The Astronews

HUI KILOLANI

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March 2011

Inside this issue:

President's Message

by Chris Peterson

February 5 at Dillingham was an overcast night. Jupiter, the Moon, and Sirius all struggled to shine through the clouds, but none succeeded for long. Only a few people even bothered to put up their telescopes. Sounds like a worthless night and a wasted trip, right? Not really.

As we were waiting and hoping for the skies to clear, we tried to point out what we could. Sirius and other bright stars around Orion were appearing and disappearing. When Sirius was pointed out and called out as the brightest star in our sky, that was followed by the unfortunately too-frequent question, "Oh, is that the North Star?"

This was a teachable moment! An opportunity to correct a misunderstanding and proceed from there. I pulled out my Palm PDA and brought up my 2sky program. I showed a few groups of people the sky that we would have been looking at if it were clear. It was easy to show where Sirius and Polaris were and how they differed in brightness. I showed the winter hexagon around Orion and pointed out the two zodiac

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March membership meeting will be at the Imaginarium on the grounds of the Windward Community College. Activities will begin at 7:30 p.m. For directions, see page 9.

Upcoming Events:

- The next meeting is at 7:30 p.m. on **Tuesday, Mar 1,** at the Imaginarium at WCC. (see Map on p 10)
- Bishop Museum's next planetarium shows with **Barry Peckham** are Friday, **Mar 4 & 18,** at 8:00 p.m. www.bishopmuseum.org/calendar
- The next Board Meeting is Sunday, **Feb 27,** at 3:30 p.m. at the POST building at UH.

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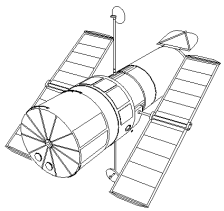
constellations there and how the ecliptic runs through them.

The sky never cleared that night, and we left before 8:30, but some people still learned something about the night sky. There are many planetarium -type programs available now for the iPhone and iPad and, I assume, other devices as well. These are powerful tools, and they make the job of explaining the sky easier, even if the sky is clear. Sometimes it's easier to learn a new pattern in the sky when you can see it represented on a screen with lines connecting stars in their constellations.

If you have such a device and program, you'll find no shortage of things to talk about. If you're a little nervous that you don't really know enough to teach others anything about the sky, your confidence will increase greatly when you can simply touch the screen and have a star's name or a Messier object's distance simply appear on the screen.

If you know that Sirius is the brightest star in the sky and isn't the North Star, you know enough to teach others. If you have an iPhone, buy an astronomy app and play around with it. Before you know it, you'll be a walking professor with a classroom in your pocket.

Chris



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Meeting Minutes by Gretchen West

HAWAIIAN ASTRONOMICAL SOCIETY
GENERAL MEMBERSHIP MEETING
February 1, 2011

President Chris Peterson called the February 1, meeting of the Hawaiian Astronomical Society to order at 7:35 p.m. The meeting was held at the Planetarium on the grounds of the Bishop Museum. Twenty members and two visitors were in attendance.

Associated Lectures — ***President Chris Peterson*** reports that the next Hawaii Space Lecture Series talk will take place at 7:30 pm, on Tuesday, February 22. ***Dr. Mike Fuller*** will speak on "The Moon's Mysterious Magnetism" at the NASA Pacific Regional Planetary Data Center, room 544 in the Pacific Ocean Science and Technology Building, University of Hawaii, Manoa. If interested in any upcoming lectures, contact NASA PRPDC at 808-956-3132 or go to http://www.higp.hawaii.edu/prpdc.
Chris announced that ***Michael Shovin*** has sent information regarding his publications and how they might be obtained.

Imaginarium Visit – The March 1 general membership meeting will be held at the Imaginarium at the Windward Community College in Kaneohe. The meeting will begin at 7:30 p.m. with a short general membership meeting prior to the program. ***Joanne Bogan*** will inform the Bishop Museum security personnel to redirect any members to our alternative meeting site for the evening. There will also be postings on our website, in the ***ASTRONEWS,*** and in Gary Ward's "pizzagram."

Announcements -- Chris Peterson announced that ***John Gallagher***, is currently recovering from heart surgery, has decided to step down as an At-Large member of the HAS Board of Directors. John will continue to act as the coordinator for school star parties and for the NASA Night Sky Network. John has been an integral part of the club in recent years and we look forward to him getting back on his feet soon. An announcement of the vacancy on the Board will be posted on our web site and in the ***ASTRONEWS.*** We will be taking nominations for a replacement at the March general membership meeting.

Change of Venue – As of February 12, the H.A.S. Saturday suburban public star parties in West O`ahu will change to Geiger Community Park located at the intersection of Geiger Road and Kapolei Parkway. This change hopes to take advantage of clearer skies and hopefully more successful Saturday suburban star viewing.

Big Island Trip –***John Sandor*** reported on the upcoming trip to the Gemini telescope on Mauna Kea the weekend of June 25. John indicated that there are openings for 7 more members to participate in the summit tour. Should there be more than 22 people wanting to go on the trip, participants will be selected by random lottery. Interested individuals should go on-line to the club website to

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view restrictions and health concerns. There will be deadlines for payments and refunds for those with a reservation. If interested, contact Joanne Bogan.

Aloha to Newcomers – ***Jim MacDonald*** has created a welcome letter to be sent to newcomers outlining available activities and benefits to members.

Starlight Reserve Bill – Neither ***Harry Zisko*** nor ***Chris Peterson*** could attend the January 18 committee meeting in person this month. ***Chris Peterson*** was able to attend the very end of the meeting via video conferencing. A large portion of the meeting was spent discussing how to extend the life of the committee into the next legislative session and facilitate attendance for outer island representatives. Chris was able to bring up the issue of light trespass. Chris was charged with researching model laws and legislation regarding light trespass. The date for the next meeting of the committee has not been set.

Visitors – Members ***John and Kealoha Swatek*** joined us for this month's meeting from the Big Island. In addition, ***Teiji Chiba*** joined us and hopes to attend some of our star parties. We look forward to seeing him there.

Upcoming Events- March 28 through March 30 marks this year's Hawaii State Science and Technology Fair. Jim MacDonald and Gretchen West will act as agency judges for HAS.

School Star Parties – We have one school star party in February, at Iolani on February 25. Members have signed up to help on that night. ***Peter Galloway*** is asking for help on a few nights around May 29. The YMCA will be holding basic astronomy training for their team leaders at Camp Erdman and they could use some help.

Missions – Chris discussed the various NASA missions. The Mars Spirit rover has not communicated with Earth at this time. Opportunity is more active, but communications with both may be compromised as Mars moves closer to the Sun. Next month, the Messenger craft will go into orbit around Mercury. The New Horizons mission is about halfway to Pluto. The Dawn mission is slated to go into orbit around Vesta and later move on to Ceres.

Donation – ***Jay Wrathall*** donated a 1990 copy of ***Atlas of the Moon*** by Antonin Rukl. This copy will be auctioned off at a later meeting. Some research indicates that the book is going for about $200 on e-Bay.

Discussions with Barry – ***Vice President Barry Peckham*** spoke briefly about our skies early in the calendar year. Our January 29, Saturday night star party at Dillingham Airfield started out somewhat cloudy. The skies cleared for a time and offered us views of seasonal favorites as well as faint planetary nebulae.

Barry shared some research he had ferreted out. Today, many people go Geocaching. Barry shared information about a particular benchmark located in Salt Lake that marks the site of the ***William Marcovitz*** Moon Telescope used to calibrate the exact time worldwide. The site was used in the 1940s and 1950s to calibrate the orbital motion (Continued on page 9)

Thank Goodness the Sun is Single

By Trudy E. Bell

It's a good thing the Sun is single. According to new research, Sun-like stars in close double-star systems "can be okay for a few billion years—but then they go bad," says Jeremy Drake of the Harvard-Smithsonian Astrophysical Observatory in Cambridge, Mass.

How bad? According to data from NASA's Spitzer Space Telescope, close binary stars can destroy their planets along with any life. Drake and four colleagues reported the results in the September 10, 2010, issue of *The Astrophysical Journal Letters.*

Our Sun, about 864,000 miles across, rotates on its axis once in 24.5 days. "Three billion years ago, roughly when bacteria evolved on Earth, the Sun rotated in only 5 days," explains Drake. Its rotation rate has been gradually slowing because the solar wind gets tangled up in the solar magnetic field, and acts as a brake.

But some sun-like stars occur in close pairs only a few million miles apart. That's only about five times the diameter of each star—so close the stars are gravitationally distorted. They are actually elongated toward each other. They also interact tidally, keeping just one face toward the other, as the Moon does toward Earth.

Such a close binary is "a built-in time bomb," Drake declares. The continuous loss of mass from the two stars via solar wind carries away some of the double-star system's angular momentum, causing the two stars to spiral inward toward each other, orbiting faster and faster as the distance shrinks. When each star's rotation period on its axis is the same as its orbital period around the other, the pair effectively rotates as a single body in just three or four days.

Then, watch out! Such fast spinning intensifies the magnetic dynamo inside each star. The stars "generate bigger, stronger 'star spots' 5 to 10 percent the size of the star—so big they can be detected from Earth," Drake says. "The stars also interact magnetically very violently, shooting out monster flares."

Worst of all, the decreasing distance between the two stars "changes the gravitational resonances of the planetary system," Drake said, destabilizing the orbits of any planets circling the pair. Planets may be so strongly perturbed they are sent into collision paths. As they repeatedly slam into each other, they shatter into red-hot asteroid-sized bodies, killing any life. In as short as a century, the repeated collisions pulverize the planets into a ring of warm dust. (Continued on Page 7)

Observer's Notebook - March 2011

by Jay Wrathall

Planets Close To the Moon

Times are Hawaii Standard Time

Mar 6, 14h, M 6.0º NNW of Jupiter
(23º from sun in evening sky)
Mar 20, 11h, M 7.5º SSW of Saturn
(164º from sun in morning sky)
Mar 30, 07h, M 5.0º NNW of Neptune
(40º from sun in morning sky)
Mar 30, 21h, M 5.5º NNW of Venus
(35º from sun in morning sky)

Mercury, Mars and Uranus are closer than 15º from the sun when near the moon in March.

Other Events of Interest

Times are Hawaii Standard Time

Mar 4, 10:46h, Moon New
Mar 11, 29h, 3 Juno at Opposition
Mar 15, 11h, Mercury 2.0º NNW of Jupiter
(16º from sun in evening sky)
Mar 19, 08:10h, Moon Full
Mar 19, 09h, Moon at perigee, only 0.8 hr after full moon.
(Very high tides expected.)
Mar 20, 13:21h, Spring or Vernal equinox
Mar 21, 02h Uranus at conjunction with sun
(Passes into morning sky.)
Mar 22, 15h, Mercury at greatest elongation
(18.6º East of the sun in evening sky)
Mar 26, 15h, Venus 0.15º S of Neptune
(35º from sun in morning sky)
(Closest planet-planet appulse of year.)

☿ Mercury

Makes a nice evening appearance close to Jupiter in mid month. Greatest elongation on Mar 22.

♀ Venus

Shines brightly in the eastern sky before dawn during all of March.

♂ Mars

Is still too close to the sun to be observed in March.

♃ Jupiter

Is low in the southwest at sunset.

♄ Saturn

Rises in early evening and is well placed for viewing by late evening.

♅ Uranus

Is too close to the sun to be observed in March. Reaches conjunction with the sun on Mar 21.

♆ Neptune

Starts the month close to the sun, but by the end of march is 40º from the sun in the morning sky.

♇ Dwarf Planet Pluto

Is visible before dawn in the eastern sky, but will be better placed for observing later in the year.

✳ Asteroid Juno

Reaches opposition on Mar 11 at about magnitude +8.8.

HAS Mauna Kea Tour by John Sandor

June 24-26, 2011

This is the last month to request reservations for the HAS private tour to the Gemini North telescope on Mauna Kea this summer! Other planned activities include a star party at the Mauna Kea Onizuka visitor information center, lunch and dinner at Hale Pohaku with professional astronomers, and a visit to the Imiloa Astronomy Center/ Planetarium in Hilo. Tour participants must be at least 16 years of age, members of HAS, and able to tolerate the hazards of high altitude at the Mauna Kea summit.

Tour reservation requests are being accepted by email only until March 31. As of this date, there are still spaces available. Please see the HAS website for more details: http://www.hawastsoc.org/MaunaKea2011/Geninfo.html

Notice to those who have already submitted reservation requests: If you have not received an e-mail from me in February regarding your reservation request then your name is not on the list, so please notify me at once.

Please send reservation requests and inquiries to:
John Sandor
sandball@aol.com

(Space Place continued from page 5)

The infrared glow from this pulverized debris is what Spitzer has seen in some self-destructing star systems. Drake and his colleagues now want to examine a much bigger sample of binaries to see just how bad double star systems really are.

They're already sure of one thing: "We're glad the Sun is single!"

Read more about these findings at the NASA Spitzer site at www.spitzer.caltech.edu/news/1182-ssc2010-07-Pulverized-Planet-Dust-May-Lie-Around-Double-Stars . For kids, the Spitzer Concentration game shows a big collection of memorable (if you're good at the game) images from the Spitzer Space Telescope. Visit spaceplace.nasa.gov/en/kids/spitzer/concentration/.

See the NASA image on the back cover.

The Winter Milky Way by Barry Peckham

For folks with binoculars or scopes, the segment of Milky Way showing in our winter sky is a treasure chest of celestial gems. This needs to be mentioned, here in the islands, because our mainland counterparts are far too cold for casual wanderings through unfamiliar starscapes. We can, and should be doing this in t-shirts, without the magazine hype mailed to us from cold-footed publishers.

The Milky Way of winter makes an arc from below Cassiopeia, up past Perseus and Auriga, between Gemini's feet and Orion's Club, and on down through Monoceros, along the Big Dog's back and into the Poop Deck (Puppis). Telescopic favorites span this entire swath. The most common treats are open star clusters: The Owl Cluster (CAS), The Double Cluster (PER), M37 (AUR), M35 (GEM), The "37" Cluster (ORI), The Rosette Cluster (MON), The Dog Butt Cluster (Tau CMA) and the Termite Cluster (NGC 2477, PUP). While you sit in your Lazy Boy, shaking your head about useless information, you are also confessing that you don't show up at HAS star parties, or that you don't use the resources available there.

Sprinkled throughout this misty, barely-there swath of distant starlight are many and varied nebulae: space clouds with color, shape and detail. Forget the Orion Nebula (just for a moment) and make sure to study other favorites: The Little Dumbbell in Perseus, The Crab Nebula near one of Taurus' horn tips, Hubble's Variable Nebula and the Eskimo Nebula in Gemini, Thor's Helmet, near the Big Dog's head, the Rosette Nebula (MON), and NGC 2440 in Puppis.

These, however, are mostly top 40 hits. The galactic vista we enjoy in winter contains many seldom-seen asterisms, clusters and nebulae, not counting the hundreds of interesting double stars. You can sweep them up in a casual wander, or find them with tips shared by other hunters. Binoculars bring out areas of interest along this river of faint starlight. My personal favorite swath lies east of the Big Dog's backbone. At the Jan 29 club star party I swept up an arc of stars joined to an equal arc by a brighter star (HIP35180). The 2 arcs and their Mag 5.5 joiner star hung from a nice little cluster (NGC 2360) which happens to be Caroline Herschell's first independent find and is known as *Caroline's Cluster*, also *Caldwell 58*. You can find it along a line connecting Sirius with the naked eye cluster M47, about 2/3 of the way to M47. I shared the view with my neighbors on the airfield, then continued my roaming. A bit south of this sight I once saw the subtle silhouette of Civil War ship "Monitor", peering back at me through the dark, dark skies of Molokai Ranch. Ah, the Winter Milky Way… it preserves your night vision!

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Directions to the Imaginarium

From Honolulu via LikeLike Highway

Upon exiting the Wilson Tunnel, get into the right lane. Exit at Kahekili Hwy (State Hwy 83) 1.6 miles away, just past the runaway truck ramp (don't miss this turnoff). Merge left and continue for approximately one mile and take a left on Keaahala Road (3rd traffic light) and head towards the mountain. At three tenths of a mile you will enter the campus of the Windward Community College. Turn right and at the end of the road, go left up the road. The Imaginarium (a round building) will be on your left with parking to the right.

If you need help on finding your way you can call Jim MacDonald at 371-8759

(Meeting Minutes Continued from Page 4)

of the Earth. A second benchmarked site, Barry reports is the location of the compound housing telescopes used to view the 1875 Transit of Venus here in Honolulu.

The Hawaiian Skies with Joanne Bogan - To the delight of all, Planetarium guide and longtime member, Joanne Bogan, spoke about the skies as we move from season to season. She then lead us through the current nighttime skies over Hawaii, showing us the movement of constellations along the ecliptic and other interesting objects.

As there was no further business, the meeting was adjourned at 9:12 p.m. Light refreshments were served.

Respectfully Submitted,
Gretchen West
HAS Secretary

Upcoming Star Parties

Public Party Mar 05 Dillingham
Public Party Mar 12 Kahala/Ewa*
Club Party Mar 26 Dillingham
***Note: Waikele Star Parties moved to Geiger park in Ewa Beach**

Treasurer's Report

by Jim MacDonald

HAS Financial Report as of February 15, 2011

Initial Balance:	**$4,427.83**
Receipts:	
Calendar Sale	6.50
Donations	66.26
Dues Received	384.00
Magazine Payments	66.95
Total Income:	**$523.71**
Expenses:	
Astronews	66.33
Excise Tax	3.38
Magazine Subscriptions	32.95
Postage	9.76
Refreshments (+ extra cups)	35.35
Total Expenses:	**$147.77**
Final Balance	**$4,803.77**

We gained seven new members this month. Included are **Steven, Jane, Erik and Erin Jenks; Terry Mayeda; Bryan** and **Kate Neel**. Thanks to **John** and **Kealoha Swatek** for their donation. Thanks and clear skies to all renewing their membership this month. Come join us under the stars soon. It's great fun.

Notice:

The 54th Hawaii State Science and Engineering Fair is opened to the public on Wednesday, March 30 from 8AM to 5PM at the Hawaii Convention Center. Come and see what our upcoming students are achieving in the fields of science and engineering. You'll be amazed!

Volunteers are also wanted; call 956-7930 for more information or go to . www.hawaii.edu/acadsci

Hawaiian Astronomical Society
Event Calendar

< March 2011 >						
Sunday	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
27	28	7:30 PM Club Meeting 1	2	3	4	6:15 PM Public Star Party(D) 5 Sunset: 6:39 PM
6	7	7:00 PM Punahou Star Party 8	9	10	11	6:30 PM Public Star Party(K) 12 6:30 PM Public Star Party(G) Sunset: 6:41 PM
13	14	15	16	17	18	19 Sunset: 6:43 PM
20	21	22	23	3:00 PM NSN Teleconference 24	25	6:30 PM Club Star Party (D) 26 Sunset: 6:45 PM
27	28	29	30	31	1	2

Notice:

HAS will publish a complete listing of club members in the May, 2011, 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 you opt-out, this list will include all member's names addresses, and phone numbers. If you wish to have some or all of your data excluded, please notify the Club Treasurer, Jim MacDonald before April 15, 2011, 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 member's personal use only for contacting one another. <u>It is not to be used for any commercial or solicitation purposes.</u> With the exception of 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!

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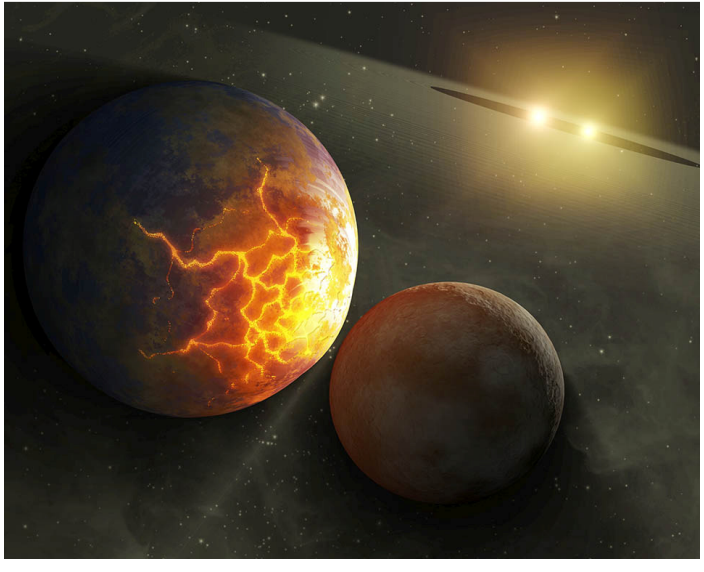

Planetary collisions such as shown in this artist's rendering could be quite common in binary star systems where the stars are very close.