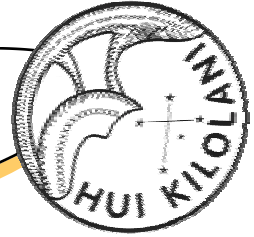


The Astronews



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February 2004

Revisiting Southern Skies

by Mel & Clare Levin

We had planned to revisit the NSW Astronomy Club's Star Party in March, but illness prevented it. Faced with losing our tickets, we chose to go in October, despite being warned by several of our club members that it was a very poor time to observe Southern skies and that the Magellanic Clouds would not be visible.

The first of two weeks was spent as tourists visiting the North Queensland rain forest preserves full of exotic flora and fauna—most notably 15 foot long man eating crocodiles! We finally went to Waruna, the property of the New South Wales Astronomical Society in the mountains about 120 miles from Sydney. About 20 members of the club were there for a long moonless

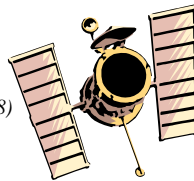
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Upcoming Star Parties

Public Party	Jan 31	Kahala/Waikale
Club Party	Feb 14	Dillingham
Public Party	Feb 21	Dillingham
Public Party	Feb 28	Kahala/Waikale
Public Party	Mar 13	Dillingham
Club Party	Mar 20	Dillingham



Upcoming Events:

- The next meeting is at 7:30 p.m. on Tue. Mar. 3rd at the Bishop Museum (Dr. Karen Meech)
- **Sam Rhoads** next Planetarium show on Mon. Mar. 2nd.

President's Message

Spirit has six wheels in the dirt. Opportunity is scheduled to land on the other side of Mars before this issue of Astronews gets mailed out. President Bush has outlined a new direction for NASA that includes a return to the Moon and eventual human missions to Mars. The solar system certainly has the attention of the public these days, and there's still more to come.

Saturn is past opposition. There will surely be increasing public interest in the ringed planet as the Cassini mission draws near. Of course, Saturn's always a crowd pleaser, and it doesn't need an approaching spacecraft to persuade people to look at it, but we should expect that the level of excitement will rise as Cassini closes in on its July 1st entry into Saturn orbit. This is an opportunity to get ahead of the hype since Saturn will be high in the sky at convenient viewing times long before Cassini arrives there. The people we introduce to Saturn at star parties over the next few months will have more reasons than usual to pay attention to its location in the sky as the months go by so that when Cassini arrives they can proudly point out Saturn to their friends.

With Jupiter following behind Saturn in their nightly march across the sky, we have a better chance than usual of turning satisfied one-time telescope users into long-term sky watchers. These two bright planets are located in or near some of the most recognizable constellations in the sky. People who know little of the night sky will be able, with only a little effort, to learn enough that they can follow the progress of Saturn and Jupiter for months. Even in town, they should be able to see enough stars to get oriented and find newly familiar sights.

I am looking forward to seeing some unfamiliar sights. I will not be at the Feb-

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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

- Feb 2, 18h, M 4.5° N of Saturn
(143° from sun in evening sky)
- Feb 8, 06h, M 2.9° NNE of Jupiter
(152° from sun in morning sky)
- Feb 18, 17h, M 5.0° SSE of Neptune
(16° from sun in morning sky)
- Feb 23, 12h, M 2.7° SSE of Venus
(43° from sun in morning sky)
- Feb 25, 16h, M 0.84° SSE of Mars
(68° from sun in morning sky)

Venus and Uranus are both within 15° of the sun when near the moon in February

Other Events of Interest

Times are Hawaii Standard Time

- Feb 2, 00h, Neptune at Conjunction with Sun
(Passes into the morning sky.)
- Feb 2, 11h, Mercury 0.79° S of Vesta
(20° from sun in morning sky)
- Feb 5, 23:49h, Full Moon
- Feb 19, 23:20h, New Moon
- Feb 21, 16h, Uranus at Conjunction with Sun
(Passes into the morning sky.)

The Planets in February

♃ Mercury	♀ Venus	♂ Mars
Mercury is visible for the first week in February in the morning dawn before sunrise.	Venus shines very brightly in the western sky after sunset at magnitude -4.1.	Mars is about mag. 1.0 and is in the SE after sunset above Venus.
♃ Jupiter	♄ Saturn	♅ Uranus
Jupiter is visible most of the night as it nears opp. early next month. Mag. -2.5. Diameter, 44".	Saturn is better this month than it will be for the rest of the year. Mag. -0.1.	Uranus is at opposition this month and is too close to the sun for viewing.
♆ Neptune	♇ Pluto	
Neptune is also at opposition this month and is too close to the sun to view.	Pluto is visible in the early morning hours, but will be better placed for viewing later this year.	

(Continued from page 2)
 ruary meeting, because I will be on my first trip to New Zealand, my first time south of the Equator. I'll be gone about three weeks, so I'm sure I'll get some good opportunities to see the

wonders of the southern sky that we've all heard about but many of us have never seen. I'll give you a report on my experiences in March.

Chris

The meeting was called to order at 7:34 p.m. by President Chris Peterson. There were thirty-three members and three visitors in attendance.

Chris spoke briefly about the Mars Explorer, Spirit, that recently touched down on Mars.

Bishop Museum's new Planetarium director, **Carolyn Kaichi**, spoke briefly about the ongoing updating of the Planetarium at the Bishop Museum.

Planetary Data Center will be hosting a talk by **Dr. Peter McGuinness-Mark**, January 20th at 7:30 p.m on the fifth floor of the POST building, UH.

Meeting Speaker for February 3, 2004 will be **Dr. Karen Meech**. She will discuss Mission Stardust and the comet Wild II.

Dillingham Use: Jim MacDonald addressed the members to restate the security concerns for the use of the Dillingham field viewing area. H.A.S. board will be contacting the Duty Manager for the field as required in our agreement for the use of the viewing area. Unless members are there for sanctioned outings, club or public viewing nights, the club will not support your being on site. It is imperative that all member follow the guidelines for site use, so that we do not loose the privilege.

School Star Parties: Forrest Luke reports that there are no school star parties scheduled for January, but that we have one scheduled for February. A sign-up sheet will be passed at the next meeting for interested members.

Thank You: Gretchen West read a thank you from **Art Kimura** for the

club support of activities on Lacy Veach Day that took place in November, 2003.

New Business: Mike Morrow, Big Island member, spoke briefly. He indicated that Big Island property is available in the Oceanview area at good prices. A number of adjacent properties have recently added telescopes.

Program: V. P. Barry Peckham asked the club members to consider expanding our help at Bishop Museum by possibly having a "Saturn Night." This would be an expansion on the success of last year's "Mars Madness" and make the night skies more accessible to the public. Barry also spoke briefly about cultural astronomy by sharing a recent article and book on Tongan astronomy.

Barry shared his completed project—a small 10 inch Dobsonian scope with a unique trunion design.

Paul Lawler brought in a Orion *StarBlast*, Tabletop Altazimuth Reflector Telescope designed for children. He was impressed by the ease of use, completeness (including a red-dot finder) and compact size. Paul also shared a Chandler two-sided planisphere which eliminates southern sky compression.

Steve Huffman shared a (way cool) laser created crystal sculpture of the Milky Way (available on-line at www.bathsheba.com).

The meeting was adjourned at 8:27 p.m. and a short Planetarium Sky Tonight show was available for interested members at 9:00 p.m..

Respectfully submitted,
Gretchen West, HAS Secretary

A month of weak showers and the year's lowest sporadic rates for northern hemisphere observers. Moonlight spoils checking for new showers for at least the first 10 days of the month.

Sunday the 8th, the *Alpha Centaurids* (radiant 14h00m -59 deg.) Looks like the maximum is about 17:00 UT or 07:00 AM local time. The Moon will mess things up too. We have observed this shower in the past from Hawaii. Under good conditions about 20 meteors or less per hour may be seen. Meteors are bright, fast, and often leave trains.

Wednesday the 25th, the *Delta Leonids* (radiant 11h12m +16 deg.) This is a reasonable year for the this very minor drizzle as the Moon will be out of the way. With only one or two meteors an hour there is not much to see. This is probably part of the early Virginid shower complex.

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

School Star Parties

It's that time of year, 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
12 Mar 2004 Niu Valley Middle School
16 Apr 2004 Kamehameha Schools, Kapalama Campus
23 Apr 2004 Lanakila Elementary
27 Apr 2004 Ala Wai Elementary

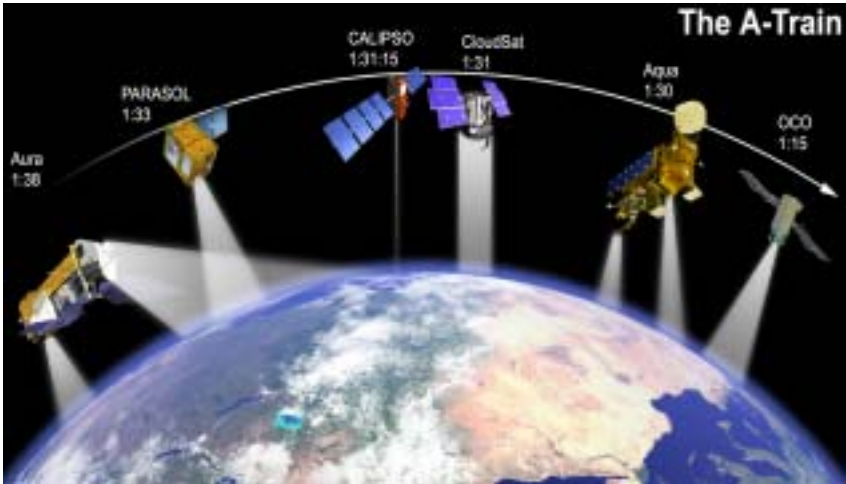
If you signed up and need help finding the school, or if you didn't sign up, but still want to participate, please contact Forrest.

You can almost see the tabloid headlines now: "Mid-west farmer spies UFO squadron flying in formation!" "First signs of imminent alien invasion," the subtitle will read.

If only this fictional farmer had been keeping up with NASA's Space Place column, he would have known better. The string of white dots moving in formation across the pre-dawn

In April 2004, NASA will launch CloudSat, an Earth-observing satellite with unique cloud-measurement abilities. These measurements will fill an important role in our understanding of global climate change, making long-term climate change scenarios more accurate and dependable.

So why bother flying in formation? By passing over the same swath



CloudSat, to be launched in November 2004, will take its place as part of the "A-Train" of satellites flying in formation to take closely timed shots of the same scene using 14 different measuring instruments.

sky were satellites, not alien spaceships.

Beginning next year, a series of challenging, high-precision launches will insert four satellites into orbits with just the right altitude, position, and orbital inclination to follow in lock-step behind NASA's Aqua satellite (launched in May 2002). Scientists have dubbed this squadron of satellites the "A-Train." Along with Aqua, the celestial parade will include Cloudsat, CALIPSO, PARASOL, and Aura.

of land within seconds or minutes of each other, the satellites will give scientists snapshots of essentially the same scene using a total of 14 different measuring instruments. CloudSat alone carries only one: a millimeter-wavelength radar sounder.

This sounder-the first of its kind put into orbit-lets scientists see a vertical "slice" of the atmosphere that shows clouds, water, and ice between the ground and 30 km altitude, with a

(Continued on page 9)

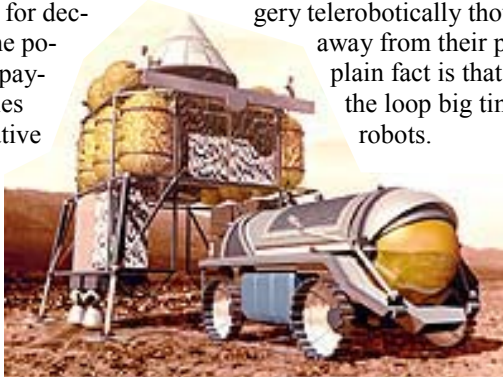
How to Mars?

by Dan DeConinck

The cost of one manned mission to Mars (about \$400 billion) is equivalent to a thousand robotic missions (about \$0.4 billion each). We could put dozens of scientific satellites in orbit around not only all our solar system's planets but also all their major moons. In addition we could send dozens of Landers to all latitudes of all planets and their major moons, and it doesn't stop there.

We could visit comets and asteroids and even send spacecraft out of our solar system. We could reach out and touch virtually every corner of our solar system and for decades to come. The potential scientific payoff and discoveries dwarf the alternative of a single mission to a single location on a single planet for at most a few months.

Supporters of manned spaceflight like to argue that the astronaut is more effective than a robot. Well even if this was true the astronaut would need to be not twice as effective or ten times or even one hundred times but rather a thousand times more effective to achieve the same value as the robot. Let's concede that the astronaut is twice as effective as the robot. That makes the robot a better choice by a factor of five hundred times. Would the Mars pancam images be any better taken by an astronaut?



The argument for the astronauts also claims that a human is needed in the loop. That argument misses the point that with robots humans are, in fact, in the loop. Just look at JPL. They have hundreds of the worlds best researchers. They are directly in the loop orchestrating the rovers' activities. This is called telepresence. Those researches are virtually on Mars. Also note how JPL claims the rover cameras have 20/20 vision.

This telepresence technology is also on trial in the operating rooms of hospitals. Doctors are performing surgery telerobotically thousands of miles away from their patients. The plain fact is that people are in the loop big time with the robots.

Now remember, I conceded that the astronauts would be more effective than the robots. The

problem is that they would be only marginally more effective for a disproportionate cost to the tune of five hundred times less scientific returns.

The manned mission supporters realize this lack of value so they cite the spin off technologies that benefit mankind. This is a very hollow argument. If you really value, for instance, the medical devices that emerge then it is silly to not pursue them in a direct, targeted way rather than spending all your money visiting the moon and hoping that this will trickle down to

(Continued on page 10)

Southern Skies (Continued from page 1) weekend. Upon our arrival we were met by Mike Kerr, the president, and proud possessor of an Obsession 25 inch Dob. It is made in Wisconsin, and he definitely thinks it's the best amateur scope made. It certainly was the finest we have been privileged to observe through.

Mike proved to be a gracious and knowledgeable host, and we spent our first night with him and his scope. Incidentally, he and several other club members told us that October was the choicest month for viewing the LMC and SMC, which were our primary objectives this trip. The seeing was good and his scope was superb.

We spent most of our time in the Tarantula Nebula—NGC 2070 in the LMC. It is 900LY in diameter and 170,000 LY from earth. The Tarantula is larger and brighter than any known nebula in the universe. If it was as close as the Orion Nebula it would cover an area 60X that of the sun and appear 30X brighter than Sirius!

We have seen 47 Tucana several times before, but never with such clarity and detail. It seemed we could resolve stars right into the center of it's nucleus. Also observed were NGC 55 and 253 in Sculptor—seen several times at Dillingham, but never so well. 55 is the brightest of the Sculptor group and is called the cigar. Then IC 51448, a smoke-ringed planetary neb-

ula in Grus—NGC 6752 in Pavo, a gorgeous globular like a brilliant starburst—also the Helix again a Dillingham target, but never so large and clearly defined.

We also used the club's 17 inch Dob (with our own eyepieces) to cruise the 2 clouds at our leisure, but the telrad was mounted in a most uncomfortable place and the scope was terribly cumbersome.

The following night (not quite as clear) we spent on the 17 in. Dob again with Don Whiteman, (last year's President) looking at much of the above again plus NGC362, a globular cluster near 47 Tucana, and NGC 121, a globular on the other side of the SMC. We also observed a filamentary Galaxy in Pavo, NGC 6744 also known as C101, and a spiral galaxy in Eridinus, NGC1232.

The last night was poor visibility, with a hail storm in the afternoon. Most of the members were asleep waiting on the outside chance that the sky would clear. So, after sitting around a campfire for several hours, we left. Driving back and forth to our motel, we saw numerous wombats, wallabies, giant hares, and kangaroos. We had to be careful not to injure them (or the car) as, similar to deer, they become mesmerized by car lights, just like we were by the incredible Southern Skies.



NGC 55—T.A. Rector/NOAO/AURA/NSF

In Formation (Continued from page 6)
vertical resolution of 0.5 km. Even by itself, this instrument would provide an important and unique view of Earth's atmosphere, since the accurate portrayal of clouds is one of the glaring weaknesses with current simulations of climate change.

But this cloud data is even more valuable when combined with measurements from the other satellites in the A-Train—for example, air temperature, trace gases, and radiation into and out of the atmosphere. Scientists can then see connections between, say, temperature and the resulting behavior of clouds. A better understanding of these connections is one of the most

sought-after goals of climate research, because changes to global cloud cover would, in turn, have a feedback effect on global temperatures.

The real story of this satellite squadron may not make the tabloid-headlines, but at least there's evidence that the imminent threat of climate change is real, which is a lot more than you can say for alien invaders!

Learn more about CloudSat and the A-Train at cloudsat.atmos.colostate.edu. Kids (and grownups) can do interactive cloud picture scrambles and learn "Cloudspeak" (the names of different kinds of clouds) at The Space Place, spaceplace.nasa.gov/cloudsat_puz.htm

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

Dachshunds

by William Jay Smith

The Dachshund leads a quiet life
Not far above the ground;
He takes an elongated wife,
They travel all around.

They leave the lighted metropole;
Nor turn to look behind
Upon the headlands of the soul,
The tundras of the mind.

They climb together through the dusk
To ask the Lost-and-Found
For information on the stars
Not far above the ground.

The Dachshunds seem to journey on:
And following them, I
Take up my monacle, the Moon,
And gaze into the sky.

Pursuing them with comic art
Beyond the cosmic goal,
I see the whole within the part,
The part within the whole;

See planets wheeling overhead,
Mysterious and slow,
While morning buckles on his red,
And on the Dachshunds go.

HAS Financial Report as of January 15, 2004

Initial Balance:\$6,339.74

Receipts:

Astronomy Payment.....	145.00
Sky & Telescope Payment.....	197.70
Donation.....	72.05
Dues Received.....	344.00
T-Shirt Sales.....	15.00
Polo Shirt Deposit.....	25.00
Telescope Fee.....	20.00
Uncleared Check.....	17.99
Total Income:	\$836.74

Expenses:

Astronews.....	136.40
Magazine Subscriptions.....	347.15
Liability Insurance.....	885.10
Polo Shirts.....	43.75
Postage.....	3.85
Total Expenses:	\$1,416.25

Final Balance.....\$5760.23

We had seven new members join the club this month. They are **Corey Moser, Clare Mamura, Alex Zamora, Susan Simioni, Richard Lane, Kristen Lawrence-Apfel** and **Richard Apfel**. Many thanks to those renewing their membership and especially to **Wilfred** and **Helen Kekoanui, Stephanie Choquette, Jeffrey Brennan, and Yoshiyuki Inoue** for their generous donations. Clear skies to all!

How to Mars? (Continued from page 7)
 an improved pacemaker. Furthermore many, if not all, of the spin off technologies would inevitably have emerged on their own timetable.

Please, lets touch and visit every corner of our solar system for decades rather than a single mission to a single

location on a single planet for a single moment in time.

*Dan DeConinck a RASC alumnus and denizen of the Internet Usenet news-group alt.astronomy views the skies from Toronto, Ontario, Canada.
 E-mail: <dan@pixelsmart.com>*

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2004**

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Dues	\$15.00	_____
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Family members: each	\$2.00	_____
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Astronomy subscription	\$29.00	_____
Donation		_____

Total: _____

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

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First color image from Mars Spirit Rover—photo courtesy of NASA/JPL