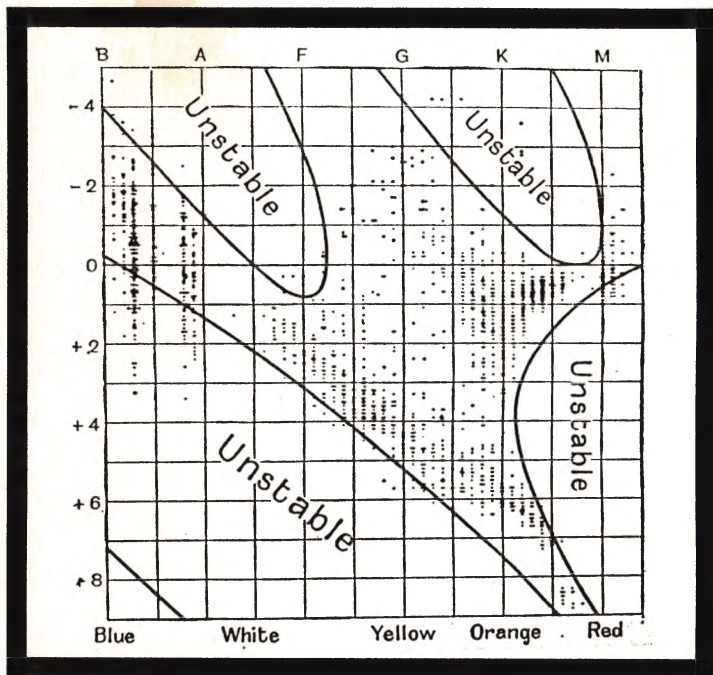


# NOVA NOTES



Halifax Centre

Nov - Dec 1988

Volume 19

Number 6

## 1988 Halifax Centre Executive

<u>Honorary President</u>	- Dr. Murray Cunningham	
<u>President</u>	- Darrin Parker P.O. Box 249 Bridgewater, N.S. B4V 2W9	543-3104
<u>First Vice-President</u>	- Paul Smith Site 38, Box 13 RR#1 Windsor Junction, N.S. B0N 2V0	861-2753
<u>Second Vice-President</u>	- Douglas Pitcairn 13 Ferguson Road Dartmouth, N.S. B3A 4J8	463-7196
<u>Secretary</u>	- Paul Duval 5415 Victoria Road Apt. 509 Halifax, N.S. B3H 4K5	429-4387
<u>Treasurer</u>	- Joe Yurchesyn 5264 Morris Street Apt. 1104 Halifax, N.S. B3J 1B5	422-8030
<u>NOVA NOTES Editor</u>	- Patrick Kelly 2 Arvida Avenue Halifax, N.S. B3R 1K6	477-8720
<u>National Representative</u>	- Wilf Morley 34 Elizabeth Street Bridgewater, N.S. B4V 1M2	
<u>Librarian</u>	- Hugh Thompson 6 Marine Drive Halifax, N.S. B3P 1A3	477-2377
<u>Observing Chairman</u>	- Mary Lou Whitehorne 53 Zinck Avenue Lr. Sackville, N.S. B4C 1V9	865-0235
<u>Centre's Address</u>	- Halifax Centre, R.A.S.C. c/o 1747 Summer St. Halifax, N.S. B3H 3A6	

# Notice of Meetings

## DUES ARE DUE!!!

It is time once again to renew your memberships!!

Dues are: \$25 adult, \$15 youth, \$500 life

Please renew as soon as possible to ensure that you receive your 1989 handbook without delay.

You can renew at any meeting **OR** send a cheque or money order made payable to "Halifax Centre, R.A.S.C." at the address on the previous page

.....

Date: Friday, November 18th, 1988: 7:00 P.M.  
Place: Nova Scotia Museum. Access from the parking lot and side entrance. Meeting to be held in the lower theatre.  
Topic: At 7:00 we will be viewing the segment done by The Journal on Isaac Newton followed by a short film on star clusters. Our speaker will be **Darrin Parker** who will talk on his recent trip to the Kennedy Space Center. We will also be having another one of our popular "junk" sales and hope to distribute the 1989 handbook to paid-up members at this meeting.

.....

Date: Friday, December 16th, 1988: 7:00 P.M.  
**NOTE THAT THIS IS THE SECOND FRIDAY !!**  
Place: Nova Scotia Museum. Access from the parking lot and side entrance. Meeting to be held in the lower theatre.  
Topic: The video has not yet been finalized for this evening. We will be having several speakers who will be discussing various aspects of observational amateur astronomy, including such topics as using a star atlas, sketching, etc.

.....

**Note: The above list is tentative and subject to change.**

.....

About the cover: The cover this issue shows a figure from the 1929 edition of **The Universe Around Us** by Sir James Jeans. It shows the regions on the "Russell diagram" where stars are unstable because stars in this region would not have "liquid, or nearly liquid, centres." The chart plots 2100 stars whose absolute magnitudes had been determined at Mount Wilson Observatory using the method of spectroscopic parallax.

# Editor's Report

Patrick Kelly

I have so many items for this issue's column that I don't know where to begin! Let me toss a coin..... O.K. here we go! I think it is fairly safe to say that I have a "scoop" in reporting that at the last council meeting an application made by a group who wanted to become an R.A.S.C. centre was approved (mostly due to **David Tindall's** proddings). As a result there is now a **Thunder Bay Centre** of the R.A.S.C. On behalf of the Halifax Centre I would like to wish them all of the best in the future.

With Christmas coming up soon I thought I would remind you that the Halifax Centre has some astronomically oriented gift ideas. We still have a few NOVA EAST T-shirts left as well as lots of the Halifax Centre ones and baseball hats. Don't forget the R.A.S.C. lapel pins and crests. The prices are as follows: T-shirts \$10.00 (sizes are small, medium, large and extra large); caps (one size fits all) \$7.00; pins and crest \$15.00; postage (if ordering by mail) \$1.00. You can contact our treasurer, **Joe Yurchesyn** if you wish to purchase anything.

You may recall that the Halifax Centre nominated **Roy Bishop** for the service award this year. The award was presented this summer at the G.A. in Victoria. I recently received a letter from Roy expressing his gratitude for having been nominated:

*Since my nomination by the Halifax Centre for the Service Award appears in the July/August edition of Nova Notes, I would like to formally record my thanks to the Centre for this honour.*

*As several of our members are probably aware, the announcement of the award at the January meeting of the National Council was a complete surprise to me. Proper procedure had not been followed, and as Chairman of the Awards Committee I knew nothing about it! The presentation of the medal to me by our National President, Mary Grey, at the GA in Victoria was the most memorable moment I have had in my long association with the RASC.*

*I am also honoured to have my name along side those of Father Burke-Gaffney and Randall Brooks. I have eighteen years of happy hours and friendships from my association with the Halifax Centre. My sincere thanks to the Halifax Centre for nominating me.*

*Sincerely,  
Roy L. Bishop*

On a sadder note, **Mary King**, one of our long-time life members passed away in September. Although illness prevented her from attending meetings for quite some time, members who attended a recent annual banquet may recall **Dr. Murray Cunningham's** talk on the history of the Halifax Centre and the

role that Mary King played in it. The executive was surprised to find that in her will, she left a large number of astronomy books and magazines as well as her 3" Questar telescope to the Halifax Centre. **Hugh Thompson** is currently in the process of sorting through the books, while **Doug Pitcairn** has overhauled the telescope and it will be on display at the October meeting.

Just because it's summer, it does not mean that our goal of educating the public stops. We sponsored several events over the summer. On July 21st, **Doug Pitcairn**, **Joe Yurchesyn** and **Mary Lou Whitehorne** gave a slide show to a group from the Nova Scotia Hospital in Dartmouth. Of course we also had **NOVA EAST '88** which was a roaring success. You can read about it in Mary Lou's report which is in this issue. The very next weekend the Halifax Centre hosted the "annual" Bridgewater Astronomy Night at the Desbrisay Museum. About fifty adults and a dozen children were there to listen to talks given by various members. Afterwards it was actually clear enough to get some observing in and about half a dozen telescopes provided a "first view" for a lot of the public.

You may recall that we were looking into the possibility of acquiring an observatory for the centre. We have narrowed down the tasks that must be performed (that is the imperial "we", Doug and Darrin did most of the work). In order to get this work done, the executive has decided to form an Observatory Committee. We are looking for members from the general membership who would like to help out by serving on this committee. If you are interested, please get in touch with **Doug Pitcairn**.

Coming up soon is our annual election for next year's executive. We have a document describing the duties of all of the positions on the executive for anyone who is interested. Anyone who wants to nominate someone for a position, or who would like to run themselves should contact either **Darrin Parker** or **Doug Pitcairn** no later than October 31st which is the closing date for nominations. You may recall that for the past several years, we have not actually had to have a vote, as we could only "persuade" one person to run for each position. If a vote is needed this year, it will take place by mail in early November. The results will be announced at the November meeting (which will also be the Annual Meeting as described in the centre's constitution.)

Members at some of our recent meetings may recall that **Doug Pitcairn** had been doing astronomical artwork on "my" Macintosh II computer. They were then shot off of the screen using slide film and the results were quite impressive. Well, in a recent issue of *Sky & Telescope*, there was an artist's concept of Nova Cygni prior to its becoming a nova. After quite a few guffaws and comments about the quality of the drawing, Doug decided to

do the same object on the Mac. He liked it so much that he sent it along with several others off to Sky Publishing to show them "how it should be done". You can imagine his surprise when they called him up to say that at least two of his artworks would be in the November issue! You might want to keep an eye open for them.

As the turnout for our beginner's nights was not all that great, it has been decided to hold them less frequently. Hopefully this will allow all of our "new" novices to get a chance to meet each other and also allow us to make more efficient use of our time by hopefully, having more people together, but less often.

My Odyssey, which was ordered last November, finally arrived... the day after NOVA EAST!! Unfortunately, Coulter is taking its idea of low-cost astronomy a bit too far. The focuser is a something that was jury-rigged from some PVC plumbing supplies and is useless with any eyepiece other than the one that comes with it. I've dubbed it "The Little Humungous".....

Don't forget to get a good look at Mars. I have been following it with Charles (my 60 mm refractor) and the detail visible is just amazing even in a scope this small.

This also brings up another topic which is related to observing. Have you ever tried to sketch what you see through the eyepiece. I have been doing a fair bit of it lately and it is remarkable how much more detail you can see. If that doesn't sound right, let me explain. In order to sketch an object you have to take a fair bit of time to do it properly. As a result, instead of just seeing an object long enough to confirm it before you go on to the next, you have to concentrate on it for five to ten minutes. As a result, not only does your eye tend to see more, but you keep asking yourself things like "Is that one star or two close ones?" , "Is there really a little spur of fuzz there?" etc. This tends to make you concentrate on the object even more with the result that what originally looked like a small, round smudge slowly resolves itself into a delicate patterns of stars with small, unresolved patches that form interesting patterns. (Of course there are still some that even after five minutes still look like a small, round smudge.....

Another area related to observing is the seeing. Unfortunately, most people have a hard time judging the seeing other than to say things like "good", "excellent", "the pits", or "&%\$\*@"!. Fortunately, I found an old magazine with a pictorial guide to seeing using on scale of 1 to 10. It shows what the Airy disk around a star looks like at high magnification for all ten steps on the scale. Any members who would like a copy can see me at the meeting or drop me a letter.

I think I've covered everything. Clear skies til next issue!Ω



## R.A.S.C. Membership

If you are reading this newsletter, chances are that you have an interest in astronomy. Have you considered joining the Halifax Centre of the Royal Astronomical Society of Canada? Each year, your membership brings you the following :

- The Observer's Handbook
- 6 issues of the R.A.S.C. Journal
- 6 issues of the National Newsletter
- 6 issues of NOVA NOTES
- R.A.S.C. Annual Report

You also get borrowing privileges from the Halifax Centre's sizable library which contains a large number of books covering all astronomical subjects. In addition, the Centre has two telescopes which members may borrow for two week periods to learn the basics of observing or to advance their observing programs. Meet new people who share your interest and learn more about this rewarding pasttime from other members. Even if you don't have a telescope, you are welcome to come to our observing sessions . Learn the night sky as never before.

### Membership fees are:

Adult: \$25.00
Youth (under 18) : \$15.00
Life: \$500.00

Our membership year starts October 1st so now is the best time to join. You can join at any of our regular meetings (see the "Notices of Meetings" ) or by mailing us a cheque or money order made to the Halifax Centre, R.A.S.C. Our address is on the bottom of the inside front cover. For more information, please feel free to contact any of the members on the executive.



# NOVA EAST '88

Mary Lou Whitehorne

This year's NOVA EAST was a very successful event. We had a great time! People came from Nova Scotia, New Brunswick, P.E.I., Québec, Maine, New Jersey and Bermuda! Quite a few stayed at the chalets and/or motel, but, as last year, most camped at the Micmac Group Camping Site. Altogether we had over forty groups there with about seventy people altogether. By 10:00 P.M. Friday night, nearly everyone who was coming was there. Because of all of the publicity (radio, T.V. interviews and in the park publicity) there was a large crowd of people waiting for a glimpse through a telescope. We set up in the pool parking lot and were very busy until about 12:30 A.M. showing some 200 people the celestial sights. The skies were hazy and the seeing rather poor but no one seemed to mind. Saturn impressed many people as did the brightest of the Perseid meteors when they flashed overhead.

Once the public drifted away, the scopes were transported to the campsite for our own observing fun. The public had even sought out the campsite and about twenty people had a look through the scopes that had been set up there. The skies up there on the hill were less hazy and the gazing continued into the small hours.

Public presentations in the assembly hall were very well attended - standing room only on Saturday and a full house on Sunday evening. Unfortunately, it was cloudy on these two nights so there was no public observing. Even so, the public was reluctant to accept the "cancelled" signs put out beside the entrance to the pool. Glenn Roberts and I went down to the pool at 10:00 on Saturday to make sure it really was foggy and much to our surprise there were people there waiting for the astronomers to arrive. "Show us something!" they demanded. (There had been a half hour break in the fog and cloud cover.) So we showed a few constellations, answered questions and since it was "sort of staying clear", told folks that we would go and get them some telescopes to look through. This meant that we had to break up the campfire party (sigh!) and head for the pool site at relativistic speed. And guess what? As soon as we did set up, the fog really rolled in! A few hardy individuals decided to try observing further inland and up the hill to avoid the fog. They also ran out of luck because the fog got up the hill faster than they did.

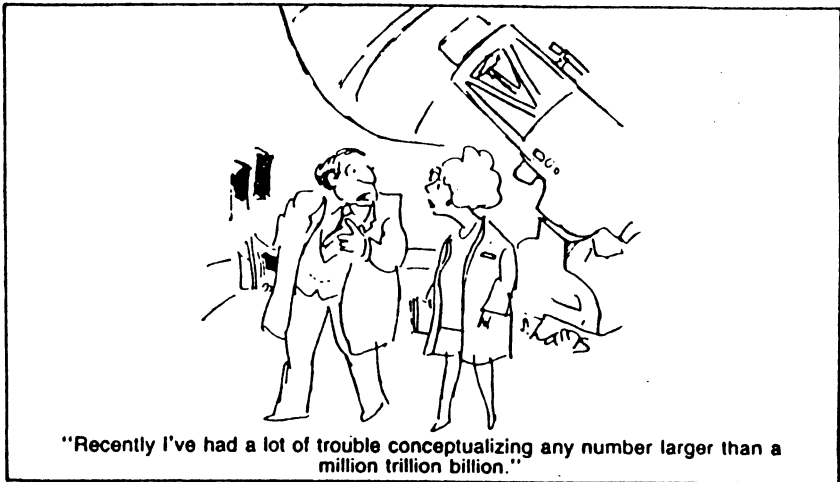
Sunday evening it drizzled steadily so there was likely little doubt in the public's mind that observing was cancelled again. However, no one went down by the pool for fear that there might



actually be people there waiting for the telescopes. Instead, we checked out a couple of alternate sites for next year's public observing sessions.

Our own seminars were held Saturday and Sunday afternoons in the assembly hall. I delivered a talk on Be stars and we also heard from Pat Kelly and Doug Pitcairn. Pat gave us a humorous look at astronomy related postage stamps and Doug showed us (wowed us) with some of his unique and spectacular computer images of astronomical objects. Sunday evening many of us gathered at the Micmac campground for an informal get-together and campfire (party) to look at Bill Thurlow's pictures from Australia and New Zealand.

In spite of the poor weather, NOVA EAST '88 was an unqualified success. We had one really good night with lots of public in attendance and well received presentations in the assembly hall. As for ourselves, events were fairly well organized and ran quite smoothly. *[Editor's note: This was due to the fact that Mary Lou did the organizing and deserves a vote of thanks from all of us.]* It was great to get together with so many amateurs from around the Maritime area. There were lots of telescopes, too. From 6" home built to Bill's 17.5" Dobsonian. I especially enjoyed the view through the 6" f/8 refractor belonging to Greg Palman from Maine. Seeing old friends again and making new ones has got to be one of the best reasons for going to a star party such as this one. Will you be there next year? I highly recommend it!  $\Omega$



# SETI and the Big Ear

Patrick Kelly

It is all too infrequent that astronomers of note manage to make their way to Nova Scotia and are willing to give a talk to the general public on their specialty. Such an event happened on September 20th, when Dr. Philip Barnhart was in Halifax and gave a public lecture on his involvement in the search for extraterrestrial intelligence (SETI). Over dinner, when asked what brought him to Halifax he remarked that when he got married, he promised his wife that on their first vacation he would bend to her wish to see the Bay of Fundy. And now, almost thirty years later he was keeping his promise!

Dr. Barnhart is currently with the Department of Physics and Astronomy at Otterbein College in Westerville, Ohio. His research has spanned a number of fields, from the recovery of asteroids lost by the disruption of World War II to stellar scintillation (twinkling). He is currently the Co-ordinator of the North American Astrophysical Observatory, a consortium of eight colleges and universities that maintains the 110 m radio telescope at Delaware, Ohio, known affectionately as "The Big Ear", you may recall it as the telescope that was almost torn down to make way for an expansion of an adjoining golf course. Dr. Barnhart joked that theirs is the only observatory in the world that has to pay green fees!

Dr. Barnhart's talk began with a quote from Nicholas Copernicus: "Astronomy is the pinnacle of all intellectual pursuits and the occupation most befitting a free man." He pointed out that it was rather ironic that just when mankind is able to communicate with another civilization anywhere else in the Milky Way, we have also reached the point at which we are capable of utterly destroying life on this planet. It brought into question the very idea of whether intelligence is a survival trait. We do not yet have any proof that it is able to survive itself.

He then examined the currently held assumption of a homogeneous universe in which there is no uniqueness on astronomical distance scales. Based on this ideal it is highly unlikely that life on Earth is unique in the universe. Indeed, we already know that the organic compounds that form the basic building blocks of life not only can be easily manufactured in conditions similar to those believed to have existed on the early Earth, but are also found in great abundance between the stars.

Given that life exists elsewhere in the universe, how do we get in touch with them? Or another way of looking at it is how

would they get in touch with us? Would we be able to actually travel to their planets or could they come and visit us? Extrapolating from both our current technology and our current understanding of the physical laws of the universe the answer seems to be "NO". The time delays as well as the extraordinary amount of effort that would be required to make such a venture are very prohibitive. A much more reasonable way to communicate is with electromagnetic radiation which would travel at the ultimate speed; that of light.

However, electromagnetic radiation comes in a wide variety of forms, from high energy gamma rays to low energy radio waves. Since our atmosphere only passes radio waves and visible light and since we don't currently have any facilities in orbit to either send or receive signals we must do it from the ground. If you consider visible light, there is a very large problem, namely the sun. Assuming that we had a technology to do it, a signal made by converting the entire Earth's energy production into the optical region would still be outshone by a factor of millions due to the sun's tremendous energy output. Thus, visible light is ruled out.

On the other hand, two radio telescopes like those at Jodrell Bank in England could communicate between any two points in our galaxy with a power bill of about \$1.50. Radio is the way to go. Due to background radio noise the frequencies that one would expect to find signals in is that between one and four gigahertz. The Big Ear is involved in just such a project: to listen at these frequencies and search for signals.

The observatory is run totally by volunteers with no operating budget. This has its problems, such as when a mouse built its nest inside their main computer's hard disk drive and put them out of operation for a year and a half. On the other hand, two graduate students were able to repaint the telescope in seven days with no damage for \$5000 worth of paint, when 15 years ago a contractor charged \$15,000, took five weeks and caused a large amount of damage to the scope. The telescope is the size of three football fields and scans the sky as it passes overhead. They recently added the ability to track an object for up to an hour by moving the receiver on a small cart. The search strategy used is to look for a strong, point source that has a very narrow bandpass. Such a signal was actually detected but there was no visible object at its location and the signal did not reappear.

Dr. Barnhart's talk drew a crowd of about 100 people and he answered many questions from the audience when the lecture was over. It would be interesting to have him back again to report on the progress made, but hopefully he could make it back a little sooner this time!  $\Omega$

# Long Distance Voyager

Clive Gibbons

reprinted and edited from *Orbit* - Hamilton Centre

The probe had been drifting through interstellar space for millions of years. Long ago, its original mission to survey the outer planets had been accomplished with a large measure of success. The voyage had not been without problems, though. More than once its high-gain antenna had strayed from its home target, leaving frantic technicians to solve seemingly unsolvable problems. Before the last planet glided by, nearly half of its original computer memory had been lost to the creeping senility of long-term space travel.

For more than ten years, its radio-thermal generators had supplied a dwindling trickle of power to the surviving sensors. Then, suddenly, soon after crossing the bow shock that separates a star from its galactic environment, all functions ceased. Scientists once again scratched their heads, wondering what the final blow had been. Some thought it could have been a collision with a grain of interstellar dust. Whatever the problem had been, the result was the same; no further contact could be established and the mission was finished. It was a tough way to celebrate the project's sixteenth birthday but the last ten years had been something of an unexpected windfall.

160,000 generations had past since the final bit of information had been beamed back to the giant receivers. Did civilization still exist or had it all disappeared in a flash of nuclear madness? Perhaps a chunk of space debris had fallen from the sky and destroyed life, as had happened in past epochs. It was mere speculation with home twenty light-years away.

The cruise through interstellar space had been completely uneventful. No alien space tug had tried to guide it to a spaceport for inspection. After all, it was only the smallest of flotsam in an endless cosmic ocean. To be found by extraterrestrials (if they existed) would be much akin to locating a needle in a galaxy. Even that smallest of possibilities had not been discounted by the thoughtful designers of the probe. Attached to a bulkhead was a gleaming disk encoded with a message from a people hoping that they were not the only ones. Unfortunately, the long lonely voyage had left the skin of the craft badly eroded. High speed collisions with micro-particles had dulled the once shining skin. The carefully composed message was now almost indecipherable.

For so long the sky had not changed. No moons or planets, comets or meteorites had interrupted the slowly shifting pattern of stars that studded the blackness. One star, though, did seem slightly brighter than it had been 100 (or was it 1000) years ago. Another tick of the cosmic clock; an instant lasting a thousand years; and the star had grown to twice its original brightness. A variable star perhaps?...or a final destination?

It was now a blinding point of light, soon a small disk, which grew larger and brighter with each passing year. Other much fainter specks could be seen moving slowly around the star. One of them had a beautiful ring system, similar to another one seen so long ago in another, more familiar solar system. No instruments functioned to record the spectacle and even if they did, what use would it have been. The powerful radio receivers at home were sensitive, but no technology could detect a ten Watt signal beamed from a distance of twenty light-years.

The probe swung past the star at a tremendous speed. It felt heat like never before in its existence; searing radiation and high energy particles fried the dead hulk as it passed only twenty-five million kilometres from the star's surface. The battered spacecraft emerged from the star's glare and continued along its hyperbolic trajectory, retreating from the inferno, but now headed towards another rendezvous.

In the universe, given enough time, the most improbable events can emerge as reality. In the case of the probe, a highly unlikely event was to become reality when it crossed the orbit of a planet circling the star. At first a collision seemed avoidable but as the hours passed, the planet loomed larger and larger. Every second it flew twenty kilometres closer to a point in space that would soon be occupied by another body.

The planet was terrestrial and appeared to possess an atmosphere. Brilliant white clouds covered much of the sunlit crescent and now, just visible in the growing portion veiled by night, twinkling lights were coming into view. Quickly the narrowing crescent was gone as the probe entered the planet's shadow. Only minutes later, it began to graze the near vacuum of the outer atmosphere. No known material could protect it from the hellish inferno generated by its 80,000 km/h descent into the steadily thickening gases.

Alas, the probe's passage did not go entirely unnoticed by the planet's inhabitants. As it streaked to ionized oblivion over the North Pacific, a Pan American 747 with 352 passengers on board witnessed the brightest meteor of their lives. Ω

# Annual Observing Chairman's Report

Mary Lou Whitehorne

It's annual report time again! We've had quite a successful year, observationally speaking, in spite of our notorious bad weather. There have been a lot of good sessions at Beaverbank over the past year with lots of scopes and observers braving the elements. We have shovelled through hip-deep snow and shivered through  $-18^{\circ}\text{C}$  temperatures. We have observed a record number of comets and asteroids this year too. Thanks, Pat and Hugh! With two 10" light buckets and one 6" refractor putting in regular appearances we have shared many spectacular views at the eyepiece.

The telephone call list has fallen by the wayside though. Unfortunately there wasn't enough positive response to warrant making so many calls. Instead, potential observers should call me (865-0235) if they want to know if there will be an observing session on a particular night. The good observing "window" lies between last quarter and first quarter moon. You can be sure that on any clear night during this "window" there will be observers at the Beaverbank site. Consult the inside back cover of NOVA NOTES for possible observing sessions.

There have also been a few successful special events this past year. In May we showed the heavens to the Hebron High School Astronomy Club (Yarmouth) when they were in town for an observing weekend. We had a good turn-out at the Desbrisay Museum in Bridgewater (August 20th). And of course, Nova East '88 in Fundy was an unqualified success.

The works for October will be a Marswatch from the Nova Scotia museum parking lot. Public invited, of course. All in all, a good year. I've seen lots of new objects at the eyepiece over the past twelve months - have you?? Clear skies!  $\Omega$



**OMCON 611S**

4" f/5.7 Newtonian with altazimuth mount, 30 mm acromatic  
finder, 27 mm wide field 1.25" eyepiece  
**\$299.95** "A good beginner's scope"

**OMCON 815**

6" f/8 Newtonian with equatorial mount, 30 mm finder,  
27 mm 1.25" eyepiece  
**\$699.95** "A scope for a lifetime"

**OMCON 878**

3.1" f/9 refractor with equatorial mount, 30 mm finder  
27 mm 1.25" eyepiece  
**\$599.95** "The best for planetary viewing"

**OMCON 611**

4" f/6 Newtonian with equatorial mount, 30 mm finder  
27 mm 1.25" eyepiece  
**\$499.95** "An equatorial beginner's scope"

**SKY MAX 14**

14" lightweight, collapsible f/4.3 reflector with 2" focuser,  
1.25" adapter, 27 mm eyepiece, altazimuth mount, carrying case  
**\$1895.00** "A large portable deep-sky scope"

**TASCO 44T Terrestrial scope**

**\$249.95** "A good patio scope"

**TENTO 7x50 Binoculars**

**\$79.95** "The best under \$150.00 - D. Dodge, Southam Observatory"

**PLUS:** 50 mm finders; light pollution filters; threaded filters;  
1.25" and .965" eyepieces and Barlow lenses; Sky Atlas 2000;  
Uranometria 2000 (Vol. 1); Edmund's Mag 6 Atlas;  
Stars - A Golden Book; A New Popular Star Atlas;  
A Hundred Billion Stars - Rigutti; slide sets; slow motion cables  
Celestron weight set; binocular tripod adapters; ,etc.

**WE ARE NOW TAKING ORDERS FOR 1989 ASTRONOMICAL  
CALENDARS FROM HANSEN PLANETARIUM AND  
ASTRONOMY MAGAZINE.**

**THE TELESCOPIC SHOPPE**  
**#1 - 143 Old Sambro Road**  
**Halifax, N.S. B3R 1R4**  
**477-0847**







core and seemed to melt into the background "clutter" of the Milky Way stars. I would say that Mars was best in the 150 mm only because the 300 mm was showing multiple images (tube convection cells?) of the planet. - L.L.

**Objects Observed:**

Planets: Jupiter, Mars

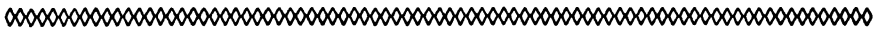
Planetary Nebulae: M27, M57

Open Clusters: h &  $\chi$  Persei, Stock 2 (thanks for the info, Glenn), M11, M26, M45, NGC 663

Globular Clusters: M13, M92, NGC 6712

Galaxies: M31, M32, M33, M110, NGC 6207

Double Stars: 24 Com,  $\Sigma$ 1615 (Com),  $\Sigma$ 1685 (Com),  $\delta$  Crv,  $\Sigma$ 1669 (Crv),  $\alpha$  CVn, 2 CVn



Time: Friday, September 3rd, 1988

Place: Beaverbank Site

Observer(s): Pat Kelly, Jim MacGuigan, Doug Pitcairn, Mary Lou Whitehorne, Joe Yurchesyn

Equipment: 2x10" buckets, 6" refractor, 4" refractor, 10x70's

Weather conditions: Cold, very clear and DRY!

Comments: One of those rare nights that is too good to be true. M31 is visible to the naked eye as a glowing oval! The Milky Way glistens brilliantly from horizon to horizon... An excellent night with not quite perfect seeing. -M.L.W. First night out with The Little Humungous (my Odyssey). Doug finder made from half of a binocular works perfectly!! - P.K.

**Objects Observed:**

Planets: Jupiter: 5-6 bands dancing in the low altitude atmosphere; Mars: magnificent detail at 300x in Joe's 6" with red filter.

Planetary Nebulae: M27 Very impressive this night with both the bright & fainter components well delineated. M97: With dimples.

Globular Clusters: M10, M12, M13: majestic as usual. Are those really Walter Scott Houston's dark lanes or just my imagination? NGC 7006: The faint one near Delphinus' nose.

Open Clusters: M73, NGC 752: bright and spread out.

Galaxies: M31: Dust lanes and HII regions visible. M32, M33: Visible spiral structure, but have seen it better. M51, M81, M82, M108, M110, NGC 890: small and very faint. NGC 891: edge on spiral. NGC 925: faint, large diffuse spot. NGC 1058: Very faint, but it's there! NGC 1023: another nice edge-on spiral. NGC 3448: face on, like a mini M33. NGC 3549: condensed nucleus.

NGC 3619, NGC 3631: no nucleus. NGC 3718 & NGC 3719: both very faint but visible in the same field. NGC 6207: Near M13, easy in Joe's, appears irregular. NGC 7743: a faint spot along a chain of faint stars connecting the 6th and 7th mag. stars on either side of the galaxy.

Double Stars: Accidentally stumbled across a small equilateral triangle of stars halfway between 56 Aqr and  $\tau^1$ - $\tau^2$  Aqr. They are red, white and blue!!!

Comets: Temple 2 was found at last!! Very faint but distinctly oblong. Confirmed in Joe's refractor.

*The dates of the best observing periods can be obtained from the "Calendar of Events" inside the back cover. Any clear night in this period is likely to find people at Beaverbank. If you wish to double check to see if anyone is going out, please call the Observing Chairman or the Second Vice President. Members are invited to submit their observations to the Editor for inclusion in "Gawker's Report". In order to make the compiler's job easier, please list all information in a format similar to that used for the column. Thanks and clear skies.  $\Omega$*

## Astro Ads

FOR SALE: C8 with Starbrite Coatings

- 5 years old (storage for last 4)
- wedge and tripod
- three eyepieces
- can deliver to Hfx/Dart.

**asking \$1800**

Call Warren Wolfs - (506) 434-3103 (Moncton)

---

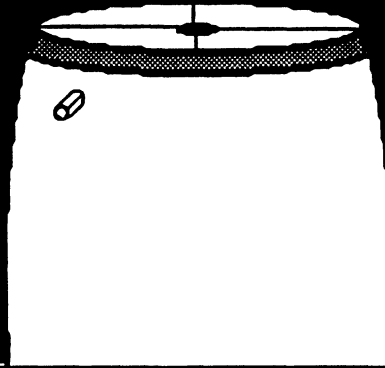
FOR SALE: Eyepieces & Finderscope

- |   |             |
|---|-------------|
| - 26 mm (1 $\frac{1}{4}$ inch) Odyssey stock eyepiece (Kellner?)                                      | <b>\$30</b> |
| - 26 mm (1 $\frac{1}{2}$ inch) Celestron Plössl   | <b>\$70</b> |
| - 10.4 mm (1 $\frac{1}{4}$ inch) Televue Plössl "The best for less"                                   | <b>\$70</b> |
| - 10x50 "Amici" finderscope (correctly oriented image)<br>solid mount, easily attached to most scopes | <b>\$50</b> |

Call Doug Pitcairn - 463-7196

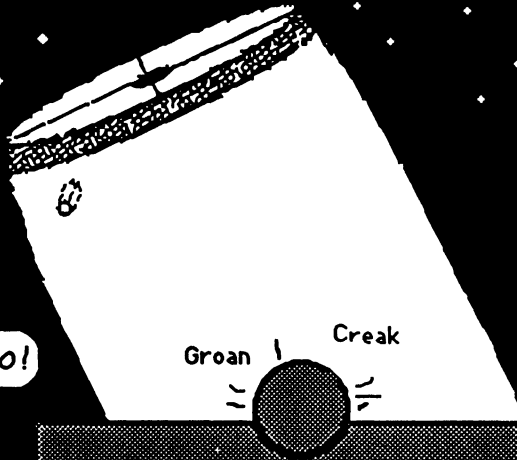
# GA★ZER

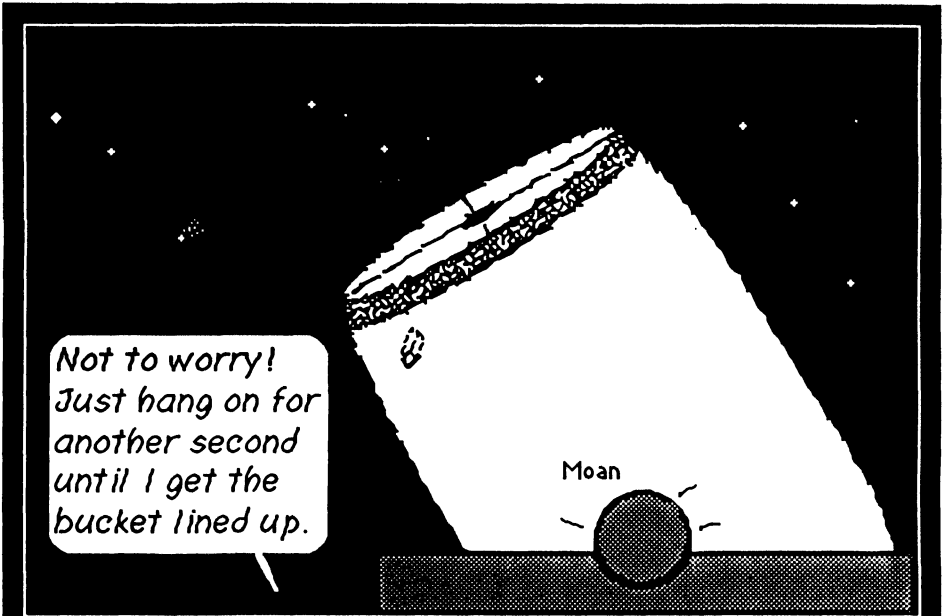
Gee, GAZER, this is a great idea... stay up until the early morning in the fall and see the winter sky in relative comfort....



*Yes, Gazer,  
but my hands  
are still frozen!*

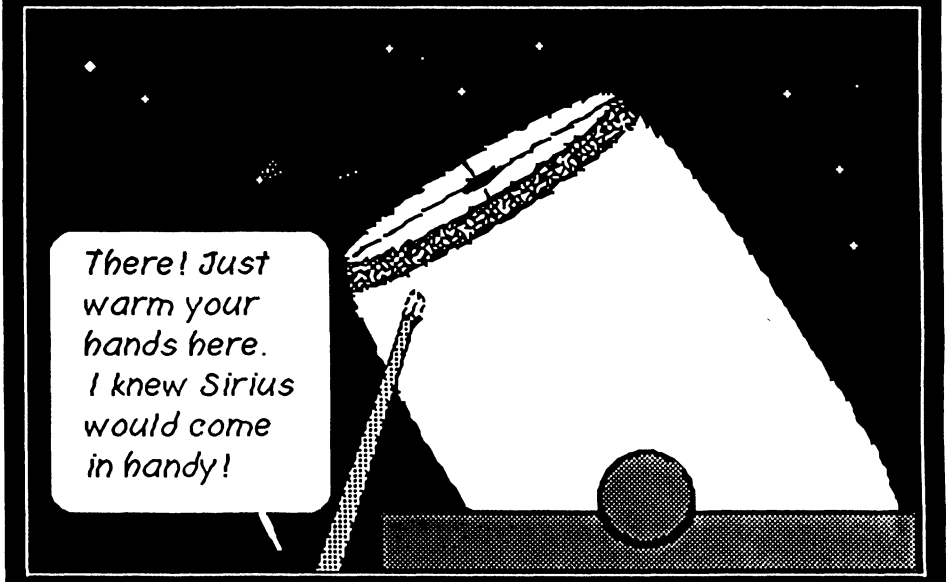
*Yeah, mine too!*





*Not to worry!  
Just hang on for  
another second  
until I get the  
bucket lined up.*

Moan



*There! Just  
warm your  
hands here.  
I knew Sirius  
would come  
in handy!*

**Patrick Kelly**

## **NOVA NOTES INDEX**

**November - December 1988    Volume 19, Number 6**

1988 Halifax Centre Executive.....	Halifax. Centre	113
Notice of Meetings .....	Halifax. Centre	114
Editor's Report .....	Patrick Kelly	115
Membership Ad .....	Halifax Centre	118
NOVA EAST '88 .....	Mary Lou Whitehorne	119
Cartoon .....	Unknown	120
SETI and the Big Ear.....	Patrick Kelly	121
Long Distance Voyager .....	Clive Gibbon - <b>Orbit</b>	123
Annual Observing Chairman's Report.....	Mary Lou Whitehorne	125
Cartoon.....	Thaves	125
Advertisement.....	The Telescopic Shoppe	126
Gawker's Report.....	Patrick Kelly	127
Astro Ads .....	Halifax Centre	130
Gazer .....	Patrick Kelly	131

NOVA NOTES is published bi-monthly by the Halifax Centre of the Royal Astronomical Society of Canada in January, March, May, July, September and November. Articles for the next issue should reach the editor by November 18th, 1988. Articles on any aspect of astronomy will be considered for publication. The editor is:

**Patrick Kelly  
2 Arvida Avenue  
Halifax, Nova Scotia  
Canada  
B3R 1K6  
477-8720**

NOVA NOTES is printed courtesy of the Nova Scotia Museum

*HALIFAX CENTRE - R. A. S. C.*  
*1988/89 CALENDAR OF EVENTS*

**October 1988**

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
<u>16</u>	17	18	19	20	<u>21</u>	<u>22</u>
23	24	25	26	27	28	29
30	31					

**November 1988**

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	19
20	21	22	<u>23</u>	24	25	26
27	28	29	30			

**December 1988**

S	M	T	W	T	F	S
					1	2 3
4	5	6	7	8	9	10
<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	17
18	19	20	21	<u>22</u>	23	24
25	26	27	28	29	30	31

**January 1989**

S	M	T	W	T	F	S
1	2	3	4	5	6	7
<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>
15	16	17	18	19	<u>20</u>	21
22	23	24	25	26	27	28
29	30	31				

**Key to calendar:**

Regular Meetings: **shadowed and outlined**

Beginner's Meetings: double underlined

Special days: **bold**

Possible observing sessions: underlined

**Special Days:**

- August 11- Perseid Meteors
- October 21 - Orionid Meteors
- October 22 - Mall Display
- November 2 - South Taurid Meteors
- November 17 - Leonid Meteors
- November 23 - Jupiter at Opposition
- December 14- Geminid Meteors
- December 22 - Ursid Meteors

**Halifax Centre  
Royal Astronomical Society of Canada  
c/o 1747 Summer Street  
Halifax, Nova Scotia  
Canada  
B3H 3A6**

**National Office R.A.S.C.  
136 Dupont St.  
Toronto, Ontario  
Canada**

