

Volume 61, Issue 6

www.hawastsoc.org





The Club's big event is this month! The HAS swap meet will be held at our regular meeting on June 4.

Go through your astronomy equipment for those items you no longer need and bring them to the *Paki classroom* at the Bishop Museum to put it on display. (Note: different meeting place this month) Hopefully, your "junk" will become someone else's treasure.

This is a good opportunity to turn your surplus equipment into cash and clear space in your storage area. OR, there is always the possibility that you might also find a sweet bargain or two for sale as well.

Come one, came all, and let's have a good time looking at equipment, swapping stuff and stories!



The Hawaiian Astronomical Society is now on



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Upcoming Events:

☆The next meeting is 7:30PM on Tues., June 4 at the Bishop Museum.

Bishop Museum's next evening planetarium shows are Friday, June 7 & 21 at 8:00 p.m. www.bishopmuseum.org/ calendar

☆The next Board Meeting is Sun., June 2 at 3:30 p.m. at the POST building at UH. Up To The Minute: 🐧



NOTICE FROM CLUB SECRETARY: CHANGE OF ADDRESS

When copies of the Astronews are returned as undeliverable I am reminded of the need for members to inform the club of address changes. Processing such changes couldn't be any easier. Send the treasurer an email with your new address and it's done. Members addresses are kept confidential and only shared with the Astronomical League (of which we are a member) for their use in mailing the League's Reflector magazine.

Updating information also applies to members receiving the electronic version of the newsletter. Please make sure I have your current e-mail address. Also consider receiving your newsletter electronically. Your e-copy will be received earlier than by snail mail, in color, plus it will save the club the cost of printing and postage. If you have any questions, ask and I'll respond as quickly as I can.

Jim MacDonald

GET THE LATEST – Did you know that the calendar in the ASTRONEWS is a snapshot of the club's activity on the Night Sky Net-work (NSN) website? Members of NSN can access the calendar online, which is updated on a daily basis as changes occur, even after publication.

The online calendar will also take you to a page that has additional information about the event (including a map) by just clicking on the event title.

You can also sign up for an event onine. By signing up electronically, your volunteer hours and miles are documented, which helps at "tax time" if you claim travel expenses. Another advantage of our online calendar is the fact you can look ahead throughout the year and plan your time and activities. See me to learn more.

Clear skies....

John Gallagher

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The **Astroneus** 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

People join the Hawaiian Astronomical Society for various reasons, and we all have our favorite club activities. Some are avid visual observers while others love imaging objects in the sky. Some of us enjoy sharing the sky with others at star parties, attending meetings, or reading the Astronews. The club exists to serve its members and the general public.

One of our main activities, of course, is providing opportunities to observe the sky. Some members would like more such opportunities. One way that we can provide some help in that regard is to slightly modify our policy for observing at Dillingham airfield.

We have two star parties a month there, one each for members and for the general public. We all know that sky conditions are not always good, and a month is a long time to wait for the next observing opportunity.

We will begin designating areas during the public star parties at Dillingham for members who want to do their own observing without being bothered by the visitors who come. This policy will evolve over time as we decide which areas should be for the public and which only for club members and how best to maintain the separation.

We are also considering adding ways for members to contact other members through our web site to arrange for small group observing sessions at other times and places. If anyone has thoughts or suggestions on the best way to accomplish this, please contact a board member. This is a work in progress.

Remember, we are going to have a swap meet at this month's membership meeting. If you have equipment you want to sell, please bring it. If you are looking for equipment, please come and bring money! All sales are person to person with no club involvement.

Also, there will be another activity in the Planetarium, so we will hold our meeting in another room, probably one of the Paki classrooms. Just follow the crowd or ask a security guard. Happy shopping!

Chris



The weather held up on May 9 for the partial solar eclipse that attracted many to viewing sites around the islands. HAS hosted one of those sites at the Bishop Museum, shown in this montage.

Photo Credit: Sue Girard

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Triple Treat by Dr. Ethan Siegel

The solar system is a busy place, with five wandering planets visible to the naked eye alone. When any two pass close by each other from our point of view, we see an astronomical conjunction, but on very rare occasions, three planets will find themselves grouped together: a triple conjunction. Towards the end of May, Mercury, Venus and Jupiter will treat us to the best triple conjunction in years.

On May 25th, Mercury will pass within 1.4° of Venus, then two days later Mercury comes within 2.4° of Jupiter, and finally on the 28th, Jupiter and Venus approach within 1° of one another. If it weren't for the slight orbital tilt of our solar system's planetary orbits, these conjunctions would all be occultations instead. During the nights of May 26th-27th, all three planets are visible immediately after sunset within the same 3° field of view, with the triple conjunction peaking in a triangular shape on the 26th. (For scale, the full Moon subtends about 1/2°.) The three planets appear close together for a few days more, making a line in the sky on the 30th/31st.

How does this happen? Mercury and Venus race around the Sun far faster than Earth, with Mercury completing more than four revolutions around the Sun for each one that Earth makes. At the same time, Jupiter is far slower, taking 12 years to orbit just

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The image shows the configuration of Mercury, Venus, and Jupiter in the western sky just after sunset on May 26, 2013. Insets show the relative size appearance of the planets on that date. *Credit: NASA*

Astronews

Dillingham Public Star Party Report May 11, 2013

The Dillingham Public Star Party was pretty much another washout with the weather not cooperating a bit. About 12 visitors and 7 members came in spite of the ominous clouds and sprinkles of rain. *Jim MacDonald* was the Coordinator for the evening. After some discussion, most visitors left, but a few stalwart members and two visitors decided to stick around for another hour to see if the weather would clear.

After watching a 'sucker hole' slowly form, I decided to set my scope up for a quick peak at Mizar/Alcor star system in the Big Supper handle. We also were able to check out the Whirlpool galaxy briefly before the sky closed in on us and ended the session. We left at 8:15pm.

Kudos to members *Peter Besenbruch, Steve Chun, Greg Wilson,* and visitors Don and Donna for sticking it out!



Laser Attacks On Aircraft A New Federal Crime

PITTSBURGH, Pa. - Shining a laser pointer at an aircraft or its flight path is now expressly illegal under federal law, United States Attorney David J. Hickton announced today.

On Feb. 14, President Barack Obama signed the FAA Modernization and Reform Act of 2012, which modernizes the nation's aviation system. Section 311 of the Act adds a new provision (18 U.S.C. ' 39A) to the Criminal Code. Title 18, United States Code, Section 39A establishes a new criminal offense for aiming the beam of a laser pointer at an aircraft in the special aircraft jurisdiction of the United States, or at the flight path of such an aircraft. The crime is punishable by a fine of up to \$250,000 and up to five years' imprisonment. The statute was enacted in response to a growing number of incidents of pilots being distracted or even temporarily blinded by laser beams.

Mr. Hickton described the number of laser incidents reported to FAA in recent years as "staggering." In 2010, nationwide reports of lasers pointed at aircraft almost doubled from the previous year, rising to 2,826 from 1,527 in 2009. In 2011, the number of incidents significantly increased again to 3,591, the highest number of laser events ever recorded, and roughly the same number reported from 2004 through 2009.

The new law offers an alternative charging option in that it specifically prohibits the act of knowingly aiming the beam of a laser pointer at an aircraft, and does not require proof of willfulness. Instead it requires proof that a defendant knowingly aimed the beam of a laser pointer at an aircraft or its flight path. The statute does, however, carve out exceptions for certain individuals engaged in authorized research, such as certain persons working for the Federal Aviation Administration, the Department of Defense, and the Department of Homeland Security. There is also an exception for individuals using a laser emergency signaling device to send an emergency distress signal.

For more information go to http://www.gpo.gov/fdsys/pkg/CRPT-112hrpt381/pdf/ CRPT-112hrpt381.pdf

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Observer's Notebook

Planets Close To the Moon Times are Hawaii Standard Time

- June 9, 23h, M 5.3° S of Venus (19° from sun in evening sky)
- June 10, 11h, Moon 5.8° S of Mercury (24° from the sun in evening sky)
- June, 07h, M 3.6° S of Saturn (127° from sun in evening sky)
- June 27, 09h, M 5.6° N of Neptune (120° from sun in morning sky)
- June 30, 03h, M 3.5° NNW of Uranus (86° from sun in morning sky)

Mars, and Jupiter are closer that 15° from the sun when near the moon in June.

by Jay Wrathall

Other Events of Interest Times are Hawaii Standard Time

June 8, 05:58h, Moon new

June 12, 07h, Mercury at greatest elongation (24.3° East of the sun in evening sky)

June 19, 06h, Jupiter at conjunction with sun (Passes into morning sky)

June 20, 19:04h, Summer Solstice

June 23, 01h, Moon at perigee only 0.4 hour before full moon. Very high tides expected

June 23, 01:33h, Moon full

June 24, 11h, Venus 0.44°S of 4 Vesta (23° from sun in evening sky)

		-7 Moro
	Y venus	O wars
Mercury makes an appear- ance in the evening sky early in June and is above Venus for the first couple of weeks of the month.	Venus is low in the west after sunset.	Mars is still too close to the sun to be viewed.
ቧ Jupiter	う Saturn	👌 Uranus
Low under Venus and Mercury at the first of the month, but soon disap- pears into the glare of the sun, reaching conjunction on June 19.	Saturn is high in the east at sunset and can be viewed most of the night.	Uranus can be viewed in the morning sky before dawn.
Ψ Neptune	P Dwarf Planet Pluto	2 Dwarf Planet 1 Ceres
Also in the morning sky before dawn, but will be better viewed later this year.	Close to opposition by the end of June, so this is one of the best months to try to view. Near midnight is the best time.	Still in the sky most of the night after reaching opposition in the middle of last month.
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President Chris Peterson called the May 7, 2013 to order at 7:30pm at the Bishop Museum Planetarium.

Presidents report:

--The Planetary Data Center speaker for the month has not yet been finalized so no information yet.

--The June HAS meeting will be a swap meet, so Chris encouraged members to bring their items on that date. (About 4-5 members indicated they will bring items for sale)

--The HAS had our usual presence at Kahala Mall on April 20th for Astronomy Day and it went quite well with the weather generally cooperating, however views of the Moon were not possible due to low lying clouds.

--The HAS also supported the IFA Open House on Sunday April 14 with our usual table display.

--*Jim MacDonald* reported the results from our HAS judging at the State Science Fair. HAS awarded prizes to 10th grader Chris Kim from Maui and Iolani 8th grader Chris Lindsay.

--Chris mentioned that the Board discussed that, since the Dillingham site access is restricted to only two nights a month, we set aside an area at the Public Star party for those members who want to observe or photograph and not wish to interact with visitors. There was also discussion about having a link on our website for members to log in to find observing buddies for times and sites other than Dillingham.

--*John Gallagher* said there was only one school star party in May for Palolo Elementary, which is a new school on our list. It will be Friday May 17th. Volunteers were requested for the event.

--HAS members were asked to volunteer for the upcoming partial eclipse of the Sun on Thursday May 9th at the Bishop Museum.

--New visitors to the HAS meeting were Don Andera and Donna Hanson, and Brenda Grigg and Sandy Kirkoski.

--*Jay Wrathall* brought a 'Wil Tirion Sky Atlas' that was left over from when he taught at BYU. He offered it for sale to members. If no one buys it now, he will bring it to the June swap meet evening.

Program:

Our program for the evening was put on by **Tom Giguere** who presented the lecture he gave at the Lunar and Planetary Science Conference in Houston Texas. His topic was "Cryptomare and Pyroclastic Deposits on the Northeast Side of the Moon. He concentrated on three crater areas - Cleomedes, Gauss, and Bel Kovich. Early lava deposits were buried by some obscure material and excavated by later impacts. He showed photos from the Lunar Reconnaissance Orbiter demonstrating small craters with dark ejecta blankets around them of older material excavated from beneath. He also showed some probable volcanic domes and vents within the Gauss crater complex. His talk was well received with a number of interesting questions.

The evening ended with HAS member Joanne showing the show the Planetarium has designed for pre-school children. It was quite a bit of fun and an interesting presentation.

Respectfully Submitted,

Sue Girard (for Gretchen West)



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Hawaiian Astronomical Society Event Calendar

List View Past Events < June 2013 > Upcoming Events Add/Log Event						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
26	27	28	29	30	31	6:45 PM Club Star 1 Party (D) Sunset: 7:12 PM
2	3	7:30 PM Club 4 Meeting	5	6	7	6:35 PM Public 8 Star Party(D) Sunset: 7:14 PM
9	10	11	12	13	14	6:45 PM Public 15 Star Party(G) 6:45 PM Public Star Party(K) Sunset: 7:17 PM
16	17	18	19	20	21	22 Sunset: 7:18 PM
23	24	25	26	27	28	6:45 PM Club 29 Star Party (D) 29 Sunset: 7:19 PM
30	1	2	3	4	5	6

<u>NOTICE</u>

HAS has published a complete listing of Club members in the this 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 includes all member's names, mailing addresses, and phone numbers.

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 <u>purposes</u>. With the exception of our membership in the Astronomical League, HAS does make this list available to, nor do we sell its contents to anyone for any purpose. *Please respect our member's right to privacy.*

The Astronews

(Space Place continued from page 4)

once around the Sun. Jupiter's been high in the sky during the early parts of the night, but steadily lowers throughout May as Earth continues to move away from it, approaching its maximum distance from Earth. Mercury and Venus, meanwhile, begin to move out from behind the Sun during May: Venus at the beginning of the month and Mercury in the middle.

Thus, during this triple conjunction, all three planets will be on the far side of the Sun, something that happens just 25% of the time in triple conjunctions involving Mercury and Venus! If you telescopically resolve these planets into disks, you'll see our inner worlds in a nearly-full gibbous phase. Jupiter will appear largest in terms of angular diameter, followed by Venus and lastly by Mercury. Just a year ago, during its now-famous transit, Venus took up more than a full arc-minute in the sky; during this conjunction, it will just one-sixth that angular size and less than a third the apparent diameter of Jupiter. Nevertheless, Venus will still be more than six times as bright as Jupiter during this time, outshining all night-sky objects other than the Moon. Closer conjunctions of two naked-eye planets are frequent, but getting three or more like this happens just once or twice per decade, so don't miss your chance to see it.

And speaking of occultations, The Space Place has a great kid-friendly explanation of the Venus transit and solar eclipses of 2012 at spaceplace.nasa.gov/venus-transit.

Dr. Ethan Siegel, a theoretical astrophysicist, is a professor at the University of Portland (OR) and Lewis & Clark College. This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration. 57

From the Editor: This is part of a continuing series contributed by Joseph E. Ciotti, Professor of Physics, Astronomy & Mathematics/ Director of the Center for Aerospace Education, Windward Community College, University of Hawai'i

This article originally appeared in The Hawaiian Journal of History, Vol. 45, 2011

HISTORICAL VIEWS ON MAUNA KEA: FROM THE VANTAGE POINTS OF HAWAIIAN CULTURE AND ASTRONOMICAL RESEARCH

BROKEN TRUST - WIDENING THE CULTURAL DIVIDE (cont.)

At least now, the community was speaking up. The vocal dissension that arose in the 1990s had the positive effect of galvanizing the Hawaiian community into articulating the underlying causes of its resentments and demands to set them right. There were still some who vocally demanded the removal of the observatories, but public forums suggested those were in the minority.

Community input during the crafting of the new Master Plan included criticism "that native Hawaiian voices were not part of the advisory or decision making agencies. At the same time, some native Hawaiians mentioned that the voices that were loudest did not necessarily represent the majority of the community."

Other, more practical concerns had surfaced in the community's overall testimony. What was in it for the Hawaiian community? How would their children benefit from these telescopes? While the majority felt that a limit had already been reached for building on the summit, the consensus was to use what you have and give back to the community. These sentiments are best summed up by several testimonies presented when the new Master Plan was being formulated:

"The mountain is very sacred. Some of us feel that you need to remove these structures, but I must accept them. I know that our children need the education. They are

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Initial Balance:	\$4,708.39		
Receipts:			
Donations	3.00		
Dues Received	130.00		
Magazine Payment	68.00		
Total Income:	\$201.00		
Expenses:			
Astroleague Dues	635.00		
Astronews	152.75		
Magazine Subscriptions	32.95		
Total Expenses:	\$820.70		
Final Balance	\$4,088.69		

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

The club gained four new members this month. They are **Brenda Grigg** and Sandy Kirkoski along with our science fair winners, Christopher Kim and Christopher Lindsay. Thank you to Brenda Grigg for her donation. Come join us at one of our star parties for some wonderful viewing. Beautiful Saturn has once again returned to our skies as Jupiter is departing. Come join us for some great views of the Summer skies.

<<Upcoming Star Parties>> **CLUB Party-Dillingham June 1** (Galloway) **Public Party-Dillingham** June 8 (Girard) Kahala/Ewa Party June 15 **CLUB Party-Dillingham** June 29 (Girard) \$ \$ 23 2 SCHOOL STAR PARTIES

UNTIL FURTHER NOTICE

SUMMER VACATION!



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Historical View of Mauna Kea continued from page 3

gone because there are no jobs here. Just maintain what you have now." — (local resident)

"... this represents a crossroads of two important Hawaiian values: preserving the 'āina [land] or protecting my 'ohana [family]. Nothing can be found in the past that can compensate for failure in the present." — (Keck Observatory employee)

BRIDGING THE GAP: 'IMILOA ASTRONOMY CENTER

The new Mauna Kea Science Reserve Master Plan was finally adopted in 2000 after more than a year of discussions and meetings. This document established a new management board that included Hawaiian representation. It allowed for the building of three additional observatories and the redevelopment of five current facilities. Perhaps, more importantly, the new Master Plan explicitly included an educational outreach component for native Hawaiians and others. The plan essentially adopted the UH-Hilo's independently developed proposal calling for the establishment of the 'Imiloa Astronomy Center (then called the Mauna Kea Astronomy Education Center). 'Imiloa in Hawaiian fittingly means to explore. The Master Plan stated:

Education, with an emphasis on outreach to indigenous community members, is a central feature of the Master Plan. Much of the philosophical framework for this finds expression in the proposed Mauna Kea Astronomy Education Center at the University of Hawai'i at Hilo. The Center will serve to facilitate formal astronomy education and the integration of science into indigenous cultures at all levels. It also will serve as the principal center in the world demonstrating how the latest science can be integrated with indigenous cultures of great antiquity to maintain unique cultural identity and knowledge while participating at the scientific forefront of the international global society.

The 'Imiloa Astronomy Center was conceived in late 1993 by Marlene Hapai, who would eventually become its director during most of its construction phase. Like the driving force behind the observatories, the initial motivation for establishing this science center and planetarium sprang from employment concerns on the Big Island.

As dissension over Mauna Kea escalated during the 1990s, 'Imiloa's mission expanded to include the improvement of relations between astronomers and the community by showcasing the connections between the rich traditions of Hawaiian culture and the groundbreaking astronomical research conducted at the summit.

The University of Hawai'i at Hilo assembled a team of educators, scientists and community leaders to draw up the plans for the facility. Since 'Imiloa was intended as a bilingual (Hawaiian and English) educational center, assistance from UH-Hilo's College of Hawaiian Language Studies was enlisted from the start. One of the driving forces behind this project was U. S. Senator Daniel K. Inouye, who was instrumental in securing \$26 million of federal funds and NASA grants to design and construct the Center. The actual design phase began in 1999 with construction commencing in 2002. The facility officially opened in February 2006.

The three large titanium-clad cones that are the centerpiece of its unique architectural design symbolize the island's three largest volcanoes—Mauna Kea, Mauna Loa and Hualālai. 'Imiloa features a 16-m dome planetarium and a 12,000 square-foot exhibition hall with over 300 displays.

All exhibits have bilingual captions. Although this doubles the amount of signage and departs from standard museum practice of minimizing text, bilingual labeling was seen as capitalizing on the revitalization of the Hawaiian language. By creating a fluent Hawaiian language setting, this approach is intended to engage Hawaiian youth in sciences while maintaining pride in their cultural identity.

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☆ (To Be Continued)

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



graph at Gemini North). On 11/28/13, Comet ISON will make one of the closest 2013 (left to right, respectively-obtained with the Gemini Multi-Object Spectropasses ever Observatory shows Comet C/2012 S1 (ISON) on Feb 4, Mar 4, Apr 3, and May 4 READY OR NOT, HERE IT COMES: A new series of images from Gemini

Sun's surface. Image courtesy: Gemini Observatory/AURA atmosphere, called the corona, and moving to within about 700,000 miles of the recorded as the comet skirts the Sun, penetrating our star's million-degree outer

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