



PeGASus

Newsletter of the

Royal Astronomical Society of Canada: Prince George Centre

Published: January to May & September to November.

www.rasc.ca/princegeorge

March 2010

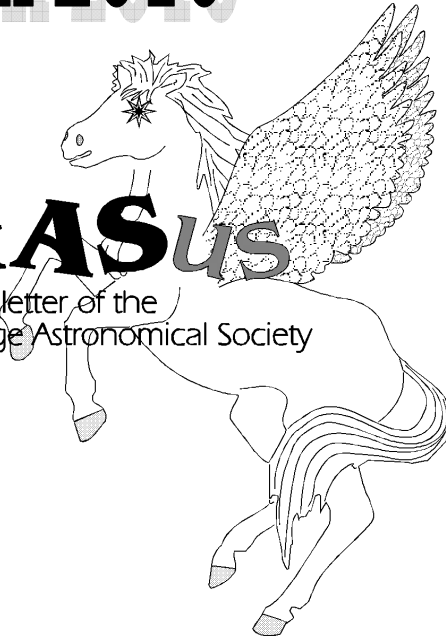
Our pursuits are out of this world.

Our activities are astronomical.

Our aim is the sky.

PeGASus

Newsletter of the
The Prince George Astronomical Society

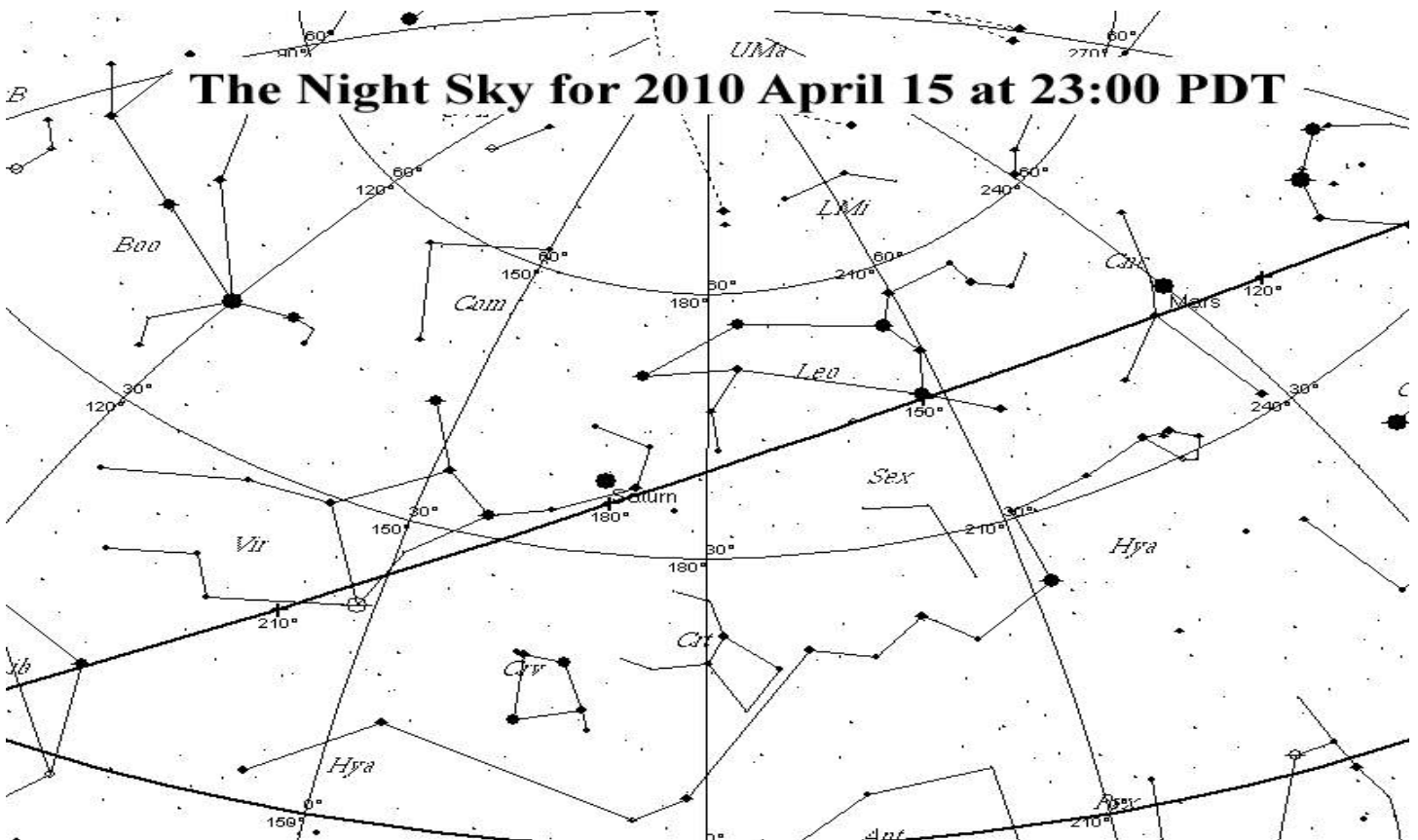


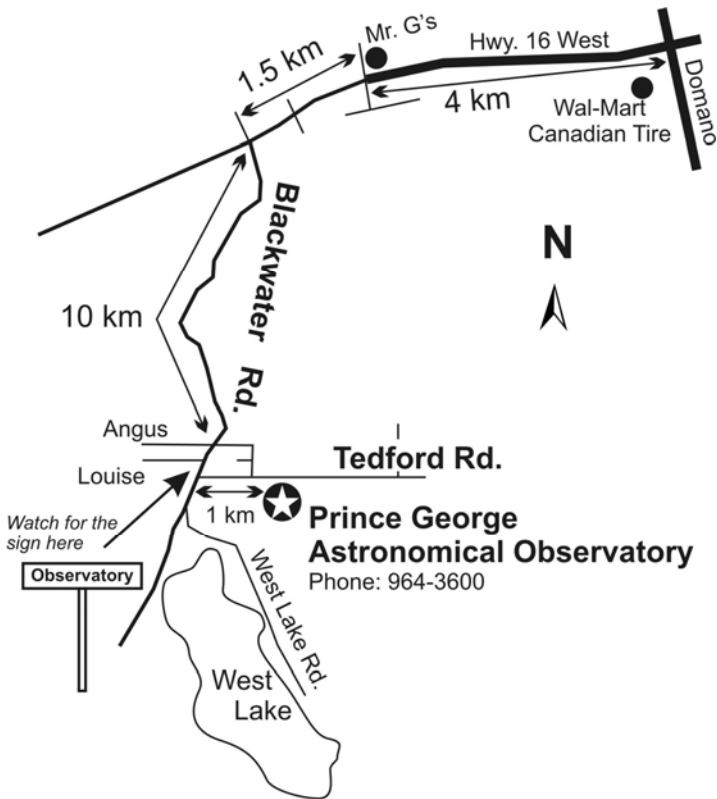
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The RASC: Prince George Centre meets next,
Saturday, April 17 6:00pm
at the Observatory

The Night Sky for 2010 April 15 at 23:00 PDT





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Contributions to the newsletter are welcome.

Deadline for the next issue is
April 23

PeGASus Editor
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Coming Events

To Volunteer to help run an event please contact Brian Battersby.
brianbattersby73@yahoo.ca
Phone: 614-3316 (cel) 612-4623 (home)

<i>Date</i>	<i>Event</i>	<i>Time</i>	<i>Place</i>	<i>Volunteers</i>
April 9	Open House	7:00pm	Observatory	Everyone welcome
April 16	Sidewalk Viewing	Until ~9:30pm	Pine Centre Mall	Everyone welcome
April 17	Business Meeting / NOVA	meeting 6:00pm NOVA 7:00	Observatory	Members welcome
April 23/24	Lunar Marathon	-6:30pm	Observatory	Everyone welcome

For an up to date list of the Volunteer Schedule / meetings / classes visit our website in the MEMBERS AREA
www.rasc.ca/princegeorge

Editorial

By Gil Self

If you only have a moment to read, stop right now and flip to page nine. I don't mind interrupting you because Trevor's article is really good and if you only have a minute or two read his first. If you have bit more time and you are back here on page three I will explain why it says it was written in November 2009. Because I forgot. Simple as that. When files come in for the newsletter I move them to a creatively named folder, "next newsletter".

At least that's the plan, but I am sometimes not as organized as I should be (most of the time) and I did not put the story where it belonged. A few days ago Trevor wrote me a very generous e-mail asking if his story was perhaps too long or too far off topic. That of course was not the case. As I said here last month pretty much anything is "on topic". I welcome your stories, whatever they may be about. If you were a member when Trevor was here you will likely remember he and his wife as outstanding members and all around great people. With that in mind it shouldn't be too hard to convince you to participate in my plan to lure them back to PG. Now don't anyone tell Trevor but what we will do is play upon their homesickness. All I'm asking you to do is keep writing those great articles about club events. The pictures, the stories of evenings under the dark skies sharing the sky with friends. That otta work!

My request last issue for you to feel free to write articles for our newsletter has brought out a couple of questions. One question, is there a better file format? I don't think so. Pretty much any of the standard Microsoft file formats would be fine. If you have some strange system that saves in an odd file format maybe just copy your text into an e-mail body and I can copy and paste. I have Microsoft Office so I can open most formats but if you have any special requirements drop me a note and we can figure something out. I have had the most difficulty when something is sent PDF so if you can avoid that it would be appreciated. Now chances are there are menu clicks that I just don't know about but sometimes I receive an article in .doc or something just as common and I have a devil of a time squeezing it into our column and page size. It seems sometimes documents have a kind of iron clad formatting and I can't make it go away, but I always manage to beat it into submission. Perhaps the simplest would be if you were to use whatever word processing program you have but set the page size and column size to close to our standard page size. The box you are reading is about 10 inches high and this column is about 3 inches wide. The page is 10 inches high and a single column page would be about 7 to 7 and a half wide. A story two columns long or four columns long would be great a story three columns long just means I have to find something to fill one half of one page, and that's ok but that's your column I don't want to give your space to someone else.

I am sure I can figure out a way to fit most anything in if you send it to me, but I thought I would just let you know what works easiest for me.

Another item worth mentioning is clarity of file names, especially if you send me more than one item. On your computer a file name like article.doc is probably just fine, you only have one story in that folder marked newsletter. As I said earlier I drop your items into a newsletter hold folder so if your file name is clear it does help me a lot. I never delete anything, after its stay in the hold folder the file gets moved to a folder called "used in last newsletter". If your file title could have something about the article or your name or any extra detail you can add it would be helpful. But once again, if you don't, its ok because I can always figure it out but if you can, great.

Writing for a newsletter can be a lot of fun and quite personally rewarding. May I say learning to write for our newsletter is personally rewarding. If your anything like me, communicating with writing is a lost skill. I worked for over forty years at a job that did not call upon writing at all. The most that was needed was occasionally a sentence or two but generally not even that. I was a technician, for the first ten years a broadcast technician and the last thirty years an office equipment technician. I used my head and hands but not pen and paper. I graduated high school in 1967, a typical nerd. Good tech skills but grade twelve English was simply a course I had to pass to graduate. So for many years my education fit my needs perfectly. If I needed to spell something or construct a complex sentence my wife was always there and she could tune up a sentence in no time at all, she could tune a sentence I could tune a superheterodyne circuit.

Well my point, which I will get to eventually, is that anyone can write for our newsletter. I know that I occasionally miss a mistake spelling or the grammar sometimes is a bit awkward, or perhaps my worst habit, run-on sentences :-) but now I know its wrong. About ten years ago somehow I ended up the editor of our newsletter. As I recall Orla Aaquist was asking, how could I say no. One thing I have always been is honest with myself, I knew my limitations even if I couldn't necessarily spell it. This was back in the early days of electronic printing, once upon a time this newsletter was typed and than photo-copied, yuk, another skill I had never mastered was typing, girls typed, guys —didn't.. What was I to do? Well since most everybody that wrote an article typed it, then if it was sent as an electronic file I wouldn't have to type it again, hey that sounded good. Now how the heck does this electronic printing work????

Well time went rolling by, folks learned about word processors and file formats but we were still running around swapping disks, and thenalong came E-Mail. I'm out of room but I hope I have demonstrated something to you, the skills come back, I've written an interesting piece for the newsletter. You know my background now. And I didn't even use spell check, yet :-)

The Night Sky for April 2010

by Bob Nelson, PhD

Hi Folks,

As I write this, spring has finally arrived! Although we have had some warm days and the snow has almost gone, it is not that warm this week and we have had rainy weather. After I write this, I need to get ready for my semi-annual run at the DAO (72" telescope in Victoria). I have selected targets for my spectroscopic observation and analysis (I do eclipsing binaries), but need to "fine tune" the priority targets.

Top of the list is BO CVn, a fairly bright (mag. 9.66) contact binary, of spectral type A5 and period 0.52 days that I am doing for some astronomers at the University of Ankara in Turkey. (I met them at a conference in 2005 in Greece; we published a paper on DN Boo back in 2008.) I have a set of radial velocities and they have the photometric data. I think that they have enough data to do the analysis (we call it modelling), but they cannot find a solution without adding a third star. They want proof from some independent source. Right now, data for any variation in the period of revolution do not go far enough back enough (only to 1989) and I cannot find any evidence in the spectra. I shall have to gather what more evidence I can. Personally, I'd go ahead, state all assumptions, and let the chips fall where they may. Sometimes, however, you get a stickler for a referee, and have to do what s/he says.

I will, as usual, add my own stars to the mix, working on those that are promising, and get the light data later. Since the DAO is under a funding squeeze (isn't everyone these days?), all of us observers need to crank out the papers so that the director can get all the support he needs. I have a couple of systems ready to go and will get back to work after I send this off to Gil.

Anyway, here is what is happening in the PG skies this month. All times are in PDT.

MERCURY is an evening object this month, but slides toward conjunction on the 28th. On the first, it is a 6" disk of magnitude -0.8 lying 15° above the

western at sunset (it sets about an hour and a half later); by mid-month, it has grown to a 9" disk but has faded to magnitude 1.5 and lies still about 15° above the western horizon (setting two hours later). By the end of the month, it will be lost in the glare of the Sun. Note that, as a function of the obliquity of the ecliptic, this is a favourable apparition for us northern dwellers. Get out there!

VENUS too is an evening object this month. At month's start, it is a 11" gibbous disk of magnitude -3.9. At sunset, it lies 11.5° above the western horizon, setting almost two hours later. By month's end, it's still gibbous and 11", mag -3.9. However, it lies 20° above the western horizon and now sets almost three hours later.

MARS, in Cancer until May, is an evening object all month. At mid-month, it lies a whopping 57° above the southern horizon and is an 8" disk of magnitude 0.5. On that date, it sets at about 04:30.

JUPITER, in Aquarius until May, is very much a morning object in April. At mid-month, it rises at 05:08, about an hour before the Sun. At sunrise, it lies only $6\frac{1}{2}^\circ$ degrees above the ESE horizon and is a 34" disk of magnitude -2.1. (Again, owing to the obliquity of the ecliptic, this is an unfavourable view for northern observers.) It'll get bigger, folks.

SATURN, in Virgo until 2012, is officially an evening object in April, but is visible all night. At mid-month, it lies some 24° above the ESE horizon and is a 19" disk of magnitude 0.7. On that date, it sets at around 06:00.

URANUS, in Pisces until 2012 (May), is a morning object in April. At mid-month, it rises at about 1/2 hour before the Sun, and at sunrise, it lies a paltry 5° above the ESE horizon. As usual, it's a 3.6" disk at about magnitude 5.7.

NEPTUNE, in Aquarius until August, is a morning object in April. At mid-month, it rises about 1.5 hours before the Sun, and at sunrise, it lies almost 11° above the SE horizon. As usual, it's a 2.3" disk at about magnitude 8.0.

CONSTELLATIONS to look for in April (at 22:00, PDT) are Central Hydra, Crater (Crt), Sextans, Leo and Leo Minor.

Central Hydra (“The Sea Serpent”, not to be confused with Hydrus, “The Water Snake” - WAY to the south, hence the “s” at the end of the constellation name) is out of the Milky Way and contains two galaxies: NGC 3923 and 3621. The former is a 2.0' x 1.2' ellipse of magnitude 10.7; the latter, a 12' ellipse of magnitude 10.0. One of the catalogues in Guide 7 tells me that NGC 3923 is travelling away from us at some 1400 km/s and is therefore about 20 megaparsecs (64 million light-years) away, using $H_0 = 70 \text{ km/Mpc}$ for the Hubble constant.

Crater (“The Cup”) contains galaxies NGCs 3672, 3962, and 3887 plus the 6th magnitude variable star SY Crt. (The Hipparcos catalogue -- available in Guide 7-- tells us that it’s a slow irregular variable of spectral type M3 III (that makes it a cool red giant) and is 570 times as bright as the Sun and lies 570 light years away.)

Sextans (“The Sextant”) contains the galaxies NGCs 2974, 3115, 3166, and 3169.

Leo (“The Lion”) is familiar to most of us. It’s a constellation that actually resembles what it’s supposed to be. The head of the beast, on the right, contains at its base the first magnitude star Regulus. It also contains numerous galaxies (almost to many to mention) M65, 66, 95, 96, 105, plus NGC 3628, 3384, 2903. Those from the first group are typically 10th magnitude and 5-10' in size. The latter group are generally fainter, typically 11th magnitude (NGC 2903 is 9.5) and smaller 3-5' (NGC 2903 is 12.5'). Note that M65 and 66 is a famous pair visible in the same field of view.

Leo Minor (“The Little Lion”) contains galaxy NGC 3344 (10.4 mag, 7.2' in size).

Clear skies,
-Bob

Business Meeting Minutes

March 13, 2010

Date: March 13, 2010

Location: 7365 Tedford Road

Chairperson: Maurice Sluka

Recording Secretary: Denise Stoltz

Executives Present: Maurice, Denise, Blair, Brian, Glen, Wayne, Rusty, Gil, Robert

Members Present:

Meeting Called to Order at 6:10 pm.

1. Previous Meeting Minutes

Minutes of February 13, 2010 meeting were circulated.

Motion to accept minutes:

Moved: Blair Seconded: Gill Carried

2. Treasurer's Report

Club Account: \$6,498.86

Gaming: \$ 8,033.21

Motion to accept treasurer's report as circulated.

Moved: Wayne Seconded: Gill Carried

Details on file

3. Correspondence, Secretary's Report

Report submitted to National

.

4. Old Business

-Lighting Seminar in progress

-Snow ploughing driveway – membership to be offered for compensation

-Telescope committee report: 24” Scope 4-shooter mirror reflectivity test results

a. RA drive assembly – no update

b. Bob to complete 4-shooter mirror reflectivity test & report – Bob out of town, Gil to assist

-Volunteer Prince George has been contacted. They have over 2000 members and would be good exposure for the club. They will give us a 1 year free membership. Volunteers must be members of the club and have a criminal record check.

-Gaming Account Grant is in!

-Road Trip Star Party to Fort St. James in April or August- Contact Pat about Forestry Site- no word from Pat yet

5. New Business

-Blocking email mining from website was considered not crucial.

-Purge all old expired members from membership lists. Denise will attach a deleted members list with updated membership list.

-Securing Observatory telescope storage

-Fixing C8, mount, mount bracket screws, collimation, lens cleaning

Overview

Report on Non Visual Astronomy by Prince George Center and its Members.

a possible earth fall meteor, November 8 2009. Possible fall area Tweedsmuir Provincial Park and the Interior Plateau.

This article is presented with the expectations that there will be monthly updates on the activity in the Prince George area.

First there are five areas of non-visual astronomy conducted by center members.

1. Monitoring of the radio emissions from Jupiter and its' moon IO using a program developed by Nasa called Radio Jove. This program is at present not active as Jupiter is not in a suitable position. All equipment is operational and ready for the first opportunity.

2. Counting of meteors entering the earth's atmosphere using simple low cost equipment " suitable for School Science Fair projects " Radio Skypipe see

http://www3.telus.net/rascpgrascpgr_meteor_activity.htm
http://www3.telus.net/glenharris/meteor_activity.htm

3. Counting of meteors entering the earth's atmosphere. Data collected using this method is published world wide monthly on several archived lists.

With daily and hourly reports on <http://www.rmob.org/livedata/main.php3>

Look for the Prince George Center, Harris, Sanders and Bower data, these are the four stations doing this data recovery. Also look at ;

http://www3.telus.net/rascpgrascpgr_meteor_activity.htm
http://www3.telus.net/glenharris/meteor_activity.htm
<http://users.xplornet.com/~rdlobsradio%20astronomy%20page.htm>

4. Capturing movies of meteors entering the earth's atmosphere using sensitive video cameras and super wide-angle lens with support hardware to shut down the camera during daylight hours. This system has already captured

5. A Center member also is in the process of making operational a small 3.2 meter radio telescope see <http://users.xplornet.com/~rdlobsradio%20astronomy%20page.htm>

Continued from page 5

-Preparing next Gaming grant- time to start thinking about assembling proposals and have them ready for September. Reevaluate proposals from the past.

-Spending Proposals

- New alternate surface for observing deck

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6. Miscellaneous

- Nova #6 to be moved with Nova #5 (Easter Long Weekend)

- Brochures to be printed up with changes

- Executives decided not to accept donation of the Super Computer

- Newsletter needs more material, please submit before deadline

- Members Meeting to be changed in the fall as members are not attending.

- Rusty building another display system

- Dates for completion needed for future items on business meeting minutes

- Cubs & Scouts asking about using club facilities for summer programs

- Glen to look at roof

- Rolling Mix will donate more free crushed shale

- Rusty will coordinate appraisal of the observing deck surface to determine best course of action

The next business meeting will be held on Saturday, April 17, 2010 starting at 6:00 pm at the observatory on Tedford road.

Meeting adjourned at 7:40 pm

WHAT'S OUT THERE

by

Fae Collins Mooney

Of Dogs and Dog Stars

I have a little dog. In my heart he shines as brightly as Sirius in Heaven's great vault. No other star in the night sky shines with such brilliance; and no other canine can compare with my little fellah. He's the greatest.

Isn't that how we dog lovers feel about that special pooch who shares our life? Perhaps I should alter that question a bit and ask if every astronomy-loving dog lover feels that way. Because, something that appears in "Strange Universe", Bob Berman's column in the April issue of *Astronomy* magazine, has me wondering...

"PETA (People for the Ethical Treatment of Animals)," writes Mr. Berman, "wants astronomy's official institution, the IAU, to ban Sirius' nickname, the Dog Star." Their reason? They believe it is degrading to dogs "to have their name flippantly used like this." They consider it a form of animal cruelty.

It's an April Fools' Joke, right? Not so, says Mr. Berman: "I'm not making this up," he declares.

What PETA may not know about Orion's dogs and their pedigree is this:

To begin with, they frisk and frolic at the heel of that mighty hunter, "the most splendid of all the constellations," declares Sir Patrick Moore in *Atlas of the Universe* (Firefly, 2003), faithfully accompanying him in his journey across the dark skies of winter. Lucky dogs, I would say.

CANIS MAJOR: the Greater Dog

"Orion's senior Dog," continues Sir Patrick, "is graced by the presence of Sirius, which shines as much as the brightest star in the sky." Sirius, "the Sparkling One", is described as being the "leader of the host of heaven". Officially called CANIS Major A, and famously known as the Dog Star, this most brilliant of nighttime stars is bright enough to be viewed in the daytime sky!

"In any good telescope," to quote from *Burnham's Celestial Handbook*, "Sirius is a truly dazzling object; to the Herschels the approach of the star to the field of their great reflectors was heralded by a glow re-

sembling a coming dawn and its actual entrance was almost intolerable to the eye." The colour is described as "brilliant white with a definite tinge of blue, but in its rapid scintillation it often seems to flicker with all the colours of the rainbow."

Martha E. Martin, in her 1907 book *The Friendly Stars*, describes this captivatingly brilliant star with reverence: "He comes richly dight in many colours, twinkling fast and changing with each motion from tints of ruby to sapphire and emerald and amethyst. As he rises higher and higher in the sky he gains composure and his beams now sparkle like the most brilliant diamond - not pure white, but slightly tinged with iridescence."

In defense of this great star's canine nickname, it has been stated that Sirius, throughout our human history, was an object of "wonder and veneration to all ancient peoples".

CANIS Major B, affectionately known as "The Pup", is a white dwarf companion to The Great Dog Star. This star is smaller than the planet Neptune yet is as massive as the Sun!

CANIS MINOR: the Lesser Dog

There is nothing minor - or lesser - about this "Little Dog" - Procyon, the brightest star of this constellation, is considerably more luminous than the Sun and slightly more than twice its diameter. Its name means "Before the Dog" - "an allusion to the fact that Procyon rises immediately preceding Sirius, and thus heralds the appearance of the great Dog Star," explains Robert Burnham, Jr. in his handbook.

Like the great hunter's "Great Dog Star", Sirius, the "Little Dog Star" also has a white dwarf companion, completing Orion's mythical pack of hunting dogs.

So, how do we make sense of PETA's accusations?

I am inclined to believe that the real reason for this odd reaction may have more to do with the disappearance of our sky-lore heritage from the urban-dweller's night sky. "City dwellers face a diluted version of the universe," observes Mr. Berman. And because we have stopped looking up (because there is nothing we can see), we no longer know - or care - about the venerable stories shining up there with the stars.

Flippant? Degrading? Cruel? No. I think not.

Non-Visual Astronomy in the Prince George BC area

Recently a major equipment replacement has been completed on the local All Sky Camera network.

On two of the three locations currently having AllSky Cameras namely, Rasc PG Center and Shane OBS complete equipment replacement has being finished.

Both of these sites currently have PC164 1/3inch low light level cameras with a .0003-lux rating and use a 180-degree fisheye lens at F1.4. Both cameras are housed in a 2-inch PVC tube along with an acrylic dome, two resistors used as heaters, a small fan for cooling in the summer months.



As the CCD in the camera could be possibly damaged by focused sunlight falling on it a very elegant daylight shroud has been added.

The shroud control, heater control with its two heat level setting and fan are all controlled by a controller card driven by the printer port of the capture computer.

Both sites are component and software identical making an easier job of install and maintenance.

The third AllSky Camera received a newer camera. A Watco 902h 1/2 inch with a .0001-lux rating as well as a control card for heater, fan and power control as this camera is shut off during the day, which shuts the auto iris lens.

Did the upgrades have any pay back?
Wait here it comes.

Until the upgrades the FOV of all the cameras differed so a solution to captured meteors was not possible.

Within 3 days of the upgrade completion, the same captures were recorded on all 3 cameras on the network. That sure sounds like a 100% success to me.
A recent capture on March 9 2010 provides a three-location capture. When solved for each capture the following results were found.



The two single trace images are solved results from captures taken on March 9 2010 at 07:33:xx UTC. The third image is an overlaid triangulation of the fall area, if this meteor, had made it through the earth's atmosphere, Shane obs captured this event as well but I was unable to solve because of incomplete star profile.

The grid overlay appears to be in degrees hence pcentre = 53degree: 45min N
And 122degree: 50 mins W Rdl-Obs = 53deg: 58min N
123deg:05min W
This places a fall area near 53deg: 55 min N 123deg: 123deg: 35min W

If others would like to assist in the solving of these captures the software can be downloaded from
<http://www.4shared.com/file/74204271/5618eb1c/UA224b.html>

CD's of most recent captures will be distributed upon request. Contact Wayne or Glen for copy.

The necessary Profile file for each camera location will be included on each CD.

Current plans are to expand the allsky camera network to the south and or west
With the west being the most likely direction. Join us in the FUN

Wayne and Glen

Asian Astronomy: My New Sky

“When you see the Southern Cross for the first time, You understand now why you came this way,”

Although I cannot see this oft-quoted asterism from where I now live, I do, by way of simple geometry, see a different night view than that of where I once stood, and you stand now, in Prince George. Twelve hours ahead, 28 degrees south and wearing a t-shirt and sandals while observing in November, it feels a world away. It is, I suppose. But looking up and seeing familiar specks of light, thinking the thoughts I did on the observing deck in Prince George, is a tangible reminder of how close we are, how cosmically small our planet is. The immensity of our globe becomes irrelevant on the cosmic scale. The stars I look at are the same ones that you do. The moon I see rise is the same one that you do. Separated only by time and space. You can leave home, but some things are just so big they never change.

You see, my girlfriend and I recently dug up our roots in Prince George and, with the offer of new employment and adventure, moved to the beautiful sub-tropical island nation of Taiwan. We now live in a rice farming village of a couple hundred people, on the East coast.

Taiwan is a land of spectacular mountains, devastating typhoons, delectable fruits, suffocating heat, boundless biodiversity, extremely friendly people and, well, rain. And rain means clouds. And clouds mean, if you plan ahead, don't bother packing your astronomy gear. So there it lays, in boxes back in Canada, the accumulation of years of my amateur astronomy affiliation.. I thought I was being decisive and pragmatic – pack light, only the essentials. “I just wont be able to use that stuff in the tropics”

But there I was, driving home on my scooter one evening, when I tilted my eyes upward and saw.. a star. Then two stars. Then...then... .

The only source of light on this forgotten road in the middle of endless rice fields was from me, my headlight.

Turn it off. Off.

Silence. Darkness. Stars.

I had prepared myself to have a year away from my obsession with the night sky and visual astronomy, but here I was seeing the stars like I never imagined. I prepared myself for endless nights of blanketed cloud cover. But that was not what I was witnessing. They were everywhere! Perfect visual astronomy potential. I was taken back to the days in Prince George, where I cut my teeth on real amateur astronomy and learned the tools of the trade.

Should have at least brought my binoculars!

During the day the sultry heat, melodic cacophony of tropical birds, endless vistas of rice fields and Chinese conversations offer a constant reminder that we are in Asia. But in the evening, when the hum of rural Taiwan settles into its nightly slumber and the sun dips behind the mountains, Prince George comes back to me. I am no longer standing in summer clothes, wiping sweat from my brow and getting whiffs of foreign dinners, but rather on the deck at the Observatory, pointing out stars in the sky with the clubs laser, or knee deep in snow with a borrowed telescope in my yard. All the way back in Prince George.

The Cosmos calls from home. The immense furnaces that are the literal stuff of life and the matter of the universe itself, flickering above me, are *almost* the same as the ones you will look at 12 hours later. The reality of the cosmos crosses that temporal line, and refreshes me with memories of home.

Living in a tiny village in Taiwan offers ample opportunities to step outside on any given night and see the best that a Taiwanaese night sky has to offer. In fact, rural Taiwan offers some of the best night skies that I have seen. When it is good, it is great. I was, and am still, surprised. And loving it.

- *Written by Trevor Padgett (November 26, 2009)*

Here are my photos from the Lunar Marathon on March 20. It was a fun get together. When the clouds came, we collimated scopes, when it cleared, we got some great lunar viewing in. Thanks Glen for organizing this event.

Doug Wayland



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

136 Dupont Street, Toronto, ON M5R 1V2 Canada

Tel: 416-924-7973 Fax: 416-924-2911 Website: <http://www.rasc.ca>

Join/renew online at: <http://www.rasc.ca/join> Form Updated: 2008 July 14

ORDINARY MEMBERSHIP APPLICATION

PERSONAL INFORMATION

Name (Please print in full) _____

Address _____ City _____

Province/State _____ Country _____ Postal Code _____

Telephone (Days) _____ Telephone (Evenings) _____

E-mail Address _____

*Membership in the RASC includes one issue of the annual **Observer's Handbook**, six issues of the **Journal of the RASC** and six issues of **SkyNews** along with benefits that your Centre may also offer.*

APPLICATION

I hereby apply for membership in the Royal Astronomical Society of Canada. I understand that personal information is collected and used according to the Society's Privacy Policy available at www.rasc.ca/privacy.shtml

Note that **Toronto Centre** memberships are processed locally. Visit toronto.rasc.ca/content/membership.shtml for details and to download an application form.

YOUR CENTRE AFFILIATION (PLEASE CHOOSE ONE ONLY)

✓	Centre	Base National Fee	Centre Affiliation Discount	Centre Fee	Total Fee
<input type="checkbox"/>	Belleville	67.00	(23.00)	31.00	\$75.00
<input type="checkbox"/>	Calgary	67.00	(23.00)	36.00	\$80.00
<input type="checkbox"/>	Charlottetown	67.00	(23.00)	23.00	\$67.00
<input type="checkbox"/>	Edmonton	67.00	(23.00)	23.00	\$67.00
<input type="checkbox"/>	Halifax	67.00	(23.00)	23.00	\$67.00
<input type="checkbox"/>	Hamilton	67.00	(23.00)	36.00	\$80.00
<input type="checkbox"/>	Kingston	67.00	(23.00)	28.00	\$72.00
<input type="checkbox"/>	Kitchener-Waterloo	67.00	(23.00)	33.00	\$77.00
<input type="checkbox"/>	London	67.00	(23.00)	27.00	\$71.00
<input type="checkbox"/>	Mississauga	67.00	(23.00)	23.00	\$67.00
<input type="checkbox"/>	Centre Francophone de Montréal	67.00	(23.00)	48.00	\$92.00
<input type="checkbox"/>	Montréal	67.00	(23.00)	32.00	\$76.00
<input type="checkbox"/>	New Brunswick	67.00	(23.00)	23.00	\$67.00
<input type="checkbox"/>	Niagara	67.00	(23.00)	27.00	\$71.00
<input type="checkbox"/>	Okanagan	67.00	(23.00)	28.00	\$72.00
<input type="checkbox"/>	Ottawa	67.00	(23.00)	23.00	\$67.00
<input type="checkbox"/>	Prince George	67.00	(23.00)	27.00	\$71.00
<input type="checkbox"/>	Québec	67.00	(23.00)	34.00	\$78.00
<input type="checkbox"/>	Regina	67.00	(23.00)	27.00	\$71.00
<input type="checkbox"/>	St. John's	67.00	(23.00)	27.00	\$71.00
<input type="checkbox"/>	Sarnia	67.00	(23.00)	23.00	\$67.00
<input type="checkbox"/>	Saskatoon	67.00	(23.00)	33.00	\$77.00
<input type="checkbox"/>	Sunshine Coast (BC)	67.00	(23.00)	23.00	\$67.00
<input type="checkbox"/>	Thunder Bay	67.00	(23.00)	23.00	\$67.00
<input type="checkbox"/>	Toronto (see note at upper right)				
<input type="checkbox"/>	Vancouver	67.00	(23.00)	26.00	\$70.00
<input type="checkbox"/>	Victoria	67.00	(23.00)	25.00	\$69.00
<input type="checkbox"/>	Windsor	67.00	(23.00)	23.00	\$67.00
<input type="checkbox"/>	Winnipeg	67.00	(23.00)	23.00	\$67.00
OR					
<input type="checkbox"/>	Unattached (No Centre Affiliation)	67.00	n/a	n/a	\$67.00

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