The Astronews

Volume 56, Issue 12

December 2008

www.hawastsoc.org

President's Message

by Chris Peterson

It was recently reported that, for the first time, images of planets orbiting stars other than the Sun have been recorded. The Gemini and Keck telescopes on Mauna Kea were used to image three planets orbiting the star HR 8799, while the Hubble Space Telescope was used to spot a planet orbiting Fomalhaut. As I understand it, the techniques used involved imaging the systems, then subtracting the light from the star to leave just the contribution from the planets. Observations were performed multiple times before results were released.

There is still some doubt about the validity of these claims, but time will soon tell if the observations are confirmed or not. Regardless of whether it is now or a little later, the first imaging of an extrasolar planet is a major "first" for astronomy. It was only in the 1990s that the first extrasolar planet discoveries were confirmed. Until now, these have all used indirect methods, such as changes caused in a star's motion by orbiting planets or microlensing caused by a planet transiting its parent star.

(Continued on page 5)

Upcoming Star Parties

Kahala/Waikele Party	**Dec. 6**
Club Party-Dillingham	**Dec. 20**
Public Party- Dillingham	**Dec. 27**
Kahala/Waikele Party	**Jan. 3**

Inside this issue:

Upcoming Events:

- ☆The next meeting is at 7:30 p.m. on **Tuesday, Dec. 2** at the Bishop Museum.
- ☆Bishop Museum's next planetarium show with **Barry Peckham** is Friday, **Dec. 5** at 7:00 p.m. www.bishopmuseum.org/calendar
- ☆The next Board Meeting is Sunday, **Nov. 31 & Jan. 4** at 3:30 p.m. at the POST building at UH.

Hawawaiian Astronomical Society
P.O. Box 17671
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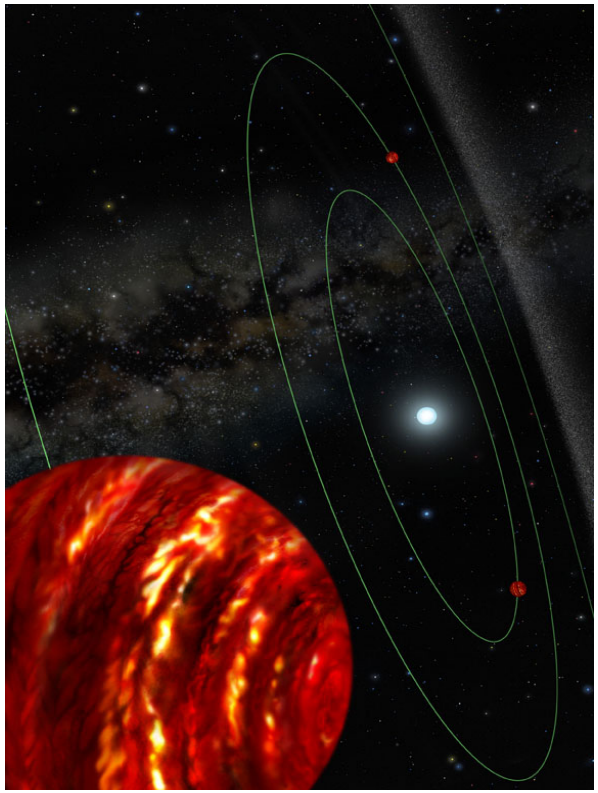

Credit: "Gemini Observatory Artwork by Lynette Cook"
Artist's conception of the multiple planet system, initially discovered with Gemini North adaptive optics images. See story on page 6.

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

Closer Look...

NIGHT SKY NETWORK

Get ready for the IYA 2009 by listening in on the Night Sky Network Kickoff Teleconference on 11 December 2008 at 4:00 pm local time.

1-800-779-8164 (toll-free)
PASSCODE: Night Sky Network
CALL LEADER: Michael Greene

You will be asked for your name and club (Hawaiian Astronomical Society) and the number of people listening with you. Please contact the club's NSN Coordinator, John Gallagher, 683-0118 for further info.

HELP OUT NASA's LCROSS MISSION!

A new online discussion group has been set up to facilitate amateur participation in NASA's LCROSS Observation Campaign. This group is designed to facilitate amateur participation in the LCROSS mission, posting and sharing images that will be of scientific value before launch, during flight, and during impact.

You can join the group by visiting http://groups.google.com/group/lcross_observation. Observations by amateur astronomers will help refine new protocols for observing the moon and increase our knowledge of the moon.

NASA's LCROSS mission is scheduled to launch in 2009, coupled with the Lunar Reconnaisance Orbiter (LRO). See http://lcross.arc.nasa.gov/ for more information.

☆

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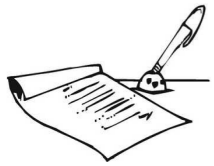
The Astronews is a monthly newsletter of the Hawaiian Astronomical Society. Some of the contents may be copyrighted. We request that authors and artists be given credit for their work. Contributions are welcome. Send them to the Editor via email. The deadline is the 16th of each month. We are not responsible for unsolicited artwork.

Time to Renew?



THE HAWAIIAN ASTRONOMICAL SOCIETY
MEMBERSHIP APPLICATION

Date:_____

Name _____

Street or P.O. Box _____

City_____State_____Zip _____

Phone_____(e-mail) _____

Family Members _____

_____

_____

_____

_____

Dues	$20.00_____
Dues (Student)	$12.00_____
Additional family members. Each	$2.00_____
Sky and Telescope Subscription	$32.95_____
Astronomy Subscription	$34.00_____
Donation	_____
Total	_____

Fill out this form and send with your check to:

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

Treasurer's Report

by Jim MacDonald

HAS Financial Report for the month ending as of Nov. 15, 2008

Initial Balance:	**$4,341.29**
Receipts:	
Calendars	32.50
Dues Received	124.00
Magazine Payment	66.95
Total Income:	**$223.45**
Expenses:	
Astronews Postage	45.54
Refreshments	17.97
Total Expenses:	**$63.51**
Final Balance	**$4,501.23**

The club membership increased by one this month. Welcome to new member **Carlos Ong**. Thanks and clear skies to all renewing their membership.

Upcoming School Star Parties 2009

Fri.	**1/23**	Mililani Middle School Science Night 6-8PM
Fri.-Sun.	**3/27-29**	KMCAS for Hawaii Hikers
Fri.	**4/17**	Hanahauoli School (Makiki) approx.100
Fri.	**4/24**	Pearl Harbor Elementary
Wed.	**4/29**	Lanakila Elementary
Thurs.	**4/30**	Ala Wai Elementary

*If you are interested in helping out at a school star party, sign up at the HAS meeting or contact the star party coordinator, FORREST LUKE at **623-9830** or lukef003@hawaii.*

Meeting Minutes

by Gretchen West

President Chris Peterson called the November 4, 2008 meeting of the Hawaiian Astronomical Society to order at 7:41 p.m. The meeting was held at the Atherton Halau on the grounds of the Bishop Museum. There were twenty-three members and two visitors in attendance

Hawaii Space Lecture Series –On Tuesday, November 18th, Dr. Paul Abell of the Planetary Science Institute and the NASA Johnson Space Center will speak on "Piloted Missions to Near-Earrth Objects via the Orion Crew Exploration Vehicle". This particular lecture for the Series is scheduled to take place at 7:30 pm, in the room 544, on the fifth 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.

Visitors: Lucas Moxie teacher from Kapolei High School joined us at this month's meeting. Lucas and his class will be joining us at an evening star party in the near future.

Reminders: President Chris Peterson reviewed events of the past month. Chris Peterson reports that the Indian Moon Mission, the Chandraayaan-1 mission in association with NASA will concentrate on spectral mapping of minerals on the lunar surface. The Phoenix lander on Mars has been slowing down and is shutting down systems to conserve power.

Transitional: The Hawaiian Astronomical Society has a new ASTRONEWS editor. Carolyn Kaichi has accepted the position and is transitioning into the position.

Event Report: This year's Astronaut Lacy Veach Day of Discovery took place Saturday, October 25th at the Mamiya Science Center on the grounds of Punahou School in Manoa. The 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 was Astronaut Stan Love, who along with Astronaut Ed Lu is the co-inventor/innovator of the gravity tractor. Gretchen West thanked John Gallagher, Jim MacDonald, Travis Le, Vincent Le, Harry and Melinda Zisko, and Forrest Luke for their invaluable help during the exhibit.

School Star Party Report: Forrest Luke reported that the star party at Mililani Iki on November 3rd was a great success. Star parties for Niu Valley Middle School will take place on November 7th and a second one for Mililani Uka will take place on November 19th.

Helping Out: Bishop Museum's Mike Shanahan will be looking for astronomers to help to help out at the April 11th "Mad About Science/Astronomy" event. The event will run from 1pm to 9pm. We will take names and sign ups after the first of the year.

Early Shopping: Jim MacDonald reports that Astronomy magazine is offering their very attractive 2009 calendars to H.A.S. members at a special price. The usual price is $12.95. However, Jim reports that club members will pay only $6.50.

December Election Looming: H.A.S. will hold its yearly election for the board of directors during the December general membership meeting. John Sandor is this year's coordinator and chairperson for elections. John read the slate for election which includes:

President	Chris Peterson
Vice-President	Barry Peckham
Treasurer	Jim MacDonald
Secretary	Gretchen West
Astronews editor	Carolyn Kaichi
At-Large members	John Gallagher and Harry Zisko

(Continued on page 7)

NASA's Space Place

What Happened to Comet Holmes?

by Dr. Tony Phillips

One year after Comet 17P/Holmes shocked onlookers by exploding in the night sky, researchers are beginning to understand what happened.

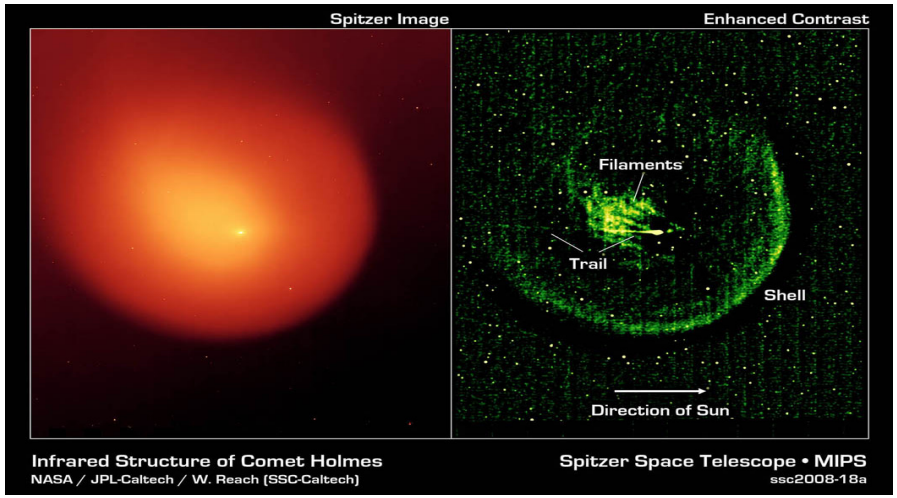
"We believe that a cavern full of ice, located as much as 100 meters beneath the crust of the comet's nucleus, underwent a change of phase," says Bill Reach of NASA's Spitzer Science Center at the California Institute of Technology. "Amorphous ice turned into crystalline ice" and, in the transition, released enough heat to cause Holmes to blow its top.

Anyone watching the sky in October 2007 will remember how the comet brightened a million-fold to naked-eye visibility. It looked more like a planet than a comet—strangely spherical and utterly lacking a tail. By November 2007, the expanding dust cloud was larger than Jupiter itself, and people were noticing it from brightly-lit cities.

Knowing that infrared telescopes are particularly sensitive to the warm glow of comet dust, Reach and colleague Jeremie Vaubaillon, also of Caltech, applied for observing time on the Spitzer Space Telescope—and they got it. "We used Spitzer to observe Comet Holmes in November and again in February and March 2008," says Reach.

The infrared glow of the expanding dust cloud told the investigators how much mass was involved and how fast the material was moving. "The energy of the blast was about 1014 joules and the total mass was of order 1010 kg." In other words, Holmes exploded like 24 kilotons of TNT and ejected 10 million metric tons of dust and gas into space.

(Continued on page 9)



Comet Holmes in infrared on left, and with enhanced contrast on right, showing comet's outer shell and strange filaments of dust.

(Coment Holmes continued from page 4)

These astonishing numbers are best explained by a subterranean cavern of phase-changing ice, Reach believes. "The mass and energy are in the right ballpark," he says, and it also explains why Comet Holmes is a "repeat exploder."

Another explosion was observed in 1892. It was a lesser blast than the 2007 event, but enough to attract the attention of American astronomer Edwin Holmes, who discovered the comet when it suddenly brightened. Two explosions (1892, 2007) would require two caverns. That's no problem because comets are notoriously porous and lumpy. In fact, there are probably more than two caverns, which would mean Comet Holmes is poised to explode again.

When?

"The astronomer who can answer that question will be famous!" laughs Vaubaillon.

"No one knows what triggered the phase change," says Reach. He speculates that maybe a comet-quake sent seismic waves echoing through the comet's caverns, compressing the ice and changing its form. Or a meteoroid might have penetrated the comet's crust and set events in motion that way. "It's still a mystery."

But not as much as it used to be.

See more Spitzer images of comets and other heavenly objects at www.spitzer.caltech.edu. Kids and grownups can challenge their spatial reasoning powers by solving Spitzer infrared "Slyder" puzzles at http://spaceplace.nasa.gov/en/kids/spitzer/slyder ☆

Calendar

Day | Week | **Month** | Year | Event Lists | Tasks

December 2008 — Printable View

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 49	30	1	2 7:30p HAS Meeting	3	4	5	6 6:30p Kahala & Waikele Public Star Parties
Week 50	7	8	9	10	11	12 Full Moon	13 12p Geminids Meteor Shower Peak
Week 51	14	15	16	17	18	19	20 6:30p Club Star Party
Week 52	21	22	23	24	25 For more events look here.	26	27 New Moon 6:30p Dillingham Public Star Party
Week 1	28	29	30	31 31-5 Galileo's Legacy	1	2	3 12p Quadrantids Meteor Shower Peak 6:30p Kahala & Waikele Public Star Parties

HAS Yahoo Group

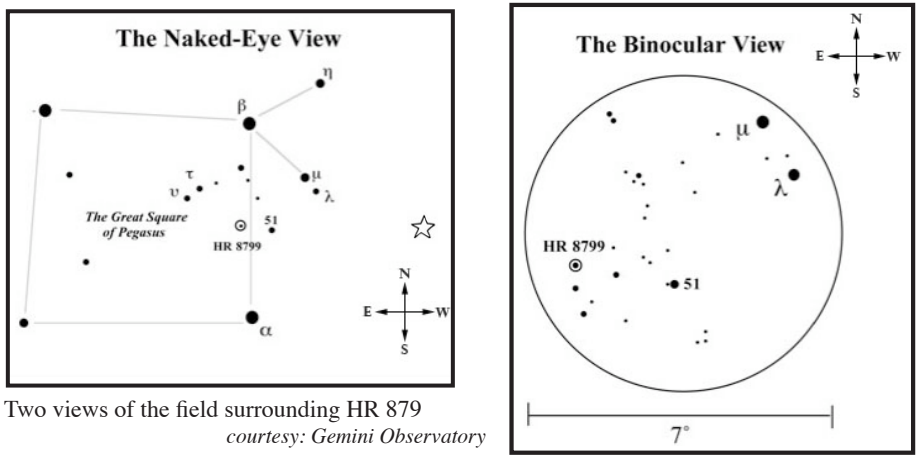
http://tech.groups.yahoo.com/group/HawaiianAstronomicalSociety/

(President's continued from page 1)

In coming years, such imaging feats will be repeated and exceeded. Modern techniques will allow ground-based telescopes to add to the list of extrasolar planets and to image some of those that have already been discovered. The game will change, though, when we have telescopes in space that are capable of imaging these planets in a single exposure. Multiple telescopes flying in formation (or arrayed on the Moon's seismically quiet surface) could use interferometry to cancel out the light from the star while leaving the planets visible. This works in a way similar to noise-canceling headphones. The constant repetitive drone of a plane's engine can be canceled out while other sounds come through loud and clear.

Even with only a point of light for each planet, it is possible to learn something about it by studying the spectrum of the light. Eventually, of course, we want to be able to resolve planetary images into many pixels. That is a little further off, but make no mistake: This is a major milestone in the history of astronomy. What other discoveries will we see next year in the International Year of Astronomy?

Chris



Two views of the field surrounding HR 879

courtesy: Gemini Observatory

Meteor Log- Dec. 2008

by Mike Morrow

Once again in December the Moon hinders the month's good showers - meteors not rain. The Ursids are okay and sporadic rates are fine. The Geminids are messed up. The minor showers have only 3 or less meteors an hour and so they we won't bother with them.

Saturday, Dec.13: the Geminids. Radiant 07h28m +33 deg. The Full Moon makes the peak for this shower poor, but a few bright meteors may be seen. The maximum is forecast for 23h UT or about 1PM local time. Not much good for Hawaii.

Monday, Dec.22: the Ursids. Radiant 14h28m +76 deg. The late-rising Moon allows for some reasonable observing time of this ill-observed shower. Rates may reach about 30 meteors an hour. The radiant is near beta Ursae Minoris (Kochab). The maximum may be between 9:30 PM and 11:30 PM local time. Ursids are mainly faint and of medium speed.

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☆

Observer's Notebook-December 2008

by Jay Wrathall

Planets Close To the Moon

Times are Hawaii Standard Time

Dec 1, 06h, M 0.80º N of Venus (43º from sun in evening sky)
Dec 1, 06h, M 1.3º SSE of Jupiter (42º from sun in evening sky)
Dec 3, 16h, M 1.3º NNW of Neptune (69º from sun in evening sky)
Dec 5, 22h, M 3.9º NNW of Uranus (94º from sun in evening sky)
Dec 18, 12h, M 5.4º SSW of Saturn (96º from sun in morning sky)
Dec 28, 17h, M 0.66º NNW of Mercury (18º from sun in evening sky)
Dec 28, 23h, M 0.63º S of Jupiter (20º from sun in morning sky)
Dec 30, 23h, M 1.5º NNW of Neptune (42º from sun in morning sky)
Dec 31, 08h, M 3.1º NNW of Venus (46º from sun in morning sky)

Mars is closer than 15º from the sun when near the moon in November.

Other Events of Interest

Times are Hawaii Standard Time

Dec 4, 03h, 2 Pallas at opposition
Dec 5, 12h, Mars at conjunction with sun (Passes into morning sky)
Dec 12, 06:38h, Moon Full
Dec 13, Geminid meteors. Very unfavorable year.
Dec 21, 02:04h, Winter Solstice
Dec 21, 20h, Pluto at conjunction with sun (Passes into morning sky)
Dec 27, 02:22h, Moon New
Dec 27, 04h, Venus 1.4º SSE of Neptune (46º from sun in evening sky)
Dec 31, 05h, Mercury 1.2º SSE of Jupiter (19º from sun in evening sky)

Mercury starts a favorable evening apparition the last week in December.	**Venus** is very close to Jupiter at the beginning of Dec. and stays high (40º +) in the western sky all month.	**Mars** reaches conjunction with the sun this month and is too close to the sun for viewing.
Jupiter is close to Venus at the beginning of Dec. and close to Mercury at the end of Dec.	**Saturn** rises before midnight in Leo.	**Uranus** is well placed for viewing in Dec. close to the meridian at sunset.
Neptune can be viewed in the western sky in the early evening.	Dwarf Planet **Pluto** reaches conjunction with the sun this month and is too close to the sun for viewing.	Asteroid **2 Pallas** reaches opposition on Dec 4. Best observed within 2 or 3 hours from midnight.

(Minutes continued from page 3)

Should you be interested in standing for election to the board you may contact John Sandor .

Night Sky Network: John Gallagher spoke briefly about the recent teleconference on "Iddy Biddy Radio Telescope" that takes place on November 14. Another teleconference will take place on December 6th and will kick-off 2009, the International Year of Astronomy.

Light Pollution: The club is urging its members to send letters to your state representatives and senators regarding the growing problem of light pollution. A short discussion took place during which it was suggested that focusing on the monetary benefits of reducing light and reducing the amount of money saved will be the most effective way for us to address this problem with our legislators and the general public.

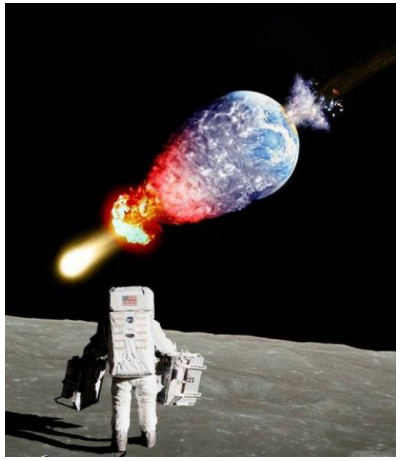
Photo Sharing Site: Melinda Zisko is setting up a photo sharing site for club members at Shutterfly.com. Anyone interested in joining the free site need only apply.

Cloudcroft, New Mexico: Barry Peckham and Paul Lawler presented a short presentation on their recent astronomy sojourn to Cloudcroft, New Mexico. The accommodations were comfortable and the skies were fairly clear. Rental scopes were impressive and at the same time, a bit of disappointment. Former club president, Stephanie Choquette of Ontario was the third member of the group who spent five days at the New Mexico astronomy hot spot. Those interested in finding out more about the site can go online to nmskies.com.

Stacking: Steve Chun share a recent image he collected of M31. The stack of fifteen 10.0 megapixel images was collected using Image Plus-for SLR cameras.

As there was no further business, the meeting was adjourned at 9:02 p.m. Refreshments were served.

Respectfully Submitted,
Gretchen West
HAS Secretary



"BAD DAY ON THE MOON or,The Real Reason We Need To Go To NEOs..."
courtesy NASA/JSC

Editor's Note:

Open for Suggstions! What works for this newsletter and what doesn't? See me or email your feedback: editor@kilolani.net