



Regulus

July - August 1995

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



**The nights are clear and warm,
It must be summer!**

**Time for star parties coast to coast
with Nova East, StarFest and Mount
Kobau all upcoming in August**

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The Centre

Officers and Executive Council

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Astronomy Day	Cathy Hall	(000) 000-0000
Education	Denise Sabatini	(000) 000-0000
Publicity	Bill Broderick	(000) 000-0000
Observing	Steven Manders	(000) 000-0000
Light Pollution	Bill Broderick	(000) 000-0000
GA Bid	Peggy Torney	(000) 000-0000

Meetings and Events

July 14	TBA - John Gauvreau, RASC Hamilton Centre
Aug 11	“Skies Over Parinacota: Eclipse Trip November 1994” - Rob Dick, President RASC Ottawa Centre
Sept 8	“Members’ Night” Our annual "What I did during my (astronomical) summer vacation" meeting! Bring your slides, etc. to show at the meeting.
Oct 13	“How to Observe Meteors” - Cathy Hall Kingston Centre Annual Meeting
Nov 10	TBA
Dec 8	TBA Kingston Centre Christmas Dinner

Centre Address

RASC - Kingston Centre
P.O. Box 1793
Kingston, Ontario
K7L 5J6

Meetings

Regular Meetings of the Kingston Centre, RASC are held on the **second Friday** of each month (unless noted otherwise) at 8 p.m., in Room B-201, *Mackintosh-Corry Hall, Queen’s University*. Non-members are welcome. Executive meetings are at 7:30 p.m.

Regulus is published six times per year. Views and opinions expressed herein do not necessarily represent the official position of The Royal Astronomical Society of Canada or its officers and members unless so indicated.

SUBSCRIPTIONS: Members of the Centre receive REGULUS as a benefit of membership. Non-members may subscribe for \$10 per year.

ADVERTISING: Classified advertisements re items to sell, buy or trade are free to members of the centre. Commercial advertising is \$25 per half page \$50 for full page. Commercial advertisers must supply clean camera-ready copy.

CONTRIBUTIONS INVITED articles, notes on observation, humour, poetry artwork, anything on astronomy or related topics are invited. Submitted material may be edited for brevity or clarity.

Deadline for receipt of material is the 15th of the month prior to Publication.

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LETTERS
TO
THE
EDITOR

Dear Editor:

I would like to thank David Stokes for his excellent article, "Olaf Koemer and the Speed of Light" in the 1995-03/04 issue of Regulus.

David did a fine job of making clear the method Roemer used to determine a value for the speed of light. Up until Roemer's brainstorm, the speed of light was just labeled as instantaneous, but thanks to Roemer, an important field of physics leading to $E=MC^2$ was opened up. I hope that we will see more essays of this style from David in the future.

In the article, David asks if any amateurs have attempted to duplicate Roemer's work. In high school, we had to do a physics project to get our Grade 13 mark. The project had to be both experimental and have background on other's work leading up to the chosen project. I decided to write about how the speed of light was discovered. I used three different methods to determine the speed of light, a quickly rotating mirror to deflect a ray of light was not successful. I could not spin the mirror fast enough to get a measurable deflection. The second method involved a laser, a pair of electronic gates switched by light sensitive resistors triggering an oscilloscope and a mirror 200 metres away. This method was much more successful, but the most accurate value was obtained by Roemer's method. The hardest part was getting successive clear nights to get eclipse timings when the eclipses were happening and that took well over a month to get a second pair of eclipses. Once the numbers were obtained, a value within 10 percent of the speed of light was calculated. The trouble is, I do not have any idea whether all of the numbers I used were numbers that

Roemer would have had access to in terms of orbits and what not. My timings were taken to the second. but then again, accurately timing an eclipse to the second in a small telescope is not the easiest task and a second makes a lot of difference when one is talking about the speed of light. Still, the project earned me an A+ and I was very happy with the accuracy of my eclipse timed results.

MK

95 G.A.

By Kim Hay

The 1995 GA held in Windsor was a smashing success!! Not only did Windsor sponsor the GA it was also its 50th anniversary! A good time was had by all. A lot of old friends were seen again, and a lot of new friends were made. The Registration started on Wednesday with a dinner and a fireworks display.

Registration continued on Thursday with a tour at the Fort Malden/Pelle Island Winery Day Tour in the morning. I missed this, and I heard that it was an excellent time, with many free samples.

The majority of people showed up on Friday, with the National Council meeting taking place. Kingston was awarded its bid for the 1997 GA, and the 1996 GA to be held in Edmonton . For the Non-meeting people a Windsor Historical tour in the am, with the Point Pelee Tour in the afternoon. What a beautiful spot. It is the southern most point of Canada. We went to the tip of the Island and looked at the water all around. Some of us walked on the beach which was very hot! The wine and cheese was held in the evening which was well attended. A wine was prepared for the event which went down very well. Many

pictures were taken by Peter Ceravolo, John Hurley, throughout the weekend.

After many of the events of each evening, a small get together was held on the 1st floor common room of Vanier hall. This was a great place for everyone to get together and chat astronomy or whatever happened to come up.

On Saturday, the group picture was taken and the Paper sessions ran all day. These were always on time, and with the usual gremlin appearances for the audio equipment, all went well.

All talks were superb. Paul Gray is looking for Centres all over Canada to help with the Quadrantids meteor shower project. This would be an excellent project for all centres. The Roll Off Roof Observatory talk was great, and I have some ideas for fixing my own observatory. After the talks and before supper, a people pyramid was attempted outside, with a video of the event taken by Peter Jedicke.

On Saturday evening a good time was had by all at the Murphy slide show and song contest. Prizes were given out to the winners of both. At 10:30 a few of us went up to the 10th floor to observe Mir. It shone at magnitude 1 and moved at a very good pace.

Sunday was the General Assembly meeting. Most Centres had a very good turnout, with only 3 centres with no representation. The proposed new publication was present at the GA for those there to see it, with the hope of the trial publication going to all members in the August mailing. More information on this should be supplied by your NC rep.

After the GA meeting another National Council meeting was held on the standing and special committees. There were some changes to the committees and I am sure that the National Council Reps will be letting all Centres know of the changes.

The Banquet/Awards were very well attended. Of course the Guest of Honour,

...continued on page 7

TRANSMISSION TOWERS:
ANOTHER SOURCE OF LIGHT
POLLUTION

By Bill Broderick

Over the winter of 1994-95 a radio-television transmission tower near Read, Ontario, about 1.5 km from my observatory, became a problem light pollution-wise. This tower, which is operated by the CBC, is about 150 m (approximately 500 ft.) in height—determined geometrically—and is outfitted with white strobe lights which flash intermittently in two modes: nighttime and daytime.

Sometime in the fall of 1994, perhaps as a result of lightning damage, the lights became “stuck” on daytime mode. The result was blindingly bright white flashes of light which literally wrecked the night sky for kilometres in all directions, so far as astronomical observing was concerned. I finally got around to reporting the problem to the person responsible for maintaining the tower in mid-March. At that time, I did not know about things like daytime and nighttime mode and thus didn't know that the lights were malfunctioning. I only knew that they were operating differently from what I was used to. The individual I spoke with stated that so far as he was aware the lights were operating as they should.

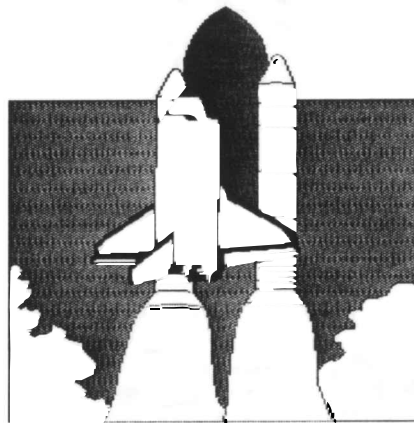
Over the next few weeks I spoke to a person in the family who happens to work for a TV station. He told me not only about the two different operating modes but also that the white strobe lights are cheaper to operate than the red lights that many towers have—and which we amateur astronomers would prefer. Also, he believed that the white strobes are mandatory on very high towers (over 150 metres) and on towers in aircraft flight corridors. Because of the lower operating costs most broadcasting stations in the future, will be gradually replacing the red

lights.

Armed with my new knowledge, I went back for another chat with the maintenance person in mid-April. It turned out, however, that he had already noticed the problem himself—finally!!! He agreed with me that it should be fixed. It was, in just a few days.

The white strobe lights on nighttime mode have a rather friendly flicker that I don't find too intrusive, although I would still prefer red. I have done astrophotography in the general direction of the tower without any apparent problems. (When the lights are on daytime mode, I don't think astrophotography anywhere within ten kilometres of the tower would be possible, that's how bright they are!) Since it seems that we are going to have more and more of these lights on transmission towers, we should be aware of what constitutes normal and abnormal operation. If the lights are so intrusive as to make observation difficult or impossible for you, they probably are malfunctioning and should be reported.

For our own enjoyment of our wonderful hobby, I urge all amateur astronomers who live or observe anywhere near one of these to become aware of what constitutes normal and abnormal operation. We also need to find out where or to whom malfunctioning should be reported. I urge you to get this information and keep it available for if and when you need it. It's almost certain that sooner or later, you will!



TERRY DICKINSON
A SUMMER STARGAZING
ODYSSEY

By Kevin Kell

Friday June 16th the Kingston Centre got together with Terry Dickinson for what has become an annular special public lecture.

It was held at Queen's University (Walter Light Hall Amphitheatre) at 8:00pm.

The topic this year was “*A Summer Stargazing Odyssey*”

Turnout was about 100 people. The hi-tech control panel for the room proved almost too much for the sponsors (preprogrammed lighting controls interlinked with overheads 35mm slide, video projectors, and screens) but the session went sailing ahead.

The lecture was a long slide show of Terry's recent (May long weekend) trip down to a mountaintop near the Mexican border in the state of Arizona, one of the last best hopes of mankind (well, North American astronomers) for dark skies.

Alan Dyer (Calgary Centre?) went along as well. A week of observing at 31 deg lat? proved to be quite rewarding with some very nice slides. After some basics, he delved deep into the sagittarius-ward core of the Galaxy.

Superwide angle shots were a strong theme with a large amount of the entire sky rolling by hour after hour.

A question & answer period followed. The 2nd issue of Skynews was made available for sale (1st issue free) to the attendees as well as Centre brochures, StarFest '95 and other info.

StarFest '95
Mount Forest, Ontario
August 25th-27th

RASC PROMOTIONS



Hello Fellow RASC Members!!

NEW NEW NEW

The Royal Astronomical Society of Canada is pleased to announce the arrival of new lapel pins. These are a white base metal with dark blue interior and white background. The lettering is silver. These pins are being sold at \$4.00 each plus 50 cents shipping per pin.

We still have the items listed below for sale. These items can be purchased from your Centre's Treasurer, or Promotions Department or can be ordered directly from the RASC Promotional Co-ordinator, Kim Hay.

Items in stock: (Prices and shipping costs)

RASC lapel pins (blue, white & silver)	\$4.00 each \$0.50 shipping
RASC stickers (blue with white overlay)	\$1.25 each \$1.00 shipping per order
Golf shirts (white(sm, med) lt blue(med))	\$20.00 each \$4.00 shipping
Toques (Black with Yellow writing)	\$15.00 each \$2.00 shipping
RASC Mugs (Thermal mugs-Blue/white)	\$4.00 each \$1.50 shipping
RASC Keychains(Clear arcylic-Blue/white)	\$2.00 each \$0.50 shipping

All taxes included in prices. If at anytime you have questions or future ideas for RASC Promotions please contact me with the address below.

Address: Mrs. Kim Hay
XXXXXXXXXX
Ontario, XXX XXX
phone : (000)000-0000
email : Kim.Hay@xxxxxxxxxxxxxxxxxx

Please make Canadian cheques and Money Orders payable to : Royal Astronomical Society of Canada (RASC)

REBUILDING THE DOUGLAS SCOPE

By Kevin Kell
Original by Larry Manuel

I came across this in my archives and was wondering if you would like to publish it or pieces of it. This will give some background history to the Club Scope.

Regulus

*R.A.S.C. Kingston centre Newsletter 1989.
04/89-05 Edition*

*Rebuilding the Douglas Telescope - Again
by Larry Manuel*

Why:

When I first rebuilt the club's 25 cm f5.5 Newtonian, in early 1986, I put the existing assembly in a Dobsonian mount. The result was a workable telescope. In the next two years, the wood in the mount was becoming moldy and the paper sonotube became soft and weak at the ends due to dampness and wear. Due to mechanical instability I had never seen the club scope collimated.

Inspiration:

The article "Collimating your Telescope - 1" in S&T 88-03 was the best such information I have seen anywhere. I was curious to look through a well built Newtonian and I wanted to know if the Douglas optics were good.

What was done:

The rotten sonotube was retired to landfill and I built a square tube of 8 mm thick marine mahogany plywood, using brown ash lumber for the corners and bonded with epoxy resin. The finish is polyurethane paint to keep out dew, frost and rot. The inside was painted black, sprinkled with lots of sawdust and then painted flat black again. The mount was rebuilt taller, stronger and similarly

waterproofed with epoxy and polyurethane.

Optics:

The primary mirror has had a fairly rough life over the years, but is basically sound. I made no attempt to clean it, other than blow off the dust. The old cell was junked without qualms, it relied on a 25 cm diameter hose clamp pinching three steel fingers to retain the mirror. This will certainly deform the mirror and hence the image. Luckily, glass springs back when the stress is removed. I bonded the mirror into a Cave mirror cell with 6 big globs of clear silicone rubber, an experiment suggested by Richard Berry's Build Your Own Telescope. I constructed a black paper light baffle ring to go behind the primary cell. This blocks stray light, yet allows ventilation so the mirror can cool. The original spider and diagonal holder was relegated to the metal recycling bin. The manufacturer had erred on the side of economy and scrimped grossly on function. I ordered (by phone) a new spider and diagonal from Kenneth Novak and Co. in Wisconsin and it was here in two weeks, excellent service. The Novak parts are marvels of simplicity, ruggedness and precision. The spider arms attach to the corners of the tube (instead of the centres of the flat panels) so that vane tension stiffens, not weakens, the tube.

Results:

Carefully following the S&T article resulted in collimation being attained during construction, no tweaking under the stars was needed. Even the inevitable thumps and bumps of numerous car trips and star parties has not fazed our rugged new scope. It will retain collimation under normal use (a.k.a. abuse). The mirror checks out well with the Ronchi test.

On deep sky objects, images are marginally brighter than in Terry Dickinson's 18 cm refractor. Definition and contrast are definitely lower however.

Mars showed good detail, as did Saturn. Double stars are not as clear as in my 8 cm refractor (puzzling), The new mount is smoother due to all plastic bearings and new Teflon.

Costs:

Mirror cell	Cave Astrola	35.
Epoxy	West System	20.
Spider and Diagonal	Novak & Co.	75.
Paint	polyurethane	20.
Plywood	marine mahogany	50.
Ash	tube corners	6.
Stainless Steel Hardware	fasteners	20.
Chest Handles	on scope	9.
Teflon	alt-az bearings	5.
5cm eyepiece modifications		30.

In addition to buying these parts I spent about sixty hours building the scope and dozens of hours in planning and research. If the club has any wish to compensate me for my work, I would like to receive the back issues of Telescope Making magazine, numbers one through twenty nine.

Comments or questions on any part of this article can be sent to :

Larry Manuel
RR1 Seeley's Bay, Ontario
K0H 2N0 613-353-2118

Larry Manuel

Editors note: Having seen and used the revamped scope, I would like to thank Larry for the time and effort he has put into the Douglas Telescope.

MK

Computer and a modem?

Join RASCnet and talk to fellow RASC members across Canada

In Kingston call:

(all 8,N,1 at speeds indicated)

Baroque BBS: Node 1	000-0000	2400-28.8 V.FC
	Node 2	000-0000 2400-14.4
Moonlight Cascade :	000-0000	1200-28.8V.FC
Observatory BBS:	000-0000	1200-28.8 V.34
StarStream:	000-0000	9600-28.8 V.34

...continued from page 3

Carolyn Shoemaker, her husband Gene Shoemaker, and friend to all David Levy were all there.

Once all the door prizes were given out and dinner was finished (which was a hot/cold buffet) the Ruth Northcott Lecture was held in Erie Hall, which began around 8:30 pm. Carolyn's talk was on "Comet Impact- Lessons Learned" She discussed the 12 years at the Palomar Observatory using the stereoscope technique for scanning films. Carolyn is credited with the discovery of more than 800 asteroids, with 162 with numbers. Among the newly discovered asteroids are 42 earth-crossing asteroids.

The hall was nearly full, and the talk was excellent. She also showed several slides. After the talk there were lots of people lining up for a chance to talk and greet both Carolyn, Gene and David. A very informal get together after the talk was held in the common room.

Most participants were leaving on Monday. With people going in all directions of the country, we all vowed to return to Edmonton for the 1996 GA, and meet up with our new friends.

I want to take this time, to thank all committee members and volunteers of the 1995 GA on a job well done, and by offering such a warm welcome into the City Of Windsor. We say goodbye for now....But we will be back!

**THE PAPERS TALKS AND AWARDS FROM THE 1995
GENERAL ASSEMBLY**

The paper talks consisted of:

Robert Dick:	The Southern Sky Activities after the Nov 3 Solar Eclipse
Rajiv Gupta:	Digital Imaging
John E. Kennedy:	Astronomy over Three Centuries
Richard W. Schmude:	Wideband Photometry of Mars during the 1994-95 Opposition
Robert Dick:	Light Pollution Abatement: Successes in Ottawa:What Cities want to hear.
Paul Gray:	Observing the Quadrantids Meteor Shower, An Update
Paul Boltwood:	Photometric Work
Raymond Auclair:	Ai-je bien vu Pluton? Have I seen Pluto?
Al DesRoiser:	Roll Off Roof Observatory
Peter Broughton:	James Craig Watson (1838-1880)
Dave Lane & Paul Gray:	Supernova Scotia 1995f
Alan Dyer& Glenn Hawley:	Eclipse Over the Andes. - (Alan Dyer was absent.)

The winners of all the awards are as follows:

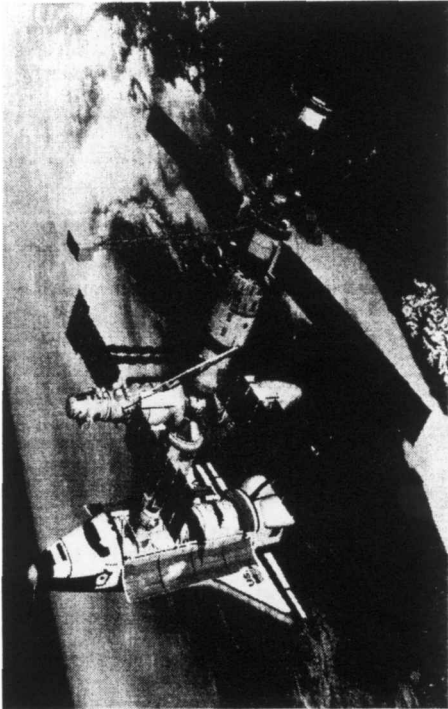
The Chant Medal:	Paul Boltwood -Ottawa centre
The Chilton Prize:	Paul Gray & David Lane - Halifax Centre
The Service Award:	Patrick Kelly - Halifax Centre Ron Gasbarini - Niagara Centre
The Simon Newcomb Award:	Michael S.F. Watson- Unattached life member
The Plaskett Medal:	Michael Richer- Paris Observatory

**SITE OF THE NEXT TWO
GENERAL ASSEMBLIES**

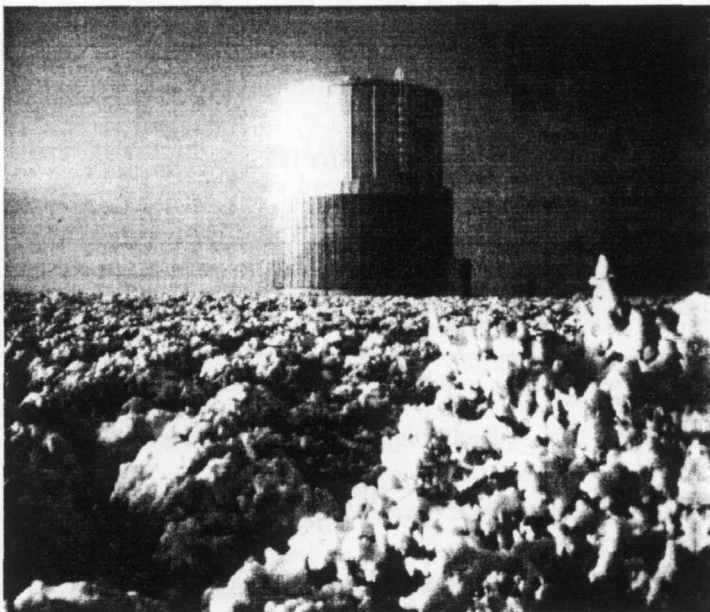
1996 - Edmonton, Alberta

1997 - Kingston, Ontario

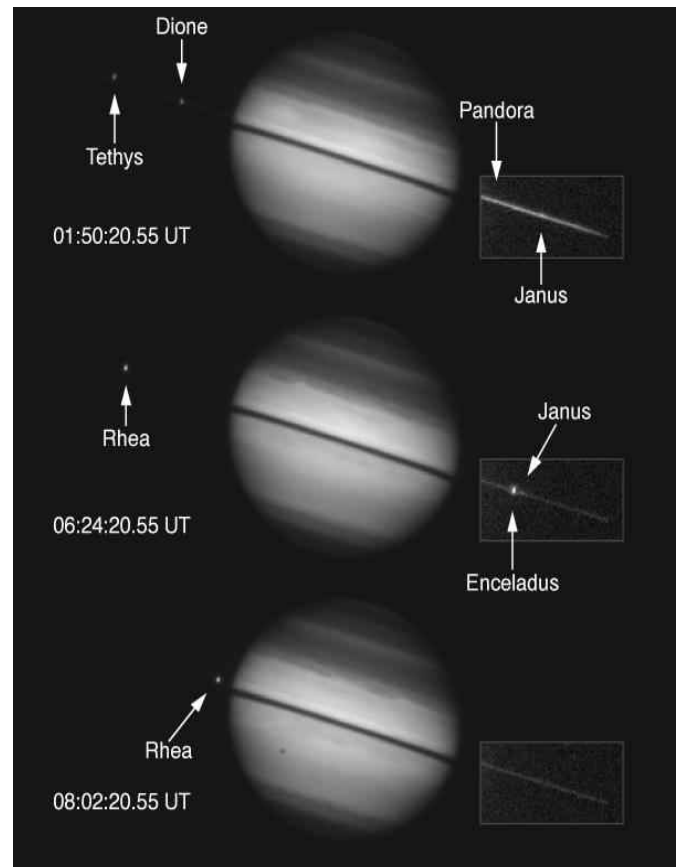
Astro Gallery



Artist conception of the docking between the MIR spacestation and the Atlantis shuttle orbiter.



South African Astronomical Observatory- Sutherland. An early morning wintry scene with the turret of the 74-inch telescope visible through mist after a snow fall. Scanned from a color photograph taken by Robin Catchpole using a black/white scanner and artificially colored by GR.



Saturn Ring-Plane Crossing May 22, 1995

HST · WFPC2

PRC95-25c · ST ScI OPO · June 5, 1995 · A. Bosh (Lowell), NASA

This sequence of images from NASA's Hubble Space Telescope documents a rare astronomical alignment – Saturn's magnificent ring system turned edge-on. This occurs when the Earth passes through Saturn's ring plane, as it does approximately every 15 years.