Southwest Florida Astronomical Society
SWFAS

The Eyepiece
January 2010

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A MESSAGE FROM THE PRESIDENT

I would like to take this opportunity to wish all of you a very healthy, happy, and safe New Year. SWFAS has had a very good year and I want to thank everyone who was in a position to work and support our many events during this International Year of Astronomy. We currently have 101 members as we continue to grow and provide educational programs and observing sessions to schools, and public and provide organizations in the community.

During our December 2009 SWFAS meeting, we held our election of officers as is customary at that time. The following individuals were nominated on, and elected, to serve as officers for the 2010 year. Bob Francis was elected President, Brian Risley was elected Vice President, Larry Richardson was elected Secretary, and Stewart Rorer was elected Treasurer.

Carole Holmberg will continue as Newsletter Editor, Tony Heiner and Chuck Pavlick will continue as Viewing Coordinators for the Fakahatchee Strand viewing site, Jon Martin will continue as Viewing Coordinator for the Caloosahatchee viewing site, Chuck Pavlick will continue as the Program Coordinator, Maria Berni will continue as Librarian, Danny Secary will continue as Club Historian, Brian Risley will continue as Equipment Coordinator, and Dan Fitzgerald will continue as Web Site Manager.

Planets in the evening sky for January consist of Jupiter and Uranus in the southwest. Mars rises around midnight in the southeast, and Saturn in the east. Mars will be high in the morning sky in the west, Saturn will be in the southwest, and Mercury in the southeast. January will have the annual Quadrantid meteor shower which will peak on January 3rd, but a bright moon will interfer with the shower this year.

President's Message Continues...

Please remember to pay your dues for 2010. Dues can be paid at our monthly meeting or mailed to our post office box: Southwest Florida Astronomical Society, Inc., PO Box 100127, Cape Coral, FL 33910. Your continued support is greatly appreciated. Most, if not all, of our new members have paid their dues for 2010. If you have a question as to whether you have paid your 2010 dues, please contact me or Treasurer Stewart Rorer.

January Meeting

Our January meeting will be at the Calusa Nature Center Planetarium at 7:30 PM on Thursday, Jan 7. The evening program for our January meeting will consist of telescope viewing in the back of the planetarium and a DVD entitled "StarGaze II: Visions of the Universe".

Send a Message To Venus

This is Kaoru KIMURA from JAPAN. I have a favour to ask of you. Japan Aerospace Exploration Agency (JAXA) will launch Venus climate orbiter [Akatsuki] in 2010. This project's main purpose is to elucidate the mysteries of the Venusian atmosphere.
I am a member of this project. JAXA is opening to the public a campaign sending a message to Venus.
Could you, your family and your school KIDs please join this event? You can visit Message Campaign web page, and put your name and message. Thank you for your collaboration!

Venus Climate Orbiter [Akatsuki]
http://www.jaxa.jp/projects/sat/planet_c/index_e.html

Message Campaign
http://www.jaxa.jp/event/akatsuki/index_e.html
- Kaoru Kimura, Japan Science Foundation, Planning & Public Relations Office

Hitch a Ride on the Glory Satellite

Do you want to hitch a ride on NASA's next climate monitoring satellite? Join the Glory mission, which will launch no earlier than Oct. 1, 2010, by surfing over to the Send Your Name Around the Earth Web page. Names will be recorded on a microchip built into the satellite, and you will get a printable certificate from NASA acknowledging your participation. There are already 226,323 names on the chip, but there's still plenty of room. You may not submit your name more than once.

To add your name to the microchip, visit
http://polls.nasa.gov/utilities/sendtospace/jsp/sendName.jsp.

Glory carries two scientific sensors dedicated to understanding the effects of aerosols and the sun's variability on Earth's climate. The Aerosol Polarimetry Sensor will collect information about tiny liquid and solid particles suspended in the atmosphere that absorb or reflect sunlight. The Total Irradiance Monitor will measure the intensity of incoming sunlight that can vary over time.

To learn more about the Glory mission, visit http://glory.gsfc.nasa.gov/.

Become a Friend to the Glory Mission on Facebook:
http://www.facebook.com/home.php?#/profile.php?id=1368706679&ref=profile

Spacewalking Astronauts Seen With a Backyard Telescope

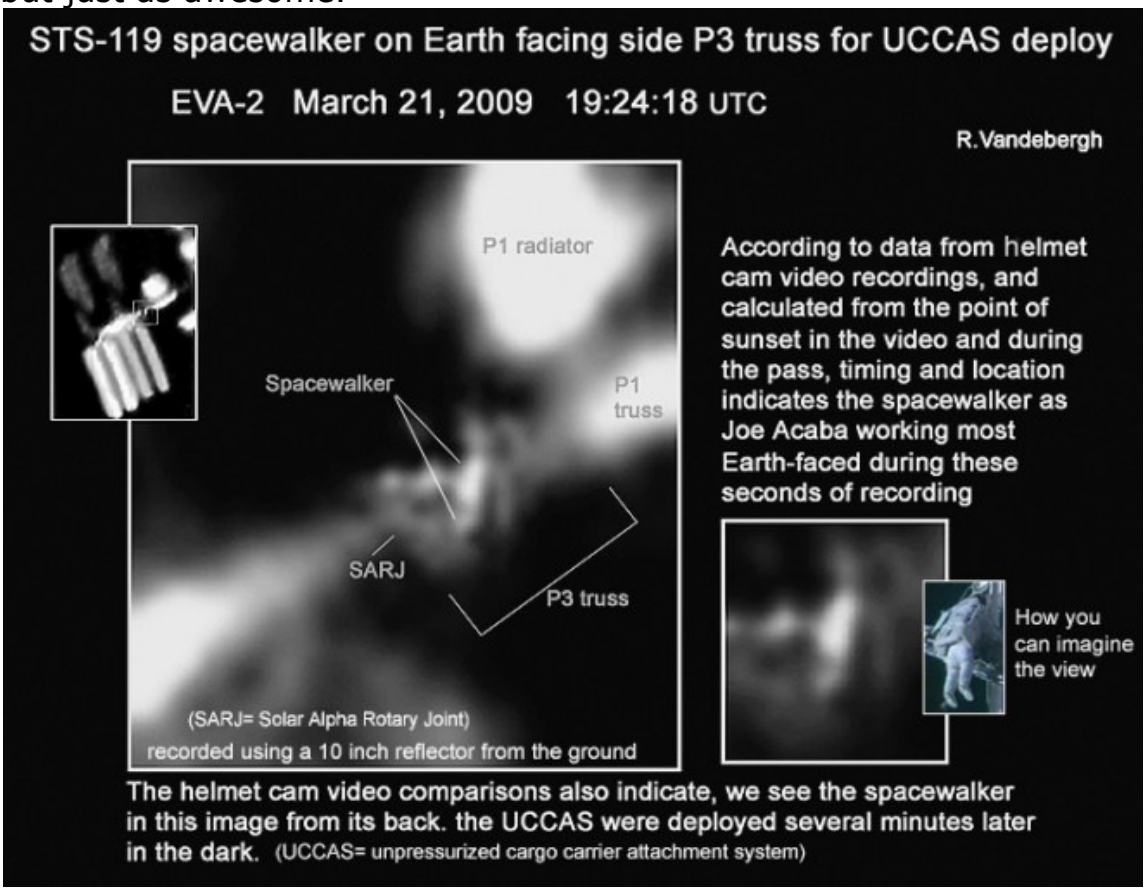
With a big enough telescope and some good fortune, an amateur astronomer can look into the sky and see humans at the space station.

Here's the proof. On March 21, 2009, astronaut Joe Acaba stepped into space for some extravehicular activity. Down on Earth, Ralf Vandebergh was in his backyard, pointing a 10 inch-telescope at the International Space Station as it passed over Europe.

In reviewing the photos he shot, he saw a few bright pixels appear precisely where the work was going on at exactly the moment it was being conducted. In other words, he was looking at an astronaut!

"The best results occur mostly as a surprise when lighting angle, viewing angle, seeing, distance and other factors of the objects are favorable," Vandebergh explains on his website: http://ralfvandebergh.startje.be/vieuw.php?qid=328303

We're big fans of photos of recognizable features on Earth taken from space, but here's the reverse: a photo of a human in space taken from Earth. It's a different kind of sublime, but just as awesome.



- By Alexis Madrigal, December 11, 2009
http://www.wired.com/wiredscience/2009/12/a-spacewalk-as-seen-from-earth/

The Celestial Alignment of 2012: Transit of Venus

Yes, a significant celestial alignment occurs in 2012. Mark your calendar—June 5-6, depending on where you live—and witness a phenomenon that changed mankind's understanding of the solar system. Behold, the second coming (in the 21st century) of the transit of Venus.

Because the orbits of Venus and earth are inclined to each other, Venus is usually either a little above or a little below the sun at inferior conjunction. A transit of Venus occurs when Venus, on the inside orbit, passes directly between the earth and the sun. A magnified view of the sun from earth reveals a tiny black dot—a mere arcminute across—gliding across the sun over several hours. Of all the visible highlights in the firmament, Edmond Halley said, "This sight...is by far the noblest astronomy affords." Transits occur in pairs that are over a century apart, with the pair of events themselves being 8 years apart. Since the era of the telescope, there have been four pairs of transits, and that history is loaded with great stories.

Consider Jeremiah Horrocks of England. A fan of Johannes Kepler and his laws of motion, Horrocks had shown by the age of 20 that the moon moved in an ellipse, with the earth at one focal point. He was keen to show that Kepler's laws of motion applied universally to the planets as well.

Horrocks had noted a discrepancy between existing astronomical tables of his day—including an omission by his hero, the reliable Kepler—so, with less than a month before the 1639 transit, Horrocks decided to do the math himself and correctly predicted the transit circumstances for his location.

On that Sunday in November, Horrocks projected an image of the sun onto a 6-inch piece of paper and awaited the appearance of Venus. He kept vigil from sunrise until shortly after 3:00 pm, taking time off for a few 1-hour blocks to tend to his Sunday duties. When Horrocks returned to his viewing, he "beheld a most agreeable spectacle." Venus had just appeared on the limb of the sun. For 35 minutes, Horrocks tracked the small black circle until the sun set. The prey had been captured.

In 1677 Edmond Halley suggested that if observers around the world timed—to the second—how long it took for Venus to move across the sun from edge to edge, one could mathematically calculate the distance to Venus and ultimately yield a sun-earth distance, or the Astronomical Unit. Using Kepler's laws, one could then easily calculate the distance to all of the planets. As with his namesake comet, Halley knew he would not live to see the transit itself. For his successive colleagues, however, quantifying the scale of the solar system was an irresistible challenge.

When the 18th century pair of transits rolled around, many nations prepared global expeditions to time Venus cutting a swath across the sun. One intrepid observer of the 1761 transit of Venus was Father Maximilian Hell, who went to the arctic coast of Lapland. The Jesuit priest obtained excellent results, but was later accused — convincingly—of falsifying his results. Many years later astronomer Simon Newcomb realized Father Hell's respected accuser was color blind and had misinterpreted the ink marks on Father Hell's papers. Father Hell had been wrongly accused. He eventually got back his good name.

Jean-Baptiste Chappe d' Auteroche went to Siberia in 1761, where angry locals blamed him and his equipment for the severe floods that year, for he was "messing with the sun." Protected by armed Cossacks, he eventually recorded the transit. Eight years later Chappe trekked to Baja California to time the 1769 transit successfully. However, he and his party succumbed to an outbreak of fever, with only one member surviving to deliver

his notes back to Paris. The dedicated Chappe wrote, "I know that I have only a little time left to live, but I have fulfilled my aim and I die content."
In 1761, after his expedition to Rodrigues Island near Madagascar was thwarted by rain, the island was pummeled by British warships, and his own ship captured after a fierce battle, Alexandre Guy Pingré of France was transferred to a British ship as a prisoner-of-war. Tapping into the ship doctor's medicinal supplies, Pingré concluded, "Liquor gives us the necessary strength for determining the distance of the Earth from the Sun."
For the 1769 transit, American David Rittenhouse was so overcome by emotion that he allegedly passed out at the sight of Venus against the sun.
Meanwhile, the British navy had promoted a young lieutenant, James Cook, to command the HMS Endeavour, destined for Tahiti. The voyage's express purpose was to time the 1769 transit of Venus, which set James Cook on his way to the first of three grand voyages of discovery.
The observations of Cook and others were often plagued, however, by a phenomenon known as the "black drop" effect. At internal contacts, when the disk of Venus just touches the edge of the sun, a meniscus sometimes appears between the planet and the sun. Circular Venus briefly elongates on one side.
To simulate the "black drop" effect, almost pinch your thumb and forefinger together against a bright background and observe with one eye shut. Near contact you'll see the meniscus between them appears.
Because it reduces the accuracy of the timing, the "black drop" effect becomes the limiting factor in determining the Astronomical Unit via transit timings.
By the time the 19th century transits rolled around, astronomers such as Maria Mitchell, David Todd, and Jules Janssen employed new techniques like photography. Even though the value of using transits to determine the astronomical unit had essentially run its course, the US Naval Observatory in particular led multiple expeditions around the globe.
American bandmaster John Philip Sousa composed *The Transit of Venus March* for an unveiling ceremony before the 1882 transit.
There are many more characters from many countries who were part of the transit of Venus story. A good resource is Steven van Roode's website at transitofvenus.nl/history.html or see links from www.transitofvenus.org.
The most recent transit of Venus occurred June 8, 2004. How well was it received worldwide? An imperfect indicator of public interest is Google's Zeitgeist feature, which aggregates millions of search queries every day. According to Google, the 2004 Transit of Venus was the #1 Most Popular Event for June 2004—the #1 Most Popular Event for the entire month! After June 5-6, 2012, the next transit of Venus will occur December 5, 2117.
As Jeremiah Horrocks wrote, "Years must roll away, but then at length the splendid sight again shall greet our distant children's eyes."
- by Chuck Bueter, full story at
http://365daysofastronomy.org/2009/12/05/december-5th-the-celestial-alignment-of-2012/

What's Up? Podcast Features the Orion Nebula

The last What's Up podcast of 2009's International Year of Astronomy features the Orion Nebula. It takes the listener/viewer from Galileo's sketch of the Trapezium stars, on to Christian Huygens' first detailed sketch of the nebula itself and on to studies by the

Hubble Telescope.

You can find it here on the Solar System Exploration archive page:
http://solarsystem.nasa.gov/news/whatsup-archive.cfm

Or on JPLnews Youtube: http://www.youtube.com/profile?user=JPLnews#g/u

Or here: http://www.nasa.gov/multimedia/podcasting/whatsup_index.html

The January 2010 podcast will be all about Mars opposition, first observations and the spacecraft studying this fascinating world!
- *Jane Houston Jones, Senior Outreach Specialist, Cassini Program*

World Tales of the Moon

Don't you just love stories? From songs to mangas, movies, books, television, YouTube, blogs, and radio, we listen to our modern storytellers: musicians, narrators, authors, actors and directors, and artists, for the beauty of their creations.

There are hundreds of stories about the Moon and its appearance; some are sacred myths, and others are folktales old and new shared for the simple joy of the tale. We've started what will become a growing stash of myths and stories from around the world. At *http://www.lpi.usra.edu/mymoon/?p=tales/index* you can find links to several stories, as well as a link to submit your own. And hey, if your story isn't totally wack we'll happily immortalize it, and you, right here on the Internet. Fame without fortune has its appeal.

Stories are taken from the Wonder-Full Moon DVD, developed by the awesome US Space and Rocket Center, Huntsville AL (y'all come'n visit one day!)

Thirty Meter Telescope Selects Mauna Kea

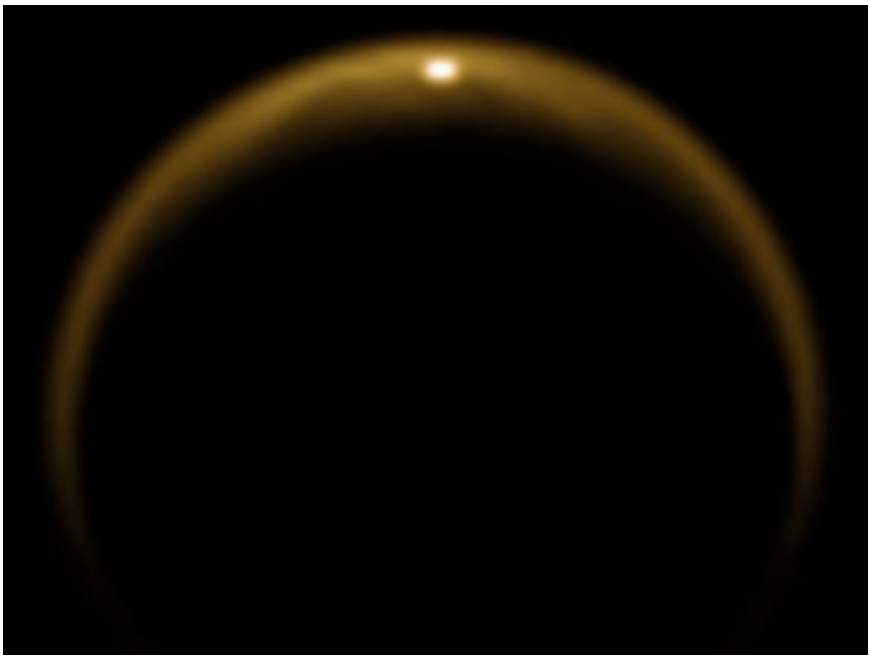
After careful evaluation and comparison between two outstanding candidate sites—Mauna Kea in Hawai‘i and Cerro Armazones in Chile—the board of directors of the TMT Observatory Corporation has selected Mauna Kea as the preferred site for the Thirty Meter Telescope. The TMT will be the most capable and advanced telescope ever constructed.
When completed in 2018, the TMT will enable astronomers to detect and study light from the earliest stars and galaxies, analyze the formation of planets around nearby stars, and test many of the fundamental laws of physics.
To achieve these outstanding results, the TMT will integrate the latest innovations in precision control, segmented mirror design, and adaptive optics to correct for the blurring effect of Earth’s atmosphere, enabling the TMT to study the Universe as clearly as if the telescope were in space. Building on the success of the twin Keck telescopes, the core technology of TMT will be a 30-meter primary mirror composed of 492 segments. This will give TMT nine times the collecting area of today’s largest optical telescopes.
To ensure that the site chosen for TMT would enable the telescope to achieve its full potential, a global satellite survey was conducted, from which five outstanding candidate sites were chosen for further ground-based studies of atmospheric stability, wind

patterns, temperature variation, and other meteorological characteristics that would affect the performance of the telescope.
Based on these results and extensive studies, Mauna Kea and Cerro Armazones were selected in May 2008 for further evaluation and environmental, financial, and cultural impact studies. The TMT board used the results from these meticulous research campaigns to help guide the final site-selection process.
"It was clear from all the information we received that both sites were among the best in the world for astronomical research," said Edward Stone, vice chairman of the TMT board. "In the final analysis, the board selected Mauna Kea as the site for TMT. The atmospheric conditions, low average temperatures, and very low humidity will open an exciting new discovery space using adaptive optics and infrared observations. Working in concert with the partners' existing facilities on Mauna Kea will further expand the opportunities for discoveries."
Before construction can begin on Mauna Kea, the TMT must submit and have approved an application for a Conservation District Use Permit (CDUP) to the Hawaiian Department of Land and Natural Resources. This will be done through the community-based Office of Mauna Kea Management, which oversees the Mauna Kea summit as part of the University of Hawai'i at Hilo.
"We are very grateful for the support that TMT has received from both the people and governments of Hawai'i and Chile during the site-selection process," said Professor Ray Carlberg, the Canadian Large Optical Telescope project director and a TMT board member. "We are excited about the prospect of being the first of the next generation of extremely large telescopes."
The TMT project is an international partnership among the California Institute of Technology, the University of California, and ACURA, an organization of Canadian universities. The National Astronomical Observatory of Japan (NAOJ) joined TMT as a Collaborating Institution in 2008.
"The selection of Hawai'i as the site for the Thirty Meter Telescope will greatly strengthen international cooperation in astronomy. The synergy between TMT and the highly successful Subaru Telescope already on Mauna Kea will lead to many further research breakthroughs," said Professor Masanori Iye, the Extremely Large Telescope Project Director of the NAOJ.
The TMT project has completed its $77 million design development phase with primary financial support of $50 million from the Gordon and Betty Moore Foundation and $22 million from Canada. The project has now entered the early construction phase. Caltech and the University of California have agreed to raise matching funds of $50 million to bring the construction total to $300 million, and the Canadian partners propose to supply the enclosure, the telescope structure, and the first light adaptive optics.
- from http://www.tmt.org/news/site-selection.htm

Cassini Sees Liquid Lake on Titan

NASA's Cassini spacecraft has photographed a flash of sunlight reflecting from a lake on Saturn's moon Titan, confirming the presence of liquid hydrocarbons on a part of the moon dotted with many lake-shaped basins.
Cassini scientists had been looking for the glint, also known as a specular reflection, since the spacecraft began orbiting Saturn in 2004. But until recently Titan's northern hemisphere, where most of the lakes are located, had been veiled in winter darkness.

Now, however, the seasons are changing and sunlight has returned to the north, allowing Cassini to capture this serendipitous image:



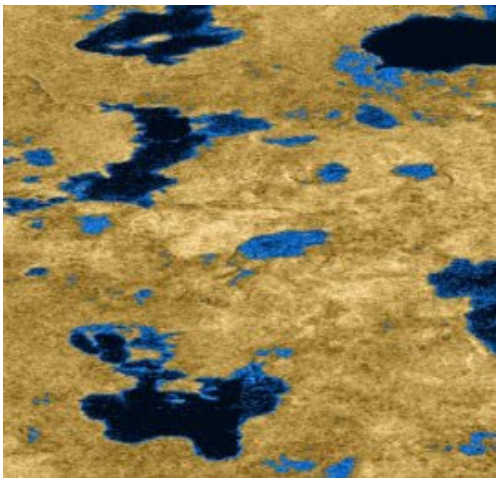
Right: This image, obtained using Cassini's Visual and Infrared Mapping Spectrometer (VIMS), shows the first observed flash of sunlight reflected off a lake on Saturn's moon Titan. Credit: NASA/JPL/University of Arizona/DLR.

"This one image communicates so much about Titan - a thick atmosphere, surface lakes and an otherworldliness," says Bob Pappalardo, Cassini project scientist. "It's an unsettling combination of strangeness yet similarity to Earth. This picture is one of Cassini's iconic images."

Titan, Saturn's largest moon, has captivated scientists because of its many similarities to Earth. Scientists have theorized for 20 years that Titan's cold surface hosts seas or lakes of liquid hydrocarbons, making it the only other planetary body besides Earth believed to have liquid on its surface. While data from Cassini have not indicated any vast seas, they have revealed what appeared to be large lakes near Titan's north and south poles. In 2008, Cassini scientists using infrared data confirmed the presence of liquid in Ontario Lacus, the largest lake in Titan's southern hemisphere. But they were still looking for the smoking gun to confirm liquid in the northern hemisphere, where the basins are larger and more numerous.

Katrin Stephan, of the German Aerospace Center (DLR) in Berlin, was processing the initial image and was the first to see the glint on July 10, 2009.

"I was instantly excited because the glint reminded me of an image of our own planet taken from orbit around Earth, showing a reflection of sunlight on an ocean," Stephan said. "But we also had to do more work to make sure the glint we were seeing wasn't lightning or an erupting volcano."



Right: A false-color radar map of putative methane lakes in Titan's northern hemisphere. Credit: Cassini Radar Mapper, JPL, ESA, NASA

Team members at the University of Arizona processed the image further. They were able to pinpoint the reflection at the southern shoreline of a lake called Kraken Mare. The sprawling Kraken Mare covers about 150,000 square miles, an area larger than the Caspian Sea, the largest lake on Earth.

By comparing this new image to radar and near-infrared images acquired since 2006, scientists were able to show that the shoreline of Kraken

Mare has been stable over the last three years and that Titan has an ongoing hydrological cycle that brings liquids to the surface. Of course, in this case, the liquid in the hydrological cycle is methane rather than water, as it is on Earth.
"These results remind us how unique Titan is in the solar system," says Ralf Jaumann, who leads the scientists at the DLR who work on Cassini. "They also show us that liquid has a universal power to shape geological surfaces in the same way, no matter what the liquid is."
- *Editor: Dr. Tony Phillips, Credit: Science@NASA, December 18, 2009*

The Space Place

Sunglasses for a Solar Observatory

By Patrick Barry

In December 2006, an enormous solar flare erupted on the Sun's surface. The blast hurled a billion-ton cloud of gas (a coronal mass ejection, or CME) toward Earth and sparked days of intense geomagnetic activity with Northern Lights appearing across much of the United States.

While sky watchers enjoyed the show from Earth's surface, something ironic was happening in Earth orbit.

At the onset of the storm, the solar flare unleashed an intense pulse of X-rays. The flash blinded the Solar X-Ray Imager (SXI) on NOAA's GOES-13 satellite, damaging several rows of pixels. SXI was designed to monitor solar flares, but it must also be able to protect itself in extreme cases.

That's why NASA engineers gave the newest Geostationary Operational Environmental Satellite a new set of sophisticated "sunglasses." The new GOES-14 launched June 27 and reached geosynchronous orbit July 8.

Its "sunglasses" are a new flight-software package that will enable the SXI sensor to observe even intense solar flares safely. Radiation from these largest flares can endanger military and civilian communications satellites, threaten astronauts in orbit, and even knock out cities' power grids. SXI serves as an early warning system for these flares and helps scientists better understand what causes them.

"We wanted to protect the sensor from overexposure, but we didn't want to shield it so much that it couldn't gather data when a flare is occurring," says Cynthia Tanner, SXI instrument systems manager for the GOES-NOP series at NASA's Goddard Space Flight Center in Greenbelt, Maryland. (GOES-14 was called GOES-O before achieving orbit).

Shielding the sensor from X-rays also reduces the amount of data it can gather about the flare. It's like stargazing with dark sunglasses on. So NASA engineers must strike a balance between protecting the sensor and gathering useful data.

When a dangerous flare occurs, the new SXI sensor can protect itself with five levels of

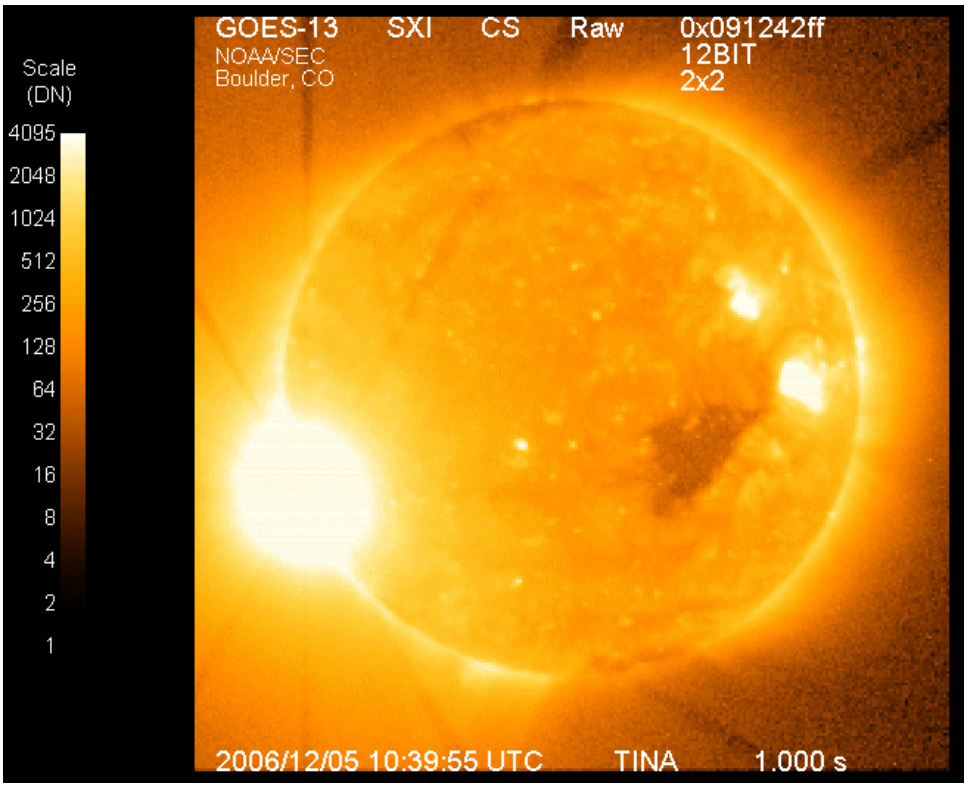
gradually “darker” sunglasses. Each level is a combination of filters and exposure times carefully calibrated to control the sensor’s exposure to harmful high-energy X-rays.

As the blast of X-rays from a major solar flare swells, GOES-14 can step up the protection for SXI through these five levels. The damaged sensor on GOES-13 had only two levels of protection—low and high. Rather than gradually increasing the amount of protection, the older sensor would remain at the low level of protection, switching to the high level only when the X-ray dose was very high.

“You can collect more science while you’re going up through the levels of protection,” Tanner says. “We’ve really fine-tuned it.”

Forecasters anticipate a new solar maximum in 2012-2013, with plenty of sunspots and even more solar flares. “GOES-14 is ready,” says Tanner.

For a great kid-level explanation of solar “indigestion” and space weather, check out spaceplace.nasa.gov/en/kids/goes/spaceweather.



Caption:
X-9 class solar flare December 6, 2006, as seen by GOES-13’s Solar X-ray Imager. It was one of the strongest flares in the past 30 years.

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

Is your Club on the NEW Night Sky Network Calendar yet?
Since December 1st, 40 NSN clubs have listed over 220 upcoming events. Check the map for the "Blue Icon" clubs: http://nightsky.jpl.nasa.gov/club/club-map.cfm
Is your club one of them? If not, log on and start using the new calendar to post your club's future events: http://nightsky.jpl.nasa.gov/club/event-calendar.cfm

What can your club can do on the Night Sky Network NOW? Watch the introductory video on the "About The Network" page: http://nightsky.jpl.nasa.gov/about.cfm

Quarterly Drawing and ToolKits Shipped to Qualifying Clubs in January
Be sure to log two events in each calendar quarter to qualify for the next ToolKit. Log your events by Monday, January 4th to qualify for the Quarterly Prize Drawing on Tuesday, January 5th and increase your chance of winning the last in our supply of metal replica Galileo Telescopes that come in their own wooden box! We'll pick five clubs randomly from the NSN events held between October 1 and December 31.

It's Time to Reserve Your Annual Award Pins
Have you reserved your NSN Annual Award Pins yet? If your club has logged at least five events held during 2009 where Night Sky Network resources were used, then... Congratulations! In January, your club will automatically receive three commemorative Night Sky Network Star 2010 Award Pins with presentation boxes and a template for a Certificate of Achievement to present to your outreach stars. The pins will be sent to you at no charge. The Night Sky Network suggests your club select deserving Award Pin recipients as those who helped organize or participated in at least five outreach events during 2009 where NSN resources were used. Your club is welcome to decide on additional criteria. IMPORTANT: Please ensure your 2009 events are logged by January 5, in order to qualify. You should receive your pins no later than January 29.

Renew your magazine subscriptions at the club discount through NSN!
SPECIAL for NSN members: Your club members can now renew their Astronomy and S&T subscriptions at the club discount rate. Each member can log into NSN, select the Links page: http://nightsky.jpl.nasa.gov/club/links.cfm
Scroll down and choose the "New and Renewal Subscriptions through the ASP" link. Your membership person and treasurer will thank you for renewing online.

Globe at Night 2010 Telecon, Jan 21st
The next telecon in our bimonthly series of 2010 will be Thursday, January 21st for the Globe at Night Telecon with Dr. Connie Walker. To join the Teleconference on Thursday, January 21 at 9:00 PM Eastern call the toll-free conference call line: 1-888-455-9236
Call anytime after 8:45 PM the evening of the telecon. An operator will answer and:
- You will be asked for the passcode: NIGHT SKY NETWORK
- You will be asked to give your NAME and the CLUB you belong to, and number of people listening with you.

Globe at Night 2010 will occur from March 3 - 16. The PowerPoint to accompany Dr. Walker's talk will be available soon.
- *Marni Berendsen, Kenneth Frank and Vivian White, Night Sky Network Administrators*

SWFAS Minutes – December 3, 2009

Bob Francis: Meeting started at 7:30 pm

- Welcome everyone! Introduction to new members and visitors
- Financial audit done by Chuck Pavlick. Audit read by Chuck.
- Election of Officers for 2010:

Carole Holmberg will remain as Newsletter Coordinator.

Dan Fitzgerald will remain as Webmaster.
Don Franks and Jon Martin will remain as Caloosahatchee Regional Park Coordinators.
Chuck Pavlick and Tony Heiner will remain as FAK Coordinators.
Maria Berni will remain as Librarian.
Dan Secary will remain as Historian and Assistant Webmaster.
Brian Risley will remain as Equipment Coordinator. Brian has telescopes to lend out to club members.
There are four elected officer positions:
President: Bob Francis re-elected for 2010.
Vice President: Alice Mack (2009) has stepped down. Brian Risley was elected for 2010.
Treasurer: Stewart Rorer re-elected for 2010.
Secretary: Karen Nichols (2009) has stepped down. Larry Richardson was elected for 2010.

Alice Mack: Alice brought in the 2010 Astronomical Calendar – members are welcome to take a look at it.

Carole Holmberg: Carole reported we received a thank you note from the Girl Scouts to the Astronomy Club.

Bob Francis:

- SWFAS supports public and private events. After the first of the year, we have a lot of events to support.
- NASA event for 2010 at new Cape Coral Library – Bob Francis and Carole Holmberg wrote letters of support for this event. This is a new library on Chiquita Blvd in Cape Coral. Everyone is invited to the event on Tuesday night. On March 2nd, Bob will present a one-hour DVD, "Stargazer – Hubble's View of the Universe.
  On March 9th, Bob will present another DVD, "Stargazer – Visions of the Universe Part 2."
- Bob was contacted by the SWFL Symphony at Barbara B. Mann. There is a concert January 16th – Space Odyssey. SWFAS was asked to participate with telescopes. Anyone who brings a telescope will get 2 tickets to the concert.
- January 15 – Bob received a request to host a private party on Sanibel Island. 2 or 3 telescopes are requested. Bob has not given a response to this event.
- Secretary's report: No minutes were in the newsletter due to the Telescope Renaissance Event.

Stewart Rorer: Read Treasurer's report.

Tony Heiner and Chuck Pavlick: Both report excellent night for viewing at the FAK. For new members, the FAK is located off I 75 – Rt. 29. It is the darkest place in SW Florida.

Jon Martin –CRP: Cancelled November 14. There was a conflict with the Girl Scout schedule. There will be viewing on December 19th. CRP is starting to charge $1.00 per hour parking. The FAK is state property. There is no fee.

Maria Berni, Librarian:

- Books are available for members. There are also a selection of books free to members.
- Maria has free tickets to the Keyboard Festival. This concert is at the First Assembly of God Church on Summerlin and Colonial.

Dan Fitzgerald: Not present. Send any photos to Dan if wanted on the SWFAS website.

Don Franks: Don showed the club a book – "Capturing the Stars." An astrophotography book of photographs from all over the world. The book is $16.20 for orders of 10 books or more. A suggestion from Don that the club can buy and use these books as gifts for speakers.

Open Discussion:

- Carole Holmberg thanked everyone who participated in Telescope Renaissance Night.
- Bob Francis will contact FGCU about meeting there in January.
- Star Party tickets for 2010 are still available. Bob Francis gave information about the Star Party. It will be held February 8th. See www.scas.org for more info.

Stewart Rorer: Presentation on Telescopes.

Meeting Adjourned at 9:10 PM.

Calendar of Events

January 3, 4, Quadrantids Meteor Shower. The shower usually peaks on January 3 & 4, but some meteors can be visible from January 1-5.
Thursday, **January 7th, 7:30 pm,** Meeting at the Calusa Nature Center Planetarium
January 15, New Moon/ Annular Solar Eclipse. Not visible from the US.
January 16, "Space Odyssey" concert at Barbara B. Mann.
Friday, January 22nd, Star Party at Mother of God, House of Prayer. Information will be provided in January regarding times and exact location.
January 29, Mars at Opposition. The red planet will be at its closest approach to Earth and its face will be fully illuminated by the Sun. This is the best time to view and photograph Mars.
January 30, Full Moon
Saturday, January 30th, 10 am – 4 pm, Edison Festival of Light, Edison Day of Discovery. Solar observing at Centennial Park at Harborside Event Center. Further information will be provided in January.
February 8- Winter Star Party in the Keys. See www.scas.org for more info.
February 19, 2010, Gulf Elementary School "Astronomy Night". Further information will be provided in February.
Saturday, February 27, 2010, Solar Observing at the Burrowing Owl Festival. Further information will be provided in February.
March 2 and March 9, Bob Francis gives DVD presentation at new Cape Coral Library.
March 12, 2010, 7:00 - 10:00 PM, Star Party for the Cape Coral Rotary Club. Further information will be provided in early March.

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