

### Inside this issue:

My apologies for this issue being late. Learning a new system and attempting to convert it to a different platform has not been easy. Now that this first issue has been published we should be on time for next month. Appreciate your understanding. Editor.

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Young Astronomers enjoying the dark Kauai skies.

### Upcoming Star Parties

- |                            |                       |
|----------------------------|-----------------------|
| <b>Public Party Nov 1</b>  | <b>Kahala/Waikele</b> |
| <b>Club Party Nov 22</b>   | <b>Dillingham</b>     |
| <b>Public Party Nov 29</b> | <b>Dillingham</b>     |
| <b>Public Party Dec 6</b>  | <b>Kahala/Waikele</b> |

### Upcoming Events:

- The next meeting is at 7:30 p.m. on **Tuesday, Nov 4<sup>th</sup>** at the Bishop Museum.
- Bishop Museum's next planetarium show with **Barry Peckham** is Friday, Nov 7<sup>th</sup> at 7:00 p.m. [www.bishopmuseum.org/calendar](http://www.bishopmuseum.org/calendar)
- The next Board Meeting is Sunday **Nov 2<sup>nd</sup>** at 3:30 p.m. at the POST building at UH.

## President's Message

The "Sharing the Universe" project would like to characterize 10 amateur astronomy clubs around the country by talking to 10 members of each club for about 30-45 minutes. This would allow us to paint a full picture of a club from a variety of perspectives, and to gather wonderful examples for what works and what doesn't - something the Astronomical Society of the Pacific can use when they develop free support mechanisms for amateur astronomy club outreach. They will provide each volunteer who is willing to talk to them with a \$20 gift certificate to Amazon. They guarantee not to share any contact information with other organizations and will do their best to schedule and conduct conversations in ways that are as pleasant and enjoyable as possible.

HAS has five volunteers so far, so another five volunteers can be included. Please e-mail [chrisp@higp.hawaii.edu](mailto:chrisp@higp.hawaii.edu) or call 956-3131 with your name and phone number.

Chris

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## Meeting Minutes

by Gretchen West

President Chris Peterson called the October 7, 2008 meeting of the Hawaiian Astronomical Society to order at 7:30 p.m. The meeting was held at the Ather-ton Halau on the grounds of the Bishop Museum. There were twenty-five members and four visitors in attendance. Terri Carroll, a new member, brought her friend Julie Sheader of Hot Springs Village, Arkansas. Terri has rented a club scope for the short time she will be on O`ahu. Ruby Johnson joined us this month. She is knowledgeable in Polynesian wayfinding and wanted to expand her base of knowledge. Greg Messier also join us this month. He is interested in viewing the night sky. He was not aware of his illustrious name and does not know whether he is related to the well-known Charles Messier. When asked, Greg indicated that he might be looking into it.

Hawaii Space Lecture Series –On Saturday, October 28th, American Astronaut Stan Love will speak on “Island in Space, the STS 122, spacer shuttle mission to the International Space Station.” He will speak of his extra-vehicular activity (spacewalk). This particular lecture for the Series is scheduled to take place at 7:30 p.m., in room 723, on the seventh floor of the Pacific Ocean Science and Technology Building, at the University of Hawaii at Manoa. For further information you can contact NASA PRPDC at 808-056-3132 or on the Web go to <http://www.higp.hawaii.edu/prpdc>

President Chris Peterson reviewed events of the past month. The Mercury Messenger Mission accomplished its second flyby of the planet Mercury on October 6 at an altitude of approximately 200 km. Images of the flyby are still being processed, however, Chris presented five available images. The Cas-sini Mission has also accomplished its flyby of Enceledus. The Mars rovers have been re-energized with the coming of Martian Spring in the southern hemisphere. The Spirit rover has moved to soak up more rays and power, while Opportunity has begun to move around more frequently. It will move out of the crater it has been in, to move about 12 kilometers south to another large crater.

Upcoming Event: This year’s *Astronaut Lacy Veach Day of Discovery* will take place Saturday, October 25 at the Mamiya Science Center on the grounds of Punahou School in Manoa, from 8:00 a.m. to 2:00 p.m. This science event for students, their parents and educators is a yearly event that celebrates the life of the late Hawaii born U.S. astronaut Lacy Veach. This year’s guest speaker will be Astronaut Stan Love, who along with Astronaut Ed Lu is the co-inventor/innovator of the gravity tractor. It is postulated that in the future this conceptual device will utilize an ion drive and will enable us to redirect any near-earth objects to a new path and avoid a collision with Earth. Astronaut Stan Love will also speak at the Hawaii Space Lecture Series in October. As

(Continued on page 4)

for the *Lacy Veach Day of Discovery*, Gretchen West has recruited HAS members to help out in manning a display table at the event.

The Astronomical Society of the Pacific, working with the National Science Foundation, will be interviewing numerous astronomy clubs across the nation about how their clubs work at “Sharing the Universe.” Each thirty-minute interview will take place over the phone. Should any H.A.S. member wish to participate, contact Chris Peterson.

Chris Peterson reports that the Indian Moon Mission, the Chandrayaan-1 mission in association with NASA will concentrate on spectral mapping of minerals on the lunar surface. Chris also reported on the October 27, 2008 confirmation of a meteoroid entering the Earth’s atmosphere. Confirmed sightings by a KLM airliner reported the object seen over North Africa in an area between Sudan and Egypt.

The Hubble service mission to repair the space telescope has been postponed. The recent failure of the main communications system has caused the service mission to be reformatted and the flight crew to need additional training to be able to accomplish the additional repairs. Currently the mission is on hold until February, 2009.

Early Shopping: Jim MacDonald reports that Astronomy magazine is offering their very attractive 2009 calendars to HAS members at a special price. The usual price is \$12.95. However, Jim reports that club members will pay only \$6.50. Jim has begun taking orders and payments from members.

School Star Party Report: John Gallagher, reporting for Forrest Luke who is on vacation, indicated that a star party will take place at Mililani Ike on November 3 and later that week, a star party for Niu Valley Middle School on November 7. The party that had been previously scheduled for the month for Pearl Harbor Elementary for October has been rescheduled for the Spring.

Guest Speaker - Dr. Joe Ciotti, director of the Windward Community College’s “Imaginarium” and Center for Aerospace Education, was our featured guest speaker at this month’s general membership meeting. Dr. Ciotti shared his adventure in China this past August to view the total solar eclipse. His Power-Point presentation took us along with him as the travel group of approximately 120 westerners traversed Western China and Northern Pakistan to view the August 1 eclipse in Altai, China. The dry, high savannah, at above 4,000 m above sea level was clear and warm. In addition to viewing the eclipse, Dr. Ciotti conducted an atmospheric experiment to chart changes in air and ground temperatures during and shortly after the eclipse.

December Election Looming: HAS will hold its yearly election for the board of directors during the December general membership meeting. John

*(Continued on page 11)*



## The Chemical Weather Report

by Dr. Tony Phillips

“Sunny tomorrow with highs in the mid-70s. There’s going to be some carbon monoxide blowing in from forest fires, and all that sunshine is predicted to bring a surge in ground-level ozone by afternoon. Old and young people and anyone with lung conditions are advised to stay indoors between 3 and 5 p.m.” Whoever heard of a weather report like that?

Get used to it. Weather reports of the future are going to tell you a lot more about the atmosphere than just how warm and rainy it is. In the same way that satellite observations of Earth revolutionized basic weather forecasting in the 1970s and 80s, satellite tracking of air pollution is about to revolutionize the forecasting of air quality. Such forecasts could help people plan around high levels of ground-level ozone—a dangerous lung irritant—just as they now plan around bad storms.

“The phrase that people have used is chemical weather forecasting,” says Kevin Bowman of NASA’s Jet Propulsion Laboratory. Bowman is a senior member of the technical staff for the Tropospheric Emission Spectrometer, one of four scientific sensors on NASA’s Aura satellite.

Aura and other NASA satellites track pollution in the same way that astronomers know the chemical composition of stars and distant planetary atmospheres: using spectrometry. By breaking the light from a planet or star into its spectrum of colors, scientists can read off the atmosphere’s gases by looking at the “fingerprint” of wavelengths absorbed or emitted by those chemicals. From Earth’s orbit, pollution-watching satellites use this trick to measure trace gases such as carbon monoxide, nitrogen oxide, and ozone.

However, as Bowman explains, “Polar sun-synchronous satellites such as Aura are limited at best to two overpasses per day.” A recent report by the National Research Council recommends putting a pollution-watching satellite into geosynchronous orbit—a special very high-altitude orbit above the equator in which satellites make only one orbit per day, thus seeming to hover over the same spot on the equator below. There, this new satellite, called GEOCAPE (Geostationary Coastal and Air Pollution Events), would give scientists a continuous eye in the sky, allowing them to predict daily pollution levels just as meteorologists predict storms.

“NASA is beginning to investigate what it would take to build an instrument like this,” Bowman says. Such a chemical weather satellite could be in orbit as soon as 2013, according to the NRC report. Weather forecasts might never be the same. Learn more about the Tropospheric Emission Spectrometer at [tes.jpl.nasa.gov](http://tes.jpl.nasa.gov). Kids can learn some elementary smog chemistry while making “Gummy Greenhouse Gases” out of gumdrops at [spaceplace.nasa.gov/en/kids/tes/gumdrops](http://spaceplace.nasa.gov/en/kids/tes/gumdrops).

**Planets Close To the Moon**

Times are Hawaii Standard Time










- Nov 3, 13h, M 1.9° SSE of Jupiter  
(65° from sun in evening sky)
- Nov 6, 09h, M 1.0° NNW of Neptune  
(97° from sun in evening sky)
- Nov 8, 11h, M 3.7° NNW of Uranus  
(122° from sun in evening sky)
- Nov 21, 04h, M 5.0° SSW of Saturn  
(69° from sun in morning sky)

Mercury and Mars are closer than 15° from the sun when near the moon in November. The moon had a close approach to Venus at the end of October and will not be close again until the 1<sup>st</sup> of December.

**Other Events of Interest**

Times are Hawaii Standard Time

- Nov 2, First Sunday in November. Clocks change from daylight-savings time to standard time
- Nov 11, 16h, Venus 7.9° S of Pluto  
(39° from sun in evening sky)
- Nov 12, 20:18h, Moon Full
- Nov 17, Leonid meteors. Unfavorable year, but enhanced activity is possible.
- Nov 25, Mercury at superior conj. with sun  
(Passes into evening sky)
- Nov 27, 06:55h, Moon New
- Nov 30, 23h, Venus 2.07° S of Jupiter  
(43° from sun in evening sky)

<p> <b>Mercury</b> can be seen in the morning twilight during the first week of November.</p>	<p> <b>Venus</b> is rapidly closing on Jupiter during November and reaches the closest separation of 2.0° on November 30.</p>	<p> <b>Mars</b> is too close to the sun for viewing in November.</p>
<p> <b>Jupiter</b> is in the southern sky in the southwest as the sun sets and is very close to Venus by month's end.</p>	<p> <b>Saturn</b> is visible in the morning sky before dawn after rising about midnight.</p>	<p> <b>Uranus</b> is well placed for viewing in November in the evening sky in Aquarius.</p>
<p> <b>Neptune</b> is west of Uranus and is well positioned for evening viewing in Capricornus.</p>	<p> Dwarf Planet <b>Pluto</b> can still be seen in Sagittarius near Venus in the early evening.</p>	<p> Asteroid <b>(4) Vesta</b> is still quite bright at about 7<sup>th</sup> magnitude after reaching opposition on October 29.</p>

## Meteor Log - September 2008

by Mike

The year's best sporadic rates occur this month along with a few minor showers.

Tuesday the 9th, September Perseids. Radiant 04h00m +47 deg. This very minor shower is active from about the 5th through the 17th. The Moon will set about the time the radiant rises which is about 11 p.m. to midnight. The shower rates are less than 5 meteors an hour. Meteors are normally swift and generally quite faint.

Sunday the 28th, Delta Aurigids. Radiant 05h28m +49 deg. Rates are only a few an hour, most likely less than 3. The maximum is ill-defined and may last from about 9/18 through 10/10. The date given is the midpoint or the interval. New Moon means coverage of most of the period will be practical.

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.

Barking Sands  
Observatory  
with retracting  
roof.



Inside of the observa-  
tory with some of their  
'hardware' in view.



## September's Kauai Star Tour

This is a wrap-up of our stargazer's sojourn to the drier side of the Garden Isle, for those who missed the October club meeting (most of you). The Hawaiian Astronomical Society is set up as an observer's club and what we do as a group is to learn from each other and share what we know with those in the wider community. Kauai is in our wider community and the south side of Kauai has what Oahu observers can only dream of (or fly to): clearer, darker skies with better southern horizons than we can manage. I repeat this logic because it clearly has not sunk in to our larger group. Travel bucks are not your problem. If money was the issue you'd have traveled when it was cheap. The issue is that you don't see the value of what you are missing.

What you missed were friendly Kauai stargazers escorting us city folk Friday Night onto a high security military base and into a club-built roll-off observatory big enough to hold 100 in the darkest and driest part of that island. Picture Barber's Point (Kalaeloa) without Campbell Industrial Park, Kapolei, Ewa Beach, Waipahu or Makakilo... and it's way darker than that. Members brought dinner for us, then served up the universe in a variety of large scopes, not the least of which was a 20", f/5 monster with an eye-popping 100 degree (apparent field) eyepiece. Seeing and transparency varied but each improved to at least 7-out-of-10. I found "Jones 1" twice without an OIII filter. Some of you know how hard that is.

For the sake of early risers, we quit at midnight and dozed in a restored plantation cottage by the beach, only 15 minutes from the Barking Sands main gate. Ten minutes in the other direction was our Saturday night public star party, hosted by the same Kauai Education and Science Association (KEASA). It is held monthly in a ball field surrounded by sugarcane and visibly removed from the main road connecting Waimea with Hanapepe. This is a fine sight for stargazers, with no light domes and a nearly unobstructed southern horizon. It included a pot luck dinner. Six to eight scopes made an appearance on the field and although my 15 incher was largest this night, 40 or more un-jaded locals and tourists showed up, along with 9 astro-class students. Their instructor was also our primary host-person: Rozlyn Reiner. Matching enthusiasm with social skills, Roz can whip up a crowd under a gorgeous field of stars. It was very nice to have her energy on the field, greeting and teaching, directing and demonstrating. As the beginner crowd faded away, more avid amateurs showed up and kept the adrenalin flowing 'til past midnight. Because of our club's larger knowledge pool, I was able to entertain these folks with targets they haven't thought to look for. It was great to offer value back to the people who were being so nice to us.

And that is what you missed, thinking there was a better way to spend a late September weekend. Don't let that mistake happen again. Fly to Kauai this January!

Barry Peckham



## 2009 HAS Board of Directors Elections

Excerpts from the HAS By-Laws

### II Board of Directors

#### Section 1.

C. The BOD shall consist of the five officers and two directors elected at-large by the Society.

#### Section 2.

A. Nominees for board members shall have been members of the Society for at least six (6) months and currently be in good standing.

B. At the November general membership meeting, a committee shall be appointed by the president to present nominations for each member of the board at the December meeting. The Society then shall elect by ballot two (2) board members at-large and five officers.

### III. Officers

#### Section 2.

##### A. The duties of the President shall be:

- a) The President shall govern the monthly membership meeting in an orderly manner.
- b) The President shall preside over BOD meetings.
- c) The President shall effect the objectives of the Society as directed in the Articles of Incorporation.
- d) The President will establish committees as the need arises.

##### B. The duties of the Vice President shall be:

- a) In the absence of the President, the Vice President shall perform the President's duties.
- b) The Vice President shall assist the President in the President's duties.
- c) The club telescopes shall be the responsibility of the Vice President. The Vice President shall keep track of the telescopes and collect all

user fees.

##### C. The duties of the Treasurer shall be:

- a) Keep correct books and records of account.
- b) File the yearly corporate exhibit with the Department of Commerce and Consumer Affairs.
- c) Maintain membership records.
- d) Present monthly Treasurer's reports at the general membership meeting and supply the Secretary with a copy for records.
- e) Publish an HAS directory.

##### D. The duties of the Secretary shall be:

- a) Keep and maintain minutes of the general membership meetings and BOD meetings.
- b) Keep up-to-date on laws affecting non-profit corporations.
- c) Keep By-Laws current.

##### E. The duties of the Editor shall be:

- a) To publish the HAS "Astronews".



**HAS Financial Report as of October 15, 2008**

<b>Initial Balance:</b>	<b>\$4,293.29</b>
Receipts:	
Calendars	117.00
Dues Received	40.00
T-Shirt Sales	15.00
Telescope Fee	20.00
<b>Total Income:</b>	<b>\$192.00</b>
Expenses:	
Astronews	93.93
Misc Bank Charges	40.00
Refreshments	10.07
<b>Total Expenses:</b>	<b>\$144.00</b>
<b>Final Balance</b>	<b>\$4,341.29</b>

The club membership increased by one this month. The new member is Terry Carroll. Thanks and clear skies to all renewing their memberships.

**Upcoming School Star Parties**

- Mon. 11/3 Mililani Ike.
- Fri. 11/7 Niu Valley Middle School.
- Wed. 11/19 or 20 Camp Erdman for Mililani Uka 5th grade.
- Fri. 1/23 Mililani Middle School 6-8 PM for a science night.
- Fri. 4/17 Hanahauoli School near Punahou (100 estimated).
- Fri. 4/24 Pearl Harbor Elementary (moved from Oct. 08).
- Wed. 4/29 Lanakila Elementary.
- Thur. 4/30 Ala Wai Elementary.
- Fri. 5/1 Mililani Mauka Elementary.

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](mailto:lukef003@hawaii.rr.com)

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Sandor is this year's coordinator and chairperson for elections. Should you be interested in standing for election to the board you may contact John Sandor or you may put your name into nomination at the November 4 meeting. John will introduce the slate of nominees at the November meeting.

A special election was held during this month's meeting to fill the position of ASTRONEWS editor. Carolyn Kaichi has volunteered to become the new editor. Members present unanimously elected her.

Night Sky Network – John Gallagher spoke briefly about the recent September 25 teleconference. An upcoming webcast on October 8 at 8:00 a.m. will focus on a "Journey to Palomar," an upcoming P.B.S. documentary. John also mentioned a reordering of the magnitudes of identifiable stars, such as Polaris which some now order as the 49th brightest star. John also introduced members to "the Teaching Company," whose series on astronomy John recommends.

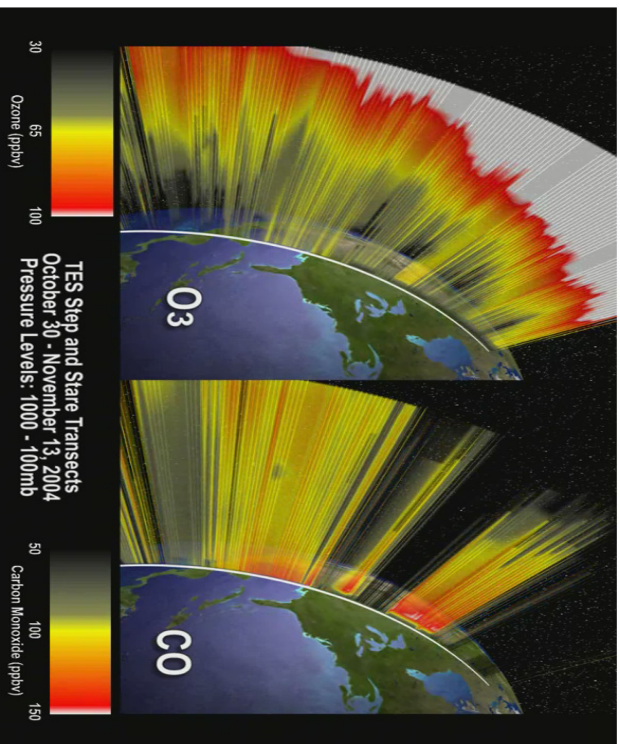
Kauai Trip: Barry Peckham, Gretchen West, and Harry and Melinda Zisco spent a glorious weekend on the island of Kauai over the October 26- 28 weekend. The Kauai Educational Association for Science and Astronomy hosted the four on Friday and Saturday evening. Barry described the ink-black Kauai skies and iridescent Milky Way at the club's Barking Sands site. The Kauai club has a viewing area on the Pacific Missile Range Facility/ NS Barking Sands. A structure on the base, built by club members, features a retractable roof for astrophotographers and has a dedicated slab for visual astronomy. The Kauai astronomers have only recently been allowed back onto the base since 2001. The Saturday viewing at Kaumakani School baseball field was a friendly affair with a tasty potluck dinner prior to a long... dark... night of viewing.

As there was no further business, the meeting was adjourned at 9:05 p.m. Refreshments were served.

Respectfully Submitted,  
Gretchen West, HAS Secretary

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*Example of visualization of data from the Tropospheric Emission Spectrometer. These frames are from an animation that steps through transects of the atmosphere profiling vertical ozone and carbon monoxide concentrations, during a given two week period.*