PeGASus
Newsletter of the
Royal Astronomical Society of Canada
Prince George Centre

September 2007

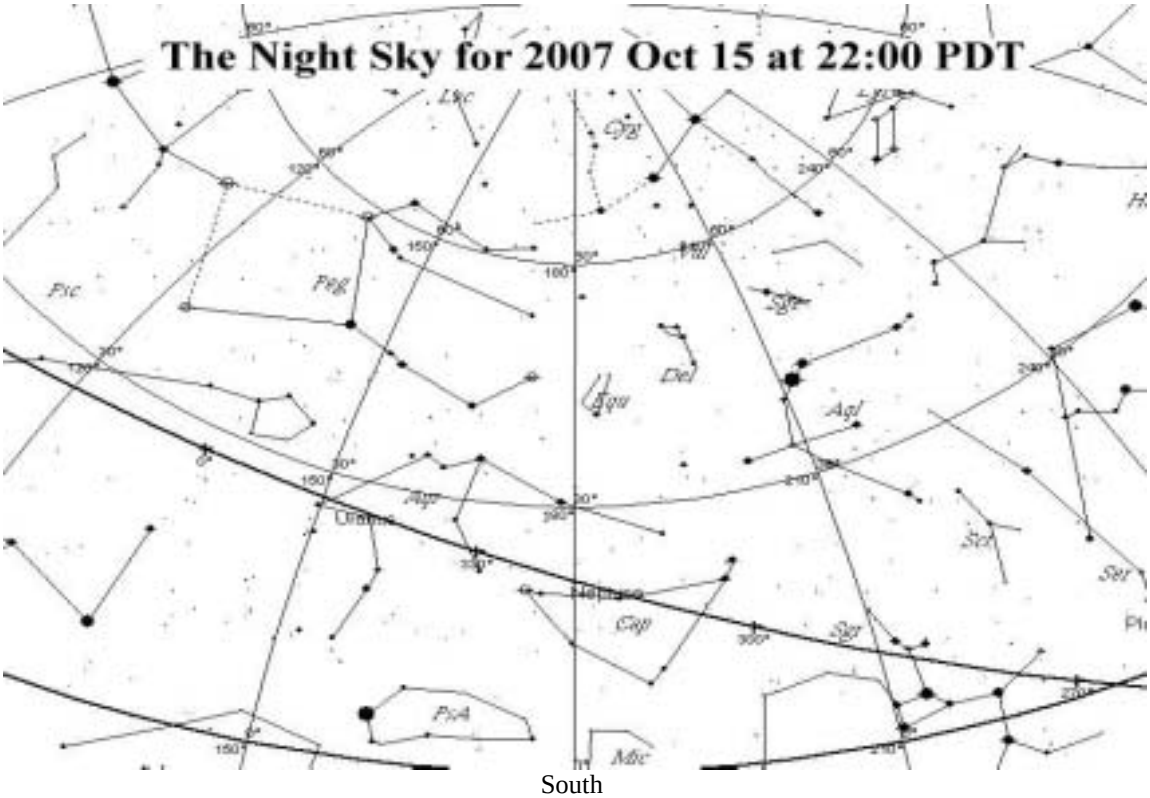
Our pursuits are out of this world.
Our activities are astronomical.
Our aim is the sky.

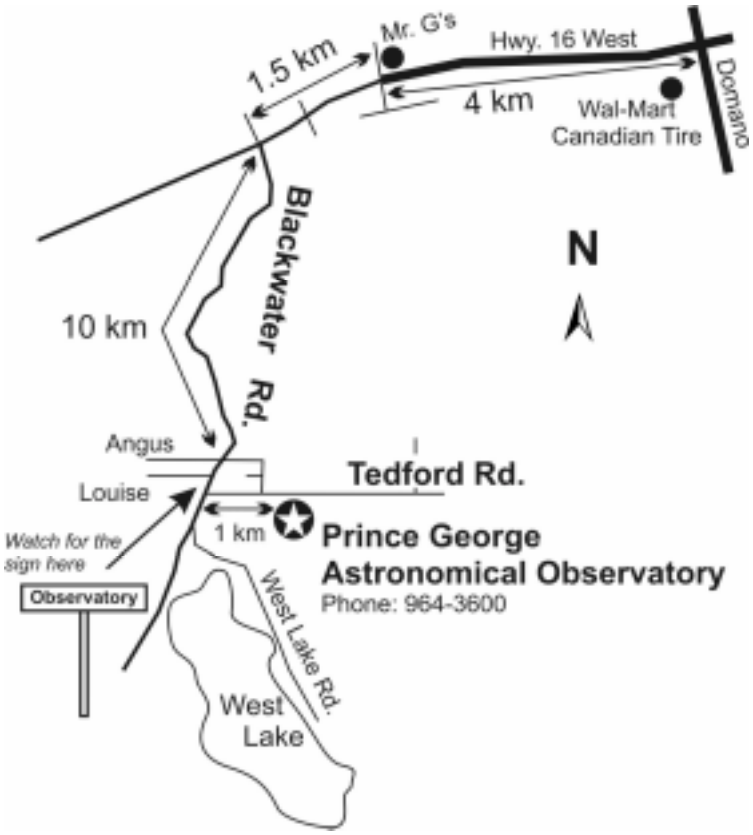
In Issue # 161

the PeGASus
is published monthly by the
Royal Astronomical Society Canada
Prince George Centre
www.rasc.ca/princegeorge

The Saturday September 29th Social Event has been CANCELLED.

The RASC-PG meets next, Saturday October 27, 7:30pm at the Observatory for a social evening





Contributions to the newsletter are welcome.

Deadline for the next issue is

October 12, 2007

PeGASus Editor

Brian Battersby brianbattersby73@yahoo.ca

Send correspondence to

Prince George RASC
7365 Tedford Road
Prince George B.C.
V2N 6S2 phone:964-3600

Coming Events

To Volunteer to help run an event please contact Brian Battersby.
brianbattersby73@yahoo.ca
Phone: 561-8138 (day) 612-4623 (evening)

Date	*Event*	*Time*	*Place*	*Volunteers*
Sept. 28	OPEN HOUSE	7:30 pm	Observatory	Greg M & Valerie Z.
Sept. 29	THE FINAL FRONTIER	8:00 pm	Vanier Hall	Gil S, Maurice S, Blair S.
Oct. 05	OPEN HOUSE	7:30 pm	Observatory	**HELP**
Oct. 12	OPEN HOUSE	7:30 pm	Observatory	Greg M, **HELP**
Oct. 19	OPEN HOUSE	7:30 pm	Observatory	**HELP**
Oct. 20	NOVA CLASS #1	7:00 pm	Observatory	Brian B
Oct. 22	TOUR: HOMESCHOOLERS	7:00 pm	Observatory	Brian B
Oct. 26	OPEN HOUSE	7:30 pm	Observatory	**HELP**
Oct. 27	CLUB SOCIAL NIGHT	7:30 pm	Observatory	*all welcome!*
Oct. 31	ANNUAL GEN. MEETING	7:30 pm	Observatory	*all welcome!*

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

EDITORIAL (October 1996)

by Gil Self

These last few weeks have certainly brought some major adjustments to the PGAS. First off, we have some pretty big shoes to fill, several active members have moved on to other endeavors. We now need to find members who can pitch in and use some of their skills to take on some of these vacated tasks. It was suggested by the executive that we look for several people that can each add a little. So if you can write an article; visit a class; host a tour; give a talk; paint-hammer-saw-rake-patch-mend-repair-(do first-aid); help with fund raising; staff the observatory ...We need you. Our Friday night open house has been very successful in raising our community profile but it has greater returns than that. If you have not had the opportunity to take part, it is very difficult to describe the satisfaction you feel when you see a young face light up the first time they see something through a telescope. I think that child is frequently started down the same road we are
all following ...."science junkie" . Perhaps even more noticeable is the occasional adult who, perhaps has never had the opportunity to "gaze at the skies", ask questions and get hooked. There are a lot of projects underway from fund-raising to construction, newsletters and hosting guests. Each of these present opportunities for us to participate in our community and, I think, take away more than we give up.
Gil Self

EDITORIAL (September 2007)

by Brian Battersby

You are witnessing the end of an era. After 11 years of tirelessly poking and prodding club members for articles, staying up half the night fighting with his computer and spending a week at a time trying to come up with the prefect editorial Gil Self has put down his pen as editor of the PeGASus newsletter.

To commemorate the momentous event I decided to reprint Gil's first Editorial column. I was a little shocked to see that I could have printed it without the dates and no one would have thought anything of it. All of the things Gil said 11 years ago still apply today. We still need more volunteers, we still run Friday night open houses and seeing "a young face light up the first time they see something through a telescope" is still a pretty darn amazing thing to witness.

I'm not sure when Gil officially joined the PGAS but his name first started appearing in the newsletter in the November 1994 issue as a Member-at-Large. Gil has been a staunch supporter of the society ever since and has held numerous positions. Most notably he will probably hold the record for longest serving Vice President and also for the longest serving newsletter editor. All you new members now know him as President!

The question you may, perhaps, be asking yourself at this point is "what changes will Brian make to the newsletter?" The answer is I'm not exactly sure, having only been on the job for an hour and a half now. I will say that Gil had a definite vision of the PeGASus as being "made for Prince George, by Prince George" which I admire deeply and still want to maintain but there is a whole big universe out there and I think in order to grow and challenge ourselves we are going to have to explore it.

There is one more thing from Gil's first editorial 11 years ago that still applies today. I "have some pretty big shoes to fill".

PS: you can send your articles for next months newsletter to brianbattersby73@yahoo.ca The deadline will be October 12.

B.B.

The Night Sky for October 2007

by Bob Nelson, PhD

Hi Folks,

It's a clear night out there, my telescope is running flawlessly, and my CCD camera is sending back image after image of a field of stars near the variable star AW Lacertae (the Lizard). "Why am I doing this?", I hear you ask. Well, back in 2003, while observing AW Lac, I noticed that one of the stars in the field was varying. I called it RHN-5, for the fifth variable star that I have been fortunate to discover. (Well, you have to call it something! It turns out that this -- unlike many of the others -- also has a conventional name, GSC 3986-3383.) At the moment, the star (happily) is going into eclipse (assuming that it is an eclipser), and I should be able to determine an accurate time of minimum. The next step is to get a set of magnitudes over one cycle (we call it a light curve) and hence determine the period. I'm hopeful. Certainly, if the clear skies continue, I can get a lot done.

There is a concept called "mining data". Some of the all-sky surveys like ROTSE, 2MASS, and the Sloan DSS have accumulated humongous amounts of data -- often for a single purpose. One can analyze selected parts of these data banks and derive useful information about specific objects (like variable stars) that were not part of the original study.

Well, in looking over my records, I see that I have taken over 90,000 CCD images in the last nine years. It has been made clear to me that I need to mine *my own data*, looking for variable stars (before the automated searches blow us all away). I have made a start in doing just that, and have found 12 variable stars. I need to complete the search, follow up on what I have discovered, and publish -- before someone else beats me to it. This is a fairly sizeable job.

And I thought that I would have lots of time now that I am retired!

I'm also off to the DAO in Victoria this week for my semi-annual observing run (just 7 nights this time), and can let you know how I made out when I return. Busy, busy, busy.

Anyway, here is what is happening in the skies next month:

MERCURY -- ah, yes, flighty Mercury. At mid-month, it lies some 16° to the east of the Sun but owing to the alignment of the ecliptic, it is poorly placed for us northern observers. Then, it rises some 2 hours after the Sun, but sets at almost exactly the same time! (To see why, remember that, along the ecliptic from the Sun to the east, you are heading -- at this time of year -- into to the southern half of the celestial sphere. In fact, Mercury lies at some 17° south latitude. Hence, at sunset, the Sun-Mercury line is almost perfectly horizontal at this latitude, and the planet therefore sets with the Sun.) In any case, Mercury reaches inferior conjunction on October 23 and is off our target list for the time being.

VENUS is a morning object this month. At month's start, it rises at 02:00, some 4 hours before the Sun. At sunrise, it lies some 33° above the SE horizon; and is a 34" waxing crescent, 34% illuminated and of magnitude -4.5. At midmonth, these values have changed to 28", 43%, and -4.5, respectively, and at the end of the month, they become 23", 52%, and -4.4, resp. Venus is racing away from the Earth. Have a boo, you early birds!

MARS, in Gemeni until Dec 30, is a late evening and morning object this month, rising as it does at midmonth at 21:25, PST. By sunrise, it will lie some 54° above the SSW horizon. It's an 11" gibbous blob of magnitude -0.3.

JUPITER, in Ophiuchus until Dec 1, is an early evening object this month, setting about two hours after the Sun. At midmonth, it lies only 11° above the SSW horizon at sunset, so it will be hard to see. For those die-hards, it's a 34" disk of magnitude -1.9. (However, as always for those who have goto telescopes, you can get good views of the brighter planets during the day. Try it, you'll be glad you did!)

SATURN, in Leo until 2009 (Sept) is a morning object this month, rising at midmonth at about 03:00. Also at midmonth, it lies 38° above the SE horizon at sunrise. It's now a 17" disk of magnitude 0.8.

URANUS, in Aquarius until 2009 (March), is an evening and early morning object this month. At midmonth it lies only 6° above the ESE horizon at sunset. As usual, it's a 3.6" disk at about magnitude 5.7.

NEPTUNE, in Capricornus until 2010 (March), is an evening object this month, setting at midmonth at 01:42 (PDT) Also at that time, it lies 12° above the SE horizon at sunset. As usual, it's a 2.3" disk at about magnitude 8.0.

Between Oct 11 and 15 or so, Venus, Saturn and Regulus form an attractive grouping, about 5° across. As noted above, this will be an early morning event. Have a look if you are up then.

CONSTELLATIONS to look for in October (at 9:00 PM, PDT) are Pisces Austrinus, Capricornus, Aquarius, Delphinus, Vulpecula, Equuleus, and Pegasus.

Pisces Austrinus (PsA, "The Southern Fish"), visible only on the extreme southern horizon here in Prince George and lying as it does off the Milky Way, contains only a few galaxies and no star clusters or nebulae. It does contain the well-known star Formalhaut (= Alpha PsA = *Al Rischa*, "The Cord"), the 18th brightest star in the night sky. It is a fine binary star, discovered by William Herschel in 1779. The galaxies visible are NGC 7172 and 7154 but these are very, very close to the horizon when on the meridian and represent challenge objects from here.

Capricornus (Cap, "The Sea Goat"), lies on the Zodiac but lies out of the Milky Way (to the northwest of PsA) and contains only M30, a fine globular cluster. Of the brighter stars, Delta and Epsilon are both variable stars. Delta is an eclipsing binary of the Algol type (fully detached, with flat regions in the light curve between eclipses); its period of 1.023 days makes it hard to study. Epsilon is a variable of the Gamma Cassiopeia variety. These are young stars that are rapid rotators; in fact, they are rotating so fast that the star's gravity is only just strong enough to retain the stellar material. With instabilities, material gets ejected every once in a while, resulting in irregular light variations and emission lines in the spectra.

Aquarius (Aqr, "The Water Bearer"), to the north of Cap, lies on the Zodiac and contains a number of variable stars but no deep sky objects (!) -- at least as listed in Norton's Star Atlas.

Delphinus (Del, "The Porpoise"), to the northwest of Aqr, is another boring little constellation, containing only two globulars, NGGs 6394 and 7006.

Vulpecula (Vul, "The Fox), in the Milky Way just to the south of Cygnus (and the last constellation in the book), contains M27, the famous "Dumbbell" Nebula (disc'd by Messier in 1764 and lying close to 900 light years from us) -- it's a wonderful object worthy of close observation or CCD photography (just wait til we have colour filters available).

Equuleus (Equ, "The Little Horse"), a tiny constellation (the second smallest in the sky, after Crux) and contains NO deep sky objects at all. Delta Equulei, however, is a close visual binary. It was discovered by Otto Struve in 1852; it was for many years at period 5.7 years, the shortest known for any visible binary. According to Burnham, the system has made 19 revolutions in the last 112 years. It is, however (as you might expect) a difficult close binary, never separated by more than 0.35 arcseconds.

Pegasus (Peg, "The Winged Horse", "The Great Square" and our mascot), also lies off the Milky Way. It contains a few faint galaxies, an open cluster, and M15, a fine globular.

Good luck to all,
Bob Nelson

RASC National Website

by Brian Battersby

www.rasc.ca

The RASC National website is an often underused resource. It is full of lots of information about the society you belong to, its publications, education resources, national programs and observing projects.

It is the observing projects section, specifically, the national observing certificates, I wish to touch upon this month.

Often the hardest thing to do in amateur astronomy is to figure out what to look at. That is where the observing certificates come in. They bring a goal, a direction, a meaning to your observing sessions. By starting one or more certificates you will observe far more often and have a wider variety of targets. If you don't have an objective for observing in mind you will quickly find yourself looking at the same old objects over and over again….boring!

Below are descriptions of the four certificate programs the RASC currently offers. These four certificates offer years of observations. The national website describes them quite well so I have quoted the rest of this article directly from the Observing Certificates webpage. http://www.rasc.ca/certificates/index.shtml

> The RASC offers four observing certificate programs to promote active observing. By successfully completing these programs you are eligible for an official certificate from the RASC. Observing certificates are a great way to challenge yourself, learn more about the night sky and get the most out of our challenging and rewarding hobby.

- **Explore the Universe Certificate** - A challenging program for the new astronomer covering all major astronomical objects including constellations, bright stars, the Moon, Deep Sky Objects, and Double Stars. Suitable for both binoculars and telescopes.
- **Messier Certificate** - Take a stroll through astronomical history as you follow Charles Messier's 18th century journey through the northern skies. His famous list of 110 "not comets" includes some of the most spectacular objects in the northern hemisphere.
- **Finest NGC Certificate** - A somewhat more challenging list for the experienced observer, developed by Sky News Magazine Associate Editor Alan Dyer. The Finest NGC list includes a further 110 objects, mainly from the New General Catalogue.
- **Isabel Williamson Lunar Certificate** - The RASC's lunar observing certificate program. It includes a comprehensive list of the best features visible on the surface of the Moon and detailed observing notes and explanations that will guide you through a complete tour of the amazing surface of our nearest neighbour in space.

> The RASC's observing certificate programs are supported and managed by the Observing Committee. Participation in this committee is welcome. To find out more contact the Observing Committee Chair. observing20010@rasc.ca

I hope you will start an observing certificate and start exploring your universe today!

Brian Battersby

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

LA SOCIÉTÉ ROYALE D'ASTRONOMIE DU CANADA
136 Dupont Street, Toronto, ON M5R 1V2 Canada
Tel: 416-924-7973 Fax: 416-924-2911 Email:
Website: http://www.rasc.ca/ E-store: http://www.store.rasc.ca/

mempub@rasc.ca

FORM UPDATED: 2007 SEP 21

MEMBERSHIP APPLICATION

APPLICATION DATE:

NAME _____
(PLEASE PRINT IN FULL)

ADDRESS _____

CITY: _____ PROV: ____

POSTAL CODE _____

TELEPHONE: (___) _____

EMAIL: _____

MEMBERSHIP BASE FEES $_____

CENTRE SURCHARGES $_____

SUB-TOTAL $_____

EJOURNAL INCLUDED

PRINTED JOURNAL $_____
($15.90 IN CAN / $15 US INTERNATIONAL)

▫ I WISH TO MAKE A DONATION $_____
(Tax receipts will be issued for donations over $10.00)

TO: ▫ RASC NATIONAL
▫ CENTRE _____

TOTAL PAID $_____

▫ 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:
The Royal Astronomical Society of Canada
136 Dupont Street, Toronto, ON M5R 1V2 Canada

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

▫ Personal information is collected for membership and/or order fulfillment purposes only.
See http://www.rasc.ca/ for the RASC Privacy Policy.

MEMBERSHIP CATEGORY

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

ANNUAL MEMBERSHIP BASE FEES:

- ▫ YOUTH $34.25
- ▫ ORDINARY $55.00
- ▫ LIFE $2100.00

Please choose one affiliation:

Annual Centre Surcharges			
✔	Centre	Ordinary	Youth
	Belleville	8.00	4.00
	Calgary	13.00	8.00
	Charlottetown		
	Edmonton		
	Halifax		
	Hamilton	15.00	
	Kingston	5.00	
	Kitchener-Waterloo	10.00	10.00
	London	4.00	
	Mississauga		
	Centre Francophone de Montréal	22.00	5.75
	Montreal	9.00	3.25
	New Brunswick		6.25
	Niagara	4.00	
	Okanagan	5.00	
	Ottawa		
	Prince George	4.00	
	Québec	12.00	4.50
	Regina	4.00	
	St. John's	4.00	
	Sarnia		
	Saskatoon	10.00	
	Thunder Bay		
	Toronto (see note below)		
	Vancouver	3.00	
	Victoria	2.00	2.00
	Windsor		
	Winnipeg		
	Unattached		

Surcharges support Centre activities. Please contact the Centres for details.
http://www.rasc.ca/member/2006contactlist.pdf

* APPLICATIONS FOR THE RASC TORONTO CENTRE ARE PROCESSED LOCALLY BY CASH OR CHEQUE ONLY. Please see their application form at http://toronto.rasc.ca

Please keep this portion for your records.

The Royal Astronomical Society of Canada
La Société Royale d'Astronomie du Canada
136 Dupont Street, Toronto, ON M5R 1V2 Canada
Tel: 416-924-7973 Fax: 416-924-2911

Website: http://www.rasc.ca/ E-store: http://www.store.rasc.ca/

Email us at: mempub@rasc.ca

Your Membership is appreciated
Thank you.

DATE: _____ Amount paid $_____ ▫ CHEQUE ▫VISA ▫MASTERCARD ▫AMERICAN EXPRESS

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

Phone: 964-3600
Email: pgcentre@yahoo.com
Website: www.rasc.ca/princegeorge

This newsletter is printed courtesy of
Spee-Dee Printers
We thank you for your support.