

# SKYNEWS



Earth Walk - April 16th

**Wed. May 11, 2011 - Wide Binaries in the Kuiper Belt by Alex Parker**

***Please note***

May and June meetings will be held in the Bob Wright Bldg, A104 University of Victoria 7:30pm

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**NEXT MEETING**

June 8th, 2011  
University of Victoria  
Bob Wright Bldg.  
A104 Lecture Room

Member's Night

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

## On the Cover

### Dave Bennett demonstrates his telescope at Earth Walk 2011

Earth Walk is an annual fun family event that invites everyone to parade in colourful costumes, all for the love of this Planet!

The Paraders assembled at the BC Legislature grounds at noon on April 16th and heard from singer Jenni Pritchard of Yoga Shala.

Samba du Soliel led the Parade which started at 12:30pm. The Earth Walk parade went up Government Street to Spirit Square, (behind City Hall).

This year had Mufaro Marimba Band, the Raging Grannies, the Rabbleberries, Art Farquharson, and Soul 62 in concert in the Square. The speakers included, Cindy Sheehan talking about Peace Activism, Rose Henry addressing Social Justice, and Zoe Blunt speaking on the Environment. All this helped show support to the cause of saving the planet. Of course our RASC Victoria Centre had a booth and provided views of Venus and the Sun with Solar Telescopes our Sun Spotter. A big thank you to all the volunteers who came out and helped all day.

## May Speaker



### May 11, 2011 - Wide Binaries in the Kuiper Belt - Alex Parker

Alex is a fourth-year doctoral student in Astronomy, University of Victoria

Outside the orbit of Neptune lies a region of the

Solar System filled with icy bodies kept in deep-freeze since the era of planet formation. This region, called the Kuiper Belt, holds valuable information about the early and ongoing history of the Solar System. By determining the orbits, composition, and collisional histories of the objects in the Kuiper Belt, we can better understand the mechanisms which governed planet formation and the migration of the giant planets. A special class of Kuiper Belt objects orbit as pairs; these binary systems are particularly rich troves of information, and I will show how they answer some questions about the history of the outer

Solar System while at the same time they raise new ones about the mechanisms of planet formation

*Bio: After completing his Bachelors in Astronomy and Physics at the University of Washington, Alex now attends the University of Victoria as a fourth-year doctoral student in Astronomy. His research interests revolve around the formation and evolution of planetary systems: Asteroid and Kuiper-Belt Object dynamics and surface processes, detection and characterization of extrasolar planetary systems and protoplanetary disks, and planetary geology. Currently he is finishing his doctoral thesis on the dynamics of binary systems in the outer Solar System, and after defending his thesis this summer he will be heading to the Harvard-Smithsonian Center for Astrophysics to help locate a second target for the New Horizons spacecraft to visit after its rendezvous with Pluto in 2015. Alex Harrison Parker - Astronomy - Science*



## President's Message

The chances are pretty good that if you are reading this President's Message on-line you are a full-fledged member of the Victoria Centre of the RASC. You've decided to join

our group of approximately 170 people, mostly from the southern end of Vancouver Island, who are fascinated with astronomy, want to learn more and enjoy contributing to the growth of astronomy with the general public as well.

If you are a visitor to one of our programs or browsing our website then you might be aware of our meetings held each month at UVIC with interesting speakers and programs, our weekly Astronomy Café in Fairfield and our many activities in the Victoria area that we hold for public outreach. But these, for the most part, are accessible to everyone in the community and don't require paying of dues, so why bother becoming a member?

Well, here's what you're missing if you are not a member of the RASC already.

At the National level: involvement in a respected Canadian, scientific organization, a yearly subscription to the popular SKYNEWS magazine and the internationally known Observer's Handbook, the on-line Journal and Bulletin of the RASC, access to reduced prices for RASC publications and merchandise, full insurance coverage for individuals and for our local centre working at public events, as well as new discounts for all members with Budget Rental Cars and Delta Hotels across North America.

At the local level: you receive our own Skynews newsletter before it is made public, have access to the Victoria Centre Observatory on Little Saanich Mountain with its amazing telescopes and camera equipment, have the opportunity to rent a variety of telescopes and other equipment to try out before you make your own decisions, take out on loan a full library of books and other resources and participate in courses on astrophotography and other topics of interest from our in-house member experts. You may also exercise the right to sit on committees such as Technology or Light Pollution Abatement and have full voting privileges in order to have a say in the running of the organization. I've probably even missed several other benefits but you have the idea.

We know that the yearly membership fees for the RASC are not insignificant and membership is not taken lightly but the dues are comparable to similar organizations. We hope that if you are already a member you will continue to feel that the information, the programs, the resources and activities, and, most importantly, the people that become friends and colleagues are well worth the money you pay each year.

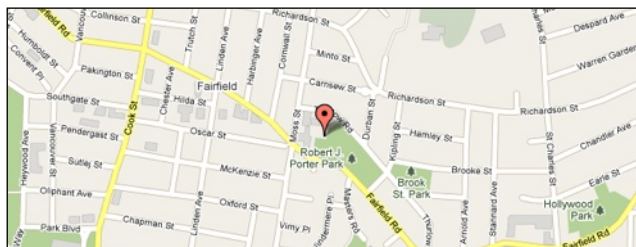
If you aren't a member yet, I encourage you to talk to people in our group, explore our website and the National website to obtain more information and come out and join us at a general meeting or at a public event. You don't need to have any particular expertise or knowledge of astronomy, nor any specialized equipment. Just come with an interest in finding out more, a dose of curiosity and a wish to explore. Then we hope that you, too, will discover what you are missing and that you really do want to access all the benefits that full membership would bring. Can we count you in?

Clear Skies... (some day soon!)

*Laurie Roche*

## Astronomy Cafe Corner

Astronomy Cafe has been doing well providing regular weekly socials for members and non-members of the Victoria RASC Centre. Coffee, tea and cookies are a regular staple that bring members and those recently



Map for Astronomy Cafe

interested in the hobby. Regular members provide presentations and videos to new and regular members of the club. On average there are 5 to 20 people that can attend. If you have a Monday evening free please drop by.

It is located at 1330 Fairfield Road (near the corner of Moss St. and Fairfield Road). 7:30 - 9 pm - See map.

*A special Astronomy Cafe' is being prepared for the FairField Community Association. This will take place on Monday, May 30th in the Community Centre's main building from 7pm - 10pm. You are encouraged to come, participate and enjoy the day and evenings activities. There will be telescopes, displays and presentations. Daytime views of the Sun and night time sightings of Saturn and other objects.*

*We are in need of volunteers. A signup sheet will be available at the May meeting.*

*Malcolm Scrimger*

## Meteors From Halleys Comet

**April 27, 2011:** Looking for an adventure? Get up in the wee hours of the morning May 6th and head out into the country, far from the city lights. You won't be alone. The birds will be up and singing about the coming dawn, and, of course, about the eta Aquarid meteor shower.

The eta Aquarids are best viewed from the southern hemisphere, but there's something special about them no matter where you live: "Each eta Aquarid meteoroid is a piece of Halley's Comet doing a kamikaze death dive into the atmosphere," explains NASA astronomer Bill Cooke. "Many people have never seen this famous comet, but on the morning of May 6th they can watch bits of it leave fiery trails across the sky."

A messenger from the dawn of the universe, Halley's Comet orbits the sun once every 76 years. Each time it swings by the sun, intense solar heat vaporizes about 6 meters of ice and rock from the nucleus. The debris particles, about the size of sand grains, spread along the comet's orbit, filling it with tiny meteoroids.

"Although Halley's Comet is deep in the outer solar system at the moment and won't return to Earth until 2061, it treats us to a meteor shower twice a year as our planet passes by the debris cloud," says Cooke. "In May we have the eta Aquarids, and in October the Orionids." And there is something especially significant about the 2011 eta Aquarids.

"This is your one chance this year to see meteors blaze across the sky without glaring moonlight dimming them."

A thin crescent moon will vacate the sky in the early evening, leaving a dark canvas for the display. Early risers are in luck, as the best viewing is an hour or two before dawn. Lie down where you can see as wide an expanse of sky as possible to catch more meteors with your peripheral vision. Look up into the darkness and relax.

The radiant for the eta Aquarids is in the constellation Aquarius. But you don't need to look toward the radiant to see the meteors.

"Meteors can appear in any part of the sky," says Cooke. "In fact their trails will tend to point back toward the radiant, so if you look that way the meteor may appear somewhat stubby. They'll appear much longer going by you than coming at you."

You won't need binoculars or a telescope to observe eta Aquarid meteors. The naked eye's field of view is usually best for seeing meteors, which frequently streak more than 45 degrees across the sky.

"Eta Aquarids are fast, moving at 66 km/s (148,000 mph!), and often trace long paths across the sky, sometimes leaving glowing, persistent trains. In the northern hemisphere, depending on your latitude [the closer to the equator the better], you should see from 10 to 40 meteors just before dawn."

Remember to pack a reclining chair or an old blanket to lie on, and a thermos of hot coffee would be nice. After all, you'll be up mighty early! The spring night air may be damp and chill, so bring along another blanket—or better yet, a big furry dog, both for warmth and company. Golden Retrievers work nicely.

It's sure to be a memorable experience. A night breeze caressing your cheek, the aroma of hot coffee in the predawn air, a gently rising chorus of birdsong accompanying your own personal light show -- and your greatest admirer by your side. It just doesn't get any better.

Author: [Dauna Coulter](#) | Editor: [Dr. Tony Phillips](#) |  
Credit: [Science@NASA](mailto:Science@NASA)

## Andeans used astronomy to determine agricultural calendar

Sources: *NewsWise* (10 May 2006), *Los Angeles Times* (14 May 2006), *The Sydney Morning Herald* (17 May 2006)

Archeologists working high in the Peruvian Andes have discovered the oldest known celestial observatory in the Americas — a 4,200-year-old structure marking the summer and winter solstices. The observatory was built on the top of a 33-foot-tall pyramid with precise alignments and sightlines that provide an astronomical calendar for agriculture, archeologist Robert Benfer of the University of Missouri said.

The find adds strong evidence to support the recent idea that a sophisticated civilization developed in South America in the pre-ceramic era, before the development of fired pottery sometime after 1500 BCE. Benfer's discovery "pushes the envelope of civilization farther south and inland from the coast, and adds the important dimension of astronomy to these ancient folks' way of life," said archeologist Michael Moseley of the University of Florida, a noted Peru expert. The name of the people who inhabited the region is unknown because writing did not emerge in the Americas for 2,000 more years. Some archeologists call them followers of the Kotosh religious tradition. Others call them late pre-ceramic cultures of the central coast. For brevity, most simply call them Andeans.

The Temple of the Fox, an ancient structure in the Chillón Valley that dates back to 2200 BCE, contains sculptures that can be associated with the agricultural calendar and Andean myth. "The Temple of the Fox is 1,000 years older than anything of its kind found before. It's also significant because it suggests people organized their lives around Andean constellations and provides evidence of the beginning of flood-plain agriculture," Benfer said.

In temples such as the one Benfer uncovered, the Andeans constructed offering chambers, used them for ceremonies and then built new chambers above the old. Benfer said this protected the Buena Vista site from looters, who came within one inch of the musician statuette while searching for gold and silver in the ancient temple. The well-preserved offering chamber holds ancient pieces of cotton and burned twigs, and Benfer's team used the twigs to radio-carbon-date the various components of the excavation site.

At the entrance to the Temple of the Fox, Benfer unearthed a mural of a fox incised inside a painted llama. He said the mural depicts the significance of the fox in Andean myth and astronomy. The fox taught the ancient Andean civilizations how to cultivate and irrigate plants and, according to Andean myth, is reincarnated by drops of water. Today, the constellation of the fox also is associated with water, and farmers use the call of the fox to predict rainfall.

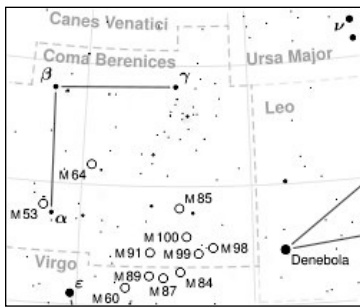
While excavating the temple and sculptures, Benfer discovered several alignments at the Buena Vista site that suggest Andeans used astronomical signs and constellations to guide their agricultural activities. The lines incorporate points at the temple entrance, at the offering chamber, on sculptures, and on surrounding ridges that align with the rising and setting sun on days of astronomical significance, such as the equinox and solstices. For example, from west to east, the offering chamber aligns with a modified rock on an eastern ridge, forming a 114-degree azimuth and pointing toward the rising sun on December 21, which is the southern hemisphere's summer solstice. This date begins the season where flood waters rise, El Niño weather patterns are predicted and plants should be

planted. On March 21, when flood waters recede, this same line points to the rising Andean constellation of the Fox. In addition, among the ancient statues Benfer excavated in Buena Vista is a personified disk that frowns at the sunset on June 21, the day marking the beginning of the harvest.

Benfer and archeologist Bernardino Ojeda of Peru's National Agrarian University have been working at Buena Vista for four years. The site contains ruins dating from 10,000 years ago to well into the ceramic era in the first millennium BCE. Benfer added that other Andean temple sites he has studied contain perfect 114-degree alignments and similar astronomical features, which act as additional evidence to support his findings.

## The Sky for May

In the Spring skies between Leo and Bootes the Constellation Coma Berenices holds one of the nearest open clusters, Melotte 111.



At a distance of 300 light years away Melotte 111 spans more than 5 degrees and its collection of stars range in brightness between 5th to 10th Magnitude. It will nicely fill the view of a pair of 7x50 binoculars but may also be seen visually

without binoculars under dark skies. The cluster is also your guide to the spring cluster of Galaxies that can be found with small to medium sized telescopes. In an 8 inch or larger telescope NGC 4565 should be your first Galaxy to look for. Here is good list of objects to find at this time of year.

NGC 4565 is a well-known edge-on spiral with highly visible dust lane from end to end. It's the largest galaxy of its type and has a visual magnitude of 9.6. The galaxy is found one degree due east of 17 Coma Berenices.

M64, the *Black Eye Galaxy*, is a bright (8.5) compact spiral one degree east-northeast of 35 Comae. The "black eye" can only be seen under ideal conditions with large telescopes. The galaxy is over 20 million light years away.

M53 is a globular star cluster one degree northeast of *alpha Comae*. The brightest Messier in the constellation (7.7), it tends to be most impressive with larger telescopes, which are needed to resolve the individual

stars. The cluster is thought to be 65,000 light years away.

*Malcolm Scrimger*

## Astronomy Day 2011

On behalf of Sid Sidhu and myself, I would like to take this opportunity to offer my heartfelt thanks to all of you who came out to Astronomy Day May 7th at the University of Victoria and also to the students and staff, who turned out to help. Although the public turnout was a little low, it was quite good for a new location and it truly was a matter of quality over quantity: every single comment from the public was overwhelmingly positive and enthusiastic. You all did a great job! There were very few glitches, and we are working to improve those for next year.

We counted a total of 92 daytime visitors, and another 11 hopeful souls who visited during the evening portion and managed to get in a little observing between the clouds.

Very special thanks go to Russ Robb, his students, and to UVic for allowing us to hold the International Astronomy Day at their facility this year. It is a wonderful venue, and without their kind assistance, our event may never have happened at all.

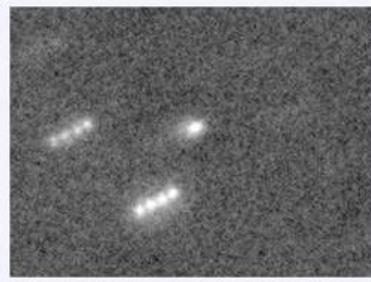
Again, my sincere thanks to all of you. Your participation was deeply appreciated.

*Clear skies!*

*Sherry Buttner, VP2 - Victoria Centre.*

## Comet Elenin to Visit this Fall

*May 4th 2011*



You may have heard the news: Comet Elenin is coming to the inner-solar system this fall. Comet Elenin, C/2010 X1), was first detected on Dec. 10, 2010 by Leonid Elenin, an observer in Lyubertsy, Russia, who made the discovery

"remotely" using the ISON-NM observatory near Mayhill, New Mexico.

Comet Elenin should be at its brightest shortly before the time of its closest approach to Earth on Oct. 16 of this year. At its closest point, it will be 35 million kilometers (22 million miles) from us. Can this icy interloper influence us from where it is, or where it will be in the future? What about this celestial object inspiring some shifting of the tides or even tectonic plates here on Earth? There have been some incorrect Internet speculations that external forces could cause comet Elenin to come closer.

"Comet Elenin will not encounter any dark bodies that could perturb its orbit, nor will it influence us in any way here on Earth," said Yeomans. "It will get no closer to Earth than 35 million kilometers [about 22 million miles]. NASA detects, tracks and characterizes asteroids and comets passing relatively close to Earth using both ground- and space-based telescopes. The Near-Earth Object Observations Program, commonly called "Spaceguard," discovers these objects, characterizes a subset of them, and predicts their paths to determine if any could be potentially hazardous to our planet.

JPL manages the Near-Earth Object Program Office for NASA's Science Mission Directorate in Washington, DC. JPL is a division of the California Institute of Technology in Pasadena.

More information about asteroids and near-Earth objects is at: <http://www.jpl.nasa.gov/asteroidwatch> , and on Twitter: @asteroidwatch

**ASTRONOMY  
CAFÉ**



**Fairfield Community Centre**

1330 Fairfield Rd. Victoria,  
7:30pm - 10pm

Call Malcolm at (778) 430-4136 for directions and information.

New comers are especially encouraged.



**New Observers Group**

Hosted by Sid Sidhu  
1642 Davies Road, Highlands. Call (250).391-0540 for information and directions.



**Email Lists**

**Observer / CU Volunteers / Members**

Contact Joe Carr to subscribe  
[web@victoria.rasc.ca](mailto:web@victoria.rasc.ca)

**NEXT MEETING**

**Wednesday June 8th - 7:30pm - Bob Wright Bldg. Lecture Room A104**

**RASC Victoria Council for 2010 / 2011**

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