

The SAN MATEO COUNTY ASTRONOMICAL SOCIETY

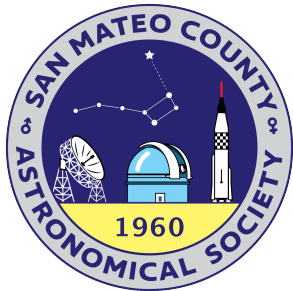
Sept. – Dec. • 2020 Issue

669th General Meeting: September 19

770th General Meeting: October 24

771st General Meeting: November 21

772nd General Meeting: December 19

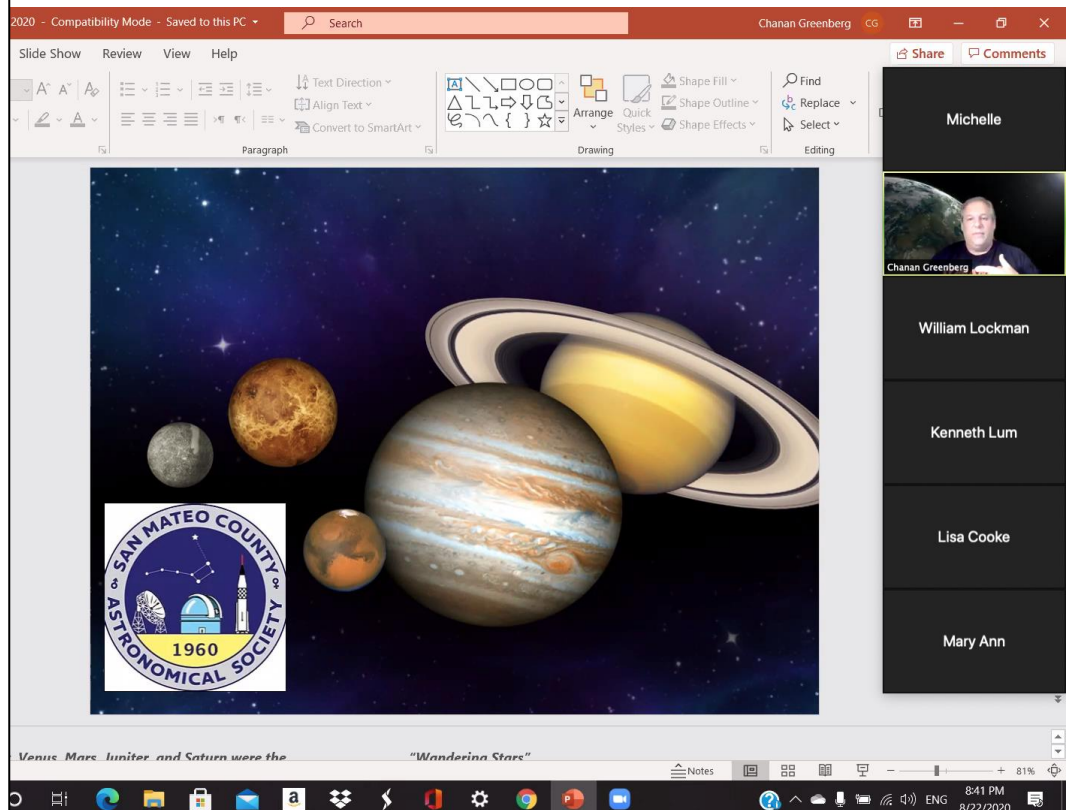


EVENT HORIZON

Founded in 1960, the San Mateo County Astronomical Society is a 501(c)(3) non-profit organization for amateur astronomers and interested members of the public. Visitors may attend Society meetings and lectures on the first Friday of each month, September to June, and Star Parties two Saturdays a month. All events are free for visitors and guests. Family memberships are offered at a nominal annual cost. Detailed membership information is found at <http://www.smcasastro.com/membership.html> where those who want can join via PayPal. Membership also includes access to our Event Horizon newsletter, discounted costs and subscriptions to calendars and magazines, monthly star parties of the Society and the College of San Mateo, use of loaner telescopes, field trips, social occasions and general meetings presenting guest speakers and programs. For additional information, please email us at SMCAS@live.com or call (650) 678-2762.

Membership forms are available near the end of this newsletter beginning on page 17.

SMCAS Events Continue Virtually ...



See page 3 or page 5 for more details

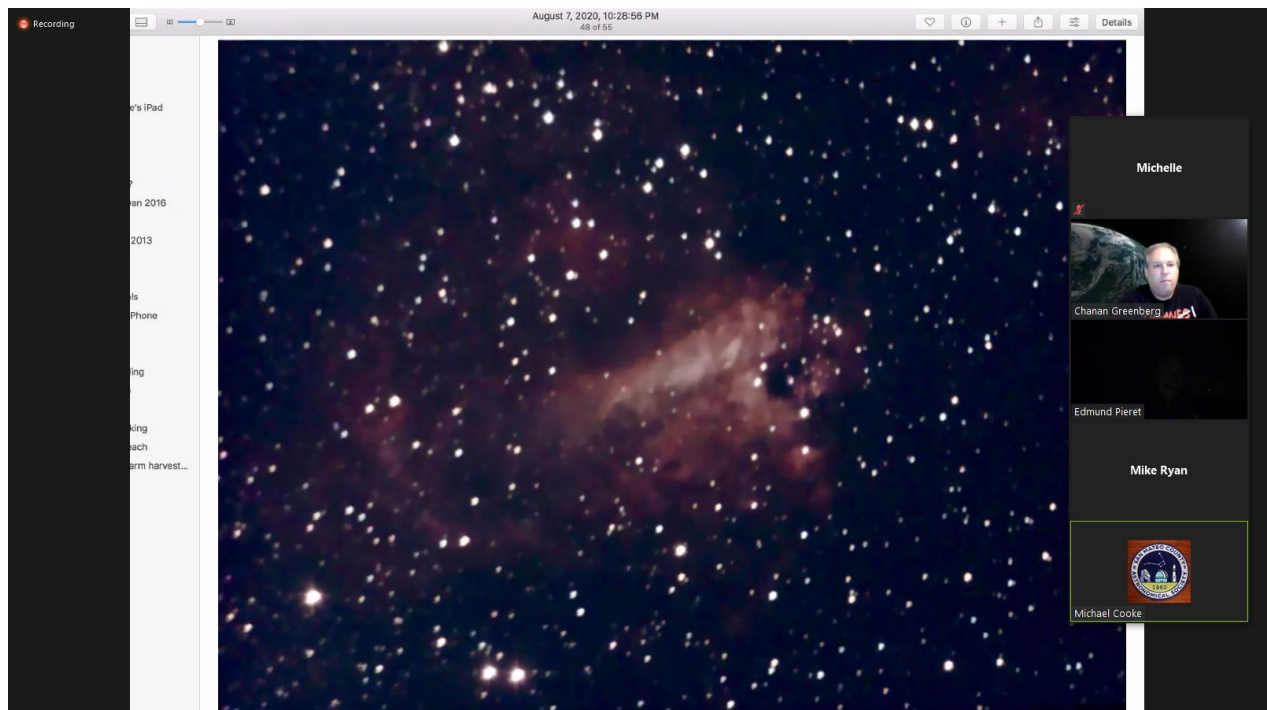
NOTE: CSM is closed due to the pandemic. SMCAS events are online until further notice.

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Cover: A slide from Chanan Greenberg’s lecture, “Size of the Universe” from August 22’s meeting and Star Party.

Below: Another photo Chanan shared during his lecture on August 22.



From the Prez

Hi All. I hope you all are enjoying good health, happiness and success, and that your lives are returning to normal. I'm gratified to report that we have been able to make some progress on Society activities, despite being still shut out of College of San Mateo's ISC Room, Planetarium, Observatory, classrooms and lobby spaces, and will likely continue to be, at least through December.

But, with the lifting of some restrictions on public outdoor gatherings (up to 50 people with social distancing), we've been able to make limited use of public parks for virtual livestream star parties, to which any invited member or interested party may log in over ZOOM. We've held them on four Saturdays; June 13 and 20, and July 11 and 25, recording the last two. We've witnessed attendance of between 29 and 43 people; better than we've ever seen at nearly any in person Star Party over the years. The exceptions have been an occasional school class or scout training. Many attendees have offered complimentary comments, finding them both educational and enjoyable.

Now, we're moving to the next step, by starting to reinstate monthly general meetings via ZOOM followed, in each case by a Star Party. We've just announced, to the members and guests of the SMCAS Newsgroup, the first such event on Saturday, August 22, at 7:45pm. We've tentatively scheduled them through year's end, on September 19, October 24, November 21 and December 19.

These are the dates which would otherwise have hosted CSM's 'Jazz Under the Stars', on the Saturdays closest to 1st Quarter Moon.

Those provide us enough moon in the sky to feature it as a ZOOM Star Party object, but not so bright as to prevent featuring deep-sky objects. Ed Pieret and Michael Cooke plan to use their eVscopes (Michael's is brand new!) to image the sky via ZOOM, soon to be joined by Ken Lum. I have provided narrative commentary on objects as they are imaged and hope to be able to continue doing so.

We expect to offer presentations by outside invited speakers for two of those meetings; Robert Garfinkle in September, and Lea Hirsch in November. Ms. Hirsch has potentially conflicting Thanksgiving plans but is uncertain due to the pandemic. If she is not able to present on Saturday, November 21, the most likely substitute date will be November 14, so as not to have the moon preclude the Star Party.



Our longtime member and former vice president, Chanan Greenberg, has generously offered to share three astronomy lectures he has prepared for more than 100 employees of his company. Saturday, August 22 featured lecture was "Size Of The Universe." Others planned for the coming months will include "Why Is Pluto No Longer A Planet?" on October 24 and "As Long As The Sun Shines" on December 19.

From the Prez (cont'd)

Chanan will also be able to provide digital imagery of Jupiter and Saturn for ZOOM, something the eVscopes can't easily do. Those planets will be prominent in the evening sky for months to come, so he will be able to add a solar-system aspect to our Star Parties. SMCAS normally partners with CSM to put on the annual Family Science Day and Astronomy Festival. CSM is planning to offer that event this year as well, on Saturday, September 26, but in an entirely virtual fashion, over ZOOM, or through webinars created for the purpose. These are in the planning stages now and SMCAS will likely contribute stargazing content, as well as outreach activities such as Ed Pieret's "Comet Chef" demonstration. Watch your SMCAS Newsgroup email for updates on this event.



Other things your Society has done lately include redesigning our logo into a beautiful 3.5-inch diameter iron on a 3D color patch, as well as striking 2-inch diameter stick-on logo labels. The Board intends to provide a logo patch and two labels to each new and existing Society member, and more of each can be purchased for a very nominal cost (say, \$3 for each patch).

We also have designed and purchased 5,000 two-sided, full-color, postcard-sized (4-inch by 6-inch) handouts for distribution. They look beautiful and will be offered to all members to share with friends and local venues.

In the future, we will be printing up a quantity of 8 1/2-inch by 11-inch, two-sided trifold brochures as well as table runners for outreach events, and custom-designed certificates of appreciation for service to the Society.

Many thanks for the efforts of our talented member, Lisa Cooke, an outstanding graphic artist. And, we should celebrate the efforts of our recently added Event Horizon editor, Michelle Morales Torres. We're so glad to have them both onboard!

Feel free to write (at jmrastro@yahoo.com), or call me at (650) 678-2762), with any questions or comments.

Take care all.



Mike Ryan
President SMCAS

Upcoming Events

Thursday, September 17 to 20: CalStar 2020 at Lake San Antonio County Park, page 6

Saturday, September 19, 7pm: 669th General Meeting, Robert Garfinkle Lecture & Star Party (weather-permitting), see below

Saturday, October 24, 7pm: 770th General Meeting, Chanan Greenberg Lecture & Virtual Star Party (weather-permitting), page 3

Saturday, November 21, 7pm: 771st General Meeting, Lea Hirsch Lecture & Star Party (weather-permitting), page 5

Saturday, December 19, 7pm: 772nd General Meeting, Chanan Greenberg Lecture & Virtual Star Party (weather-permitting), page 3

Crestview Star Party 2020 schedule: www.smcasastro.com/crestview-park.html

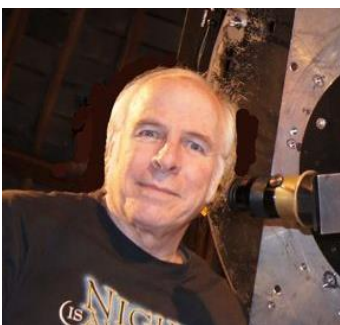
San Mateo County Astronomical Society Presentations Now in Conjunction with Star Parties

In keeping with the pandemic physical distancing requirements, through the end of 2020 the San Mateo County Astronomical Society is moving our normal first Friday general meetings and presentations to occur via Zoom teleconferencing in conjunction with a monthly Zoom Star Party. The evenings will start at 7pm with a short SMCAS members meeting, then presentation, followed by the Star Party. The tentative schedule for these combined lecture and Star Party events is listed above. We will resume our normal first Friday in-person meetings once CSM has reopened for public events. Our Zoom meetings and presentations are open to the public. Children are welcome although the subjects may be too advanced for some. Subscribe to SMCASNews@groups.io to get information about how to join these events.

Saturday, September 19

[Fantasy Flight to the Moon](#)

Robert Garfinkle,
FRAS (Fellow Royal
Astronomical
Society)
Author



Saturday, November 21

[Here Come the Suns: The Statistics and Habitability of Planets in Binary Star Systems](#)

Dr. Lea Hirsch
Postdoctoral Research
Fellow, KIPAC, Stanford
University



CalStar 2020 • September 17 to 20 • Lake San Antonio Park



CalStar is a regional dark-sky star party held annually in late September or early October in Monterey County, California. The event format and atmosphere are quite casual, and there are no scheduled activities, vendors, or fees other than the camping fee collected at the park entrance. The focus is on observing and enjoying the dark skies and good company.

Most people that go, decide to camp. Mainly because it is safer and more convenient to collapse into a nearby tent, RV, or car than to try to drive to other lodging.

Multi-day star parties also try to protect the night vision of their guests by restricting the use of cars. Moving cars in the middle of the night is disruptive since there is almost no way to do it without costing some portion of other guests' night vision. Thus CalStar and other star parties restrict the movement of cars after dark. You may not operate a car within those areas after dusk.

Plan to bring water for drinking and cooking, besides most groceries. Oak Hill Market, a full-service grocery store, is located at Lake

Nacimiento, about 30-minutes away. The nearest cities with a full selection of major retail stores are King City and Paso Robles, which is at least 45 minutes away.

Be sure to bring enough battery power to support yourself.

Bring at least twice as much clothing as you think you'll need. Despite the warm-to-extremely-hot temperatures that can often occur in this region during the daylight hours, it can become quite chilly at night.

Consider bringing something for shade. Some campsites have shade trees. However, you may wish to bring a canopy of some sort for extra shade, especially in the main field, much of which is exposed. If you plan on hanging around the campground during the day, personal sun protection such as hats, sunglasses, and sunscreen is a good idea, as well as plenty of fluids to stay hydrated.

And of course, don't forget your telescope and other astronomy gear!

For additional details, go to calstar.observers.org

Solar System Rise and Set Times

By Ron Cardinale

Crestview Star Party – Weather-permitting

SMCAS 2020 (PT*)	<u>Sep 19</u> <u>Rise</u>	<u>Sep 19</u> <u>Set</u>	<u>Oct 24</u> <u>Rise</u>	<u>Oct 24</u> <u>Set</u>	<u>Nov 21</u> <u>Rise</u>	<u>Nov 21</u> <u>Set</u>	<u>Dec 19</u> <u>Rise</u>	<u>Dec 19</u> <u>Set</u>
Sun	6:55 AM	7:09 PM	7:27 AM	6:18 PM	6:56 AM	4:54 PM	7:19 AM	4:54 PM
Moon	9:28 AM	8:59 PM	3:25 PM	12:42 AM	1:00 PM	11:35 PM	11:31 AM	10:23 PM
Mercury	8:52 AM	8:00 PM	7:43 AM	6:17 PM	5:37 AM	4:11 PM	7:25 AM	4:46 PM
Venus	3:28 AM	5:15 PM	4:30 AM	4:54 PM	4:27 AM	3:31 PM	5:29 AM	3:26 PM
Mars	8:35 PM	9:25 AM	5:45 PM	6:23 AM	2:41 PM	3:24 AM	1:04 PM	2:09 AM
Jupiter	3:40 PM	1:19 AM	1:32 PM	11:10 PM	10:58 AM	8:41 PM	9:27 AM	7:18 PM
9/7** PM, East on left	J g i e c		g J i c e		g i J e c		c g e i J	
	J=Jupiter, c=Callisto, e=Europa, g=Ganymede, i=Io							
Saturn	4:08 PM	1:57 AM	1:52 PM	11:38 PM	11:08 AM	8:56 PM	9:27 AM	7:19 PM
Uranus	8:54 PM	10:33 AM	6:33 PM	8:09 AM	3:40 PM	5:14 AM	1:47 PM	3:19 AM
Neptune	6:47 PM	6:23 AM	4:28 PM	4:01 AM	1:37 PM	1:09 AM	11:47 AM	11:16 PM
Pluto	4:01 PM	1:41 AM	1:44 PM	11:20 PM	10:56 AM	8:32 PM	9:09 AM	6:45 PM
* PDT for September and October, PST for November and December								
** 9 PM for September and October, 7 PM for November and December								

Rise set times from <http://www.almanac.com/astronomy/rise/CA/San%20Carlos/>

Jupiter's moons' positions from <http://www.shallowsky.com/jupiter/>



Virtual Star Party Highlights - COMET NEOWISE

By Mike Ryan



Photo by Joel Bruxvoort using a Google Pixel 3a in astrophotography mode.

C/2020 F3, otherwise known as Comet NEOWISE, is a long period comet with a near-parabolic orbit discovered on March 27, by astronomers using WISE or Wide-field Infrared Survey Explorer space telescope. At that time, it was an 18th-magnitude object, located 2 AU or 190 million miles away from the sun and 1.7 AU or 160 million miles from Earth. The comet's systematic designation of C/2020 F3, indicates a nonperiodic comet and the third discovered in 2020.

By July, it was bright enough to be visible. It is one of the brightest comets in the Northern Hemisphere since Comet Hale-Bopp in 1997. Under dark skies, it can be clearly seen with the naked eye, and remains visible throughout most of July. On July 17, it

entered the constellation of Ursa Major, below the Big Dipper. As of July 23, the time of best visibility, the comet was about magnitude 3, but binoculars were required to see it near urban areas.

Comet NEOWISE reached perihelion (its closest approach to the sun) on July 3 at a distance of 0.29 AU or 27 million miles. This passage increased the comet's orbital period from about 4,400 years to roughly 6,700. The closest approach to Earth occurred on July 23rd at distance 0.69 AU or 64 million miles while in Ursa Major.

(continued on page 9)

Virtual Star Party Highlights (cont'd)

Earlier in July, the comet could be seen in the morning sky above the northeastern horizon and below Capella. From Earth, the comet was less than 20 degrees from the sun between June 11 and July 9. By June 10, as the comet was being lost to the glare of the sun, it was apparent magnitude 7, but brightened to about magnitude 3 at 0.4 AU or 37 million miles from the sun and 1.4 AU or 130 million miles from Earth.

In early July, Comet NEOWISE far exceeded the brightness attained by recent previous comets, C/2020 F8 also known as SWAN, C/2019 Y4 or ATLAS and briefly, even Hale-Bopp in 1997. It also had developed a second tail. The first tail was blue and made of gas and ions, with a red separation caused by high amounts of sodium. The second was of a golden color and made of dust, like the tail of Comet Hale-Bopp. This combination resembles comet C/2011 L4 or PANSTARRS but became brighter than PANSTARRS. In early July, it actually became briefly brighter than Hale-Bopp. However, its nucleus activity subsided after midJuly and its green coma became clearly visible after that.

On July 13, a sodium tail was confirmed by the Planetary Science Institute. Sodium tails have only been observed in very bright comets such as Hale-Bopp and C/2012 S1 or ISON.

NEOWISE's retrograde orbit crossed the plane of the ecliptic, to which it is inclined at about 129 degrees, in late June. On July 18, the comet peaked at a northern declination of more than 48 degrees.

From the infrared signature, the diameter of the comet nucleus is estimated as 3 miles across. The nucleus is similar in size to Comet Hyakutake in 1996, Halley in 1986 and other short-period comets.

A number of authors have suggested that the comet could become known as a so-called "Great Comet." However, this distinction is usually reserved for comets that are easily observable with the naked eye, even with low to moderate light pollution. Examples over the decades have included Comet Ikeya-Seki in 1965 (the brightest of the 20th century), Comet Bennett in 1970, Comet West in 1976 and Hale-Bopp in 1996 and '97.



Photo by Ed Pieret using an eVscope taken during July 25's SMCAS Virtual Star Party.

Stargazing Trip During a Pandemic

By Mary Ann McKay



In early July, SMCAS members Mary Ann McKay and Ed Pease made a weeklong road trip to northeastern Nevada to ride the Great Basin Star Train!

In early July, my husband, Ed Pease and I made a weeklong road trip to northeastern Nevada, driving 300 miles most days. Our first stop was Fallon, where we saw the Grimes Point Petroglyphs and took a few short hikes. The nearby Indian reservation road was closed, due to the pandemic. Day two we stopped for a tour of the Eureka Opera House, and drove to our main destination, Ely (pronounced eel – lee) where we stayed in the Lyndon Baines Johnson room of the historic Hotel Nevada (other rooms had names like Wayne Newton Room!).

In Ely, we enjoyed a tour of the Railroad Museum and taking the Great Basin Star Train! We purchased the train tickets in August 2019 as they typically sellout a year in advance; the trains run only on certain Friday nights between May and September. The train departed East Ely at 7:30pm and took about two and a half hours round trip. Wearing

masks, we sat in an open car, socially distanced from other passengers. Some park rangers from nearby Great Basin National Park led the



presentation, noting that this is the only national park ranger talk allowed in the U.S. during the pandemic! While we railed into the dark sky of the high desert, one of the rangers asked ten multiple choice astronomy questions; astronomy prizes were given to the kids (junior ranger badges) and to adult passengers with nearly perfect scores (not Ed or Mary Ann!). At our midpoint destination, we heard an astronomy talk similar to the ones SMCAS often has for scouts and other groups; the guide used laser pointers as the pandemic rules do not allow the use of telescopes. With the moon nearly full, the views of it, Jupiter and Saturn were terrific.

The third day was July Fourth and from a distance from other viewers, we watched an old-fashioned parade and fireworks in Ely. Next we drove to Baker, where we stayed at the appropriately named Stargazer Inn with the outstanding Kerouac's restaurant next door. Although we had nearly 17 hours of daylight, late at night we walked out of our motel room into the parking lot and enjoyed the view of the many stars one can see when there is no light pollution! A few miles from Great Basin National Park, we took some intense hikes (starting as high as 10,000 feet and lasting as long as five hours) and picnicked near Cave Lake.

(continued on page 11)

Stargazing Trip During a Pandemic (cont'd)

Our next stop was Elko and the historic California Trail. This area is sheep country and was settled by many Basques. We enjoyed a Basque dinner and had leftovers for lunch in Winnemucca the next day outside the Humboldt museum, which we also recommend. We spent our wedding anniversary in Reno where we walked along the Truckee River after dinner before heading home the following day.

Many of us have canceled or delayed vacation plans due to the pandemic. Do I recommend traveling? Well, I found it a little scary

stopping at public restrooms. Although Nevada requires masks and we found good compliance by workers in both hotels and restaurants. I was a little troubled seeing a number of people without masks and some anti-mask signs and demonstrations in some of the small towns. I don't know how typical our experience was. I do recommend the Northern Nevada Railroad Star Train, and museum and there also are other train rides from East Ely during the day that you might want to check out in future summers. It was nice to get away!



Fourth of July fireworks show at Ely Nevada. Photo by Ed Pease.



NASA Night Sky Notes: Summer Triangle Corner: Altair

By David Prosper

Altair is the final stop on our trip around the Summer Triangle! The last star in the asterism to rise for Northern Hemisphere observers before summer begins, brilliant Altair is high overhead at sunset at the end of the season in September. Altair might be the most unusual of the three stars of the Triangle, due to its great speed: this star spins so rapidly that it appears “squished.”

A very bright star, Altair has its own notable place in the mythologies of cultures around the world. As discussed in our previous edition, Altair represents the cowherd Niulang in the ancient Chinese tale of the “Cowherd and the Weaver Girl.” Altair is the brightest star in the constellation of Aquila the Eagle; while described as part of an eagle by ancient peoples around the Mediterranean, it was also seen as part of an eagle by the Koori people in Australia! They saw the star itself as representing a wedge-tailed eagle, and two nearby stars as his wives, a pair of black swans. More recently one of the first home computers was named after the star: the Altair 8800.

Altair’s rapid spinning was first detected in the 1960s. The close observations that followed tested the limits of technology available to astronomers, eventually resulting in direct images of the star’s shape and surface by using a technique called *interferometry*, which combines the light from two or more instruments to produce a single image. Predictions about how the surface of a rapidly spinning massive star would appear held true to the observations; models predicted a squashed, almost “pumpkin-like” shape instead of a round sphere, along with a dimming effect along the widened equator, and the observations confirmed this! This equatorial dimming is due

to a phenomenon called *gravity darkening*. Altair is wider at the equator than it is at the poles due to centrifugal force, resulting in the star’s mass bulging outwards at the equator. This results in the denser poles of the star being hotter and brighter, and the less dense equator being cooler and therefore dimmer. This doesn’t mean that the equator of Altair or other rapidly spinning stars are actually dark, but rather that the equator is dark in comparison to the poles; this is similar in a sense to sunspots. If you were to observe a sunspot on its own, it would appear blindingly bright, but it is cooler than the surrounding plasma in the Sun and so appears dark in contrast.

As summer winds down, you can still take a Trip Around the Summer Triangle with this activity from the Night Sky Network. Mark some of the sights in and around the Summer Triangle at: bit.ly/TriangleTrip. You can discover more about NASA’s observations of Altair and other fast and furious stars at nasa.gov.



Altair is up high in the early evening in September. Note Altair’s two bright “companions” on either side of the star. Can you imagine them as a formation of an eagle and two swans, like the Koori?

Directions to SMCAS Public Star Parties (Weather Permitting)

From Hwy 101 or El Camino: take Brittan Avenue in San Carlos, west (toward the hills). Follow Brittan 2.3 miles (from El Camino) to Crestview Drive. Turn right on Crestview. In half-a-block, you will see a small blue-posted sign with an arrow, indicating the entry road into Crestview Park. It lies between houses with addresses #998 and #1000 Crestview Drive.

From Highway 280: take Edgewood Road exit. Go east (toward the Bay) about 0.8 miles. Turn left at Crestview Drive. Go 0.5-mile uphill to where Crestview meets Brittan. Again, drive the half-block, to the small blue sign on the right, and the entry road on the left.

From Hastings and Club Drives: From Belmont, take Carlmont Drive to Hastings Drive. Follow Hastings about 1.5 miles, first uphill, then down, to San Carlos where it becomes Witheridge Road, then ends a block later at Club Drive. Turn right and climb Club Drive to Crestview Drive. Turn left and continue some 2 miles, first up, then down past Leslie Drive, to the small blue Crestview Park sign on the left. Turn right into the Crestview Park entry road.

Crestview Park - San Carlos

Come on out, and bring the kids, for a mind-blowing look at the Universe!

Bring your binoculars, telescopes, star guides, and lounge chairs for some informal star gazing at Crestview Park.

Dress warmly and wear a hat. Only visitors with telescopes should drive in. Others should park on the street and walk in or arrive before dark so that car headlights don't affect the observers' dark adaptation. Bring small flashlights only, covered with red cellophane or red balloon.

These measures avoid safety issues of maneuvering in the dark, as well as ruining the night vision of the viewers.

Please don't touch a telescope without permission. And parents, please don't let children run around in the dark.

Note: If bringing a telescope and arriving after dark, please enter the Park with your headlamps and white interior lights off. If you aren't bringing a telescope, whether before or after dark, please park along Crestview Drive, and walk in.

Crestview Park is residential, adjacent to homes and backyards. Before inviting potentially noisy groups, please call Ed Pieret at (650) 595-3691 for advice and advisories. **Call Ed also to check the weather and 'sky clock' and to see whether the Star Party is still scheduled.**

Crestview Star Party schedule is here:

<http://www.smcasastro.com/crestview-park.html>

From San Carlos, take San Carlos Avenue to Club Drive, and climb to the 5-way intersection. Take the half-right to continue on Club Drive past Witheridge Road to Crestview Drive. Proceed as above to Crestview Park.



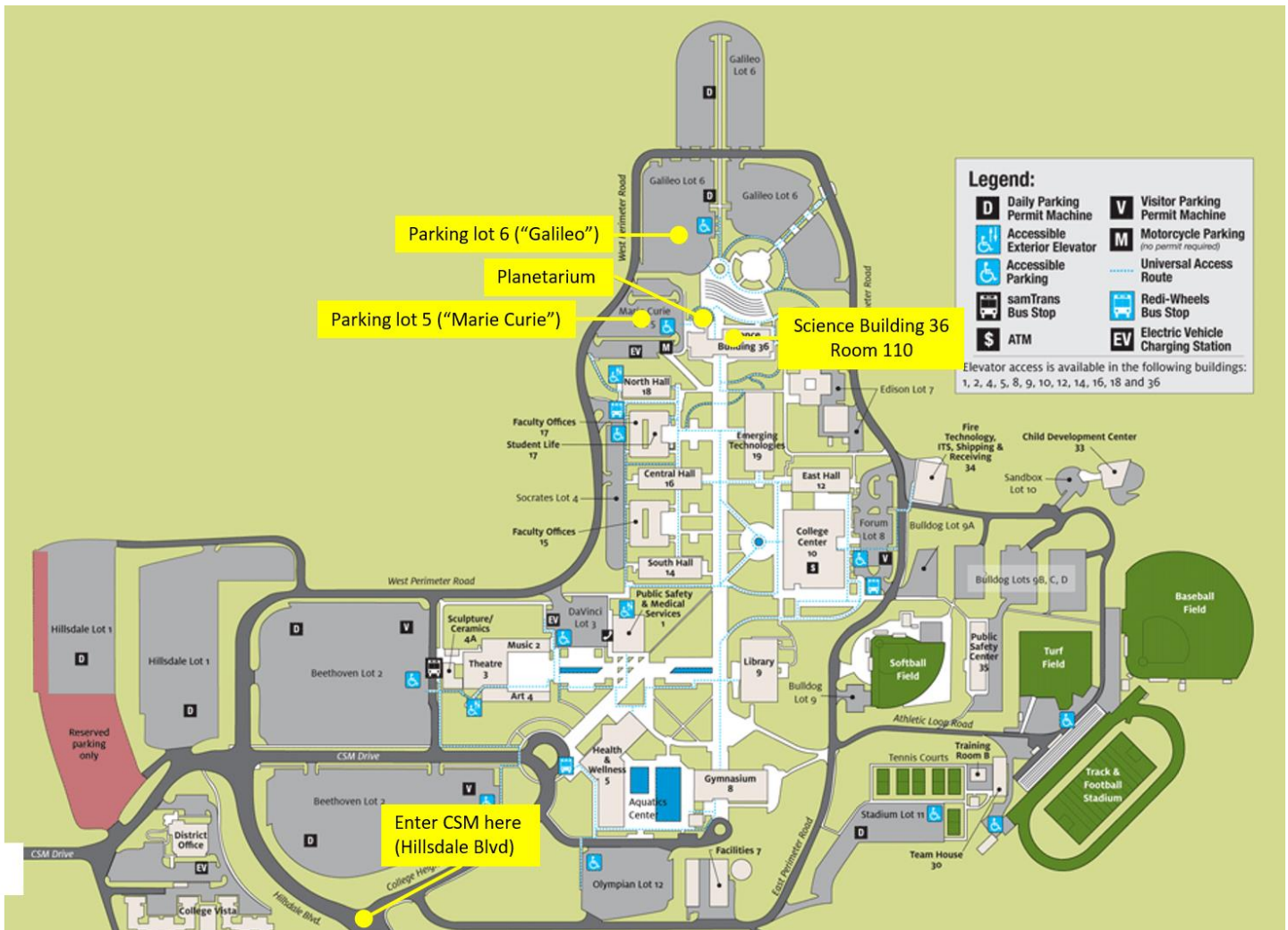
Directions to SMCAS Meetings at The College of San Mateo:

NOTE: CSM is closed due to the pandemic.

SMCAS events are online until further notice.

Directions to the CSM Planetarium for Meetings:

After exiting Hwy 92 at Hillsdale Blvd, climb the hill towards CSM, passing two traffic lights to the stop sign at the top of Hillsdale Blvd. Continue straight onto West Perimeter Road and follow it until you reach Lot 5, "Marie Curie", or Lot 6, "Galileo." Science (ISC) Bldg. (36) and the Planetarium lie straight ahead. Enter Bldg. 36 either through the door facing the lot or walk around the dome to the courtyard entrance. We meet in ISC room 110 for pizza and soft drinks one hour prior to the talk in the Planetarium (Pictured below.)





San Mateo County Astronomical Society Membership Application

SMCAS@live.com; P.O. Box 974, Station A, San Mateo CA 94403; (650) 678-2762

rev 02272020

Become an SMCAS Member Today! Here's what you get:

- **Members Community**

Friendly advice and guidance from experienced recreational astronomers; access to SMCAS group emails, which provide general orientation information, announcements of astronomy events, file access and exchange.

- **SMCAS Events**

General meetings are held the first Friday of most months, at 7pm in the Integrated Science Center (ISC) Room and Planetarium in the Science Center (Bldg. 36) at the College of San Mateo (CSM), 1700 W. Hillsdale Blvd., San Mateo. Meetings include lectures and presentations on space science, an activity session, and refreshments (usually pizza).

We also offer stargazing two Saturdays a month, weather permitting. Visitors and those without telescopes are welcome; members are glad to share! SMCAS also has sponsored dark-sky campouts at Fremont Peak State Park, field trips to SLAC, KIPAC and Lick Observatory, plus **member-only events, including Star-B-Ques and quarterly potlucks.**

- **Subscriptions (free with your membership)**

The Event Horizon, SMCAS' newsletter, with SMCAS and member information, viewing tips and articles.

The Reflector, published quarterly by the Astronomical League, a national alliance of astronomy groups like SMCAS.

- **Significant Discounts on Equipment and Publications**

Discounts on purchases at Bay Area astronomical equipment retailer Orion Telescope Center, on sky calendars and ephemerides, and on such periodicals as *Sky & Telescope* and *Astronomy*.

- **Access to Loaner Equipment**

Use of SMCAS loaner telescopes and other astronomy equipment.

- **Sharing your Appreciation of Astronomy and Space Science with the General Public.**

Your SMCAS membership helps bring astronomy to interested lay people, especially students and children

Annual Dues: (SMCAS is a tax-exempt non-profit 501(c)(3). Dues may be tax deductible; consult your tax advisor):

\$30 Regular Family Membership; \$15 Student Membership

Every membership includes all members of your immediate family, (including your kids).

To join you can:

Send application (see reverse side), with payment, to: SMCAS, P.O. Box 974, Station A, San Mateo CA 94403.

- Bring the completed application and payment to a meeting or event and give it to any SMCAS officer.
- Go online at <http://www.smcasastro.com>, click on the Membership tab and pay via PayPal.

Membership Application on next page



San Mateo County Astronomical Society Membership Application

rev 02272020

SMCAS@live.com; P.O. Box 974, Station A, San Mateo CA 94403; (650) 678-2762

Date: _____ Please check one: [] New Member or [] Renewal

[] \$30 Regular Family Membership; [] \$15 Student Membership

All members, please indicate areas of interest below. New members, please complete entire form. Renewing members, please provide your name and any information that has changed in the last year.

We will list your name, address, email address, and phone number(s) in our membership roster unless you have checked the box preceding that information. The membership roster is distributed to active members only.

Each member's name and mailing address must be provided to the Astronomical League (AL), SMCAS' umbrella organization. If you don't want AL to have your phone number and email address, indicate below.

[] Name(s) _____ [] Email Address _____

[] Address _____

[] City & Zip Code _____

[] Phone Number(s): _____ [] Do not provide my phone number(s) to the AL.

[] Don't provide my email address to the AL. (Checking this means you can ONLY get **The Reflector** by regular mail)

Please check one: send **The Reflector** [] by mail, or [] by email.

Areas of Interest:

SMCAS encourages member involvement. We invite you to provide additional information about your interests, skills, occupation and prior experience. Please identify SMCAS projects and functions that you might like to help facilitate.

Please indicate which of the following activities might be of interest to you:

___ Star Parties - Do you own a telescope you can bring: Yes () No ()

___ General Meetings - Finding (or being) a Speaker. Official greeter. Set up or take down ISC or refreshments.

___ Family Science Day & Astronomy Festival (Usually at CSM the first Saturday in October).

___ Social Events - Equinoctial and Summer Solstice potlucks, Summer Star-B-Que, Holiday Potluck.

___ SMCAS Membership and Promotional Drives

___ Communications – 'Event Horizon' Newsletter, Website(s), Facebook page, group email, Publicity posting.

___ Educational Programs – School, museum and library star parties, Bay Area Astro teacher assistants.

Other/Comments: _____