The Astronews

HUI KILOLANI

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President's Message

I'm writing this from Houston, Texas, where I attended the 39th Lunar and Planetary Science Conference. It was a lunaphile's dream. At long last, there is a solid program in place that turns NASA's attention back to the Moon. Also, other countries are sending spacecraft to the Moon and are planning other missions there, alone or in cooperation with the U.S. and other countries.

First up for the U.S. is the Lunar Reconnaissance Orbiter (LRO) mission, set for launch later this year. This mission has several science instruments,

(Continued on page 2)

Inside this issue:

Upcoming Star Parties

Public Party	**Apr 5**	**Dillingham**
Public Party	**Apr 12**	**Kahala/Waikele**
Public Party	**Apr 26**	**Dillingham**
Club Party	**May 3**	**Dillingham**
Astronomy Day	**May 10**	**Kahala Mall**
Public Party	**May 10**	**Kahala/Waikele**
Public Party	**May 24**	**Dillingham**

Upcoming Events:

- The next meeting is at 7:30 p.m. on **Tuesday, Apr. 1st** at the Bishop Museum.
- Bishop Museum's next planetarium show with **Barry Peckham** is Friday, **Apr. 4th** at 7:00 pm. www.bishopmuseum.org /calendar/
- The next School Star Party is on **Friday, Apr. 4th** at Mililani Mauka Elementary.

President's Message (cont.)

including cameras (to map the Moon in several wavelength regions), radiation detectors, radar, and a laser altimeter. This is the first NASA-initiated lunar mission since the Apollo days (Clementine was a DOD-sponsored mission, and Lunar Prospector was a scientist-proposed Discovery mission). Technology has vastly improved since 1972, and we can expect this mission to revolutionize our understanding of the Moon.

Because the launch vehicle had more capacity than would be used by LRO, the Lunar CRater Observation and Sensing Satellite (LCROSS) mission was added. This mission will impact a projectile into the south polar region in an area where it is thought that water ice might be present. A Shepherding Satellite will follow closely behind, observing and flying through the plume of material produced and transmitting data to Earth before it impacts as well. LRO will be watching it all, as will astronomers on Earth. You may remember that Lunar Prospector was deliberately crashed into nearly the same spot at the end of its mission, but this impact will be much bigger, and may be visible in amateur telescopes from Earth.

A Discovery-class mission called Gravity Recovery And Interior Laboratory (GRAIL) has been selected to fly in 2011. It will send a pair of satellites to orbit the Moon in tandem while carefully measuring the distance between them. This will greatly increase our knowledge of the gravity field of the Moon and its interior structure.

As with LRO, excess capacity on the rocket allowed another mission to be added. The Lunar Atmosphere and Dust Environment Explorer (LADEE) will observe the

(Continued on page 4)

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HAWAIIAN ASTRONOMICAL SOCIETY
GENERAL MEMBERSHIP MEETING
March 4, 2008

President Chris Peterson called the March 4, 2008 meeting of the Hawaiian Astronomical Society to order at 7:41 p.m. The meeting was held at the Atherton Halau of the Bishop Museum. In attendance were twenty-nine members.

Hawaii Space Lecture Series - Dr Kim Binsted, co-investigator, HU-NASA Astrobiology Institute of the University of Hawaii will be the next Hawaii Space Lecture Series lecturer on Tuesday, March 18th, 2008 at 7:30 pm in the NASA Pacific Regional Planetary Data Center on the fifth floor of the P.O.S.T. building at the University of Hawaii at Manoa. Dr. Binsted will speak on "Mars in the Arctic: A Four-month Mars Exploration Analogue Mission. For further information you can contact NASA PRPDC at 808-056-3132 or on the Web go to http://www.higp.hawaii.edu/prpdc.

General Information - H.A.S. President, Chris Peterson reviewed planets and other easily seen objects available for easy viewing this month.

H.A.S. President, Chris Peterson indicated that the NASA Mars Reconnaissance Orbiter with its high-resolution cameras isolated a series of four avalanches in progress on the surface of Mars. This unusual occurrence will help us understand more geomorphology of the planet.

Donation - A donation of an 8" Nexstar telescope is reported this month. This scope is reported to be "like new" and "hardly out of the box." This scope will be available for viewing, hopefully, at the next general membership meeting. We will probably have this scope up for auction.

Star Party Report - Forrest Luke reports that our first 2008 school star party at Iolani School on Friday, February 29, 2008 was a success. Six astronomers from the club helped out with the star party and the children and parents who attended appeared to enjoy the event. There are no scheduled school star parties for March. A schedule of April and May star parties will be posted at the next membership meeting.

Light Pollution Survey - Forrest Luke informed the members of the International Night Sky Association the "Globe at Night" project, took place on February 25 through March 8, 2008. This was to be the third annual international survey of the effects of light pollution on our night skies

Upcoming Events -

Hawaii State Science and Engineering Fair: This year's science fair takes place March 31 through April 2nd. We will again award a prize of $50, a certificate of merit, a tee shirt and magazine subscription to one Senior Research competitor in the field of astronomy.

Institute for Astronomy - Open House: The Open House takes place on Sunday, April 28th. A schedule and sign-up will be available at the next general

(Continued on page 4)

membership meeting.

International Sidewalk Astronomy Day - May 10 is the date for the next International Sidewalk Astronomy Day. Barry hopes that more than just a few of our members will take the time to coordinate and set up scopes either that weekend to share the skies with the man, the woman, or the child on the street.

Short Notes: Vice-President Barry Peckham spoke on a variety of short subjects. Barry also displayed various print materials and poster items he had up for sale. Steve Chun reports that he is selling his hardware for astrophotography for $250.

Purchases for the rental scopes: Vice President Barry Peckham has purchased two like-new eyepieces to replace the somewhat dilapidated eyepieces that are used with the Coulter rental scope.

Areas of Interest: Joanne Bogan gave a brief review of a recent University of Hawaii Lecture on the origins of the earth's oceans.

3-D Presentation: John Sandor entertained members with a 3-D View Master presentation, including the use of "funky" stereo glasses. The presentation spanned the origins of the NASA Space Program up to the first steps on the surface of the Moon. It was a blast from the past.

The meeting was adjourned at 9:17 p.m. and refreshments were served.

Respectfully Submitted,
Gretchen West, Secretary, H.A.S.

(Continued from page 2)

dust conditions on the Moon before they are altered by future human presence there. Dust is one of the biggest challenges facing future human lunar explorers.

The Japanese Kaguya mission is currently orbiting the Moon and sending back HDTV movies of the surface as it conducts its investigations. The Chinese have a mission there called Chang'E, but they haven't released much data yet. India will launch its Chandrayaan-1 mission later this year carrying NASA's Moon Mineralogy Mapper instrument among many others. As I said, a lunaphile's dream this year, and I don't even have space to begin talking about the MESSENGER mission to Mercury.

The Saturday night before the conference, Tom Giguere and I visited another HAS, the Houston Astronomical Society, at their weekly star party. That's a story for another time.

I'll talk about the recent Lunar and Planetary Science Conference at the April meeting.

Chris

Tracking Wildlife from Space
by Patrick Barry

It's 10 o'clock, and do you know where your Oriental Honey Buzzard is?

Tracking the whereabouts of birds and other migrating wildlife across thousands of miles of land, air, and sea is no easy feat. Yet to protect the habitats of endangered species, scientists need to know where these roving animals go during their seasonal travels.

Rather than chasing these animals around the globe, a growing number of scientists are leveraging the bird's-eye view of orbiting satellites to easily monitor animals' movements anywhere in the world.

The system piggybacks on weather satellites called Polar Operational Environmental Satellites, which are operated by the National Oceanic and Atmospheric Administration (NOAA), as well as a European satellite called MetOp. Sensors aboard these satellites pick up signals beamed from portable transmitters on the Earth's surface, 850 kilometers below. NOAA began the project—called Argos—in cooperation with NASA and the French space agency (CNES) in 1974. At that time, scientists placed these transmitters primarily on buoys and balloons to study the oceans and atmosphere. As electronics shrank and new satellites' sensors became more sensitive, the transmitters became small and light enough by the 1990s that scientists could mount them safely on animals. Yes, even on birds like the Oriental Honey Buzzard.

“Scientists just never had the capability of doing this before,” says Christopher O'Connors, Program Manager for Argos at NOAA.

Today, transmitters weigh as little as 1/20th of a pound and require a fraction of a watt of power. The satellites can detect these feeble signals in part because the transmitters broadcast at frequencies between 401 and 403 MHz, a part of the spectrum reserved for environmental uses. That way there's very little interference from other sources of radio noise.

“Argos is being used more and more for animal tracking,” O’Connors says. More than 17,000 transmitters are currently being tracked by Argos, and almost 4,000 of them are on wildlife. “The animal research has been the most interesting area in terms of innovative science.”

For example, researchers in Japan used Argos to track endangered Grey-faced Buzzards and Oriental Honey Buzzards for thousands of kilometers along the birds' migrations through Japan and Southeast Asia. Scientists have also mapped the movements of loggerhead sea turtles off the west coast of Africa. Other studies have documented migrations of wood storks, Malaysian elephants, porcupine caribou, right whales, and walruses, to name a few.

Argos data is available online at www.argos-system.org, so every evening, scientists can check the whereabouts of all their herds, schools, and flocks. Kids can learn about some of these endangered species and play a memory game with them at spaceplace.nasa.gov/en/kids/poes_tracking.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Observer's Notebook - April 2008

by Jay Wrathall

Planets Close To the Moon

Times are Hawaii Standard Time

Apr 1, 23h, M 0.28º WSW of Neptune
(49º from sun in morning sky)
Apr 3, 21h, M 2.8º NNW of Uranus
(25º from sun in morning sky)
Apr 4, 11h, M 4.2º NNW of Venus
(17º from sun in morning sky)
Apr 11, 20h, M 1.2º N of Mars
(83º from sun in evening sky)
Apr 15, 07h, M 2.3º SSW of Saturn
(126º from sun in evening sky)
Apr 26, 20h, M 2.7º SSE of Jupiter
(105º from sun in morning sky)
Apr 29, 10h, M 37º NNE of Neptune
(76º from sun in morning sky)
Mercury is closer than 15º from the sun when near the moon in April.

Other Events of Interest

Times are Hawaii Standard Time

Apr 5, 17:55h, Moon New
Apr 15, 03h, Moon 0.82º SSW of Regulus
(124º from sun in evening sky)
Apr 15, 21h, Mercury at superior conj. with sun
(Passes into evening sky)
Apr 20, 00:24h, Moon Full
Apr 22 Lyrid Meteors
(Unfavorable year since near full moon.)

Mercury begins it's best evening apparition of the year in late April, but will be best positioned for viewing in May.	**Venus** can be seen low in the east early in the month. It will be too close to the sun to observe in May and June.	**Mars** is in the southwest at dusk as it continues to get dimmer. Magnitude +1.0.
Jupiter is visible high in the southeastern sky before dawn.	**Saturn** is still well placed for viewing in the evening sky. Look for it east of Mars near Regulus. Magnitude +0.6.	**Uranus** is still too close to the sun to view easily in April.
Neptune is about 50º from the sun in the dawn sky, but is so dim that it will be difficult to find.	Dwarf Planet **Pluto** rises just before midnight and can be observed in the morning sky.	Dwarf Planet **Ceres** is visible in Taurus near the Pleiades during the early evening hours.

Meteor Log - April 2008 *by Mike Morrow*

April, like February can have more sporadic fireballs than usual. The months main event is badly moonlit.

Tuesday the 22nd, the Lyrids. Radiant 18h04m +34 deg.
It is possible to have as many as 45 meteors per hour or if the radiant is directly overhead there might be as many as 90 meteors an hour. Best time to look is after 10:30 local time. This year, unfortunately, the moon will be about full. Lyrids are swift and occasionally spectacularly bright. Nearly 25% may leave persistent trains.

That is about it for April. The Pi Puppids which reach a maximum on the 23rd at about midnight our time have a far south radiant and with the moon about full it will be hard to see much from the shower.

If you are interested in observing meteors contact Tom Giguere at 672-6677 or write to Mike Morrow, P.O. Box 6692, Ocean View, Hawaii 96737

Minor Planet Report - April 2008 *by Carey Johnson*

Comets

17P/Holmes, Mag. 7*
C/2007 W1 (Boattini), Mag. 10.9 - 8.7*
C/2006 Q1 (McNaught), Mag. 11.4 - 11.3*
46P/Wirtanen, Mag. 11.0 - 12.6*
C/2008 C1 (Chen-Gao), Mag. 11.7 - 12.1*
C/2008 A1 (McNaught), Mag. 13.3 - 12.7*
C/2007 B2 (Skiff), Mag. 13.0 - 12.9*

Asteroids

4/8 (7) Iris at opposition, Mag. 9.4
4/8 (5) Astraea at opposition Mag. 9.5
4/17 2005 NB7 0.042 AU from Earth, Mag. 14.8
(1) Ceres, Mag. 8.3 - 8.4*
(6) Hebe, Mag. 9.8 - 10.3*
(8) Flora, Mag. 10.2 - 10.2*
(15) Eunomia, Mag. 9.6 - 10.0*
(41) Daphne, Mag. 9.0 - 9.1*

* April 1st - April 30th
See http://www.geocities.com/quarkcsj/calendar.html for more up to date info.

HawaiianAstronomicalSociety : Calendar - Microsoft Internet Explorer

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

YAHOO! TECH Groups

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

April 2008

Prin

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30 [Add] Asteroid 2008 EG9 Near-Earth Flyby (0.041 AU) 3:30p HAS Board Meeting	31 [Add]	1 [Add] 7:30p HAS Meeting	2 [Add] Science Fair	3 [Add]	4 [Add] Mililani Mauka Star Party	5 [Add] New Moon Asteroid 2008 EE85 Near-Earth Flyby (0.048 AU) Messier Marathon 6:30p Dillingham Public Star Party
6 [Add]	7 [Add]	8 [Add] Asteroid 7 Iris At Opposition (9.4 Magnitude) Asteroid 5 Astraea At Opposition (9.5 Magnitude)	9 [Add]	10 [Add]	11 [Add]	12 [Add] Sidewalk Astronomy Annual World Space Party: Yuri's Night 6:30p Kahala & Waikele Public Star Parties
13 [Add]	14 [Add]	15 [Add]	16 [Add]	17 [Add] Asteroid 2005 NB7 Near-Earth Flyby (0.042 AU) M 14.8	18 [Add]	19 [Add]
20 [Add] Full Moon	21 [Add]	22 [Add] Earth Day Lyrids Meteor Shower Peak	23 [Add]	24 [Add]	25 [Add] For more events look here. Lanikila El. Star Party Kapolei Middle School (Spring Fling) Star Party	26 [Add] 6:30p Dillingham Public Star Party
27 [Add] IFA Open House	28 [Add]	29 [Add]	30 [Add]	1 [Add]	2 [Add]	3 [Add] 6:30p Club Star Party

2008 Board Members
at a board meeting 2 March, 2008

Vice President: *Barry Peckham*, **Secretary:** *Gretchen West*, **Treasurer:** *Jim MacDonald*, **President:** *Chris Peterson*, **Members at Large:** *John Gallagher* & *Harry Zisko*, and **Newsletter Editor:** *Carey Johnson* (taking the picture).

Upcoming School Star Parties

Fri.	4/4	Mililani Mauka Elementary
Fri.	4/25	Lanakila Elementary
Fri.	4/25	Kapolei Middle School (Spring Fling)
Thur.	5/8	Ala Wai Elementary
Fri.	5/9	Pearl Harbor Elementary
Mon.	5/12	Red Hill Elementary

If you are interested in helping out at a School Star Party, sign up on the monthly sheet at the HAS Meeting or contact the Star Party Coordinator: Forrest Luke at 623-9830 or e-mail at lukef003@hawaii.rr.com

HAS members prepare for a School Star Party

Iolani Space Night
2-29-2008
by Carey Johnson

Treasurer's Report

by Jim MacDonald

HAS Financial Report as of March 15, 2008

Initial Balance:	**$4,937.85**
Receipts:	
Donations	35.00
Dues Received	166.00
S&T Payment	32.95
Total Income:	**$233.95**
Expenses:	
Astronews	235.62
Equipment (2 Eyepieces)	40.00
Magazine Subscription	32.95
Postage	2.33
Refreshments	16.08
Total Expenses:	**$326.98**
Final Balance	**$4,844.82**

Our membership remained unchanged this month. A special thank you to Lenore Hansen-Stafford and Michael Reiter for their donations. Thanks also to everyone renewing their membership this month. Clear skies to all!

Electronic Newsletter

We are taking the first step in making the Electronic Version of the Newsletter available to our members.

If you would like to receive the electronic version, send your e-mail address to the Newsletter Editor at quarkcsj@hotmail.com

You will still receive your hard copy in the mail, but you will get the advantages of receiving the electronic version which are:

1. You would receive it earlier, for example, last month I sent it to the printers on the 19th and received it in the mail on the 26th.
2. It's in color!

THE HAWAIIAN ASTRONOMICAL SOCIETY

MEMBERSHIP APPLICATION

2008/2009

Name _____

Street or P.O. Box _____

City _____ State _____ Zip _____

Phone _____ (e-mail) _____

Family Members _____

_____

_____

_____

_____

Dues	$20.00	_____
Dues (Full-time 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:

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Honolulu, Hawaii 96817-0671

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

Saturn by HAS member Freddy Willems
Feb. 20, 2008. Meade 14" LX200 UHTC GPS + ToUcam 840 Pro II + Powermate 2X, + Baader UV-IR filter, at 10 fps. Stacked 1200 out of 1800 Avi. frames in Registax 4.