Regulus

The Newsletter of the Kingston Centre of the Royal Astronomical Society of Canada –January 2006

Coming up…

RASC Regular Meetings

Queen's University
Stirling Hall Theatre D

Friday January 13
Speaker: Walter MacDonald
"A Dome on a Home"

Friday February 11
Speaker TBA

Meetings are co-sponsored by Queen's Physics and include astronomy lectures open to the public.

KAON Public Observing

Queen's Observatory
Ellis Hall
Saturday Jan 14 7:30 - 9:30
Saturday Feb 11 7:30 - 9:30

AstroYak

Friday, January 27 7:00 pm
Friday, February 24 7:00 pm
at the home of Kevin Kell and Kim Hay, 76 Colebrook Rd.

Members Observing

January 21-31 Lemoine Point
February 18-28 Lemoine Point
Contact Ken Kingdon for notification.

The Observational Astronomy for the Novice Program

NEW Course!

Observational Astronomy for the Novice is a nine week course, running Tuesdays evenings starting January 31st, 2006 from 7:00 - 9:00 pm. We ran this highly successful course last fall for the first time, and we're now ready to offer it again.

For more on Oaftn, see page 6

Kingston Centre Member Discovers FMO

Kingston member Kevin Fetter has discovered a Fast Moving Object (one of the close asteroids) from Spacewatch images. The Spacewatch program is dependant on amateurs like Kevin because computer algorithms just aren't up to the task of finding faint objects in complex images.

Congratulations Kevin!

For more on Kevin's discovery and the Spacewatch program, see page 9.

Special meeting of the RASC

A Special Meeting of the Membership (of the National Society) will be held on Saturday, February 11, 2006 at 9 am in Mississauga. Two issues will be decided:
Proposal to Amend Society Fee Distribution and Adoption Procedures
Proposal to Enable Print and Electronically Delivered (PED) Journal
See page 9 for more on these very important issues.

Kingston Centre of the Royal Astronomical Society of Canada
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President's Tid Bits
Kim Hay

Welcome to 2006!!

Though the snow may be on the ground, and the temperatures all over the map, let's hope we get some observing in this year. With all the cloud over the last few weeks I think someone must have got an astronomical present over the Christmas holidays.

I on the other hand, did receive a very nice gift, not a visual piece of astronomical equipment, so all the cloud is not my fault, but a VLF 40 kHz Solar Radio Telescope assembly, in which the antenna's are now up along the roof line, and now we are just muddling along with the software, and hardware compatibility issues. When complete and running we (Starlight Cascade Observatory) should be able to detect solar activity that is in the D layer of our atmosphere. There should be a possible story in the upcoming months, on the progress of the Solar Radio Telescope.

We do have a busy year lined up ahead of us, and our speakers are coming on line, but we would like to hear from our members. A small 5-10 minute presentation would be great, and we have all the electronics needed for you to present your talk. If you are interested, please contact Arlyne Gillespie, our VP either at the meeting or by email, agillespie@hpedsb.on.ca

On February 11 in Toronto there will be a RASC Special General Meeting, on which we the members can cast their proxy vote. The explanation sheet and proxy, would have been emailed to members who supplied an email address, otherwise this will be mailed to you. Please read it over, and if you have any concerns or questions, please contact our National Representative, John Hurley, or one of the Executive. The National body is in a financial situation, where if we do not save over $50,000 in the budget, we will have to start using reserve funds. There are two main topics to be voted on to help curb costs, and help National retain funds:

Initiative One: Society Fee Distribution and Adoption Procedures

a) A change from a fixed to flexible distribution of the membership fees between the Society and the Centre

*When there is a fee increase to members, currently the split is 60% to National and 40% to Centres. This vote is to remove the mention of the split mention in the bylaws, so it can be determined at the council level what amount National may need to help offset costs, and what portion, Centres may receive.

Initiative Two: Proposal to Enable the "Print and Electronically-Delivered (PED) Journal"

*The proposal is you have the option to receive the Journal electronically, or if you wish a paper copy, you would pay an extra $15.00 + GST per year to receive the Journal.

Your vote is needed on these two decisions. For more information before hand, go to http://www.rasc.ca/rascnews/SGM2006.shtml
Though we have some administration work to do on the National level, at the Centre level, we will have our public events with Queen's this year and nights at the Little Cataraqui Conservation area.

The new Observational Astronomy for the Novice course will be starting up again in late January, and observing nights and social gatherings will take place.

We still have some openings in our Committee's and many hands are always needed to help make the Centre run smoothly, if you want to come out and contribute in any way, please do.

Hear is to the New Year 2006.....which will be clear, and we will observe!

Members Observing Sessions
Ken Kingdon

December Members Observing at Equuleus Observatory

Equuleus Observatory is the best-equipped in Eastern Canada., plus it includes a warm-up room! Mike Wirths has both 18-inch and 30-inch StarMaster goto

scopes that track. We enjoyed an excellent night there last April. The views are outstanding. We have a selection of objects that will leave you gasping!
Floating Period: the first clear night beginning Monday, Dec. 26 through to Monday, Jan. 2nd. (excl. New Year's Eve)
Contact: advise Ken Kingdon in order to be informed upon the first clear day when we will go.
Meet: between 7-8pm at his observatory (have an early supper, and plan to begin your drive about 6PM).
Directions: from Kingston: drive north on Division Street (a.k.a.CR#10, or The Perth Road). Continue thru Westport on CR#10**,** go up the hill past Foley Mountain 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. **(Edited for Privacy Concerns)**

Directions from Perth: drive south on CR#10. Turn left (south) onto Narrows Lock Road. Proceed 2km to Stanley Road, turn right (west) 100m).

January 2006 Members Deep-Sky Observing at Lemoine Point Conservation Area

Once again, we have permission to observe all of this period.
Floating Period: the first clear night beginning Saturday, Jan. 21 through to Tuesday, Jan. 31. Those on the Observing List will be informed.
Meet at 7 pm in the South Parking Lot of Lemoine Point C.A.

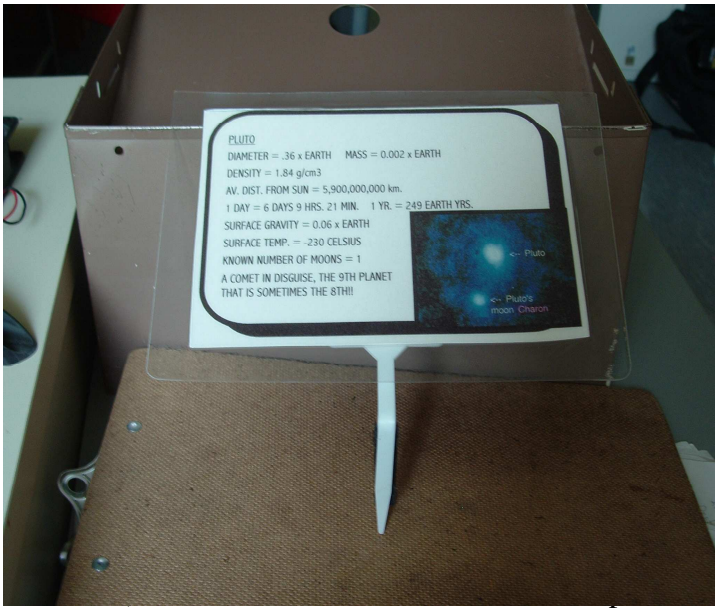
The Solar System Display

Kevin Kell

We've had this solar system display for some years now and not a lot of people (our own members) even knew about it so I thought I'd write up a short little article.

Some years back, for the Sky Is The Limit Festival, we thought we needed some more external self-service displays that the kiddies could go off and entertain themselves for awhile.

The scale distance solar systems idea came up but the problem with scale (if you've actually ever done this), is that the inner solar system is real close in and pluto is tens or hundreds of metres away. So we came up with this idea: an info sheet about a planet, laminated it, stuck a plastic garden marker to it, melted it to a 45 degree angle and stuck velcro on it.



a small, easily portable solar system display that was easy to read.

Since then, we've discovered that the bamboo sticks aren't big enough (they break off, they sway a lot in the wind, and the two velcro surface don't have enough contact area to stick well).

Thanks to Kim and Hank for the work and ideas for this from years back. Now what we need are some new ideas for bigger better sticks. 2"x4" lumber is out as we want this to stay portable :)

Planet info sheet mounted and ready for public display.

If anyone has any ideas, please let us know! better yet if you have about 12 or 14 of these bigger better sticks, bring them along!

From the Webmaster

Kim Hay

First a special thanks to Kevin Fetter for managing the Centre's website for the last two years. Great job Kevin, we really appreciate your efforts. Kim Hay is now taking over as webmaster in 2006.

Its been a few years, since we have changed our passwords on the Kingston Centre's members only page. This should be done for security reasons every year, so the notification will go out in the January issue of Regulus, and will become effective on February 1st. Make sure you keep your Regulus handy when accessing the members only section, so you can keep enjoying the website, if you forget, send the webmaster a note at kim@starlightcascade.ca.

The passwords are listed on the bottom of page 10 for members of the Kingston Centre. Regulus is also sent to other RASC Centres, other institutions and a few non-members. In these cases, the passwords are removed. All back issues of Regulus are available on the website as well. Password removed copies are available in the public area, and complete (with passwords) in the members-only area.

Also, on a side note, if there is anything you wish to see on the webpage, or want added, please send me a note at kim@starlightcascade.ca.

The website will be undergoing some changes over the next month but you can always stay in touch with the Kingston Centre. Forgot the web address? See the bottom of page 1 for website and other contact information.

RASC Observers Calendar 2006 are now available.

All SRP's (Suggest Retail Price) would have tax and shipping added if ordered through www.store.rasc.ca or by mail order. Get them from us and no extra taxes, no shipping! (unless you want it shipped of course :) and save a bundle, and help the RASC-KC earn a little as well.

New!

Isabel Williamson Lunar Observing Program Booklets $10

2006 RASCcalendars $15 - low stock.. may be out

2006 RASC Observer's Handbooks (you get one with membership, this is a 2nd one for the observatory or bathroom :) $24

Beginner's Observing Guide Book by Leo Enright $20

RASC planispheres for 40-50 degrees north $15

RASC stainless steel mugs $15

skyways book in french (1 copy) by Mary Lou Whitehorne $20

skyways book in english (out of stock) by Mary Lou Whitehorne

lapel pins - RASC national new logo $5

lapel pins - RASC-KC GA logo $5 for one, quantity discounts

Expanding Their Universe Book by Laura Gagne $20, members $16

Worlds to Discover Book by Laura Gagne $15, members $12

Slide set #1 - ETU - 40 slides $30, members $24

Slide Set #2 - ETU - 40 slides $30, members $24

Slide Set #3 - WTD - 20 slides $15, members $12

From the Editor

Doug Angle

January marks the start of my second year as editor of Regulus. Actually, I produced the December 2004 issue, so this marks my 14th Regulus. Wow how time flies.

Producing the newsletter was a new venture for me, and came with some surprises. I expected to be constantly looking for material to fill the pages, but that's not been so much of a problem thanks to the many contributors (although I do tend to think of all my reading material in terms of column-inches now!). However, I invariably end up with a page of empty space and either a ½ page or a 2 page article to fit. In the first few months, I approached the problem with some pretty heavy-handed editing, but I think I've found better ways now. Apologies to those that whose articles were butchered in the name of editorial license.

In the past year, I've been looking at newsletters from other organizations, astronomical and otherwise, for ideas on how to manage and improve Regulus. Many reprint topical information from various internet sites. Instead, I've chosen to give priority to Kingston Centre activities, either in the form of observing and activity reports, or notices of upcoming events. Kim Hay is a big help, producing the Cosmic Calendar every month, and Ken Kingdon has faithfully met deadlines with the current observing schedules. Next in priority are articles of astronomical interest by centre members, often from the prolific pens of Leo Enright and Kevin Kell. Finally, broader news articles round out the content. Of course, Regulus is for the members, so please let me know what you want to see in these pages.

Of course, I still find myself staring at a blank page from time to time, and I'm in constant need of articles. Tell us about your recent observing sessions, equipment or book reviews, or other projects on the go. I'm especially interesting in hearing what our distance members are up to. Articles may be of any length and most formats, although I prefer submissions less than 3 pages and in plain text. Pictures should be sent as separate files. Thanks to all who have contributed and offered support.

Book Review

Moon Observer´s Guide by Peter Grego

Kevin Kell

I was a lucky door prize recipient at the Centre´s Annual Awards Banquet back in November and what I won was a book. My current reading stack is about 45 titles tall but this one caught my eye more than the others and climbed up the priority ladder to achieve the prestigious position of bathroom reading. Once achieving this position, a book is as good as read.

The Moon Observer´s Guide by Peter Grego (Firefly Books 2004) is a great companion to anyone interested in Lunar Observing, along with the Virtual Moon Atlas software, Rukl´s Moon Atlas, and the Isabel Williamson Lunar Observing program. A small introductory section up front starts with, "Why Observe the Moon?" followed with some basic background of what features are and what equipment you can use.

The middle section is the best part, a lunar day by day guide to features that are available. An example from Day Three: "The whole of Mare Crisium is now visible, and the earthshine remains visible with the naked eye, faintly illuminating the dark side of the Moon."

Lastly are guides to recording observations and glossaries and references. Recording your observations includes all manner of photography and drawings. There are exposure tables, tips for digital cameras and video cameras and more.

The book is printed in China and retails for $14.95. Definitely recommended for any observer´s library. You may not be a lunar observer now, but odds are you will be and when you do, you will want this book.

Observational Astronomy For the Novice II

Doug Angle

Last September for 9 weeks, 20 people attended the Kingston Centre's Observational Astronomy for the Novice course. At the time we had much more interest than we could accommodate in the class, and so we turned a number of people away. Our plan was to see how our first effort turned out before deciding what to do next. The course was very successful and well received so we are now preparing to offer it again.

The course is an introduction to visual astronomy. While we cover a little bit of theory, the main focus is "what can I see from my backyard?". That alone covers a lot of material.

The first 4 weeks cover *how* to observe, the next 4 weeks cover *what* to observe, and the last week is an observing session at the Queen's observatory. Topics for each of the 8 weeks are:

How to Observe
Motion of the Sky and Seasons
Maps, Distance, Position and Brightness
Telescope types and Using them

The Celestial Sphere and Deep Sky
Moon and Ec lipses
Solar System
Stars

Between classes, students are encouraged to work on their Observing the Universe certificate. It should be possible to complete the certificate by the end of the course.

Cost of the course is $150 for non-members. This includes a membership in the RASC Kingston Centre, cost to members is $90. Youth and those who attempted to register for the September course are offered additional discounts.

To register go to http://members.kingston.net/rasc/nova.htmor call 613-377-6029

Members Observing Schedule 2006

Ken Kingdon

Members observing sessions are intended for RASC-KC members and their guests. This give us a time when we can observe together, without the worries of million candlepower flashlights and other distractions we get at public events.

Most months we will observe at Lemoine Point. The start times do change somewhat in months when Sunset is later. Of course, feel free to come earlier and set up. You can stay as long as you like. Bring binoculars or a telescope if you have them. If not, the centre has a number of instruments in the equipment loan program. Contact Kevin Kell to arrange. Of course, feel free to come even if you don't have equipment.

I keep a list of interested people, and will advise people by email the afternoon of the day (earlier if it's more obvious) if it's forecast to be clear. To get on the list,[XXXXXXXXXXXXX] email at kenkingdon@hotmail.com

Also, if we still need directions, they are written (just once) here...

Directions: proceed south on Bayridge Drive (or Days Road) to its very end at Front Road. Turn west (right) onto Front Road, and proceed past the Airport almost 1km. At the very end of Front Road, slow to turn right into the Conservation Area, and proceed 400m into the South Parking Lot.

In both June and July, please note that we will switch to lunar observing so that we can begin around the 9pm sunset (avoids beginning a deep-sky session VERY late, and the nights are rather too short anyway). This will give many members the opportunity to learn the Moon and to complete their "Isabel Williamson Lunar Certificate".

For August, a trip to Nirvana is at "prime time", so this is scheduled instead of Lemoines.

No separate observing is planned for September, as we go to Fall'n'Stars.

So here is the 2006 Members Observing Schedule...

Clear Skies (gosh... we NEED 'em !)
Ken Kingdon

January
Floating Period: first clear night beginning Saturday, Jan.21 right through to Tuesday, Jan.31. Those on the Observing List will be informed.
Meet: 7pm in the South Parking Lot of Lemoine Point C.A.

February
Floating Period: first clear night beginning Saturday, Feb.18 right through to Tuesday, Feb.28.
Meet: 7pm in the South Parking Lot of Lemoine Point C.A.

March
Floating Period: first clear night beginning Monday, March 20 right through to Friday, March 30.
Meet: 7pm in the South Parking Lot of Lemoine Point C.A.

April
Floating Period: first clear night beginning Thursday, April 20 through to Saturday, April 29.
Meet: 9pm in the South Parking Lot of Lemoine Point C.A.

May
Floating Period: first clear night beginning Saturday, May 20 right through to Sunday, May 28.
Meet: 9pm in the South Parking Lot of Lemoine Point C.A.

June
Because of very short nights, we now switch to LUNAR OBSERVING this month.
Floating Period: first clear night beginning Saturday, June 3 right through to Sunday, June 11
MEET: 9pm in the South Parking Lot of Lemoine Point C.A.

July
Because of very short nights, we switch to LUNAR OBSERVING.
Floating Period: the first clear night beginning Monday, July 3 right through to Monday, July 10
Meet: at 9pm in the South Parking Lot of Lemoine Point C.A.

August
Deep-Sky Observing at Nirvana (N. IRViNg Airstrip)
Floating Period: first clear beginning Saturday, Aug. 19 right through to Tuesday, August 29.
Directions: from Hwy 401 at Napanee, drive north 1-hour on Hwy 41 to civic #19213, which is about 10 minutes past Bon Echo Prov. Park. Turn east (right) onto the gravel road called the Irving Lake Airstrip Road. 1 km after a bridge, look for an obvious "Y" in the road. Take the right branch up a small grade, proceed 100 meters onto the abandoned runway, then drive 400 m to its southern end. Park and set-up on the west side, OFF of the abandoned runway.

Nirvana Notes:
- stay for one or more nights. Many Ontario & Quebec observers may also be there.
- during the day, dinning is just 2 km south at Moosehorn Restaurant on Hwy.41. Don't miss their great breakfast each morning 9 AM.
- camp fires are not permitted at Nirvana. No washrooms, except at Moosehorn Restaurant.
- camping is best done at nearby Bon Echo P.P. If desired, motel accommodations can be arranged at the Swiss Inn in Denbigh (website http://www.swissinn.northcom.net/ or phone 1-800-844-0284

September See you at Fall'n'Stars

October
Floating Period: first clear night beginning Saturday, Oct.14 right through to Wednesday, Oct.25
Meet: 7pm in the South Parking Lot of Lemoine Point C.A.

November
Floating Period: first clear night beginning Monday, Nov.13 right through to Friday, Nov.24
MEET: 7pm in the South Parking Lot of Lemoine Point C.A.

December
Floating Period: first clear night beginning Monday, Dec.11 right through to Friday, Dec.22
Meet: 7pm in the South Parking Lot of Lemoine Point C.A.

Responsible Lighting and Your Home, Part 2

by Kevin Kell

In Part 1, we looked at a generic back door lighting situation where there was bad bad lighting. There was too much light, it caused a lot of glare, trespassed onto the neighbours property and was shining up in places that we didn't need it. We corrected that by reducing the wattage and by using full cutoff shielding.

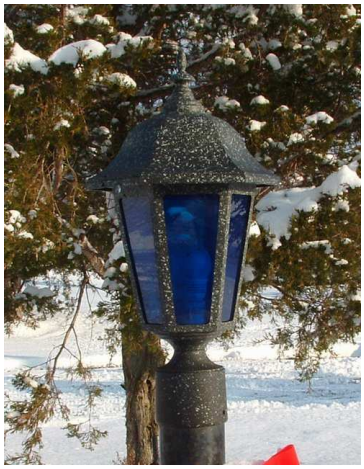
In this article, we look at bad driveway lights. Not everyone may have these, but if you are ever thinking of getting them please keep this article in mind.

What is the purpose of driveway lights? In our instance, merely as navigational aids (ie to help us find our driveway, especially as there are deep ditches on either side that love to eat Jettas!). As navigational aids, they just have to be bright enough to be seen from a distance, and not bright enough to read by.

So when we first moved in some years back, there were two 100 watt incandescent light bulbs in the fixtures, truly blinding drivers as they drove by, not to mention being on a dusk to dawn sensor. Applying the tenets of Responsible Lighting to this issue and we find:

a) Use
light only where you need and use it : the lights did fulfil a purpose

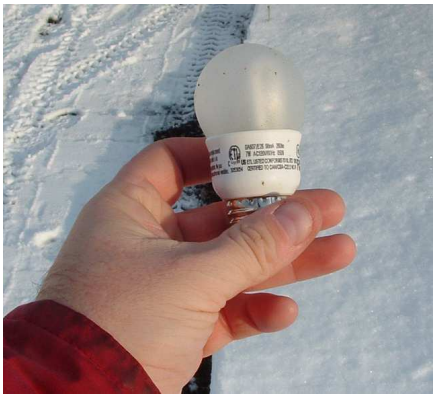
b) Use full cutoff fixtures to use the light where you want it and no where else. : there were lids on the fixture to stop the light from going up, but they could still be more full cutoff.



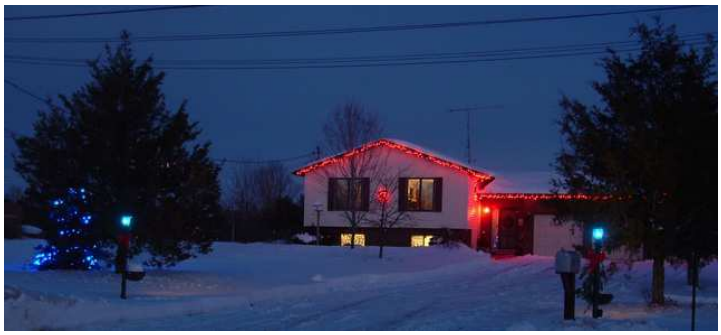
c) Use the appropriate wattage and not more than you need: there is too much wattage here to serve its function.

d) Use a motion sensor, or timer to reduce the time of lighting to when it is needed: replace the dusk to dawn with a programmable dusk+n hours

So out come the 100 watt incandescent bulbs and in went 7 watt Compact Fluoresecent bulbs. The 100 watt bulb puts out about 1600 lumens. The CF bulb puts out about 300 lumens.



The light output dropped over 5 times, yet still fulfilled the function of navigation aids.



In addition the dusk to dawn sensor switch was replaced by a programmable dusk +4 or +6 hour switch, allowing us to use the light only when we really needed it. A quick calculation shows that we went from 2000 watts/day down to 75 watts/day and still achieved our desired purpose of driveway lights. Or in terms of power bills, down from (2kwh*30days=60kwh@$0.15=)$9/month to (0.075kwh*30days=2.25kwh@$0.15=) 34 cents/ month.

This is another example of what you can do in your own home to help reduce light pollution, save energy dollars and promote responsible lighting.

RASC Members Discover "FMOs" in 2005

By Denis Grey, Toronto

[from www.RASC.ca] RASC members Michael Boschat of Halifax (2005 TV51), Kevin Fetter of Kingston (2005 XZ7) and Ed Majden of Victoria (2004 MV2 and 2005 NX55) all helped to discover

FMOs in 2005. FMO is an acronym for "Fast Moving Object" and applies to Aten, Apollo and Amor types of asteroids and other relatively nearby (<0.2 AU) solar system objects (comets and asteroids).

FMOs and VFMOs (Very Fast Moving Objects) are so named because these objects move very fast across the sky compared to typical asteroids, leaving long trails even in relatively short exposures. The University of Arizona's FMO Spacewatch Project conducts a survey using a 0.9m Kitt Peak telescope with a mosaic CCD system.

Spacewatch attempted to create an efficient FMO trail detection algorithm, but the best detection software could only find relatively bright trails while the visual examination of images were able to detect fainter trails below the detection threshold of the software as well as to eliminate edge-on galaxies in the same fields (which look much like FMOs). As a result it has been the approach of Spacewatch to continue to identify FMOs by visual inspection of image data rather than making further attempts at developing software for the purpose as is the case with other types of asteroid surveys. As part of this process the Spacewatch website regularly distributes image data to participants who receive co-discoverer credit for their contributions when they identify FMOs.

RASC members who are interested in participating in this public program can find out how to become a Spacewatch member and participate in the search for FMOs through the Spacewatch website.

Special Meeting of the RASC

A Special Meeting of the Membership will be held on Saturday, February 11, 2006 at 09 a.m. to 10:30 a.m. at Lecture Hall 2082, South Building University of Toronto at Mississauga, 3359 Mississauga Rd N., Mississauga, ON (directions: www.erin.utoronto.ca/services/conference/map/index.html)

Agenda:

1. Approval of Agenda
2. Initiative One: Proposal to Amend Society Fee Distribution and Adoption Procedures
3. Initiative Two: Proposal to Enable Print and Electronically Delivered (PED) Journal
4. Adjournment

In 2003 and 2004 the National Society incurred a combined deficit of $63,363. In 2005, the society is projecting a deficit in the range of $25-$35,000 despite significant cost-cutting measures and appeals for donation.

The Society's Treasurer predicts that, unless significant corrective action is undertaken, the Society will have to borrow from our restricted funds, such as the Endowment or Northcott Funds, to pay for day-to-day expenses before the end of 2006.

As recently as 2002, the Society enjoyed a surplus fo $32,680. The Society's current financial issues are generally a result of lower revenues and increasing costs, specifically from:
An abrupt rise in the Canadian dollar which reduced our publication sales revenue, since most publication sales are in US dollars
A drop in membership numbers
A reduction in unit sales of the Society's flagship publications: The Observer's Handbook and The Observer's Calendar
Dramatic increases in liability insurance premiums
General increases in postage, printing, and employee salary costs.

If adopted, the two initiatives below are predicted to resolve the current situation and return the Society to a balanced budget by 2007.
[from the editor} For more detail, see http://www.rasc.ca/artman/uploads/rasc-sgm2006_001.pdf. Please consider this important issue. The national portion of your membership fee is $33, for which members receive about $90 in benefits. The rest is subsidized by handbook and other sales which have softened recently. We need to take action now to preserve the financial health of the **Society.** John will have proxy forms available at the January meeting - please talk to John give him your direction, and sign a proxy form.

Kingston Cosmic &Events Calendar
Jauary and February 2006

By Kim Hay

For more detailed information, please refer to the **RASC 2006 Calendar** and the **RASC 2006 Observers Handbook**. Available from Kevin Kell or from National Office, http://www.rasc.ca

Date	Events		Date	Events
Jan 3 Tuesday	Quadrantid meteor peak 1:00 pm		Feb 4 Saturday	Little Cataraqui Conservation Area Public Talk 7:00 –9:00 pm with observing- weather permitting
Jan 6 Friday	Moon First Quarter 13:56		Feb 5 Sunday	First Quarter Moon 1:29
Jan 13 Friday	Regular Meeting Stirling Hall Theatre D 7:30 p.m. Guest Speaker –Walter MacDonald Topic "A Dome on a Home: The Story of Winchester Observatory"		Feb 10 Friday	Regular Meeting Stirling Hall Theatre D 7:30 p.m. Speaker TBA
Jan 14 Saturday	KAON Observing Session- Ellis Hall Queen's Observatory 7:30-9:30 p.m. for more information visit http://members.kingston.net/rasc/pubobs.htm		Feb 11 Saturday	KAON Observing Session- Ellis Hall Queen's Observatory 7:30-9:30 p.m. for more information visit http://members.kingston.net/rasc/pubobs.htm
Jan 14 Saturday	Full Moon 4:48		Feb 12 Sunday	Full Moon 23:44
Jan 21-31	Members Observing at Lemoine Point. Floating date. Observing the first clear night in this period.		Feb 15 Wednesday	Zodiacal Light visible in the West after evening twilight for the next two weeks
Jan 22 Sunday	Moon Last Quarter 10:14		Feb 16 Thursday	Mars 2.3° S of the Pleiades 8:00 pm
Jan 27 Friday	Astro Yak at the home of Kevin Kell & Kim Hay visit http://members.kingston/~rasc/indexsec.htm for directions		Feb 17 Friday	Venus at greatest brilliancy Moon Occults Spica
Jan 29 Sunday	New Moon 9:15		Feb 18-28	Members Observing at Lemoine Point. Floating date. Observing the first clear night in this period.
Jan 31 Tuesday	Saturn 0.9° S of Beehive Cluster (M44) Observational Astronomy for the Novice Course 7:00-9:00 pm		Feb 24 Friday	Astro Yak at the home of Kevin Kell & Kim Hay visit http://members.kingston/~rasc/indexsec.htm for directions
			Feb 27 Monday	New Moon 19:31