

The SAN MATEO COUNTY ASTRONOMICAL SOCIETY

February 2017 — 641st General Meeting Notice



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 info is found at www.smcasastro.com, where those who want can join via Paypal.

Membership includes access to this monthly 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 us at (650) 678-2762.



GREEN FLASH, photographed at San Francisco in December 2006. Greg Edwards, the speaker at the February general meeting, will discuss photographic techniques for capturing such unusual transient sunset and sunrise phenomena. See page 3 for more information. Photo credit: user TheBrockenInaGlory via Wikipedia under the Creative Commons [CC BY-SA 3.0 license](https://creativecommons.org/licenses/by-sa/3.0/).

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DATES TO SAVE

Feb 3: General Meeting, Pizza, and Presentation at the CSM Planetarium. Details on page 3.

Mar 3: General Meeting at the CSM Planetarium.

Apr 7: No general meeting in April.

Apr 8 (tentative date): Spring Equinox Spaghetti Feed/Potluck at Crystal Springs Methodist Church, San Mateo.

More events on page 5.

President's Corner

The Bay Area is one of the best places for astronomy in the world! We have multiple great universities and research institutes in the area, staffed by some of the most respected astronomers you can find. And these institutions attract many other top astronomers from around the world who come and visit. When I refer to astronomers, I mean to include all the related scientific disciplines such as astrophysicists, cosmologists, astrobiologists and so on that make up a rich tapestry of experts in just about every field you can think of.

It always amazes me how willing all this great talent is in making themselves available to amateur astronomers and the general public through presentations and various forms of public outreach. Over the years, SMCAS has been able to attract a stellar lineup of these speakers to our group at our monthly general meetings. If you want to see the history of our speakers over the years since around the year 2000, you can access it on our web site at the following link by scrolling down past the current speakers:

<http://www.smcasastro.com/meetings.html>

For our longer term members, reviewing the past speakers should bring back memories of some of the great presentations we have had. For our new members, taking a look at these prior speakers will give you an indication of what to expect in the future!

Since our general meetings only occur about 9 times a year, it means we are only touching the surface of the talent that is out there. For all our members, if our general meetings are not enough for you, there are many other opportunities to hear great speakers around the Bay Area. One of the best ways to keep up on all the presentation opportunities is to subscribe to the weekly BayAstro Yahoo Group run by one of our own members, Ken Lum. Each week he emails out a list of all the significant upcoming presentations on astronomical topics in the Bay Area. If you haven't already subscribed to this service, you can find a link to it on our website under the Resources tab at:

<http://www.smcasastro.com/resources.html>

While you are there, you may also notice links to many other resources available to our SMCAS members as well as the general public, including: member websites, training and education, loaner equipment, organizations we support, and other organizations that offer public lectures.

Lastly, I'd like to welcome new members Bo Yan of Foster City, Emily Stepien of Belmont and Robert Peterson of Portola Valley, who all joined SMCAS in January!

Happy stargazing!

Marion Weiler

President, San Mateo County Astronomical Society

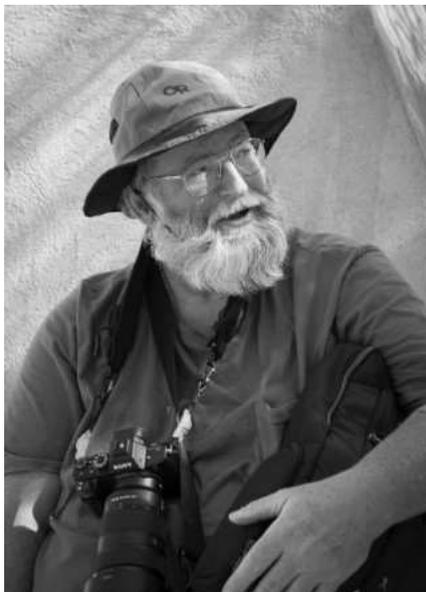
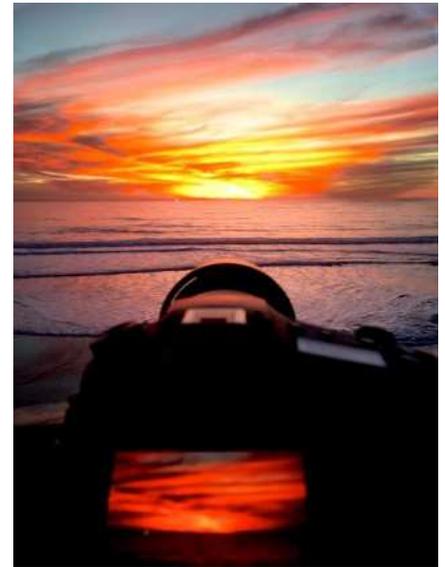
Greg Edwards

Astronomer, photographer

Sunset and Sunrise Phenomena

Friday, February 3, 2017 , College of San Mateo, Building 36
SMCAS General meeting at 7:00 p.m. ISC Room, room 110
Presentation at 8:00 p.m. in the CSM Planetarium
Free and open to the public, free parking (lots 5 and 6 recommended)

In this talk we will explore some of the over 100 different Sun-related phenomena that can be seen in the sky and look at photographs of over three dozen examples (green flashes, blue flashes, Sun dogs, 22 degree arcs, Sun pillars, belt of Venus, etc.). There will be discussion on how and where to photograph these phenomena and how to perform post-processing. After this talk, you should have a 66% chance of photographing the green flash above the ocean when the horizon is clear and you have the right gear.



Greg Edwards is a retired InfoSec Engineer who made his living for 4.5 years doing Astronomy. He has viewed all the Messier and Herschel 400 objects with binoculars and was the Pt Reyes National Seashore Astronomy instructor in the summer of 2016. As a photographer he has had a picture on display at the Royal Photographic Society HQ in Bath England (the “Octagon Chapel” where William and Caroline Herschel gave concerts when they were professional musicians!), has won a Photographic Society of America contest and has over 6200 Awards at ViewBug. Check out gregedwards's profile at <https://www.viewbug.com/member/gregedwards>

Remembering Leroy Amen

By Ron Cardinale



Leroy Amen, 1930–2017

As many of you know, the San Mateo County Astronomical Society lost a longtime member in January.

Leroy Amen died at his home in San Mateo. He would have been 87 in April. He had been an SMCAS member for about 3 decades.

Leroy was a retired federal prosecutor. He was originally from Wyoming. He was drafted into the Army and after completing his service he went to law school. He was in private practice for a while but he wasn't satisfied with it and decided to pursue a different path. He became an attorney with the U.S. Department of Justice in Wyoming

and then in Washington, DC. In 1973, he moved to the bay area to work at the SEC in San Francisco. His wife, Sue, died a few years after they moved here. She was only 43. Leroy never remarried. He continued to work at the SEC until he retired in 1989.

I met Leroy when I joined SMCAS in, I think, 1993. In those days, we were really diehard observers. I don't know how many times only he and I were at Crestview in absurdly poor conditions hoping for the sky to clear. It seldom did when it was like that but we were ready just in case. He had been an SMCAS Board member from 1989 into the 2000s. Leroy was an enthusiastic participant at Astronomy Day at Bowditch in Foster City with his telescope eagerly showing the skies to all comers. Astronomy Day is now Family Science & Astronomy Festival at CSM, which Leroy also regularly attended. He was also a regular at Jazz Under the Stars at the CSM observatory. In more recent years, it had become impossible for him to grapple with his telescope but he never lost his love of observing. He'd always be enthusiastic about the star parties and other events even though it had become difficult for him to get around. Although his body declined, his mind remained sharp right to the end.

Leroy also liked photography a lot. He was the first person I knew to buy a digital camera. He was always ready to go out and take pictures and he'd always find something to photograph. He did some astrophotography and general photography but he was especially passionate about photographing birds. He began to do more photography as it got harder for him to use his telescope.

Leroy will be missed by everyone who knew him.

Event Update

Upcoming Holiday Party, Star Parties, and Monthly Meetings, for SCMAS this Year and Beyond!

We have many fun and interesting activities planned in the coming months. See the web site (www.smcasastro.com) or contact Marion Weiler (mgwe@pacbell.net) for more information or to volunteer at any of these events. Please contact Ed Pieret (epieret@comcast.net) if you are available to help out with Star Parties at Crestview Park and other locations.

Fri, Feb 3	7:00 pm	General Meeting, Pizza Social and Presentation
Sat, Feb 18	5:45 pm	Crestview Park Star Party
Sat, Feb 25	5:45 pm	Crestview Park Star Party
Fri, Mar 3	7:00 pm	General Meeting, Pizza Social and Presentation
Sat, Mar 18	7:00 pm	Crestview Park Star Party
Sat, Mar 25	7:15 pm	Crestview Park Star Party
Fri, Apr 7		No General Meeting in April
Sat, Apr 8 (tentative)	6:00 pm	Spring Equinox Social, Crystal Springs Methodist Church
Fri, Apr 14	7:00 pm	Symvisio: A Visual Equivalent of Symphony, by Mohsen Janatpour, CSM Theater
Sat, Apr 22	8:00 pm	Crestview Park Star Party
Sat, Apr 29	8:00 pm	Crestview Park Star Party

The times given for Crestview star parties are approximately at sunset. Arrive then to set up a telescope or if you want to learn about telescopes. If you would like to merely see the wonders of the night sky through our telescopes, observing starts about an hour later and usually continues for about two hours.

Comet Campaign: Amateurs Wanted

By Marcus Woo

In a cosmic coincidence, three comets will soon be approaching Earth—and astronomers want you to help study them. This global campaign, which will begin at the end of January when the first comet is bright enough, will enlist amateur astronomers to help researchers continuously monitor how the comets change over time and, ultimately, learn what these ancient ice chunks reveal about the origins of the solar system.

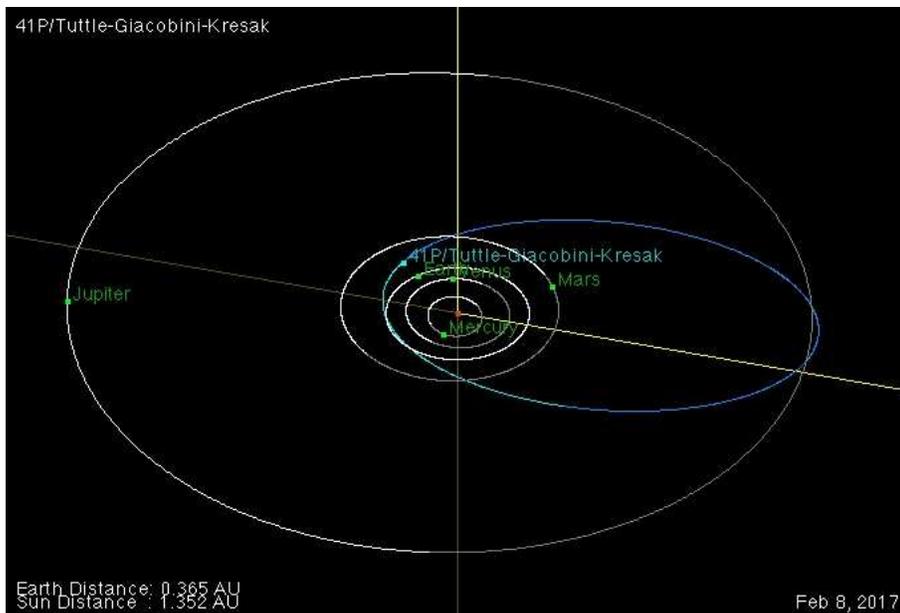
Over the last few years, spacecraft like NASA's Deep Impact/EPOXI or ESA's Rosetta (of which NASA played a part) discovered that comets are more dynamic than anyone realized. The missions found that dust and gas burst from a comet's nucleus every few days or weeks—fleeting phenomena that would have gone unnoticed if it weren't for the constant and nearby observations. But space missions are expensive, so for three

upcoming cometary visits, researchers are instead recruiting the combined efforts of telescopes from around the world.

"This is a way that we hope can get the same sorts of observations: by harnessing the power of the masses from various amateurs," says Matthew Knight, an astronomer at the University of Maryland.

By observing the gas and dust in the coma (the comet's atmosphere of gas and dust), and tracking outbursts, amateurs will help professional researchers measure the properties of the comet's nucleus, such as its composition, rotation speed, and how well it holds together.

The observations may also help NASA scout out future destinations. The three targets are so-called Jupiter family comets, with relatively short periods just over five years—and orbits that are accessible to spacecraft. "The better understood a comet is," Knight says, "the better NASA can plan for a mission and figure out what the environment is going to be like, and what specifications the spacecraft will need to ensure that it will be successful."



Continued on p. 8

An orbit diagram of comet 41P/Tuttle-Giacobini-Kresak on February 8, 2017---a day that falls during the comet's prime visibility window. The planets orbits are white curves and the comet's orbit is a blue curve. The brighter lines indicate the portion of the orbit that is above the ecliptic plane defined by Earth's orbital plane and the darker portions are below the ecliptic plane. This image was created with the Orbit Viewer applet, provided by the Osamu Ajiki (AstroArts) and modified by Ron Baalke (Solar System Dynamics group, JPL). <http://ssd.jpl.nasa.gov/sbdb.cgi?orb=1;sstr=41P>

February Rise and Set Chart

SMCAS 2017 (PST)		Feb 18 Rise	Feb 18 Set	Feb 25 Rise	Feb 25 Set
Sun		6:52 AM	5:52 PM	6:43 AM	5:59 PM
Moon		12:35 AM	11:22 AM	6:12 AM	5:20 PM
Mercury	In the suns' glare	6:29 AM	4:45 PM	6:36 AM	5:18 PM
Venus	In the evening	8:14 AM	9:09 PM	7:47 AM	8:55 PM
Mars	In the evening	8:51 AM	9:34 PM	8:36 AM	9:32 PM
Jupiter	Most of the night	9:59 PM	9:20 AM	9:29 PM	8:52 AM
Jupiter's moons		i e j g c		c i e j g	
11 PM, East on left		J=Jupiter, c=Callisto, e=Europa, g=Ganymede, i=Io			
Saturn	In the wee hours	3:07 AM	12:47 PM	2:41 AM	12:21 PM
Uranus	In the evening	9:07 AM	10:00 PM	8:40 AM	9:34 PM
Neptune	Mostly in the suns's glare	7:28 AM	6:42 PM	7:01 AM	6:16 PM
Pluto	Before sunrise	4:40 AM	2:26 PM	4:13 AM	2:00 PM

- Star parties at Crestview are on the 18th and 25th.
- The date for the next Jazz Under the Stars at CSM was not available at the time of this writing.

- courtesy of Ron Cardinale

Fundraising for the Group: SMCAS Participates in AmazonSmile and Receives a Percentage of Your Purchase

SMCAS is now enrolled in AmazonSmile, a program that enables certified 501(c)(3) non-profit organizations to receive donations from eligible purchases at Amazon.



To enroll in the program, go to smile.amazon.com. On your first visit to this site, you can select a charitable organization – San Mateo County Astronomical Society (SMCAS) – that will receive 0.5% of the purchase price of eligible items on Amazon. How will you know if an item is eligible? Items are clearly and literally marked on the product detail pages with “Eligible for AmazonSmile donation.” For more information, go to smile.amazon.com/about.

San Mateo County Astronomical Society Event Calendar						
< February 2017 >						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
29	30	31	1	2	7:00 PM General Membership Meetin	3 4 Sunset: 5:40 PM 
5	6	7	8	9	10	5:46 PM Penumbral Lunar Eclipse. 11 Sunset: 5:47 PM 
12	13	14	15	16	17	6:00 PM Crestview Star Party 18 Sunset: 5:55 PM 
19	Washington's 20	21	22	23	24	6:00 PM Crestview Star Party 25 Sunset: 6:02 PM
26 	27	28	1	2	3	4

San Mateo County Astronomical Society Event Calendar from the Night Sky Network.

Calendar courtesy of Ed Pieret

Comet Campaign, continued from p. 6

The first comet to arrive is 41P/Tuttle-Giacobini-Kresak, whose prime window runs from the end of January to the end of July. Comet 45P/Honda-Mrkos-Pajdusakova will be most visible between mid-February and mid-March. The third target, comet 46P/Wirtanen won't arrive until 2018.

Still, the opportunity to observe three relatively bright comets within roughly 18 months is rare. "We're talking 20 or more years since we've had anything remotely resembling this," Knight says. "Telescope technology and our knowledge of comets are just totally different now than the last time any of these were good for observing."

For more information about how to participate in the campaign, visit www.psi.edu/41P45P46P. Want to teach kids about the anatomy of a comet? Go to the NASA Space Place and use Comet on a Stick activity!

spaceplace.nasa.gov/comet-stick

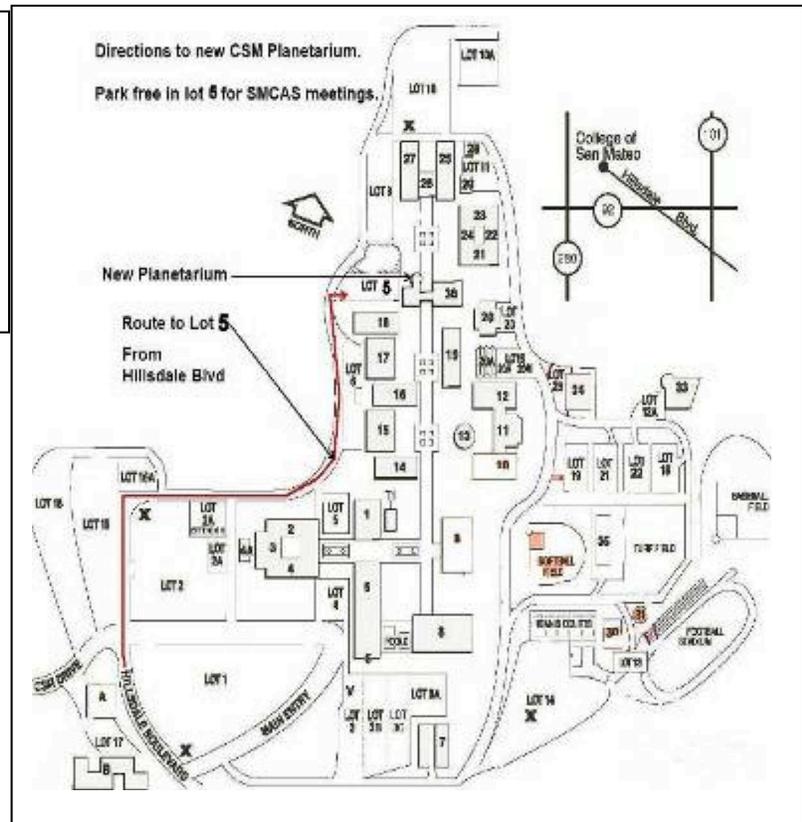
This article is provided by NASA Space Place. With articles, activities, crafts, games, and lesson plans, NASA Space Place encourages everyone to get excited about science and technology. Visit spaceplace.nasa.gov to explore space and Earth science!

Directions to SMCAS Meetings at CSM, and to Star Parties

Star Parties are Free to Members and Visitors and are Held Regularly, Weather Permitting

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. Continue straight, bear right then, after the 2nd stop sign, bear left over the rise. Enter the next parking lot on the right, called Lot 5, "Marie Curie". Science Bldg 36 and the planetarium lie straight ahead. Enter Bldg. 36 thru the door facing the lot, or walk around the dome to the courtyard entrance.



Crestview Park

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 flash-lights 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.

From Hwy 101 or El Camino, take Brittan Avenue in San Carlos, west (to 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 sign on the right, and the entry road on the left.

Directions to Crestview Park for Star Parties

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.

2nd Note: 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.

Membership Application and Society Information

To join the San Mateo County Astronomical Society or to renew membership, you can pay dues via Pay Pal on our website (www.smcasastro.com), at any monthly meeting, or send your check, payable to SMCAS, to: SMCAS, PO Box 974, Station A, San Mateo, CA, 94403.

Dues are currently \$30 for a new (family) membership and renewing member and \$15 for a student membership.

Please check one of the following boxes: () New member () Membership renewal () Student () Address or info change

NOTE TO RENEWING MEMBERS: Please complete the following form only if you have a change to your membership or contact info.

Name(s) _____

Address/City/Zip: _____

Phone(s) _____ Email _____

SMCAS – Society Information

Meetings of the San Mateo County Astronomical Society are usually held the **first Friday of the month (except in July and August)** in the Planetarium at the College of San Mateo, 1700 West Hillsdale Blvd. in San Mateo. Check our web site for any meeting changes. Directions: exit Hwy. 92 at West Hillsdale Blvd. and proceed uphill through the second and third sets of traffic lights, to the first stop sign at the top of the hill. Continue straight, bearing right then, after the second stop sign, left up over a rise. After the third stop sign, enter the first parking lot on the right with a sign 'Lot 5, Marie Curie', identifying the top level plus those below. Additional parking is available in Lot 6 if Lot 5 is full.

Science Bldg. 36 adjoins the lot, with the geodesic planetarium dome to its left. Circle the planetarium, or enter Bldg 36 thru the door facing Lot 5. For the 4th floor observatory, use the elevator just inside on the right. The planetarium corridor is ahead on the left. Turn left at the restroom sign.

Officers: President: Marion Weiler; **Vice-President:** Ed Pieret; **Treasurer:** Karen Boyer; **Secretary:** Vacant.
Board Directors-At-Large: Ed Ching, Bob Franklin, Ken Lum, Mary Ann McKay, Mike Ryan, and Frank Seminario.

Event Horizon Editor: Ted Jones. **NOTE:** Newsletter is posted by the beginning of each month (except for July and August). Submissions and photos are welcome by the 15th of the month before publication.

SMCAS Contact Information

Website: www.smcasastro.com

The CSM Astronomy Department schedule is at www.collegeofsanmateo.edu/astronomy/events.

Facebook: www.facebook.com/groups/1800419490194179/

Email: SMCAS@live.com

Society Yahoo group: <http://groups.yahoo.com/group/smcas>.

Yahoo Group Subscription: email smcas-subscribe@yahoogroups.com to subscribe.

Event Horizon: To submit articles or photos, please contact Ed Pieret — epieret@comcast.net or 650.862.9602.