

The SAN MATEO COUNTY ASTRONOMICAL SOCIETY

September 2016 — 638th 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.



THE WICKETT LUMBER COMPANY STAR PARTY of September 8, 1962, at "Star Hill" off Skyline Boulevard above Palo Alto. Identified participants: (A) Frederick H. Jacobs; (B) Ernie Schlage; (C) Rick Johnston; (D) Henry Stevens; (E) Joe Weiland; (F) John Holzter. See page 6 for more about these early SMCAS members.

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DATES TO SAVE

Sep 2: General meeting, pizza, and member presentations and discussion at the CSM planetarium.

Sep 17: Fall Equinox Spaghetti Feed/Potluck. Bring a dish to share. **RSVP.** See page 3.

Oct 7: **NO GENERAL MEETING** in October.

Oct 8: Family Science and Astronomy Festival at CSM. **Volunteers needed!** Contact Ed Pieret. See page 9.

More events and details on page 6.

President's Corner

Summer is rapidly coming to a close, and I hope you all have enjoyed it! Although we have not had general meetings since our June 3 meeting, we have kept busy with a number of great events this summer, including our Annual Banquet on July 16 and the Hidden Villa StarBQue on August 6.

September and October will be busy months for us, and I hope to see you all at our upcoming events. We have our general meeting September 2, which will be a member's night. This is a format we haven't tried for a while, but should be fun. Instead of a formal outside speaker, the presentation portion of our meeting starting at 8 pm in the planetarium will be open to member talks and discussion about their interests in astronomy. Members are encouraged to spend a few minutes talking to the group about their astronomy interests, activities, telescopes, and plans and such.

Of special note is the annual Family Science and Astronomy Festival at CSM planned for Saturday, October 8. This is our biggest event of the year, and one of the most fun. We can expect 1,000–2,000 people to attend. This year we will once again partner with the CSM Science Department, SLAC National Labs, the Astronomical Society of the Pacific and other organizations to put on this event. The format will be the same as in the past: daytime activities and planetarium shows, evening presentation in the CSM Theatre, and then a Jazz Under the Stars Star party at the CSM Observatory. We need SMCAS volunteers to help make this event a success, so please let me or any other SMCAS Board member know if you are available to help out.

Lastly, the affairs of the San Mateo County Astronomical Society are managed by the 9 individuals on the SMCAS Board of Directors, a great group of astronomers who volunteer their time to keep our Society running smoothly for everyone's benefit:

<http://www.smcasastro.com/board-of-directors.html>

I would like to extend an invitation to any SMCAS members who are interested in attending the SMCAS Board meetings to please do so! You will learn a bit about how we operate, the issues we deal with, get to know the board members better, and perhaps even contribute some great ideas for managing SMCAS and our events. We usually meet the third Tuesday evening of the month in the ISC room at CSM, and our next scheduled meeting is September 20. Our meetings generally run for 2 hours, from 7:00–9:00 pm. If you are interested in attending, please let me know and I will arrange a parking pass for you, and confirm the details of when we are meeting, as meeting days/times are subject to change.

Marion Weiler

President, San Mateo County Astronomical Society

SMCAS Autumnal Equinox Social and Spaghetti Feast

Saturday, September 17 6:00-9:00 pm

Come help us be part of the world community celebrating this year's Autumnal Equinox! Bring your appetite, your spouse, your family, friends and all the stories you wish to tell; there will be no truth meter present!

This event is free for members and their families/friends. You are encouraged to bring your favorite appetizer, bread, side dish or desert to share, but it is not required. We will supply the pasta and sauces, plates/utensils as usual! **RSVP to Marion at mgwe@pacbell.net with the number of people in your party.**

An Equinox is the time when the sun crosses the plane of the earth's equator, making night and day of approximately equal length all over the earth and occurring about March 21 (vernal equinox or spring equinox) and September 22 (autumnal equinox). Astronomically, the September equinox marks the end of summer and the beginning of fall (autumn) in the Northern Hemisphere

Many cultures around the world hold feasts and celebrate festivals and holidays to mark the September equinox.



The Fireside Room
Crystal Springs Methodist Church
2145 Bunker Hill Drive, San Mateo, CA
650-345-2381

If you have special diet needs regarding the spaghetti or sauce, please advise. For RSVP, special needs or questions, contact Marion at mgwe@pacbell.net

Antique Telescope Society Meeting October 21–24 at Lowell Observatory, Flagstaff, AZ

By Ken Lum

This year's Antique Telescope Society convention will be on October 21-24 at the Lowell Observatory in Flagstaff, AZ. We last visited Lowell in 2000, and now plan a return visit this year. The Lowell Observatory was founded in 1894 by Percival Lowell of Boston who used it's facilities to search for evidence of an advanced civilization on Mars. This was done with the aid of a 24" refractor built by the famed American telescope makers, Alvan Clark and Sons also of Boston.

While Percival Lowell did not find any evidence of life on Mars, the most famous discoveries made at the observatory were the first spectroscopic evidence of the expanding Universe by Vesto M. Slipher between 1912-14 using the 24" and the discovery of Pluto by Clyde Tombaugh using a Clark 13" refractor astrograph in 1930. Lowell observatory continues to do cutting edge modern astronomical research both at its original site on the outskirts of Flagstaff and at nearby Anderson Mesa where the observatory works in cooperation with the US Naval Observatory(USNO).

Most recently, in 2012, a 4.3 m Ritchey-Chrétien reflector was completed at Happy Jack in the Coconino National Forest in cooperation with the Discovery Channel. We hope to be able to visit this telescope as well.

The 24" Clark refractor has recently undergone a restoration and cleaning and is now operational mostly as a public observing telescope. The Pluto discovery astrograph is also still available to visit. There is now an effort



The 24-inch Clark refractor at Lowell Observatory, Flagstaff, AZ.

underway to clean and restore that telescope. The ATS also plans a trip to visit the USNO facility at Anderson Mesa where, among several telescopes, the first operational Ritchey-Chrétien reflector, a 42", built by George W. Ritchey is located.

Should anyone like to join attend this next ATS convention, application forms will soon be available on the organization's website at:

<http://webari.com/oldscope/>

so check back to see when these will be posted. I will also make an announcement when the time comes and more information on the cost of the convention is available. So, if you have time and are interested in visiting this great, historic facility as well as other wonderful sights in the area, such as the Grand Canyon and Meteor Crater, by all means avail yourselves of this remarkable opportunity.

The Great American Eclipse

By Ed Pieret

During the morning of August 21, 2017 there will be a total solar eclipse moving across the United States.

A total solar eclipse occurs about every 18 months, but each occurrence covers only a small part of the Earth's surface. There have been no total solar eclipses visible from the United States during the 21st century. There was an annular eclipse visible from Northern California and though it was quite a spectacle, it pales in comparison to a total eclipse.

The last total solar eclipse to touch the contiguous United States was in 1979 and crossed Washington, Oregon, Idaho and Montana. The last United States total eclipse was visible from Hawaii and Mexico in 1991.

A total solar eclipse is an exciting event. I like to say that it is "the most dramatic thing you will see in the sky that doesn't kill you." The sky becomes dark and the Sun's corona becomes visible along



with stars and planets that are close to the Sun.

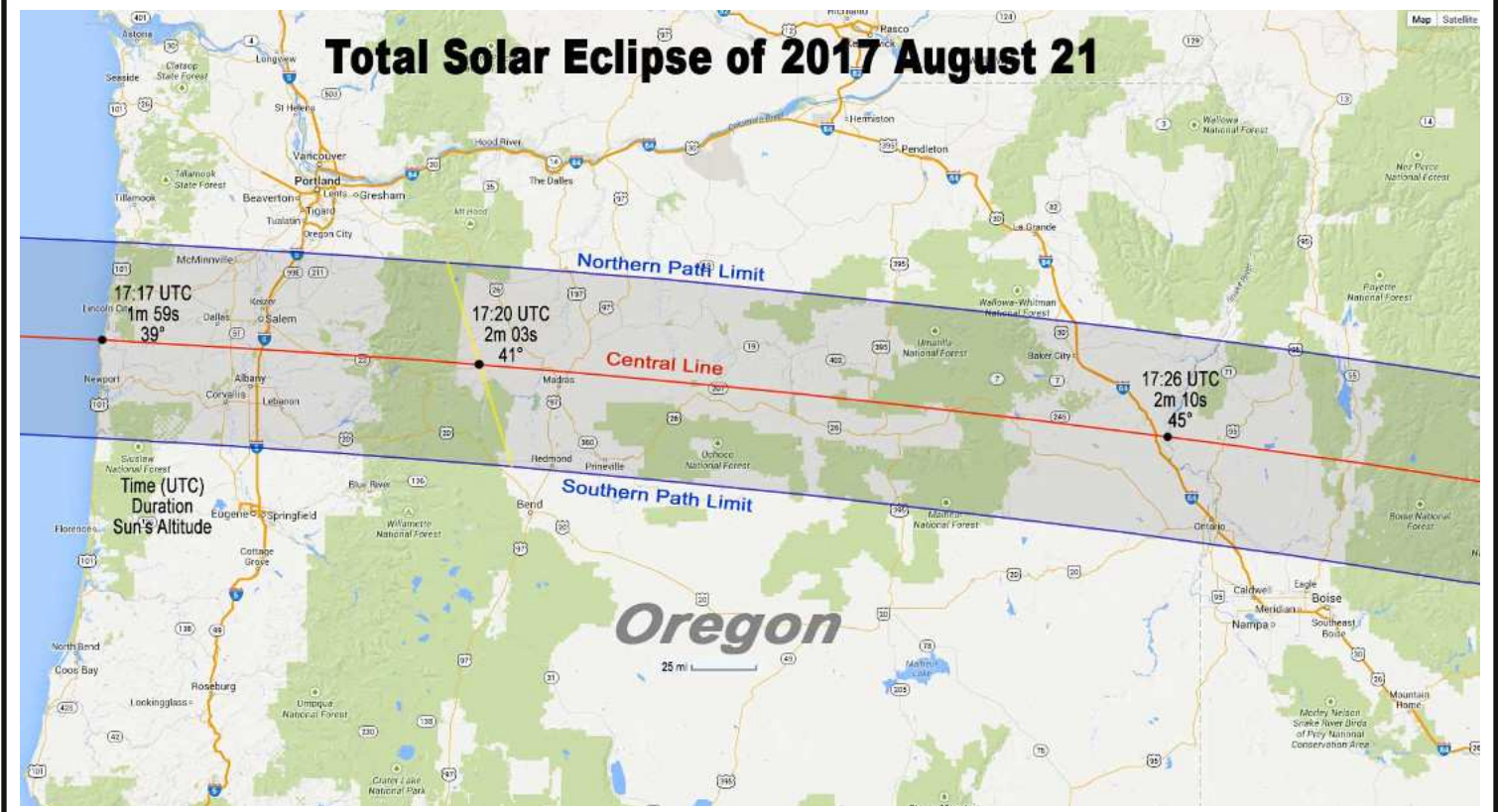
I would recommend that you start planning for the event and plan to bring any children or grandchildren along.

If you miss this there will be another American eclipse on April 8, 2024 which will cross Texas and a number of midwestern and eastern states.

Although a map is provided below, I would advise you to go to a great google interactive map to make your plans, at

xjubier.free.fr/en/site_pages/solar_eclipses/TSE_2017_GoogleMapFull.html

We will be discussing this in more depth at the September 2, 2016 meeting.



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.smcastro.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, Sep 2	7:00 pm	General Meeting, Pizza Social, Member talks and discussion
Sat, Sep 3	7:30 pm	Crestview Park Star Party
Sat, Sep 17	6:00 pm	Fall Equinox Spaghetti Feed/Potluck, Crystal Springs Methodist Church, San Mateo
Sat, Sep 24	7:00 pm	Crestview Park Star Party
Sat, Oct 1	7:00 pm	Crestview Park Star Party
Fri, Oct 7		There will be NO general meeting on this date
Sat, Oct 8		Family Science and Astronomy Festival at CSM
Sat, Oct 22	6:15 pm	Crestview Park Star Party
Sat, Oct 29	6:15 pm	Crestview Park Star Party
Fri, Nov 4	7:00 pm	General Meeting, Pizza Social and Presentation
Sat, Nov 26	5:00 pm	Crestview Park Star Party

Wickett Lumber Star Party, continued from cover

Frederick H. Jacobs (A) was a retired United Airlines DC-6 pilot at the time of the photograph. He served as the fifth SMCAS president from 1965–66, and again in 1972–73.

Ernie Schlage (B) was the owner and chairman of Schlage Lock Company and our second president, serving from 1962–63.

SMCAS founder **Rick Johnston** (C) was the society's first president, serving in two consecutive one-year terms from 1960–62.

Henry Stevens (D) arranged for the use

of the Wickett Lumber Company site. The location off of Skyline Boulevard provided dark skies and a large open space clear of encroaching trees. Likewise, the society's access to the CSM planetarium in 1963 as a meeting site, with access to the key and use of the projector, was by Henry Stevens' arrangement with CSM astronomy chair Dr. Claude Anderson.

Joe Weiland (E) and **John Holtzer** (F) were CSM students at the time of the photograph.

Thanks to Mike Ryan for identification of the above individuals and the additional historical information.

Is there a super-Earth in the Solar System out beyond Neptune?

By Ethan Siegel

When the advent of large telescopes brought us the discoveries of Uranus and then Neptune, they also brought the great hope of a Solar System even richer in terms of large, massive worlds. While the asteroid belt and the Kuiper belt were each found to possess a large number of substantial icy-and-rocky worlds, none of them approached even Earth in size or mass, much less the true giant worlds. Meanwhile, all-sky infrared surveys, sensitive to red dwarfs, brown dwarfs and Jupiter-mass gas giants, were unable to detect anything new that was closer than Proxima Centauri. At the same time, Kepler taught us that super-Earths, planets between Earth and Neptune in size, were the galaxy's most common, despite our Solar System having none.

The discovery of Sedna in 2003 turned out to be even more groundbreaking than astronomers realized. Although many Trans-Neptunian Objects (TNOs) were discovered beginning in the 1990s, Sedna had properties all the others didn't. With an extremely eccentric orbit and an aphelion taking it farther from the Sun than any other world known at the time, it represented our first glimpse of the hypothetical Oort cloud: a spherical distribution of bodies ranging from hundreds to tens of thousands of A.U. from the Sun. Since the discovery of Sedna, five other long-period, very eccentric TNOs were found prior to 2016 as well. While you'd expect their orbital parameters to be randomly distributed if they occurred by chance, their orbital orientations with respect to the Sun are clustered extremely narrowly: with less than a 1-in-10,000 chance of such an effect appearing randomly.

Whenever we see a new phenomenon with a surprisingly non-random appearance, our scientific intuition calls out for a physical explanation. Astronomers Konstantin Batygin and Mike Brown provided a compelling possibility earlier this year:

perhaps a massive perturbing body very distant from the Sun provided the gravitational "kick" to hurl these objects towards the Sun. A single addition to the Solar System would explain the orbits of all of these long-period TNOs, a planet about 10 times the mass of Earth approximately 200 A.U. from the Sun, referred to as Planet Nine. More Sedna-like TNOs with similarly aligned orbits are predicted, and since January of 2016, another was found, with its orbit aligning perfectly with these predictions.

Ten meter class telescopes like Keck and Subaru, plus NASA's NEOWISE mission, are currently searching for this hypothetical, massive world. If it exists, it invites the question of its origin: did it form along with our Solar System, or was it captured from another star's vicinity much more recently? Regardless, if Batygin and Brown are right and this object is real, our Solar System may contain a super-Earth after all.



A possible super-Earth/mini-Neptune world hundreds of times more distant than Earth is from the Sun. Credit: R. Hurt / Caltech (IPAC)

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!

September Rise and Set Chart

SMCAS 2016 (PDT)		Sep 3 Rise	Sep 3 Set	Sep 24 Rise	Sep 24 Set
Sun	Equinox on 22nd	6:42 AM	7:33 PM	6:59 AM	7:01 PM
Moon		8:51 AM	9:00 PM	12:53 AM	3:18 PM
Mercury	B4 sunrise late in month	8:10 AM	7:53 PM	5:39 AM	6:20 PM
Venus	After sunset	8:40 AM	8:36 PM	9:24 AM	8:16 PM
Mars	In the evening	2:33 PM	11:49 PM	2:10 PM	11:21 PM
Jupiter	Conjunction w/sun: 26th	8:06 AM	8:19 PM	7:05 AM	7:08 PM
Jupiter's moons		eg i j c		g e i j c	
10 PM, East on left		J=Jupiter, c=Callisto, e=Europa, g=Ganymede, i=Io			
Saturn	In the evening	1:54 PM	11:45 PM	12:36 PM	10:26 PM
Uranus	Most of the night	9:14 PM	10:16 AM	7:50 PM	8:50 AM
Neptune	Opposition on 2nd	7:27 PM	6:43 AM	6:03 PM	5:18 AM
Pluto	Much of the night	4:26 PM	2:15 AM	3:03 PM	12:52 AM

- Star Parties are at Crestview on the 3rd and 24th.
- Jazz Under the Stars date was not available.

– *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						
< September 2016 >						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28	29	30	31	1	2	3 7:00 PM Crestview Star Party Sunset: 7:35 PM
4	Labor Day 5	6	7	8	9	10 Sunset: 7:25 PM
11	12	13	14	15	16	17 6:00 PM Fall Equinox Social Sunset: 7:13 PM
18	19	20	21	22 7:21 AM Fall Equinox	23	24 7:00 PM Crestview Star Party Sunset: 7:02 PM
25	26	27	28	29	30	1

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

Calendar courtesy of Ed Pieret

Volunteers Needed!

Family Science and Astronomy Festival

College of San Mateo

Saturday, October 8, 2016

SMCAS member volunteers are needed to run activities, staff a membership table, and provide general logistical help.

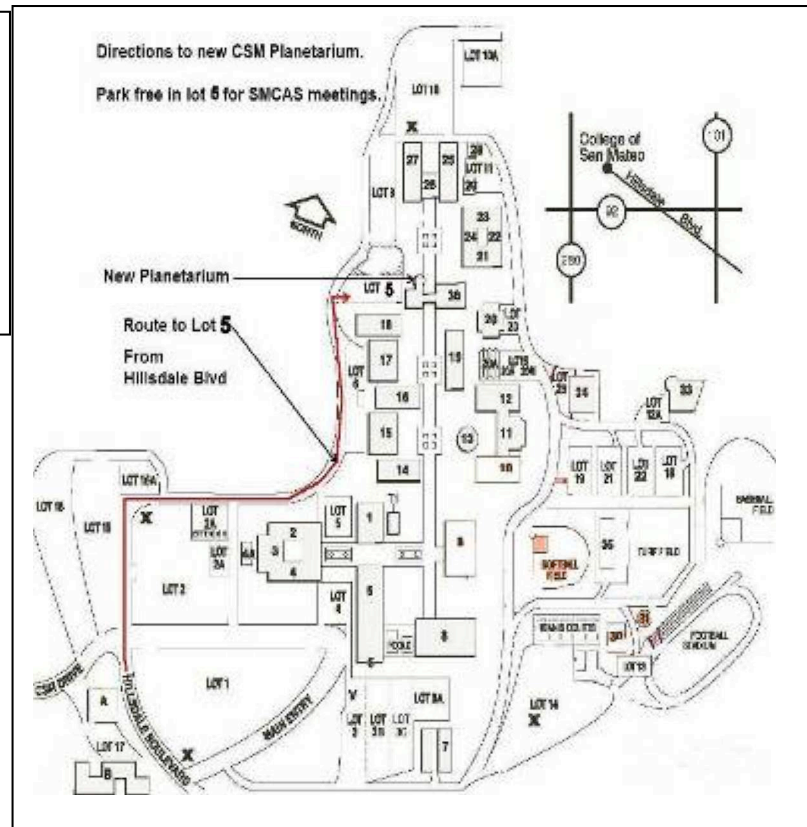
Please contact Ed Pieret (epieret@comcast.net, 650-862-9602) if you can volunteer!

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.

Directions to Crestview Park for Star Parties

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.

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 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. 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.

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.smcas.net

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

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.