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**Members at Large**

Bill Almond, Sandy Barta, Dave Bennett, Jim Hesser, David Lee, Steve Pacholk, Colin Scarfe, Malcolm Scrimger

*this month  
monday nights*

**Astronomy Cafe**

**Closed for the season  
Will start up again in  
September**

Call Geoff at (250) 592-2264 for  
information.

**ASTRONOMY  
CAFÉ**



*second wednesday of the month*

**Monthly Meeting**

7:30 PM, Elliott Lecture Theatre,  
Rm 061, UVic.

*as sky and interest dictate*

**New Observers Group**

Hosted by Sid Sidhu.  
1642 Davies Road, Highlands.  
Call (250) 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



*on the cover*

## **Twin Crescents** by Charles Banville

The way things looked a few minutes prior to Venus being occulted by the Moon.

**Date:** April 22, 2009 at 05:25

**Location:** Mount Tolmie Park, Victoria

**Optics:** Optics: Borg 77EDII at f/4.3 on Tripod

**Camera:** Canon 20Da

**Exposures:** One single RAW image of 1/60 second, ISO 400.

**Process:** White balance correction with Canon DPP, cropped. Noise reduction with Neat Image.

*this month*

## **Members' Night** Bring your stories

**June 10th, 2009, 7:30 PM, Elliott Lecture Theatre, Rm 061, UVic**

Costa Rica Southern Skies - Joe Carr

Please contact our Vice President Lauri Roche if you have something you wish to present to our members at this meeting (250) 652-2361.

*contact us on-line*

**Web Site**

[www.victoria.rasc.ca](http://www.victoria.rasc.ca)

**New Members**

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huddle under cover by the afternoon as the winds and the rains came.

Somehow the end of the marathon was, perhaps, the most memorable. Sid Sidhu, David Lee and I had gone back in the evening to hear, James DiFrancesco, give a presentation on his adventures in Hawaii. There were a few dozen in attendance and, at the end of the talk, Sid and David set out their telescopes on the deck. There was a tremendous wind storm and the black clouds were scudding across the sky. It poured rain at one point. The branches of trees were littering the parking lot. It was freezing cold. Did this prevent Sid and David from continuing? Not one little bit. They were determined that the conditions were not going to get the better of them and they were not going to put the telescopes away until 11:00 pm to make sure the One Hundred hours were formally put in. David kept saying that he didn't think he'd ever done viewing under these extreme conditions but Sid kept telling people to come and see the Moon as it peeked out occasionally from behind the clouds.

And then just about 10:30 pm the wind started whisking away the clouds from the south and the sky began clearing. First a few stars, then the moon and finally Saturn appeared as clear as if there was not a cloud in the sky. By the end we had just four visitors and they were mesmerized by how great the viewing was. Sid kept saying "I told you so!" David took some great pictures of the visitors looking through the telescopes and we asked two of them their names so we could put them in the Skynews. And here is where the story makes a great ending. One of the young women was Katrina Pellatt, the daughter of our friend and member of our Society, Blaire Pellatt, who passed away this year. Blaire had been such a passionate advocate of sidewalk astronomy and was so involved in getting our Centre and members to take Astronomy to the streets that it seemed as if, with his daughter present right at the end of our hundred hour marathon, that he was saying thanks to us for carrying on his passion.

A hug thank-you to Sid Sidhu for all of the organization over many months (and for the cookies!), to Sherri Buttner and Sid for getting the volunteer roster organized, to Leslie Johnson at the Museum who helped get power to us outside (and comfy chairs), and particularly to the many fabulous volunteers who gave their time and talents to be at the Museum site and at the Centre of the Universe for all One Hundred hours and five minutes. It was a great Mammoth Marathon. Now, who is signing up for next year?

Lauri Roche

*A Mammoth Marathon*

Wow! We did it! For one hundred hours (and five minutes to be exact), from 7:00pm on Tuesday, April 28th to 11:05 pm on Saturday May 2nd, members of the Royal Astronomical Society in Victoria took astronomy to the community and gave over two thousand locals, tourists, and school kids an educational and entertaining experience.

Our Mammoth Marathon, named for the Royal BC Museum mascot, began on the sidewalk outside of the Museum right in the heart of downtown Victoria. As patrons came out from viewing the IMAX show, Cosmic Voyage, (and a presentation from one of our local UVIC professional astronomers) we deftly corralled them to join us to look through the telescopes at the Moon and Saturn. As expected, "oohs" and "ahhs" erupted around us.

As the wee hours of the night came on two ardent volunteers bundled up and took command of the tented area. We found out the following facts:

- Victoria closes down after 11pm on Tuesdays (and Wednesdays and...).
- It gets mighty cold out at night at the end of April in Victoria hours.
- And garbage pick up for the municipal bins starts at about 5 am.

Needless to say our number of public observers were rather thin that night, but as the new cohort of volunteers showed up early the next morning to let the overnighters go home there were still smiles all round as Venus was rising and the Sun peeked out behind the buildings.

Over twenty five dedicated volunteers continued the shifts all through Wednesday, Thursday, and Friday. Throngs of tourists from all over the world stopped by to do solar viewing, ask about International Year of Astronomy, and chat about Victoria. School kids tumbled out of buses and locals, rushing by to get to work, took a peek through the telescopes. We gave out lots of Astrocards and ran out of planispheres early on. We had people who came by during the day and then again at night, bringing their families and friends with them. We were blessed this whole time with fantastic weather and, from all accounts the marathon was a big success.

At about the 85 hour mark, on Saturday morning, the tent was taken down at the museum site and all the activity moved to the Centre of the Universe for Astronomy Day. Unfortunately our good weather deserted us, but undaunted, Alex Schmid set out his telescope on the deck, but had to

*IYA Report*

To celebrate the 400th anniversary of Galileo's first pointing a telescope towards the heavens, the Victoria Centre joined an international community of enthusiastic Amateur and Professional astronomers. The Centre's aim is to excite the public in celebrating the achievements of astronomy and appreciate our place in the cosmos.

At the start of 2009 the Centre embarked on its own, or in collaboration with other institutions in Victoria, an aggressive list of IYA related activities offering an opportunity to at least 20,000 Greater Victoria residents to experience a Galileo Moment (GM) of discovery.

**How have we done?**

The year-to-date GM count is 8,793. By the time you read this report the Annual Beaverie and the Fairfield Community events will have to be added to this number. We are not half way through the year and are well on our way to exceeding our expectations.

Here are a few of the activities to date:

- IYA kick-off events at the various malls.
- IYA soft launch at the CU.
- Participation at the Hobby Show
- FETTU events at the Bay and Victoria Airport.
- Took part in Be a Tourist in Your home town
- I-Max "Cosmic Voyage".
- 100 Hour Sidewalk Astronomy Marathon.

This is no time for us sit back and bask in the glory of what we have been able to accomplish. If you have not had an opportunity to volunteer, don't despair there are many volunteer opportunities ahead.

**What is next?**

The Centre members will be very busy during the summer (June, July and August), the event hosts will be seeking your time and expertise to engage with the public. There are a number of events on the list of *Upcoming Events* listed below.

### Neighbourhood Backyard Astronomy

Take astronomy to the people in your own neighbourhood, instead of having them come to our places of observing. This is an opportunity for you to introduce your neighbours to your hobby. You choose the day and time (from August 1st to August 31st). There are 31 days from which to choose, so there are no excuses for not having good weather conditions. Even making contact with one neighbour may qualify you for an unspecified award.

Rules of the game are:

- 1) **Period** - August 1st @ 00:00 hours to August 31 @ 24:00 hours.
- 2) **Place** - has to be in your neighbourhood, your front or back yard place, local park etc.
- 3) **People** - only your neighbours.
- 4) Prepare a report giving the number of neighbours at your party and a brief description of your experience. Please forward the event report to me so the GM counter accurately counted.

Each member should conduct his/her own star party without assistance from other Centre members. We have 180 members, let's have 180 back yard astronomy parties. You are not restricted to only one star party, host as many as you wish.

A package of handouts will be available at the regular June meeting, so let Sid know before June 8th.

### *Upcoming events*

Thru to June 4 - **Cosmic Voyage** - now playing at IMAX - Stunning computer animation with cutting-edge science gives us a sweeping view of the universe. Every Tuesday evening in April: speakers at 6pm & 7:45pm, and IMAX IYA Sidewalk Astronomy at 9:30pm.

June 2 - 20 - **A Short History of Night** a performance by Theatre Inconnu - theatrically charts the beginnings of modern science through the dramatization of two of the Renaissance's most colourful figures: Danish astronomer Tycho Brahe and geometrician/mystic Johannes Kepler. <http://www.theatreinconnu.com/>

June 1, 11:00am to 11:00pm, **Fairfield Community Centre**, Displays and observing

June 11, to September 10, 8:30pm to 10:30pm - **Butchart Gardens** (Lauri)

*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, 203 - 4920 Dundas St W, Toronto, ON M9A 1B7

[sales@islandeyepiece.com](mailto:sales@islandeyepiece.com)  
**250-743-6633**

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The image shows a Kendrick Astro Instruments DigiFire 10 Digital Controller. It is a white rectangular device with a central digital display showing '9%' and '12.0'. To the left of the display is a 'Low voltage cutoff indicator' and to the right are 'Optic Temperature Sensor Output 1' and 'Optic Temperature Sensor Output 2'. At the top left is an 'Ambient Temperature Sensor' and at the top right is a '12 v Dedicated' terminal. The device has several buttons and a 'Made in Canada' label at the bottom.

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*Presidents Message*

**June 2009**

The big news this month is the progress on our Victoria Centre Observatory. We have used funds received from the BC Gaming Commission to purchase more of the equipment needed to compete the observatory. That includes a Hyperstar camera lens and QSI 583 astro camera for remote and local imaging as well as a Tele Vue 127mm scope to complement the 14 inch Meade. In addition, Bruno Quenneville has organized to get a concrete pad and walkway with the help of a generous donation of concrete from TRIO Ready Mix.



In another significant milestone, the DAO has cleared a major hurdle we faced in making the VCO remotely accessible. Thanks to their generosity, we now have the necessary high speed that is essential for remote use. Their support of the VCO project has been crucial at every stage of the project and they have once again been there for us when we needed help.

Additional bits and pieces needed to complete the facility will be purchased with the rest of the grant funds through the summer. Once the new equipment is installed we will have a flexible facility for remote and local use with state of the art equipment we can all be proud of.

A big thank you to Sid and all the volunteers who have been keeping us on track to reach our goal of 20,000 Galileo experiences by the end of the year. With the year half way through, we are on target with half of the target already met. Well done everyone.

John

*Sid Sidhu and Dave Bennett at the 100 Sidwlok Astronomy Marathon at the RBCM*



June 13th – Buccaneer Days, **Pirate Den**, behind Archie Browning Sports Centre Centre, (Sid). Displays and observing.

June 21, 11am–2 pm - Beaver Beach, Elk/Beaver Lake Regional Park. **Celebrating Solstice**, Meet at the Nature Centre at Beaver Beach.

July 1, 10:00am to 4:00pm - **Memorial Park, Sidney Day**, displays and observing (Lauri)

July 5th - **Strawberry Festival**, Elk/Beaver Lake, (Sid) Displays and solar observing.

July 17 - 19 - **Island Star Party**, Victoria Fish and Game Club, Malahat.

July 25, to be confirmed, **Luminara at Beacon Hill Park** (Sid)

August 1st to August 31st - **Neighbourhood Backyard Astronomy**, (everyone, including you).

September 5 to 7, time to be determined, **Saanich Fair**, Stelly's X-Road, Saanichton

September 13, time to be determined, **Metchosin Day**, displays and observing

October 17 - Early Music Society of The Islands, Alex Goolden Hall, Victoria, B.C. - **GALILEO'S DAUGHTERS Perpetual Motion: Revolutions in 17th-Century Science & Music with Dava Sobel** – Author Dava Sobel eloquently narrates the story of coinciding revolutions in science and music in the 17th century, as breathtaking images of Earth and the heavens compliment the virtuoso singing and playing of soprano Sarah Pillow, her Baroque ensemble Galileo's Daughters, and lutenist Ronn McFarlane.

November 14, Gorge Vale Golf Club. **RASC Victoria Centre AGM** and Dinner. Speaker: Dr. Christian Marois (of extra-solar planets fame) from the HIA.

**For an up-to-date list, please visit the Centre website. If you would like to participate in any of the above events please call the event host.**

## Scoring More Energy from Less Sunlight

For spacecraft, power is everything. Without electrical power, satellites and robotic probes might as well be chunks of cold rock tumbling through space. Hundreds to millions of miles from the nearest power outlet, these spacecraft must somehow eke enough power from ambient sunlight to stay alive. That's no problem for large satellites that can carry immense solar panels and heavy batteries. But in recent years, NASA has been developing technologies for much smaller microsattellites, which are lighter and far less expensive to launch. Often less than 10 feet across, these small spacecraft have little room to spare for solar panels or batteries, yet must still somehow power their onboard computers, scientific instruments, and navigation and communication systems. Space Technology 5 was a mission that proved, among other technologies, new concepts of power generation and storage for spacecraft.

"We tested high efficiency solar cells on ST-5 that produce almost 60 percent more power than typical solar cells. We also tested batteries that hold three times the energy of standard spacecraft batteries of the same size," says Christopher Stevens, manager of NASA's New Millennium Program. This program flight tests cutting-edge spacecraft technologies



*Helen Johnson, a spacecraft technician at NASA's Goddard Space Flight Center, works on one of the three tiny Space Technology 5 spacecraft in preparation for its technology validation mission.*

so that they can be used safely on mission-critical satellites and probes.

"This more efficient power supply allows you to build a science-grade spacecraft on a miniature scale," Stevens says. Solar cells typically used on satellites can convert only about 18 percent of the available energy in sunlight into electrical current. ST-5 tested experimental cells that capture up to 29 percent of this solar energy. These new solar cells, developed in collaboration with the Air Force Research Laboratory in Ohio, performed flawlessly on ST-5, and they've already been swooped up and used on NASA's svelte MESSENGER probe, which will make a flyby of Mercury later this year. Like modern laptop batteries, the high-capacity batteries on ST-5 use lithium-ion technology. As a string of exploding laptop batteries in recent years shows, fire safety can be an issue with this battery type.

"The challenge was to take these batteries and put in a power management circuit that protects against internal overcharge," Stevens explains. So NASA contracted with ABSL Power Solutions to develop spacecraft batteries with design control circuits to prevent power spikes that can lead to fires. "It worked like a charm." Now that ST-5 has demonstrated the safety of this battery design, it is flying on NASA's THEMIS mission (for Time History of Events and Macroscale Interactions during Substorms) and is slated to fly aboard the Lunar Reconnaissance Orbiter and the Solar Dynamics Observatory, both of which are scheduled to launch later this year. Thanks to ST-5, a little sunlight can go a really long way. Find out about other advanced technologies validated in space and now being used on new missions of exploration at [nmp.nasa.gov/TECHNOLOGY/scorecard](http://nmp.nasa.gov/TECHNOLOGY/scorecard). Kids can calculate out how old they would be before having to replace lithium-ion batteries in a handheld game at [spaceplace.nasa.gov/en/kids/st5\\_bats.shtml](http://spaceplace.nasa.gov/en/kids/st5_bats.shtml).

*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>