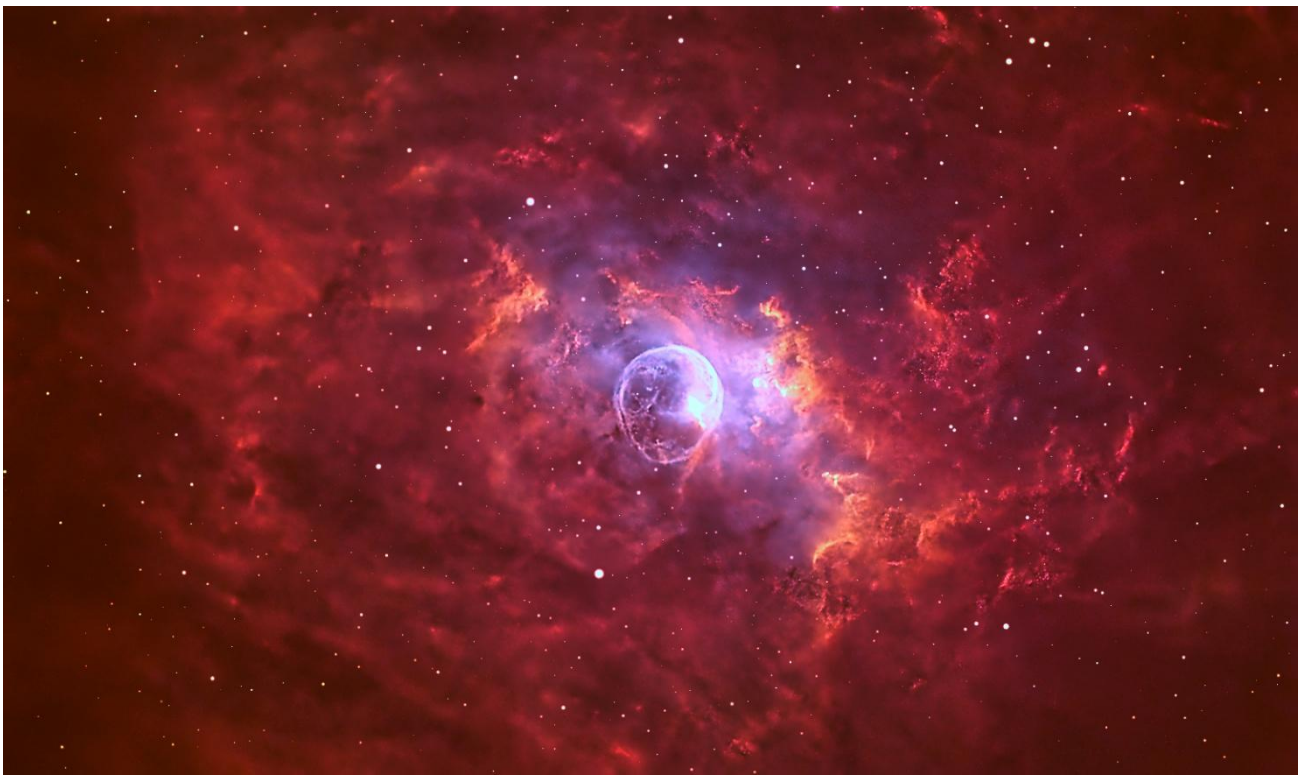
SIRIUS ASTRONOMER

www.ocastronomers.org

The Newsletter of the Orange County Astronomers

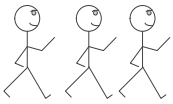
General information and contacts for the Orange County Astronomers club can be found at www.ocastronomers.org

January 2026 Free to members, subscriptions $12 for 12 issues **Volume 53, Number 1**



This is the Bubble nebula, NGC7635 in Cassiopeia. Steve Borgens took it with Astrotech 65 EDQ refractor and QHY MiniCam 8 camera from the club's Anza site in October 2025.

Upcoming Events - free and open to the public

Beginner's class	Friday, 6 February at 7:00 to 9:00 PM This is session 6 of the class. It covers the basics of astrophotography, different types of imaging, how different types of cameras are used for this kind of photography, other equipment and considerations for taking a good picture. Teacher is Kyle Coker. This class is at Orange Coast College, near Building 40, Astronomy House	**IN PERSON**
Club Meeting 	Friday, 9 January at 7:30 to 9:30 PM "What's Up": Chris Butler from OCA Main speaker: Adam Boesky from Harvard University whose talk will be "Untangling the Rate of Black Hole Mergers: A Cosmic Tug of War"	**IN PERSON** and **ONLINE** **IN PERSON** **ONLINE**
Astro-Physics SIG	Friday, 16 January, at 7:00 PM to 9 PM Orange Coast College, Building 40, Astronomy House	**IN PERSON**
Star Parties	Saturday, 17 January at the OCA Anza site.	

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

Welcome to 2026!

We had a somewhat soggy farewell to 2025, which did limit opportunities for sky-gazing. The weather forecast for the night of the December star party at Anza was so discouraging that there seemed little point in going out there – no need to drive all the way to Anza to see clouds. We're hoping that 2026 will give us much better sky conditions for the January star party on the 17th!

On the bright side, soil and vegetation should be damp enough after the December rains to make it unlikely we'll have any significant wildfires for a while. With the various retrospectives and updates that have been coming out as we approach the one-year anniversary of the fires that destroyed so much of Pacific Palisades and Altadena last January, concerns about fire never seem very far away these days. Sorrow for all that was lost in those fires and sympathy for those affected by them are never far away.

On a more club-related side, we are close to resolving a couple of outstanding issues that we have been working on for a while. The first is how minors may attend our meetings at Chapman University in light of Chapman's liability concerns. Our Treasurer, Charlie Oostdyk, has been working with contacts at Chapman to reach an accommodation that will work for both sides. We expect to have everything finalized in the next few weeks. When everything is in place, minors will again be able to attend meetings in person when accompanied by a parent or other responsible adult.

The other issue was holding Orange County star parties, for which there have been more problems getting re-started after Covid than we expected. The arrangement we are working out with OC Parks will be for a different location than the one we were using pre-Covid. This one has the advantage that people can park close to where they set up. Our Secretary, Alan Smallbone, is coordinating final arrangements and Charlie has had extensive discussions with his contacts at OC Parks to move things forward. He also was able to visit the alternative sites they suggested. Please contact Alan if you would like to volunteer to help with these star parties.

Our local astronomy store, Orange County Telescope, has expressed interest in coordinating with us on these local star parties, and we are hoping that works out, as well. If we can get both of these in place – 2026 will definitely be off to a great start!

OCA Election

A final reminder – the OCA election ends at the day of the January general meeting, January 9, 2026. If you haven't sent in your vote yet, please do. If you have a problem with the electronic ballot, please contact John Hoot, at observatory@ssccorp.com, as he is coordinating that part of the election. If you want to go paper instead of digital, and have problems downloading the ballot from the website, please contact Reza AmirArjomand or Alan Smallbone.

I hope that you all had a great holiday season, and that 2026 will be a great year for you!

Help Wanted

- OCA representative to the Western Amateur Astronomers
- Coordinator to organize star parties in Orange County

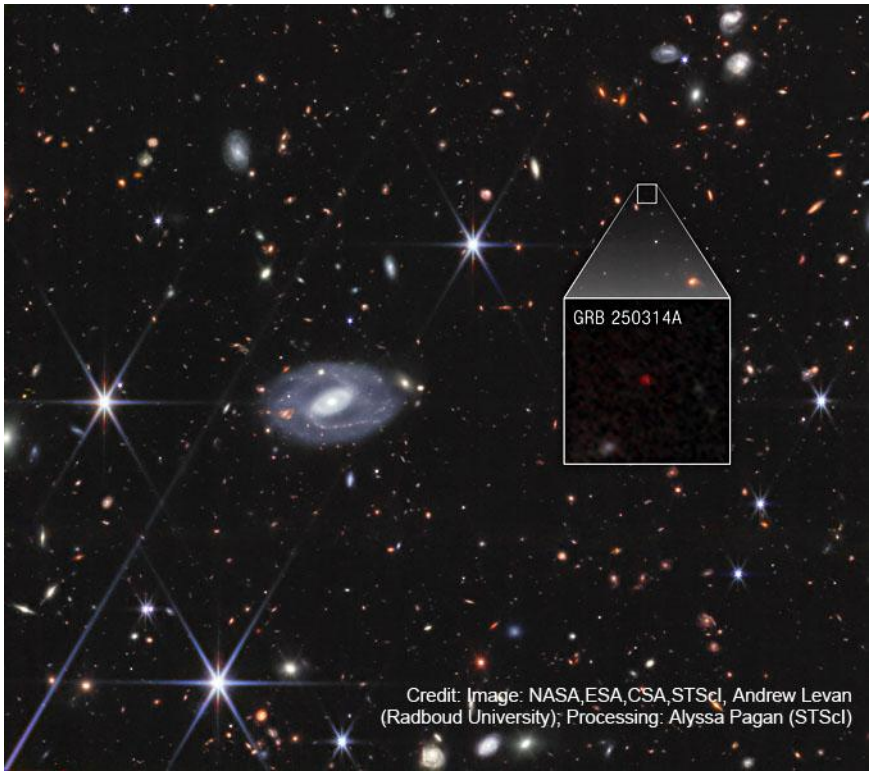
These are pretty easy jobs. Both you and the club can benefit with your participation. Please send Barbara an email and give her a chance to tell you about them.

AstroSpace Update

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

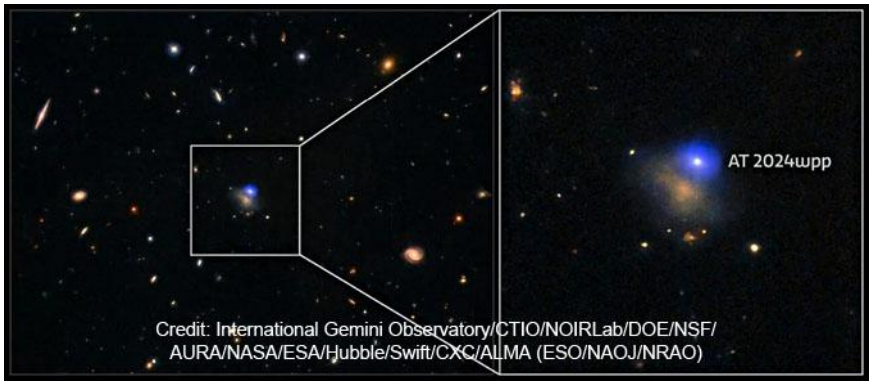
Early Spiral Galaxy – The James Webb Space Telescope (JWST) discovered an unusual galaxy that existed in the early Universe, only 1.5 billion years after the Big Bang. Its light is just now reaching us due to its extreme distance. The galaxy has been named Alaknanda, after a Himalayan river. What is unusual for galaxies this early in history is that it is a grand spiral galaxy similar to the Milky Way. It happens to lie behind the much closer galaxy cluster Abell 2733, which magnifies and brightens Alaknanda by gravitational lensing. Astronomers are debating how this galaxy could have reached a mature spiral shape so early. Alaknanda appears to have a smaller companion galaxy, and some astronomers posit that its gravitational effect promoted the development of spiral arms. More observations are hoped to help explain how the spiral shape formed.

Longest GRB – Last July a GRB was observed to last 7 hours, much longer than any before. The afterglow and host galaxy of this one were observed in X-rays, infrared and visible light. X-ray emission that occurred before the GRB was located in archived data. The host galaxy was determined to be so distant that its light took 8 billion years to reach us. The host galaxy is rather large, more massive than our Milky Way. In contrast, most GRBs originate in small galaxies. Observations of this event are best explained by yet another GRB cause: a black hole consuming a star. The black hole could be either stellar mass or intermediate mass, but supermassive was ruled out. A firm explanation of the cause may have to wait until another extremely long GRB (a rare event) happens to be observed.

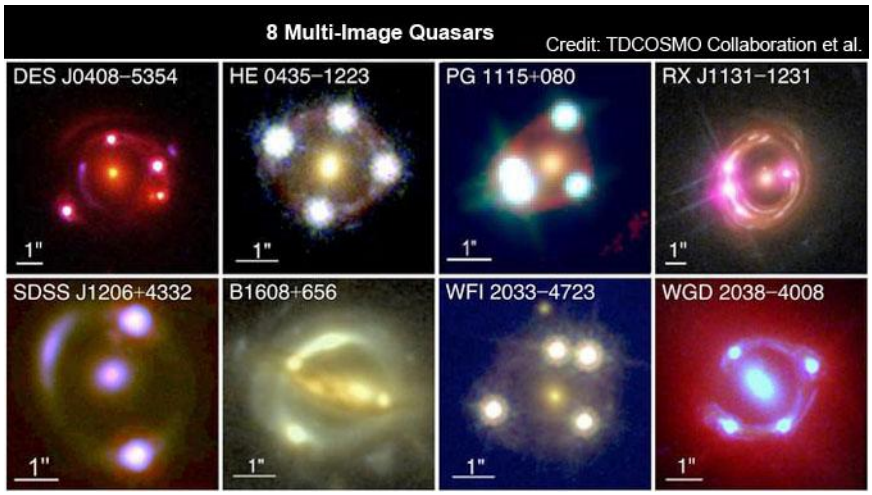


Most Distant Supernova – JWST observations showed that a very distant gamma-ray burst (GRB) was caused by a collapsing massive star supernova explosion. It turned out to be the most distant supernova ever seen. Its light left the explosion only 730 million years after the Big Bang. The observations showed the galaxy that the supernova occurred in. This is often not the case for very distant and therefore dim supernovas because their galaxies are typically dimmer than the supernovas. The galaxy appears typical of galaxies at this time point. The new observations showed that the supernova behaved very much like ones that are closer to us and therefore exploded later in the life of the Universe. Some astronomers have posited that the behavior of supernovas might change over the life of the Universe, but this observation does not support that. It is believed that short duration (less than about 2 seconds) GRBs are caused by a neutron star colliding with some massive object, but longer duration GRBs (including the newly observed one) are caused by massive star supernovas.

First Stars Evidence – Theory has it that the first stars that formed after the Big Bang would consist initially of only hydrogen and helium and could often form with 1,000 to 10,000 times the mass of the Sun. Stars today, are seeded with many other elements and rarely exceed 100 times the Sun's mass. Using JWST astronomers believe they have found the spectra of some of these gigantic first stars. At the end of their lives, such gigantic stars would collapse into intermediate mass black holes, which would help explain how massive black holes were present so early in the Universe. What was found in the spectra of a galaxy known as GS 3073, which we are seeing as it existed only about a billion years after the Big Bang, was too much nitrogen compared to oxygen, a condition predicted to occur only in gigantic stars. Astronomers will look for this nitrogen excess in the spectra of other very distant galaxies.



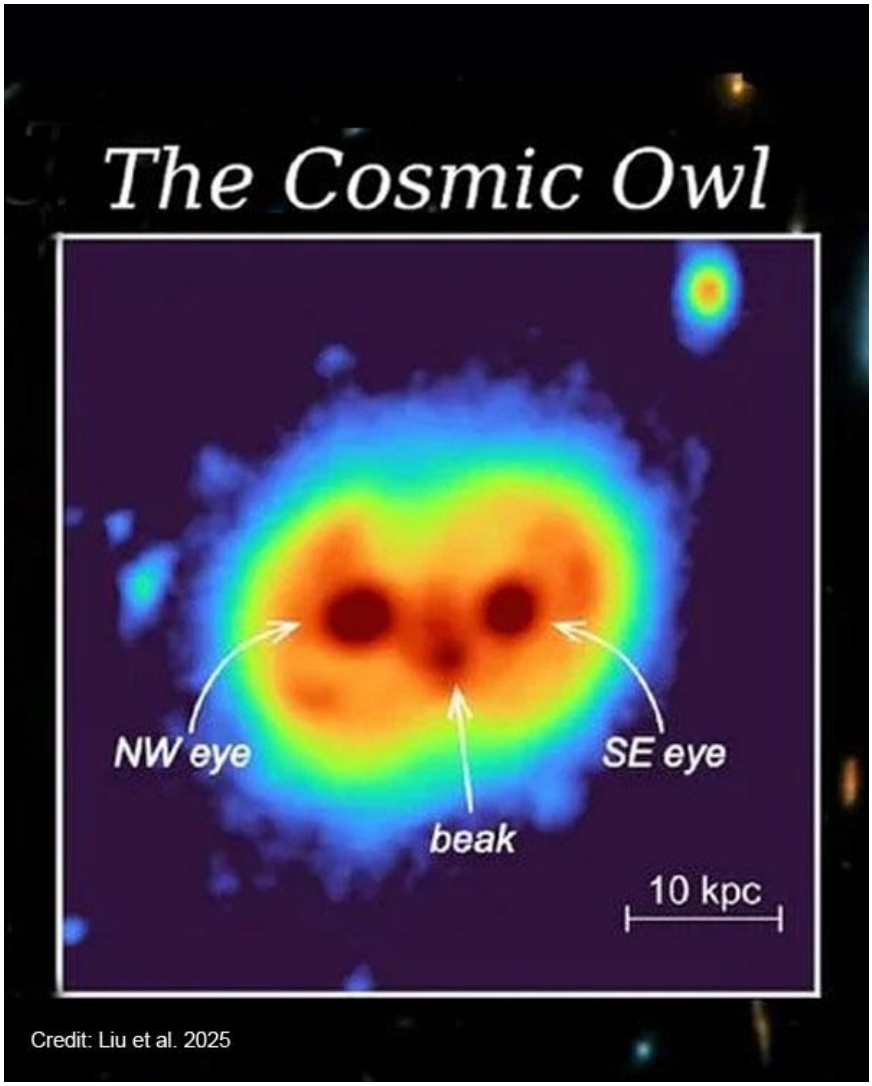
Luminous Fast Blue Optical Transients (LFBOTs) are bright flashes of blue and ultraviolet light followed by faint fading X-ray and radio emission. Only a bit more than a dozen have ever been seen. Astronomers have been debating their cause for years. The 2 best theories are supernovas or material falling into a black hole. Observation of an LFBOT known as AT 2024wpp may have provided the answer. It eliminated supernovas as a cause and found that a star being consumed by a black hole under certain conditions could explain all the emissions. The black hole would have to be about 100 solar masses, the star consumed would have to have orbited the black hole before falling in, it must be an old star that had used most of its hydrogen, and the consuming would have to create jets of outflow material. Future ultraviolet space telescopes are expected to discover many more LFBOTs, and observation of these could confirm this finding.



Hubble Tension – The Hubble Constant is a measure of how fast the Universe is currently expanding. Measures of it based on determining distances and speeds of distant objects result in values around 73 (in units of kilometers per second per megaparsec). Measures based on the Hubble Constant's effects on the Cosmic Microwave Background (CMB) result in values around 67. Recent measurements with both methods are thought to be precise enough that the difference between 67 and 73 is not explainable as measurement errors. This has become known as the Hubble Tension. A new method of measuring the Hubble Constant calculates it from its effects on quasars that are seen in multiple images due to their light passing through gravitational lenses. A new study using this method on 8 quasars resulted in 74. A likely explanation for the Hubble Tension is therefore that some property of the Universe thought to be constant since the CMB is actually changing. Other explanations have been proposed, so it may take a lot more work to firmly settle the Hubble Tension.

Exomoon – Measurements of the positions of a brown dwarf (object between planet and star in mass) or possibly gas giant planet, known as HD 206893 B, as it orbits its star show that its motion is disturbed by a body orbiting it, that is, an exomoon. The body is roughly of Neptune mass. It is considered an exomoon candidate until confirmed by further work. Only a few exomoon candidates are known because such small bodies are difficult to detect. All are awaiting confirmation.

Carbon Atmosphere – JWST was used to observe an exoplanet known as PSR J2322-2650b and found that its atmosphere is dominated by helium and molecular carbon. No other of the more than 100 exoplanets whose atmospheres have been studied has been found to contain molecular carbon. Its carbon soot clouds could condense to form diamonds. If there were any oxygen or nitrogen present it would react with the carbon to form other compounds, so there is essentially no oxygen or nitrogen present. Astronomers have not been able to explain how such an atmosphere could form. The planet's star is not an ordinary one but is a pulsar (rapidly spinning neutron star). Only a very few pulsars are known to have planets. This planet orbits its pulsar every 7.8 hours. This is so close that the pulsar's gravity is likely stripping away material from the planet and may eventually destroy it. It is definitely close enough to distort the planet into a sort of lemon shape.



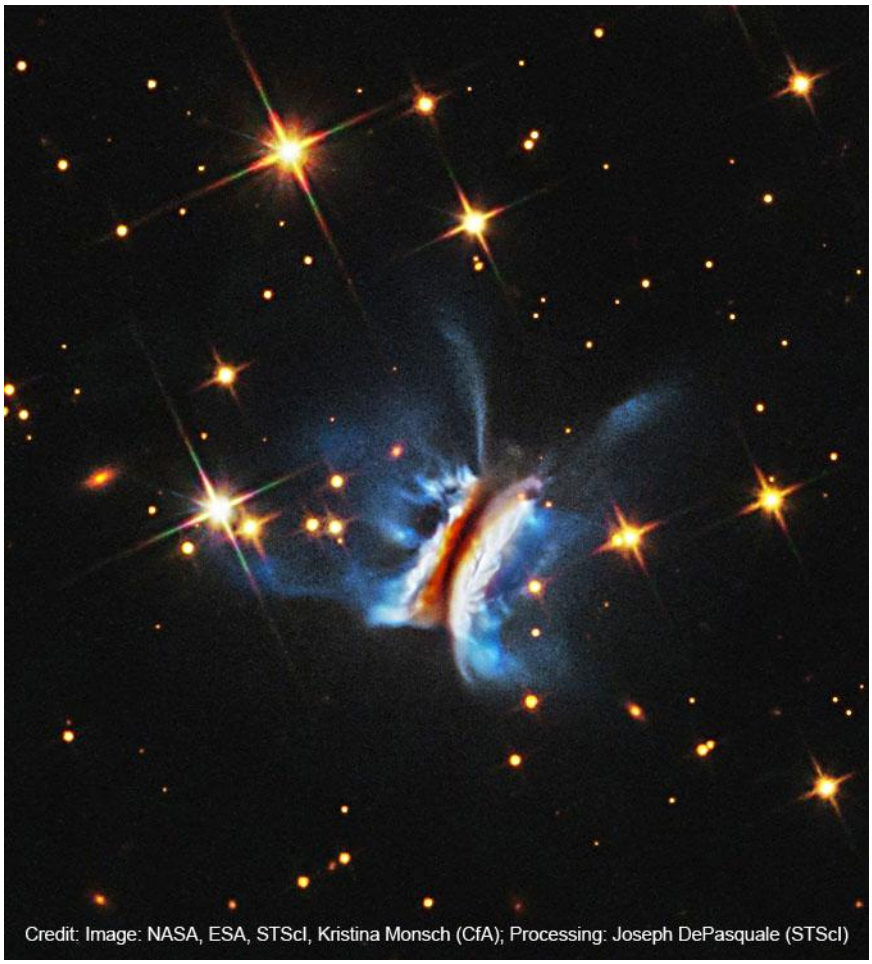
Runaway Black Hole – Theoretically when 2 galaxies merge it is possible that gravitational forces could throw one of their supermassive black holes (SMBH) out at high speed: a runaway SMBH. Astronomers believe they have found the first known runaway SMBH. They found this in JWST observations of the Cosmic Owl galaxy, which is actually a pair of galaxies with 3 dark spots that resemble an owl's eyes and beak. A tail of newly formed stars and a bow shock where the runaway is hitting material were found. Both were predicted to form in simulations of a runaway SMBH.

Exoplanet Atmospheres – Astronomers assessed the possibilities for atmospheres on 5 newly confirmed roughly Earth-sized exoplanets orbiting red dwarf stars and found that 2 of them could have strong enough gravity to retain atmospheres. Because red dwarf stars often flare violently, many astronomers believe that red dwarfs would blow away the atmospheres of their planets. This study showed such atmospheres should sometimes survive. Astronomers would like to search these planets with JWST to confirm this theoretical result.

Colliding Planetesimals – The Hubble Space Telescope (HST) imaged a point of light suddenly appearing near the star Fomalhaut. It has the characteristics of a dust cloud that resulted from a collision between 2 massive planetesimals (planets under formation). From the brightness of the object it is estimated that the colliding bodies would be roughly 37 miles in diameter. The dot seen in 2008 near this same star was originally thought to be an exoplanet, but is now believed to be a collisional dust cloud, like the new object. Seeing 2 of these events so close in time means that there is a lot more colliding than thought going on during planet formation at Fomalhaut. Astronomers plan to continue monitoring this object to make sure it continues to behave as a collisional cloud would.

Carbon Monoxide Found – JWST found carbon monoxide in a protoplanetary disk for the first time. The disk surrounds HD 131488, a young star about 500 light-years away in Centaurus. This probably indicates that carbon monoxide is being produced by collision of comets within the disk.

Chaotic Disk – HST observed the largest protoplanetary disk known. Such disks are where planets are forming. It was found to be more chaotic and turbulent than expected, with wisps of material extending above and below the disk. The disk is known as IRAS 23077+6707 and is about 1000 light-years away. It is huge, about 40 times the size of the Kuiper Belt of our Solar System. It has been compared to various sandwiches because it has a dark (dust) streak between two slices resembling bread.


Credit: Image: NASA, ESA, STScI, Kristina Monsch (CfA); Processing: Joseph DePasquale (STScI)

Solar Discoveries -The Parker Solar Probe made another close pass to the Sun (about 4 million miles). Three discoveries were made: 1) tadpoles (small dark shapes) were confirmed appearing to swim down magnetic field lines, 2) ripping of the Heliospheric Current Sheet (an electrical sheet that separates the Sun's north and south magnetic fields, and 3) seeing the birth of in/out pairs (where a piece of corona gets pinched into 2 blobs, one going into the Sun and the other flying away). The in/out pairs are thought to be involved in creating solar storms and coronal mass ejections.

Private Space Telescope – The first private space telescope, named Mauve, launched into low-Earth orbit in late November. The launch was aboard a SpaceX Falcon 9 rocket that carried to orbit 140 tiny satellites. Mauve is about the size of a mini-refrigerator and contains a 5-inch aperture telescope sensitive to visible and ultraviolet light, with imaging and spectral capabilities. Data gathered by it will be available only to customers who subscribe. Its mission is planned to last 3 years. Mauve's owner, Blue Skies Space company, plans to launch an infrared space telescope in 2027.

Adopt-a-Scope

Here is Jake Brown at the December general meeting transferring a Meade LX200 12 inch SCT and its tripod to Brian Johnson, winner of the December scope give-away.

News About Our Anza Site

Lower Pads Area
Demolition has been completed. The sole pad remaining from last month was extracted and the entire area has been graded. There is some electrical work to complete related to the wiring that previously served this area.

Repair of the gully between 10 Pad Alley and Jupiter Ridge has been started.

Kuhn Shipping Container Cleanup
We will be cleaning up the club's shipping / storage container located near the Kuhn observatory, probably in the Spring. David Fischer will be organizing this effort and would appreciate hearing from people who know about the items that have been stored there. We will need knowledge to decide what to keep. Send email to dkn.fischer@gmail.com to let him know of your interest to help.

Dealing With Weeds
The club's field mower has been tuned up and will get tried out early in the spring. We hope it enables us to maintain a low level of weeds in shared areas. In view of the substantial rainfall in last 2 months, an overly healthy crop is anticipated.

Repair of the Barbeque
It needs new wheels – the original ones broke off because they were not designed for gravel surfaces. We would like to set it up with bigger, better wheels on both front and back ends. This looks like a job for somebody who likes to tinker with stuff.

Do we have any volunteers ?

Contact David Fischer newsletter@ocastronomers.org

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.

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

Issue	**Due date**
February	31 January
March	28 February
April	28 March

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.

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	$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	$ 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 Jerry Floyd jlfloyd720@gmail.com

- Stellarvue SV102EDT Triplet Refractor, 102mm aperture, 621mm focal length, f/6.1, Serial #23 >>> $ 750

This is equipped with JMI Focuser, tube rings, and base plate.
Telrad (mounted on custom wood adapter) and star diagonal are included

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

The items below are being sold on behalf of Russell Sipe's estate. John Bartsch is handling them. All items are local to Orange County. Please consider that John is not an astronomer and will need some help from prospective buyers in evaluating some of these items. Those who are interested should contact him directly and make arrangements to inspect these things.

For Sale contact John Bartsch Text at (714)328-7877

Astronomy gear previously owned by Russell Sipe (former OCA President)

- Nextstar 8SE $1300 o.b.o.

The Nextstar 8SE is the largest-aperture scope of the NexStar SE series, the 8" provides over 1.5 times more light gathering power when compared to the 6SE. This scope comes with mount, tripod, controller, electrical accessories.

For Sale contact John Bartsch Text at (714)328-7877

Astronomy gear previously owned by Russell Sipe (former OCA President)

- Takahashi EM-10 mount with spreader but no tripod $ TBD

For Sale contact John Bartsch Text at (714)328-7877

Astronomy gear previously owned by Russell Sipe (former OCA President)

- Camera tripod $ TBD

- Takahashi Fluorite FS-102 D=102mm F=820mm $1000 o.b.o.

Accessories are for sale separately. Please look at the Takahashi EM-10 mount box for some parts Associated with this telescope.

For Sale contact John Bartsch Text at (714)328-7877

Astronomy gear previously owned by Russell Sipe (former OCA President)

- Filters, other accessories in padded case $ TBD
- Adapters (mostly) and other accessories with organizing box $ TBD
- Eye-pieces in padded case $ TBD
- Tripod spreader, sky chart, power supply ?, other accessories $ TBD

Contact me to inspect these items

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