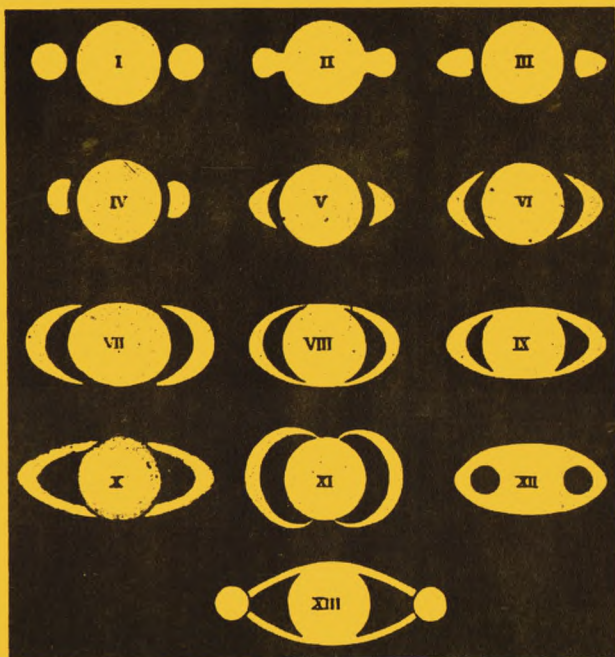


NOVA NOTES



Halifax Centre



May-June 1987
Volume 18
Number 3

1987 Halifax Centre Executive

- Honorary President - Dr. Murray Cunningham
- President - Kathy Oakley
3140 Hemlock Avenue
Halifax, N.S. B3L 4B6 455-2681
- Vice-President - Darrin Parker
P.O. Box 249
Brifgewater, N.S. B4V 2W9 543-3104
- Secretary - Douglas Pitcairn
13 Ferguson Road
Dartmouth, N.S. B3A 4J8 463-7196
- Treasurer - David Tindall
3231 Glendale Road
Halifax, N.S. B3L 3S4 455-7456
- NOVA NOTES Editor - Patrick Kelly
2 Arvida Avenue
Halifax, N.S. B3R 1K6 477-8720
- Assistant Editor - Glenn Roberts
P.O. Box 250, Western Shore
Lunenburg Co. , N.S. B0J 3M0 627-2900
- National Rep - Norman Scrimger
12 Lynwood Drive
Halifax, N.S. B3M 1Y9 443-7455
- Librarian - Mary Lou Whitehorne
53 Zinck Avenue
Lr. Sackville, N.S.
B4C 1V9 865-0235
- Observing Chairman - Glenn Roberts
P.O. Box 250, Western Shore
Lunenburg Co. , N.S. B0J 3M0 627-2900
- Centre's Address - Halifax Centre, R.A.S.C.
c/o 1747 Summer St.
Halifax, N.S. B3H 3A6

Notice of Meetings

-
- Date:** Friday, June 19th, 1987 : 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:** Our 7:00 video presentation will be **THE ROCKY ROAD TO JUPITER** Which chronicles the problems and expected results of the Galileo mission to Jupiter which is due to be launched soon after the Space Shuttle program resumes.
Our speaker will be **Norman Scrimger** and we will also be having a member's night. See inside for further details.

As usual there will be NO regular meeting in July

-
- Date:** Friday, July 31st - Monday August 3rd, 1987 .
- Place:** FUNDY NATIONAL PARK, NEW BRUNSWICK
- Topic:** **ANNUAL CAMPING OBSERVING WEEKEND**

For more details, see inside

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

About the cover: The cover this issue shows a series of drawings of the planet Saturn made by Christian Huygens in the early 1600's

Editor's Report

Patrick Kelly

You may have noticed that the topics listed for both of our upcoming meetings, ask you to refer inside this issue for details. This is because we have so many things planned for both of these meetings (the regular meeting in June and the Camping Observing Weekend in August), that there was not enough room to list them all in the **Notice of Meetings**.

By the time you read this, the General Assembly in Toronto will have come and gone, but our National Representative, Norman Scrimger will be letting us know what happened as he will be giving his G.A. Report. (At press time, it looked as if our centre should have a good turnout at the G.A. this year with four members confirmed and several other maybes). The rest of the evening will be devoted to a member's night. We have several things lined up. A short while ago there was a note in **Sky & Telescope** which stated that there were eyepieces made in the period from 1940 to 1975 which contained radioactive elements. Use of these optics could cause cataracts. Most of these items were only singly coated; non-coated and multi-coated optics are probably safe. It is estimated that 1 in 10 of these eyepieces are slightly radioactive, while 1 in 50 are unacceptably radioactive. We will have a Geiger counter on hand for those who wish to have their optics checked.

In addition we will be having two contests; a limerick contest and a trivia contest. Doug and I came up with two sample ones to "convince" the rest of the executive that it could be done. (We just got out before the eggs started to fly!) So dig out a pencil and some paper and see if you can come up with something astronomical. Doug and I will put our necks on the line at the meeting but we want some company! Our last trivia contest proved to be so popular that we will be having one at this member's night as well. The format

is not finalized yet, but you can be sure it will be fun.

This year the camping observing weekend will be held in **Fundy National Park** in New Brunswick. There were two main reasons for this. The first was that Kejimkujik's group campground was booked for the long weekend as well as both weekends on either side, although we could have gone for either weekend with the full moon! The second reason was that we will be having a visit from about 25 members of the astronomy club from Summerside, P.E.I. They have about 45 members and want to find out how we are organized, what we do, etc. The same is also true of the Saint John Astronomical Society. We felt that it would be a great benefit to members of all three clubs to meet. Although the C.O.W. will be held at the group campground in Fundy itself, there are trailer accommodations, a motel and chalets in the park itself, several motels in the village of Alma as well as several bed and breakfasts in the immediate area. See elsewhere in this issue for maps and further accommodation information. We are hoping for a good turnout, so start making plans!

We have had our fourth finisher in the Messier Contest, as yours truly finished on April 22nd. It took me just over two years, but I was determined to see all of them in my Unitron 60 mm refractor. Yes, it can be done with an instrument this size, after all Messier himself used a scope of comparable aperture. However, a lot of the fainter objects that are far from bright stars are not that easy to spot and require both exceptional nights and lots of patience. A wide field eyepiece is a necessity, especially when you have a finder scope like mine (it would make a good peashooter).

As a result of finishing I have decided to name my telescope "Charles". I am sure that despite the fact that Doug and I have ordered an 10.1" Odyssey, I'll be using Charles for quite a while to come. There are several people hot on the trail of the fifth position. Doug, Mary Lou and Joe are all waiting for the Scorpious - Sagittarius region to come up to get the clump of them in that region. Perhaps, one (or more) of

them will finish up at the C.O.W.

Several other items of interest to members came up at the April executive meeting. We have formed a committee, headed by Glenn Roberts, to look into the ways and means by which the centre would be able to obtain an observing site on which we could construct a permanent observatory. We have also learned that the Nova Scotia Museum will allow us to set up a display for the time period around Nova Scotia Astronomy Day, this fall, which will hopefully give our group a much higher profile with the general public. Final details are still being worked out. We hope to have a nice display, so if anyone has any ideas or suggestions, feel free to pass them on.

Another item which I thought readers would find interesting is an excerpt from a letter which was sent to the museum by Stan Duncan of Annapolis Royal requesting information about people in his area interested in astronomy and forwarded to us. He writes in part:

"I had to re-open your letter because I just found out that you have a planetarium at the N.S. Museum. I hope one day to visit . In June 1944 I was fortunate enough to visit the Hayden Planetarium in New York. Their show eclipsed "The Rockettes" at Radio City Music Hall. Note: On my way to the Hayden along the south fence of Central Park I was approached by a lone mugger. He didn't know that I had been trained in unarmed combat and wore hobnailed boots. He viewed his own planetarium that night and saw stars not shown on the dome of the Hayden. One certainty is that he never again confronted a Canadian soldier."

Having done many shows at the planetarium, I can honestly say that I have never had anyone show up with that type of story!

There are several items that I have been asked to pass on to the membership. Those of you who have read the last few issues of **Nova Notes** are probably aware that Michael Boschat is an avid meteor observer. He hoped that his recent articles on using

television sets to observe meteors would get some members interested enough to try it for themselves. He is trying to get enough observations of several upcoming meteor showers to be able to plot the information to see how the distribution of meteors in the shower varies with time. Members interested in coordinating observations of this type can write Michael at 6363 Liverpool Street, Halifax, Nova Scotia, B3L 1Y1.

The Nova Scotia Museum is asking for our help but in a topic not directly related to astronomy. Their education programs are in need of some new bird specimens to be mounted or prepared as study skins for school programs. If you encounter cat or window kills in reasonable shape, please pop them in a plastic bag, place it in the freezer until frozen, and then drop them off at your nearest branch of the Nova Scotia Museum. Common birds are especially needed, for example, they have no robins, chickadees or grosbeaks.

Those members who still have library materials that are overdue are asked to please return them as soon as possible as there are several overdue items which are being requested by others. Your cooperation in this matter is vital if our library is to maintain itself as a useful resource for members.

Two changes has been made in the format of the **Gawker's Report**. I have decided to put in everyone's full name, as I think it is much easier to get to know people by their first name rather than by their initial. My apologies for those people who were at the April observing session who are still listed by their initials. I hadn't even thought of the format change at the time and didn't write down your full names. Secondly, after seeing several of the rather lengthy reports that we have starting with this issue, I thought that it would be easier for members reading the reports to have objects listed with the NGC objects in numeric order. It would make things a bit easier if future submissions were already in numeric order.

I suppose if I don't end this column soon, there will be no room for anything else! However, for those of

you who have ever thought of trying to discover your own comet and have read tales of people spending hundreds of hours without finding anything, I have a piece of trivia that might make you feel a bit better. It was published in **Regulus**, which is the newsletter of the Kingston Centre.

"In the year 1896 a Lick Observatory astronomer, Charles Perrine, requested from another astronomer, updated information on a comet which Perrine had previously discovered. The answer came in a telegram whose words were garbled and the position was completely in error. Not realizing that the numbers were wrong, Perrine pointed his telescope at the coordinates given, and by a fantastic coincidence, an entirely different and undiscovered comet was right in the middle of his eyepiece. An amazing way to discover a comet!" Ω

The 1987 Shapley Lecture

Patrick Kelly

On March 18th of this year, another in the series of Harlow Shapley lectures was held at Saint Mary's University. This year the speaker was Dr. Robert Rood of the University of Virginia in Charlottesville. Dr. Rood received his Ph. D. from the Massachusetts Institute of Technology and he has done work in the fields of stellar evolution and nuclear synthesis in both stars and the early universe. His topic **The Search for Unicorns and Extraterrestrial Life** promised to be most interesting, and there was a fairly large crowd on hand, including at least nine members of the Halifax Centre.

Dr. Rood based a fairly large part of his talk on the comparison between the current search for extraterrestrial life and the historical search for unicorns. He started by explaining how the idea of extraterrestrial life developed historically in conjunction with the idea that the stars were like our

sun and the Earth was not at the center of the universe. However, despite all of the theoretical work that has been done in this area, we still do not know if extraterrestrial life exists. As he pointed out, there are many ways to prove that extraterrestrial life exists (assuming that you have valid observations), but proving that it does not exist is a much harder task.

This is where the comparison with unicorns comes in. Despite the fact that no one ever proved that unicorns do not exist, it is pretty safe to say that nobody still believes that they do exist. If that is the case, then why did people believe in them in the first place. The legends about unicorns claim that they looked like a horse, but had a single horn protruding from their forehead. In addition, the horn itself possessed magical powers, for instance, if it was ground up and added to a water it would make the water pure, even if it had been poisoned. In those days, if you were a nobleman, what better way to keep someone from attempting to poison you than to claim that it would do them no good anyways, because you had some of this magic powder that you used all the time.

The key is that the idea of unicorns was both plausible, because there were animals with horns and horses without horns, so a combination of the two did not seem too absurd AND the idea was useful to certain people. This being the case, then why did people find it so hard to come up with an actual living unicorn. Part of the reason (other than the fact that they do not exist) would have been the method used to find them. The basic idea was that all you had to do was find a virgin, get her to stay out in a field and eventually a unicorn would come by and lay down with its head resting on her lap. As Dr. Rood pointed out, when this didn't work, he can imagine that they must have tried many variations such as more than one virgin, leaving them out longer, trying different hair colors, male virgins, etc. The end result, however, is that if you don't capture a unicorn this way, it tells you absolutely nothing about whether or not unicorns exist, but presumably it does tell you something about whether or not unicorns are attracted to virgins.

Returning to the search for extraterrestrial life, we find that interest in this area took a large surge, when in the late 1950's Frank Drake of the National Radio Astronomy Observatory in Green Bank, West Virginia first looked for radio signals emanating from several nearby stars. He was the first person who went from thinking about the question to doing something about it. He also developed the well known Drake equation which allows one to predict how many communicating technological societies there should be in our galaxy at any one time. This equation is simply the product of a group of terms, each one of which can be assigned a value based on our current knowledge of astronomy, biochemistry, biology and sociology. Unfortunately, as one progresses from astronomy to sociology, the error bars on our best guesses for the terms become increasing large to the point where the final result can be anywhere from one(us) to millions, depending on the values you choose.

There have been many attempts since Drake's pioneering work to look for radio signals, using many different strategies, but Dr. Rood thinks that we may have fallen into the same trap as those who were looking for unicorns. The fact that we do not find radio signals from space does not tell us that other life does not exist, it simply tells us that we may not be using the right techniques to search for it properly.

He feels that the best way to look for extraterrestrial life is to go into space ourselves. In fact, he believes that we **MUST** go into space, because if we are going to continue to use more and more energy, as a growing technological society seems to do, then space offers many more possibilities because technology itself is much better suited to space.

By technology, he refers to the combination of using energy and making things. He stated that if you look at the Earth as a place to carry out technology, you will find that it is an incredibly hostile place. It has a corrosive atmosphere that rusts metals. The climate itself result in large daily and seasonal temperature variations in most places, winds, rain, hail, hurricanes, tornados, etc. The weather, combined with the Earth's

strong gravity requires us to make buildings etc, where almost all of the materials used either go into holding the building up or keeping the outside away from the inside. However, if we move into space to get away from all of these problems, he feels that any aliens will almost certainly come to the same conclusion.

Once we have established ourselves in space, we will no longer think of the Earth as our home and people used to living in space will probably not even want to take the effort to visit Earth. As he points out, most people in North America whose ancestors came from overseas, have no great desire to go back to see where their ancestors came from. In fact, he can imagine that such trips to Earth will be rare: "I remember when Uncle Joe went back to Earth. He almost froze to death and was practically eaten alive by insects!"

At this point he feels that it is just a matter of time until one of the large orbiting cities decides to head to another star, either in search of a new source of raw materials, or just to see what is there. Although this sort of travel would be slow, once they arrived they would soon populate that star system and eventually someone would head out to the next system, etc. If one assumes that once this colonization procedure starts, it would continue at roughly the same pace, in terms of the age of the universe, the entire galaxy would be colonized almost instantly. Thus if there were already lots of aliens, it would only take one of them to start this process, in which case our solar system should already have been colonized by a race from somewhere else in the Milky Way.

He left us with several possibilities as to why this has not happened, perhaps it is much more difficult to travel from star to star than we think or possibly the curiosity which our race possesses is abnormal or it may be that we are the first technological society (after all someone has to be first) or just maybe there are no other races and we are alone. If the last case is true, it is definitely both a sobering and yet at the same time exhilarating thought. We only have the one chance, but think of the possibilities if we make it! Ω

A Note From the Librarian

Mary Lou Whitehorne

Our library has recently been blessed with the donations of several fine books. I would like to take this opportunity to express my thanks to these generous donors. We are a non-profit organization and new books are costly. We are trying to keep an up-to-date, high quality collection of books available to our members and these gifts to our library are greatly appreciated.

The following people have donated these books to the Halifax Centre Library:

Randall Brooks ----- Modern Observational
Techniques for Comets
Glenn A. Brown ----- The Night Sky
Patrick Kelly ----- The Stars
Gary W. McMahon ---- Halley's Comet from Nova
Scotia
Paul & Caroline Smith - Nightwatch
Joe Yurchesyn ----- Astronomy with Binoculars
Joe Yurchesyn ----- The Practical Astronomer

A very special "thank you" is extended to Mr. Gary w. McMahon for his donation to the centre of a hand driven poncet camera mount. Members may remember seeing this remarkable gadget at the June '86 members night. Ω

Unusual Objects and You

Michael Boschat

Unusual objects can be cataloged as things that cannot be explained at the particular time that they are observed. So, if you see something that falls in this

Occultation of the Pleiades

Michael Boschat

March 5-6 gave us a moon that was thirty-four percent illuminated covering some of the stars of the Pleiades. There were fourteen stars covered, the faintest having a magnitude of 11.4, while the brightest was at 5.5. Out of fourteen events, only two were bright enough to look for a close companion star. If such a binary system was observed, the bright star would fade out instead of disappearing almost instantly. No such fading was observed. I set up the 80 mm refractor and used 90x keeping the dark lunar limb in the field. In the background I could hear the time signals from WWV.

The first star went at 02h17 U.T. The following are the times of disappearance of the brighter stars along with their visual magnitudes:

<u>Magnitude</u>	<u>Time (U.T.)</u>
9.7	03h 12m 56.8s
8.0	03h 38m 12.8s
8.8	03h 56m 59.8s
7.7	03h 59m 46.9s
7.7	04h 05m 59.9s
5.5	04h 10m 59.0s

My personal equation of 0.3 seconds has not been subtracted from the times. The observations were made from my backyard, no wind, magnitude of the faintest visible naked eye star was 5.0. Another such event will take place July 20th starting at 15h00 U.T. Hopefully, there will be more bright stars this time! Ω

Asteroid Observing

Michael Boschat

How many of you observe the asteroids? What is needed to observe them? Let us see.

First of all you need a semi-large telescope, 100 mm or up although an 80 mm can be used with good results. Next you need a source of data. The Observer's Handbook is a good source as it gives just the basic data. I favor The Handbook over others because of the fact that it does not mention too much about the asteroid itself, i.e. asteroid so and so has a companion. This eliminates the psychological factor that can destroy an observation, because if it says that if the asteroid has a companion and it will blot out a star for so many seconds, you will see it even if the asteroid misses the star completely.

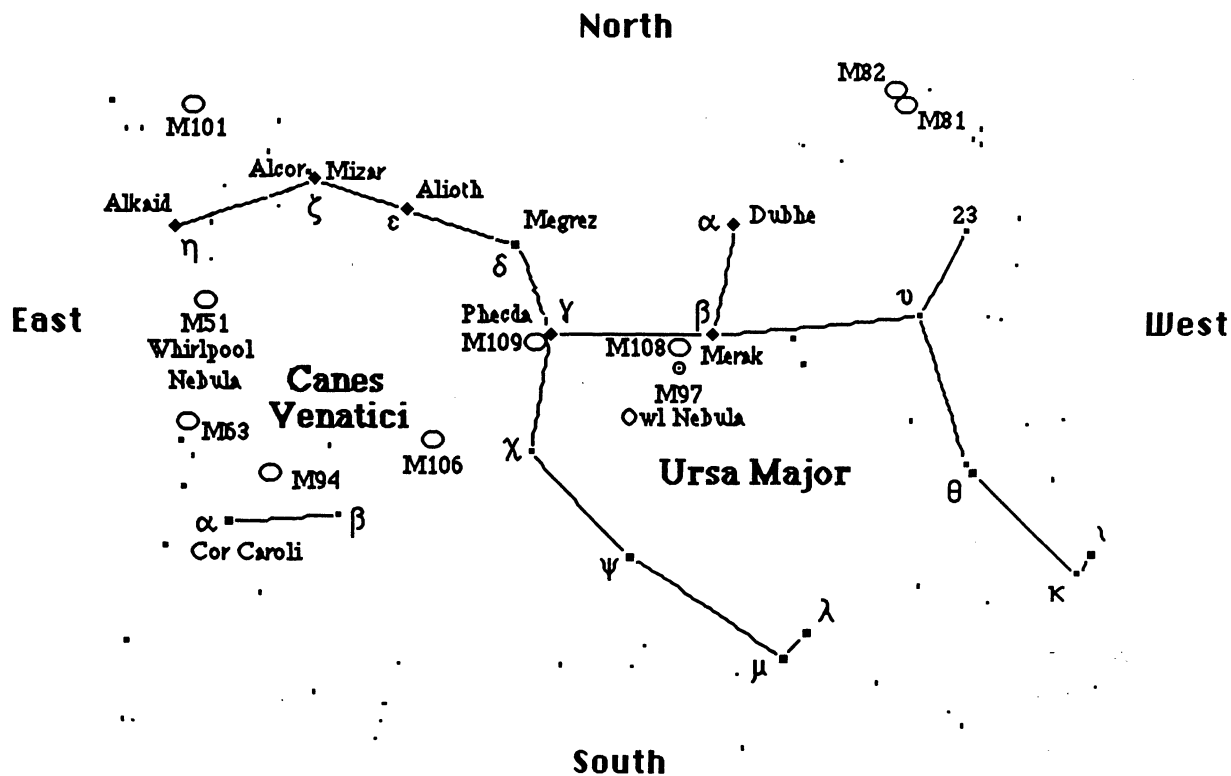
Plot the asteroid to be observed on a star chart, then set the telescope to the indicated field using low power. Use stars on the map to form triangles or rectangles, then find these in your field. Make a sketch of the field, then do the same thing the next night. Some asteroids can move in a few minutes, giving themselves away.

Now for the most important item of asteroid observing; the occultation of a star by one. Check astronomical magazines or The Handbook. They will give the duration of the occultation as well as the magnitude of the drop in starlight. Because of uncertainties in the positions of both the star and the asteroid, a prediction that an occultation will be seen in the southern United States, could be changed at the last minute and the occultation would only be observed from eastern Canada!

So, try to observe as many occultations as possible. The number that you can actually observe will depend upon your telescope aperture, of course. It is best to make sure that you are actually observing the correct star by learning the field a few days before the actual event. Note everything that happens. Even if nothing happens, record it; a negative observation is as important as a positive one. If the star fades, then fades again, you may have seen a binary asteroid. All timing should be to the nearest tenth of a second, so a good stopwatch is necessary.

In any case, it is interesting to watch them move among the stars. Ω

Constellation of the Month – May



May 15th

11:00 P.M. AOT

Ursa Major - The Great Bear

Canes Venatici - The Hunting Dogs

<u>Object</u>	<u>Type</u>	<u>Magnitude</u>	<u>Right Ascension</u>	<u>Declination</u>
M51	Galaxy	8.1	13h 29m	+47° 18'
M63	Galaxy	9.5	13h 15m	+42° 08'
M81	Galaxy	7.9	9h 54m	+69° 09'
M82	Galaxy	8.8	9h 54m	+69° 47'
M94	Galaxy	7.9	12h 50m	+41° 14'
M97	Planetary Nebula	12.0	11h 14m	+55° 08'
M101	Galaxy	9.6	14h 02m	+54° 27'
M106	Galaxy	8.6	12h 18m	+47° 25'
M108	Galaxy	10.7	11h 10m	+55° 47'
M109	Galaxy	10.8	11h 57m	+53° 29'

classification, what do you do? Well, first, DO NOT PANIC (unless you are being attacked by aliens!), record as much detail of the object as possible. This information should include such things as:

- speed in degrees per second (this can be done by comparing it to stars it may pass)
- its angular diameter in degrees (also, whether it changes shape with time)
- color
- magnitude (if diffuse, then if you have binoculars estimate its magnitude by defocusing stars until they are the same size as the object and try and find one with the same brightness; if no optical equipment is available, do the best you can).

Note any changes in the structure, if any. Always record the time in UT (Universal Time). Make drawings of the object. If you have a camera with you, get photos. A picture is worth a lot to a scientist. Make exposures from five to ten seconds or up to thirty seconds if the object is moving slowly. Develop your own film or have it done by someone who knows how to do it.

If in the field when something takes place try to phone another observer to get confirmation. Next phone C.F.B. Shearwater so that it can be observed by the military. When all of the data is collected, write it up and send it along with any film to:

Dr. McNarma
Planetary Sciences Section
National Research Council
Ottawa, Ontario
K1A 0R6

I would be happy to receive any observations or unusual objects or fireballs at 454-0333 from 5:30 P.M. to midnight, or write to 6363 Liverpool Street, Halifax, Nova Scotia, B3L 1Y1.

Remember, yours may be the only observation. Good hunting. Ω

Camping Observing Weekend Infomation

Patrick Kelly

As stated in the **Editor's Report**, here is the information on this year's camping observing weekend. For those who want to know how to get there, and where to go once you are there, there are maps on the following pages. Although the C.O.W. itself will be held at the group campground inside Fundy Park itself, not everyone finds camping to be their cup of tea. So for those of you who don't want to stay in a tent, I have obtained some information from the New Brunswick Department of Tourism (thanks to Len Larkin). To the best of my knowledge, the only fee that will apply to all members is the park vehicle fee of **\$6.00 per vehicle** which will be valid for the entire long weekend.

Other accomodations are available in the area immediately adjacent to the park. Below you will find a table summerizing the feature of all of the establishments which can be found along Highway 114 (see map). The rates are given in four catagories: A = 1 bed/1person; B= 1 bed/2 people; C= 2 beds/2people; D= supplementary charge per person. If a range is given, it refers to either the range of rooms available or the difference in rates between the high and low seasons. Unless stated, establishments **DO NOT** take credit cards.

Name: Alpine Motor Inn

Address: E.A. Ryder, Alma, N.B. E0A 1B0

Location: Alma

Phone: (506) 887-2052

No. of Units: 34 (14 are housekeeping)

Features: Pool, Color TV, Shower, Bath & Shower

Rates: A:\$30-\$38; B:\$33-\$38; C:\$35-\$42; D:\$5

Credit Cards: Mastercard, Visa, American Express

Name: Burns Central Motel

Address: Leo W. Burns, Alma, N.B. E0A 1B0

Location: Alma

Phone: (506) 887-2909

No. of Units: 6 (4 are housekeeping)

Features: Shower, Black & White TV

Rates: A:\$22; B:N/A; C:\$26-\$27; D:\$2

Name: Hilltop Motel

Address: Ed Kremen, P.O. Box 132, Alma, N.B. E0A 1B0

Location: Alma

Phone: (506) 887-2401

No. of Units: 9 (5 are housekeeping)

Features: Shower, Black & White TV

Rates: A:\$18; B:\$20; C:\$22-\$27; D:\$3

Name: Parkland Motel

Address: R.G. Weir, Alma, N.B. E0A 1B0

Location: Alma

Phone: (506) 887-2313

No. of Units: 10

Features: Licensed Dining Room and Lounge, Bath, Color TV

Rates: A:\$22; B:N/A; C:\$26-\$27; D:\$2

Credit Cards: Mastercard, Visa, American Express

Name: Caledonia Highlands Inn & Chalets

Address: Fundy National Park, P.O. Box 99, Alma, N.B. E0A 1B0

Location: Fundy National Park

Phone: (506) 887-2930

No. of Units: 44 (38 are housekeeping)

Features: Shower, Color TV

Rates: A:\$45-\$47; B & C:\$45-\$47.50; D:\$5

Credit Cards: Mastercard, Visa

Name: Fundy Park Chalets

Address: Peter Tingley, Fundy National Park, Alma, N.B. E0A 1B0

Location: Fundy National Park

Phone: (506) 887-2808, (506) 433-2084

No. of Units: 29 (29 are housekeeping)

Features: Licensed Dining Room and Lounge, Coffee Shop, Shower, B & W TV, Heated Pool

Rates: A, B & C:\$30-\$45; D:N/A

Name: Cailswick Babbling Brook Bed & Breakfast

Address: Riverside-Albert, N.B. E0A 2R0 Location: Riverside-Albert

Phone: (506) 882-2079 No. of Units: 5

Features: Bath & Shower, Common Color TV

Rates: A:\$22; B & C:\$30; D:\$6

Name: Charbarick Farm Bed & Breakfast

Address: Nerenne P. Russell, R.R. #1 Hillsborough, N.B. E0A 1X0

Location: Hillsborough

Phone: (506) 734-2974 No. of Units: 2

Features: Bath & Shower, Black & White TV

Rates: A:N/A; B:\$25; C:\$30; D:N/A

Name: Grannie's Bed & Breakfast

Address: Alice Maxwell, 47 Pleasant St. Hillsborough, N.B. E0A 1X0

Location: Hillsborough

Phone: (506) 734-3081 No. of Units: 3

Features: Bath, Air Conditioning, Color TV

Rates: A:\$20; B & C:\$25; D:N/A

Credit Cards: American Express

Name: Bogle's Bed & Breakfast

Address: Hopewell Hill, N.B. E0A 1Z0

Location: Hopewell Hill

Phone: (506) 882-2821 No. of Units: 2

Features: Bath & Shower, Color TV

Rates: A:\$20; B & C:\$25; D:\$5

Name: Broadleaf Tourist Farm (Bed & Breakfast & Farm Vacations)

Address: Hopewell Hill, N.B. E0A 1Z0

Location: Hopewell Hill

Phone: (506) 882-2349 No. of Units: 2

Features: Shower, Color TV

Rates: A:\$25; B:\$30; C:\$50; D:N/A

Name: Broadleaf "Too" (Bed & Breakfast & Farm Vacations)

Address: Hopewell Hill, N.B. E0A 1Z0

Location: Hopewell Hill

Phone: (506) 882-2803 No. of Units: 2

Features: Bath & Shower, Color TV

Rates: A:\$25; B:\$30; C:N/A; D:N/A

Name: Dutch Treat Farm

Address: Hopewell Cape, N.B. E0A 1Y0

Location: Hopewell Cape

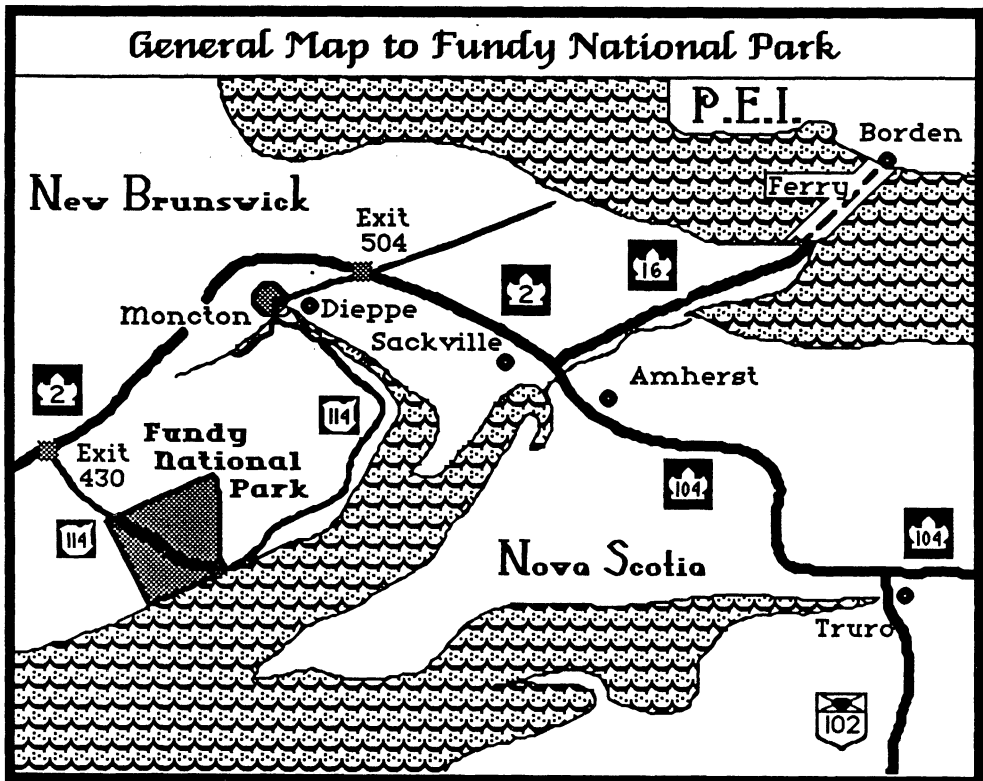
Phone: (506) 882-2552 No. of Units: 3

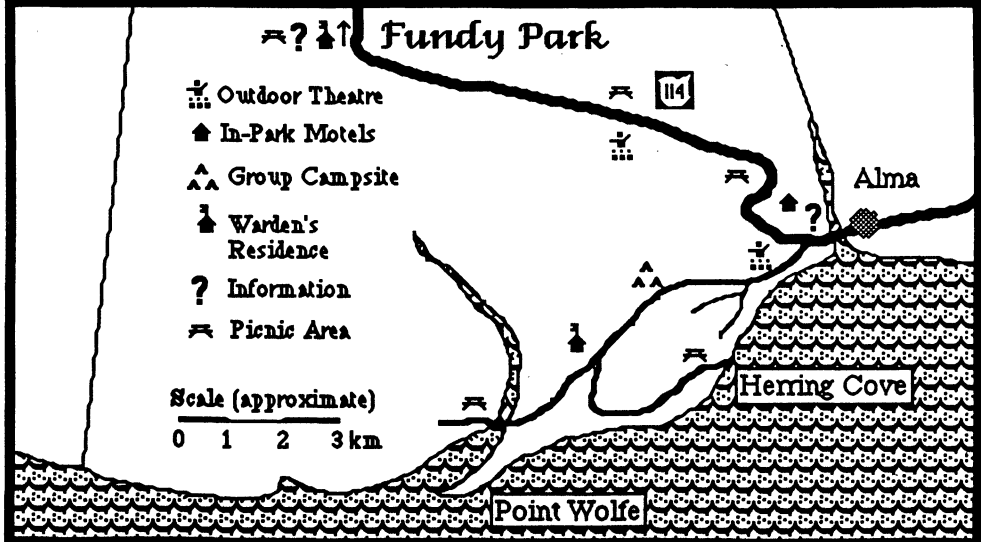
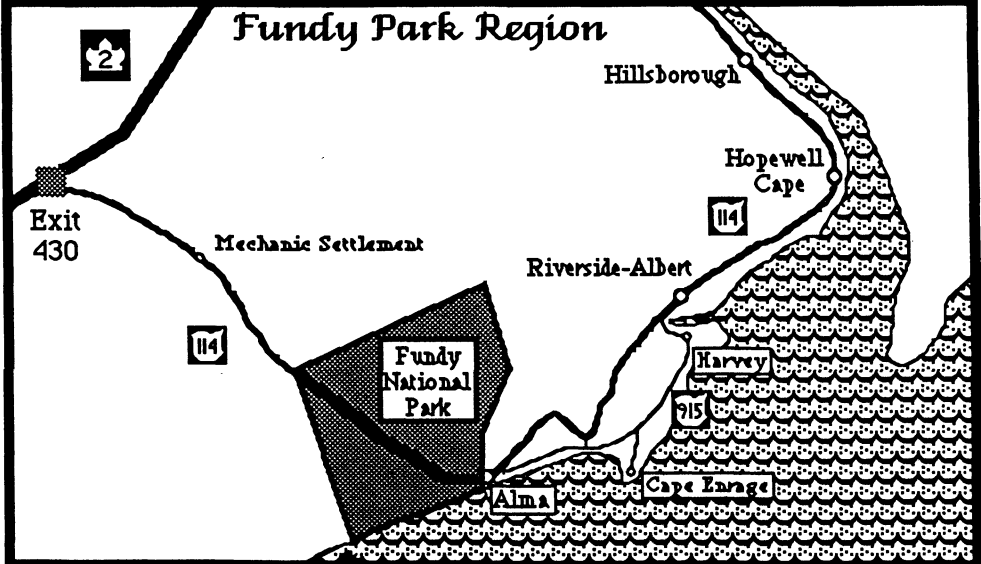
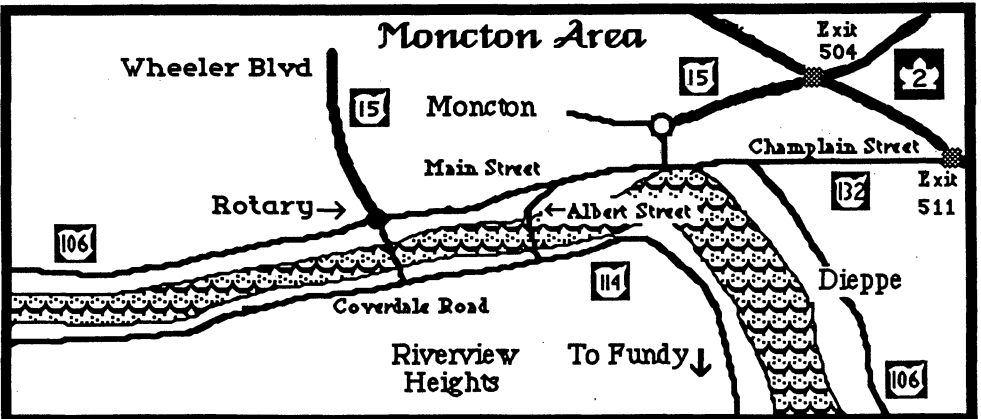
Features: Central Shower & Bath, Central Color & Black and White TV

Rates: A:\$22; B & C:\$28; D:\$6

Name: Hopewell Rocks Motel, Log Cabins, Restaurant & Craft Barn
Address: Hopewell Cape, N.B. E0A 1Y0 **Location:** Hopewell Cape
Phone: (506) 734-2975 **No. of Units:** 27 (2 are housekeeping)
Features: Restaurant & Coffee Shop, Bath & Shower, Color TV
Rates: A:\$29-\$34; B:\$32-\$36; C:\$38-\$44; D:\$6
Credit Cards: Mastercard, Visa

Name: Pollock's Heritage Farm (Bed & Breakfast & Farm Vacations)
Address: Hopewell Cape, N.B. E0A 1Y0 **Location:** Hopewell Cape
Phone: (506) 734-2975 **No. of Units:** 6
Features: Restaurant & Coffee Shop, Bath & Shower, Color & B and W TV
Rates: A:\$26; B:\$30-\$33; C:\$35-\$38; D:\$8





GA☆ZER

Well, that's another public observing session over and done with.

Yes, and I've never seen so many rowdy kids!

Yeah, the "kneebiters" were thick as flies, weren't they!

It's a good thing I didn't bring my big telescope.

By the way, who was that last group that has all black eyes?

What are you talking about? I didn't see anyone with a black eye.

Hey, you've got a black eye too!

Well, I'll be! One of those little %\$&#@ put MASCARA on my eyepiece!*

NOVA NOTES INDEX

May- June 1987

Volume 18, Number 3

1987 Halifax Centre Executive.....	Halifax. Centre	53
Notice of Meetings.....	Halifax. Centre	54
Editor's Report.....	Patrick Kelly	55
The 1987 Shapley Lecture.....	Patrick Kelly	59
A Note From the Librarian.....	Mary Lou Whitehorne	63
Unusual Objects and You.....	Michael Boschat	63
Occultation of the Pleiades.....	Michael Boschat	65
Asteroid Observing.....	Michael Boschat	65
Constellation of the Month.....	Patrick Kelly	67
Gawker's Report.....	Glenn Roberts	69
Camping Observing Weekend Information.....	Patrick Kelly	75
Gazer.....	Patrick Kelly	79

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 June 19th, 1987. 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. 1987 CALENDAR OF EVENTS

May 1987

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

June 1987

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

July 1987

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

August 1987

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

Key to calendars:

Meetings: outlined

Special days: shadowed

Observing sessions:

bold and underlined

Special Days:

May 4 - Venus 0.6° south of Jupiter

May 5 - η Aquarid Meteors

May 8 - Annual Banquet - watch for details

May 15 to 18 - General Assembly in Toronto

July 29- South δ Aquarid Meteors

July 31 - August 3 - Camping Observing
Weekend

August 12 - Perseid 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**

