

The SAN MATEO COUNTY ASTRONOMICAL SOCIETY

October, 2011 590th 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.

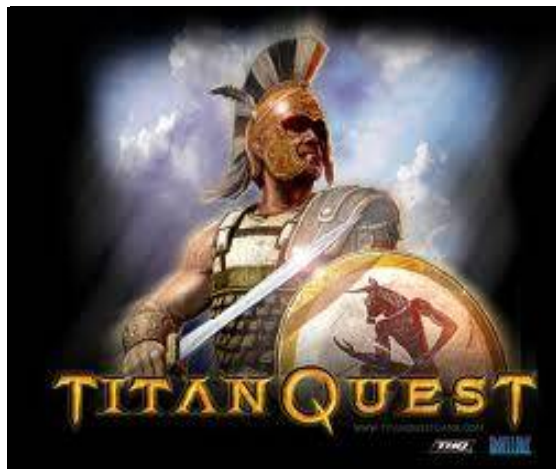
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WHEN YOUR NAME IS TITAN, NOBODY JOKES ABOUT YOUR NATURAL GAS

*(Methane is no joke. Especially
if it's released inside your space suit)*

Dr. Chris McKay, Planetary Scientist, NASA Ames, will discuss the results of the Cassini/Huygens mission, and explain why Titan's methane cycle is the key to understanding the past history and future evolution of Saturn's bad boy of big satellites. (Apparently, it has nothing to do with all those baked beans.) To learn more about it, come to the Science Center on Friday, October 7 at 7:30 pm for meet & greet & pizza, followed by his lecture at 8:00.



"Who cut the cheese?"

MONTHLY STAR PARTY
Crestview Park in San Carlos
Saturday 9/24/2011

(See directions on p. 7)

ANNOUNCEMENTS

SPEAKER: Dr. Chris McKay, Planetary Scientist, NASA Ames

TOPIC: Titan: Past, Present and Future

TIME: 7:30 pm October 7th, 2011

WHERE: [The CSM Planetarium](#) Bldg 36, Parking Lot 5

Free and open to the public



Cassini/Huygens descent

The results of the Cassini/Huygens mission raise many questions about the source and fate of methane on Titan. Understanding its methane cycle is key to understanding Titan's past history and future evolution, and provide a context for considering the possibility of life on Titan that uses methane for its biological solvent. A member of the Huygens science team, Dr. McKay will describe a new model for Titan's geological cycle that may indicate its current thick atmosphere is a transient phenomenon.



Dr. Chris McKay

Since Dr. McKay earned his AstroGeophysics Ph.D. from the University of Colorado, he has been a research scientist with the NASA Ames Research Center. His current research focuses on the evolution of the solar system and the origin of life. He is also actively involved in planning for future Mars missions including human settlements. He has been involved with polar research since 1980, traveling to the Antarctic dry valleys and more recently to the Siberian and Canadian Arctic to conduct research in these Mars-like environments. Dr. McKay was a co-Investigator on the Titan Huygen's probe in 2005, the Mars Phoenix lander mission for 2007, and the Mars Science Lander mission for 2009. His awards include the 2004 NASA Exceptional Leadership Medal, the 2004 NASA Group Achievement Award - ARES project, and the 2005 NASA Ames Honor Award - Mentor. He is a Fellow with the International Society for the Study of the Origin of Life, and the American Geophysical Union. You won't want to miss his talk!

From the Prez:

I am very excited about this fall's astronomy day event. On November 5th we are combining our traditional fall astronomy day with a special event planned with CSM, the "[Family Science and Astronomy Festival](#)."

This event will be in conjunction with the "Bay Area Science Festival" which runs from October 29th through November 6th. It also coincides with a Bay Area wide Star Party.

The schedule for the event is as follows:

- 2:00 pm: Planetarium show
- 2:30 to 4:30 pm: Science demonstrations by CSM science faculty (Biology, Geology, and Physics)
- 4:30 to 6:30 pm: Astronomy demonstrations, hands-on workshops, and planetarium shows.
- 7:00 to 8:30 pm: Keynote speaker: [Dr. Alex Filippenko](#), Professor of Astronomy, UC Berkeley "Dark Energy and the Runaway Universe" CSM Theater (Building 3).
- 8:30 to 9:00 pm: Speaker reception in the Theater Lobby
- 9:15 to 11:00 pm: Telescope viewing of the night sky in our rooftop observatory. (Dress warmly!)

Dr. Filippenko is one of the discoverers of dark matter. He is a renowned lecture and Astrophysicist who has won numerous awards for both his work as an astronomer and as a lecturer. Dr Filippenko is seen often television, especially in "The Universe" on the History channel. He has won numerous awards for both his work as an astronomer and as a lecturer explaining difficult concepts in an understandable way.

Mohsen Janatpour has arranged for the speaker, the CSM Theatre for the talk and for refreshments afterward.

Because of the fame of the speaker, the extensive publicity campaign from CSM and the publicity from the Bay Area Science Festival, we are expecting a much larger crowd than usual for Astronomy Day.

As always, we have much more material to present than we have people willing to volunteer. If you would like to present a topic please let me know. We have material for The Solar System, space rocks, the galaxy and universe, search for other planets, supernova, black holes and a number of other subjects. If you would be willing to help but don't feel you can present, please volunteer in our craft area or to help with general logistics.

Ed Pieret, President
(650)862-9602

San Mateo County Astronomical Society
SMCAS@live.com



Dark Clues to the Universe

By Dr. Marc Rayman

Urban astronomers are always wishing for darker skies. But that complaint is due to light from Earth. What about the light coming from the night sky itself? When you think about it, why is the sky dark at all?

Of course, space appears dark at night because that is when our side of Earth faces away from the Sun. But what about all those other suns? Our own Milky Way galaxy contains over 200 billion stars, and the entire universe probably contains over 100 billion galaxies. You might suppose that that many stars would light up the night like daytime!

Until the 20th century, astronomers didn't think it was even possible to count all the stars in the universe. They thought the universe was infinite and unchanging.

Besides being very hard to imagine, the trouble with an infinite universe is that no matter where you look in the night sky, you should see a star. Stars should overlap each other in the sky like tree trunks in the middle of a very thick forest. But, if this were the case, the sky would be blazing with light. This problem greatly troubled astronomers and became known as "Olbers' Paradox" after the 19th century astronomer Heinrich Olbers who wrote about it, although he was not the first to raise this astronomical mystery.

To try to explain the paradox, some 19th century scientists thought that dust clouds between the stars must be absorbing a lot of the starlight so it wouldn't shine through to us. But later scientists realized that the dust itself would absorb so much energy from the starlight that eventually it would glow as hot and bright as the stars themselves.

Astronomers now realize that the universe is not infinite. A finite universe—that is, a universe of limited size—even one with trillions of stars, just wouldn't have enough stars to light up all of space.

Although the idea of a finite universe explains why Earth's sky is dark at night, other factors work to make it even darker.

The universe is expanding. As a result, the light that leaves a distant galaxy today will have much farther to travel to our eyes than the light that left it a million years ago or even one year ago. That means the amount of light energy reaching us from distant stars dwindles all the time. And the farther away the star, the less bright it will look to us.

Also, because space is expanding, the wavelengths of the light passing through it are expanding. Thus, the farther the light has traveled, the more red-shifted (and lower in energy) it becomes, perhaps red-shifting right out of the visible range. So, even darker skies prevail.

The universe, both finite in size and finite in age, is full of wonderful sights. See some bright, beautiful images of faraway galaxies against the blackness of space at the Space Place image galleries. Visit <http://spaceplace.nasa.gov/search/?q=gallery>.

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



This Hubble Space Telescope image of Galaxy NGC 4414 was used to help calculate the expansion rate of the universe. The galaxy is about 60 million light-years away. Credit: NASA and The Hubble Heritage Team (STScI/AURA)



General Meeting Notes – September 2, 2011

About 60 people came to the General Meeting in the College of San Mateo Planetarium, which was preceded by a social half-hour with pizza and beverages. President Ed Pieret made a few announcements about upcoming events (Star Parties, Jazz Under the Stars, and the November 5th Astronomy Day (coupled with the CSM Family Science Day and featured Speaker, Alex Fillepenko). Also, SMCAS will assist several local public libraries put on star parties in October: October 3rd in Foster City, October 21st in Atherton, and October 28th in Belmont. We will need volunteers to bring telescopes to these events.

Luis Alvarez, a CSM astrophysics student gave a brief summary of his summer at the Houghton-Mars Project Research Station, Devon Island, in the far Canadian Arctic. Donations from SMCAS members helped fund Luis' trip. He reported that it appears to be feasible to operate a remote-operated telescope at the site; the next step is to get a telescope there.

The featured presentation was given by Dr. Bart De Pontieu, Research Scientist, Lockheed Martin Solar and Astrophysics Laboratory, Palo Alto, *The Solar Interface Region*. Dr. Belikov reviewed what is known or theorized about the physics of the Sun's Photosphere, Chromosphere and Corona, emphasizing that we still don't have good answers to many important solar physics questions. He also reviewed some of the space-based telescopes being used, and gave a brief preview of the upcoming IRIS telescope project. While stretching our minds and memories of college-level physics (e.g., Zeeman Effect and Alfvén waves), Dr. De Pontieu addressed how sunspots form, why they look the way they do, and the causes of spicules and coronal loops.

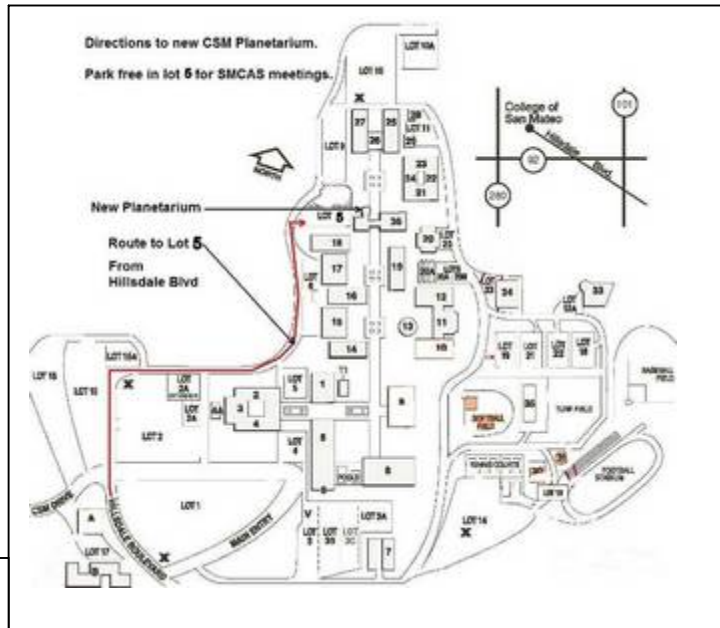
October 2011

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 Crestview Star Party
2	3 First Quarter  Foster City*	4	5	6	7 SMCAS Meeting	8
9	10 Columbus Day	11 Full Moon 	12	13	14 The Sky Tonight Planetarium Show John Muir School star party	15
16	17	18	19 Last Quarter 	20	21 Atherton*	22 Crestview Star Party
23	24 South San Francisco *	25	26 New Moon 	27	28 Belmont*	29 Crestview Star Party
30	31 Halloween					

* Star Parties held for Libraries in the city designated.

2011 - PDT

	Oct 1 Rise	Oct 1 Set	Oct 22 Rise	Oct 22 Set	Oct 29 Rise	Oct 29 Set
Sun	7:04 AM	6:53 PM	7:23 AM	6:23 PM	7:30 AM	6:15 PM
Moon	12:10 PM	10:03 PM	2:33 AM	3:39 PM	10:55 AM	8:49 PM
Mercury	7:15 AM	7:02 PM	8:44 AM	6:59 PM	9:09 AM	7:00 PM
Venus	8:06 AM	7:27 PM	8:53 AM	7:13 PM	9:10 AM	7:11 PM
Mars	2:04 AM	4:16 PM	1:42 AM	3:31 PM	1:33 AM	3:14 PM
Jupiter	8:10 PM	9:40 AM	6:41 PM	8:05 AM	6:10 PM	7:33 AM
9 PM, East on left	c g J i		g J e i c		g J i e c	
Red Spot transit	11:47 PM		4:06 PM		4:51 PM	
Saturn	7:55 AM	7:26 PM	6:45 AM	6:10 PM	6:21 AM	5:45 PM
Uranus	6:34 PM	6:43 AM	5:09 PM	5:16 AM	4:41 PM	4:48 AM
Neptune	5:07 PM	3:57 AM	3:44 PM	2:33 AM	3:16 PM	2:05 AM
Pluto	1:48 PM	11:49 PM	12:27 PM	10:27 PM	12:00 PM	10:10 PM



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 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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