The Astronews

HUI KILOLANI

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August 2006

North Rim Star Party

Barry Peckham

Imagine anyone from Hawaii driving into Las Vegas at noon, having a healthy lunch and then leaving for a better place in another state.

Now imagine a ½ mile wide meadow stretching for miles between low piney hills, with quaking aspens (white bark) for a border. That is the setting for the rustic Kaibab Lodge, outside park boundaries and 18 miles north of the Grand Canyon's North Rim. We had cheap accommodations there, made cheaper by the complimentary star party we threw for lodge guests. HAS members Jane and Morris "Mojo" Jones made the arrangements and loaded their van with 3 sizes of LITEBOX scopes for our first visit to this less-viewed perspective on Amer-

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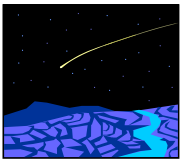

Upcoming Star Parties

Public Party	**July 29**	**Kahala/Waikele**
Club Party	**Aug 19**	**Dillingham**
Public Party	**Aug 26**	**Dillingham**
Public Party	**Sep 2**	**Kahala/Waikele**
Club Party	**Sep 16**	**Dillingham**
Public Party	**Sep 23**	**Dillingham**
Public Party	**Sep 30**	**Kahala/Waikele**

Upcoming Events:

- The next meeting is at 7:30 p.m. on Tuesday, Aug. 1st at the Bishop Museum.
- Bishop Museum's next planetarium show with **Barry Peckham** is Friday, Aug. 4th at 7:00 pm.

President's Message

Last month I wrote about changes in the Sun that would affect life on Earth. Did you know that Earth's climate is also affected by other bodies in the Solar System? The gravitational effects of the Moon and all the planets out to Jupiter combine to cause variations in the Earth's motion that affect our climate.

Milutin Milankovitch, a Serbian astrophysicist, in the early 20th century calculated these effects on three motions of the Earth: eccentricity (deviation from circularity of Earth's orbit around the Sun); obliquity (the degree of tilt of Earth's rotational axis); and precession (the change in the direction in which the Earth's axis points). All three motions change regularly in what are now known as "Milankovitch cycles."

Of these three cycles, eccentricity varies the slowest, over about 100,000 years. The amount varies from nearly no difference in perihelion and aphelion distance (a circle) to about 5%. Currently we are at about 3%. Obliquity ranges from about 21.5 to 24.5 degrees over 41,000 years. We are now nearly at the average tilt of 23.5 degrees. Precession causes the Earth's orbital axis to describe a circle on the sky once every 25,700 years.

The combination of these cycles causes changes in how much sunlight falls on different parts of the Earth throughout the year. For example, the Earth is now at perihelion near the beginning of the year. This makes seasonal variations in insolation more extreme in the southern hemisphere than in the north.

How insolation affects climate is partially controlled by the location of Earth's landmasses, which, of course, move over long periods of time. The feed-

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Hawaiian Astronomical Society
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Observer's Notebook—August 2006 by Jay

Planets Close To the Moon

Times are Hawaii Standard Time

Aug 1, 22h, M 4.6º SSW of Jupiter (90º from sun in evening sky)
Aug 9, 04h, M 2.9º SSE of Neptune (177º from sun in midnight sky)
Aug 10, 20h, M 0.41º SSW of Uranus (155º from sun in morning sky)
Aug 21, 20h, M 2.9º NNE of Venus (18º from sun in morning sky)
Aug 25, 03h, M 0.51º SSW of Mars (19º from sun in evening sky)

Mercury and Saturn are closer than 15º from the sun when near the moon in August.

Other Events of Interest

Times are Hawaii Standard Time

Aug 6, 14h, Mercury at greatest elongation (19.2º west of the sun in morning sky.)
Aug 7, 01h, Saturn at conjunction with sun (Passes into morning sky.)
Aug 9, 00:55h, Moon Full
Aug 10, 11h, Mercury 2.2º SE of Venus (19º from sun in morning sky)
Aug 10. 19h. Neptune at opposition
Aug 12, Perseid Meteors
Aug 12, 02h, 1 Ceres at opposition
Aug 23, 09:09h, Moon New
Aug 26, 13h, Venus 0.08º NNE of Saturn (16º from sun in morning sky)
Aug 31, 19h, Mercury at superior conj. With Sun (Passes into evening sky)

Planets in August

☿ Mercury

has a morning appearance during the first two weeks of August.

♀ Venus

is low in the east before sunrise at magnitude -3.90.

♂ Mars

is very low in the SW at dusk at magnitude 1.8 (as dim at it ever gets). Very hard to find after 1st week or so of August.

♃ Jupiter

shines brightly at magnitude -2.1 in the south west evening sky and sets in the late evening before midnight.

♄ Saturn

is at conjunction with the sun and passes into the morning sky. Too close to the sun to be observed.

♅ Uranus

Uranus rises a little later than Neptune, but is well placed for viewing about midnight.

♆ Neptune

reaches opposition this month and so is in the sky all night. Best observed a couple of hours either side of midnight.

♇ Pluto

This is one of the better months to try to see this elusive planet. Try mid-evening when it will be high in the southern sky.

Meeting Minutes

H.A.S. Secretary

The July 11th general meeting was held in the Bishop Museum's Atherton Halau and began at about 7:35. A few minutes later, president Chris Peterson directed the membership and guests on hand to step outside and view a very nice pass of the International Space Station with Space Shuttle attached. All went according to schedule as a bright light appeared over the Hawaiian Hall and climbed to more than 60 degrees in the northern sky, rivaling Jupiter in brightness.

Back inside, Chris announced that lunar scientist Jeff Taylor will give a talk titled "Science Resources and Settlement of the Moon" in commemoration of the Apollo 11 landing anniversary. If you didn't go to hear his talk, you already missed it.

Chris also told us the names selected for Pluto's newly discovered satellites: Nix and Hydra. Nix is the goddess of darkness and night. Hydra is a monster with 9 heads. Earth's attempt to get a better look at Pluto and brood is called the Pluto Express and will speed out past our own Moon's orbit during the first day of its journey.

July 15th marked the second Lahaina Noon of the year. Now the north walls of Hawaii buildings will stop seeing the sun.

Forrest Luke asked for help with a star party on the U.H. Manoa campus. He didn't know at this meeting that the event would be clouded out.

The Bishop Museum will host a Girl Scout group 600 strong on the day and night of August 12th. Volunteers with telescopes are eagerly sought.

The new H.A.S. summer t-shirt design is now available in a light blue color, with Scorpius replacing our Winter Orion design.

Chris proposed that we have another swap meet meeting a few months from now.

Mary Miller's 6" Pierre Schwaar "Companion" dob is still for sale: $400. Contact Barry Peckham if you don't have her contact info.

Barry did a show & tell on the Grand Canyon's North Rim Star Party and also a tour of Jet Propulsion Laboratories in Pasadena. Chris Peterson followed with a show & tell of Meteor Crater in Arizona.

Mike Morrow shared with the group that bones have been found on the Moon. Apparently, Mike added, the cow never made it.

Meeting was adjourned just before 9:00 PM. Joanne took interested members and guests over to the planetarium for a short show.

Submitted by H.A.S. vice president Barry Peckham

North Rim *(Continued from page 1)*

ica's classic chasm. Our 1st night was clear and dark and still. Mojo gave a PowerPoint presentation on the Milky Way in the lodge's lobby and then the 3 of us ran the scopes for 25 of the staff and guests. The coldest it got was 53 degrees while we were out, but we ran out of stamina before 11:00 and were packed up by midnight.

Breakfast at this lodge was exotic and affordable. As usual, we got the royal treatment from those who had joined us the night before. Then we drove on to the Canyon itself. It is 1500 feet higher than the South Rim and the 8500' elevation created some breathing and hydration issues, but we were glad to find a nicely designed stone lodge perched on the edge of the rim, with limestone-&-log cabins nearby and a tolerable number of people milling about. The bad news was that there was no clearing in which to enjoy a starry sky, so the scope wranglers in attendance (about 16 of us) had to crowd our equipment onto the observation decks of the lodge itself, where our view of the sky was severely cropped. Since the main deck was so packed with scopes, Jane, Mojo and I chose to set up 2 scopes on a smaller but more neglected deck, and this allowed us to show the crowd's favorite object, Saturn, until it and companion Mars set. This pair of planets began the evening low in the West so all but small kids had to kneel at the eyepiece. Somehow the air stayed steady and Saturn looked fabulous. On our 2nd night at the Lodge, I used a clicker to count 162 kneelers at the 14.5" scope I aimed from a corner of the deck. The air never got colder than 60 degrees.

Both Jane and Mojo gave formal indoor PowerPoint presentations to canyon visitors, who are used to this form of entertainment due to the frequent Ranger talks. Mojo's Milky Way talk is polished from many repetitions. Jane borrowed from her professional presentations and gave a talk about the Cassini mission to Saturn.

While they set up and delivered these talks, I watched the scope equipment on the deck, kept an eye on the people circulating through this space, and had plenty of time to enjoy the canyon's changing light show. This was pretty much the best part of my

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Meteor Log—August 2006

by Mike Morrow

In the northern hemisphere August is normally ***Perseid*** month, with increasing sporadic rates, mild weather and minor showers. Sadly, the Moon intervenes to spoil the Perseids' best even if we have clear skies. Where is Xena?

Saturday the 12th, the **Perseids**. Radiant 03h04m +57 deg.
Really active from about 23:00 UT on the 12th to 01:30 on the 13th. Rates may reach 80 an hour, sometimes a bit less and sometimes a few more. The radiant is near or above the horizon about 10 to 11 PM local time and is a few degrees northeast of the Perseus Double Cluster. Perseids are fast, often bright, and frequently leave persistent trains.

The month's remaining showers produce two or three meteors and hour and would be hard for the average observer to call so we will not take up space with them. .

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

North Rim *(Continued from page 5)*

trip: to be allowed a stretch of time in a perfect place on a perfect day… and I got to do this 2 days in a row. The activity-oriented tourist crowd misses the canyon's beauty because they can't DO anything with it. At sunset time a number of tourists began dashing around frantically to find a vantage point for seeing the sun hit the horizon. "Where can I see the sun set?!" they would ask me, wild eyed, like the sun had never set before. The canyon was on our south side, and shadow-play, plus the reddening of the rocks, made for a spellbinding show below us. But these tourists ignored the show. They put their backs to it and watched the sun go down over the flat and featureless western horizon.

The tragedy of this location was that thousands of square miles of dark skies surrounded us. We were trying to show the universe in the only locale where the night sky was cursed. Still, the young and the old, the educated and ignorant were all impressed by our sunlit planets. After 10:00 PM on the 2nd night, Jupiter showed the tiny black shadow of its moon Io, and near the giant's limb, Io itself showed up like a white marble, slowly moving out from in front of Jupiter and back into the black of space.

We drove through the Kaibab forest fire on the way home and it seemed to be dying down, but 2 days after we left, North Rim visitors were trapped in the park and ashes like

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Treasurer's Report

by Jim MacDonald

HAS Financial Report as of July 15, 2006

Initial Balance:	**$4,148.52**
Receipts:	
Donations	13.05
Dues Received	63.00
S&T Payments	65.90
Astronomy Payments	34.00
T-Shirt Sales	285.00
Total Income:	**$460.95**
Expenses:	
Astronews	147.69
Magazine Subscriptions	226.83
Postage	8.10
Total Expenses:	**$382.62**
Ending Balance:	**$4,226.85**

This month the club welcomes three new members. They are **Sheri St. Germain**, **John Winslett** and **Lauren Brewer**. A special thanks to **Richard Lane**, **Sapavith Vanapruks** and **Barry Peckham** for their donations and aloha to all of those renewing their membership this month. Clear skies to all!

North Rim *(Continued from page 6)*
snowflakes were falling on our former scope perches. Our return to the Los Angeles area bypassed Las Vegas but stopped in Baker, CA, where a 4 story high thermometer read 119 degrees as we stopped for a snack and 120 degrees as we pulled out of town. Still, teens ran in packs through the streets and ravens fought each other for dumpster scraps. Baker is the "Gateway to Death Valley". How quaint. "Lucky you live Hawaii."

President *(Continued from page 2)*
backs and response lags caused by such things as ice buildup and melting make predicting the effect of the Milankovitch cycles on Earth's climate difficult. That is one reason that it is hard to say just how much human actions are contributing to global warming.

Chris

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Who says the sun looks bigger on the horizon? This fun optical illusion also serves to illustrate that neither sun nor moon really changes size.