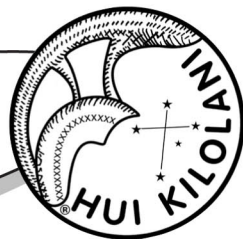


The Astronews



Volume 57, Issue 11

November 2009

www.hawastsoc.org

President's Message

by Chris Peterson

Well, I can't say I was too surprised. I looked for the LCROSS impact but didn't see it. Did anyone? The shepherding satellite reportedly got data. It observed the plume and a thermal signature from the impact, and it also imaged the 28-m crater that resulted from the impact of the Centaur upper stage. My guess is that any detection of water was slight at best, or else we would have heard all about it by now. This is an important question, and nobody wants to put out bad information about it, so the results may be slow in coming out.

Earthlings were disappointed because the plume didn't rise high enough to be seen from here. The impact apparently ejected much less material than had been anticipated. One reason that has been suggested for that is that the Centaur was basically a hollow cylinder rather than the compact solid body that modelers use in their simulations of impacts.

Regardless of the results, the experiment has sparked much discussion about water on the Moon. Even if there were a significant quantity of water at either or both poles, getting at it would be difficult. The permanently shadowed craters that may be responsible for cold trapping the water molecules would be very challenging places from which to retrieve any of the water. Neither robotic equipment nor spacesuits for astronauts are designed to work at such cold temperatures.

However, it has been known for many years that water could be produced on the Moon by

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Upcoming Events:

- ☆ The next meeting is 7:30PM on **Tues., Nov. 3** at the Bishop Museum Planetarium.
- ☆ Bishop Museum's next planetarium show with **Barry Peckham** is Friday, **Nov. 6 & 20** at 8:00 p.m.
www.bishopmuseum.org/calendar
- ☆ The next Board Meeting is Sunday, **Nov. 1** at 3:30 p.m. at the POST building at UH.



Normally I wouldn't take sides between the entertainment industry and science professionals, but found it interesting to receive this post from NASA Outreach--enjoy!



Carolyn

**Astronomical Society of the Pacific Web
Pages Give Real Scoop on
"Doomsday 2012"**

Will Doomsday come in 2012? A widespread Internet-circulated story claims that Dec. 21, 2012 will be the end for planet Earth because some astronomical event, allegedly predicted by the ending of a Mayan calendar cycle, will destroy or decimate our planet. But don't hold your breath, says NASA scientist David Morrison, because isn't going to happen. His concise summary of the claims and the scientific response is being published by the Astronomical Society of the Pacific as a public service at: <http://www.astrosociety.org/2012>

For several months, NASA and many astronomers have received increasingly worried letters and e-mails from members of the public about the possibility, widely touted on the Internet, that the world will end in 2012. Many mechanisms for doomsday are being proposed, including a collision with a fictional planet called Nibiru, deadly activity on the surface of the Sun that lashes out at Earth, alignments with the center of our galaxy, and so on. David Morrison has coined the term "cosmophobia" -- fear of the cosmos -- for these concerns, and has seen a huge increase in the phenomenon this year.

One of his most interesting findings is that the doomsday notion seems to be getting strong play right now as a result of the viral marketing campaign by distributors of the science fiction motion picture "2012", to be released this November. Their campaign includes setting up a web site for a fictitious organization and encouraging people to search for "2012" on the Web.

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The **Astronews** is a monthly newsletter of the Hawaiian Astronomical Society. Some of the contents may be copyrighted. We request that authors and artists be given credit for their work. Contributions are welcome. Send them to the Editor via email. The deadline is the 16th of each month. We are not responsible for unsolicited artwork.

President **Chris Peterson** called the October 6, 2009 meeting of the Hawaiian Astronomical Society to order at 7:31 p.m. The meeting was held at the Planetarium on the grounds of the Bishop Museum. There were twenty-seven members and two visitors in attendance.

Hawaii Space Lecture Series –As of August 4, 2009, there is no scheduled lecture for this month. Usually lectures take place in the NASA Pacific Regional Planetary Data Center, room 544, P.O.S.T. Bldg, on the grounds of the University of the Hawaii, Manoa. Free lectures usually begin at 7:30 p.m. Should you be interested in any upcoming lectures or for information you can contact NASA PRPDC at 808-056-3132 or on the Web go to <http://www.higp.hawaii.edu/prpdc>.

Donation – A Discovery Science 2" telescope that was donated to the club, but is not viable as an observing scope will be donated to Good Will. A second scope, a 13" Coulter Odyssey was donated to the club. This 15-year-old scope, which is in very poor condition, was put up for bid at the October meeting. The dilapidated scope was sold for \$110 by **Gretchen West**, after a short bout of spirited bidding. **Jim MacDonald** has sent a letter of recognition and acknowledgement of donation to the donor.

FYI - H.A.S. President **Chris Peterson** spoke briefly regarding the Messenger Mission to Mercury. The third fly-by will occur in the very near future. The orbiter got a gravity assist in order to slow down so that it may be ready to settle into an orbit in early 2011.

LCROSS - Chris also reminded members of the 1:31:30 am LCROSS event to occur early October 9th. The impactor will crash into Crater Cabeus on the moon's southern limb that night, hopefully throwing up large amounts of material. Four minutes later the shepherding space craft will follow LCROSS down to impact nearby. Earthbound telescopes like Keck, on the Big Island of Hawaii as well as telescopes like the Hubble Space Telescope will be watching, waiting to examine the impact plume.

SOEST Open House - **Chris Peterson** reminded members that this year's Open House occurs on October 16th and 17th, Friday and Saturday. Saturday should be the best day for club members.

Aerospace in Hawaii Week - **Gretchen West** set up an H.A.S. display table at the State Capitol Building for Aerospace Week.

Sale Correction – The listing of a telescope by **Dave Verrett** in the last ASTRO-NEWS was incorrect. The telescope Dave is interested in selling is an 18" scope. In addition to the scope, Dave is also selling a collection of astronomy books to be sold as one unit.

Hubble Space Telescope – The KHET television program NOVA will air "Hubble's Amazing Rescue," reviewing the outstanding work done by ground crews and astronauts in repairing the Hubble Space Telescope.

Dillingham Airfield – **Gretchen West** reports that the new policy for locking the gate at Dillingham Airfield is now being enforced. As of now, the KeyMaster needs to contact the security officer on site by phone and arrange to meet him at the gate so that our lock can be interlocked (daisy-chained) with the airfield lock. Upon leaving the airfield, the KeyMaster must again contact the security officer and have him meet us at the gate and disengage our lock and the airfield lock so that it can be secured for the night.

Astronaut Lacy Veach Day - October 24th will be the day that HAS participates again in a celebration of science for students, parents and educators. This year's Lacy Veach Day will take place at the Mamiya Science Center on the grounds of

Staring at Lightning

There's something mesmerizing about watching a thunderstorm. You stare at the dark, dramatic clouds waiting for split-second bursts of brilliant light — intricate bolts of lightning spidering across the sky. Look away at the wrong time and (FLASH!) you miss it.

Lightning is much more than just a beautiful spectacle, though. It's a window into the heart of the storm, and it could even provide clues about climate change.

Strong vertical motions within a storm cloud help generate the electricity that powers lightning. These updrafts are caused when warm, moist air rises. Because warmth and lightning are inextricably connected, tracking long-term changes in lightning frequency could reveal the progress of climate change.

It's one of many reasons why scientists want to keep an unwavering eye on lightning. The best way to do that? With a satellite 35,800 km overhead.

At that altitude, satellites orbit at just the right speed to remain over one spot on the Earth's surface while the planet rotates around its axis — a "geostationary" orbit. NASA and NOAA scientists are working on an advanced lightning sensor called the Geostationary Lightning Mapper (GLM) that will fly onboard the next generation

(Continued on page 9)



The Geostationary Lightning Mapper (GLM) on the next generation of GOES satellites will detect the very rapid and transient bursts of light produced by lightning at near-infrared wavelengths. This image was taken from the International Space Station and shows the Aurora Australis and lightning.



FOR SALE

Telescope and Astronomy Books

18" f4.5 Truss Tube Dob telescope w/accessories

[Editor's Note: this is a corrected reprint of this ad]

*Please call Dave at 623-9466 or e-mail:
twocajuns@mac.com for complete listing*

Meteor Log - November 2009

by Mike Morrow



It appears that the Leonids may be strong this month. Most of the other shower have less than five meteors an hour and the Southern Taurid peak is destroyed by the Moon. Where is Zena when she is needed.

Tuesday the 17th and Wednesday the 18th, the **Leonids**. Radiant 10h08m +22 deg. Rates will be variable but may reach 100 an hour. Don't we hope so!!! Leonids may be observed between the 10th and the 23rd. The parent comet Tempel-Tuttle's latest nearest passage was in 1998, the Leonids have continued to produce variable activity since 2002.

Several theoreticians say there may be a strong return this year. The maximum may be between 06UT on 9/17 and 01UT on the 18th. Other possibilities will be during the daytime hours.

Saturday the 21st, the **Alpha Monocerotids**. Radiant 07h52m +01 deg. Activity for this shower is between the 15th and the 25th. Rates are variable ranging from less than 5 and hour to near 40 an hour. This usually minor shower's most recent outburst was over Europe in 1995. The outburst lasted about five minutes. It appears that the next major outburst may be about 2043.

If you are interested in observing meteors contact **Tom Giguere** at 672-6677, or write **Mike Morrow**, P.O. Box 6692, Ocean View, Hawaii 96737

Planets Close To the Moon

Times are Hawaii Standard Time

Nov 8, 18h, M 3.2° SSW of Mars
(96° from sun in morning sky)

Nov 12, 10h, M 6.8° SSW of Saturn
(49° from sun in morning sky)

Nov 23, 09h, M 3.4° NNW of Jupiter
(78° from sun in evening sky)

Nov 23, 17h, M 2.9° NNW of Neptune
(82° from sun in evening sky)

Nov 26, 03h, M 5.2° NNW of Uranus
(136° from sun in evening sky)

Other Events of Interest

Times are Hawaii Standard Time

Nov 1, 05h, Mars 0.23° NNE of center
of Beehive cluster (92° from sun in
morning sky)










Nov 2, 09:14h, Moon Full

Nov 4, 22h, Mercury at superior conj.
with sun (Passes into evening sky)

Nov 16, 09.13h, Moon New

Nov 17, Leonid Meteors
Very favorable year for this major shower.

**Mercury and Venus are closer than
15° from the sun when near the moon
in November.**

 Mercury Close to the sun most of the month. May be visible low in the southwest during evening twilight at the end of the month.	 Venus Rises only about a half hour before the sun, but because it is so bright it may be visible in the morning twilight.	 Mars Rises about 9:00 pm in mid-month, brightening and getting larger as it approaches opposition.
 Jupiter Still bright and well-placed for viewing near the zenith in the evening sky after sunset.	 Saturn Visible in the morning sky after rising about 1:30 am.	 Uranus Well-placed for viewing in the evening sky in the constellation of Aquarius.
 Neptune Near Jupiter and can be viewed in the evening hours.	 Dwarf Planet Pluto Getting too close to the sun for viewing in November.	 Asteroid 3 Juno Visible in the evening sky near Uranus.

Punahou School. **Gretchen West** has chaired the HAS participation in this year's display and interactive presentation at the science day.

School Star Parties – HAS star party coordinator **Forrest Luke** reports that October is a full schedule.

Oct. 20 – Kahana Bay near Laie

Oct. 21 – Lehua Elementary in Pearl City.

Oct. 22 – Momilani Elementary, Pearl City Heights

Forrest passed around a sign-up sheet for astronomers. The state furlough scheduled for seventeen Fridays during the 2009-2010 school year, may impact already scheduled Friday school star parties.

Trips Abroad – **Carolyn Kaichi** described her recent trip to the mainland during which she attended the Astronomy Society of the Pacific workshops for formal and informal educators.

Guest Speaker – This month's surprise guest speaker was club member **Sue Girard** who went on the voyage of a lifetime. Sue joined 400 other enthusiasts on the "The Voyage of the Costa Classic" to view the total solar eclipse on July 22, 2009. The 10-day trip and cruise took Sue to China, Korea, Japan and past the island of Iwo Jima, into the path of totality during the solar eclipse. Sue explained that in addition to the regular delights of a cruise, enthusiasts could attend multiple lectures on plate tectonics, the island of Iwo Jima, meteorites, etc. Britain's Astronomer Royal lectured on Black Holes, the Solar System and the search for Life (the SETI Program) and the Big Bang. The actual day of the solar eclipse was clear and calm, a perfect day on the water. The eclipse astronomers used a variety of set ups for viewing.

Night Sky Network – At-Large member **John Gallagher** reported on the recent teleconference of October 2nd. Teleconferences take place between 3:00 pm and 4:00 pm HST. Should you be interested in these very interesting teleconferences, please feel free to contact John.

Sky & Tel 2010 Calendars – **Jim MacDonald** has 2010 Sky & Tel calendars for sale for \$6.50 for club members.

Lessons with Barry – Vice President **Barry Peckham** spoke about what an individual can do when trying to refurbish an old dilapidated telescope. Barry also refreshed our memory on Fomalhaut (Alpha Piscis Austrinus) and its many interesting aspects. Barry asked members to remember all the activities our club has historically taken part in. Barry urged members to come out to club activities, go outer island and enjoy the night skies on other islands and to generally get involved in this interesting hobby we all enjoy.

As there was no further business, the meeting was adjourned at 8:59 p.m.
Refreshments were served.

Respectfully Submitted,

Gretchen West
H.A.S. Secretary



HAS T-Shirts \$15!

(see Jim MacDonald)

- Light Blue

SIZES SM - 2XL

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 45	1	2 Full Moon	3 7:30p HAS Meeting	4	5	6	7 6:30p Dillingham Club Star Party
Week 46	8	9	10	11	12	13	14 6:30p Dillingham Public Star Party
Week 47	15	16 New Moon	17 Leonids Meteor Shower Peak	18 6:15p Honowai Elementary School (Date Tentative)	19 3p Teleconference - Processing Date from Kepler Mission	20 6:30p Leihoku Elementary School	21 6:30p Kahala & Waikele Public Star Party
Week 48	22	23	24	25 For more events look here. 6:15p Honowai Elementary School	26	27 12p Charge your battery packs	28
Week 49	29	30	1 7:30p HAS Meeting	2 Full Moon	3	4	5

☆ Upcoming Star Parties ☆

Club Party-Dillingham

Nov. 7

Public Party- Dillingham

Nov. 14

Kahala/Waikele Party

Nov. 21

HAS Yahoo Group

<http://tech.groups.yahoo.com/group/HawaiianAstronomicalSociety/>

(Lightning continued from page 4)
geostationary operational environmental satellite, called GOES-R, slated to launch around 2015.

“GLM will give us a constant, eye-in-the-sky view of lightning over a wide portion of the Earth,” says Steven Goodman, NOAA chief scientist for GOES-R at NASA’s Goddard Space Flight Center. Once GLM sensors are flying on GOES-R and its sister GOES-S, that view will extend 18,000 km from New Zealand, east across the Pacific Ocean, across the Americas, and to Africa’s western coast.

With this hemisphere-scale view, scientists will gather an unprecedented amount of data on how lightning varies from place to place, year to year, and even decade to decade. Existing lightning sensors are either on the ground — which limits their geographic range — or on satellites that orbit much closer to Earth. These satellites circle the Earth every 90 minutes or so, quickly passing over any one area, which can leave some awkward gaps in the data.

Goodman explains: “Low-Earth orbit satellites observe a location such as Florida for only a minute at a time. Many of these storms occur in the late afternoon, and if the satellite’s not overhead at that time, you’re going to miss it.”

GLM, on the other hand, won’t miss a thing. Indeed, in just two weeks of observations, GLM is expected gather more data than NASA’s two low-Earth orbiting research sensors did in 10+ years.

The new data will have many uses beyond understanding climate change. For example, wherever lightning flashes are abundant, scientists can warn aircraft pilots of strong turbulence. The data may also offer new insights into the evolution of storms and prompt improvements in severe weather forecasting.

Staring at
(FLASH!) Did you miss another one? The time has come for GLM.

Want to know how to build a weather satellite? Check the “how to” booklet at scijinks.gov/weather/technology/build_satellite.

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

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NIGHT SKY NETWORK NEWS

by John Gallagher

Mark your calendar for another IYA 2009 Teleconference on Thursday, November 19th with the theme Processing Data from the Kepler Mission with Dr. John JenkinsPeter Jenniskens. Dr Jenkins is the Co-1, Signal Processing/ Detection Algorithms for the Kepler Mission and leads the team that analyzes the date coming from the spacecraft. Teleconference begins at 3:00 pm (local time). Contact Night Sky Network Coordinator, **John Gallagher**, 683-0118 for details on downloading the power point presentation. Details are also posted on the HAS Yahoo Group Calendar.

HAS Financial Report for the month ending as of Oct. 15, 2009

Initial Balance:	\$4,180.66
<i>Receipts:</i>	
Dues Received	142.00
Calendar Sales	32.50
Donations	123.05
Magazine Payments	99.90
Total Income:	\$397.45
<i>Expenses:</i>	
Calendar Costs	156.88
Refreshments	14.66
Total Expenses:	\$171.54
Final Balance	\$4,406.57

We gained one new member this month -- ***Rolando Halili***. A special thanks to ***Gretchen West*** and ***Susan Girard*** for their donations. Thanks and clear skies to all renewing their membership this month.



Upcoming School Star Parties 2009

Wed.	11/18	Honowai Elementary (Waipahu)
Wed.	11/18	Camp Erdman (Mililani Uka) 5th Grade
Fri.	11/20	Leihoku Elementary (Waianae) Event starts at 6 PM
		Pearl Harbor Elementary (Jan. 2010)*

(President continued from page 1)

using hydrogen from the solar wind that has been implanted in lunar regolith (and can be released by moderate heating). Heating hydrogen in the presence of lunar rocks that contain oxygen (with which it would combine) would produce water vapor. This might turn out to be the most cost-effective approach to obtaining water on the Moon. There is scientific knowledge to be gained by studying water at the Moon's poles, but its utility as a resource may be more of an economic and political question.

Chris



MAGAZINE RENEWALS



Magazine renewal procedures have become confusing so here is the latest. For *Astronomy Magazine*, there has been no change. All new subscriptions and renewals are to be done through the club treasurer. Checks are to be made payable to HAS in the amount of \$34.00 per year. Two year subscriptions are permissible at \$68.00.

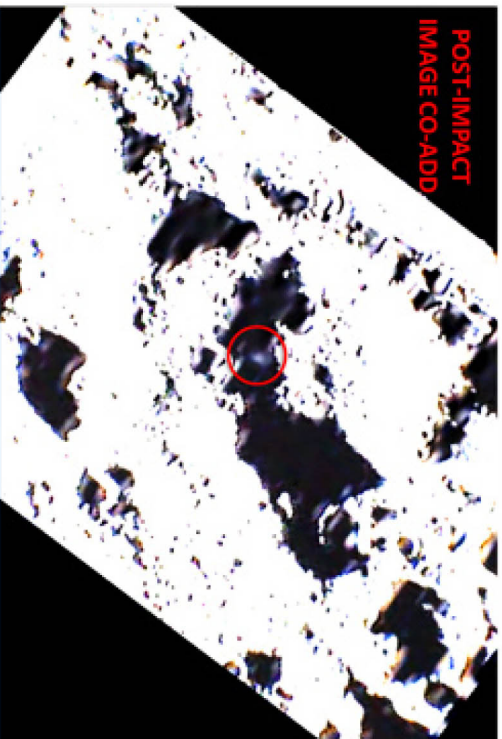
Sky and Telescope Magazine has bypassed the old procedure and want subscribers to deal directly with them. They'll send you a post card about six months before expiration and ask that you send your payment directly to them. The problem is that these postcards are usually trashed along with the rest of the advertising which makes it difficult to respond. Members can send payment to the club treasurer as I have been renewing subscriptions. Checks in the amount of \$32.95 (club member rate) should be made payable to HAS to allow processing via the internet. The publisher has been muddying the water by offering "special deals to preferred subscribers." The card I received requested a \$34.95 payment for an annual subscription along with a Mars DVD. They appear to be lowering their standard subscription rate, but not that for astronomy club members. I noticed that they are also charging \$37.95 in some cases. Be advised. New subscriptions will still be required to be done through the club. Two year subscriptions are permissible, but the club rate charges is \$65.95.



Jim MacDonald

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VisibleCamera Images from LCROSS Shepherding Spacecraft



WONDER WHY YOU DIDN'T SEE ANYTHING?

Shown is the result of three co-added, stretched LCROSS Visible Light Camera images taken shortly after impact (with 15 seconds following impact). The extent of the plume at 15 sec is approximately 6-8 km in diameter. (see *President's Message* pg. 1)

Credit: NASA



Place stamp
here. Post
Office will not
deliver mail
without proper
postage