Nova Notes

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

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Astrophotos

Dave Lane and Greg Palman, NGC2237 – Rosette Nebula and NGC5128 – the Centaurus A radio galaxy.

Taken with the following equipment: Astro-Physics 130mm f/6 APO refractor on Astro-Physics 600E mount, SBIG ST8XME CCD, RGB colour filters, Homeyer filter wheel. Exposure times were typically 15 minutes in each filter.

Taken at the Winter Star Party 2005 in the Florida Keys. Processed with Maxim DL and Corel Draw. (Copyright 2005 – by Lane and Palman). http://www.davelane.ca/aro/wspimages/

April 16, 2005: Successful sidewalk astronomy event held to mark Astronomy Day at the Keshen Goodman Library in Clayton Park

I want to extend my sincerest "Thank you" to Ron Mills for organizing today's public observing at the Library on Lacewood Drive, and to all of the Centre members who came out to share the views of the sky (day and night) and to educate the folks who stopped by. When I left around 8:30 p.m. I did a quick head-count and I counted over 110 people! I estimate that close to 1000 people came by to sample for the first time the delights of the night sky that we know so well.

My hope is that this resounding success will lead to more frequent public observing sessions. I had a wonderful time – the number of delighted exclamations from our guests made my day many times over. Would the membership be interested in making this a more frequent event? I will certainly be there with my telescope(s)!

Well done!

Craig Levine, President
RASC, Halifax Centre

Solar prominences in H-Alpha
– Mike Boshat

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Articles on any aspect of Astronomy will be considered for publication.

Nova Notes is published bi-monthly in February, April, June, August, October and December. The opinions expressed herein are not necessarily those of the Halifax Centre.

"Letters to the Editor" or letters to our resident expert "Gazer" are also most welcome.

Contact the editor at the following:

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Nova Notes is also available as a PDF file on our Centre's website at **www.halifax.rasc.ca**

Material for the next issue should reach the editor by August 19

Astronomers can be identified by the tilt of their heads.

Nova East 2005

Smiley's Provincial Park
Hants County, Nova Scotia

SEPT. 2ND – 5TH, 2005

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA, HALIFAX CENTRE,
THE MINAS ASTRONOMY GROUP,
AND THE NOVA CENTRAL ASTRONOMY CLUB PRESENT

The 19th Annual Atlantic Region Star Party

Photo/caption: Roy Bishop

Nova East 2005 Program of Events

Friday, Sept. 2nd

Afternoon to Early Evening
Registration at the information/registration tent

7:45 p.m.
Welcome, Announcements & Introduction of NE Committee

8:00 p.m.
Guest Speaker: John Dobson
At the event tent

10:00 p.m. to ???
Nova East Observing
(full dark at 9:30 p.m.)
Observing Field

10:30 p.m.
Observing Workshop: Double Stars for Small Telescopes. Host: Gary Weber
Near the Swings

Saturday, Sept. 3rd

Many events during Saturday's program are public outreach events. The public is invited to participate and learn about the fun and interesting aspects of astronomy.

8:30 a.m.
Astronomers' Breakfast
Coffee and baked goods will be available to registered attendees
Event Tent

10:00 a.m.
Group Photograph
Observing Field

11:00 a.m.
Manufacture safe solar filters for binoculars or a small telescope
A small fee is required for the supplied Baader solar film
Hosts: Paul Gray and Ted Dunphy
Event tent *(Public Invited)*

11:00 a.m.
Viewing Our Home Star
An opportunity to look through properly equipped telescopes to safely see our own sun.
Observing Field *(Public Invited)*

1:00 p.m.
Nature Hike in Smiley's Park.
Gather at Event Tent

1:30 p.m.
Workshop: Choosing and Using Binoculars for Astronomy
Host: Chris Beckett and Simon d'Entremont
Event Tent *(Public Invited)*

2:45 p.m.
Workshop: Amateur Telescope Making
Host: John Dobson
Event Tent *(Public Invited)*

4:00 p.m.
Workshop: ""Fun in the Sun" Solar features in White light and H-Alpha. It's never been so easy or cheap!
Host: Craig Levine and Daryl DeWolfe
Event Tent *(Public Invited)*

8:00 p.m.
Saturday Night's feature: "Supernova Research From Your Backyard"
Host: Dave Lane and Paul Gray
Event Tent

9:45 p.m.
The Draw for Door Prizes
Host: Chris Beckett
Event Tent

10:15 p.m.
What's Up in the Night Sky
(Public Invited)
Event Tent

10:30 p.m. to ???
The Night Sky Through a Telescope
(Public Invited)
A variety of telescopes and experienced amateur astronomers will be on hand to presents views of fascinating objects in the night sky. Information Hosts will be available at the Registration Area.
Observing Field

11:00 p.m.
Observing Workshop: Binocular Sky Tour
(Public Invited – bring your binoculars)
Host: John Jarvo
Workshop Area

Sunday, Sept. 4th

8:30 a.m.
Bannock and Coffee
Host: Gary Weber, Daryl DeWolfe, Chris Beckett and others
Campsite

10:30 a.m.
Flotsam and Jetsam Sale: Cart your surplus astro gear, books, magazines or extraneous stuff to Nova East! Sell it! Trade it! Go home with cash in your pocket
Event Tent

1:30 p.m.
Workshop: The Magic of Sundials
Host: David Chapman
Event Tent

2:45 p.m.
Stellar Evolution – Why are stars different colours?
Host: Mary Lou Whitehorne
Event Tent

4:00 p.m.
Nebulae – What makes nebulae shine and what on earth do those expensive filters do to see them better?
Host: Roy Bishop
at Event Tent

8:00 p.m.
Sunday Night's Feature (TBA)
Event Tent

Monday, Sept. 5th

7:30 a.m.
Good gosh–sleep in!!

11:30 a.m.
Tour of St. Croix Observatory
Host: Tony McGrath
Gather at the Event Tent

No other formal events are planned for Monday. Relax, be social and help out cleaning up and packing up the gear from the weekend. If the weather is good, you may wish to stay in the park for another night of observing. If so, let the park people know your intentions.

Please note that all times are approximate and somewhat flexible. Impromptu events may be scheduled. Please check the message board at the Event Tent.

Bringing the stars to the public is a legacy of every Nova East Star Party. To that end, Nova East 2005 is offering a wide selection of "sidewalk astronomy" events which are open to the general public, Nova East attendees, and Smiley's Park users. They include a Solar Observing session, a What's Up? talk followed by a Night Sky Observing Session with telescopes, workshops, and other impromptu events to be announced on site.

In addition, Nova East registrants have access to an evening Astro-Talk by a special guest speaker, Astronomers' Breakfast, Astronomy Workshops and numerous other activities, tours of the St. Croix Observatory, two evening group Observing Sessions, and a chance to win some neat door prize draws. Nova East Registrants have on site parking (if Camping) or adjacent site parking (if non-Camper). Otherwise, parking is at the Park Entrance.

Nova East Etiquette

To make Nova East an enjoyable and safe experience for everyone, we would appreciate your co-operation in following these Star Party rules of etiquette:

1. RED LIGHTS AT NIGHT

White lights ruin our night vision and our ability to see the night sky. Please cover flashlights and/or car lights with a red filter. Please don't operate a naphtha or propane lantern on the site after dark.

2. CARS AT NIGHT

For Nova East campers, please don't move on site vehicles at night. Better yet, move your vehicle to the nearby non-camping parking area ahead of time for an easy departure. Parking for non-camping Nova East attendees is available inside the Park near the observing site. Check at the Nova East Information Tent for directions.

3. PETS and VALUABLES

Park rules require pets to be kept on a leash. Please protect your valuables as Nova East is not responsible for lost or stolen articles. However, Park staff, and selected Nova East personnel, have been assigned to ensure site security.

4. ALCOHOLIC BEVERAGES

No alcoholic beverages are allowed to be consumed on site.

5. PLEASE FOLLOW ALL PARK RULES

A copy of park rules are available at the park entrance.

Smiley's Park and Local Services

Smiley's Park Facilities

In the Park, over 100 campsites are available to the general public. Hot showers and flush toilets are at the main comfort station. Water, fire grills, picnic tables, a trailer dump station, and facilities for the disabled are also available. Firewood can also be purchased.

Local Services

Gas stations, Camping Supplies, Confectionary goods, and Hardware supplies are 5min. from Smiley's Park in the village of Brooklyn. Extensive services such as Malls, Restaurants, Banking, and 24hr services are in the town of Windsor, 15min. from the Park. The closest motel (but not the only one) is the Downeast Motel, 902-798-8374, also 15min. drive from the Park.

Nova East is presented by: The Minas Astronomy Group, The Halifax Centre of the Royal Astronomical Society of Canada, The Nova Central Astronomy Club.

We hope to see all of you again for Nova East 2006 here at Smiley's Provincial Park - August 25, 26 & 27

Campsite Reservation Information

This is a camping week-end so we encourage everyone to bring their tent or trailer. Once again, we have camp sites available adjacent to the observing site. To guarantee one of these sites it would be best to pre-register. All Nova East campers pay for and register their campsite with us – do not register at the Park entrance. Specific campsites will be assigned upon checking in at the Nova East Information Tent at the Nova East site in the Park. One vehicle per site. Non-camping vehicles are not permitted in the Nova East campers area. Nearby vehicle parking is available.

Promotional Items

A limited supply of Nova East T-shirts will be available at the star party. To avoid disappointment, it would be best to pre-order your Nova East 2005 T-shirt with your pre-registration. Your T-shirt will be then be waiting for you upon arrival at the Nova East Information Tent. There will be no orders after the August 12 , 2005 T-shirt deadline.

To contact Nova East 2005

Visit our Website:

http://halifax.rasc.ca/ne/

E-mail us: novaeast@rasc.ca

Please return this form to this address by August 02, 2005,

with a cheque payable to **RASC, Halifax Centre.**

Nova East 2005

c/o Dave Parsons 485 Basinview Drive Bedford NS B4A 1T3

Registration Form

Name:

Street or P.O. Box #:

City:

Province:

Postal Code:

Telephone #:

E-mail Address:

Fees

Attendance
$15.00 for Weekend
(Single or Family attending)

☐ weekend pass/passes X $15.00 =

Camping
$18.00/night
One vehicle and one tent/ trailer permitted per site

☐ night/s X $18.00 =

T-Shirts
All T-Shirts are $15.00. Please indicate the number of each size you will need.

☐ XL ☐ LG ☐ MD ☐ SM

Total number of shirts ☐ X $15.00 =

Total Payment =

Whence Lightning?

By Roy Bishop

In 1749 Benjamin Franklin demonstrated that lightning is an electrical phenomenon, a gigantic, high-voltage spark occurring between thunderclouds, or between a thundercloud and the ground. The energy released in a lightning bolt is built up by the heat-generated winds and associated separation of electrical charges carried by the ice and rain in a thundercloud. One of the mysteries concerning lightning has been that the electric fields measured within thunderstorms are too small to cause an electrical breakdown in the air. Typically, a voltage difference of about 20,000 volts per centimetre is required. The 2-mm-long spark that you receive from a doorknob after walking across a carpet on a dry winter day involves a finger-tingling snap of about 4000 volts, but, fortunately, with a very small, non-lethal current.

So, if the electric field in a thunderstorm is too small to initiate the massive runaway electrical breakdown of air that is a lightning bolt, how then do lightning bolts get started? An article in the May 2005 issue of "Physics Today" by two physicists, Alexander Gurevich and Kirill Zybin at the Russian Academy of Sciences in Moscow, indicates that cosmic rays apparently trigger lightning bolts.

The Austrian physicist Victor Hess discovered cosmic rays in 1911 when, using a balloon, he took a radiation meter high into the atmosphere. Hess found that the higher he went, the stronger was the dose of ionizing radiation he encountered. Few passengers on commercial jets are aware of this hazard of modern air travel! The radiation is caused by high-energy, sub-atomic particles that bombard Earth from interstellar space, the so-called cosmic rays.

Cosmic rays consist of protons (hydrogen nuclei), photons (gamma rays), electrons, positrons (anti-matter electrons), and smaller numbers of heavier atomic nuclei. The greater the energy of the particle, the less numerous they are. The highest energy cosmic rays far exceed the energies attained by the largest particle accelerators in laboratories on Earth. Their source appears to be the most violent events in the universe, such as supernova explosions and stellar debris falling into large black holes at the centers of galaxies.

When a high-energy cosmic ray (for example, a proton with an energy of about ten to the sixteenth electron-volts) hits a nitrogen or oxygen nucleus high in the atmosphere, it generates a cascade of secondary particles that rip downward at essentially the speed of light, producing an extensive atmospheric shower of ionizing particles. When this occurs within the region of a strong electric field in a thundercloud, a runaway electrical breakdown takes place and a lightning bolt is triggered. The cascade of secondary particles generated by the cosmic ray occupies a straight, narrow, cylindrical volume about 100 metres in diameter and tens of kilometres long, whereas the lightning bolt, once triggered, follows a crooked path dictated by the electric field pattern of the thundercloud, and the rain, ice, and humidity conditions within the storm.

Thus it appears that the unpredictable staccato dance of lightning bolts marks the random arrival of subatomic debris from the most violent events in the universe, events that occurred thousands of years ago, thousands of light-years from Earth. This is a revelation that will imbue me with a new sense of spine-tingling awe when next I experience a lightning storm on a summer's night. ✭

June 24, 2005, 11:43 p.m. AST

Exposure Details: Nikon D70 digital SLR, Nikkor 18-70DX lens @ 60mm, 30 second exposure @ f/4.5, iso320, tripod, raw capture, tungsten white balance.

– Shaun Lowe

A Beginner's Astronomy

by John Vandermeulen

Here are some notes on how I am getting started in amateur astronomy. Not that my way is really special, or different from anyone else's, as every body has to start somewhere. But it is doubtful that there are that many who start on page 1 at my age.

Anyway, I first subscribed to Sky & Telescope way back in 1950's Edmonton, but then drifted into other things like university, marriage, more university, children. Just what got me re-started some 50 years later, I can not recall except that last year 2004 I found and began to follow a web-forum. Then over Christmas 2004, while at our daughter's in Ontario, we stopped in at Efstonscience (Toronto) to look at real telescopes, not just magazine pictures of same. The idea to own a scope began to float there, which was followed by a search of the internet for anything relating to astronomy. Eventually I was thoroughly hooked with a full-blown interest in things astronomical.

Now, I don't know how other beginners go from zero-level astronomy to serious interest, but for me I knew that a very steep learning curve lay ahead of me indeed, if I wanted a telescope and how and why to use it. So I set myself a series of steps, focusing on gaining information, advice, knowledge.

1) The Web. The web holds an incredible amount of accessible information, and in fact became my library of astronomy with an endless supply of articles, how-to, and so forth; all conveniently and directly available from my home.

2) Web-forums. There is no end to the wisdom and knowledge on forums such as Cloudy Nights, and it you can get to it faster than a speeding bullet. This in turn led to myself posting questions for advice. It is this interaction that is so useful. on the web-forum.

3) Experienced amateurs are surprisingly helpful, and readily available to explain some particular problem or difficulty. So I developed contact with American and Canadian amateurs (Craig Levine) found on web-forums, and off S&T, and SkyNews.

4) Commercial manufacturers (Orion) and dealers (for ex. Astromart) are very free with even lengthy advice.

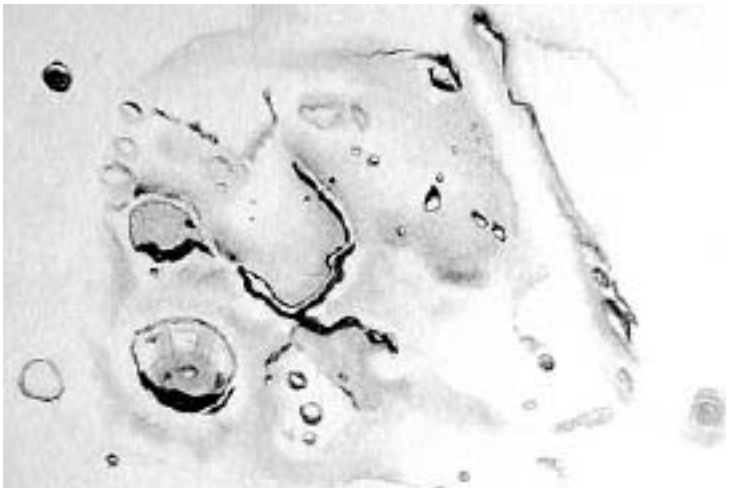
Response was great. My own situation is really very simple, 1) a particular interest in 'deep sky' viewing; and 2) I have been involved in science all my life. On the negative side is a neuromuscular problem that prevents my lifting most anything heavier than a six-pack. My plan was to begin observing from our large sun-deck where my wife Gail can help and assist. And as we live about 15 miles north of the airport, light pollution is a lesser factor. Craig Levine thought all this over and agreed that a 6" or 8" Newtonian on a Dobsonian mount should fit me very well. He also steered me to Clinton Shannon. Discussions with others, including Efston's, suggested that if I considered an 8", I might as well go for a 10" reflector, and so on. (The latter practice of consumership can break the bank thoroughly and quickly.)

By this time I had seen and read enough to settle on a mid-size (i.e. 6" or 8") reflector of some sort, and a dobsonian mount. I had also sorted out the various terminology – FOV, magnification, f-ratio, EP, and so forth. Also, the 8" size would pretty well be the limit of our handling. If fitted with a set of wheels my wife Gail could help roll the thing onto the sun-deck.

The dobsonian mount has one distinct problem, which is that it is limited to alt-azimuth only. True, there exists a motorized dob set-up (for example Orion), but it is not a 'go to' system where a few clicks on a remote PDA instruct the scope to slew over automatically to whatever desired feature.

The dob system involves manual steering/pushing gently the tube by hand, while guided by an electronic indicator. Talks and correspondence helped me settle on an 8" Newtonian reflector on a dob mount, from Orion, marketed as their 8" Intelliscope. It would already be fitted for the necessary motor electronics, but for now I would do without the hand-held remote PDA.

And then – luck. I had posted an e-mail to CloudySkies about something or other, when one of the other correspondents happened to mention seeing a smaller scope for sale on AstroMart. A quick check confirmed for sale an Orion StarBlast with two eyepieces and an EZ-finder. Its 4.5" primary mirror was a fair bit smaller than the planned for 6" or 8". According to the Orion Co. information, this particular telescope was designed for teenage or younger hobbyists. Hence its price was in direct competition with those refractors sold through photographic supply stores. However, the Starblast is beautifully constructed, a solid scope. And a quick survey on the web revealed that quite a few observers regard this 4.5" (f/5.6) as their back-up scope, handy for travelling. For myself, I view it as a good interim scope, while learning the sky and handling a reflector. And with the price about a third of the price of the 8" it was a "no-brainer". So, a quick re-planning, and an e-mail to the seller and it was done. I had actually bought my first telescope, after 50 years. ✯



Here is a sketch I did of Daryl Dewolfe's observing challenge to find the "cobra head" on the Moon. This sketch was done all at 125X with my 8" dob and took around 80 minutes or so. Aristarchus is the large crater bottom left. March 22nd, 2005 – Michael Gatto

Halifax Centre extends a Financial Challenge

Here is a message that was sent to the national RASC list that outlines a very important initiative that the Halifax Centre has undertaken to help with the financial situation that the national RASC finds itself in. It must be stressed that Halifax Centre has incurred a surplus over the past year – that we did not need – because of the structure of the disbursement of fees. We feel that there must be accountability at the local and national level towards resolving the situation that our beloved organization finds itself in. If other RASC Centres have received an un-needed cash surplus because of the current fee structure, we want to challenge them to return the excess towards paying down the shortfall. The reality is that the existing fee structure ensures, in the current economic climate, that the costs of services provided by the national RASC exceeds revenues. We have an opportunity to offer a powerful symbolic gesture, and a real opportunity (if other Centres respond) to ease the financial burden on our organization. We have taken a bold step of setting an example for the 26 other centres across Canada. It is my hope and expectation that the other centres will respond and rise to the challenge before us.

This measure was passed almost unanimously at the executive meeting, after much debate. The lone opposed vote agreed completely with the motion in principle, but disagreed with the implementation. Please email if you wish to obtain a copy of the meeting minutes.

Please feel free to contact myself, Pat Kelly, or Dave Lane with any quetions.

Sincerely,
Craig Levine
President, RASC Halifax Centre

At its June 17th meeting the Council of the Halifax Centre dealt at length with the society's current financial state, and the failure of recent attempts to change the society's fee structure to more realistically balance the membership fees which are retained by the national society. There have been two recent fee increases which, under the current by-laws, resulted in increases to centre membership fees (whether they needed it or not). The centre portion of these two increases, including the increase just approved at the Kelowna annual meeting, is $4.40 for regular membership, and $3.50 for youth membership.

Recognizing that the national office provides a valuable and desirable set of services and benefits to members and does not have the revenue to maintain these services, the Council of the Halifax Centre passed a motion that for the 12-month period starting July 2005, it will send a monthly refund to the national office of $4.40 for each new or renewing regular membership, and $3.50 for each new or renewing youth membership. At the end of this period, the centre will review the society's finances and fee structure and decide if this procedure will be extended.

The Halifax Centre challenges other centres to adopt a similar initiative. It is only through working together to find creative solutions, and to make necessary changes, that the society can surmount the serious financial difficulties that it faces.

Craig Levine
President, Halifax Centre

Meeting Report for March 18, 2005

By Blair MacDonald

The meeting was called to order by our intrepid leader, Craig, at 8:04 p.m.

Craig's first order of business was to announce that Daryl DeWolfe has taken on the position of Observing Chair, the only remaining opening on the executive. Following that announcement, Craig moved on to the usual membership and merchandise pitch. It seems we have some extra 2005 calendars for sale at substantial savings off the regular price. This meeting reporter has it on good authority that the next price reduction on the 2005 calendar will take place in December so get em while you can!

Paul Heath has offered to organize an observing session for a local Brownie troop and several volunteers have stepped up to offer help, thanks folks.

Craig also announced that Mary Lou's book, Skyways, is to be published in French as well as English.

Craig then introduced the main speaker for the evening, Dr. Joe Hahn. Dr. Hahn is an associate professor in the Astronomy and Physics department of St. Mary's University. His research interests include the dynamics of planetary systems, comets and interplanetary dust, circumstellar disks and the Kuiper Belt. His talk was entitled "The Kuiper Belt and the Early Evolution of the Solar System".

Dr. Hahn started with a definition for the Kuiper Belt: a debris disk left over from the formation of the outer planets. The talk then delved into the origin and evolution of the belt and how it may be the source of short period comets. From our solar system Dr. Hahn moved on to potential Kuiper belts around other stars and several stunning photos of dust rings around stars such as Beta Pictoris. Finally the talk ended with a spirited question and answer session.

After the break Daryl gave the "What's Up" talk. His first act as the new Observing Chair was to rename this section of the meeting to "The Sky at St. Croix". Daryl issued an observational challenge to the Centre, observe the Cobra's Head on the Moon. This feature is at the end Schroter's Valley and that was the only hint he was willing to give, honest.

Craig, "my wife won't let me buy it", gave the handbook talk explaining the many uses of the exit pupil diagram in the 2005 handbook.

Finally the meeting wrapped up with a discussion about the skies at Liscomb and the location of several observing sites there. ✭

Meeting Report for May 13, 2005

By Walter Zukauskas

Pat Kelly brought the meeting to its usual state of disorder at 8 p.m. He executed all the official functions tonight as Craig Levine, our President, was away trying to improve himself. As President, Pat announced Nova East with John Dobson as featured speaker, and the work party at SCO on May 23. National Representative Pat encouraged us to assign proxy votes for the Annual Meeting of National Society (big issues on agenda). Pat Ferengi commented on matters financial, both locally and nationally. (I nodded off.)

In preparation for the main speaker, we had shenanigans in the dark while trying to fire up the PC and projector.

———

Andrea Misner, our featured speaker, got us "Thinking Outside the Textbook with Cosmic Rays".

Victor Hess won a Nobel Prize (1936) for carrying ionization chambers to high altitude and noting that a charged particle flux increases with altitude. The sources of these so-called cosmic rays (CR) lay outside Earth. Energetic CRs come from outside the solar system. Some have truly stupendous energies of about 10^{20} or 10^{21} eV! Sources of high energy CRs? The usual suspects are suspected – pulsars, supernovae, black holes – but not proved.

Detection methods depend on energy. Low energy detectors involve satellites and balloons. High energy CRs require only earth-bound detectors – a convenience that will be relevant later in the talk.

Why study CRs? e.g. pions and muons both first found in CR. And they may give insight about the cosmic composition of matter, and especially about really exotic stuff – dark matter, strings and magnetic monopoles!

Andrea outlined her own work, done with Malcolm Butler of St. Mary's, on the air showers of particles created by collision of CR particle with atmospheric atoms at altitudes of ~100km. CR particle + atom –> shower of photons, neutrinos and muons arranged in the "Christmas tree" pattern with the collision event at the top (the angel) and the presents (neutrinos, photons, and muons) at the base. Andrea's analysis takes place within the framework of a large computer programme CORSIKA 6020 (COsmic Ray SImulations for KAscade), where simulations of showers can be created. Two nice results are the demonstration of the Christmas tree effect, and the distribution at ground level of muons resulting from the collision. All as functions of energy and direction.

Put a Cosmic Ray in your Tank! That is what Imperial Oil has said through its sponsorship of the "Cosmic Rays in the Classroom" project. As part of a nationwide effort, six high schools in NS will receive CR detection equipment, and will report high energy CR events with the aims of establishing CR fluxes, and of reconstructing the Christmas tree for the event, and inferring the energy and direction of the primary. Authentic science in the school. Students will get real-life science experience, academic credit, public recognition, and the effort will look really neat on their CVs.

Andrea brought off the talk with clarity and panache. When asked, she said she hoped to become a high school teacher. More power to her!

———

Looking Up by Daryl DeWolfe. Daryl remineded us of the SCO Members' Night and of the prevalence of galaxies this time of year. Jupiter is always a show, and shadow transits of its satellites are prominent now, including some double transits. Daryl set up an Observing Challenge – to look for noctilucent clouds (NLCs). NLCs are the highest clouds known (~80 km), and are typically seen in twilight conditions, exhibiting iridescent colours. They are probably a mix of ice and dust, and were first noticed after the Krakatoa eruption at the end of the nineteenth century. Some say their increased visibility over the past century is a consequence of industrialization. The Maritimes are outside the usual range of such clouds (latitude >~ 50 degrees) but May to July is a favourable time for viewing them. So keep an eye out – you never know…

———

Dave Lane rounded out the evening by giving us all another excuse for gadget envy. He has installed on Abbey Ridge Observatory a Boltwood cloud and precipitation detector. Dave is now alerted to rain without wetting his scalp. Is there anything this observatory cannot now do for itself? The only down side is that the Observatory no longer actually needs Dave. He has nurtured it so well, building its physical form, giving it vision, providing a programme to carry out, and a means to communicate. It has outgrown its mortal companion. Hopefully, it will allow Dave to continue serving it. ✯

Missing Life Members

By: Pat Kelly

The executive is trying to track down three of the centre's life members who have not been seen in many years. If anyone has information about their current location, or how to contact them, the should contact Patrick Kelly (patrick.kelly@dal.ca, 494-3294(w), 798-3329(h) The three are:

David E. MacDonald (joined 1975)

Gerald Murphy (joined 1981)

Rev. David Whiston (joined 1955)

St.CROIX Observatory

Part of your membership in the Halifax RASC includes access to our observatory, located in the community of St. Croix, NS. The site has grown over the last few years to include a roll-off roof observatory with electrical outlets, a warm-room and washroom facilities. Enjoy dark pristine skies far away from city lights, and the company of like minded observers searching out those faint fuzzies in the night.

Members' Night

Every weekend closest to the new Moon there is a Members' Night at St. Croix. The purpose of members' night is to attract members from the Centre to share an evening of observing with other members. It's also a great night for beginners to try out different scopes and see the sky under dark conditions. For more information or transportation arrangements, please contact the Observing Chairman Daryl Dewolfe at 902-542-2357. *Dates for Members' Nights for the following few months are:*

Friday, July 8 and Friday, August 5

Directions from Halifax

(from Bayers Road Shopping Centre)

1. Take Hwy 102 (the Bi-Hi) to Exit 4 (Sackville).
2. Take Hwy 101 to Exit 4 (St. Croix).
3. At the end of the off ramp, turn left.
4. Drive about 1.5 km until you cross the St. Croix River Bridge. You'll see a power dam on your left.
5. Drive about 0.2 km past the bridge and take the first left (Salmon Hole Dam Road).
6. Drive about 1 km until the pavement ends.
7. Drive another 1 km on the dirt road to the site.
8. You will recognize the site by the 3 small white buildings on the left.

Become a St. Croix Key Holder

For a modest key fee, members in good standing for more than a year who have been briefed on observatory can gain access to the St.Croix facility. For more information on becoming a key holder, contact the Observing Chairman Daryl Dewolfe at 542-2357.

RULES FOR THE 17.5" SCOPE

(OR ANY RASC SCOPE AT SCO)

On Members' Nights the 17.5" scope must be shared by all members. The 17.5" scope can be used by anyone, but all views have to be shared with anyone interested in taking a look.

On non Members' Nights the scope can be used by individuals wishing to work on personal observing projects. Members should try to limit their use to under 45 minutes when other members are waiting to use it. Preference will be given to members who send an email to the hfxrasc list, or call the observing chair on the night they want to go out. If no one else wants to use the scope then feel free to use it all night, but it would be considerate every so often to ask members there if anyone has been quietly waiting to use it.

Please contact the Observing Chairman Daryl Dewolfe for more information or to book the scope at 902-542-2357.

Meeting Announcements

Halifax Centre of the Royal Astronomical Society of Canada

There are no Centre meetings in the months of July or August. See you in September!

Meetings begin at **8:00** P.M.

Members of the general public are welcome.

All members—but especially new ones—are invited to come to the meetings 20 - 30 minutes early to participate in our new informal "Meet and Greet". It's a chance to ask questions about astronomy, the RASC, memberships, or to just say hello.

Room 176 Loyola Building
Saint Mary's University *(See Map Below)*

The Halifax RASC Executive meetings begin at 7:00 P.M., and members are welcome to attend.

Halifax RASC Executive 2005

Honorary President	*Dr. Roy Bishop*	
President	Craig Levine	852-1245
1st vice-president	Paul Evans	423-4746
2nd vice-president	Marc Bourque	835-2589
Secretary	Andrea Misner	425-5074
Treasurer	Pat Kelly	798-3329
Nova Notes Editor	Michael Gatto	453-5486
National Rep.	Pat Kelly	798-3329
2nd National Rep.	Mary Lou Whitehorne	865-0235
Librarian	Alex LeCreux	404-5480
Observing Chairman	Daryl Dewolfe	542-2357
Councilor	Shawna Mitchell	865-7026
Councilor	Gary Weber	454-8264
Councilor	Steve Tancock	465-4092

Meeting Location

Meetings are held every third Friday of the month, except for the months of July and August. Meetings take place in room 176, Loyola Building (#3 on map) at Saint Mary's University.

1. *McNally*
2. *Sobey Building*
3. ***Loyola Academic Complex***
4. *Loyola Residence*
5. *Patrick Power Library*
6. *Science Building*
7. *Burke Building*
8. *Bookstore*
9. *Alumni Arena*
10. *The Tower*
11. *Rice Residence*

P = Parking