

NOVA NOTES



Halifax Centre



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1987 Halifax Centre Executive

<u>Honorary President</u>	-	Dr. Murray Cunningham	
<u>President</u>	-	Kathy Oakley 3140 Hemlock Avenue Halifax, N.S. B3L 4B6	455-2681
<u>Vice-President</u>	-	Darrin Parker P.O. Box 249 Brifgewater, N.S. B4V 2W9	543-3104
<u>Secretary</u>	-	Douglas Pitcairn 13 Ferguson Road Dartmouth, N.S. B3A 4J8	463-7196
<u>Treasurer</u>	-	Joe Yurchesyn 5264 Morris Street 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 Rep</u>	-	Norman Scrimger 12 Lynwood Drive Halifax, N.S. B3M 1Y9	443-7455
<u>Librarian</u>	-	Mary Lou Whitehorne 53 Zinck Avenue Lr. Sackville, N.S. B4C 1V9	865-0235
<u>Associate 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

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Date: Friday, September 18th, 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 a PBS documentary on the recently discovered hole in the ozone layer.
Our speaker will be **Norman Scrimger** who will be giving a report on the General Assembly which was held in Toronto earlier this year.

.....
Date: Saturday, September 26th, 1987 . 8:30 P.M.

Place: Room H-19, School of Architecture Building, Technical University of Nova Scotia

Topic: **Special Meeting of the Halifax Centre**

We will have presentations from two of the members of the National Council who will be in Halifax for the September National Council Meeting.

Dr. Lloyd Higgs, Director of the Dominion Radio Astrophysical Observatory in Penticton, B.C. will be giving a talk entitled "*Imaging the Sky with an Aperture-Synthesis Radio Telescope*"

Michael Watson will be showing a slide presentation "*South of Capricorn*" which chronicles his trip to Australia to view Halley's Comet.

See the Sept-Oct Issue for more details.

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Note: The above list is tentative and subject to change.
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About the cover: The cover this issue shows a 1910 cartoon related to Halley's Comet. The caption read: Burglar (with a sudden enthusiasm for astronomy): "Scuse me, Guv'ner, can you tell me where I can get a view at this 'ere comet?"

Editor's Report

Patrick Kelly

Well, once again a combination of a heavy teaching load and the computer gremlins have conspired to make an issue of Nova Notes late. My apologies. You really have to experience it yourself to get the feeling of helplessness and frustration that only a massive failure of your hard disk drive can bring, especially when it has committed hari-kari so well that it has to be sent to Ontario to have its pieces put back together. A lot has happened since the last issue went out so I should get started and let you know what's been happening.

For those of you who actually read the executive roster, you may have noticed some changes it for this issue. Our observing chairman **Glenn Roberts** has moved on to a new job in Prince Edward Island and as a result has handed in his resignation. For those of you who know Glenn, you will be glad to know that he is now has a high ranking job in the P.E.I. government's planning department and his obsession (?) for organizing things should really pay off. It was rather interesting because Glenn had actually applied for the position two years ago (who says governments are inefficient) and at the time he had left them the number of my office as he was a student at T.U.N.S. and spent a lot of time there. Just by chance he had dropped in one day when someone called and asked for him. The rest, as they say, is history.

Glenn was only on the executive for a short time but his presence will stay with us for quite a while to come. He started a group to look at building a permanent observatory for the centre and was responsible (along with **Len Larkin** in Saint John for organizing **Nova East '87**. More on that later. In addition, some of his other accomplishments have been to arrange with the museum for us to have a "temporary" display set up inside the museum for the period around Astronomy Day, start the Gawker's Group who go out regularly now on most clear nights, and also help out with Nova Notes as assistant editor. Suffice it to say that we shall miss his keenness (with a capital "K"). He hopes to start an astronomy

club in Charlottetown with the help of the Summerside Astronomy Club and has plans to try and get the planetarium there reopened by using volunteers. Although he plans to be in P.E.I. for a while he says that he will remain a member of our centre and try to get back as often as we can. Well, Glenn, thanks for all the work and we wish you all the best in the years ahead.

Because Glenn's departure was so late in the year, it was decided that someone on the executive should take over as observing chairman and the executive would appoint someone to give that person a hand until the fall elections. **Mary Lou Whitehorne** volunteered and is our new observing chairman in addition to her job as librarian. **Hugh Thompson** was asked to fill in as associate librarian and he has been doing a great job helping Mary Lou with both positions.

As Norm was not able to make it back from "out west" in time to give a report on the General Assembly at the June meeting, I'll fill you in on two things that came up at the G.A. that have a direct bearing on the Halifax Centre. The first is that the 1989 G.A. will be hosted by the unattached members of the society under the leadership of Raymond Auclair at the Coast Guard College in **Sydney, Nova Scotia**. Although the Halifax Centre will not be directly involved, I think that it is pretty safe to say that there will be a large turnout of members from our centre. After all if we can have five members show up for the one in Toronto, just think of what we can do in our own backyard!

The other item is a little more close at hand and directly related to our group. It was decided at the G.A. to hold the September National Council meeting outside of Toronto for only the third time in the history of the society. At the invitation of **Norm Scrimger**, that meeting will take place in **Halifax** on Saturday September 26th. As a result there will be a special meeting of the Halifax Centre on that date. See the **Notice of Meetings** for times. There will be more info in the next issue.

We have had several other members complete their Messier certificates. Congratulations to **Larry Bogan, Doug Pitcairn, and Mary Lou Whitehorne!** For those who haven't started yet or have started but would like a record of what you have seen, copies of the Centre's Messier Form are free for the

asking. You can either write to me directly or see me at any of the meetings. In addition to this form, there is an application (which needs to be witnessed by two other members) which must be completed in order to get both the Halifax Centre's certificate as well as the one from National Office.

Over the summer, members of the executive took part in two events which were fun for everyone involved. The first was an "Astronomy weekend" held in June for a group from the Summerside Astronomy Club led by **Ron Perry**. Their group has about fifty members (which is quite an accomplishment considering the size of the local population). They came to see how our centre is set up, what our goals are, etc. as well as to take in a tour of the Burke-Gaffney Observatory, a show at the Halifax Planetarium and talks given by members of the executive on the subjects of ancient American astronomy and observing techniques of amateurs, and some late developments in astronomy. The Summerside group is trying to decide whether they should remain independent or apply to become a new centre of the R.A.S.C. It was decided to place them on the mailing list for NOVA NOTES so they can keep abreast of things down here. Whatever they decide, we wish them well and offer all of their members a standing invitation to come to our events if they are in the neighbourhood.

The other event was an astronomy camp for kids which was held at the museum. There were two of them, one in July and one in August. They were given presentations along with hands-on activities that covered the whole range of astronomy as well as a show at the planetarium. It turned out so well, that we are hoping to repeat it in the near future. If there are any members who would like to volunteer half a morning for this type of project, please contact anyone on the executive.

Lastly I should mention that the reason that some of the articles starting with this issue are in different sizes is no reflection on the content of the material! I am trying to make all articles fit in multiples of half a page, both to make the layout easier to do and to give the final product a better look. Until the next issue, clear skies to all. Ω

Starting Out as an Amateur Observer

Glenn Roberts

My first introduction to amateur observing came when I was growing up in northern Ontario back in the 1950's. Initially, I was out of doors at night for other reasons - either to use the little shack out back, or, during the summer, out crawling around on all fours with a flashlight looking for worms for the next day's fishing trip. Between mad dashes from house to shack, or when the worms had all discovered I was hunting them and had disappeared, I would pause and look up at the sky, which to my young eyes and imagination seemed filled with millions of gleaming crystal gems. It wasn't long before I was going outside at night just to look at the sky. I can still vividly remember many summer nights spent lying on my back atop a hill behind our house, gazing up in wonder at the stars, making believe that I was in a spaceship hurtling through space.

Although the stars have passed over my head many thousands of times since those days, my fascination with the night sky has stayed with me. It is with such memories in mind that I want to talk a little about starting out as an amateur observer and some of the things that you can do to maximize what you see in the night sky.

Perhaps the very first thing that the novice observer should do is join an astronomy society or club within his or her area. For a small membership fee, the novice will share with and learn from other individuals who share a passion for the wonders and splendours of the heavens.

Having done this, the obvious place for any novice observer to begin is at the beginning. A good astronomy book and/or a good planisphere will prove an invaluable aid in recognizing and remembering the shape and location of the numerous constellations in the sky. Since there are few constellations that are recognizable as the mythological figures for which they are named, it is often easier for the novice observer to learn them from the geometrical arrangement of their stars - triangles, trapezoids, parallelograms, and so on. But how do you locate them in the first place? A simple method is to get acquainted with some key bright stars, many of which are associated with a single constellation. A familiarity with these easily found constellation beacons will soon lead to a recognition of the figure as a whole.

But the novice observer should be wary of looking up at the stars for long periods of time. For a strange transformation will take place in your soul with all that starlight seeping in through your eyes. Soon you will no longer be content to merely look at the stars with your eyes; you want to get closer to the stars, to see more of them. Once this transformation (some people might refer to it as a disease or a madness) takes place, the only cure is the purchase of either a pair of binoculars or a telescope. However, another problem now presents itself. Looking through astronomy books and periodicals, the novice observer is often overwhelmed and excited by the beautiful pictures (usually in colour) of the sun, moon, stars, nebulae, galaxies, etc. which fill the night sky. Invariably, they fail to notice at the bottom of the picture that the photo was taken through Palomar's 5 m telescope on a colour film with an exposure of 1 hour. They hurry off to purchase a telescope (usually a cheap department store type) with notions of seeing the same pictures through its lens as appeared in the books. Needless to say, disappointment sets in very early (usually within an hour of first setting up the scope).

To avoid such disappointment, the amateur observer would be far better off out observing with a good pair of 10x50 binoculars. Such an instrument offers a decent amount of magnification and a field of view which, although more restricted than that available to the naked eye, will bring a host of celestial objects into clearer and closer view. They also have the luxury of being easily transported and used. The best method of observation is simply to lie down (either the ground or in a lounge chair) and point them at the sky. As well, if it turns out that observing the night sky is not really what you want to do, then the binoculars can readily be used for daytime observing of birds, etc., and you have only made a modest cash outlay of \$30 - \$50, compared to the \$100 or more that a telescope (even a cheap one) would cost.

Perhaps though, you have opted for a telescope. I won't go into the pros and cons of what telescope is the best, or how large a telescope you should purchase. Let me just say that you should do alot of reading about (or have someone explain to you) the design features and capabilities of particular types of scopes. It is here that your membership in an astronomy society or club shows its benefits. Knowledgeable members can be of great assistance in helping you choose the right type of scope for the kind of observing you plan to do. If you are lucky, you might even get a chance to look through other members' telescopes, which will help you decide what type of scope you should purchase. There is always the added bonus that other members might assist you in

building your first scope. Finally, you should shop around and compare prices before rushing out and buying the first scope you see in the store window (the market for telescopes is sufficient nowadays that many manufacturers offer discount prices to get you to buy their product). Shopping around can save you a good deal of money.

Well now, let's assume that you have acquired either a good pair of binoculars or a decent scope. What now? How do you use them to maximize what you want to see in the night sky? The most important investment that you can make, after the purchase of your binoculars or telescope, is the acquisition of a good star atlas (although you can sometimes find such an atlas in your public or astronomy club library, you will inevitably want to have your own on hand). There are many good star atlases on the market, one of the better being Wil Tirion's Sky Atlas 2000.0. A good star atlas, such as Tirion's, will show the name, location, and magnitude (usually down to 8), relative to the constellations, of countless stars and deep sky objects. It will not, however, show the positions of the sun, moon, planets, comets, asteroids or meteors, as these objects change position constantly. The necessary information to plot the positions of these objects on any given night of the year can be obtained from various astronomy books and periodicals.

Let me talk briefly here about setting circles. These are calibrated devices on the telescope which allow you to, in a sense, "dial up" the exact location of a particular celestial object. While handy things to have when searching for very faint and elusive objects (I have setting circles on my SPC8), they soon become more of a nuisance (having to be re-set for each object) than a blessing. In a sense, the telescope is doing the searching for you, and you are merely "looking" at the final picture. You might as well have stayed inside and looked at the pictures in a book.

This also brings to mind what I consider to be an unfortunate trend amongst telescope users today - the use of computer assisted telescopes. A small computer is built into the telescope mechanics which, with a push of a few keys, automatically slews the telescope across the sky and stops it lined up on a specified celestial object. Ads boast of being able to view thousands of objects a night. Impressive? Yes! But what do you really gain by being able to view thousands of objects a night? I think not very much other than a long list of observed objects. Again, as with the setting circles, it is the telescope which is doing all the work, and, I might add, having all the fun, of finding the objects in the night sky. I find the actual hands-on searching through the myriad star lanes for a certain deep sky object to be the greatest enjoyment of observing. Sure,

I get a certain satisfaction when I finally do find the object, but, since I was not the first to find it, the searching, to me, becomes the adventure. I would therefore recommend that the novice observer (and even the not-so-novice observer) forego the purchase of a computer assisted telescope. They are an expensive luxury which the amateur observer can well do without.

As an alternative to computers and setting circles, I would suggest that the novice observer learn an observation method called "star hopping" which, at least for me, has proven to be of great assistance in finding celestial objects. Once you know the position of a particular celestial object on your star atlas, you simply note its position within a constellation, choose a bright star within the constellation as a beginning reference point, locate that star in your binoculars or telescope's finder scope, and, using your star atlas as a guide, move your binoculars or finder scope, from star to star within your field of view until you come to the object you are looking for. It is really very easy and very effective.

Binoculars offer a slight advantage over standard finder scopes, in that they present a "right side up" view of the sky which matches the view on a star atlas. Standard finder scopes present an inverted image which can cause some difficulties for the beginner, at least initially. Amici finder scopes, which present a "right side up" view are available; I have an 8x50 Amici on my telescope, and it has greatly assisted me in my search for deep sky objects. For example, during the course of three evening's observing, I was able, with the use of this finder and Sky Atlas 2000.0, to observe all 218 deep sky objects in Virgo. Another evening, in two hours, I observed all 81 deep sky objects within the constellation of Coma Berenices. Star hopping is a method I strongly recommend all amateurs learn. You will become a better observer for it. Besides, you just never know what else you may discover along the way - a new comet or a supernova perhaps!

Let me conclude by saying that, as an amateur observer, whether using binoculars or a telescope, you will inevitably learn the finer nuances of observing as you log more and more time in the field. You will learn how to clean and care for your optics, how to deal with dew, how to dress for winter observing, and a host of other techniques and procedures that can only come with time and experience. But for now, let it suffice that you, as an amateur observer are now taking up a hobby that will give a new dimension to the way you look at and think about yourself and the universe. Hopefully, the passion you now feel for the wonders of the night sky will stay with you all your life, and that you will, in turn, pass that passion on to others. Ω

Spode's Law and Hunting Pluto

Michael Boschat

Spode's Law is the English equivalent of Murphy's Law and is invoked whenever some unforeseen event occurs which interferes with whatever you are trying to do.

We left at 9:30 to go to Mill Lake Observatory, fifty two kilometres from the lights of the city. I thought "Well, here we go. Warp ten all the way!" Well, it didn't quite go like that...

Spode's Law No. 1: Had to pick up friend's girlfriend who had phoned at the last minute, so we detoured and got her. Now, my speech said "Let's warp out of here!" We started off and were finally on the 103.

Spode's Law No. 2: Pulled over by R.C.M.P. at 10:05, finished at 10:15.

Spode's Law No. 3: Owner of C8 decides he needs device to turn telescope stand at Mill Lake. Divert off course to another place to get one. Arrive at 10:45. Now only fifteen kilometres from city.

Spode's Law No. 4: Owner starts to talk to another girl at place where device is. He finishes at 10:58.

Spode's Law No. 5: Finally arrive at Mill Lake only to find fog over the water. "I've got a bad feeling about this." I say.

Spode's Law No. 6: Pier is covered in an icy frost. Slipped on pier and landed on you know what.

Spode's Law No. 7: Took one and a half hours to set up telescope, dropped screw into lake during process and hands are now frozen. Time: 12:30.

Spode's Law No. 8: Scope is finally all set up. Girlfriend wants to know what C8's owner was saying to other girl. A slight disagreement arises! It's not until 1:00 that it seems to be finished. Girlfriend asks me a question. I reply that I am just an observer and stand on the Fifth Amendment (or whatever we have).

Spode's Law No. 9: An owl! They take off in search of it! After they have gone, I become aware of something making rustling sounds in the woods about ten metres away. I say "Well, so much for Pluto, time to go." No answer. "Ron?", "Hello?" Still no answer. My mind races in thought but I force myself to stay calm. "Beam me up, Scotty!"

Spode's Law No. 10: Ron and girl back at 1:30. "Let's get a picture of Pluto" he says. I say "Uh huh", looking carefully towards the woods.

Spode's Law No. 11: Looking through the C8 we can't see anything. Shining a light on the scope reveals the corrector plate fogged both inside and out. I feel like throwing it to whatever is in the woods!

Spode's Law No. 12: I am starting to wonder what else could go wrong. A dog howls (at least I think it was a dog). "Miller Time!" We dismantle everything and I take some constellation shots with a camera. Finish at 3:15.

Spode's Law No. 13: Finish packing everything in the car and then the car won't start. "We're trapped here!" I say. "No problem", Ron says, lifting the hood. Time 3:35. Car engine starts at 4:00.

Spode's Law No. 14: At 4:20 we are stopped by the same R.C.M.P. car. We talk about Pluto for a bit and then continue on. Back home at 4:55.

In all, it was an interesting night for Spode's Law. It was not a totally lost night, however, as three meteors were seen and using the 10x50 binoculars I was able to observe M51, M81 and M82. And, of course, the next clear night we'll try again. Ω

A Time of Maximum Brightness for δ Cephei

Michael Edwards
Peter J. Edwards
Walter Zukauskas

During the autumn of 1982, δ Cephei was repeatedly observed by both Michael and Peter Edwards with the aim of determining an epoch of maximum brightness.

In total, 104 observations were secured over a two month span. The comparison stars were those shown in The Observer's Handbook. No corrections for light travel time were applied (all being less than 0.003 day).

Phases were computed using a period of 5.366341 days (from The Observer's Handbook), with zero phase taken to be 1982 September 20.0 (U.T.) (= Julian Date 2,445,232.5). Observations were formed into groups of four and their average magnitude and average phase computed. The resulting light curve is shown in figure 1. The dashed line is a freehand sketch only and provides one possible rendering (hopefully, a reasonable one) of the observations.

The time of maximum was found by Pogson's method to occur at phase 0.60 ± 0.02 of the full period. This corresponds to 3.22 ± 0.11 days after phase zero. The observed maximum occurred at:

1982 September 23.22 ± 0.11 U.T.

or

Julian Date $2,445,235.72 \pm 0.11$

The **General Catalog of Variable Stars** (1969) predicts a brightness maximum at JD 2,445,235.83. The difference, observed minus calculated is -0.11 ± 0.11 days.

Since the O-C value is about the same size as its uncertainty, it is likely without statistical significance. However, two AAVSO observers have also reported O-C values of -0.09 and -0.1 days with associated errors of about ± 0.1 days. Taken together, these

What Your Executive Does

Kathy Oakley

Have you ever wondered just what your elected officials do during an executive committee meeting? No? Well, let me tell you anyways.

The May regular meeting has traditionally been "skipped" because of the Annual Banquet. This year, however, there were a number of things on the drawing board which needed to be attended to, so an executive meeting was held in my living room. I think that I can honestly say that a good time was had by all (I'll leave out the incriminating parts) and we managed to conduct lots and lots of "executive stuff" amidst the flow of tea, coffee and wine. One of the many things decided upon was that someone should write a brief description of the duties of each executive position. So, here goes.....

I have to tell you, (and I'm sure the rest of the executive would want me to), that my job is the easiest of the lot. It's a firm belief of mine that presidents should delegate, so I do. They don't call me "The General" for nothing. Fortunately I have a great group of people to work with which makes an already easy job even easier.

My responsibilities include drawing up an agenda each month (i.e. committing to paper what fellow execs have on their minds), chairing the meetings, doing the things you see me do each month at the regular meetings (introducing the speaker, making announcements, etc.), seeing that a spot is chosen for the multitude of events that we hold each year and javing something to say about papers submitted for any of our various awards. This job is really a cinch and here is why:

Your vice president: The bane of Darrin Parker's existence is probably item number two on his job description - "2) Perform any tasks assigned by the president from time to time." I have been known to do just that on occasion. That last line is wasted on most of you because you cannot see the smile on my face as I'm writing

it, and probably will not see the smile on Darrin's face when he reads it. The other duties of the VP include medianotices, occasional reports to National Office and over-seeing the ordering and sale of The Observer's Handbook. The fact that he has been a full-time student at Saint Mary's and now must commute from Bridgewater to attend meetings has not stopped Darrin from doing a terrific job as your VP, almost always with that smile on his face, and always on time.

Your Secretary: Ah... Doug Pitcairn. Even if Doug was a lousy secretary (he's a super secretary), I'd want him on staff. His experiences, not always of an astronomical nature and his wonderful sense of humor add, well, - something to the monthly meetings. This post is just what you would expect it to be, namely one of recording for posterity what goes on in the Halifax Centre throughout the year and reporting tidbits of the same where requested. At the end of the year, the secretary sends a report on the whole enchilada to National Office. We in the local executive rely on Doug to remind us of what transpired at the previous meeting (he has trained us now to "hear" what he reads to us at a speed approaching that of light), and to act as the central processor for much of the Centre's business and most of its paperwork.

Your Treasurer: Alas, this is no longer to be Dave Tindall, as he is now swamped with the duties of National Secretary (no relation to Doug). Dave has worked as the Centre's banker for some years now, and not once abused the privilege of the post to take a quick trip to Tahiti or South America. His reward (?) will be the occasional trip to Toronto. Way to go, Dave. During his time as treasurer he was responsible for maintaining financial records involving membership dues and the sale of crests, pins and handbooks. He's also been known to stand up after meetings and announce in a very deep and authoritative voice that those who have not yet paid their dues may do so before leaving. These duties will be taken over, temporarily, by Joe Yurchesyn, who has kindly volunteered himself for the rest of the year. Many thanks, Joe. (And Joe, that bit about the trip to Tahiti was a joke.)

Your Librarian: If you are a regular meeting attendee, you know something of Mary Lou Whitehorne's job already. Mary Lou keeps her eyes ever-peeled for books you might find useful or interesting, buys them if the treasurer says "O.K." and then tells us about them at the start of each meeting. The librarian is also responsible for maintaining the Centre's cabinet full of books, journals, photographs and some stuff that none of us can accurately identify. The person in this post also selects the book prize for the Simon Newcombe Award. Mary Lou has made some nice purchases during her reign, and is solely responsible for our joining (we hope) the Astronomy Book Club. She also volunteers to do things like organize annual banquets all on her own and on occasion fall prey to the dreaded "Presidential Delegating". Her enthusiasm for and expertise in observing and astrophotography are visible at each meeting, as is her good nature.

Your NOVA NOTES Editor: With all due respect to the other executives, I think that this must be the most time consuming position. Pat Kelly does a wonderful job of turning out our publication, issue after issue, after issue. The job description merely lists "Gathering of articles..." and "Preparing the master copy"... but Pat goes far, far beyond the call of duty with these. Each little collection of articles lucky enough to roll off the presses as an issue of NOVA NOTES reflects the time, care and creative abilities put into it by its editor. Pat jokingly agreed with me recently that he would probably "scare himself" if he ever counted up just how many hours are put into each issue. In all seriousness, I feel that we each owe him a tip of the proverbial hat for a job superlatively well done. So, Patrick, consider yourself tipped. But getting back to the formal job description..

The NOVA NOTES editor also maintains the members mailing list and sees that everyone receives their copy of each issue, helps judge entries for the Burke-Gaffney Award and sends mini-reports of Centre happenings to National Office.

Your National Representative: Like the presidency, a cushy job, done to perfection by past president Norman Scrimger. Norm's job is to attend the General Assembly for all of us, present the Simon Newcombe Award while there, and be a source of

inspiration within the Centre. We also take advantage of this astronomer's knowledge and experience, but this has nothing to do with the position, and everything to do with the man himself.

Your Observing Chairman: This position allows some cold-loving keener to encourage other like-skinned individuals to get out and do what astronomers have done since the beginning of time. Being a warm-blooded individual, I don't feel qualified to tell you just what that is, but I am sure that Glenn Roberts could give you an accurate, detailed answer. Why don't you ask him sometime just what his Gawkers Group does all night in the middle of a cold, dark field? Be warned, though, this man's enthusiasm is contagious. In addition to the assigned duties of selecting and organizing observing sessions for the Centre (and occasionally for the public), Glenn has volunteered to take upon himself the tiny task of getting a Centre observatory built. And if that were not enough, he also fills the position of Assistant Editor. *[Editor's Note: Since this article was written Glenn accepted a position with the planning department of P.E.I. and has moved there. He hopes to start an astronomy club in Charlottetown and plans to continue his membership with us. We wish him the best in the future.]*

There is one other position, that of Honorary President, currently filled by Dr. Murray Cunningham. His job is to look honorary and distinguished at all Centre functions and he has always done so, even when dressed in a Chinese silk robe and mustache.

What I have tried to point out in each of these descriptions is that the jobs themselves always seem to end up playing second fiddle to the personalities which inhabit them. With this in mind I am inviting each one of you to try one on for size and see how much fun you can have in it. We DO have a good time on the executive. This year, like others, began with a new executive crew, some of us not knowing each other very well. After a few meetings, however, we'd grown into the sociable, affable, yet hard-working body which now runs your Centre. Wouldn't YOU like to be a member of next year's group? I hope so and wish you luck in the elections. Ω

Arcturus - Who Wants It?

Mary Lou Whitehorne

Arcturus, (α Boötes is its proper astronomical name), has been so named for some 3000 years. In ancient times, the names Arcturus and Boötes were used, seemingly interchangeably, to apply to either the constellation or its brightest star. Thus, there are several different legends that apply to both the star and/or the constellation. These legends cast Boötes and Arcturus variously as wagoner, driver, herdsman, shepard, ploughman, the digger or trencher in a vinyard, and in reference to the nearby Great Bear he becomes bear watcher, the bear's tail, bear driver and bear hunter. It becomes apparent that Arcturus has a long and noble history.

One civilization used this brilliant star's appearance in the morning and evening sky as a guide in tending and harvesting their grape vines. There are many references in ancient literature to the use of this star as an indicator of the proper time for various farm chores. Arcturus has been an object of great interest to humankind from early times and was even believed to affect peoples' health.

Arcturus is located at right ascension $14^h 15^m$ and declination $+19^\circ 15'$. It has a visual magnitude of -0.04 and so it is one of the brightest stars in the sky. It is also quite nearby - only 25 light years away - a next door neighbour so to speak.

Its spectral classification is K1 IIIfe, meaning that it is a relatively cool star having a surface temperature of about 5000 K. The Roman numeral III indicates that it is a giant star located above the main sequence dwarfs (those having a luminosity class of V) on the Hertzsprung-Russell diagram. Arcturus is a red giant and can be found on the upper right hand portion of the H-R diagram. The "fe" in the spectral classification means that this star's spectrum contains hydrogen emission features and broad non-hydrogen features.

Arcturus has a measurable proper motion and a high radial velocity. This is due to the fact that Arcturus is an older population II and spends most of its time in the galactic halo. It is currently cutting through the plane of the galaxy and is currently very close to its closest approach to the sun. This velocity appears to be variable; the star is considered to be approaching the sun at a speed of about 5 km/sec.

Arcturus is the first star seen after sunset, high in the sky, in late spring and early summer. This brilliant celestial gem is more than 100 times as luminous as our sun and has a diameter of about twenty million miles. It has gained fame in recent times by having its light used to open the Chicago World's Fair in 1934.

Now for the "who wants it" part. Sometime last year, a member approached me and asked for a photograph of Arcturus taken through a telescope. I didn't have one then, but now I do. If you are still out there and would still like a picture of this majestic star, please contact me. Ω

TLP : Transient Lunar Phenomena

Michael Boschat

How many people look at the moon? It seems all the glory is gone since man landed on that body in the late 60's and early 70's. But that is not the case; there are still things to be done.

What are TLP's? Basically, they are brief phenomena seen by both amateur and professional astronomers. The best documented TLP was seen in 1958 by N. Kosirev using a 1.3 metre reflector in the U.S.S.R. He managed to obtain a spectrum of the reddish glow that he saw in the crater Alphonsus which when developed showed a carbon gas emission spectrum. However, astronomers in the U.S. did not accept the observation.

During the 1950's, Project Moonblink was organized to monitor transient changes on the moon's surface and it still operates to this day. The largest such group is England and operates with the British Astronomical Association. The well known author Patrick Moore is an avid observer and noted authority on lunar phenomena.

So, what is to be seen and what type of telescope should one use? First of all, certain features will show reddening or their floor will be obscured. A good one to watch is Plato. It has been reported that the small craterlets inside the main crater have "disappeared" and the angle of the sun's illumination was ruled out. Another favorite is Gassendi; more TLP's are reported in this structure than in any other. A close second is Aristarchus, which is very bright and is visible in the Earthshine at low to medium powers. What do you see inside this crater? Look at it carefully.

As for telescopes, an 80 mm will show a few TLP's but scopes of 150 mm aperture and up are advised. Also recommended is some type of system to allow filters to be rotated in the optical path. Red and blue filters are best. If and when a TLP occurs, it will "blink" when the filters are switched. At this point, note the time and which feature is involved. Make drawings or photographs if possible and include notes on the weather and seeing conditions.

Those who have the 1987 Observers Handbook can open to the lunar map on page 65 and mark the following areas (or shade them with a colored pencil): Alphonsus, Archimedes, Aristarchus, Atlas, Cassini, Cleomedes, Endymion, Eratosthenes, Gassendi, Hercules, all of Mare Crisium, Plato, Posidonius, Schickard, Tycho. So, the next time the moon is up, take a look. Who knows, you might see something that is not quite right. Ω

Country Observing - Is It Worth It ?

Michael Boschat

"Time?" I ask Ron as we "warp" along the 103 highway. "8:10 P.M." he replies, passing a car. "Almost there" I say in anticipation as the passed car gets red shifted in space-time.

We finally arrive at Mill Lake Observatory (or MLO as we call it). After our first unsuccessful attempt at Pluto we are ready to try it again. *[Editor's Note: see Spode's Law elsewhere in this issue]* Out of the car and into the cottage quickly so that the killer insects don't bite us. Now comes the hard part: to set up the C8 on the pier. Out comes rubbing alcohol and musk oil. We splatter it over our hands and faces. At this point we're ready to pass out from the fumes. If a match were lit we would go up in a big ball of flame that would make the nuclear arsenals of the U.S.A. and U.S.S.R. look like kids' toys. We're ready.

Out the door and along the pier to the telescope stand. We are being buzzed by "them"; kamikaze mosquitos! The solution is not working; we're losing. A bolt drops into the water and a few unscientific words come out of someone as it is retrieved from the water. The telescope is all set up. We run back to the cottage for all we are worth.

Now we see the four baby crows on the steps looking at us and crying for food. We give them some corn flakes. Ron yells, "INCOMING!" Turning around I see a huge crow diving for you know what. "Well boys, it's Miller time" I say as I back into the door very quickly. After a few minutes the baby crows are on the roof pecking at the skylight. Sound familiar to anyone? (Hint: A movie by Alfred Hitchcock).

The sky finally darkens and we decide its a good rime to go observing. On the other pier about seventy feet away are sixteen guys who have all had one too many Millers. We sort of remain motionless so as to not have a possible disaster on our hands. After a half hour they leave. Looking at the sky we see cirrus clouds. "Where did they come from? They weren't there two minutes ago.", I say in a very low voice. ZAP! A flash of light, green and about magnitude -1 in Lyra. The first meteor to record in the log! Meteor observing is in my blood. Every meteor is a part of me. "...Mike". Ron says with an "I hate to say this" tone of voice. "It was a firefly". "No", I reply. I'm disillusioned at this point. I'm sure it was a meteor. I pray it was a meteor. But alas....another green streak darts by. I'm shattered by of all things, a firefly. Then for the kill, Ron yells "FIREBALL!" as my head is hanging down and when I look up, there is nothing left to be seen. Now I know how those outfielders feel when 30 000 or so fans watch them drop the ball.

I finally surrender to the country's will. Is it worth it? You bet! Ω

Lady from Andromeda

David Salloum

There once was a lady from Andromeda.
She one evening came to my humble chambre.
She told me that she was from the future
And knew the fate of the Earth.
I told her there was no such thing - travelling back to historia.

She approached my bed and with her she did bring
A short message that her sweet voice seemed to sing.
She told me that time travel was possible,
As I shall presently see,
And said "Einstein did not know everything."

She grasped my hand and took me forward in time
To see what had happened to Earth; what a dreadful crime.
My world was a wasteland,
So barren and bleak.
A sentence unjust for a planet in its prime.

I wanted to go back and spread the news.
But that was a foolish path for me to choose.
For if I returned,
And changed the past,
The control of my future I would surely lose.

I returned anyway to give my information.
Only to have myself brought before another Inquisition.
They said that I was insane;
My declarations preposterous.
And I found myself in immediate incarceration.

I was imprisoned on a heretic charge, it did seem.
No one would listen to my imploring scream.
I was hopelessly alone, pleading to be heard,
when I frantically woke up,
Realizing that it was all a dream.

However, I remembered mu dream in its entirety,
And found myself resolving the most puzzling questions of antiquity.
I shared my knowledge with the world
And was highly acclaimed,
And began the road to my future, receiving respect and celebrity.

There once was a lady from Andromeda.
She had placed me in a state of euphoria.
For I have given the world
What it had never known,
And have been instilled into the lap of academia. Ω

Librarian's Corner

Mary Lou Whitehorne

One of the things that makes anyone who is in charge of a library feel elated is a continually growing use of the materials over which have been placed in their custody. This is the case where I find myself now. Our library grown considerably over the past few years due to both the purchase of new books by the Centre and through donations (thank you very much). In addition the use of the library has been increasing quite a bit faster than the rate at which we have been acquiring new volumes. However, with all good things, there also come problems.

The main problem facing our library is that we have a very high demand for some valuable reference materials and there have been some problems with books being overdue. This poses a particularly annoying problem when the most popular books are not returned on time. I have come up with two new ideas to hopefully alleviate these problems. They will both be effective immediately. The first is to set up a reference collection which will contain those books which are in the heaviest demand. There will be a separate sign out policy for these books. Secondly, for those members who may not be able to return their books in person, I have arranged several ways for the books to be returned before they become overdue.

In addition, the sign out policies for both regular and reference books as well as the new return policy are set forth below so that members will have a permanent copy of them. I would like to thank you in advance for helping me out. Now perhaps I won't have to make so many "reminder" phone calls or write so many "have you forgotten?" letters!

Sign Out Policy for REGULAR Books

1. The library is open only to members of the Halifax Centre of the R.A.S.C.
2. If you borrow a book, please record the fact in the library's log book and be sure to include your telephone number.

3. Please PRINT information in the log book legibly.
4. Please sign with your initials to show that you have accepted responsibility for the book.
5. Ensure that the librarian initials and dates the return of the book when you bring it back.
6. The normal borrowing period is one month (the book is due back at the next meeting). A longer period is permitted, but you may be asked to return the book for another reader.
7. If you wish to borrow one of the library's limited circulation reference books, please see the librarian who will assist you.

Sign Out Policy for REFERENCE Books

1. The borrower must approach the librarian directly as these books will not be out on display at the regular meetings.
2. Reference books will be available only to members in good standing with the library and they must be returned promptly when due.
3. If the borrower cannot attend the next meeting, they will be expected to return the book through one of the alternate book return methods.

Alternate Book Return Methods

1. Deliver the books to the front desk of the Nova Scotia Museum on Summer Street with a note that they are to be placed in the R.A.S.C. Mailbox.
2. Deliver the books in person to the librarian's home.
3. Mail the books to the Nova Scotia Museum.
4. Mail the books to the librarian's home.



LIBRARIAN'S ADDRESS

Mary Lou Whitehorne
 53 Zinck Avenue
 Lower Sackville, N.S.
 Canada
 B4C 1V9

MUSEUM'S ADDRESS


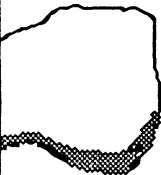
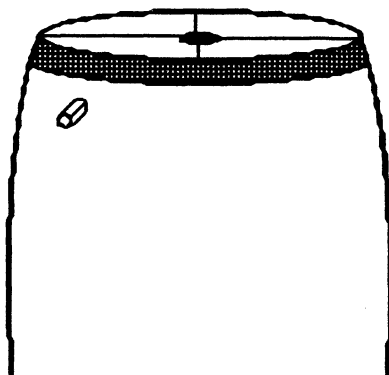
Halifax Centre, R.A.S.C.
 c/o 1747 Summer Street
 Halifax, N.S.
 Canada
 B3H 3A6 Ω

GA☆ZER



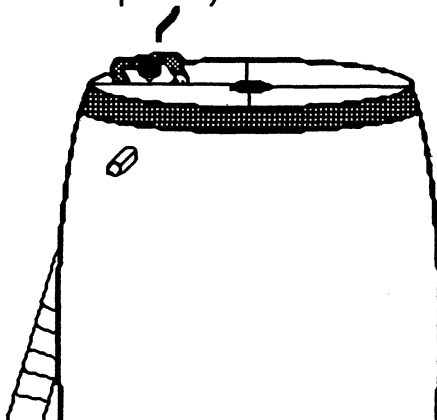
Hi Fred! Glad you could make it over this holiday to see my cement mixer scope.

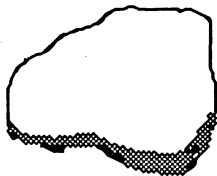
Wow, Gazer! What a light bucket! So this is the one you said that you could see the globular clusters of M87 in? Can I look inside?



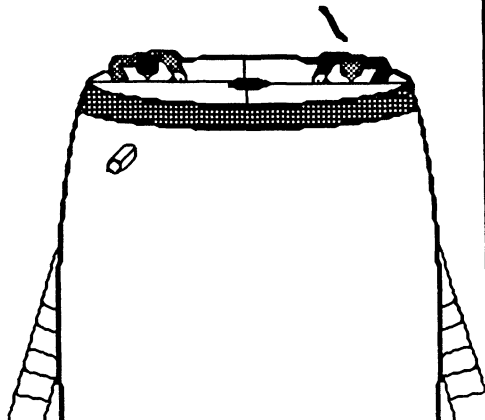
What's all this whitish stuff on the primary mirror?

That's a new mirror; a state of the art Zerodur 1/20th wavelength diffraction limited....

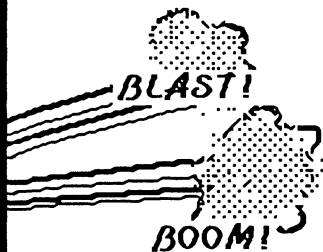




Oh, it's probably just some glare from the high reflectivity.....



BAM!

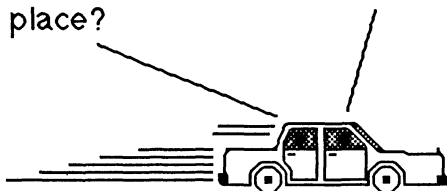


BLAST!

BOOM!

Fred, what is all that noise back at Gazer's place?

I have a pretty good idea. He said something about shooting every %#@&\$ sea gull within five kilometres!



Idea by Len Larkin / Drawn by Patrick Kelly

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Patrick Kelly
2 Arvida Avenue
Halifax, Nova Scotia
Canada
B3R 1K6
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HALIFAX CENTRE - R. A. S. C. 1987 CALENDAR OF EVENTS

September 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	<u>19</u>
20	21	22	23	24	25	26
27	28	29	30			

October 1987

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

November 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	<u>21</u>
22	23	24	25	26	27	28
29	30					

December 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	<u>19</u>
20	21	22	23	24	25	26
27	28	29	30	31		

Key to calendars:

Meetings: **outlined**

Special days: **shadowed**

Observing sessions:

bold and underlined

Special Days:

- Sept. 1 - Antares 0.3° north of Moon
- Sept. 26 - National Council Meeting in Halifax
- Sept. 28 - Antares 0.3° north of Moon again!
- Oct. 7 - Lunar Eclipse
- Oct. 16 - 17 Astronomy Day at the Museum
- Nov. 3 - South Taurid Meteors
- Nov. 18 - Leonid Meteors
- Dec. 14 - Geminid 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

