The Astronews

HUI KILOLANI

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www.hawastsoc.org

President's Message by Chris Peterson

Much of our understanding of the fundamental nature of the universe is related to astronomy. One example is our knowledge of the origin of elements. Astrophysicists in the 20th century developed models that explained how heavier elements could be produced from hydrogen in stars through fusion and in supernovae. Not all of the details are yet understood, however.

A team from MIT and elsewhere recently used the Hubble Space Telescope to discover the element tellurium in three 12 billion-year-old stars. Tellurium is rare on Earth and is seldom found in stars. It is thought that it can only form from large supernovae during what is called the r-process. The fact that it exists in these ancient stars indicates that these special supernovae were already occurring before that time.

The abundance of tellurium in relation to some other heavy elements was the same in all three stars, which are located in the halo of the Milky Way. These proportions are the same as predicted by models of the core collapse type of supernova. These findings provide more confidence in those models. The team will continue to look for other elements. Selenium, for example, which is similar to tellurium, has never been detected outside our solar system.

Closer to home, Mars comes to opposition on March 3rd, just three days before our monthly meeting. Although it is nearly as far from the Sun as it gets, and therefore about as small in the eyepiece as it can be at opposition, it is still close enough to provide some interesting views. If the weather cooperates, we plan to do a little Mars observing at the meeting. Bring your telescope to the meeting if you'd like, and we'll take a look. (Don't expect to find any tellurium.)

Chris

Inside this issue:

Upcoming Events:

☆The next meeting is 7:30PM on **Tues., Mar 6** at the Bishop Museum Planetarium.

☆Bishop Museum's next planetarium shows with **Barry Peckham** are Friday, **Mar 2 & 16** at 8:00 p.m.
www.bishopmuseum.org/calendar

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

Up To The Minute:

NOTE FROM THE CLUB TREASURER:

When copies of the Astronews are returned as undeliverable I am reminded of the need for members to inform the club of address changes. Processing such changes couldn't be any easier. Send the treasurer an e-mail with your new address and it's done. No filling out postal forms or paying for postcards.

Members addresses are kept confidential and only shared with the Astronomical League (of which we are a member) for their use in mailing the League's Reflector magazine. This need was also reinforced when I was recently notified of address changes by the Astronomical League but which had not been sent to HAS.

Updating information also applies to members receiving the electronic version of the newsletter. If you want your copy of the Astronews delivered on time, please make sure I have your current e-mail address. Remember, anyone wishing to receive their newsletter electronically, need only inform me of your wishes. Your e-copy will be received earlier than by snail mail, in color, plus it will save the club the cost of printing and postage. If you have any questions, ask and I'll respond as quickly as I can.

Jim MacDonald

Drawing of Messier 51 by William Parsons, the Third Earl of Rosse, 1845.

SUE GIRARD'S MESSIER CHALLENGE

Club member Sue Girard has put together a list of Messier objects that she is offering to anyone who wants to take the challenge of spotting throughtout the evening into the morning hours. It is quite substantial so if you are interested, contact the Editor or Sue directly.

Hawaiian Astronomical Society
P.O. Box 17671
Honolulu. HI 9681-0671

President
Chris Peterson
956-3131
chrisp@higp.hawaii.edu

Vice-President
Leslie Galloway
636-1024
gallowayL001@hawaii.rr.com

Secretary
Gretchen West
282-1892
gwest002@hawaii.rr.com

Treasurer
Jim MacDonald
371-8759
jim.macd@hawaiiantel.net

The Astronews Editor
Carolyn Kaichi
551-1030
c.kaichi2001@gmail.com

Board Members at-Large
Sue Girard
341-6114
socrux@hawaiiantel.net

April Lew
734-2705
stardustlounge@hotmail.com

HAS Webmasters
Peter Besenbruch
peter@besenbruch.info
Harry Zisko
harryz@pobox.com

School Star Party Coordinator
John Gallagher
gallaghej002@hawaii.rr.com

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.

Winter Dog Treats

by Paul Lawler

The poet Robert Frost wrote:

The great Overdog
That heavenly beast
With a star in one eye
Gives a leap in the east.

He dances upright
All the way to the west
And never once drops
On his forefeet to rest.

I'm a poor underdog,
But to-night I will bark
With the great Overdog
That romps through the dark.

Of course the star of Canis Major is Sirius, but there's much more to see. Let's take a look at some of the lesser known dog treats.

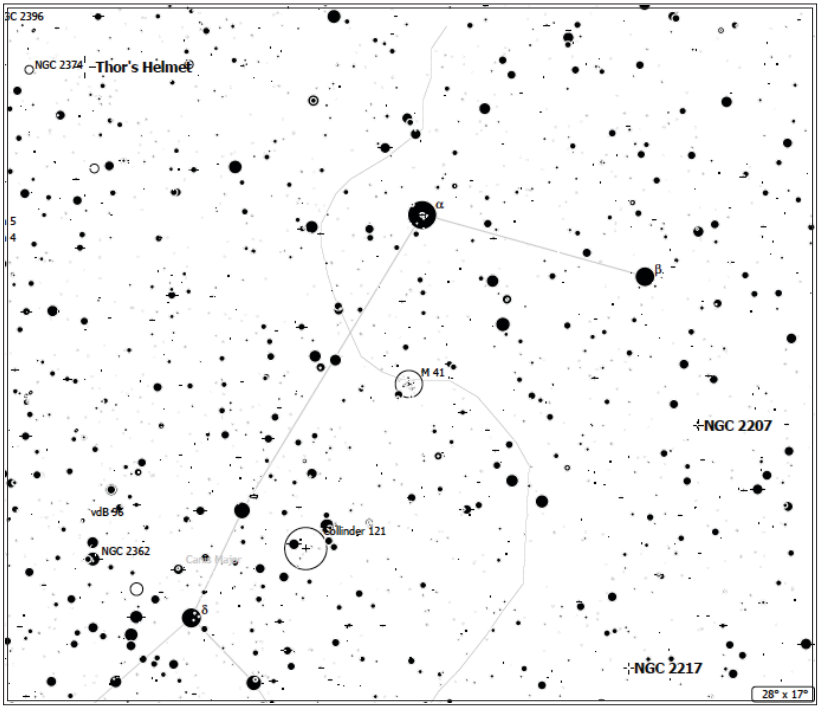
Since my favorite things to look at are generally deep sky objects, there are a couple of great contenders in Canis Major. All of these require dark skies and large apertures, but if you meet those requirements, they are well worth observing.

In fact one of these is one of my all time favorite objects. NGC 2207 and IC 2163 are colliding spiral galaxies first discovered by John Hershel in 1835. They are approximately 80 million light years distant. They have apparent magnitudes of 12.2 and 11.6, respectively.

NGC 2217 is a barred spiral galaxy. At Mag 12.0 it is a shade brighter than NGC 2207, but the apparent size is also larger, spreading the light over a larger area (please be aware that these galaxies are VERY challenging objects).

Another deep sky treat is NGC 2359, also known as, "Thor's Helmet." This is an emission nebula about 30 light years across and 1500 light years from us. It's distinctive shape is eerily reminiscent of a horned norse helmet. At its heart is a Wolf-Rayet star, which could go supernova at any moment.

You have probably already guessed that this is one of my favorite objects in the winter sky. ☆



NASA's Space Place

The Hidden Power of Sea Salt, Revealed

by Dauna Coulter

Last year, when NASA launched the Aquarius/SAC-D satellite carrying the first sensor for measuring sea salt from space, scientists expected the measurements to have unparalleled sensitivity. Yet the fine details it's revealing about ocean saltiness are surprising even the Aquarius team.

"We have just four months of data, but we're already seeing very rich detail in surface salinity patterns," says principal investigator Gary Lagerloef of Earth & Space Research in Seattle. "We're finding that Aquarius can monitor even small scale changes such as specific river outflow and its influence on the ocean."

Using one of the most sensitive microwave radiometers ever built, Aquarius can sense as little as 0.2 parts salt to 1,000 parts water. That's about like a dash of salt in a gallon jug of water.

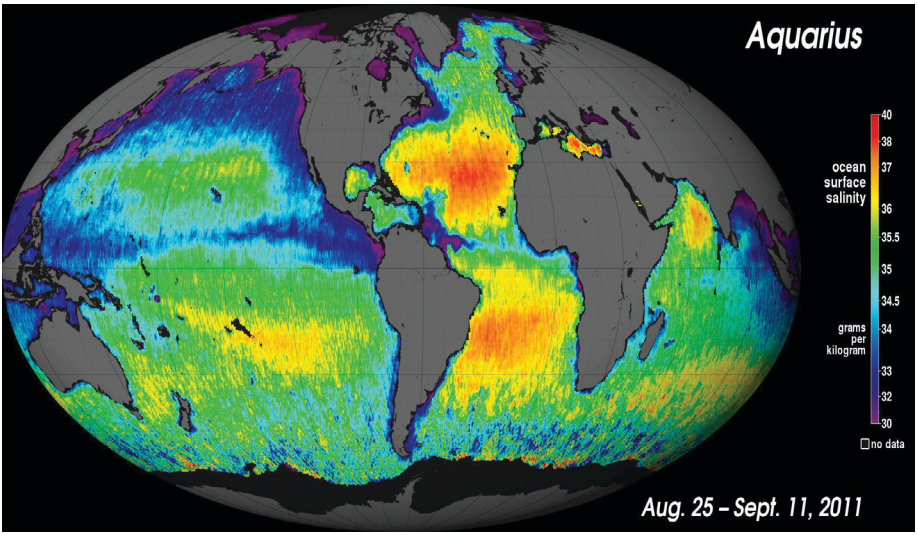
"You wouldn't even taste it," says Lagerloef. "Yet Aquarius can detect that amount from 408 miles above the Earth. And it's working even better than expected."

Salinity is critical because it changes the density of surface seawater, and density controls the ocean currents that move heat around our planet. A good example is the Gulf Stream, which carries heat to higher latitudes and moderates the climate.

"When variations in density divert ocean currents, weather patterns like temperature and rainfall are affected. In turn, precipitation and evaporation, and fresh water from river outflow and melt ice determine salinity. It's an intricately connected cycle."

The atmosphere is the ocean's partner. The freshwater exchange between the at-

(Continued on page 9)



Map of global ocean salinity produced from only two and a half weeks of Aquarius data. (Image altered to fit on page - Editor) Image courtesy: NASA

Meteor Log

by Tom Giguere

If you need a break from those late night meteor observing sessions, March might be a good month to skip.
The only shower this month is the sparse and southerly γ-Normids (GNO). The history of this shower dates back to 1929, when a New Zealander named Ronald McIntosh identified seven meteors from the radiant. Confirming observations followed in 1953 and 1969. With these few observations this shower is clearly not one of the big "players". Since the radiant is so far south we in Hawaii have a better chance to catch a few than do mainland observers.

First Quarter	*Full Moon*	*Last Quarter*	*New Moon*
Mar. 1&30	**Mar. 8**	**Mar. 15**	**Mar. 22**

Shower	Activity	Max Date	λ 2000	Radiant α	Radiant δ	V∞ km/s	*r*	ZHR
γ Nomids (GNO)	2/25 - 3/22	Mar. 14	354°	239°	-50°	56	2.4	6

If you observe this month's shower or any shower – email your observation!
Tom Giguere, 808-782-1408, Thomas.giguere@yahoo.com
Mike Morrow, PO Box 6692, Ocean View, HI 96737.

Planets Close To the Moon

Times are Hawaii Standard Time

Mar 7, 14h, M 9.1º SSW of Mars
(172º from sun in midnight sky)

Mar 10, 17h, M 5.9º SSW of Saturn
(142º from sun in morning sky)

Mar 19, 16h, M 5.6º NNW of Neptune
(28º from sun in morning sky)

Mar 25, 13h, M 3.0º N of Jupiter
(36º from sun in evening sky)

Mar 26, 11h, M 2.0º SSE of Venus
(46º from sun in evening sky)

Mercury and Uranus are closer than 15º from the sun when near the moon in March.

Other Events of Interest

Times are Hawaii Standard Time

Mar 4, 04h, Comet Garradd C/2009 P1 at opposition
Mar 3, 10h, Mars at opposition
Mar 4, 23h, Mercury at greatest elongation (18.2º East of the sun in evening sky)
Mar 5, 07h, Mars nearest to the earth (Peak brightness of -1.2 magnitude)
Mar 7, 23:41h, Moon Full
Mar 11, Mainland changes from standard time to daylight savings time
Mar 13, 12h, Venus 3.0º NNW of Jupiter (46º from sun in evening sky)
Mar 19, 19:31h, Spring (or vernal) equinox
Mar 21, 09h, Mercury at inferior conj. with sun (Passes into morning sky)
Mar 22, 04:38h, Moon New
Mar 24. 08h, Uranus at conjunction with sun (Passes into morning sky.)
Mar 26, 22h, Venus at greatest elongation (46º East of the sun in evening sky)

☿ Mercury

Makes a fine evening appearance during the first week of March, with greatest elongation on Mar 4.

♀ Venus

Venus shines brightly in the west about 45º from the sun and reaches greatest elongation on Mar 26.

♂ Mars

Reaches opposition on March 3 and is closest to earth on March 5 at magnitude -1.2.

♃ Jupiter

Shines brightly in the evening sky along with even brighter Venus. Passes Venus on March 13.

♄ Saturn

Saturn rises in the early evening and is well placed for viewing by midnight.

♅ Uranus

Reaches conjunction on March 24 and is too close to the sun to observe in March.

♆ Neptune

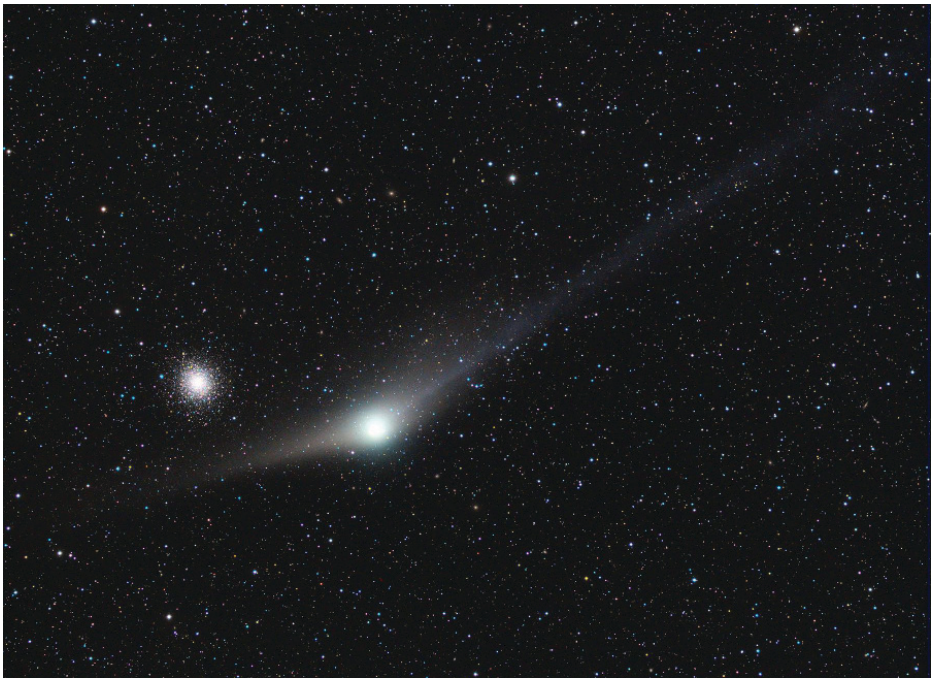
Neptune is still quite close to the sun in the morning sky and would be difficult to observe this month.

♇ Dwarf Planet Pluto

Rises a couple of hours before the sun - will be better observed later in the year.

Comet Garradd C/2009 P1

Reaches opposition on March 1 at about magnitude 6 in Ursa Minor. ***(see page 7 for image)***



Sweeping slowly through the constellation Hercules, ***Comet Garradd (C2009/P1)*** passed with about 0.5 degrees of globular star cluster M92 on February 3. From APOD (Astronomy Picture Of The Day) Feb. 4, 2012. Comet Garradd is 12.5 light-minutes from planet Earth, arcing above the ecliptic plane.
Image Credit & Copyright: Rolando Ligustri (CARA Project, CAST)

A Cure For Depression

by Mel Levin

When I'm lonely-all self centered and sad,
There is one thing that always makes me glad.
It has the agility to make my keel straight,
It has the ability to make all worries abate.
What is this wondrous panacea that erases darkness and dread?
I'll tell you now, it's the sky overhead.
It's such a thrill to see our universe gleam with such wonders beyond my wildest dream.
And to this I must in truth confess-of all the galaxies, comets, clusters and planets—
I like the double cluster in Perseus the best.
Now please understand this is my choice—my wife's favorites are of a different voice.
In the north she prefers the Veil because it's so delicate and frail.
While her overwhelming best in the entire sky goes to that beast of all beasts—
That ominous, carnivorous Tarantula.
Oh that Tarantula!
With its sinewy tentacles, so rich in starbirth,
The brightest and biggest nebula in the sky—she is in awe of it, and so am I.

☆

List View Past Events < **March 2012** > Upcoming Events Add/Log Event

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26	27	28	29	1	2	3 8:00 AM Science Symposium Sunset: 6:38 PM
4	5	6 7:30 PM Club Meeting	7	8	9	10 Sunset: 6:41 PM
11	12	13 8:00 PM Globe at Night	14 8:00 PM Globe at Night	15 8:00 PM Globe at Night	16 8:00 PM Globe at Night 6:30 PM Cub Scouts SP	17 8:00 PM Globe at Night 6:15 PM Club Star Party (D) Sunset: 6:43 PM
18 8:00 PM Globe at Night	19 8:00 PM Globe at Night	20 8:00 PM Globe at Night	21 8:00 PM Globe at Night	22 8:00 PM Globe at Night	23 6:30 PM Mililani Ike SP	24 6:15 PM Public Star Party(D) Sunset: 6:45 PM
25	26	27	28	29	30 7:00 PM Hokulani Star Party	31 6:15 PM Public Star Party(K) 6:15 PM Public Star Party(G) Sunset: 6:47 PM

A Space Odyssey - An imaginary journey to the Constellation Sagittarius. A moderator of the Yahoo NexStar group, Leonard Mercer, who resides in Malta, uses his own astrophotography images to format a presentation of an imaginary journey to the center of the Milky Way Galaxy.

It is inspiring and mesmerizing. According to the author, when viewing the original on a large screen TV the effect is 3D. The YouTube version might not have great resolution. (Yipes - where is the original?) Here's the link: ***http://www.youtube.com/watch?v=Ep0nlhWZXLc***
.

Clear Nights,
John G.

(Space Place continued from page 4)
mosphere and the ocean dominates the global water cycle. Seventy-eight percent of global rainfall occurs over the ocean, and 85 percent of global evaporation is from the ocean. An accurate picture of the ocean's salinity will help scientists better understand the profound ocean/atmosphere coupling that determines climate variability.

"Ocean salinity has been changing," says Lagerloef. "Decades of data from ships and buoys tell us so. Some ocean regions are seeing an increase in salinity, which means more fresh water is being lost through evaporation. Other areas are getting more rainfall and therefore lower salinity. We don't know why. We just know something fundamental is going on in the water cycle."

With Aquarius's comprehensive look at global salinity, scientists will have more clues to put it all together. Aquarius has collected as many sea surface salinity measurements in the first few months as the entire 125-year historical record from ships and buoys.

"By this time next year, we'll have met two of our goals: a new global map of annual average salinity and a better understanding of the seasonal cycles that determine climate."

Stay tuned for the salty results. Read more about the Aquarius mission at aquarius.nasa.gov.

Other NASA oceanography missions are Jason-1 (studying ocean surface topography), Jason-2 (follow-on to Jason-1), Jason-3 (follow-on to Jason-2, planned for launch in 2014), and Seawinds on the QuikSCAT satellite (measures wind speeds over the entire ocean). The GRACE mission (Gravity Recovery and Climate Experiment), among its other gravitational field studies, monitors fresh water supplies underground. All these missions, including Aquarius, are sponsors of a fun and educational ocean game for kids called "Go with the Flow" at spaceplace.nasa.gov/ocean-currents.

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

Meeting Minutes

by Gretchen West

President Chris Peterson called the February 7, 2012 meeting of the Hawaiian Astronomical Society to order at 7:34p.m. The meeting was held at the Bishop Museum Planetarium. There were 26 members and two visitors in attendance.

Associated Lectures: There is a lecture tentatively scheduled for the Hawaii Space Lecture Series on February 28, 2012. University of Hawaii-based NASA Planetary Data Center Director, Dr. Peter Mouginis-Mark will speak on "Venus, the Nearest Earth-like Planet: Geology of Venus and the Case for a New Mission to Earth's Twin." Contact NASA PRPDC at 808-956-3132 or go to http://www.higp.hawaii.edu/prpdc. Lecture will be at the NASA Pacific Regional Planetary Data Center, room 544 in the Pacific Ocean Science and Technology (POST) building at UH Manoa.

Chris stated that with Mars coming up earlier in the evening, it would be nice to set up a telescope on the observing deck at out next meeting if the weather is cooperative.

Chris spoke on the Kepler Mission that is attempting to detect earth-size planets around other stars in their habitable zone. So far the mission has detected 11 planetary systems with 26 planets.

Star Light Reserve Committee: Chris attended the December 14, 2011 meeting of the Starlight Reserve Committee. He reported that the committee finalized their recommendations on the bill, SB 2402. The bill focuses on the replacement of lighting with full cut-off fixtures. Future considerations for the committee will be on lighting in the City & County of Honolulu. Upgrades should provide momentum for savings in the establishment and replacement of lighting in our state.

(Continued on page 11)

Treasurer's Report

by Jim MacDonald

HAS Financial Report for the month ending as of Feb. 15, 2012

Initial Balance:	**$4,455.92**
Receipts:	
Dues Received	204.00
Magazine Payments	34.00
Total Income:	**$238.00**
Expenses:	
Astronews	55.32
Magazine Subscriptions	134.95
Total Expenses:	**$190.27**
Final Balance	**$4,455.92**

The club gained six new members this month. They are ***Camelia and Dennis O'leary; NatalieVan Houser; Walter Murawski; Michael Lyons; and Thomas Bryan.*** Our thanks to all those who renewed their membership this month. Come join for some unforgettable views.

<<Upcoming Star Parties>>

CLUB Party-Dillingham	**Mar 17**
Public Party-Dillingham	**Mar 24**
Kahala/Ewa Party	**Mar 31**

Upcoming School Star Parties

Fri.	**3/16**	Cub Scouts - Schofield Barracks (Wahiawa)
Fri.	**3/23**	Mililani Ike Elementary (Mililani)
Fri.	**3/30**	Hokulani Elementary (St. Louis)
Fri.	**4/20**	Boy Scouts - Schofield Barracks (Wahiawa)
Thurs.	**4/26**	Ala Wai Elementary (McCully)

(Minutes continued from page 9)

Facebook: Chris acknowledged ***Barry Peckham*** for the creation and maintenance of a Facebook page for Friends of the Hawaiian Astronomical Society. The page will be used to post notifications of club events, pictures and comments.

Visitors: We had two visitors to this month's meeting. ***Ryan*** found us via the Internet and is interested in astrophotography. ***Mohan*** works at Windward Community College and enjoys viewing. .

Permits: ***John Gallagher*** reports that we have received an updated permit for the use of Geiger Park for star parties. ***Barry Peckham*** indicates that the permit for use of the Kahala Community Park is forthcoming from Keora Blakely.

Hawaii State Science and Engineering Fair: Will take place on April 2-4, 2012. ***Sue Girard*** and ***Jim MacDonald*** will judge for the club. The winners of the H.A.S. agency prize from Senior and Junior Research divisions will receive a $50 gift certificate, an astronomy magazine subscription and a club tee shirt.

Dillingham Airfield: Those joining us at Dillingham Airfield for our monthly star parties need to be aware that drivers will need to sign in with that night's Board member In-Charge on a nightly visitor's log. Information to be on the sign-in sheet includes the car's make and license plate number, driver's name, and the number of people in the car. The Dillingham security guard will used the sign-up sheet to check each car off as they leave. All exits will take place through the Dillingham Airfield West Gate.

Star Party Report: ***John Gallagher*** reports that we have one school star party during the month of February. John signed up astronomers for help for:

Feb 24 – Iolani School Science Night star party

Workshop/Exhibit Table: Sacred Heart Science Day Celebration occurs on Saturday March 3, from 8:00 to 11:45 a.m. H.A.S. will set up for solar viewing.

The Globe at Night: ***John Gallagher*** reminded everyone of the annual "The Globe at Night." Members are urged to naked-eye observe the night sky during three scheduled viewing windows: February 12-21, March 13-22, and April 11-20.

Night Sky Network: John further urged members to access and use the calendar on the Night Sky Network, in addition to the H.A.S. website, for information about H.A.S. star parties. John also reported on the January Teleconference regarding the upcoming transit of Venus.

Transit of Venus: The club will support the Bishop Museum for the upcoming Transit of Venus on June 5, 2012.

John Sandor announced that ***Nicolas Biver***, a former HAS member who is now an astronomer in France, will be coming to Hawaii to observe the Transit. However, he is observing from Mauna Kea and may not have any time in Honolulu. Members who have been in the club for many years may remember Nicolas and his square-tube telescope and his very interesting astronomical sketches.

Guest Speaker: Russ Genet, a Research Scholar in Residence at California Polytechnic State University and an adjunct professor of Astronomy at Cuesta College, was our speaker at the February meeting. Mr. Genet spoke about "Visual Double Stars for Smaller Telescopes." He now works with enthusiasts and shares his expertise in research. He urged our group to help members and newcomers to learn how to cooperate on gathering information and to learn how to write and submit research and scientific papers.

The meeting was adjourned at 9:10 p.m. Refreshments were served.

Respectfully Submitted,

Gretchen West

Secretary

Hawaiian Astronomical Society
P.O. Box 17671
Honolulu, HI 96817-0671

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A beautiful day above the Hawaiian Islands - as seen from the vantage point of the International Space Station.

Image courtesy NASA