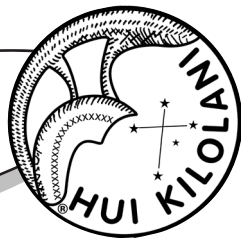


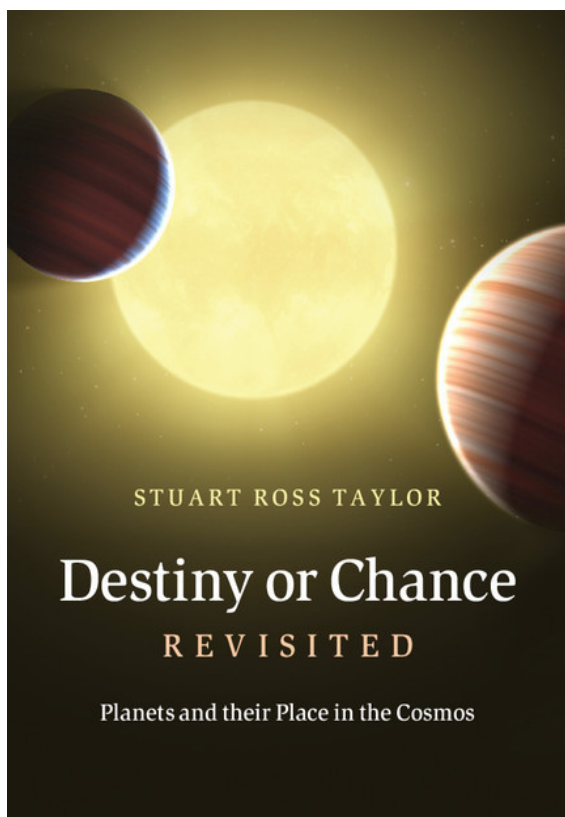
# The Astronews



Volume 61, Issue 11

November 2013

[www.hawastsoc.org](http://www.hawastsoc.org)



Another book recommendation by Meteor Report contributor Tom Giguere (see page 5 for review and meteor information).

Read a good astronomy-related book lately and want to share with your fellow club members? Feel free to send in your reviews!

*Editor*

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### Upcoming Events:

☆The next meeting is 7:30PM on **Tues., Nov 5** at the Bishop Museum.

☆Bishop Museum's next evening planetarium shows are every Saturday of the month at 8:00 p.m.  
[www.bishopmuseum.org/calendar](http://www.bishopmuseum.org/calendar)

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



## Notices:

- Don't forget the HAS Club Potluck on **Tuesday, December 3** at the Bishop Museum prior to the club meeting. We will start at 6PM and would like to finish up in time for the meeting.

Look for the sign up sheet at this month's meeting. As usual, anything is welcome but if you want suggestions you may email me at [c.kaichi2001@gmail.com](mailto:c.kaichi2001@gmail.com). This is a great opportunity to get to know your fellow club members, get in the holiday spirit and share some great food!



## NSN News

- **FLASH:** There will be a telecon on the LADEE Mission to the moon by Dr Brian Day on 12 Nov 2013 at 4:00 pm. Details can be found on the Night Sky Network web page by clicking on the November calendar and then clicking on the link for the LADEE mission on 12 Nov 2013. For additional info contact the NSN Coordinator, John Gallagher, at 683-0118 and leave a message.

Clear Nights,  
*John*



- **THANK YOU (AGAIN) WASHINGTON, D.C.:**

Another irritating result of the recent government shutdown was our regular article from NASA Space Place was cancelled this month.

On the bright side, however, we have some pictures to document Lacy Veach Day--enjoy!



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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.

The first detection of extrasolar planets came in the late 1980s and early 1990s. Once it became clear that they do really exist, more searches were done and more planets were found. This led to the authorization of NASA's Kepler mission, launched in 2009. This mission was dedicated to finding planets by watching the dip in light intensity they cause when they transit their host star. Before Kepler became disabled earlier this year, the number of known planets increased to about a thousand, many in multiple planet systems. More discoveries are yet to be made from data Kepler returned that has not been fully analyzed.

More than one tenth of these are Earth or "Super Earth" sized, but the true percentage is probably greater since larger planets and those in close orbits are easier to detect. Hence, the large number of "hot Jupiters" that have been found. No exact Earth analog has been discovered, but two planets with less than twice Earth's diameter have been found in their star's "habitable zone" where liquid water would be stable at the surface.

A clever observational technique has been used to detect planets orbiting in a different plane from the rotational plane of their star. The rotation of a star slightly blue shifts the light coming from the side that is moving toward Earth and red shifts light on the side moving away. This slightly blurs absorption lines in the star's spectrum. As a planet transits, it blocks light from different areas of blue/red shift as it crosses. If planets are orbiting in the star's equatorial plane there is a certain pattern of changes. The pattern is different if the equatorial and orbital planes are different.

The tilted orbits can be the result of the gravitational attraction of a companion star with an orbit inclined to the rotational plane of the planets' host star. Such a system can force planetary migrations that result in hot Jupiters.

Also, the Spitzer space telescope's infrared measurements of a planet detected by Kepler helped identify clouds in the planet's atmosphere. Future space or Moon based telescopes should be able to actually image some of these planets. Exciting discoveries lie ahead!

Chris



## Traveling With Aperture

by Barry Peckham

Compare your travelling companion with mine. Whose travels lighter, tighter and cheaper? Whose makes less noise, requires less pampering, is jet-lag free and sees the universe as it truly is? Whose makes more friends in faraway places, sits quietly in the back seat of a car and never has a bad hair day? Despite my years of preaching about the merits of airline-friendly aperture, few continue to take their telescopes out into the wild blue yonder.

Owing to a freakishly long stretch of perfect September weather in New England, I had many more scope-worthy nights there than openings in my schedule, but I did set up 4 times when the Moon wasn't bullying the stars. Planning a trip around moon phase is critical for those of us who love the night, but for this visit to Rhode Island my stay would span a complete lunar cycle. As usual, the best weather of all fell upon the Full Moon, and the worst fell on a star party of the Delaware Valley Amateur Astronomers, where I set up and ran a 14" LITEBOX for less than an hour, finding 5 targets in the murk.

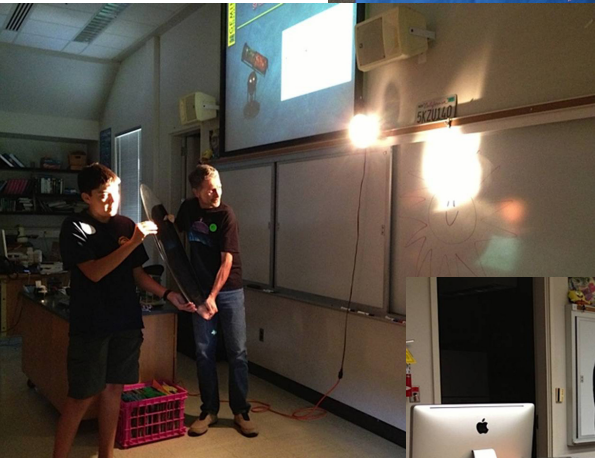
The buzz-kill for jaded old me is the level of light pollution in New England skies. The family farm is rural enough, but bracketed by 3 cities and their associated light pollution domes. While celestial things look better south of the farm, out over the dark Atlantic, Rhode Island's latitude pushes our favorite southern targets down into the buildings and trees and surf. Compared with our light-drenched Dillingham site, rural

*(Continued on page 10)*

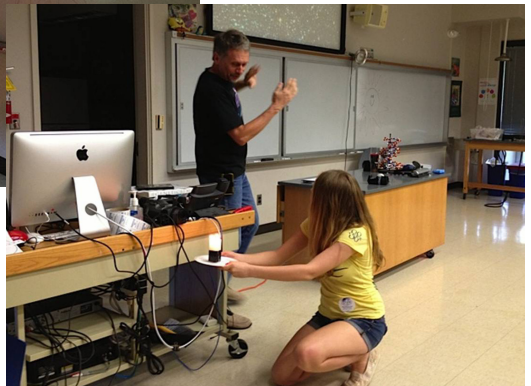
# Lacy Veach Day Punahou School - 10/26/13



**John Gallagher and Sue Girard** show students and their parents a view of the sun in front of the science center at Punahou School, while Punahou alum **Gretchen West** gives back to her alma mater by manning the HAS table during Lacy Veach Day 2013.



Peter Michaud, from Gemini Observatory, conducts a workshop at Lacy Veach Day on Adaptive Optics. He demonstrated focusing light with mirrors and the effects of the atmosphere on astronomical imaging.



I read a compelling book recently called “Destiny or Chance Revisited” by Stuart Ross Taylor. The book is an updated version of his earlier book by the same name (minus the “Revisited”). Dr. Taylor, who is active in the planetary science community usually focusing on the big picture; here he lays out a completely detailed account of the formation of our solar system, Earth and the planets. Asteroids/Meteorites are part of the story, first as the building blocks and later as the cosmic leftovers well after formation. With this solar system groundwork laid, Ross proceeds to neighboring star systems and their newly discovered planetary families of all shapes and size. He could have rested on his long history of research and just written from memory, instead I felt that he dug deep into the literature and incorporated the very latest findings in this book. He probably felt that being up to date was important, since in his words the field of exoplanet discovery around neighboring stars is moving so fast that the facts are almost out of date when they appear on the printed page!

The author applies what he presented as the formation of our solar system to these new planets, specifically “Earthlike” planets, residing in the so-called “goldilocks zone.” Step by step he examines each of the stochastic (i.e. random) events that have shaped our own solar system and examines the odds of the same thing happening to one of these other earthlike planets. The odds quickly get astronomical and it becomes clear what Dr. Taylor thinks the chances of finding life out there are.

Well, isn’t it an interesting question to ponder. Ross has weighed in on the question with his rigorous approach. I read his account, respect it, and can imagine some alternatives to his thinking. What do you think? Is life out there? Read and think for yourself!

Meanwhile, back at the night sky – we have some major moonlight issues in November. November’s full Moon period largely wipes out the three shower maxima, from the minor Northern Taurids on or about November 12, the major Leonids on November 17 and the usually-minor  $\alpha$ -Monocerotids on November 21. Concerning the Leonids, two maximum timings have been suggested in 2013, one by Mikhail Maslov for 10h UT (ZHR 15–20), the other at the nodal-crossing time close to 16h UT (ZHR perhaps 15?), both on November 17.

## MOON PHASES

	<i>New Moon</i> <b>Nov 3</b>	<i>First Quarter</i> <b>Nov 10</b>	<i>Full Moon</i> <b>Nov 17</b>	<i>Last Quarter</i> <b>Nov 25</b>				
	Shower	Activity	Max Date	$\lambda$ 2000	Radiant $\alpha$	$V_{\infty}$ km/s	$r$	ZHR
No. Taurids (STA)*		10/20 - 12/10	Nov 12	230°	58° +22°	29	2.3	5
Leonids (LEO)*		11/10 - 11/30	Nov 17	235.27°	152° +22°	71	2.5	15*
$\alpha$ -Monocerotids (AMO)		11/15 - 11/25	Nov 21	239.32°	117° +01°	65	2.4	Var

**When the full moon trumps your shower, find a good book!**

**Tom Giguere**, 808-782-1408, [Thomas.giguere@yahoo.com](mailto:Thomas.giguere@yahoo.com)

**Mike Morrow**, PO Box 6692, Ocean View, HI 96737



Planets Close To the Moon

Times are Hawaii Standard Time










- Nov 6, 14h, M 8.0° N of Venus  
(47° from sun in evening sky)
- Nov 10, 20h, M 5.5° NNW of Neptune  
(103° from sun in evening sky)
- Nov 13, 14h, M 3.2° N of Uranus  
(137° from sun in evening sky)
- Nov 21, 17h, M 5.0° SSW of Jupiter  
(130° from sun in morning sky)
- Nov 27, 11h, 5.4° SSW of Mars  
(70° from sun in morning sky)
- Nov 30, 11h, 1.5° SSW of Saturn  
(22° from sun in morning sky)

Mercury is closer that 15° from the sun when near the moon in November.

Other Events of Interest

Times are Hawaii Standard Time

- Nov 1, 10h, Mercury at inferior conj. with sun (Passes into the morning sky)
- Nov 3, Clocks change for daylight savings time to standard time.
- Nov 3, 02:48h, Moon new
- Nov 6, 02h, Saturn at conjunction with sun (Passes into morning sky)
- Nov 17, Leonid meteors  
(Unfavorable year for this sometimes huge shower)
- Nov 17, 05:15h, Moon full
- Nov 17, 16h, Mercury at greatest elongation (19.5° West of the sun in morning sky)
- Nov 23, 05h, Comet Ison 4.7° SSW of Saturn (18° from the sun in morning sky)

 <b>Mercury</b>  Visible in the morning twilight late in November, and will be close to Comet Ison and Saturn as Ison reaches it brightest.	 <b>Venus</b>  Shines brightly in the west after sunset. Reached maximum elongation on Halloween evening.	 <b>Mars</b>  Mars is visible in the morning sky before sunrise at a magnitude of about +1.4.
 <b>Jupiter</b>  Jupiter is visible shining brightly in the morning sky above Mars.	 <b>Saturn</b>  Saturn reaches conjunction early in the month. Becomes visible late in the month very low in the east near dawn.	 <b>Uranus</b>  Uranus reached opposition last month and is in the sky most of the month..
 <b>Neptune</b>  Neptune is near the zenith at sunset and can be viewed in the evening hours.	 Dwarf Planet <b>Pluto</b>  Pluto is well placed for viewing in the evening sky in Sagittarius.	 <b>Comet Ison</b>  Should reach max brightness on 11/29. Look low in the east near Mercury and Saturn before sunrise. May be as bright as Mag. -5, or could be a dud.

**President Chris Peterson** called the October 1, 2013 meeting of the Hawaiian Astronomical Society to order at 7:28p.m. The meeting was held in the Planetarium on the grounds of the Bishop Museum. There were twenty-six individuals in attendance.

**Hawaii Space Lecture Series:** This month's lecture is scheduled for Tuesday, Oct. 22. Chris is not sure of what the topic for this month will be, but suspects it will focus upon the Messenger Mission to Mercury. Lectures usually take place at the NASA Pacific Regional Planetary Data Center, room 544 in the Pacific Ocean Science and Technology Building at University of Hawaii Manoa. Contact NASA PRPDC at 956-3132 or go to <http://www.higp.hawaii.edu/prpdc> for more information.

**SOEST Open House:** This year's SOEST Open House will take place on October 25th (8:30 am – 2:00 pm) and 26th (10:00 am– 2:00 pm). SOEST is home to the academic departments of Oceanography, Geology and Geophysics, Meteorology, and Ocean and Resources Engineering, as well as eight research institutes, centers, laboratories, and programs.

**Lacy Veach Day of Discovery:** This year's Lacy Veach Day of Discovery hosted by Punahou School is on October 26. Requests for table and chairs are set; and the lunch orders are made for those people who have signed up.

**Winter Pot Luck:** We would remind everyone that a Winter Pot Luck Dinner will take place prior to the December 3rd H.A.S. general membership meeting at the Bishop Museum. We hope that members will join us on that night to celebrate the holiday season, as well as join in the camaraderie of fellow enthusiasts.

**Possible Upcoming Speaker:** Dr. Norman Butler, who contacted the club a month or so ago, is interested in speaking to the club at the December of this year, about telescope construction.

**On-line Course:** Members were informed that "Corsera" has an astronomy course on-line. If you were to audit this course, it is believed to be free.

**Digital Projector:** The club will be looking into purchasing a digital projector for our use at meetings either in the Planetarium or meeting rooms. Member **Harry Zisko** brought in his digital projector for a dry run. The picture was very nice and everyone seemed please with the resolution.

**General Information:** The H.A.S. Logo has been registered as a service mark with the State of Hawaii. Registration will last until 2018. The club liability insurance has been paid for 2014.

**Upcoming Elections:** Yearly elections will take place during the December General Membership Meeting. **Joanne Bogan** has agreed to chair the elections in December. Anyone interested in running for a position on the H.A.S. Board, please contact Joanne. The club will be replacing three board members consisting of two Members-At-Large and the Vice President position. **Peter Besenbruck** agreed to run for office.

**Comet Ison:** The comet is an early morning sight for early birds with a telescope willing to get up around 3:30 am to view this dim sight, just above Mars in the constellation Leo.

**International Observe the Moon Night:** Saturday, October 12th will be this year's International Observe the Moon Night. So if you are viewing that night, and the sky is clear, take a long hard look at the Moon. Enjoy its craters and mare.

**Star Party Report:** **John Gallagher** reports on our next school star parties:

October 6th – Mililani Uka Elementary

October 25th – Niu Valley Middle

**Visitors:** There was one visitor at this month's meeting.

Hawaiian Astronomical Society  
Event Calendar

List View	Past Events	< November 2013 >			Upcoming Events		Add/Log Event	
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday		
27	28	29	30	31	1	5:35 PM Public Star Party(D)  Sunset: 5:56 PM		
3	4	7:30 PM Club Meeting	5	6	7	6:15 PM Star Studded Night 8 5:20 PM Public Star Party(G) 5:20 PM Public Star Party(K)  Sunset: 5:53 PM		
10	Veterans Day	11	4:00 PM TC: LADEE Mission	12	13	14	15	16
17	18	19	20	21	22	23		
24	25	26	27	Thanksgiving Day	28	29	5:20 PM Club Star Party (D)	30
							Sunset: 5:50 PM	

<<Upcoming Star Parties>>

Public Party-Dillingham      Nov 02 (MacDonald)  
Nov 23 (Galloway)  
  
Kahala/Ewa Party      Nov 09  
Club Only-Dillingham      Nov 30 (Peterson)

.....

☆ ☆ Upcoming School Star Parties ☆ ☆

Fri.	11/08	St Patrick School (Kaimuki area)
Mon.	12/09	Mililani Ike Elementary



**Take the world's best courses,  
online, for free.**

In case you haven't heard of ***coursera.org***, it is an online course that has a very large number of college level courses covering just about any major subject. Levels of commitment range from "auditing" (downloading lecture videos and other course material to be pursued at your leisure) to the full commitment consisting of homework and taking tests toward a certificate of completion.

Of particular note, there are courses in astronomy. Academic background needed varies widely from beginners to graduate level. There are four courses in astronomy coming up. One starts in December 2013 and three start in early 2014.

The first is “Introduction to Astronomy” (<https://www.coursera.org/course/introastro>) beginning Dec 2, 2013 with a duration of 12 weeks. Basic familiarity with scientific notation and high school algebra are the prerequisites. The second, starting in January 2014, “Analyzing the Universe” (<https://www.coursera.org/course/analyze>) lasts 6 weeks with prerequisites of high school algebra and trigonometry. The third course begins in February 2014: “Highlights of Astronomy – The Big Questions” (<https://www.coursera.org/course/astronomy>) for 4 weeks. Minimum prerequisites are high school math and an interest in astronomy. The last, also starting in February 2014, is “Astrobiology and the Search for Extraterrestrial Life” (<https://www.coursera.org/course/astrobio>) with and does not require any academic background.

Some of the Coursera courses have as many as 250,000 students enrolled in a single class. The student forums give you a chance to interact with fellow students across globe. This may be the future of educating the planet.



(Minutes continued from page 7)

**General Subjects:** *President Chris Peterson* gave an explanation of reports that the Voyager I space probe may have reached and crossed the edge of the heliopause, indicating that it may have left the Solar System.....probably.

**Get Ready for the Holidays:** *April Lew* informed the members that the 2014 Astronomy Magazine calendars will be available for sale again this year for \$6.50 each.

**Rental Scope:** *Chris Peterson* reminded all members that the club has rental telescopes that are light weight and easy to move from place to place. We would like to remind everyone that our scopes are available for rent by members for a nominal fee. If you are interested be sure to contact ***Vice President Leslie Galloway***. It is a fine way to pass the evening enjoying the stars.

**Planetarium:** Enjoying the night sky outside is the best, but enjoying the planetarium night skies with *Joanne Bogan* is a real treat. She shares her knowledge of the night sky with vim and vigor. Joanne asked us to join her in enjoying the well-known “Explorers of Polynesia” show this month. She indicates that there is a new show in the works, and she wants us to view the new one as well and see which one we prefer.

**Mahalo:** As there was no further business, the meeting was adjourned at 9:17 p.m. Members enjoyed tasty refreshments supplied by *Susan Girard and April Lew*.

Respectfully Submitted,  
*Gretchen West*  
HAS Secretary



# Treasurer's Report

by Jim MacDonald

HAS Financial Report for the month ending as of Oct. 15, 2013

<b>Initial Balance:</b>	<b>\$3,937.46</b>
<i>Receipts:</i>	
Calendar	110.50
Dues Received	62.00
Telescope Fee	20.00
<b>Total Income:</b>	<b>\$192.50</b>
<i>Expenses:</i>	
Astronews	149.74
<b>Total Expenses:</b>	<b>\$568.61</b>
<b>Final Balance</b>	<b>\$3,980.22</b>

The club gained three new members this month. They are **Brian Hagelin, Alisa Burpee, and Michelle Manna.**

Come see what the late fall early winter skies have to offer. These are some of the best views of the year!

.....  
(APERTURE continued from page 3)



Rhode Island was much less satisfying. I will appreciate Dillingham Airfield more when next the weather gods bless our gathering.

Barry



Dillingham Club Star Party - Oct. 26, 2013

Seven HAS folks turned out at Dillingham for the club star party and it turned into a weird yet wonderful evening. As we were arriving we had views of helicopters with water slings dumping water on that big brush fire in the Waianae mountains.

The sky cleared completely, but moisture and haze made for poor transparency. The Milky Way was just visible and the stars twinkled madly with the poor seeing.

Then there was a weird phenomenon of heat lightning flashing from a storm cell about 80 miles southwest of O'ahu. The flashes happened quite often and were very bright during our entire time out there making for a rather strange observing session in spite of a clear sky. It was a poor galaxy evening, but double stars were easily split (the 'Double-double' was gorgeous!).

A couple folks left at 8:30pm, and some at 10:30pm, but the rest of us stayed until midnight when the dew started forming. All in all, a very strange, but enjoyable evening.



(Meteor Report continued from page 5)

MOON PHASES

New Moon      First Quarter      Full Moon      Last Quarter  
Oct 5            Oct 11            Oct 18            Oct 26

Shower	Activity	Max Date	$\lambda$ 2000	Radiant $\alpha$	$\delta$	$V_{\infty}$ km/s	$r$	ZHR
Draconids (DRA)	10/6 - 10/10	Oct 08	195.4°	262°	+54°	20	2.6	Var
So.Taurids (STA)*	9/10 - 11/20	Oct 10	197°	32°	+09°	27	2.3	5
$\delta$ -Aurigids (DAU)	10/10 - 10/18	Oct 11	198°	84°	+44°	64	3.0	2
$\epsilon$ -Geminids (EGE)	10/14 - 10/27	Oct 18	205°	102°	+27°	70	3.0	3
Orionids (ORI)	10/2 - 11/7	Oct 21	208°	95°	+16°	66	2.5	20*
Leo Minorids (LMI)	10/19 - 10/27	Oct 24	211°	162°	+37°	62	3.0	2

Keep your sense of humor as you sit in the dark looking up!  
For more info or to send in your astro-humor contact:  
Tom Giguere, 808-782-1408, [Thomas.giguere@yahoo.com](mailto:Thomas.giguere@yahoo.com)  
Mike Morrow, PO Box 6692, Ocean View, HI 96737

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**Honolulu, HI 96817-0671**



This image, contributed by HAS Member *Alex Dzierba*, was highlighted in the online site SpaceWeather.com. Alex took this picture of the sunspots rising over Koko crater in Honolulu on Oct. 8th using a Coronado Personal Solar Telescope with a Ca/K filter.

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