



Regulus



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



The 61 cm Venor Dobsonian-Mount telescope.

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 December 12th at 7:30pm
at Queen's University, Stirling Hall (Physics)
Theatre D

2004

Friday January 09
Friday February 13
Friday March 12
Friday April 10
Friday May 14
Friday June 11
Friday July 09
Friday August 13
Friday September 10
Friday October 09
Friday November 12
Friday December 10



Contents of this Issue

available at
<http://130.15.144.99/rasc/secure/regulus/reg200312.pdf> and include:
* Election Results * President's Annual Report * Secretary's Annual Report *

Treasurer's Annual Report * Awards banquet * National Email address changes * Submissions from Members * News from the Internet * Telescopes of the Kingston Centre

Contents of the November 2003 issue are available at :

<http://130.15.144.99/rasc/secure/regulus/reg200311.pdf> and include:
* President's Voice * Awards banquet * NC Report * New Logo * Webmaster Report * Fall'N'Stars Door Prize List * Clear Sky Clock Status * Mars Meteorite * Observing Group * Public Observing

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: rascexec@cliff.path.queensu.ca

RASC Kingston Email Lists:
rascckchat - about 20 members chat about astronomy (no attachments)



Election Results

The elections were held at the Annual General Meeting in November and once again as in many years past, there were only acclamations and no elections per se.

Effective 2004 January 01

President: Peggy Hurley
Vice President: Doug Angle
Secretary: Diane Torney
Treasurer: John Hurley
Librarian: David Maguire
National Council Rep: Peggy Hurley
Editor: vacant

In past years when elected positions were not filled, the usual practice has been for the elected Executive to search for and appoint someone to fill those duties. In addition the elected Executive will be appointing Committee Chairs from those members who step forward and volunteer.



Annual General Meeting

President's Annual Report
Nov. 14, 2003.

I began this year with high hopes and expectations. Most important to me was to try and make the monthly meetings a warmer and more casual atmosphere and my lack of decorum certainly helped with the casual part. I am honoured to belong to a "Royal Society" but we cannot truly be a "Centre" without relaxed interaction and discussion at our monthly meetings. I believed that extending the breaks, providing drinks for purchase so members could stay in the room and bringing back observing reports would bring some of our newer members closer and encourage them to participate and volunteer more. Unfortunately selling raffle and 50/50 still kept me from meeting and talking with many of you.

This year started as "the Year of the Observatory" with the intention of pursuing funding for and the location of observatory land. As the year went on there were advancements but also new hurdles as it became apparent that we must have our charitable registration to secure funding (the application for which seems to have been swallowed in a black hole) and incorporation to protect our members and investment. Steps are in progress for both of these objectives and there will be further information in the coming months.

An immediate necessity in January was to arrange for the purchase of accessories for the Venor Telescope. Here we were looking for observatory land for a 60cm telescope our members had built and we had to borrow eyepieces from members to use it. This situation was too limiting and unacceptable to me. With the help of our Vice-President's knowledge on the subject we purchased 3 eyepieces a Barlow and a nebula filter and an accessories case. Now the Venor is equipped and ready to go without imposition on our members.

In February Professor Judith Irwin spoke with the executive about a joint Queen's University Observatory / RASC-KC Public Outreach Program. It took a while to get this program running but the Nov. 8th Lunar Eclipse Open House at the observatory was the first in a two year program of open houses on the 2nd Saturday of every month. The project is known as the Kingston Astronomy Outreach Network. We

will be discontinuing our Tuesday night sessions at Murney Tower in favour of the observatory where we have a warm room and bathrooms! The joint program which will be advertised by both parties will certainly be beneficial to all of us. The sky although not the best has no trees or occasional car headlights glaring at us as we take the public to the corners of the available universe.

With regard to the above I would like to make the following announcement now that there have been no further extensions by the Trillium Foundation on the ban of public announcement .

It is my pleasure to announce that in conjunction with the Queen's U Observatory, RASC-KC has applied for and received a 2 year grant from the Trillium Foundation in the sum of \$25,000. The largest portion of this money will provide a Queen's Observatory Coordinator to run the Kingston Astronomy Outreach Network (KOAN). There is however \$6,700.00 designated for the purchase of a RASC-KC 8" GPS Schmidt-Cassegrain telescope, eyepieces, CCD camera and accessories. This telescope is of course for the purpose of bringing the night sky to the Kingston public and will be stored at the observatory, but it will eventually be housed in our own observatory and is ours to keep at the end of the 2 years. The agreement and grant binds us to participation in 16 public open houses and 50 tours at the observatory annually over the next two years. The complete details will follow in the *Regulus* Newsletter for all membership to read.

This year has seen the writing of several manuals by volunteer members which will accompany our scopes in the equipment loan program. As well the "RASC Kingston Centre Member's Handbook" to be used by the executive as a guideline in running the Centre in a consistent manner was officially endorsed and adopted by the executive.

We held our usual public events and observation sessions. The only event I will speak of is Fall'n'Stars 2003. We were rained out for the most part, but I don't go only to observe, I go to be with friends and share a common passion. Looking through the eyepiece can become a solitary thing, but laying in a chair or a BOP and observing the night sky with "Fireball" and friends can be Astronomical! We may have difficulty obtaining a site for 2004, but even if the quality of the observing can not be as good as in the past I hope we still proceed with our RASC - Belleville/Kingston Star Party and I hope to see

many more of you there.

There have been other purchases and events by the Centre and I will leave them to be reported by the appropriate Committee Chairs. It is about time I sat down. In closing I will say that this year has seen a lull in volunteers as the long term members grow weary. I ask and encourage you all to step forward and participate in our Committees and events, it can be very gratifying and need only be as busy or complicated as you wish to make it. Remember that at public events 90% of the time you know more than the people who approach your eyepiece and once they look you have the ability to WOW them and change their whole perception of recreational astronomy. Please be there when you can for Astronomy Day, Sky is the Limit, our monthly open houses and other events.

I thank those few members that worked extra hard this year to help this Centre and to help me, you know who you are so I need not name. I look forward to being able to spend time with many of you in the next year on our breaks, at Harvey's and at observing sessions.

Hank Bartlett,
President RASC Kingston 2003



2003 Secretary's Report
Royal Astronomical Society of
Canada
Kingston Centre

We currently have 132 Affiliated Members of whom 33 live outside Ontario.

Regular Meetings were held on the second Friday of each month at 7:30 p.m. in Theatre D Stirling Hall, Queen's University.

January 10: Student presentations on spacecraft were cancelled due to weather. Doug Angle did an extended "What's up tonight?", and Jan Wisniewski showed some of his fine astronomical images.

February 14: Jan Wisniewski - "How to do a Messier Marathon"
Jan showed how he prepares for and conducts a Messier Marathon, including some of his experiences in his 3 attempts to see all 110 Messier objects in one night.

March 14: Doug Angle - "Using Star Charts and Starhopping"

Our scheduled speaker was not able to attend. Doug Angle led an exercise in using the handbook, planisphere and star charts to find a Messier object by star hopping.

April 11: Dan Falk - "The Quest for the Theory of Everything"

Dan presented a historical overview and latest theories of the unified field theory.

May 7: David Levy - "Shakespeare's King Lear and the Comet of 1605: A cosmic union of Science and Art"

David gave an enthusiastic talk on historical comets and his own early experiences in astronomy. We were joined by the Astronomy winners from the Regional Science Fair.

June 13: Dr. Rajiv Gupta - "Astro Imaging Techniques"

Rajiv showed his techniques for capturing and processing astro images with film, digital scanners and Registar®.

July 11: Dr. Richard Jones - "Amerigo Vespucci's Measurements of Longitude"

Richard presented his research proposing that Amerigo Vespucci made accurate measurements of longitude in the new world in the early 16th century, much earlier than commonly thought.

August 8: Annual BBQ at Mark Kaye's
Guest Speaker - Geoff Gaherty "Observing Under Urban Skies"

September 12: Leo Enright - "Transits of Mercury and Venus"

Leo presented the causes and patterns of transits of the inner planets, along with some fascinating stories of early transit expeditions.

October 10: Members night

Mark Kay - showed some of his latest slides
Doug Angle - Tides

Leo Brodur - showed some of his aurora pictures
Laura Gagnon - The Antikythera Mechanism"

Mike Earl - Finding Lost Satellites

Dieter Bruechner - The Ries Crater

November 14: Gregg Wade - "Magnetic Activity of the Sun and Stars"

November 29: Annual Dinner Meeting
David Turner St. Mary's University
"Will Polaris stop Pulsing?"

December 12: Peggy Hurley - "Solstice Celebrations"

Events this year included:

May 10 Astronomy day at Frontenac Mall.

July 5 Sky is the Limit Festival (A local charity event)

September 26/27 Fall 'N' Stars (A camping and observing weekend held jointly with the Belleville Centre of the RASC)

Almost all public and club observing sessions were plagued by remarkably poor weather throughout the year.

In March, the Kingston Centre and the Queen's University Physics Department made application to the Trillium Foundation to form the Kingston Astronomy Outreach Network. The funding will allow both organizations to expand their outreach activities in the local community through the hiring of an Observatory coordinator and the purchase of an eight inch GOTO telescope and CCD camera primarily for public events. Even before funding has been approved, we have rearranged our public observing schedule to hold joint sessions at the Queen's Observatory on Ellis Hall. The first event was the Lunar Eclipse of November 8th and even the weather cooperated. The public enjoyed views through eight telescopes on the observing deck and toured the University Observatory. Henceforth, the joint RASC/Queen's observing sessions will be held at 7:30 p.m. on the second Saturday of each month at the Ellis Hall observatory.

Further information on our activities may be found on our Web site at <http://members.kingston.net/rasc> and, in particular, in our newsletter *Regulus* which is available on the Web site.

Submitted: Brian Hunter

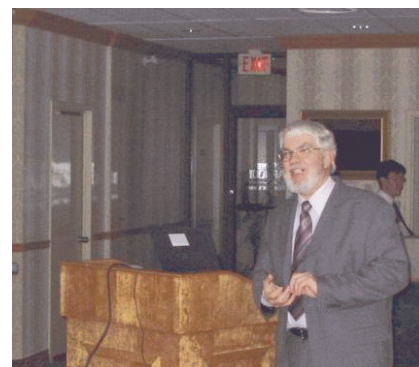
Treasurer's Report

This didn't make it in on time so it will have to be published in the new year.



Awards Banquet

Our Annual Awards banquet was held on Saturday November 29th with a record turnout of 30 people. Our guest speaker was Dr. David Turner of St. Mary's University in Nova Scotia who spoke about Polaris in particular and Cepheids in general. Title: "Will the North Star Stop Pulsating?"



The 2003 Douglas Award went to: Jan Wisniewski

The A.V. Douglas Award is the highest honor the Kingston Centre bestows on a member. The only possibly more exciting honor being from our peers stating "Wow, this is the most awesome telescope I have ever seen, when did you get it?" "Just look at the filaments in the Veil!!"



The Douglas Award is named after Dr. A. Vibert Douglas noted Kingston area Astronomer, and founder of the Kingston Centre RASC in 1961. Dr. Douglas was the Centre's first President and served as Honorary President for 25 years.

The Douglas Award is presented for: Service and/or an astronomical achievement. Selection of the winner of this award will be by the major award committee of the RASC Kingston Centre, composed of at least three members of the Executive Council of the Kingston Centre.

This year's award winner has been a member since 1995 and since then has given numerous talks at our Centre meetings all of which are accompanied by his stunning CCD imagery, so stunning that his website "A CCD Tour of the Universe" has had over 150,000 visits. This website contains what for some would be a lifetime of observing. A very accomplished observer who is always willing to share observing secrets and coach others, he has chaired the CCD

Imaging Committee and has instructed others on the building of CCD cameras. He played a very active role in the Venor Project working long and hard cutting, grinding and polishing the secondary mirror while also building his own 20" telescope. A 20" telescope with a 6" finder, hmmm now that is aperture fever!

This past year we have not seen a great deal of our fellow astronomer as his occupation has required that he move to another city and a new and family member is surely occupying much of his time. By now most everyone knows of whom I am speaking and I have rattled on long enough for him to write his acceptance speech. Jan Wisniewski, please come forward to accept the 2003 A.V. Douglas Award. [Ed: Due to bad weather, Jan was unable to attend the Awards Ceremony]

**The 2003 Regulus Award went to:
Ken Kingdon
for his September 2003 article "Nirvana Star Party".**



There were no Centre Membership Awards this year.

News from Other Places



The RASC National Office recently had to discontinue the old email addresses in use (rasc@rasc.ca) due to overwhelming amounts of spam. Messages to the old addresses will be responded to by an automatic message telling people about the new addresses, which are:
for general inquires:



and for membership or merchandise issues:



The new addresses have been "obfuscated" to stop or at least slow down spam email harvesting robots from gathering them off the website.

Please do not post these new email addresses to the web or chat rooms in clear plaintext. If you must refer to them at least try something like mem pub (at) rasc dot ca.



On Wednesday, 2003 November 19, at the Canadian Museum of Nature in Ottawa, Rajiv Gupta, on behalf of the Society, accepted the **2003 Michael Smith Award for Science Promotion.**

Below is the text of Rajiv's acceptance speech. More information about this Award will be in the President's Corner in the December issue of the Journal. As well the February 2004 issue of the Journal will have more to say about the MSA award.

The main page at the NSERC website for the Michael Smith Awards is:

http://www.nserc.ca/msmith/index_e.htm



From Terry Adrian:

Good Day Kevin,

Here are the final two mapping systems to go along with the Messier and Finest NGC you have now. These are the updates I said I would send about 3, or 4 weeks ago.

The Dark Nebula, and the DSC Objects Mapping systems are to complement the data within the 2004 Observers Handbook. The DSC includes the new Object HH1 I feel that these would be a good complement to
<http://www.rasc.ca/observing.htm>

Thanks, Kevin
Regards, Terry Adrian, President RASC - OC

Submissions from Members

From Kim Hay:

I was contacting Ray Berg, a US Kingston Centre member who lives in Indiana, and here is what he has been up to this summer. He had an excellent summer. Visit the weblink he has, it is awesome.

"Hi Kim!

It was really good to hear from you. I am fine - just begrudgingly getting ready for the upcoming cold winter spell. I have continued very sporadic observing due to poor weather conditions this year in Indiana.

This summer, on a trip to southwest New Mexico, we visited Andy Homeyer for a couple of days. He lives in a small enclave of amateur astronomers at 7000ft near Cloudcroft in the Sacramento mountains. Needless to say, with no non-astronomers around, it's quite dark there at night! We got some wonderful views of globular clusters (including Omega Centauri skimming the southern horizon) and other deep space goodies with his C-11 and 7-inch AstroPhysics refractor. His neat roll off roof observatory housing these two scopes can be seen at <http://www.intint.com/andy> Apache Point Observatory and the National Solar Observatory are both just down the road. We were able to get in the NSO, view the equipment and real time solar images being studied and talk to some of the staff.

The following is from some notes I took while visiting the NSO.

This observatory complex is operated by the Association of Universities for Research in Astronomy. It is located on Sacramento Peak (elevation 9200 feet) in the Sacramento Mountains of southwest New Mexico. There are four observing facilities at this site.

The oldest is the Grain Bin Dome, built in 1950 from a modified grain bin (!) It housed a 6-inch prominence telescope and was used until 1963, when the patrol duties were transferred to another facility. The building now contains a conventional scope for casual night observations. I couldn't get a look at or determine the size or type of this telescope.

The Evans Solar Facility (1952) is a large dome containing a 16-inch coronagraph and a 12-inch

coelostat. Corona studies are conducted here along with investigations of solar flares, higher elevation magnetic fields and solar filaments. We were able to get in to see these instruments in operation and speak with some of the staff.

The Hilltop Dome (1963) houses a number of telescopes used for patrol duties in compiling an extensive, continuous archive of both white light and hydrogen alpha solar images. Visitors were not allowed in here.

The Dunn Solar Telescope (1969) is a tower that directs sunlight down through a 329 ft. long evacuated tube to a primary mirror located 188 ft. below ground level, back up to ground level and out to various instrumentation for spectroscopy studies and to evaluate faculae, granulation, filaments flares etc in high resolution imaging. We were allowed to view parts of this equipment and to view real time images of the sun on monitors. Technicians adjusting the instrumentation were friendly and chatted a bit with us while they worked.

There is a nice Visitors Center with well-done solar related displays and a little gift shop offering solar souvenirs and books. All in all, it was a great visit!

Back here at home, I did observe the current two huge sunspots rotate onto view, but after the first coronal mass ejection occurred, we have had continuous cloudy skies and thus no chance to see the aurora. I am priming my grandkids for the lunar eclipse this coming weekend, and hope the skies clear by then.

Wishing you clear skies - keep in touch.
Ray Berg"



From Hein van Asperen

"Hello Kevin, "Sympatico" caused too much problems, I changed to Cogeco. My new email address is [hvanasperen \(at\) cogeco.ca](mailto:hvanasperen@at.cogeco.ca)

My eyes are not as good as a few years ago but I enjoyed Mars and the recent huge sunspot. My note was identical as the small picture in the latest Regulus page 9."

Hein van Asperen



From Ian Levstein:

"I just wanted to let everyone know that as of this writing, I have a new email address - the first in about 5 years. The reason for

the change... we finally broke down and got a cable modem in the house!

My new address at home is:

ian.mstm (at) zoominternet.net

Many thanks - hope you're all well.

Ian"



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.

December : nothing scheduled

For details about the observing certificates, see <http://www.rasc.ca/observing/home.html>

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)

Messier Hunters

Hank Bartlett (55), Fred Barrett (50), Tom Dean (36), Laura Gagne (76), Kim Hay (19), Peggy Hurley (55), David Maguire (7)

Finest NGC Hunters

Doug Angle (51), Kevin Kell (5)

Exploring the Universe Hunters

Kim Hay (0), Kevin Kell (0)



Public Observing Sessions (POS)

The second Saturday of Each month at Queen's University Ellis Hall, top floor at the Observatory, 7:30-9:30pm for the winter, later hours in the summer.

Ellis Hall Observatory open houses with observing out on the deck. We have left the 20cm (8") Fitzgerald telescope there with it's equipment bag for manning by Centre members at these events.

2003

Saturday December 13

2004

Saturday January 10

Saturday February 14

Saturday March 13

Saturday April 10

Saturday May 08

Saturday June 12

Saturday July 10

Saturday August 14

Saturday September 11

Saturday October 09

Saturday November 13

Saturday December 11

Our first joint Public Observing Session was a great success! A conservative estimate of 300 visitors to the Ellis Hall Observatory and Observing Deck. We had at least 8 telescopes out on the deck and clear weather for a change! For more information check out:

<http://observatory.phy.queensu.ca/>

Queen's Observatory in collaboration with RASC is launching its first regular event, Monthly Open Houses for public, starting on December 13th, 2003. They will take place every second saturday of each month beginning at 7:30pm till 9:30pm (till further notice or change).

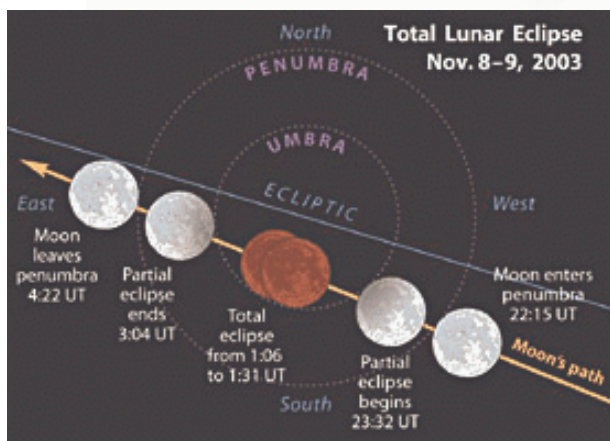
The observatory is located on Ellis Hall, University Avenue, across from Grant Hall on the Queen's Campus. Parking is available in the underground parking lot across from KGH or behind Mac-Corry Hall off Union.

The aim of each session is to popularize and

bring astronomy closer to the public, viewing the sky through real telescopes, familiarizing constellations and opening discussion forums.

If the weather is clear, visitors will be able to look through a variety of astronomical telescopes to see celestial objects visible at the time of their visit (depending on their visibility, it can be the Moon, planets, brighter galaxies, star clusters, etc.)

In the unfortunate event of bad weather tour of the observatory facilities, films of astronomical nature and discussions will be offered. The admission is free and everybody is welcome!



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 *** on a two year assignment at the Queen's University Ellis Hall Observatory for Public Observing Sessions so our own helping members do not have to carry their own scopes up to the observing deck.
- ☆ 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.



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 \(at\) 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

Regulus is published 6 times per year on paper and 12 times per year in adobe acrobat format files. Both are available on our web site. Views and opinions expressed herein do not necessarily reflect the official position of the Royal Astronomical Society of Canada or its officers and members.

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 will be edited for brevity or clarity. Copyright 2003 All rights reserved. Permission is granted to other publications of a similar nature to print material from Regulus provided that full credit is given to the author and to Regulus.
December Print Run=0

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

Newsletter Submission Info: The deadline is usually the 3rd 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: 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>



Ramblings from the Editor
by Kevin Kell

"So Long and Thanks for All the Fish!"

Members Only Website Password Change Effective 2004 January 01

Check the bottom of page 10 for the new password for the RASC-KC Members only website.



News from the Internet

ESA News 4 December 2003
Make your own Mars Express
<http://www.esa.int>

Throughout Europe, over a thousand people, both engineers and scientists, have been involved in the development and building of Mars Express. However, only one person is needed to build a model of Mars Express, and that's you!

The real Mars Express spacecraft weighs 1200 kilograms and measures 1.5 by 1.8 by 1.4 metres (excluding solar panels). This is probably far too big for your study or bedroom, so we have made our model a bit smaller ...

Click here to download your own blueprints to make a model of the first European spacecraft to visit another planet!

http://esamultimedia.esa.int/images/spcs/goodies/models/mars_express_model_kit.pdf

Click here for more fascinating models to make.

http://www.esa.int/esaSC/SEMEO5T1VED_index_0.html

More about ...

* Europe goes to Mars

http://www.esa.int/SPECIALS/Mars_Express/index.html

* Mars Express overview

http://www.esa.int/esaSC/120379_index_0_m.html

Related links

* Beagle 2 lander homepage
<http://www.beagle2.com>

2003 RASC-KC PUBLICATIONS ORDER FORM

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

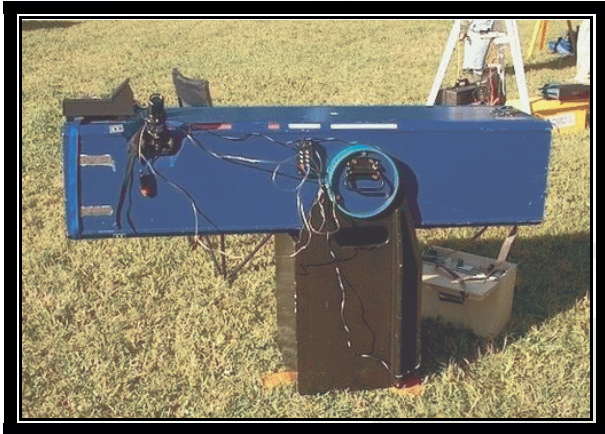
****SALE effective 2003 June 01 until 2003 December 31**

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

Other Products available from RASC National Office
<http://www.rasc.ca/promo> and <http://www.rasc.ca/publications.htm>

Effective 2004 January 11th WebSite Passwords for Member-only Secure areas:

**Telescopes of the Kingston Centre -
Royal Astronomical Society of Canada
Box 1793 Kingston Ontario Canada K7L 5J6
<http://www.rasc.ca/kingston>**



25cm f5.5 Douglas Dobsonian
built around 1979, rebuilt 1989 and 2003
32mm Koenig (x47), 9mm Meade MA (x167)



20 cm f7 Fitzgerald Dobsonian
built in 1997
25mm RKA (x55)



20cm f4.5 Barney Dobsonian
built in 1999
8mm B&L plossl (x51), 30mm B&L plossl (x30)



11 cm f4.3 Bushnell Voyager
purchased in 1999
5 mm Plossl bushnell (x100), 27 mm Plossl bushnell (x19)



11cm f7.9 Orbitor Equatorial
purchased in 2000
25mm(x36) kelner, 15mm(x60) kelner, 9mm (x100) kelner



61cm f4.56 Venor Dobsonian
built in 2002
32mm Erfle Focus Scientific 2003 (x88)
18mm Orthoscopic University Optics 2003 (x157)
12.5mm Orthoscopic University Optics 2003(x223)
2x Barlow Televue 2003