

A Community Effort

Charles Rykken

One of my duties as the editor of Astronews is to solicit articles to be published in Astronews. I also see the Astronews as a kind of community bulletin board. I am new at this editor business and have yet to build relationships with potential contributors. I thought it might be a good idea to ask any of you reading this if you think you might have an article you would like to submit. I balk at doing this because, if there are a large number of article submissions, I will have to reject most of the submitted articles. As an unpublished writer of fiction, I know well the difficulty of getting something published through a large publishing house and have developed a thick skin when it comes to rejection. Of course, Astronews is no large publishing house but we do have standards. So if you have something that you believe the community of readers would enjoy and have a thick skin about letting me decide what is put on these pages, then let's give it a twirl.

I am getting a bit embarrassed by me being the only writer of articles beside the regular submissions detailed in the table of contents above to the right.

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Upcoming Events:

- The next meeting is on Tuesday, Jan. 6th at the Bishop Museum.
- Bishop Museum's planetarium shows are every Saturday of the month at 8:00 PM
www.bishopmuseum.org/calendar
- The next Board meeting is Sun., Jan 4 at 3:30 PM in POST building at UH.

President's Message

January 2015

Welcome to the Year of the Dwarf Planet! At least that's what I'm calling it. This year NASA spacecraft will, in a sense, complete the initial reconnaissance of the planets in our solar system. The only two dwarf planets that were once considered (just) planets will share the spotlight as the year progresses.

The Dawn spacecraft has finished its study of Vesta. It has begun to image Ceres at low resolution, but the resolution should exceed that of images taken by the Hubble Space Telescope, the best available so far, by January 26th. Dawn is approaching Ceres slowly, so the images will gradually improve. Dawn should begin orbiting Ceres in March.

The New Horizons spacecraft will steal attention away from Dawn when its images exceed Hubble quality on about May 5th. It is moving much faster than Dawn and will fly past Pluto on July 14th. Dawn will gradually reduce its distance from Ceres and gradually image the whole body at higher resolution as it did at Vesta. New Horizons will collect all its best images of the bodies in the Pluto system over only a few days. However, so much data will be collected that it will take months to transmit it all back to Earth. It will be interesting to watch how public attention bounces back and forth between the dwarf planets as new images of each are revealed over time.

Of course, those aren't the only groundbreaking missions going on. The European Rosetta mission will be following Comet 67P around the Sun. As I write this, the location of the Philae lander that failed to stick its landing and bounced away is unknown. It should soon be found

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The Astronews is the monthly newsletter of the Hawaiian Astronomical Society. Some of the contents may be copyrighted. We request that authors and artists be given credit for their work. Contributions are welcome. Send them to the Editor via e-mail. The deadline is the 15th of each month. We are not responsible for unsolicited artwork.

Planets Close To the Moon

Times are Hawaii Standard Time

- Jan 7, 22h, M 4.9 SSW of Jupiter
(146° from sun in morning sky)
Jan 16, 02h, M 1.8° N of Saturn
(54° from sun in morning sky)
Jan 21, 08h, M 3.1° N of Mercury
(16° from sun in evening sky)
Jan 21, 16h, M 5.4° NNW of Venus
(21° from sun in evening sky)
Jan 22, 13h, M 3.7° NNW of Neptune
(33° from sun in evening sky)
Jan 22, , 17h, M 2.7° NNW of Mars
(36° from sun in evening sky)
Jan 25, 02h, M 0.59° NNW of Uranus
(68° from sun in evening sky)

Other Events of Interest

Times are Hawaii Standard Time

- Jan 4, Quadrantid Meteor
(Unfavorable because of full moon)
Jan 4, 18:53h, Full Moon
Jan 10, 15h Mercury 0.65° west of Venus
(18° from sun in evening sky)
(Magnitudes -0.7, -3.9)
Jan 14, 10h, Mercury at greatest elong. from sun
(18.9° ast of the sun in evening sky)
Jan 19, 14h, Mars 0.21 SSE of Neptune
(36° from sun in evening sky)
(Magnitudes +1.2, +8.0)
Jan 20, 03:14h New Moon
Jan 29, 06h, 3 Juno at Opposition
Jan 30, 04h, Mercury at inferior conj with sun (Passes into morning sky)
3-Juno (Asteroid) - reaches opposition on Jan 30 at magnitude +8.1.

Planets in October

Mercury ♿ makes an evening appearance in January. Look for it very near Venus on Jan 10.	Venus ♀ is low in the west just after sunset.	Mars ♂ is visible low in the SW evening sky , Very close to Neptune on Jan 19.
Jupiter ♃ is in the sky most of the night as it approaches opposition next month..	Saturn ♄ is visible low in the southeastern sky before sunrise.	Uranus ♅ is visible in the evening sky after sunset above Mars.
Neptune ♆ is low in the evening sky after sunset.		Pluto ♇ (Dwarf Planet) reaches conjunction with the sun on Jan 3, so is lost in the glare of the sun all month.

Vice President Peter Besenbruch called the December 2, 2014 meeting of the Hawaiian Astronomical Society to order at 7:37 p.m. The meeting was held in the Planetarium, on the grounds of the Bishop Museum, Honolulu, Hawaii. There were thirty-three members and two visitors in attendance.

Prior to this evening's meeting, many members joined together for a little holiday potluck supper. The food was delicious and the fellowship was outstanding. A good time was had by all. Thank you all for the great food selections.

The Geminid meteor showers will be visible on the nights of December 4th through the 17th. The morning of December 14 should be the best viewing. Viewing at Moana Farms in Waianae is available to those who are interested.

In the News – The Hyabusa II was launched into space as of about 7:00 pm, December 2, 2014 HST. The spacecraft is to travel to asteroid 1999 JU3 to collect rock and then return in 2017.

The Rosette mission lander Phoebe landed safely on the asteroid's surface. After a bounce or two, it is believed that the lander came to rest close to a cliff face. Only a few minutes of data was sent.

The New Horizon's mission to Pluto will have a wake-up call on December 6th to prepare it for its rendezvous with Pluto next July 14, 2015.

Storage Box Installation – Barry Peckham is designing, constructing and installing a storage box for our digital projector. The box will be mounted to the wall in the Planetarium behind-the-scenes work area. Payment for the work done has been made.

Elections – H.A.S. held its yearly election for members of the Board of Directors. Election's chairwoman, Joanne Bogan presided on this year's election. The full slate of nominees was elected by unanimous acclamation. The Board members for 2015 are as follows:

President	Chris Peterson
Vice President	Peter Besenbruch
Treasurer	April Lew
Secretary	Gretchen West
Astronews Editor	Charles Rykken
At-Large member	Otis Wikman
At-Large member	Andy Stroble

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Hawaiian Astronomical Society

Event Calendar

JANUARY						
CALENDAR YEAR / MONTH						SUNDAY
2015						FIRST DAY OF WEEK
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28	29	30	31	01	02	03
04 sunset at 8:09	05	06 7:30 PM Club Meeting	07	08	09	10 6:00 PM Public Star Party at Dillingham
11 sunset at 8:12 8:00 PM Globe at Night	12 8:00 PM Globe at Night	13 8:00 PM Globe at Night	14 8:00 PM Globe at Night	15 8:00 PM Globe at Night	16 8:00 PM Globe at Night	17 8:00 PM Globe at Night 6:00 PM Club Star Party (Private)
18 8:00 PM Globe at Night sunset 8:14	19 8:00 PM Globe at Night	20 8:00 PM Globe at Night	21	22	23 6:45 PM Waialua Elem Star Night(Private)	24 6:00 PM Public Star Party(Geiger) 6:00 PM Public Star Party(Kahala)
25 sunset 8:16	26	27	28	29	30	31

< < Upcoming Star Parties> >

Public Party-Dillingham Jan. 10

Public Party Geiger Jan. 24

Public Party Kahala Jan. 24

Upcoming School Star Parties

Fri.	Jan 23, 2015	Waialua Elementary School (Waialua Area-North Shore)
Wed	Feb 25, 2015	Assets School (Hickam/Pearl Harbor Area)
Fri	Feb 27,2015	Waikiki Elementary School (Waikiki area)

President's Report (Continued from page 2)

in images of the comet provided by the orbiter. There is still hope that increasing proximity to the Sun will provide enough solar energy to allow Philae to become active again sometime before the comet reaches perihelion in August.

What an amazing time to be alive! From the dawn of the space age in 1957, we will have visited all the major bodies in our solar system in less than 60 years. What will the next 60 bring?

Chris

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Guest Speaker: This month we had a visit from Institute of Astronomy, Assistant Astronomer, Roy Gal. Mr. Gal is in charge of outreach and public relations activities as well as working for the National Gemini Office and teaching undergraduate classes and conducting research. Mr. Gal spoke at length to the membership about how galaxies behave. During his talk, Mr. Gal spoke about the work being done with the Hubble and Spitzer telescopes. He generally described galaxy types and the use of spectroscopy in galaxy identification. It was a fascinating talk.

Mr. Gal requested help from the Hawaiian Astronomical Society with an upcoming International Astro-

nomical Union meeting, which will take place in Honolulu in early August 2015. More information will be forthcoming.

Joanne was gracious enough to show us the night skies for December 2014. Lovely as always.

Mahalo – As there was no further business, the meeting was adjourned at 9:38 p.m.

Respectfully Submitted,

Gretchen West
H.A.S. Secretary

Keeping an Eye on Storms and More

By Kieran Mulvaney



In late July 2013, Tropical Storm Flossie barreled furiously toward Hawaii. The question was not if it would strike, but when and where it might do so.

During the afternoon hours of July 29, forecasts predicted landfall later that week on the state's Big Island; however, by the time residents of the 50th state awoke the following morning things had changed. NOAA's Central Pacific Hurricane Center warned that the islands of Oahu, Molokai and Maui were now at a greater risk.

This overnight recalculation was thanks to the Day/Night Band viewing capabilities of the Visible Infrared Imaging Radiometer Suite, or VIIRS, on board the Suomi National Polar-Orbiting Partnership (Suomi NPP) satellite. VIIRS is able to collect visible imagery at night, according to Mitch Goldberg, program scientist for NOAA's Joint Polar Satellite System (JPSS), of which Suomi NPP is a part. That means it was able to spot some high-level circulation further north than expected during the nighttime hours. This was an important observation which impacted the whole forecast. Without this forecast, said the Hurricane Center's Tom Evans, "we would have basically been guessing on Tropical Storm Flossie's center."

Polar-orbiting satellites, like Suomi NPP and the future JPSS-1 and JPSS-2 (scheduled for launch in 2017 and 2021, respectively), sweep in a longitudinal path over Earth as the planet rotates beneath them—scanning the globe twice a day. VIIRS, the imager that will be aboard all the JPSS satellites, images 3,000 km-wide swaths on each orbit, with each swath overlapping the next by 200 km to ensure uninterrupted global coverage. This high-resolution, rapidly updating coverage allows researchers to see weather patterns change in near real-time.

Instruments on Suomi NPP allow scientists to study such long-term changes too—things like, "the patterns of sea surface temperature, or coral bleaching," says Goldberg. They are even used by the World Bank to determine how much energy is burned off and wasted from natural gas flares on oil drilling platforms.

While scientists are excited by the JPSS series' wide range of capabilities, the ability to address pressing immediate concerns is, for many, the most tangible value. That was certainly the case in July 2013, when thanks to Suomi NPP, authorities had ample time to close ports and facilities, open shelters, activate emergency procedures, and issue flash flood warnings. Despite heavy rains, high surf, and widespread power outages, accidents and injuries were few. By the time the storm passed, Hawaii was soaked.

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Following on the minor success of the Orionids in October, the Leonids in November, we set our sights on the Geminids in December. We knew that the last quarter moon would impact the shower after midnight, but it was a shot worth taking, after all, this is regularly the premier shower of the year. The weather had been good, but started to decline on the day of the shower.

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First Quarter	Full Moon	Last Quarter	New Moon
January 27	January 6	January 13	January 20

Shower	Activi- ty	Maximum		Radiant		V_{∞}	r	ZHR
		Date	$\lambda \square$	α	δ	km/s		
Quadrantids (QUA)	12/28→ 1/12	(Jan 03)	283.16°	230°	+49°	41	2.1	120

We've got a new year, make it your resolution to get out and see a few meteors! Tom Giguere, 808-782-1408, Thomas.giguere@yahoo.com; Mike Morrow, PO Box 6692, Ocean View, HI 96737.

Treasurer's Report

by April Lew

HAS Financial Report November 16, 2014 to December 15, 2014			
Beginning Balance	2,662.71		
Income:			
	Dues Received	140.00	
	Astronomy Sub order	136.00	
	Sky & Telescope sub order	65.90	
	Donation in memory of Melvin Levin	50.00	
Total Income	391.90		
Expenses:			
	Astronews Printing and Postage December issue	173.30	
	Astronomy Sub order	136.00	
	Sky & Telescope sub order	65.90	
	Post Office Box rental	128.00	
Total Expenses			503.20
Ending Balance			2,551.41

We welcome three new members this month. They are **James Neff** and **Polly Miao**. Many thanks to those renewing their membership(Joanne Bogan, Paul Lawler, Mark Watanabe, Sue Girard, and Dr. Stephen Ugelow). As a reminder, please check your membership anniversary date listed on the Astronews address label. Clear skies to all!

(Meteor Log) Continued from page 8)

Unstable air started moving in and produced both a low-level layer of clouds and wispy cirrus clouds at high altitude. With very little chance of success I called the event off. With no clear indication that everyone had gotten the word, I made a quick run out to the farm to notify any stragglers. Sonia, our host, and a new farm resident, Kristina were eager to settle down and try to see the Geminids. The weather remained marginal, and we typically had a sky that was twenty percent clear at best. Persistence paid off! Sonia saw two, and Kristina saw two definite Geminids. I didn't see any, but that's ok – glad our "group" count reached 4. By the way, everyone had received word, so no one made the trip needlessly.

No word of any 2014 Geminids pictures from the Hawaii contingent, but xxx in xxx captured this nice Geminid.

The **Quadrantids (QUA)** often put on a good show in early January, but the Moon will be a major impediment this year. If you rise early on Sunday before dawn, the Moon will be setting in the west. This would be the best way to view this year's Quadrantids.

Accompanying Meteor Log picture is to the right on page 11 ———>

(Space Place Continued from page 7)

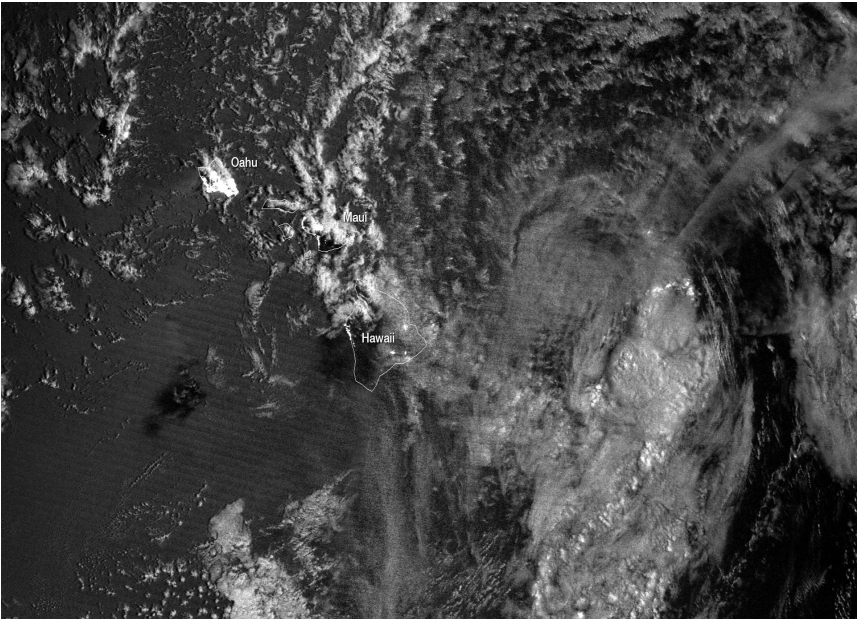
But it was largely unharmed.

Learn more about JPSS here: <http://www.jpss.noaa.gov>.

Kids can learn all about how hurricanes form at NASA's Space Place:
<http://spaceplace.nasa.gov/hurricanes>

Picture of Flossie to the right on page 11 —————>

S-NPP captured this image of Tropical Storm Flossie heading toward Hawaii using its VIIRS Combined Day-Night Band sensor. Credit: NOAA.



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Place cover
up this snudge
with some-
thing. A post-
age stamp is
suggested..



Ring of Dark Matter in Galaxy Cluster

This Hubble Space Telescope composite image shows a ghostly "ring" of dark matter in the galaxy cluster Cl 0024+17

Credit: NASA, ESA, M.J. Jee and H. Ford (Johns Hopkins University)