

# NOVA NOTES

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THE NEWSLETTER OF THE HALIFAX CENTRE OF THE RASC  
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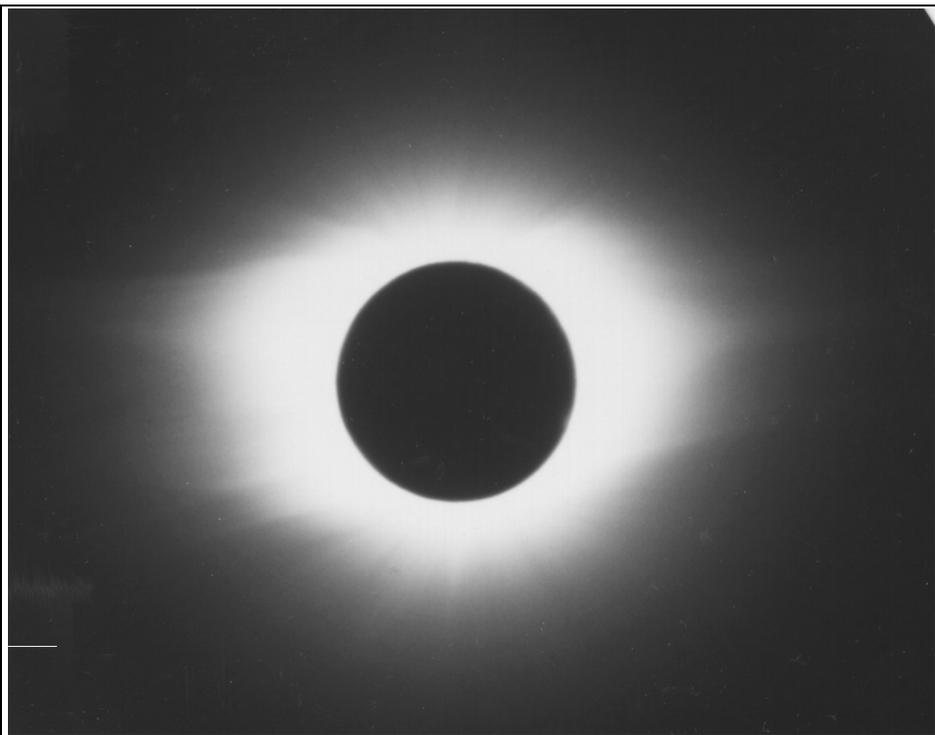
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## EDITOR'S REPORT: BY SHAWN MITCHELL

This issue might have arrived a little bit late. Sorry for any inconvenience. I have been upgrading my computer to make editing Nova Notes faster and easier, but I have encountered a few problems. When you start swapping hard drives and motherboards, programs tend not to want to work for some strange reason. Oh well, I needed something else to fix anyway.

The next issue of Nova Notes will be the June issue and I am in need of some articles. I hope to have that issue in the mail by June 8, so if you have an article or idea for an article submit it at or before the May meeting and it will likely be published in the June issue. In the event of a surprise surplus of submissions there's the August issue to fill as well.  $\Omega$



## ASTROPHOTO OF THE MONTH - TOTALITY FROM CURACAO

This month's astrophoto was submitted by our president Clint Shannon and was taken from Curacao, NA on February 26, 1998 during the total solar eclipse. Clint used Ektrachrome Elite II ISO 100 film in a Nikon F3 camera that was mounted for prime focus photography to his Genesis 4" Refractor. The exposure was 1/8 of a second.

## PRESIDENT'S CORNER: by CLINT SHANNON

The Halifax Centre was represented at the eclipse expedition to Curacao in February by Roy and Gertrude Bishop, Mary Lou Whitehorne and family, Dave Chapman and family, Michael Falk, Dave Lane, John Jarvo, Greg Palman (our member from Maine) and yours truly. Sherman Williams and his wife observed the eclipse from Antigua.

Mary Lou has waxed most eloquently in her article "Eclipse Impressions" printed in this issue, which I am sure also reflects the feelings of those of us who were privileged to be there.

After experiencing this total eclipse I can well understand how a person can become addicted to chasing them.



**NOVA NOTES**, the newsletter of the **Halifax Centre of the Royal Astronomical Society of Canada**, is published bi-monthly in February, April, June, August, October, and December. The opinions expressed herein are not necessarily those of the *Halifax Centre*. Material for the next issue should reach the editor by **May 15<sup>th</sup>, 1998**. Articles on any aspect of astronomy will be considered for publication. "Letters to the Editor" or to our resident expert: GAZER are also most welcome. Contact the editor at:

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It is my pleasure to announce that the recipient of the Burke-Gaffney Award for 1997 is Michael Boschat for his excellent article "Radio Detection of Meteorites" which appeared in the December '97 issue of *Nova Notes*. Congratulations Mike.

The Saskatchewan Summer Star Party which is hosted by the Saskatoon and Regina R.A.S.C. Centres will take place at the Cypress Hills Provincial Park, Saskatchewan July 23-26, 1998. We have been asked to emphasize the importance of pre-registration prior to June 30. We have a supply brochures which includes registration information. Anyone interested in attending can

obtain one from me. Last year this Star Party attracted 200 people.

On 9<sup>th</sup> of April I underwent a cataract operation on my right (observing) eye. The result is akin to receiving a gift of new vision from the Almighty. Needless to say, I am looking forward to the same operation on my left eye.

At the monthly meeting in May, Roy Bishop will be giving a talk on the Observer's Handbook and in June there will be three mini talks given by Mary Lou Whitehorne - "Stellar Story Boxes", Daryl Dewolfe "Ceravolo Maksutov-Newtonian Telescope" and John Jarvo - "Roll-Off Roof Backyard Observatory". Ω

**NATIONAL COUNCIL FEB 98  
REPRESENTATIVE REPORT:  
BY DAVID TURNER**

For those who have never attended a meeting of National Council, the venue for most such marathons in recent years has been the posh boardroom of Smith-Lyons in Toronto on the 62nd floor of the Bank of Nova Scotia Building at 55 King Street West. (It has a fantastic view, by the way.) Getting there can be half the fun, as evidenced by Ray Koenig's sad tale of how he wandered the labyrinthine elevator shafts at length before realising that they did not stop at the 62 d floor. Since standard procedure involves a security check and an armed escort to take you to the meeting room, the occasional newcomer gets hopelessly lost trying to find it. Added to the difficulty is the illusion that, as noted by eagle-eyed Peter Jedicke, the inside of the building looks remarkably like its exterior (I kid you not!). That may account for the fact that about a third of those in attendance at the meeting of February 14th arrived late.

This year's "Valentine's Day Massacre" began at 9:32 a.m., a half

hour later than the indicated start time of 9:00 a.m. The meetings used to begin at 10:00 a.m. until Bonnie accidentally inserted the earlier time when typing the agenda for the previous meeting. Since there were no complaints... well, you get the picture. Attendance at the meeting may have been a bit lower than usual, possibly a consequence of the triskadekaphobia associated with the previous day (Friday the 13th), or more likely because the agenda normally evokes all of the consumer appeal of the dust jacket for *Mrs. Miller's Greatest Hits* (remember vinyl?).

President Doug George initiated the proceedings with the usual round of introductions, a feature designed to tax the recall abilities of even the best of us (what about name tags?). What followed was a brief President's — travel itinerary — leading into the report of First Vice President Randy Attwood. Although Randy's summary included many of the motherhood issues that spark lively discussions (the handling of membership renewals by U of T Press, membership categories, and the "opting out" provision), his report proceeded in quite timely fashion. National Secretary Raymond Auclair's report was presented in absentia and produced the first actual vote of the meeting, I believe on the acceptance of new members and the awarding of Messier and Finest NGC certificates. (Attendees will invariably argue that the adoption of the previous minutes led to the actual first vote.) Bonnie then provided a summary of her hectic workload, in part as overworked Executive Secretary and in part as diplomat. Hmm, sounds a lot like the position of *Journal* editor.

Money matters were next on the agenda as Rajiv Gupta presented the Treasurer's report. Try as one may, it is not possible to discuss the

annual budget for the Society without touching on the subject of the *Observer's Handbook*, which continues to be the Society's major source of revenue (not membership fees as some would believe). That prompted a short discussion of Roy Bishop's longevity as *Handbook* editor and extensive wishes for his continued good health, not to mention a lasting interest in editing the Society's "milk cow." Matters then drifted into the report of the Finance Committee by Randy Attwood, which was highlighted by his sordid tale of the financial dealings with our 1997 provider Strategic Ink, a discussion of honoraria for invited speakers, and an impromptu history lesson from Fred Troyer on the national/centre split for membership fees. A possible change to travel policy was raised and debated, but without a feasible resolution. Our dealings with Strategic Ink led to a lengthy discussion by the RASC's legal counsel Michael Watson, most of which was deleted from the minutes on account of the unresolved nature of the dispute. The report of the Publications Committee was provided, and a possible solution to the problem of untying membership from *Journal* subscriptions to satisfy new regulations for reduced postal fees by Canada Post was deemed impractical. The hiring of a new provider for the *Journal*, Redgull Integrated Design (i.e. Brian Segal), was mentioned at that time.

Following lunch it was time for me to present the Journal Editor's report, most of which entailed describing in detail the manner in which material for the *Journal* is handled prior to publication. Particulars can be found in the meeting minutes, although that may not satisfy the curiosities of some of our more irate contributors. It can at least be pointed out, however, that normal practice does *not* consist of forcing all prospective authors to

recite the mantra "I love the new *Journal*, I really love the new *Journal*" repeatedly, prior to sending their contributions to our cryptography department for "editing." Nor do we apply non-verbal threats — such as allowing articles to be published in the "free-form" styles created for them by Strategic Ink — to those unwilling to follow such a procedure. In general we simply try to do our best. (Remember chaos theory?) A few unofficial copies of the February issue of the *Journal* were circulated during the report, which did not elicit the heated debate envisioned originally.

The most controversial feature of the report of *Beginner's Observing Guide* editor Leo Enright (who was not there either) was the question of whether a new style of binding to permit the title to appear on the *Guide's* spine would be economical or otherwise acceptable. Details at 11:00. Rajiv's *RASC Calendar* report was lengthier and included a somewhat confused motion and debate about retail/centre pricing and a proposed change in the calendar's dimensions. There were no reports from the Librarian or Astronomy Day Co-ordinator, so that portion of the agenda breezed by quite quickly. The report of the Membership and Promotion Committee was accompanied by the circulation of an example of material sent to new members, as well as by continued debate on an issue raised earlier about the possibility of harmonising the manner in which centre memberships are handled, i.e. encouragement of opting in for opted out centres. Bob May presented a brief report for the Property Committee, and the report of the Computer Use Committee was accepted as circulated.

As everyone's attention span was beginning to flag, it was time for the report of the Light Pollution Committee and the matter of its

budget. The placement of this item late in the agenda invariably results in less discussion than it deserves. Michael Watson managed nevertheless to bring a bit of levity to the otherwise serious nature of the matter with his reference to the committee's budget as "the light pollution tail wagging the budgetary dog." The matter will almost certainly be debated further at the next meeting, if for no other reason than the fact that no budget was approved. There were no reports from the Long Range Planning Committee or the New Observing Certificates Committee (thank goodness!), and the report on future General Assemblies, touched on the somewhat uncertain nature of where the GA would be held in the year 2000 (the invitee having left the Society in the meantime). The Awards Committee report was shuffled in the agenda as Council debated whether or not committee chair, Doug Hube, who eventually called in from the airport, should be in attendance to present his report. Given the lateness of the hour and the distance of the airport from downtown Toronto, Doug George decided to adopt the more merciful option of presenting the report as circulated. Three Service Awards and the Chant Medal were dutifully accepted as designated by the committee.

At that point in the proceedings Council members decided to forego having ice water splashed in their faces to revive them in lieu of adopting the report of the Nominating Committee, which had almost the same effect. With the exception of Rajiv Gupta in the list of otherwise "CN Tower Mafioso," the proposed candidates for national office, while not entirely unexpected, are bound to raise a few eyebrows because of their lack of regional distribution. Committee chair Peter Broughton was unable to field any questions that might have been

raised. He had left the meeting about an hour earlier for another engagement (nice timing Pete!). The meeting began to lose steam at that point. The remaining items dealt with an extension of a special projects grant to the Vancouver Centre and a possible request for matching funds for a Niagara Centre proposal, neither of which required immediate attention. The only discussion focused on the need for timing and reasonableness on the part of requesting Centres. Matters came to a merciful end around that time (~3:30ish), as members began discussing possible dinner arrangements. (I had food poisoning that evening!). Ω

**CURACAO ECLIPSE  
IMPRESSIONS  
BY MARY LOU WHITEHORNE**

**C**uracao. A great place for an eclipse. Especially for a February-frozen Canadian! Just imagine the warm southern skies, tropical breezes, the Southern Cross, Eta Carina, Omega Centauri, Alpha and Beta Centauri, Centaurus A... Sigh! Could it have been real or did I just dream it all up?

Did I really step out on the balcony and watch the Southern Cross sailing high above the palm trees? No, not a dream but a dream come true for me. I saved my pennies (many, many pennies!) and I went to Curacao for the eclipse. Thank you, Roy, for twisting my rubber arm!

My proof for having been there is the stack of photographs of the paradise where we stayed. It is a beach resort with sinfully high prices and decadent levels of service. Grounds like the Garden of Eden and a large private beach with its own protective barrier reef that harbored corals and a plenitude of exotic and beautiful fish. We snorkeled until the sun set and then we swam in the pool (one of three on the site). It's

heavenly to me to be able to lie on my back in the 85 degree pool water, surrounded by palm trees, and look up into the night sky and see the winter constellations glistening high overhead. What a blissful way to watch Orion! I would go back there in a minute! I did not want to come home.

Eclipse. What feeble things words are for such an overwhelming phenomenon! Yes, the Sun was completely covered. It got very dark, very fast. The eclipse was amazing. It was my first total eclipse of the Sun and it was worth every penny (about \$1000 per minute per person!) that it cost me to get there. The event was magnificent and there's so much to tell and words are so inadequate...

The site at the northern tip of the island was rugged, barren coral, windswept and dusty, baked in the tropical sun. Called Watamula, it looked to be forgotten by God. I'll never forget the harshness and cruelty of the jagged coral nor the deep pure indigo blue of the heaving, tossing Caribbean. Cactus, lizards and low-lying thorn trees were interspersed with deep and sudden sinkholes ready to trap the unwary walker.

The eclipse began on time and under perfectly clear skies. I watched it progress just as I have watched other partial and annular eclipses, but with a sense of anticipation and excitement that this would finally be the "real thing." Gradually and almost imperceptibly at first, the light faded and dimmed. Faster now, the shadows sharpened and deepened, and everything took on an eerie other-worldly look and feel. Temperatures dropped noticeably. Venus shone brightly. I saw the shadow approach from the southwest first as a faint brownish smudge low to the horizon, quickly gathering into a looming darkness across the sky. Suddenly the wind died and the darkness fell with a terrible swiftness that was palpable.

The Solar corona burst forth in brilliant, exquisite beauty and the Moon was a black, black, BLACK disc in the sky. It was not a spectacle to be seen but one to be felt and experienced. The apparition in the sky was totally three-dimensional and awesomely lovely. I cried. I couldn't help it. We saw the diamond ring, four bright planets, the sunset affect all around the horizon, prominence on the Sun, the deep, blood red of the chromosphere (which I have seen many many times with a hydrogen alpha filter but never with the devastating affect that a total eclipse carries). As totality ended I wished with all my being that the Moon would move backwards and obscure the Sun again, for just a few more seconds of magic.

I was awestruck. It was a once-in-a-lifetime amazing event. The Bleakness and barrenness of Watamula were transformed into a place of rapture unlike any other. It is easy to understand why "primitive" cultures reacted the way they did to eclipses but I had not previously understood just how powerful an eclipse can be.

I do now. Ω

**SOLAR ECLIPSE  
OBSERVATIONS  
BY DAVID M.F. CHAPMAN**

The afternoons leading up to eclipse day were depressingly cloudy, and the day dawned with puddles of water on the ground. Rain! This was not a good sign on this dusty, desert isle. The drive to the viewing site at the northern tip of the island was gloomy, everyone expecting the worst. Gradually, however, the clouds parted and we caught glimpses of blue sky. By the time we reached the prepared site, things were definitely looking up.

Our family (myself, Chris, Alison, and Chris' mother) had signed up with the RASC Toronto Centre eclipse group headed by Dr. Ralph Chou. Ralph is a veteran eclipse chaser and did his utmost to ensure everyone was looked after and was satisfied. He had taken several trips to Curacao and had thoroughly briefed the authorities on the eclipse. Michael and Dan Falk were also among the Toronto group.

At the eclipse site, Ralph Chou chose a remote area among the cacti, far from the sun shelters and refreshment areas provided. It did not take long for Roy Bishop and Dave Lane to find us. One visit to the shady corner claimed by the Bishops, the Whitehornes, and the Falks was enough to persuade me to move our family group to join them. It was hot, and it was important to moderate the exposure to the Sun and the wind. We made our apologies to Ralph, and moved.

If you have the chance to go on an eclipse trip, go with Roy Bishop: He was a continuous source of entertainment during the partial phase of the eclipse. He found a tent canopy with a constellation of tiny holes, each projecting a pinhole image of the partially-eclipsed Sun on the ground. He was very casual about setting up his own telescope, leaving it to the last few minutes. "I knew you would bring your Ranger," he said with a wink. Roy became focused and serious during totality, drawing our attention to this detail

and to that detail as the event unfolded. "There's Venus! Here comes the Moon's shadow! Bailey's Beads! Look at Mercury and Jupiter!" It was Roy who originally got me thinking about experiencing this eclipse, and I am sorry that his Montserrat expedition did not come to pass, but in the end I was glad to be with him and other RASC Halifax members to share this unique celestial event.

The solar eclipse experience is most difficult to convey in words. There is a tension and mounting excitement during the partial phase as the light slowly fades and the shadows sharpen (in one direction only). Then everything happens in rapid succession: the final descent into blackness, the Diamond Ring effect, Bailey's Beads, the emergence of the solar corona, the sudden appearance of bright planets nearby. I knew these things would happen, but I was still unprepared for them! There seems to be universal agreement that the passage of subjective, personal time accelerates during a total solar eclipse. It was over far too soon. I met one fellow who was going to observe for 90 seconds, then take pictures...he never took the pictures. Dave Lane was heard to remark, "Let's do it again!"

I had decided to take pictures only of the eclipse event, but not of the eclipse itself. Nevertheless, in the final minutes before totality, I realized that I had everything I needed to at least give it a try, so I squeezed off a half-dozen exposures at the end of my slide film at a variety of exposures that I can't even recall. A couple of them turned out OK, but not as good as Clint Shannon's or Dave Lane's. No matter. The photographs help evoke the memory, but the memory is what counts.

Eclipse-watching is bonding. We had all agreed not to present our eclipse observations at the March RASC Halifax Centre meeting,

leaving this until April so that everyone's materials would be available. However, at the end of the March meeting, after most people had left, I found myself standing in a group of stragglers. I looked around, and realized that the group was 100% eclipse watchers, not the entire Curacao gang, but all those who had come that night. Somehow, we couldn't bring ourselves to leave. Then one of us mentioned...

August '99... Ω

JANUARY 1998  
MEETING REPORT  
BY PAT KELLY

Our new president, Clint Shannon, started the new era in fine form by starting the meeting several minutes **before** eight o'clock. Our new observing chair, Michael Boschat, gave his first "What's Up" report on the coming and goings in the sky for the coming month. He reviewed the planets as well as several upcoming conjunctions and occultations'. Comet Temple-Tuttle was also featured as its passage may produce a meteor storm in the near future. He also mentioned several minor meteor showers that would be visible in the coming weeks.

Roy noted that on the previous evening he had observed Venus with the unaided, even though it was at inferior conjunction, because Venus was six degrees north of the Sun.

Mary Lou gave a brief report on the success of the Starlab, the portable planetarium operated by the Atlantic Space Sciences Foundation. It is fully booked to the end of this school year and ninety teachers in Nova Scotia have been trained, with two more fully booked training sessions still to go. The total attendance last year was as follows:

Halifax Planetarium:	5,000
Tailor-made Universe:	1,800
Starlab:	10,700
TOTAL:	17,500

She also showed two new home-made projectors for use in the Starlab; a meridian projector and a Milky Way projector.

Next up was a presentation by Dave “Honey, I Shrunk the Scope” Lane. He had taken his old 13-inch Dobsonian scope and totally rebuilt it so that it meets the airline requirements for checked luggage. He plans to take it to Curacao for the solar eclipse, as he will be there for a week and plans to get some deep-sky observing in while he is that far south. He has enlisted the aid of several other centre members who are also making the trip, so that all of the pieces make it there (and back). The rocker box now folds flat. Dave assembled the scope in less than five minutes and did it so quickly that there were suggestions about adding a scope run at this year’s tattoo as a follow-up to the gun run! The main speaker for the evening was Dr. Rachid Ouyed who was going to be talking on the subject of whether Jupiter was a planet or a star. He is a Fellow of the Canadian Institute for Theoretical Astrophysics (CITA) and will be at Saint Mary’s for another two years. He is originally from Algeria, was educated in France and came to Canada to get his Master’s and Ph.D. He is now a Canadian citizen (proud to be). He showed that objects such as Jupiter are hard to classify as they appear to be midway between the Sun and the Earth in many properties. This results in the confusion over whether it should be considered as a large planet or a small, but failed, star. He gave a brief history of the formation of the solar system, paying special attention to the formation of Jupiter. The core that Jupiter formed by the accretion of planetesimals was quite large and

as a result its gravity was capable of accumulating a large quantity of gas from the surrounding nebula. It had been accepted that because Jupiter accumulated through the same process as the Earth, it had to be considered a planet, although it was distinguished from the terrestrial planets by being called a giant planet.

Until thirty-five years ago, planets were thought to get all of their heat from the Sun. At that time, infrared studies of Jupiter showed that it was giving off considerably more heat than could be accounted for by solar heating. Nuclear processes were not thought to be possible in an object with Jupiter’s mass. There is a simple formula that can be used to determine the maximum core temperature of a large ball of hydrogen gas.

Where temperature is in degrees Kelvin (K).

$$T \equiv \left[ \frac{M_{Object}}{M_{Jupiter}} \right] \times 10^5$$

This formula produces a temperature at the core of objects that are greater than fifty Jupiter masses that is sufficiently high for fusion to occur between hydrogen atoms. In the Sun, this is the familiar proton-proton chain that converts hydrogen into helium. For objects between ten and fifty Jupiter masses, hydrogen can fuse with deuterium (hydrogen that contains a neutron in its nucleus). For objects with less than five Jupiter masses, it was thought that no fusion was possible.

From a theoretical point of view, as fusion appeared to be out, there was only one possible explanation. It had to be caused by a convection process bringing up heat from Jupiter’s core. This heat would have been created when Jupiter was originally formed. A process such as this should have totally mixed Jupiter’s very thick atmosphere. The

results from the *Galileo* probe seem to suggest that this is not the case.

Dr. Ouyed and his colleagues have come up with a new model of Jupiter which allows for a different source of energy. In their model, during Jupiter’s formation, incoming planetesimals were totally vaporized as they came down through Jupiter’s massive atmosphere. As a result, their material was diffused throughout Jupiter’s atmosphere. With no convection, the elements separated themselves by mass as gravity sorted them into different layers. As a result, above Jupiter’s iron/silicate core is a layer of helium. Above it is a layer of deuterium and above this is a layer of metallic hydrogen which extends most of the way to the surface of the planet. It is only at the top layer that convection occurs.

In their scenario, with the deuterium concentrated in a single layer, deuterium-deuterium fusion can occur. This energy source had never been considered before, because with convection, the deuterium would be spread so thinly that the chances of two deuterium atoms colliding was too low. One of the side effects of this process is that energetic neutrons, which would be released by the reactions, would pass into the layer of hydrogen and bind with it, creating new deuterium.

Does this energy source provide enough energy to account for Jupiter’s excess energy production? If you work through the calculations, you find that the answer appears to be “Yes”. Not only that, but Jupiter’s energy source should be enough to sustain it for about twice the planet’s current age. That would mean that Jupiter will outlast the Sun by about five billion years! This model also appears to explain the excess energy being produced by the other Jovian planets.

It was a very interesting presentation and it was a real treat to be in on some cutting edge science. If

this theory is accepted (two papers are in press now) it will be a real feather in the cap for Dr. Ouyed and the other researchers in the team.  $\Omega$

**FEBRUARY 1998**  
**MEETING REPORT**  
BY DAVID CHAPMAN

**W**ith about 35 persons in attendance (according to Ralph "Cookie" Fraser), new President Clint "Eagle Eye" Shannon approached the podium and quelled the unruly mob. He briskly dealt with the hum-drum announcements, lingering only for a moment to drive home the fantastic deal which is the annual RASC membership, considering all the neat stuff you get. (Once a Ferengi, always a Ferengi!) Dave "Gold Dust" Lane, the new Treasurer says: For those of you who HAVEN'T renewed, soon you will be cut off from the National mailing list (although we tend to be a little more forgiving at the Centre level). He reports we have a current Halifax centre membership of 155, which could be compared to the all-time high of 171 we had in the post-Halley days. (However, if some of you defaulters would renew...) Speaking of defaulters, Greg "Bookie" Spearns, the centre Librarian, requests folks to turn in books you have had for more than one or two months. Observing Commissar Mike Boschat presented the "What's Up" section of the meeting, with the full cooperation of the overhead projector, whose bulb did NOT immediately burn out when Mike turned it on. Saturn is the most prominent planet in the evening sky; Venus, the morning sky. The February 26 solar eclipse will be partial in Halifax, for those left behind; the other consolation prize is a partial penumbral lunar eclipse a fortnight later on March 12. Mike also encourages people to get out and see the Zodiacal light, which is best

seen in the evening western sky at the end of twilight this time of year.

The main speaker was Steve "Poisson" Campana, a scientist with the Department of Fisheries and Oceans at the Bedford Institute of Oceanography, who spoke on "Astrophotography from a Garage Roof-Top Observatory". Steve was a centre member about 10 years ago and caught the astrophotography bug. Since that time he has experimented with several techniques, including electronic post-processing of astro-images. When the opportunity arose for his family to build their dream home in Head of St. Margaret's Bay, Steve managed to deflect the project into building an astronomical observatory with living quarters. (Just kidding! Actually, his wife allowed him a budget of \$2000 to make the mods necessary to include an observatory.) Steve's project was written up in Sky&Telescope magazine last year, which gave your scribe and ex-President the idea of inviting him to speak to the centre. The focal point of the observatory is a 22-foot steel 8" pipe that is anchored in the garage floor and penetrates the ceiling into the garage attic, which has been outfitted with a floor and some weather-proof flip top roof doors. Steve keeps his 8" diameter Schmidt-Cassegrain telescope on the pier permanently, and says he can enter his observatory and be observing in 2 minutes. His astrophotographic gear is equipped with an electronic auto-guider, allowing to set up an exposure and wander off into the house for up to 2 hours while the photons are being collected by the film. Steve is more interested in the images of astronomy than the scientific aspects, but his interest in scientific image processing that he uses at work has evidently spilled over into his hobby. The resulting images are very impressive, and professional-looking, free of sky-glow and vignetting. Steve's presentation was informative

and entertaining, well-received by all present. It would be great if he came back to the fold!

The evening came to an early close, with many of us heading off to the solar eclipse early the next day. There wasn't even the usual group going to Hogie's very month!  $\Omega$

**WHAT'S UP**

BY MICHAEL BOSCHAT, OBSERVING CHAIR

**May**

**Fri. 22-** Venus 1.7 degrees North of 24 day old Moon at 2200 UT ( 8pm). Morning event.

**Fri. 29-** Venus 0.3 degrees North of Saturn 0200 UT(11pm) Morning event.

**June**

**Wed. 17** - Jupiter 0.8 degrees North of Moon 1100 UT ( 8am ).

**Sun. 21** - Venus 3 degrees North of Moon 1400 UT ( 11am ). Spring Solstice at 1403 UT ( 11:03am )  
**SUMMER!!**

**Mon. 22** - Aldebaran ( Alpha Tauri ) occulted by Moon. Disappears at 1244 UT ( 9:44am ). Reappears at 1355 UT (10:55am).

The planets dominate the morning sky. By August Jupiter and Saturn start a slow return to evening skies. $\Omega$

## NOTICE OF MEETINGS AND EVENTS

### REGULAR MEETINGS

Date: **Regular Meeting — Friday, May 15 at 8pm;**  
7pm for the council meeting.

Place: Lower Theatre, Nova Scotia Museum of  
Natural History, Summer Street, Halifax.  
Access is from the parking lot.

Topic: **Main Speaker:** Dr. Roy Bishop.  
Topic: **"Observer's Handbook"**

Date: **Regular Meeting — Friday, June 19 at  
8pm;** 7pm for the council meeting.

Place: Lower Theatre, Nova Scotia Museum of  
Natural History, Summer Street, Halifax.  
Access is from the parking lot.

Topic: **Main Speakers:**  
Mary Lou Whitehorne.  
Topic: **"Stellar Story Boxes"**

Daryl Dewolfe  
Topic: **"Ceravolo Maksutov-Newtonian  
Telescope"**

John Jarvo  
Topic: **"Roll-off Roof Backyard  
Observatory"**

Date: **Regular Meeting — Friday, September 18  
at 8pm;** 7pm for the council meeting.

Topic: **Main Speaker:**  
Dr. David Turner  
Topic: **"A Lifetime of Star Clusters"**

### BECOME A ST. CROIX OBSERVATORY 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 centre's new Observatory, which is nearing completion. To become a key holder, contact Observatory Committee Chair, Shawn Mitchell.

### JUST WHERE IS THE ST. CROIX OBSERVATORY?

The Centre's Observatory is located in the community of St. Croix, Nova Scotia. To get there from Halifax (Bayers Road Shopping Centre), follow these simple instructions.

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 1.5km until you cross the St. Croix River Bridge. You will see a power dam on your left.*
5. *Drive about 0.2km past the bridge and take the first left (Salmon Hole Dam Road).*
6. *Drive about 1km until the pavement ends.*
7. *Drive another 1km on the dirt road to the site.*
8. *You will recognize the site by the two small white buildings on the left.*

### ASTRO ADS

Telescope for Sale:

Saturn Telescope with all attachments.

The scope is a 2.4" f/15 refractor, equatorial mount, "attachments included", paid \$350, 4 months ago.

Asking \$175.

Call Bob, 453-6406 (day), or 827-2915 (home).

### OVER DUE LIBRARY BOOKS

If you have had a Centre book out on loan for more than two months please return it to the library at the next Centre meeting, or if you need it longer for a project contact the Librarian.

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