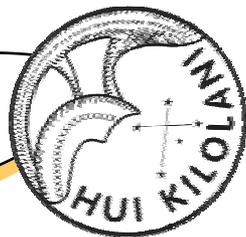


The Astronews



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June 2004

The Pistol Star

by Ron Paul Smith

What can possibly top the “celestial bling” of BPM 37093, a white dwarf star 4,000 km. In diameter that has crystallized into a carbon-diamond weighing 10 billion trillion karats (*see March 2004 Astronews*)?

How about the brightest known star in the universe? This star, known as the “Pistol Star.” is located in the central cluster* at the heart of our galaxy, in the constellation Sagittarius. The Pistol Star is a blue super giant that lies at a distance of about 25,000 light years. It has a diameter of 180 million km., and blazed with the luminosity of 5 million suns. Our sun has an apparent magnitude of -27 and yet we do not see the Pistol Star at all.

Born a million years ago in the

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Upcoming Star Parties

Club Party	June 12	Dillingham
Public Party	June 19	Dillingham
Public Party	June 26	Kahala/Waialeale
Public Party	July 10	Dillingham
Club Party	July 17	Dillingham
Public Party	July 24	Kahala/Waialeale



Upcoming Events:

- The next meeting is at 7:30 p.m. on Tue. June 1st at the Bishop Museum
- **Sam Rhoads** hopes to be live from Greece for the next Planetarium show happening on Mon. June 7th.

President's Message

Back by popular demand, it's the HAS swap meet. At our July meeting, we will take some time to provide members with the opportunity to view, buy, and sell equipment. This time we will do things a little differently. Those with something to sell can display it before the meeting begins. After we call the meeting to order, sellers will be given an opportunity to describe what they have available. This might be a more efficient way of handling the swap meet; everyone can hear each seller's descriptions at the same time. This should allow us to get through the process more quickly and still have time for other activities at the meeting.

As those who attended the April meeting know, Carl Miller donated a series of videotaped lectures entitled *Understanding the Universe: An Introduction to Astronomy* to our club. These are available for loan to club members on request. You may view the titles of the lectures by going to www.teach12.com and selecting "Science & Mathematics" from the column on the left. Click on the series title, then on "View Lecture Titles" to get a pop-up list of the lectures. If you want to borrow a tape, please contact me. Tell me the lecture(s) you want and I will bring the tape(s) to the meeting. For those who are interested but don't have access to the internet, I will have a list of titles at the meeting.

As the recent good but less-than-overwhelming comet show fades in magnitude and in our memories, we look forward to the next major event, the transit of Venus across the face of the Sun, the first such occurrence since 1882. As most of you know, Hawaii just misses this opportunity as the transit begins just after sunset on June 7th for most of the state. There was a time when these rare events were

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

President

Chris Peterson

956-3131

chrisp@higp.hawaii.edu

Vice President

Barry Peckham

524-2450

barry@litebox-telescopes.com

Secretary

Gretchen West

735-0482

gwest@pixi.com

Treasurer

Jim MacDonald

261-2162

jim.macd@verizon.net

Board Members-at-Large

John Gallagher 683-0118

gallaghej002@hawaii.rr.com

Nick Bradley 735-3634

nickjkbradley@hotmail.com

The **Astronews Editor**

Paul C. Lawler

395-8121

paul@lawler.net

HAS Webmaster

Peter Besenbruch

prb@lava.net

The Astronews 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 15th of each month. We are not responsible for unsolicited artwork.

Planets Close to the Moon

Times are Hawaii Standard Time

- June 6, 22h, M 5.1° SSE of Neptune (121° from sun in morning sky)
- June 8, 12h, M 3.9° SSE of Uranus (101° from sun in morning sky)
- June 18, 21h, M 4.9° N of Saturn (16° from sun in morning sky)
- June 20, 01h, M 3.8° N of Mars (28° from sun in evening sky)
- June 23, 16h, M 3.1° N of Jupiter (70° from sun in evening sky)

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

Other Events of Interest

Times are Hawaii Standard Time

- June 2, 16:30h, Full Moon
- June 3, Asteroid Hebe in Beehive Cluster (54° from sun in evening sky)
- June 7, 23h, Venus at inferior conj. with sun (Passes into morning sky) (Transit, but not visible in Hawaii)
- June 11, 01h, Pluto at Opposition
- June 17, 10:28h, New Moon
- June 18, 11h, Mercury at superior conj, with sun (Passes into evening sky)
- June 20, 14:57h, Summer Solstice

The Planets in June

 Mercury Mercury is visible in the west during evening twilight at the end of the month.	 Venus Venus is in conjunction with the sun on June 7 and is very difficult to observe this month.	 Mars Mars is mag. 1.8, about as dim as it gets, low in the west in the evening sky.
 Jupiter Jupiter is still high in the sky at sunset in southern Leo. Mag. -1.9, Diam. 35".	 Saturn S. is still visible in the west after sunset but sets a couple of hours after the sun. Mag. +0.1,	 Uranus Uranus can be viewed in the eastern sky in the early morning hours.
 Neptune Neptune is near Uranus and can be seen in the predawn hours.		 Pluto Pluto is at opposition this month and is in the sky all night, highest at about midnight.

Meeting Minutes

H.A.S. Secretary

The meeting was brought to order at 7:37 p.m. by President Chris Peterson. There were thirty-three members and three visitors in attendance. Chris greeted the visitors and urged them to join members not only at the meetings but also at the monthly star parties at Dillingham Airfield and at Waikele and Kahala regional community parks. Chris informed the membership that the regular viewing area at Dillingham Field may not be available on May 15th and May 22th.

Old Business

Bishop Museum - Carolyn Kaichi thanked the star party helpers. She is hoping to find us a storage area for club video tapes and book library. Loan of the astronomy study tapes from recent video library donation from Carl Miller, are available by contacting President Chris Peterson at no charge.

Monthly Planetarium Monday Show-June 7th - Transit of Venus in Athens will be featured via video link and hopeful of an onsite phone linkup with Sam Rhoades. Call Bishop Museum ASAP for reservations.

Laser Pointers As a result of concerns over liability, the HAS Board of Directors will be drafting a formal policy regarding laser use and wattage. The Board is researching information. Input from members is welcome.

Reports

IFA Open House (April 18, 2004)
Gretchen West reported on the success of our participation and thanked members for their helpfulness.
Radio Interview - (April 22) Chris

Peterson was interviewed by Mike Buck regarding Astronomy Day. Astronomy Day - (April 24, 2004)
Barry Peckham reported on viewing of the moon, the sun and naked-eye visible Venus during the day at Barnes & Noble, on the second floor of Kahala Mall. Monthly urban star parties were well attended with about 60 guests at Waikele and about 200 guests at Kahala.

Legislative Proclamation - The Hawaii State Legislature issued a proclamation on April 23, 2004 commending the Hawaiian Astronomical Society and HAS member Forrest Luke for providing public outreach to the community and free education access to astronomy and the night sky.

New Business

Mahalo - Mr. Richard Shimabukuro from Kaimuki Christian School and Church brought the best wishes and letters to the star party helpers for the wonderful time they provided for students and parents.

July Swap Meet - The first half-hour of the July HAS meeting will be devoted to a astronomy hardware swap meet. Members will be able to describe their items to attendees.

Asterism Contest - Vice President Barry Peckham urged members to submit their written offerings before the May 15th Dillingham Star Party. HAS Board members will judge submissions. A trophy will be awarded to the winner.

Trips - Barry Peckham spoke briefly about viewing lemon yellow stars and constellations seemingly out of place, during his recent trip to Australia.

(Continued on page 11)

Meteor Log—June 2004

by Mike Morrow

The month has chiefly minor night time showers.

Monday the 7th, the **Arietids**. Radiant 02h56m +24 deg.

The maximum is at 4 hrs UT and the Moon messes up those trying to see something of this shower.

Tuesday the 15th, the **June Lyrids**. Radiant 18h32m +35 deg.

This shower has generally less than 5 meteors per hour. New Moon on June 17 presents one of the best chances in recent years to search for this possible shower.

Sunday the 27th, the **June Bootids**. Radiant 14h56m +48deg.

Rates are variable from nothing to near 100 per hour. The shower was absent for about 70 years, but in 1998 it produced a strong return. We may see a strong return this year, but the maximum will be about 01 hours UT or 3PM local time. We may get to see something as the radiant should be above the horizon most of the night.

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



L: Gretchen West does her Venus dance, showing people how to find Venus in broad daylight.
R: John Gallagher roasts in the parking lot, sharing views of our "nearest" star.

When I Heard the Learn'd Astronomer

by Walt Whitman

When I heard the learn'd astronomer;
When the proofs, the figures, were ranged in columns before me;
When I was shown the charts and the diagrams, to add, divide, and
measure them;
When I, sitting, heard the astronomer, where he lectured with much
applause in the lecture-room,
How soon, unaccountable, I became tired and sick;
Till rising and gliding out, I wander'd off by myself,
In the mystical moist night-air, and from time to time,
Look'd up in perfect silence at the stars.

Voyage to a Double Planet

by Patrick L. Barry and Tony Phillips

Download a “nine planets” screensaver for your computer with spectacular photos of our solar system, and you’ll notice that one planet is conspicuously missing: Pluto. Icy and mysterious, Pluto is the only planet never visited and photographed by NASA space probes.

In fact, the clearest image we have of Pluto is a tiny, pixelated blob of light and dark patches taken by the Hubble Space Telescope in 1994. It’s tantalizing ä but not much more. Earth-based telescopes have succeeded, however, in discovering one amazing fact: Pluto is not a lone world, but a double-planet system. Its companion, measuring about half the size of Pluto itself, is named Charon.

Work is underway to launch a robotic probe to visit and photograph Pluto and Charon. The project, called New Horizons, will map both worlds. Sensors will chart surface minerals and ices, and catalog the gases that make up Pluto’s wispy atmosphere.

“It’s the second epoch in the exploration of the planets,” says Alan Stern, the principal investigator for New Horizons at the Southwest Research Institute in Colorado. “We’re going to the very edge of the solar system.”

The probe is scheduled to launch in January 2006. Its journey will be a long one. Pluto is more than 30 times

further away from the Sun than Earth is! Even with a speed boost from a flyby of Jupiter, the probe won’t arrive at Pluto until July 2015. Afterward, the probe will venture on to explore the Kuiper Belt, a distant “halo” of small, frozen objects surrounding the solar system, from which comets originate.

Aside from sheer curiosity about these distant worlds, scientists are motivated by questions about the for-



Artist's idea of the New Horizons spacecraft flying by Pluto and its moon, Charon. (artwork by: Dan Durda)

mation of the solar system. Orbiting in the deep freeze far from the sun, Pluto and Charon have undergone less change than the inner planets during the solar system's 4.5 billion year history. These two worlds will provide a glimpse into the past.

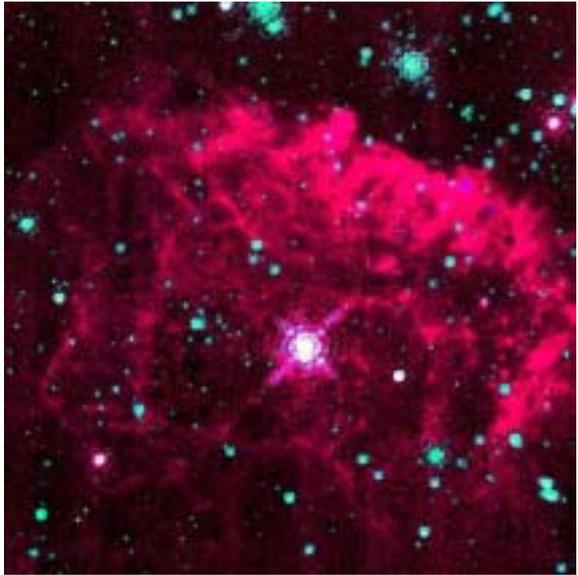
Pluto could also shed light on the origin of our own Moon. Earth, with its single, large moon, is unusual. The Pluto-Charon system is the only other pair like it in the solar system. In fact, some astronomers consider Earth and the Moon to be a double planet, too.

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Pistol Star (Continued from page 1)

whirlwind of gas and dust at the center of our galaxy, the Pistol Star resides virtually unseen, in that seething maelstrom. Professional astronomers can easily detect this stellar object with infra-red telescopes where operating wavelengths “see through” the blocking clouds of stardust.

Now, if only some telescope manufacturer would market an infra-red instrument for amateur astronomers, we could view a star that uses as much energy in 6 seconds as the Sun consumes in a year.



**Providing even further celestial “bling bling,” the Central Cluster also hides hundreds of the brightest super giant stars in the Milky Way.*

Ref: *The Great Atlas of the Stars*, Serge Brunier; pages 52-54.

Items for Sale

Orion 1.25” Moon Filter	\$10
Celestron Ultima 1.25” eyepiece (unused)	\$70
Orion 25mm 1.25” eyepiece	\$20
16x70 Panoptic Binoculars	\$140
Taud T Binocular Unimount (with heavy tripod)	\$225
Herald–Bobroff Astro Atlas (signed by the author)	\$70

For more information, contact: Mel Levin at 395-6724

Double Planet (Continued from page 6)

So knowing more about Pluto and Charon could give clues about how the Earth-Moon system formed.

And, of course, the spectacular, up-close photos of Pluto and Charon are going to look great as a screensaver!

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology,

How Sirius was Born

(and Other Unpublished Notes on Star and Cluster Formation)

by Mel Levin

Well, we all know the inherent inaccuracies of folklore and sadly, I must admit that ancient mythology is no exception. It seems some events were deleted—censored actually—for fear of Godly retribution. So to set the record straight, allow me to state what truly happened—my unimpeachable source—*The Daily Inquirer*.

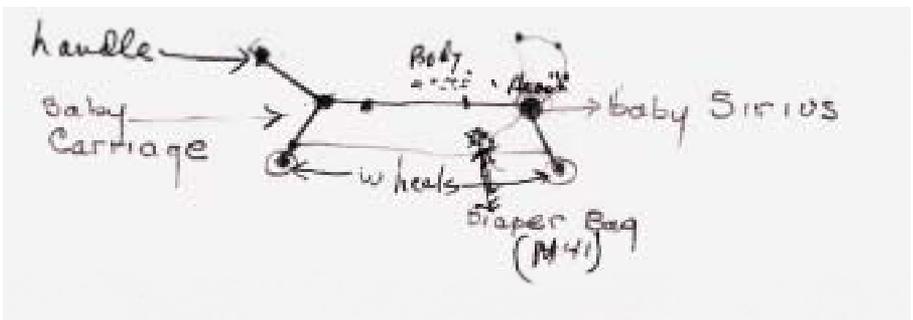
It seems that when Perseus rescued Andromeda they just didn't go their separate ways as some would have you believe. In fact, they fell deeply in love, and a torrid affair ensued, lasting approximately 1.6 light years, after which they grew tired... really bored is more accurate... with each other and drifted apart. It is widely rumored that this tryst took place in or near the triple galaxies (M105, 95 and 96) in Leo, but there is no way to authenticate this, as our reporters claim no one in those galaxies will assume responsibility.

As is often the sad case in these sordid liaisons, an unplanned preg-

nancy ensued, causing Andromeda to precipitously rush home to Mom and Dad. Well... need I tell you their reaction? Cepheus was enraged. Indeed, he actually turned livid, giving rise to the famous garnet star (μ Cephei). His wife, Cassiopeia, was less distraught, thus giving rise to the smaller "pink buddy."

Upon learning that her grandchild was a brilliant boy, she repented her boastful behavior and to prove her repentance, she flung her jewels out of the window, thus forming the many star clusters in her constellation. These are recognized today as M52 and M103, as well as NGC 7789, 7788, 7790, 146, 133, 136, 654, 663 and 659. As you can tell, she had a lot of jewelry to toss around.

As for the brilliant baby boy... they named him Sirius, and placed him in the southern sky where, to this day, you can observe him in his baby carriage carrying his diaper bag.



School Star Parties

by Forrest Luke

Recently, four of us were standing under umbrellas at a chain blocking entry to a rain soaked playing field at Kamehameha Schools. We were there to show the entire fourth grade and their parents the wonders of the heavens. It didn't look good! The teacher who had made the request joined us

and started to worry about the frequent brief rain showers. I laughed and commented, "Don't worry. Just leave it to us. We will not let the

crowd even know that they are not having a good time!" Later, we all agreed that we don't know just how we did it, but that big crowd had a good time in spite of all the rain and gusting wind. They never knew that they were having a bad time! Are we good or what?

Joanne was inside with the star



Lab, and she agreed that the crowd seemed to enjoy themselves even outside. All the comments she overheard were positive.

I showed up at the April meeting with a clipboard that had three lines of spillover onto a THIRD page for star party volunteers. You guys and gals,

the members of HAS, came through. I got all the help needed to make this very busy month a success. Not only do you volunteer your time willingly,

but you all are awesome when we get going under the night sky. I think that it is your boundless enthusiasm that lets us show a crowd of several hundred people the major planets between rain showers—and never let them know that they are having a bad time! So pat yourselves on the back, gang. You are a great bunch of people!

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:

- 14 Jun 2004 IFA Workshop at Kapiolani Park**
- 26 Jun 2004 Camp Mokuleia (bereavement camp)**
- 28 Aug 2004 Girl Scout Camp (Dave Verrett)**
- 26 Apr 2005 Ala Wai 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.

HAS Financial Report as of May 15, 2004

Initial Balance:.....	\$5,533.60
Receipts:	
Astronomy Payment	29.00
Donation	109.00
Dues Received.....	214.00
Polo Shirt Deposit	50.00
Sky & Telescope Payment	98.85
T-Shirt Sales	270.00
Uncleared Check	10.08
 Total Income:	 \$780.93
Expenses:	
Astronews.....	153.05
Magazine Subscriptions.....	253.70
Refreshments	7.80
Polo Shirts	80.10
Speaker's Dinner	8.35
 Total Expenses:	 \$503.00
 Final Balance	 \$5,811.53

We had twelve new members join the club this month. They are **James, Beth, A.J. and Noelani Kingery; Carol Gray; Orlando Halpern; Michael and Cheryl Albright; Danny and Chisato Baker; Alan Riezman; and David Dellalana.** Many thanks to **Sapavith Vanapruks, Diane Kellett** and the **Kaimuki Christian Church** for their generous donations to the club. Thanks also to those renewing their membership this month. Clear skies to all!

President's Message (Continued from page 2)
 long anticipated and carefully observed because they could be used to increase the precision of our estimate of the Astronomical Unit, the distance between the Earth and Sun, a fundamental unit in determining greater distances in our solar system, galaxy,

and beyond. Since the last transit occurred, we have developed other more accurate ways to measure the A.U., so viewing this event now has more appeal for its rarity than its scientific importance. Another transit occurs in 2012, the last until the 22nd century.

Chris



HAS members participate in Astronomy Day at Kahala Mall showing wonders of the daytime sky to the public. Pictured left to right are Gretchen West, Kevin Polk and Barry Peckham.

Minutes (Continued from page 4)

Comets - Comets Linear, and NEAT may both be naked eye visible in the evening sky from May 22.

Beginner Subjects - Barry Peckham urged other members to speak on their areas of interest. The subject for this month was "eyepieces."

Bishop Museum Telescope- Jim MacDonald proposed that the club reimburse the club members that have already paid out moneys for the mirror recoating as well as a Telrad on its mount totaling \$464.70 for the Bishop Museum Telescope. A motion was made and unanimously approved.

Guest Speaker

Dr. Ken Chambers from the Institute for Astronomy spoke to membership

about Observational Cosmology - He is involved in an upcoming project called "Pan Starro" (Panoramic Survey Telescope and Rapid Response) which will survey whole sky repeatedly in order to find potentially dangerous near earth objects. It will create a superior 3-D map of the universe using multiple telescopes.

School Star Parties

Forrest Luke reported that the numerous school star parties held during the month of April were well attended even though some were a bit wetter than is normally useful.

Respectfully Submitted,
Gretchen West, HAS Secretary

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

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M13 Hercules Cluster (webcam image by Stefan Maue)