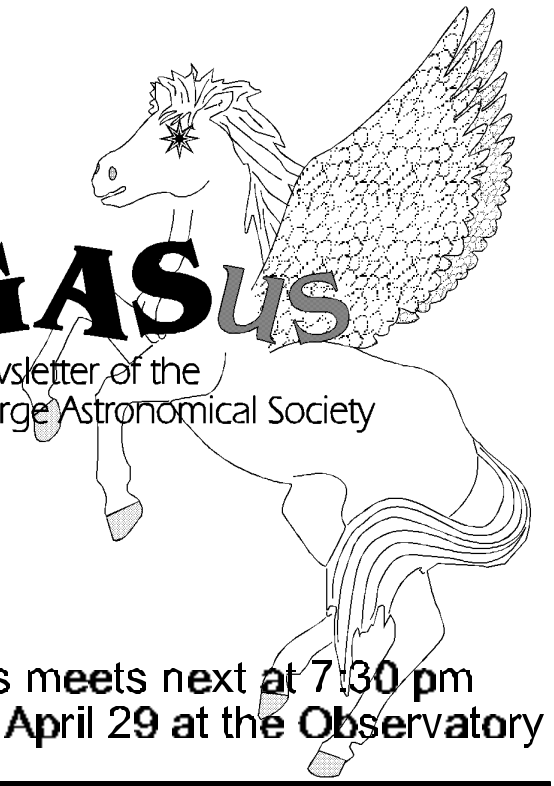
1998 APRIL ISSUE #84



the

PeGASus

Newsletter of the
The Prince George Astronomical Society

The pgas meets next at 7:30 pm
Wednesday April 29 at the Observatory

INSIDE :

the PeGASus
is published
monthly by the
Prince George Astronomical Society.

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

Contributions to the newsletter are welcome.

Deadline for the next issue is

MAY 15

Send correspondence to
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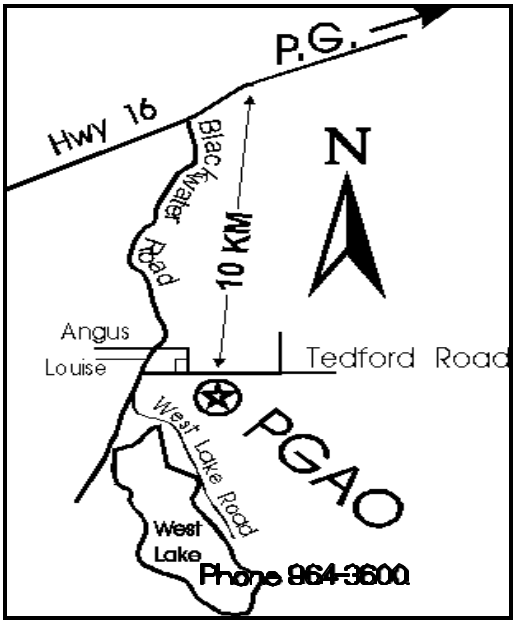
Prince George, BC, V2N 1P8
or



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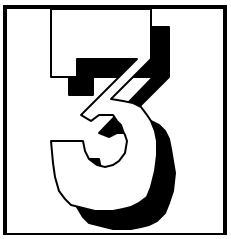
EDITORIAL

by Gil Self

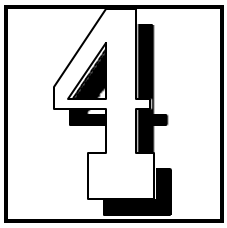


I have to ask myself occasionally what the function of the editorial in our newsletter is? Am I to take up causes, you know save the whales or gun control etc. ??
Or should I be the cheerleader, revving up interest and motivating with lots of pats on the back for all the hard work that our members are doing. Or, maybe its just a chance to tell you what I'm thinking about (the kitchen needs painting, that problem machine I'm working on, inventory due in two weeks, got to get that—- naw you don't want to hear all that , too chaotic). So maybe just a bit of a flag waver, a bit of a motivator, and a bit of a cheerleader. But, I think most of all this is a chance to talk to each one of you directly, once a month. To try and make sure you know what the plans are from the directors of our club. We have often talked about trying to make sure everyone knew that there was not an elite core group holding everyone else out, and that everyone was welcome to participate in all our activities. That is very true, anyone is more than welcome at any club function. But although it may not be elite there is a core group. We have upwards of 50 members but most of what we accomplish is because of about 10 to 15 members. That's great and they all deserve recognition for the time that they give us ! We know that this is only a volunteer organisation and everyone has many pressing demands on their time, but if you can each find two or three hours more a month we could really make great progress together. For example, bring you ideas to the executive meetings. The executive meets once a month, usually on the Wednesday of the second week, anyone is welcome. Call a member of the executive for time and place. There is almost always one work party each month, usually the Saturday after the general meeting. Or, you could take on a project, find out what are the upcoming jobs and take ownership of one you feel comfortable with. Or talk to your employer, we have an organisation with a great track record we can be proud of , maybe your company would like to share some of that public exposure with us. So, you see, even if you are 'just' a member to quietly support our club, you can still help. This is the year that we finally have the building up and usable and protected. The roof is fixed the damp in the basement is cured, the building is not going to deteriorate around us. We can finally start doing some serious astronomy. So if a few of us can take on a small project and get it out of the way we can all have more time to enjoy what we are really all about, astronomy.

Some of the outstanding projects are: frame the basement, build a water system, bathrooms and sewage, build a darkroom,. finish framing the classroom door, paint the building, repair and paint the dome, landscaping, double-up the driveway, improve parking, build a fence, flooring, a viewing deck, motorise the dome, build a viewing seat, computerise the scope. The list goes on but we are at the point that we can use the observatory for what it was intended . The outstanding projects will get looked after over time but I think we should focus some extra effort into completing as much as we can in the coming year.

Clear Skies

Gil



Coming Events

If you are involved with any astronomical or otherwise scientific activity on behalf of the PGAS, please list the activity here.

April 29 —-General meeting at the Observatory
May 27 —-General meeting at the Observatory

The Night Sky for May '98

by Bob Nelson, PhD

Hi Folks! Starlight Wasting Time is upon us again and, as the Earth continues on its way around the Sun, we get less and less nighttime. I set this month's SkyMap at midnight since, on the 15th, that's how late you'll have to stay up to see dark skies. Luckily for me personally, classes at the College are now over, and I can sleep late the next morning (for me, observing *is* professional development after all). I plan to sleep out at the observatory after late nights. For you, gentle readers, perhaps the weekends will be good for you.
(Unless otherwise noted, all events are for the 15th of the month.)

PLANET ROUNDUP

MERCURY, is a morning object in May and reaches some 24 degrees western elongation from the Sun on the 15th. However, because Sun and nearby planets are on an ascending part of the ecliptic, they make a shallow angle with the horizon at dawn at this time of the year. The planets are therefore close to the horizon (and hence hard to see) at dawn.

VENUS, a morning object in May, rises about an hour before sunrise. It's a 15.7" disk of magnitude -4.1. This makes it very a prominent and beautiful object just before dawn (I've seen it recently and it's great!). But don't expect to see much telescopically (it's a gibbous "blob") unless you can pick it up before dawn and keep tracking it until it is high in the sky.

MARS, in Aries (until the 15th when it passes into Taurus), is lost in the glare of the Sun. It reaches conjunction on the 12th and is actually occulted by (passes behind) the Sun.

JUPITER, in Aquarius (until the 27th when it passes into Pisces), rises around 3:30 A.M. and is low in the southeast at dawn. On the 15th, it's a 36.7" disk of magnitude -2.2 about 21 degrees up and to the right of Venus at dawn.

SATURN, in Pisces, is lost in the glare of the Sun (it's between Venus and the Sun on the 15th).
URANUS, in Capricornus, rises around 2 A.M. (PDT) and is low in the south-southeast at dawn. It's a 3.6" disk of magnitude 5.8.
NEPTUNE, in Capricornus, rises at about 12:45 AM and sets at about 9 AM. As

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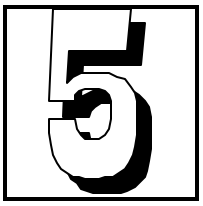


NEPTUNE, in Capricornus, rises at about 12:45 AM and sets at about 9 AM. As usual, it's a 2.3" disk at about magnitude 7.9.

PLUTO, in Ophiuchus, rises at about 8 PM and sets at about 6:30 AM. As usual, it's a 0.1" disk at magnitude 13.8.

CONSTELLATIONS to look for in May (at 12 PM, PDT) are Corvus, Eastern Hydra, Virgo, Coma Berenices, and Canes Venetici.

Corvus is the small lectern-shaped constellation southeast of Leo (the top two stars point up towards Spica to the northeast). It has, however, very few objects of interest -- only NGC 4782 (halfway towards Spica).

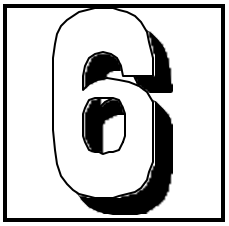
Hydra is a sprawling constellation running from 8 hours to 15 hours right ascension and from -35 to +5 degrees declination. In this month's region of interest, there is globular cluster M68, lying 3.8 degrees southeast of Beta Corvi (the star at the lower left corner of Corvus). M68, discovered by Messier in 1780, is about 2' in diameter, contains around 100,000 stars and is about 46,000 light years distant. The absolute magnitude is about -7.7. Although not as spectacular as M13 or M5, it's still good to look at.

Virgo and Coma Berenices, lying to the east of Leo, are the regions of the sky rich in galaxies. Virgo contains 11 Messier objects, all galaxies. These are part of the giant Virgo cluster of galaxies lying some 20 megapasecs (65 light years) from Earth. This contains some 1000 galaxies and shines with the light of 10^14 suns. It is thought that the local group (containing the Milky Way Galaxy, M31, M33 and others) may be falling towards the Vigo Cluster. Nearby in the sky, but much more distant is the even larger Coma cluster which lies some 150 megaparsecs (500 million light years) away. It contains some 10,000 galaxies and shines with the light of 10^15 suns.

So all told, there are dozens of galaxies in an arc from Virgo to Coma Berenices to Canes Venatici to Ursa Major -- lots to see.

Also in western Coma Berenices lie the globular clusters M53 and NGC 5053, about 1 degree apart. In Canes Venatici, about 15 degrees to the northeast, lies M3, one of the three finest globular clusters in the northern sky, (the others are M13 and M5). Discovered by Messier in 1764, it glows with the apparent magnitude of a 6^{th} magnitude star and lies about 35,000 light years distant. It contains at least 45,000 stars and has a total mass of around 140,000 solar masses. It's very old, about 10 billion years young.

So there you have it -- lots to see this month if you can stay up late BN



NIGHT VISION

By Rob Firth

A sound awakes me in the middle of the night. Although the room is dark, I can see the nightstand. My eyes are dark-adapted. I reach over and flick on the light, which temporarily blinds me. Feeling reassured that the sound was nothing to worry about I flick off the light. The room is dark, the nightstand no longer visible. After a few minutes my eyes slowly start to see objects, the nightstand has reappeared. This is the eye's slow response to dark adaptation.

Human eyes work by light refraction. Light collects at the cornea, like the objective of a telescope, then is refracted, first through the iris, through the lens (with an adjustable focal length), finally through the retina, the light sensitive part of the eye. In the retina are photoreceptive cells called rods and cones. Cones are responsible for colour, rods, for light sensitivity. Dark-adapted eyes peak at 510 nm., the bluer end of the spectrum, which is why astronomers choose red lighting for their surroundings. Cones are not so dark adaptive which is why we suffer a certain amount of colour blindness, especially when viewing the dimmer stars.

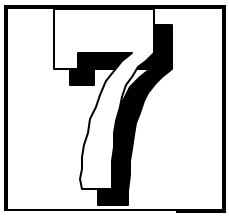
Dark adaptation is important in astronomy when viewing faint objects through the eyepiece. First of all, your observing site should be away from any stray light, farther away the better. Intermittent light, such as car headlamps, can delay the eye's ability to dark-adapt, which usually takes 15 to 30 minutes. A flashlight with a read lens is helpful for looking at star maps and using your equipment.

When looking through the eyepiece, keep both eyes open and breathe normally so as not to starve your eyes of oxygen. Then, using averted vision for the faint objects, as there are more rods nearer to the retina. Another technique that I use is to slowly blink the eyes while using averted vision.

For brighter objects, such as the planets, use the center of your eye to distinguish colors (the center of the eye has more cones).

It takes time to train your eyes to these techniques, but once mastered, a whole new universe awaits you.

Here are some great websites you might be interested in.
http://webhome.idirect.com/~rsnow/
http://www2.gsoc.dlr.de/scripts/satvis/satvis.asp?Lat=53.92&Lng=-122.75&Loc=Prince+George&TZ=PST
http://www.skypub.com/.



From The Net

Hi Gil,

As a member of the AAVSO discussion group, I get a lot of stuff. In response to a Californian's question about observing in the cold, (I sent some-thing too), I got the following from South Africa.

to: NELSON
Subj: Cold..
Hi discussers,

I live on the South African highveld, which lies about 1400 m (more than 4000 ft) above sea level. Most winter nights here are open and a lot of heat escapes towards Sco and Sgr. Temperature drops of more than 20 C are common and that's what makes observing (or rather the observer) here 'cool' .

As Jan Hers mentioned, what we need here after the session are electric blankets and I would add a loving and understanding wife.
We have dry cold but even so one of the main problems towards the morning is dew on the eyepiece. A battery pack and some resistors in series around the drawtube can solve that.

Clothing: that changes during the winter night. I usually start off with T-shirts and shorts, then I add or replace with a light training suit, thick-soled shoes and two pair of socks. What I especially look out for is that the warm clothing is worn in a way that cold bridges are reduced i.e. socks over trousers, trousers over shoes....'it's a technique' The training suit which is the basis of my observing clothing must have a cap.
Wind here is few and mostly welcome as it clears the haze. So no need for plastic clothing here.

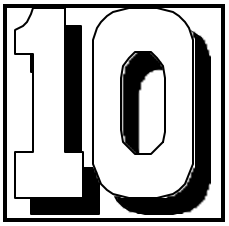
Eating/drinking: some oats at the end and some red wine when it gets cold or a beer in the summer. What I also do, especially around Christmas, and believe me I am then always thinking about you, observers of the North, is to jump in the swimming pool a few times during the observing session... to keep a cool head.

What I don't like is the unexpected visit of a lion or a rhino, but fortunately other people felt the same about that and so they are these days kept in game reserves (large and nice ones!). Most problems here are from insects, arguably large ones like baboon spiders, they predict the rain and enter the house or observatory just to let you know.. The main problem I would say are the annual harvests of termites. It always occurs during a clearing after some good summer rains. The highveld is one large ant heap and the termites come out to spread to the four directions. They get large double wings like dragoon-flies and come out from under the ground, millions of them. This is feasting time for the birds, but as soon I notice them I close down. They will mess up the scope tube in no time.

Best regards,

Berto Monard,
Pretoria

Maybe I will think twice next time I am complaining about the mosquitoes——GS



At The Eyepiece

(Reprinted from RASC Journal)

By Alan Whitman

This spring tour begins in the mid-evening zenith with the globular cluster which is probably the easiest object on the OBSERVER'S HANDBOOK Deep-Sky Challenge Objects list. It ends low in the south with the toughest object on the Messier list, a galaxy that is as challenging from Canada as is the easiest Challenge Object.

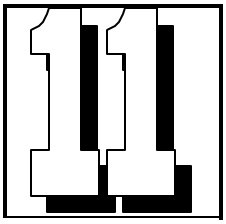
NGC 2419 is the Milky Way's most distant globular cluster, about 200,000 light years from earth. The globular's interest lies in its distance--it is about as far away as the Small Magellanic Cloud. Some older references like BURNHAM'S CELESTIAL HANDBOOK call it "The Intergalactic Wanderer", a romantic image indeed. However, this title is almost certainly wrong given our current knowledge of darkmatter and its great contribution to our galaxy's gravitational field.

NGC 2419 is one of the most compact globulars, concentration class II, appearing about 2' in diameter in amateur instruments. My 20-cm Newtonian picked up the cluster at 61x. It was faint at magnitude 10.4, but it was unmistakeably a globular in the eyepiece. There are no reports of anyone resolving its 17th magnitude stars visually--Lord Rosse could not do so with his 1.8-metre metal mirror last century in Ireland.

The distant globular is in the obscure constellation Lynx. Don't let that throw you. The way to handle recently created constellations like Lynx is to ignore their unfortunate creation and work from the nearest prominent star. You'll find your quarry a mere seven degrees north of Castor.

Castor is one of the finest multiple stars. Components A (mag. 2.0) and B (mag. 2.8) are currently 3.7" apart so if you can't separate them, you can safely record the night's seeing conditions as poor. Unfortunately, poor seeing is quite common in north temperate latitudes at this time of year due to the turbulence caused by windshear aloft, especially that associated with the jetstream. (For that reason, most of the observations mentioned in this article were at low or medium power).

Castor was the first gravitationally bound binary system to be announced, by William Herschel in 1803. The pair were at their minimum separation of 1.8" in 1965, but my logbooks record two occasions in 1962 when my 60-mm refractor managed to elongate and notch the A and B components at the correct position angle. The small refractor also revealed the 9th magnitude C component some 73" distant. Each of Castor's resolvable stars is a spectroscopic binary. So Alpha Geminorum is a rather interesting multiple star with six components.



The magnitude 8.9 galaxy NGC 2903 in 'the Sickle' of Leo is rated as a showpiece object by Alan Dyer, a rating which only 11 of Messier's galaxies and 10 Finest NGC galaxies earn. The elongated Sb spiral is a large 11' by 5' oval with a bright core. The galaxy yielded easily to the 60-mm refractor. The dark lane southwest of the star-like nucleus was visible at moderate power in the late Peter Kuzel's 45- cm Dobsonian from a 900 metre high ridge east of Kelowna on a club observing night in March, 1985 when we enjoyed superb transparency. Phil Harrington says that telescopes in the 30-cm range may reveal the brightest HII region, designated NGC 2905, found 1' northeast of the nucleus.

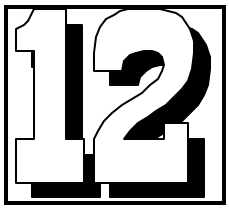
Gamma Leonis is on anyone's list of the sky's finest double stars. Separated by 4.4", the golden pair shine at magnitudes 2.1 and 3.4. Some authors have ascribed a greenish or reddish tinge to the fainter star--such perceptions probably arose in the eye of the observer or in the chromatic aberration of his 19th century refractor.

Only 50' east of Gamma lies an attractive pair of almost touching galaxies: the round, 1' in diameter, elliptical galaxy NGC 3226 is magnitude 11.4, and the elongated 3' by 1' spiral NGC 3227 is magnitude 10.8. My only view of them was with the Prince George club's 0.6-metre Cassegrain at 120x, but W.S. Houston found that NGC 3227 was easy in his 10-cm Clark refractor at 95x.

M96, a large 6' by 4', magnitude 9.2, Sb spiral with a bright core, anchors a group of galaxies in the belly of the Lion. M95 (mag. 9.7) is in the same low power field of view, only 42' to the west. It looks round (3') with a bright central condensation in my 20-cm reflector at 61x. Harrington writes that the largest amateur telescopes will increase the apparent size to 5' and show hints of the barred-spiral structure that is visible on photographs. The galaxy would then look like a Greek letter Theta, which is Robert Burnham's description of the photographic appearance.

The elliptical galaxy M105 lies 48' NNE of M96. M105 has two companions, NGC 3384 and 3389, and the three form a small triangle about 8' to 10' on a side. The triangle plus M96 will fit into my 20-cm equatorial's 30x field, but M95 won't quite squeeze in. M105 is magnitude 9.3 and spherical (2') with a bright centre. Magnitude 10.0 NGC 3384 is 4' by 2', but may visually look nearly round. Edge-on spiral NGC 3389 was just a very faint (mag. 11.8) featureless blur with the 20-cm telescope.

Halfway between Theta and Iota Leonis there is a trio of Sb galaxies in the same low power field: M65, M66, and NGC 3628. The two Messiers are only 21' apart and Dyer ranks both as showpieces. I called both "easy" when I found them in 1964 with the 60-mm refractor at 10x. But, like Messier's small refractors, mine missed NGC 3628 at both 10x and 55x



M65 is very elongated (7.8' by 1.6'), is magnitude 9.3, and has a bright nucleus. Harrington says that it displays a dark lane on its eastern rim (the side facing M66), visible with only a 15-cm aperture. While the dust lane is prominent on most photographs of M65, I have no record of having observed it.

M66 is the brightest at magnitude 9.0 and is elongated (8.0' by 2.5'). The 20-cm reflector shows a bright star-like nucleus at 61x. Burnham compares the southeastern spiral arm to a "crab's claw", a very apt analogy to the photographic appearance. One of the spiral arms is visible at 120x with the 0.6-metre Cassegrain, but my notes state that it is "the longer spiral arm" which would be the arm closest to M65, not Burnham's "crab's claw". However, Harrington reports seeing the latter arm with his 33-cm Dobsonian.

The edge-on galaxy NGC 3628 is 12' by 2', is magnitude 9.5, and displays a little mottling with the 20-cm Newtonian at 61x. An equatorial dust lane was barely visible at 120x and 225x with the 0.6-metre reflector on a night with excellent transparency but only fair seeing. (In comparison viewing a few minutes later, the equatorial dust lane of the famous edge-on spiral NGC 4565 was easy near its nucleus.) At the next new moon, with better seeing, I called NGC 3628's dark lane "easy" at 120x.

Lemon-yellow and pale blue Tau Leonis is one of the sky's prettiest double stars. Tau's 5th and 7th magnitude components are separated by a wide 1.5', so use your lowest power. I normally don't observe optical doubles, but Tau is so attractive that I make an exception for it several times each spring. A real binary is in Tau's field, 83 Leonis. Its stars are 29" apart. One is pale yellow and magnitude 6.5 and the other is greenish-tinged and a magnitude fainter.

One of the most attractive elliptical galaxies is NGC 3115 in Sextans, near Lambda Hydrae. The magnitude 9.2 Spindle Galaxy is 4' by 1' and has a high surface brightness. As it is one of the most appropriately named objects in the sky, further description is not necessary. A 75-mm refractor can find it.

Our fourth showpiece deep-sky object is NGC 3242 in Hydra. Any observer who wonders why Herschel coined the metaphorical term, "planetary nebula", need only look at this example. Known as "The Ghost of Jupiter", it has a uniformly illuminated, oval (40" by 35"), pale blue disk. It is one of the brightest planetaries at magnitude 8.6. This object is so easy to find that my first view of it was at full moon! W.S. Houston said that a 15-cm telescope would reveal the 11th magnitude central star, but Burnham implies that a 25-cm aperture is needed. James Mullaney suggests that the central star is variable. Variability, in combination with NGC 3242's remarkable surface brightness (eight times that of the Ring Nebula), may make the central star much more difficult than magnitude 11 sounds.

M83 might seem like an object for later in the season, but both Mark Kaye and Richard Huziak recently made the point that the early morning hours are the best time to hunt for

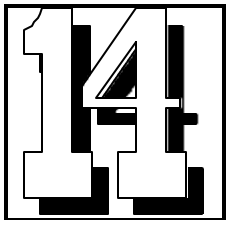
difficult objects. Most houselights, porch lights, and headlights are off in the predawn hours, resulting in significantly darker skies in many populated areas. When Spica culminates, it is time to search for M83 nineteen degrees farther south. The magnitude 7.6 glow, spread over a 10' by 8' face-on Sc spiral, is the toughest Messier to detect from Canada. [Most sources list the galaxy as being of about 8th magnitude. In NGC 2000.0 the magnitude of M83 is given as 7.6 and I've used that source. But in a few sources the magnitude is given as 10.1, which seems very pessimistic. Perhaps someone measured the small central core at magnitude 10.1 and failed to integrate properly the glow from the three magnificent spiral arms. This would be like determing the magnitude of a great comet by measuring its pseudonucleus while ignoring its coma.]

From Canada you can't hope to do much more than find M83. However, it is one of the most impressive galaxies south of the celestial equator, so remember to reobserve it when you have a chance at a southern U.S. star party or while on a subtropical vacation. Part of the hobby's attraction is the joy of the succesful hunt. You have to plan; you have to observe objects again and again until, on some night of excellent transparency and/or seeing, you discern detail that was never revealed to you before; and you sometimes have to travel to see objects normally hidden from you.

The dimensions of objects are from BURNHAM'S CELESTIAL HANDBOOK since Burnham gives the apparent visual size which is much more useful to the visual observer than are the much larger sizes measured on astrophotos. The magnitudes are from NGC 2000.0, as are these celestial coordinates:

	R.A.(2000) DEC	REMARKS
NGC 2419	07 38.1 +38 53	
Alpha Gem	07 34.6 +31 53	Castor
NGC 2903	09 32.2 +21 30•	
Gamma Leo	10 20.0 +19 51	Algieba
NGC 3226	10 23.4 +19 54	
NGC 3227	10 23.5 +19 52	
M96	10 46.8 +11 49	
M95	10 44.0 +11 42	
M105	10 47.8 +12 35	
NGC 3384	10 48.3 +12 38	
NGC 3389	10 48.5 +12 32	
M65	11 18.9 +13 05	
M66	11 20.2 +12 59	
NGC 3628	11 20.3 +13 36	
Tau Leo	11 27.9 +02 51	
83 Leo	11 26.8 +03 01	
NGC 3115	10 05.2 -07 43	
NGC 3242	10 24.8 -18 38	
M83	13 37.0 -29 52	

Alan Whitman



Why is there ,sometimes, a rabbit in the moon?

The rabbit is actually on the moon, not in the moon. When we look at the moon, we see only its surface features, we cannot look below the surface using visible light, although radio waves can penetrate a few centimetres below the surface. Moreover, we don't see the rabbit all the time.
It only comes out when the moon is full or nearly full. This is because moon rabbits like the sun. Every part of the moon's surface has a day and night, much like Earth, except that the lunar day lasts about one month. As the month progresses, the lunar rabbit hops along trying to keep the sun straight over head. It wouldn't be able to do this on earth because rabbits cannot hop around the earth in one day; also, lunar rabbits cannot swim. However, they can hop around the moon in one month. Just how fast does the rabbit have to hop, you asked?
The radius of the moon is 1740 km. This makes the circumference 2 x 3.14 x 1740 = 10900 km.
So the rabbit has to hop with a speed of 10900 km/month, or
10900 x 1month /30 days x 1 day / 24 hours = 15.2 km/hour
in order to keep up with the sun. Even Earth rabbits can hop this fast.

Orla
What can I say - Someone might make comment about proximity to those big dishes at the VLA —-but I won't **:>)** Gil

Building Report

If you've been to visit the observatory in the past couple months, you will have been amazed at the speed with which we are improving and updating, renovating and turning the site into a professional caliber observatory. Oh, wait – that was a great dream I had recently… sorry to disappoint!

On a more grounded note, things are proceeding slowly yet steadily on the PGAO. Things of note include Vince Hogan and Don Clapper cleaning house rather effectively the weekend following the March meeting. On the weekend of 11, 12 April, we installed a sidewalk going out to the C8 pier. Special thanks go to Jon and Peter Bowen, and Don Clapper who gave me much needed assistance in the base preparation and the installation of (so far) 34 concrete sidewalk pavers. With luck, we will reduce the amount of gunk that we get on our shoes and in the building.

Projects needing to be done, requiring both materials and volunteer labour, are: painting the exterior of the dome, and the block walls, installing walls and insulation in the basement, coating the floor with protective coating, running conduit under the dome floor into the warm room, cleaning out the future photolab and extra rooms, setting up the warm room as a computer control centre for the 24" scope.

That's the scope of things done, and things left to do for the time being.

PGAS CONTRIBUTORS

The PGAS would like to thank the following individuals, corporations and government agencies who, since 1991, have donated money, goods or services to the construction and operation of the Prince George Astronomical Observatory.

Ministry of Adv. Ed. Training and Tech.	$25,000
BC Science Council	16,000
BC Lotteries	3,900
Helmar Kotsch (Acme Mas.)	1,932
Northwood Pulp and Timber	1,665
Electrical Services Ltd.	1,583
Royal Bank of Canada	1,500
Regional District of Fraser-Fort George	1,000
Prince George Rotary Club	1,000
The Pas Lumber Co	750
Rustad Broth & Co Ltd	750
Canfor Polar Division	744
A.V. Jay Roofing	600
Xerox Canada	500
Russelsteel	465
Lakeland Mills Ltd	460
Canfor Clear Lake	270
Lutz Klaar	200
Canfor Netherlands	200
Art Beaumont	150

The greatest contributors to the construction and operation of the observatory are from PGAS members who have generously contributed their time to this project. The value of their contribution surpasses all external contributions.

The PGAS is a non-profit organization dedicated to the advancement of astronomy and science in general in Prince George and the neighboring northern communities. Donations of money or materials to the society are greatly appreciated and tax deductible.

Support Community Science

Join the PGAS

The Prince George Astronomical Society's
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