The Astronews

HUI KILOLANI

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Inside this issue:

President's Message

by Chris Peterson

The Hawaiian Astronomical Society is one of many groups participating in an effort to preserve (and, we hope, improve) dark skies in Hawaii. The Starlight Reserve Committee finally held its first meeting on July 13th. This is pursuant to legislation passed last year that mandates that the committee make a report to the state legislature with goals and recommended actions to achieve them.

The meeting was run by Jim Crisafulli, Director of the Office of Aerospace Development (in DBEDT). Dr. Richard Wainscoat of the Institute for Astronomy gave a slide presentation summarizing the ongoing loss of dark skies and its effects on astronomy, wildlife, cultural practices, and money wasted by inefficient lighting.

Many groups were represented, including all the counties and several government agencies that would be affected by dark sky legislation. This first meeting was mostly just to bring the parties together and introduce the concept to those unfamiliar with it. No concrete steps were taken yet.

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Upcoming Star Parties

Public Party	**Jul 31**	**Dillingham**
Club Party	**Aug 07**	**Dillingham**
Public Party	**Aug 14**	**Kahala/Waikele**
Club Party	**Sep 07**	**Dillingham**

Upcoming Events:

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

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It's usually frustrating to work in a committee, especially one with such a heavy load of bureaucracy. When I suggested that many efficiencies, such as replacing light fixtures with better ones, could be self-financing through savings in energy costs, it was pointed out to me that capital budgets and operating budgets are often separate, so savings on energy can't simply translate to more money for fixtures. This is the reality of our system, but it seems to me that these are details that just need to be addressed correctly in any proposed legislation.

A participant by teleconference from Arizona talked about a similar process to control lighting there. He encouraged us to think long term and consider the most productive areas first. It took many years for the Arizona regulations to take full effect, but over time much has been achieved.

We should take this effort seriously and do our share of the necessary work. I'm proud that our club has been invited to participate. This is an opportunity to make a lasting change for the better, one that all astronomers can appreciate.

Chris

Ben Cable's 8" Dob built for his son.

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Meeting Minutes

by Gretchen West

HAWAIIAN ASTRONOMICAL SOCIETY
GENERAL MEMBERSHIP MEETING
July 6, 2010

President Chris Peterson called the July 6, 2010, meeting of the Hawaiian Astronomical Society to order at 7:33 p.m. The meeting was held at the Planetarium on the grounds of the Bishop Museum. There were sixteen members and one visitor in attendance.

Hawaii Space Lecture Series: In commemoration of the Apollo 11 mission, and the first lunar landing in 1969, The NASA Pacific Regional Planetary Data Center will be celebrating Spaceweek 2010. H.A.S. President Chris Peterson reports that the next lecture in the series will take place at 7:30 p.m., on the Tuesday, July 20. Tom Giguere will speak on "LROC- A High-Resolution Tour of the Moon." Tom will discuss the Lunar Reconnaissance Orbital Camera, its dual mission. Should you be interested in any upcoming lectures or for information you can contact NASA PRPDC at 808-056-3132 or on the Web go to http://www.higp.hawaii.edu/prpdc.

FYI – Chris Peterson spoke briefly about the Japanese Spacecraft, Hayabusa. The spacecraft's mission returned to Earth with possible minute samples of Asteroid Itokawa and came to Earth on the continent of Australia. Chris also discussed the Rosetta Mission, which will pass Lutetia, a very small asteroid. This mission of opportunity may bring a closer look at Asteroid Leticia.

It is hoped that the long-lived Spirit Rover on Mars will power-up as the seasons change on Mars and the sunlight hit the rover's solar panels. Earthbound scientists are looking forward to the rover communicating after its solar batteries recharge.

Partial Lunar Eclipse – A few members of the club went out in the wee hours of the morning to catch a glimpse of the partial lunar eclipse, visible to people in Hawaii.

Astronaut Lacy Veach Day – Sylvia Kaizuka, coordinator for the October 16, 2010, event has contacted the club. We will participate again this year by making students, parents and teachers aware of H.A.S. activities.

School Star Party Report: Forrest Luke reports that we will participate in Island Pacific Academy's Starry Night activity in Kapolei on July 16. Viewers enjoyed the skies with the help of H.A.S. astronomers.

Forrest passed a clipboard around for sign-ups for an upcoming school star party.

Visitors - Sebastien How of Mililani joined us at this month's meeting. His interest in astronomy was recently rekindled. He looked on the Internet and found us.

Upcoming Teleconference – John Gallagher informed members of the next teleconference. One will take place on July 22 which will discuss the Interna-

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tional Observe the Moon Night. This event will take place September 18 and amateur astronomers will introduce the public to the face of the moon.

Binocular Challenge – Club secretary, Gretchen West, introduced the Summer Binocular Challenge to members and visitors. Everyone can become more involved with the night sky. Through the use of a regular pair of binoculars everyone can get a closer look at the universe above them.

Orbit of Mars – President Chris Peterson introduced a short movie of one orbit of Mars using images from the European Mars Express spacecraft. He also showed a video of a virtual flight through Valles Marineris Mars using a digital elevation model from the Mars Odyssey spacecraft.

More information – Vice President Barry Peckham spoke of his various attempts to get a visual of Proxima Centauri. Barry discussed data related to the star Vega. He recounted the Asian tale related to stars Vega and Altair, and the river in the sky, the Milky Way. Barry discussed the summer triangle and related facts about the two stars.

Barry made a point to list the virtues of aperture. Barry read from the "Amateur Astronomy Magazine" regarding aperture, as well as the virtues of Asian mirrors.

Planetarium guide and longtime member Joanne Bogan lead us through the summer skies over Hawaii, showing us which planets are visible and other interesting objects.

As there was no further business, the meeting was adjourned at 8:58 p.m. Refreshments were served.

Respectfully Submitted,
Gretchen West
HAS Secretary

This picture is of the partial eclipse taken by Barry Peckham on the night of June 26, 2010. It was shot through thin cloud cover with a Canon SX200 on a tripod with 12x zoom, ISO 400 and about 1/80th second exposure. Great shot for a small point-and-shoot camera.

The Sun Can Still Remind Us Who's Boss

By Dr. Tony Phillips

Grab your cell phone and take a good long look. It's indispensible, right? It tells time, surfs the web, keeps track of your appointments and, by the way, also makes phone calls. Modern people can hardly live without one. One good solar flare could knock it all out.

"In the 21st century, we're increasingly dependent on technology," points out Tom Bogdan, director of NOAA's Space Weather Prediction Center in Boulder, Colorado. "This makes solar activity an important part of our daily lives." Indeed, bad space weather can knock out power systems, telecommunications, financial and emergency services—basically, anything that needs electronics to work. That's why NOAA is building a new fleet of "space weather stations," the GOES-R satellites. "GOES-R will bring our existing fleet of weather satellites into the 21st century," says Bogdan. "They're designed to monitor not only Earth weather, but space weather as well."

NOAA's existing fleet of Geostationary Operational Environmental Satellites (GOES) already includes some space weather capabilities: solar ultraviolet and X-ray telescopes, a magnetometer and energetic particle sensors. GOES-R will improve upon these instruments and add important new sensors to the mix.

One of Bogdan's favorites is a particle detector named "MPS-Low," which specializes in sensing low-energy (30 ev – 30 keV) particles from the sun.
Who cares about *low-energy* particles? It turns out they can be as troublesome as their high-energy counterparts. Protons and other atomic nuclei accelerated to the highest energies by solar flares can penetrate a satellite's exterior surface, causing all kinds of problems when they reach internal electronics. Low-energy particles, particularly electrons, can't penetrate so deeply. Instead, they do their damage on the outside. As Bogdan explains, "Low-energy particles can build up on the surfaces of spacecraft, creating a mist of charge. As voltages increase, sparks and arcs can zap electronics—or emit radio pulses that can be misinterpreted by onboard computers as a command."

The Galaxy 15 communications satellite stopped working during a solar wind storm in April 2010, and many researchers believe low-energy particles are to blame. GOES-R will be able to monitor this population of particles and alert operators when it's time to shut down sensitive systems. "This is something new GOES-R will do for us," says Bogdan.

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Observer's Notebook - August 2010

by Jay Wrathall

Planets Close To the Moon

Times are Hawaii Standard Time

Aug 11, 14h, M 2.2º SSW of Mercury
(27º from sun in evening sky)
Aug 12, 16h, M 7.3º SSW of Saturn
(42º from sun in evening sky)
Aug 12, 22h, M 4.2º SSW of Venus
(45º from sun in evening sky)
Aug 13, 04h, M 5.5º SSW of Mars
(48º from sun in evening sky)
Aug 23, 21h, M 4.2º NNW of Nepture
(175º from sun in midnight sky)
Aug 26, 15h, M 5.8º NNW of Uranus
(154º from sun in morning sky)
Aug 26, 19h, M 6.6º NNW of Jupiter
(152º from sun in morning sky)

Other Events of Interest

Times are Hawaii Standard Time

Aug 6, 15h, Mercury at greatest elongation
(27.4º East of the sun in evening sky)
Aug 7, 21h, Venus, Mars, and Saturn within 4.81º circle
(47º from sun in evening sky.)
Aug 8, 01h, Venus 2.7º SSW of Saturn
(46º from sun in evening sky)
Aug 9, 17:08h, Moon New
Aug 12, Perseid Meteors
(Very favorable year for this major shower.)
Aug 8, 01h, Venus 2.7º SSW of Saturn
(46º from sun in evening sky)
Aug 18 29h Venus 1.9º SW of Mars
(46º from sun in evening sky)
Aug 18, 18h, Venus at greatest elongation
(46.0º east of the sun in evening sky)
Aug 20, 00h, Neptune at opposition
Aug 24, 07:05h, Moon Full
Aug 7, 21h, Venus, Mars, and Spica within 4.19º circle
(45º from sun in evening sky.)

Mercury Is visible low in the western sky after sunset during the first two weeks of August.	**Venus** Shines brightly in the evening sky reaching greatest elongation 46º from the sun of Aug 19.	**Mars** Is near Venus and Saturn in the evening sky - at about magnitude +1.5.
Jupiter Rises late in mid-evening as it approaches opposition next month.	**Saturn** Is still well placed for evening viewing near Venus and Mars.	**Uranus** Near Jupiter in the mid-night and morning sky.
Neptune Rises about midnight and is visible in the morning sky.	Dwarf Planet **Pluto** Is still in view north of the Sagittarius "teapot" in the early evening.	Dwarf Planet **Ceres** Can be found north of the tail of Scorpius in the early evening.

Meteor Log - August 2010

by Mike Morrow

This is Perseid month and sporadic rates are rising. Zena has done her thing as there is no Moon, the maximum is during the day. Clear skies would be nice in any case.

Thursday, the 12th, and Friday, the 13th, the Perseids. Radiant 03h12m, Dec. +58 deg/ Rates are 50 to 75 or more per hour. The maximum may be during daylight hours for Hawaii, but some should be seen at night also. Perseids are fast, often bright, and frequently leave persistent trains.

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

(Space Place continued from page 5)

The GOES-R magnetometer is also a step ahead. It will sample our planet's magnetic field four times faster than its predecessors, sensing vibrations that previous GOES satellites might have missed. Among other things, this will help forecasters anticipate the buildup of geomagnetic storms.

And then there are the pictures. GOES–R will beam back striking images of the sun at X-ray and extreme UV wavelengths. These are parts of the electromagnetic spectrum where solar flares and other eruptions make themselves known with bright flashes of high-energy radiation. GOES-R will pinpoint the flashes and identify their sources, allowing forecasters to quickly assess whether or not Earth is in the "line of fire." They might also be able to answer the question, *Is my cell phone about to stop working?*

The first GOES-R satellite is scheduled for launch in 2015. Check www.goes-r.gov for updates. Space weather comes down to Earth in the clear and fun explanation for young people on SciJinks, http://scijinks.gov/space-weather-and-us.

See the NASA image on the back cover

Revision to Previous Minutes

Among its ranks, HAS appears to have a few more amateur telescope maker (ATM) than previously reported. It has been brought to our attention that Mike Lennolt and Ben Cable have both built their own telescopes. Mike states, "I made both 8" and 20" telescopes from scratch, including grinding, polishing and figuring the primary mirrors!" Ben Cable made an 8" Dob for his son. He said that the hardest part was producing the mirror. A picture of Ben's scope is on page 2.

Why We Do What We Do

This article was written in March, 2009, by Dawn Baird (Grove), President, Star Forge Astronomy Assocaiation and posted on the Night Sky Network.

Just a few weeks into my presidency of our astronomy organization I was called by a journalist who wanted to find out more about the International Year of Astronomy. I was a bit nervous talking to her, afraid of saying something stupid and I spoke haltingly, unsure of myself. It all changed when, after I explained our free outreach programs, she asked me, Why do you do this? As I answered her question my jaw seemed to unlock and my words flowed without hesitation.

I admitted to her that when it came to technical knowledge of astronomy I was far from an expert. What drew me to astronomy was not the fascination of facts but the amazing lift of spirit I feel every time I look at the Universe through a telescope. The first time I looked through a telescope I felt awe and wonder and magic. Suddenly all the bad things in my life and in the world in general didn't seem as frightening when compared to the beauty and peace of the night sky. I have my own telescope and I can look out on any clear night and get my personal fix, but that did not explain my passion for outreach. There is more to the story, I explained to her.

I went to high school in one of the toughest neighborhoods in the valley. Walking from the bus stop to school my nostrils burned from the acrid smell of crack being smoked in the houses nearby. I saw despair and so many kids my age never had a thought of leaving that neighborhood, only of how to continue to survive in it. In fact, to want to excel in school was a speed train ticket to getting beaten up. To want to educate yourself was to become teacher's pet, to sell-out to the man or to be unfaithful to where you came from. Unless you were a sports star you were never allowed to aspire to leaving the neighborhood behind, who did you think you were anyway?

I escaped high school and went on with my life. When it was time for my first-born to start school I was told she was being bussed miles away to a school in the same neighborhood that I went to high school in. I volunteered as a helper the first day and not half an hour into the class a little boy suddenly ran out of the room. Overwhelmed with other matters, the teacher asked me to bring him back. When I caught sight of him I saw him lying on the pavement, curled up with his school-issued backpack covering his head. I saw in his posture the despair and hopelessness that permeated my high school experience and my heart broke. The next morning I transferred my daughter back into a school in our own neighborhood but I never forgot the children we left behind.

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I wanted to help those kids and their families so I volunteered my time to go out with community outreach officers to bring food and donated clothes to families living in those cement-floored houses. We fed their bellies and warmed their bodies but the despair came right back. The cycle kept on; their faces remained vacant, they never looked up. We fed their bodies but it seemed to shame their spirits. I wanted more than this; I wanted to help them break this cycle they were caught in, even if only for a single child! There had to be something more I could do!

When I became involved in a local astronomy club, I had the chance to work with John Dobson on the corner of Haight and Ashbury. Standing on a corner with John's beat-up van and his home-made telescopes we passed out fliers and called to passers-by to see Saturn for the first time. I was surprised to see petite John bully a frightening looking biker into looking through the eye-piece. The bearded man was all hardness and swagger and attitude. I was amazed that he bothered to take a look but when he did I watched his body melt and his hardness fade away. Then there came a voice so soft and child-like that it I could not believe its source. Oh, wow! the biker said in the voice of a small boy. When the man looked up at me the hard lines were gone, he smiled and was excited and chattered about what he saw. The transformation of his face from poisonous glare to wide-eyed wonder was stunning to witness. That was the first inkling of what my mission would be and a couple years later I had another light-bulb moment that secured my resolve.

Several of my friends and I had set up our telescopes on the patio of a local family-owned pizza parlor. The owner loved having us there but had warned me that some tough characters had been hanging around. Sure enough a large gang showed up, the parlor was swarmed by low-riding pants and street bling, transporting me back to my high-school days. Here again were the hard faces and the sly sideways looks that I knew meant trouble was brewing. I wondered if we should pack up and leave but then remembered the bikers that John had pulled in and I knew that I had to do the same.

Gathering my courage, I entered the parlor and walked right up the throng of the gang members. I asked them if they had ever looked through a telescope before and they looked at me like I was insane. It was an awkward and frightening moment but my nervousness made me break out into a goofy smile as I asked them if they wanted to see Saturn. All it took was two young men to shrug and say sure and we soon had the entire gang lining up to our scopes. Again the miracle happened; hard lines softened, street-smart voices turned into the wonder-filled whispers of young boys who asked me about astronauts and other planets. We talked about space travel and I told them that it was quite possible that one of them could one day invent the technology to take us to other worlds. It was a night of possibilities, when boys from the hood spoke of how cool it would be to travel in space. I hope that maybe, just maybe one or two of them could see themselves doing it, could imagine themselves going to college and leaving behind the cages of despair they had grown up in. They looked up at me, directly into my eyes and I saw stars in their eyes. It was that night when it all came into focus for me.

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Treasurer's Report

by Jim MacDonald

HAS Financial Report as of July 15, 2010

Initial Balance:	**$5,163.31**
Receipts:	
Donations	10.00
Dues Received	190.00
Total Income:	**$663.90**
Expenses:	
Astroleague Annual Dues	695.00
Astronews	166.73
Postage	2.24
Total Expenses:	**$863.97**
Final Balance	**$4,499.34**

Our membership increased by three this month with Shannon and Jackson Murphy, plus Matthew Cochran. Welcome back also to Jim Branchaud for rejoining the club. Thanks and clear skies to all renewing their membership this month.

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If in all of my years of outreach, only a single child lifts his or her head and puts their sites on the stars then it was all worth it. It felt good to bring a warm meal to a hungry child but it means so much more to bring them hope for their future. That is why I do what I do. When I finished telling the journalist my story she responded simply with a soft-spoken. Wow.

Dawn Baird (Grove)
President, StarForge Astronomy Association
http://www.spaceandastronomy.org

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Hawaiian Astronomical Society
Event Calendar

< August 2010 >

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	7:30 PM Club Meeting 3	4	5	6	7:00 PM Club Star Party (D) 7 Sunset: 7:09 PM
8	9	10	11	12	13	6:30 PM Public Star Party(K) 14 6:30 PM Public Star Party(W) Sunset: 7:04 PM
15	16	17	18	19	20	21 Sunset: 6:59 PM
22	23	24	25	26	27	28 Sunset: 6:53 PM
29	30	31	1	2	3	4

Discounts for SkyTools 3 software

Skyhound.com has released its latest version of SkyTools with version 3. The Pro version contains a 522-million star database. Several members purchased version 2 when it was offered a few years ago and are still using it today. The program produces excellent finder charts with great detail and some of us are interested in upgrading to the newer version.

The publisher is offering an Astronomy Club Discount Program ranging from 25% to 50% depending on the number of copies purchased. Interested? See http://www.skyhound.com/ and look for the club discount program for additional details. Our treasurer, Jim MacDonald, will be happy to take your order and answer your questions.

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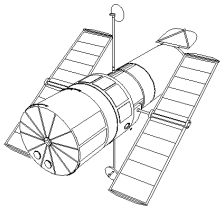

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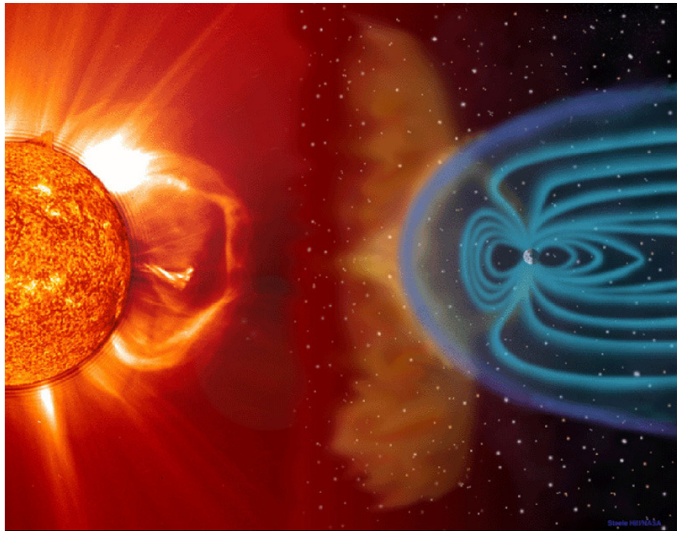

In spite of Earth's protective magnetosphere, solar storms can wreak havoc with Earth satellites and other expensive electronics on the ground.