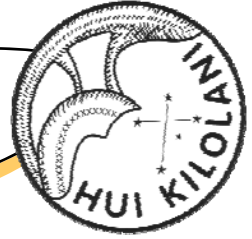


# The Astronews



Volume 54, Issue 1

[www.hawastsoc.org](http://www.hawastsoc.org)

January 2006

## New Year, New Scope

Barry Peckham

The active word here is “new”: a good word full of promise and possibilities. Would you prefer that 2005 went on forever? Infinity has its drawbacks. And what about your astronomy tools: should you settle in with what you’ve got for the rest of your days? Now surely there are more shop-a-holics and over-buyers in our hobby than there are those, like HAS members Walter and Warren, who make their classic equipment an extension of their very beings. And for that matter, we don’t go around popping new eyeballs into our sockets whenever the view becomes dull, but I mean to strike a balance between the ever-changing and the changeless. You know the old adage: changing what can be changed,

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## Upcoming Star Parties

<b>Public Party</b>	<b>Jan 7</b>	<b>Kahala/Waikele</b>
<b>Public Party</b>	<b>Jan 21</b>	<b>Dillingham</b>
<b>Club Party</b>	<b>Jan 28</b>	<b>Dillingham</b>
<b>Public Party</b>	<b>Feb 4</b>	<b>Kahala/Waikele</b>
<b>Public Party</b>	<b>Feb 18</b>	<b>Dillingham</b>
<b>Club Party</b>	<b>Feb 25</b>	<b>Dillingham</b>



## Upcoming Events:

- The next meeting is at 7:30 p.m. on Tuesday, Jan..3<sup>rd</sup> at the Bishop Museum.
- The next Bishop Musm. Planetarium show with Barry Peckham will be on Fri. Jan 6 at 7:00 p.m.

## President's Message

Astronomy is a curious mixture of the precisely known, the unpredictable, and things that fall somewhere between those extremes. For example, we know that Saturn will come to opposition on January 27th, Jupiter on May 3rd, Neptune on August 10th, and Uranus on September 4th. We know when the Moon, the other planets, and the stars will rise and set each day, how bright they should be, and even the patterns of variation in brightness of many stars.

While we know that there should be many comets, Kuiper belt objects, extrasolar planets, and supernovae discovered, we have no idea when or where these objects will be found. We can easily look up the phase of the Moon for each of the major meteor showers to see if they offer the possibility of a good show this year, but we are only beginning to be able to predict peak times and intensities based on previous passages of the parent comets responsible for most showers.

We know which spacecraft are scheduled to pass by or arrive at which objects in our solar system, but we don't know what they will discover when they get there. We also don't know which ones will fail and which ones will amaze us with their longevity, such as the Mars Exploration Rovers that have already lasted eight times as long as their nominal missions.

There are other developments that affect amateur astronomers that have nothing to do with what we observe, but rather how we observe. Telescope designs are becoming more sophisticated but still dropping in price. Some Go To telescopes can now figure out where they are pointed after being aimed at any three bright stars or planets, even if the operator has now idea

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**Planets Close To the Moon**

Times are Hawaii Standard Time

- Jan 1, 03h, M 7.1° SSE of Venus  
(19° from sun in evening sky)
- Jan 2, 05h, M 3.8° SSE of Neptune  
(34° from sun in evening sky)
- Jan 3, 16h, M 1.8° SSE of Uranus  
(54° from sun in evening sky)
- Jan 8, 09h, M 1.3° NNW of Mars  
(115° from sun in evening sky)
- Jan 15, 06h, M 3.7° NNE of Saturn  
(166° from sun in morning sky)
- Jan 23, 07h, M 4.4° SSW of Jupiter  
(77° from sun in morning sky)









Mercury is closer that 15° from the sun when near the moon in January.

**Other Events of Interest**

Times are Hawaii Standard Time

- Jan 4, 06h, Earth at perihelion – nearest the sun for 2006. Distance – 0.9833 a.u.
- Jan 5, 11h, 4 Vesta at Opposition
- Jan 9, 16h, Moon in the Pleiades  
(130° from sun in evening sky)
- Jan 13, 14h, Venus at Inferior Conjunction  
(Passes into morning sky.)
- Jan 13, 23:47h, Moon Full
- Jan 26, 11h, Mercury at Superior Conjunction  
(Passes into evening sky.)
- Jan 27, 12h, Saturn at Opposition
- Jan 29, 04:15h, Moon New
- Jan 29, 22h, Moon at perigee only 16 hours after new  
(Very high and low tides expected.)

**Planets in January**

 <b>Mercury</b> too close to the sun to be seen well in January and reaches superior conjunction on January 26.	 <b>Venus</b> shines brightly in the southwest on January 1, but plunges rapidly toward inferior conjunction on the 13th.	 <b>Mars</b> starts the year at mag. -0.6, still large enough to see surface detail. By month's end it is dimmer and smaller.
 <b>Jupiter</b> rises about three in the morning and shines brightly in the pre-dawn sky.	 <b>Saturn</b> in the sky all night, reaching opposition on the 27th. Best viewing is near midnight.	 <b>Uranus</b> quite low in the southwest after sunset.
 <b>Neptune</b> Neptune is too close to the sun for easy viewing in January.		 <b>Pluto</b> still too close to the sun to view in January.

# Meeting Minutes

H.A.S. Secretary

The general membership meeting of the Hawaiian Astronomical Society was brought to order at 7:32 p.m. by President Chris Peterson. The meeting took place in the Atherton Halau of the Bishop Museum, with twenty-eight club members and 12 visitors present.

## Opening Remarks

Chris began the meeting giving a brief overview of current events. He discussed the 12 meter South Africa Land Telescope, and the discovery of a new comet by **Fabrizio Bernardi** of the Canada-France Telescope on Mauna Kea. Unfortunately at mag. 19 it won't be visible in most scopes.

## Visitors

Our visitors this month included 10 members and faculty advisor of the Maryknoll Astronomy Club, who recently joined club members at our Kahala Suburban Star Party. Other visitors joining us were two enthusiasts from Vancouver, B.C.

**Janet Voss.** John displayed hardcopy printouts of information of the discussions. If any member is interested in participating in the next conference, contact John Gallagher.

## Molokai Ranch Trip

Vice President Barry Peckham announced a January 27 and 28, 2006 trip to the Molokai Ranch. This trip features "more convenient hours of darkness, clearer skies and less water vapor. The skies feature the brightest



Dr. Andrea Boattini, an Italian astronomer currently at the Institute for Astronomy at the University of Hawaii, Manoa, spoke on the subject of "Near Earth Objects."

## Night Sky Network

NASA Nite-Sky coordinator, John Gallagher spoke briefly of the recent Nite-Sky teleconference with **Dr.**

bunch of stars visible in any season and the best telescopic planet, Saturn and Jupiter." The Beach Village at Kaupoa is about 8 miles from the

(Continued on page 6)

*New Year's Scope* (Continued from page 1) accepting what cannot be changed, and being wise enough to know the difference. So last summer I decided to sell my favorite telescope and to build something new.

My former green-and-purple 15 incher first traveled to Molokai when it was just a couple days old. It was January '99 and the new scope enjoyed perfect skies for 4 nights and 4 pre-dawn viewing sessions. In April that year it flew to Ayer's Rock, Australia, and later to Phoenix and New England. I was intent on showing how a 15" scope could be considered a travel scope... but few were taking notice. Meanwhile, baggage restrictions were tightening, and of course mainland folks were falling in love with expensive refractors, which they thought of as travel scopes. But as the years flew by, I kept flying with my 15 incher, even after 9/11, and I was never sorry to have a big scope at a dark site.

So when it came time to upgrade my starware, I stuck with the preferred aperture and paired down its container. My current job taught me the merits of AutoCad (computer drafting) and I learned with difficulty a program for turning digital drawings into plywood telescope parts using a huge robotic drilling and cutting machine. It doesn't save time but it does facilitate a lighter and tighter creation.

Some design changes from the former 15 incher: The scope's optical tube diameter is actually 1/2" bigger than before, due to an increased understanding of "vignetting" and tube currents. The octagonal skeleton that holds this tube is no longer a true octagon. This helps with nesting parts (a cage in a box in a box) for travel. Light

shielding at the scope's top end is reduced slightly to save bulk and weight. The altitude bearings (trunnions) are redesigned to incorporate a handle and the "virtual weight" spring attachment.

A minor change in mirror cell (support) design pulled the primary mirror 3/4" closer to the back of the scope. This reduces the height at the eyepiece and moves the center of gravity closer to the back of the scope.

The big change was in construction material. Baltic birch plywood is great stuff: affordable, very stiff and dense in the nominal 1/2" version, with minimum voids and 9 or more plies. But it is also heavy stuff. On a gamble, I tried making the new scope with 1/2" "liteply". It was much less stiff and harder to work with, but the formica-like material I use as a finish surface helped to compensate. I could have created a floppy monster but instead everything turned out okay and I have less weight to lug around. I added a fancy focuser and an 80mm finder scope... just for fun.

This new scope saw first light on a fine night at the monthly Kahala Park star party. Only 2 other scopes bothered to show, along with 30 or so of the scopeless. I'm still waiting for the finder, so there is a 3 lb. counterweight in its place, but all seems well with the new experiment.

Many people leave the hobby of amateur astronomy because it eventually fails to thrill. Light pollution keeps increasing while our vision keeps decreasing. It is not wrong to bond with one's starware, but the bottom line is the coefficient of thrill. Make sure you do what needs to be done to stay engaged with the visible universe.

**President's Report** (Continued from page 2)  
what they are. (Opinions differ as to whether this is a good thing!) Cameras and computers are making astrophotography more accessible to those who don't want to devote a major part of their lives to it.

The other major unknown lies in ourselves. How much observing will we do? What will we see for the first time? What will we learn?

Oh, yeah, then there's the weather...

**Chris**



The **Christmas Tree** Cluster NGC2264

**Minutes** (Continued from page 4)  
lodge. As this may be the last of many great visits to Molokai, we hope those interested will contact Barry Peckham at 524-2450.

Barry read a few "wrong ideas students have about astronomy" (look for more in next month's Astronews). and announced that club member **Nathan Shores** had burned a number of copies of the *Virtual Moon Atlas*. Nathan made copies available for free to interested parties after the meeting.

### Election of Officers

**Mel Levin** (standing in for Elections Chairman) Joanne Bogan, conducted elections for the 2006 Hawaiian Astronomical Society Board of Directors. As there were not last minute nominations, **Jay Wrathall** moved that the full slate of nominees, **Chris Peterson**, President; **Barry Peckham**, Vice President; **Jim MacDonald**, Treasurer; **Gretchen West**, Secretary, At-Large Members, **John Gallagher** and **Steve Huffman**, and **Paul Lawler** as Astronews Editor, be accepted. The motion was seconded and with the unanimous affirmative vote of all members present, slate was re-elected.

### Special Guest Speaker

Dr. Andrea Boattini, Italian astronomer, working currently at the Institute for Astronomy at the University of Hawaii, Manoa, spoke on the subject of "Near Earth Objects." Dr. Boattini gave an overview of the origins of the solar system and its composition. He outlined the time frame of impacts to the Earth and the Moon. He discussed Kuiper Belt and Oort cloud materials. His discussion explained how photometry can identify for us the orientation, shape, size and movements of possible satellites within the solar system. Spectroscopy reveals the mineralogy and mass of such objects. The tracking of large near earth objects and our ability to identify and make an effort to deflect a catastrophic impact was discussed in the question and answer period.

The meeting adjourned at 9:17 pm. Refreshments were served.

Respectfully submitted,  
Gretchen West  
HAS Secretary

This is a good time of year to see the Andromeda galaxy. When the sun sets and the sky fades to black, Andromeda materializes high in the eastern sky. You can find it with your unaided eye. At first glance, it looks like a very dim, fuzzy comet, wider than the full moon. Upon closer inspection through a backyard telescope—wow! It's a beautiful spiral galaxy.

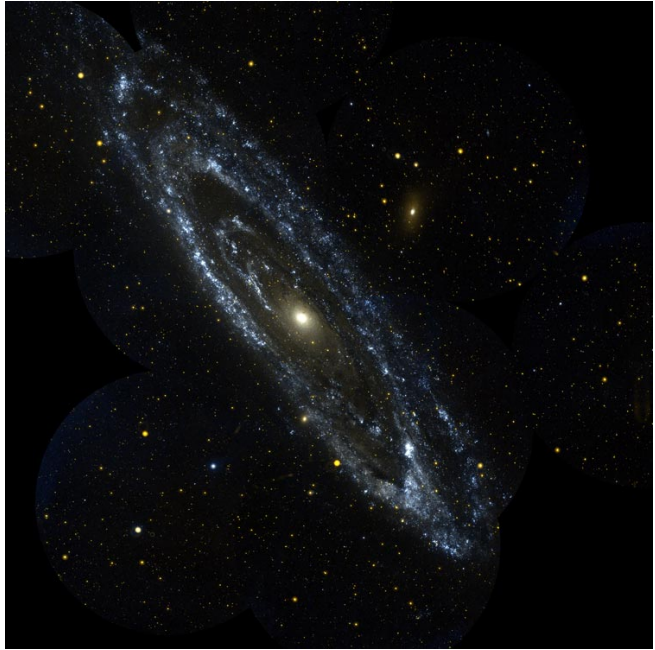
At a distance of “only” 2 million light-years, Andromeda is the nearest big galaxy to the Milky Way, and astronomers know it better than any other. The swirling shape of Andromeda is utterly familiar.

Not anymore. A space telescope named GALEX has captured a new and different view of Andromeda. According to GALEX, Andromeda is not a spiral but a ring.

GALEX is the “Galaxy Evolution Explorer,” an ultraviolet telescope launched by NASA in 2003. Its mission is to learn how galaxies are born and how they change with age. GALEX's ability to see ultraviolet (UV) light is crucial; UV radiation comes from newborn stars, so UV

images of galaxies reveal star birth—the central process of galaxy evolution.

GALEX's sensitivity to UV is why Andromeda looks different. To the human eye (or to an ordinary visible-light telescope), Andromeda remains its usual self: a vast whirlpool



*The GALEX telescope took this UV image of the Andromeda galaxy (M31), revealing a surprising shape not apparent in visible light.*

of stars, all ages and all sizes. To GALEX, Andromeda is defined by its youngest, hottest stars. They are concentrated in the galaxy's core and scattered around a vast ring some 150,000 light years in diameter. It's utterly unfamiliar.

*(Continued on page 8)*

### *Andromeda (Continued from page 7)*

“Looking at familiar galaxies with a new wavelength, UV, allows us to get a better understanding of the processes affecting their evolution,” says Samuel Boissier, a member of the GALEX team at the Observatories of the Carnegie Institution of Washington.

Beyond Andromeda lies a whole universe of galaxies—spirals, ellipticals and irregulars, giants and dwarfs, each with its own surprising patterns of star formation. To discover those patterns, GALEX has imaged hundreds of nearby galaxies. Only a few, such as Andromeda, have been analyzed in complete detail. “We still

have a lot of work to do,” says Boissier, enthusiastically.

GALEX has photographed an even greater number of distant galaxies—“some as far away as 10 billion light-years,” Boissier adds—to measure how the rate of new star formation has changed over the universe's long history. Contained in those terabytes of data is our universe's “life story.” Unraveling it will keep scientists busy for years to come.

For more about GALEX, visit [www.galex.caltech.edu](http://www.galex.caltech.edu). Kids can see how to make a galactic art project at [spaceplace.nasa.gov/en/kids/galex/art.shtml](http://spaceplace.nasa.gov/en/kids/galex/art.shtml).

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

## Back in Black

by Barry Peckham

On the weekend of January 27-29 a group casually called Stargazers of Oahu will once again make a pilgrimage to the most stargazer-friendly locale in our nation. Thousands of amateur astronomers on the mainland will surely weep and gnash their teeth as we fortunate few board our plane to the promised land. Oh, if only they could afford the extravagance of joining large telescopes under very dark, very warm winter skies!

Alas, all feel certain that it takes a millionaire's disposable income to squander on a thrill like Stargazers of Oahu will once again be serving up. But for us on the inside track to winter observing, the cost of our sojourn can be less than 2 weeks worth of gas for the average SUV.

Oahu's over-populated southern coast prevents appreciation for the deep southern sky. The more subtle Winter Milky Way is also difficult to savor from “The Gathering Place”. Even Dillingham Airfield has brightened enough to rub out the fainter nebulae of Winter.

So those who love darkness set their sights on Molokai Ranch, and we invite you to join us as we savor the star fields of winter. For now, the deal is a repeat of our spring and fall rates, but it could come down a bit if enough people join us.

See Barry Peckham for details:

[barry@litebox-telescopes.com](mailto:barry@litebox-telescopes.com)

Tel: 524-2450



The Quadrantids are favored by the Moon. Also some minor showers which may exist are favored during the last week of the month. Meteors from Cancer-Leo-Virgo may occur from the 20th thru the 27th.

Tuesday the 3rd, **the Quadrantids**. Radiant 15h20m +49deg.

Rates for this shower run from a few to near 100 an hour.

New Moon on December 31 makes this a grand year for this shower.

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

## Treasurer's Report

by Jim MacDonald

### HAS Financial Report as of December 15, 2005

Initial Balance:.....	<b>\$5,818.03</b>
Receipts:	
Astronomy Payment.....	204.00
Donations.....	136.28
Dues Received.....	275.00
S&T Payments.....	131.80
Calendar Payments.....	26.77
Total Income: .....	<b>\$773.85</b>
Expenses:	
Astronews.....	73.01
Magazine Subscriptions.....	399.60
Refreshments.....	7.88
Refund.....	32.95
Total Expenses: .....	<b>\$513.44</b>
Ending Balance:.....	<b>\$6,078.44</b>

We welcome four new members this month. They are **Ian Sver**, **Susie Hawkes**, and **Jim** and **Liz Takishita**. A special thanks to **Gary Shimazu**, **Scott Allen**, **Paul McCurdy**, **Susan Girard** and an anonymous member for their donations. Many thanks also to those renewing their membership. As a reminder, please check your membership anniversary date listed on the Astronews address label. Clear skies to all!

## 2006 Meeting & Star Party Dates

Club Meeting	Dillingham Public	Dillingham Club Only	Kahala/Waikele
Jan 3	Jan 21	Jan 28	Jan 7
Feb 7	Feb 18	Feb 25	Feb 4
Mar 7	Apr 1	Mar 25	Mar 4
Apr 4	Apr 29	Apr 22	Apr 8
May 2	May 27	May 20	May 6*
Jun 6	Jun 17	Jun 24	Jun 3
Jul 11	Jul 15	Jul 22	Jul 1
Aug 1	Aug 26	Aug 19	Jul 29
Sep 5	Sep 23	Sep 16	Sep 2
Oct 3	Oct 14	Oct 21	Sep 30
Nov 7	Nov 11	Nov 18	Oct 28
Dec 5	Dec 23	Dec 16	Nov 25
Jan 2 '07	Jan 20 '07	Jan 13 '07	Dec 30

\*Astronomy Day

*There are two kinds of light—the glow that illuminates, and the glare that obscures.*

—James Thurber

## Free Magazines

I have been dragging these around the country with me for 30 years, and am finally ready to let what I've treasured for so long go. The *Astronomy* magazines date from 1974 to 2000, and the *Sky and Telescope* date from 1974 to 2004. Some years are complete, some years completely missing, and some years partial. In total I have roughly 180 *Astronomy* and 110 *Sky and Telescope* issues to be given away. Will deliver on Oahu. Call Gary at 626-8258.

### Hawaiian Astronomical Society Membership Application/Renewal 2006-2007

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	\$34.00	_____
Donation		_____

Total: \_\_\_\_\_

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

Hawaiian Astronomical Society

P.O. Box 17671

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

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A worm's eye view of the construction technique for weight reduction in the new Litebox.