NOVA NOTES

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THE NEWSLETTER OF THE HALIFAX CENTRE OF THE RASC
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NOVA NOTES, the newsletter of the *Halifax Centre of the Royal Astronomical Society of Canada*, is published bi-monthly in January, March, May, July, September, and November. The opinions expressed herein are not necessarily those of the *Halifax Centre*. Material for the next issue should reach the editor by **May 10, 1992.** Articles on any aspect of astronomy will be considered for publication. "Letters to the Editor" or to our resident expert: "GAZER" are also most welcome. The editor can be reached at:

David Lane
4-26 Randall Avenue
Halifax, Nova Scotia
B3M 1E2
E-mail: 71601.247@compuserve.com
Compuserve: 71601,247
Phone: (902) 443-5989

Inside This Issue...

Editor's Report: by David Lane

Thanks to all of you who had such nice things to say about the new format of *NOVA NOTES* unveiled in the last issue. Thank you! It was fun to prepare and I learned a lot about "desktop publishing" during the exercise, but there is so much more to learn.

NOVA NOTES is currently about one month behind the production schedule which I intend to follow. I apologize for that, but it was due to the change to the new format, which required a lot of effort on my part. In order to catch up, I will be publishing *NOVA NOTES* at six week intervals from now until the July issue. My plan is to mail each subsequent issue at about the middle of the month of issue. The deadline for material to be published in each issue will be the preceding general meeting.

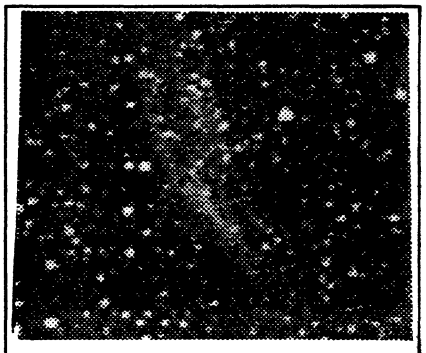
I also have to apologize to several members (about 25) who did not receive the Nov/Dec issue. A block of addressed issues inadvertent did not get mailed. I tried to blame it on the database of members not being up to date, but at the last meeting, someone looking through the box of extras came across them. It won't happen again!

This month I am trying something new; the "Astrophoto of the Month". I won't know how it will reproduce until it is printed. If it turns out well, it will become a regular feature, so send me your prized astrophotos or for that matter any photos of interest to the Centre membership!

As I said last month, I ask you to write articles for *NOVA NOTES*. The new format does allow me to easily reduce the number of pages if there is not enough material to fill the issue, but I don't want to be forced to do that. Ω

President's Report: by Patrick Kelly

Although it hasn't been all that long since I last wrote a report for *NOVA NOTES*, there have been a few things that have come up that are worth passing on to you. Members may recall that there has been a great dearth of articles submitted for the Burke-Gaffney Award over the last number of years, thus the format for the award process was changed.



"Astrophoto of the Month"
The California Nebula

Len Larkin of Saint John took this 50mm wide field shot with Fuji HG400 color print film. The print was made by sandwiching two negatives together in the enlarger, a process which reduces grain and enhances the contrast.

Under the new criteria, the author of the "best" article (as judged by a panel) from that year's volume of *NOVA NOTES* would receive the award. The first winner under these new rules is David Fleming of Middle

Sackville, New Brunswick for his article on Eratosthenes. Congratulation, David! As the prize that goes with the award is an astronomy book of the author's choice, David has chosen a copy of Terence Dickinson's latest book, "The Backyard Astronomer's Guide". We plan on having the book autographed at our April meeting and will be presenting the award at the Annual Banquet.

Speaking of which, Nat already has tickets available. He has promised a feast from which no one will leave with an empty stomach unless they so desire! He also decided that for those who wish to bring children, may do so at half price ($10 instead of $20). As the number of tickets is limited, I suggest you get yours as soon as possible. See the "Notice of Meetings" section elsewhere in *NOVA NOTES* for more details. A map (courtesy of Doug P.) showing how to get to the Waverly Legion is shown on Page 8.

On to publications! I want to congratulate Dave Lane on his first issue of *NOVA NOTES*. It is nice to see that he had some top-notch articles submitted and the new format was an excellent start. I am sure that Dave will be "fine-tuning" things in future issues, but he is off to a great start. At least I no longer have to be grilled about the true identity of "GAZER" anymore, but in the immortal words of Super Chicken, "He knew the job was dangerous when he took it."

We also have received a second shipment of sixty BOG (Beginner's Observer's Guides). For those members who are not able to attend meetings, but would like to order one, you can send a cheque or money order for $7.50 (includes GST and $1.50 postage) to the Centre address. The society should also be finding out very soon if Scouts Canada will be selling BOGs in all of their retail stores. Once I know for sure, I will pass the info on.

Most of you are probably not aware of the ongoing debate over the society's *Journal*. Although debate has been going on behind the scenes, for the last thirty or so years, it appears to be coming to a head. In the last year or so, there have been serious concerns raised about the financial drain that the *Journal* places upon the Society. These concerns have come primarily from the Montreal Centre, but having returned from the last National Council meeting, and having access to the newsletters of other Centres of the Society, these same concerns have been raised in the Ottawa, Vancouver and Hamilton Centres, and no doubt are being discussed in many other Centres. The reason that I bring this up is because the next issue of the *BULLETIN* will contain the long-awaited National Membership Survey. I want to stress to all of you that it is vital that we get feedback from as many members of the society as possible, especially on this issue.

While there can be arguments made both for and against the *Journal* on a variety of bases, (forum for Canadian astronomers, international "prestige", uniqueness, duration of publication, bargain for the money, to name a few) the fact remains that over the last ten years, the *Journal* has cost the Society about $250,000. It would appear that if all things stay as they are, there will be a motion presented at the Annual Meeting in Calgary to increase next year's regular membership fee from the current $32 to $40. I would thus hope that all of the Halifax Centre members will fill out their surveys and return them as soon as possible, so that the results concerning the *Journal* may possibly be on hand for that meeting.

Plans for our Halifax '93 General Assembly are going ahead relatively smoothly. As you are undoubtedly aware, Mary Lou Whitehorne is in charge of the overall planning for this event and has put an incredible amount of work into it so far. Although we now have committees (or at least committee heads) for all of the things that need to be done, there is still a lot of work that has to be done. As many of the current executive are also involved with the GA, there is the distinct possibility that a sizable number of them are going to burn themselves out over the next year and the Centre will lose a lot of good people. So, if you think that you can help out in any way, no matter how small, please give Mary Lou a call. She will be more than pleased to hear from you!

Last, but not least, yet another reminder that the April meeting will not be held at the usual time and place, so see the Notice of Meetings for the details. Ω

Letter to the Editor

Dear Editor:

I would like to congratulate Paul Gray on the excellent account (*NOVA NOTES* January/February 1992) of the 1992 Quadrantid meteor shower observations carried out by Pat Kelly, Dave Lane, and Paul Gray. It was good to see that three Halifax Centre members braved the January elements to observe the shower, particularly since many of us were clouded in. I thought readers of *NOVA NOTES* might be interested in other preliminary reports of the shower which appeared in the *Journal of the International Meteor Organization* February 1992 issue.

These reports generally confirm the observations made by the Halifax group that 1992 was an excellent return of the shower, with zenithal hourly rates (ZHR) significantly above average. A group of five observed from the French Alps under near perfect conditions on the night of January 3-4, 1992, continuing observations right up until the time of dawn (last observing interval ended at 6:00 UT). They found peak activity at 4:30 UT, with ZHR at peak of near 170. A compilation of observations from England and Spain yielded a ZHR of about 120 at peak which was estimated to occur at 03:00 UT. A single observer from Norway placed the peak of the shower at 6:15 UT. Peter Brown observed the shower from Fort McMurray, Alberta, reporting an excellent shower. Diffuse auroral glow played havoc with limiting magnitude corrections, but his observations (from 06:00 UT to 9:50 UT) would suggest a peak at

near the beginning of that observing period. The Halifax reports suggested a peak ZHR of at least 90 and possibly as high as 130, with peak at perhaps 06:30 UT. Therefore the Halifax observations are in quite good agreement with the global picture, and I believe that the predicted peak at 6:00 UT on January 4 with a ZHR of 80 (*Observer's Handbook 1992*) has, within usual meteor shower tolerances on rates, proven accurate.

As a final note, I might encourage this or other groups to observe the Eta Aquarid shower in early May (predicted maximum at 15:00 UT May 4). Although peak activity of this shower is during daylight, shower meteors can be observed in the final few pre-dawn hours. Because this shower is derived from Comet Halley, and because it has a well modelled and complicated rate profile, observations are of particular interest. The shower extends for a number of days, and observations anytime during this period could be valuable. A recent analysis of some of our video records indicates that, at least for faint meteors, the Alpha Scorpid shower (radiant at RA 16h20m; DEC -25°) is equally active in early May, and the observing direction should be arranged to facilitate separation of the two showers (at 35 km/s the alpha-Scorpids are significantly slower as well). I would appreciate receiving any observations of this shower which are made. Happy meteor watching! Ω

Bob Hawkes
Mount Allison University
Sackville, N.B.
E-Mail: RHAWKES@MTA.CA

The Many Suns of 40 Eridani: by Len Larkin

Armchair astronomy almost always gives one a new insight into the night sky. This search was no exception. But why the interest in 40 Eri? Read on.

It began with a letter in the July 1991 issue of *Sky and Telescope* concerning a suitable candidate for the home sun of the well-known fictional planet Vulcan. Co-authored by three astronomers at the Harvard-Smithsonian Center for Astrophysics and the late Gene Roddenberry, it tied together real astronomy with Star Trek sci-fi lore. The main point of the letter was that 40 (Omicron 2) Eri was an excellent candidate for Vulcan's sun based on evidence that suggests it to be four billion years old (hence similar to our Sun). There was also a fascinating sunspot connection.

I copied the info from some of my "trekker" co-workers but wanted to get some more background about the physical and visual aspects of the system. The letter itself told of three stars: a 4th magnitude orange K1 primary, a 9th magnitude white dwarf and an 11th magnitude red dwarf; the dwarfs orbit each other approximately 400 A.U. distant from the primary. Also from the letter, an observer on Vulcan would see the dwarfs as -8 and -6 magnitude stars. Well, that was a lot of interesting info. I only needed to find out the separations and position angles of the stars in the multiple system to make myself a mini-expert on the topic. Hey, maybe I could even observe them!

The *Observers Handbook* had some additional information on 40 (Omicron 2) Eri thanks to the fact that the system, being only 15.7 light-years from us, made it into the Nearest Stars section. None of this helped define the visual appearance of the system but the listed proper motion and, most importantly, the direction, helped solve a minor mystery which plagued me later in the search.

Sky Catalog 2000.0 Volume 2 was my first port of call in the investigation. All multiple star systems with a combined magnitude of 8.0 (over 8000 of 'em!) are listed in Volume 2 and, sure enough, 40 Eri was

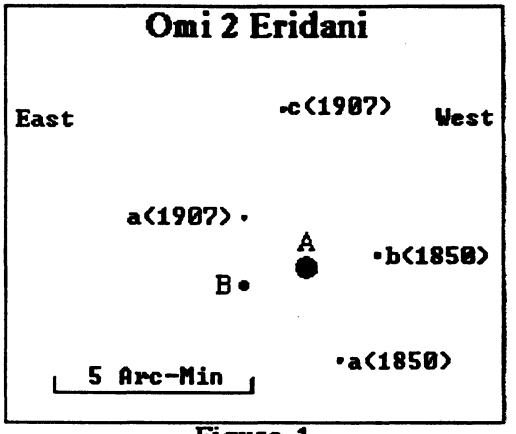


Figure 1

listed under the name of Struve 518. The A, B, and C components and their magnitudes were given (the A star is the primary, or brightest). The separations and position angles for the AB pair were almost identical for the years 1836 and 1970, suggesting that there was no short-term orbital motion.

The BC pair (those -8 and -6 dwarfs) did not have their separation or position angle given - Drat! Wait a minute, an orbit had been computed. Awwwwright!! Unfortunately, after searching for a few minutes, it was obvious that 40 Eri was not in the Visual Binary Star section of *Sky Catalog 2000*. Neither was it in Volume 1 (Double Stars) of the *Webb Society Deep-Sky Observers Handbook* nor *Observing Visual Double Stars* by Paul Couteau. The reason was the

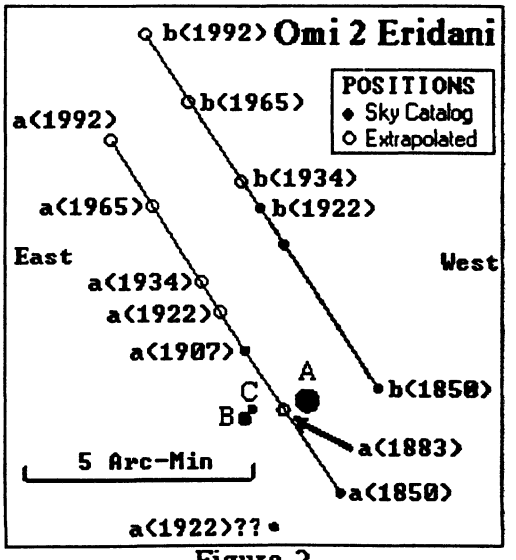


Figure 2

same - the 9th mag BC pair was too faint for the listings in these books. Double Drat!!

But besides this lack of information about 40 Eri, there was also an extra mystery in the *Sky Catalog* listing. Included with the three main stars were two 12th magnitude companions (I.D.'d as "a" and "b") - both with positions varying rapidly in regards to the main stars. I certainly didn't expect to find field (background) stars with orbital motion! Was the info for these stars merely typos? If so, there were four extra lines of incorrect separations and position angles! After searching through several books, I found another listing for 40 Eri in the classic *Celestial Objects for Common Telescopes* by Rev. T. W. Webb. Although the presentation is rather quaint, much interesting information was gleaned here; colour for the BC pair was yellow/white (Struve) or yellow/blue (Webb); separation was 2"-3" around the turn of the century; and the orbital period was listed as 180 years. Amongst the other tidbits found in the Webb listing was a 12th magnitude companion whose location was fixed (relative to the others). Hmmmmm...the plot thickens.

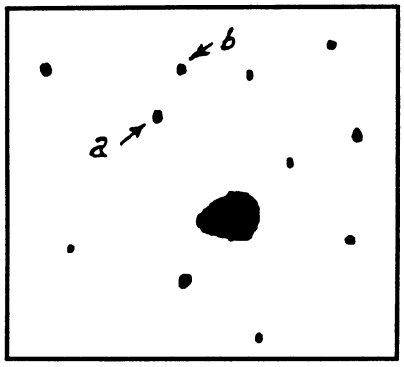
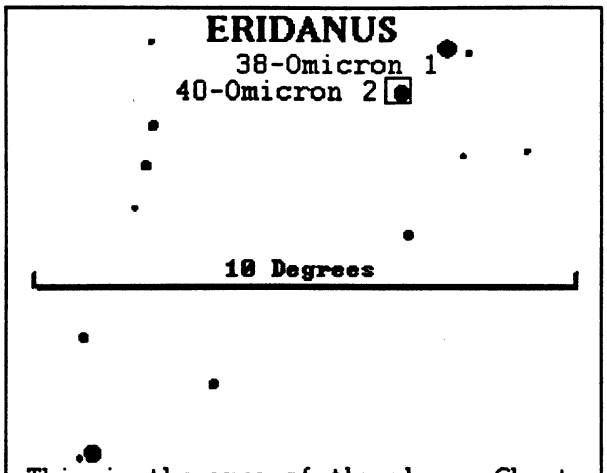


Figure 4

By this time a chart seemed the intelligent thing to do. So I used the pertinent info from *Sky Catalog 2000.0* to locate the stars in relation to the A star (Figure 1). The position of



This is the area of the sky on Chart 238 of Atlas Stellarum. The small box indicates the area shown in Figure 4 magnified 8 times.

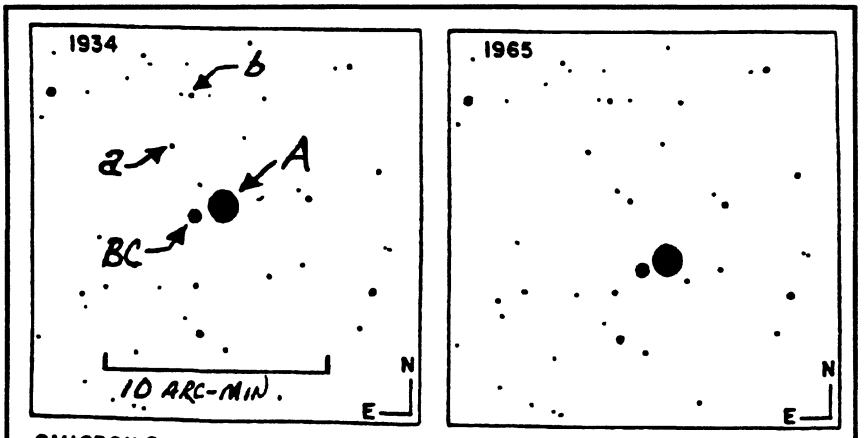
Figure 3

the C star still couldn't be determined, and those 12th magnitude companions definitely weren't fixed!

My luck improved when I started searching through the indices of old *Astronomy* magazines. The January 1977 issue highlighted the constellation of Eridanus. I immediately picked out Omicron 2 Eri in the selected objects box - there were the familiar magnitudes of the A, B and C stars. Jackpot! The BC separation was listed as currently 8 arc-seconds and there was even a colour sketch, by James Mullaney, of the triple system! Ahhh, finally! In the several paragraphs devoted to the system, I found that the BC separation varied from 2" to 8" over a 250 year period. Colours and spectral type were confirmed and it even turned out that the BC system was just in the right part of its orbit for easy viewing! The only mystery left was those 12th magnitude companions and their connection with the triple system.

By now a little voice inside my head was nagging "Hey dummy, look at the facts!" The large proper motion of the Omicron 2 system had been mentioned in a couple of sources but hey - I was on a double star chase, not a stellar motion study. Anyway, assuming a linear (not orbital) motion for the 12th magnitude stars and comparing that with the proper motion information from the Observers Handbook, I found them to be travelling in almost exactly the opposite direction and speed as Omicron 2 (Figure 2). They were nothing more than background stars recording the speedy motion of the Omicron 2 system in our galaxy! One more problem did surface while adding the rest of the data to the chart. One of the three "a" star plots (for the year 1922) didn't fit well - it was nowhere near where expected. On a hunch, I changed the position angle by exactly 180°, and using the same separation, plotted the star in just the right spot! Perhaps the micrometer reading was interpreted incorrectly or an arithmetical error crept in or a computer hiccupped during a file transfer - who knows?

The obvious next step was to observe Omicron 2. A mild night in December found me on the back deck with the 150mm refractor, zoomed in on the system. The transparency was poor with an M.V.M. of 5.2 magnitude. Although the 9.5 magnitude dwarf was visible with an 80mm aperture stop, even full aperture did not show the 11.1 mag dwarf. My disappointment was offset by at least having seen the white dwarf - touted as the most easily observed example of that class of star. The suggested minimum aperture to see all three is 100 mm (under dark skies). Maybe another night. To get a final confirmation of the positions of the 12th magnitude stars, I charted their apparent motion to 1992 and, at a recent Saint John Astronomical Society meeting, requested observations. Adrian Bordage, using his Celestron C-8, observed the area and passed along a sketch which was a rough match to the calculated positions. Francis Casey searched his references and found, in *Burnhams Celestial Handbook*, photographic charts of Omicron 2 for the years 1934 and 1965. Rough scaling indicated the 12th magnitude stars were indeed on the charts but without precise scale



OMICRON 2 ERIDANI — The Proper Motion over a 31 year interval. The Total Displacement is 126". From Lowell Observatory photographs.

or limiting magnitude information, we couldn't be confident of which ones were my prey (celestial hunting is always in season!). All the pieces fell into place recently when I visited the Fogler Library at the University of Maine in Orono. In a tiny section of Chart 238 of *Atlas Stellarum*, Omicron 2 and its neighboring stars (Figures 3 and 4) down to 14th magnitude were recorded (in 1969). I didn't do the measurements directly on *Stellarum*; instead I used the atlas chart to precisely scale the photo-charts in *Burnhams*, then compared the measurements from *Burnhams* with the charted positions. This allowed me to measure the distance of the "a" and "b" stars from the primary. As you can see in Table 1, correlation between the references is very impressive.

	1934(")		1965(")	
Separations	a	b	a	b
Charted	214	312	340	436
Measured	215	300	346	440

Table 1

As an added bit of trivia, during the 1880's, an observer would have seen the "a" star appear to move between the primary and the BC pair, temporarily becoming the closest companion! The late 19th century was bustling with visual observations of double stars and it would be interesting to find an observation for this period.

All this may have seemed like a lot of work, but imagine, if you will, a being (Vulcan or otherwise) looking at its twin Venus-like beacons from a planet orbiting around the K1 primary. Omicron 2 scientists would have already proven that the dwarfs were (compared to even nearby stars) a local phenomenon - an extended family, so to speak. This being might be enjoying the night, speculating about other life in space - unaware that across a fifteen light-year gulf, another creature was also observing its twin stars and wondering such things.

ERRATA:

Sky Catalog 2000.0 Volume 2 - In the Double and Multiple Star section, at R.A. 4 hr 15.2m (Struve 518), Position Angle for Ba pair (1922) is wrong - it should be 16° (not 196).

You may also want to update the photo-charts on page 890 of *Burnhams Celestial Handbook* with the info for the "a" and "b" stars shown in the figure above. Ω

The 1992 Calgary General Assembly

The Calgary Centre would like to invite astronomers, both amateur and professional, to rendezvous near the magnificent Rocky Mountains for the 1992 RASC General Assembly (GA). Located in the beautiful Bow River Valley, Calgary has much to offer delegates attending this gala event. Accommodations for the 1992 GA will be at the University of Calgary, and an extended stay can be arranged to take in the eightieth running of the Calgary Exhibition and Stampede, plus numerous other tourist attractions. The GA is loaded with interesting activities! Here are some of the planned events:

July 1: After registering at the University of Calgary, attend the Canada Day fireworks display and a public starnight hosted by the Calgary Centre.

July 2: Enjoy a day trip to Drumheller, Alberta to visit the Royal Tyrrell Museum of Paleontology, and step back in time to when the dinosaurs ruled the Earth. A stop is planned to visit the K/T boundary which marks the extinction of the dinosaurs in the geologic record. In the evening, visit the Alberta Science Centre/Centennial Planetarium featuring a robotic dinosaur exhibit, and have a piece of birthday cake to celebrate their 25th Anniversary. The Helen Sawyer Hogg public lecture featuring Dr. Alan Hildebrand will be held this same evening in the Planetarium.

July 3: Friday morning and afternoon are booked for the National Council Meeting and various committee meetings. If you are not committed to these meetings, then you are free to either enjoy the Stampede Parade or take a day trip to Banff and Lake Louise. The evening will feature a Western Barbeque, Murphy Slide Show and Song Contest, and tours of the U. of C. operated Rothney Astrophysical Observatory and the Calgary Centre's Wilson Coulee Observatory.

July 4: The Paper Sessions planned for Saturday morning and afternoon. A group photo will be taken of the delegates during the noon lunch break. The evening will consist of a formal banquet, an awards presentation, and an after dinner talk by Damien Lemay, our National President.

July 5: On the final day of the GA, the Annual Meeting and the second National Council Meeting are planned for the morning. The afternoon will

feature free astronomical workshops on astrophotography, astronomical computing, CCD imaging, and astronomy education. The final event is a night at the exciting Stampede Grandstand Show.

The GA will also include the traditional song, photography and display contests. Further information on display categories and contest rules is available by contacting the Calgary Centre.

See you in Calgary in 1992! To receive your registration package contact RASC - Calgary Centre, c/o Ms. Dennis Goodman, 28 Southland Crescent SW, Calgary, Alberta, T2W 0K3. Phone (403) 252-7095. Ω

Bringing Astronomy to the Public: by Doug Pitcairn, Observing Chairman

This year, we are going to take Astronomy to the public on two scheduled occasions. These Astronomy Nights will be informal telescope "show-offs" and are to be held at Dollar Lake Park, "way in behind the Airport". This provincial park has some of the darkest skies available anywhere in Nova Scotia, perfect for Astronomy.

The nights for these events are to be **Friday, July 24th**, with a rain date of July 25, and **Friday, August 21st**, with a rain date of August 22nd. On these two nights, amateur astronomers of the RASC will be on hand to show off views of various astronomical objects to anybody and everybody who shows up with an itch to see what's "up there!". Please note, astronomical viewing requires clear skies. If there is a thin layer of high cloud, most folk still call "clear" but most astronomers call it terrible. If there is a bunch of cloud about, but the weather service calls for "clear" the following night, we will switch the event to the Saturday "rain date" night instead.

We will of course be asking for volunteers to assist with telescopes and gabbing 'bout stuff. Ω

The Great Lunar Graze Expedition: by Patrick Kelly

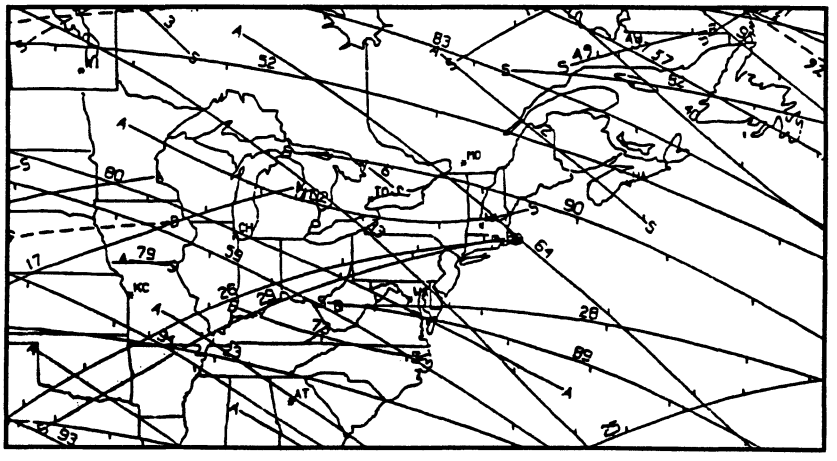
Isn't it curious how some of your most memorable observing sessions start out in such an innocent fashion? In early February, I was sitting at my desk, merrily typing away when Doug got off the phone after talking to Dave Lane. It seems that Dave had got a phone call late on Sunday night from Roy Bishop requesting help in mustering some warm bodies to observe the lunar graze of μ Arietis (see Graze # 52 in the map below from the *1992 Observer's Handbook*) which was scheduled for Monday night (that evening). Roy had received a call that weekend from Dr. David Dunham of the International Occultation Timing Association. "Sure, put me down.", said I, "I have never observed a lunar graze before, and probably won't see one this time either because you just know its going to be cloudy anyway."

Well, plans progressed very quickly, but smoothly as we ended up with a total of six people. Our intrepid group of fearless observers consisted of myself, Jason Adams, Dave Lane, Doug Pitcairn, Mary Lou Whitehorne, and Joe Yurchesyn. Dave had plotted a map showing exact predicted line of the graze with up-to-date data provided by Dr. David Dunham. Its northern limit was to pass near Roy's house (we are still trying to figure out how he arranged that!) and down through the village of Elmsdale, on Trunk Highway 2. As we had six people, and knew where the graze line was supposed to be, we decided that three teams of two would be the best approach, with one group on the line and one each north and south of that position. Roy and Sherman Williams would make observations from Blomidon.

Nightfall came and the forecast for that night was clear and cool (-12°C). Normally, the thought of cool weather does not bother me, but the idea of standing around in the open for an indeterminate amount of time did prompt me to put on a slightly thicker pair of socks than I normally would have! As we found out later, David Dunham had been prepared to fly up from Maryland to observe this graze, but the U.S. weather forecasts were calling for high cirrus clouds over Nova Scotia, so he changed his mind at the last minute.

We had planned to meet relatively early at Doug's house in order to get organized into teams, etc. So, shortly after dinner, I loaded Charles into the trunk (not the Prince of Wales, but my Unitron 60 mm refractor, so named because I had used it to successfully observe all of the objects on Charles Messier's list) and off I went.

Upon my arrival, I realized that the rest of the group had really gotten serious about this. We had three short-wave radios (one thanks to Nat Cohen) to use to receive to the time signals as well as three portable tape recorders so that we could record both the "beeps" from the time signals and our comments on what we saw. We broke up into three groups, Jason and



myself, Mary Lou and Doug, and Dave and Joe, and headed for the Elmsdale Mall.

Upon arriving at the mall, (the first time for myself), I was rather amazed to find it to be one of the best examples of poorly designed lighting and energy waste I had seen in a long time. Despite the fact that it was late on a Monday night and that nothing was open in the mall, all of the parking lot lights were on, and so it seemed was every other exterior (and most of the interior) light as well. I am sure that the mall would have been easily visible from low Earth orbit! We spent some time there, discussing the pros and cons of using it as a site. In the end, we decided to head for the Elmsdale Lumber Yard. Doug was familiar with the layout of the buildings and knew the owner, as a result of bring many tour groups of students from the School of Architecture there. This would prove to be of great benefit later in the night.

So, off we went. The lumber yard was a much darker location, and Doug almost had us all convinced that we should all stay there to observe the graze! However, we decided that he and Mary Lou would stay at this site, as it was south of the predicted graze line and thus was likely to be occulted, while the other two groups would head off to locations on the graze line and north of it.

Dave and Joe picked the most northerly site and went back to the mall. Upon arriving, they decided to set up at the back of the building so that they could be away from both the light pollution and curious bystanders. So, that is how the security guards found them, unloading bags of equipment and tools right next to the Woolworth's freight entrance! When asked why they were there, Joe explained that there was a graze line from a star that was about to be occulted by the Moon that ran all the way across Canada and passed just one kilometre south of where they were. The reply: "Yeah, right! Does Mr. Sobey know you are here? ... Do you mind if we take down your license plate number?. Dave looks up briefly from where he is getting set up and says "Help yourself." The guards depart.

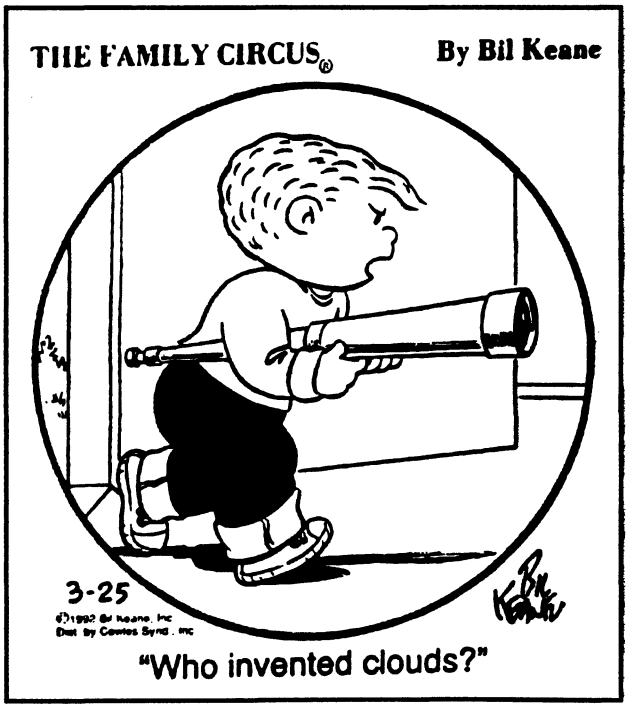
Meanwhile, back at the lumber yard, the predicted time of the occultation was fast approaching. While Doug and Mary Lou are gazing intently into their eyepieces with the chirps of the short wave radio in the background, the owner of the lumber yard happens to drive by. Deciding that it was rather unusual for anyone to be in the midst of the lumber yard at that time of night, he parks his truck and walks over to investigate.

Jason and I, by default, get to find a site at the intersection of highways 2 and 214, which is supposed to be right on the graze path. We get out of the van next to the library and try to decide where to set up. "How about over here?", asks Jason, pointing to the middle of the parking lot. "No.", I reply, "I think we ought to get back this way as far as we can go. The last thing we need is for the Moon to go behind all of those power lines during the occultation". "Back this way as far as we can go" turned out to be next to a snow drifted chain link fence with the main Truro-Halifax train line less than a metre away on the other side. Out comes the observing stool, the short wave, the tape reorder, and the telescope. Jason sets up his binoculars. We sit down to await the occultation. Off in the distance, we hear the mournful cry of a train whistle.

It is now five minutes later. The security guards return, and much to their surprise, find Joe and Dave still there and still setting up equipment. When asked if they were serious about "that star stuff", Joe tells them if they don't believe them to drive up to the lumber yard because there are two more people there doing the same thing! The guards leave once more, this time failing to return.

Doug and Mary Lou are both rather startled when a voice comes out of the darkness asking them what they are doing there. Doug, his eye still glued to the eyepiece, introduces himself and explains why they are there. Mary Lou looks up to introduce herself and at least engage in a short bout of polite conversation, just in time to hear Doug shout "Out!". Looking back into the eyepiece she realizes that the star is now gone and the she has missed the start of the occultation. Oh well, there is always the egress.

I am getting rather edgy. No sign of an occultation yet. There is a strange, faint, rumbling sound coming from the north and it seems to be growing slowly louder. My feet, encased in just socks and rubber boots, and having been sitting outside for most of the last two hours are finally starting to cool off. With nothing better to do, I start calling out readings to Jason to pass the time. "Outer left toe surface temperature -4° and still dropping, sir". A quick check of the time. I thought that the



graze was supposed to have started two minutes ago. I consult with Jason who confirms my suspicions. "Well," I ponder, "let's wait another minute, and if nothing happens, we'll pack it in."

Joe and Dave observe the star continuously and see no signs of an occultation. After all that time and effort they have nothing to show from it other than a negative result. They pack up their gear and head back to the lumber yard to rendez-vous with the other groups.

Mary Lou and Doug are now staring intently into their eyepieces, waiting for the sudden reappearance of a star from behind the lunar limb. One minute drags into two and then three. Finally, the star pops out and they both shout out for the benefit of the tape recorder. This is real astronomy!

Well, we didn't have to wait long for something to happen. The sound from the north is no longer faint. The one minute is almost up. Suddenly the star disappears. I shout out, "Mark!". At the same time, a LONG, southbound freight train leaps out of the darkness and roars past us. I am trying to observe the occultation as fine snow swirls through the air, landing on everything, including my eyepiece. Jason passes me the tape recorder. "It's back", I shout directly into the tape recorder, trying to make myself heard over the noise from the train. "Mark, gone again", "Mark, back again", "Mark, gone again", "Mark, back again". The train is still going by and although my eyepiece is covered with little drops of water, I wait another minute and see no further activity. The last thing that shows up on the tape is my shouting "Goddamn, the C.P.R.!" as I shook my fist at the receding train.

After regrouping at the lumber yard to compare notes, we decided that we would all be a lot more comfortable if we went up to the gas station restaurant on the 102 and got some food. Over a late, late meal we had a chance to relax, warm up, and chat. Later analysis of the tape recordings allowed us to send a detailed set of observations to the I.O.T.A. Although the chance to contribute something towards the advancement of "real" astronomy made me feel good, to me, what makes amateur astronomy is not so much the results, but the shared fun of getting them. Of having left the quiet and comfort of a warm house on a cold winter night to try something new (and something that would make your average person shake their head in bewilderment) with a group of wonderful people. And as long as amateur astronomy can still make that happen, you can bet your last dollar that I will still be right in the thick of it all. Ω

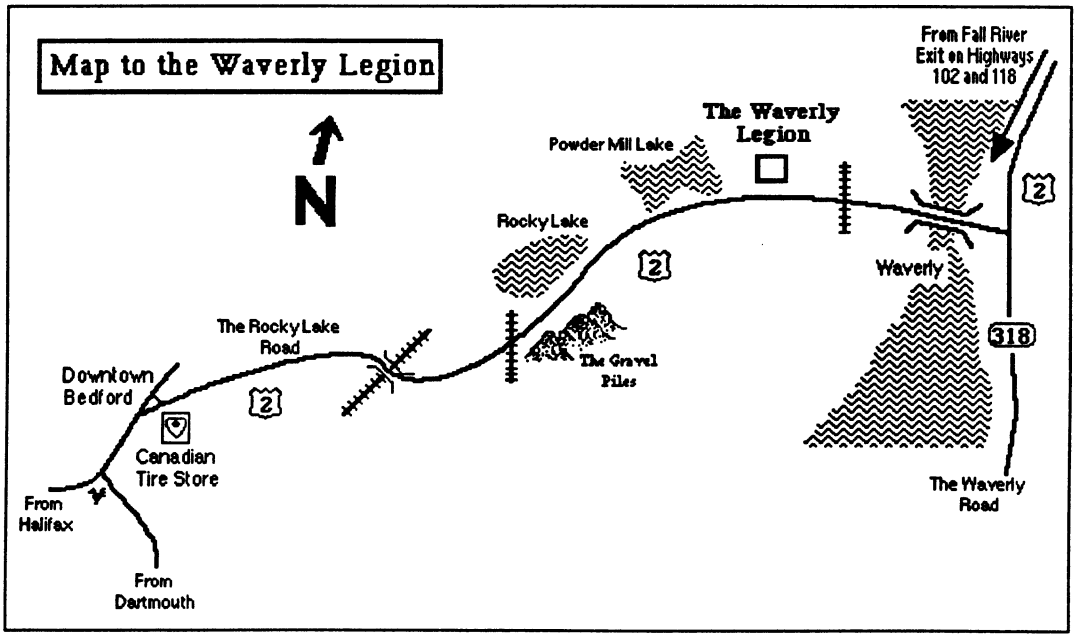
Notes from the Chair:

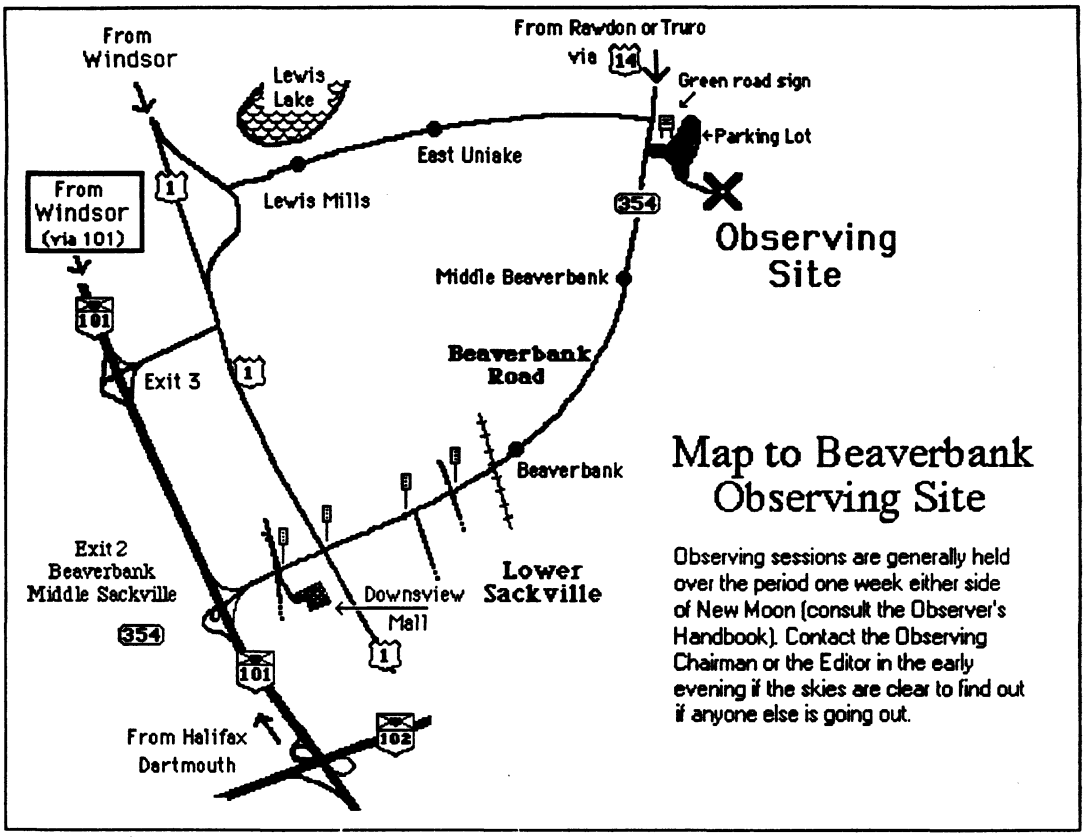
by Doug Pitcairn, Observing Chairman

Well, the spring sky has allotted us several reasonable observing sessions so far, let's hope the trend continues.

The first thing that I would like to mention is a new lunar atlas which has just become available. *The Hamlyn Atlas of the Moon* is an excellent hardcover lunar atlas with, what is quite possibly, the best set of lunar charts ever. *Sky and Telescope* did a review of this atlas in their April issue. They liked it, and considered it well worth the $34.95US price tag. Now comes the good news; I just picked up a copy of this book at a local bookstore (W.H. Smith in Park Lane Mall, Spring Garden Rood, Halifax) for $7.95! I have no idea why there is such a discrepancy in price, but I heartily recommend taking advantage of it (Now if I could just find a pile of Nagler eyepieces for $3.99 at the local Z-mart ... sigh.).

Anyways, in the last newsletter, I suggested that I would be comparing the new *Tele Vue* Panoptic 22mm (P22) eyepiece with my 24mm *Tele Vue* Widefield (W24). I have had a





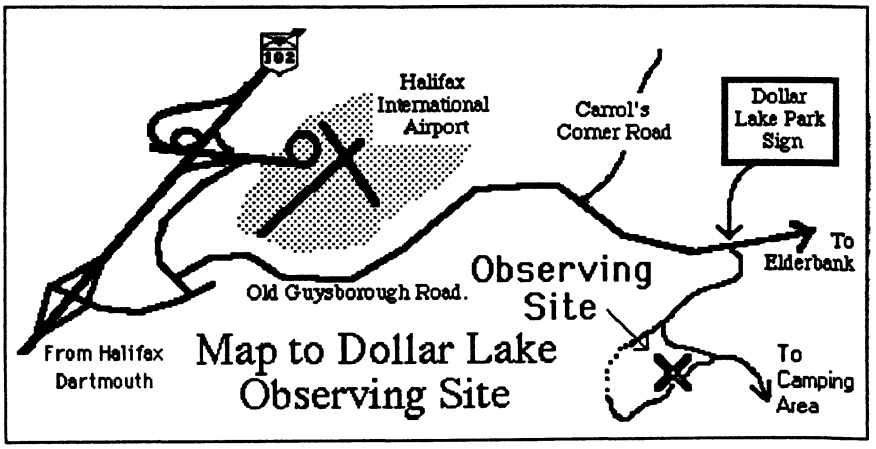
chance to view with them both several times, and here's what I think.

The Panoptic arrived well packed and in perfect condition. The exterior was up to the standards *Tele Vue* owners have come to expect, with a nice rubber grip band as well as an integral fold down rubber eye cup. It is heavier and larger than the Widefield, but still smaller and lighter than the Naglers I've seen.

Optically, the Panoptic appears to do everything *Tele Vue* promised. The apparent field of view is about 10% larger than the Widefield. The eye relief is slightly greater than the W24's, but both eyepieces allow me to view the full field with my eyeglasses on (a must considering my astigmatism). Speaking of which, the P22 shows none of the astigmatism which is quite apparent in the outer field of the W24. The changing of star points from dashes to "I"s as you pass through the focal point was a minor annoyance with the W24 (although it has never been as noticeable with my 15mm Widefield).

Finally, there is the optical effect which Dr. Roy Bishop tells me is called "pin cushion" distortion. This is a field distortion which tends to make stars appear closer together in the centre of the field than at the edge of the field. The effect is not noticeable until you start panning; then it jumps out at you. The W24 does this in every instrument I've viewed through it with; the P22 has corrected this distortion.

Overall, the P22 appears to deliver on the promised quality, but only for the promised price. People should still consider the Widefield series for a reasonably priced high performance eyepiece. It is obvious that a $300 plus eyepiece is not for everybody, but if you want a low power eyepiece that shows you everything your objective is capable of, the new Panoptic 22mm or its larger cousin, the 35mm are awesome eyepieces. Ω



Nova Notes Editor, Halifax Centre
Royal Astronomical Society of Canada
c/o 4-26 Randall Avenue
Halifax, Nova Scotia
B3M 1E2

National Office R.A.S.C.
136 Dupont St.
Toronto, Ontario
Canada
M5R 1V2

Notice of Meetings

Date: **Regular Meeting - Wednesday, April 29th: 8:00pm** for the main speaker.

Place: Sir James Dunn Building, Dalhousie University, Halifax. Meeting to be held in the Room 135.

Topic: The main speaker is **Terrence Dickinson** of Yarker, Ontario. Terrence is Canada's Leading astronomy writer. He has written several Astronomy books and also writes a monthly column for the Halifax Chronicle-Herald. Terrence's talk is entitled: **"Seeking the Holy Grail of Amateur Astronomy"**

Date: **Annual Banquet - Friday, May 22th: 7:00pm** with dinner to be served at 7:30pm.

Place: Waverley Legion on Rocky Lake Drive, Waverley (see map elsewhere in this issue).

Details: The cost is $20 per person all inclusive; a cash bar is provided. Dinner is to be a "gut-buster" Turkey Dinner catered by the ladies auxiliary. Contact Nat Cohen for details and tickets (434-3103).

Topic: The main speaker is **John Hault**, formerly of the Edmonton Space Sciences Centre. John is now associated with the Museum of Industry in Stellarton, Nova Scotia. He will be speaking about the current progress being made by the **Nova Scotia Planetarium Advisory Commitee (NSPAC)** to realize a major planetarium for Nova Scotia.

Halifax Planetarium Shows

Planetarium shows are held each Thursday at 7:00pm at the Halifax Planetarium located on the main floor of the Dunn Building at Dalhousie University. Shows are given on various topics. Contact the Nova Scotia Museum at 424-7391 for details.

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