The Astronews

HUI KILOLANI

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December 2003

## An Unexpected Gem

by Tony Flanders

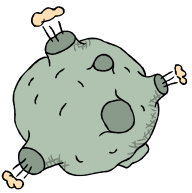
The highlight of my latest urban observing session was one of the truly great objects in the sky (right up there with the southern glories that I recently returned from viewing in Chile), which for some reason I had managed to gloss over for lo these many years. I have, of course, seen it innumerable times with naked eye, binoculars, and telescope, but somehow I had managed never to observe it, which is quite a different thing from merely seeing it. The object in question is Melotte 20, the Alpha Persei Cluster (or Group or Association if you prefer).

This object is just stupendous! And the best of it is that it shows very well indeed in 7x35 binoculars under an urban sky, and shows nearly to perfec-

*(Continued on page 10)*

## Inside this issue:





## Upcoming Star Parties

| | | |
|---|---|---|
| **Public Party** | **Dec 13** | **Dillingham** |
| **Club Party** | **Dec 20** | **Dillingham** |
| **Public Party** | **Dec 27** | **Kahala/Waikele** |
| **Club Party** | **Jan 17** | **Dillingham** |
| **Public Party** | **Jan 24** | **Dillingham** |
| **Public Party** | **Jan 31** | **Kahala/Waikele** |

### Upcoming Events:

- The next meeting is at 7:30 p.m. on Dec. 2nd at the Bishop Museum.
- **Sam Rhoads** next Planetarium show on Mon. Dec. 1st.

# President's Message

Time seems to fly by faster and faster as the years go by. The older you are, the better you know what I'm talking about. This is already my 12th monthly report as president of the HAS, the end of another year. I've enjoyed serving as president, and I'm willing to continue for another year if the members want me to. Sure, it's a little bit of work, and it takes some time, but we're fortunate to have a good group of officers who are competent, enthusiastic, and also a lot of fun to work with. Please consider serving the club as an officer.

I've tried to balance the sometimes competing interests of various members. That was the purpose of the meeting format questionnaire that was distributed earlier this year. Happily, choosing among many good alternatives is a much more pleasant task than trying to generate new ideas. We have members with interesting information to share, and professionals at the cutting edge of astronomy, who are willing to talk to us about their work. I hope that everyone is reasonably happy with the way the club is operating. If not, please speak up!

We certainly have plenty to be proud of, far more than I can mention here. Our star parties have provided thousands of people with the opportunity to view, appreciate, and better understand some of the wonders of our universe. This year we helped many people get the best view through a telescope that they will ever have of Mars. We've made observing more convenient for many people (including some of our members!) by adding Waikele Community Park to our roster of regular star party locations.

There is much to look forward to in the coming year. Jupiter and Saturn will be

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# Observer's Notebook—December 2003 by Jay Wrathall

## Planets Close to the Moon

**Times are Hawaii Standard Time**

Dec 1, 09h, M 3.7° SSE of Mars (103° from sun in evening sky)
Dec 10, 12h, M 4.8° S of Saturn (157° from sun in morning sky)
Dec 15, 21h, M 3.4° NNE of Jupiter (95° from sun in morning sky)
Dec 25, 07h, M 3.2° SSE of Venus (32° from sun in evening sky)
Dec 25, 17h, M 5.1° SSE of Neptune (38° from sun in evening sky)
Dec 27, 01h, M 4.3° SSE of Uranus (55° from sun in evening sky)
Dec 30, 00h, M 3.4° SSE of Mars (90° from sun in evening sky)
Mercury is closer than 15° from the sun when near the moon in Dec.

## Other Events of Interest

**Times are Hawaii Standard Time**

Dec 8, 10:38h, Full Moon
Dec 8, 20h, Mercury at Greatest Elongation (21° East of the sun in evening sky)
Dec 11, 14h, Moon 1.1° S of asteroid 1 Ceres (145° from sun in morning sky)
Dec 11, 18h, Pluto at conjunction with sun, passes into morning sky.
Dec 14, Geminid meteors.
Dec 18, 14h, Asteroid 1 Ceres 0.30° S of Pollux (153° from sun in morning sky)
Dec 21, 21:02h, Winter Solstice
Dec 22, 23:44h, New Moon
Dec 26, 15h, Mercury at inferior conjunction with Sun (Passes into morning sky.)
Dec 31, 10h, Saturn at opposition, is on the meredian at midnight.

## The Planets in December

### ☿ Mercury

Mercury is visible in the evening sky the first half of the month, to the lower right of Venus.

### ♀ Venus

Venus is very bright in the evening sky, although it is still close to the horizon at sunset.

### ♂ Mars

Mars is at mag 0 in the south after sunset, but is a lot dimmer and smaller than it was in August..

### ♃ Jupiter

Jupiter rises about midnight and is visible in the pre-dawn hours.

### ♄ Saturn

Saturn is at opposition this month giving the best views or the year. Mag, -0.5. Diam, 20.7"

### ♅ Uranus

Uranus is low in the westen sky after sunset in Aquarius. Mag +5.7

### ♆ Neptune

Neptune is near Uranus low in the western sky in early evening. Mag +7.8

### ♇ Pluto

Pluto is at conjunction with the sun this month and cannot be observed.

*(Continued from page 2)*

well placed for viewing again. The Space Infrared Telescope Facility should expand our understanding (and get a new name) when it begins routine observations. Cassini will reach Saturn, and several spacecraft will reach Mars. We have many reasons to keep looking up!

Chris

# Meeting Minutes

H.A.S. Secretary

The November 4, 2003 meeting was called to order by President Chris Peterson at 7:33 p.m in the Atherton Halau, Bishop Museum with thirty-two members and four visitors in attendance. Chris greeted the membership and inquired of our visitors what their interests were.

**Old Business:** Elections to be held at the December 2nd meeting: The following members will be running for offices of Board of Director at the next meeting. The slate of nominees was read, moved and seconded:

President - Chris Peterson
Vice President - Barry Peckham
Treasurer - Jim MacDonald
Secretary - Gretchen West
Astronews Editor - Paul Lawler
At-Large Members (2) - Gary Ward, John Gallagher, Nicholas Bradley

**Memberships and Magazines:** Jim MacDonald again reiterated Sky and Telescope subscriptions have increased. Sky and Tel now costs $32.95/year. Astronomy magazine stays the same at $29.00/year. Please remember this when renewing your membership/subscriptions.

**Lacey Veach Day:** will take place again this year on November 18, 2003.

Events will take place at Punahou School on that Saturday. We are looking for helpers. See Gretchen West if you are interested in manning the table or showing the sun to individuals.

**New Business:** The membership recognizes that the Bishop Museum has been very generous to the Hawaiian Astronomical Society in providing us with a venue for our monthly meetings. In recognition of this a motion was made and seconded that the club look into having the primary and secondary mirrors of the Bishop Museum observatory telescope re-coated. While the mirrors are being coated, a club scope will be lent to the Bishop Museum. Barry was assigned to research the cost, dates of availability and postage required.

The members also voted to purchase a solar filter for use with club owned scopes.

The Pacific Regional Planetary Data Center—Hawaii Space Lecture Series will present a free lecture, ***CRYOBOT: New Technology for Exploring Ice on Earth, Mars, and Europa*** with Dr. F. Scott Anderson, November 25, 2003 at 7:30 pm in the Pacific Ocean Science and Technology Building, POST 544.

Good Places to go for observer's information The first Monday of each month is Sam Rhode's Hawaiian Skies show in the Bishop Museum's Planetarium. It is a great learning experience, so if you're thinking of going be sure to phone 848-4168 to make a reservation.

**School Star Parties: Forrest Luke** reported on past and upcoming school star parties.

**Steve Huffman** shared two computer video star tours created for Deep Space Explorer.

Barry Peckham spoke briefly about the last Kahala Star Party. He urged more members to volunteer their time at the urban star parties at Kahala and Waikele sites. Barry reintroduced Amateur Astronomy

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## Meteor Log—December 2003

by Mike Morrow

December has several minor showers, but the major shower the **Geminids** suffer a severe attack of the full Moon. Sporadic rates remain good. Most of the minor showers have less than 3 meteors an hour so we will skip them.

Sunday the 7th, the **Puppids-Velids**. Radiant 09h12m -45 deg.

- This shower is weak but has been observed from Hawaii

Sunday the 14th, the **Geminids**. Radiant 07h28m +13deg.

- Numbers from about 40 per hour to near 80 when there is no Moon.

Tuesday the 23rd, the **Ursids**. Radiant 14h28m +76 degs.

- Rates are variable and may reach near 50 per hour at times. This year the Moon is new. Thanks to Zena.

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)*

Magazine for sidewalk astronomers. A recent article was contributed by HAS member **Marilyn Michaelski**.

**Guest Speakers: Dr. David Jewitt** of the UH Institute for Astronomy was our guest speaker. He discussed substantial orbital bodies that are being detected for the first time by the 16 megapixel infrared telescope on Mauna Kea. He also spoke at length about recent insights into the configuration and make up of the Kuiper Belt.

Discussion touched on how astronomers at IFA and other research facilities on the mainland are using the telescope to look at active long period comets and short period comets within our Solar System from an new perspective.

Two graduate research assistants, **Scott Sheppard** and **Henry Hsieh**, accompanied Dr. Jewitt to the November meeting. Scott Sheppard spoke to the members about his research under Dr. Jewitt on the satellites of Jupiter, Neptune, and Uranus. Henry Hsieh discussed his research on the characteristics of asteroid and comets and how determinations are made.

The meeting adjourned at 8:58 pm. for refreshment.

Respectfully submitted,
Gretchen West, HAS Secretary

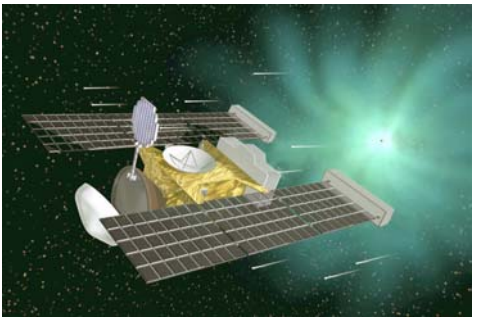
NASA's Space Place

# Stardust

by Patrick L. Barry & Dr. Tony Phillips

Philosophers have long sought to "see a world in a grain of sand," as William Blake famously put it. Now scientists are attempting to see the solar system in a grain of dust—comet dust, that is.

If successful, NASA's Stardust probe will be the first ever to carry matter from a comet back to Earth for examination by scientists. It would also be the first time that any material has been deliberately returned to Earth from beyond the orbit of the Moon.



And one wouldn't merely wax poetic to say that in those tiny grains of comet dust, one could find clues to the origin of our world and perhaps to the beginning of life itself.

Comets are like frozen time capsules from the time when our solar system formed. Drifting in the cold outer solar system for billions of ears, these asteroid-sized "dirty snowballs" have undergone little change relative to the more dynamic planets. Looking at comets is a bit like studying the bowl of leftover batter to understand how a wedding cake came to be.

Indeed, evidence suggests that comets may have played a role in the emergence of life on our planet. The steady bombardment of the young Earth by icy comets over millions of years could have brought the water that made our brown planet blue. And comets contain complex carbon compounds that might be the building blocks for life.

Launched in 1999, Stardust will rendezvous with comet Wild 2 (pronounced "Vilt" after its Swiss discoverer) on January 2, 2004. As it passes through the cloud of gas and dust escaping from the comet, Stardust will use a material called ***aerogel*** to capture grains from the comet as they zip by at 13,000 mph. Aerogel is a foam-like solid so tenuous that it's hardly even there: 99 percent of its volume is just air. The ethereal lightness of aerogel minimizes damage to the grains as they're caught.

Wild 2 orbited the sun beyond Jupiter until 1974, when it was nudged by Jupiter's gravity into a Sun-approaching orbit-within reach of probes from Earth. Since then the comet has passed by the Sun only five times, so its ice and dust ought to be relatively unaltered by solar radiation. Some of this pristine "stuff" will be onboard Stardust when it returns to Earth in 2006, little dusty clues to life's big mysteries.

To learn more, see the mission website at *stardust.jpl.nasa.gov*. Kids can play a fun trivia game about comets at *spaceplace.nasa.gov/stardust*.

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

## Personal Digital Assistants

by Ron Paul Smith

The popular GO-TO telescopes all use hand held computer "paddles" to drive the telescope to the object to be viewed. The hand-held PDAs sold by CompUSA utilize similar computational electronics to allow the user to input addresses, do spreadsheets and even take photographs. They operate in PC or Palm formats, and many, many applications/programs are written for them. The more expensive the device (they sell for between $100 and $800), the more features it has.

My own PDA, the Sony Clie NX70V, has a top of the line high resolution screen and a built-in 1/2 megapixel digital camera. The latest model, the NZ90 has a 2 mega-pixel camera—a great improvement. Also, plug-in cameras are available for many PDAs. I can even take a superfine picture with my Sony DSC-717 5mp digital camera (as previously written about, a popular camera for certain aspects of digital astrophotography), and download the image onto the 320x480 pixel screen of my Clie via the Sony memory stick which inserts into both the camera and the PDA. The reverse is also true. At a recent H.A.S. meeting, I "beamed" an astrophoto of M42 and Orion's belt into Paul Lawler's laptop from my PDA. I had previously downloaded it from my Sony Cybeshot digital camera. "Beam Me Up, Scotty!"

Kevin Polk demonstrated his ***2 Sky*** planetarium software on his own Sony Clie at an H.A.S. meeting several months ago. Presumably he could beam his star charts into my unit, too. With the advent of the new large capacity memory sticks (up to 1gb), the observer will be ble to view all sorts of astronomy programs currently available only on CD, take good quality astrophotographs with multi-megapixel camera add-ons, or built-ins, and eventually even be able to

*(Continued on page 11)*

## School Star Parties

It's that time of year again, and School Star Parties are once again 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:

**27 Feb 2004 Pearl Harbor Elementary**
**23 Apr 2004 Lanakila Elementary**
**27 Apr 2004 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.

## Observing Cassini

by Jane Houston Jones

I've been very interested in Cassini lately. Cassini the crater, Cassini the division, and Cassini the mission. Last night I looked at Cassini the crater. The north polar area of the moon was bright and beautiful on the 8th day of the lunar cycle. This was where I aimed my telescope for a San Francisco side-walk along the terminator. Just south of Montes Alpes is the crater Cassini. It's an odd looking little crater, 57km in diameter, with slumping or terraced walls, two cratelets on the flooded crater basin, and a crack in the wall. There is a little lunar dome right next to it, but the area was bathed in sunlight last night, and I didn't spot the dome.

When I observe I often wonder about the men and women whose names are immortalized in our universe. Giovanni Cassini was an Italian-French astronomer who lived between 1625-1712. He discovered that Saturn's rings are split into two parts and the gap between them is today called the Cassini Division. He discovered Tethys, Dione, Rhea and Iapetus, four of Saturn's moons. He also discovered the zodiacal light and the polar caps on Mars!

Two hundred eighty five years after his death, the Cassini Mission launched. It's been flying through the solar system since 1997. On July 1, 2004 Cassini will begin a 4 year orbit of Saturn and will release its piggy-backed Huygens probe about six months later for decent through the thick atmosphere of the moon Titan.

Soon, I'll be watching Cassini's progress from my new office at the Space Flight Operations Facility at JPL in Pasadena California.

Yes, I am going to work in the Cassini Division! As soon as Mojo and I can get ourselves moved to Pasadena, I'll be starting my new job as Senior Outreach Specialist for the Cassini-Huygens mission to Saturn and Titan!

*Jane Houston Jones*

## 2004 Meeting & Star Party Dates

| Club Meeting | Dillingham Public | Dillingham Club Only | Kahala/ Waikele |
|---|---|---|---|
| Jan 6 | Jan 24 | Jan 17 | Jan 31 |
| Feb 3 | Feb 21 | Feb 14 | Feb 28 |
| Mar 2 | Mar 13 | Mar 20 | Mar 27 |
| Apr 6 | Apr 10 | Apr 17 | Apr 24* |
| May 4 | May 22 | May 15 | May 29 |
| Jun 1 | Jun 19 | Jun 12 | Jun 26 |
| Jul 6 | Jul 10 | Jul 17 | Jul 24 |
| Aug 3 | Aug 7 | Aug 14 | Aug 21 |
| Sep 7 | Sep 18 | Sep 11 | Sep 25 |
| Oct 5 | Oct 16 | Oct 9 | Oct 23 |
| Nov 2 | Nov 6 | Nov 13 | Nov 20 |
| Dec 7 | Dec 4 | Dec 11 | Dec 18 |

* Astronomy Day

**I wonder whether the stars are set alight in heaven so that one day each one of us may find his own again.** *—Antoine de Saint Exupéry*

## Treasurer's Report

by Jim MacDonald

**HAS Financial Report as of November 15, 2003**

| | |
|---|---|
| Initial Balance: | $5,351.05 |
| Receipts: | |
| Magazine Payments | 346.65 |
| Donation | 3.05 |
| Dues Received | 271.00 |
| T-Shirt Sales | 30.00 |
| Telescope Deposit & Fee | 40.00 |
| Total Income: | $690.70 |
| Expenses: | |
| Astronews | 150.11 |
| Magazine Subsciptions | 98.63 |
| Total Expenses: | $248.76 |
| Final Balance | $5792.99 |

During the month we had five new members join the club. They are **Kerry Steele**, **Danny Rampani**, **Erik Hauptmann**, **Anthony Mauro**, amd **Steven Petranik**. Many thanks to these new members and to those renewing their membership this month. Clear skies to all!

***Unexpected Gem*** *(Continued from page 1)*

tion in my 70mm scope under those same skies.

The heart of the cluster is a line (or double line) of stars snaking with two 180° turns from Alpha to Sigma, in much the same shape as the constellation Draco. This field is framed perfectly in the 3.2° field of my Ranger at 16x. It is embedded in a longer line stretching from what looks like a double or triple star 1.7° NW of Alpha down to **δ** (delta) Persei on the ESE, or at least to **π** (psi) Persei. **ι** (iota) is a nice outlier 2.5° west of Alpha.

The whole thing hangs together surprisingly well, much better than a lot of open clusters I have seen, due partly to the fact that it is set against a surprisingly sparse background (for the Milky Way) especially on the NE. The cluster (or whatever it is) is full of colored stars, mostly blue but also some yellow or red, including in particular Sigma, which is a lovely deep orange. Also, the stars have an uncanny propensity to form into pairs, like lovely matched 29 Perei and 31 Persei one degree ENE of Alpha, and also much fainter and smaller pairs.

The star HR 969 which I perceive as the NW end of the larger cluster appears to me as an obvious quintuple, with three bright components and two at the edge of averted vision in my 70mm scope at 140x, but it isn't charted that way or listed in the WDS (Washington Double Stars) catalog.

# Hawaiian Astronomical Society
# Membership Application/Renewal
# 2003-2004

Name: _____

Street or P.O. Box: _____

City: _____ State: ____ Zip: _____

Phone: _____ e-mail: _____

Family Members: _____

_____

| | | |
|---|---|---|
| Dues | $15.00 | _____ |
| Student Dues | $8.00 | _____ |
| Family members: each | $2.00 | _____ |
| Sky & Telescope subscription | $32.95* | _____ |
| Astronomy subscription | $29.00 | _____ |
| Donation | | _____ |
| Total: | | _____ |

Fill out this form and send with your check payable to:

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

☐ Check here if you do not want information included in the Club Roster.

* New price

***PDAs*** *(Continued from page 7)*
drive GO-TO telescopes using the PDA like a TV remote, all while listening to digital music from downloaded MP3 or WMA files and even "surfing" the net with plug-in WiF card, all with the help of their own personal digital assistant.

*Ed. Note: Your editor finds **2Sky** so valuable he has a PDA dedicated just to running astronomy software.*

**Hawaiian Astronomical Society**
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Place stamp here. Post Office will not deliver mail without proper postage

*Scott Sheppard, Dr. David Jewitt and Henry Hsieh from UH-IFA*