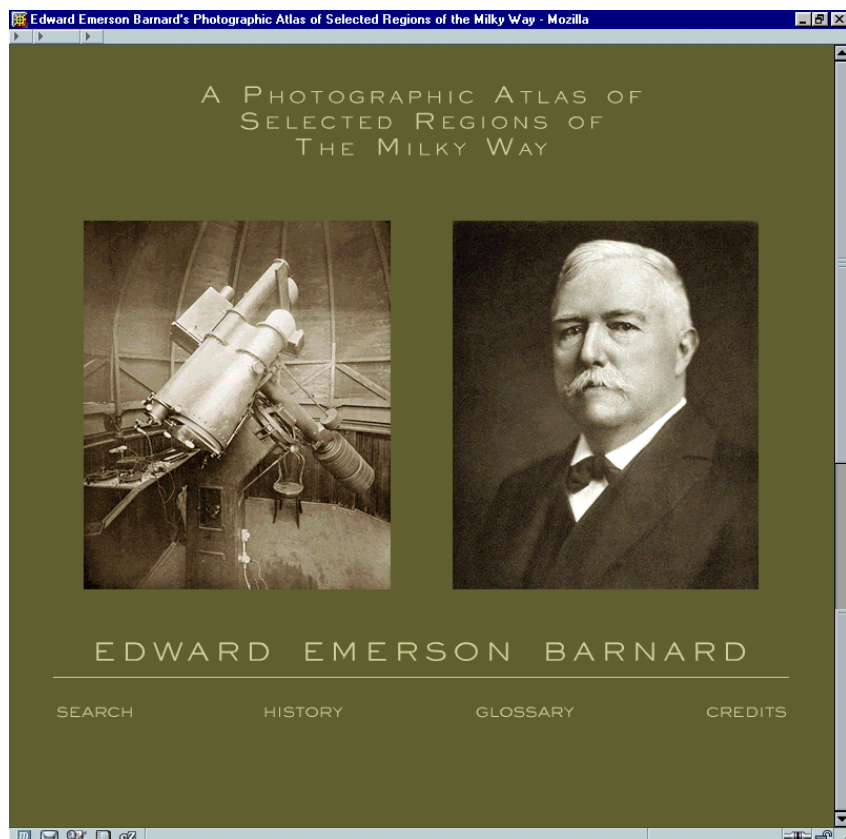


Web Page of the Month



A 'must see' posted to the National RASC email list:

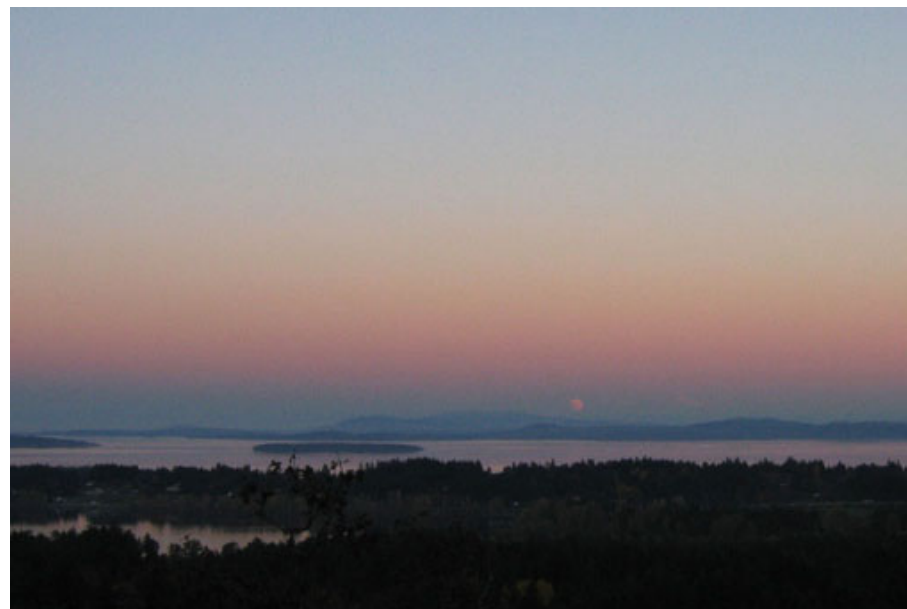
Anyone who has observed or is interested in observing any of EE Barnard's Dark Nebulae will be interested in this website.

It is a complete scan of EE Barnard's Photographic Atlas of Selected Regions of the Milky Way. It includes all the forwards, plate notes, chart and image of each plate. Since only a few thousand at most of these were ever produced and a single copy is now worth \$10,000 USD, this is the only way most of us will ever see this work. It is a joy just to read Barnard's notes about each plate and just gaze at the beautiful images he made of the Milky Way.

Clear skies! Paul Gray

<http://www.library.gatech.edu/barnard/index.html>

SKYNEWS



<http://victoria.rasc.ca/>

This Month

Sara Ellison & Jon Willis

Living on Thin Air

Many of the world's most powerful telescopes are situated on the lonely expanses of the Atacama desert in northern Chile. Drs Jon Willis and Sara Ellison spent three years living and working in Chile at the European Southern Observatory, home of the four 8-metre Very Large Telescopes. Drs Willis and Ellison talk encompasses several aspects of their Chilean experiences, including their work at the telescopes, scientific research done at these premier facilities and life at 2400 metres.

Dr Sara Ellison obtained her undergraduate degree in Physics with Space Science from the University of Kent at Canterbury, UK, in 1997 and her doctorate in astronomy from the University of Cambridge in 2000. She then moved to Chile to take up a fellowship at the European Southern Observatory. Here, Dr Ellison divided her time between research on the chemistry of high red shift galaxies and supporting operations at the 8-metre Very Large Telescopes in the Atacama desert. Dr Ellison moved to Canada in 2003, where she took up a Canada Research Chair in observational cosmology at UVic. Dr Ellison has been the recipient of several honours and awards, including a prize for her doctoral work from the Royal Astronomical Society and the 2004 Annie Jump Cannon award from the American Astronomical Society.

Dr Jon Willis obtained his undergraduate degree in Physics and Astronomy from the University of Glasgow, UK, in 1995 and his PhD in astronomy from the University of Cambridge in 2000. He then moved to Chile to undertake post-doctoral research at the Catholic University in Santiago. In 2002 Dr Willis joined the European Southern Observatory as Science fellow, combining research into the distribution of massive galaxy clusters with support operations at the La Silla observatory located at the southern limit of the Atacama desert. In 2003 Dr Willis moved to Canada to take up an Assistant Professorship at the University of Victoria

Contact Us On-Line

Web Site: <http://victoria.rasc.ca>

Victoria Council members:

president@victoria.rasc.ca

vp@victoria.rasc.ca

treasurer@victoria.rasc.ca

secretary@victoria.rasc.ca

librarian@victoria.rasc.ca

nationalrep@victoria.rasc.ca

newmembers@victoria.rasc.ca

web@victoria.rasc.ca

General Enquiries:

info@victoria.rasc.ca

RASC Victoria Council

This Month

President: Chris Gainor
1490 Thurlow Road
Victoria, BC V8S 1L9
380-6358
cgainor@islandnet.com

Vice President:
Bruno Quenneville
477-2257
brunoq@shaw.ca

Treasurer: Laura Roche
8581 Sentinel Place
Sidney, BC V8L 4Z8
656-2396
lroche@shaw.ca

Secretary and Recorder:
Li-Ann Dorrance
lidorrance@telus.net

Honourary President:
George Ball

Librarian & Telescopes:
Sid Sidhu
J.S._Sidhu@telus.net
Past President and
National Representative:
David Lee
479-5187
David_Lee@telus.net
Skynews Editor: Sandy Barta
Website Editor: Joe Carr
Email list: Joe Carr
web@victoria.rasc.ca

Members at Large:
Bill Almond, Jim Hesser,
Ed Maxfield, Frank Ogonoski,
Blair Pellatt, Colin Scarfe,
Rich Willis

New Members Liaison:
Sandy Barta



Astronomy Cafe

At Bruno Quenneville's
2019 Casa Marcia Crescent,
Victoria, BC.
Call 477-2257 for more information or
directions.

Newcomers are most welcome.
Come and enjoy!

Nov 17

Astro Imaging

**Every 3rd Wednesday
at**

Bill Almond's

354 Benhomer Drive

Nov 26

***New Observer's Group
At Sid Sidhu's:***

1642 Davies Road (off Millstream
Lake Road) at 8:00 PM.

Call 391-0540 for more information or
directions



Please Note!!

There is NO November meeting
at Uvic—it's at the Golf Club
on November 20

Saturday,
November
20

Annual Dinner

Gorge Vale Golf Club
see details inside

December 8

December Meeting

7:30 pm
Room 060, Elliott Building, UVic

**Yes, We post important,
timely, member-related
news to our email list.**

Online information about the RASC Vic
and Skynews email lists:

<http://victoria.rasc.ca/>
click on: 'Members Only'

Annual Meeting and Dinner

Saturday, November 20, 2004
Gorge Vale Golf Club
1005 Craigflower Road, Victoria, BC
Bar opens 6:00 pm
Dinner 7:00 pm
Speakers 8:00 pm
Cost \$28.00 per person

Please note: attendance to the business meeting only is no charge

Purchase tickets at the October General Meeting, or order by phone or email with payment at the door.

Let Lauri know by Monday, November 17 so she can reserve you a spot.

PHONE: (250) 652-2361 EMAIL lroche@shaw.ca

2005 RASC Calendars \$13.00 each
100th anniversary mugs \$6.00 each

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President's Message

Whether we know it or not, when we peer into our telescopes we are looking back in time. The moon is only a few seconds back, the planets minutes, and the brighter stars a number of years. The light from most of the faint fuzzies we love to look at is hundreds of thousands or millions of years old.

My major occupation these days is looking into the past with books rather than astronomical gear, although I use the latter when I can. I am studying history at the University of Alberta with the only professional historian in Canada whose area of expertise is astronomy and space exploration.

My advisor, Dr. Robert W. Smith, has written histories of the Hubble Space Telescope and of the "Great Debate" in astronomy in the early part of the 20th century about the expansion of the universe. This fall, a new National Geographic book on Hubble written by Dr. Smith and Dr. David DeVorkin of the Smithsonian Institution is in bookstores.

I have long been interested in the history of space exploration and astronomy. At the U of A I am learning a great deal about the wider history of science, and I am doing some research work on the James Webb Space Telescope, which will look deeper into the universe than Hubble. Even though JWST is still at least seven years away from launch, its history goes back more than a decade already, and I am helping to preserve that history.

When the Victoria Centre was established 90 years ago, the Dominion Astrophysical Observatory was briefly the largest telescope on Earth. There John S. Plaskett made important findings about the nature of our galaxy. Since then, much more powerful telescopes have been built and more discoveries made, many of them with the help of the staff based at the DAO.

(Continued on page 4)

Address Change? Information Incorrect?

Telephone: (416) 924-7973 (toll-free at (888) 924-RASC in Canada)

Fax: (416) 924-2911

E-Mail: mempub@rasc.ca

Website: www.rasc.ca

Postal Mail: RASC, 136 Dupont Street, Toronto, ON M5R 1V2, Canada

General enquiries: nationaloffice@rasc.ca

The deadline for the next issue of *Skynews* is

November 21 2004

Get your *Skynews* early and in colour. Tell Lauri, our Treasurer, that you get *Skynews* on line and we won't mail you a copy

(Continued from page 3)

Most of us have been privileged to witness humanity's first halting steps into the cosmos, which are continuing with today's explorations of Mars, Saturn and other places in the solar system.

The knowledge we have gained from these efforts means that our conception of the universe today is vastly different from that of the founders of the Victoria Centre. In the years to come, I hope to do my part in chronicling those changes and how they came about.

This month, I am stepping down as president of the Victoria Centre. I want to thank once again our terrific council and the fabulous members who make our centre a great organization to be a part of. I know our new council will continue to do the great job our outgoing and past councils have done, and I look forward to rejoining you all when I get back to Victoria in the spring.

Chris Gainor



On the Cover!

October 27, 2004

The moon was just rising at 6:01 over Elk Lake and the ocean. Mount Baker is just barely visible in the mist to the right.

Brenda Stuart

(Continued from page 12)

Calgary Light Pollution Abatement Website:

<http://www.syz.com/rasc/lp/frame.html>

Saskatchewan Light Pollution Abatement Website:

<http://www.ras.sk.ca/lpc/lpc.htm>

RASC National Light Pollution Abatement Website:

<http://www.rasc.ca/light/home.html>

The International Dark-Sky Association: <http://www.darksky.org/>

Lunar Eclipse

Thanks to all the members who came to Cattle Point for the eclipse: John Adlington, Kevin and "Di" Campbell, Blaire Pellatt, Alex Schmid, and Guy Walton.

The weather couldn't have been better. There was no trace of wind. Approximately 100-150 people came; they were very polite and very appreciative. There was a steady stream of traffic from 6:00 pm right through to 9:00 pm.

The moon was the "star" of the show! It's easy to see how people regarded this event as an omen — it was very eerie experience when the very brightness of the full moon light was cast to a pallor.

Clearly Yours Blaire Pellatt

Just to let people know. Joe's photo made Spaceweather. Way to go Joe!

I like how you can see the jet's exhaust.

http://science.nasa.gov/spaceweather/eclipses/gallery_27oct04_page4.html

Eric Schandall our "foreign correspondent" in New York has an eclipse image in the gallery on Spaceweather.com

Bill Weir and David Lee

Editor's note: Make sure you check out our web site for all the great images taken by our members—I just don't have room for them and you miss the amazing copper colour of the Moon in this black and white publication ...

Upcoming Meeting

December	TBA
January	Dr. JJ Kavelaars, HIA, DAO. Hunting for Moons
February	Gail Conway, Malaspina College, Nebulae
March	TBA
April	Laura Ferrarese and Pat Cote, DAO
May	Russell Robb, U Vic
June	TBA

Cypress Hills Dark Sky Preserve

On September 28, 2004 at approximately 10:00 pm CST, a declaration was made creating a unified CYPRESS HILLS DARK-SKY PRESERVE. It was signed at the Cypress Hills West Block Ranger's Station in Saskatchewan, Canada and includes Cypress Hills Centre Block (SK), Cypress Hills West Block (SK), Cypress Hills West Block (AB) and Fort Walsh National Historic Site (SK). Cypress Hills Interprovincial Park (CHIPP) is now the largest Dark-Sky Preserve in Canada with a total of 39,600 hectares (97,800 acres).

The signing took place as part of the Canadian Parks Council Conference, where about 70 park managers from all across Canada and the northwest U.S. were in attendance to witness this historical event. The Dark Sky Preserve was formed through a partnership of Saskatchewan Environment, Alberta Community Development, Canada Parks agency and the Royal Astronomical Society of Canada (RASC). Representing the RASC at the ceremony were Bob King (Calgary, AB), Vance Petriew (Regina, SK) and Richard Huziak (Saskatoon, SK). Park Managers Brad Mason (CHIPP SK), Rick Goett (CHIPP SK), Julie MacDougall (CHIPP AB) and David Rohatensky (Ft. Walsh) are delighted at the declaration and look forward to protecting their natural dark skies environmentally, historically and culturally for park visitors to enjoy.

Cypress Hills Interprovincial Park Centre Block has been the home of the annual Saskatchewan Summer Star Party (SSSP) for the past eight years. Amateur astronomers from all over the world come to the SSSP to enjoy the dark skies and natural beauty the park has to offer:

<http://duke.usask.ca/~ges125/rasc/sssp2004.html>

Clear and Dark Skies on behalf of:

Vance Petriew	Saskatchewan Light Pollution Abatement Committee RASC - Regina Centre http://www.ras.sk.ca
Richard Huziak	Saskatchewan Light Pollution Abatement Committee RASC - Saskatoon Centre http://duke.usask.ca/~ges125/rasc/
Bob King	Chair, Light Pollution Abatement Committee RASC - Calgary Centre http://www.syz.com/rasc/

Other URL's to enjoy:

Alberta Community Development Press Release:

<http://www.gov.ab.ca/acn/200410/17199F8DE4BA5-F138-48B2-B2BF1B080BBE4F2D.html>

Saskatchewan Environment Press Release:

http://www.se.gov.sk.ca/media/Saskatchewan%20Environmentnewsreleases/cypress_dark.htm

More images of the Declaration: <http://www.ras.sk.ca/lpc/dsp/dsp.htm>

(Continued on page 13)



A Summer Vacation Tracking Down UFOs

Erin Schumacher's summer job for NASA was to look for UFOs. Erin is a 16-year-old high school student from Redondo Beach, California, attending the California Academy of Mathematics and Science in Carson. She was one of ten students selected to work at NASA's Jet Propulsion Laboratory (JPL) in Pasadena as part of the Summer High School Apprenticeship Research Program, or SHARP.

But, is studying UFOs a useful kind of NASA research? Well, it is when they are "unidentified flashing objects" that appear in certain images of Earth from space. Erin worked with scientists on the Multi-angle Imaging SpectroRadiometer (MISR) project to track down these mysterious features. MISR is one of five instruments onboard the Earth-orbiting Terra satellite. MISR's nine separate cameras all point downward at different angles, each camera in turn taking a picture of the same piece of Earth as the satellite passes overhead. Viewing the same scene through the atmosphere at different angles gives far more information about the aerosols, pollution, and water vapor in the air than a single view would give. Ground features may also look slightly or dramatically different from one viewing angle to another.

Erin's job was to carefully examine the pictures looking for any flashes of light that might be visible from just one of the nine angles. Such flashes are caused by sunlight bouncing off very reflective surfaces and can be seen if a camera is pointed at just the right angle to catch them. Because the satellite data contain precise locations for each pixel in the images, Erin could figure out exactly where a flashing object on the ground should be. Her job was then to figure out exactly what it was that made the flash-in particular, to see if she could distinguish man-made objects from natural ones.

When Erin began working at JPL, scientists on the MISR project had already identified two large flashes out in the middle of the Mojave Desert in Southern California. These turned out to be from solar power generating stations. Soon, Erin began finding flashes all over the place. She learned how to apply her math knowledge to figuring out how the objects would have to be oriented in order to be seen by a particular MISR camera. One time, she and a team of MISR scientists and students went on a field trip to the exact locations of some flashes, where they found greenhouses, large warehouses with corrugated metal roofs, a glass-enclosed shopping mall, and a solar-paneled barn. For some flashes, they could find nothing at all. Those remain "UFOs" to this day!

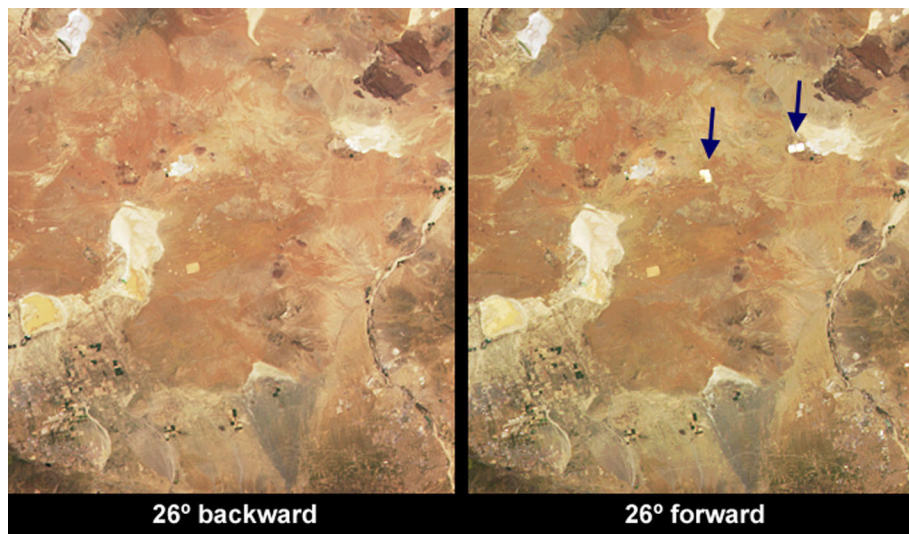
(Continued on page 6)

The Space Place Continued

Learn more about SHARP at www.nasasharp.com and Earth science applications of MISR at www.misr.jpl.nasa.gov. Kids can do an online MISR crossword at: spaceplace.nasa.gov/en/kids/misr_xword/misr_xword1.shtml.

By Diane K. Fisher

Note: We have a new activity on the Space Place Web Site. It's called the Astounding Earth Quiz Show. We can't make you a millionaire, but you can have some fun and see how much you know about your own home planet. Play the new quiz show at:
http://spaceplace.nasa.gov/en/kids/quiz_show/ep001/



Two cameras on MISR made these images of the same part of the Mojave Desert. The camera pointed at an angle of 26 forward saw the flashes from two solar electric power generating stations. These objects are nearly invisible at the other angle..

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

Centre of the Universe Continued from page 10

meetings are the smallest ones. I came across a paper from Germany for a proposed satellite called the Dobson Space Telescope, and yes, it is based on the Dobsonian telescopes we have come to know and love here on Earth.

The idea for this telescope is that a great deal of science can be done by so-called micro satellites (classed as satellites weighing between 10 and 100 kg), as the 60-kg MOST and other spacecraft have proven. Satellite builders and researchers in Canada and many other countries are turning away from large spacecraft and going to smaller vehicles.

But a problem with small space telescopes is that they face space limitations at launch in addition to weight constraints. So the Dobson Space Telescope is designed to unfold once it is in space before going to work. It will have a structure something like Guy Walton's portable Dobs.

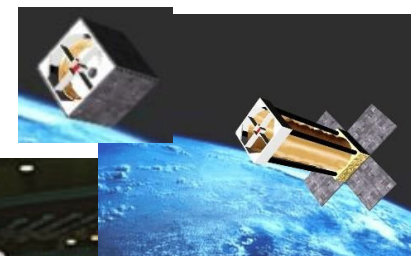
More information on this project is available at
<http://www.dobson-space-telescope.com/>

This type of satellites can be used for both astronomical research and for remote sensing of the Earth.

Canada showed at the congress that it is active in space exploration, and I did my part when I delivered one of the first papers on the history of Canada's space program to a congress session on the history of space exploration.

Chris Gainor

The Dobson
Space Telescope
folded and open



Spaceman Chris



(Continued from page 9)

new stars that have formed in the same region of space. Point a pair of binoculars or a small telescope at the Pleiades to reveal more hot blue stars and gas and dust surrounding them.

Look to the East in the early mornings of November. You will find planets positioned just above the horizon. The bright "star" you will see is actually the planet Venus, sometimes called the "morning star". Look on the morning of the 9th to see Venus close to both Jupiter and the Moon.

Clear skies and happy stargazing! Cassie

International Astronautical Congress

Vancouver hosted one of the biggest annual gatherings of space experts during the International Astronautical Congress that took place the first week of October. Members of the public were able to take part in activities that were set up under Space Fest 2004 at the convention centre and the H.R MacMillan Space Centre.

The congress emphasis was on spacecraft and launch vehicles. But those interested in astronomy had plenty to see, including a lecture on the Hubble Space Telescope by Dr. Bruce Margon of the Space Telescope Science Institute, and a talk on Canada's MOST satellite, also known as the Humble Space Telescope, by Dr. Jaymie Matthews of the University of B.C. astronomy department.

Both talks emphasized the baffling results from both spacecraft that have astronomers rethinking their theories of how the universe works. Dr. Margon noted that Hubble has found that the universe is continuing to expand at a faster rate, and Dr. Matthews spoke about how MOST found that the star Procyon is not as prone to seismic activity as astronomers expected.

A large number of sessions at the congress were given over to the latest results from spacecraft at Mars, including the two Mars Exploration Rovers on the surface and Europe's Mars Express spacecraft in orbit around the Red Planet. Even though the rovers are well past their period of guaranteed operation and have gone through a Martian winter, they are still going strong. Richard Cook, who until recently was rover Project Manager, is now at work on a spacecraft that's due to land on Mars in 2009. Russian government representatives spoke of their plans to launch a new spacecraft to Mars' moon Phobos in a few years' time.

There were many astronauts present, but the star of the congress was surely Yang Liwei, who less than a year before became China's first Taikonaut when he was launched in the Chinese Shenzhou spacecraft. His appearance brought a standing room crowd to its feet, even though he didn't utter a word.

Back to astronomy. Sometimes the most interesting presentations at these

(Continued on page 11)

Report from the Centre of the Universe

November

I hope everyone is enjoying the fall and had a chance to see the beautiful lunar eclipse! I big thank you to each of you who helped out with the Lunar Eclipse event! It was a huge success!

We have some special events coming up this November at the Centre of the Universe!

We are now into our winter hours – we are open daily from 10 am to 5:30 pm Tuesday through Saturday. We do have a few evenings in November when will be open, so mark your calendars...

Leapin' Leonids!

Join us Tuesday, November 16 and Wednesday November 17 from 7 to 11 pm for two evenings of shooting stars as we celebrate the annual Leonid Meteor Showers, the highlight of the November sky! Earth is passing through the tail of Comet Temple-Tuttle, and tiny particles of space debris will fall through our atmosphere creating fabulous "shooting stars"! Join us for family friendly programs about meteors, crafts and other activities for kids, and watch and listen to shooting stars!

Christmas at the Centre of the Universe

Celebrate Christmas with the Centre of the Universe Saturdays, November 27 and December 4 from 7 to 11 pm! Was there really a "Star of Bethlehem"? What Christmas gift should you buy the stargazer in your life? We will answer all these questions as we celebrate the "most wonderful time of the year"! Join us for multimedia shows, planetarium presentations, telescope tours and telescope observation (weather permitting) and do some Christmas shopping with 10% off in our gift shop, excluding telescopes, binoculars and telescope accessories.

Centre of the Universe Courses

We still have room in our upcoming astrophotography course and you still have time to sign up for our "Planets" course in January! For more information on courses, please visit http://www.hia-ihc.nrc-cnrc.gc.ca/cu/ast_e.html.

Astrophotography at the Centre of the Universe An introductory two-evening course taught by David Lee

Tuesday, November 2nd, Wednesday, November 3rd, 2003 and Tuesday, November 9th, from 7 to 10 p.m.

Cost: \$89. Class size limited to 30. To register: (250) 363-8262

(Continued on page 8)

(Continued from page 7)

Equipment required: None! The course is intended for those who have little or no equipment and are interested in the possibilities of astrophotography. However, if you have an SLR camera or advanced digital model, you're welcome to bring it (and telescopes, too) for consultation and experimentation after class.

Did you ever see an amazing photograph of the night sky and think, "Gee, I wish I could do that!"? In fact, you can get started in astrophotography with relatively simple gear. This two-evening course introduces you to the possibilities of night-sky photography, both film and digital, starting at the most basic level and examining what is possible with more advanced equipment. The course will be a combination of informal lectures, multimedia presentation, question-and-answer, and, weather permitting, night-sky observing at the Dominion Astrophysical Observatory.

David Lee is well-known in Victoria as an amateur astrophotographer. He is an advocate of public outreach in Astronomy and the Sciences and is currently the National Representative of the Royal Astronomical Society of Canada, Victoria Centre. His photographs have been published in Skynews, Sky & Telescope and various space-related websites.

David Lee has a B.Sc. from the University of Victoria (Mathematics and Psychology) and a Visual Communications Diploma from the Banff Centre School of Fine Arts. He has been an instructor in digital photography at Camosun College at both introductory and advanced levels.

The Centre of the Universe is now presenting a Starlab Planetarium Outreach Program:

Bring the Centre of the Universe to your school with the Starlab planetarium. The Starlab is a fully portable planetarium which is easily set up in any gym, multi-purpose room or library. Treat you class to the magic of the night sky without leaving your school! Up to 6 classes per day can be accommodated with curriculum-linked programming. For more information on costs and availability, please call the Centre at 250.363.8262.

Christmas Parties at the Centre of the Universe

Are you looking for a unique place to hold your corporate Christmas party this year? Join us at the Centre of the Universe for a dinner under the stars and exclusive programming! For information on costs and capacity, please call 363.8262.

The Sky This Month: October 2004 (All times and dates local to Victoria, BC)

November 5	Last Quarter Moon
November 9	Venus, Jupiter and Moon in close proximity in East one hour before sunrise

(Continued on page 9)

(Continued from page 8)

November 12	New Moon
November 16	Leonid Meteor Showers Peak
November 19	First Quarter Moon
November 26	Full Moon

Every November, the Earth passes through debris left behind by comet Tempel-Tuttle, a comet that swings by the Earth every 33 years. As this debris hits our atmosphere, it burns up and we are treated to a beautiful show of shooting stars. Named after the constellation Leo, this year's Leonids are predicted to be rather good. Between November 13 and 23, you should be able to see quite a few shooting stars; the Leonids will peak this year in the early morning of the 17th. You don't need any special equipment to view a meteor shower. Head outside to a nice dark, open location around 11:30 p.m. Lie on your back with your feet pointed to the east and look up. The shooting stars will mostly appear to be radiating from the constellation Leo, the giant "backwards question mark" just off the horizon.

Join us at the Centre of the Universe on Tuesday, November 16 and Wednesday, November 17 from 7 to 11 p.m. We will celebrate the meteor shower with fun-filled presentations, family activities and meteor watching. Enjoy the shower! For more information on this year's Leonids, visit:
http://skyandtelescope.com/observing/objects/meteors/article_1362_1.asp.

Look to the South at 9 p.m. to find the "Great Square" of Pegasus, a beautiful fall constellation. This is a large box of bright stars high off the horizon in the East. Attached to the far star at the left-hand side of the diamond you may see a shape like the front end of a canoe. This is the constellation Andromeda. Just above this constellation you may be able to see a small, hazy patch of sky just before you run into the canoe of Andromeda. This is the Andromeda Galaxy, our closest galactic neighbour and the only galaxy you can see with your naked eyes. The Andromeda Galaxy is over 2 million light years away; making it also the farthest object away from the Earth that we are able to see with our naked eyes.

While you are gazing at the fall constellations, look to the East. This is where you will find our winter constellations rising. Just above the Eastern horizon, you will find the great hunter Orion. Orion is shaped like an hourglass with three stars at the centre forming his belt. The bright red star at the upper left of the constellation is Betelgeuse, a red super giant 800 times the size of our sun. The bottom right portion of the constellation will show you a contrasting bright blue star. Rigel, a blue super giant, is a newer star about 60,000 times more luminous than our sun. Look above Orion to discover a v-shape of stars in the sky. This is the face of Taurus the bull. Just up from Taurus, you will see a beautiful open cluster of stars called the Pleiades. An open cluster is a group of relatively

(Continued on page 10)