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

October 2005

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

In Issue # 147

the PeGASus
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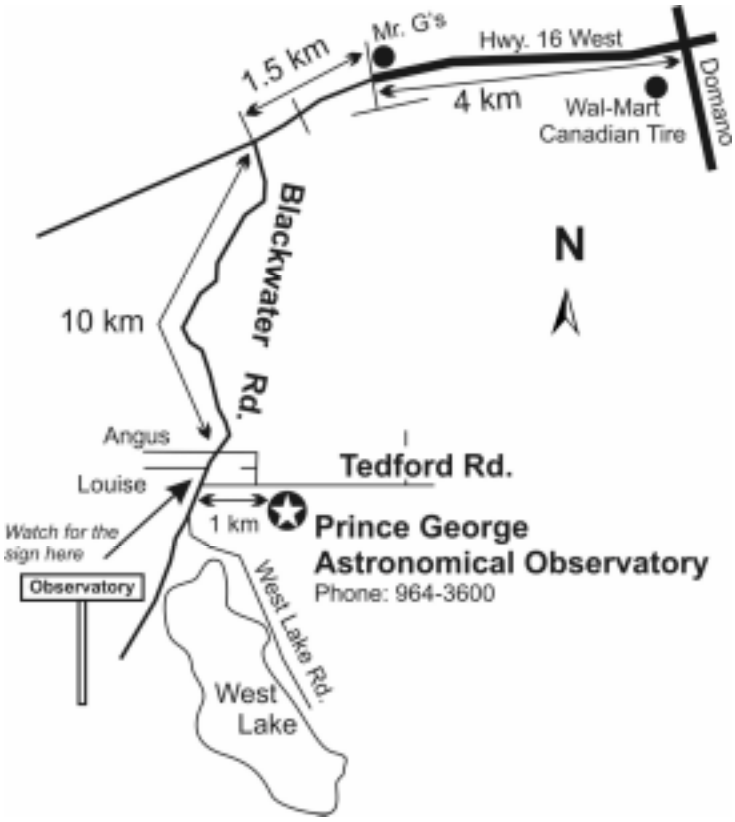
Prince George Centre

www.rasc.ca/princegeorge

The RASC-PG meets next at 7:30 pm Wednesday October 26 at The Observatory

Important Notice:
Annual General Meeting and Elections will be held
October 26 7:30 pm
at the observatory



Contributions to the newsletter are welcome.

Deadline for the next issue is

November 18

PeGASus Editor

Gil Self **gil-pg@shaw.ca**

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Coming Events

Oct. 22 P.G. Photographic Society coming for a visit / tour. 7:30 pm, Observatory

Oct. 26 ANNUAL GENERAL MEETING (Elections). 7:30 pm, Observatory

Oct. 28 Mars Opposition viewing - PUBLIC EVENT. 7:30 pm, Observatory

Oct. 29 NOVA session #4. 7:30 pm Observatory

Nov. 4 & 5. Mars Opposition viewing - PUBLIC EVENT. 7:30 pm, Observatory

Nov. 12 NOVA session #5. 7:30 pm Observatory

Nov. 16 Girl Guide Tour (about 60 people attending). 6:00 pm, Observatory

Nov. 26 NOVA session #6. 7:30 pm Observatory

Nov. 30 GENERAL MEETING—GUEST SPEAKER FROM UNBC. 7:30 pm, Observatory

Open Houses run every Friday evening August through November
Members Nights run every Saturday evening August through November

Editorial

Gil Self

Stop !!!! If you rarely read the editorial, please read this one !

"The Time's they are a-changing"

While not the piercing political commentary of the sixties, Dylan's words describe very well the current state of the PGAS. Over the past year or so, we have enjoyed a dramatic increase in our membership. During this time we have continued our public outreach with regular open house and many tours, and we have extended our hours. We now have a members night at the observatory every week, and there are also several school programs already in place. We have offered our assistance to the school system, to help them build the new science curriculum. We have a working meteor tracking system. As well, a new project just getting underway is investigating the possibility of doing radio astronomy.

I really don't have enough room here to give you a detailed list of all that is being done. But to make a very long story short, we have grown-up! A few short years ago we were a small group of enthusiasts, with a great observatory. In the last two years we have had visits by two RASC presidents and many other speakers and guests with national experience. Two points can be made from that statement, they came too see what all the fuss was about (and went away impressed), and from talking to all these folks we have the best member owned facility in the country. If you consider membership on a per capita basis I think we have one of the largest organizations as well. Now we are a large group of enthusiasts with a great observatory.

What I am getting at is that if we are to maintain this organization we need more help. It has always been the case that a small group has made sure that what needed doing was looked after. That works for a while but eventually people get tired. Everyone volunteers because they enjoy the science, or the people involved, or the chance to learn something , or just simply to help. But when it becomes an obligation, or drudgery, people start to drop. I think we are at the point where if we take some action and spread some of the jobs out among several people we keep the valuable folks we have. If several people take on one small responsibility each, no one individual is going to be overwork or overwhelmed.

This is going to take some planning, there are a lot of things that you just don't think of , but if somebody didn't step up to the plate, you would certainly miss them. Let me give you one example, where does the water come from when you flush the toilet? You would sure miss it if the tank wasn't kept full. Doug Wayland has taken it on himself to check the tank every time he's out there and bring water out as required. This is one of those invisible jobs that we usually don't even stop and think about, Thank-you Doug.

The meeting on October 26 is our annual general meeting as required by the government agencies that grant us our non-profit status and some of our funding. This meeting is when we also are required to have elections. I think this year we need to decide a few things as to how we want this centre to operate. There has been some discussion already, if we are having problems filling up a monthly newsletter, perhaps it should be bi-monthly? Since we are in effect having a meeting every Saturday night (members night) perhaps we will scrub the monthly general meeting. There are many items to discuss, but we need your input.

We are looking for ways to improve, but it needs to be rewarding and enjoyable.
We need YOU!

The Night Sky for November 2005

by Bob Nelson, PhD

Hi Folks,

Ah, another month has rolled by and with it, the need for another column! Another evening is spent with the planets and stars (even though it is cloudy out as I write this). We have had a lot of cloudy nights this month, I fear, but you never know – we could get clear nights at any time! One needs to be positive to be an astronomer!

I personally have no right to complain. I was given twelve observing nights for the 1.8 metre telescope at the Dominion Astrophysical Observatory (DAO) in Victoria at the end of September. I totally lucked out with only one cloudy night; I took a total of 78 target spectra, resulting in two complete radial velocity curves and one partial. (The acquisition of photometric data for these stars should result in a full analysis and publication for each.) Yippee!

Anyway, here is what is going on in the sky this month:

MERCURY, the winged messenger, is pretty well lost in the glare of the Sun this month. At the start of the month, it sets a half hour after the Sun (good luck there!), and it reaches inferior conjunction on November 23.

VENUS is an evening object all month. At the start, it sets about two hours after sunset and is a half-illuminated 24" disk of magnitude -4.4 (bright!!). By month's end, it will have grown to a 36" diameter crescent of magnitude -4.6 and will set almost three hours after sunset. Nice stuff!

MARS, in Aries until 2006 (Feb), rises at mid-month at about 15:30 PST (about an hour before sunset) and is up all night. At 21:00 PST, it is about 40° above the ESE horizon; however, the Moon is not far behind (some 14° away), spreading out its near-full glow – just like an obnoxious street lamp. This should not, however, be a problem for well-baffled telescopes. Again at mid-month, it's a 19" disk of magnitude -2.1.

JUPITER, in Virgo until November 30 when it passes into Libra, is a morning object, rising at mid-month about two hours before the Sun. Its time will come in the new year.

SATURN, in Cancer until 2006 (Aug), rises at mid-month at about 21:30 (PST) and is therefore up all night. It transits around 05:20 and, unless you stay up all night, will be better accessible in February or March. Again at mid-month, it will be a 19" disk of magnitude 0.2; the rings will be tilted at about 17° -- and we are looking at the southern side (and will be until 2008 Dec 25 when they will be almost edge-on, but then open out, still revealing the southern side. The true ring crossing will eventually occur on about 2009 Sept 4.)

URANUS, in Aquarius until 2009 (March), sets at mid-month at around midnight. As most observers know, it's easily found with binoculars if you know where to look. In a small to medium telescope, its moons are also a good sight. As usual, it's a 3.6" disk at about magnitude 5.7.

NEPTUNE, in Capricornus until 2010 (March), sets at mid-month at about 22:15 (PST) and therefore should not be hard to find with the big 'scope if you have good finder charts and/or planetarium software. As usual, it's a 2.3" disk at about magnitude 8.0.

PLUTO, in Serpens until 2006 (Sept), sets at mid-month about 18:40 and therefore, except for the really eager beavers, is not well placed for viewing. As usual, it's a 0.1" disk at magnitude 13.8

CONSTELLATIONS to look for in November (at 21:00 PST) are Sculptor, Western Cetus, Pisces and Andromeda.

Sculptor (Scl, "The Sculptor's Tools"), another southern constellation at the limit of our visibility here in Prince George lies out of the Milky Way. It contains NGC 253, a spectacular spiral galaxy, a number of fainter galaxies, a faint globular (NGC 288) and, near the latter, the south galactic pole which, at declination 27.5 degrees south, is just visible from Prince George. The brightest star, Alpha Sculptoris, is a B7 giant radiating 1700 times solar, has a radius of 7 times solar, and a mass of 5.5 solar. The reason it is so dim (at 4.3 mags) is that it lies at a distance of 670 lightyears. Its claim to fame – and the reason I am telling you all this – is that at an age of 81 million years, it is at the end of its hydrogen-fusing cycle. The core, which is comprised almost entirely of helium, will ignite after the star expands, the surface cools, and the star becomes a red giant. The star is presently classified as a slow rotator; this relative stillness results in a lower than solar surface helium abundance (no mixing) and an enhanced abundance of heavier elements such as silicon, titanium and manganese. The magnetic field generates star spots, enabling astronomers to measure its rotation period. The magnetic field occasionally flips and controls the behaviour of a close-in cloud of circumstellar gas. [Taken in part from http://www.astro.uiuc.edu/~kaler/sow/fomalhaut.html.]

Western Cetus (Cet, "The Sea Monster"), contains a number of galaxies, including M77, which is a bright and compact spiral galaxy, contains three distinct sets of spiral arms and lies about 60 million light years distant. According to Burnham, this and NGC 4594 in Virgo (The "Sombrero") were the first two systems in which very large redshifts were discovered, leading to the discovery of the expanding universe.

Pisces (Psc, "The Fishes"), lies on the Zodiac. It contains M74, according to Burnham, one of the faintest and most elusive of the Messier objects requiring a dark sky and suitable eyepiece. Pisces also contains, according to Norton's 2000.0 Star Atlas, the galaxies NGC 487 and 524.

Andromeda (And, "The Princess of Ethiopia"), is familiar to most of us; it contains the "Great Andromeda Galaxy" M31 along with its satellite ellipticals, M32 and NGC 205 (a.k.a. M110 -- but not really on Messier's list). According to Burnham (and the references therein), M31 has been known at least as far back as 905 AD; it was known as "The Little Cloud" and appeared on star charts long before the discovery of the telescope in 1609. Simon Marius is usually credited with the first telescopic observation in 1611 or 1612. Early observers thought the "nebula" consisted of glowing gases but long photographic exposures early in this century revealed it to be a vast star system. Edwin Hubble, observing Cepheid variables with the 100" Mt Wilson telescope, established the distance as around 90,000 light years, well out of this galaxy. Later, corrected calculations in 1953 extended the distance out to 2.2 million light years. We now know that M31, along with M33 and our galaxy, are the three largest members of the "Local Group", gravitationally bound and holding numerous smaller galaxies, including the Large and Small Megallanic Clouds. Needless to say, M31 has been the subject of many studies by professionals using the largest telescopes and is also a fine object for amateur study and photography.

Clear skies to all,
Bob

Celestron StarHopper 8 For sale $375.00

Key Features:

- 8" Primary Mirror
- 48" Focal Length
- BK7 Optical Quality glass
- Roller Track Bearing on Azimuth Surface provides dozens of support points for smooth swivel motion
- Variable Tension Clutch System for proper balance and smooth control in both altitude and azimuth
- Includes 25mm Plössl eyepiece and 9 x 50 finder scope
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The Eyepiece and Filter Kit (#94303) contains: **For sale $150.00**

Five Superior Grade Plössl Eyepieces - 1.25" — 4-element design with a 52° AFOV (32mm has 44°) — Superb color resolution, edge sharpness and clarity. All eyepieces are fully multi-coated for maximum contrast and resolution. Supplied are a 4mm,6mm, 9mm, 15mm, and 32mm.

Barlow Lens - 2x 1.25"— Compliments the Plössl eyepieces in this kit and gives you a total of ten power combinations. High grade glass optics with fully multicoated lenses are used so there is no degradation of image.

Six Colored Eyepiece(Lunar & Planetary) Filters - 1.25" — Included are Kodak Wratten #12, #21, #25, #56, #58A, and #80A. Since you have all the eyepieces necessary to study the planets and moon in detail, these filters will greatly enhance your enjoyment of our solar system.

Moon Filter - 1.25" — A neutral density filter which allows you maximum enjoyment of the moon especially during the brighter phases.

Aluminum Carrying Case — This sturdy and well-built case fits all of the above items in the die-cut foam interior and has room for additional accessories.

Contact Hugh Kennedy
hughkennedy@shaw.ca

Both for $500.00

24 Inch Mirror Cleaning

After continued discussion on email it was decided to hold a work party to clean the large 24 inch mirror on the big telescope. On Saturday September 24, 2005 a few of us got together to clean it. Brian brought the supplies which included 2 jugs of distilled water, dish soap, cotton balls and jet dry. Preparation included getting the wood carrying case and some plastic to hold the mirror. Once that was done Gil showed us how to remove the mirror and it was moved outside. There was a brief interlude in the action as we had to attend to injuries suffered by Maurice. A small gash that stretched across his forehead threatened to coat the 24 inch mirror in blood. For the sake of the mirror the majority of members asked Maurice to at least bandage hid head to stop the blood flow. As like most first aid victims he was reluctant to acknowledge his injuries

getting ready

swabbing the mirror

Teamwork was essential in this critical operation. We had lots of opinions that were pointed directly at the cotton swabber operators. We encouraged safety and care on the worksite. (This was due to the concussion like Injury Maurice suffered) After the swabbing we tried to rinse with destilled water and a drop of jet dry. It soon became apparent that the Jet dry left a residue. Quickly we changed tactics like all good teams do facing disaster (or at least another round or cleaning)
"Rinse with distilled water the team cried out!"

finished cleaning and rinsed.

Next was drip dry the Mirror. Alas it was taking too long. I pulled out a Blower Upper of large air mattresses and other assorted rubber things. At a critical moment of drip drying it was blown off.

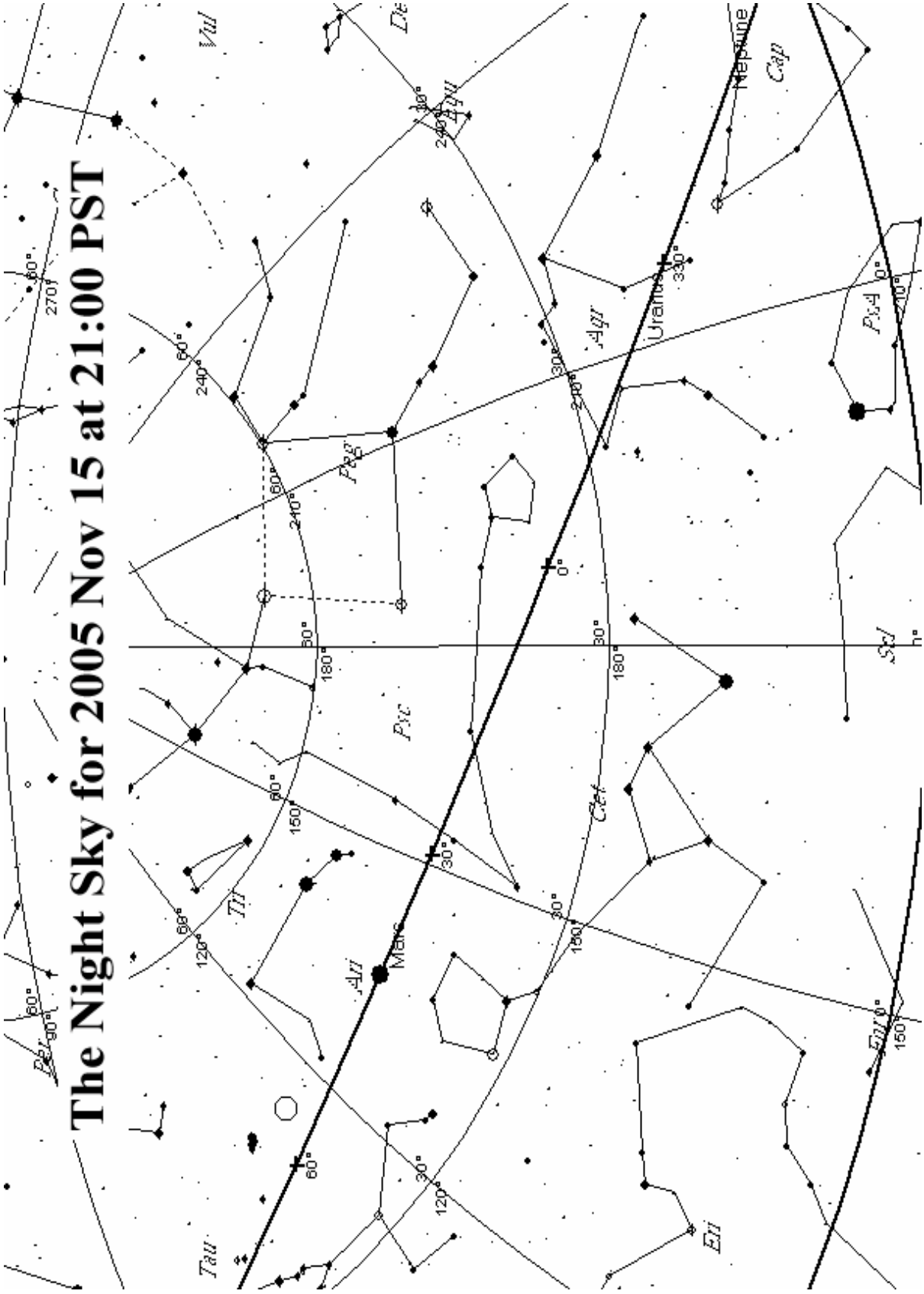
Blow dry

We had one thing left to do and that was..Ooops wait we have not cleaned the Secondary mirror yet! Well to cut it short we cleaned that right on the telescope.

Hugh Kennedy

I took this shot this morning (Oct 17,05) at 05:10 am PDT when the moon was at maximum eclipse. The first clear morning we have had for awhile.
Details:
Canon FTbN 35mm camera
At prime focus of ETX 90 scope, about f14
1/125 sec
Kodak Gold 200 film
Unretouched
Doug

Map courtesy Dr Bob Nelson



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AKA the Prince George Astronomical Society

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