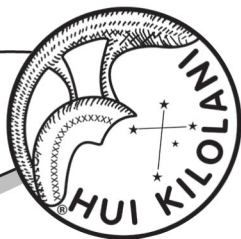


The Astronews



Volume 57, Issue 1

January 2009

www.hawastsoc.org

President's Message

by Chris Peterson

On a recent trip to Arizona, I was able to visit the Lunar and Planetary Laboratory (LPL) in the Department of Planetary Sciences at the University of Arizona in Tucson. It is the home of the HiRISE team. The HiRISE (High Resolution Imaging Science Experiment) instrument is currently operating aboard the Mars Reconnaissance Orbiter (MRO) at Mars. It is essentially a CCD attached to a telescope with an $f/24$ 0.5-meter mirror. There is a replica of the instrument at the LPL, and as I looked at it someone pointed out that the spider vanes are attached tangentially to the secondary mount instead of the more common radial attachment. I think this is supposed to make the secondary more stable. I wonder what the diffraction spikes would look like?

HiRISE is capable of imaging through blue-green, red, and near infrared filters with a ground resolution of 30 cm/pixel from 300 km altitude. The swath width on the ground is >6 km in the red filter and >1.2 km in the other two filters. Even

(Continued on page 11)

Upcoming Star Parties

Kahala/Waikele Party	Jan. 3
Club Party-Dillingham	Jan. 17
Public Party- Dillingham	Jan. 24
Kahala/Waikele Party	Jan. 31

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Upcoming Events:

☆ The next meeting is at 7:30 p.m. on **Tuesday, Jan. 6** at the Bishop Museum.

☆ Bishop Museum's next planetarium show with **Barry Peckham** is Friday, **Jan. 2** at 7:00 p.m.

www.bishopmuseum.org/calendar

☆ The next Board Meeting is Sunday, **Jan. 4** at 3:30 p.m. at the POST building at UH.



CELEBRATING THE YEAR OF ASTRONOMY IN HAWAII

If there ever was a time to start getting involved in amateur astronomy, it's this upcoming year!

Because of the publicity surrounding the many activities and events taking place in the Year

of Astronomy (IYA), there may be an increase of public awareness for the hobby as well. Gareth Wynn-Williams and Kathleen Robertson from the Institute for Astronomy will attend this month's HAS meeting to discuss possible collaboration opportunities.

One possibility is utilizing the graduate student volunteers from the Institute at the January star parties in town and at Dillingham. A press release has been sent out to the media calling attention to the Club's public star parties as part of HAS involvement in the Year of Astronomy. If anyone has anything else to contribute, please bring your ideas to the next meeting in January! ☆

ISS VIEWING OPPORTUNITIES

Early January brings some nice opportunities for ISS watching. The station has just celebrated 10 years in orbit! Don't forget to check the web-site before going out, though, since times can change.



Date	Mag	Starts			Max. altitude		
		Time	Alt.	Az.	Time	Alt.	Az.
8 Jan	-0.7	06:29:04	10	NNW	06:31:42	30	NE
9 Jan	-1.4	06:55:38	10	WNW	06:58:20	34	SW
10 Jan	-1.1	05:49:14	33	NNE	05:49:47	37	NE

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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.

(Jim McDonald substituting for Gretchen West)

President Chris Peterson called the December 2, 2008, meeting of the Hawaiian Astronomical Society to order at 7:35 p.m. There were 26 members present and no visitors.

Current Triple Conjunction: Chris began the meeting discussing the conjunction of Jupiter, Venus and the Moon. Television News 8 reporter, Zahid Arab, called Chris to ask for information on the conjunction. Chris provided details including when the closest encounter would be. Still, HAS members reported that some erroneous information was presented in the news casts.

International Year of Astronomy - 2009: The club received a request from Ricardo Cardoso Reis of the outreach unit at the University of Porto, Portugal, who is coordinating a global IYA2009 activity called "Dawn of IYA2009." For this activity they propose that starting at local noon, 1st of January, 2009, everyone with means to (safely) observe the Sun, gather outside science centers, town halls, shopping centers, or simply your own street, and present the Sun and the IYA2009 to the world. Professional and hobby astronomers are encouraged to participate in what will be the largest Sun observation event in the world.

All registered participants will download a set of instructions on how to safely observe the Sun, a IYA2009 logo to place on their equipment and/or a small poster, which should be present during the activity. <http://www.astro.up.pt/caup/eventos/dawn2009/index.php> is a temporary web address for this group.

Astronews is in good hands: Chris recognized Carolyn Kaichi for her outstanding job in producing the December Astronews. Thanks also to Richard Frey for his stellar effort in mailing them with such a short turnaround.

New Mercury Crater Named: John Gallagher mentioned that a crater on Mercury was named after a Hawaiian artist who died 112 years ago. He was Joseph Kaho'oluhi Nawahiokalaniopuu. He was also a teacher, legislator, lawyer, journalist, and cabinet member to Queen Liliuokalani. Chris clarified that the crater is located in Calloris Basin and named Nawahi Crater. Names on different planets will be based on different themes. Objects on Mercury will be given names based on people who were in the arts or humanities.

Light Pollution: John Gallagher told the group that he wrote a letter to various legislators and the city highlighting the featured article in the November, 2008, National Geographic magazine dealing with light pollution. He urged the recipients to work towards economizing the use of nighttime lighting in public areas. The only response received to date was a letter from Mayor Hannemann saying that the city was working towards replacing offending street lights. John also said that his Neighborhood board was preparing a 5-year development plan and that he was trying to get light pollution included.

Election of Club Officers: John Sandor, in his role of officiating in the election of club officers, recognized the current candidates, as published in the current Astronews, and asked for additional nominations. As there were none, it was moved and seconded that a vote be held. John basically asked if anyone opposed the list of candidates. No objections were raised and it was declared that the current slate be elected.

President-Chris Peterson; Vice-President-Barry Peckham; Treasurer-Jim MacDonald; Secretary-Gretchen West; Editor-Carolyn Kaichi; Members At-Large-John Gallagher and Harry Zisko

New Mexico Slide Show: Barry presented a slide show of his recent trip to New Mexico. Malcolm Park, an imager from Canada with Stephanie's group took the

(Continued on page 7)

SUPERSTAR HIDE AND SEEK

by Dr. Tony Phillips

It sounds like an impossible task: Take a star a hundred times larger in diameter and millions of times more luminous than the Sun and hide it in our own galaxy where the most powerful optical telescopes on Earth cannot find it.

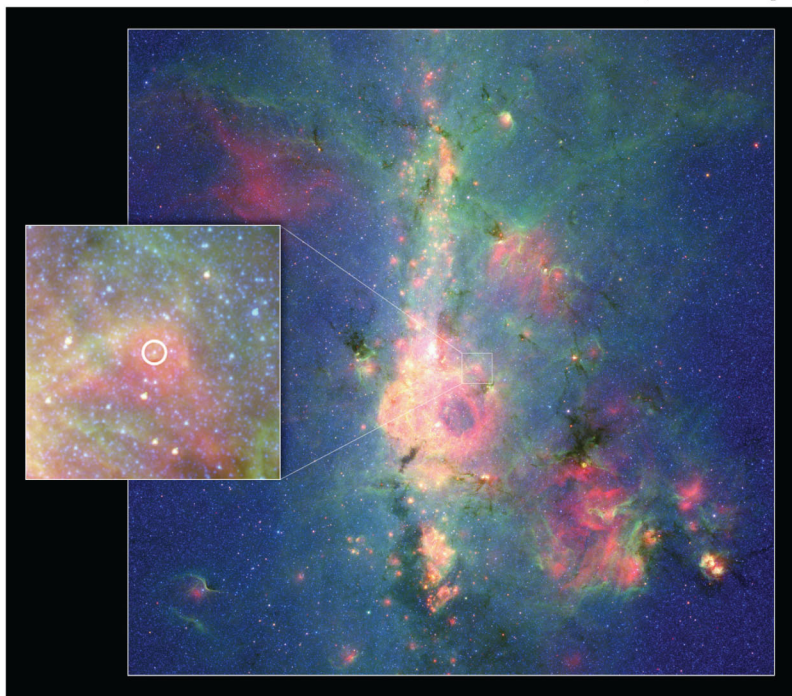
But it is not impossible. In fact, there could be dozens to hundreds of such stars hiding in the Milky Way right now. Furiously burning their inner stores of hydrogen, these hidden superstars are like ticking bombs poised to 'go supernova' at any moment, possibly unleashing powerful gamma-ray bursts. No wonder astronomers are hunting for them.

Earlier this year, they found one.

"It's called the Peony nebula star," says Lidia Oskinova of Potsdam University in Germany. "It shines like 3.2 million suns and weighs in at about 90 solar masses."

The star lies behind a dense veil of dust near the center of the Milky Way galaxy. Starlight traveling through the dust is attenuated so much that the Peony star, at first glance, looks rather dim and ordinary. Oskinova's team set the record straight using NASA's Spitzer Space Telescope. Clouds of dust can hide a star from visible-light telescopes,

(Continued on page 9)



The "Peony Nebula" star is the second-brightest found in the Milky Way Galaxy, after Eta Carina. The Peony star blazes with the light of 3.2 million suns.

Upcoming School Star Parties 2009

Fri.	1/23	Mililani Middle School Science Night 6-8PM
Fri.-Sun.	3/27-29	KMCAS for Hawaii Hikers
Fri.	4/17	Hanalei Middle School (Makiki) approx.100
Fri.	4/24	Pearl Harbor Elementary
Wed.	4/29	Lanakila Elementary
Thurs.	4/30	Ala Wai Elementary

If you are interested in helping out at a school star party, sign up at the HAS meeting or contact the star party coordinator, FORREST LUKE at 623-9830 or lukef003@hawaii.



Sleepless

Sleepless 4 AM
The Hunter trods a dark sky
Gone all thoughts of sleep!

Cosmic Haiku by
Clare Levin

December Nights

Silvery shining moon
Watches the celestial pair
Dance across the sky

Tarantula Nebula

Spider's woven web
A huge maze of tangled threads
What a wondrous sight!

Meteor Log- Jan. 2009

by Mike Morrow

The Quadrantids will be O.K. as the Moon will be first quarter and the New Moon will assist for checking for new minor showers.

Saturday, January 3, the Quadrantids

Radiant 15h20m +49 deg. The maximum is forecast for about 2h 50 m AM local time (12h 50m UT). Rates are variable running from about 30 to 100+ an hour. The Moon is 1st quarter on the 4th and on the 3rd it will set about local midnight.

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










- Jan 2**, 03h, M 4.1° NNW of Uranus
(67° from sun in evening sky)
Jan 14, 21h, M 5.7° SSW of Saturn
(124° from sun in morning sky)
Jan 27, 03h, M 1.6° NNW of Neptune
(15° from sun in evening sky)
Jan 29, 03h, M 4.2° NNW of Uranus
(40° from sun in evening sky)
Jan 29, 23h, M 2.5° NNW of Venus
(42° from sun in morning sky)

Mercury, Mars, and Jupiter are closer than 15° from the sun when near the moon in January.

Other Events of Interest

Times are Hawaii Standard Time

- Jan 3**, Quadrantid meteors.
Very favorable year.
Jan 3, 14h, Earth at perihelion (nearest the sun). Distance of 0.98327 a.u.
Jan 4, 04h, Mercury at greatest elongation (19.3° east of the sun in evening sky)
Jan 9, 20h, Moon at perigee only 16.7 hrs before a full moon – high tides expected.
Jan 10, 12:27h, Moon Full
Jan 14, 11h, Venus at greatest elongation (47.1° east of the sun in evening sky)
Jan 20, 06h, Mercury at inferior conj. with sun (Passes into morning sky)
Jan 22, 11h, Venus 1.2° NNW of Uranus (47° from sun in evening sky)
Jan 23, 20h, Jupiter at conjunction with sun (Passes into morning sky)
Jan 25, 21:55h, Moon New

 Mercury has a favorable evening apparition the first few days of January.	 Venus is high in the western sky at sunset all month. Reaches greatest elongation on Jan 14.	 Mars is still too close to the sun for viewing in January.
 Jupiter reaches conjunction with the sun on Jan 23 and passes into the morning sky. Too close to the sun to be viewed this month.	 Saturn rises in mid-evening and shows very narrow rings.	 Uranus is near Venus in the western sky at sunset.
 Neptune is getting too low in the western sky for easy viewing after sunset.	 Dwarf Planet Pluto reached conjunction with the sun last month and is still too close to the sun for viewing.	 Dwarf Planet Ceres will reach a favorable opposition next month and has already brightened to mag +7.5.

(Minutes continued from page 3)

pictures including a tour of the city of Roswell. The video also included images of the zodiacal light and flashing images of the star Sirius.

January Kauai Trip: Barry announced plans for the next trip to Kauai on January 23-24. He plans two nights of viewing at Barking Sands with the KEASA group and to rent a cottage at Waimea Plantation Cottages. Anyone wishing to join the group should contact Barry for details.

Publicity of upcoming sky viewing events: Barry plans to contact Kayla Rosenfeld at Hawaii Public Radio news department in hopes of having our Kahala/Waikele star parties announced on the radio.

Barry gave a quick review of a book entitled: *First Star I See Tonight, an Exploration of Wonder* by Robert L. Eklund. The book is a compilation of astronomy haiku.

Chris to Attend Meeting: Chris said that he will be attending the yearly meeting of representatives of the various Regional Planetary Data Centers to be held at the University of Arizona in Tucson.

Night Sky Network: Teleconferencing held each month can be listened to via telephone at a single number through December of 2009. This number is 888-455-9236. There is also an MP3 file that can be downloaded for listening at any time. Contact John Gallagher for procedures and signing up.

General Discussion: Tom Broussard pointed out that he read where Enceladus, one of Saturn's moons, is apparently giving off water vapor and is perhaps a location of possible life. Chris cited Europa as a similar case at Jupiter that seems to also have a large body of water. However, in this latter case there is a thick layer of ice over the water which may make getting to it more difficult.

As there was no further business, the meeting was adjourned at 8:40 p.m. Refreshments were served.



ISS Expedition 18 crew images beautiful weather over the Hawaiian islands on 4 Dec 2008 at 21:20 GMT. Exposure was 1/500th of a sec; f/4.5 with a 28mm lens, ISO 100.

Courtesy: NASA

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1	28	29 Epoxi, Earth Flyby Moon, Jupiter, Mercury Conjunction	30	31 31-5 Galileo's Legacy	1 International Year of Astronomy 2009	2	3 Quadrantids Meteor Shower Peak 6:30p Kahala & Waialeale Public Star Parties
Week 2	4 Earth At Perihelion (0.983 AU From Sun)	5 Comet P/2008 X4 (Christensen) Closest Approach To Earth (0.408 AU) M 11.5*	6 7:30p HAS Meeting	7	8 Comet P/2003 K2 (Christensen) Perihelion (0.534 AU) M 11.28*	9	10
Week 3	11 Full Moon	12	13	14 Venus At Its Greatest Eastern Elongation (47 Degrees)	15 2002 AO11 0.0197 AU from Earth M 16.6	16	17 Asteroid 136849 (1998 CS1) Near-Earth Flyby (0.029 AU) M 12.5 6:30p Club Star Party
Week 4	18	19	20	21	22	23 6p Mililani Middle School Science Night	24 6:30p Dillingham Public Star Party
Week 5	25 For more events look here.	26 Chinese New Year Comet 144P/Kushida Perihelion (1.439 AU) M 13* New Moon	27	28	29	30	31 6:30p Kahala & Waialeale Public Star Parties

HAS Yahoo Group

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

but Spitzer is an infrared telescope able to penetrate the dusty gloom.

"Using data from Spitzer, along with infrared observations from the ESO's New Technology Telescope in Chile, we calculated the Peony star's true luminosity," she explains. "In the Milky Way galaxy, it is second only to another known superstar, Eta Carina, which shines like 4.7 million suns."

Oskinova believes this is just the tip of the iceberg. Theoretical models of star formation suggest that one Peony-type star is born in our galaxy every 10,000 years. Given that the lifetime of such a star is about one million years, there should be 100 of them in the Milky Way at any given moment.

Could that be a hundred deadly gamma-ray bursts waiting to happen? Oskinova is not worried.

"There's no threat to Earth," she believes. "Gamma-ray bursts produce tightly focused jets of radiation and we would be extremely unlucky to be in the way of one. Furthermore, there don't appear to be any supermassive stars within a thousand light years of our planet."

Nevertheless, the hunt continues. Mapping and studying supermassive stars will help researchers understand the inner workings of extreme star formation and, moreover, identify stars on the brink of supernova. One day, astronomers monitoring a Peony-type star could witness with their own eyes one of the biggest explosions since the Big Bang itself.

Now that might be hard to hide.

Find out the latest news on discoveries using the Spitzer at www.spitzer.caltech.edu. Kids (of all ages) can read about "Lucy's Planet Hunt" using the Spitzer Space Telescope at spaceplace.nasa.gov/en/kids/spitzer/lucy.

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



**2009 HAS T-Shirts
are Here!**

Only \$15

• Light Blue
SIZES SM - 2XL

Available in January!
(see Jim MacDonald)



HAS Financial Report for the month ending as of Dec. 15, 2008

Initial Balance:	\$4,499.28
<i>Receipts:</i>	
Calendars	32.50
Dues Received	574.00
Donations	18.10
Magazine Payment	301.80
T-Shirt Sales	15.00
Total Income:	\$941.40
<i>Expenses:</i>	
Astronews	157.85
Bank Charges	2.00
Equipment - Rubber Stamp	14.71
Magazine Subscription	435.31
P.O. Box Rent	86.00
Postage	2.36
Refreshments	12.83
Total Expenses:	\$711.06
Final Balance	\$4,729.62

The club membership increased by four this month. The new members are **Blanche Niksich, Jerry Harris, Michael Sarrazin and Lorna Lee**. A special thanks to **Susan Girard, Gary Ward and Gary Shimazu** for their donations. Thanks also and clear skies to all renewing their membership.

NOTICE:

HAS will publish a complete listing of Club members in the April 2009 issue of the Astro-news. This publication is required by Club by-laws, Article III, Section 2 Para C(e) and Article VIII, Section 1B. Unless notified otherwise, this list will include all member's names, addresses, and phone numbers. If you wish to have some or all of your data excluded, please notify the Club Treasurer, Jim MacDonald before 15 March 2009 by sending him an e-mail at jim.macd@Hawaiiantel.net or by written notice to the Club's post office box listed on the back page of this newsletter. Please be advised that this listing is intended for Club members' personal use only in contacting one another. It is not to be used for any commercial or solicitation purposes. With the exception of membership in the Astronomical League, HAS does make this list available to, nor do we sell its contents to anyone for any purpose.

Please respect our members' rights to privacy!




(President continued from page 1)

under the most optimistic scenario, HiRISE will not be able to image more than a few percent of the planet's surface before the mission ends.

The actual coverage will be less, partly because some areas will be imaged multiple times. Partly this is to look for changes over time (for example, in the polar regions where water and carbon dioxide frost come and go each year). Another reason is that selected regions are being imaged at varying look angles to enable stereoscopic images to be produced. Shortly before my visit, LPL released hundreds of anaglyphs (the kind visible in 3-D with blue/green glasses). New automated routines allow these to be produced more rapidly than in the past, and more releases are planned for later in the mission. To view them see <http://hirise.lpl.arizona.edu/anaglyph/>.

MRO has recently completed its primary two-year science mission and has returned 73 terabits of science data, more than all earlier Mars missions combined, so it could certainly be declared a success. If the spacecraft remains healthy, though, it could continue to produce important results for several more years. Stay tuned.

Chris 

NASA'S TOP SCIENCE, EXPLORATION AND DISCOVERY STORIES OF 2008

NASA landed on Mars, photographed distant worlds, added to the International Space Station, took part in a lunar science mission with India and made major progress toward returning astronauts to the moon as the agency celebrated its 50th birthday in 2008. Here on Earth, NASA researchers recorded the continued decline of Arctic sea ice, won awards for aviation breakthroughs, discovered the cause of storms that brighten the Northern Lights and helped create state-of-the-art swimsuits worn by Olympic gold medalists. Ten of the top accomplishments of America's space agency in its golden anniversary year are listed below. Votes are still be accepted at http://www.nasa.gov/news/08_YIR_poll.html



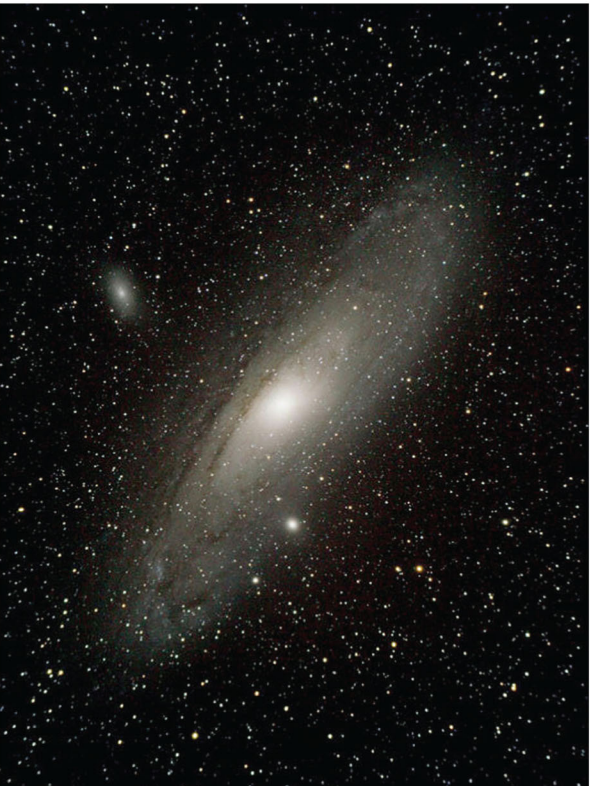
What Do You Think?

Which is the biggest NASA accomplishment of 2008?

- ☐ International Space Station Nears Completion on 10th Anniversary
- ☐ Phoenix Wraps Up Successful Mission to Mars
- ☐ Ares I Rocket Passes Important Design Milestone
- ☐ Arctic Sea Ice Decline Continues
- ☐ THEMIS Satellites Discover What Triggers Eruptions of Northern Lights
- ☐ Hubble Finds Planet Circling A Distant Star
- ☐ NASA Completes First Tests on Next-Generation Rocket Engine
- ☐ NASA Team Awarded Collier Trophy
- ☐ NASA Returns to the Moon With Instruments on Indian Spacecraft
- ☐ NASA Tests Help Record-Breaking Olympians Rocket Through Water
- ☐ Other

[View Results](#)

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Credit: HAS Club Member STEVE CHUN

M31 Galaxy- 18.2 min exposures, taken at Dillingham Airfield (9/20/2008),
Scope mounted on a Vixen Sphinx SXW, taken on a Meade 80mm Series 5000
APO with an unmodified Canon XTi Prime Focus at ISO 800, Stacked using
ImageSPUs and final processing using PhotoShop.

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