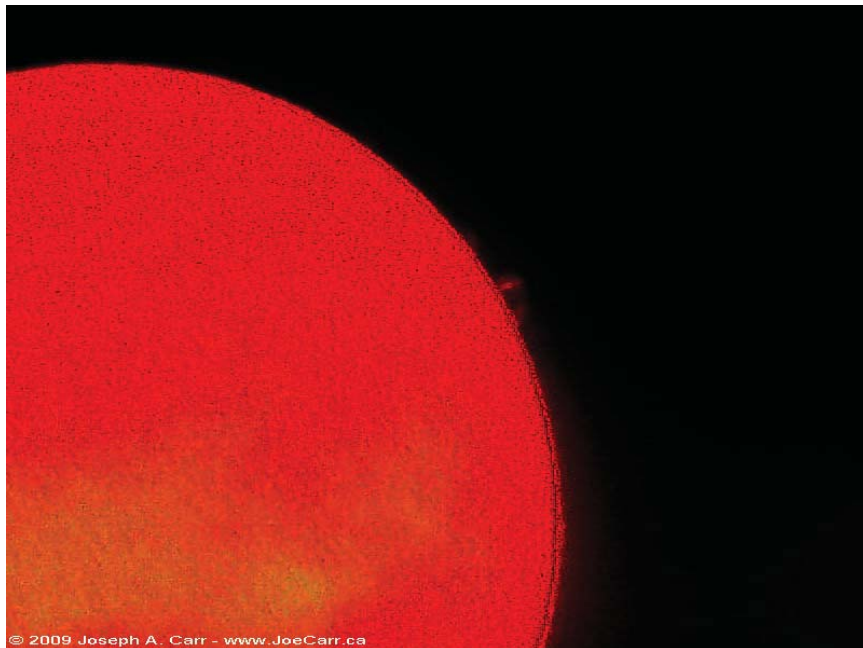


skynews



on the cover

Solar Flares in Ha Band

by Joe Carr

February 9, 2009 4:30pm PST, Victoria, BC

It's rare but not unheard of in February – the Sun was out this afternoon, and it was clear of clouds for a couple of hours. I took advantage and setup my new Lunt solar telescope on the back deck around 4:30pm and was rewarded with some quite spectacular solar flares. Having setup for a quick view, I didn't have the scope setup on a tracking mount, so I just handheld my point-and-shoot digital camera to the eyepiece and had a go.

Photo taken a-focally thru 24mm Panoptic, Lunt LS-60T double stacked solar telescope using an Olympus Stylus 770SW point-and-shoot digital camera.

Moderate contrast stretching and saturation enhancement done using ACDSsee Pro 2.

this month

Dr. Justin Albert

March 11, 2009, 7:30 PM, Elliott Lecture Theatre, Rm 060, UVic

Bio: Dr. Albert's principle areas of research are High Energy Physics and Experimental Cosmology. He received his Ph.D. from Princeton University in 2002.



"My research attempts to find answers to the following two questions: *Why is the universe predominantly made of matter (rather than equivalent amounts of matter and antimatter)?* and...

Why does the expansion of the universe appear to be accelerating? "

"In order to answer these two fundamental open questions in physics, I work on two experiments: BaBar and SNAP."

"On BaBar, we study the phenomenon of CP violation. CP (or charge-parity) violation is a property of the Standard Model of particle physics, and is observed when particles decay *via* just one of the 4 known physical forces: the weak interaction. As the physicist Andrei Sakharov showed in 1967, CP violation is necessary for a matter-antimatter asymmetry to develop in the early universe after the Big Bang. However, there is not enough CP violation in the Standard Model of particle physics to explain why the universe we observe today is made of matter. Thus we have the question of where the extra CP violation could occur. This is one of physics' major unanswered questions."

"My colleagues and I specifically search for CP violation in decays of bottom quarks to the triplet of quarks: $c \text{ anti-}c d$. This process is observable at the BaBar detector at the Stanford Linear Accelerator Center near Palo Alto, CA."

"This process is especially sensitive to potential sources of CP violation from extensions to the Standard Model at high energies which could help explain the asymmetry of matter and antimatter in the universe."

contact us on-line

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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>

Upcoming events

March 1-31 - Victoria International Airport - **From Earth to The Universe (FETU) exhibits** at the Victoria Airport.

March 3,- 7:30pm - **Free public lecture "Dark Matters"** by Professor Joe Silk, from the Department of Physics, University of Oxford at the Bob Wright Centre, Room B150, UVic.

March 11 - 7:30pm, Elliott Lecture Theatre, Rm 060, UVic. **RASC monthly meeting lecture** - Dr. Justin Albert, Assistant Professor, Dept of Astronomy and Physics, UVic

March 16-28 - Cattle Point in Oak Bay on selected nights (dates to be determined closer to the event). **GLOBE at Night**.

March 22, 2009 1:45pm - **IYA Cemetery Tour - Ross Bay Cemetery**
 A tour of astronomical notables at the Ross Bay Cemetery. Meet at 1:45pm, in front of Starbucks Coffee, Fairfield Plaza. \$5 - no reservations needed. Phone 250-598-8870 or www.oldcem.bc.ca

March 28 - Alex Goolden Hall, 907 Pandora Avenue - **Early Music Society of the Islands presents Lucidarium** - recreates performances of the itinerant professional musicians of the time period when Galileo first pointed his telescope skyward. There will be opportunities for night sky viewing after the performance, weather permitting.

April 2 - Centre of the Universe, Observatory Hill. **IYA postal stamp First Day of Issue Ceremony**.

April 8 - 7:30 PM, Elliott Lecture Theatre, Rm 060, UVic. **RASC monthly meeting lecture - Gravitational Lensing** - Mr. Karoun Thanjavat, Graduate Student, Dept. of Astronomy and Physics, UVic

April 19 - Noon - 2 pm, Gonzales Hill Regional Park. **Sunday, Sun Day**
 The Gonzales Observatory was designed to look at only one star – the sun! Join us as we use modern telescopes to look at the sun while exploring the history of this unique Victoria landmark. Meet at the observatory at the end of Denison Road, off Beach Drive

April 28 - May 2 - RBCM - **100 Hours Side Walk Astronomy Marathon**

May 2, 10 am - 4 pm - Centre of the Universe - **Astronomy Day**

May 13 - 7:30pm - Elliott Lecture Theatre, Rm 060, UVic. **RASC monthly meeting lecture** - *Active Galactic Nucleii* - Ms Emily Down, Visiting Astronomer, NRC HIA

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



Chris, John and Sherri at the Bay Centre FETU exhibit. Chris holds the proclamation from the Mayor of Victoria declaring 2009 IYA in Victoria.



Mars talk by Alain Berinstain at UVic.

Where did all these gadgets come from?!

Ion propulsion. Artificial intelligence. Hyper-spectral imagers. It sounds like science fiction, but all these technologies are now flying around the solar system on real-life NASA missions.

How did they get there? Answer: the New Millennium Program (NMP). NMP is a special NASA program that flight tests wild and far-out technologies. And if they pass the test, they can be used on real space missions.

The list of probes that have benefited from technologies incubated by NMP reads like the Who's Who of cutting-edge space exploration: Spirit and Opportunity (the phenomenally successful rovers exploring Mars), the Spitzer Space Telescope, the New Horizons mission to Pluto, the Dawn asteroid-exploration mission, the comet-smashing probe Deep Impact, and others. Some missions were merely enhanced by NMP technologies; others would have been impossible without them.

"In order to assess the impact of NMP technologies, NASA has developed a scorecard to keep track of all the places our technologies are being used," says New Millennium Program manager Christopher Stevens of the Jet Propulsion Laboratory.

For example, ion propulsion technology flight-tested on the NMP mission Deep Space 1, launched in October 1998, is now flying aboard the Dawn mission. Dawn will be the first probe to orbit an asteroid (Vesta) and then travel to and orbit a dwarf planet (Ceres). The highly efficient ion engine is vital to the success of the 3 billion mile, 8 year journey. The mission could not have been flown using conventional chemical propulsion; launching the enormous amount of fuel required would have broken the project's budget. "Ion propulsion was the only practical way," says Stevens.

In total, 10 technologies tested by Deep Space 1 have been adopted by more than 20 robotic probes. One, the Small Deep Space Transponder, has become the standard system for Earth communications for all deep-space missions.

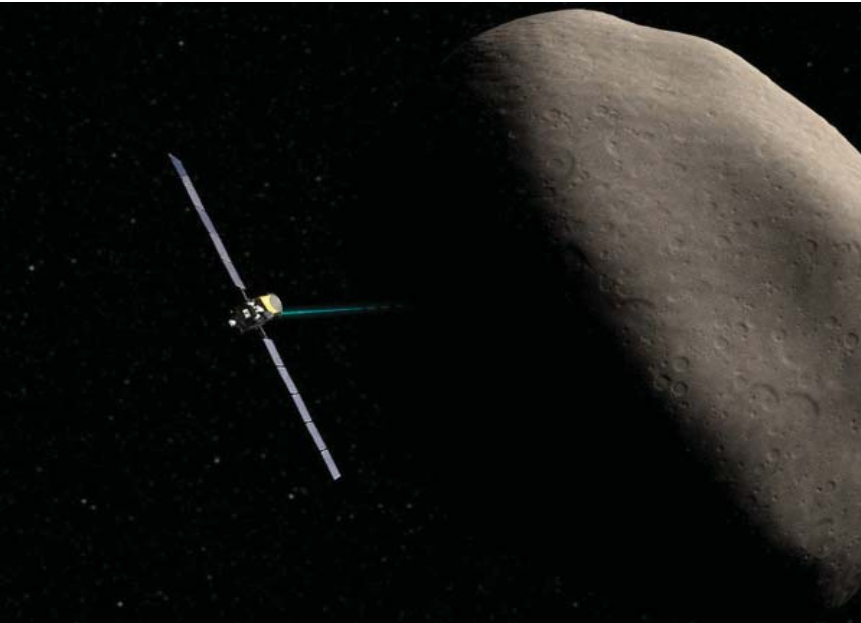
And Deep Space 1 is just one of NMP's missions. About a half-dozen others have flown or will fly, and their advanced technologies are only

beginning to be adopted. That's because it takes years to design probes that use these technologies, but Stevens says experience shows that "if you validate experimental technologies in space, and reduce the risk of using them, missions will pick them up."

Stevens knew many of these technologies when they were just a glimmer in an engineer's eye. Now they're "all grown up" and flying around the solar system. It's enough to make a program manager proud!

The results of all NMP's technology validations are online and the list is impressive: nmp.nasa.gov/TECHNOLOGY/scorecard/scorecard_results.cfm. For kids, the rhyming storybook, "Professor Starr's Dream Trip: Or, How a Little Technology Goes a Long Way" at spaceplace.nasa.gov/en/kids/nmp/starr gives a scientist's perspective on the technology that makes possible the Dawn mission.

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



Dawn will be the first spacecraft to establish orbits around two separate target bodies during its mission—thanks to ion propulsion validated by Deep Space 1.

March 2009

What a great IYA we are having in Victoria. The Bay Centre display exceeded all my expectations for the quality of the displays. The interest shown by the public in the videos, paintings and interactive material was evident from the moment the event was set up and it has not stopped.



Many of the visitors had a special Galileo experience discovering just how challenging it could be to look through the replica Galileo telescope and make out a tiny image of Jupiter that was pasted up on a column some distance away. It was an impressive demonstration of the achievements Galileo made with optical gear that seems so primitive 400 years later. Thanks to everyone from NRC, UVIC, RASC and the local colleges who organized, created, and volunteered to make this event a huge success.

The good stuff is not over. By the time you read this the Airport display will be in full swing and many more events are scheduled for the coming months - <http://victoria.rasc.ca/events/iya2009/docs/IYA2009Victoria.pdf>

One coming event gives me great personal pleasure. We are joining with the Cowichan Valley Starfinders Astronomy Club to have a joint Island Star Party this summer. It will be a special IYA oriented event to attract more of the public and I am very glad that we can do it in partnership with the Starfinders. They have always had finely run starparties and it will be great to work closely with them on this one.

Costs of rental for the Fish and Game site have risen and this will impact registration fees but the event will still be the best star party bargain you are likely to find. Early Bird savings will be available to keep the costs down. Check out: <http://victoria.rasc.ca/events/StarParty/Default.htm> for more information.

As a result of our IYA events, we have attracted a number of new members. On behalf of our Centre, I offer a warm welcome to all who have recently joined. We are glad to have you with us and look forward to

sharing our love of the night sky with you for years to come.

With all that has happened, and so much more that is planned, it is clear that this IYA year is having an good impact on our Centre and on the citizens of the region. It is your year to celebrate - Enjoy!

address change? information incorrect

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IYA

The France / Victoria Connection
by Jack Ruitenbeek

I am an RASC Life Member (such as they are these days) at Victoria Centre and although I live officially on Gabriola Island, I in fact spend 11 months a year in France, just outside of Geneva. I have hitched my observing wagon to the local astronomy club here in France called M51. Our club here obtained, last year, permission from the French IYA09 authorities to use their logo to do an on-line astronomy quiz. The original quiz was in French (based on a locally developed board game of the snakes and ladders type - called "Jonah and the Black Hole") and then it was translated into five other languages (English, German, Italian, Spanish, Dutch). The quiz itself is maintained on a server at the Lyon Observatory in France. I provided most of the English translation to the quiz as part of my local volunteer effort and in so doing they also permitted me (in the translation credits) to list my affiliation as "RASC Victoria Centre".

The quiz includes 50 multiple choice questions and is geared to young and old alike. The site is now up and running in 5 of the 6 languages (all except Spanish) and I welcome you to try it. (The Spanish version is now being proofread so may be up and running by the next issue).

The main site is at: <http://www.test-astronomie.com/>

That site shows the credits and by clicking anywhere in the big Logo you move to the entry site for the Quiz: <http://www.test-astronomie.com/accueil%20AMA09.html> where you choose your language (by clicking the appropriate flag), and off you go...

We have found it popular in classrooms while testing the site, and it is also a challenge to try it in a few languages if you think you have one mastered.

Wishing you all well, and clear skies,

Jack

Astrophotography



Charles Banville - Star Trails – Polaris
 January 29, 2009
 Death Valley National Park, CA
 Optics: Canon EF 17-40mm f/4L USM used at 17mm
 Camera: Canon 20Da on Tripod
 Exposures: 68 JPEG light frames of 1 minute at ISO 1600
 Process: Multiple images stacked with Photoshop.

Charles Banville - Comet Lulin C/2007 N3 Lulin
 January 29, 2009
 Mojave National Preserve, CA
 Optics: Borg 77EDII at f/4.3 on HEQ5 mount
 Camera: Canon 20Da
 Exposures: 8 light frames of 60 sec, ISO 800.
 Process: Calibrated with 20 dark frames and 20 flat frames in ImagesPlus. Combined using MinMax Excluded. Colour balance adjustment and cropped in Photoshop.



John McDonald
Orion rising over the Plaskett
 Modified Canon 350D Camera with 10-20mm lens on astrotrack.
 Five light frames for a total exposure of 25 min at ISO 200 and f5.6 with 20mm focal length. Two 5 min darks were used for calibration.
 Processing in Photoshop.



RASC victoria council

*this month
 monday nights*

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Astronomy Cafe

Fairfield Community Centre,
 1330 Fairfield, Victoria
 7:30-11pm

Call John at 250.480.0928 for directions and 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.