

Web Page of the Month



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

Hi all,

Lunar Topographic Orthophotomaps are available for downloading at:

<http://www.lpi.usra.edu/research/mapcatalog/LTO/index.shtml>

They are available in two different resolutions or even higher resolution by special request. Check them out!

Dave Roles

And, while you're in the neighbourhood, check out:

<http://www.lpi.usra.edu/education/>

and

<http://www.lpi.usra.edu/library/website.shtml>

SKYNEWS



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

This Month

Doug Johnstone

The JCMT: Past, Present, and Future

The James Clerk Maxwell Telescope is the premier single-dish submillimeter telescope in the world. Canada is a major partner in the telescope, along with the UK and the Netherlands. In this talk I will discuss why astronomers are interested in observing at these wavelengths, why observing at these wavelengths is so difficult, what we have learned so far, and what we hope for the future.

Doug Johnstone is an Astronomer at the National Research Council's Herzberg Institute of Astrophysics in the Millimetre Astronomy Group. He graduated from the University of Toronto in 1989 with a B.Sc. with High Distinction. He completed his M.A. in Astronomy at the University of California, Berkeley in 1991. He received his Ph.D. in Astronomy from the University of California, Berkeley in 1995—his thesis was on photoevaporating disks around young stars.

Doug's current research includes a survey of star-forming regions, sub-millimetre observations of star-forming regions in the Orion A molecular cloud with the JCMT SCUBA instrument, exploring the mechanisms through which a young star will lose its gaseous disk, and Doug is a member of the Canadian Galactic Plane Survey.

On the Cover!

Lunar Eclipse & Occultation by Aircraft

What are the odds of an aircraft passing in front of an eclipsed Moon? Here a Dash-8 turboprop aircraft flying from Seattle to Victoria crosses the partially-eclipsed Moon).

Joe Carr

Contact Us On-Line

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RASC Victoria Council

This Month

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Members at Large:
Bill Almond, Jim Hesser,
Ed Maxfield, Frank
Ogonoski, Blaire 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!

Dec 15

Astro Imaging

**Every 3rd Wednesday
at**

Bill Almond's

354 Benhomer Drive
478-6718

Dec 17

**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



January 12

January 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 RASCVic
and Skynews email lists:

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

click on: 'Members Only'

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grams and mentioned that all telescopes have been signed out. He called for Volunteers for upcoming dates. Sid informed the members that Bear Mountain Golf Course has asked for input on light pollution abatement to be included in their planning.

New Members: Bruno welcomed visitors and new members at the meeting.

Council: David Lee reported that there are four elected positions for council including President, Vice President, Treasurer and Recording Secretary. For the term beginning November 20, 2004, Bruno Quenneville will continue as Vice president and Li-Ann Dorrance will remain as recording secretary. Scott Mail has been nominated for the position of President and David Griffiths has been nominated for the position of Treasurer. Further nominations may be made to David Lee who will remain as our National Representative. Chris Gainor will be the Past President and Lauri Roche will step down as Treasurer.

Evening Program: Dr Gregory G. Arkos, from Malaspina University-College spoke to members on the subject of Mars titled "From Schiaparelli to Spirit: A history of the human exploration of Mars". The talk included the human exploration of Mars from early programs to the ongoing explorations and also explained why it is important to explore Mars.

The meeting adjourned at 9:10pm

Li-Ann Dorrance
Secretary / Recorder

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Club's 20" Made New

About a month and a half ago, Blair Pellatt and I went out to Sid's to pick up the 20" club scope for Blair's sidewalk astronomy program. What we found was a huge monster that looked impossible to load in a van. Also, the unit was very hard to move on its azimuth bearing, the eyepiece holder would only take 1 1/4" eyepieces and the secondary cage has a smaller internal diameter than that of the 20" mirror. There was no finder on it so positioning was impossible.

I convinced Blair that we should leave the scope with Sid because it would be too cumbersome. I took a lot of measurements of the scope with the thought of rebuilding the secondary cage, replacing the focuser and mounting a Telrad finder.

After a lot of thought and discussions with Sid and Bruno, we decided that the best action would be to rebuild the telescope in the tradition of the Obsessions.



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Address Change? Information Incorrect?

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General enquiries: nationaloffice@rasc.ca

The deadline for the next issue of *Skynews* is

December 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

(Club 20" Continued from page 3)

I was given a budget of only \$500.00 that rapidly vanished with the purchase of wood, metal for the mirror cell and secondary cage plus hardware, varnish and flat black paint. I had the truss tubes, focuser and Ebony Star Formica and if I donate these items, we will be close to budget but we still need a good large diameter finder and a Telrad. Also, we need a ramp for rolling the unit into a truck or van.

I have put in many hours constructing the telescope and Larry Danby has helped me by doing the welding, making the azimuth pivot and providing me with wheelbarrow wheels and some hardware (for which I paid him). Blair and Bill Weir have come by to see what I am doing but I feel somewhat of a chump to have taken on this project—winning the Ernie P. Telescope Making Award is mellowing me a bit.

Anyway, If the club does not have money to pay for the additional things required, it would be nice to have donations from the membership.

Guy Walton

Jean Kirkoff

Jean Kirkoff, a long time member of the RASC passed away recently. Jean sang in the soprano section of the University of Victoria chorus for many years until health problems interfered, and although we sometimes chatted during the breaks in rehearsals, it was usually about the music.

It was the same situation for RASC meetings; she hadn't been attending them very often in recent years because of health reasons, although she maintained her interest in astronomy. I don't know how long she had been a member.

I did know that she shared ownership of a boat, and sailing was certainly one of her primary interests in life, as was mentioned in the obituary notice which appeared in the paper on November 3 and 4.

Some years ago she won a contest in the *Times Colonist* for the most interesting "how we met" story, in which she described having several dates with her future husband in war-time, blacked-out England before they had occasion to see what each other looked like!

She was certainly a cheerful, outgoing person with many outside interests until poor health began to slow her down.

Betty Hesser



General Meeting Minutes

October 13, 2004 at UVic

The Regular Monthly Meeting of the Victoria Centre of the Royal Astronomical Society of Canada, which took place at the Centre of the Universe, commenced at 7:35 pm. With Vice President Bruno Quenneville presiding. Forty-six people attended.

Welcome: Vice President Bruno Quenneville welcomed everyone. Bruno mentioned that Chris Gainor is in Edmonton and sends his regards..

Announcements and Reminders: Bruno

Future events

- October 16 Jayme Mathews, Centre of the Universe at 3:00pm
- October 20 Orion D Meteor Shower
- October 23 J.J. Kavelarrs, Centre of the Universe 9:00pm
- October 27 Total Lunar Eclipse, Centre of the Universe lower first parking lot on the left at 5:30pm to 11:00pm
- November 20 Victoria Centre Annual Dinner and Meeting, Gorge Vale Golf Club 6:00pm. No host Bar, 7:00pm Dinner

Ongoing activities

- Astronomy Cafe at Bruno Quenneville's home every Monday. Coffee, cookies and stars. Average attendance 5+
- New Observer's Group at Sid Sidhu's home in the Highlands every fourth Friday of the Month
- Astro Imaging Group at Bill Almond's Observatory every third Wednesday
- Saturday Night viewing, Centre of the Universe until the end of October
- RASC Victoria General Meeting, University of Victoria every second Wednesday of the month.

Treasurers Report: Lauri Roche reported the account total as of September 30, 2004 is \$3896, the gaming account balance is now \$2600 as Sid Sidhu purchased camera equipment. Lauri asked that dinner reservations for November 20 should be emailed to lroche@shaw.ca. Lauri also informed members there are a few Calendars for 2005 available for sale. Please renew Sky and Telescope through Lauri.

Star Party: The RASC Star party saw 42-45 paid attendance and, even though rain prevented sky viewing, there were many speakers, many prizes and many members bought equipment.

Library and Telescopes: Sid Sidhu informed members that the Library would be open after the meeting. Sid thanked Ed Maxfield for donating the book *Atlas of the Sky, Journey between the Stars and Planets in the discovery of the Universe* Published by TAJ books. 2004. Sid gave an update on the school pro-

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those marvelous Hubble or Cassini images from NASA's image galleries (www.nasa.gov/multimedia/imagegallery/) and take them to your local photofinisher to produce photographic prints and posters. Get creative and make a collage of YFA's favorite images, get the collage printed, then frame it yourself.



Astronomical travel is a well-established sector that not many people know about. Our very own Jack Newton and his wife Alice run a Bed and Breakfast in Osooyos (www.jacknewton.com) which offers a distinct astronomical bonus: observing and photographing through Jack's superbly-equipped observatory. Want to travel further afield? How about New Mexico Skies (www.nmskies.com) or Star Hill Inn (www.starhillinn.com)? Again, use of superb astronomical equipment under

ideal sky conditions in New Mexico, USA. It isn't hard to arrange for airfare to the Big Island of Hawaii, and a tour of the Mauna Kea facilities. More exotic locales to consider for your YFA might include Chile or Namibia, and don't forget the April 2005 Solar Eclipse observable from Panama. Do a web search and surprise yourself!

By now, you may have noticed there is no mention of buying telescopes, binoculars, eyepieces, cameras, and other **equipment** for YFA. If you don't know what you are buying and you are uncertain of YFA's precise astronomical equipment needs, do not buy optics and hardware as a gift. If YFA has strategically left you an advert with one of these items highlighted, then go ahead and make the purchase. Otherwise, if you really want to give optics or hardware, buy a gift certificate from a reputable astronomy dealer. Locally, these dealers would be good options: Island Eyepiece and Telescope in Mill Bay (250) 743-6633 (www.islandeyepiece.com), or Sirius Science & Nature in Penticton (250) 770-1477. Out of province dealers: Kendrick Astro Instruments in Toronto (416) 762-7946 (www.kendrick-ai.com), Efston Science (888) 681-1079 (www.telescopes.ca), and Anacortes Telescope in Washington state (800) 850-2001 (www.buytelescopes.com).

Joe Carr

Upcoming Meetings

January	Dr. JJ Kavelaars, HIA, DAO. Hunting for Moons
February	Gail Conway, Malaspina College, Nebulae
March	Henk Hoekstra, UVic
April	Laura Ferrarese and Pat Cote, DAO
May	Russell Robb, U Vic
June	Members' Night



Galactic Surprise

Open an old astronomy textbook. The basic sketch you'll find there of galaxy formation is fairly simple: a vast cloud of diffuse hydrogen and helium gas condenses under gravity, and dense spots in the cloud collapse to form stars. Voila! A galaxy.

But, real galaxies are much more complex than that. A galaxy is a swirling "soup" of billions of stars and roaming black holes, scattered clouds of gas and dust, random flashes of star birth and exploding supernovas, and an unseen and mysterious substance called "dark matter." Over time, all these ingredients mix and interact—pulling and compressing and colliding—and somehow that interplay leads to the galaxies we see today. No wonder it's such a hard problem to solve!

Just over one year into its three-year mission, GALEX is already shedding some new light on the problem.

"Some of the discoveries GALEX has made will change our understanding of how galaxies develop and when, where, and why stars form in galaxies," says Peter Friedman, a researcher at Caltech and Project Scientist for GALEX.

This small space telescope, called the Galaxy Evolution Explorer (GALEX for short), makes its discoveries by taking pictures of millions of galaxies scattered over the whole sky. Some of these galaxies are close by (at least by astronomical standards of "close"), while others are as much as 10 billion light-years away. Because light takes time to travel through space, we see these distant galaxies as they appeared billions of years ago. Comparing young galaxies from the distant past with older, modern galaxies will teach scientists about how galaxies change over time.

Looking at these pictures, scientists were surprised to find many newborn stars in the outer parts of old, mature galaxies. Scientists had assumed that as a galaxy ages, the clouds of gas needed to form new stars in these outer reaches either got used up or blown away. Finding so many new stars in these regions of old galaxies (such as Centaurus A, Messier 101, and Messier 81) shows that, apparently, they were wrong.

Friedman says that astronomers don't know yet how to explain these new findings. Rethinking and improving theories to explain unexpected discoveries has always been the way science makes progress—and GALEX is certainly making progress.

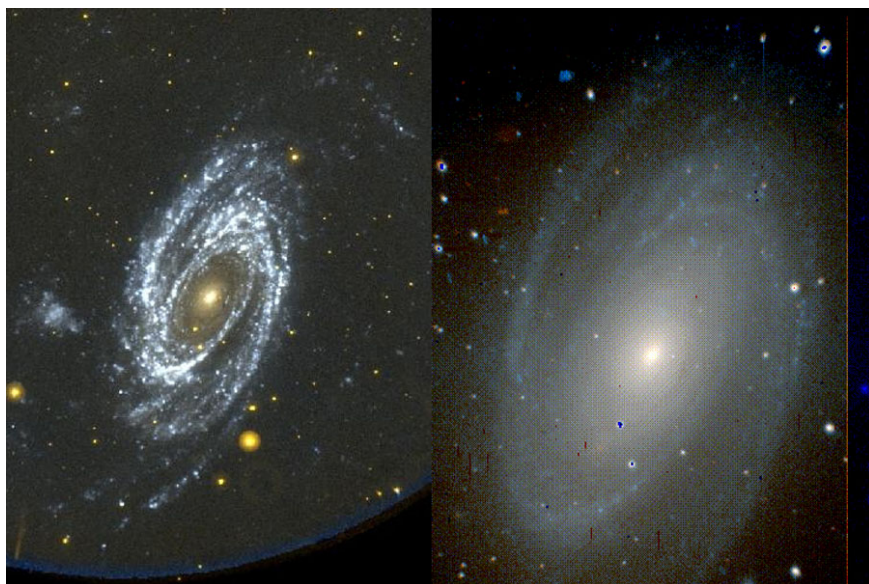
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The Space Place Continued

One thing is certain: It's time to re-write some old textbooks.

For more information, see <http://www.galex.caltech.edu/>. Kids can do a galaxy art project and learn more about galaxies and GALEX at <http://spaceplace.nasa.gov/en/kids/galex/art.shtml>.

by Patrick L. Barry and Dr. Tony Phillips



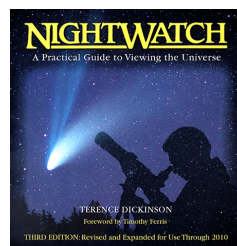
M81 is 10 million light years away.

The image on the left was made from GALEX data and shows UV light from hot, new stars. These star forming regions are not detectable in the visible light image on the right (McGraw-Hill Observatory, Kitt Peak, Arizona, Greg Bothum, University of Oregon.).

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

can stay out for hours and keep their head warm. Check out the hiking and outdoor stores in town for the best selection of snugly head gear for YFA. While you're there, buy a pair of nice warm socks, and some "thin but warm" gloves.



If YFA doesn't have the **basic books** *The Backyard Astronomer's Guide* or *NightWatch*, those would be a good start. Both can be purchased at local bookstores, or at the Centre of the Universe. The CU gift shop has the best selection of astronomical gifts in Victoria, so why not shop locally? (www.hia-ihc.nrc-cnrc.gc.ca/cu/)

If Your Favorite Astronomer is a beginner, RASC's *The Beginner's Observing Guide* is an obvious choice. Don't stop there...have a look at the other books available online, as well as RASC logo items. (www.store.rasc.ca)

National Geographic Society offers some fine books with superb images and maps: Encyclopedia of Space, Orbit: NASA Astronauts Photograph the Earth, Space Odyssey, Other Worlds, Mars: Uncovering the Secrets of the Red Planet, and Beyond Earth. Have a look at the reference space maps: Milky Way Map (framed), Solar System Map (framed), Earth's Moon, Mars, The Heavens, & Universe. Finally, the video: Asteroids: Deadly Impact might be just what your YFA wants to view this Christmas! (www.nationalgeographic.com)



A hot item among astronomers this year is the release of an updated Rukl's Atlas of the Moon. You can find this gem on the Orion telescope website – search for "moon atlas". I bought this item for myself! (www.telescope.com)

A **subscription** to Sky and Telescope magazine is always welcome. Save some money and pay a reduced rate through RASC Victoria Centre (contact the Treasurer for details). Browse the website store for a wide selection of books, atlases, accessories, games, calendars, software, and art prints. (www.SkyandTelescope.com)

If you are a do-it-yourself gift maker, making an **Observing Log Book** is an excellent idea. The RASC website discusses observing logs (www.rasc.ca/observing/home.html) and has a sample form in pdf format available (www.rasc.ca/handbook/obsform.pdf). You can find other observing log forms on the Internet. The paper and ink used for the log book should be able to withstand moisture, and the book cover and spine should lay flat, making it easy to write and draw in. Making it easy to add and remove pages would be a bonus. Hint: Buy one of those pens with the built-in red lights from the CU gift shop to complement your log book.

Another great DIY project is framing an **astronomical print**. Did you know that all NASA space images are royalty free? This means you can freely download

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On Sunday afternoon, the Ruth Northcott Lecture will be presented by Jaymie Matthews, Mission Scientist for the MOST (Microvariability and Oscillation of STars) satellite. Dr. Matthews will bring us up to date on the latest results from Canada's own "Humble Space Telescope". Among MOST's scientific goals is direct detection of light from exo-solar planets -- a very exciting and competitive area of research.

Astrophotographer Jack Newton is our banquet speaker Sunday evening at Gray Monk Estate Winery just north of Kelowna. Gray Monk boasts a first-class reputation for its wines and cuisine, all in a spectacular setting among vineyards overlooking Lake Okanagan. Jack's talk -- planned to follow an optional tour of the winery -- will feature many of his finest, and most interesting astrophotos. Crisp focus is required, so go easy on the wine!

On Monday, you can choose to journey south for a special insider's tour of the Dominion Radio Astrophysical Observatory near Penticton. Then, if you like, continue down the valley for an open-house at Jack and Alice Newton's Observatory Bed & Breakfast in Osoyoos.

Of course, you can expect a variety of presentations, activities, and displays throughout the General Assembly at the event's home base among the pines at the North Kelowna Campus of Okanagan University College. Accommodation is available on site in the student residences. OUC is co-sponsoring the GA.

All in all, we think we have the makings of a very memorable and most enjoyable national convention. As more information becomes available, you can keep track by visiting the GA's web site www.ocrasc.ca/ga.htm

Gifts for an Astronomer

At first glance, buying a gift for Your Favorite Astronomer (YFA) would seem to be such an easy way out. After all, there are so many do-dads. It's pretty easy to buy for YFA when they are in on the deal, however if you want to surprise YFA with a gift under the tree (or for any other occasion), it can be risky business buying these items when you don't know the first thing about them.

I love helping folks spend their money, so here are some suggestions.



A **flashlight**—one of those LED flashlights with a lanyard that loops around the neck. They should switch between red and white light, and have adjustable brightness. These make a great stocking stuffer.

A **hat or toque** may seem mundane, but YFA has to stay warm on those cold winter nights of observing. You will be thanked over and over again when they

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Report from the Centre of the Universe

December

Happy Holidays all! I hope you are all enjoying this festive season!

Our hours are: Tuesday to Saturday from 10 am to 5:30 pm.

The Centre will be closing at 3 pm on December 15 for our annual Christmas party. We will also be closed from December 24 at 12 pm to January 4 at 10 am for the Christmas Holidays!

Are you looking for a holiday gift for that hard-to-buy-for person? Check out the gift shop at the Centre of the Universe! We offer a wide selection of fabulous products including educational toys, exciting books, clothing and accessories as well as telescopes, telescope accessories and binoculars! We have a ton of amazing new products, so come on up and check us out! Also, give the gift of the stars this holiday season, by giving a gift certificate or an astronomy course to someone special in your life.

Centre of the Universe Courses

Planets:

An introductory course to planetary astronomy and the winter skies

Wednesdays, January 19, 26 and February 2 from 7 to 10 pm - Our winter night course is perfect for the adult learner who's interested in astronomy. This exciting nine-hour course will give you an introduction to general astronomy, in-depth information on our Solar System and how to find extrasolar planets, and lots of time for guided explorations of the night sky. You'll be taught by trained astronomers and educators, and have a chance to tour the Plaskett telescope, work in the Skylab planetarium, and observe with research-grade telescopes.

"Planets" has been completely redesigned from our old "Winter Skies" course, featuring a new curriculum and a new project-based format. Come experience the difference!

The "Planets" course requires no previous astronomy background, and is most appropriate for adult learners. Any interested students under the age of 18 are asked to contact the Centre to discuss their enrolment. The course will run from 7-10 p.m. on January 19 and 26, and February 2. Registration is \$79+GST for Centre of the Universe season's pass holders, and \$89+GST for all others. The course will be held at the Centre of the Universe, located at 5071 West Saanich Road.

For more information or to register, please email the Centre at cu@nrc.gc.ca, or call (250) 363-8262.

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The Sky This Month: December 2004

All times and dates local to Victoria, BC)

December 4	Last Quarter
December 5	Venus one degree from Mars in the southeast in the morning
December 7	Moon occults Jupiter: After 4am, look for Jupiter to peak out from behind the Moon
December 9	Moon near Venus and Mars at dawn
December 11	New Moon
December 13	Geminid Meteor Showers Peak
December 18	First Quarter
December 21	Winter Solstice: Shortest day of the year with winter officially beginning at 4:43 am local time
December	26 Full Moon

Happy holidays to all! December skies are filled with beautiful constellations, some great planets, an unusual meteor shower and the beginning of winter!

December brings us another annual meteor shower, the Geminids. Named for the constellation Gemini, all of the "shooting stars" will appear to come from the Twins. Usually, meteor showers occur when the orbit of the Earth passes through debris left behind from a comet. As this comet dust burns up in our atmosphere, we are treated to shooting stars. The Geminids are slightly different. 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 caused by an asteroid (a rocky leftover from the formation of our solar system). This year's Geminids will peak on the evening of December 13. Head outside between 10 pm and dawn (local time) and 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 to these stars and look up! We should see about 75 shooting stars per hour, which could make this meteor shower the best of the year surpassing the Leonids and the Perseids! Bundle up!

For more information on this year's Geminids, visit http://skyandtelescope.com/observing/objects/meteors/article_802_1.asp.

December 21 marks the shortest day and longest night of the year! The Winter Solstice is the beginning of winter for those of us living in the North Hemisphere. The sun will reach its most southern descent in our skies 4:43 am December 21st (local time).

Winter constellations are beautifully displayed above the South East horizon at 8 pm through December. Just off the horizon, look for the hourglass shape of

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(Centre of the Universe Continued from page 8)

Orion, the hunter. Within the constellation Orion, you can find many places where new stars are forming. Under the far left hand star in the belt of Orion is the "Horse Head" nebula. The dagger, hanging from the belt, is actually another baby star nursery called the "Orion Nebula". A small telescope, or binoculars will show you the glowing gas of the Orion Nebula.

Orion is a good route marker for finding your way around the night sky, as it is quite a recognizable constellation. Use the three stars in Orion's belt to point up to Taurus, the Bull. Taurus has a "V" shaped head. The brightest star in the head of the bull is called Aldebaran, the "eye of the bull". Just up from Taurus, you will find a small grouping of blue stars. These are the Pleiades, an open cluster of new stars.

Use Rigel, the lower right blue star, and Betelgeuse, the upper left red star of Orion, to draw a line towards the East. You will run into two bright stars almost perpendicular to the horizon. These are Castor and Pollux, the heads of the Gemini Twins.

Look above the Eastern horizon around 9 pm, just below Gemini, to see a bright yellow "star". This is Saturn, the Lord of the Rings. If you are up early, look to the Eastern Horizon around 6:30 am. Here you will see the "morning star" of Venus shining brighter than anything else (other than the moon) in the sky. Just above Venus, look for a red "star", the planet Mars. Above Mars, Jupiter shines brightly with a yellow tinge!

Clear skies and happy stargazing!

Wishing you a fabulous holiday season, much joy and happiness and many clear nights

Clear skies and happy stargazing! Cassie

2005 GA — Okanagan

RASC members from across the country are warmly invited to join us in Kelowna, British Columbia, next May for General Assembly 2005. This spring-time GA, on the Victoria Day long weekend, has a lot to offer. The four-day event includes a variety of tours, displays, contests, and lectures, plus plenty of great food and a sip (or two!) of Okanagan wine.

The Okanagan GA's roster of guest speakers is shaping up well. Confirmed presenters include Jack Newton, Andreas Gada, Tyler Foster, Rajiv Gupta, and Jaymie Matthews.

Saturday evening, the 2005 GA offers a dinner cruise aboard the S.S. Fintry Queen -- Kelowna's popular paddlewheeler. There's always a chance that the legendary lake monster Ogopogo will appear; keep a camera handy.

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