The Astronews

Volume 60, Issue 10

October 2012

www.hawastsoc.org

HAS VOLUNTEERS NEEDED

ALL HAS MEMBERS:

Your club needs a volunteer to support a request from the teachers of Kamakau Hawaiian Immersion School. They would like someone from the club to explain about the sun, moon, planets for their first and second grade children sometime before the public shcool Winter Break (before December 16).

The date is open to when the volunteer is available. This is a daytime event since it must be done during school hours. There are only 34 students. The school is located on Kuneki Street near the H-3 on the Kaneohe side of the island.

If interested please contact ***John Gallagher***, HAS School Star Party Coordinator, at 683-0118 (leave message if no answer).

Clear Nights,
John G.

The Hawaiian Astronomical Society is now on facebook

Inside this issue:

Upcoming Events:

- ☆The next meeting is 7:30PM on **Tues., Oct. 3** at the Bishop Museum **Atherton Halau.**
- ☆Planetarium shows with **Barry Peckham** are ON HOLD during the renovation. www.bishopmuseum.org/calendar
- ☆The next Board Meeting is Sun., **Sept 30** at 3:30 p.m. at the POST building at UH.

Up To The Minute:

A NOTE FROM CLUB TREASURER JIM MacDONALD:

Have you received any great magazine offers lately? One of our members received the following from S&T stating, "As someone who loves astronomy, you're entitled to this special DISCOUNTED OFFER – get a full year of Sky & Telescope at 47% OFF the cover price. Plus, you'll get four exclusive astronomy gifts—FREE!"

Sound too good to be true? Could It be? Their cover price is $5.99 which works out to be an annual rate of $38.10 with their stated discount. Our club's annual subscription rate is $32.95. However, they don't tell you what these four exclusive gifts are.

Most magazines send out renewal notices six months before the expiration date. This keeps you from missing an issue, but it also allows the magazine to use your money should you should you comply. S&T no longer provides the club with member's expiration dates so I can't help you there.

This date is included on the magazine address label. For renewal, S&T wants to deal directly with you. They send out a letter asking you to renew. Make sure it has the club's renewal rate of $32.95 listed. If not, I can renew your subscription if you send a check to the club made out to HAS. This allows our transaction to be processed via e-mail.

If you have questions about a 'great magazine offer,' send me an e-mail and I'll try to answer your question. In the meantime, our club subscription rate is about as good as it gets. Please note that the club does not receive any commissions on subscriptions. Any benefits are all yours.

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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's Message *by Chris Peterson*

Astronomy teaches us that we need to take a long perspective to understand the size and age of the universe and the objects in it that we observe. The usefulness of that way of thinking carries over into other aspects of life.

In late August, Neil Armstrong died. He was the first person to walk on the Moon. There never was or will be a comparable moment in human history. That's when we became a multi-world species. It is a moment that will likely be remembered by future generations as long as history is studied. There were a lot of significant changes in the 20th Century, but few will seem as important 500 years from now as they seem today.

Landing a person on the Moon still will.

We were lucky to be represented by Neil Armstrong as the representative of all humans. He was humble about his place in the achievement. His humility was not excessive; it was appropriate. He realized that hundreds of thousands of people worked hard to make the Moon landings possible, and he acknowledged that. He wrote a book about his experiences, but he avoided paid speaking engagements, product endorsements, and every other way that so many people seek out to profit from their celebrity.

I don't mean to say that there was nothing special about him. Although he wasn't specifically chosen to be the first to land on the Moon (just chosen to command the flight that turned out later to be the first to make the attempt), it would have been difficult to find anyone better qualified. Others might not have succeeded. If you want to learn more about him, check out these web sites:

http://www.youtube.com/watch?v=OlJGQ92IgFk&noredirect=1 shows footage of his lunar lander training accident that demonstrated his courage in persisting as long as possible under dangerous circumstances and his good judgment in ejecting when absolutely necessary to save his life.

http://www.youtube.com/watch?feature=player_embedded&v=lRBVJofGQyE#! shows him talking to other test pilots about this and other experiences he had as a test pilot.

http://www.youtube.com/watch?v=Vnb7sjrB0HM is an interview from several years ago with Ed Bradley.

http://thebottomline.cpaaustralia.com.au/ has a multipart interview from just last year that covers many aspects of the Apollo program and Moon landings. It's probably the most in-depth interview he ever granted.

We have lost a giant. An era has passed. *Chris*

Tranquility (Neil's Song) *by Chris Peterson*

These are the lyrics to a song I composed. They are written from the point of view of Neil Armstrong looking back on his Apollo 11 mission to the Sea of Tranquility during which he became the first human being to set foot on another world. I had the privilege of performing the song in 1994, during a celebration in Honolulu of the 25th anniversary of Apollo 11, for Eugene Cernan, commander of Apollo 17 and the most recent person to stand on the Moon.

Riding on a pillar of fire, I rose up through the sky,
Escaped the bounds of Earth's gravity well. Then I fell ….
Into Tranquility. Tranquility.
Just Buzz and me, into Tranquility.

The ground was rough. My fuel was low. This wasn't quite the plan.
Alarms rang out, but we went on. I flew on down. I found a place to land.
Tranquility. Tranquility.
"The Eagle's landed," I told Houston, and they began to breathe.

(Continued on page 11)

NASA's Space Place

Doing Science with a Spacecraft's Signal

By David Doody

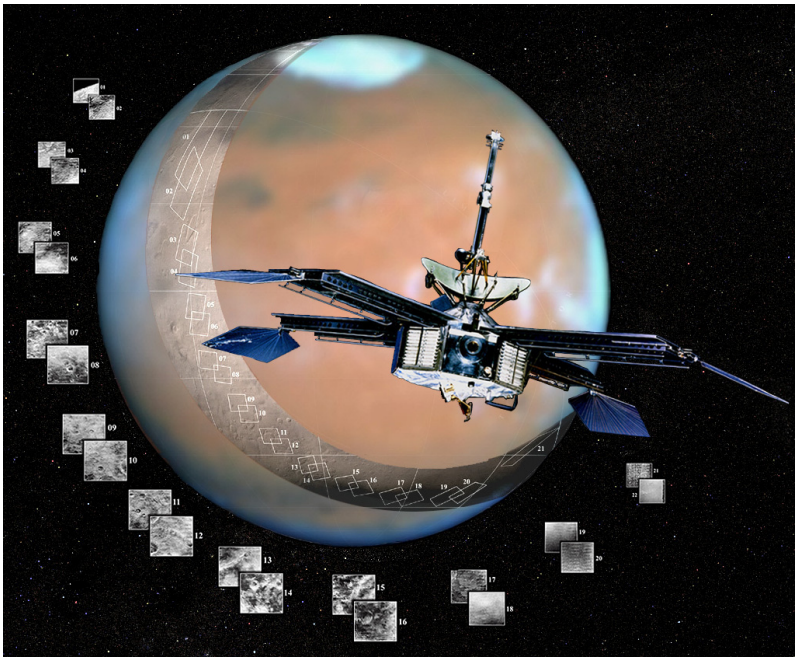
Mariner 2 to Venus, the first interplanetary flight, was launched August 27 fifty years ago. This was a time when scientists were first learning that Venus might not harbor jungles under its thick atmosphere after all. A Russian scientist had discovered that atmosphere during the rare Venus transit of 1761, because of the effects of sunlight from behind.

Mariner 2 proved interplanetary flight was possible, and our ability to take close-up images of other planets would be richly rewarding in scientific return. But it also meant we could use the spacecraft itself as a "light" source, planting it behind an object of our choosing and making direct measurements.

Mariner 4 did the first occultation experiment of this sort when it passed behind Mars as seen from Earth in July 1965. But, instead of visible light from the Sun, this occultation experiment used the spacecraft's approximately 2-GHz radio signal.

The Mariner 4 experiment revealed Mars' thin atmosphere. Since then, successful radio science occultation experiments have been conducted at every planet and many

(Continued on page 9)



In this poster art of Mariner 4, you can see the parabolic reflector atop the spacecraft bus. Like the reflector inside a flashlight, it sends a beam of electromagnetic energy in a particular direction. Mariner 4 was the first mission to include a radio occultation experiment.

Credit: NASA/JPL/Corby Waste

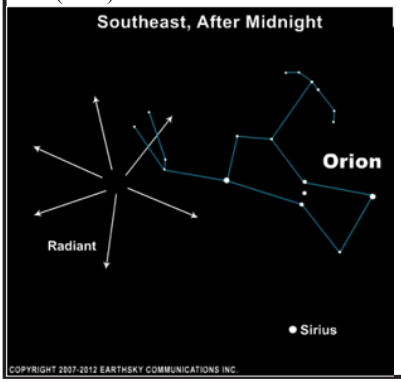
October 2012

October is a busy month for meteor observing and nicely includes two reasonably active showers. The periodic Draconids, associated with comet 21P/Giacobini-Zinner which returned to perihelion in February, showcase in early October.

Next, come the Southern Taurids (STA) associated with Comet 2P/Encke. The δ-Aurigids (DAU) follows which is the weakest of the three known near-Auriga-Perseus showers of late August to October. Peaking on October 18, the ε-Geminids (EGE) is a weakminor shower with characteristics and activity nearly coincident with the Orionids. Speaking of the Orionids (ORI), we will have a fairly nice view this year if one waits until after the Moon goes down. The IMO has tracked this shower and says that each return from 2006 through 2009 has produced unexpectedly high rates of around 40—70. This month I've included a finder chart for the Orionids.

Last Quarter	*New Moon*	*First Quarter*	*Full Moon*
Oct 8	**Oct 15**	**Oct 22**	**Oct 29**

Shower	Activity	Max Date	λ 2000	Radiant α	Radiant δ	V∞ km/s	*r*	ZHR
Draconids (DRA)	10/06 - 10/10	Oct 08	195.4°	262°	+54°	20	2.6	Var
Southern Taurids (STA)*	9/10 - 11/20	Oct 10	197°	32°	+09°	27	2.3	5
δ-Aurigids (DAU)	10/10 - 10/18	Oct 11	198°	84°	+44°	64	3.0	2
ε-Geminids (EGE)	10/14 - 10/27	Oct 18	205°	102°	+27°	70	3.0	3
Orionids (ORI)	10/02 - 11/07	Oct 21	208°	95°	+16°	66	2.5	25*
Leo Minorids (LMI)	10/19 - 10/27	Oct 24	211°	162°	+37°	62	3.0	2



If you plan to observe, let us know – we'd love to coordinate…

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

Oct 5, 12h, M 1.1º SE of Jupiter
(116º from sun in morning sky)

Oct 11, 06h, M 5.9° SSW of Venus
(38º from sun in morning sky)

Oct 16, 12h, M 1.4º NNW of Mercury
(22º from sun in morning sky)

Oct 18, 04h, M 2.1° NNE of Mars
(43º from sun in evening sky)

Oct 24, 02h, M 5.8º NNW of Neptune
(119º from sun in evening sky)

Oct 26, 19h, M 4.7º NNW of Uranus
(151º from sun in midnight sky)

Saturn is closer that 15° from the sun when near the moon in September.

Other Events of Interest

Times are Hawaii Standard Time

Oct 2, 19h. Venus 0.15° SW of Regulus
(40° from sun in morning sky)

Oct 6, 17h, Moon 1.2° SW of 1 Ceres
(102º from sun in morning sky)

Oct 15, 02:02, Moon new

Oct 21 Orionid Meteors
(Favorable year for this major shower)

Oct 26, 12h,
Mercury at greatest elongation
(24.1° East of the sun in evening sky)

Oct 28, Clocks change to standard time on mainland.

☿ Mercury

Mercury is visible most of the month in the west just after sunset.

♀ Venus

Shines brightly in the morning sky at magnitude -4.1. Has a very close approach to Regulus on the morning of Oct 3rd.

♂ Mars

Mars is now too close to the western horizon after sunset to be seen crisply.

♃ Jupiter

Rises in the early evening and shines brightly in Taurus for the rest of the night.

♄ Saturn

Saturn reaches conjunction with the sun this month and is too close to the sun to be viewed.

♅ Uranus

Reached opposition last month and is well placed for viewing in Pisces.

♆ Neptune

Reached opposition in August, so this is still a good month to view the most distant planet in the solar system.

♇ Dwarf Planet Pluto

Can be viewed in the southwest near M25 in the early evening.

⚳ Dwarf Planet 1 Ceres

Approaching opposition in December and is brightening. It will be very close to the moon on the night of Oct 17/18.

Meeting Minutes

by Gretchen West

President Chris Peterson called the Sept. 4, 2012 meeting of the Hawaiian Astronomical Society to order at 7:32p.m. The meeting was held at the Planetarium on the grounds of the Bishop Museum. There were18 members and three visitors in attendance.

Associated Lectures: There is a lecture scheduled for the Hawaii Space Lecture Series on Tuesday, Sept. 25, 2012, at 7:30 pm. Dr. Kim Binsted will speak on "HI-SEAS: Hawaii Space Exploration – Analog and Simulation." Lectures usually take place at the NASA Pacific Regional Planetary Data Center at UH Manoa. Contact NASA PRPDC at 808-956-3132 or go to http://www.higp.hawaii.edu/prpdc.

Planetarium Upgrade: ***Chris Peterson*** reminded members that Bishop Museum is in the process of upgrading the Planetarium. As a result, the October, November and December meetings will take place in the Atherton Halau. Look for postings in the ASTRONEWS about the location of upcoming meetings. The Windward Community College "Imaginarium" has offered to host us at their facility if possible.

Chris Peterson has communicated with ***Freddie Willems*** about coming to speak on astrophotography and imaging. We are looking forward to Freddie's response.

Lacy Veach Day: Saturday, Oct. 27, 2012 is the set date for this year's Lacy Veach Day at Punahou School. ***Gretchen Wes***t will be the liaison for the club. See Gretchen if you are interested in helping out that day.

Star Party Report: ***John Gallagher*** reports that our recent school star party at Pauoa Elementary School on Aug.24, 2012 was a success. Our team of astronomers shared the early evening skies with most of the students of the school and their parents. John passed a sign-up sheet for members interested in helping out at the next event, Mililani Iki, on Sept. 21st. A teleconference regarding the inception of the universe will take place Sept. 18th. Contact John for more information.

Our next suburban star parties at Kahala Community Park and Geiger Park will observe the "International Observe the Moon Night." That evening we will celebrate the Autumnal Equinox. We hope to see members there.

Saving Hubble: IfA will be screening the movie "Saving Hubble" at the UH Art Bldg. on Sept. 5th. There will some solar viewing beginning at 4:00 p.m., with the movie beginning at 7:30 p.m. Stargazing and discussion will follow.

Tee Shirts: J***im MacDonald*** reported that new "winter" dark blue H.A.S. tee shirts are available in all sizes. As for the 'summer' light blue shirts, there is a limited supply. Jim also had illustrations of polo shirts that will be available for order with the H.A.S. logo. Should you be interested orders will be taken with pre-payments only!

Calendar Time: ***Jim MacDonald*** also reports that Astronomy Magazine has offered their 2013 calendars "Deep Space Mysteries," as well as Discovery Magazine 2013 calendars "Wonders of Science" for a discounted $6.50 each. Pre-paid orders will need to be completed no later than the October meeting. See our Ads in the Astronews.

Donation: ***Jay Wrathal***l offered past issues of the Astronomical Calendar 2011 by Guy Ottwell.

Astronomical League: ***Travis Le***, who leaves shortly for his first semester at Stanford, was presented with the Astronomical League of the Pacific plaque for his second place award of Young Astronomer of the Year.

Tribute: The world mourns the passing of American astronaut Neil Armstrong, the first human to step on the surface of the Moon. This evening the Hawaiian Astronomical Society looked back at Mr. Armstrong's life and accomplishments. We viewed

(Continued on page 11)

Hawaiian Astronomical Society
Event Calendar

List View | Past Events | < October 2012 > | Upcoming Events | Add/Log Event

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	1	2 7:30 PM Club Meeting	3	4	5	6 5:30 PM Club Star Party (D) Sunset: 6:16 PM
7	8 Columbus Day 	9	10	11	12	13 5:30 PM Public Star Party(D) Sunset: 6:10 PM
14	15 	16	17	18	19 6:30 PM Niu Valley MS SP	20 5:30 PM Public Star Party(K) 5:30 PM Public Star Party(G) Sunset: 6:04 PM
21	22 	23	24	25	26	27 7:45 AM Lacey Veach Day Sunset: 5:59 PM
28	29 	30	31	1	2	3

CLUB SHIRTS FOR SALE

see Jim MacDonald

POLO STYLE:
Embroidered, different colors, sizes
Orders need to be place by November
More information at club meeting, or contact Jim

T-SHIRT:

$15

- Dark Blue (s - 2XL)
- Light Blue (s - L only)

(Space Place continued from page 4)

large moons. And another one is on schedule to investigate Pluto and its companion Charon, when the New Horizons spacecraft flies by in July 2015. Also, during that flyby, a different kind of radio science occultation experiment will investigate the gravitational field.

The most recent radio science occultation experiment took place September 2, 2012, when the Cassini spacecraft carried its three transmitters behind Saturn. These three different frequencies are all kept precisely "in tune" with one another, based on a reference frequency sent from Earth. Compared to observations of the free space for calibration just before ingress to occultation, the experiment makes it possible to tease out a wide variety of components in Saturn's ionosphere and atmosphere.

Occultation experiments comprise only one of many categories of radio science experiments. Others include tests of General Relativity, studying the solar corona, mapping gravity fields, determining mass, and more. They all rely on NASA's Deep Space Network to capture the signals, which are then archived and studied.

Find out more about spacecraft science experiments in "Basics of Space Flight," a website and book by this author, http://www2.jpl.nasa.gov/basics. Kids can learn all about NASA's Deep Space Network by playing the "Uplink-Downlink" game at http://spaceplace.nasa.gov/dsn-game ☆

Star Party Report *by Sue Girard*

Dillingham Public Star Party - Sept 15, 2012

Well, it sure looked like a gorgeous start to a perfect night of viewing. The sky was beautifully clear and the number of visitors was about 30 or so. We had the usual group of club members (a few regulars were unable to make it), so we all set up and quickly turned our attention to Saturn as it was getting quite low to the horizon. It didn't disappoint giving some first-timers a real thrill with their first glimpse of the ringed planet.

Then we made the rounds of all the favorites as they became visible - Alberio, the Ring nebula, Ptolemy's cluster, various other open and globular clusters. The Milky Way, of course, was spectacular giving many visitors their first real look at it. We pointed out a fair number of satellites as they passed overhead and also noticed two rather strange bright lights just above the Waianae range near Schofield which disappeared before we could get a look at them. Then about 8:30pm some ominous clouds began to come over and most of our visitors left. By 9:00pm the sky had completely clouded over with no sign it would clear, so we decided to call it quits.

Dillingham Club Star Party - Sept 8, 2012

The sky looked rather ominous when we first arrived, but we decided to stick it out and see if it would clear. It did a short time later, so we quickly set up our scopes and started perusing the old favorites. The Milky Way was nearly directly overhead and was very bright, with the dust lanes easily visible. Sagittarius and Scorpius were the clear-on favorites since the Southern sky tended to stay clear at least for the first part of the evening.

The globulars M22, M4, and M5 always delight, and Ptolemy's cluster was very pretty indeed. B86 (Barnard's Ink spot) was nicely visible. However, the clouds started to cover most of the sky and by 8:10pm, it was clear we had pretty much lost the sky. We adjourned to commiserate at Zippy's over a cup of coffee and drove home in a steady drizzle.

Sue

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

Initial Balance:	**$4,145.87**
Receipts:	
T-Shirt Sales	30.00
Donations	53.50
Dues Received	196.00
Calendars	68.00
Total Income:	**$413.40**
Expenses:	
No Expenses This Month	
Final Balance:	**$4,559.27**

The club gained three new members this month. They are ***Henry Weiland, Courtney Bruno and Kaylee Marie Weiland***.

Thanks also to ***Albert Kanno, Sapavith Vanapruks, Susan Girard and Henry Weiland*** for their donations.

We appreciate all of those who remembered to renew their membership on time.

<<Upcoming Star Parties>>

CLUB Party-Dillingham	**Oct. 6** (Girard)
Public Party-Dillingham	**Oct. 13** (Galloway)
Kahala/Ewa Party	**Oct. 20**

☆ ☆ Upcoming School Star Parties ☆ ☆

Fri.	**9/21**	Mililani Ike Elementary (Mililani Mauka)
Fri.	**10/19**	Niu Valley Middle School (East Honolulu)
.		*****2013*****
Fri.	**1/18**	Waikiki Elementary (Honolulu)

(Minutes continued from page 9)

three video interviews with Neil Armstrong. ***Chris Peterson*** also shared the poem "Tranquility-Neil's Song."

Melody Chang brought the Planetarium to life for us, taking us around the solar system and also gave us a guided tour across the evening skies.

As there was no further business, the meeting was adjourned at 9:41 p.m.

Respectfully Submitted,
Gretchen West
Secretary

Neil's Song continued from page 3

Buzz communed for all mankind. Hey, Buzz, now pass that wine to me!
Tranquility. Tranquility.

Stepped off the LEM, I took my giant leap into the Tranquil Sea.
I stood my ground, I looked around, the first of all humanity.
Tranquility. Tranquility.

The only footprints that I saw belonged to me, and those will last a million years.
No traffic lights, no grocery stores, I guess we really are the first ones here.
Tranquility. Tranquility.

Michael Collins, passing overhead, our only neighbor for a quarter-million miles.
I paused to gaze up at the spinning gibbous Earth, but Buzz and I had work to do
And we could only stay a little while.
At Tranquility. Tranquility.

Buzz came out and showed me how to Moonwalk.
He said the desolation was magnificent.
Science, flags, and footprints. There were many reasons that we went.
To Tranquility. Tranquility.

We grabbed our tools and gathered ancient Moon rocks to bring them back for NASA's scrutiny.
They'd peer, and probe, and count, and think, and slice those samples up
until they figured out the history
Of Tranquility. Tranquility.

A CRASH!! A flash! A basin formed, almost 4 billion years ago.
Another hundred million years went by. Lava streams began to flow.
Pulse after pulse of magma filled that basin up until it froze into a waveless crystal sea.
Three billion years and more it turned its face to Earth and waited,
silently, for Buzz and me.
Tranquility. Tranquility.

We splashed down southwest of Hawaii, said "aloha" to the customs people there.
We had a single simple answer to, "Where've you been, and what do you declare?"
Tranquility. Tranquility.

I can't believe that 40 years have come and gone.
People should be living up there NOW!
I don't know when someone will take the next Moon walk,
but Buzz and I showed everybody how.
At Tranquility. Tranquility.

I hear it calling me. It says, "Come back to me."
RSVP. It's mankind's destiny. JFK's legacy. Won't you go there with me?
Tranquility. It's time to get on back to the Moon. YEAH!

☆ *by Chris Peterson*

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

Space exploration lost a pioneer with the passing of Neil Armstrong on Aug. 25, 2012.

See related stories in this issue.

Moon image courtesy: ***Barry Peckham*** *(Dec. 25, 2009)*
Armstrong image courtesy: NASA