The Astronews

HUI KILOLANI

Volume 56, Issue 6

www.hawastsoc.org

June 2008

Quality Time at the Porthole

by Barry Peckham

Our former HAS president Stephanie Choquette, currently living with her family in Toronto, is responsible for this extreme form of amateur astronomy: Find spaceship Earth's most scenic porthole. Go there. Bring significant aperture. Sleep after moonrise.

Barry & Stephanie at Bond Springs.

(Continued on page 9)

Upcoming Star Parties

Public Party	**May 24**	**Dillingham**
Club Party	**May 31**	**Dillingham**
Public Party	**Jun 7**	**Kahala/Waikele**
Public Party	**Jun 21**	**Dillingham**
Club Party	**Jun 28**	**Dillingham**
Public Party	**Jul 5**	**Dillingham**

Inside this issue:

Upcoming Events:

- The next meeting is at 7:30 p.m. on **Tuesday, June 3rd** at the Bishop Museum.
- Bishop Museum's next planetarium show with **Barry Peckham** is Friday, **June 6th** at 7:00 pm www.bishopmuseum.org/calendar
- The next Board Meeting is at 3:30 PM on **June 1st** at the POST building at UH.

President's Message

A story on CNN.com said a 140-year-old supernova, the youngest ever discovered, had just been found. Other reports said it occurred 26,000 years ago, so which is right? Actually, both versions are correct. The supernova in question is near the center of our galaxy, the Milky Way, and the light from the explosion reached us 140 years ago, so we're now seeing the conditions as they were 140 years after the initial outburst. But, of course, it took the light 26,000 years to reach us.

This is a common source of confusion in astronomy. People will often say that the supernova happened 140 years ago even though they know very well that the actual event occurred thousands of years earlier. Partly this is for convenience, because it's easier to say it that way than to give the whole distance/speed-of-light explanation every time. However, it is also true that we don't really know the distance to many objects very accurately. The Hipparcos spacecraft refined our knowledge of distances to nearby stars, and the Gaia mission is intended to measure many more distances and improve accuracy. We know when we witnessed an event, but it would be awkward to continually revise the time we assign to that event every time our estimates of its distance change.

There are several reasons that this discovery is significant. First, this is our first opportunity to study the remnants of a supernova at such a "young" age. It's a good opportunity to compare observations to theories.

Another reason astronomers are excited about this discovery is that not as many supernovae have been observed as they expect should be occurring in the Milky Way. This one was so obscured by dust between it and us that it wasn't discovered earlier. It has now been identified in radio

(Continued on page 4)

Hawaiian Astronomical Society
P.O. Box 17671
Honolulu, Hawaii 96817

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

Vice President
Barry Peckham
542-8658
barry@liteboxtelescopes.com

Secretary
Gretchen West
737-4742
gwest002@hawaii.rr.com

Treasurer
Jim MacDonald
261-2162
jim.macd@hawaiiantel.net

***The* Astronews Editor**
Carey Johnson
216-1410
quarkcsj@hotmail.com

Board Members-at-Large
John Gallagher 683-0118
gallaghej002@hawaii.rr.com
Harry Zisko 262-1947
harryz@pobox.com

HAS Webmaster
Peter Besenbruch
prb@lava.net

School Star Party Coordinator
Forrest Luke
lukef003@hawaii.rr.com

***The* Astronews** is the 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 e-mail. The deadline is the 16th of each month. We are not responsible for unsolicited artwork.

HAWAIIAN ASTRONOMICAL SOCIETY
GENERAL MEMBERSHIP MEETING
May 6, 2008

President Chris Peterson called the May 6, 2008 meting of the Hawaiian Astronomical Society to order at 7:45 p.m. The meeting was held at the Atherton Halau of the Bishop Museum. In attendance were thirty-one members and one visitor.

Hawaii State Science and Engineering Fair – The fair took place from March 31st through April 2nd. H.A.S. judges reviewed the entries and awarded the following to the top astronomy related Science Senior Research project: A free 1-year H.A.S membership, a H.A.S. tee shirt, a 1-year subscription to an astronomy related magazine, an H.A.S. Award certificate and a $50 check. This year's award winner was Mimi N. Hang of McKinley High School whose Senior Project was titled "Masses of Galaxies and Their Relation to Dark Matter.

Institute for Astronomy – Open House: This years IFA Open House took place on Sunday, April 27th from 11:00 am to 4:00 pm. Gretchen West reported that the support of members John Gallagher, Jim MacDonald, Forrest Luke, Mel and Clair Levin and Paul Lawler made the HAS display and activities a success.

Expanding our Knowledge – Jim MacDonald reports that the "like-new" 8" Nexstar telescope that was recently accepted as a donation has been collimated, although there are still some problems with the scope. The club will be keeping this scope for the time being as a learning tool, to broaden our ability to help members in selecting scopes that are suited to their tastes. We hope to bring the scope into better working order and it may be used as a rental scope in the future.

Electronic Newsletter Format - ASTRONEWS editor Carey Johnson reports that about a dozen members have chosen to receive their ASTRONEWS in electronic format. Anyone interested should contact Carey Johnson.

Astronomy Day – Saturday, May 10 is Astronomy Day. Members have signed up to help Gretchen West and Barry Peckham on the top level of Kahala Mall, fronting Barnes and Noble. Members will share views of the sun and the moon with the public from 11:00 am to 4:00 pm. Later that evening viewing will adjourn to the suburban star viewing at Waikele and Kahala Community Parks.

School Star Party Report – Forrest Luke reports that April and May are a busy time for the club. School star parties are scheduled for Mililani Mauka, Lanakila Elementary, Kapolei Middle School, Ala Wai Elementary, Pearl Harbor Elementary, and Red Hill Elementary.

(Continued on page 4)

Visitors: President Chris Peterson greeted one visitor to the meeting this month. Gretchen Yarborough has become a new member and hopes to find a scope to fit her interests.

Australia, They Were There: Vice President Barry Peckham and Canadian member Stephanie Choquette recently headed for Alice Springs, Australia. Back from "Down Under," the intrepid astronomers report that the skies were perfect and the two spent 40 plus hours of observation using the two Litebox telescopes.

N.A.S.A. Kepler Mission - The membership viewed a N.A.S.A. video regarding the N.A.S.A. Kepler Mission, which will be looking for habitable planets.

The meeting was adjourned at 9:03 p.m. and refreshments were served.

Respectfully Submitted,
Gretchen West Secretary, H.A.S.

(Continued from page 2)

and X-ray wavelengths. Perhaps this one will lead us to better ways to find others.

Of course, we haven't been recording supernovae all that long, and at an expected two or three per century in our galaxy, we'll have to observe for a lot longer to get good statistics. Imagine if one happened a hundred years ago at a distance of 100 light years, another 200 years ago at a distance of 200 l.y., and a third 300 years ago at 300 l.y. out. We'd see all three this year! And if five occurred this year at 100, 500, 1000, 10,000, and 25,000 l.y., we couldn't know that for 25,000 years, and even then we'd have to have good records, accurate distance estimates, and still care enough to figure it out!

Chris

Did you know?

All the Newsletters from May of 2002 to present are located at our Webpage at http://www.hawastsoc.org/

Thanks to Paul Lawler for providing me the old Newsletters to convert to PDF, to Jim MacDonald for scanning the missing copies, and to Peter Besenbruch for posting them on the webpage.

Ozone, the Greenhouse Gas

We all know that ozone in the stratosphere blocks harmful ultraviolet sunlight, and perhaps some people know that ozone at the Earth's surface is itself harmful, damaging people's lungs and contributing to smog.

But did you know that ozone also acts as a potent greenhouse gas? At middle altitudes between the ground and the stratosphere, ozone captures heat much as carbon dioxide does.

In fact, pound for pound, ozone is about 3000 times stronger as a greenhouse gas than CO2. So even though there's much less ozone at middle altitudes than CO2, it still packs a considerable punch. Ozone traps up to one-third as much heat as the better known culprit in climate change.

Scientists now have an unprecedented view of this mid-altitude ozone thanks to an instrument aboard NASA's Aura satellite called the Tropospheric Emission Spectrometer—"TES" for short.

Most satellites can measure only the total amount of ozone in a vertical column of air. They can't distinguish between helpful ozone in the stratosphere, harmful ozone at the ground, and heat-trapping ozone in between. By looking sideways toward Earth's horizon, a few satellites have managed to probe the vertical distribution of ozone, but only to the bottom of the stratosphere.

Unlike the others, TES can measure the distribution of ozone all the way down to the heat-trapping middle altitudes. "We see vertical information in ozone that nobody else has measured before from space," says Annmarie Eldering, Deputy Principal Investigator for TES.

The global perspective offered by an orbiting satellite is especially important for ozone. Ozone is highly reactive. It is constantly being created and destroyed by photochemical reactions in the atmosphere and by lightning. So its concentration varies from region to region, from season to season, and as the wind blows.

Data from TES show that ozone's heat-trapping effect is greatest in the spring, when intensifying sunlight and warming temperatures fuel the reactions that generate ozone. Most of ozone's contribution to the greenhouse effect occurs within 45 degrees latitude from the equator.

Increasing industrialization, particularly in the developing world, could lead to an increase in mid-altitude ozone, Eldering says. Cars and coal-fired power plants release air pollutants that later react to produce more ozone.

"There's concern that overall background levels are slowly increasing over time," Eldering says. TES will continue to monitor these trends, she says, keeping a careful eye on ozone, the greenhouse gas.

Learn more about TES and the science of ozone at tes.jpl.nasa.gov/. Kids can get a great introduction to good ozone and bad ozone at spaceplace.nasa.gov/en/kids/tes/gases.

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

Observer's Notebook - June 2008

by Jay Wrathall

Planets Close To the Moon

Times are Hawaii Standard Time

Jun 7, 15h, M 1.0º SSW of Mars
(58º from sun in evening sky)
Jun 8, 21h, M 2.8º SSW of Saturn
(74º from sun in evening sky)
Jun 20, 04h, M 2.4º SSE of Jupiter
(159º from sun in morning sky)
Jun 22, 22h, M 0.78º NW of Neptune
(128º from sun in morning sky)
Jun 25, 03h, M 3.6º NNW of Uranus
(102º from sun in morning sky)

Venus and Mercury are closer than 15º from the sun when near the moon in June.

Other Events of Interest

Times are Hawaii Standard Time

Jun 3, 09:03h, Moon New
Jun 7, 05h, Mercury at inferior conj. with sun
(Passes into morning sky)
Jun 8, 18h, Venus at superior conj. with sun
(Passes into evening sky)
Jun 12, 03h, 3 Juno at opposition
Jun 18, 07:30h, Moon Full
Jun 20, 06h, Pluto at opposition
Jun 20, 09:59 Summer Solstice

Planets for June

Mercury has a fairly good morning apparition during the last week of June.	**Venus** is too close to the sun to be observed in June.	**Mars** approaches Regulus in June, coming to less than a degree from it at the end of the month.
Jupiter rises before midnight and is becoming larger and brighter as it approaches opposition in July.	**Saturn** is near Mars and Regulus in the evening sky. Can be viewed early, but sets 2-3 hours after sunset.	**Uranus** can be viewed before dawn in the eastern sky.
Neptune can also be viewed in the pre-dawn sky, further to the west than Uranus.	Dwarf Planet **Pluto** reaches opposition this month, so this is the best time of the time of the year to view this very dim planet.	**(3) Juno** reaches opposition on June 12. A good chance to view the third asteroid discovered. Mag. +10.

Meteor Log - June 2008

by Mike Morrow

June 30th is the 100th anniversary of the Tunguska airburst event over Siberia. June has very little happening. Some radio showers and one shower with less than 5 meteors an hour (better called a drizzle) is hopeless due to the Moon.

Friday the 27th the June Bootids. Radiant: 14h56m Dec. +48 deg. The shower had a strong return in 1998, but had been dormant for about 70 years. It was also good in 2004 on June 23rd. Rates can go from nothing to near 100 an hour. The shower is connected to Comet Pons-Winnecke. If something really happens this year it should be within six hours of 4h30m local time on the 27th. The Moon will not cause much trouble. Meteors are very slow.

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

Minor Planet Report - June 2008

by Carey Johnson

Comets

5/29 C/2008 J4 (McNaught) 0.726 AU from Earth, Mag. 12.7
6/12 C/2007 W1 (Boattini) 0.21 AU from Earth, Mag. 6.1
6/19 C/2008 J4 (McNaught) Perihelion 0.445, Mag. 13.2
6/24 C/2007 W1 (Boattini) Perihelion 0.85 AU Mag. 6.24
C/2006 Q1 (McNaught), Mag. 11.5 - 11.7*
C/2007 B2 (Skiff) 13.0 - 13.1*
C/2007 G1 (LINEAR) 12.2 - 11.9*
C/2008 J4 (McNaught) 12.3 - 13.0*
C/2006 OF2 (Broughton) 12.4 - 12.0*
19P/Borrelly 10.6 - 9.7*

Asteroids

6/13 (3) Juno at Opposition, Mag. 10.0
(4) Vesta 7.8 - 7.6*
(2) Pallas 9.3 - 9.1*
(7) Iris 9.9 - 10.3*
(41) Daphne 9.7 - 10.2*
(3) Juno 9.9 - 9.9*
(20) Massalia 9.9 - 10.1*

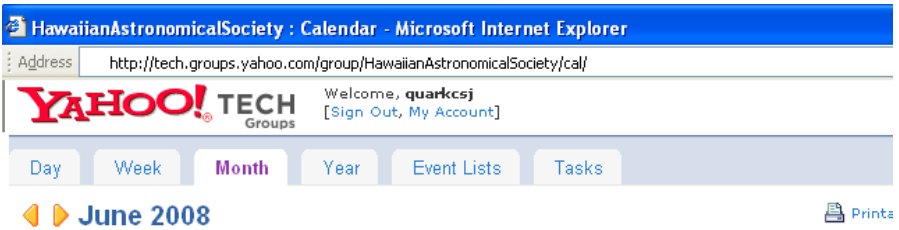
* June 1st - June 30th

See http://www.geocities.com/quarkcsj/calendar.html for more up to date info.

Upcoming School Star Parties

Mon. 6/2 Camp Timberline for Honolulu Waldorf High School

If you are interested in helping out at a School Star Party, sign up on the monthly sheet at the HAS Meeting or contact the Star Party Coordinator: Forrest Luke at 623-9830 or e-mail at lukef003@hawaii.rr.com



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1 [Add] Comet C/2008 J2 (Beshore) Closest Approach To Earth (1.457 AU) M 14.3 3:30p HAS Board Meeting	2 [Add]	3 [Add] New Moon 7:30p HAS Meeting	4 [Add]	5 [Add]	6 [Add]	7 [Add] 6:30p Kahala & Waikele Public Star Parties
8 [Add]	9 [Add]	10 [Add]	11 [Add]	12 [Add]	13 [Add] Asteroid 3 Juno At Opposition (10.0 Magnitude)	14 [Add] Comet C/2007 W1 (Boattini) Perihelion (0.207 AU) M 7.7
15 [Add]	16 [Add]	17 [Add]	18 [Add] Full Moon Comet C/2008 J4 (McNaught) Perihelion (0.445 AU) M 13.2	19 [Add] Dwarf Planet 134340 Pluto Closest Approach To Earth (30.476 AU) M 13.9	20 [Add] Pluto At Opposition M 13.9 Summer Solstice, 20:24 UT	21 [Add] Comet C/2008 J1 (Boattini) Closest Approach To Earth (1.457 AU) M 14.3 6:30p Dillingham Public Star Party
22 [Add]	23 [Add]	24 [Add]	25 [Add] Comet C/2007 W1 (Boattini) Perihelion (0.857 AU) M 8	26 [Add] For more events look here.	27 [Add]	28 [Add] 6:30p Club Star Party
29 [Add] 3:30p HAS Board Meeting	30 [Add] 100th Anniversary (1908), Tunguska Explosion Event	1 [Add] 7:30p HAS Meeting	2 [Add] New Moon	3 [Add]	4 [Add] Earth At Aphelion (1.017 AU From Sun)	5 [Add] 6:30p Dillingham Public Star Party

(Continued from page 1)

For sustained viewing of our celestial surroundings, comfort matters, so we took the recommendation of HAS members Jane & Mojo, who once counted Leonid meteors for NASA at a cattle station in Australia's Outback, near Alice Springs. Jane told us that the rentable cottages on this property were in a place dark enough for stargazing right outside the door. This sounded perfect for a group of 6 to 8 people, but when only Stephanie and I were willing to go, it seemed too expensive. I was persuaded to go anyway with the following logic: if we are spending all this money on airfare, shouldn't we maximize our chances for clear skies? So off to Alice Springs we 2 flew, packing two 12.5" scopes.

I'd reserved an intermediate size car so we could get our scopes and gear from the Alice Springs airport to the cottage at Bond Springs Outback Retreat. Budget told me at the airport that a Corolla qualified. Luckily, everything fit. Bond Springs cattle station is bigger than my home state, but the homestead and guest cottages are on the near side of Alice: convenient for travel but not so good for sky-glow. Still, we'd be dealing with less light pollution than Oahu throws at Molokai. It was just a shame that both Magellanic Clouds and the galaxy's finest globular would spend most of the night lurking in the light dome from little Alice.

A different time of year would have kept them out of the glow, but our chosen timing had its advantages. It was off season for the cottages (we got upgraded to a bigger, better-located cottage at no extra cost). There were no temperature extremes (Goldilocks Zone!). We enjoyed comfortably low humidity (crispy charts all night) and very stable weather patterns. It was dark by 7:15 each night and we were ready for action, catching 47 Tucanae at the top of the light dome and the Tarantula Nebula at a low-but-still-dark altitude.

Our cottage is only a few miles south of the Tropic of Capricorn, at -23.5 degrees. Looking south, the Milky Way bracketing Crux was higher than the Teapot ever gets in Hawaii. The Eta Carina Nebula took my breath away each night and we shared it with our hosts, as well as an opal salesman from Alice. Omega Centauri was of course on the top 10 list and we returned to it over and over, but we had more than 40 hours to invest in the southern starfields so top ten targets were mere frosting on the cake. Stephanie's cake was a collection of legitimized lists for which she had printed out finder charts, using Sky Tools software. At least one of the lists offered a certificate in exchange for observing reports, so Stephanie worked through an organized hunt, making organized notes. My own idea of pleasantly passing the time was to bond with the deep southern sky. I chose constellations I'd been neglecting for years: Vela was at the top of that list. I also chose telescopic activities that I was no longer making time for in Hawaii, like star-hopping, and hunting for tiny galaxies at the limit of vision. My most useful charts came from a book I used as a beginner: "Observing The Constellations" by John Sanford, and also from Uranometria star charts that I blew up to 11x17. Sanford's charts are small so I scanned

(Continued on page 11)

Treasurer's Report

by Jim MacDonald

HAS Financial Report as of May 15, 2008

Initial Balance:	**$5,226.82**
Receipts:	
Donations	28.00
Dues Received	62.00
Total Income:	**$90.00**
Expenses:	
Combination Lock	25.12
Mailing Labels & Envelopes	32.04
Total Expenses:	**$57.16**
Final Balance	**$5,259.66**

The club membership remained unchanged this month. A special thanks to Alyce Ikeoka and Freddy Willems for their thoughtful donations. Thanks also to everyone renewing their membership this month. Clear skies to all!

Electronic Newsletter

A testimonial from a HAS member who has been receiving the electronic version of the newsletter.

I instituted the electronic version of "Above the Fog" for the SFAA: http://www.sfaa-astronomy.org/newsletter/ We have saved a TON of $$. Our newsletter printing and mailing was the single most costly item in our annual budget. It was easy for me to do that. We have ~ 10 members out of 300 that get ATF mailed to them as mostly, those folks are w/o computers. The pdf ver. is far better too, it's interactive w/ links and full color at no extra cost. We even edit the online version if need be AND we have an archive for all to read and research.

If you would like to receive the electronic version, e-mail the Newsletter Editor at quarkcsj@hotmail.com

(Continued from page 9)
them, blew them up, and then printed them as grayscale negatives. The finest objects in each constellation are located on these simple charts: doubles, clusters, galaxies, nebulae. I had the time to find them all. My favorite finds were NGC 5286, in the horse-chest of the Centaur (a gold star paired with a crisp globular) and planetary nebula NGC 3918 (just west of Crux) with its "vivid pale blue" color. I did a lot of "staring into space" and was glad no one was watching. It took awhile to make out the chameleon and Octans, at the south celestial pole. Volans, the flying fish, is a favorite from 2004 that I enjoyed seeing again, on Carina's west side. Beautiful globular NGC 2808 hovers near Volans' tail. Meanwhile, hour after hour, Stephanie studied her charts, hunted her quarry, and called me over for both beautiful and tough finds.

On each of the 6 nights a crescent moon rose about an hour later. That meant we stayed at the eyepiece(s) an hour later each night, until the final night when the moon rose at 5:30 AM and there was no sleeping at all. We watched the sunrise, then packed and left for the airport, and for Sydney, and for an all night flight to Honolulu. On the plane, we could close our eyes and still see stars.

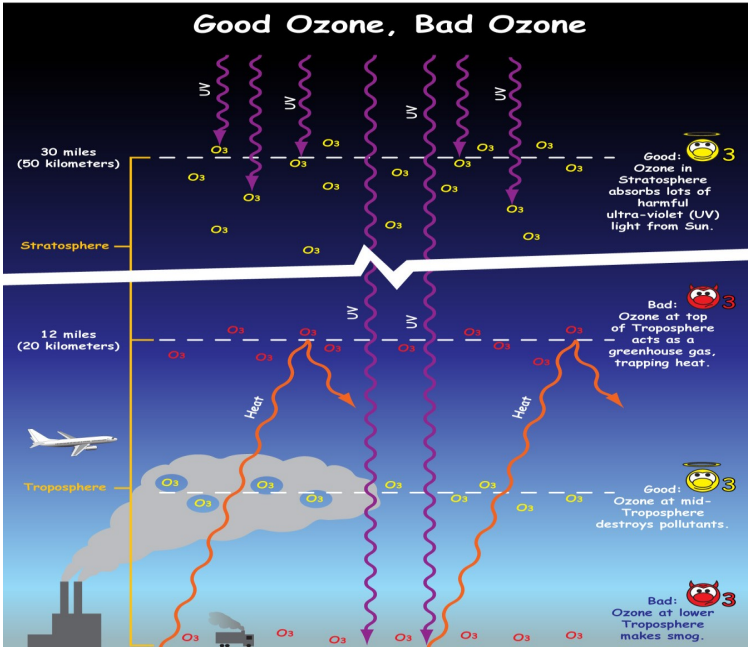
NOTICE!

HAS will publish a complete listing of Club members in the **July 2008** issue of the ***Astronews***. 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 **June 15th** 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. Notice: Member information is not to be republished, redistributed, or used for any commercial or solicitation purposes. Please respect our member's right to privacy.

The **Astronews** is printed by ***Aiea Copy Center***.
http://www.aieacopycenter.com/

H.A.S.
P.O. Box 17671
Honolulu, HI 96817

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



Ozone behaves differently at different altitudes in the atmosphere. High in the stratosphere and at mid-troposphere it has positive effects on life at the surface. At the top of the troposphere ozone is a greenhouse gas and at the surface it makes smog. (See NASA's Space Place article on page 5.)