

RASC victoria council

*this month
monday nights*

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Astronomy Cafe

Fairfield Community Centre,
1330 Fairfield, Victoria
7:30-11pm
Call 477-2257 for directions or
more information.
New comers are especially
welcome. Come and enjoy!

**ASTRONOMY
CAFÉ**



second wednesday of the month

Monthly Meeting

7:30 PM, Elliott Lecture Theatre,
Rm 060, UVic

as sky and interest dictate

New Observers Group

Hosted by Sid Sidhu
1642 Davies Road, Highlands
Call 391-0540 for information
and directions.

by email

**Observer/CU Volunteers/
Members email lists**

Contact Joe Carr to subscribe to
these email lists for important,
timely, member-related news.

skynews



this month

Dr. Eric Steinbring, NRC-HIA
Astronomy in Canada's High Arctic - Long nights and clear skies.

December 13, 7:30 PM, Elliott Lecture Theatre, Rm 060, UVic

The earth's polar regions are well suited for astronomy. And they have advantages over Hawaii and Chile, which have been viewed as the best locations for the last few decades. The poles are not only extremely dry, but also beneficial for work in the infrared, incredibly cold. Plus, they provide months of uninterrupted darkness. It has already been shown that the Antarctic offers places that combine these qualities with clear skies. Satellite imagery suggests that mountains in Canada's far North should also possess excellent sky conditions - and there is reason to believe they might be even better places than the Antarctic to put telescopes. To confirm this our group has begun testing two mountains on Northern Ellesmere Island, about as far north as one can go and still remain within Canada. I'll talk about our initial efforts this summer, which put in place two robotic weather stations and sky monitors.



the rovers were looking for other things. This catch-as-catch-can approach limits what researchers can learn.

No more! The two rovers have just gotten a boost of artificial intelligence to help them recognize and photograph dust devils. It comes in the form of new software, uploaded in July and activated in September 2006.

“This software is based on techniques developed and tested as part of the NASA New Millennium Program's Space Technology 6 project. Testing was done in Earth orbit onboard the EO-1 (Earth Observing-1) satellite,” says Steve Chien, supervisor of JPL's Artificial Intelligence Group. Scientists using EO-1 data were especially interested in dynamic events such as volcanoes erupting or sea ice breaking apart. So Chien and colleagues programmed the satellite to notice change. It worked beautifully: “We measured a 100-fold increase in science results for transient events.”

Now that the techniques have been tested in Earth orbit, they are ready to help Spirit and Opportunity catch dust devils—or anything else that moves—on Mars. “If we saw Martians, that would be great,” laughs Chien. Even scientists have their guilty pleasures.

Find out more about the Space Technology 6 “Autonomous Sciencecraft” technology experiment at nmp.nasa.gov/st6/TECHNOLOGY/sciencecraft_tech.html, and the use of the technology on the Mars Rovers at nmp.nasa.gov/TECHNOLOGY/infusion.html. Kids can visit spaceplace.nasa.gov/en/kids/nmp_action.shtml and do a New Millennium Program-like test at home to see if a familiar material would work well in space

observers group

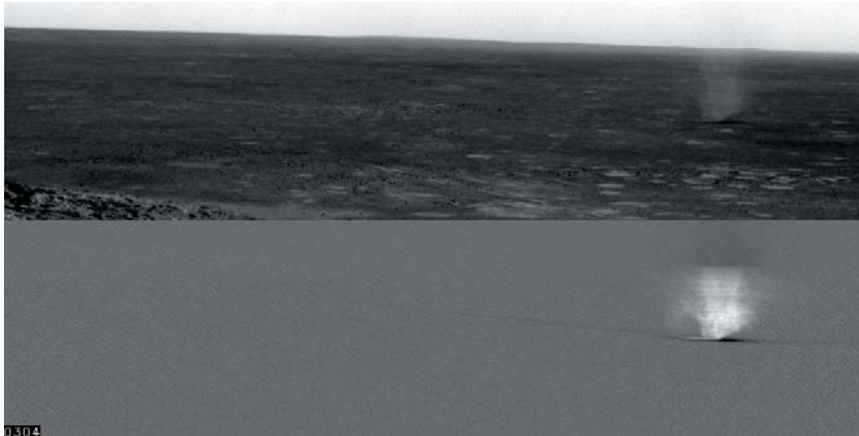
RASC Victoria Centre and the NRC have signed a License to Use Land Agreement which gives members of Victoria Centre expanded access to NRC property on Observatory Hill.

If you are a member in good standing of Victoria Centre RASC, consider yourself an “active observer”, and wish to take advantage of this opportunity, please send an email to the 1st or 2nd Vice President. More information on this program see: <http://victoria.rasc.ca>

Martian Devils by Dr. Tony Phillips

Admit it. Whenever you see a new picture of Mars beamed back by Spirit or Opportunity, you scan the rocks to check for things peeking out of the shadows. A pair of quivering green antennas, perhaps, or a little furry creature crouched on five legs...? Looking for Martians is such a guilty pleasure.

Well, you can imagine the thrill in 2004 when scientists were checking some of those pictures and they did see something leap out. It skittered across the rocky floor of Gusev Crater and quickly disappeared. But it wasn't a Martian; Spirit had photographed a dust devil!



Dust devils are tornadoes of dust. On a planet like Mars which is literally covered with dust, and where it never rains, dust devils are an important form of weather. Some Martian dust devils grow almost as tall as Mt. Everest, and researchers suspect they're crackling with static electricity—a form of "Martian lightning."

NASA is keen to learn more. How strong are the winds? Do dust devils carry a charge? When does "devil season" begin—and end? Astronauts are going to want to know the answers before they set foot on the red planet.

The problem is, these dusty twisters can be devilishly difficult to catch. Most images of Martian dust devils have been taken by accident, while

on the cover

Transit of Mercury Bill Weir

This is my best photo of the bunch taken with my wife's little Cannon point and shoot. It was hand held up to a 10mm Speers WALER eyepiece that was in my 6" dob. I had to crop it to get rid of most of the vignetting. I darkened the background but don't really know what I'm doing, so forgive the rough edge to the Sun. This shot was taken at approximately 11:17, November 8, 2006.



The Metchosin Mercury Transit Camp

Three Radio Astronomy Futures: EVLA, ALMA, and SKA Dr. Mark Adams

coming up

January 10, 7:30 PM, Elliott Lecture Theatre, Rm 060, UVic

Two major international radio astronomy research facilities are now under construction: the Expanded Very Large Array (EVLA) in the southwestern United States, and the Atacama Large Millimeter/submillimeter Array (ALMA) in the high-elevation desert of northern Chile. A third new international research facility, the Square Kilometre Array (SKA), is in its early design phase. This talk will provide an overview of the scope, design, and schedule for each of these extraordinary new facilities.

contact us on-line

Web Site
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President's Report

Victoria Centre's Annual General Meeting is now history, and the Centre has a new Executive Council. I am pleased to be your new President, and plan to build on the great strides both the Centre and the national organization are making to offer more relevant services to our members while keeping the costs under control. Thanks must go to the outgoing Council members, especially our First Vice President Bruno Quenville. Bruno put his heart and soul into Centre activities and helping our members and non-members alike. He certainly deserved the Newton-Ball Award for 2006.

Speaking of outgoing Council members, Scott Mair is now our Past President, but "outgoing" really doesn't describe his move. Scott has stepped into the Skynews Editor role, and he also generously volunteered to give our new First Vice President Sid Sidhu a bit of breathing room by taking on the organization of Astronomy Day (April 22, 2007).

I'm a fairly dedicated observer, so I will be making a concerted effort to encourage our membership to get out there and observe, photograph, sketch, take notes, or just lay in the grass and gaze upward. Not that armchair astronomy will be ignored:

- our Centre website continues to grow and serve our members' needs for current information about activities fellow members are up to,
- our Centre email lists allow members to have some more immediate two-way communication,
- Skynews has evolved over the last year to include lots of colour, so receiving this publication electronically will ensure you see it at its best.

If you can pry yourself out of your armchair to attend our monthly meetings, you are in for a treat. Victoria Centre is blessed with so many first-rate speakers being available locally. Most of them are professional astronomers who are eager to share their work with us.

I've always felt getting involved in an organization is the best way to gain maximum benefit from membership. I will work hard to get you involved this year. Council has established a Job Jar, where we will have clearly-defined volunteer jobs that need to be done for Victoria Centre. The first Job Jar item is from me: I currently act as Membership Coordinator, which involves creating the labels for the Skynews mail-out and email notification, maintaining a roster of Victoria Centre members and reconciling it with

*astrophotography***Charles Banville, M33**

*Taken: 20 October 2006 from Bruno's backyard in Oak Bay.
Optics: TeleVue NP-101, f/5.4 on Losmandy G-11.
Camera: Canon 20Da
Exposures: 60 light frames of 60 sec @ ISO 800.
Processing: ImagesPlus, Photoshop and Neat Image.*

**David Lee - Orion Nebula**

*Mount: Losmandy GM8
Telescope: NP101is 540mm/5.4
Filter: Hutech IDAS LPR
Camera: Fuji Finepix S2
Sensor Speed: ISO 800
Processing: 11 light frames registered and stacked with Registar 1.0
Post Processing: Adobe Photoshop CS2
light application shadow/highlight and NR*

Li-Ann Skibo - Transit of Venus

Ok, it's not Mercury, but with all the transit excitement, Joe talked me into showing my 2004 Venus transit shots.

**John McDonald - M51**

*SSSP Aug. 27, and DAO Sept 21, 2006
Telescope: WO 105mm
Camera: Pentax ist-DS, 0.8x focal reducer.
Mount: HEQ5
Exposure: Total of 49 minutes light (60sec x 49) plus 49 minutes dark. 10 flat/10 bias.
Processing: Calibrated, aligned, stacked & developed in ImagesPlus. Further processing in Photoshop CS, Neat Image and Astronomy Tools.*

glare of the sun.

Towards the end of December, Mars and Jupiter will appear as morning planets in bright twilight.

Saturn, the "Lord of the Rings", will rise in the east after 11 pm in early December. By month's end it will rise high above the eastern horizon by 9:30 pm. Be sure to look for Saturn on December 10th, after 12 a.m., when the moon will pass on the same plain between Earth and Saturn. This is called an occultation or an eclipse, where a celestial body passes in front of another celestial body.

For an example of an occult of Saturn visit the Astronomy Picture of the Day website at <http://antwrp.gsfc.nasa.gov/apod/ap010908.html>.

The Moon

The Full "Cold" Moon or "Long Nights Moon" as named by the Algonquin people is the moon that signifies the onset of winter. It is at this time that the nights grow longer and darker and the cold weather tightens its grip.

The Saanich people called this moon Sis,et-The Elder Moon. This is the oldest moon, the last of the year, leading into the shortening of days and the dying off of the year. The day of Winter Solstice was a day of great importance, a day in which elders traditionally taught the children about the right way to live their lives. Ceremonies were held in the longhouses, new dancers were initiated and culture and heritage were celebrated.

address change? information incorrect

Contact the National Office

Telephone - 416.924.7973 or toll-free in Canada 888.924.RASC

Fax - 416.924.2911

Email - nationaloffice@rasc.ca

Post - RASC, 136 Dupont Street, Toronto, ON M5R 1V2

General enquiries - [natonaloffice@rasc.ca](mailto:nationaloffice@rasc.ca)

the monthly release of the National membership list. If you can handle a database or spreadsheet and can do mail merge, and have 2-3 hours per month to give to Victoria Centre, please contact me!

Another way to get involved in Victoria Centre is to attend a Council meeting. Starting in 2007 these meetings will be held on the 3rd Wednesday of every second month, at 7:30pm in the Astronomy Lounge, Elliott Building 4th floor, University of Victoria. The next meeting is therefore January 17, 2007. Please contact me if you plan to attend, particularly if you want to add an item to the agenda. I will endeavor to post the agenda to the RASCVic email list a day before the meetings occur.

From myself and everyone on Victoria Centre Council, may you have a happy holiday season, and may we all have some clear dark skies to enjoy through our winter months ahead.

Joe Carr

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Centre of the Universe

The Christmas season is upon us and we have some terrific gift ideas from our giftshop. We have everything that an aspiring astronomer or a seasoned astronomer would want. We are even having a huge Christmas sale - 30% off ALL CLOTHING!! and other huge savings on selected items! Sale runs from Dec 1st until Dec 21st, while supplies last.

Christmas Shutdown

The Centre of the Universe will be operating within its regular hours during the month of December, but will be closed from December 22nd until January 9th so that all of our hard working interpreters can spend some time with their families and so we can prepare some exciting events in the New Year, so stay tuned.....

The Sky This Month

December 10	Moon occults Saturn (after 12:00 am PST)
December 12	Last quarter moon (6:32 am PST)
December 14	Geminid Meteor Showers Peak before dawn
December 20	New moon (6:02 am PST)
December 21	Winter Solstice (4:22 pm PST)
December 25	Christmas Day
December 26	Boxing Day
December 27	First quarter moon (6:49 am PST)

The winter constellations will shine high above the South East horizon at 8pm through December. Sitting slightly above the horizon, look for the hourglass shape of Orion, the hunter. Within the constellation Orion, you can find areas of star formation. The sword, the three stars under his belt, is host to another region of star formation called the "Orion Nebula". A small telescope or binoculars will show you, in good detail, a cloud of gas and dust and the brightest stars of the Orion Nebula.

Orion can be used as a tool for finding other constellations in the winter sky. Use the three stars in Orion's belt to point up to the "V" shaped nose of Taurus, the Bull. The brightest star in the "V" is Aldebaran, the "eye of the bull". Just to the right of Taurus, you will find a small grouping of bluish coloured stars called the Pleiades, or the "Seven Sisters".

If you track back to Orion's belt after 10 p.m., and draw a line down

towards the horizon, you will find a star called Sirius in Canus Major (Big Dog). Sirius is seriously the brightest star in our nighttime sky but is only the 7th closest star to our sun at 8.7 light years away. The closest star to our sun is a star called Proxima Centauri at 4.2 light years away but is not even visible to the unaided eye. How does that work? If you compare the brightness of the Sun, Sirius and Proxima Centauri, all at the same distance from us (comparing their absolute magnitudes), Sirius would be 22.5 times more luminous than the sun (ie: very bright) and Proxima Centauri would be 1/17700 as bright as the sun (ie: very dim). If Sirius is so bright, why can't we see it in the day? That's simple, the sun is a mere 150 million km away and Sirius is 82 trillion km away. The sun will outshine any star in our sky because it is so close to us.

December is the month for the Geminid meteor shower (named for the constellation Gemini in which most "shooting stars" will appear to come from). Usually, meteor showers occur when the orbit of the Earth passes through debris left behind by a comet. As the comet dust burns up in Earth's atmosphere, we are treated to meteor showers. The Geminids are slightly different in that instead of passing through comet dust, the Earth passes through debris left behind by an asteroid called Phaethon. This is the only known annual meteor shower that is caused by an asteroid, a rocky leftover from the formation of our solar system.

The best time to view the Geminids is after 10 p.m., December 13th. The peak of the shower, when you will see the most meteors, is just before dawn on December 14th. To observe the shower, look for two bright stars perpendicular to the Eastern horizon; these are the heads of the twins, Castor and Pollux. Lie on the ground in an open, clear area with your feet pointing towards these stars and look up!

This year's Geminids will coincide with a crescent moon meaning that the faintest of the meteors will be difficult to see. The good news is that moonrise is after 1:00 a.m. PST, leaving lots of time for dark sky meteor viewing. The Geminids often offer brilliant displays of colour with the brightest meteors showing up in yellow, green or blue.

The Planets

Of the five visible planets (visible to the unaided eye that is), only one is visible in the evening sky during this month. Mercury, Venus, Mars and Jupiter are day time planets, spending most of the month hidden in the