

The SAN MATEO COUNTY ASTRONOMICAL SOCIETY

May, 2008 549th 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 normally held on the first Friday of the month, August through June.

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 a complimentary bulletin or additional information, call (650) 592-3192.

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Scientist Nabbed in Plot to Shoot Missile at Moon!

*(Green cheese enthusiasts express relief
that nefarious plot was defused.)*

Police scoffed at Astronomer Brian Day's claim that his team's efforts are not intended to damage the world's largest supply of green cheese, but instead are intended to determine "once and for all" if water lurks in the darkest craters of the moon. (Water is known to promote the mold that gives green cheese its distinctive color.) To hear Mr. Day defend his participation in the Lunar Crater Observation and Sensing Satellite (LCROSS) mission, come to the ISC on **Friday May 2, at 7:30** (**Astronomy Day Planning meeting starting at 7:00**) (See p 2 for directions.)

MONTHLY STAR PARTY

Crestview Park in San Carlos

Please see directions on P. 2

Sat., May 3

Sunset: 8:01 PM
Moonrise: 4:43 AM
Moonset: 6:20 PM
Phase: 2 days before new

ASTRONOMY DAY

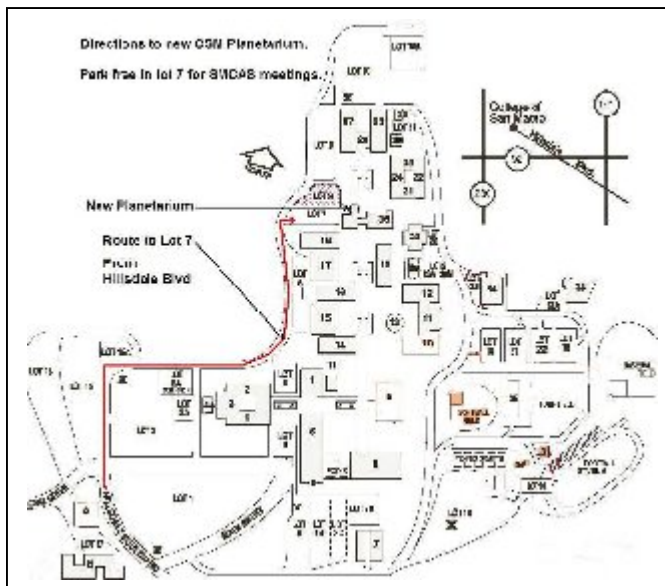
Sat., May 10
Sunset: 8:08 PM
Moonrise: 11:07 AM
Moonset: 1:08 AM
Phase: 1 day before 1stQ

May 24

Sunset: 8:19 PM
Moonrise: 11:49 PM on 23rd
Moonset: 9:26 AM
Phase: 5 days after Full

Sat., May 31

Sunset: 8:24 PM
Moonrise: 3:09 AM
Moonset: 5:10 PM
Phase: 4 days after LQ



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 observer's 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.

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.

Directions to New 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 Lot 7. The planetarium is directly ahead of you. Enter the building (36) through the door facing the parking lot.

Directions to Crestview Park

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 set-up 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

ANNOUNCEMENTS

Wanted: Ice and other Party Supplies on the Moon

(Hint: look where the sun don't shine.)

Astronomer, eclipse chaser and software developer Brian H. Day will be speaking in May about his experience working on the Lunar Crater Observation and Sensing Satellite (LCROSS) mission: to detect the presence or absence of water ice in a permanently shadowed crater at either the Moon's North or South Pole. The identification of water is very important to the future of human activities (and parties) on the Moon. LCROSS will blast the permanently dark floor of one of the Moon's polar craters with two heavy impactors early in 2009 to test the theory that ancient ice lies buried there. The impact will cause ejecta to create a plume that specialized instruments will be able to analyze for the presence of water (ice and vapor), hydrocarbons and hydrated materials. The LCROSS Project is also coordinating an observation campaign and he will discuss details regarding observing opportunities associated with LCROSS. Brian is the Education and Public Outreach Lead for LCROSS. Here's what he has to say in his own defense: "I am a long-time astronomy enthusiast. Currently, I serve on the Board of Directors of the Peninsula Astronomical Society, and am the Chairman of the Foothill College Observatory. Since the 1991 total solar eclipse in Baja, I've caught the eclipse bug, and now make a point of traveling to remote corners of the world for the chance to stand in the moon's shadow. Astronomy (the world's second-oldest profession) has been a long-time passion for me. As a kid, I learned my way around the sky with my first small telescopes. While studying astronomy at UCLA, I worked as research assistant for Dr. Bruce

Margon, conducting a photometric study of the BL Lacertae Object Mkn 421. As Foothill Observatory Chairman, I conduct and coordinate the weekly public programs at the observatory, conduct training on the observatory equipment, and manage the outstanding staff of P.A.S. volunteers at the observatory. My other interests include photography, volcanology (I've seen 4 eruptions to date), wine, skiing, hiking, and just about everything else."

Brian is a frequent speaker at schools, social clubs, etc., talking about the Internet, eclipses, or astronomy in general.



Brian Day enjoying one of his eclipse-chasing locations. One of the benefits of this pursuit, obviously, is daytime hours.

Other Announcements

May 10 is Astronomy Day

June Speaker: Nick Kanas, on star maps

July 19: Annual Banquet

From the Prez:

May 10, 2008 will be International Astronomy Day. SMCAS is celebrating with a public event to be held at CSM from 12:00 Noon to 12:00 Midnight.

Once again we are combining Astronomy Day with a CSM Family Science Day. This gives visitors much more to see and do and increases attendance for both events. We tried the combination last year and even though the weather was bad, we had a large crowd.

Please contact any teachers, youth groups, churches or other organizations to let them know about the event. We will keep the website (www.smcas.com) updated with the latest information.

As members of the San Mateo Astronomical Society, you are expected to help out at events like this as much as possible. Even if you can't stay for the full event, any help will be appreciated. We will be starting setup at 10:00 a.m. and have activities and exhibits from 12:00 Noon to 5:30 p.m. The speaker will be at 6:00 p.m., the raffle at 7:00 p.m. At 8:00 p.m. we will have a slide show featuring some Astro Photos taken by members. There will be a special Planetarium Show at 8:30PM and then we will have observing both in the Observatory and with members' telescopes on the ground level.

We have more material to exhibit than we can possibly show in one event. If you have a special interest, let me know, and we probably have material for you to put together an exhibit. Also, if you have or know any children who have a project or interest they would like to display we will make every effort to accommodate them.

Current thoughts for displays and activities include "Make a Planisphere," "Make a Sun Clock," "Making Craters," "Solar System Model," "Space Theatre," "Solar Observing" and "Planetarium Shows."

We will have a planning meeting open to all members at 7:00 p.m. on May 2, just before our general meeting. I strongly encourage you to attend and bring your ideas. We want this to be an outstanding event and need all the ideas we can get.

You may have noticed that there are no minutes from last month's meeting in this issue. This is because last month's meeting was combined with Professor Janatpour's talk and no business was conducted.

See you at 7:00 p.m. on May 2 and then on Astronomy Day on May 10th.

Ed Pieret, President - San Mateo County Astronomical Society



Stellar Compass for Space Explorers

by Patrick L. Barry

In space, there's no up or down, north or south, east or west. So how can robotic spacecraft know which way they're facing when they fire their thrusters, or when they try to beam scientific data back to Earth?

Without the familiar compass points of Earth's magnetic poles, spacecraft use stars and gyros to know their orientation. Thanks to a recently completed test flight, future spacecraft will be able to do so using only an ultra-low-power camera and three silicon wafers as small as your pinky fingernail.

"The wafers are actually very tiny gyros," explains Artur Chmielewski, project manager at JPL for Space Technology 6 (ST6), a part of NASA's New Millennium Program.

Traditional gyros use spinning wheels to detect changes in pitch, yaw, and roll—the three axes of rotation. For ST6's Inertial Stellar Compass, the three gyros instead consist of silicon wafers that resemble microchips. Rotating the wafers distorts microscopic structures on the surfaces of these wafers in a way that generates electric signals. The compass uses these signals—along with images of star positions taken by the camera—to measure rotation.

Because the Inertial Stellar Compass (ISC) is based on this new, radically different technology, NASA needed to flight-test it before using it in important missions. That test flight reached completion in December 2007 after about a year in orbit aboard the Air Force's TacSat-2 satellite.

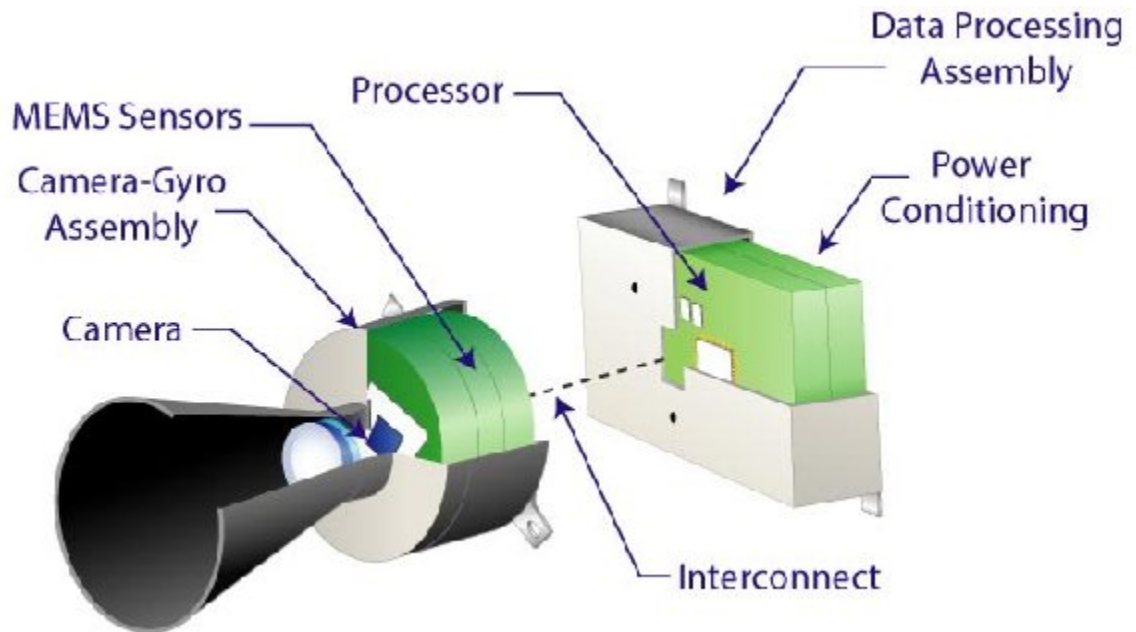
"It just performed beautifully," Chmielewski says. "The data checked out really well." The engineers had hoped that ISC would measure the spacecraft's rotation with an accuracy of 0.1 degrees. In the flight tests, ISC surpassed this goal, measuring rotation to within about 0.05 degrees.

That success paves the way for using ISC to reduce the cost of future science missions. When launching probes into space, weight equals money. "If you're paying a million dollars per kilogram to send your spacecraft to Mars, you care a lot about weight," Chmielewski says. At less than 3 kilograms, ISC weighs about one-fifth as much as traditional stellar compasses. It also uses about one-tenth as much power, so a spacecraft would be able to use smaller, lighter solar panels.

Engineers at Draper Laboratory, the Cambridge, Massachusetts, company that built the ISC, are already at work on a next-generation design that will improve the compass's accuracy ten-fold, Chmielewski says. So ISC and its successors could soon help costs—and spacecraft—stay on target.

Find out more about the ISC at <http://nmp.nasa.gov/st6/>. Kids can do a fun project and get an introduction to navigating by the stars at spaceplace.nasa.gov/en/kids/st6starfinder/st6starfinder.shtml

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

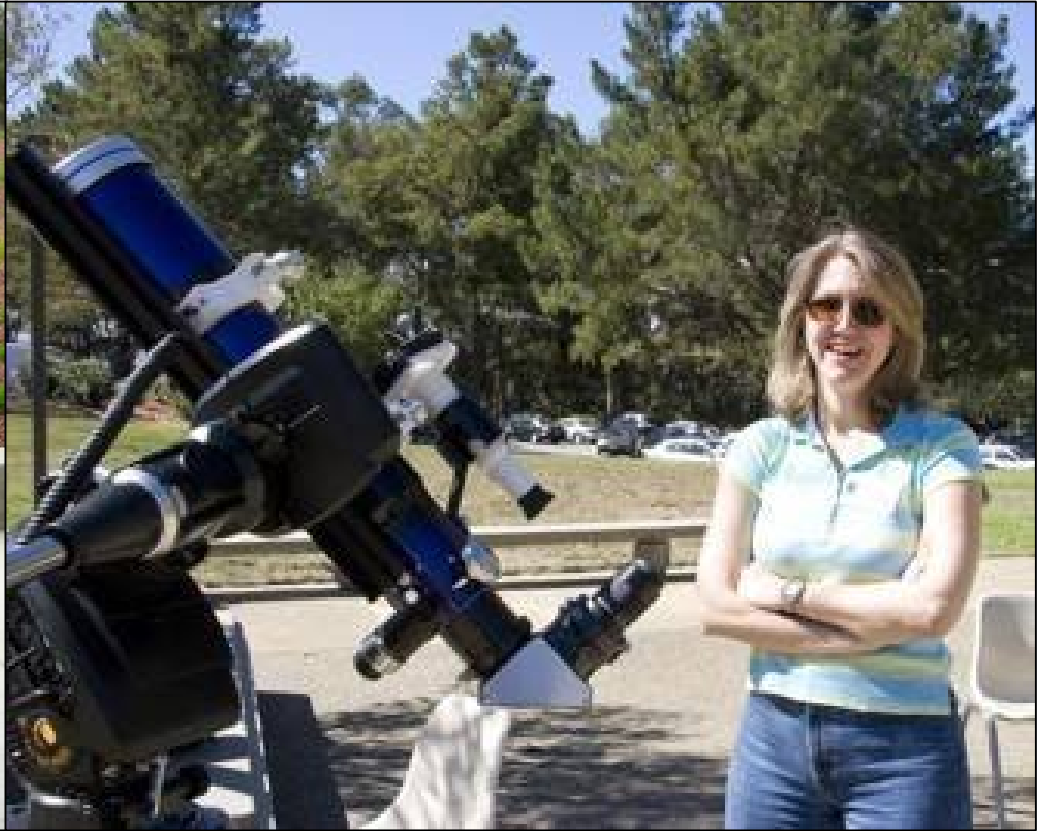


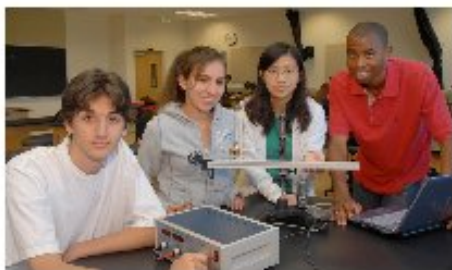
Compass is built as two separate assemblies, the camera-gyro assembly and the data processor assembly, connected by a wiring harness. The technology uses an active pixel sensor in a wide-field-of-view miniature star camera and micro-electromechanical system (MEMS) gyros. Together, they provide extremely accurate information for navigation and control..

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 sanfrancisco@scopecity.com. Check them out at <http://www.scopecity.com>



Past Astronomy Day Events





Come join us for:
**National Astronomy Day/
CSM Family Science Day**

**Saturday May 10, 2008
Noon – Midnight
Science Bldg. 36**



presented by:

**San Mateo County Astronomical Society
CSM Math/Science Division**



Astronomy / Science Day Activities

- *Astro Demonstrations*
- *Planetarium Shows*
- *Solar Viewing*
- *Keynote Speaker*
- *Observatory Viewing*
- *Astro Theatre*
- *Biology*
- *Physics*
- *Anatomy/Nursing*
- *Architecture*
- *Engineering*
- *Horticulture*



Event & Parking (Lots 7-10) are free.

For further information call SMCAS 650-862-9602 or CSM 650-574-6401
<http://smcas.dmmhost.com/> • <http://www.collegeofsanmateo.edu/astronomy/>

San Mateo County Astronomical Society		May 2008					Pacific Daylight Saving Time	
<i>Sunday</i>	<i>Monday</i>	<i>Tuesday</i>	<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>	<i>Saturday</i>		
				1	2	3		
	LQ 7:13 AM				SMCAS Meeting!	Star Party @ Crestview		
4	5	6	7	8	9	10		
	Eta Aquarid meteors. NM 5:18 AM			Eta Lyrid meteors.	Planetarium show @ CSM.	Astronomy & Family Science Day!		
11	12		14	15	16	17		
FC 8:47 PM								
18	19	20	21	22	23	24		
	FM 7:11 PM					Star Party @ Crestview		
25	26	27	28	29	30	31		
		LQ 7:57 PM				Star Party @ Crestview		

Object		May 3 Rise	May 3 Set	May 10 Rise	May 10 Set
Sun		6:11 AM	8:01 PM	6:04 AM	8:08 PM
Moon		4:43 AM	6:20 PM	11:07 AM	1:08 AM
Mercury	In the evening	6:59 AM	9:35 PM	7:06 AM	9:58 PM
Venus	In the sun's glare	5:49 AM	7:08 PM	5:45 AM	7:24 PM
Mars	Much of the night	10:58 AM	1:34 AM	10:50 AM	1:19 AM
Jupiter	In the wee hours	1:03 AM	10:46 AM	12:36 AM	10:19 AM
	9 PM, E on left		e J i c		c e J i
	red spot transit		8:31 PM		9:17 PM
Saturn	Much of the night	1:52 PM	3:18 AM	1:25 PM	2:51 AM
Uranus	Before sunrise	3:58 AM	3:37 PM	3:31 AM	3:11 PM
Neptune	In the wee hours	2:45 AM	1:23 PM	2:18 AM	12:55 PM
Pluto	Very late at night	11:14 PM	9:30 AM	10:46 PM	9:02 AM

Object		May 24 Rise	May 24 Set	May 31 Rise	May 31 Set
Sun		5:53 AM	8:19 PM	5:50 AM	8:24 PM
Moon		11:49 PM on 23	9:26 AM	3:09 AM	5:10 PM
Mercury	In the evening	6:55 AM	9:42 PM	6:31 AM	9:04 PM
Venus	In the sun's glare	5:42 AM	7:55 PM	5:43 AM	8:10 PM
Mars	In the evening	10:34 AM	12:48 AM	10:26 AM	12:32 AM
Jupiter	Late at night	11:39 PM	9:22 AM	11:10 PM	8:52 AM
	9 PM, E on left		c e g J i		e g J i c
	red spot transit		10:48 PM		11:33 PM
Saturn	Much of the night	12:31 PM	1:56 AM	12:06 PM	1:30 AM
Uranus	In the wee hours	2:37 AM	2:18 PM	2:10 AM	1:51 PM
Neptune	In the wee hours	1:23 AM	12:01 PM	12:55 AM	11:33 AM
Pluto	Late in the evening	9:50 PM	8:06 AM	9:21 PM	7:38 AM

Membership Application

To join the San Mateo County Astronomical Society, or to renew your membership please send \$25.00 dues (make check payable to "SMCAS") with this form to:

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

For information, call our CSM contact number (650) 574-6256, or the president at (650) 592-3192

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 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 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:** Helen Asker; **Treasurer:** Bob Franklin

Board Members-At-Large: Bob Frommer, Ken Lum, Mike Ryan., Marion Weiler, and John Fiske.

Membership: Hank Washauer. **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.

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