

The SAN MATEO COUNTY ASTRONOMICAL SOCIETY

April 2015 – 628th 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.smcas.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.



From our own Tom Stephany, SMCAS board member, taken on his solar eclipse-viewing trip to Svalbard, Norway. Only visible from high northern latitudes, Tom snapped the photo of this full solar eclipse and sent it via email on March 20, only saying: Svalbard Eclipse, Second Contact. Short, but speaks volumes. Tom, along with Ken Lum, will be the featured speakers at our SMCAS June general meeting and presentation.

Table of Contents

Upcoming Events	1
President's Corner	2
March Meeting Review	3-4
SMCAS Event Schedule	5
April Rise and Set	6
Members' Forum	7-8
Calendar	9
Directions to CSM, Crestview	10
Application Form & Club Info	11

Join Us! Spring Equinox Dinner on March 28 and Special Lecture at CSM Theatre on April 3

- **Spring Equinox Dinner – SMCAS Members and Their Families**
Saturday, March 28, 2015. 7:00 p.m. Fireside Room at the Crystal Springs Methodist Church, 2145 Bunker Hill Drive, San Mateo. Board members will provide sauces and pasta. Bring a side dish to share!
- **Special Lecture in the CSM Theatre**
Friday, April 3, 2015. 7:30 p.m. Instead of our normal pizza social and meeting, SMCAS will meet in the CSM theatre (bldg. 3) for a special Arts and Sciences presentation featuring Prof. Mohson Janatpour. Reception and star-gazing to follow presentation.

President's Corner

"Everybody talks about the weather, but nobody does anything about it," said Mark Twain. If only we could do something about it! March was a busy month for SMCAS star parties, but weather interfered frequently. We had quite a few star parties scheduled: Crestview Park, Hillsborough School, Bayside STEM fair, etc. But, poor weather conditions dogged most of them. Our normal Crestview star parties have experienced multiple weather cancellations, Hillsborough school was cancelled, and Bayside was held under less than optimal conditions. Yet, even with less than optimal conditions, guests at our star parties always seem to be in awe of what they see, and make it worthwhile and rewarding for us to keep holding them!

But, how about things that we can do something about? What can we do at SMCAS to continue to make this organization a worthwhile and rewarding experience for all of us? From March 2 to 14, the SMCAS Board conducted an online survey of our members to gather feedback on how SMCAS is doing and get ideas on building a better SMCAS. The survey went out to all current and recent past members, plus other interested parties who are part of our Yahoo Group: more than 150-plus email accounts. The turnout was great: we had 46 responses with many ideas too numerous to list here.

The survey results can be organized into a few primary themes that will help guide the Board about the direction of SMCAS. Overall, the responses indicated we are doing well in general in meeting member expectations. But In addition to what we are currently doing, respondents would like:

1. More member focus, in addition to general public outreach;
2. More member star parties, networking, education and information sharing opportunities inside and outside of SMCAS;
3. Dark-sky star party sites;
4. Better communication of our events, membership renewal, and member benefits;
5. To grow our community to achieve our mission.

In summary, our goal is to build a better SMCAS community. And unlike the weather, we can do something about it. We will use the survey results to help guide and involve everyone in taking steps to build a more engaging, more educational, more interactive and more inviting SMCAS community. A community that has all of these elements will thrive, and will carry us into the future!

If you are interested in seeing all the actual individual (and anonymous) survey results, including a lot of great specific ideas, you can view them through the Survey Monkey web site at the following link: <https://www.surveymonkey.com/results/SM-NBVVQBT7/>

And, if you have additional comments or ideas not covered in the survey, please feel free to contact me (or other Board members) directly, or submit them through our new online suggestion box at: <https://www.surveymonkey.com/r/6N3DDZB>

Marion Weiler

President, San Mateo County Astronomical Society
mgwe@pacbell.net

Event Review

March General Meeting Summary: Living with the Stars

By Ken Lum, SMCAS Board Member

I recall an old video scene (I believe from the earlier Cosmos TV series by Carl Sagan) where a water fountain was shown along side a marble statue in the shape of a human. While both had form, it was pointed out that the fountain was more like a real human than the statue because its watery substance was continually changing and cycling through while roughly maintaining its form whereas there was no such process taking place in the static stone statue. Last month, Dr. Karel Schrijver, a solar astrophysicist at Lockheed/Martin came to greatly elaborate on this theme by summarizing his new book, Living with the Stars, where he and his wife, Dr. Iris Schrijver of Stanford, describe the connection between our bodies and the rest of the Universe.

Except for hydrogen, most of the rest of the atoms making up our bodies come from atomic fusion reactions in stars where hydrogen is converted into heavier elements. As these heavier elements are scattered into space by supernovae, many coalesce into larger structures such as molecules, dust grains, and eventually, planetary bodies as well as other stars. On Earth, these atoms are still being cycled through uncountable processes, most especially the process of life.

But not all these atoms come from just the material that formed the Earth 4.5 billion years ago. Even now, up to an estimated 40,000 tons of cosmic dust falls on the Earth yearly, and much of this material is being breathed and ingested into our bodies thru innumerable routes as we go about our daily activities. This process of ingestion and regeneration followed by loss through cell death and excretion makes us much more like the water fountain than the statue. **(Continued on page 4.)**

Below: Dr. Karel Schrijver, author of Living with the Stars, and Marion Weiler, SMCAS president (right).



[Living with the Stars, continued from page 3.](#)

All these processes are thermodynamically driven by energy mostly from the Sun and sometimes from subterranean heat, which drives life cycles through the heating of the Earth and the material and energy flows of food chains. Even the origin of life itself may have had an extraterrestrial contribution either from external bodies (meteors, comets and asteroids) bringing living things (Panspermia), or organic substrates to the Earth, or interacting in some way with Earth compounds to create organic compounds that could lead to the origin of life (See Nature Chemistry article below).

Over the long run, we all came from star dust and will return to star dust in the far future when the Sun destroys the Earth hundreds of millions to billions of years from now sending our remnants off to another infinite adventure in space.

Author's note: I have not had a chance to read Drs. Schrijver's book yet, but hope to soon. I derived all of what I wrote above from Dr. Karel Schrijver's talk to us and material from the web-based sources listed below, as well as relying on my astronomical knowledge.

Selected readings:

- www.livingwiththestars.org
- <http://ukcatalogue.oup.com/product/9780198727439.do> (Can also try: <http://tinyurl.com/lshzyf>)
- <http://news.nationalgeographic.com/2015/01/150128-big-bang-universe-supernova-astrophysics-health-space-ngbooktalk/> (Can also try <http://tinyurl.com/kr2zffl>)
- Bhavesh H. P., Percivalle, C., Ritson, D.J., Duffy, C.D., Sutherland, & J.D., Common origins of RNA, protein and lipid precursors in a cyanosulfidic protometabolism, Nature Chemistry, 16 March 2015
or <http://www.nature.com/nchem/journal/vaop/ncurrent/full/nchem.2202.html>
(Can try: <http://tinyurl.com/mwlcqbq>) for the abstract.)

Editor's Note: Thanks to Ken Lum for providing summaries and photos of our SMCAS monthly meetings. Ken will be a featured speaker, along with Tom Stephany, at our monthly meeting on June 5, 2015. Ken and Tom will present "Astronomical Tourism and Solar Eclipse Chasing." The presentation will include a description of and photos from Tom's trip to Svalbard, Norway to view the recent solar eclipse. Pizza and socializing at 7:00 p.m., presentation at 8:00 p.m. The event is free and open to the public. Directions to CSM are on page 10 of this issue.

Mark Your Calendars! Many Fun, Family and Educational Activities Scheduled For the Next Few Months, Including an SMCAS Members Tour of SLAC

We have many fun and interesting events scheduled for the next several months. Mark your calendars now, and please contact Ed Pieret (epieret@comcast.net) if you are available to volunteer to help out with Star Parties at Crestview Park and other locations.



Here is an updated overview of activities planned for the group through October 2015.

- | | | |
|--------------------------|-----------|--|
| Saturday, March 28, 2015 | 7:00 p.m. | Spring Equinox Banquet |
| Friday, April 3, 2015 | 7:30 p.m. | SMCAS Meets in CSM Theater for Professor Mohsen Janatpour Art & Science Lecture Reception and Star Gazing After Lecture |
| Saturday, April 11, 2015 | 8:00 p.m. | Crestview Star Party |
| Saturday, April 11, 2015 | 5:00 p.m. | KIPAC Open House Star Party |
| Saturday, April 18, 2015 | 8:00 p.m. | Crestview Star Party |
| Friday, May 1, 2015 | 7:00 p.m. | General Membership Meeting, Pizza Social and Presentation |
| Friday, May 8, 2015 | 2:30 p.m. | SLAC National Accelerator Lab Tour (Members only by RSVP to Marion Weiler) |
| Friday, June 5, 2015 | 7:00 p.m. | General Membership Meeting, Pizza Social and Presentation |
| Friday, Sept. 4, 2015 | 7:00 p.m. | General Membership Meeting, Pizza Social and Presentation |
| Friday, Oct. 2, 2015 | 7:00 p.m. | General Membership Meeting, Pizza Social and Presentation |
| Saturday, Oct. 17, 2015 | 2:00 p.m. | Family Science and Astronomy Festival |

March Rise and Set Chart

<i>SMCAS 2015 (PDT)</i>	<u>Apr 11</u>	<u>Apr 11 Set</u>	<u>Apr 18</u>	<u>Apr 18 Set</u>	<u>Apr 25</u>	<u>Apr 25 Set</u>
	<u>Rise</u>		<u>Rise</u>		<u>Rise</u>	
Sun	6:38 AM	7:41 PM	6:28 AM	7:47 PM	6:19 AM	7:53 PM
Moon	1:35 AM	12:06 PM	6:33 AM	8:02 PM	12:26 PM	1:41 AM
Mercury	6:48 AM	7:49 PM	6:54 AM	8:37 PM	7:02 AM	9:19 PM
Venus	8:27 AM	10:56 PM	8:26 AM	11:10 PM	8:28 AM	11:22 PM
Mars	7:26 AM	9:01 PM	7:13 AM	8:59 PM	7:00 AM	8:57 PM
Jupiter	1:51 PM	3:54 AM	1:24 PM	3:27 AM	12:58 PM	3:00 AM
Jupiter's moons	c g e J i		g e J i c		ge c J	
9 PM, East on left	J=Jupiter, c=Callisto, e=Europa, g=Ganymede, i=Io					
Saturn	10:57 PM	9:04 AM	10:28 PM	8:35 AM	9:58 PM	8:06 AM
Uranus	6:33 AM	7:13 PM	6:06 AM	6:48 PM	5:39 AM	6:22 PM
Neptune	4:59 AM	4:08 PM	4:32 AM	3:41 PM	4:05 AM	3:15 PM
Pluto	2:02 AM	11:53 AM	1:34 AM	11:26 AM	1:07 AM	10:58 AM

- Total eclipse of the moon on the 4th in the early morning (maximum about 5AM).
- Star parties are at Crestview on the 11th and 18th.
- Jazz Under the Stars is at CSM on the 25th.

- *Courtesy of Ron Cardinale*

Interested in Becoming More Involved? Join the SMCAS Board!

The SMCAS board will have a few openings for its next term: June 2015 through June 2016. The board works with SMCAS members to determine and plan events, monthly meetings and special activities including the Science and Astronomy Fair at CSM and the Star-B-Que at Hidden Villa in the Los Altos Hills. The board also manages the budget, outreach and coordination with other organizations, and communications with SMCAS members. Board positions will be discussed at the next SMCAS general meeting in May (April is presentation only), but if you are interested in learning more, please contact Marion Weiler, SMCAS president at mgwe@pacbell.net.

Members Forum

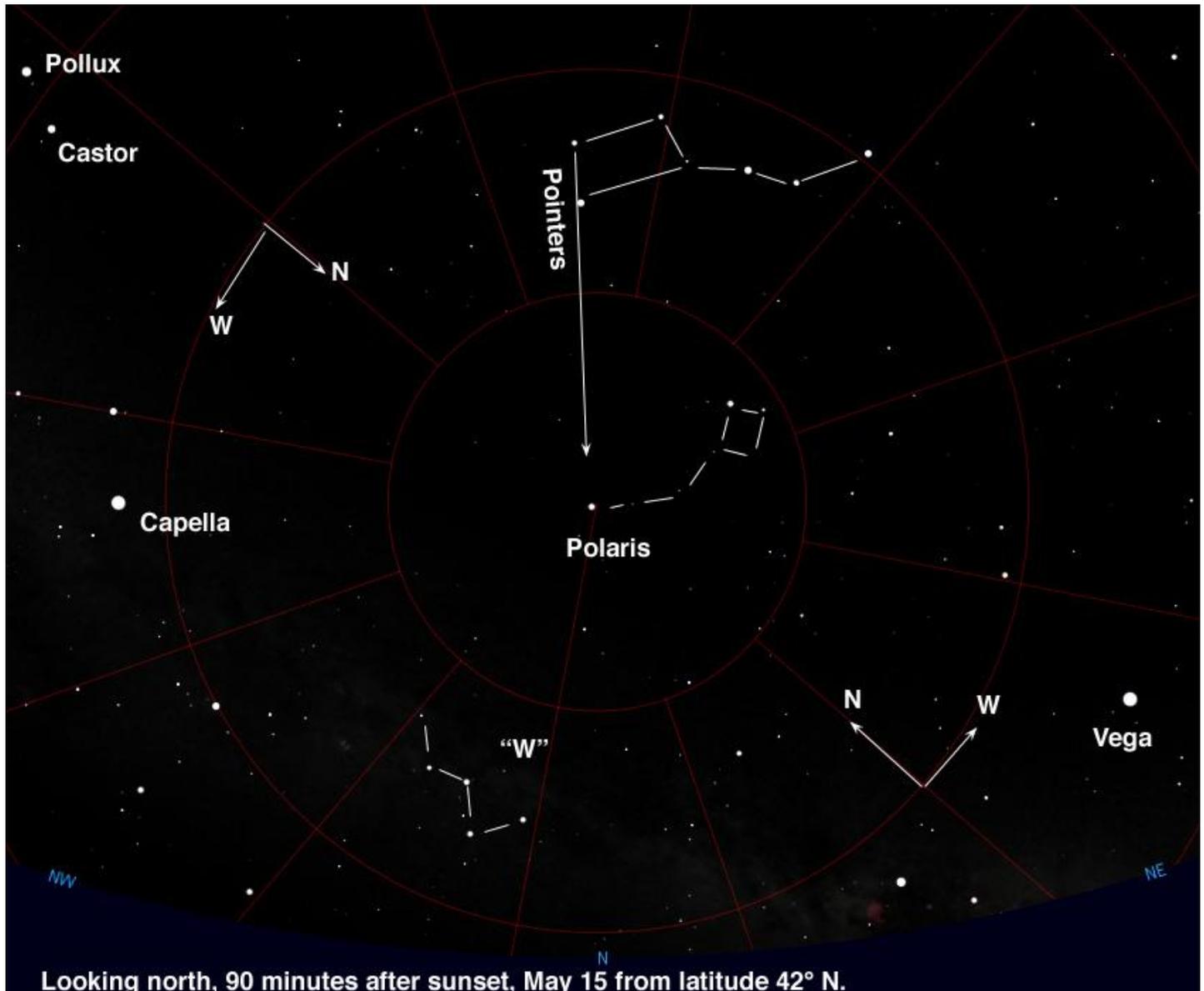
Popular Concepts about Astronomy and the Sky that are Wrong

By Ed Pieret

The North Star is a very bright star.

Although the North Star (Polaris) is arguably the most important star in the sky it is only the 50th brightest. Many people who attend Star Parties are surprised that it is not brighter.

Polaris has been used for over a thousand years for navigation.



Polaris, in a photo from April 2013. May is the month that Polaris gets two bright flankers.

Not only is it a reliable indicator of direction, the angle it makes with the horizon is the Latitude of the observer. Navigation instruments, such as the Quadrant, were designed to measure this angle. Since ancient navigators had no way to determine Longitude they would sail on a North-South line until Polaris made same angle with the horizon as their destination, then sail on an East-West line to their destination. *Continued on page 8.*

Popular Concepts About Astronomy and the Sky that are Wrong (Continued from page 7)

Polaris is about one degree from being directly over the North Pole. This has little effect on navigation but needs to be taken into account when doing long exposure astrophotography.

As the Earth spins, its axis wobbles like a top (precession). This causes the axis to point at different parts of the sky over time. In about 12,000 years Vega, a much brighter star, will be the North Star.

Polaris really a three star system consisting of a supergiant and two smaller companions. Polaris is 430 light years from Earth.

SMCAS Has Loaner Telescopes for Members to Borrow

SMCAS has a supply of loaner telescopes. These are meant to be used by beginners or volunteers at public star parties. Members can check these out on a month-to-month basis.

If you are a member but are not sure if you want to invest in a telescope, you can use one of these to get familiar with telescopes and what you can see. Borrowing one of these, along with talking to other members and attending star parties to see telescopes in action, can help you chose the best telescope to buy.

One of the telescopes has a GoTo capability. If you are not sure if you want to invest in this feature, you can borrow the telescope and see how you like it. Here is a list of available loaner telescopes:

SMCAS LOANER TELESCOPES

Make	Model 328	Size and Type	Features
Orion	4.5in. Deluxe EQ	4.5in Reflector	Equatorial Mount with Fine Controls
Mead	ETX-70 AT w/Autostar	70mm Refractor	Tripod with GoTo.
Janson	Model 328	114mm Reflector with Tripod	Tripod
Unbranded		4.5in Reflector with Tripod	Tripod with Fine Controls

If you want to borrow a loaner telescope, contact Ed Pieret at EPieret@comcast.net.

SMCAS Monthly Calendar — April 2015

<div style="text-align: center;"> ◀ April 2015 ▶ </div>						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2	3 7:00 PM SMCAS Meeting	4
5	6	7	8	9	10	11 8:00 PM Crestview Star Party
12	13	14	15	16	17	18 8:00 PM Crestview Star Party
19	20	21	22	23	24	25
26	27	28	29	30		

• observing event
• club event
• community event

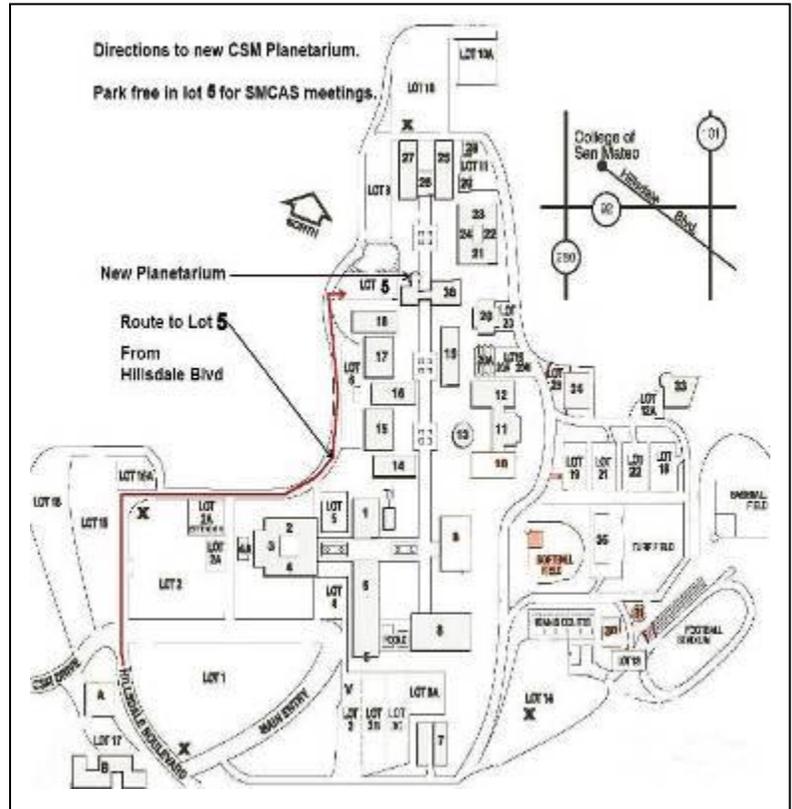
- Courtesy of Ed Pieret

Directions to SMCAS Meetings at CSM, and to Star Parties

Star parties are held monthly, weather-permitting, and are free to members and visitors.

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



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 at any monthly meeting or sent 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 only for 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; **Secretary:** Karen Boyer; **Treasurer:** Tom Stephany. **Board Directors-At-Large:** Bob Franklin, Ken Lum, Karen Zamel, Jeff Dye, Ali Emami. Andy Thanos.

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

SMCAS Contact Information

Website: <http://www.smcas.com>.

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 telling your interest in title and body text.

Event Horizon: To offer articles or photos, please contact Editor Karen Zamel: karenzamel@gmail.com or (650) 814-3902.