

NOVA NOTES

VOLUME 28 — NUMBER 1 — FEBRUARY 1997

THE NEWSLETTER OF THE HALIFAX CENTRE OF THE RASC
PO BOX 31011, HALIFAX, NS, CANADA B3K 5T9

Website: <http://apwww.stmarys.ca/rasc> E-mail: rasc@ap.stmarys.ca



INSIDE THIS ISSUE...

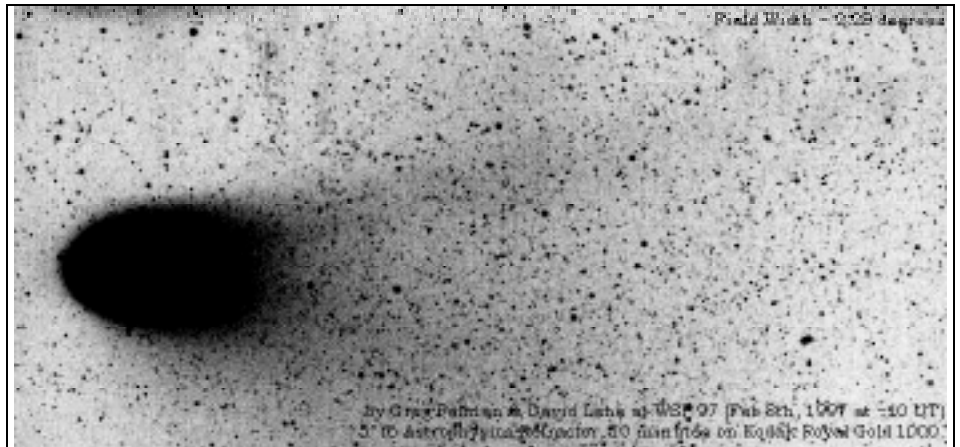
President's Report	1
Letter to the Editor	2
The Annual Meeting Minutes	2
2 nd Vice President's Report for 1996	3
Meeting Report - February 97	4
Notes from the Chair	6
Hale-Bopp Observing Reports	6
Hale-Bopp Comet and Star Party	7
Notice of Meetings and Other Stuff	8

PRESIDENT'S REPORT:

BY DAVID CHAPMAN

I must confess that the dead of winter is not my favourite observing season. It takes something pretty special to get me outside with my telescope this time of year. Fortunately, the occasional glimpses I get of Comet Hale-Bopp in the morning (when I step out on the front porch to fetch the Daily News) have maintained my interest in celestial affairs. If it were not for Comet Hyakutake's brilliant appearance last March, Comet Hale-Bopp would already be the brightest comet I have seen, and promises to get brighter. I have only seen it in binoculars, but I understand that even in modest-sized telescopes a great wealth of detail can be observed in and around the coma. Soon it will be available for viewing in the evening sky, and I will be able to point it out to my friends and family, none of whom seem interested enough to rouse themselves at 5 A.M. to see a fuzzy cotton ball in the sky.

The Astronomy and Physics Department of Saint Mary's University and the Halifax Centre of the RASC will be sponsoring two evenings of comet talks and public observing in connection with the close approach of Comet Hale-Bopp. These will be on



ASTROPHOTO OF THE MONTH

GREG PALMAN TOOK THIS PHOTO OF COMET HALE-BOPP ON THE MORNING OF FEBRUARY 8TH AT THE WINTER STAR PARTY (WSP) IN THE FLORIDA KEYS. IT WAS A 10 MINUTE EXPOSURE ON KODAK ROYAL GOLD 1000 FILM USING AN ASTRO-PHYSICS 5" F/6 REFRACTOR. THERE WERE FOUR MEMBERS ATTENDING WSP THIS YEAR. A FULL REPORT WILL APPEAR IN THE NEXT ISSUE.

two successive Tuesday evenings, March 25 and April 1 at 7pm in the Theatre Auditorium of SMU's McNally Building (see notice on the back page of this issue). We hope that RASC members will support these activities. I dare say that our Centre will be making good use of the St. Croix Observatory in upcoming weeks: if you are interested in whether observers will be present, contact the Observing Chairman, Shawn Mitchell (865-7026).

This year, we are not participating formally in Astronomy Day (as is our custom). Rather, we are concentrating on events such as the appearance of Comet Hale-Bopp. However, I encourage all members to promote astronomy and the RASC at this time, perhaps through volunteering to speak to school groups, scouts and guides, etc. A comet information sheet will soon be available from SMU (*Editor: It is inserted into this copy of Nova Notes*), and I am sure that Dave Lane

IMPORTANT NOTICE TO MEMBERS

There have been significant changes in the way memberships were handled in the recent renewal period. The National Office of the RASC has contracted the University of Toronto Press (UTP) to look after our membership renewals and certain other services.

For a variety of reasons, the renewal period has not gone smoothly with several members **not receiving their handbook** (or receiving two!) and some renewals not appearing on the membership lists and many errors being introduced into the mailing list.

If you've experienced any problems, **please let us know about it** and we will see that all is made well. **Contact Ian Anderson (Treasurer) or David Lane.**



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 **April 18th, 1997**. 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:

David Lane

4-26 Randall Avenue
Halifax, Nova Scotia
B3M 1E2

E-mail: dlane@ap.stmarys.ca
Phone: (902) 443-5989 (home)
(902) 420-5633 (work)

would be able to provide copies to those talking to groups.

I am pleased to announce that the RASC National Council has approved the Halifax Centre's Nomination of the "**Ken Chilton Prize**" to **Heather Cameron**. The Ken Chilton Prize is awarded for a significant piece of astronomical work carried out or published in the past year. Heather is a high school student in the Annapolis Valley and has won countless science fair prizes for her work in recent years. Many of you will remember the wonderful talk she gave to the Centre a couple of years ago on her "Solar Observation Station." She recently published an article on this work in a US journal called IAPPP Communications. At right, you will also find a letter from Heather's father announcing that she has won another

major award — this time from the Astronomical League.

The end of March is the deadline to apply for the Simon Newcomb Award. This is an essay writing competition open to RASC members who are not professional astronomers. There is now a cash award as well as a book prize. If anyone wants more information on this National award, please call me (463-9103).

A brief word on upcoming meetings and events: Meghan Gray, an impressive young university student, will address us on March 21 on the topic of Seyfert galaxies. On April 18, RASC National President Doug George will be speaking to us on CCD Astronomy (that is, astronomy using the light-sensitive sensors called charge-coupled devices). On May 16, we will be showing the Cyanogen Productions (Peter Ceravolo et al.) video made from still photos of Comet Hyakutake, plus there will be a chance for members to share observations and photos of Comet Hale-Bopp. On June 20, we have asked Pat Kelly and Roy Bishop to reprise their celebrated overview of cosmology that they recently presented to the Minas Astronomy Group.

RASC National Council has approved the Halifax Centre's Nomination of the "Ken Chilton Prize" to Heather Cameron.

That completes our meeting season, after which we take a summer break that ends with Nova East on Labour Day weekend. However, there will be a few events during the summer. On Saturday, June 21, the day following our June meeting, we plan to have a centre picnic at the St. Croix Observatory site, in lieu of the Annual Banquet. Plans are at a very early stage now, but we'll keep you posted.

So everyone get their pencils out and mark those dates on your calendar. If you don't have a calendar, then Clint Shannon will be happy to sell you an official RASC 1997 Observer's Calendar at a good price! Ω

LETTER TO THE EDITOR

(Received by Blair MacDonald, 1st VP on March 5, 1997)

Larry Bogan and I thought that the Halifax Centre of the RASC might want to know about one of its members that it does not see often enough. Larry thought that you'd be an appropriate person to contact and I have your e-mail address.

Heather received a phone call last night from Charles Allen in Louisville, Kentucky, to tell her that the **Astronomical League** this year has decided to give its very prestigious "**Young Astronomer Award**" to her. The award has many prizes, including a 10" LX200 Meade telescope, lifetime access to an observatory in Texas, and an all-expenses paid trip to their week-long convention in Colorado in July where she is to give an evening talk on her work. We don't have much in the way of details at this time.

She would not have done so well without the help of people like yourself. Thanks.

Barry Cameron (Heather's Father)

MINUTES OF THE CENTRE'S ANNUAL MEETING

PREPARED BY TOM HARP, SECRETARY

(This meeting was held during the centre meeting of November 15, 1996.)

The meeting was called to order at 20h25 at the Nova Scotia Museum of Natural History, Halifax.

1) Approval of the Minutes of Last Year's Annual Meeting

Approval of last year's minutes as published in the December 1995 issue of Nova Notes was moved by David Lane/Mary Lou Whitehorne. The motion was carried.

2) Reports from Members of the Executive

a) *President (David Chapman)*

The President's written report will be published in a future issue of Nova

Notes. An oral report was presented to the meeting in which the President outlined the highlights of his first term in office. These highlights included substantial progress on the Centre's new observing site at St. Croix, the success of the 10th Nova East star party and the public participation in the Sidewalk Astronomy program. Also highlighted were the awards of the Chant Medal to David Lane and the Burke-Gaffney Award to Diane Brooks.

*b) Second Vice-President
(Shawn Mitchell)*

The Second Vice-President's written report will be published in a future issue of Nova Notes. In an oral summary, merchandise sales were equivalent to last year. Calendar sales were up from 55 to 85 due to the inclusion of colour photographs.

c) Treasurer (Ian Anderson)

The Centre's preliminary financial report for the fiscal year ending September 30, 1996 was presented.

Total revenue was \$ 11,902.76
Total expenditures were \$ 14,117.78
Deficit was \$ 2,215.02

Expenditures for the Observatory totaled \$ 9,628.14. The decision to expense the Observatory buildings was the subject of a discussion; however, that decision stands at this time.

Assets amounted to \$ 15,835.36
Liabilities were \$ 1,081.85
Capital Equity was \$ 14,753.51

The Treasurer indicated that this report could not be considered final and ready for audit at this time.

d) Nova Notes Editor (David Lane)
Nova Notes was published six times in the past year. Each issue had an average of eight pages.

*e) National Council Representative
(Patrick Kelly)*
The past year has seen major changes at National Office. A brief overview of the administrative and publications

changes was presented to the meeting.

f) Librarian (Clint Shannon)

In the past year, a total of \$ 90 was spent on books and magazine subscriptions. Delinquency on loans from the Library is beginning to be a problem. The normal loan period is one month with an additional month being granted in most cases. Several recent circumstances indicate that a delinquency report will be required in an attempt to "bring offenders to heel".

Motion to accept the Executive reports by W. Zukauskas/D. Turner. The motion was carried.

3) Election of Officers

At the October meeting of the Centre, a general call for nominations for the Centre Executive Council was made. There being no reply to this call, the candidates recommended by the Nominating Committee were declared elected as follows:

President	David Chapman
First Vice-President	Blair MacDonald
2nd Vice-President	Clint Shannon
Secretary	Mary Lou Whitehorse
Treasurer	Ian Anderson
Observing Chairman	Shawn Mitchell
Nova Notes Editor	David Lane
National Council Representative	Pat Kelly
Librarian	Greg Spearns
Councillors	David Turner, Robin Clayton, Paul Gray
Cookie Chairman	Ralph Fraser

4) Election of Auditor

A motion to elect Larry Bogan as the Centre's Auditor for 1997 will be made at a future Executive Council meeting.

5) Regional Science Fair Award Fund

Several years ago a fund was set up for an award for astronomy related projects at the Regional Science Fair. Projects warranting such an award are infrequent and could be funded as required from the general account.

As published in October Nova Notes, it was moved that the Regional Science Fair Award Fund be eliminated and its funds be transferred to the general account. (D. Lane/S. Mitchell) The motion was carried.

6) Other Business

There was no other business.

The meeting was adjourned at 21h10 on a motion by D. Tindall.

Thomas A. Harp, Secretary Ω

**2ND VICE-PRESIDENT'S
REPORT FOR 1996**
BY SHAWN MITCHELL

The past year has seen many changes of historical importance to the Halifax Centre. Probably the most significant event in 1996 is the completion of the first phase of the Centre's observatory, a weather-tight warm room and roll-off observatory. The observatory would never have gotten this far as fast as it has without the donations of time and skills as well as monetary donations from members of the Centre. I'd like to thank all the members who have participated in the project to date, and to pat yourselves on the back for a job well done. Through all your efforts the Centre is creating an observatory complex that we can all take pride in.

This year only a few projects are planned at the observatory, we need to paint the inside of the roll off observatory and wire and finish the inside of the warm room. Some landscaping also needs to be completed, such as having a few loads of gravel spread on the driveway (and possibly make it larger), and a load of pea gravel spread on the outside observing area. A gate will be fabricated and installed at the driveway entrance by early summer. One further job that needs to be done this summer requires the assistance of Roy "The Beaver" Bishop (I would imagine that everyone realizes what this job entails — no pun intended) — a few more

trees need to be hacked out in the west and northeast sides of the site.

The surprise appearance of Comet Hyakutaki in the spring was a significant event that provided us with a preamble to comet Hale-Bopp this year. On a more important note Hyakutaki provided the Centre with a surprising source of revenue for the observatory project. Photographs of Comet Hyakutaki donated by Darren Talbot and David Lane were sold to members of the Centre and the public raised about \$750 for the observatory project. Hopefully this year photographs of Hale-Bopp will be just as profitable.

Photographs of Comet Hyakutaki ... were sold to members of the Centre and the public raised about \$750 for the observatory project.

The main job of the 2nd VP is the handling of all the Centre's merchandising. Last year saw a huge increase in the sales of RASC Calendars, this is no doubt the result of the addition of colour photographs to the calendar. Handbook sales remained at the same level as past years, however we had virtually no sales of Beginner's Observing Guides (BOGs). The lack of sales was caused by the lack of BOGs, the current edition had been sold out and the new edition had not been published in time to be distributed with the fall orders. Below is a table listing 95 and 96 sales. We also sold 24 "Nova East 96" T-shirts at Nova East this past year.

	1995	1996
Observer's Handbook	76	84
Beginner's Observing Guide	47	9
RASC Calendar	52	81

Sales of Handbooks have been relatively stable for the past couple of years, probably indicating that we have saturated the local market. A mail order flyer listing RASC Publications for sale was created by

David Lane in January and was sent with his ECU upgrade notices to his United States customers. This may open a new market for the Centre's merchandising efforts next year and hopefully our sales will be up for 1997. Ω

**MEETING REPORT:
FEBRUARY 97
BY PAT KELLY**

The February executive meeting started later than usual this month as some of the executive had gone out to dinner with our guest speaker. As a result, the agenda was a bit shorter than usual, but contained the inevitable item "Meeting Reporter for Tonight". In the absence of David Turner (and also possibly due to a decreasing number of little gray cells on my part!) I decided to volunteer for the position for this evening. David Turner showed up shortly thereafter... I will have to remember that tactic for the next meeting!

In addition to our guest speaker we had another special visitor at the meeting. Brenda Polido (*Editor: Neither Pat or I are sure of the spelling of her last name*) is visiting Halifax from Monterey, Mexico. Those who subscribe to the centre's e-mail listserver may recall that she had been in fax contact with Nat Cohen shortly before his untimely death. She is a university student and is very interested in astronomy. She brought greetings from the astronomy club that she belongs to in Mexico and as is visiting Halifax for awhile. We hope that she will make it to other meetings and that she will be able to pursue her astronomical interest here — weather permitting!

Clint Shannon announced that as we were heading into March, the RASC Observing Calendars would be priced to sell and that interested members should get theirs now to beat the BST.

Another astronomical item which has just come out is a video by Doug George, Peter Ceravolo and other members of the Ottawa Centre. They produced a 45 minute video of Comet Hyakutake detailing their efforts to

make an actual motion picture of its passage. This was accomplished by Peter Cerevolo who went to Arizona and took over 900 photographs, each of four minutes exposure. These were then image processed and used to produce a movie, about one minute long, that shows the comet sailing against the background stars, its tail in continuous motion. I saw this at the last General Assembly, and I can assure you that it is an incredible piece of work. The video costs about \$40 (with tax) and will be shown at the May meeting.

Speaking of upcoming events, Saint Mary's University and the Centre will be hosting two special events for the public relating to Comet Hale-Bopp. Our illustrious editor should have the details elsewhere in this issue. The speaker at the April meeting will be Doug George (see above) who is also the national president. The June meeting will feature Roy Bishop and yours truly, the topic will be cosmology. This talk was given last year at a meeting of the Minas Astronomy Group and both of the presenters now cannot recall exactly what they did, but hopefully we will get our memories refreshed in time!

In lieu of an annual banquet this year, it was decided, based on Roy's suggestion, that we have a pot luck barbeque at the new observatory. It will be held on Saturday, June 21st, which is not only the day after the June meeting (so that everyone at the meeting cannot say that they were not reminded) but also the June summer solstice. We hope to have a great turnout, especially for those who have not been out yet to see it.

Shawn Mitchell was up with the usual "What's Up" talk. The three items that he looked at were all events coming up in March: the opposition of Mars, the partial lunar eclipse and Comet Hale-Bopp. There were plenty of finder charts free for the taking and we also saw a video made with Dave Lane's Earth Centered Universe program showing the path that the comet would take in both the morning and evening skies. We even got to see a slide that Dave and Greg Palman

took while they were in Florida for the Winter Star Party.

On to the main event! The main speaker was Doug Johnstone, who has been a post-doctoral fellow at the Canadian Institute for Theoretical Astrophysics (CITA) since 1995. He graduated from the University of Toronto in 1989 and received his PhD from Berkeley. The topic of his talk was "The Destruction of Proto-planetary Disks in the Orion Trapezium". Dr. Johnstone noted that he was a theoretical astronomer, not an observational one and that while he could find the Big Dipper, Orion and Cassiopeia, his observational skills did not go much further.

His talk was illustrated with a lot of excellent images, including many of the Trapezium region which were taken by the Hubble Space Telescope. (Some of these images can be viewed at his web site: www.cita.utoronto.ca/~johnston/orion.html)

He began by covering the basics of our understanding of how disks form around stars. Disks are produced around stars as they form from a collapsing region inside giant molecular clouds. These clouds are typically about 100 parsecs (or 300 light years) in diameter, have a mass of about 1000 solar masses and a temperature of about 10K (-263°C, or in Dr. Johnstone's words, colder than an Albertan winter, but not by much!) These structures were only found about twenty-five years ago, as they can only be seen with radio or infrared telescopes.

An area of research that has received a lot of interest lately is the process that halts the collapse of very large stars. One theory, which appears to have observational evidence to back it up, is that the material falling in produces an outflow of material via winds and jets. Some Hubble images showed large stars in situations just like those predicted.

Another area, related to this topic, is the process by which planets are formed. Dr. Johnstone went over one possible planet recipe, which starts with a proto-planetary disk containing gas and dust, leading to the buildup of giant "dust bunnies" and ending with

the evaporation of the remaining nebula to reveal a planetary system. One aspect of this process which is not fully understood, is how planets of different masses would typically be distributed in a solar system. He showed a slide which showed the configuration of a number of planetary systems which have recently been discovered and in almost all of the cases, the large Jupiter-class planets have been very close to the star. At present astronomers do not know why this would happen, but one possible explanation is that the main technique being used to discover solar systems makes short-term effects (which would be caused by massive planets in close to the star and much easier to detect) so this anomaly may simply be a selection effect.

Dr. Johnstone then showed some remarkable images of the Orion Nebula that had been taken by the Hubble Space Telescope. One aspect of the nebula that is not commonly known is that the stellar density at its core is the same as that at the core of a globular cluster! Some of the images showed a feature known as a proto-ionizing globule (or PIG) which led to a rather amusing title page on the subject of "PIGS in Space".

Close-up views of the area around the Trapezium shows that many of the new fainter stars there have "tails" which are pointing away from the really bright central stars of the Trapezium. These tails appear to be formed from dust being pushed back out of the fainter star system. There are also arcs of gas visible between these stars and the central ones. These bow shocks are formed where the stellar wind from the smaller stars meets the wind from the bright ones. (It was noted that even Dave Lane would have trouble getting CCD images like these!)

One particularly spectacular image showed two star systems in the early stages of formation. Both systems were near the outer edge of the region so that their proto-planetary disks were silhouetted against the soft glow of the nebula. One was a view of a star which was surrounded by a dark donut — a face-on view of a forming solar system. In the same image was a

RASC GENERAL ASSEMBLY TO BE HELD IN KINGSTON, ONTARIO

The annual general assembly (GA) will be held this year on the Canada Day weekend and will feature a great slate of events and first class speakers including: Dr. Eugene Shoemaker, Dr. David Levy, Terrence Dickinson, Dr. Martin Duncan, and Dr. Judith Irwin.

Registration packages can be obtained locally by calling Dave Lane (443-5989).

side view, with the central star hidden behind a dark band of material and with material being blown out of it in both polar directions. This is caused by the intense energy from the nearby Trapezium stars, blowing gas out of one side of the disk and heating and raising the dust out of the near side. So far, over 150 of these "evaporating disks" have been found in M42.

From theory, one can determine the mass loss as a fraction of the mass of the disk. Observations from the Hubble can be used to determine the current rate of mass loss in these systems. One can then easily calculate the lifetime of a proto-planetary disk under such circumstances and it turns out to be about one million years, which is only 10% of the estimated time required for a planetary system to form. In effect, stars that are formed near a massive star are stripped of the material that they need in order to have a planetary system. One interesting item that does come out of this sort of calculation is that it is very hard to get rid of the disk that is very close to the star, so that if a large planet were to form, one would expect to find it in close to the star.

It would seem that the Sun formed near the outer regions of its nebula, and a nice safe distance from any O-type stars, for which we can all be thankful! Ω

NOTES FROM THE CHAIR:

BY SHAWN MITCHELL,
OBSERVING CHAIR

With Hale-Bopp visible in our morning sky and now there are reports from people seeing it in the evening twilight, its time for members of the Halifax Centre to plan comet observing sessions. If you want to observe with other members of the Centre or show the public the glories of the night sky the Centre is planning a variety of activities that might appeal to you.

The Centre will be co-hosting, with the Department of Astronomy and Physics at Saint Mary's University, two public comet information and observing sessions. The first information session will be held Tuesday, March 25 in the Theatre Auditorium of the McNally Building. This is the gray stone building on Robie Street with the "U" shaped driveway. The second session will be held on Tuesday, April 1 at the same location. The information sessions, which begin at 7p.m., are intended to educate the public about Comet Hale-Bopp and comets in general and will consist of four short talks by RASC members and SMU staff. These will also include the popular demonstration of making a comet

using dry-ice and an assortment of other ingredients! Weather permitting, observing will begin around 8p.m. on the lawn in front of the building.

Members are invited to the Centre's Observatory in St. Croix to see Hale-Bopp in its true glory from a dark site. Any clear night between March 26 and April 10 members will likely be at St. Croix observing the comet. If you plan to attend an observing session at St. Croix call the observing chairman (that's me) at 865-7026 to find out who's going out and what time to meet at St. Croix. For anyone who has not been to the observatory yet, this is an excellent time to come out and see what the Centre has accomplished in the past year and see one of the rewards of having an observatory, a bright comet hanging in the west over the site.

To find Hale-Bopp in the morning sky during March use a pair of binoculars and look east-northeast from 5:00 am until 6:00 am. Use the chart above to locate where the comet is every morning at 5:30am.

To find Hale-Bopp in late March and early April in the evening sky, start looking a half hour after sunset in the northwest and use the chart on the insert included with this issue of Nova Notes to locate where the comet is in the sky at 8:00pm. The curved line

along the chart bottom is the horizon on April 12 at 8:00p.m. For reference, Hale-Bopp is about 10 degrees above the horizon on March 11.

For anyone who has missed the two total lunar eclipses last year, we will experience a deep partial lunar eclipse on the night of March 23/24. Details of this eclipse are on page 102 of your Observer's Handbook. The Moon will enter the Earth's umbra at 10:57pm local time signifying the start of the visible eclipse. The Moon will continue to penetrate the earth's umbra until mid eclipse at 12:39am when only about 2 arc minutes of the Moon's northern limb will still be outside of the umbra. The eclipse ends at 2:21am when the Moon leaves the umbra. Ω

COMET HALE-BOPP

OBSERVING REPORTS:

ROY BISHOP AND SHERMAN WILLIAMS

From Roy Bishop

There have been almost no messages on this line (*he means the Halifax Centre e-mail list — DL*) regarding Hale-Bopp. Is no one looking at it??

This morning (March 1), despite the last Q Moon, the comet was IMPRESSIVE! Indeed, with a 35 mm Panoptic in my 444 mm Big Blue, the comet deserved the adjective "awesome"! No photo or CCD image comes close to what the retina/cortex creates when presented first-hand with a flood of photons from a bright comet. And this scene is only going to get better — the Moon is dimming, and the comet is getting brighter (I estimated it as mag +0.5 this morning, brighter than Altair but not yet up to Vega or Hyakutake).

The tail is somewhere between 5 and 6 degrees in length. As the Moon dims a longer tail will likely appear, but it will be nowhere near the 50-degree one flowing behind Hyakutake last March 24-26. Hale-Bopp is simply too far away.

Hale-Bopp is presently about 1.5 AU away, 15 times Hyakutake's distance last March 25. If Hale-Bopp were presently at Hyakutake's distance, it would be shining at

$$+0.5 - \log(15sq)/0.4 = -5.4$$

That's bright enough to start casting noticeable shadows!

The right (southwest) side of the tail is becoming very bright, apparently because of the asymmetric way the dust is blasting out of the nucleus. Within 30" of the nucleus much structure is visible (at 225x on the 444 mm). There are presently three bright, concentric dust shells, and their geometry changes slowly from day-to-day. The inner-most shell is being fed by a very bright jet of material from the nucleus.

On this scale, Hyakutake was impressive too, but the near-nucleus structure of Hyakutake was pretty much bilaterally symmetric; in contrast Hale-Bopp is asymmetric and more complex.

Twilight begins about 5:30, so you should be at the eyepiece or camera by 4:30 am. (I hear a few groans ... the solution is simple — be in bed by 9 pm). It is very likely we will not get a period like the next few weeks for another decade or two or three. Make the most of it!

Yes, I do not mind if you want to show up at 4 am at my place; provided the sky is clear and you warn me! (542-3992).

From Sherman Williams

It's beautiful!! I was up at 5 am (*March 3rd — DL*), looked out my NE window and there it was. There was no doubt that I was looking at a comet.

After I got some outdoor things on over my jammies, I went outside. That was even better and through the 10X50's — WOW! The head is beautifully bright and the extent of the comet spans almost entirely the 6 degree field of the binoculars. Without the moon in a couple of days it'll even be better.

Its brightness now seems to be closely rivaling Vega (Mag 0). Even in two days I can see the increase in relative brightness (I had a good look Saturday am). The unaided eye can see the tail easily: a nice fan which stretches higher on the north side. It's

noticeably brighter on the south (right hand) side.

Binoculars easily show the bright golden coloured core and the colour and shape of the bright spray of material that sweeps back into the tail.

An obvious "V" separates the dust and gas tail. The dust tail is about half the length of the gas tail.

In my 10 inch reflector, the shell structures, layered beyond the nucleus are easy to see; a very entertaining nuclear region indeed!

Next clear morning, it'll really be worth the effort to get up and have a look! Especially if you have a dark location. I don't think you will be disappointed. Quarter of 5 to 5:15 am is best (earlier if you wish), 5:15 to 5:30 is still very good; I noticed that by 5:45 the dawn had already eroded the contrast.

Try the evening sky too. I was looking Friday evening; it was bright and easy to spot, low above the NW, of course it's too low and the sky's too bright for good viewing. It can't match the morning view yet.

Don't wait for spring, do it now! Dare I say, I'm thrilled. Ω

HALE-BOPP COMET AND STAR PARTY: APRIL 5, 1997, SPRY POINT, PEI

Come join us at Spry Point on the Island's eastern end this spring at a star party extraordinaire and a chance to view this outstanding comet whose appearance may be the most spectacular celestial event of the century.

Our deep-sky Hale-Bopp Comet and Star Party will take place April 5, 1997 on a remote and beautiful 96 acre peninsula where the skies are black and the sound of waves breaking against sandstone cliffs, surrounds you.

The event is sponsored by the Institute for Bioregional Studies and will host astronomy lectures and an equipment swap during the peak viewing period of the comet. Amateur and professional astronomers are invited to observe to their heart's content, exchange stories, showcase telescope creations, review the latest

trends and techniques, and haggle for the best buys and swaps!

We will be holding this event at the Spry Point Ark in Little Pond, Kings County, Prince Edward Island, halfway between Montague and Souris. It is remote and free of light pollution. Star gazing conditions from this location are excellent.

Mac Campbell, radio commentator for CBC Radio, will be our host for the social events. Additional astronomers, including Dr. William Thurlow, are being scheduled to interpret the skies and guide us through a spectacular evening of science, celebration and fun.

A midnight buffet and entertainment will be included in the evenings events in addition to scheduled astronomy discussions. We suggest the following tips:

- Bring your own instrument, if possible
- Be prepared for cold weather
- No flash photography
- Before using any telescopes, ask the owner
- Refrain from smoking around telescopes and observers
- Have Fun!

Join us for the evening or stay overnight. Rooms are available at discounted rates or overnight guests can bring sleeping bags and foams to bunk out, dormitory style, in the Ark greenhouse. (Rooms are limited so be sure to book a space early!)

A pre-registration fee of \$35. (Includes midnight buffet) is required *before* March 21st.

For more information call: The Institute for Bioregional Studies at: (902) 892 9578 or send an email to: pferraro@cycor.ca. Ω

CENTRE CHANGE OF ADDRESS

The Centre has changed its mailing address to: **PO Box 31011, Halifax, NS, B3K 5T9**. This box is shared with the *Atlantic Space Sciences Foundation*. The change was made to provide more convenient access to our mail. The old address at the museum is expected to be valid for at least the next year, but will only be checked at meetings.

NOTICE OF MEETINGS AND EVENTS

REGULAR MEETINGS

Date: **Regular Meeting — Friday, March 21 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: **Meghan Gray**, a "star" physics student at Mount Allison University. Topic: **"The Rainbow Connection: Mapping an Active Galaxy with the Hubble Space Telescope."**

Date: **Regular Meeting — Friday, April 18 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: **Doug George**, the RASC's National President will be visiting our Centre. Topic: **"Observing with CCD Cameras."**

SPECIAL EVENTS

Comet Hale-Bopp Information and Observing Sessions at Saint Mary's University — **March 25 and April 1 at 7pm** (see the Hale-Bopp insert or the "Notes from the Chair" article). To volunteer to help with this event, call Dave Lane (443-5989).

Hale-Bopp Comet and Star Party on Prince Edward Island — April 5th. See the article on page 7.

St. Croix Pot Luck Starbeque — June 21st. More details will be in the next issue.

General Assembly in Kingston, Ontario — June 28th to July 1st. See page 5.

Nova East 97 in Fundy National Park — August 29 to September 1. Full details with the June issue.

1997 RASC CALENDARS FOR SALE BEGINNER'S OBSERVING GUIDES FOR SALE

The remaining 1997 Calendar's are **PRICED TO SELL!** Make Clint an offer! The members price for the Beginner's Observing Guide is \$11ea.

To purchase either of these publications, see Clint Shannon at a meeting or call him at 889-2426. Centre T-Shirts are also still available.

ASTRO ADS

8" Meade Dobsonian Telescope

Includes three eyepieces and 8x50 right angle finder.

Asking: **\$700**

Contact: **Richard DeYoung** at 469-2584 or 422-0551

10" Meade LX 200 Telescope

With lots of extras including finder scope, a Televue 2" diagonal, 2" Superwide 32 mm EP, 26 mm Plossl EP, Nebula filter, 6400-object data bank, tripod and cases for all these accessories. Also, an ultra steady heavy duty homemade wedge

All for **\$3600**

(the telescope alone sells new for \$4500)

Contact: **Bob McConnell** at 902-742-4887 to be put in touch with the owner.

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. *Continue onto the dirt road and drive another 1km to the site.*
8. *You will recognize the site by the two small white buildings on the left.*

1997 HALIFAX CENTRE EXECUTIVE

Honorary President	Dr. Murray Cunningham	
President	David Chapman	463-9103
1st vice-president	Blair MacDonald	445-5672
2nd vice-president	Clint Shannon	889-2426
Secretary	Mary Lou Whitehorne	865-0235
Treasurer	Ian Anderson	542-0772
Nova Notes Editor	David Lane	443-5989
National Representative	Pat Kelly	798-3329
Librarian	Greg Spears	868-2626
Observing Chairman	Shawn Mitchell	865-7026
Councilors	Paul Gray	469-0947
	Robin Clayton	864-0550
	Dr. David Turner	435-2733