

Nova Notes

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



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**NOTE: Meeting room change
for September, see back**

Astrophotos of the Month

Paul Gray continues his mission to land on the moon, one step at a time, and the intrepid Nova Easters pose for the group photo, umbrellas in hand.

See pictures page 6, and don't forget to check the Nova East section at www.halifax.rasc.ca for even more.



As heard on hfxrasc@rasc.ca...

If you're a member with email, why not become part of the Centre's email list? The list is a great resource for people looking for other members to observe with, for reminders of upcoming astronomical events, or for sharing information. Members who observe at

St. Croix usually post a notice to say if they'll be out that night. Log on to our website (www.halifax.rasc.ca) to get signed up and you too could participate in lively intellectual discussions, or at least read them!

Here are a few of the postings to the list regarding people's experiences viewing Mars over the last few months.

I was also out from 12 to 1:30 and the seeing last night was particularly good. Saw more detail on Mars than the last several weeks (using my StellarVue 102EDT and 3mm Radian @ 207x). I cut the glare with a polarizing filter and, even the occasional haze that drifted in front of Mars helped pick out detail, the best way I can describe what I saw is to go to Sky & Telescope's main page and look at the small Mars image halfway down the page, that's exactly the image my EDT presented me with, only the SPC was about half size and very brief (1-2sec) excellent seeing times showed sharp detail along the dark surface feature edges. If you didn't observe Mars last night, you missed a really good night for it. Maybe tonight will be as co-operative.

Marc Bourque. ☆

The views I got of Mars last night were amazing. (I stopped an 8" SCT down to just under 3" with an aperture mask.) I could easily make out all the dark land forms, and the view at the eyepiece started to look a lot like the pictures you see everywhere. I was even able to crank up the magnification to 412X, something I rarely get away with. This is interesting since I was essentially using a 3" "refractor".

By conventional wisdom, I should not have been able to use more than 150X.

I did my viewing between 10 and 11 P.M., long before the atmosphere settled, from my deck, over houses, and in fact over most of the city. Since I was only using a fraction of the normal light path, the turbulence was much less noticeable than normally. Also, the annoying reflection I always get with my plossls while observing bright objects was gone.

Another thing I noticed is that focus is a lot more "forgiving" when using the mask. In other words, the image seems to be in focus for a larger depth of travel through focus. One trick I used, is to get it in close focus without the mask, then put the mask on; that usually bring the image bang on perfect focus.

Does anybody know if there are variations on the aperture masks that can be used? Two holes? A larger hole? Another shape? I'd love to experiment.

Pat D'entremont ☆

Last nights' views of Mars were very nice. I observed and took some shots (not processed yet) here at home for a couple of hours, mostly working around 100x with the refractor. The seeing was a bit wobbly until Mars climbed higher after midnight, then things settled down quite nicely.

I last saw Mars on Aug 1st and noticed that the polar cap was a) more distinct and b) smaller than two weeks ago. This may be an effect of seeing the other side of the planet compared to the previous views. Does anyone know if the south polar cap (SPC) is off-centre (eg not symmetrical around the pole)?

Calum Ewing ☆

Calum, the SPC on Mars seems to be an amazing thing to watch. You're right in that it appears to be smaller now than it was two weeks ago. As the south pole tips towards the Sun (and us) it begins to sublimate (melts from ice to gas with no liquid state in between) and then floats through the Martian atmosphere only to end up at the NPC where it cools and turns to frost and fog around the NPC – this is what causes the white North Polar Hood that you may see along the northern limb during some nights and it is this cycle that drives the major Martian weather patterns.

The SPC is a very rugged looking feature at this point and will continue to "break up" as it nears its summer season. There are plenty of "bays" and projections along the perimeter and several bright patches here and there, and during good seeing you may even be able to pick out a rift cutting across the SPC (Rima Australis).

Graeme Hill ☆



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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 Oct. 03

Just a quick note after arriving back from SCO. Tonight I had the best views of Mars I have ever had. Now that may not be saying much – many people on this list have MUCH more time logged against observing Mars.

The pole was very distinctive. There was a fair amount of detail visible on the surface of the planet. The seeing was fairly cooperative. I experimented with some colour filters I picked up last month and did see some benefit (my notes are still in the car). I guess I will have to start learning the names of the features so I can tell you what I saw :)

I used the Centre's 17" scope stopped down to 14" (?). Primary eyepiece was a 10.5mm Pentax. I'm not actually sure what the focal length of the scope is so I can't tell you my magnification tonight. I just know it looked pretty.

Didn't look at anything else except three nice meteors and a tumbling satellite.

Paul Evans ★

Hi All,

Darren T. and I made it to SCO about 23:30. A very clear night. Saw a number of bright meteors while waiting for Mars to clear the trees. I have not seen Mars since June and it has grown considerably. I would say it now shows a larger disc than Jupiter.

With the 10" I was able to push the power to 200X and with the help of Darren's deep red and contrast filters saw a lot of fine detail on Mars. The South Polar Cap (SPC) was very bright, small and rounded. It showed a sharp dark line around it with a central widening. As seeing improved after 01:00, a dark bump extended down to the NW of the central shading. Mare Sirenum (MS) showed as a darker band about a third of the way N from the SPC. It showed two darker nodules on its N side. Mare Cimmerium (MC) blended into MS extending to the east

limb and as seeing improved Solis Lacus (SL) extended down to the NW of MS. MS showed a faint extension to the SW above SC. With the contrast filter and then improved seeing, Tharsis (TH) filled the north central portion of Mars, a flattened oval about 2-3 times the size of the SPC and half as bright. With the deep red filter and as seeing improved, the faint shading of Mare Boreum (MB) extended from the western limb below TH and stretched almost to the eastern limb. MB was about half as dark as MC. On the eastern edge of MB, a darker wedge of Elysium (E) and Trivium Charontis (TC) appeared near the NE limb of Mars. Between the bright area of TH and the dark shading of MS was Memnonia.

Last evening were the best views of Mars that I have ever had, despite the bright moon, a lot of detail was easily seen. A great night at SCO.

Paul Heath ★

I had another good look at Mars last night, from my driveway. I had my three telescopes set up: the C90 (90 mm f/11 Maksutov), the TeleVue Ranger with Celestron 2x Barlow (in effect a 70 mm f/14 refractor) and my reduced-aperture Discovery (in effect a 70 mm f/17 unobstructed reflector). The C90 was altazimuth-mounted on a video tripod; the Ranger was on a solid equatorial mount with drive; the Discovery was in a Dobson mount. I used Celestron .96" orthoscopic eyepieces on the the C90 and my 7 mm TeleVue Nagler on the other scopes.

The seeing was poor at 9:30, but steadily improved; I quit at 11:45. The C90 showed a disk, and hints of the polar cap and surface markings, but the view was somewhat disappointing. I think the telescope is OK, but I am not sure if the eyepieces are up to it. Is there such a thing as a quality .96" short-focal-length eyepiece?

The Ranger had pretty good views, but there was a little problem with false

colour at this high magnification (136x...close to the limit).

I could easily see the polar cap and the dark plains (Syrtis Major?) I had an "amber" filter kicking around (where did that come from?) and I held it over the eyepiece: it seemed to help the contrast; certainly the violet halo disappeared.

I think the reflector gave the best views at 174x, even though I was technically over the magnification limit for the reduced aperture. There was no colour problem; the filter did not seem to help much. When I removed the aperture stop, the image brightened, but was terrible.

I really enjoyed the convenience of the driven equatorial mount on the Ranger: not having to move the scope every few seconds. The reflector was OK in this respect, thanks to the wide field of view the eyepiece provides.

A work colleague, Dave Thomson, dropped by for a look. he was very satisfied with the view he got, and helped me evaluate the various combinations. I am certain this is the best look at Mars I have had so far.

Dave Chapman ★

Here's a sketch I made at the eyepiece, scanned and edited in Photoshop.



Details, 8" f7.5 reflector, at 170 - 410X, using a #58 green filter, but primarily a neutral density (~13% transmission) filter.

August 01-2003, from 2:00 A.M. to 3:00 A.M. with excellent seeing from home in Dartmouth, Nova Scotia

Not an actual email, but I had a gap here so I figured I'd throw this in :)

Michael Gatto ★

May 2003 Meeting Report

Larry Bogan

We were welcomed by President, Steve Tancock, who promptly presented a fantastic offer to all visitors of a free 2003 RASC Calendar plus all the other benefits of joining the RASC. He announced that Carolyn Shoemaker was to be given honorary doctorate at St. Mary's University and arrangements were being made for members to meet her while she was in Halifax. This would occur around the 23rd of May. And last, but not least, the Burke Gaffney award was presented to Andrea Misner for best written article in Nova Notes for 2002.

Steve introduced Mark Kaye President of the Hamilton Centre of the RASC (also member of Kingston and Calgary Centres). Mark's presentation title was "Three Decades of Observing or How to Make Looking Up Easier".

If I have missed something in Mark's talk please forgive me because despite being given paper to write this on, there was no desk lamp included. Mark showed us four carousels of slides with the room lights off the whole time. Have you ever noticed how much darker the room is when astronomy pictures are being shown versus landscapes, etc.

Like most of us, Mark started with a Tasco 50 mm telescope, and entertained us with a photo of himself as an adult observing with it (amazing that he still has it). It was all uphill from there. It was the inconvenience of off-the-shelf equipment that drove him to build telescopes and observatories that make observing an enjoyable and hassle-free hobby. He started

*Steve Tancock
presents the
Burke Gaffney
award to
Andrea Misner.*



by building a better tripod and improved eyepiece on the Tasco, then used it to take pictures of the Moon. The later purchase of an Astrophysics 5" refractor (1986 I think) was mounted as a Dobsonian for a refractor that had dew-heater batteries as a counter weight. This was under Toronto's light-polluted skies.

His family then moved to Kingston and it was here there that larger construction occurred. He cut through the peak of their home to make an attic-roof-top observatory with a flip-top cover. The pier for the telescope was an abandoned telephone pole that rested on the basement floor and stretched up through two bathrooms to the observatory. A trap door gave access to the observatory from the house. He continued the practice of photographing the skies and produced even more impressive images (nebula, comets, constellations, galaxies).

Alas the convenience was not to last because there was soon a move to Calgary. Although they had to purchase a home there, they kept the 'cottage' in Kingston, ON. The new location was east of Calgary on the prairie and had superb dark skies. However, as Mark pointed out, only spring and autumn are suitable for observing there. In the summer the

skies are never dark and in the winter it is just too cold. Despite this, a new pier was built in the backyard and more excellent photos were created. Around this time, during visits back to Kingston, Mark built a new telescope to occupy the old roof-top observatory. This was a 8" reflector with an unique design that allowed the eyepiece to remain at a constant height above the floor. This made observing even easier and more fun.

Another move back to Ontario put Mark in Georgetown on the other side of Toronto from Kingston. But now it was only 4 hours to the cottage and its observatory became active again. The next modification was to enable the mount to handle the refractor there as well as the reflector. Another pier appeared in the backyard in Georgetown which could hold either telescope also. The pier was the same design as in Calgary, an assembly of four 2x4s with a rebar reinforced concrete centre creating a very inexpensive but sturdy foundation for observing. About the same time an SBIG ST-4 CCD and open-tube guide scope were added to relieve the tedium of hand-guiding photographs.

Mark now has a Finger Lakes CCD camera and is imaging with that as well as with his favorite Ektachrome

200 Professional film. Through all his descriptions of astronomical equipment, Mark's emphasis, was (1) that the telescope that gets used is the one that is easiest to use and (2) that construction of an observatory may be necessary to make observing really enjoyable.

He also showed us slides of several observatories that he has visited over the years. Included were Jack Newton's in Victoria, a couple of very compact but useful ones in Ontario, and a set of robotic telescopes. He has added to his collection of observatories by visiting Roy Bishop's and Dave Lane's while in Halifax. Mark finished with a collection of his better astrophotographs.

Later as Roy and I were driving back to the Valley after the meeting, we reflected on our time in this hobby. We started in the 1950's (that's five decades) but, speaking for myself, I have not done as much as Mark to make the use of equipment more convenient. Maybe I had better build that observatory that has been on the drawing boards for the last decade. ★

June 2003 Meeting Report

Pat Kelly

The final meeting before the summer break began as a beautiful day which progressed into a lovely summer evening. While one might have expected a lapse in attendance, over 50 people turned out for the June meeting, no doubt drawn by the main speaker, Dr. Roy Bishop. Roy has the ability to take an apparently innocuous observation, such as the sighting of a fireball, and turn it in to a detective case as interesting as any you will find in the mystery section of the local library.

I took fairly detailed notes of Roy's talk, with the intention of making a fairly detailed report* of his presentation, but as luck would have it, the paper that Roy wrote for the RASC Journal upon which his talk was based, appeared in the issue immediately following the meeting. As you would

already have received that issue, there is little that I can add to the material in Roy's paper, but there was one item in his presentation that did not appear in the printed version.

Roy asked the question "Why does a fireball end with a burst?" At the start of the meteor trail, the density of the air is $2.3 \times 10^{-8} \text{ kg/m}^3$, while at the elevation of the terminal burst the density has risen to $1.4 \times 10^{-5} \text{ kg/m}^3$. Thus over the course of the meteor's path, the air density increases by a factor of 600 during a scant 0.6 seconds of flight. At the Earth's surface, the density of air is 1.2 kg/m^3 while the density of water is 1000 kg/m^3 , about 800 times denser than the air above it. As Roy pointed out, a meteor hitting the Earth's atmosphere undergoes the same kind of stresses that an airplane would experience flying straight down into the ocean! No wonder it is disrupted! ★

** regular readers may be shocked (as was I) at the brevity of Pat's meeting report this month! ;)*



– Gary Weber

On behalf of the Nova East Organizing Committee I would like to thank all the members who came out and braved the rainy weekend for the event. Despite the rain, we managed to stay on schedule with all our events (except observing) and provide a full weekend of entertaining and informative activities.

I would also like to thank the following people for their volunteer efforts in producing a series of workshops and participating in other activities which all combined to bring a little sunshine to the weekend.

Dan Falk	Paul Gray
Chris Beckett	Michael Gatto
Ron Mills	Paul Heath
Paul Evans	Graeme Hill
Dave Lane	Roy Bishop
Mary Lou Whitehorn	Don Wright
Steve Tancock	
Smiley's Park Staff	
Campground Hosts	

Once again, thank you all for your participation which made Nova East successful despite the inclement weather.

The 2003 Nova East Organizing Committee:

Registrar:	Irene Moore
Programming:	Darren Talbot
	Dave Parsons
	Gary Weber
Park Liaison:	Norm Scrimger
Door Prizes:	Daryl Dewolfe

Nova East 2003

Despite the appearance of the Great Cloud Nebula all weekend, it was a GREAT Nova East. My hat's off to the folks who put a lot of effort into putting together an absolutely great program. The presentations were excellent, and the rockets brought out the inner kid in me. Great job everyone!!!

– Craig Levine



Many thanks to the organizers and speakers of this Nova East weekend — my first since I joined RASC last December. I attended, often with my wife Annabelle, all the morning and evening events (impressive!) An early interest in amateur astronomy which I'm sorry to admit had waned over four decades was renewed, abruptly.

– Martial Thiebaux

We just returned from a very enjoyable, albeit, wet Nova East. I'd like to congratulate the organizing committee for putting on a very enjoyable weekend, despite the weather. Somehow they worked around the weather to deliver most (all?) of the original program, except those that depended on clear skies.

This was my 17th Nova East (yes, all of them!) and I look forward to many more.

– Dave Lane

P.S. and as always the rockets were awesome!

I thought that as President of the Halifax centre I should say a few things about this year's Nova East So...

Great improvising on the fly because of the weather! Despite the weather, talks and events and entertaining displays had a nice flow throughout the weekend.

Great subject range on the talks! Talks of interest to all levels were very obviously well thought out and planned.

Very nice door prizes! A excellent job by all who solicited donations to increase the number/value of prizes.

As for the whole Nova East crew (from M.A.G., N.C.A.C. and the R.A.S.C.), excellent job! If you keep up the great work Nova East will only get BIGGER and BETTER !!!

Also a big thanks to Mary Lou Whitehorne and all of the people that helped promote Nova East this year.

– Stephen Tancock



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 Dave Lane at 826-7956. *Dates for Members' Nights for the following few months are:*

Fri. Sept. 26th (*Rain date, Sat. Sept. 27th*)

Fri. Oct. 24th (*Rain date, Sat. Oct. 25th*)

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 Dave Lane at 826-7956.

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 Dave Lane for more information or to book the scope at 826-7956.

Meeting Announcements

Halifax Centre of the Royal Astronomical Society of Canada



Friday, September 19, 2003

NOTE ROOM CHANGE: ROOM 255, SOBEY BUILDING

Speaker: Dr. Jayanne English
Professor of Physics and Astronomy, University of Manitoba
Associate of the Ontario College of Art

Title: "Cosmos versus Canvas: Tensions between Art and Science in Astronomy Images"

Abstract: Bold colour images from telescopes act as extraordinary ambassadors for astronomers because they pique the public's curiosity. But are they snapshots documenting physical reality? Or are we looking at artistic spacescapes created by digitally manipulating astronomy images? This lecture provides a tour of how original black and white data from the Hubble Space Telescope, for example, are converted into the colour images gracing magazines.

Friday, October 19, 2003

Speaker: David L. Crawford
Emeritus Astronomer, NOAO, and Volunteer Executive Director,
International Dark Sky Association.

Title: Environmental Outdoor Lighting. Good night time lighting has many advantages. It is environmentally friendly, indeed necessary. It promotes good vision at night, hence safety and security, as well as creating a quality ambiance for the community. It saves energy, avoids light trespass, and helps preserve dark skies for everyone, astronomers and the public. It is friendly to the ecosystem, and even human health. We all win!

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 2003

<i>Honorary President</i>	Dr. Roy Bishop	
<i>President</i>	Steve Tancock	465-4092
<i>1st vice-president</i>	Pat Kelly	798-3329
<i>2nd vice-president</i>	Pat d'Entremont	497-1153
<i>Secretary</i>	Craig Levine	852-1245
<i>Treasurer</i>	Paul Evans	423-4746
<i>Nova Notes Editor</i>	Michael Gatto	453-5486
<i>National Representative</i>	Pat Kelly	798-3329
<i>Librarian</i>	Dr. Michael Falk	422-5173
<i>Observing Chairman</i>	Dave Lane	826-7956
<i>Councilor</i>	Clint Shannon	889-2426
<i>Councilor</i>	Dave Chapman	463-9103
<i>Councilor</i>	Andrea Misner	491-8668 ext: 4808

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. Sobeys 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

