NOVA NOTES

Halifax Centre

May–June 1991
Volume 22
Number 3

1991 Halifax Centre Executive

Honorary President	-	Dr. Murray Cunningham	
President	-	Mary Lou Whitehorne 53 Zinck Avenue Lr. Sackville, N.S. B4C 1V9	865-0235
First Vice-President	-	Joe Yurchesyn 5264 Morris Street Apt. 1104 Halifax, N.S. B3J 1B5	422-8030
Second Vice-President	-	Brian Segal RR#5 Antigonish N.S. B2G 2L3	783-2772
Secretary	-	Wesley Howie 19 Plateau Crescent, Apt. 515 Halifax, N.S. B3M 3K9	457-3052
Treasurer	-	Nat Cohen 32 Roblea Drive Dartmouth, N.S. B2W 1Y7	434-3103
NOVA NOTES Editor	-	Patrick Kelly 2 Arvida Avenue Halifax, N.S. B3R 1K6	477-8720
National Representative	-	Douglas Pitcairn 13 Ferguson Road Dartmouth, N.S. B3A 4J8	463-7196
Librarian	-	Jason Adams P.O. Box 447 Lower Sackville, N. S. B4C 3G4	864-9783
Observing Chairman	-	David Lane 26 Randall Avenue Apt. 4 Halifax, N.S. B3M 1E2	443-5989
Councillor(s)	-	Dr. David Turner	435-2733
	-	Dr. Randall Brooks	434-7567
	-	Greg Roberts	835-6264
Centre's Address	-	Halifax Centre, R.A.S.C. c/o 1747 Summer St. Halifax, N.S. B3H 3A6	

Notice of Meetings

Date: **Sunday, August 11th: P.M.**
Place: Oakfield Provincial Park (off Highway #2 between Wellington Enfield). There are two provincial parks along this stretch of road. Laurie Park is the southern one, Oakfield is the northern one.
Topic: **R.A.S.C. Family Barbecue and Perseid Party!** Bring your own BBQ, food, etc. and don't forget your bathing suits! Starting at dusk the public will be showing up for our third annual Clouded Out Perseid Meteor Watch! Just in case it is clear, be sure to bring a lawn chair and/or blanket so that you don't get a kink in your neck!

Date: **Friday, August 30th - Monday September 2nd**
Place: Fundy National Park, New Brunswick
Topic: **NOVA EAST '91** The usual information and maps can be found inside this issue.

Date: **Friday, September 20th: 8:00 P.M.** for the main speakers.
Place: Nova Scotia Museum, Summer Street, Halifax. Access from the side entrance. Meeting to be held in the lower theatre.
Topic: There will be several speakers who will be giving reports on the following summer activities: Vancouver General Assembly; Stellafane; NOVA EAST; and the Solar Eclipse Expedition.

Halifax Planetarium Public Shows

There are no public shows during the summer months.

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

JUNE MEETING TRIVIA RESULTS JUST IN !

Category	First Place	Runner-up
Expert	Roy Bishop	Bill Thurlow
Intermediate	Dan Falk	Larry Parker
Beginner	Barry Diggins	Daryl DeWolfe

Overall Weighted Winner : Dan Falk
"Worst Expert" : Dave Chapman

About the cover:

The cover shows an artist's concept of Eratosthenes explaining his calculation of the Earth's circumference. His was one of the first discoveries ever made as a result of the combination of observation and mathematics.

Editor's Report
Patrick Kelly

As there was no Editor's Report in the last issue, there is the usual overflow of information to pass on in this issue. Our Astronomy Day celebrations this year were the biggest yet in terms of the number of exhibits and the number of members showing up to help out. Unfortunately, the turn out from the general public was extremely disappointing as less than one hundred people showed up at Saint Mary's. We will have to make some tough decisions as to whether we can justify making such an effort for such a small crowd. Perhaps now that we have liability insurance, a mall display would be more effective... However, the Halifax Centre owes a vote of thanks to the following people who so generously and cheerfully volunteered their time, talent and effort for Astronomy Day 1991:

Jason Adams
Randall Brooks
Dave Chapman
Nat Cohen
Susan Darch
Rob Hawgood
Wes Howie
Paul Grey
Pat Kelly
Dave Lane
Darrin Parker
Doug Pitcairn
Laurie Reed
Greg Roberts
Jason Schella
Dave Tindall
Mary Lou Whitehorne
Joe Yurchesyn
Walter Zukauskas

Another one of our active members, **Greg Roberts**, has moved on to bigger and better things. Greg graduated from TUNS in May and is spending the summer working at an aircraft repair company in Massachusetts. In September he is off to California to start working at the Jet Propulsion Lab, where he will be "putting spacecraft together". He plans to keep up his membership in the Centre and we hope to see him from time to time as his parents live in the metro area.

The 1991 General Assembly produced several items of business that are relevant to all of our membership. There were two competing bids to host the 1993 General Assembly, one from Toronto and one from Halifax. When the voting was over, Halifax won! As a result, the 1993 General Assembly will be held at Mount Saint Vincent University over the Canada Day long weekend. We will be looking for volunteers to help with the planning, etc. so if there is any particular area in which you would like to help out, contact someone on the executive to let them know.

Membership fees were also discussed at one of the National

Council meetings. Although it was felt that a membership fee increase was required, it was decided not to put a fee increase forward at the Annual Meeting because such an item had not appeared on the agenda which was mailed out to all members. It should be noted that this was done more for conscientious reasons than procedural or legal ones as a membership fee increase could have been proposed. However, it would appear to be certain that a membership fee increase will happen next year.

On to a more local financial concern. The 1991-92 guidelines for the printing of NOVA NOTES just arrived . We no longer have to supply our own paper, but we will be charged for both paper and printing. In addition, they can now only handle newsletters that are on regular letter-size paper (8.5"x11"). The financial implications may require adopting a surcharge to cover the cost of NOVA NOTES. If we are to keep the current format for NOVA NOTES, we may have to consider getting it published at another printer which would probably increase the cost. I suppose that as a last resort we could print it at four point on one piece of paper, and have members tack it to a wall and read it through their telescopes...

For those of you planning to stay in the chalets at Fundy Park for this year's NOVA EAST, you may be out of luck. This year the North American Outdoor Hiking Association (the name may not be correct, but you can get the picture) is hosting its annual "convention" in Fundy Park over the Labour Day long weekend. When we last checked in early June, there rooms were almost completely booked. At least we'll have lots of people for the public viewing sessions.

Some of our executive members have made (or will make) trips to different areas to promote astronomy. Mary Lou Whitehorne, Doug Pitcairn, Dave Lane, Joe Yurchesyn and myself went to P.E.I. in April to give several talks to the Charlottetown Astronomy Club. We also had a chance to sit in on their Astronomy Day mall display and get a tour of the C-10 telescope which is operated by the U.P.E.I. Physics Department. Even as I write this, Mary Lou is vacationing in Newfoundland, but has arranged to make it to one of the meetings of the St. John's Centre. Dave Lane, Roy Bishop, Murray Cunningham and Bill Thurlow will all be in Mexico for the total eclipse and will be reporting back at the September meeting. Also, Doug, Dave and Joe will be going to Stellafane this year and will also let us know what they saw at the September meeting.

Lastly, David Levy has discovered his seventh comet (and after only two minutes of searching!) It's orbit has not been calculated yet, but at the time of discovery (mid-June) it was just below and to the left of M74 and was about magnitude 7.5.

Clear skies until next issue. Ω

Solar Photography Primer

Brian Segal

Photographing the Sun and sunspots is not terribly complicated depending on your equipment but you must take care!

WARNING!!!!!!!NEVER LOOK AT THE SUN DIRECTLY THROUGH ANY LONG LENS (PREFERABLY NO LENS). SEVERE EYE DAMAGE COULD OCCUR AND IT IS IRREVERSIBLE!!!! DO NOT, UNDER ANY CIRCUMSTANCES, USE "EYEPIECE CAPS" OR OTHER SIMILAR TYPE OF FILTERS AT THE EYEPIECE... ONCE THE UNFILTERED LIGHT HITS THE EYEPIECE IT IS BLISTERING HOT. IT WILL CRACK THE LITTLE FILTER, FRY YOUR CAMERA AND FRY YOU TOO! ONLY USE A FILTER THAT COVERS THE ENTIRE OBJECTIVE!!!

TO AIM SAFELY AT THE SUN

The easiest method I know of is to hold a piece of white cardboard at the rear (eyepiece) end of your scope so that the scope's shadow is cast on the cardboard. If you hold the board squarely facing the Sun you then move the scope around until the shadow on the board is lined up so as to show only a two dimensional image (i.e., no tube length). It's easier to do than explain! At that point the Sun should be streaming into your scope and you haven't had to look directly at the Sun!!

FOCUS

The Sun is a very active body, and emits, obviously, a lot of heat. To add to the general confusion, the Earth's atmosphere is always in motion as well. Ironically, in astrophotography the shorter the exposure the greater the negative atmospheric effect on sharpness. In a very long exposure (like at night) the waves of atmospheric disturbance are averaged out and the sky looks smooth and stars are pinpoints.

However, in daytime shooting at things like the Sun, (or at night, the Moon which is a daylight object due to its brightness) your shot catches everything including not only any shake present in the system, but also the wave fronts. Basically you have to take a lot of shots at each focal length to get a good one. As your focal length increases so does the problem. On top of THAT, as you add more glass and longer optical paths your image loses sharpness as well. It just takes a lot of patience and LUCK! One of the reasons I prefer slower film (ISO 400 and less) is because at least you don't have grain to add to the problem. Refractors provide the sharpest image as there is no obstruction from a secondary mirror.

Oh yes, to get sharp focus you have to be very careful. I recommend a clear, non split image screen if your camera allows screen changes. Nikon, for example makes one for microscopes and another plain ground screen The brighter the screen the better. I usually focus on the limb (edge) of the Sun to get it as sharp as possible. However at high magnifications where you can really see the spots well, focus on them. The Sun has a naturally granular surface (sort of like orange peel) so don't panic when you see this in your viewfinder or on film.

REFRACTORS

If you have a refracting telescope (i.e. only lenses, no mirrors) there are two acceptable methods:

(1) Projection:

This is where you aim the scope at the Sun so that the Sun's image is projected on to a piece of white card behind the eyepiece. You can then use a camera with a macro lens to photograph the image on the card. The longer the focal length of the eyepiece the bigger the image and the lesser amount of whole Sun captured. In other words, it's like any other lens configuration, the shorter the focal length the wider the angle, the more covered, the smaller the details. To photograph a projected image on cardboard use your camera's meter and BRACKET one or two stops in each direction.

(2) Prime focus:

ONLY ATTEMPT THIS WITH A FULL APERTURE SOLAR FILTER WITH AN ATTENUATION OF AT LEAST D = 5.

Most commercial solar filters on the market satisfy this need. This reduces the solar glare by a factor of about 100,000 to 1 and is safe. The best ones I know of that are easily available are made by a company called Thousand Oaks Optical in Michigan, but any copy of either *Sky & Telescope* or *Astronomy* has ads for solar filters. I would recommend the glass ones as they are very sturdy!

Always be careful not to scratch the coatings on solar filters. Do NOT use a solar filter that has obvious scratches as ultraviolet light will leak in and your eye will be wide open! You may notice that some filters have the odd tiny pinhole. You can opacify these with an indelible black marker.

Once you have the filter mounted on the front objective, and with the FINDER EITHER COVERED OR REMOVED, aim at the Sun using the method described above. You can see the solar disk through your camera (which is attached to the telescope through the use of a "T-ring" and a "T-adapter") which is at the prime focus of your scope where the eyepiece used to be.

You can enlarge the image, thus getting more detail, by using a special tube that allows you to place an eyepiece just in front of the camera and can vastly extend the telephoto length of the scope (I can make my 8" Schmidt-Cassegrain into a 25,000 mm lens!).

REFLECTORS

If you have a reflecting telescope I would only recommend method (2) - PRIME FOCUS - using the full aperture filter. In a Newtonian you may have fewer problems as the tube is not sealed and can cool, however, with a catadioptric (i.e. a Schmidt-Cassegrain, Maksutov, etc.) the tubes are sealed and tremendous heat can build up and fry your optics!

Any GOOD astrophotography book will describe the necessary equipment for all of this. Also back issues of both *Sky & Tel* and *Astronomy* have had numerous excellent articles over the years.

SHUTTER SPEED/FILM SPEED

As the Sun is a daylight object you can use any speed of film. I recommend films in the ISO 50 to 100 range because they can pick up great detail and in slower exposures (necessary with very long lenses) there is less colour shift if you use Fujichrome. As to print film, any thing like Reala, Gold 100 or the like will work. You can use faster films to gain a faster shutter speed which helps at lower magnifications, but once you get up into the high focal lengths the only acceptable method is to lock up your camera's mirror and wait for a still moment!

Since your aperture is fixed (telescopes don't have diaphragms) the two exposure factors you have FOR A GIVEN FOCAL LENGTH are film speed and shutter speed. Once you have selected a film, shutter speed is it!.

To calculate exposure at prime focus you have to know the attenuation factor of your solar filter, the focal length of the lens and the film speed.

1. Calculate the system's "f": ratio by dividing focal length by aperture diameter (i.e. a 2000 mm scope with a 200 mm aperture is an f/10 system... a 12,000 mm focal length with a 200 mm aperture is an f/60 system and thus 5 stops SLOWER than the f/10 system!) Once you have determined your basic exposure at prime focus you simply move your shutter speed stop for stop. Once again a good book will fill you in.

2. Once you know the f ratio, the film speed, and the attenuation you can easily calculate the shutter speed if you own a copy of Barry Gordon's excellent book "*Astrophotography, featuring the fx system of exposure determination*" published by Willman-Bell Inc. I recommend it highly, it's packed full of info and a real time saver.

But just to give you some guidelines, using ISO 100 film, a filter attenuation of D=5, and an f/10 system I would shoot bracketed exposures starting at 1/125 and stopping at 1/30. You might even go as fast as 1/250. So with ISO 200 you start at 1/250; at ISO 400 start at 1/500 (but I would start at 1/1000 to be sure) and at ISO 800 start at 1/2000. As you can see it doesn't take long

to increase focal length to the point where the old rule of 1/FOCAL LENGTH for shutter speed becomes irrelevant. Once you get into long focal lengths with eyepiece magnification you defeat that rule in a "flash" - pardon the bad pun! So why not use finer film?

I usually employ overkill and shoot from two stops above to two stops below my calculated ideal (5 shots per image). It's worth it. LOCK UP YOUR CAMERA MIRROR FOR ALL SHOTS.

If you are going to take longish exposures your telescope should be tracking with a motor drive. The Earth IS travelling at about 1600 km/h and after a while it shows. But for the most part a rock solid tripod and mount is the basic requirement.

Solar photography is very challenging. It is an activity that can be done during the day, and what's more it is a valuable contribution to the science as it represents a true record of a passing phenomenon. The Orion Nebula is a constant target that has been photographed again and again, but the Sun is in a state of continual change, and each observation represents fresh data. Just be certain to use the proper filters procedures, and enjoy the chance to take close-ups of our nearest star! Ω

The Spring Expedition of the S.J.A.S.

David Driscoll

The Saint John Astronomical Society planned a Messier Marathon for March 18/19 of this year, a Friday night with no Moon in the sky. However, the date was moved to Saturday because of overcast skies at the observing site on Friday night. This is a mixed blessing: we should have a more leisurely setup in daylight Saturday, which is a plus, but I will end up playing Mr. Mom to four kids because my wife has a meeting out of town. This may not be a minus but it is not a plus. Saturday started clear with high altitude clouds, and a forecast for crystal-clear skies overnight. We also, of course, had a forecast of dropping temperatures (Arctic front with -10° temperatures). Astronomers left their various home bases in the middle of the afternoon. I made a stop-off at Malcolm Baxter's (current holder of the Tallest Astronomer in the Maritimes title) to let him know that the trip was a "GO". Malcolm dropped a pending family visit (i.e. He pulled a U-turn and chased my car back to his house. He was already on his way for the visit), packed his gear, loaded wood into the firebox, loaded 'scopes into his truck, and was off.

Our destination: Micmac campsite #1, Fundy National Park. For those of you who have never been there, Micmac #1 has a closed-in cook house with storage cupboards and a large wood stove. The campsite is about 200 metres off the main road, but the park ranger estimated that we should be able to drive right into the campsite. About 4:00 pm Saturday afternoon all of the group but one arrives at the park headquarters. Tom Anderson, the missing amateur, will come later from his home in Moncton - much later as it turns out, but we don't know that at the time. A small convoy of three vehicles sets out from Headquarters and shortly encounters its first obstacle; a locked gate across the main road, just past the pool. But we can handle this. The warden left us a note saying how to get in touch with him, so we call him and he comes and opens the gate. Obstacle #1 is successfully overcome.

Obstacle #2 is not so easy. Although the warden thinks that the camp road should be passable, he errs in his thinking. None of the vehicles can go more than 20 metres on the camp road, so we park on the main road and haul our supplies in by hand. Although we cannot overcome obstacle #2, we can live with it.

Obstacle #3 is another matter. We walk into the campsite – no problem. We open the cabin door – no locks, no ice to chop, no problem. We step through the door into 5 cm of water. Now we have a BIG problem. Our choices are:

1. Abandon the expedition - this is not really an option.

2. Move to another campsite. This risks disturbing non-astronomy types who sleep at night and use the same cabins. It's an option but not a great one.

3. Move to Micmac site #2 with its dry, open-sided cook house. Since we don't intend to sleep much, we pick door #3. This means that we have to haul all of our equipment 400 metres plus, over hard-packed snow. My kids don't fall through the crust, but with a load of gear I manage to break the crust on occasion. But we have gotten smarter and this year we have a supply of water. After the first 100 metres a 20 litre jug gets awfully heavy. Worse is yet to come!

Meanwhile, back at the ranch (cook house), Malcolm is making a fire in the stove, and Debbie Storey is making supper. Francis Casey is assembling his C-8. Food is spread all around, daughters are eating, son and friend are hauling counterweights from the car. Supper is very well done by the time the boys eat. We also have very dim lighting, which you expect with astronomers, but it makes it damn hard to see what you are eating, let alone find anything. And Malcolm still has a double air-mattress to blow up.

On to observing. Venus looks great. The sky is sparkling and clear. But we have missed two objects already because of circumstances beyond our control (see obstacle #'s 1,2 and 3). I have two small distractions (ages 4 and 2). The girls are tired and I stuff them into a double sleeping bag and shove them under a picnic table by the wood stove. They are settled for the night. Between 9:00 and 10:00 P.M. we hear a voice in the wilderness. Tom Anderson has arrived and King Kong (the 320 mm (12") f/9 on equatorial mount) is in the truck. Tom says he would have been here earlier, but the mount was frozen in 15 cm (6") of ice and had to be chopped free. We now have 200 kg (450 lbs) of steel and optics to haul across 400 metres of crusted snow. This takes a while. Most of the stuff fits on a toboggan. The optics tube does not fit because it is too long. The pier does fit, but keeps falling off. By the time the pier has been carried to the observing site, we are 5 cm shorter but our arms are 5 cm longer. A hole has to be dug through the hard, crusted, ice-laden snow down to the ground, so that the 'scope will have a solid base to stand on. And the snow is only 40-60 cm deep. Before midnight we are in operation. It may have been as early as 11 P.M., but I forget. At least we are all warmed up again (small wonder)!.

We observe. The kids toboggan – down the hill and into the cook house; and into the road, and into the trees and into all sorts of stuff. We return to the cook house to thaw out. The top of the stove is red hot, but a slight breeze has come up and it blows all the heat away and freezes the water. In an attempt to get close to the heat, Luke melts his new nylon parka. This should be fun to

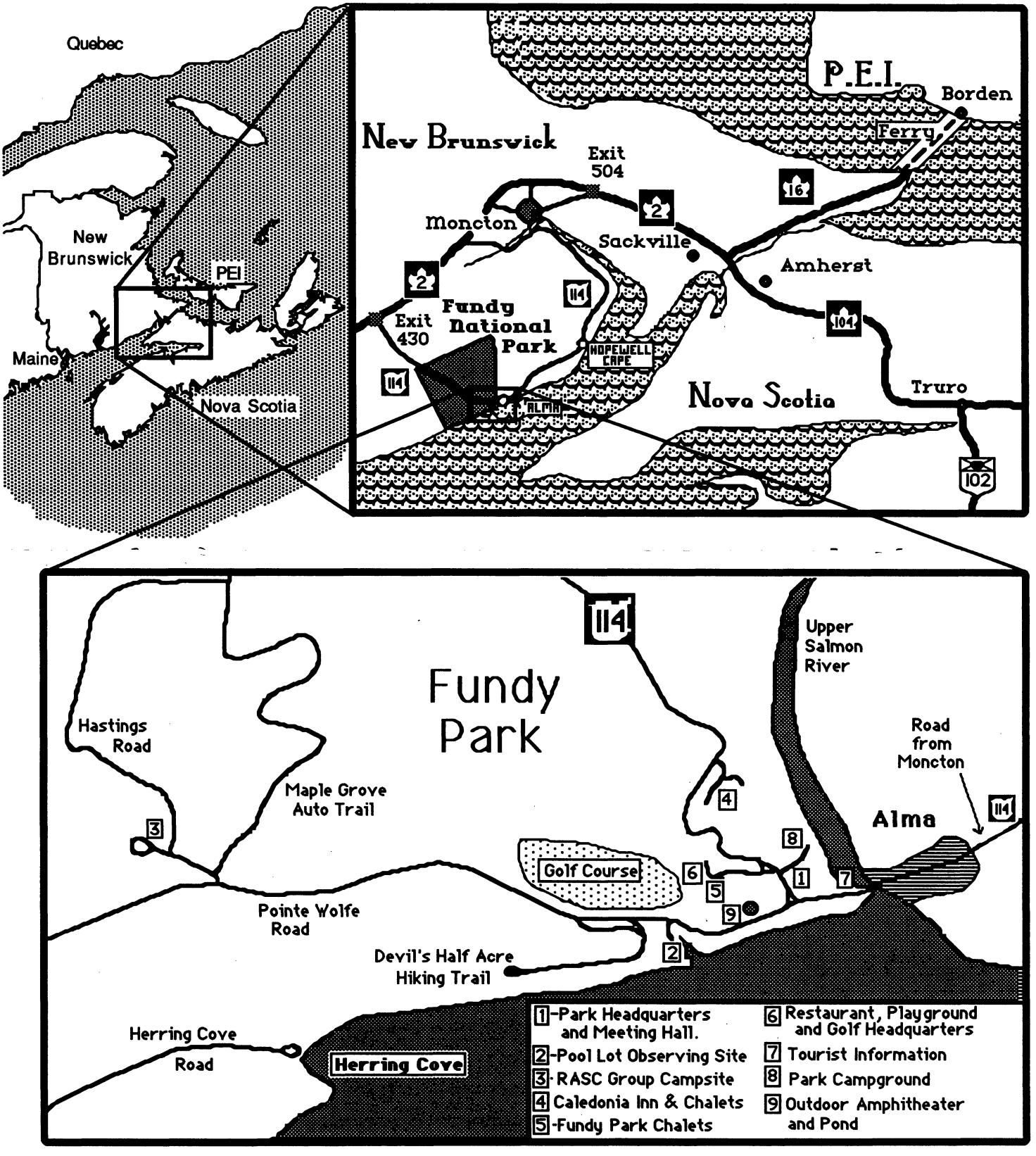
explain to his mother when I deliver him home - he's not one of my kids! Malcolm's daughter Corrine complains bitterly about the cold. Even roasting her feet does not help.

We returned to observing. Lyra is just coming over the trees. After a year of waiting Debbie Storey is going to have somebody show her the Ring Nebula. I advise her to wait until it gets out of the trees. She ignores my advise and threatens me with bodily harm unless I get the Ring (nebula) in a telescope "right now". This is a slight exaggeration, but you get the picture. When she does see the Ring peaking through the trees, she is disappointed by the mushy image. "That's it?!". We do get a much better image in Tom's scope a couple of hours later. Debbie has finally seen the Ring Nebula. Debbie also warns us of incoming clouds to the southeast right in the middle of Sagittarius. Debbie has seen her first, light-pollution-free view of the Milky Way. We continue to observe and thaw on and off through the night.

When the sun comes up we pack up and haul many pounds of 'scopes and optics back to the vehicles. Francis Casey packs his telescope and telephone (cellular) and goes home. Malcolm packs his 'scope, double air mattress and frozen daughter and goes home. Tom packs King Kong on his rental and goes to rescue his son from a winter cub camp. David and Debbie and David's three kids (plus the one on loan) have breakfast at the observing site, and in keeping with Nova East tradition, head into the big city of Alma (pop.104) for the post-observing meal. We find the only place open and indulge in hot chocolate and industrial-strength coffee. This is an alright ending to a long observing session, with the drawback that many townies now think that Debbie is the mother of four kids. I hope we try it again, but next year I'm taking a tent and a catalytic heater or a dragon. Ω

Astro Ads

Fundy Park


Quebec
New Brunswick
PEI
Maine
Nova Scotia
P.E.I.
Borden
Ferry
New Brunswick
Exit 504
16
Moncton
2
Sackville
Amherst
2
Exit 430
Fundy National Park
114
HOPEWELL CAPE
104
114
ALMA
Nova Scotia
Truro
102
114
Upper Salmon River
Fundy Park
Hastings Road
Maple Grove Auto Trail
Road from Moncton
Alma
114
3
4
8
Golf Course
6
5
1
7
9
Pointe Wolfe Road
2
Devil's Half Acre Hiking Trail
Herring Cove Road
Herring Cove
1-Park Headquarters and Meeting Hall.
2-Pool Lot Observing Site
3-RASC Group Campsite
4 Caledonia Inn & Chalets
5-Fundy Park Chalets
6 Restaurant, Playground and Golf Headquarters
7 Tourist Information
8 Park Campground
9 Outdoor Amphitheater and Pond

NOVA EAST '91

Doug Pitcairn

Once again, the Halifax Centre of the R.A.S.C. and the Saint John Astronomy Club will be jointly hosting NOVA EAST. I have included a schedule of events and a map which shows the Park layout and how to get to Fundy. More detailed maps of the park are available at the information centre which is just over the bridge from the village of Alma.

There is no registration fee for this event, but there is the usual park entrance fee of a few dollars. There are two kinds of accommodations available. For those who prefer camping, we have a large site in the Micmac Group Campground. There will be enough room to accommodate all who wish to come. Those who camp will not have to pay camping fees, as these are waved in lieu of our Public Observing Sessions. For those who prefer to be a bit more civilized, there are two inns in the park. One is **Fundy Park Chalets** which has 29 housekeeping units. It features a licensed dining room and lounge, coffee shop, shower, B&W TV and heated pool. Rates are about $65 per night (1990 prices) Phone: (506) 887-2808 or (506) 433-2084. The other is **Caledonia Highlands Inn and Chalets** which has 44 units,showers and color TV. Rates are about $70 (1990 prices). Phone: (506) 887-2930. In addition, there are several motels in the small village of Alma, right beside the park.

As this event is listed in both **Sky & Telescope** and **Astronomy** magazines, we are starting to draw people from all over. In addition, the park publicizes the public star shows and talks, so we hope to have a good turnout for all of the events. The later date this year will hopefully assure us good clear skies, as this is the best observing "window" our weather allows. Last year, there were dozens of 8 inch and larger telescopes, as well as various homemade gizmos and scopes. Don't be shy if you have no scope, there is always an eyepiece to look through. I never met an owner of a large scope who didn't like to show off views. Anyone will find lots to do at night and during daylight hours. The park is one of the oldest in Canada, and is well established with dozens of walking trails and entertainment facilities for all ages, including an excellent golf course, restaurant, lounge, swimming pool and playground .

Again this year we hope to have an electrical generator at the Micmac Campground. Thus we will be able to use a slide projector, so if any of you have slides that you would like to show, bring them along! As with any star party, the more who attend, the better it is. We are having some new NOVA EAST '91 T-shirts made up and will have them for sale again this year. I hope to see you there. Ω

Date	Time	Event	Location
Friday August 30th	All day	Arrival and camp setup	Various locations
	21:00 - 23:00	Public observing (3 or 4 volunteers)	Assembly Hall
Saturday August 31st	Morning	Free time	Anywhere
	12:00 - 14:00	Corn boil and weiner roast	Micmac Campsite
	14:00 - 17:00	Scope setup Group photo session Swap shop & gab session	Micmac Campsite
	17:00 - 19:00	Private suppers	Wherever
	19:30 - 21:00	Public talks* If clear, 4 talks followed by observing If cloudy, 6 talks followed by telescope display	Assembly hall
	21:00 - 23:00	Public observing (3 or 4 volunteers)	Assembly Hall
Sunday Sept. 1st	All day	Free time	Anywhere
	21:00 - ??	Private observing	Micmac campsite
Monday Sept. 2nd	All day	Departures and farewells	Various

Astro Quips

Doug Pitcairn

You know your telescope is too big when:

1) The local aviation authority insists you mount a flashing red light on top.
2) You can't go observing tonight because no cranes are available from the local supplier.
3) You attend Stellafane and you end up with the longest lineup at your eyepiece.
4) You find yourself arguing with your spouse that an 18 wheeled truck might be a reasonable second vehicle.
5) You install a new counterweight, and Greenwich Observatory contacts you because every time you slew, it affects the rotation rate of the Earth.
6) You order a new mirror, and Corning stock goes up 3 points. Ω

Notes Across the Fundy

Len Larkin

It has been two years since the last "Notes" was written so I will try to fill you in about the activities of the Saint John Astronomical Society from that time on.

1988

Like most astronomy clubs, we have been involved with presentations for cubs, girl guides, scouts, etc. on a continuing basis. Many members have given these talks over the years. In 1988 we were also part of larger project - the annual Cubaree. Dave Driscoll, Tom Anderson and I setup displays June 3rd/4th of that year at the Cubaree site (about 30 km southwest of Saint John) for the 150 or so cubs attending. We also treated the leaders to some views through telescopes. In April, I gave my first presentation/observing session to school students (Grade 4) and found it to be a wonderful experience. The kids had taken astronomy in their science class in previous weeks and were primed with loads of questions and enthusiasm.

Dave D. was very active the fall of that year in teaching astronomy courses. One general observing course was presented to a half dozen people in three Saturday sessions through the Recreation and Parks Department of Saint John. Another course on naked-eye astronomy was given weekly, over several weeks, to a church group in Sussex (about 80 km northeast of the city). This group was working towards their Duke of Edinburgh awards.

The S.J.A.S. participated in a Family Fun Day at Rothesay Elementary School in October with the hopes of generating some publicity for the club. The 2,000 parents and kids who paraded past the exhibits were entertained by a slide show, computerized planetarium program, jumbo star charts, telescopes and more at our exhibit. Unfortunately, we didn't receive one new member out of the 2000 visitors! I think that, after this activity, we lost interest in publicity events.

1989

Dave D. developed the logo for our membership cards (currently on the front of Night News). In September, elections were held and Dave became the new club president, Tom Anderson - Vice President, Francis Casey - Secretary and Bruce Scott - Treasurer.

Several members attended the General Assembly held in Sydney that summer and, as in the past, six to eight members made it to the Nova East weekend in Fundy National Park.

Our members enjoyed a visit to the astronomy facilities at U.N.B. in November/89 courtesy of Merril Edwards. The account of this trip was published in the May/90 issue of Nova Notes.

1990

Early in this year, Dave McCurdy began using his 13.1" Dobsonian (currently the largest 'scope in the club). The S.J.A.S. made its first spring expedition to Fundy Park in March, which also marks the completion of the massive mount for Tom Anderson's King Kong (12" f/9 Newtonian). Continuing on the telescope topic, Francis Casey, by the end of 1990, had completed his roof-top observatory on top of his garage. It provides a permanent home for his C-8 and, while a bit cramped, gives a welcome respite from the icy winds of winter.

Our newsletter, Night News, went through a series of face lifts in 1990 as I learned some of the tricks of Word Perfect. It now provides 8 pages for members' articles, news, etc.

The S.J.A.S. got involved in one of its latest projects in the summer of 1990 when Professor Bob Hawkes of Mount Allison University asked us to assist him in his meteor project. Professor Hawkes told us about his project at a fall meeting and was kind enough to give our members a tour of the facilities at Mount Allison this past winter. We may get some imaging done this summer, if all goes well.

Publicity for the club was well organized by Debbie Storey and Kay Belanger, for on November 3rd we had a busy day at McAllister Mall (the largest mall in Saint John) with our display. Several telescopes were set up, tables were crammed with books, posters, star charts, etc. Astronomy videos ran continuously all day as did a computerized planetarium. Lots of people browsed around the exhibits and several new members have come into the club as a result of it.

1991

Most of the meetings this year have found various members giving short talks on subjects assigned to them earlier. Below is the list for this year:

January	- Stellar Evolution - Kay Belanger
February	- Black Holes - Chris Clayton
	- Galaxies - Bruce Scott
March	- Rainbows, Halos - Dave McCurdy
April	- UFO's - Ruth Thompson
	- Messiers - Len Larkin

Dave Driscoll, continuing his teaching tradition, has given two separate Saturday courses recently. The busiest one, no doubt, was a six hour session for Girl Guide badge certification.

Some of our members expressed interest in attending the Halifax Banquet but after Mary Lou took the time to send me tickets and information, some schedule mix-ups with our members caused the plan to flop. Instead, at last minute notice, a banquet was scheduled here in Saint John for our members on May 11th. It was a success with fifteen people attending.

The highlight of the banquet was the presentation of our very first Service Award to David Driscoll for all his work in the club. He definitely has done the greatest number of Cub, Guide and school talks within our membership. On top of that, he has given numerous astronomy courses in the Saint John region, along with many presentations at meetings over the years. Dave has also been active in just about every activity that the club has attempted since its inception, including observing when he led the club with over forty Mars sketches during the 1988 opposition!

We have already completed a second trip to U.N.B. and, of course, some hardy members endured another trip to Fundy Park recently. We currently have about eighteen members in the club with four of us in the Halifax Centre also. So we are still alive and well here in Fog City and hope to see many of you at Nova East '91.

Our current executive is as follows:

PRESIDENT: David Driscoll Ph:(506)693-7552
VICE PRESIDENT: Position Vacant
SECRETARY: Debbie Storey Ph:(506)738-8664
TREASURER: Bruce Scott Ph:(506)693-3035 Ω

Astronomy Day '91

Wesley Howie

The annual Astronomy Day was held on Saturday, April 20. The event was a success with about 100 people attending the various events and presentations.

Many interesting static displays were presented at Saint Mary's University. Nat Cohen and Dave Lane demonstrated the Center's mirror grinding machine. Yes — an actual washing machine-spare bicycle parts-come mirror grinding machine. Apparently this contraption was salvaged from the basement of Randall Brooks, renowned astronomical contraption historian. But, hey — the machine works and it certainly beats walking around a wooden barrel for several weeks. There was some talk of starting mirror grinding clinics in the near future.

An impressive array of telescopes were on hand (complete with owners) for public scrutiny. The Center's Black Hole Telescope, so named because of the black hole mass counterweight, captured many a glance, as did ~~Dick~~ Joe Yurchesyn's semi-portable refractor. Dave Lane and Centre President, Mary Lou Whitehorne, exposed their Schmidt-Cassegrains to the public. Dave had on hand many boxes full of styrofoam and gadgets that could connect all manner of cameras and eye holes to the telescope (no Schmidt!!!).

A fine display on the history of celestial navigation was presented by Dave Chapman. The display consisted of many texts illustrating the development of star charts and celestial navigation aids over the history of astronomical observation.

Greg Roberts was on hand with his "faster than Ben Johnson-brain the size of a planet" computer. Greg was displaying Landsat images he had received from N.A.S.A. The software is capable of zooming in on these images to a resolution of a couple of hundred feet. Greg also displayed images of the outer planets taken by the Voyager space craft.

Doug Pitcairn gave his now classic "Is There Life Out There?" presentation. The talk was well attended by the public. Doug's lecture included excellent imagery, some created by Doug himself on a Macintosh computer, of what other worlds and other beings may look like. After attending this talk one is left with the impression that we are most likely not alone in the universe. (Of course we're not; I've seen Alf on TV and I read the National Inquirer – need I say more?)

Mary Lou Whitehorne conducted tours of the Burke-Gaffney Observatory. The approximately fifty people who attended the tour were treated to some solar observing. Mary Lou also demonstrated some of the exotic equipment used to study the stars. Such things as cameras, spectroscopes, and eyeballs were thoroughly discussed.

The Center had free literature on hand for the public. Among the hand outs were copies of *Astronomy* magazine, 1990 Observer's Handbooks, monthly sky charts, NOVA NOTES, and R.A.S.C. membership information. After viewing the myriad of displays at Astronomy Day '91, the public appetite for more information on astronomy seemed voracious. An indication that our efforts were not in vain.

Oh yes, before I forget, there was a computer on hand from that other computer manufacturer (Apple, I believe) running some sort of sky atlas program (was it Voyager?).

All in all an interesting time was had by all; astronomer and public alike. The Centre is already looking forward to next year's Astronomy Day with great anticipation.

I would like to take this opportunity to apologize to anyone who presented a display during Astronomy Day 91 but who was left out of this article. Your efforts are by no means diminished however, time, space, and especially memory are limited these days.

I would like to take a moment, on behalf of the Halifax Center, to thank all of those who participated in Astronomy Day 91. It is with your cherished support that we are able to make events like Astronomy Day '91 possible. Ω

Log on to N.A.S.A.'s Spacelink

David Griffith

While browsing through the school's heap of *Odyssey* magazines recently, I came across an article about Spacelink, N.A.S.A.'s on-line information service. This service was created in 1988 primarily for teachers and is a veritable gold mine of up-to-date information on astronomy and space science. As a teacher forever in search of this type of material I decided to log on. I'm glad I did.

Once on-line, it is a simple matter of browsing through the various menus and submenus until you find something you like. If you are new to telecomputing, worry not! Spacelink offers simple step-by-step directions on how to use this service. Once you locate something that you think may be useful, you can either view it on the screen or download it via either Xmodem or Ymodem protocols.

To say that Spacelink's database is extensive would be an understatement. Information is updated constantly and includes such things as downloadable programs and graphics; status reports on N.A.S.A. programs like Magellan; education services and classroom materials; current N.A.S.A. news and press releases, etc. etc. The list is exhaustive.

If you own a computer and have never tried Spacelink, try it! The downloadable files and programs alone justify the long-distance call to Huntsville, Alabama, home of the Marshall Space Flight Center and Spacelink's computer. The service does not charge an access fee; your only cost is the phone call. Do it during discount times like late at night or on Sunday and it is a real bargain.

To access Spacelink, set your communication parameters to eight data bits, no parity and one stop bit. The service supports baud rates of 300, 1200 and 2400. To log on, simply dial 1-205-895-0028. New users will be prompted to enter a username and password, as well as supply mailing information.

While Spacelink is not an interactive service like many bulletin board systems, there is a provision to leave questions and comments for N.A.S.A. before logging off.

Though Spacelink considers itself a service primarily to teachers, its services would be of great interest to anyone interested in astronomy and space sciences, a criterion applicable to anyone reading this newsletter, I would venture. My only regret is not having learned of this service earlier. Thanks *Odyssey*!.Ω

Lodestar Plus Upgrade

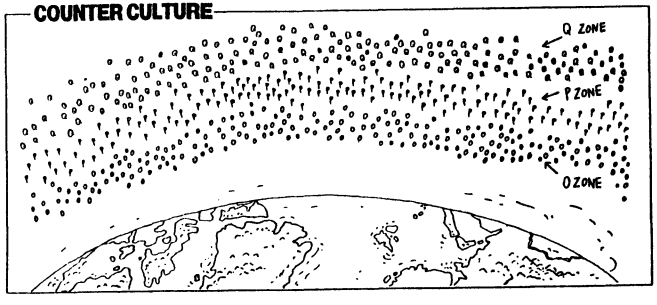
David Griffith

In the Jan.-Feb. issue of NOVA NOTES, I reviewed the *Lodestar Plus* computer program for IBM and compatibles. My general conclusion was that *Lodestar Plus* is a powerful program hampered by some pesky, though not crippling deficiencies.

I recently received an upgrade notice and for the less than $50 fee, decided to upgrade to *Lodestar Plus II.* I am quite pleased with the improvements made to the program, although I am very disappointed with the company's (Zephyr) decision not to upgrade the manual. The only documentation received with the upgrade was a twelve page add-on outlining the new features. That being said, now for the improvements.

First, the overall plotting speed of the program has been approved and the occultation search program has been speeded up considerably. These are both important considerations for those equipped with slower machines without math co-processors. Cursor movement on the screen is smoother and more accurate. A function to find and identify constellations is now included; a feature useful to novices just learning their way about the sky. Also, a new user database has been added, containing names of the seventy-nine brightest stars and forty-eight deep-sky objects. Provision now exists to create a personal database containing objects that may be of special interest to the user. An option exists to upgrade the star database from 9,096 to 259,075 now exists but at an extra cost. As an added bonus, several configuration files of noteworthy astronomical events are included to demonstrate *Lodestar's* capabilities and applications. I particularly enjoyed the May 28th, 1737 occultation of Mercury by Venus.

In sum, *Lodestar Plus II* is a definite improvement to the original program. I have not seen the new version advertised yet, though I suspect that this will happen soon. Now if only software companies could learn to write decent manuals! Ω



Ask GAZER
GAZER

Dear GAZER:

At a recent meeting, Pat indicated to you were getting little correspondence lately. I presume that since you are the "Ann Landers of the Halifax Centre" you need some practice. Therefore, you should not object to giving an opinion and/or personal advice concerning the commentary in this letter.

An occurrence at a recent Centre meeting has irked me enough to take pen in hand to request a second opinion - before I charge off to demand a Special Meeting of the Centre to voice my complaint.

At the March 15th R.A.S.C. meeting, demonstrative and radical remarks were made against the joys of planetary viewing(!) by certain (not to be named) deep sky observing fanatics. Even the Observing Chairman, a self-confessed deep sky observer, could not bring himself to mention the current activity of the brightest and most wondrous of the planets - Venus! "I forgot." he said. "Horse hockey!" I say.

I interpret this as a subversive threat by some fanatical deep sky observers to take control of the Halifax Centre and to begin the brainwashing of other observers to the non-existent joys of squinting blurry-eyed at faint, indistinct, averted vision smudges that exist more in the imagination of the disciples than in the telescope.

Have I innocently stumbled onto a covert plot or not?

Deeply Concerned
A Solar System Observing Fanatic

P.S. What is your observing preference? No one can be above suspicion!

Well, I must say that the topic of this letter is rather unexpected! I had heard through the grapevine that some of the general membership had to start a "Venus" cheering section at one of the recent meetings, but I had not suspected that there was an active conspiracy afoot. However, I have done some research into the subject and have found evidence not only to substantiate your theory but in fact evidence of an even wider and more far-reaching web of treachery and subterfuge. In fact, if my suspicions are correct, the end result could possibly be a scandal that could have implications reaching as far as the Royal Family!

I began by looking at the trend of reports of amateur observations as reported in NOVA NOTES over the past decade. At first, there is no marked bias one way or the other. However, you may recall that back in late 1985, a new column was added to NOVA NOTES, called "Gawker's Report". If you follow the development of this column to its eventual demise in mid-1988, you will see that there is a huge increase in the number of "deep-sky" observations especially towards the end. Not only that, there is only a token mention made of double star observations as well as planetary ones.

There are several interesting points that can be raised about this column. It was introduced shortly after the current editor took over and in fact "Gawkers' Reports" was compiled by him for a period of time. This leads me to believe that he was either an unwilling tool of the conspiracy or was an active participant. I suspect the latter and that the reason that the column was cancelled was because it was getting too obvious that the deep-sky fanatics were taking over! Since then, the tone of NOVA NOTES has been a bit more balanced, but not by much.

It was at about this time in my investigation that I also began to realize that at about the same time that the Gawker's Report" was canned, there was a great increase in the number of so-called "regular" members showing up at Centre meetings bringing in box after box of astrophotographic slides to "entertain" the rest of the membership. Again, I have no firm proof but I suspect that this was a change in tactics by the fanatics and that their approach was two-fold. The most obvious one was to show that the only real use for a telescope was astrophotography. And not just any old astrophotography but astrophotography of deep-sky objects. The second method of brainwashing was accomplished by placing "subliminal" slides into the ones being presented at meetings. Messages such as "Altazimuth mounts suck" and "Astrophotographers do it in the stop bath" were just some of the slogans used.

Now for the more important aspects of this conspiracy. The same NOVA NOTES editor is now also editor of the Society's BULLETIN and in the brief time since he has taken over that position, there has been a decided slant in the content of the BULLETIN towards deep-sky observing. This in itself would not be too startling, but I decided that all avenues should be explored, so I wrote to Rosemary Freeman, (the Society's Executive Secretary) to obtain a list of the members on the various national committees. This is where the trail started to get hotter!

There were several changes made to the committees at the recent General Assembly. The following people from the Halifax Centre are now on national committees in the Society: Roy Bishop, Randall Brooks, Patrick Kelly, David Tindall and Mary

Lou Whitehorne. (Raymond Auclair, who is formerly of Cape Breton, also shows up in several committee lists). One may look over the list and to all apparent purposes, these names appear to be randomly scattered through the committees. What most people do not know is that the Society had a "secret" Central Committee which oversees the operations of all of the Society's other bodies including that of the National Council and all of the above named persons are members of that committee!!!

By now, I had realized that the sort of conspiracy that I was up against had not only a local but a national agenda. That goal is nothing short of the complete takeover of the national society by the deep-sky observers and the movement of the National Office from Toronto to Halifax! I know what you are all thinking. "Randall Brooks a deep-sky observer? You must be kidding! Randall doesn't even look through telescopes!" Well, that is what he would like you to believe! There were rumours just before he left for Ottawa that he was seen several times at the Beaverbank observing site actually looking through telescopes! I suspect that he could no longer contain his passion for deep-sky observing and moved to Ottawa so that he resume the practice without it becoming public knowledge.

The scary part is that although these fanatics hold a slight majority on the Central Committee, they still need a few more seats to get the two-thirds vote that would be required to put their plan into action!We all know that with the recent collapse of the Meech Lake Accord there has been a lot of internal turmoil generated between Central Canada and the other regions of this country. In order to take advantage of this, they have already invoked a little known clause of our Royal Charter and asked the Queen to create three new seats on the Central Committee. This would then allow them to appoint fellow conspirators to these seats and bring their plans to fruition.

The danger lies in the potential backlash from the Centres in Ontario, particularly the very large Toronto Centre. It is quite conceivable that if a full-scale civil war were to erupt within the R.A.S.C. , the resulting publicity could be all that is needed for the Queen to step down and let Charles assume the throne.

Is there anything we can do to avert this potential disaster? Fortunately the answer is "YES!" and the solution is relatively simple. Effective immediately, if any deep-sky photographs are shown at Centre meetings, members should not look at the screen, no matter how loud the "Oooh!" and "Aaahs!" are! Since I do not know whether any of the western centres are involved it would probably be a good idea for their members to take these precautions as well. Only time will tell whether we are successful in saving the Society from sure ruin, although having National Office in Halifax does have its appeal... Ω

NOVA NOTES INDEX

May-June 1991 **Volume 22, Number 3**

NOVA NOTES is published bimonthly by the Halifax Centre of the Royal Astronomical Society of Canada in January, March, May, July, September and November. Opinions expressed in articles and/or columns are those of the author and are not necessarily those of the Halifax Centre. Articles for the next issue should reach the editor by July 19th, 1991. 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 on 50% recycled paper containing at least 5% post-consumer fiber.

HALIFAX CENTRE - R. A. S. C.
1991 CALENDAR OF EVENTS

July

S	M	T	W	T	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

S	M	T	W	T	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**

September

S	M	T	W	T	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					

October

S	M	T	W	T	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		

Key to calendar:

Regular Meetings: **bold and shadowed**

Special days: **bold** (On dates marked with an asterisk, the event occurs on the **morning** of the date given. Check your Observer's Handbook for details)

Possible observing sessions: underlined

Special Days:

July 28 - South Delta Aquarid meteor shower
August 11 - Perseid meteor shower
Aug. 30-Sept 2 - NOVA EAST '91

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
M5R 1V2