The
Astronews

HUI KILOLANI

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October 2004

Paul Coleman to speak at October Meeting

University of Hawaii IFA astronomer Dr. Paul Coleman will be the featured speaker at the October meeting. Dr. Coleman, will speak about the ancient, as well as modern, Hawaiian traditions concerning astronomy in Hawaii. He will also talk about the history of European astronomy in Hawaii beginning with Captain James Cook, who visited our islands to observe the transit of Venus.

Dr. Coleman, who is a native Hawaiian, was born on Oahu and is a graduate of St. Louis High School. He received his Ph.D. in physics from the University of Pittsburgh, while working for the National Radio Astronomy Observatory. After receiving his doctorate

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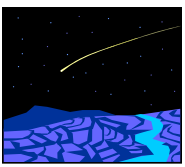

Upcoming Star Parties

Club Party	**Oct**	**9**	**Dillingham**
Public Party	**Oct**	**16**	**Dillingham**
Public Party	**Oct**	**23**	**Kahala/Waikele**
Club Party	**Nov**	**9**	**Dillingham**
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Public Party	**Nov**	**23**	**Kahala/Waikele**

Upcoming Events:

- The next meeting is at 7:30 p.m. on Tue. Oct. 5th at the Bishop Museum. (guest speaker)
- **Sam Rhoads** next planetarium show is on Monday, Oct. 4th.

President's Message

Remember all the hoopla surrounding the opposition of Mars last year in August? Everyone seemed to know about the closest approach of Mars to Earth in thousands of years. I'd bet that very few of the people who got excited about that also realize that Mars stayed in our night sky until recently. It quickly faded below the brightness that made it stand out in the sky to even casual observers, but Earth's slightly faster inside track has taken until now to gain a half lap around the Sun on our nearest outside planetary neighbor. On September 15th, Mars reached conjunction with the Sun, so we're now closer to the next opposition of Mars than to the last one.

Until a few decades ago, planetary conjunctions with the Sun had little practical effect. Astronomers couldn't observe the planet, but planets aren't well placed to observe for quite a while before and after conjunction, anyway. In this age of planetary exploration, however, conjunction has a much more important significance. Radio communication is difficult or impossible when a planet is very close to (or even directly behind) the Sun. There are currently four operating Mars missions that need to do without communication with the Earth for several days: Mars Global Surveyor, Mars Odyssey, the two Mars Exploration Rovers, and Mars Express (a European mission). I guess that's five missions if you count each of the rovers separately. Mission planners need to make provisions for the spacecraft to operate autonomously while they are out of communication with Earth. In the case of the rovers, they will take a few measurements with some of their instruments, but they won't move from their current locations until communications have been restored.

Jupiter's conjunction with the Sun

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Hawaiian Astronomical Society
P.O. Box 17671
Honolulu, Hawaii 96817

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Observer's Notebook—October 2004

by Jay Wrathall

Planets Close To the Moon

Times are Hawaii Standard Time

Oct 7, 02h, M 3.4° N of Saturn (78° from sun in morning sky)
Oct 10, 12h, M 3.9° NNE of Venus (39° from sun in morning sky)
Oct 12, 11h, M 1.4° NE of Jupiter (16° from sun in morning sky)
Oct 21, 13h, M 5.1° SSE of Neptune (104° from sun in evening sky)
Oct 23, 01h, M 3.7° SSE of Uranus (123° from sun in evening sky)

Mercury and Mars are less than 15° from the sun when near the moon in June.

Other Events of Interest

Times are Hawaii Standard Time

Oct 3, 06h, Venus 0.16° S of Regulus (41° from sun in morning sky)
Oct 5, 08h, Mercury at superior conj. with sun (Passes into evening sky)
Oct 13, 16:47h, New Moon (Partial eclipse of the sun.)
Oct 21, Orionid Meteors
Oct 27, 17:06h, Full Moon
Oct 31, Clocks change from Daylight Savings Time to Standard Time on the mainland.

The Planets in October

Mercury

Mercury is too close to the sun for easy viewing this month.

$ Venus

Venus shines brightly in the morning sky, still near max. elongation. Mag. - 4.1.

% Mars

Mars is too close to the sun to observe in October.

& Jupiter

Jupiter is visible in the east just before sunrise and by month's end is almost as high as Venus.

' Saturn

Saturn rises in the late evening and can be best viewed in the early morning hours.

(Uranus

Uranus can be viewed in the southern sky (in Capricorn) after sunset.

) Neptune

Neptune is near Uranus and can be seen in the evening hours.

+ Pluto

Pluto is visible in the SW sky just after sunset. It will soon be too close to the sun to view.

Meeting Minutes

H.A.S. Secretary

The general membership meeting was called to order at 7:37 p.m. by President Chris Peterson in the Atherton Halau. Forty-one members and seven visitor were present.

Old Business

Genesis Mission: President Chris Peterson spoke of the impending return of the NASA mission designed to collect debris resulting from Solar wind. An early reentry @ 6:00am Wednesday September 8 will return the first such collection of solar material in over 30 years. Its return to Earth will hopefully be caught by aircraft trained in mid-air recovery.

Planetary Data Center Lecture- Dr. Dave Bluett will speak at the POST Building, Rm. 504 on the UH campus September September 28 on [3]Messenger Mission to Mars.[2]

Visitors - President Chris Peterson greeted the seven newcomers at this months meeting. Maryknoll students were in the audience, as were two adult enthusiasts.

Bishop Museum Telescope - Jim MacDonald reports that the B.M. telescope repair is close to being completed. At present, the fabrication of a nylon sprocket gear for the tracking mechanism is in the works.

New Business

Dr. Paul Coleman- will be our guest speaker for October General Membership Meeting. Dr. Coleman will speak on "Hawaiian Astronomy - Then and Now."

Dr. Fred Whipple - The planetary scientist who formulated the [3]Dirty Snowball [3] theory to explain cometary composition, passed away this week.

September School Star Parties- Forrest Luke that September has only one scheduled school star viewing planned. It is: Friday September 17 at Iroquois Point Elementary School

Pride of Aloha Cruise- Carolyn Kaichi spoke briefly about the "sky talks" Bishop Museum employees are leading on the cruise ship, Pride of Aloha, . Star guides, paid by the Bishop Museum led two lectures and three light pen sky viewing sessions during week-long cruises which circumnavigate the state. Qualified HAS members will be considered as onboard leaders. Inquire with Carolyn Kaichi.

Asterism Challenge - Barry Peckham issued a c hallenge to the general membership is to find his elusive asterism.

Clues:

- in the armpit of the "other Great One"
- 6 stars in a bent line
- 30x to 80x power eyepiece used to view.

Beginner Topics

Mel Levin spoke and gave an overhead presentation on " Star Hopping". Mel related his early star hops as a beginner with Barry Peckham and his further personal experiences in star hopping using ***Star Hopping***, a good book which gives ample help to those interested in this observing technique.

Kunia Site - The HAS will be offering to give a star party to the Kunia Camp community later this month. We are offering Sept. 15 or Sept. 22 nights as possible evenings. If this is inconvenient, the club will try

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Meteor Log—October 2004

by Mike Morrow

All the expected shower peaks this month are favorably moonless. Sporadic rates are also good, at least for northern observers.

Friday the 8th, the **Draconids**. Radiant 17h28m +54 deg.
Rates run from none to what might be called storm. This year the maximum may happen from 02h-19h UT on October 8th. The radiand is highest in the early evening. Draconids are characteristically very slow moving.

Thursday the 21st, the **Orionids**. Radiant 06h20m +16 deg.
Rates run from about 5 to 15 and hour. Typical shower meteors are very fast, sometimes bright and often leave persistent trains.

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

Comet Corner

by Greg Crinklaw

Two new comets have been discovered recently, both my amateurs. These comets are currently bright enough to be visible in amateur telescopes. Orbits are still preliminary.

2004/Q2 (Machholz) is a 10th magnitude comet in Eridanus with a 3' coma that should be visible in a 6-inch telescope from all but far-northern latitudes. Comet Machholz, discovered visually in a 10-inch reflector on August 27, is the 10th comet discovered by Don Machholz of California.

According to the preliminary orbit this comet will brighten dramatically and may be visible to the naked eye after Christmas!

2004 Q1 (Tucker) is a 12th magnitude object in Cetus with a 25" coma that should be visible in an 8-inch telescope. Comet Tucker was discovered on CCD images by Roy A. Tucker of Tucson, Arizona on August 23.

This comet should brighten until around November 1, when it should be brighter than 11th magnitude and be in Andromeda. Throughout this time it will be well placed for evening observation from both the northern and southern hemispheres.

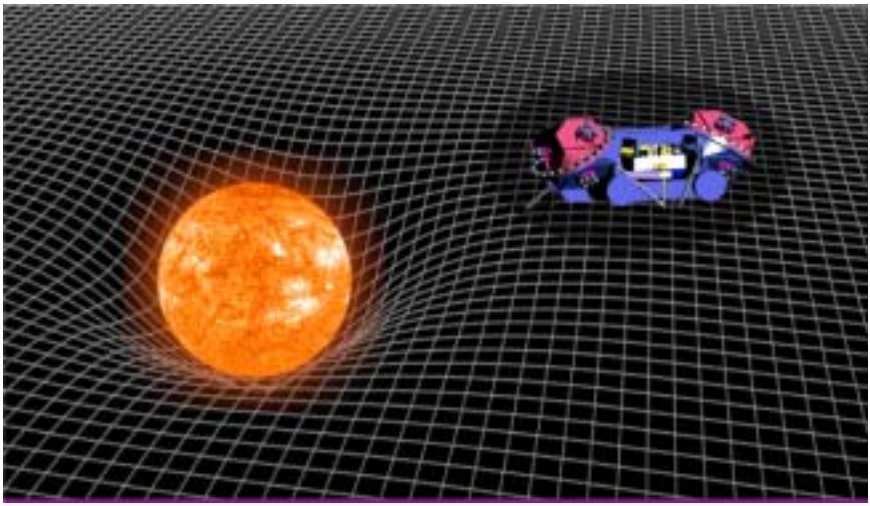
Coleman *(Continued from page 1)*

he was a visiting assistant professor at Virginia Tech. He then accepted a position at the Kapteyn Astronomical Institute in Groningen, The Netherlands, spending eight years there on the scientific staff. He then returned to the United States and held successive appointments at New Mexico Tech, Yale University, and the University of Puerto Rico before accepting his present position as an Associate Astronomer at the UH Institute for Astronomy. Dr. Coleman's research interests are in extragalactic astronomy and cosmology.

Hunting Gravitational Waves: Space Technology 7

by Patrick Barry & Dr. Tony Phillips

Among the mind-blowing implications of Einstein's general theory of relativity, direct verification is still missing for at least one: gravitational waves. When massive objects like black holes move, they ought to create distortions in space-time, and these distortions should spread and propagate as waves--waves in the fabric of space-time itself.



Space Technology 7 will test a technology to be used in detecting gravitational waves in space.

If these waves do exist, they would offer astronomers a penetrating view of events such as the birth of the Universe and the spiraling collisions of giant black holes. The trick is building a gravitational wave detector, and that's not easy.

Ironically, the gravitational waves spawned by these exceedingly violent events are vanishingly feeble. Gravitational waves exert a varying tug on objects, but this tug is so weak that detecting it requires a device of extraordinary sensitivity and a way to shield that device from all other disturbances.

Enter Space Technology 7 (ST-7). This mission, a partnership between NASA's New Millennium Program and the European Space Agency (ESA), will place a satellite into a special orbit around the Sun where the pull of the Earth's and Sun's gravities balance. But even the minute outside forces that remain -- such as pressure from sunlight -- could interfere with a search for gravitational waves.

To make the satellite virtually disturbance-free, ST-7 will test an experimental technology that counteracts outside forces. This system, called

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School Star Parties

by Forrest Luke

School and Group Star Parties are being coordinated by Forrest Luke. If you are contacted for a school star party, please have the school contact Forrest directly by phone at 623-9830 or via e-mail at <lukef003@hawaii.rr.com>.

As a reminder, upcoming scheduled school star parties are:

15 Apr 2005 Pearl Harbor Elementary
26 Apr 2005 Ala Wai Elementary
13 May 2005 Lanikai Elementary
27 May 2005 Kipapa Elementary

If you signed up and need help finding the school, or if you didn't sign up, but still want to participate, please contact Forrest.

Pres. Report *(Continued from page 2)*

follows that of Mars by about six days, but the faster orbital motion of Mars will mean that Jupiter will beat Mars out of the pre-dawn glare into the morning sky. Venus and Saturn (and briefly Mercury) already shine in the east before dawn. The winter hexagon around Orion looks even more filled with bright points of light than usual now.

So we say goodbye to bright planets in the evening sky for a while, but before long we'll start another long cycle with good evening planetary viewing. Then, in about a year, everyone will notice Mars again.

Chris

Quarterly Telescope Workshop October 2, 2004

Okay… I saw the shiny blue tube, the computer, the array of sockets on the base and I got carried away… but how do I actually use this thing?

Polar Alignment, Alt/Az Alignment, Drive Training, Backlash, Home Position—what does it all mean?

Get the answers at the Quarterly HAS Telescope Workshop. This quarter's workshop at Kahala Community Park will focus on the **Meade ETX** series and Autostar controller, but many of the principles we discuss will also apply to other motorized and GOTO telescopes. Please bring your scope and arrive BEFORE sunset, as there are several alignment steps best conducted in daylight.

The HAS Quarterly Telescope Workshops are open to all HAS members and guests. If you know someone who has bought (or is considering purchasing) an ETX and is having trouble, please feel free to bring them along.

Sky Tapestry

A tapestry jewelled hangs over the night;
Have you looked up to see where it gleams?
There are rubies and sapphires and diamonds white
Interwoven with mists of lost dreams.
This tapestry ancient was hung up for you
Before Time tried to reckon with Space;
And for ages to come it will hang in the blue,
Starry jewels each one in its place.
Each star has a story, each mist is alight;
If you seek to know each priceless fold
You will treasure this tapestry hung up at night
By the Weaver of tapestries old.

— Cordella Lackey

Su Reed Remembered

by Gretchen West & Jim MacDonald

Su L. Reed, long time member of the Hawaiian Astronomical Society, passed away earlier this month at her home in Makiki. Her daughter Su Losi indicated that she slipped away in her sleep. Su Reed¹s accomplishments ranged from professional photography and hiking the hills and mountains on all islands, to being an amateur pilot.

As a member of the HAS for almost 40 years, Su was one of the most senior members of the society. She attended general membership meetings regularly for many years and recently as often as her health would allow. Keeping in touch with the club, Su attended her last club meeting this last month, September 2004.

Viewing the evening sky was an activity she greatly enjoyed. In a recent conversation, Su had spoken warmly of her delight in being able to participate in star viewing in the field. In recent years, she would come to Dillingham Field with friends, and had joined the crowd viewing the night time sky at Kahala Community Park. She was always an enthusiastic observer at the eyepiece and never failed to express her deep gratitude for those sharing their telescopes.

The Hawaiian Astronomical Society sends our regards to her family and we will miss her presence at meetings and nights out under the stars. Aloha Su!

Cards and messages can be sent to the family at Su's most recent address and will be forwarded to her family.

Treasurer's Report

by Jim MacDonald

HAS Financial Report as of September 15, 2004

Initial Balance:	**$5,330.35**
Receipts:	
Astronomy Payment	29.00
Dues Received	77.00
Polo Shirt Deposit	29.00
T-Shirt Sales	45.00
Telescope Fee	20.00
Total Income:	**$200.00**
Expenses:	
Astronews	153.00
Magazine Subscriptions	90.95
Postage	2.90
Polo Shirts	115.62
Total Expenses:	**$322.20**
Final Balance	**$5,167.88**

The club welcomes three new members this month. They are **Robert** and **Yoko McNamara**; and **Jeff Childs**. Many thanks to those renewing their membership this month. Clear skies to all!

Sky Publishing Special

Sky Publishing is pleased to announce a limited time offer of a 15% discount on books and products (excluding magazine subscriptions and sale items) sold through our catalog and on our on-line store at SkyandTelescoope.com. This offer is made exclusively to astronomy club members and replaces our previous discount program.

Here is how it works: Go online and make your purchases. Continue to the checkout process and at step 1 fill in the promotion code field with **CLUB04H**. Your discount will automatically be applied. (Note: the 04 is a numeric). *or* Call 800-253-0245 (Outside the US and Canada, dial +1-617-864-7360) and tell the customer service representative you would like to take advantage of the special club discount offer. Mention the promotion code of **CLUB04P** to qualify for the discount.

Note: This offer is only good through October 31, 2004.

Space Weather *(Continued from page 6)*
the Disturbance Reduction System (DRS), is so exquisitely sensitive that it can maintain the satellite's path within about a nanometer (millionth of a millimeter) of an undisturbed elliptical orbit.

DRS works by letting two small (4 cm) cubes float freely in the belly of the satellite. The satellite itself shields the cubes from outside forces, so the cubes will naturally follow an undisturbed orbit. The satellite can then adjust its own flight path to match that of the cubes using high-precision ion thrusters. Making the masses cube-shaped lets DRS sense deviations in all 6 directions (3 linear, 3 angular).

ST-7 is scheduled to fly in 2008, but it's a test mission; it won't search for gravitational waves. That final goal will be achieved by the NASA/ESA LISA mission (Laser Interferometer Space Antenna), which is expected to launch in 2011. LISA will use the DRS technology tested by ST-7 to create the ultra-stable satellite platforms it needs to successfully detect gravitational waves.

If ST-7 and LISA succeed, they'll confirm Einstein (again) and delight astronomers with a new tool for exploring the Universe.

Read more about ST-7 at http://nmp.jpl.nasa.gov/st7 . For kids in a classroom setting, check out the "Dampen that Drift!" article at http://spaceplace.nasa.gov/en/educators/teachers_page2.shtml

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Minutes *(Continued from page 4)*
to set up another viewing some time in November. Mel Levin and Gretchen West will be speaking with the Nature Conservancy and Del Monte.

Club/Public Star Parties - Code for Dillingham Field lock was discussed. The code has changed. If you do not know the new code please ask a BOD member. We are asking members not to yield logic for code to non club members.

Mars Global Surveyor- President Chris Peterson presented a series of images taken by the Mars Observer camera. Polar views, wind erosion features such as yardangs and possible water erosion features were displayed and discussed.

NASA Night Sky Network- John Gallagher displayed and explained the fours sections of the NASA educational materials that will be available to HAS members and educators, as part of our participation in the NASA Night Sky Network.

A Newcomer Telescope Training Session are scheduled for October 2, 2004 at Kahala Community Park. Those wanting help will need to phone BOD members to verify their attendance. Help for those ETX users will be available.

The meeting adjourned at 9:03 p.m.. Refreshments served and at 9:15 we met in the Planetarium for a "Skies Tonight" with Joanne Bogan.
Respectfully Submitted,
Gretchen West, HAS Secretary

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P.O. Box 17671
Honolulu, HI 96817

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