Regulus

The Newsletter of the Kingston Centre of the Royal Astronomical Society of Canada – March 2005

Coming up…

RASC Kingston Center Monthly Meeting

Queen's University
Stirling Hall Theatre D

Friday March 11th at 7:30pm
Melissa Ruiters
The Globular Cluster Systems of selected Virgo Galaxies: What do they tell us?

Friday April 8, 2005 at 7:30
Peter Jedicke - Astronomy in Hawaii: Research, Outreach, Observing -- and Politics

Kingston Astronomy Outreach Network Public Observing

Queen's Observatory
Ellis Hall
Saturday March 12
Saturday April 9

AstroYak

Friday March 25 7:00 pm
Friday April 22 7:00 pm
at the home of Kevin Kell and Kim Hay, xxxxxxxxx. Visit http://members.kingston/~rasc/indexsec.htm for directions

John and Doug look at the sky as Peggy protects her night vision from the flash at the members observing session at Sharbot Lake. The Venor Telescope shows in the background. See Ken's observing report on page 7 for more.

Kingston Centre
of the Royal Astronomical Society of Canada
Box 1793 Kingston Ontario
K7L 5J6
http://www.rasc.ca/Kingston
infoline: 613-377-6029
email: kingston@rasc.ca

President's Tid Bits

By Kim Hay

The groundhog predicted six more weeks of winter, and earlier this month winter it was, and yes the calendar also states that March 20, the spring equinox will arrive at 7:33 am edt., and so many of us are looking forward to that turn in the calendar and year, and to start planning their summer vacations to star parties.

Well winter too has its star parties, and in February was the Winter Star Party held in the Florida Keys. Though I personally did not attend this function, others across the RASC did, and we are looking forward to hearing their observation results. We do however, have one member who is in Florida, Leo Enright, who has sent us his observing results, with 28 nights out of 31 nights observing in January and making the rest of us drool, and his February is turning out to shabby either. Way to go Leo! (See Leo's report on page 4)

Though we don't have to southern climate zones, we do our observing when we can, with our monthly KAON sessions with Queen's University, our floating members observing sessions hosted a members home during the darkest times of the month, are arranged by our Observing Chair Ken Kingdon. We also do some ad hoc observing at the Astro Yak sessions every fourth Friday of each month at the home of the Starlight Cascade Observatory. (http://starlightcascade.ca). There have been some reports on our local email list of members observing and letting us know what they observed. So we would like to hear about your observations too. Come and join the Kingston Centre email list by going to http://crux.stmarys.ca/mm21/listinfo/kingstonrasc. Fill out the form, the moderator will approve you, and you're in. You can also submit your observations to "Regulus" at angle@personainternet.com.

We will be having lots of activities coming up in the next few months, and I hope that you will be able to come out and enjoy them. There will be observing, Astronomy Day on April 16 at the Isabel Turner Library, with talks and solar observing and displays, and night time observing at the Queen's Observatory. In May, we will be back at the Little Cataraqui Conservation area, in June a possibility of setting a display up at the "Relay for Life" on the RMC grounds, and the Sky is the Limit Festival in July. These are all great functions, and lots of fun for members and public to come together and enjoy our hobby of Astronomy.

Well, here's to a clear spring, cool nights and may your observing time be enjoyable.

"Astronomy compels the soul to look upwards, and leads us from this world to another."

- Plato, 400 BC

Magazine Subscriptions

Kevin Kell

Sky & Telescope Magazine is $7Can/Issue * 12 = $84/year at newsstands. Regular subscription price is $50US for Canadians. If you renew or subscribe through the Centre it is $40US (about $50Can). It is a big chunk of change when you look at it all at once, it's almost the same as RASC membership. However it is a good magazine with lots of diversity and lots of pages! Love it! We currently have about 10 members subscribed. They also just came out with an Australian edition where they have to change the language from "color" to "colour".. too bad they wouldn't do that for us!

February Public Observing

Kevin Kell

The February KAON public observing session was held February 12 at the Queen's Observatory on Ellis Hall. For those keeping notes, rasckc volunteers were: Hank Bartlett, Susan Gagnon, Norm & Nancy Welbanks, Kim Hay, David Maguire, and Kevin Kell. A new member Kevin Feran also showed up to learn about scopes.

The session started around 19:30 to mostly clear skies over Ellis Hall. Coming from Yarker, we had snow squalls as late as 17:30 but then it cleared up wonderfully. We shoveled off the observing deck and started setting up scopes before 19:30 and people were showing up already. Both small battery packs for the LX200 were dead (I have them at home charging now). They are only 7 amp hour batteries and one will certainly last through 6 or more hours... it's just that they don't get recharged from month to month. We will bring in the battery power pack purchased for the LX200 next month and leave it there (it's a bruiser! Two man carry for sure!)

We got about 30 minutes of lunar, planetary (Saturn was gorgeous) and a few others and the clouds rolled in. And stayed that way for the rest of the night. Around 20:30 it started to snow and we packed up the equipment and took it inside.

Terry Bridges shows a visitor the cosmos with the Queen's telescope

We had two display up in the hallway along with handouts, star charts, and other stuff. Terry Bridges ran tours of the big scope (remembering to rush upstairs to close the dome when the snow started!) and a couple of DVD programs. We

estimated that over 50 people showed up even with the cloud.. Not bad!

We left after 21:45, got north of Kingston and most of the sky clear up again! Must have been local lake effect snow squalls, much like the January Members Observing Session up near Sydenham, where members coming in from Kingston and Odessa reported snow, as opposed to the pristine clear skies at Doug Angle's Home.

Florida Observing report

Leo Enright

January Report: Of the 31 evenings in I had 28 recorded observing sessions. 26 of them were excellent sessions with good observations: 2 of them were quite cloudy with my seeing only a few objects, because of the clouds, though on one of the two cloudy nights I actually had good conditions when I was briefly observing at another location earlier in the evening. In the morning, of the 31 dates, I had 20 observing sessions for objects in the morning sky.

February Report: It is February 9 as I write this report. Of the 8 evenings so far this month I have had 6 good observing sessions and 2 evenings when clouds allowed me to see only a few objects. I have had 5 morning observations on the 9 mornings so far this month. In total of the 38 days for observing since the beginning of January, I have recorded 24 pages of notes in my observing log, and in addition, I have 17 drawings of objects I observed.

Objects Observed: The most spectacular object throughoug this whole period has been Comet Machholz (C/2004 Q2). In late January it passed quite close to the very rich and very bright stars of the Alpha Persei Cluster. Over the past week it has been fairly close the northernmost end of the great string of stars called Kemble's Cascade (named after one of Canada's finest ever observers). It is still within 10 degrees of the cascade. Of the 31 days in January, I observed this comet on 26 evenings, and of the 8 evenings so far in February i have observed it on 6 evenings. It has been wonderful to be able to watch it brighten, night by night, and then fade slightly. Its tail fanning out eastward was quite faint because of the ambient light pollution, but still it was faintly visible.

Of course, I have been observing the Messier objects of the winter sky, night after night, including M35, M36, M37, M38, M41, M42, M43, M44, M45, M46, M47, various areas of Orion, the areas of R Lep, RX Eridani, RX Lep, and other areas. Of course, from here the stars of Gemini are extremely close to the zenith (or north of it) late in the evening at this time of year.

In the morning sky, the dance of Mercury and Venus continued on into January with something that began in December. From Jan. 1 to 21 I saw the parir 12 times with them being very close on the mornings of Jan. 12 (less than 1/4 degree apart) and Jan 13 (about 1/3 degree apart) On Jan. 17 they were about

1 degree apart. After Jan. 21, I saw Venus 5 times without seeing Mercury, namely on Jan. 22, 24, 25, 26 and 27. I did not see Venus after Jan. 27. On Jan. 31 I saw Jupiter do its close approach to the moon with the distance at 11:00 UT being about 50 arc minutes from the nearest limb of the moon. (I suggested a Lunar Parallax Project to one of our members, but the project was not completed at that time.) More recently in the morning sky, Mars is still a nice partner to Antares (its "rival star" as the name suggests). They have done their morning dance and are now about 22 degrees apart, from this morning's observation. Yesterday morning and this morning Mars was very close to the Lagoon, yesterday about 3/4 degree from the middle of the nebula and this morning about 1 degree from the eastern edge of the nebula.

Clear skies and best wishes to all Kingston Centre members,
Leo Enright

Members Observing Schedule

Ken Kingdon

MARCH - Members Observing Night
Visit and observe at Mike Wirth's "Equuleus" Observatory, near Perth. Enjoy unforgettable deep-sky views with his 18-inch and 30-inch Starmaster "goto and track" telescopes. Orion Nebula is guaranteed to make your jaw drop! You do not need to bring your own scope. Announced at the regular February Meeting, I have already received a partial Advisory List of those who wish to go. As the March issue of Regulus is timed for delivery early into this "floating" period, you must act NOW to be added to the Advisory List so you will know on which clear night this outing will be held.
10-DAY FLOATING PERIOD:
TUESDAY MARCH 1ST through to THURSDAY MARCH 10.
CONTACT: advise Ken Kingdon in order to be informed right upon the first clear day when we will go.
TIME: have an early supper, and plan to begin your drive about 6PM. The observatory tour begins about 7PM, lasting say 2 hours (perhaps more).
DIRECTIONS: from Kingston, drive north on Division Street (CR#10, a.k.a. Perth Road). Continue thru Westport on CR#10, go up the hill past Foley Mtn. C.A., drive 15 minutes to Stanleyville Road (only exit road with a street-light). Turn right (south-east) onto Stanleyville Road. Proceed 2km to the stop sign in downtown Stanleyville. Turn left (east) onto xxxxxxxxxxxxx, with home on the left, and his roll-off roof observatory with heated warmup room on the right. Double-park in the observatory drive. If you come to the stop sign at the Narrows Locks Road, backup 100m. (From Perth, drive south on CR#10. Turn left (south) onto Narrows Lock Road. Proceed 2km to xxxxxxxxxxx. Should you become lost, phone Mike's home 613-xxx-xxxx, or the horse barn 613-xxx-xxxx.

APRIL - Members Observing Night
"Beginners night" at Camden Lake Provincial Wildlife Area. Learn how to

identify the Constellations, and how to star-hop to the showpieces. No scope? ... binoculars are fine.
10-DAY FLOATING PERIOD: WED., MARCH 30 through to THURSDAY, APRIL 08.
CONTACT: Ken Kingdon must first be notified. You will be advised upon the first clear day when we will go out.
TIME: plan to ARRIVE on-site about 8PM. We finish at 10PM say.
DIRECTIONS to the Camden Lake Wildlife Area are:

From the Hwy. 401 exit (#599) at Odessa, drive north all the way (20 minutes) on County Road #6. Proceed through Yarker, and stay on CR#6 through Colebrook north on CR#6 (ignore the Centennial Park Road) to the hamlet of Moscow. Another 1 km north brings you to Card Road. Turn left (west) onto Card Road and stay on it for 3 km to its western terminus in the big parking lot. You can setup scopes anywhere on the grassy portion of the parking lot.

Astronomy and Gardening- Two great hobbies growing hand in hand

Kim Hay

Well, now we have all heard of planting by the moon cycles, and farmers harvesting by the harvest moon, but tomatoes and space?

Yes, it's true! We know that seeds have been taken on shuttle missions for several science missions, to study the effects of gravity and weightlessnes, high pressures, low pressures, no light, lots of light and extreme temperatures. Well here is where astronomy and gardening come together and grow together.

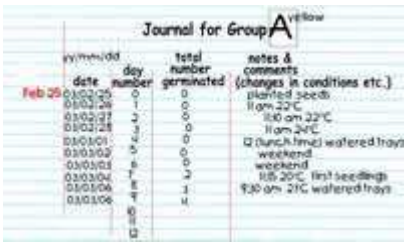
As a project to excite students in learning how to survive in a Mars environment, students from grades 2 to 10 were asked to partake in a science experiment using tomato seeds. These seeds are a plum tomato type from traditional, conventional sources and have not been altered through any means- including biotechnology. They are a seed from H.J. Heinz Canada the H9478-F1 variety. This is a versatile variety in that it can be used for tomato paste products and fresh juice. The plants will produce mature fruit in a period of 85-105 days depending on the growing conditions.

There are three (A,B,C) groups of seeds to be planted, and the students would have to monitor their growth, temperature, germination period, and any other characteristics that would show up. How to grow a seed from dehydrated state, where would the water come from, use the carbon dioxide that would be expelled by the space travellers. How much light, how long would it take from a non-earth type planet? Many questions, and lots of different areas of science to use, its one great way to get the students excited in science and other possible space areas.

One was a control group (no special treatment), a second group that have been

exposed to the Mars like environment on Devon Island in the Canadian north, and the third group, was exposed to simulate a breach in the storage system on a mission to Mars.

Since this is a blind test, and no one knows what group of seeds is which, these seeds were to be grown, data gathered and collected, and sent into the Tomatoesphere website.


Journal for Group A yellow

yy/mm/dd date	day number	total number germinated	notes & comments (changes in conditions etc.)
Feb 25 03/02/25	0	0	planted seeds
03/02/26	1	0	11am 22°C
03/02/27	2	0	11:30 am 22°C
03/02/28	3	0	11 am 24°C
03/03/01	4	0	12 (lunch time) watered trays
03/03/02	5	0	weekend
03/03/03	6	0	weekend
03/03/04	7	2	11:15 20°C first seedlings
03/03/05	8	3	9:30 am 21°C watered trays
03/03/06	9	M	
	10		
	11		
	12		

This project is sponsored by Agriculture an Agri-Food Canada company, the Canadian Space Agency, Heinz Canada, OCE-Crestech, the University of Guelph, Stokes Seeds, and Natural Sciences and Engineering Research Council of Canada.

On Friday February 11, I presented a 5-minute introduction to this project. I handed some seeds and log sheets out at the meeting, so it will be interesting to see the results.

If you are interested in the outcome, or want to know more about this project please go to the following links below.

See http://www.tomatosphere.org/ for more information Devon Island Green House Project
www.uoguelph.ca/research/news/articles/2002/greenhouse_technology.shtml
Devon Island www.space.gc.ca
Mars on Earth www.marsonearth.org
NASA Haughton-Mars Project
www.arctic-mars.org
The Guelph University Vacuum experiment http://ces1.ces.uoguelph.ca/

I plan on starting my seeds soon, and monitor their growth; I hope that you will try as well.

TOMATOSPHERE

MEMBERS OBSERVING NIGHT AT SHARBOT LAKE

Ken Kingdon

Instead of picking a single date and getting clouded out, a sequence of "floating" dates allows members to get out on the first clear night during the dark Lunar phases. In the cold months, members can go out observing for just 2 hours after supper and get home early enough for work the next day. Each month's "floating" schedule is reported in the 'Regulus' newsletter. Upon receiving an advisory by e-mail or phone, members have to be ready on short notice after an early supper. During the Daylight Savings months, we will revert to weekends or consecutive weekends, and can also to switch to Lunar observing.

February 1st to10th was the "floating" period, and the sky became pristine on Monday, February 1st, which turned out to be the only really useable night in February. Those on the Advisory List were notified by the Observing Chairman. A wonderful site south of the Village of Sharbot Lake was provided by our very gracious RASC hosts, John and Peggy Hurley.

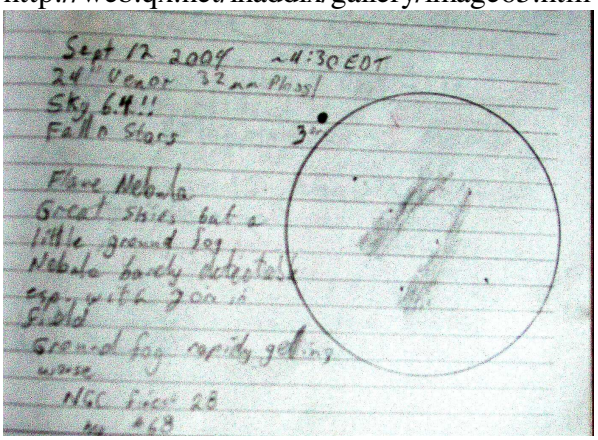
Sharbot Lake has superb dark skies, yet is only 40-minutes drive north of Kingston's Hwy 401. Moderate weather, calm and silent, with superb transparency and seeing... and no mosquitos! With both a home and a car nearby for possible rewarming, there was no threat of becoming cold.

Besides our hosts and myself, Doug Angle arrived with our club-made 24-inch reflector. Doug quickly found for us the distinct face-on spiral galaxy NGC 1232, #21 on The RASC Finest NGC List. Doug remarked that he had attempted this low galaxy from his Sydenham home (20 minutes from Kingston), but it was lost in the light pollution, and could not be found even after 2 frustrating hours of hunting with the big 24-inch Venor! Proof enough that truly dark-sky sites are worth the little extra drive. It's often stated that "aperture rules", but one could also argue that "dark sky trumps aperture".

With unaided eyes, Comet Machholz was just a "fuzzy star" without a tail, but with our Centre's 24-inch scope, it appeared very bright with a stellar nucleus, and a distinct 2° long tail. Next with my own 12.5-inch reflector I observed one of Leo Enright's favourite double-stars, the naked-eye gamma-Arietis... a gorgeous, steely-blue pair of equally bright stars. I swung over to the nice open cluster NGC 1502 that commences the "Kemble's Cascade" star chain, then saw the closeby planetary nebula NGC 1501, which from this site was bright enough to require no nebula filter. It is #20 on the Finest NGC. PNs are commonly blue, as depicted in the image from our fellow RASC-KC member Walter MacDonald: http://www.starlightccd.com/funstuff/mx7c/walt-ngc1501.htm

In Canis Major, I located NGC 2362, nick-named the "Mexican Jumping Bean Cluster". Centred within the many telescopic stars of this open cluster, there is a lone, brilliant, naked-eye star (tau-Canis Majoris). A sharp tap on my scope caused this bright star to wobble in a different direction from all the other dimmer cluster stars, an interesting effect caused by the persistence of human vision when a bright object moves quickly across the eye's retina.

My jaw dropped at the sight of my best-ever detailed view of the "Flame Nebula" (NGC 2024), #28 on the Finest NGC. Dark branches cross the center of this emission nebula, so its glow appears divided into "flames". From Sharbot Lake, no nebula filter is necessary - remarkable because the very bright zeta-Orionis star (easternmost in Orion's belt) is right beside it, and can overwhelm it. The Flame Nebula can be seen at: http://web.qx.net/lhaddix/gallery/image65.htm



Flame nebula in the Venor. Dwg by Doug Angle

One of my personal favourites, NGC 2359 (Canis Major) is washed-out from Kingston, but under truly dark skies, it was easily observed, even without a nebula filter. Nick-named "Thor's Helmet", it appears to have two protruding "bison's horns" as seen in old viking movies. See Thor's Helmet at: http://www.mindspring.com/~sb635/ngc2359st8.htm

Occasionally one hears erroneous claims that "all deep-sky objects are too faint". However, both the "Flame Nebula" and "Thor's Helmet" provide convincingly proof that observers must consider the effect of an observing site located well away from city lights, as well as using reasonable aperture. RASC Kingston Centre members are incredibly fortunate people, being located so close to truly dark-sky sites, plus having scopes up to 24-inch aperture.

I used a nebula filter on IC 2177, The "Seagull

Nebula" and it jumped out. Located on the Monoceros-Canis Major border, it is #18 on The RASC Challenge List. Visible with an 8-inch scope, this 2° long nebula appears like a graceful Seagull, banking in flight. Along its curved "wings", you may see about five star clusters and patches of nebulosity... an interesting pot-pourri.

The constellation Ursa Major is now approaching culmination, giving its best views of the year. Spiral structure was obvious within the face-on galaxy M101. I looked at M97 Owl Nebula, and the two dark "eyes" were seen by using an O-III nebula filter. M108 was an outstanding edge-on spindle. I observed several pairs of interacting galaxies, most noticeable being M51 Whirlpool, plus the pair of NGC 3718 & 3729. The long gravitationally-distorted arm of 3718 looks like cotton candy spun onto a stick. See the webpage: http://perso.wanadoo.fr/jp.bousquet/n3718_3729.htm

Diagonally through the bowl of the Big Dipper is the bright pair M81 and M82, also visible with binoculars. A wide-FOV eyepiece (1.25° or greater) provides the best telescopic view of both galaxies together. A narrower FOV reveals just one galaxy at a time, but improves the amount of visible detail. Visit the website: http://www.rc-astro.com/

I star-hopped to "The Box"... a galaxy-group named Hickson 66 located in the constellation Coma Berenices. The box-shape of four mostly edge-on galaxies improves with larger aperture, so we really must observe this unusual galaxy-group with the 24-inch Venor sometime! See the webpage: http://www.atmob.org/Articles/MarioPhoto/n4169box.jpg

During that February night, my 12.5-inch Newtonian became completely entombed in a 5mm coating of hoar frost crystals... yet my on-board heaters easily kept the mirrors and Telrad frost-free, giving perfect views. Just before dis-assembling, I had to step back and take a moment to appreciate my frosted scope for the enjoyable tour it had provided. Raising my eyes high overhead for one last look at that star-filled sky, my chronic case of photon deprivation cured up. After a short 40-minute drive, I crossed Hwy 401 on the north edge of Kingston's light dome, and arrived home with a bunch of memories. To our kind hosts John and Peggy Hurley... thanks for the memories.

The Kingston Centre of the RASC

Email address: kingston@rasc.ca

Newsletter Submission Info:
I can take most common formats, although I prefer plain text. Pictures should be sent as image files in attachments separate from the articles.
E-mail: angle@personainternet.com
Post: Doug Angle,
xxxx.
RR#1, Sydenham Ontario Canada
K0H 2T0
Deadline for the April issue is **March 18**

Subscriptions: Members of the Kingston Centre receive Regulus as a benefit of membership. Advertisements are free to members of the Centre. Commercial advertising is $20/quarter, $40/half page, $100/ full page and should be in electronic format.
Contributions are more than welcome.
Submitted material may be edited for brevity or clarity.

Kingston Cosmic & Events Calendar

by Kim Hay

For more detailed information, please refer to the RASC 2005 Calendar, and the RASC 2005 Observers Handbook. Available from Kevin Kell, or from National Office, http://www.rasc.ca

Date & Time	Events
March 10	New Moon 4:10
March 11 7:30	RASC-Kingston Regular Meeting
March 12 Saturday 7:30 – 9:30	KAON Observing Session- Ellis Hall Queen's Observatory
March 12 Saturday	Mercury at greatest elongation E(18º) best evening view in 2005
March 17 Thursday	First Quarter Moon 14:19
March 20 Sunday	Spring Equinox 7:33 am
March 25 Friday	Full Moon 15:58 Good Friday Astro Yak
March 26 Saturday	Jupiter 2.0º East of Moon 8:00 am
March 27 Sunday	Easter Sunday
March 28 – April 11	Zodiacal Light visible in West after evening twilight
March 30 Wednesday	Venus at superior conjunction
Apr 1 Friday	Last Quarter Moon 19:50
Apr 3 Sunday	Daylight Savings Time Begins- 2:00 am
Apr 3 Sunday	Jupiter at Opposition
Apr 8 Friday 7:30 p.m.	RASC-Kingston Centre Regular Meeting Stirling Hall Theatre D
Apr 8 Friday	New Moon 16:32
	Annular –Total Solar Eclipse partial phase visible in most of S of USA. – NOT HERE
Apr 9 Saturday NEW TIME 9:30-11:00 p.m.	KAON Observing Session- Ellis Hall Queen's Observatory
Apr 11 Monday	Moon 1.3 º S of Pleiades best in E of North America
Apr 16 Saturday	Astronomy Day Isabel Turner Library. Night Observing at Queen's University 8:30 -10:00 pm.
Apr 16 Saturday	First Quarter Moon 10:37
Apr 22 Friday	Astro Yak at the home of Kevin Kell & Kim Hay
Apr 22 Friday	Lyrid meteor peak 6:00 am see www.imo.net
Apr 24 Sunday	Full Moon 6:06
Apr 24 Sunday	Prenumbral Lunar Eclipse visible in all of N.America seen best in West
Apr 26 Tuesday	Mercury at greatest elongation W (27º) not easily observed.

All times in Eastern Standard Time