



# Regulus



The Newsletter of the Kingston Centre of the Royal Astronomical Society of Canada - September 2003



telescope.

The 61 cm Venor  
Dobsonian-Mount

## 2003 - The Year of The Observatory\*

*\*Our primary goal this year is to find a location to build an observatory for the Centre in general and the Venor telescope in specific.*

### Next Meeting(s)

Friday September 12<sup>th</sup> at 7:30pm  
at Queen's University, Stirling Hall  
(Physics) Theatre D

Guest Speaker: Leo Enright (RASC-KC)

**Topic: Transits of Mercury and Venus.**

Friday/Saturday September 26/27

Fall'N'Stars 2003 Star Party

see <http://www.rascbelleville.ca/fallnstars>  
registration available at the September  
meeting or by contacting Kim Hay



### **Contents of this Issue**

available at  
<http://130.15.144.99/rasc/secure/regulus/reg200309.pdf> and include:

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- \* Ramblings from the Editor

Contents of the August 2003 issue are  
available at :

<http://130.15.144.99/rasc/secure/regulus/reg200308.pdf>  
and include:

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- \* Starfest 2003
- \* CCD Observing - More than Just Pretty Pictures
- \* The Sea of Serenity
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RASC Kingston Email Lists:  
*rasckcchat* - about 20 members chat  
about astronomy



### **President's Voice** by Hank Bartlett

Fall'n'Stars 2003 is just a few weeks away, have you registered yet? Well, to be honest I haven't registered either. I am definitely going; I'm just taking for granted that they are taking for granted that I am going. Make sense? No of course not, that is why you should not be like me and leave registering until the last minute. Boot up and go to [www.rascbelleville.ca/fallnstars](http://www.rascbelleville.ca/fallnstars) print off the registration (or pick one up at the Sept. 12 meeting) and send it in now. Fall'n'Stars is a fun event with ample sky for observing and elbowroom for everyone attending. If you enjoy sharing the night sky with fellow astronomers, winning prizes (one of which is grains of the Zagami Martian Meteorite, you could own Martian real estate!), discussing all facets of our hobby in common and getting the opportunity to look over and even try out (if you talk nicely with the owner) the wide variety astronomical equipment that the shops will only let you look at, COME TO FALL'n'STARS 2003!!!! Okay the commercial is almost over, I mean it, come and enjoy and support the Kingston and Belleville RASC. See you there Sept. 26 -28 2003.

Last week I spent 4 days and nights at the NYAA Starfest 2003, it is amazing what their event has grown into. Approximately 1,000 astronomers and the family members sharing the sky, campground and wonderful lectures. Mars was absolutely fantastic, the dark sky and still air at some points completely made one forget how low Mars is in the southern sky. I must admit however that I never did manage to stay up all night this year and watch Orion rise in the east, formerly a Starfest tradition. Something must have been different this year or maybe it is just an affliction of being in my '50s. If I had

remembered to tell my autostar that I was not in Newburgh anymore I may have been able to find some of those deep sky objects that elude us all in brighter more polluted skies, I must learn to plan ahead better. Next year this event is Aug. 19 - 22, I highly recommend it.

Markfest 2003, again this year our Aug. meeting was held at the observatory/summer home (notice I got the priority right with the slash) of Mark Kaye. Mark's talent at the grill is becoming as astronomical as his photography. A fun time was had by all, as you may check out for yourself in our photo album on the RASC Kingston web site (and yes, there are pictures of me without a drink in my hand). Geoff's talk on his many years of observing in the light polluted skies of major cities brought me to feel guilty over wasting the dark sky I have here in Newburgh. Thank you Mark for another fine event.

Your Executive is still working on your behalf to improve the Centre, if you have any particular thoughts on what you expect from your membership fees contact us, we need your suggestions. We are currently preparing to incorporate as this step is necessary in order to own land. Our application for non-profit status is still in the hands of the government and we are trying to find out at what stage we are. Non-profit status will allow us to issue tax-deductible receipts for donations and should aid us in getting financial support for purchasing observatory land. As has been mentioned in the past if you have a friend or relative with appropriate land that they wish to lease or sell let us know. We are always interested in checking out locations and sky. We are also involved in a grant application that may allow us to purchase better and much needed equipment for public observing sessions.

If you have an interest in the workings of the Executive and feel that you have the drive to help lead this Centre in the new year remember elections are coming up and ALL positions are open. Talk to your fellow members and indicate your willingness to be nominated now. Your fresh ideas and direction may be just what our Centre needs.

Observing, well the weather has still for the most off us limited our ability to get out there and observe. However the night sky is coming earlier every night now, soon the mosquitoes will be gone and the cooler evenings bring less haze. Do try to get out there whenever you can and then bring some interesting observing stories to our monthly meeting.

Share the view,  
Hank

## News from Other Places

### Starfest 2003

<http://www.nyaa-starfest.com/>

Weather for 2003 was mostly great and clear! Some images will be sprinkled throughout this issue.



Vulcans welcome Starfest Star-Party Goers

## Submissions from Members



### Are we really doing all we can?

By Kim Hay

Though the following topic has bothered me before this phone call, it is not directed at any one individual or group. It is but a general question asked by a member of the Centre and a person who holds a few positions on different committees. **Are we really doing all we can?**

On Wednesday August 27, 2003 we were all getting ready to observe the closest approach of Mars to Earth. Telescopes were ready, observing tables set up, and all that was needed was some sleep to prepare ourselves.

I received a phone call from an interested person, asking if we, as a Centre had any observing nights planned for the Mars approach, because he and some very enthusiastic youngsters were interested in looking through a telescope at the red planet. He told me he was sorry, and that it was kind of late in asking, but he had not seen anything that said we were doing anything for the event.

At this point, my heart sunk into a black hole. I felt like we (as a centre and its leaders) had betrayed the public and possibly our own members, because we did not have any observing nights planned to show the public Mars. I was very upset that we, as a group of volunteers, had not planned, or discussed, anything about this event.

Oh, this person understood, but was still enthusiastic about coming to meetings and possibly joining, but I did not understand, why we did not have anything planned, and what kind of picture would this individual walk away with, an astronomy club that does not do astronomy, especially on a very special occasion.

This is part of our mandate to show and educate the public and yes even our members the wonder and amazement of Astronomy. Yes, we are all volunteers, and when there is, too few people to try to accomplish the many tasks we wish to accomplish, we get burned out, or too busy and just shrug our shoulders and walk away.

It takes many people to run a centre, and to try to bring forth the education and awareness to the public, and with the few people we do have, it appears that it is not enough. **The Centre needs more help.** More people to come forth, and say, Yes, I would like to come out and help at an event. Even if you feel you may not be ready or feel you have the skills; come out anyway, with you just being there, you are already helping. A person may ask you a question, you may not know the answer, but you can find out. Help a person look in a Centre supplied telescope or through binoculars, and help them see a planet or a galaxy for the first time. Be part of it, in anyway you can.

At our monthly public observing event, (though weather dependent,) and lately, they have been weathered out, we should possibly do just a bit more. Have handouts of the upcoming months star chart, possible objects to look for, when people go home and they can look in their own backyard. This may bring more people out to public observing sessions, or even to our meetings. Yes, it might mean a bit more commitment, but we should at least try. Hold our observing session the next night, if weathered out. If this is too much, then how about star charts at our monthly meetings, so maybe interested people will come to the next public observing session with questions, or want to view something specific. We need to light the fire, create the spark to let our members know they can do this for others, the public, and even for their own families.

As I looked through the telescope early this morning at Mars, the Pleiades and the Orion Nebula, I thought of the phone call, and hoped that at least the interested person, and the enthusiastic youngsters, went out and looked up and saw this once in a life time event, maybe not through the scope they had hoped for, but looked to see the red planet and I still wondered **Are we really doing all we can?**



## GEOSTATIONARY SATELLITES

by Ken Kingdon

During the RASC Fall'n'Stars Party held near Belleville, Ontario on September 7, 2002, Dr. Brian Hunter kindly showed me my first-ever Geostationary Satellite, just south of M11 at about 11pm. Using Norm Welbank's 12.5" Starmaster at about 55x, my first-ever view of a Geostationary Satellite (GeoSat) revealed an obvious satellite "moving" slowly across the starry background. It was moderately bright due to its great distance, but what sets it apart from other types of satellites is its "apparent" slow speed. It reminded me of the near-miss Asteroid 2002 NY40 of Aug. 17-18, 2002 (described in the September 2002 *Regulus*). In a way, these GeoSats do provide a realistic and interesting simulation of what a near-miss asteroid actually looks like. If you did not get the chance to see that near-miss Asteroid 2002 NY40, this article will give you another opportunity to experience one.

Although numerous other satellites often dash through my eyepiece during deep-sky observing, it's also true that not even one GeoSat had ever crossed my path. This indicates

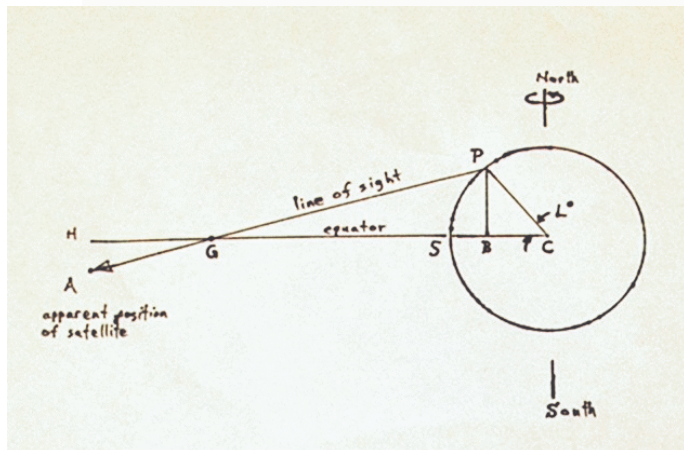
that they can be elusive, without some knowledge and guidance. My curiosity pushed me to find out more about them.

A satellite is in geostationary orbit (GSO) when it remains over the same spot on the Earth. This is a very desirable property for satellites performing communication and weather analysis, so that they can collect or relay data to users 24 hours a day. To remain over the same spot, a GeoSat's orbital period is 24 hours (equal to the earth's rotational period). A true geostationary orbit is geosynchronous, circular, and has zero inclination. There is only one geostationary orbit, a "belt" encircling the earth's equator (somewhere along the celestial equator) at an altitude of about 35,786 km (22,236 miles). It is impossible to have a satellite in geostationary orbit over a point that is not somewhere along the equator. Hence, a great many of mankind's most useful satellites are all crammed into a belt above the celestial equator, and they must be spaced sufficiently apart to avoid interference. To get an idea of what this looks like, visit the July 14, 2003 Astronomy Picture of the Day at the URL: <http://antwrp.gsfc.nasa.gov/apod/ap030714.html>

GeoSats remain in sync with the speed of Earth's rotation, so once a GeoSat is located, it will not move out of the FOV of a non-tracking telescope. Once found, it will remain on the same line-of-sight if you look for it during any night of the entire year. It remains stationary in the eyepiece as background field stars drift slowly westward due to the Earth's rotation. In this way, a GeoSat can be observed for extended periods of time without moving the telescope, and this makes for relaxed and interesting viewing as the cosmos streams past. Although a GeoSat is stationary while the stars drift westward, the human brain will fall prey to the illusion that the satellite must be moving through a field of motionless stars. But the GeoSat does not move. Then too, the apparent short-term hourly motion of the stars across the heavens is also an illusion - it is Earth's rotation on its polar-axis that causes stars to have apparent motion. [The longer-term movement of constellations is the result of Earth moving along its solar orbital path as the seasons change]. If scope-tracking is turned "on", then the scope will begin to follow the motion of the stars, and will move away from a GeoSat (but then an observer may soon encounter yet another GeoSat along the "belt").

With a GeoSat placed at the centre of the FOV, this creates yet another illusion - it seems to move faster than the apparent motion of the background stars. This is simply the result of having the satellite centred so the brain can more readily perceive the slow relative motion of the background field stars. It may be said that observing GeoSats has a lot to do with illusions... it's all just "smoke and mirrors".

Although GeoSats do track along celestial Declination = 0°, the effect of topocentric parallax when viewed from locations with say northern latitudes causes the GeoSat to appear to track south of declination 0°. I could find no mathematical formula to calculate a GeoSat's position, so I set out to determine how to derive a method to find and observe GeoSats from any latitude L on Earth; see sketch.



In the sketch, consider an observer at any place P on Earth that has a geographic latitude L degrees. The centre of Earth is the point C. Earth's mean radius is PC = 6,371 km. The actual position of the GeoSat is at the point G, a distance GS = 35,786 km above Earth's surface, S. However, allowing for parallax, the APPARENT position of the GeoSat is at the point A, as viewed from place P with the observer's line-of-sight along the local meridian, as represented by the line PGA.

The line SGH is Earth's equator projected onto the celestial background. This represents 0 degrees Declination on star charts.

To determine the apparent position A of a GeoSat, we must calculate the distance (arc-angle) of point A below the point H, which is the angle HGA. We make it negative, since it appears south of the celestial equator. Note that angle HGA is the same as angle PGB, which we can calculate using trigonometry, as presented following. [Those rusty on trig can now skip to the section marked \*\*\*\*].

In the triangle PGB, the tangent of the angle PGB is given by:  
 $\tan \text{PGB} = \text{distance BP} / \text{distance GB}$  [eq. #1]

First calculate distance BP. In the triangle PCB, the trigonometric sine of the known angle PCB is defined as:  
 $\text{sine PCB} = \text{BP} / \text{PC}$ . Sine PCB is a known to be sine L (latitude L is known), and PC = 6,371 km.  
 Hence, we now know BP = 6371 x sine L [eq. #2]

Next, calculate GB. We note that GB = GS + SB = 35786 + SB.  
 But SB = SC - BC, where SC = 6371 and BC = 6371 x cosine L.  
 Thus, GB = 35786 + (6371 - 6371 x cosine L) [eq. #3]

We can now solve equation #1,  
 $\tan \text{PGB} = \text{BP} / \text{GB} = \text{eq. \#2} / \text{eq. \#3}$   
 $= (6371 \times \text{sine L}) / (35786 + 6371 - 6371 \times \text{cosine L})$   
 [eq. #4]

\*\*\*\* Using equation #4, we can calculate the angle PGB, which is the Declination needed to find GeoSats:  
 Declination =  $\arctan [(6371 \times \text{sine L}) / (35786 + 6371 - 6371 \times \text{cosine L})]$  [eq. #5]

For example, Kingston has geographic latitude L = 44.25 degrees. From calculators (or trig tables, or computers) we get: sine L = 0.6978  
 and cosine L = 0.7163  
 Then Dec =  $-\arctan [(6371 \times 0.6978) / (35786 + 6371 - 6371 \times 0.7163)] = -\arctan (4445/37593)$   
 $= -\arctan 0.1182 = -6.74 \text{ degrees} = -6 \text{ degrees } 45 \text{ minutes}$ .

We conclude that an observer in Kingston should look for GeoSats along the line of Declination - 6.74 degrees. Remember that number! GeoSats viewable from places at the same latitude as Kingston are scattered across the sky at this Declination. Note that the belt may be about one degree wide to include migrating GeoSats.

For other selected locations, the required Declination (in degrees) is: Toronto -6.68, Montreal -6.87, Vancouver -7.24, Halifax -6.79, Edmonton -7.60, Calgary -7.40, Windsor ON -6.53, Ottawa -6.86, New York NY -6.35, Chicago IL -6.47, Los Angeles -5.52, St. Louis -6.10, Miami FL -4.35, St. Petersburg FL -4.61, Hilo Hawaii -3.45, London UK -7.40, Paris FR -7.20, Sydney AUS +5.50, Tokyo JP -5.74, Quito Ecuador +0.04.

Now armed with where to look, I ventured forth with my 12.5-inch reflector into my light-polluted suburban backyard on July 7, 2003 to attempt to track down some GeoSats... and I succeeded, finding a total of NINE in about an hour. I used a star chart to star-hop from M11 to R-Scutum, then along a chain of stars S to dec  $-6^{\circ}40'$ , then headed W a few degrees, and within 10 minutes of beginning, I found three GeoSats within the same  $40'$  FOV at 117x.

Compared to the starry background, which we normally barely notice moving, they appeared to drift at a distinctly perceptible rate, even while scan-searching for them with the telescope. The first GeoSat (travelling left to right across the starry background) was dimmest (~mag 12), leading a 2nd brighter (mag ~10) GeoSat by about  $5'$ , then a 3rd equally bright GeoSat was trailing this close pair by about  $20'$ . All appeared to "travel" in a straight line, but of course, none moved.

Further west I found one GeoSat alone, which looked the most like an asteroid, because it was alone. The near-miss Asteroid 2002 NY40 seen August 18th, 2002 looked similar in size and brightness, and moved at very much the same rate.

Further west again, using a wider  $55'$  FOV eyepiece, I found two close GeoSats "travelling" together about  $10'$  apart. And finally, three mag 11 GeoSats within a  $55'$  FOV, one of which was unusual - two were following each other in a straight line,  $1'$  apart, and another trailed  $6'$  behind, but was  $4'$  below (ie, N) indicating that it was not yet in a true geostationary orbit. During all this star-hopping and "satellite-hopping", I used an observing chair to great advantage for comfortable and careful scrutiny.

Here are some tips to see these somewhat elusive GeoSats:

1. Using the calculated Declination for your location, examine a star chart and go outside and find a bright visual star that is close to this Declination and within say 30 degrees either side of your local north-south meridian. Following the calculated Declination on the chart, begin star-hopping east or west from this bright star.

2. The more aperture a telescope has, the better the probability of spotting distant and faint GeoSats. A 10 inch or larger Newtonian works fine, and I am advised that fair success can be had with a fast 8" f/4.5. I have since found some large and bright GeoSats with binoculars, and with my 82mm refractor, but the wider FOV in such instruments makes for an extremely slow and tedious speed of passage, making finding a GeoSat against the starry background much harder to discern.

3. Once the first GeoSat is found, rather than star-hopping, it then becomes faster to simply scan along the same "direction of travel" to encounter more. Pairs, triples, and up to six or seven can be found in a single FOV. Finding multiples makes it even easier to move along the apparent "travel" direction to find even more; now you are "satellite-hopping". Eventually you will be far to the east or the west of your local meridian, but still finding numerous GeoSats. In theory, a more cumbersome math formula using spherical co-ordinates (this is a David Orenstein math problem) could account for more parallax off the meridian, but in practice the error is inconsequential, and we can simply "satellite-hop" along the belt to find more GeoSats.

4. Planetarium software (eg, "GUIDE") can determine for any given date/time, the exact positions of known GeoSats near to convenient visual stars. However, most observers can still find plenty of GeoSats by simply knowing the local Declination of their part of the "belt".

5. Use a wide-field low power eyepiece. Some GeoSats can also be found within say a one-degree wide "belt" from the calculated Declination, as they may be migrating to a final allotted position, or changing allotted position, or moving to a higher altitude "parking" position once they are retired from service. GeoSats have their own on-board propulsion rockets, so they can be re-located.

6. Because hundreds of GeoSats are fixed in an equatorial belt, the background stars will change with the seasons, but the GeoSats stay fixed. For late summer, GeoSats viewed from the latitude of Kingston are along the same Declination  $-6^{\circ}45'$  and the easiest hunting area is just  $29'$  south of M11. Later on, try near beta-Aquari, or M42 in Orion (many amateurs mistakenly report "asteroids" when observing near M42; now we know why!).

7. Since the GeoSats remain fixed, you can draw a sketch of their alt-az position relative to trees and houses on your local horizon. Note the position of your scope, if not pier-mounted. Such a sketch works all year, regardless of season, and helps to quickly re-locate them.

I rate GeoSats to be just as fascinating as the unique TiPS satellite, or the NOSS triple satellites. It's fun to hunt GeoSats down, and they are interesting to show at a starparty. They are excellent targets to hunt for from a mosquito-free backyard, rather than venturing out for deep-sky observing to darker rural skies at the peak of the mosquito season. Seated and just watching a GeoSat is a very relaxing sensation, one which heightens your awareness of passing star clusters, asterisms, galaxies and nebulae.

Happy hunting!

Ken Kingdon  
RASC - Kingston Centre



**From: "Bill Broderick"**  
**Subject: Fw: [RASCALS]**  
**Great Mars Party in**  
**Belleville**

**Date: Thu, 28 Aug 2003**

Hello All:

Did we or did we have a Mars Party last night? Some 10 or 12 telescopes were set up on the hill overlooking the Bay of Quinte, in East Zwick's Park, by RASC Belleville members and starting around 9 p.m. the people came--and came--and came. By all estimates, the crowd was at least 300, maybe 500 people, with the lines stretching down the hill and out towards the parking area. To say the least, we were very pleasantly overwhelmed.

Mars rose in all his dignity over the waters of Bay of Quinte and the dark silhouette of Prince Edward County in the distance, gleaming like some kind of celestial firework in the sky. At first the images in the telescopes were not all that steady. There was a lot of shimmering. But as the evening progressed, the image quieted down and after midnight was just entrancing.

Even with their untrained eyes, people were able to make out the south Polar Cap of Mars and many were sure they saw some tonal variations on the disk of Mars. A little advice about what to look for went a long way. Later in the evening I put a neutral density filter on the eyepiece to cut down the brightness and this made the image a bit clearer. All in all, we had a great time and a lot of people went away happy.

The "Party" was advertised by a newspaper article published the same day in The Intelligencer and Carl MacDonald, our President, was interviewed on the radio twice on Wednesday.

Thanks to everyone who was able to participate.

Bill Broderick





**From: "David Maguire"**

**Subject: Messiers & messier**

**Date: Tue, 19 Aug 2003**

You can add me to the Messier contenders list. The other night I went out and deliberately looked for objects in the sky with a planisphere. Effectively I was trying to bring in a cat which is why I was only out for 45 minutes. Not a brilliant start but I actually kept notes. Writing them took longer than the time outside.

I also made notes (- on a loose piece of paper) of instrument, date, session time, standing locations.  
 count 4 Messier objects 31, 22, 4, 52  
 NGC - 869, 884 which I think move around a lot - I've been looking at them for 15 years.  
 coat hanger where I didn't think it was - explaining why I haven't seen it for a while.  
 plus maybe M 81 & 82  
 - Definitely not M51 even if I was looking straight at it, it can't be seen w/ 10 X 50's.  
 - same for M 57 which may be there or it may be a conspiracy.  
 - E Lyra also won't double split for me.

All of the above can be replicated, esp. the ones I couldn't see. Yes, more objects would yield to better references which I dug up & will apply to the search later in the week.



**Sky & Telescope Magazine  
 and Astronomy Magazine  
 Subscription Discounts  
 by John Hurley**

Hello All,

It is that time of the year again and I am letting everyone know that members of the Kingston Centre can get a discount form Sky & Telescope and Astronomy Magazines.

Astronomy is \$ 40.00 for one year  
 76.00 for two years ( US Funds )  
 Sky & Telescope is \$ 39.95 for lone year  
 (US Funds )

For anyone that is interested please let me know ASAP. I can handle new subscriptions and renewals. I just need to know that your want to be a part of this savings and I will go to the bank and get the US money order and let you know what you will need to pay the Centre in Canadian funds.

If anyone has any questions please let me know.  
 The normal renewal rates for Astronomy are 50.00 per year and 49.95 for S& T.

Thanks and Clear Skies,  
 John Hurley  
 Treasurer, RASC Kingston Centre



**NIRVANA STARPARTY  
 by Ken Kingdon**

A year ago in mid-August, just 2 others from Ottawa Astronomy Friends (OAFs) plus myself (Ken Kingdon)

went up to Nirvana and we enjoyed superb skies then. I wrote an article entitled "Arizona of the North" describing Nirvana in the RASC newsletter "Regulus" (August 2002). Well the word got around, and one year later 25 observers, who were not going to Mt. Forest's StarFest, attended an informal First Annual NIRVANA StarParty on August 22-23, 2003. It's held at the former Irvine Lake Airstrip, located about 10 minutes north of Bon Echo (#19213 Hwy. 41). Observers came from as far as Orillia, Montreal, Ottawa, Kingston. Some camped for both Friday & Saturday, others observed for just a night. Meals were at the Moosehorn Restaurant, just 2 km south on Hwy.41, or Swiss Inn Restaurant at Denbigh. There were no other costs to enter or to camp. Informal and impromptu.

During daytime Saturday, the relative humidity was a low 31%. The sky that night became exceedingly clear and awesomely dark. Nirvana has the second darkest light pollution level in the world, and is the darkest large observing site this far south anywhere in Canada. August 23, 2003 was the best observing night I've ever had in Ontario, though below the quality I enjoyed last spring at the Texas Star Party. Amazingly, I can report that we are yet to see Nirvana at its ultimate best - seeing happened to be somewhat above average, but not perfect because of the high daytime winds; dew formed, and transparency deteriorated somewhat from the 6.9 limiting magnitude as yet another damp air mass approached early Sunday; aurorae briefly lit up several times and solar-generated skyglow was present. Despite these problems, as I said, this Nirvana sky was my best ever in Ontario.

In late June, I had stayed in my suburban Kingston backyard to avoid the rural mosquito hordes. I used the time with my 12.5" reflector to practice a star-hopping route to the globular cluster G1, which is not in The Milky Way Galaxy, but is 20 times further away in another galaxy, Andromeda. G1 has been described on the internet as The #1 Best Deep-Sky Hunt, since it is in a star-poor region well away from M31, the Andromeda Galaxy. My practice sessions really paid off, as during this night at Nirvana I got to use Mike Wirth's big 30-inch Starmaster scope to manually hunt down G1 by star-hopping along my memorized route. We observed this granular-looking globular 2.2 million light years away, the furthest away that any of us had ever seen a globular cluster. Sure, it is faint, but it is distinct and its granularity was quite apparent at 500x using a 7mm Takahashi eyepiece. I had brought along my astro-photo album, and the Hubble image helped verify G1 because we saw two tiny stars right beside it, making it appear as a triple star. This "triple" lies at the bottom corner of a small distinctive triangle, in an otherwise empty background, with the other corners being a double-star and a single star. I like to call this triangle by the name "1-2-3".

Also in Mike's 30-inch, equipped with a bino-viewer and two 24mm Panoptics, were some fabulous "to die for" views, each having incredible 3-D effects: M17 Swan

Nebula - nebulosity goes way out behind the swan; breathtaking! Better than CCD images.  
M15 Globular Cluster, very large with its many faint out-lying stars, and a super 3-D depth... wow!! M31 Andromeda Galaxy, huge at high power, but brighter and far more extensive than I've ever seen.

I used a Green Laser Pointer taped onto a tripod head, then aimed at the location of G1 so others could find the location of G1 by looking in their own telescopes at the end of the 2km long "green streak". This seems a good way to help others get to any target, and I will be working on this method some more. After turning off the green laser for a while, I called over Albert Saikaley to have a look at the "Great Comet of 2003". Now, Albert is an astro-imager par excellence, who went to Texas with me last spring, but Albert spends most of each night undercover while computer-processing digital images; it's reported that he never sees any dark skies! Undercover again at Nirvana, Albert had missed the green laser pointing upward. Then, just as Albert looked in the eyepiece of my PortaBall for "Comet Kingdon", I re-energized the green laser on the stand-alone tripod, and he was amazed by the gorgeous bright comet with a long tail! It looked precisely like a comet because the light-beam ends unexpectedly abruptly with a round head, exactly like a classic comet. Albert was stunned! Do NOT do the above trick to anyone, like Albert, after you have just shown them a bright deliberately way-out-of-focus bloated blue star and boldly claimed it to be Abell 39, a Planetary Nebula that is the largest sphere in the known universe. I'm still LOL!

We all saw a great many new and favourite objects; any scope can do wonders in such a dark sky. The Milky Way overhead stood out as a river of stars, wonderful to simply behold with unaided eyes. The list of objects found and shared by the 25 observers would simply be far too long to record here. This superbly dark sky delivered many "ohoo's and ahhh's". One chap working on his Messier List, got about 25 new ones - all gorgeous views. Mars became really nice when seeing improved about 3AM, and Norm Welbank's refractor gave a terrific view of Mars. Some astro-imagers got good Mars shots. A naked-eye NOSS triple satellite went overhead. Even a nice crescent Moon rose before dawn, and Orion climbed quite high in the east. It got very cold before dawn (we were too lightly dressed and I shivered more than I can remember in decades until I warmed in my car).

We all had a great party too, which after all, is the essence of a starparty.

And we had good reason to celebrate... it was the official End of the Mosquito Season! Apparently, a very large Bat got there, and cleaned them all out.

Albert Saikaley posted the following message to the Yahoo Groups Ottawa Astronomy Friends (OAFs) :

The Top 10 Reasons why the Nirvana StarParty is the best, according to Albert:

10 - The Lectures - Super Steve Manders and his theories on EVERYTHING!

9 - The Restaurants - every eatery we visited had a built-in petting zoo.

8 - The Rules - None.

7 - No line ups - None at the washroom, vendors building, lecture hall, or snack bar (ain't none)

6 - The Guided Tours - Ross's famous nature hike (AKA the death march).

5 - The DSO's - Comet Kingdon and Abell 39 through Ken's PortaBall.

4 - The Horizon's - The best I've ever seen, including TSP.

3 - The 30" Starmaster - Most other lesser events sport more portable scopes in just the 25" range.

2 - The Mag. 7 Dark Skies - that night I observed under the best skies I've seen, except for Texas.

1 - The Laughter - Albert says he's never laughed so hard and so much in a 48 hour period.

It was a great time, and I hope that many more observers will attend a future Nirvana StarParty. I'll always enjoy the solitude that comes when just a few show up at Nirvana, but a larger number is better fun. Some of the OAFs have plans for a Nirvana StarParty of 1000 people, and by gosh, it likely will happen. For now, just small informal Nirvana StarParties are planned, and a website has already been created with a lot of information, including maps and photos at:

<http://www.nirvanastarparty.webcentre.ca/>

Being just 1 hour and 30 minutes from Kingston, Belleville or Ottawa, a mini-starparty at Nirvana is liable to break out any weekend that the sky is dark and clear. The best part is, because we pick the clearest night, and not the date... no one will ever be clouded out at a Nirvana StarParty!

:~))

Ken Kingdon  
RASC - KC Member



## Observing Group Meetings

These are regular meets at the home of members who volunteer their locations and homes to us on or near a new moon. Contact Kevin Fetter if you are interested in hosting a session in 2003. Contact one of the Executive, or the host, for directions or visit the members-only website.

**September 26/27: Fall'N'Stars 2003 near Thomasburg**  
see <http://www.rascbelleville.ca/fallnstars/>

**Saturday October 18, 2003**  
**At Diane Torney's home near Picton.**

Note: There is a HOT TUB in case of clouds, so bring your swimsuits!

**The Messier Certificate Holders (16)**

Leo Enright (1982), Gus Johnson (1983), Jim Scotti (1983), Mark Sorensen (1986), Stan Hanna (1990), Steve Manders (1990), Bill Broderick (1993), Dan Rombaugh (1993), Ray Berg (1996), Ken Kingdon (1998), David Pianosi (1998), Doug Angle (1999), Vic Smida (2002), Mark Kaye (2003), Norm Welbanks (2003), Kevin Kell (2003)

**The Finest NGC Certificate Holders (5)** Walter MacDonald (1995), Cathy Hall (1997), Leo Enright (1999) Jan Wisniewski (2001), Ken Kingdon (2002)



## Public Observing Sessions

These are the public observing sessions, normally held at Murney Tower Park on the Kingston waterfront on King & Barrie Sts. On the first Tuesday after a

new moon.

The next POS are:

**Tuesday October 28<sup>th</sup> at dusk** Sunset at 5:02 pm

**Tuesday November 25<sup>th</sup> at dusk** Sunset at 4:31 pm



## Equipment Loan Program

Members in good standing are able to sign out Centre equipment, including:

- ☆ 25cm (10") f5.5 Douglas Dobsonian Advanced Users

- ☆ 20cm (8") f7 FitzGerald Dobsonian Intermediate Users
  - ☆ 20cm (8") f4.5 Barney Dobsonian Intermediate Users
  - ☆ 11cm (4.5") f4.3 Bushnell Voyager Starter Users
  - ☆ 11cm (4.5") f7.9 Orbitor 3500 Equatorial Starter Users
  - ☆ 5 barndoor tracking platforms 1999 February - Starter Users
  - ☆ Collimating Tool 2001 August - All Users
  - ☆ Binocular Set #1 B&L7x50 1999 April - Starter Users
  - ☆ Binocular Set #2 B&L10x50 1999 April- Starter Users
  - ☆ Binocular Set #3 Bushnell 7x50 1999 April - Starter Users
  - ☆ Binoculars Set #4 Stem 7x50 1995 - Starter Users
  - ☆ 19mm Televue Panoptic Eyepiece 2000 March - Intermediate Users
  - ☆ Filter Set - ND13, 4 colour, O3 nebula - all 1.25" 2000 September - Intermediate Users
  - ☆ Kodak Ektagraphic 35mm slide projector 2000 November
- Contact Tom Dean

Coming Soon: an *equatorial tracking platform* for Dobsonian telescopes. We've taken delivery of it and now need to sit down with it, write up a manual, test out it's load limits, etc.

The Douglas 25cm telescope is out of commission as it undergoes a refit. After Fall 'N' Stars, the primary mirror will be shipped out for a recoating, last done in 1995.



## RASC Kingston Centre Meetings

The Kingston Centre RASC meets once a month on the **2nd Friday of each month at 7:30 pm (19:30) in Stirling Hall Theatre D** on Queen's University Campus **unless noted otherwise**. We

have adopted a policy of moving any meeting that is held on a holiday weekend.

**Friday September 12<sup>th</sup> 7:30 pm**

at Stirling Hall Theatre D

Guest Speaker: Leo Enright (Kingston)

Topic: Transits of Mercury and Venus.

**Friday Oct 10th 7:30 pm TBA**

**Friday November 7<sup>th</sup> 7:30 pm**

General Elections ( Voting for 2004 Executive )

**Saturday, November 29, 2003**

**Annual Awards Banquet at the**

Harbour Restaurant, Portsmouth Olympic Harbour.

Drinks: 18:00 Dinner: 19:00

Speaker: Dr. David Turner, St. Mary's University., will join us for dinner and speak about Polaris in particular and Cepheids in general. Title: "Will the North Star Stop Pulsating?"

Tickets are \$25 and can be purchased at meetings August, Sept, October, and November. or by mailing in cheques to the Centre mailbox, please mark them attn. Susan. Tickets may be requested by telephone to Susan 389-4710 but only cold hard cash (or cheque) will get you beyond the **deadline of November 24 (Monday)** before).

Please notify Susan early if you have any food allergies or vegetarian needs. Menu will be announced well in advance.

**Friday December 12th 7:30pm**

Last meeting of the year.



## The Kingston Centre of the RASC

The Kingston Centre was founded in 1961.

PO Box 1793, Kingston, On K7L 5J6

Infoline & answering machine: 613-377-6029

Email: [<rascexec@cliff.path.queensu.ca>](mailto:rascexec@cliff.path.queensu.ca)

Web: <http://members.kingston.net/rasc>

We also have an email chat list "rascchat". Send your email address to Kevin Kell to be added to the RASCCHAT list.

**Executive Officers - 2003**

**President:** Hank Bartlett

**Vice President:** Doug Angle

**Secretary:** Brian Hunter

**Treasurer:** John Hurley

**Librarian:** David Maguire

**Editor:** Kevin Kell

**National Council Rep:** Peggy Hurley

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September Print Run=200

#### **The Newsletter of the Kingston Centre of the Royal Astronomical Society of Canada**

**Newsletter Submission Info:** The deadline is usually the 3<sup>rd</sup> Friday of each month. The preferred method of submission is E-MAIL file attachment.

E-mail: <kell@cliff.path.queensu.ca>

Fax: 1-613-533-2907 (with cover page to Kevin Kell)

Post: 76 Colebrook Road RR#1, Yarker Ontario K0K 3N0  
Canada

#### **Resources Available to Members:**

(See bottom of page 10 for passwords to "member-only" RASC web sites)

- **RASC-Kingston Centre Handbook** at:

<http://130.15.144.99/rasc/secure/kingstonmanual.pdf>

-**RASC National manual** at

<http://www.rasc.ca/private/rascmanual.pdf>

- **RASC-Kingston Centre Loan Program** at:

<http://members.kingston.net/rasc/loan.htm>

Loan Chair and the originals are kept online our website. As of right now: you can access:

☛ Douglas Telescope manual at  
<http://130.15.144.99/rasc/secure/douglasmanual2003marc h07.pdf>

☛ Venor Telescope manual at  
<http://130.15.144.99/rasc/secure/venormanual2003august0 1.pdf>

☛ Bushnell Voyager Telescope manual at  
<http://130.15.144.99/rasc/secure/bushnellvoyagermanual2 003august01.pdf>

The other manuals are coming along nicely and we should have all of them done by the end of 2003.

That said, I would like to remind you that elections are coming up in November and \*all\* positions are open to all regular members in good standing. The relevant bylaws are:

#### Article V - Election of Officers

The conditions of nomination shall be:

1. that the person nominated shall be a member in good standing of the Centre,
2. that the assent of the nominee shall have been obtained,
3. that at least two who are members in good standing of the Centre shall make the nomination.

Take the opportunity to talk to the current or past holders of any of the executive positions if you have questions about the job duties and responsibilities.

For instance, I would be more than happy to lay out the whole of the Editing Job (newsletter included) to anyone interested. Among other Executive positions whose current holders have indicated they will not be standing for nomination, I too have decided not to run this year. I have far more observing projects that I have found I just don't have enough time for.

The flip side of this is that I don't feel that I have contributed enough to the Centre in recent times and am stepping aside to make room for "new blood", in the hopes of helping to pull the Centre out of its current low activity mode into something more.

The Three Large Projects (the 60cm Venor telescope, The

Education Projects and Fall'N'Stars Star Party) that we have completed in the last 5 years or so I am sure have helped contribute to burnout. Either that or I am just getting grumpier in my old age.



Jay Anderson and Stan Runge (Winnipeg) and Kim Hay (Kingston)

## **Ramblings from the Editor**

by Kevin Kell

### **Telescope Manuals online!**

We have been producing operator's manuals for our equipment loan telescopes and other pieces of equipment. One copy of the manual

travel with the instrument, one is kept by the Equipment



## Annual General Meeting and Elections

The Annual General Meeting is coming up in November and as always, we are looking for people to serve on the Executive of the Kingston Centre. Every year we publish information about the positions and encourage members to ask questions of any of the executive if they are even remotely interested in running in the elections. There are 7 elected executive positions.

### 2003 PUBLICATIONS ORDER FORM

Item	Price per unit (Shipping and taxes included) Regular (Member )	Quantity	\$ SubTotal
*Expanding Their Universe 2 <sup>nd</sup> Edition - The Teacher's Companion for Secondary School Astronomy 161 pg 2002 <b>NEW!</b>	\$30 (\$24)		
*Worlds to Discover 1 <sup>st</sup> Edition - Astronomy for Elementary School 154 pg 2000	\$15 (\$12)		
*Slide Set #1 companion for Expanding Their Universe 40 slides	<del>\$75</del> (\$60) \$50		
*Slide Set #2 companion for Expanding Their Universe 40 slides	<del>\$75</del> (\$60) \$50		
*Slide Set #3 companion for Worlds to Discover 20 slides	<del>\$35</del> (\$28) \$25		
*Students Guide to Careers in Space, 2 <sup>nd</sup> edition 33 pg 1998	\$5 (\$4)		
*Secondary School <b>Combo 1:</b> ETU book, Slide Set #1 OR #2 (Circle choice), Careers in Space	\$100 (\$80)		
* Secondary School <b>Combo 2:</b> ETU book, Slide Sets #1 AND #2 (Circle Choice), Careers in Space	\$160 (\$125)		
*Elementary School <b>Combo</b> : WTD book, Slide Set #3, Careers in Space	\$50 (\$40)		
Beginner's Observing Guide by Leo Enright	\$15		
2004 RASC Observer's Calendar	\$17		
2004 Observer's Handbook	\$25		
		Total	

Payment must accompany all orders. Cheques should be made out to: RASC Kingston Centre. Sorry, we cannot accept credit cards and cash should not be sent through the post. Mail your order in to: RASC Kingston Centre, Box 1793 Kingston Ontario K7L 5J6 Canada

- \* Consider a membership in the RASC-KC. It includes a **20% discount on Centre produced material.**
- \* 20% discount now extended to members of RASC (other centres included)

**\*\*SALE effective 2003 June 01 until 2003 September 30**

- ☺ Slide Sets #1 and #2 NOW ONLY \$50 each (no additional discounts applicable)
- ☺ Slide Set #3 NOW ONLY \$25 (no additional discounts applicable)



Hit a Planet - win a prize.  
And remember 1 mile = 1.6 km