



# REGULUS

MARCH-APRIL 1993

NEWSLETTER OF THE KINGSTON CENTRE  
OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

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**CONTRIBUTIONS WELCOME:** Articles, notes on observations, humour, poetry, artwork, anything on astronomy or related topics, are invited. Submitted material may be edited for brevity or clarity. Please send all submissions to the Editor as follows:

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## MEETINGS AND EVENTS HORIZON

**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, Macintosh-Corry Hall, Queen's University. **Non-members are welcome.** Executive meetings are at 7:30 p.m.

**Fri., Mar. 12** **REGULAR MEETING.** Speaker, Leo Enright, "Eclipses In the 20th Century." (Substituting for Denise Sabatini who will give her talk later in the year.)

**Fri., April 2 \*** **REGULAR MEETING.** Speaker, Dr. Richard Henriksen, "What's New (Starting from What's Old) In Cosmology?" Dr. Henriksen is an astrophysicist at Queen's University.

**SAT., MAY 1** **ASTRONOMY DAY.** Details re activities to be announced.

**Fri., May 7 \*** **REGULAR MEETING.** Speaker, Terence Dickinson, "The Southern Sky From Las Campanas, Chile." Also, Terry will be autographing copies of the new edition of his book *The Universe...And Beyond*. Copies of this book as well as other titles, will be available at the meeting for sale at a special discount price for members.

\* **NOTE: First Friday** **NOTE: THIS MEETING IS IN ROOM D-120 B-201**

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## CONSCIOUSNESS IN THE UNIVERSE

By Louie Bernstein

(Reprinted from SKYWARD, monthly newsletter  
of the Montreal Centre, for December 1992.)

It is rather sobering to learn that the very atoms which make up our bodies originated long ago in supergiant stars and that, in effect, we are all made of stardust. But that's just the beginning. Our connection with the universe goes much deeper than that.

We normally think of ourselves as existing within the universe but separate from it. In other words, the universe begins where your body ends. Your skin forms the boundary layer between you and the cosmos. This view of our relationship to the universe is one that dates back to childhood infancy. Babies learn spatial coordination by differentiating their bodies from the surrounding environment. So, we learn the spatial extent of our bodies at a very early age, and this reinforces the idea that we are separate from the space around us. But is this really the case?

If we look at our bodies on the sub-atomic level a different picture emerges. We see trillions upon trillions of sub-atomic particles--mostly protons, neutrons, and electrons. Now let's imagine that we are moving beyond our skin into the surrounding air. What do we see? Essentially the same thing. Trillions upon trillions of protons, neutrons, and electrons. The sub-atomic particles that make up our bodies are exactly the same as those that make up the air, the rocks, the trees, our planet, and everything else for that matter. In other words, we are made of the same stuff that the rest of the universe is made of!

On the sub-atomic level we begin to merge with the universe. The boundary between us and the cosmos begins to blur and becomes indistinct. We are no longer separate from the universe--we become a part of it. In fact, on this level we blend with the universe like tiny drops of water in the sea.

If we view the universe as a sea of sub-atomic particles, there are tiny regions in that sea in which the spatial arrangement of those sub-atomic particles give rise to consciousness. We call those tiny regions human beings! Put another way, once we accept that we are not separate from the universe then we must conclude that small parts of the universe are actually conscious. Those parts are us! That much is undeniable. The real question becomes: Is the universe conscious of itself through us--or is our experience of the universe insular? In other words, does the whole know what its parts are experiencing?

Of course such questions boggle the mind and take us to the outer limits of science. They lead us into the realm of metaphysics and philosophy, and yet a number of reputable scientists have been seriously pondering such questions recently, and some are even speculating that there may be much more to cosmic consciousness than we think.

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*Amateur astronomers are naturalists of the night, captivated by the beauty, mystique and unfathomable vastness of the Universe that is accessible only under a dark night sky.*

--TERENCE DICKINSON

# NC REP'S REPORT

## THE FEBRUARY 1993 NATIONAL COUNCIL MEETING

By Walter MacDonald, National Council Rep

A National Council meeting was held on a VERY COLD Saturday, February 6th, in Toronto. This proved to be a rather long meeting--almost seven hours! For some reason the February meetings seem to be longer than the meetings at other times of the year.

Centre member TERRY HICKS was back in full swing as National Treasurer. The report of the Finance Committee contained a number of very significant recommendations which were passed by Council. Here are the more significant ones:

- \* reimbursement for travel will be based on ABC fares rather than economy fares
- \* a mechanism will be established to assist Council members in arranging travel and in obtaining the lowest fares available
- \* reimbursement of hotel accommodation for officers will be eliminated (billeting will be encouraged instead)
- \* the minimum return driving distance for entitlement to travel reimbursement will now be 600 km (not 100 km)
- \* a committee will be formed to help Centres in reducing membership turnover
- \* the senior category of membership will be eliminated
- \* the youth category of membership will be retained
- \* life membership fees will be set at 25 times the annual regular fee
- \* membership fees for 1993/4 will be set at \$35 for ordinary members, \$22.50 for youth members, and \$900 for life members.

It should be noted that the membership fees have to be approved by the membership at the Annual Meeting of the Halifax GA.

A balanced 1993 budget was presented by TERRY HICKS and approved by Council. In combination with the Finance Committee recommendations, it does much to bring the Society's costs under control.

The Library Committee reported that it had produced a computer inventory of the National Library for distribution to all Centres. The National Library also has a number of movies and videos, along with a great many lantern slides. Plans are under way to copy and distribute all of these materials.

**BULLETIN** Editor PATRICK KELLY presented some cost figures based on publishing four and six times a year. A definite savings for the quarterly schedule was noted. He noted that further savings are possible by not supplying back issues to members joining after January 31st, since it is costly to print small numbers of extra copies of publications after the fact.

The Constitution Committee under MIKE WATSON proposed a few changes to **By-Law #1** which were approved. These included a **proxy form** for use at Annual Meetings. This was inspired by the profusion (and resultant confusion) of all the different proxy forms at last year's annual meeting.

A report from KARL MILLER was presented on computer membership programs. These are now being tested and will allow Centres to share membership data with National Office more easily.

The Light Pollution Committee proposed the printing of Certificates of Merit for good lighting. These would be issued to companies or individuals that have installed efficient lighting systems.

The 1993 RASC Calendar has proven a success. As a result production of the 1994 Calendar was approved.

The Membership Survey Committee announced that it is in the process of analyzing the data from the survey. Preliminary raw data was available on a 1.44 MB floppy disk. A copy was obtained for the Kingston Centre. If you are interested, contact our Librarian DAVID STOKES.

A new "Speaker's Travel Assistance Grant" form was approved. This was very timely since the Kingston, Windsor and London Centres are arranging to have JACK NEWTON visit on a speaking tour of sorts later this year!

On the GA front, Halifax is in the final stages of preparation for this year's GA. St. John's will be hosting the 1994 GA. The Windsor and Edmonton Centres have expressed interest in hosting the 1995 and 1996 GAs respectively.

For anyone wishing more information on the doings of National Council at this meeting, the minutes will be available in the near future from either the Centre President or National Council Rep.



**R.A.S.C. PROMOTIONAL ITEMS**

**Available at the Kingston Centre**

**All of the items listed below have GST and PST included--and are AVAILABLE. Come and see me after one of our regular meetings or give me a call at (000) 000-0000. KIM HAY, Secretary-Treasurer, Kingston Centre.**

- |                                      |  |                |
|--------------------------------------|--|----------------|
| <b>1. RASC TURTE-NECK SWEATERS</b>   | <b>- Black with Yellow Crest or Navy Blue with Yellow Crest (Extra Large Only)</b>       | <b>\$20.00</b> |
| <b>2. RASC STICKERS</b>              | <b>- Round Blue Vinyl with White Emblem (New Seal)</b>                                   | <b>\$ 1.25</b> |
| <b>3. TOUQUES</b>                    | <b>- Navy Blue with Yellow Lettering "RASC/SRAC"</b>                                     | <b>\$16.00</b> |
| <b>4. 1993 CALENDARS</b>             | <b>- Featuring Astrophotography by Rajiv Gupta (Vancouver) and John Mirtle (Calgary)</b> | <b>\$ 7.00</b> |
| <b>5. BEGINNER'S OBSERVING GUIDE</b> | <b>- with updated material for 1993 by Leo Enright</b>                                   | <b>\$ 5.35</b> |
| <b>6. 1993 OBSERVER'S HANDBOOK</b>   | <b>- if purchased without membership</b>   | <b>\$16.00</b> |

# NEWS AND NOTES

## NEW MEMBERS

A warm word of welcome to the following new members who have joined Kingston Centre in the last little while: SUSAN GAGNON, STEPHEN HEMPHILL, ANDREW HOUSTON, DAVID MCLAY, DR. WALTER SMITH. It's a real pleasure to have you all with us.

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## MEETING ROOM CHANGE--AGAIN!!

Starting with the ~~May 7th~~<sup>JUNE 11</sup> meeting we will be back in **Room D-120**, where we met in December 1992. It's a nice room and the ideal size for our group, plus it has a nice little extra area off to the side at the back that would be great for Executive meetings, and perhaps for our bookcase if we can get permission to keep it there.

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## "TELL-US-SCOPIC" OBSERVATIONS

Don't forget to feed the Kingston Centre's new "TELL-US-SCOPE" suggestion box--and I don't mean Pringle's Potato Chips! The little red tube on the unique "Blocksonian Mount" is hungry for your feedback. Give us your ideas on future activities, fund-raising suggestions, speakers, topics for speakers--or whatever!

Suggestions submitted may be signed or anonymous, and we might print some of them in Regulus to stimulate discussion and action.

Or we may even award a prize for some snappy suggestion that really grabs us. (Which reminds me, we're looking for ideas on how to acquire more prizes for just such purposes.)

So put on your thinking cap  
--or your designer RASC Touque--  
set your focal point to the future--  
and hand in those "TELL-US-SCOPIC  
OBSERVATIONS"!

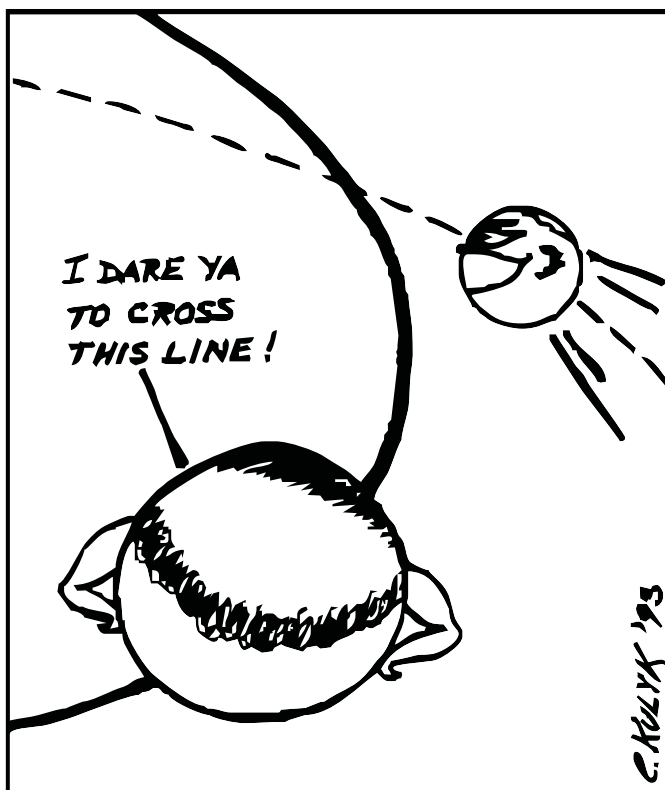
(This has been an unpaid non-political  
message from your President, C. KULYK.)

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## OUR CENTRE TELESCOPE

The Kingston Centre's 10-inch Dobsonian-mounted Newtonian reflector telescope is available to members in good standing who would like to borrow it.

Just make your wishes known at any meeting, or contact the President, and arrangements will be made to get it to you, or for you to pick it up.. The telescope is easily TRANSPORTABLE and not difficult to handle, and is an excellent learning tool, especially for newer members.



WORLDS IN COLLISION ...

## ONE ENCHANTED EVENING--WITH MARS!

By Bill Broderick

The night of January 20th was truly incredible. I actually don't remember how cold it was, but it was probably around minus 10 or 15 Celsius. To me, the important thing was the clarity and steadiness of the atmosphere! At 380X Mars was crisp and sharp in my C-11, with lots of contrast. I slipped in my 4.7mm eyepiece, boosting the magnification to 600X. Still the image was sharp and clear, with no perceptible loss of detail. This was terrific! How would it look through the Barlow, I wondered.

There was only one way to find out. I took the Barlow from its place in the foam-lined accessory case, slipped it into the star-diagonal, inserted the eyepiece and adjusted the focus. There swam Mars showing incredible detail--almost like a view from orbit. The magnification was an awesome 1200X!

Although I occasionally used magnifications of 100X per inch on my old Tasco 60mm refractor (up to about 250X) and routinely do so with my current Astrophysics Star 12 (120mm) refractor (which equates to about 475X or 500X), never before in my life have I been able to use such magnifications on a Schmidt-Cassegrain telescope. My old 8-inch was pretty well useless at anything over 400X, and the 10-inch gave up the ghost at about 550X or so--no matter how good the seeing. In other words, these telescopes could be used effectively only at magnifications of up to approximately 50X per inch of aperture.

The reason for the lower effective magnifications in the case of Schmidt-Cassegrains is the obstruction of the central secondary mirror, which goes a long way towards reducing clarity and contrast, which means reducing definition. Also, of course, the larger aperture of these instruments makes them more susceptible to the vagueries of poor seeing. A Schmidt-Cassegrain that can give 100X per inch in good seeing has got to be a really rare bird indeed. So far I have only been able to use the extremely high power of 1200X to any advantage the one time only. But it's very satisfying to know that I can use it.

For the record, the central meridian of Mars for the day and time of observation--9:00 p.m. EST on January 20th--was L=192. Cimmerium Mare was clearly visible and a large bright area below it. The North Polar Cap was sharply defined. Some mottling was seen in Elysium, probably Trivium Charontis.

All in all, this was an observation to remember!

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Do you have an observing experience you would like to share with other readers of REGULUS? Just send it in to the Editor. We'll be more than happy to print it.

### **1993 RASC GENERAL ASSEMBLY** **HALIFAX, NOVA SCOTIA, JULY 2 TO 5**

Many exciting activities are planned for this annual get-together, including display contests and awards, paper sessions, and a ride on the Bluenose II.

DAVID LEVY, honorary President of the Kingston Centre, will be giving the Ruth Northcott Memorial Lecture, speaking about the art of comet hunting.

Pick up a registration form at an upcoming meeting, or write directly to:  
DAVID LANE, 00 XXXXXXXXXXX, XXXXX, Halifax, N.S., XXX XXX.

RASC KINGSTON CENTRE MEMBERSHIP LIST AS OF FEBRUARY 28, 1993

(LIST REMOVED)

MEMBERSHIP CODES: R = Regular A = Associate L = Life S = Senior

NOTE: PLEASE REPORT ANY INACCURACIES TO THE EDITOR BILL BRODERICK OR TO THE SECRETARY KIM HAY.

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## International Dark-sky Association

3545 N. Stewart, Tucson AZ 85716 USA

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### How to Get Started ...

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There are probably many people who would like to do something to help combat light pollution. Many feel that the problem is overwhelming and too large to tackle. Many others would like to get started but don't know where to begin. This information sheet addresses the question of How to Begin. The key thing to remember, perhaps, is that it will not get solved, anywhere, locally, nationally, or internationally, in a short period of time. We will get there one step at a time. Bit by bit. As individuals working alone or together. We hope and expect that the International Dark-Sky Association will be able to be a help to those who want to do something, by being an information source and an inspiration. Remember the bumper sticker that says: Think globally, act locally. We can share experiences and information and resources, but we must act as individuals as well in order to solve the problem of light pollution, one step at a time. Here is some specific advice:

1. Read the key IDA Information Sheets. Relate the information to your Own experience and to your own community.
2. Look over your own area, by night and by day. Identify the best and the worst lighting installations. Write down the location and the type of installation. Take photographs. Take foot-candle readings, if possible. Compare. Learn what makes for good lighting.
3. Tell those with good lighting that you appreciate it. Ask who did the design.
4. Identify those involved in your area. Lighting designers. City and county staff and elected officials. Environmentalists. Utility company staff and officials. Energy saving organizations.
5. Find what resources are available in the local libraries. Do they have the Illuminating Engineering Society of North America (IES or IESNA) Handbooks? What else?
6. Is there a local astronomy club or society? Who are the members? Are they active? Are they active in the light pollution issue? Can you help them? Can they help you? Are they an IDA organizational member? Likewise, get to know the local reporters and media people.
7. Who else can help? Who knows who that may be useful or helpful? Again, the media are allies.
8. Check out the local stores, lighting suppliers, discount shops. What lighting do they have? Do they have anyone on their staff who understands lighting? Are they interested in selling good lighting? Collect information on what they have.
9. What is the electricity rate locally? Does the local utility have a conservation program? Who is involved? What are they doing? Do they understand about good lighting?
10. Begin to talk to individuals and to groups. Get on the "Chicken Circuit," talking to local social and service clubs. Talk to school groups, to retirees, to anyone you can get to invite you to share your knowledge with them. Word will spread, and you will get many invitations. It is a new and interesting issue. One in which "We All Win." Distribute the IDA Information Sheets. Use the IDA or the IDA/ASP slide sets: they are well tested and are very useful for talks about the issues. Collect clipping from local papers (and elsewhere). Start your information flies.
11. Don't forget the astronomy issue too. People like astronomy and the many exciting things and the interesting visuals. If you can, show people the sky, with the naked eye, with binoculars, and with telescopes. Almost everyone likes the experience, and likes the vista of a really dark sky.
12. Finally, share your experiences and your new knowledge with IDA. We can learn from your experiences, and share that with members and others. Together we can accomplish more than we can alone. Light pollution control is truly both a local and a global issue.