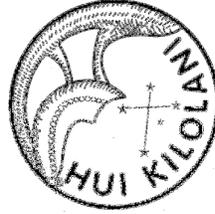


The Astronews



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President's Message

By Chris Peterson

You may have seen recent reports that the Moon may have been partly responsible for the sinking of the Titanic in 1912. A quite rare extreme tide in January of 1912 as well as large tides the previous and following months may have contributed to the unusually large number of icebergs in the North Atlantic in 1912. This is a reminder that astronomical objects are not just lights in the sky but physical objects that sometimes interact with us in other important ways.

The Sun, because it is so large, and the Moon, because it is relatively close, have the largest gravitational effects on Earth. The circumstance in January 1912 that caused the extremely large tide involved the full Moon almost coinciding with both its perigee and Earth's perihelion. The unusually high tides that resulted may have dislodged icebergs that commonly become grounded near the shores of Labrador and Newfoundland, Canada, and sent them on their way into the North Atlantic shipping lanes.

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Upcoming Star Parties

Club Party Apr 14 Dillingham
Public Party Apr 21 Dillingham
Public Party Apr 28 Kahala/Ewa

Upcoming Events:

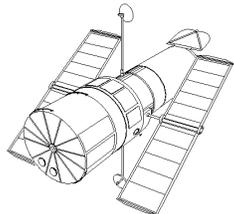
- The next meeting is at 7:30 p.m. on **Tuesday, Apr 3**, at the Bishop Museum Planetarium
- Bishop Museum's next planetarium shows with **Barry Peckham** are Friday, **Apr 6 & 20**, at 8:00 p.m. www.bishopmuseum.org/calendar
- The next Board Meeting is Sunday, **Apr 1**, at 3:30 p.m. at the POST building at UH.

The Moon has other important effects on Earth, of course. The tides would still exist on Earth without the Moon, but they would be much smaller if driven only by the Sun. The daily rise and fall of the oceans may have been very important in the transition of life from the oceans onto dry land. In addition, evolution would certainly have taken a different direction if the Moon didn't provide a substantial amount of light in the night sky for nocturnal activities.

Another important way the Moon affects Earth is by stabilizing its orientation in space. Earth's spin axis currently points toward Polaris. As Earth wobbles like a spinning top, the point at which the axis is aimed moves slowly around a circle, but the tilt of the axis with respect to Earth's orbit around the Sun, its obliquity, varies only a little from its current 23.5 degrees.

Mars currently has a similar obliquity, but without a large Moon to stabilize it, its obliquity changes much more radically over a 124,000-year cycle. This results in extreme changes in the size of its polar caps and the distribution of water vapor over the planet.

Next time you observe the Moon, remember to appreciate the role it has played in making Earth more hospitable to creatures like us.



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HAWAIIAN ASTRONOMICAL SOCIETY
GENERAL MEMBERSHIP MEETING
March 6, 2012

President Chris Peterson called the March 6, 2012, meeting of the Hawaiian Astronomical Society to order at 7:35p.m. The meeting was held in the Planetarium on the grounds of the Bishop Museum. There were fourteen members in attendance. It was a stormy evening which accounted for the reduced number of attendees.

Gretchen West was battling high waters and so was **Sue Girard** at her building.

Associated Lectures -- There is a lecture scheduled for the Hawaii Space Lecture Series on March 27, 2012, at the University of Hawaii at Manoa. The topic will be “Lunar Geology and New Lunar Discoveries from the Moon Mineralogy Mapper on Chandrayaan-1” by **Dr. Peter Isaacson**. Chandrayaan-1 was a spacecraft from India that operated for about a year around the Moon. It looked at the Moon in several wavelengths to help it identify various minerals in greater detail than before. Should you be interested in upcoming lectures or for information you can contact NASA PRPDC at 808-956-3132 or go to <http://www.higp.hawaii.edu/prpdc>. Regular lectures usually take place at the NASA Pacific Regional Planetary Data Center, room 544, in the Pacific Ocean Science and Technology Building on the Manoa campus of the University of Hawaii. Next month **Lionel Wilson**, a volcanologist, is scheduled to give a talk on volcanic activities on asteroids.

Rukl Atlas of the Moon -- **Barry Peckham** has sold the Rukl Atlas that was donated to the club by **Jay Wrathall**. The book has been mailed.

IFA Open house -- **Gretchen West** is coordinating our participation in the IFA open house which is scheduled for April 29 at the IFA headquarters in Manoa Valley. The hours are from 11:00 am to 4:00 pm. She is looking for club members to man our table in two hour shifts and those interested can sign up at our next meeting. We basically want to let the public know who we are and what we do.

Dillingham Airfield -- **Chris Peterson** reminded the group that attendees are now required to sign in with that night's HAS Board

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Member-In-Charge. Information includes the car's make, model, license plate number, driver's name, and the number of people in the car, etc. The Dillingham security guard will use the sign-up sheet to check each car off as they leave. All exits will take place through the Dillingham Airfield West Gate. **Chris** reminded everyone to please abide by all rules that are currently in use.

Publishing of Addresses --The club will be publishing member's name, address and phone number in the June *Astronews* as required by the club's by-laws. If you object to having some or all of your information made public, please notify the club treasurer, **Jim MacDonald** by May 15 to either his e-mail address which is contained in the masthead of the *Astronews* or by sending a written notice to our post office box (P.O. Box 17671, Honolulu, HI 96817-0671). The question was raised as to whether we would be publishing e-mail addresses. **Chris** said that this issue has been discussed in the past and it was decided not to include them because of some abuses in the past. We can consider this in the future. The group was reminded that the club now has a Facebook page and this is a good way to contact others who may have signed up.

Offer from Skytools -- **Paul Lawler** received an offer for free gift cards for Skytools Starter Edition for Astronomy Clubs. These cards unlock the full features of SkyTools Starter Edition. **Jim MacDonald** has offered to contact the company in an effort to obtain some of these cards to be distributed to members who do not have planetarium software. This sounds like something that would be good for new members.

Star Party Report – **Chris** reported on the star party held at Iolani School. Visibility was good for the earlier part of the evening with the Moon, Jupiter and Venus in view. However, the kids were in various classrooms and when they did get out to the field the sky had clouded up. **John Gallagher** wound up showing the kids the navigation lights on the top of a tall building. The following evening at Kahala it started out looking like the schedule would be washed out. About ten students from one of the surrounding schools showed up and the club was able to show them the Moon, Jupiter and later Mars.

School Star Parties -- **John Gallagher** asked for volunteers for three school star parties during the month of March:



The Planet in the Machine

By Diane K. Fisher and Tony Phillips

The story goes that a butterfly flapping its wings in Brazil can, over time, cause a tornado in Kansas. The 'butterfly effect' is a common term to evoke the complexity of interdependent variables affecting weather around the globe. It alludes to the notion that small changes in initial conditions can cause wildly varying outcomes.

Now imagine millions of butterflies flapping their wings. And flies and crickets and birds. Now you understand why weather is so complex.

All kidding aside, insects are not in control. The real 'butterfly effect' is driven by, for example, global winds and ocean currents, polar ice (melting *and* freezing), clouds and rain, and blowing desert dust. All these things interact with one another in bewilderingly complicated ways.

And then there's the human race. If a butterfly can cause a tornado, what can humans cause with their boundlessly reckless disturbances of initial conditions?

Understanding how it all fits together is a relatively new field called Earth system science. Earth system scientists work on building and fine-tuning mathematical models (computer programs) that describe the complex inter-relationships of Earth's carbon, water, energy, and trace gases as they are exchanged between the terrestrial biosphere and the atmosphere. Ultimately, they hope to understand Earth as an integrated system, and model changes in climate over the next 50-100 years. The better the models, the more accurate and detailed will be the image in the crystal ball.

NASA's Earth System Science program provides real-world data for these models via a swarm of Earth-observing satellites. The satellites, which go by names like Terra and Aqua, keep an eye on Earth's land, biosphere, atmosphere, clouds, ice, and oceans. The data they collect are crucial to the modeling efforts.

Some models aim to predict short-term effects—in other words,

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Observer's Notebook - April 2012 by Jay Wrathall

Planets Close To the Moon

Times are Hawaii Standard Time

- Apr 3, 12h, M 8.3° SSW of Mars
(140° from sun in evening sky)
- Apr 7, 00h, M 6.0° SSW of Saturn
(171° from sun in midnight sky)
- Apr 16, 00h, M 5.° NNW of Neptune (54° from morning sun)
- Apr 18, 11h, M 7.0 NNW of Mercury (27° from morning sun)
- Apr 18, 17h, M 5.2 NNW of Uranus (24° from sun in morning sky)
- Apr 22, 09h, M 2.5° N of Jupiter (15° from sun in evening sky)
- Apr 24, 16h, M 5.7° S of Venus (41° from sun in evening sky)

Other Events of Interest

Times are Hawaii Standard Time

- Apr 3, 19h, Comet Linear C/2011 F1 at opposition
- Apr 6, 09:19h, Moon Full
- Apr 8, Easter Day - First Sunday after the first full moon after the vernal equinox.
- Apr 15, 08h, Saturn at opposition
- Apr 18, 07h, Mercury at greatest elongation (27° West of the sun in Morning sky)
- Apr 20, 21:19h, Moon New
- Apr 22. Lyrid Meteors (Very favorable year for this sometimes strong shower)
- April 28, Astronomy Day
- April 30, 12h, Venus Brightest (Mag. -4.7)

 Mercury Should be easy to find at dawn, late in April. Look near the thin crescent moon on April 18.	 Venus Shines brightly (Mag - 4.5) in the Pleiades early in the month and reaches its greatest brightness on April 30.	 Mars Still shines brightly in Leo, near Regulus, after reaching opposition last month.
 Jupiter Can be viewed low in the west after sunset early in the month. By Apr 30 it will be lost in the sun's glare.	 Saturn Reaches opposition in mid April and will be in the sky all night. Best observed near midnight.	 Uranus Rises just before dawn and is difficult to view this month. It will be only 2° from Mercury on Apr 22.
 Neptune Is also in the morning sky, rising about 3 hours before the sun.	 Dwarf Planet Pluto Rises close to midnight - will be better observed later in the year.	Comet Garradd C/2009 P1 Starts the month at mag +8 and gradually fades.



Steven Chun's picture of the closest conjunction of Jupiter and Venus on the evening of March 13, 2012

NOTICE!

HAS will publish a complete listing of Club members in the **June 2012** 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 will include all member's names, mailing addresses, and phone numbers. If you wish to have some or all of your data excluded, please notify the Club Treasurer, Jim MacDonald before **May 15, 2012**, by sending him an e-mail at jim.macd@hawaiiantel.net or by written notice to the Club's post office box listed on the back page of this newsletter. 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 purposes. With the exception of our membership in the Astronomical League, HAS does not make this list available to, nor do we sell its contents to anyone for any purpose. Please respect our members' right to privacy.

Notice: Member information is not to be republished, redistributed, or used for any commercial or solicitation purposes.

March 16 at Schofield Barracks for a group of Cub Scouts

March 23 at Mililani Ike Elementary School

March 30 at Hokulani Elementary School

Club members interested in helping with this outreach program are urged to contact John Gallagher.

The Globe at Night – **John Gallagher** reminded everyone of the annual “The Globe at Night” project. Members are urged to participate by naked-eye observing the night sky between: March 13 through 22. Observers will be asked to identify and report on the number of stars in a known constellation that they can see, like Orion. Further information can be obtained at www.globeatnight.org.

Mars at opposition -- **Chris** had hoped to be able to have members view Mars sometime during the meeting. However, the weather did not cooperate. He discussed the orbit of Mars and that it had just reached opposition on March 3. This is not one of the better oppositions as Mars is at considerable distance from earth. Mars’ orbit is elliptical and it takes 15 to 17 years between closest approach to earth. In 2003 both planets were at their closest point, 34.6 million miles apart. This year at opposition we were 62.6 million miles apart. In 2018 the distance separating us will be 35.8 million miles.

Curiosity Rover – The Mars Science Laboratory is successfully on its way to Mars. Someone asked about the landing procedure and if it would be bounced onto the surface of the planet. Because of its weight the rover will be lowered onto the surface by a device called a sky crane which will release the rover as it touches down, and the rocket assembly called the sky crane will fly away and land elsewhere.

The Sky Tonight – **Joanne Bogan** took us on a planetarium tour of the March skies. One of the members asked about the retrograde of Mars and so she demonstrated the progression of the planet in relation to the background stars.

As there was no further business, the meeting was adjourned at 8:50 p.m. Refreshments were enjoyed by members after the meeting.

Jim MacDonald



Treasurer's Report

by Jim MacDonald

HAS Financial Report as of March 15, 2012

Initial Balance:	\$4,503.65
Receipts:	
Dues Received	128.00
Total Income:	\$128.00
Expenses:	
Astronews	239.89
Excise Tax	1.45
Magazine Subscriptions	61.70
Total Expenses:	\$303.04
Final Balance	\$4,328.61

We gained three new members this month. Included are **Norman and Sherry Nicolson and Mike Shimojo**. Thanks and clear skies to all who remembered to renew their membership this month. Come join us for some views of Mars, Venus and Saturn. Sue Girard would like to encourage folks to do a mini Messier Marathon this month.

Upcoming School Star Parties

Friday April 20 Cub Scouts—Schofield Barracks (Wahiawa)
Thursday April 26 Ala Wai Elementary (McCully)
Friday April 27 Niu Valley Middle School

Are you in FaceBook? Thanks to Barry Peckham, the club now has a Face-Book page and HAS members are encouraged to get involved and help spread the word of our existence. Share your photos, stories and experiences with others interested in astronomy. If you need help finding our page, enter www.FaceBook.com in your web browser. When the introductory page appears, type in: Hawaiian Astronomical Society in the search locator and our page will appear. Become a member and join the rest of the club.

CAMELOPARDALIS

By Mel Levin

Whoever heard of a creature covered in dots?
A Camel of sorts, with Leopard spots
Because it's unique-not a regular guy
they put him in a starless hunk of sky.
and tho he's surrounded by neighbors so bright
and tho he tried with all his might
to show his feelings of true gratitude
the best they gave him were 4th and
5th magnitude.

But like all good tales, this has a trail
Lest you think our animal is weak and
frail
He carried dignitaries over vast de-
sert trails.
the most notable, according to Biblical
myth,
was Rebecca--Isaac's chosen bride
Her fame spread far and wide.

So worry not for our Camelopardalis
He knew real greatness once
and cares not when he sees all those
scopes
turned on his neighbor's bright spots in
space
while he sits contentedly, enjoying the
quiet and solitude
that dimness can embrace.



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Barry Peckham's "Fullish Moon" of 02/06/12. Still some shadow play on the limb. Image rotated for naked eye orientation.

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