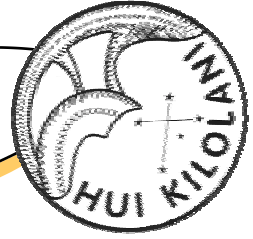


The Astronews



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Sunny Side Up

Editor

My long awaited Coronado PST has arrived, and just in time for some wonderful solar viewing. I have seen spectacular prominences, flares, filaments, sunspots, and even granulation on the sun's surface.

I first became interested in solar viewing after looking through a double stacked Coronado SolarMax 90 at Stelafane, but I quickly realized that I was not \$11,000 interested (that's just for the Coronado parts, and doesn't include the Astro Physics refractor the filters were mounted on).

So it was with great interest that I followed Coronado's introduction of their Personal Solar Telescope (PST). Memory is obviously a faulty thing, but I will go out on a limb and say
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Upcoming Star Parties

Public Party	Aug 7	Dillingham
Club Party	Aug 14	Dillingham
Public Party	Aug 21	Kahala/Waikele
Club Party	Sep 11	Dillingham
Public Party	Sep 18	Dillingham
Public Party	Sep 25	Kahala/Waikele

Upcoming Events:

- The next meeting is at 7:30 p.m. on Tuesday, August 3rd at the Bishop Museum.
- **Sam Rhoads** next planetarium show is on Monday, August 2nd.

President's Message

Amateur astronomers observe the sky, by definition, for the love of doing so rather than as a livelihood. However, that doesn't mean that we can't and don't earn the occasional dollar from our activities. In recent years, members have been paid to provide telescopic views of the sky at organized gatherings of (mostly Japanese) tourists. It's a great way to earn the price of a new eyepiece or other equipment.

Now one of our members is looking for someone to help with telescopic photography of a building exterior. He'll supply the telescope (an 8" dob, with 1.25" and 2" barrels), but he needs someone with a camera (preferably digital) that can be attached to take the photos. He's happy to pay a reasonable amount for the time spent on the project. If you're interested, contact Paul McCurdy, Tel 808.589.1344, Fax 808.589.1346.

Planetary spacecraft should be back in the news in August. The Cassini spacecraft was out of communication for several days just after it arrived at Saturn. Now that we are past the conjunction of Saturn and the Sun, data is once again flowing. It will still be a while, though, before Saturn is high enough in our morning sky to be a tempting telescopic target.

If all goes well, August will see the launch of the Messenger spacecraft, only the second mission to Mercury. The Mariner 10 mission in the 1970s got fairly detailed images of less than half of Mercury during three flybys, but Messenger is scheduled to go into orbit around the planet in 2011 after a journey that will include one Earth, two Venus, and three Mercury flybys. Messenger carries a complement of instruments that should greatly increase our understanding of this least-studied of the terrestrial planets.

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Planets Close to the Moon

Times are Hawaii Standard Time

- Aug 2, 05h, M 5.0° SSE of Uranus (154° from sun in morning sky)
- Aug 11, 13h, M 7.9° N of Venus (46° from sun in morning sky)
- Aug 13, 00h, M 5.1° N of Saturn (30° from sun in morning sky)
- Aug 17, 21h, M 2.3° NNE of Jupiter (26° from sun in evening sky)
- Aug 28, 01h, M 4.9° SSE of Neptune (157° from sun in evening sky)
- Aug 29, 13h, M 3.5° SSE of Uranus (176° from sun in Midnight sky)

Mercury and Mars are closer than 15° from the sun when near the moon in August.

Other Events of Interest

Times are Hawaii Standard Time

- Aug 5, 17h, Neptune at opposition
- Aug 12, Perseid Meteors
- Aug 15, 15:23h, New Moon
- Aug 17, 08h, Venus at greatest elongation (45.8° W of the sun in morning sky.)
- Aug 23, 11h, Mercury at inferior conj. with sun (Passes into morning sky.)
- Aug 27, 08h, Uranus at opposition
- Aug 29, 16:21h, Full Moon
- Aug 31, 10h, Venus 1.9° S of Saturn (45° from sun in morning sky)

The Planets in August

♁ Mercury	♀ Venus	♂ Mars
Mercury is difficult to find this month, being very close to the sun all month.	Venus dominates the morning sky, reaching greatest elongation on Aug 17. Mag, -4.2.	Mars becomes too close to the sun to be easily viewed in August.
♃ Jupiter	♄ Saturn	♅ Uranus
Jupiter is low in the west early in the month. By the end of Aug it is lost in the evening twilight.	By the end of the month Saturn is near Venus in the morning sky. Mag, +0.3.	Uranus is at opposition this month and can be seen all night, best near midnight..
♆ Neptune	♇ Pluto	
Neptune is also at opposition this month. It is best viewed late in the evening.	Pluto is well placed for viewing in the evening sky near the Serpens - Ophiuchus border	

(Continued from page 1)
 that the view of prominences through my PST is probably 90% of the view I got at Stellafane and I couldn't be more pleased. It's as though I have doubled my opportunities to observe overnight!

For those who are interested, I plan to have the PST set up (weather permitting) on the observing deck at the Bishop Museum from 5:30-7:00 p.m. (prior to our monthly meeting) on August 3rd.

The general membership meeting was called to order at 7:33 p.m. by President Chris Peterson. Forty-two members and one visitor were present.

Old Business: President Chris Peterson updated general membership on the ongoing NASA Cassini Mission. He reported to the club on June 15th close fly-by of Phoebe by Cassini. Chris reviewed the three scheduled fly-bys and the drop of the Huygens Probe to Titan, in January of 2005. Further discussion touched on discoveries in the make-up of the Cassini Division and the variety of atmospheric wind speeds at different levels of Saturn's atmosphere.

President Chris Peterson welcomed two members who have not been to a meeting in a few years and bid welcome to our one visitor.

Waikele Urban Star Party: The Waikele Urban Star Parties are being well attended by the public and our core of astronomers who share the skies with the public at this event are doing a fine job. President Chris Peterson urged other members, who live in West Oahu who have and use their own scopes come and have fun at our monthly West Oahu event.

There was a short discussion of proposing permanent light shielding to the Department of Parks and Recreation for the Waikele viewing site. Currently Forrest Luke is shielding brighter lights with brown paper grocery bags during each Waikele event.

President Peterson asked for a volunteer to look into permanent shielding there. There were no immediate volunteers.

School Star Party Report: Forrest

Luke reported that other than one star party to take place on July 7 at Bellows Beach in Waimanalo, there are no further group star parties scheduled for the month of July.

New Business: Newcomers Telescope Training Sessions. In an effort to help newcomers foster their interest in astronomy, Paul Lawler has suggested Beginners Telescope Training Sessions to be held quarterly on a full moon Saturday at Kahala and/or Waikele Community Park.

Those newcomers wanting help are urged to contact Board members so that the Board can enlist the help of members with different makes of scopes to volunteer their time during these sessions to help newcomers learn how to use newly purchased or rented scopes. Notification of proposed workshop dates will be listed in the Astronews and on the web site.

Alternate viewing Sites: President Chris Peterson reported on a prospective Kunia viewing site at Kunia Camp (see July '04 Astronews).

President Chris Peterson read the proposed policy statement on use of green lasers at star parties. After a short discussion the policy was accepted by unanimous vote (*Ed. Note: The policy will be printed in the September Astronews*).

Ray Brust, Jr. presented information on the derivation of our club name. He feels that according to a well known Hawaiian Dictionary, kilolani" is appropriate for our use.

Beginner Topics: Vice President Barry Peckham talked briefly on Focal Ratio. Barry explained the relationship of tube length to the diameter of the

(Continued on page 5)

This is Perseid month! Sporadic rates are rising and it is vacation time.

Wednesday the 4th, the **Southern Iota Aquarids**. Radiant 22h12m -15 deg. Rates are about 2 meteors an hour for the drizzle which is a lunar casualty.

Sunday the 8th, the **Northern Delta Aquarids**. Radiant 22h20m -05 deg. This drizzle has perhaps 4 meteors per hour. The radiant is above the horizon most of the night and the Moon is last quarter. The meteors are chiefly faint and of medium speed.

Thursday the 12th, the **Perseids**. Radiant 03h04m +57 deg. Rates can be near 80 per hour. We pass very close to the parent comet dust trail on August 11 at about 20:54 UT on August 11. There may be many more Perseids the usual for about 15 minutes. This year's Perseid shower could be really something - then again!?

There are three other minor shower this month which produce 3 meteors or less per hour and the Moon does not help the last one:

Tuesday the 17th the **Kappa Cygnids**, radiant 19h04m +54 deg.

Thursday the 19th, the **Northern Iota Aquarids**, radiant 21h48m -06 deg and Tuesday the 31st, the **Alpha Aurigids**, radiant 05h36m +42 deg.

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

Minutes (Continued from page 4)
collection device, whether it is a refracting or reflecting telescope.

Other aspects of focal ratio discussed were exit pupil, portability, coma, chromatic aberration, image and optical quality, as well as eyepiece expense. Further discussion centered on how to determine how "fast" or "slow" scopes will be.

Astro-Tourism: Mel Levin requested that if anyone was interested in earning money by presenting the sky to Japanese visitors at Kapiolani Park during the months of July and August to please contact him. Scope required.

Swap Meet 2004 : The last 20 minutes of July meeting were designated for the Second Annual Swap Meet.

Participants gave a short description of their items and then the members got down to business. All transactions were strictly between buyer and seller.

The meeting adjourned at 8:47 p.m.. Members conducted business of the swap meet, and refreshments were served.

Respectfully Submitted,
Gretchen West, HAS Secretary

HAS Financial Report as of July 15, 2004

Initial Balance: \$5,293.96

Receipts:

Astronomy Payment 58.00
Donation 10.00
Dues Received 134.00
Sky & Telescope payments 98.85
T-shirt sales 15.00
Telescope fees 40.00

Total Income: \$355.85

Expenses:

Astronews 159.07
Magazine Subscriptions 61.95
Postage 23.95
Refreshments 6.24

Total Expenses: \$251.21

Final Balance \$5,398.60

We had Seven new members join the club this month. They are Charlotte and Janice Nakamine; Stuart, Elizabeth, Missy, and Kisa Lopez; and Linda Kumasaka. Many thanks to the Hoffers for their generous donation and to those renewing their membership during the month. Clear skies to all!

President's Message (Continued from page 2)

If this issue of Astronews reaches you in time, I urge you to consider attending a talk entitled Moon, Mars, and Beyond: Next Steps in the Human Exploration and Settlement of Space. The talk will be given by Prof. Jeffrey Taylor, a planetary scientist, at

7:30 p.m. on Tuesday, July 27th, in the Planetary Data Center, room 544 of the POST building, on the University of Hawaii at Manoa campus. Dr. Taylor is a very entertaining speaker, and this is a fascinating topic.

Chris

by Patrick L. Barry

Ever had a great idea for a new spacecraft propulsion system, or for a new kind of Mars rover? Have you ever wondered how such “dinner napkin sketches” evolve into real hardware flying real missions out in the cold blackness of space?

The road to reality for each idea is a unique story, but NASA has defined some common steps and stages that all fledgling space technologies must go through as they're nursed from infancy to ignition and liftoff.

Suppose, for example, that you've thought of a new way to shield astronauts from

harmful radiation during long space missions. In the first stage, you would simply “flesh out” the idea: Write it down, check the physics, and do some quick experiments to test your assumptions.

If the idea still looks good, the next step is to build a “proof of concept.” This is the “science fair project” stage, where you put together a nifty demonstration on a low budget—just to show that the idea can work.

For your radiation-shielding idea, for example, you might show how a Geiger counter inside a miniature mock-up doesn't start clicking when some radioactive cobalt-60 is held nearby. The shielding really works!

Once that hurdle is cleared, devel-

opment shifts into a higher gear. In this stage, explains Dr. Christopher Stevens of JPL, the challenge isn't just making it work, but making it work in space.

“Some conditions of space flight cannot be adequately simulated here on Earth,” Stevens says. Cobalt-60 doesn't truly mimic the diverse mixture of radiation in space, for example,

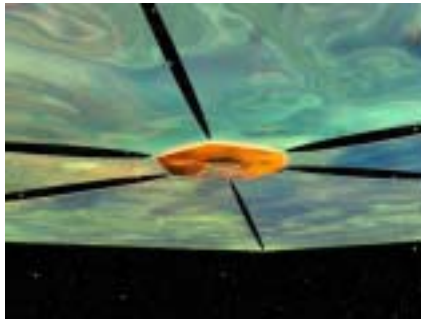
and the true microgravity of orbit is needed to test some technologies, such as the delicate unfolding of a vast, gossamer solar sail.

Other technologies, such as artificial intelligence

control systems, must be flight tested just because they're so radically new that mission commanders won't trust them based solely on lab tests.

Stevens is the manager of NASA's New Millennium Program (NMP), which does this sort of testing: Sending things to space and seeing if they work. In recent years the NMP has tested ion engines and autonomous navigation on the Deep Space 1 spacecraft, a new “hyperspectral” imager on the Earth Observing 1 satellite, and many other “high risk” technologies.

Thanks to the NMP, lots of dinner napkin sketches have become real, and they're heading for space. You can learn more at the NMP website, <http://nmp.nasa.gov/>.



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HAS Members enjoy the swap meet at the July meeting