Hall 1, building 40** Parking fee must be paid in advance via Passport Parking app – see page 2 for more details
Astro-Physics SIG 	Friday, 18 September, at 7:00 PM to 9 PM **IN PERSON** Orange Coast College, Building 40, Astronomy House
Star Parties	Saturday12 September at the OCA Anza site. No Irvine site star party will be held in September.

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)

Parking at Orange Coast College

Parking at Orange Coast College must be paid via Passport Parking, a smart-phone app. Parking Lot E = Zone 92847 may be the most convenient one for the meeting location. Standard parking rate is $5 + $0.35 processing fee and is good for the entire evening. Please access this site well before visiting OCC to establish an account for Visitor parking.

https://cccd.t2hosted.com/Account/Portal

Cover Photo

Michael Beckage took these images of the recent partial lunar eclipse from Long Beach using a Celestron C6 with f6.3 focal reducer and Canon 60Da DSLR.

There is another lunar eclipse image later in this issue.

President's Message

By Barbara Toy

Welcome to September, the month of the autumnal equinox, when schools are back in session, and it often seems to be more of a time of new beginnings than New Years. In keeping with the season, this September marks a new beginning of sorts for our club…

New Meeting Location for Our In-Person General Meetings

We have not been able to work out terms with Chapman University that will allow us to continue to have our in-person meetings there. Now, after some hard work by Charlie Oostdyk and others, we have a new meeting location in a math lecture hall near the Planetarium at Orange Coast College. This is near the location where the Astrophysics SIG and sometimes the Beginners Class have been meeting, which has been working well for them.

As I write this, we are working on the final paperwork and expect that we will be able to hold the in-person portion of our general meeting on September 11 at this new location. Charlie, Alan Smallbone, Liam Kennedy and I met with Jessica from the Planetarium to see the lecture hall and test our equipment there. Reza AmirArjomand connected with us remotely so we could test the remote aspects as well. Everything went well and we don't expect any significant problems conducting hybrid meetings from there.

The room has about the same number of seats as Chapman Auditorium, though with ramps instead of stairs to get from the top/back to the bottom/front of the hall, so the room is generally easier to navigate. It has good acoustics, and we can connect to the sound system as well as the WiFi which we hadn't been able to do at Chapman since Covid, hence the use of our own sound system, which has been adequate but not optimal.

The Planetarium will be open at the time of our meetings, and we'll be able to use the restrooms there, which are the closest physically to where we will be meeting. Parking is also pretty close, in the Planetarium lot. We'll put maps and instructions on the website on the locations of the meeting hall, parking, etc., and send the information out on the email groups before the meeting, so please check there for details.

We will miss meeting at Chapman, and hope our relationship with the university will continue, with members of the Chapman community being welcome to attend our meetings on topics of interest to them, whether in person or remotely.

We're also excited about new options opening for us with this change, particularly the prospect of building a productive relationship with the Planetarium and the astronomy program at Orange Coast College, and we're very grateful to the Planetarium and the college for giving us this opportunity.

OCA Election Season Starting

We're about to start our annual election cycle for the OCA Board for next year. We formally take nominations of candidates in October and November, finalize the ballot after the November general meeting, and the election itself is in December and early January, ending at midnight of the day of the January general meeting.

Please think seriously about running for a position on the Board, which is the governing body for the club. We've been fortunate to have a mix of long-term and new members on the Board over most of the time I've been associated with it. That gives us the benefit of both historical perspective and consistency from the long-termers and different perspectives and suggestions from our newer members as we determine our best course in dealing with challenges facing the club. There is a real benefit to the club and to the Board itself if you run for a Board position.

The benefit to individual members of being on the Board varies from person to person, but there are very few Board members I've known over the years who haven't found the experience rewarding. For me, it has given me a deeper understanding of the club, its history and activities over time, as well as opportunities to get to know people in the club I probably wouldn't have met otherwise, so it has really enriched my club experience. There's also satisfaction to learning about problems facing the club and helping to resolve them, and to working on longer-term policies and plans, and just in doing what I can to help keep things running smoothly. Since other Board members regularly volunteer to take on jobs that need doing, I think they get similar satisfaction.

So please think about it over the next month, maybe attend the September Board meeting if you'd like to get a flavor of what it's like to be on the Board, and, come October, I hope you'll let us add your name to the list of candidates for the 2027 Board.

AstroSpace Update

September 2026
Astronomy and space news summarized by Don Lynn from NASA and other sources

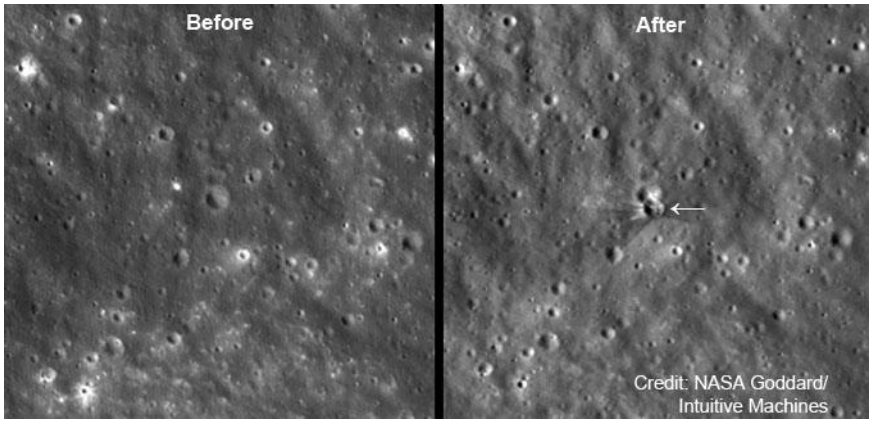
Active Venus – Most planetary astronomers have long believed that Venus is geologically dead: no tectonic activity. A new study using computer models of Venus concludes that images of the planet showing rift valleys best match recent tectonic activity. Rift valleys form when plates on a planet pull apart from each other. It had been thought that the observed rift valleys were artifacts left from activity long ago.

Eclipse of the Earth – The Perseverance Mars rover was imaged the Martian moon Phobos eclipsing Earth. It lasted only about 10 seconds. This is the only time this event has ever been observed.

Martian Aurora – The MAVEN Mars orbiter stopped working late last year, but astronomers are still discovering things in its data. They found that one type of aurora that occurs on Mars has the same cause as common Earth aurora, except on Mars they happen only over the scattered locations that possess magnetic fields, while on Earth it occurs around the magnetic north and south poles. In these auroras, magnetic field lines from the Sun reconnect with magnetic field lines of the planet, ultimately firing electrons into the atmosphere. Several instruments on MAVEN traced this process happening on Mars.

Comet Split – In June of 2025 observers of comet 240P (NEAT) found a fainter object moving along with it, the result of a piece breaking off of the nucleus of the comet. To learn more about splitting comets, a team of astronomers monitored the two comet pieces for 6 months, beginning in October 2025. They measured the sizes, dust-loss rate, and separation speed. The main piece is roughly 800-1200 yards in diameter, and the smaller piece perhaps 600 yards. The best estimate is that the break occurred at least 3 years before the monitoring observations. The astronomers considered the different mechanisms that could cause a comet split, and concluded rotational instability is the most likely cause of this split. Outgassing can cause the nucleus rotation to change.

Lunar Impact – A SpaceX Falcon 9 carried two landers (named Blue Ghost and HAKUTO-R M2/Resilience) to the Moon early in 2025. The 4+ ton upper rocket stage was left in orbit about the Sun, expected to stay there pretty much forever. But recent tracking of the stage found its orbit had changed, and it was then on course to strike the Moon. This happened on August 5. Of course, astronomers were watching the predicted impact site and were able to take images and a spectrum of the cloud of material kicked up, though the impact itself was not bright enough to image. Two lunar orbiters were able to image the resulting crater within days and compare with pre-impact images. The crater is about 60 feet wide and 10 feet deep and ejecta was seen about it.



Charon Rotation – Pluto and its largest moon Charon have been observed close-up only once, and that was by the New Horizons spacecraft flyby in 2015. Astronomers are still studying the Charon data observed then. Charon has unique fault patterns at its equator. It has been hypothesized these faults could be the result of Charon forming with quite a fast rotation and vastly slowing down to the rate we see today. A new study used computer simulation of Charon's rotation over its history to try to match the faults and other features, including northern fractured terrain and its smooth southern plains. The best match with observation came with a 14 hour initial rotation period, slowing to today's observed 153 hour rotation, combined with some global contraction. The slowing of Charon's spin is believed to be due to tidal forces from Pluto.

Liquid on Pluto – Astronomers studying New Horizons data found evidence that liquid nitrogen is found at the northern edge of the huge heart-shaped nitrogen glacier on Pluto. Conditions on Pluto do not allow liquid nitrogen to rain or even to remain long exposed on the surface. So, the liquid must be rising through cracks in the surface. Computer simulations show that frozen nitrogen can melt to liquid under the nitrogen glaciers.

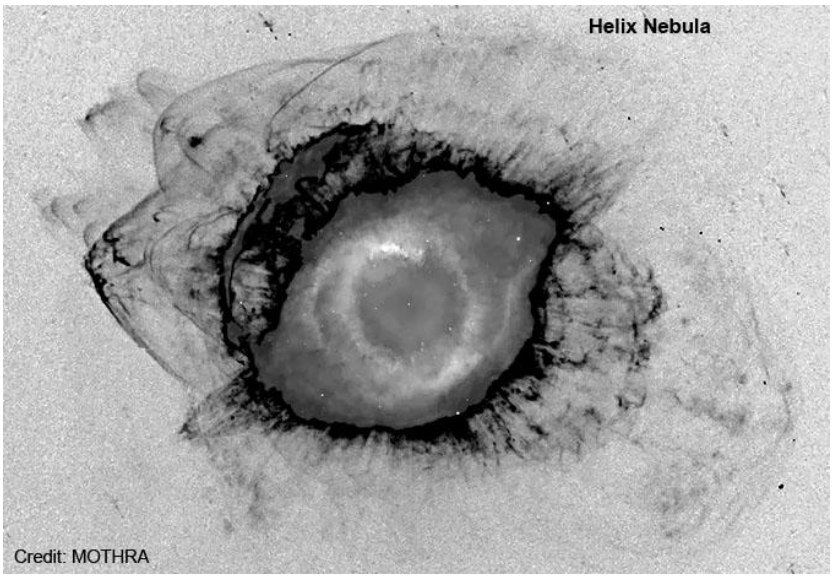
Neptunian Moons – Neptune has a strange system of moons: one huge moon (Triton), and 15 small moons, with the inner ones orbiting among rings. Because Triton revolves backwards (retrograde) and has a quite elliptical orbit, astronomers have long thought that it was captured after the planet and its original moons formed. A new study observed the rings and 3 inner moons to try to deduce how they formed. Two of the studied moons have water-rich clay. However, they and the third moon do not have water ice, nor do the rings. They concluded that those 3 moons and the ring material were likely broken out of the interior of original moons when Triton invaded the Neptune system. The non-clay moon must have formed in a different region of the debris from the Triton capture.

Triple Black Hole – The James Webb Space Telescope (JWST) has for the first time ever found 3 supermassive black holes in a single galaxy. The galaxy is designated J0148-4214. It is so distant that its light took 12.5 billion years to reach us. The black holes have masses of 80 million, 2 million and 0.6 million times the Sun's mass. Two of the black holes are near each other approximately at the center of the galaxy, while the third is more than 5000 light-years from the center. The two central black holes will likely merge in about 700 million years, but the non-central one will take much longer to fall to the center of the galaxy and merge.

Andromeda Star Formation – Using data from two previous HST observation programs of the Andromeda galaxy, astronomers established the star formation rates in that galaxy over time. That star formation has been declining over the past 500 million years and dropped even more in the last 40 million years. The team divided Andromeda into thousands of squares 300 light-years on a side and determined the history of star formation in each square. Previous work showed that Andromeda underwent a burst of star formation 2 billion years ago, probably due to interaction with another galaxy. Since that time, star formation there has been in decline. Much of the star formation in Andromeda occurred in a ring of radius 32,000 light-years. Much of the decline in star formation found in the recent work occurred within that ring. The new study looked for a correlation between star formation decline and proximity of the satellite galaxy M32, but was not conclusive due to uncertainties in the distance to M32.

Milky Way Mergers – The Hubble Space Telescope (HST) while studying the stars in 39 of our Milky Way's globular clusters found that certain groups of stars had to have formed outside our galaxy and merged into our galaxy about 11.8 billion years ago. This merger was before the previously known mergers of galaxies into the Milky Way. The discoverers are calling the galaxy involved in this newly discovered merger LKH. The previously known major mergers into the Milky Way occurred 6 and 10 billion years ago.

Helix Nebula – A telescope named MOTHRA is under construction in Chile. It consists of more than 1100 telephoto camera lenses ganged together. It will have the light-gathering power of a 188-inch (4.8-meter) telescope and can fine-tune its narrowband filters as needed for each project. A test image taken with only a fraction of the lenses in place was made of the Helix planetary nebula. It showed detail not seen before of clumpy material thrown off by the Helix as the clumps dissipate into space. Bow shocks were also seen where castoff material is colliding with interstellar gas. These are the processes that recycle material from a dying star into the next generation of stars. Seeing this new detail is helping astronomers understand the recycling processes.



Quasars That Gravitationally Lens – Quasars are supermassive black holes that glow brilliantly from massive amounts of matter falling into them. Much can be learned from studying them, particularly quasars that gravitationally lens objects behind them. So, astronomers tried a new method of finding more lensing quasars using artificial intelligence (AI). Normally one trains their AI program by showing them thousands of examples of what they want AI to look for. But there aren't thousands of known lensing quasars. In this case, the scientists made a bunch of pictures of what a lensing quasar ought to look like and trained their AI on that. AI looked at 800,000 observations of quasars and it said 200 of them looked like they were lensing. Scientists examined these candidates and found that 7 of them really were lensing quasars. That about doubled the number of known lensing quasars. They are each located about 5 to 6 billion light-years away.

Supernova Precursor Seen – The first phase of a supernova explosion is known as Shock Breakout (SBO). It is seen in X-rays and lasts only seconds to hours. It has been observed only a couple of times in the past couple of decades. The Einstein Probe, an X-ray space telescope, spotted an SBO last March. Observing an SBO allows astronomers to determine some pre-explosion properties of the star and properties of its circumstellar material. The SBO was about 500 million light-years away and was the harbinger of a supernova that became known as SN 2026gzf, a Type Ic Broad Line supernova. Some supernovas of this type have produced gamma-ray burst (GRBs), but this one did not. This SBO was weaker than expected, even though the supernova had the expected brightness. The star that exploded was a Wolf-Rayet star, a type depleted of hydrogen and helium.

LINK – I reported here in previous issues that NASA hired the Katalyst company to provide a spacecraft (called LINK) that is designed to 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. LINK was launched but it suffered a problem with its reaction wheels, which caused it to tumble. Spacecraft controllers were not able to regain complete control of LINK and so were not able to attach LINK to Swift. However, they continue to test all possible features of LINK to establish the possibility of future use of such rescue spacecraft. Swift is now expected to be dragged into Earth's atmosphere and burn up later this year. Swift has been operational for more than 20 years, even though it was originally designed for a 2-year mission. There is no other spacecraft that operates like Swift. Its gamma-ray telescope is extremely wide-angle and is continuously watching 1/6 of the entire sky. It does not possess high resolution to allow knowing precisely where newly detected gamma-rays are originating, but the X-ray/UV/visible light telescopes do have high resolution and can be aimed at gamma-ray sources within two minutes.

Bonus Picture

Don Lynn captured the partial eclipse from the driveway of his house in Colorado using a Canon 80D DSLR and 400mm Tamron zoom lens

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.

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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 ½ 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.

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 Flattener $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

- 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

For Sale contact David Pearson (714) 293-5684

- Ioptron EQ45 mount with case, one counterweight and Tripod $300

From the Editor

Has anybody an idea for a new article or interesting column of articles for the newsletter ?

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.

Issue	**Due date**
October	26 September
November	31 October
December	28 November