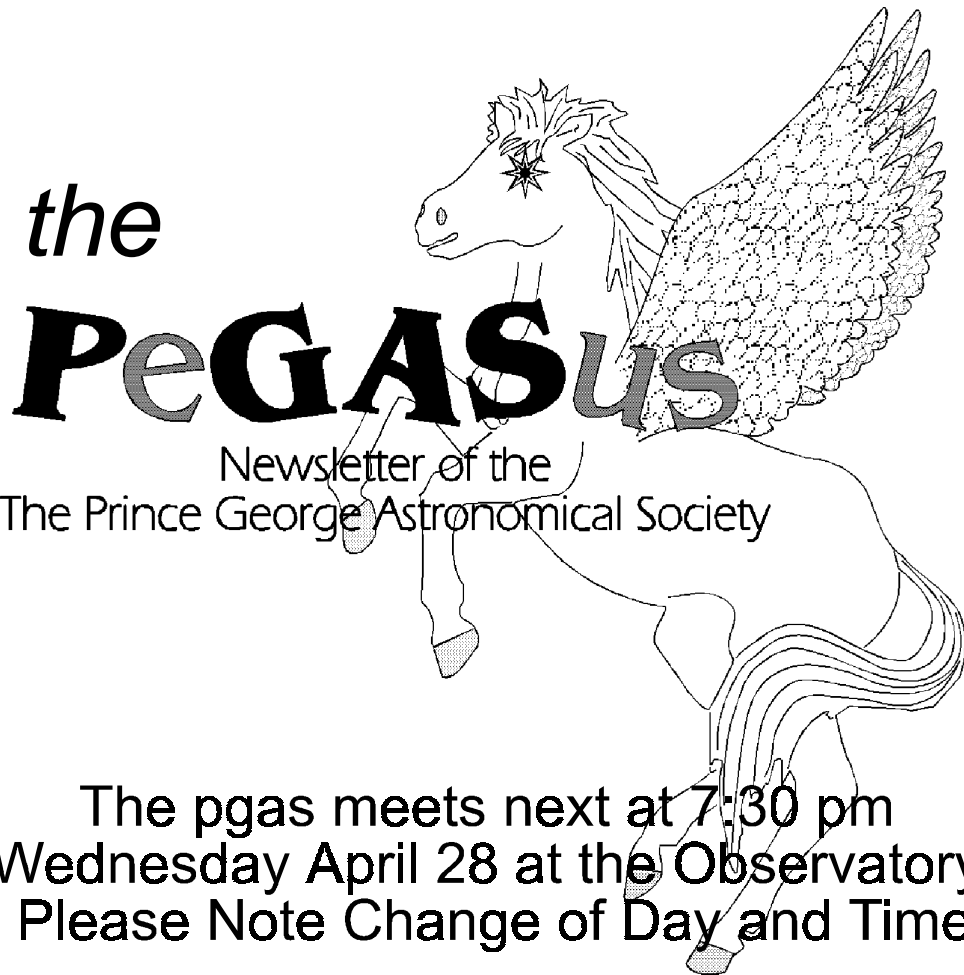


1999 APRIL ISSUE #93



The pgas meets next at 7:30 pm
Wednesday April 28 at the Observatory
Please Note Change of Day and Time

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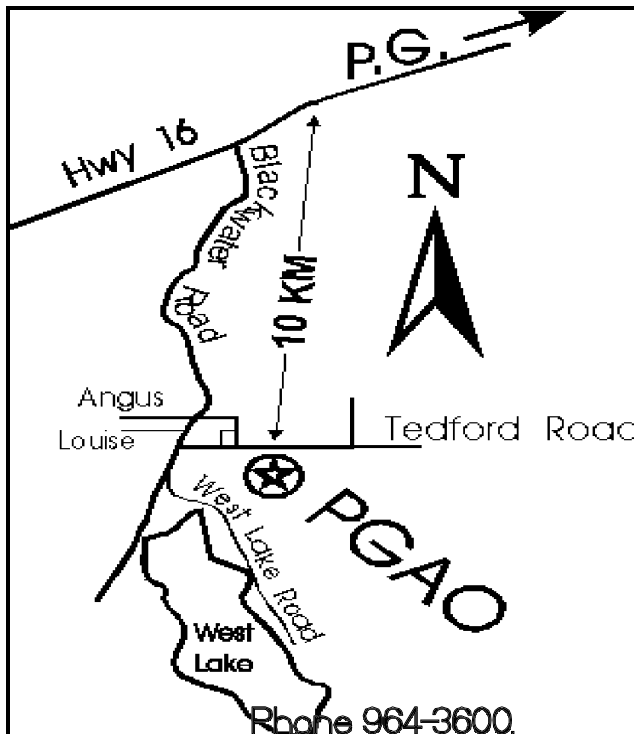
Our pursuits are out of this world.
Our activities are astronomical.
Our aim is the sky.

Contributions to the newsletter are
welcome.

Deadline for the next issue is

MAY 14

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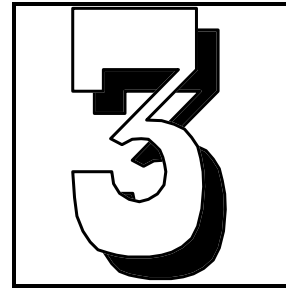
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EDITORIAL

By Gil Self



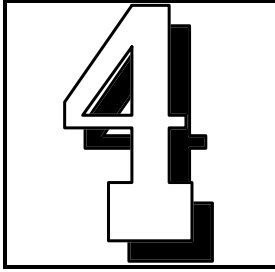
I have recently heard some interesting statistics I thought I should pass along to you . The first was that Prince George has the fourth worst skies in Canada (number of cloud free nights), I of course agree based on experience over the last few years, cloud free nights are uncommon and crystal clear nights are rare. If you tally in the nights with a bright moon (I understand the moon is necessary for tides and such so we shouldn't nuke it out of existence) and add the nights with Northern Lights and on and on. If you figure it all out I think you are lucky to get 15 or 20 good nights a year. At least that was where I was going while I was working out what to write in this months editorial. The point being that when we have a good night we should be prepared, have a phoning tree set up so the maximum number of members know, especially new members. If we have good night, round up a few people, have an observing plan set up on the computer for every night of the year and when that rare night happens take full advantage of it. Sounds like a good plan and maybe we should go ahead with it.

But the second statistic is what caught my attention. I overheard Bob describing his sessions over the last two months. Months that I more or less considered a write-off. Bob said that he had managed 7 nights each month. That's 14 nights, almost my years total, 15 to 20 nights.

I guess what struck me was sometimes one should stop "thinking" about astronomy, and "do" astronomy. Be patient, wait out the clouds, let the dew settle. The hard part of course is getting up for work the next morning (work- that "other" part of your life that allows you time to do the things you really want to do).

There are some very interesting things happening, the telescope is working better than ever, there is new computer and new software to try out. The images from the ST6 have never looked better (we may even see some color images in the next while, if I get down to work and sort out some details. Come to the meeting on the 28th and lend a hand. Gil

Brian and Lyn Potts are proud to announce their fourth child was born March 1, 1999 , weighing 7 lbs 9 oz. Her name is Rebecca



Coming Events

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

April 28, PGAS meeting 7:30pm at the Observatory
March 27 April 24 May 22 —Shoot the Moon,
see Brian Potts

The Night Sky for May '99

by Bob Nelson, PhD
Hi Folks,

Well, spring is supposed to have arrived. We can tell, because the Sun sets later in the evening (especially since starlight wasting time started early in April). But, as I write this, it's still quite cold, although we have been getting many more clear nights of late.

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

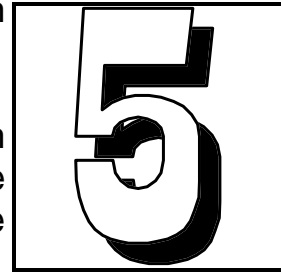
MERCURY is a morning object this month but is not observable by northern observers. (It rises 20 minutes before the Sun on the 1st but is near opposition by the end of the month.)

VENUS is still a fine evening object (and will be until late August). On the 15th, it's a 18" disk of magnitude -4.2. Throughout the month, it's in the gibbous phase (it's half illuminated on June 10 and reaches maximum brilliance on July 15 when it's a large crescent.) At the beginning of the month, it sets 4 hours (!) after the Sun and that doesn't change much all month. Have a look at it!

MARS, in Libra (until April 16 when it moves into Virgo), rises at 7:29 PM on May 1 and 4:56 PM at the end of the month. It shrinks from a 16" disk at magnitude -1.6 to 14" at magnitude -1.0 by the end of the month. Opposition occurred on April 24 but through some quirk in celestial mechanics (both objects have elliptical orbits), Mars is closest to Earth on May 1 at 1700 h UT (noon our time). Distance is 0.578 AU (not particularly close as far as oppositions go).

JUPITER, in Pisces all month (except when it briefly dips into Cetus), is lost in the glare of the Sun in May. Next month, it will be a morning object.

SATURN, in Aries all month, is lost in the glare of the Sun all month.



URANUS, in Capricornus all year, is a morning object. On the first of the month, it rises about two hours before sunrise, but by the end, it rises over three hours before

sunrise. As usual, it's a 3" disk of magnitude 5.8 (visible in binoculars if you know where to look).

NEPTUNE, in Capricornus all year, is also a morning object (good for astronomers that stay up all night). On the first of the month, it rises almost three hours before sunrise, but by the end, it rises about four hours before sunrise (at about 1 AM, PDT). As usual, it's a 2.3" disk at about magnitude 8.0.

PLUTO, in Ophiuchus all year, rises on the first at about 10 PM (PDT) and rises on the 30th at about 8 PM (PDT) As usual, it's a 0.1" disk (i.e., starlike) at magnitude 13.8. It reaches opposition on May 31. Maybe some night I'll take an image of it.

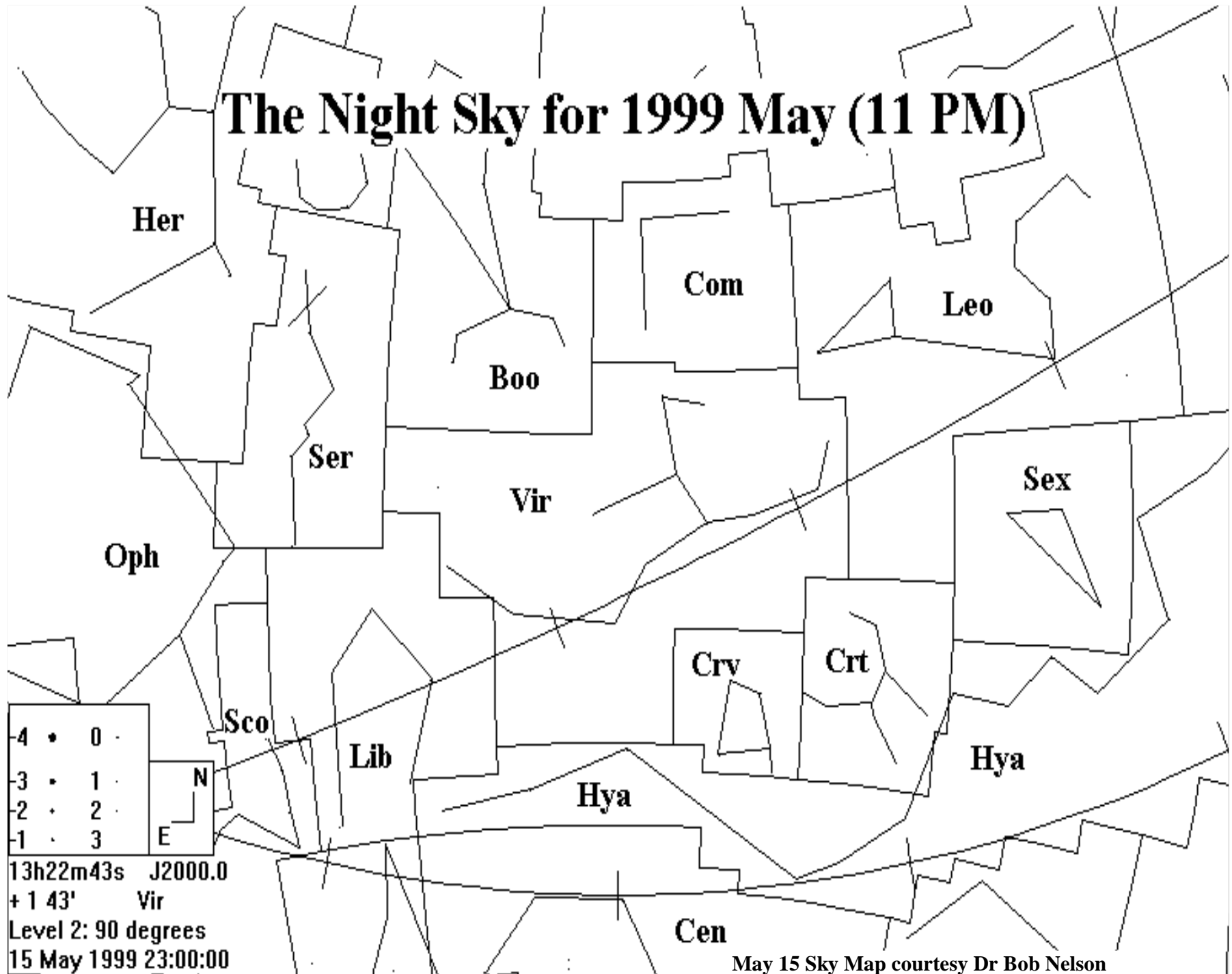
CONSTELLATIONS to look for in May (at 12 PM, PDT) are Corvus, Eastern Hydra, Virgo, Coma Berenices, and Canes Venetici.

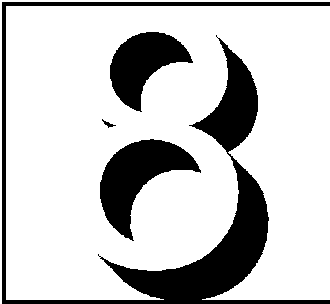
Corvus ("The Crow") is the small lectern-shaped constellation southeast of Leo (the top two stars point up towards Spica to the northeast). It contains NGC 4782, a galaxy located halfway towards Spica and NGC 4361, a planetary nebula inside the figure. Messier 104 is just over the north boundary in Virgo.

Hydra ("The Sea Serpent") 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), and several galaxies, M83, NGCs 5061, 3923, and 3821.

Virgo ("The Vrgin") and Coma Berenices ("Bernice's Hair"), lying to the east of Leo, are the regions of the sky rich in galaxies. Virgo contains 11 Messier objects, all galaxies and many NGC objects too numerous to mention. These are part of the giant Virgo cluster of galaxies lying some 20 megapasecs (65 million 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

The Night Sky for 1999 May (11 PM)





contains some 10,000 galaxies and shines with the light of 10^{15} suns.

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 6th 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.

Another event, on May 5, is the Eta Aquarid meteor shower (in Aquarius, of course). As usual, it's best after midnight. In addition, Regulus gets occulted by the Moon on May 21. Guide 7 predicts that Regulus will disappear at 20:15:45 (8:15 PM, PDT) and reappears at 21:28:35. This is around sunset which occurs at 21:16 (PDT) on that date. Let's get some images of this event!!

Clear Skies,
Bob

SETI NEWS from Owen Salava
SETI @ home Update (<http://setiathome.ssl.berkeley.edu/>)

A few months ago, I wrote a short article about using our computers to assist in this program. A short reminder, it's a screen saver which processes data from the Arecibo radio telescope in conjunction with the Search for Extra-Terrestrial Intelligence program (SETI). "SETI @ home is a scientific experiment that will harness the power of hundreds of thousands of Internet-connected computers in the Search for Extraterrestrial Intelligence (SETI). You can participate by running a program that downloads and analyzes radio telescope data. There's a small but captivating possibility that your computer will detect the faint murmur of a civilization beyond Earth."

Unless you're running Unix in some flavour or another, you have to wait a little longer before getting your computer running on something better than "Flying Windows" as this comment from the above page mentions:

Windows and Macintosh users: Versions of SETI@home for these computers are undergoing final testing and will be released about May 15, 1999 (sorry for the delay).

Comet 1999 H1 Lee Preview



Comet Lee will pass closest to the sun in mid July, reaching a perihelion distance of 0.71 AU (1 AU is the distance of the earth from the sun). It will pass closest to the earth in early May, at a distance of about 0.72 AU. It will be brightest in early July, reaching perhaps 6.7 magnitude. Note that the magnitude estimates used here are only that; Lee could be considerably brighter or fainter. If it were to have an outburst, it could conceivably reach naked eye visibility. All things considered, June may be the best month to observe this comet.

May 1999

Still primarily a southern hemisphere object, Lee will nonetheless be visible near the southern horizon just after the end of evening twilight, particularly from lower latitudes. Moving higher into the northern sky with each day, Lee will begin the month in Vela, move through Antlia and into Pyxis by mid month. The end of the month finds it in eastern Hydra. At magnitude 8 on May 1, it will brighten to 7.5 magnitude by mid month and remain about this magnitude thereafter. It should make a good binocular object.

June 1999

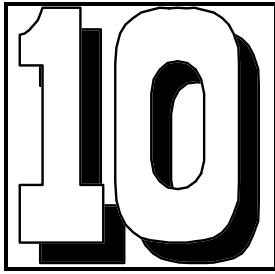
Lee will brighten slowly in June, reaching magnitude 7 by month's end. It will move to northwest through Cancer, setting later each evening. By mid month it will be low on the horizon, visible during evening twilight. It will be somewhat higher in the sky as seen from the southern hemisphere.

July 1999

Early July will find Lee at its brightest, around magnitude 6.7, making it a fine binocular object. It will, however, be quite low in the evening sky, equally visible from both hemispheres. Your best bet to observe Lee this month will be in evening twilight. By the 10th, Lee will be all but lost in the glare of the setting sun. At this time northern hemisphere observations become favored.

August 1999

August 1st will find Lee appearing very low in morning twilight near magnitude 7.3. Unfortunately, moonlight will interfere. It will only be visible from northern latitudes at this time. By the morning of August 11, Lee will



August 15th will find Lee moving slowly through western Auriga, now visible at a comfortable altitude before morning twilight as seen from the northern hemisphere. Lee will slowly climb higher in the sky, fading to 8th magnitude by the morning of the 25th, when the moon will once again interfere.

September 1999

Lee will come out of the interference of the moon by about the morning of the 6th. Thereafter it will climb higher in the morning sky, still highest just before twilight, but visible earlier in the night. By the 15th, it will be above two airmass by midnight, although it will have faded to about magnitude 8.5. Racing ahead of the moon out of Camelopardus, Lee will become an all night object in Cassiopeia by month's end as seen from the northern hemisphere. Southern hemisphere observers at lower latitudes may glimpse it near their northern horizon. Lee will have faded to nearly 9th magnitude by this time.

October 1999

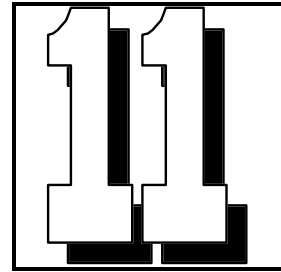
By October 10 Lee will have faded to about magnitude 9.3, but will be high in the sky in Andromeda around 11PM. Southern hemisphere observers will see Lee climb above their northern horizon. The moon will begin to interfere on the 15th. By month's end Lee will once again be best observed just after evening twilight, having moved into Pegasus. It will start to fade fast, reaching 10.5 magnitude. It will be visible from both hemispheres.

November 1999

November sees Lee remain high in the evening sky as seen from both hemispheres. It will fade rapidly, reaching 12th magnitude by mid month.

The predictions above are based on the orbit for Comet Lee published in MPEC 1999-H06, in April 1999. The magnitudes of comets are known to be highly unpredictable, so the values above should only be considered rough estimates; Lee could be considerably brighter or fainter.

In the coming year, there are a great number of things to be done around the observatory to both improve it for the use of the members and to present a great face to the community. Donations of time and materials in the coming year will be highly appreciated as we work as a society to improve the capabilities of the equipment, and increase the comfort and usability of the building overall.



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
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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.

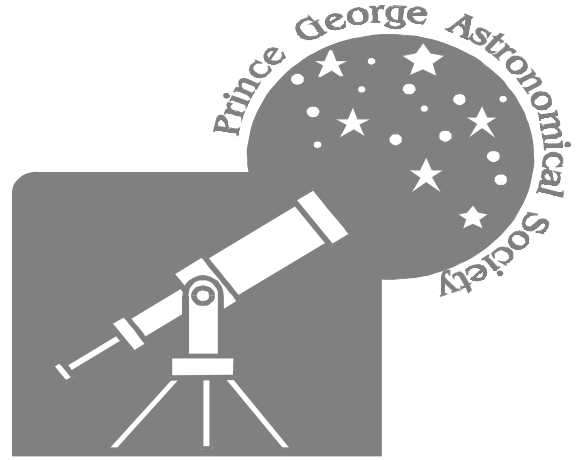
The PGAS is a non-profit organization dedicated to the advancement of astronomy and science in general in Prince George and the neighboring northern communities.

Donations of money or materials to the society are greatly appreciated and tax deductible.

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