

January, 2011 581st General Meeting Notice



EVENT HORIZON

Founded in 1960, the San Mateo County Astronomical Society is a non-profit organization for amateur astronomers. Family memberships are open to the public, and visitors are cordially invited to the Society's meetings, which are held on the first Friday of the month, September through June. Detailed information about our events and membership can be found at www.smcas.com

Membership includes a monthly bulletin, discounted subscriptions to calendars and magazines, monthly star parties, use of our loaner telescopes, tours, field trips and guest speakers, plus an invitation to join our online discussion group. To receive additional information, send a note to SMCAS@live.com or call (650) 862-9602.

January Full Moon Made of Pizza!

(Pepperoni detected. Astronomers astonished.)

Just when you thought the green cheese story was laid to rest, along comes the mozzarella. Since we couldn't get a reputable scientist to comment on this latest discovery, we canceled the speaker for this month and ordered pizza instead. Members are welcome to join us in the conference room around the corner from the Planetarium for some fellowship, intelligent conversation and juicy gossip about our favorite heavenly bodies on Friday January 7 at 7:30. (See page 9 for directions.)



Assorted stars, this month's full moon, favorite heavenly bodies

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MONTHLY STAR PARTIES

**Crestview Park in San Carlos
Saturday January 1, 8 & 29**

See page 9 for directions
See page 7 bottom of calendar for rise & set times



SMCAS Events for 2011

Here's a complete list (except for speakers and topics)

- January** 1-Crestview Star Party, 7-SMCAS Meeting, 8-Crestview Star Party, 29-Crestview Star Party.
- February** 4-SMCAS Meeting, 5-Crestview Star Party, 11-CSM Planetarium Show, 12-Jazz Under the Stars, 26-Crestview Star Party.
- March** 4-SMCAS Meeting, 5-Crestview Star Party, 11-CSM Planetarium Show, 12-Jazz Under the Stars, 26-Crestview Star Party.
- April** 1-SMCAS Meeting, 2-Crestview Star Party, 9-Jazz Under the Stars 23-Crestview Star Party, 30-Crestview Star Party
- May** 6-SMCAS Meeting, 7-Astronomy Day, 7-Jazz Under the Stars, 13-CSM Planetarium Show, 28-Crestview Star Party.
- June** 3-SMCAS Meeting, 4-Crestview Star Party, 10-CSM Planetarium Show, 11-Jazz Under the Stars, 25-Crestview Star Party.
- July** 2-Crestview Star Party, 8-CSM Planetarium Show, 9-Jazz Under the Stars, 16-Annual Banquet, 23-Crestview Star Party, 30-Crestview Star Party.
- August** 20-Crestview Star Party, 27-Crestview Star Party.
- September** 2-SMCAS Meeting, 3-Jazz Under the Stars, 9--CSM Planetarium Show, 24-Crestview Star Party.
- October** 1-Astronomy Day, 1-Crestview Star Party, 7-SMCAS Meeting, 8-Jazz Under the Stars, 14-CSM Planetarium Show, 22-Crestview Star Party, 29-Crestview Star Party.
- November** 4-SMCAS Meeting, 5-Jazz Under the Stars, 11-CSM Planetarium Show, 19-Crestview Star Party, 26-Crestview Star Party.
- December** 2-SMCAS Meeting, 3-Jazz Under the Stars, 9-CSM Planetarium Show, 17-Crestview Star Party, 24-Crestview Star Party.

Mark your calendars!

From the Prez:

As we look to a brand new year, SMCAS starts its 51st year as an organization. Over that time we have gone from sputnik to the International Space Station, from only having launched an object into low orbit to placing rovers on Mars. NASA was less than two years old when our club was founded.

In the early days of SMCAS, clubs like ours were the main way to get information about space exploration and the exceptional discoveries being made. It was also a time when an amateur telescope was the best way to see the planets and deep space objects.

Today, with the Hubble and other space images freely accessible on the internet, anyone can see unbelievably detailed photographs of space objects. Robotic space ships are providing us with images of planets and moons that would never be possible through telescopes. More information about any planet, object or star that you could possibly want can be found with a Google search.

This leads to a question; "What purpose does SMCAS serve in 2011". I would like to propose the following answers:

1. Our speakers provide not only information but their personal experience as a participant on the frontiers of space exploration. They give a personality to the science and provide an insight that cannot be gotten by a Wikipedia article or Science Channel program.
2. Our Star Parties provide an opportunity to see astronomical objects with your own eyes. The first view of Saturn or the moons of Jupiter through a telescope is an unparalleled experience. Seeing these objects with your own eyes creates a sense of reality that simply can't be obtained from photographs.
3. SMCAS provides astronomical outreach to the community. We supply astronomical information to the general public, especially children. Outreach is why our meetings and star parties are open to the public (and are the basis for our tax exemption.) It also includes the members who visit classrooms through Project Astro, our Astronomy Day programs and the private star parties we hold for schools, scout groups and other organizations.
4. The club provides a place for the exchange of information about astronomical equipment and techniques. We provide loaner equipment to members starting out in astronomy, and can provide advice about everything from choosing a telescope to astrophotography.

Our January meeting will primarily serve function 4. It will be a "Members Meeting" which is a time to share information and techniques; show various equipment and demonstrate what's available as outreach material. There will not be a speaker in January because we don't anticipate a large turnout.

I would like to thank you all for your membership. Previously articles explained how we're going to change to an annual membership. You should be receiving a letter from me in the next few weeks that explains this for your personal situation and either asks for you to renew your membership or includes your 2011 membership card.

Best wishes for a happy and prosperous 2011. There's a list of planned functions on page 2 and I hope to see you at many of these events.

Ed Pieret, President
(650)862-9602

San Mateo County Astronomical Society
SMCAS@live.com

General Meeting Notes – December 3, 2010

Almost 100 people came to the General Meeting in the College of San Mateo Planetarium, which was preceded by a social half-hour fueled by pizza. President Ed Pieret made a few announcements about upcoming events (Star Parties, Jazz Under the Stars, and the Holiday party, December 17th).

Dr. Adrian Brown, Planetary Scientist from the SETI Institute, invited the audience to attend the weekly Wednesday noon SETI colloquium speaker series held at the new SETI headquarters in Mountain View. The schedule of SETI speakers can be found at <http://seti.org/talks>

The featured talk was given by Planetary Research Scientist, Dr. Jennifer Heldmann, NASA Ames Research Center, a review and update on NASA's LCROSS mission. Dr. Heldmann emphasized the importance of determining whether there is water on the Moon, in part because of the extraordinary expense of transporting water to the Moon with future human explorations ... at least \$100,000 per gallon. She discussed evidence from earlier lunar orbiting satellites for water ice in Lunar polar craters with permanent shadows, where the ambient temperature is about 40 degrees Kelvin. Why ground-based observers (including some in our audience) couldn't see the expected dust plume when parts of the LCROSS rocket hit the Moon, was also covered. Besides water, Dr. Heldmann said that tentative identifications of several other chemicals were found in the plume, including methane, carbon dioxide, sulfur dioxide, ammonia, sodium and potassium. Roughly 5-6 percent of the plume was water, so clearly there is an abundance of water ice in the Lunar polar regions. However, how to get to it and make use of that water in those extreme environments? Any ideas?

SMCAS Annual Holiday Potluck Party (Photos by Leroy Amen)





Astronomers Stumble onto Huge Space Molecules

By Trudy E. Bell and Tony Phillips

Deep in interstellar space, in the swirling gaseous envelope of a planetary nebula, hosts of carbon atoms have joined together to form large three-dimensional molecules of a special type previously seen only on Earth. Astronomers discovered them almost accidentally using NASA's Spitzer Space Telescope.

"They are the largest molecules known in space," declared Jan Cami of the University of Western Ontario, lead author of a paper with three colleagues published in *Science* online on July 22, 2010, and in print on September 3.

Not only are the molecules big: they are of a special class of carbon molecules known as "fullerenes" because their structure resembles the geodesic domes popularized by architect Buckminster Fuller. Spitzer found evidence of two types of fullerenes. The smaller type, nicknamed the "buckyball," is chemical formula C_{60} , made of 60 carbon atoms joined in a series of hexagons and pentagons to form a spherical closed cage exactly like a black-and-white soccer ball. Spitzer also found a larger fullerene, chemical formula C_{70} , consisting of 70 carbon atoms in an elongated closed cage more resembling an oval rugby ball.

Neither type of fullerene is rigid; instead, their carbon atoms vibrate in and out, rather like the surface of a large soap bubble changes shape as it floats through the air. "Those vibrations correspond to wavelengths of infrared light emitted or absorbed—and that infrared emission is what Spitzer recorded," Cami explained.

Although fullerenes have been sought in space for the last 25 years, ever since they were first identified in the laboratory, the astronomers practically stumbled into the discovery. Co-author Jeronimo Bernard-Salas of Cornell University, an expert in gas and dust in planetary nebulae, was doing routine research with Spitzer's infrared observations of planetary nebulae with its spectroscopy instrument. When he studied the spectrum (infrared signature) of a dim planetary nebula called Tc 1 in the southern-hemisphere constellation of Ara, he noticed several clear peaks he had not seen before in the spectra of other planetary nebulae.

"When he came to me," recounted Cami, an astrophysicist who specializes in molecular chemistry, "I immediately and intuitively knew I was looking at buckyballs in space. I've never been that excited!" The authors confirmed his hunch by carefully comparing the Tc 1 spectrum to laboratory experiments described in the literature.

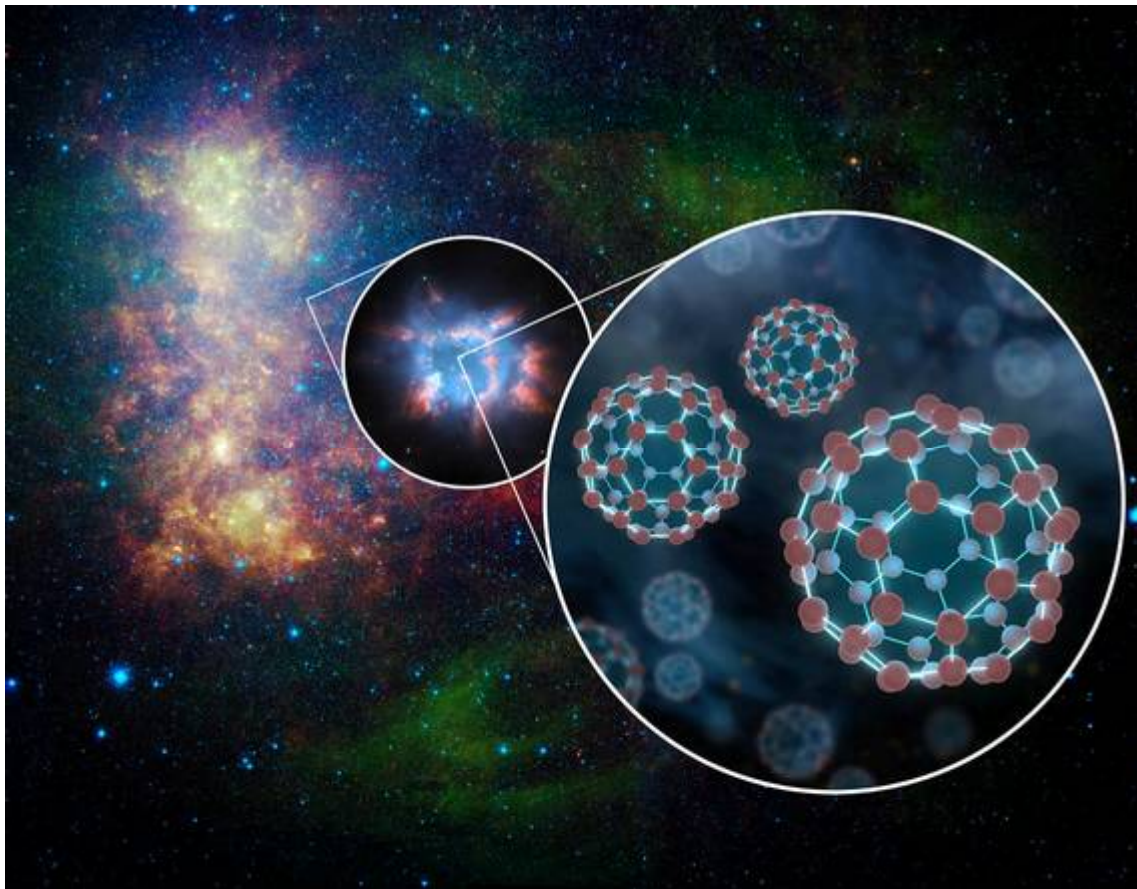
"This discovery shows that it is possible—even easy—for complex carbonaceous molecules to form spontaneously in space," Cami said. "Now that we know fullerenes are out there, we can figure out their roles in the physics and chemistry of deep space. Who knows what other complex chemical compounds exist—maybe even some relevant to the formation of life in the universe!"

Stay tuned!

Learn more about this discovery at <http://www.spitzer.caltech.edu>.

For kids, there are lots of beautiful Spitzer images to match up in the Spitzer Concentration game at <http://spaceplace.nasa.gov/en/kids/spitzer/concentration>.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



Superimposed on a Spitzer infrared photo of the Small Magellanic Cloud is an artist's illustration depicting a magnified view of a planetary nebula and an even further magnified view of buckyballs, which consist of 60 carbon atoms arranged like soccer balls.

See other surprising UV images from the Galaxy Evolution Explorer at <http://www.galex.caltech.edu>. Kids (and grownups) can play the challenging new Photon Pileup game at <http://spaceplace.nasa.gov/en/kids/galex/photons/>.

For a fun site to get your kids interested in stars, black holes, galaxies and such through video, audio, games and projects try the following link (you might even learn something yourself): http://spaceplace.nasa.gov/en/kids/cs_space.shtml

Scope City, 350 Bay Street, San Francisco, offers a huge selection of telescopes, accessories and more. They also offer a \$25 merchandise discount to new SMCAS members. Obtain a receipt from SMCAS Treasurer showing you have paid your dues for the current year. To arrange for your discount, contact Sam Sweiss at Scope City, in the store, at 415-421-8800, or email Error! Hyperlink reference not valid. Check them out at <http://www.scopecity.com>



January 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 New Year's Day Crestview Star Party
2	3	4  New Moon Partial Solar Eclipse	5	6	7 SMCAS Meeting	8 Crestview Star Party
9	10	11	12  First Quarter	13	14	15
16	17 Martin Luther King Day	18	19  Full Moon	20	21	22
23	24	25	26  Last Quarter	27	28	29 Crestview Star Party
30	31					

2011	<u>Jan 1 Rise</u>	<u>Jan 1 Set</u>	<u>Jan 8 Rise</u>	<u>Jan 8 Set</u>	<u>Jan 29 Rise</u>	<u>Jan 29</u>
<u>Set</u>						
Sun	7:24 AM	5:02 PM	7:24 AM	5:08 PM	7:15 AM	5:30 PM
Moon	6:28 PM	8:13 AM	1:33 AM	12:03 PM	5:15 PM	6:45 AM
Mercury	5:43 AM	3:36 PM	5:43 AM	3:27 PM	6:23 AM	3:59 PM
Venus	3:42 AM	2:09 PM	3:48 AM	2:05 PM	4:12 AM	2:04 PM
Mars	7:59 AM	5:34 PM	7:52 AM	5:33 PM	7:24 AM	5:32 PM
Jupiter	11:16 AM	11:08 PM	10:50 AM	10:46 PM	9:37 AM	9:41 PM
8 PM E on left	g e c J i		g c e J i		g e i J c	
red spot transit	8:52 PM		9:41 PM		12:10 AM on 30th	
Saturn	12:38 AM	12:16 PM	12:12 AM	11:49 AM	10:50 PM	10:27 AM
Uranus	11:14 AM	11:10 PM	10:47 AM	10:43 PM	9:26 AM	9:24 PM
Neptune	9:56 AM	8:42 PM	9:29 AM	8:15 PM	8:08 AM	6:56 PM
Pluto	6:42 AM	4:49 PM	6:16 AM	4:23 PM	4:56 AM	2:59 PM
M 42	5:09 PM	4:39 AM	4:42 PM	4:12 AM	3:15 PM	2:49 AM

Meet Bob Fies

Note: this is the fourth in a series of articles introducing club members. The previous three articles featured Bob Black, Ron Cardinale, and Leroy Amen, respectively.

Bob Fies, probably the dean of the SMCAS telescope makers, developed his early interest in astronomy by attending original Morrison Planetarium shows in Golden Gate Park and attending a 1955 Carlmont High School science class which included telescope making as a project. Bob and his brother made a telescope from a 6-inch Corning mirror blank, purchased by their father, and later Bob bought a 12.5-inch blank and finished the parabolic mirror himself. Bob's early mentors were his father and the head of the science department at Carlmont.

Bob joined the SMCAS in the early 1990s, about the time he retired from a career as a Pan American World Airways mechanic (1964-1991), and served on the Board for one or two years in the early 2000s. Currently, in addition to his telescope mirror recoating business (<http://www.alcoat.net>) Bob has a part-time job at Lick Observatory "watching for airplanes when the adaptive optics laser is in use".

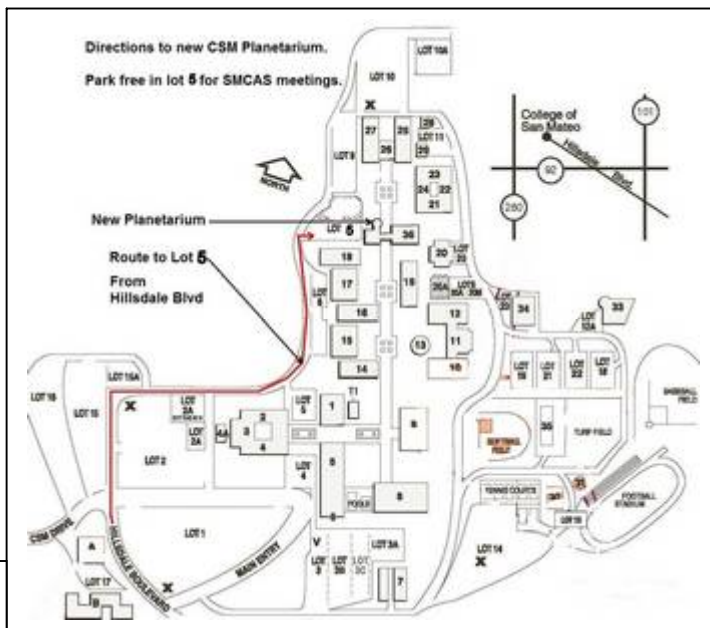


His current telescopes (all home-made, except for eyepieces and finders) are 8-inch and 12.5-inch Newtonian reflectors on Dobsonian mounts. The mount for the larger telescope could be a collector's item someday because it was made by John Dobson, in Bob's mother's garage. The 8-inch telescope was made to document telescope making for a website ... Bob will sell you the documentary CD for \$5.

He is a reliable stalwart at school star parties and Astronomy Day activities, and delights in answering questions about telescope making. Bob says, "I have no special moment of astronomical inspiration. It's just been an enduring interest over the years." Bob maintains a "sort of diary of Bay Area astronomical events" at <http://www.alcoat.net/smcas/smcas.htm>.

Bob has some property in the Santa Cruz Mountains (much darker skies than at Crestview!) for which he designed a "grid tie solar power system".

Text by John Fiske; top photograph probably taken with a self-timer on Bob's camera; the lower photo may have been taken by Bud Hoff.



Directions to Planetarium

After coming off HW92 at Hillsdale Blvd towards CSM, proceed up hill through the second and third sets of traffic lights until you come to the first stop sign, where you enter the campus, and continue straight. After the third stop sign, turn into the first parking lot on the right. This is now called Lot 5. The planetarium is directly ahead of you. Enter the building (36) through the door facing the parking lot.

Directions to Crestview Park

Crestview Park

Come out and bring the kids for a mind-expanding 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. Visitors should park on the street or arrive before dark so that headlights don't affect the observers' dark adaptation. Bring small flashlights only, with the lens covered with red cellophane or red balloon. Please don't touch a telescope without permission. And parents, please watch your children.

Take Hwy 101 or El Camino to Brittan Avenue in San Carlos, and turn west (right from El Camino). From El Camino, follow Brittan about 2.3 miles to the intersection with Crestview Drive.

From Alameda, go about 1.4 miles to Crestview. Turn right on Crestview. A small sign saying "Crestview Park" is a half-block ahead on the right. Look to the left for the park entry road, a small street between houses #998 and #1000. If after dark, please park on Crestview near the park entrance and walk in the short distance, to avoid safety issues and disturbing the telescope setup and viewing.

From Highway 280 to Edgewood Road. Go east (toward Bay) about 0.8 miles. Left on Crestview Dr. Go 0.5 miles uphill to the intersection with Brittan Avenue. Go one short block to the park entrance on the left.

Note: The park is residential, and adjacent to homes and backyards. Before inviting noisy groups, please call Ed Pieret or Leroy Amen.

For more information, call:
Leroy Amen: 573-0935
Leroy's cell: 504-5196
Ed Pieret: 595-3691

Membership Dues: Membership annual dues are payable yearly, on your renewal date which is shown on your Event Horizon mailing label. See the back page of the Event Horizon for mailing instructions. Members who are over 3 months past due will be removed from the Event Horizon mailing list until their dues are paid. Members who are over 6 months past due will be removed from the active membership rolls. These members will not be eligible for club privileges but can retain membership in the Yahoo group. We will try to contact the members personally prior to making them inactive.

Membership Application

To join the San Mateo County Astronomical Society or to renew your membership please send dues by check payable to "SMCAS" to the address below. Dues are \$35 for a new member, \$30 for Renewing members and \$25 for students and seniors.

SMCAS, at PO Box 974, Station A, San Mateo, CA 94403

Check one: () New member () Membership renewal () Address or info change

NOTE TO EXISTING MEMBERS: do not fill in address etc. unless it's changed!

Name(s) _____

Address/City/Zip: _____

Phone(s) _____ Email _____

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, located at 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 until you come to the first stop sign, where you enter the campus, and continue straight. After the third stop sign, turn into the first parking lot on the right. This is Lot 7. The planetarium is directly ahead of you. Enter the building (36) through the door facing the parking lot.

Officers: President: Edmund Pieret; **Vice-President:** Chanan Greenberg; **Secretary:** John Fiske; **Treasurer:** Marion Weiler

Board Members-At-Large: Bob Franklin, Ken Lum, Mike Ryan, Murad Hamidouche.

Membership: open position **Newsletter:** Dave Wolf, Ron Cardinale, Darryl Stanford, John Garis, Bob Fies.

Program: Marion Weiler, **Publicity:** open position; **Reporter:** open position

Event Horizon Editor: Dave Wolf **NOTE:** We welcome articles and photos submitted by the 15th of the month prior to publication.

Contacts:

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