SIRIUS ASTRONOMER

www.ocastronomers.org

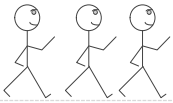
The Newsletter of the Orange County Astronomers

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

June 2026 Free to members, subscriptions $12 for 12 issues **Volume 53, Number 6**

These are the dark nebulas LDN1355 and 1357, often called the "Helping Hand" for the portion just left of center. David Fischer captured this in November and December 2022 from the club site in Anza using an 80mm refractor and ASI2600MC color camera.

Upcoming Events - free and open to the public

Beginner's class	**Monday**, **6 July** at 7:00 to 9:00 PM **IN PERSON** This is session 5 of the class, the IN-PERSON session "How to Use Your Telescope". Bring your telescope to class and get some help learning to set it up and use it. This class is at Orange Coast College, near Building 40, Astronomy House
Club Meeting 	Friday, 12 June at 7:30 to 9:30 PM **ONLINE and IN PERSON** "What's Up": John Garrett from TVA **IN PERSON** Main speaker: Geoffrey Mo from Carnegie Observatories and Cal Tech **IN PERSON** Whose talk will be "The Big Eye: Palomar Observatory's past and future"
Astro-Physics SIG	No meeting this month.
Star Parties	Saturday, 13 June at the OCA Anza site. No star party at the Irvine site this month.

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

Annual Starbecue on July 11, 2026

Our club's annual Starbecue potluck party is set for the evening of the July Anza Star Party, July 11, 2026, in its usual area behind the club observatory at Anza. This, by the way, is not a random choice – it's the largest flat, shaded area on the Anza site, and shade is a necessity while the sun is up on a summer day at Anza.

We usually start setting up around 5:00, and people arrive with their food and start eating by around 6:00. We have a couple of long tables we set up for the food, buffet style, and we have power from the observatory for those who may need to plug something in. Please bring a dish that serves around eight people, and we plan to have the club barbecue going for those who want to do some grilling. We don't have sign-ups for who is bringing what for food, but we generally wind up with a variety of tasty dishes to enjoy along with the fun of meeting up with other club members we may not have seen for a while and meeting new people.

We have one picnic table that gives some seating, but it's best to bring your own chair and also your own drinks. The club provides paper plates, napkins and utensils. Please bring serving spoons, spatulas or whatever else may be needed to serve whatever dish you bring.

Parking is limited around the observatory, so, if you drive up, please park in the Ten Pad Alley or Lower Pad areas, which are immediately below the club observatory level; both of those levels have stairs directly to the observatory level.

There is no trash service in the area of our Anza site, so we need volunteers to remove the bags of trash generated by the party. If you can, please take a trash bag with you when you leave. We also need everyone to take leftovers of the food they brought with them when they leave the party. We don't have any ability to use leftovers and we want to avoid attracting rodents.

These parties are always fun events, and club members often bring family and friends, which adds interest for everyone. We look forward to seeing you there!

Update on the Orange County Star Party

We had our first Orange County Star Party since everything shut down for Covid on May 9, 2026. Not all of the people who had signed up and planned to bring telescopes were able to make it due to unexpected circumstances, but we had three telescopes set up in the viewing field, and saw a number of objects, including Jupiter and Venus. We were able to park in the viewing area and set up next to the cars, which was very convenient and made it much faster to set up and tear down than if we'd had to transport everything from the parking lot.

I don't know how many members of the general public showed up, but our main docent, Ross, took them (and some club members) on a nature walk to look for bats, owls and other night creatures at dusk. This gave those of us with telescopes time to set up and enjoy some viewing before they got back. Unfortunately, it clouded over soon after they joined us, but Liam Kennedy was able to show them some objects in his LX200, and Alan Smallbone showed them some real-time images from his Seestar and some taken from his remote telescope. Liam also let everyone know when the International Space Station would pass overhead, and it generated a lot of excitement when it showed up.

Everyone had a good time, and we heard later from OC Parks that they were really happy with the event and are looking forward to working with us to make them even better in the future. They are also hoping we have more people with telescopes come out to these events, and there is some hope they can be expanded if they continue to go well.

Unfortunately, our permit had to be reissued because our insurance renewed, and we didn't have enough time to get authorization for the star party we had tentatively scheduled for June 6 (the Saturday closest to 3 rd Quarter Moon). At this point, we expect that the next Orange County Star Party will be on July 18, the Saturday after the Anza Star Party instead of the Saturday before it. Alan posts updates on the email groups, so please be sure you are on those groups to get the notice of any changes. Again, if you can volunteer to help with these star parties, please contact Alan (Alan@OCAstronomers.org), and thanks again to those of you who already volunteered.

As a last unrelated but important matter for this month, many thanks to our local astronomy store, Orange County Telescope in Santa Ana, for their generous gift of a new Telrad finder for our Kuhn telescope! We've missed having a good finder since our old unit died a while back, and really appreciate their generosity!

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.

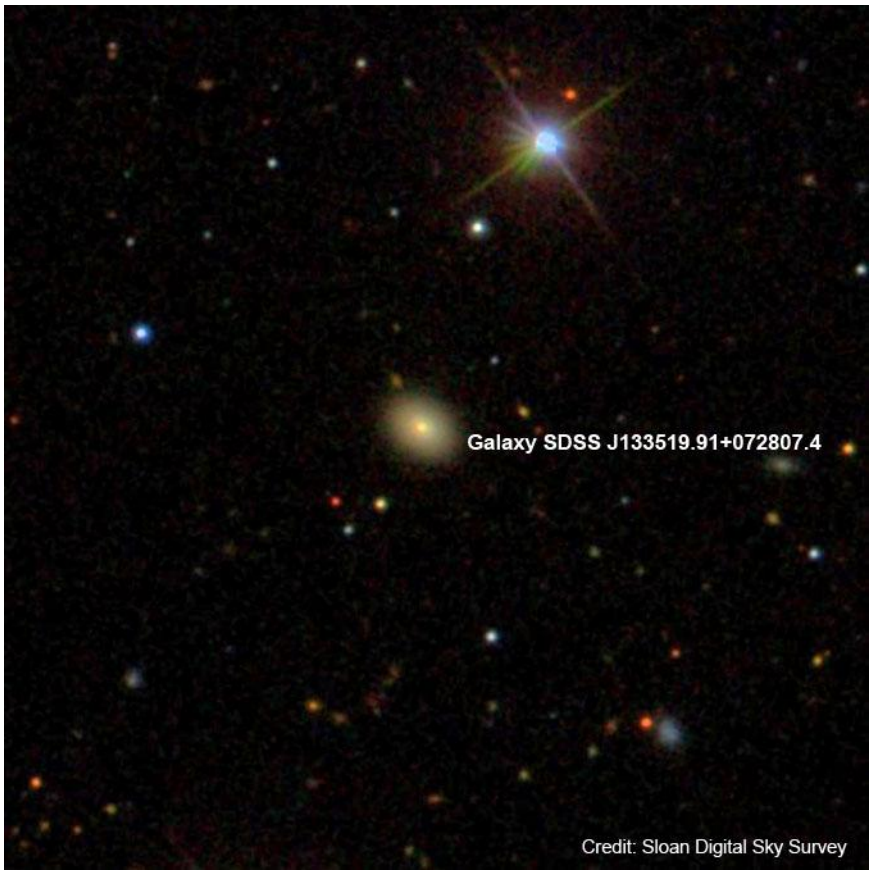
AstroSpace Update

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

Milky Way Hot Gas Halo – Computer simulation of our Milky Way galaxy that also takes into account disturbances from the neighboring galaxy Large Magellanic Cloud showed that the hot gas halo about the Milky Way should be more compressed, and therefore hotter, on the south side than on the north side. When the temperatures of the hot gas halo were actually measured, using the eROSITA X-ray space telescope, this difference was found, in the form of 12% higher southern temperature. The simulation also showed more high-velocity gas clouds on the north side than south, which had already been observed, but not explained yet.

Black Hole Jets – Astronomers used an array of radiotelescopes spread out across much of the Earth to resolve what is going on in Cygnus X-1, where a stellar size black hole is spewing jets made of material thrown off by the wind of a companion star. Measuring how the jets are being bent as the black hole and star orbit each other allowed scientists to calculate the power of the jets. The result was 10,000 times the power output of our Sun. This is about 1/10 of the energy released by material currently falling toward the black hole. This was the most accurate measure ever of the power of black hole jets.

Brightening With X-rays – Almost 7 years ago a galaxy known as SDSS J133519.91+072807.4 was seen to brighten in visible light and later in other wavelengths of light. The brightening was attributed to a supermassive black hole awakening, that is, having much material begin falling in. The brightening was assigned a name of alphabetically assigned letters, which were shortened to "Ansky". Then about 2 years ago Ansky began emitting semi-regular X-ray flares. Several nearby galaxies have shown similar X-ray behavior, which was attributed to a stellar-size object spiraling into the black hole. In all such cases, the period between X-ray flares slowly shrinks. Except Ansky did the opposite: the period is increasing. There are 5 theories that partially explain Ansky's behavior. A lot more observation and theoretical work is needed to fully explain Ansky.



Black Hole Feeding – The supermassive black hole at the center of our Milky Way galaxy, known as Sgr A*, is steadily consuming gas from the accretion disk that surrounds the black hole. Astronomers have long questioned what source replenishes the gas lost from the disk. Astronomers recently used infrared imaging to track a gas cloud known as G2 that is in orbit about Sgr A*. They found that gravitational forces had elongated the cloud and future orbits are likely to tear it apart. In fact, two other clouds similar to G2 were found to have similar orbits, implying that they were formed the same place as G2. Additionally, a double star was seen orbiting Sgr A*, with gas and dust was being gravitationally pulled from the double star to form gas clouds similar to G2. So, the theory now is that stars near Sgr A* are emitting gas clouds that eventually end up feeding the accretion disk about Sgr A*. More work is needed to confirm this, but it looks like the question of the source of material falling into Sgr A* has been answered.

Exoplanet With Ice – The James Webb Space Telescope (JWST) made observations of the exoplanet Epsilon Indi Ab, which is more than 7 times as massive as Jupiter and is located about 12 light-years away. Its temperature was measured at 243°F warmer than Jupiter, indicating that it has not yet cooled since its formation. Its atmosphere is brighter than expected, apparently due to water-ice clouds. Computer simulations had predicted more ammonia than was found. Observations of similar exoplanets are needed to understand this low ammonia level.

Rocky Exoplanet – JWST observed the surface of an airless rocky exoplanet somewhat larger than Earth and found it to be dark, with its spectrum resembling the Moon's surface. This indicates the surface is probably volcanic rock long weathered by radiation and meteorite impacts. The spectrum could not distinguish if the surface is powdery like our Moon, but space weathering should result in a powdery surface. The planet is known as LHS 3844b and is about 48 light-years away. It orbits quite close to its star and is tidally locked (that is, one side always faces its star). The lighted side is over 1300°F while the dark side is little above absolute zero.

Exoplanet Radius Gap – Previous work has shown a gap in radius exists for exoplanets. Specifically few exoplanets exist that have a radius between 1.5 and 2.0 times the Earth's radius. However, a new study of planets orbiting dim low-mass red dwarf stars found that gap does not exist. This implies that planets form or age differently about low-mass stars than they do about more massive stars. This finding tends to support the water-rich pebble accretion theory of how planets form. Planets with radius between that of Earth and Neptune don't exist in our Solar System, even though that range of planet size is common in exoplanet systems. So, astronomers must study exoplanet systems to obtain hints about how planets form, particularly in the range of size between Earth and Neptune.

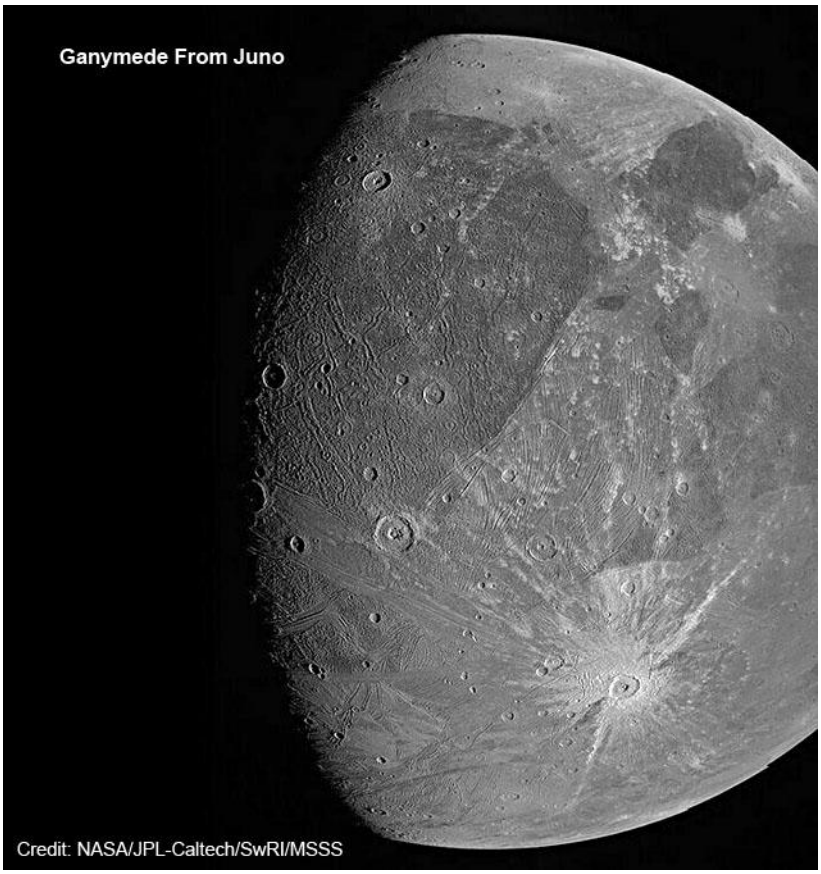
Odd Exoplanet Pairing – About 7 years ago a pair of exoplanets was discovered that are rare types to find together. It consists of a Neptune-size and a Jupiter-size planet orbiting close to each other and close to their star. The Neptune-size one takes only 4 Earth days to orbit the star and the other orbits in twice the time. Follow up observations with JWST determined the atmospheric content of these two. From this it was determined that they both would have to have formed quite far from their star. That means that they both migrated to their positions close to their star. They likely migrated together in order to be where they are now. That could only happen if the migration was caused by drag from a disk of gas and dust. In other words, the migration had to happen before the planet-forming disk dissipated at the end of planet formation.

Planets Orbiting Binary Stars – Of the more than 6000 confirmed exoplanets, only 18 of them orbit about a binary star pair. These are known as circumbinary planets. The count of 18 does not include the fictional planet Tatooine seen in the Star Wars movies, which were filmed before any real circumbinary planets were discovered. A new method of searching for exoplanets by looking for shifts in the orbits of binary stars that are caused by the gravity of an orbiting planet has discovered 27 circumbinary planet candidates that now need confirmation. The search was made on archived data from the TESS planet-finding space telescope. These new candidates range in distance from 650 to 18,000 light-years away. It is planned to take spectra of the 27 binary stars as part of the confirmation process, which should show astronomers much more about double stars and circumbinary planets.

Unusual Triple Star – TESS discovered an unusual triple star, known as TIC 295741342. We are seeing the orbits of all 3 stars edge on, so the components cause eclipses of each other. The close pair orbits each other every 4.75 Earth days. The star in distant orbit takes 412 days for each circuit. It is the brightest of the triple. The close pair eclipse the distant star at overlapping times, causing a two stepped eclipse. Tracing the stars' evolution and orbiting into the future shows that the brightest component will swell somewhere in the range of 54 to 129 million years in the future and begin spilling mass onto the close pair. It is not clear whether this will be a gentle or violent transfer of mass. In September the close pair will pass behind the other component. Observations at that time should shed more light on this unusual triple.

Brown Dwarfs – One of the Zooniverse citizen science programs has been for 10 years having volunteers looking through images taken by the WISE infrared space telescope and its successors to identify brown dwarfs. Those objects are too massive to be planets but not massive enough to be ordinary stars. They are thought to be almost as common as stars, but much more difficult to discover because they are so dim. A new paper about the search announces that its volunteers have found over 3000 brown dwarfs, essentially doubling their numbers. They also discovered a new class of them, known as extreme T subdwarfs.

Ganymede's Core – Jupiter's moon Ganymede is the only moon in our Solar System that generates a magnetic field. In the cases of planets with magnetic fields, they are all believed to be generated by electrical currents flowing in molten metal cores. This implies Ganymede would have a molten metal core. Yet the core of a body the size of Ganymede should have cooled since its formation and no longer be molten. The planets melted during or soon after their formation due to the heat given off by radioactive aluminum 26. But a new theory proposes that Ganymede was melted instead by much slower, longer lived radioactive materials, such as uranium, thorium and iron. That would result in Ganymede forming a molten core billions of years after formation instead of mere millions of years. The core could still be in the process of melting in this scenario. Much more work is needed to confirm this.



Small Body Atmosphere – An amateur astronomer observed a trans-Neptunian asteroid passing in front of (transiting) a star, and the slow disappearance and reappearance showed that the object has a very thin atmosphere. No other trans-Neptunian object is known to have an atmosphere except Pluto. The newly discovered atmosphere is as much as 100 times thinner than Pluto's. Astronomers calculated that this atmosphere should dissipate within a millennium, so it must be newly created or replenished. An impact or outgassing would be the likely source. The asteroid is known as 612533 2002 XV_{93}. It is about 300 miles in diameter, less than one quarter that of Pluto. Its orbit is in a 2:3 resonance with Neptune, as is Pluto's.

Martian Marathon – The Mars rover Perseverance is about to finish running a marathon, that is, 26.219 miles. It took about 5 years. Among rovers, only Opportunity rolled farther, at about 28 miles.

Drill Stuck – The Mars rover Curiosity in April drilled into a rock nicknamed Atacama to take a sample, and when it retracted the drill, the entire rock was stuck to it. This has never happened to a rover before. Atacama is about 18 inches across and would weigh 28 pounds if on Earth. It took spacecraft controllers 6 days of tilting, vibrating and spinning to finally drop Atacama. Luckily nothing was damaged, except the rock itself fractured when it hit the ground.

Spacecraft Flyby – In May the Psyche spacecraft made a close pass by Mars to get a gravity slingshot that propelled it toward its asteroid target, also named Psyche. The spacecraft instruments observed Mars as an instrument test, which went well. The spacecraft has 3 instruments: magnetometer, multispectral imager, and a gamma-ray/neutron spectrometer. The spacecraft approached Mars nearly from the night side and left nearly above the day side, so the images taken showed the planet from some unusual angles. The asteroid shows a spectrum high in iron, which has long led some astronomers to believe that it is a fragment of the iron core of a planet or large asteroid that long ago broke up. Psyche will arrive at Psyche and go into orbit in the summer of 2029.

Voyager 1 has been in operation for about 49 years, nearly 10 times as long as its original mission plan. It is the farthest spacecraft away, at over 170 AU, where an AU is the average distance between the Sun and Earth. Voyager 1 is powered by a Plutonium system that slowly loses electrical power as the radioactivity level fades. Whenever the power level gets dangerously low for a current configuration, spacecraft controllers must turn off an instrument. This time it was the Low-Energy Charged Particles instrument, leaving the spacecraft with only 2 of its original 10 instruments in operation, namely the magnetometer and the plasma wave instruments. Spacecraft controllers are testing a new scheme in which both Voyager 1 and 2 will rotate different instruments into operation, one at a time.

Starship Test Flight – A new version of Starship with Heavy Booster, denoted V3, flew its first test flight in May (and the 12th flight in the Starship series). Though not everything worked perfectly, it was declared a successful test flight in that it met all objectives. The flight launched from Texas and landed in the Indian Ocean. Though both stages of Starship are designed to be reusable, this flight did not attempt the stages' recovery. Starship is by far the largest and most powerful rocket ever flown. A version of the rocket is planned to be used to take astronauts from lunar orbit to landing and back to orbit in the first lunar landing of the Artemis project.

Thebe – The Juno spacecraft has been in orbit about Jupiter for nearly 10 years, and just recently happened to make its closest pass by the small (about 60 mile diameter) moon Thebe. This allowed the highest resolution images ever taken of Thebe. These images showed an impact crater that is a huge fraction of the size of the moon.

Mars Helicopters – JPL and the AeroVironment company have tested rotors for the next generation of Mars helicopters. One factor that limited capability in the first Mars helicopter was to keep the rotor blade tips well under the speed of sound in Martian air to avoid sonic booms (shock waves) from destroying the blades. So the new generation of blades is tougher in order to survive the shock waves. The latest test in a tank of simulated Martian air exceeded the speed of sound by 8%. It developed 30% more lift than the old style blades. The new generation also will have advanced sensors, additional cameras, communications systems that don't need relay by a rover, and more capable batteries. The plan is to send at least 3 of these helicopters to Mars on a mission named Skyfall perhaps in 2028. The helicopters will land themselves when released high above the surface, requiring no landing spacecraft.

Lithium Propulsion Tested – NASA is testing a next-generation electrical propulsion system which uses lithium as propellant. It is estimated to have 25 times the power of the best electrical propulsion system in use currently, which is propelling the Psyche spacecraft to an asteroid. It is hoped that this technology will eventually be able to send humans to Mars.

Swift Telescope Rescue – Last fall NASA hired the Katalyst company to provide a spacecraft (called LINK) that will launch this month 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. Without this boost, Swift is expected to be dropped down by atmospheric drag and burn up within this year. Swift is the leader in high-energy (gamma-ray and X-ray) astronomical discoveries, thus boosting it is important to astronomy. This is the first ever automated satellite boost rescue mission (astronauts in the space shuttle performed some manual satellite boost rescues).

News About Our Anza Site

Kuhn Shipping Container Cleanup
Some work to reorganize the container will proceed gradually.

Dealing With Weeds
Some of the observatory owners have been out here recently, clearing weeds in their areas. There are still other areas not yet attended to. This needs to be done soon because fire season is here. There has already been at least one brush fire near CA 79 whose blackened fields can be seen while driving to our 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.

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.

Issue	**Due date**
July	27 June
August	1 August
September	29 August
October	26 September

OWENS VALLEY RADIO OBSERVATORY TRIP
SCIENCE BEYOND THE BOOK

June 12-13th 2026

With Dr. Mark Hodges and
Dr. Doug Millar and Cecilia Caballero, MA

Please join with us on the above dates for an extraordinary adventure in science education at the Owens Valley Radio Observatory, outside of Big Pine, CA. Included are science demonstrations at the 40m radio telescope and a tour, walking a scale model of the Solar System, solar astronomy, and nighttime astronomy. We will also make ice cream with liquid nitrogen.

This year we are emphasizing the DSA2000 radio telescope. We will have the chance to hear from one of the engineering staff and talk about some of the technical details of the array. We will also review some of the challenges to getting the data transferred and transformed. It should be very interesting. If you want to get a head start look at the DSA2000 website at https://www.deepsynoptic.org/

If you want to come on Friday, we have been invited by the owners of the Starlight Motel to be treated to an Indian dinner free of charge to our attendees. It will be served at the motel at 5pm. Please let us know if you would like to attend, because we need a head count. We will also have an evening of astronomy Friday night at the south of Building #10 at the west end of the observatory. You can bring your own telescope and there will be a number of telescopes set up to share their views. 120V AC is available. We will also do astronomy on Saturday night. The main program will be on Saturday afternoon, starting in the dining area in Building #10. We will go to the Pizza Factory in Bishop for dinner.

The tour of OVRO is free and courtesy of Dr. Mark Hodges, OVRO, and Caltech. Attendees are responsible for their own meal expenses. This trip is open to teachers, students with their families, members of local astronomy clubs, and radio hams. You must RSVP to go on the trip to Dr. Millar so that we know how many to expect (contact information below). Please also forward your cell phone number.

This is not a sponsored event. Everyone is on their own for transportation and lodging. You have many options. You can stay at a motel nearby, camp in a campground, or bring a tent or trailer and stay at the OVRO site. Don't camp under the 130ft dish as it is a favorite object for photos. We can give you more ideas of good spots to set up camp. If you do decide to camp at OVRO, you must provide your own bathroom, as the buildings will be locked. There are places to eat in Big Pine and Bishop. The Brewed Awakening in Big Pine is great and Jack's in Bishop is an old favorite.

Please arrive at OVRO by 1:00 PM on Saturday for the program. The weather will be warm and dry. If there are mosquitos, I'll have repellent available. Evenings will be a little cooler, so dress accordingly for the nighttime astronomy. Most popular food to share? Chocolate chip cookies. Coffee will be available. Or bring your favorite K cup.

The March Sirius included several pictures of prior visits to give a sense of what this activity is like.

Schedule:

Friday-

Dinner at the Starlight Motel

Set up telescopes to the south of building #10 for astronomy by sunset. 110v AC, bathroom and coffee and water available.

Saturday

1:00pm: arrive at kitchen in building #10 for start of program and tour.

5pm: check in at your Motel (if not already checked in) and go to dinner in Bishop.

Evening- Astronomy at the site

Sunday

A lot of us like to gather for breakfast about 9:30 at Jack's in Bishop. More information will be available on Saturday.

Leave whenever you like. Check websites about the area and the Highway 395 for sightseeing opportunities.

The directions from the LA area are: Drive north on the I5/CA14 through Palmdale and Mojave. Continue past Inyokern and join US395. Continue on North through Little Lake, Lone Pine and Independence. Continue through Big Pine. Just as you get to the end of town turn right on Highway 168 towards the Westgard Pass. Go about 2 miles and turn left onto Leighton Lane, the observatory road. You should be able to see the 40m dish in the distance, but it is 4 miles away! Continue through the gate, even though it says "authorized personnel only", onto the property and follow the blacktop road. Go past two 90-foot telescopes to the west end of the site and park. Below is a more detailed map. The observatory address is: 100 Leighton Lane, Big Pine, CA.

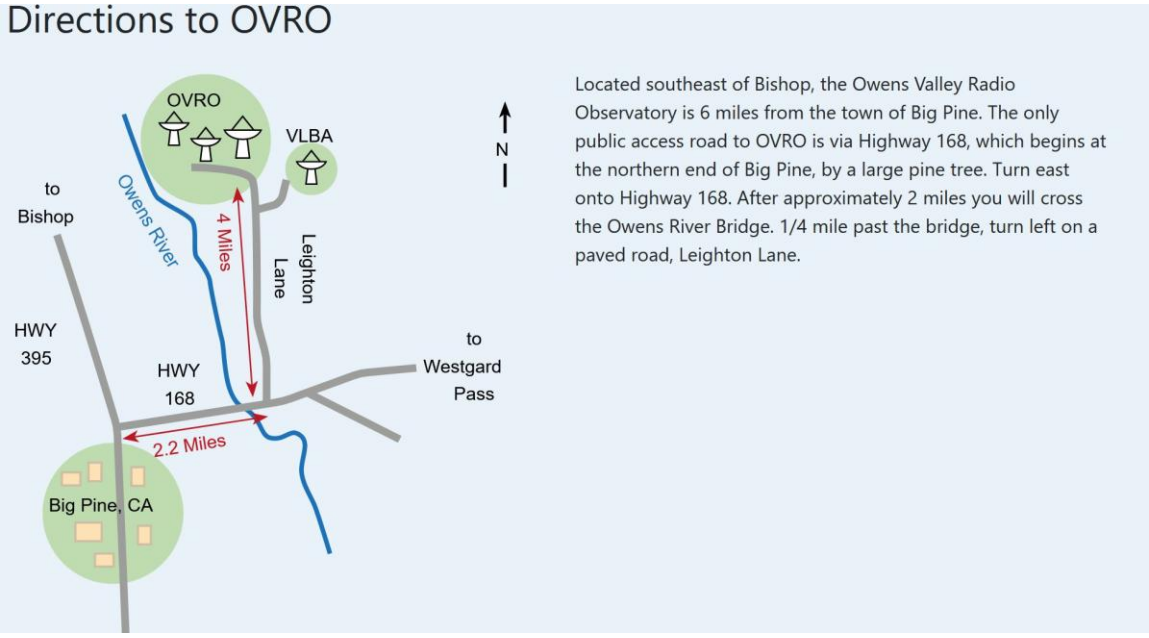
If you would like to bring your own telescope, please do so.

For any questions and RSVP's, my contact information is
Dr. Doug Millar Cell- 562-810-3989 and email is drzarkof56@yahoo.com

Thank you and I hope to see you on the trip!
Dr. Millar

Local Directions to the observatory:

n.b. The large pine tree no longer exists.



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 Jerry Floyd jlfloyd720@gmail.com

- Stellarvue **SV102EDT** Triplet Refractor, 102mm aperture, 621mm focal length, f/6.1, Serial #23 $ 500

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.

For Sale contact Jerry Floyd jlfloyd720@gmail.com

- Stellarvue **SV80S** apochromatic triplet refractor with High-quality Russian LOMO OK4 glass $ 500

80mm aperture, 480mm focal length, f/6.0,
Serial #0018. Designed by Thomas Back.
2 inch Feather Touch Focuser, saddle plate instead of tube rings.
Serial #0018. Designed by Thomas Back.

1.25 inch star diagonal, 2 inch to 1.25 inch reducer, 25mm 1.25" Plossl eyepiece and soft case included

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

- 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 Val Akins akins7821@gmail.com

- University Optics 1 1/4" eyepiece set with Meade RG lenses - (hard to find!) $100
  8 eyepieces with case

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 Steve Feldman 949-461-0028

- Sky Watcher Mak 127, pickup only, Mission Viejo $280
- SynScan Hand Control v.5, pickup or mail $100
- ZWO 482 MC Planetary Camera, pickup or mail $125

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 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.