

PeGASus

Newsletter of the

Royal Astronomical Society of Canada: Prince George Centre

Published: January to May & September to November.

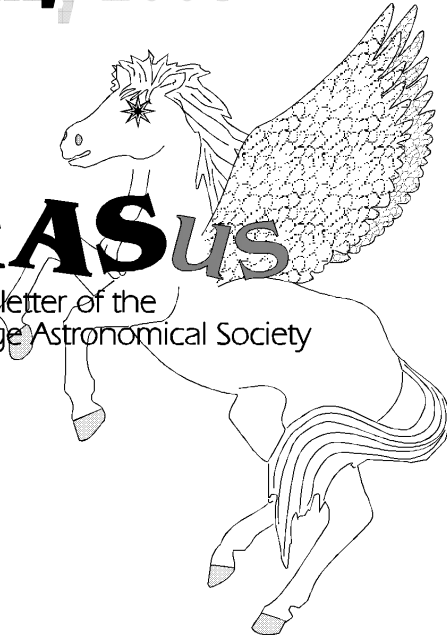
www/rasc.ca/princegeorge

February 2008

*Our pursuits are out of this world.
Our activities are astronomical.
Our aim is the sky.*

PeGASus

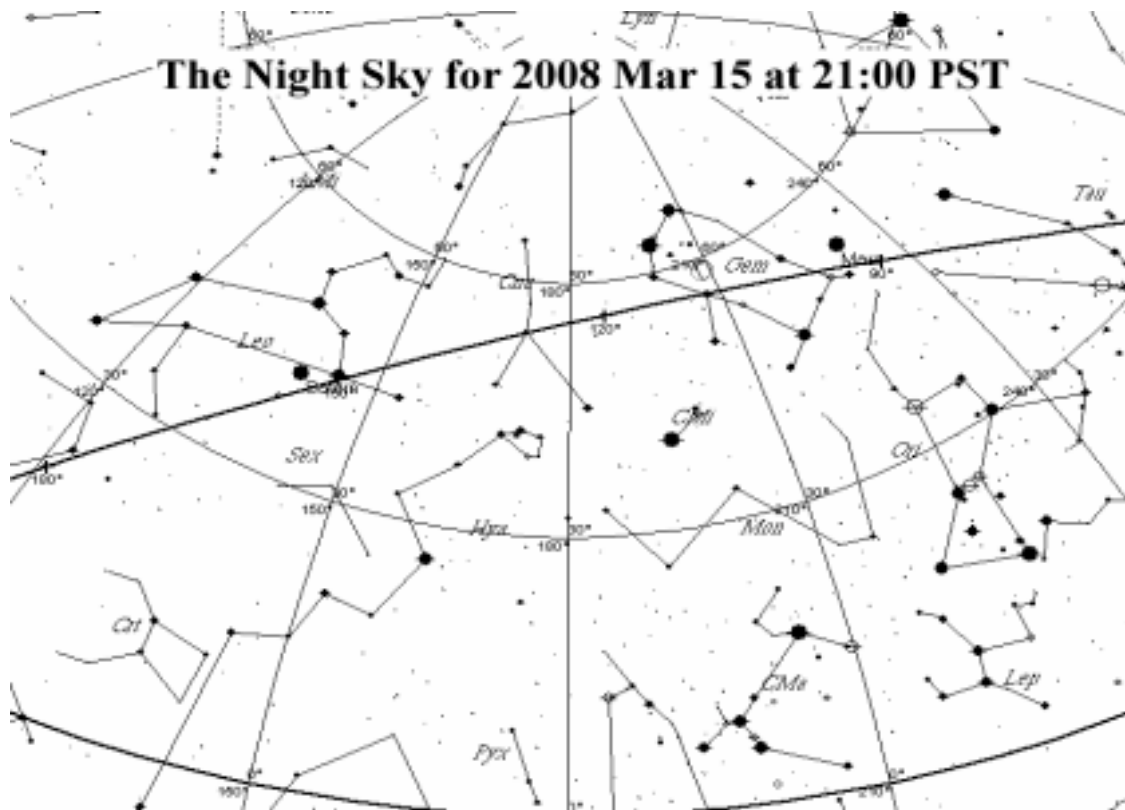
Newsletter of the
The Prince George Astronomical Society



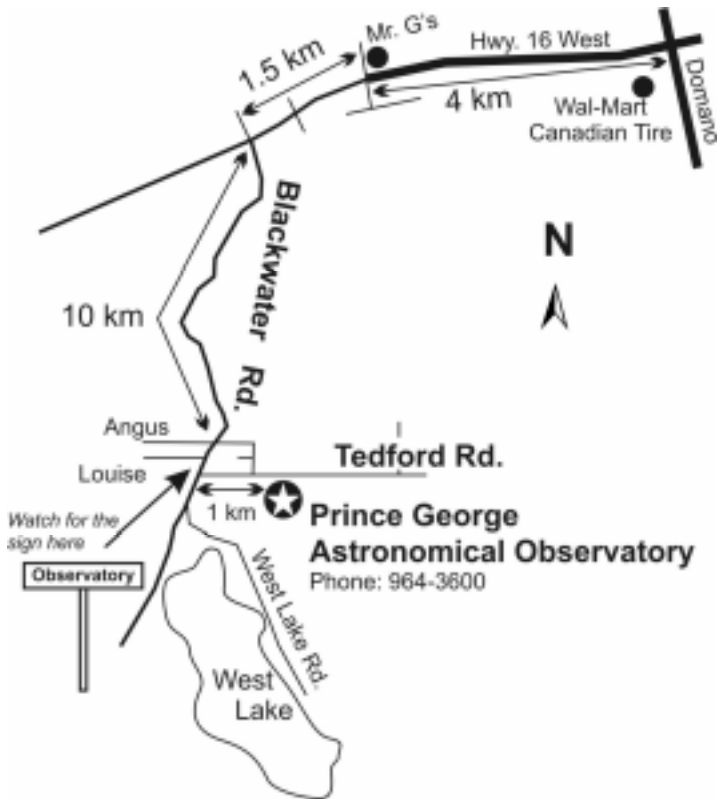
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The RASC: Prince George Centre meets next,
Saturday March 1, 7:30pm
at the Observatory for a Social Evening



South



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Contributions to the newsletter are welcome.

Deadline for the next issue is

March 21, 2008

PeGASus Editor

Brian Battersby

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Coming Events

To Volunteer to help run an event please contact Brian Battersby.

brianbattersby73@yahoo.ca

Phone: 561-8138 (day) 612-4623 (evening)

<i>Date</i>	<i>Event</i>	<i>Time</i>	<i>Place</i>	<i>Volunteers</i>
Feb. 20	Lunar Eclipse viewing	5:45 pm	Observatory	Doug W
Feb. 23	NOVA Class 3: Maps, Position, Bright	7:00 pm	Observatory	Bob N
Feb. 29	Tour: Young Naturalists Club	7:00 pm	Observatory	Brian B
Mar. 1	Social Meeting	7:30 pm	Observatory	Gil S
Mar. 6	Tour: Bownies	6:30 pm	Observatory	Brian B
Mar. 8	Spring Recreation Market	9:30 am	Pine Centre Mall	finish at 6:00 pm
Mar. 8	NOVA Class 4: Telescopes	7:00 pm	Observatory	Blair S
Mar. 9	Spring Recreation Market	9:30 am	Pine Centre Mall	finish at 6:00 pm
Mar. 12	BUSINESS MEETING	7:30 pm	Arctic Manufacturing, Hart Hwy.	<i>all members welcome!</i>
Mar. 22	NOVA Class 5: Celestial Sphere	7:00 pm	Observatory	Wayne S
Mar. 29	Tour: Girl Guides	8:00 pm	Observatory	Glen H, Wayne S

For an up to date list of the Volunteer Schedule visit our website in the MEMBERS AREA

www.rasc.ca/princegeorge

Editorial

by Brian Battersby

Beyond the small viewport, located on the port side of the always too cramped starship, two half illuminated spheres come into my view.

I notice one is about a third the size of the other and they are gravitationally bound. "A double planet system." Measuring their orbital inclination and velocity I realize that in 21.4 hours the smaller body will enter into the shadow of the larger body. "A lunar eclipse!"

Hurriedly I check the instruments, scanning the larger body. "I can breathe its atmosphere, no need for the suit." I am excited. To stand on a planets surface, unprotected by the suit and watch the cosmic alignment happen with my own eyes. "Is unheard of!" I need to hurry, time is moving forward, the planets are moving, the eclipse is coming.

The lander makes a soft "whoosh" in the icy white precipitation coating the hill I have selected near the 54th parallel to witness the eclipse from. It crunches noisily beneath my boots.

1 hour until the eclipse begins.

30 minutes.

15 minutes.

5 minutes.

1.....

It begins.

News Flashes

The Prince George Centre would like to officially welcome the following new additions to the Royal Astronomical Society of Canada Prince George Centre.

Patti G, Rebecca G, Marie O, John H, Doug M, Shelly Y,

Janice & David W, Karen S, Bruce S, Paul R, Laurie P,

Hugh H, Tammy M, David M, Michael H

The Spring Recreation Market will be held at Pine Centre Mall from 9:30 am to 6:00 pm on both Saturday, March 8 and Sunday, March 9.

The RASC Prince George Centre takes this opportunity to raise public awareness about our organization and facility. If you are interested in helping to man the Observatory booth during these times, please contact me. It is not a prerequisite that you know a lot about our group, the questions are usually general in nature, and most people who visit the booth just want to know when we're open and where the observatory is located. The brochure we hand out has all that information.

Glen Harris

RASC Prince George Centre Secretary

RASC eNews

Across the RASC

Earth Hour an Opportunity for RASC to Shine

Earth Hour is a wonderful opportunity for RASC Centres to draw public attention to the night sky without so much light pollution. Schedule a Sidewalk Astronomy event to celebrate Earth Hour. Imagine as twilight deepens the lights going out around you revealing the sky without sky glow, a last quarter Moon, Mars and Saturn with perhaps the Zodiacal Light visible in the West after evening twilight.
Feb 18, 2008, 14:22

Northern Skies

Young Moon Opportunity February 7th

On February 7th observers across Canada have an opportunity to observe a young moon less than 24 hours old. Those of you who are working on the Isabel Williamson Lunar Program take note as this is one of the most difficult observations in the program. This opportunity is one of two this year, the other will be in April and has even better conditions. Don't miss out!

Feb 5, 2008, 22:15

Northern Skies

The Sky This Month - February 2008

<http://www.rasc.ca/news/>

[The_Sky_This_Month_February_2008.shtml](#)

The sky Twins parade high above us. We also look at the February lunar eclipse.

Feb 1, 2008, 00:53

Announcements

National Treasurer Appointed

I'm pleased to announce that **Mayer Tchelebon** of the Toronto Centre has been appointed by the Executive to serve as the Society's Treasurer, replacing Alan Whitman who resigned last fall. Mayer is a professional accountant with extensive experience in the financial affairs of not-for-profit organizations, having served as treasurer of two other NFPs. He also worked as a budget analyst for a large city in the GTA before "semi-retiring" a few years back. Mayer is looking forward to the challenge of the position and will complete the current Treasurer's term of office which expires in 2010.

Jan 31, 2008, 21:34

The Night Sky for March 2008

by Bob Nelson, PhD

Hi Folks,

Well, here we are in the grip of winter (it's -14°C and snowing as I write this), but spring is just around the corner, and with it, our new observing season. Progress is about to happen with the new telescope drive, and I hope to have some good news soon.

Anyway, here's what will be happening in our skies next month:

MERCURY is a morning object all month. At mid-month, it rises only 25 minutes before the Sun; at sunrise, it lies a tiny 3° above the ESE horizon – surely a challenge object!

VENUS is a morning object all month. Like Mercury, it rises at midmonth only 25 minutes before the Sun and is similarly placed at sunrise. (In fact, the two planets travel together this month, never more than about 2-3 arc minutes apart. They are in conjunction on the 23rd, when Mercury passes 1° south of Venus.) However, at magnitude -2.1 , it should be easy to spot, even after sunrise. It's a $6''$ gibbous disk, 72% illuminated (amorphous blob).

MARS, in Taurus until March 4, after which it passes into Gemini, is an evening object all month. At sunset (mid-month), it lies high (61° up) in the SSE sky; it transits at about 19:53; and it sets at 04:52 (all times PDT). (Note the apparent error in the Observer's Handbook – it says before 03:00 – standard time, presumably - which must be for Toronto, latitude 44° !) It's a $8''$ gibbous blob of magnitude 0.5.

JUPITER, in Sagittarius until 2009 (Jan) is a morning object this month. At mid-month, it rises at 05:00 (PDT) and, at sunrise, lies some 11° above the SSE horizon. Then, it's a $33''$ disk of magnitude -2.1 .

SATURN, in Leo until 2009 (Sept), is visible all night this month. At mid-month, it transits at midnight and is a $20''$ disk of magnitude 0.3.

URANUS, in Aquarius until 2009 (March), is lost in the glare of the Sun this month.

NEPTUNE, in Capricornus until 2010 (March), is a morning object all month, rising at mid-month at 06:29; at sunrise, it is only 6° above the SE horizon. As usual, it's a $2.3''$ disk at about magnitude 8.0.

Daylight savings time begins March 9 at 02:00 (boo, hiss!!)

March Equinox occurs on March 19 at 22:49 (PDT)

CONSTELLATIONS to look for in March (at 22:00, PDT) are Pyxis, Puppis, Western Hydra, Cancer and Lynx.

Pyxis (“the compass on the Argonaut's ship”) is visible on the extreme south at 9:30 PM on the 15th. It's just at the edge of the Milky Way but contains little of interest (no open clusters, etc.).

Puppis (“the stern on the Argonaut's ship”) is just to the northwest of Pyxis. Straddling the Milky Way, it contains numerous goodies including open clusters M46, M47, M93, NGC 2477 and others. M46 (at 7 deg south, and therefore visible in P.G.) is a rich open cluster, about $1/2$ degree in diameter containing around 150 stars between magnitude 8 and 13 lying about 500 light years away. It also contains the planetary nebula NGC 2438 about 7' north of the cluster centre.

Hydra (“the Sea Serpent” - not to be confused with Hydrus, a small boring constellation) extends all the way up to declination $+5^{\circ}$. The western part contains M48, another fine open cluster. It does contain the bright eclipsing binary KW Hya. This system, which has a period of 7.75 days and varies between 6.11 and 6.6 magnitudes, is one of the brightest Algols in the sky. While not a classical Algol (which is supposed to have the cooler star filling its Roche lobe), this contains two type A (hot) stars which are detached (completely separate). SIMBAD (the engine that finds all the papers on a given celestial object) tells me that there are 42 publications that at least mention KW Hya, so it appears to have been well studied.

Cancer (“the Crab”) is more familiar to us northerners, lying as it does between Gemini and Leo. It con-

tains the famous “Praesepe” or “Beehive” Cluster, M44 and M67, a rich old cluster. It also contains RS Cancri, a RR Lyrae semi-regular variable star that is comprised of a type M6 supergiant star that pulsates in and out with a period of around 120 days.

Lynx (“the Lynx” -- gee!) lies to the north of Cancer, out of the Milky Way and contains only NGC 2419, the famous “Intergalactic Wanderer”, the most distant of the globular clusters. It was discovered in 1788 by William Herschel (and rediscovered by his son John in 1833), observed by Lord Rosse in 1861, and finally classified as a globular in 1922 when photos were taken by the 42" reflector at Lowell Observatory. The distance was determined by observing 31 RR Lyrae stars in the cluster; it's some 182,000 light years (55,800 pc) from us (and 210,000 light years = 64,400 pc) from the galactic centre. This distance is comparable to that of the Magellanic Clouds and suggests that this cluster indeed is intergalactic.

Clear skies,
-Bob

Grasslands Gala

Submitted by Bob Steventon

Chris Harris, well-known professional photographer and author, will be giving a talk and slideshow based on his latest book, *Spirit in the Grass: The Cariboo Chilcotin's Forgotten Landscape*. The presentation will take place March 12th, 2008, 7:30 pm, at the Canfor Theatre at UNBC. Advance tickets are \$10 and are available from Books & Company (1685 Third Avenue) as well as some Prince George Photographic Society members. Tickets will be \$12 at the door. Copies of Chris's books will be available for purchase at the presentation. For more information about Chris Harris, visit his web site at www.chrisharris.com. For information about the PG Photographic Society or the event, visit www.pgphotoclub.com or call 250-562-3717.

Expect a multimedia presentation that will include slide-sound sequences in combination with stories behind the images and how the book was created. As the photographer, Chris will speak from the creative visual arts perspective rather than the science perspective. In this way he hopes to provide a new and

fresh avenue to appreciate British Columbia's beautiful grasslands.

Spirit in the Grass: The Cariboo Chilcotin's Forgotten Landscape

The Cariboo Chilcotin grasslands are one of the ecological wonders of the world. Grasslands occupy less than 1% of BC yet support over 30% of our most threatened or endangered species and over 40% of all our vascular plants. It is British Columbia's most endangered ecosystem. The goal of this book is to increase awareness of the incredible beauty and ecological richness of the grasslands. As stated in a July 2007 Canadian Geographic article on the book, "a hectare of prime uncultivated grasslands contains more flora and fauna than a hectare of any other ecosystem on the Planet". The photography is by Chris Harris and the natural and cultural history of the grasslands was written by leading ecologists, Ordell Steen and Kristi Iverson, and award winning BC writer and poet Harold Rhenisch. A percentage of book profits will be donated to the Grasslands Conservation Council of BC.

"The stunning images in this book evoke wonder and awe, which are essential if we are to love and fight to protect such sacred places". -- David Suzuki

Chris Harris is a freelance and adventure photographer who has captured the full range of his wilderness experience – from the high adventures of summing Mt. McKinley and Mt. Logan to the fragile Chilcotin grasslands and the quiet waters of the Bowron Lakes. His stock photography has been enjoyed in books, calendars and magazines, including National Geographic and Canadian Geographic. Chris founded Country Light Publishing in 1990 and is respected for his innovative work in forging the way for self-publishing authors. *Spirit in the Grass* is the tenth in his “Discover British Columbia Books”™ series. His work can be seen online at www.chrisharris.com or in person at his beautiful straw bale constructed gallery at 105 Mile Ranch, BC.

Wednesday March 12, 2008

UNBC: Canfor Theatre

See advertisement on back cover for more info.

Bob Steventon is a PG Centre member and a member of the PG Photographic Society.

Invisible Spiral Arms

by Patrick Barry

At one time or another, we've all stared at beautiful images of spiral galaxies, daydreaming about the billions of stars and countless worlds they contain. What mysteries—and even life forms—must lurk within those vast disks?

Now consider this: many of the galaxies you've seen are actually much larger than they appear. NASA's Galaxy Evolution Explorer, a space telescope that "sees" invisible, ultraviolet light, has revealed that roughly 20 percent of nearby galaxies have spiral arms that extend far beyond the galaxies' apparent edges. Some of these galaxies are more than three times larger than they appear in images taken by ordinary visible-light telescopes.

"Astronomers have been observing some of these galaxies for many, many years, and all that time, there was a whole side to these galaxies that they simply couldn't see," says Patrick Morrissey, an astronomer at Caltech in Pasadena, California, who collaborates at JPL.

The extended arms of these galaxies are too dim in visible light for most telescopes to detect, but they emit a greater amount of UV light. Also, the cosmic background is much darker at UV wavelengths than it is for visible light. "Because the sky is essentially black in the UV, far-UV enables you to see these very faint arms around the outsides of galaxies," Morrissey explains.

These "invisible arms" are made of mostly young stars shining brightly at UV wavelengths. Why UV? Because the stars are so hot. Young stars burn their nuclear fuel with impetuous speed, making them hotter and bluer than older, cooler stars such as the

sun. (Think of a candle: blue flames are hotter than red ones.) Ultraviolet is a sort of "ultra-blue" that reveals the youngest, hottest stars of all.

"That's the basic idea behind the Galaxy Evolution Explorer in the first place. By observing the UV glow of young stars, we can see where star formation is active," Morrissey says.



The discovery of these extended arms provides fresh clues for scientists about how some galaxies form and evolve, a hot question right now in astronomy. For example, a burst of star formation so far from the galaxies' denser centers may have started because of the gravity of neighboring galaxies that passed too close. But in many cases, the neighboring galaxies have not themselves sprouted extended arms, an observation that remains to be explained. The Galaxy Evolution Explorer reveals one mystery after another!

"How much else is out there that we don't know about?"

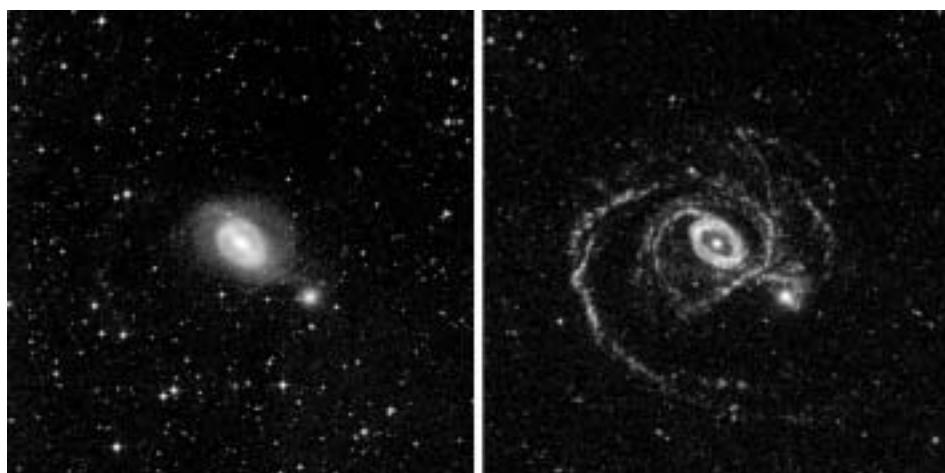
Morrissey asks. "It makes you wonder."

Spread the wonder by seeing for yourself some of these UV images at www.galex.caltech.edu. Also, Chris Martin, principle scientist for Galaxy Evolution Explorer—or rather his cartoon alter-ego—gives kids a great introduction to ultraviolet astronomy at spaceplace.nasa.gov/en/kids/live#martin.

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

In the image above, red represents the galaxy's appearance in visible light, while blue shows its otherwise invisible long spiral arms.

The image to the right is a b/w comparison image.



Want to join the RASC Prince George Centre?
 Fill out the form below and mail it in to the address at the top of the form.
 Existing members can use this form to renew as well!



THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

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(\$66.80 IN CAN / \$23 US INTERNATIONAL)

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My cheque/money order is enclosed

(PLEASE MAKE PAYABLE TO RASC)

NOTE: FOR NON-CANADIAN MEMBERS PRICES ARE IN US DOLLARS.

VISA MASTERCARD

EXPIRY DATE _____

SIGNATURE _____

Please return this form with your payment to:
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 136 Dupont Street, Toronto, ON M5R 1V2 Canada

MEMBERSHIP INCLUDES: OBSERVER'S HANDBOOK
 6 ISSUES OF RASC EJOURNAL / 6 ISSUES OF SKYNEWS

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 See <http://www.rasc.ca/> for the RASC Privacy Policy.

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YOUTH MEMBERS MUST NOT HAVE REACHED THEIR 21ST BIRTHDAY
 AT THE TIME OF PAYMENT.

ANNUAL MEMBERSHIP BASE FEES:

- YOUTH _____ \$36.75
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Please choose one affiliation:

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Surcharges support Centre activities. Please contact the Centres for details.
<http://www.rasc.ca/member/2008/contactlist.pdf>

* APPLICATIONS FOR THE RASC TORONTO CENTRE ARE PROCESSED LOCALLY.
 Please visit <http://toronto.rasc.ca/content/membership.shtml> for details.

Please keep this portion for your records.



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**Royal Astronomical Society of Canada
Prince George Centre**

AKA *the Prince George Astronomical Society*

Phone: 964-3600

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Website: www.rasc.ca/princegeorge

Back issues of PeGASus are available on our website.



"The stunning images in this book evoke wonder and awe, which are essential if we are to love and fight to protect such sacred places".

— David Suzuki



Grasslands Gala!

Featuring the work of Chris Harris, renowned Canadian nature photographer. The event will include a stunning slide show and talk showcasing his new book, *Spirit in the Grass: The Cariboo-Chilcotin's Forgotten Landscape*.

The Cariboo-Chilcotin grasslands are one of the ecological wonders of the world and British Columbia's most endangered ecosystem. Chris will be on hand throughout the evening to sign and personalize copies of his book.

Wednesday, March 12, 2008 at 7:30 pm
Comfor Theatre, UNBC, Prince George, BC
Sponsored by the Prince George Photographic Society
Tickets: \$10 at Books & Company, \$12 at the door

Details are available at www.pgphotoclub.com or contact 250-562-3717.
You can visit Chris Harris Photography at www.chrisharris.com



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