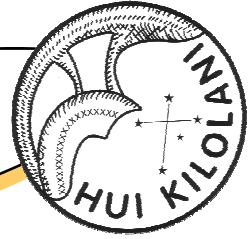


The Astronews



Volume 58, Issue 4

April 2010

www.hawastsoc.org

Inside this issue:

President's Message

by Chris Peterson

After a relatively quiet period, April brings new opportunities for planetary observing. The two inner planets join forces to show us how much difference a few tenths of an astronomical unit can make. Mercury, at about 0.4 A.U., orbits the Sun in about 88 days. It never gets far from the Sun in our sky, and it only briefly pokes high enough into our pre-dawn or post-dusk sky for an unaided view. Venus, at about 0.7 A.U., takes about 225 days to circle the Sun, so it lingers as either the "morning star" or the "evening star" for several months each time.

This month, the pair appears together in the early evening. Both are still climbing out of the twilight when, on April 3rd, they are separated by less than 3°. Mercury reaches its greatest separation from the Sun on April 8th then quickly begins to drop from view. Venus, on the other hand, continues to climb away from the Sun until after Mercury next appears in the evening sky in July. Watch Venus pass near the Pleiades near the end of April.

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Upcoming Star Parties

Public Party Apr 3 Dillingham
Club Party Apr 10 Dillingham
Public Party Apr 17 Kahala/Waikele
Astronomy Day Apr 24 Kahala Mall

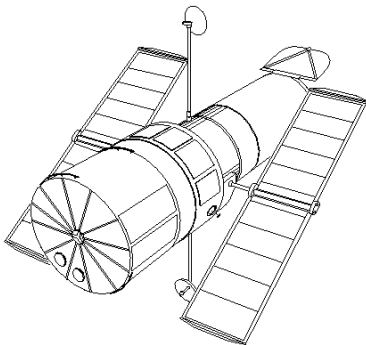
Upcoming Events:

- The next meeting is at 7:30 p.m. on **Tuesday, Apr 6th** at the Bishop Museum.
- Bishop Museum's next planetarium shows with **Barry Peckham** are Friday, **Apr, 2 & 16** at 8:00 p.m. www.bishopmuseum.org/calendar
- The next Board Meeting is Sunday **Mar 28th** at 3:30 p.m. at the POST building at UH.

Meanwhile, on the other side of the sky, Mars slowly relinquishes its prime position to Saturn, just past opposition and showing us the north side of its rings for the first time in years. Equinox on Saturn occurred in August of last year, but most of the transition was difficult to observe with Saturn near conjunction with the Sun. Fortunately, Cassini was able to send back images from nearby for the first time. For the giant planets, their size and distance mean that they don't look much bigger at opposition than they do weeks later when they are already high enough to observe at sunset. For Saturn especially, observing well past opposition enhances the view because the shadows of the rings and the planet each fall on the other object. This helps give Saturn a more three-dimensional look.

Mars finally catches up with Saturn at the end of July, and the pair is soon joined by Venus for a nice grouping after sunset. By the time we lose Saturn, Jupiter will be near opposition and engaging in its own conjunction dance with Uranus. More about that later.

Chris



Hawaiian Astronomical Society

P.O. Box 17671
Honolulu, Hawaii 96817-0671

President

Chris Peterson

956-3131

chrisp@higp.hawaii.edu

Vice President

Barry Peckham

542-8658

barry@liteboxtelescopes.com

Secretary

Gretchen West

737-4742

gwest002@hawaii.rr.com

Treasurer

Jim MacDonald

261-2162

jim.macd@hawaiiantel.net

The **Astroneus** Editor

Carolyn Kaichi

551-1030

c.kaichi2001@gmail.com

Board Members-at-Large

John Gallagher 683-0118

gallaghej002@hawaii.rr.com

Harry Zisko 262-1947

harryz@pobox.com

HAS Webmaster

Peter Besenbruch

prb@lava.net

School Star Party Coordinator

Forrest Luke

lukef003@hawaii.rr.com

The **Astroneus** is the monthly newsletter of the Hawaiian Astronomical Society. Some of the contents may be copyrighted. We request that authors and artists be given credit for their work. Contributions are welcome. Send them to the Editor via e-mail. The deadline is the 16th of each month. We are not responsible for unsolicited artwork.

Vice President Barry Peckham called the March 2, 2010 meeting of the Hawaiian Astronomical Society to order at 7:34 p.m. President Chris Peterson was off-island. The meeting was held at the Planetarium on the grounds of the Bishop Museum. There were twenty-two members in attendance.

FYI – Vice President Barry Peckham spoke to the general membership about the wonderful skies we enjoyed this year during the month of February. Stargazing at Dillingham Airfield and in the community parks at Kahala and Waikele were the best winter skies we have seen for a few years. Barry warned that March is historically a poor viewing month, but it would be nice to be proven wrong.

The moon rising out of the ocean from the southern shore is always a treat. Barry urged members to take the time to travel to the south shore to enjoy this astronomical treat when the moon is situated in such a way that it rises out of the ocean.

School Star Party Report: Forrest Luke reported that there were three school star parties in the month of February. Viewers at the following schools enjoyed the skies with the help of HAS astronomers: Washington Intermediate; Waikiki Elementary; and Iolani Space Night. Forrest passed a clipboard around for sign-ups for upcoming March school star parties.

March 17th – Bellows Field

March 19th – Punahou School

March 21st – Cub Scouts at Alva Scott Elementary

March 23rd – Mililani Ike Elementary

March 24th – Kipapa Elementary

Hawaii State Science and Engineering Fair - *THE ASTRONEWS* editor and Executive Director of the Hawaii State Science and Engineering Fair, Carolyn Kaichi requested help from Hawaiian Astronomical Society

(Continued on page 4)

members to move the Science Fair office on Sunday April 4th from their University of Hawaii location to this years venue at the Hawaii Convention Center. If you are interested in participating in a worthwhile effort, contact Carolyn Kaichi.

Guest Speaker – The Hawaiian Astronomical Society’s March guest speaker was Nancy Alima Ali. Nancy, a H.A.S. member, is the manager of the Windward Community College’s “Imaginarium.” The title of her talk was “Fostering Cultural Understanding Through Astronomy.” Mrs. Ali made a recent trip to Asia and the Middle East with her husband. During her trip Nancy traveled to Hong Kong; Dubai; Muscat, Oman; Amman, Jordan; and Cairo, Egypt. She spoke at the Oman Astronomical Society in Muscat, and in Amman, to the Jordan Astronomical Society. Nancy saw the great diversity of conditions for these groups. She was hosted by the locals and in Jordan went to that country’s society’s desert camp where club members share two scopes for stargazing. Viewing in the desert was quite dusty, which made for lovely sunsets, but interfered with clear viewing. Nancy was obviously delighted by her trip and the friends she made on her travels.

Globe at Night – This year the survey called “The Globe at Night,” which enlists the help of amateur astronomers across the globe, sets about counting the stars seen in urban settings. The 2010 survey will take place March 3rd through March 16th, 2010. Those people interested in participating in the survey can find more information at www.globeatnight.org.

Planetarium guide and longtime member Joanne Bogan lead us through the Bishop Museum Planetarium’s current “Galileo” show, recounting the life and accomplishments of the famed scientist and astronomer. Joanne also took us on a guided tour of the night skies above Hawaii. As always, a treat!

As there was no further business, the meeting was adjourned at 9:50 p.m. Refreshments were served

Respectfully Submitted,
Gretchen West
HAS Secretary

Deadly Planets

By Patrick L. Barry and Dr. Tony Phillips

About 900 light years from here is a rocky planet not much bigger than Earth. It goes around its star once every hundred days, a trifle fast, but not too different from a standard Earth-year. At least two and possibly three other planets circle the same star, forming a complete solar system. Interested? Don't be. Going there would be the last thing you ever do. The star is a pulsar, PSR 1257+12, the seething-hot core of a supernova that exploded millions of years ago. Its planets are bathed not in gentle, life-giving sunshine but instead a blistering torrent of X-rays and high-energy particles. "It would be like trying to live next to Chernobyl," says Charles Beichman, a scientist at JPL and director of the Michelson Science Center at Caltech.

Our own Sun emits small amounts of pulsar-like X-rays and high energy particles, but the amount of such radiation coming from a pulsar is "orders of magnitude more," he says. Even for a planet orbiting as far out as the Earth, this radiation could blow away the planet's atmosphere, and even vaporize sand right off the planet's surface.

Astronomer Alex Wolszczan discovered planets around PSR 1257+12 in the 1990s using Puerto Rico's giant Arecibo radio telescope. At first, no one believed worlds could form around pulsars—it was too bizarre. Supernovas were supposed to destroy planets, not create them. Where did these worlds come from? NASA's Spitzer Space Telescope may have found the solution. In 2005, a group of astronomers led by Deepto Chakrabarty of MIT pointed the infrared telescope toward pulsar 4U 0142+61. Data revealed a disk of gas and dust surrounding the central star, probably wreckage from the supernova. It was just the sort of disk that could coalesce to form planets!

As deadly as pulsar planets are, they might also be hauntingly beautiful. The vaporized matter rising from the planets' surfaces could be ionized by the incoming radiation, creating colorful auroras across the sky. And though the pulsar would only appear as a tiny dot in the sky (the pulsar itself is only 20-40 km across), it would be enshrouded in a hazy glow of light emitted by radiation particles as they curve in the pulsar's strong magnetic field. Wasted beauty? Maybe. Beichman points out the positive: "It's an awful place to try and form planets, but if you can do it there, you can do it anywhere."

Find more news and images from Spitzer at <http://www.spitzer.caltech.edu/>. In addition, The Space Place Web site features several games related to Spitzer and infrared astronomy, as well as a storybook about a girl who creamed of finding another Earth. Go to <http://tiny.cc/lucy208>.

Planets Close To the Moon










Times are Hawaii Standard Time

- Apr 9, 12h, M 3.8° NNW of Neptune (52° from sun in morning sky)
- Apr 11, 08h, M 5.5° NNW of Jupiter (32° from sun in morning sky)
- Apr 11, 22h, M 5.5° N of Uranus (24° from sun in evening sky)
- Apr 15, 17h, M 1.5° N of Mercury (17° from sun in evening sky)
- Apr 16, 01h, M 4.0° NNW of Venus (23° from sun in evening sky)
- Apr 21, 19h, M 4.4° SSW of Mars (96° from sun in evening sky)
- Apr 25, 09h, M 7.4° SSW of Saturn (143° from sun in midnight sky)

Other Events of Interest

Times are Hawaii Standard Time

- Apr 3, 22h, Mercury 3.0° WNW of Venus (19° from sun in evening sky)
- Apr 4, Easter Sunday, First Sunday after the first full moon after the Vernal Equinox
- Apr, 13h, Mercury at greatest elongation (19.4° east of the sun in evening sky)
- Apr 14, 00:30h, Moon New
- Apr 22, Lyrid Meteors (Favorable year for this sometimes strong shower)
- Apr 24 Astronomy Day
- Apr 28, 02:18h, Moon Full
- Apr 28, 07h, Mercury at inferior conj. with sun (Passes into morning sky)

<p> Mercury</p> <p>Makes a fine evening appearance in the twilight sky below Venus just after sunset.</p>	<p> Venus</p> <p>Shines brightly low in the west after sunset.</p>	<p> Mars</p> <p>Still pretty good for observing in the western sky after sunset, but is now too small to see much detail.</p>
<p> Jupiter</p> <p>Can be viewed low in the eastern sky just before dawn.</p>	<p> Saturn</p> <p>Still well placed for viewing late in the evening after its opposition last month.</p>	<p> Uranus</p> <p>Is still too close to the sun to be easily viewed this month.</p>
<p> Neptune</p> <p>Can be found in the east before sunrise, but will be easier to view later in the year.</p>	<p>Dwarf Planet  Pluto</p> <p>Rises about midnight and is high in the east by sunrise in Sagittarius.</p>	<p>Dwarf Planet  Ceres</p> <p>Is also in Sagittarius at magnitude +8.3, but will brighten as it approaches opposition in June.</p>

April may see lots of sporadic fireballs like February although the main event is the Lyrid shower.

Thursday, the 22nd, the Lyrids. Radiant 18h04m, +34 deg. Rates are variable, but may reach about 60 + meteors an hour. This year the maximum is forecast for about 7AM local time so the Sun may be in the way and the Moon will set between 1 and 2 AM so a short time before dawn will be the time to observe unless you are in eastern Asia.

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

Laser Caution

Harry Zisko sent an article to various HAS members containing a news article that is of interest to us all. The article is about a Rocklin California man who pointed a laser at a sheriff's helicopter while it was on routine patrol. For this action, he was sentenced to four in state prison. The article goes on to state that pointing a laser at an aircraft in flight is a federal offense which is a felony under rules of the statute. This is a good time to also remind members of a longstanding club policy on the use of Lasers.

Policy Statement on Use of Lasers

No laser in excess of 5 mW output shall be used by any person at any event sponsored by the Hawaiian Astronomical Society (HAS). This restriction also applies to HAS members participating in events sponsored by other organizations such as schools, scouting groups, churches, etc., which include HAS as a participating organization. This maximum output level will not exceed lasers found in category Class IIIA as spelled out in ANSI Z136.1-1993.

Individuals using lasers are expected to exercise utmost caution in their handling of such instruments. Lasers used as pointers should only be aimed skyward, not at any aircraft, or where they might reflect off shiny surfaces, or where there is a possibility of hitting any person or animal. Telescopes in the process of being aimed by a laser need to be pointed in such a manner that any laser beam escaping from the scope's optics will be directed skyward.

Telescope Basics - Star-hopping For Its Own Sake

By Barry Peckham

Pushed to the brink of extinction by DSC technology, star-hopping has fallen from favor among the current clutch of telescope users. This happened because there are faster ways to bag a faint fuzzy, but also because DSCs (digital setting circles) and GoTo gizmos represent other retail products for which markets can be made. The emphasis is on sale-ability rather than use-ability. My intention here is simply to remind amateur astronomers that *hunting*, *exploring* and *wandering* are 3 hard-wired human avocations squashed by robotic finders. Star-hopping isn't promoted because promoters need a product to sell. Let gratification be your guide. Try hopping through the universe!

HAS member Glenn Nanamori reminded me recently that Uranometria charts show stars as they appear in an 8" scope under suburban conditions. During the day, I picked a piece of sky for scrutiny, taped together 2 photocopied pages (319 & 320) of Puppis, enlarged the result onto 11x17 paper, and waited for dark. Late February nights place Puppis on the meridian around 10 PM, which means it is as high off the horizon as it's going to get. Sitting comfortably at the eyepiece, I began a journey out through the starfields of the Winter Milky Way and across the galactic equator, with the Big Dog's butt star as home base. On my way East into Puppis I was compelled to sweep back and forth along the stellar arc of Clare Levin's Corona: striking in binoculars but a telescopic sweep-treat as well. The omega star in this arc let me launch deliberately toward the Puppis border, and I remind the reader that one plays this game 'tween chart and eyepiece, employing the practice of pattern recognition (also hard-wired into humans). Chart creator Wil Tirion draws 'em as we see 'em, while other chart makers do not.

Triangles, trapezoids and arcs: these are the signposts in space. Stars bright and dim, doubles, golden gleamers and bluish beamers: it's a jewelry jungle out there! Study, orient, move the scope over one field of view. In pops a scattering of faint stars marked Ru27 on the chart. Nice! I'm using 45x and more than a degree of visible sky. Using the brighter stars as directional aids, I push north across the galactic equator and find Xi Puppis without looking at the sky directly. Wow, what a stellar composition! It is the best sight of the night, and not on anybody's list of anything special. It has color and contrasting brightness and an arc of 5 or more shiners. Just over one field away lies M93: an arrowhead of several dozen tiny lights. Snaking back toward my doggie departure point, I swing past invisible planetaries and the very visible blue & gold topaz pair labeled h3945. For once, the chart lets me fun? navigate deliberately to the sparkling cluster around Tau Canis Majoris, then back to home base Delta. Now, doesn't this sound like fun? Try hop!

Once again I'm temporarily taking off my editor's cap and putting on my "hard hat" as things get a bit more intense at work. For those of you not familiar with what I do, I am the director of the Hawai'i State Science and Engineering Fair, scheduled for April 6 & 7. As usual, Treasurer Jim MacDonald has been kind enough to "volunteer" (hopefully willingly!) to assemble the *Astronews* this month and I am very grateful to have one less responsibility off the plate for now.

But back to the science fair. For those of you who have never experienced one before, I highly recommend it. The fair is free and open to the public on Wednesday, Apr. 7 from 8:00 A.M. to 5:00 P.M. at the Hawaii Convention Center Ballroom. **PLEASE NOTE THIS IS A NEW VENUE IF YOU HAVE ATTENDED IN THE PAST.** The HCC Ballrooms are on the 4th floor of the Convention Center; there is parking at the center but there is a \$5 charge.

The Hawaiian Astronomical Society's own Travis Le will be there with his astronomy category project, "A Comparison of Similar Planetary Systems to WASP 2", a continuation of his project from last year. This year Travis has already won 1st place at his district level fair and is guaranteed a spot at the International Science and Engineering Fair (ISEF) in San Jose in May. As you may recall Travis also travelled to ISEF last year and was one of two Hawai'i winners out of a delegation of 20 to receive awards in Reno, NV.

Aside from Travis' project, there are now over 400 projects this year, representing public and private schools from all over the state. Students in grades 6-12 are eligible to enter, and awards range from trophies to travel, cash and scholarships. You are definitely going to be amazed at the level of sophistication from many of the projects. The Awards Ceremony is also open to the public and will begin at 4:30 P.M. at the Convention Center Ballroom on Wednesday as well.

Consider this an invitation to attend this event and support the kids who work so hard to become our future scientists and engineers! Hope to see you there!

Carolyn



HAS Financial Report as of March 15, 2010

Initial Balance:	\$4,859.06
Receipts:	
Donations	82.00
Dues Received	428.00
Magazine Payments	133.90
Telescope Rental	20.00
Total Income:	\$663.90
Expenses:	
Astronews	68.04
Magazine Subscriptions	131.85
Postage	2.07
Refreshments	4.39
Total Expenses:	\$206.35
Final Balance	\$5,316.61

We regained one member this month with Ken Elliott returning after a hiatus. A special thanks to John Swatek, Robert Humphreys, Ken Elliott, Diane Kellett and Eugene Shimabukuro for their donations. Thanks and clear skies to all renewing their membership this month.

Upcoming School Star Parties

- Fri. 4/16 Niu Valley Middle School.
- Tue 4/20 Ala Wai Elementary.
- Wed. 4/21 Lanakila Elementary.
- Thurs. 4/22 Mililani Middle School
- Tue 5/18 Red Hill Elementary
- Fri. 5/21 Mililani Mauka Elementary.

If you are interested in helping out at a School Star Party, sign up on the monthly sheet at the HAS Meeting or contact the Star Party Coordinator: Forrest Luke at 623-9830 or e-mail at lukef003@hawaii.rr.com

Hawaiian Astronomical Society
Event Calendar

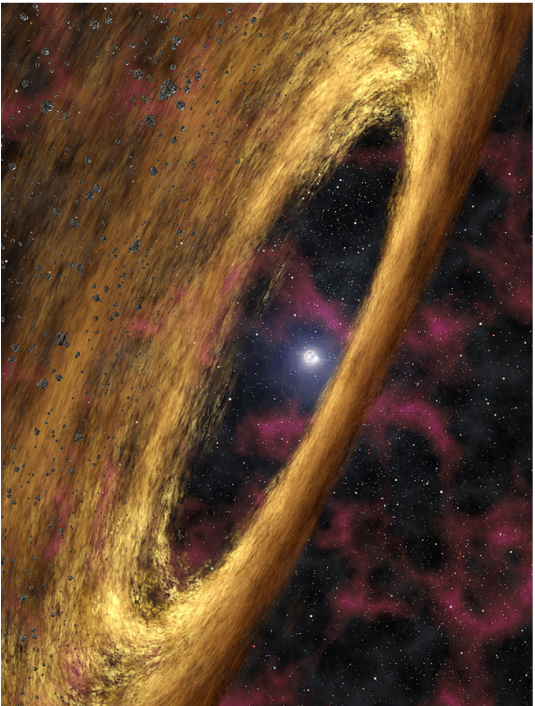
April 2010						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
28	29	30	31	1	2	6:30 PM Public Star Party(D) 3 Sunset: 6:48 PM
4	5	7:30 PM Club Meeting 6 	7	8	9	6:30 PM Club Star Party (D) 10 Sunset: 6:50 PM
11	12	13	14 	15	7:15 PM Niu Valley Middle School 16	6:30 PM Public Star Party(K) 17 6:30 PM Public Star Party(W) Sunset: 6:53 PM
11:00 AM IFA Open House 18	19	7:15 PM Ala Wai Elementary Sch SP 20	7:15 PM Lanakila Elem School SP 21 	7:15 PM Mililani Middle Sch SP 22	23	1:00 PM Astronomy Day Kahala Mall 24 Sunset: 6:55 PM
25	26	27	28 	29	30	1

The month of April has several events of interest to the club. Starting off, the Hawaii Academy of Science will hold it's annual Hawaii State Science and Engineering Fair at the Hawaii Convention Center on April 6 and 7. HAS will participate by judging both the junior and senior research entries in the category of Physics and Astronomy. Selected winners will be awarded a Certificate of Recognition, HAS membership, and a subscription to an astronomy magazine of their choice. The senior awardee will also be given a cash prize of \$50. See Carolyn's article on page 9 for more detail.

On Sunday, April 18, the Institute of Astronomy at the University of Hawaii will hold it's annual open house at 2680 Woodlawn Drive in Manoa from 11 am to 4 pm. Free exhibits, games, and talks for all ages. See: <http://www.ifa.hawaii.edu/open-house/open-house.shtml>, for details when available

Astronomy Day this year presents a problem. Nationally it is scheduled for April 24. HAS normally holds an event at Kahala Mall during the day with Sun and Moon viewing then moving to Kahala Park encouraging mall visitors to join us at the park. This year the moon will be near 80% illuminated limiting viewing after dark primarily to the Moon. The Board agreed to hold our regular Kahala/Waikele first quarter moon viewing on the 17th and then a day time Astronomy Day event at Kahala Mall on the 24th. The Moon rise will be delayed on this day, but the Sun will be available for viewing.

Hawaiian Astronomical Society
P.O. Box 17671
Honolulu, HI 96817-0671



Artist's concept of a pulsar and surrounding disk of rubble called a "fallback" disk, out of which new planets could form. (See NASA's Space Place Article on "Deadly Planets" on Page 5)

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