The SAN MATEO COUNTY ASTRONOMICAL SOCIETY

December 2017 — NO GENERAL MEETING THIS MONTH

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.

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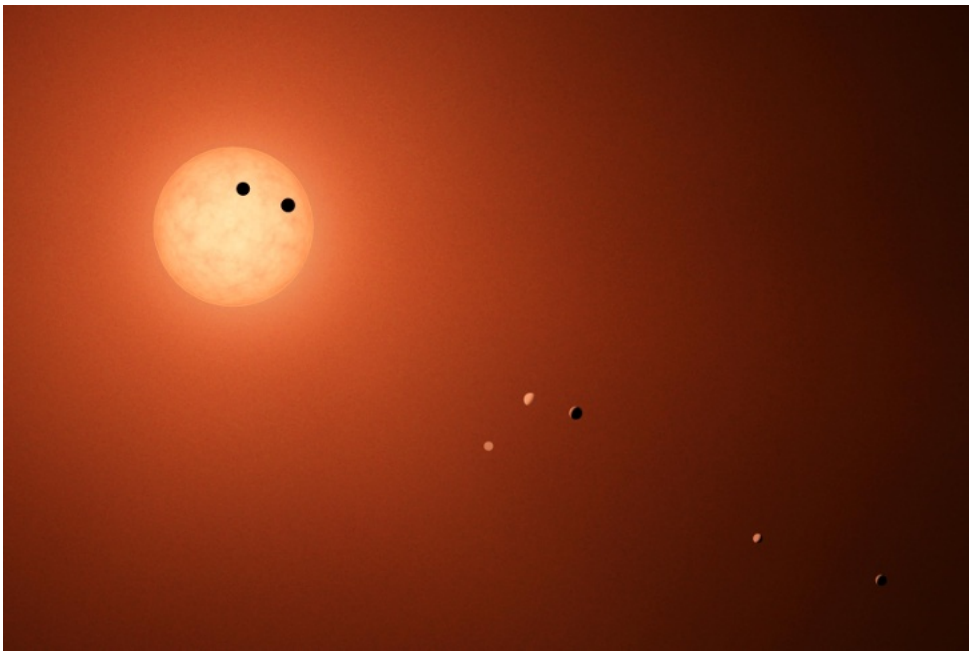


HABITABILITY OF PLANETS ORBITING RED DWARF STARS was the topic of our November talk by Dr Gibor Basri of UC Berkeley. Above: artist's conception showing the seven terrestrial planets of the nearby (12 pc) TRAPPIST-1 system with sizes and positions to scale in relation to their Jupiter-size star. See page 4 for more about Dr Basri's talk. Image credit: NASA/JPL-Caltech.

DATES TO SAVE

Dec 1: NO GENERAL MEETING in December.

Dec 2: Holiday Party at Crystal Springs Methodist Church, San Mateo. Bring a dish to share. Details on page 6.

Dec 23: Crestview Park Star Party — Winter Solstice celebration!

Jan 5: NO GENERAL MEETING in January.

Jan 16: SMCAS Board Meeting, CSM ISC room.

More events and further details on pages 6 and 7.

President's Corner

Season's greetings! Another year at SMCAS has almost gone by, and it has been a busy year for us. In 2017, together we accomplished many worthwhile things:

- Put on upwards of 20 star parties at Crestview Park
- Co-sponsored the CSM Family Science and Astronomy Festival which drew around a thousand people
- Participated in, and held a star party, at the SLAC Kids Night event, which drew about 800 children and families
- Hosted the San Carlos Charter Learning Center at one of our Crestview star Parties, which drew several hundred students and families
- Helped out at the Eclipse viewing event at CSM which drew several thousand people
- Held 8 general meetings with presentations by professional astronomers, astrophysicists, and cosmologists, attracting many CSM students and the public
- Held a special June double header presentation on the science from the Kepler Mission, in conjunction with NASA's Kepler & K2 Science Conference IV
- Held 2 socials plus our annual banquet with installation of officers
- Published 10 SMCAS Event Horizon Newsletters
- Held 10 Board meetings
- Kept our State/Federal tax and regulatory filings current, which allow us to continue operating as a 501c(3) charitable organization

The SMCAS Board of Directors and myself want to thank the entire SMCAS membership for contributing to this very successful and fun year of astronomy outreach and activity! Whether you contributed through direct involvement of time or indirectly through your membership donations, you have made a positive impact on many people, especially in the lives and aspirations of many young students who have gained a valuable appreciation of the night sky, astronomy, and science in general. Thank you all!!

A special shout-out to key contributors such as Ed Pieret for leading the charge on Crestview star parties; our terrific Treasurer Karen Boyer; and our outstanding Event Horizon Editor Ted Jones who continues to put out an excellent newsletter each month!

Happy holidays to all, and see you at the Holiday party December 2nd!

Marion Weiler
President, San Mateo County Astronomical Society

SMCAS General Meeting and Presentation on Friday February 2, 2018

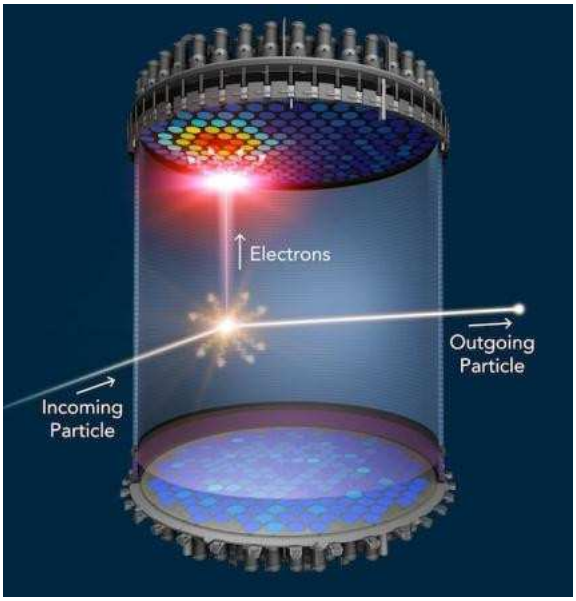
Kelly Stifter

PhD student
SLAC National Accelerator Laboratory, Stanford University

Direct Detection of Dark Matter

Friday, Febr uary 2, 2018, 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)

The LUX ZEPELIN (LZ) experiment is a next-generation dark matter direct detection experiment, to be located at the Sanford Underground Research Facility (SURF) in South Dakota. When completed, the experiment will be the world's most sensitive experiment for WIMPs (Weakly Interacting Massive Particles) over a large range of WIMP masses. LZ is a collaboration of 30 institutes in the US, UK, Portugal and Russia.



Kelly Stifter is a PhD student in the Physics Department with the SLAC National Accelerator Laboratory, Stanford University. In 2015, she was an undergraduate researcher at CERN, in Geneva Switzerland. From 2012–2014 she was a Physics teaching assistant at the University of Minnesota. Prior to that she was an intern at Fermilab in Batavia, Illinois. Her current research at SLAC involves system testing for the upcoming LZ detector, which will be looking for illusive Dark Matter particles called WIMPs. SLAC's participation in LZ is part of the research program of the SLAC–Stanford Kavli Institute for Particle Astrophysics and Cosmology.

November Meeting Review

Are Red Dwarf Planets Habitable?

By Ken Lum

Thus far some 3,693 exoplanets in 2,768 star systems have been discovered by various means, mostly from NASA's Kepler mission. Most of these planets orbit red dwarf stars (Spectral Types K or M) which are the most common types of stars in the Universe. Since several of these exoplanets have been found to orbit in the habitable zones of their host stars, it is reasonable to ask if this star type can possibly be compatible with the existence of life. To help answer this question, Dr. Gibor Basri of UC Berkeley came to fill us in on the thinking about the habitability of such systems.

In general, smaller stars more often play host to smaller planets with many being Earth-like and rocky in composition. Due to their small size, these stars would be expected to have habitable zones fairly close to their stars making for potentially habitable planets that have shorter orbital periods. For example, the exoplanet-red dwarf system Trappist-1 has 7 Earth-like planets that have habitable zone orbits smaller than that of Mercury and orbital periods varying from 1.5 days to 18.8 days. Other examples include Proxima Centauri and its planet Proxima Centauri b, and the star LHS 1140 and its planet LHS 1140b. All told, as many as 30–45% of dwarf stars may harbor Earth-like planets [1].

But would red dwarf stars have stellar characteristics that would allow such planets to develop life-compatible environments? Various observational and theoretical arguments suggest life would have a difficult time getting started on such systems. One difficulty is the stars' low luminosity with peak brightnesses in the infrared during their main sequence evolutionary phase. Such a low energy environment would make photosynthesis as we know it very difficult to be sustained without any additional source of light.

November speaker Dr. Gibor Basri (left) with SMCAS President Marion Weiler

Red dwarfs also have very long lifetimes-longer than the age of the Universe. This means these stars take an extremely long time to cool down to stable temperatures eventually reached in the main sequence phase of their evolution. During their very prolonged pre-main sequence phase, high, mostly UV radiation output from these stars could prevent gaseous water from condensing to a liquid state-a necessary step towards the development of macromolecules. Furthermore, water could be destroyed through photolysis into hydrogen and oxygen with the hydrogen being driven off into space by the radiation and solar wind leaving a completely waterless elemental oxygen environment incompatible with life.

Since planets in these systems' habitable zones necessarily have to orbit close to their stars, the planets would be tidally locked with only one side of these planets perpetually facing the star and its deadly solar winds while the other side would be perpetually facing away in the dark and extreme

Continued on p. 5

Walker Lake, Nevada — A Star Party Destination?

By John Fiske

Walker Lake, a very large, saline, desert lake about an hour's drive southeast of Reno, has open, dry, fairly dark skies, and inexpensive ($6/night) camping. I tried it in October, hoping to avoid predicted rain and snow at familiar California sites. Overall, the dark skies provided better viewing than from Fremont Peak State Park. For example, I could readily see deep sky objects of magnitude 13–14 with my 14-inch dob (vs 12–13 at Fremont Peak).

So, what's not to like, besides the long drive (four hours via Donner Pass for me from my Walnut Creek home)? The BLM campgrounds, along the western edge of Walker Lake are close to Highway 95, a major truck route, so late-night high beams were somewhat annoying and could be fatal to astro-photography. The southern-most camping area has sites furthest from the Highway (where I was). As with other desert sites, occasional gusty winds can interfere with telescope stability and blow light objects into the lake. The campsites have no water sources, and are more amenable to RV "camping" than for tents (I'm a "tent" guy). Lastly, there is a small light dome from Hawthorne, the large town on the southern end of the Lake, roughly 10 miles away, so the skies were not as dark as elsewhere in rural Nevada.

Bottom line: I can't recommend the Walker Lake campgrounds as a star party destination since there are better, closer options, weather and road conditions permitting. I understand that another amateur astronomy group based in Reno uses a site south of Fallon, NV, roughly 30 miles north of Walker Lake.

Red Dwarf Planets, continued from p. 4

cold. In this hostile positioning between extremes, any life that develops would necessarily be confined to a more hospitable terminator boundary between the illuminated side and the dark side.

Red dwarfs demonstrate considerable variability in light output in random nonperiodic ways, especially during their pre-main sequence phase, making for highly variable temperature environments on possibly habitable planets. Frequent flares have been observed that could seriously erode planetary atmospheres over time. The degree of this erosion would partly depend on whether any of these planets have protective magnetic fields. If there is no or a weak magnetic field, planetary atmospheres could be stripped from their host planets very rapidly. Nonetheless, in a special case where planets form at a longer distance from its host star in a more hospitable zone and remain out there until the star ends its flare stage before migrating in closer to the star, there might be a chance for life to survive.

All these and other difficulties with red dwarf stars make the possibility of life on planets going around such stars problematic. But because of the huge abundance of such stars and, by extension, their planets, there is an increased likelihood that very rare scenarios arise where a few such systems could harbor life.

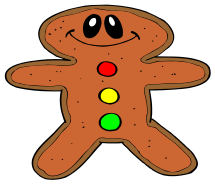
To explore such possibilities, bigger surveys are planned starting with a proposed successor to the Kepler satellite in the form of the TESS (Transiting Exoplanet Survey Satellite) mission which will explore a much larger area of sky with more sensitive detectors. It is tentatively scheduled for launch in 2018.

Reference

1. He, Mattias Y., Triaud, Amaury H. M. J. and Gillon, Michaël. 2017. First limits on the occurrence rate of short-period planets orbiting brown dwarfs. *Monthly Notices of the Royal Astronomical Society*, 464(3):2687–2697. arxiv.org/pdf/1609.05053.pdf.

Holiday Potluck Party

Our traditional Members' potluck will take place at The Fireside Room at the Crystal Springs Methodist Church; 2145 Bunker Hill Drive, San Mateo, California.



Saturday, December 2nd 2017

6:00PM to 9:00PM

Please bring your favorite holiday treat to share.

We always have a fun time and great food, so plan to bring the family! Also:

- **A special presentation on unusual eclipse pictures by Ken Lum**
- **Astronomy calendars ordered thru Ed Ching should be there for pick up**
- **If you have renewed your membership for 2018 before or at the party, receive a special gift at the party!**

Please bring a side dish, salad or desert. *Board members will bring entree items. The club will provide non-alcoholic beverages, paper plates and utensils.*

You may bring your own alcoholic beverages but please drink in moderation.

Directions:

From El Camino, take Hwy 92, exit at Ralston. Turn right (to the west), and Ralston becomes Polhemus.
- Or, if coming from Hwy 280, take Hwy 92, exit at Ralston, then turn right (yes, right!), toward Polhemus.
- Once on Polhemus go about a half-mile, pass Safeway on the right, then take the half-left onto Bunker Hill Drive. The Church will be just ahead on your left

RSVP to mgwe (at) pacbell.net http://www.smcasastro.com

Upcoming SMCAS Meetings and Events

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, Dec 1		**No general meeting in December**
Sat, Dec 2	6:00 pm	**Holiday Party, Crystal Springs Methodist Church, San Mateo**
Thu, Dec 14	Midnight+	**Geminids Meteor Shower peaks — King of meteor showers (moon is favorable, rising just before 4am)**
Sat, Dec 16	5:00 pm	**Crestview Park Star Party**
Sat, Dec 23	5:00 pm	**Crestview Park Star Party — Winter Solstice celebration!**
Fri, Jan 5		**No general meeting in January**
Sat, Jan 13	5:15 pm	**Crestview Park Star Party**
Tue, Jan 16	7:00 pm	**SMCAS Board Meeting**
Sat, Jan 20	5:15 pm	**Crestview Park Star Party**
Fri, Feb 2	7:00 pm	**General Meeting, Pizza Social and Presentation**
Sat, Feb 10	5:45 pm	**Crestview Park Star Party**
Sat, Feb 17	5:45 pm	**Crestview Park Star Party**

General meetings and board meetings are held in the ISC Room (room 110) in building 36 at the College of San Mateo. For directions to the building or to the star party site at Crestview Park in San Carlos, see page 13. All SMCAS members are welcome at board meetings.

Crystal Springs Methodist Church is located at 2145 Bunker Hill Drive, San Mateo. The Holiday Party will be in the Fireside Room.

The times given for the 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.

Upcoming Crestview Star Parties

By Ed Pieret

Our scheduled Crestview Star Parties through the end of 2018 are listed in the table below.

A few things to remember about these events:

1. Everybody is welcome to come. We love having visitors, especially children.
2. There are no official cancellation procedures. Attendance is strictly up to the individual.
3. If there are clouds, strong winds or a threat of rain, do not expect astronomers to bring out their telescopes.
4. Please do not bring white lights (dim red lights are OK). Park on the street and do not drive into the park unless you are bringing a telescope.
5. If you have a telescope but need help using it, bring it to the park at sunset, you can ask the more experienced astronomers to help you.
6. If you don't have a telescope but would like to learn how to use one, you can borrow a loaner telescope from SMCAS if you are a member.
7. If you are interested in viewing the wonders of the universe through our telescopes, come about an hour after sunset.
8. For directions and more information, go to www.smcasastro.com/crestview-park.html and click on the red button near the bottom of the page that is labeled Star Parties at Crestview Park, or see the map on page 13 of this issue.

Crestview Star Party Schedule

Date	Sunset
2017	
12/16/2017	4:51 PM
12/23/2017	4:56 PM
2018	
01/13/2018	5:13 PM
01/20/2018	5:21 PM
02/10/2018	5:44 PM
02/17/2018	5:51 PM
03/10/2018	6:12 PM
03/17/2018	7:18 PM
04/14/2018	7:44 PM
04/21/2018	7:51 PM
05/05/2018	8:03 PM
05/12/2018	8:09 PM
06/09/2018	8:30 PM
06/16/2018	8:32 PM

Date	Sunset
07/07/2018	8:33 PM
07/14/2018	8:30 PM
08/04/2018	8:14 PM
08/11/2018	8:06 PM
09/01/2018	7:38 PM
09/08/2018	7:27 PM
09/29/2018	6:55 PM
10/06/2018	6:44 PM
11/03/2018	6:08 PM
11/10/2018	5:02 PM
12/01/2018	4:51 PM
12/08/2018	4:51 PM

Borrow a Telescope and Use it to Wow Your Guests over the Holidays

By Ed Pieret

Even a view of the Moon through one of our loaner telescopes will blow the socks off your visitors.

SMCAS Loaner Telescope Program

SMCAS has several loaner telescopes available for active members to borrow. They are meant to be an introduction to the wonders of astronomy and a way for members to assess their interest prior to buying their own telescope or purchasing an upgrade.

Since a new member might not yet know what kind of telescope would be best, feel free to contact Ed Pieret (EPIERET@comcast.net or (650)862-9602). He will be happy to sit down with you to discuss your interests and show you how the the various instruments in our inventory could be used.

The rules for borrowing a telescope are:

1. Loan period is for 60 days. It can be extended for another 60 days upon request provided there are no requests for the same telescope.
2. Borrowers are expected to participate in SMCAS outreach activities including Crestview Star Parties as much as possible.
3. If the borrower loses interest in astronomy or buys a telescope, the loaner and accessories are to be returned promptly.
4. Active membership is required to borrow and keep a loaner telescope.
5. SMCAS Astronomers will assist the borrower in setup and productive use of the telescope.

The following is a list of the current loaner telescopes.

Brand	Type	Name	Aperture	Focal	Comments	Status
Jason	Compound	Comet 334	114 mm	1000 mm	Integrated finder. Also separate finder and laser dot finder. Erecting Prism, T-Adapter. .75 in optics. Separate tripod.	Available
Mead	Refractor	ETX 70AT	70 mm	350 mm	Goto, Hard Fitted Case, Separate Tripod in Soft Case, assorted eyepieces including electronic eyepiece.	Available
Orion	Reflector	Skyview 4.5 deluxe EQ	4.5 in.	900 mm	All enclosed in soft case	Available
Edmunds	Compound	Astroscan	4.12 in.	445 mm	Wood tripod - not stable. Best on tabletop.	Available
Edmunds	Compound	Astroscan	4.12 in.	445 mm	Has stable tripod	Used for outreach
Home made	Reflector	Dobsonian	8 in.		In good shape. On wheels	Available
Celestron	Compound	8 SE	8 in.	80 in.	2 inch optics, Full goto, New Condition, Fitted case, Standard tripod, 30 mm. 2 in. eyepiece.	Available
Celestron	Compound	SP-C8	8 in.	80 in.	Has heavy Equatorial tripod, electronic controls, fitted case	Available
Orion	Reflector	Dobsonian	8 in.		Needs cleaning and adjustment	Needs Work
Sky Window	Mirror	11 X 80 Binoculars				Available

Studying Storms from the Sky

By Teagan Wall

The United States had a rough hurricane season this year. Scientists collect information before and during hurricanes to understand the storms and help people stay safe. However, collecting information during a violent storm is very difficult.

Hurricanes are constantly changing.This means that we need a lot of really precise data about the storm. It's pretty hard to learn about hurricanes while inside the storm, and instruments on the ground can be broken by high winds and flooding. One solution is to study hurricanes from above. NASA and NOAA can use satellites to keep an eye on storms that are difficult to study on the ground.

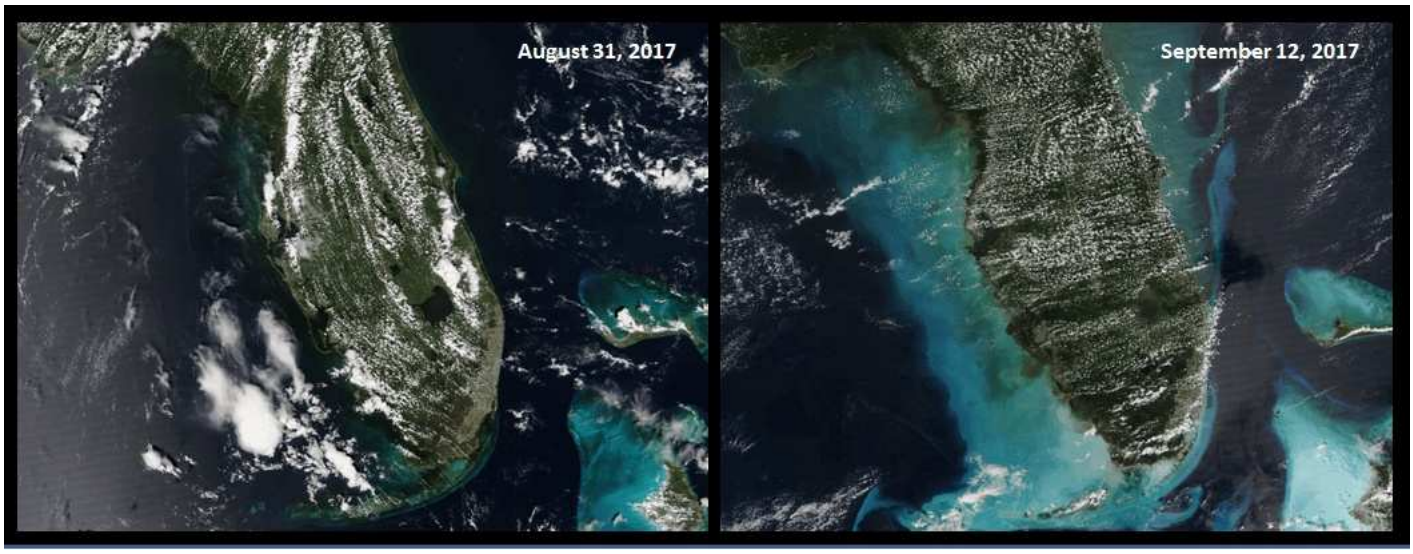
In Puerto Rico, Hurricane Maria was so strong that it knocked out radar before it even hit land. Radar can be used to predict a storm's path and intensity—and without radar, it is difficult to tell how intense a storm will be. Luckily, scientists were able to use information from a weather satellite called GOES-16, short for Geostationary Operational Environmental Satellite – 16.

The "G" in GOES-16 stands for geostationary. This means that the satellite is always above the same place on the Earth, so during Hurricane Maria, it never lost sight of the storm. GOES-16's job as a weather satellite hasn't officially started yet, but it was collecting information and was able to help.

From 22,000 miles above Earth, GOES-16 watched Hurricane Maria, and kept scientists on the ground up to date. Knowing where a storm is—and what it's doing—can help keep people safe, and get help to the people that need it.

Hurricanes can also have a huge impact on the environment—even after they're gone. To learn about how Hurricane Irma affected the Florida coast, scientists used images from an environmental satellite called Suomi National Polar-orbiting Partnership, or Suomi-NPP. One of

Continued on p. 12



These images of Florida and the Bahamas were captured by a satellite called Suomi-NPP. The image on the left was taken before Hurricane Irma and the image on the right was taken after the hurricane. The light color along the coast is dirt, sand and garbage brought up by the storm. Image credit: NASA/NOAA.

December Rise and Set Chart

SMCAS 2017 (PST)		**Dec 9 Rise**	**Dec 9 Set**	**Dec 23 Rise**	**Dec 23 Set**
Sun	Solstice on the 21st	7:12 AM	4:50 PM	7:21 AM	4:56 PM
Moon		11:52 PM	12:19 PM	10:56 AM	10:05 PM
Mercury	Conjunction with sun	7:48 AM	5:21 PM	5:48 AM	3:46 PM
Venus	Very briefly before sunrise	6:38 AM	4:23 PM	7:06 AM	4:36 PM
Mars	In the wee hours	3:19 AM	2:18 PM	3:07 AM	1:47 PM
Jupiter	In the wee hours	4:21 AM	2:53 PM	3:39 AM	2:06 PM
Jupiter's moons East		c e Ji g		c e i J g	
5:30 AM next day	J=Jupiter, c=Callisto, e=Europa, g=Ganymede, i=Io				
Saturn	Conjunction with sun	8:00 AM	5:37 PM	7:12 AM	4:49 PM
Uranus	In the evening	1:55 PM	2:59 AM	1:00 PM	2:03 AM
Neptune	In the evening	12:09 PM	11:23 PM	11:15 AM	10:29 PM
Pluto	After sunset	9:21 AM	7:03 PM	8:27 AM	6:10 PM

- Star parties are at Crestview on the 9th and 23rd

– 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.

December 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26 4:54 PM Sunset	27	28	29	30	01	02 6:00 PM Holiday Party
03 4:52 PM Sunset	04	05	06	07	08	09
10 4:52 PM Sunset	11	12	13	14	15	16 5:00 PM Crestview Star Party
17 4:53 PM Sunset	18	19	20	21	22	23 5:00 PM Crestview Star Party
24 4:56 PM Sunset	25	26	27	28	29	30
31	01	02	03	04	05	06

Calendar courtesy of Ed Pieret

Studying Storms, continued from p. 10

the instruments on this satellite, called VIIRS (Visible Infrared Imaging Radiometer Suite), took pictures of Florida before and after the Hurricane.

Hurricane Irma was so big and powerful, that it moved massive amounts of dirt, water and pollution. The information captured by VIIRS can tell scientists how and where these particles are moving in the water. This can help with recovery efforts, and help us design better ways to prepare for hurricanes in the future.

By using satellites like GOES-16 and Suomi-NPP to observe severe storms, researchers and experts stay up to date in a safe and fast way.

The more we know about hurricanes, the more effectively we can protect people and the environment from them in the future.

To learn more about hurricanes, check out NASA Space Place: spaceplace.nasa.gov/hurricanes.

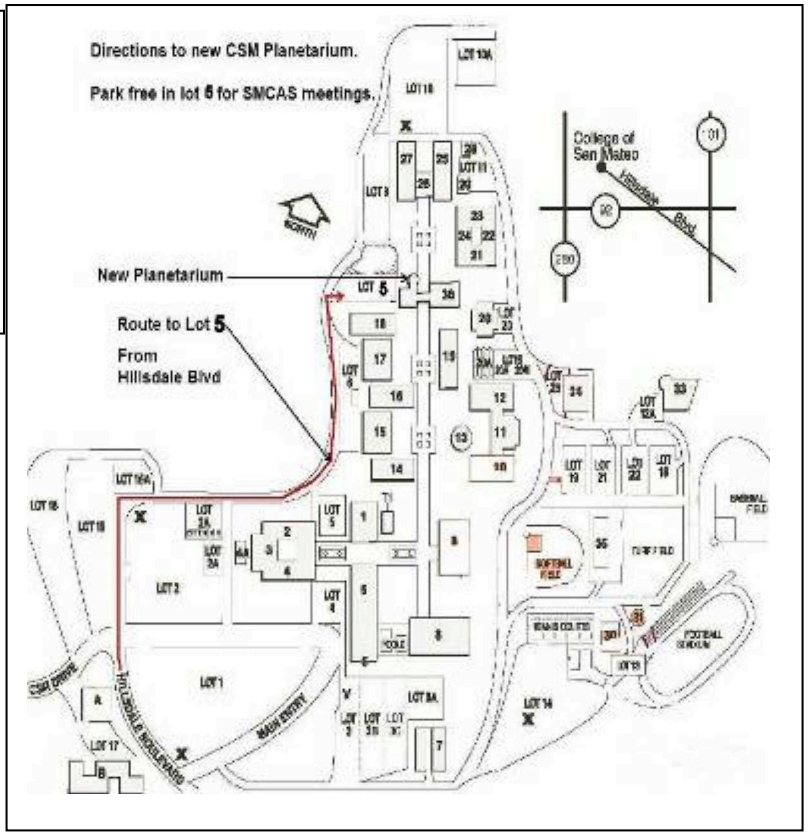
This article is provided by NASA Space Place. With articles, activities, crafts, games, and lesson plans, NASA Space Place encourages everyone to get excited about science and technology. Visit spaceplace.nasa.gov to explore space and Earth science!

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.

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.

San Mateo County Astronomical Society
Membership Application

rev 04022017

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' parent 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: _____

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