
NEWSLETTER/BULLETIN

Formerly the National Newsletter

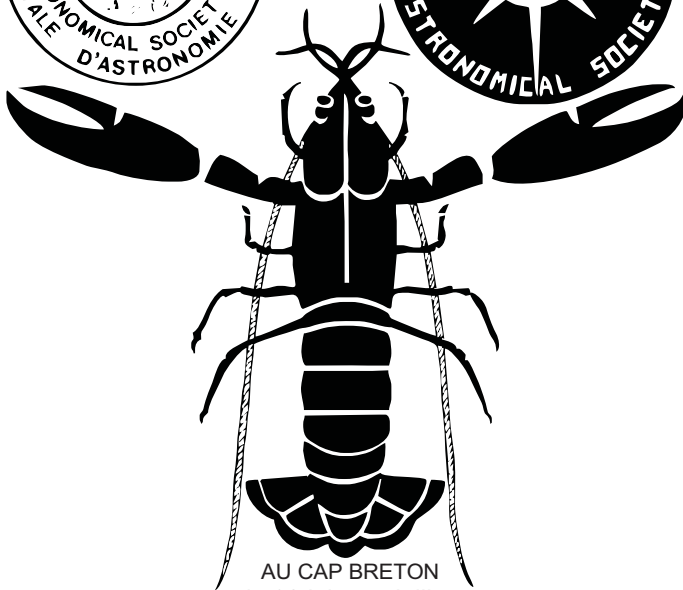
The Royal Astronomical Society of Canada
La Société Royale d'Astronomie du Canada

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The 1989 General Assembly of the R.A.S.C.

JUNE 30 to JULY 3
in
CAPE BRETON



AU CAP BRETON
du 30 juin au Juillet

L'Assemblée générale 1989 de la S.R.A.C.

NEWSLETTER/BULLETIN

The *Newsletter/Bulletin*, formerly the *National Newsletter*, is a publication of the Royal Astronomical Society of Canada and is distributed together with the Society's *Journal*. Inquiries about the Society should be directed to its National Office at 136 Dupont Street, Toronto, Ontario M5R 1V2.

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Deadline for June issue is April 1.

Editorial

by Ian G. McGregor

For several years now I have felt that some major changes were needed in the Newsletter. Beginning with this issue, readers will start to notice a transformation from a publication which in many respects resembles the Society's *Journal* to a more popular level publication both in appearance and content.

The story of the *Newsletter* should be briefly summarized for new readers. It first appeared in the February 1970 issue of the *Journal* as four green-coloured pages stapled into the *Journal* and separately numbered. Its editorial content was the responsibility of the now long-defunct Committee on Coordination of Centre Activities. In an editorial it was stated "This is the first issue of the National Newsletter (for want of anything better to call it)." There was also a call for "an interesting, apt and preferably bilingual name" for the *National Newsletter*.

Then in February 1978, a major change occurred in the *National Newsletter*. It was physically separated from the *Journal* by the new editor Frank Shinn and appeared as a 16-page supplement on white paper. An editorial in the February 1978 *Journal* by the *Journal* editor Lloyd Higgs, currently our National President, stated "this is being done for production reasons only and is not to be misconstrued as any indication of a separation of the amateur and professional interests within our Society."

The basic format of the newsletter would remain the same for the next 11 years basically because it worked for the technology available and the volunteer staff time available. During this period Frank Shinn completed his editorship, was succeeded first by Ralph Chou, and then by the present editor.

Since the newsletter was no longer bound with the *Journal*, some libraries began to catalogue the newsletter separately from the *Journal*. However, the page numbering system still retained the letter

“L” before the page number as it had since 1970. In 1987, the “L” was dropped since there was no reason to retain the old system.

A major problem facing all newsletter editors is how to print current news. For many years, the University of Toronto Press needed the material a full two months before the month of publication. This made “news” at least three months old before it is in the hands of members. Hardly a “standard” for a newsletter.

The arrival of the home computer permitted changes in the production of the newsletter, and beginning in 1986, material was submitted to the Press on floppy disk. It saved time at the Press but caused more work for the Editor. Changing the newsletter format must be done carefully as there are many potential problems which can occur.

The development of desktop publishing opened a new door to the newsletter. Last year, I began to hold discussions with the Design Department of the University of Toronto regarding a design change. Using desktop publishing and laser printers the production of the *Newsletter* can be done independently of the *Journal*. The two publications only have to meet for packaging and mailing. The lead time would also be appreciably reduced.

A totally new format for the Newsletter is currently being considered. The *Newsletter* will have a much larger page size and an attractive colour masthead on the cover. There will be a 2 or 3 column format.

I had hoped the new format would be in place for this issue but demands of home and office gobbled up my free time for the crucial first issue. As a result, the changes will take place in two stages over the next year.

Stage One: To help in the design process and to make the transition easier for readers and librarians, some fundamental changes have been made. First, the *National Newsletter* is now the *Newsletter*. The use of the word “national” has long been inappropriate for the publication and it had never been intended to be permanent. Furthermore, since there were already a lot of words which had to appear in both English and French in the new design, some potential clutter is removed. This change was approved at the National Council meeting of January 28, 1989.

As well, after consulting with several head librarians and examining hundreds of periodicals, it was decided a new volume series should start. The December 1988 issue of the *National Newsletter* was listed as Volume 82 Number 6. Now, there have not been 82 volumes of *National Newsletter*, only 19 volumes have been printed. Therefore, the February 1989 issue of the *Newsletter* is Volume 1 Number 1.

Stage Two: This is the big change. The *Newsletter* moves to a larger format more appropriate for a newsletter, a colour front masthead and 2–3 column format. It will have a very readable appearance. I expect lead time will drop to about three weeks from the current two months. My target issue for Stage Two is February 1990.

I hope you find the changes make the *Newsletter* more interesting and attractive. Clear skies!

Letters to the Editor

Mount Kobau no problem

I hope none of your readers will be scared off from attending the Mount Kobau Star Party after reading about the long road, low gears and stranded vehicles in *Mount Kobau Kaleidoscope* (December issue page 88).

I have driven the Kobau road at least a dozen times and have experienced no unexpected problems. In reality, the road is at least three car widths wide from bottom to top. One should expect to drive slowly in second gear, and plan on one hour of travel time each way. With the large number of other travellers using the road at party time, it has to be the safest and most scenic road in the universe.

Any dust problems can be avoided by duct taping all vehicle doors. As for the “stranded” vehicles, their owners probably left the summit early to avoid the last night’s cold air, a threatening storm, and high winds.

Ronald E. Dawes
Hansville, Washington 98340

Persian Gulf not Arabian

In a letter published in the June 1988 Newsletter from Abdul Ilah Marafie, he indicates that the Persian Gulf is now known as the “Arabian Gulf.” I think some research will show that this is wishful thinking on the part of the Arab countries. Since half the coastline of the Gulf still belongs to Iran (formerly called “Persia”), I wonder what they think about it. I believe Knowlton Nash may be vindicated.

J. Hurlburt
West Vancouver, B.C. V7W 1H3

Some Thoughts on Montreal Centre’s 70th Anniversary

**by Louis Bernstein
Montreal Centre**

Back in 1918 when Reverend W.T.B. Crombie decided to form the Montreal Centre of the Royal Astronomical Society of Canada, things were very different from today.

The First World War was just about to end, and air flight was in its infancy. Our solar system had only eight planets and galaxies were still a theory. Radio astronomy was unheard of and the idea of landing a man on the moon was a Jules Verne fantasy. I remember reading science fiction stories as a youngster and wondering what it would be like to live in the future.

Well, in a very real sense we are living in the future, the future that men like Reverend Crombie dreamed of. It is a future full of wonders. A future of quarks, quasars, black holes, gravity waves, orbiting space telescopes, infrared, ultraviolet and x-ray astronomy. There are nine planets in our solar system now, and we have discovered billions of galaxies, along with an omnipresent 3 degree Kelvin radiation that hints at a cosmic genesis, an idea I know that Reverend Crombie would have felt at home with. Men have landed on the moon and space probes have visited all but two planets.

The rate at which we gather information far exceeds the rate at which we can process and assimilate it. Yet, despite all our advances, the people of Reverend Crombie’s day had something that we have lost. They had a sense of wonder about the universe. A sense of mystery and awe. By comparison, we have become far too complacent over our new knowledge. We feel that we have seen just about everything and that there is very little left to discover.

Some leading cosmologists even claim that we are on the verge of achieving a unified field theory, and that the final chapter of physics is at hand. Yet, how often in the past have we felt so confident in our understanding of the cosmos, only to have our theories and our perspective completely changed. How many times has humanity felt it had attained the final level of reality, only to discover newer and more subtle levels just beyond our grasp. On more than one occasion, I have heard it mentioned that observational astronomy is a thing of the past, and that amateur astronomy can no longer make serious scientific contributions.

My answer to those jaded individuals is that amateur astronomers should not be seeking fulfillment and meaning through scientific contribution. That is the realm of the professional. Instead, we should be communicating our sense of joy and our enthusiasm for the heavens.

In this regard, we would do well to re-learn what men like Reverend Crombie knew. We must regain that long sense of wonder.

Reprinted from Montreal Centre’s *Skyward*

A Twisted Tale About Sky Optical

by Steve Hicks
Vancouver Centre

On January 17, 1987 a friend and I each ordered a 10-inch f4.5 thin Dobsonian-type mirror from Sky Optical. We ordered them through a company in Toronto known as Perceptor in order to avoid the customs work. My friend and I had decided on Sky Optical because they were estimating delivery dates of only six months, much faster than Coulter's one-year plus. We were hoping to pop them in our telescopes in time for the hot humid Toronto summer. It didn't quite work out that way.

After I had moved to Vancouver from Toronto, John Kidner of Perceptor called me in July to say that the mirrors would be delayed until September or October of 1987. No big deal. I was prepared to wait. The mirror was to be sent to Toronto in the mail and then by United Parcel Service to Vancouver.

Unfortunately, I did not call John Kidner until December. He had recently talked to Tim Swan at Sky Optical who had assured him that it had been mailed out weeks ago. Waiting patiently, I thought it had just been held up in the mail because of the Christmas rush. By mid-January it had not arrived in Toronto and I was getting worried. I called Tim Swan personally on January 18, 1988. He was aware the order had not arrived and had started a trace with the U.S. Postal Service. By the first week in February, neither Perceptor nor I had heard back from him so I called again. He said both mirrors had been lost in the mail but since they were insured it was not a problem for him. Another two would be in the mail in two weeks, tops.

In the middle of March I called John Kidner in Toronto but nothing had been received. Back on the phone to California and Tim said it had gone out and he would do another trace. At this point Tim also said that he had had it with the mail, and would send future orders to Canada via U.P.S. only. Incidentally, a 14-inch mirror from Sky Optical had indeed arrived safely at Perceptor through U.P.S.. Tim then assured us that our 10-inchers were at the top of their list and would be made immediately.

Just by coincidence I had some time off, access to a car, and enough frustration to prompt me to offer to drive down to Los Angeles and pick up the mirrors. Since it only took about a week to make a mirror, Tim said my plan was fine and it would be ready by Easter. On the day before Good Friday, all ready to run out and buy traveller's cheques, I called him again to make the final arrangements. I was then told that they were out of 10-inch mirror blanks! More were due in a couple of weeks and would be sent by U.P.S..

I decided let Perceptor handle it from here. They sent a letter and left a message to no avail. Again, I let it drag for a couple of months. On June 15, 1988, a year and a half after the original order I called Susanne Kidner of Perceptor. She told me further contact with Sky Optical had been a waste of time. Following her advice, I left a message on Sky Optical's answering machine (11am) saying that I was ready to cancel my order. The next day I left a message (2pm) saying I was officially cancelling my order with Perceptor. Fortunately, my money was in Toronto, not Los Angeles. I am sure it is in the mail on the way back to me.

For a comparison, Lance Olkovich also ordered a 10-inch thin mirror from Sky Optical. He ordered it on December 2, 1987, was told it would be delivered by the end of the month, and received it (via air courier) on March 23, 1988. This mirror was supposed to be a "test" mirror in preparation for an order for five more. After some testing and analysis, Lance described the mirror as "moderately astigmatic" with an "optical hole" in the centre where the parabola is not even close to being diffraction limited. After a few phone calls to Sky Optical's answering machine, he had given up on them as well. Asked about Coulter's mirrors, on the other hand, Lance said they have good figures on them and are well worth the wait. While using Lance's Sky Optical mirror (obtained at a bargain basement price), I plan to order another 10-inch, this time from Coulter.

Reprinted from Vancouver Centre's *Nova*

Editor: Many members have had the experience of ordering equipment by mail order. Steve Hick's experience may serve as a warning to first-time buyers that it is important to keep good documentation on your order in case there are problems.

Viewing the Planets Through Century-Old Glass

by Terence Dickinson
Yarker, Ontario

Washington D.C. in mid-August 1988 was not the place to be. The jungle-like weather experienced in eastern Canada was even worth a one-hour plane flight to the south. But there I was, attending the International Astronomical Union's conference (in air conditioned hotels, of course).

One evening there was an open house at the U.S. Naval Observatory. The observatory is just five blocks from the conference hotel so a group of us decided to walk. It was a dumb idea. Even at 9 p.m. the temperature couldn't have been less than 35 degrees Celsius. We were soaked in sweat when we finally arrived at the gate.

The observatory is set in a beautiful park just a few miles from the White House. The park is also the location of the Vice-President's residence, so a formidable fence marks the perimeter with Navy guards on 24-hour duty. No problem, they were expecting us.

After wine and cheese and some remarks by the director, the 12- and 26-inch Clark refractors were opened for observing. The oppressive humidity and the urban site meant nothing much past Vega and Deneb were visible with the naked eye. Saturn was lost in the murk. Noting the dismal sky, some of the conference delegates remained in the air conditioned administration building rather than venture into the sweaty night air. But most of us wanted to have a peek through the telescope used to discover the two Martian moons 111 years before.

The 26-inch f/15 refractor is huge, requiring a dome that rivals that of reflectors three times the aperture. Some wag remarked that this must be the only 120-year-old piece of equipment the U.S. Navy still uses. The entire splendidly polished hardwood floor elevates for convenience at the eyepiece. In this case, the eyepiece was a 30mm Clave yielding 330X.

First, we looked at Uranus. This gave me a hint of what was to come. It was a bright aquamarine ball with definite limb darkening. There was barely a quiver in the image. The big scope was then shifted a few degrees to Saturn.

The view of the ringed planet was nothing short of stupendous. The thick, humid atmosphere above Washington wasn't moving at all. The image was perfectly steady. Even though the haze permitted only three satellites to punch through, the disk and ring detail was clearer than I have ever seen in 30 years of planet observing.

Cassini's division was like a perfect ellipse drawn in ink all the way around the white rings. Encke's gap was not fleeting but rather plainly in view as a grey zone in the middle of the A ring. Several subtle intensity variations were evident in the bright B ring. Inside ring B, the Crepe ring was perfectly distinct. The disk's most prominent feature was an ochre belt north of the equator. However, there were hints of low-contrast belts as well as a beautiful gradation of hue from the tawny equator to the grayish pole.

Only a handful of the group seemed interested in the exceptional seeing conditions (fortunately, so I was able to soak up several minutes of superlative viewing after everyone was through. I hope the huge, incredibly sharp image never fades from my mental observing log. But more surprises were to come.

The 12-inch Clark, beautifully refurbished and restored in 1980 was proudly showing Saturn as it must have done in 1896 when it was first installed. At 230X, I saw all the features seen earlier in the 26-inch, though not with quite the same clarity. However, the difference was less than one would expect in view of the vast difference in size between the two telescopes.

The next day Rich Schmidt, one of the astronomers who refurbished the 12-inch, invited me to a late night Mars observing session with the telescope (the 26-inch was unavailable). The seeing was almost as good as the night before. A complete set of Nagler eyepieces from 20mm to 4.8mm provides the following magnifications: 230, 353, 417, 510, 655 and 955. We were able to use all but the two highest on Mars.

When Mars reached the zenith, 50 degrees above the horizon, the view was superb—among the best I have ever seen. Meridianii Sinus, Margaritifer and surroundings were so clear that irregularities in the edges of these dark regions could be distinguished. An orange filter effectively removed the pale blue chromatic aberration halo and increased the contrast. Schmidt says he usually prefers the 12-inch over the 26-inch for visual work. It is a wonderful planetary scope.

Later, Schmidt told me the story of how he and a colleague found the telescope dismantled, rusting in crates, outside in the observatory storage yard. It took 700 hours to refurbish and reinstall in its original dome. Today, it is used for public observing in the daytime and personal staff observing at night.

Thinking back on the experience, my regret is that so few people have the opportunity to see the planets as clearly as they presented themselves that night in Washington. It is largely a matter of luck – having your eye at the eyepiece of a good telescope when the seeing is close to perfect. In eastern Canada, near-perfect seeing (generally steady images with occasional ripples interspersed with moments of absolute image clarity) occurs about one clear night in ten according to my observing records. Perfect seeing (no trace of image shimmer) is limited to once or twice a year.

Other than on these rare good nights, a large-aperture telescope does not necessarily outperform much smaller instruments. Rick Schmidt confirmed this. He said the planetary views in the 12-inch Clark on an average night were usually as good, and often better than in the 26-inch. My experience is the same. I have 3, 4, 5½ and 7-inch refractors. On the poorest nights there is virtually no difference among them. The images fuzz out above 100X. In average seeing, the 5 and 7-inch arc close rivals. Less than one-third of the nights are steady enough to permit the 7-inch to show what it can do.

Planetary observing is primarily seeing-dependent, not aperture-dependent. But when those rare nights of perfection do occur, it is wonderful to see those jaw-dropping views of our neighbour worlds.

Crescent Moon Shines Shyly On Moonwatchers

Astronomers at the conference of the American Astronomical Society held in Boston in early January report that ancient observers in the Middle East had better conditions for spotting the crescent Moon than present-day observers. The findings reported by Drs. LeRoy Doggett of the U. S. Naval Observatory and Bradley Schaefer of NASA's Goddard Space Flight Center are based on two surveys involving more than 1500 observers.

On the evenings of April 28, 1987 and July 14, 1988 observers across North America scanned the western horizon after sunset trying to glimpse the thin crescent Moon. These evenings were chosen by Doggett and Schaefer to test models for predicting first visibility of the crescent after New Moon. For their initial survey in April 1987, they recruited several dozen friends and colleagues, mostly professional astronomers. For the July 14 Moonwatch, they made public appeals to amateur astronomers and the general public. Observers were asked to report their location, weather conditions, and whether or not they saw the Moon. The response, nearly 1200 observing reports, was gratifying and a bit overwhelming.

Midsummer haziness prevented most observers on the East Coast from seeing the Moon on July 14. However, it was sighted by a number of observers with good observing conditions in Ontario. For observers at western longitudes, the Moon became increasingly visible. In some large cities, such as Los Angeles, air pollution made observations difficult or impossible. By comparison ancient cultures in the Middle East, who began their months with the first sighting of the lunar crescent, had more favourable observing conditions. If those dry, clean atmospheric conditions now prevailed worldwide, the July crescent would have been visible throughout North America and out into the Atlantic Ocean.

On the day of New Moon, the Moon rises with the Sun and sets about the time of sunset. Since they are close together in the sky, the Moon is invisible in the Sun's glare. Under certain conditions, however, a thin crescent Moon may become visible, low in the western sky, shortly after sunset on the evening of the New Moon. Each succeeding evening the Moon sets later, increasing the chance it will be seen.

This is the most extensive study of conditions under which the young crescent moon can be sighted. It is significant because many cultures through history have used the first sighting to mark the beginning of each new month. Such lunar calendars continue to be used by Muslims, some Jewish sects, and other cultures. Even the formalized Gregorian and Jewish calendars have their origins in early lunar calendars. Dr. Schaefer is using the Moonwatch surveys to test his recently developed model for predicting first visibility. For Dr. Doggett the surveys are part of a general study of historic calendars.

Press Release from the American Astronomical Society

The 1989 General Assembly/L'Assemblée générale 1989

June 30 to July 3/du 30 juin au 3 juillet

Tentative Schedule

Friday, June 30	National Council Meeting (3:30 pm) Wine & Cheese Party
Saturday, July 1	Paper Sessions Civic Reception
Sunday, July 2	Paper Sessions Banquet
Monday, July 3	Tours

Accommodation will be \$35.00 per day including meals.

All registration forms will be ready by the end of March.

For information write to:

Reception Committee, RASC '89 GA., Coast Guard College, P.O. Box 4500, Sydney, Nova Scotia B1P 6L1.

Comité d'Accueil, A.G '89 de la SRAC, Collège de la Garde Côtière, Case Postale 4500, Sydney, Nouvelle-Ecosse B1P 6L1.

International Astronomy Youth Camp

The 1989 International Astronomical Youth Camp (IAYC) will be held from July 3 to 22, 1989 at Malga Bissina in the Italian Alps about 80km north of Brescia. The fantastic mountain world offers good possibilities for observing.

The first IAYC was organized in 1969 which means this year we look back on 20 years of international youth camps. This will be the 25th camp held in 20 years and will make this year's event special. It is also the first time that an IAYC is being held in Italy.

The aim of the camps is to offer people between the ages of 16 and 24 the opportunity to cooperate in amateur astronomical projects and to stimulate international understanding and friendship.

For the astronomical program, participants can take part in working sessions on one of the following subjects: Astrophysics; Chemical Evolution of the Universe; Deep Sky Observation; Distance in Astronomy; Planetary System; the Sun; and Variable Stars.

Each group is led by a qualified specialist. A darkroom is provided for fast processing of photographs. The working groups enable beginners and advanced amateur astronomers to work three weeks intensively at their hobby. A non-astronomical programme is also offered. The camp language is English, and participants should be able to communicate in it without using a dictionary.

The participation fee will be about DM 750 including the program with printed report, accommodation, one excursion, and a bus trip from and to Brescia at the beginning and end of the camp.

If you are interested in astronomy and willing to share your hobby with other young people from many other countries, write as soon as possible for detailed information to:

IWA e.V. c/o Uwe Reimann, Ferdiriand-Beit-Str. 7, D-2000 Hamburg 1, Federal Republic of Germany.

International Astronomy Day 1989

by Steve Dodson
National Astronomy Day Coordinator

When Astronomy Day 1989 is celebrated on May 13 the most successful interplanetary mission ever will be in its home stretch, closing in on the outermost of the gas giant planets. The Neptune encounter will crown the discovery-studded Voyager odyssey, which has seen Voyagers 1 and 2 redefine our understanding of Jupiter and Saturn, and the lone Voyager 2 virtually write the book on Uranus and its moons.

The long-range Voyager 2 investigation of Neptune may well have yielded some surprises by Astronomy Day, and the pace of discovery will increase steadily over the summer months until the encounter is complete in late August.

There is thus an opportunity this year to give our Astronomy Day observances both a sense of perspective and a sense of immediacy. We can use this occasion to review the recent explosion of knowledge about the outer solar system, and we can capture some of the excitement of the imminent encounter. An informative review article on the subject "The Triumphant Grand Tour of Voyager 2" appeared in the December 1988 issue of Astronomy magazine.

Thus the following theme is suggested for Astronomy Day 1989:

Celebrating the Voyager Odyssey: Distant Worlds Revealed

This year and this theme might offer your Centre the opportunity to renew and invigorate its approach towards Astronomy Day. A number of suggestions have been detailed in a letter which has been sent to each centre secretary.

The most successful Astronomy Day celebrations will be those which involve the greatest organized participation of Centre members and other community resource people in advance preparations. Centres not having an Astronomy Day Committee should form one promptly, dividing the identified tasks among as many members as possible.

Astronomy Day offers the best opportunity to develop both membership and community support for your activities. It can also create awareness among local residents that astronomy is an activity that is going on around them, and not just on remote mountain tops.

If you agree with the importance of these objectives, please communicate your support to your Centre president or secretary and consider joining your local Astronomy Day team now!

Steve Dodson, National Astronomy Day Coordinator can be contacted at Science North, 100 Ramsey Lake Road, Sudbury, Ontario P3E 5S9.

Quo Ducit Urania

by Glen Hawley
Calgary Centre

Some of us were discussing, a while ago, exactly what the motto on the seal of the Royal Astronomical Society of Canada actually means, and what that lady in the long dress is doing there. Though I doubt that I am the best of Latin scholars, a fairly good translation would be "Where Urania Leads"; Urania being the name of the seated lady. Who then is this Urania? And why should we be following her? She is (or was, in classical mythology) the Muse of astrologers and astronomers. The Muses were a group of nine sister goddesses who were regarded as the inspiration of all learning and the arts, and who could be called upon by mortals in need of divine aid. They tended to specialize, each to a particular field or discipline. The closest equivalent to the Muse in the Christian mythos is probably the Patron Saint. The nine were daughters of Zeus and Mnemosyne (goddess of memory) and were generally represented as beautiful virgins. In addition to Urania, Clio was the muse of history, Thalia of comedy, Melpomene of tragedy, Euterpe of music, and Terpsichore of dance. Not as often mentioned in the literature were Calliope (epic poetry), Polyhymnia (religious music), and Erato (lyric poetry).

Observer's Cage

by David H. Levy

A Messier Marathon

Recently there has been some controversy over the value of a Messier Marathon, an event that takes place during the March New Moon weekend when observers try to spot as many of the Messier objects as they can. Around March 20, every one of the 110 objects is technically speaking in the night sky and can be observed. If the New Moon comes earlier than March 20, M30 becomes virtually impossible to see in the morning twilight, and if New Moon comes later than March 20, M74 and M77 disappear in the evening dusk.

In the 1940's, Isabel K. Williamson of Montreal began what is acknowledged to be the first Messier Club. Those who joined would attempt to observe all the Messier objects, finding them themselves, keeping a log, and reporting each sighting with appropriate comments. Later, sketches were added to the program, and finally, a Messier album for photographs. A scorecard still is kept on the wall of the Montreal Centre's Observatory so that participants can compare scores.

The purpose of this club remains the teaching of good observing habits. The Messier objects are scattered all over the sky, and include almost every kind of deep sky object. Open and globular clusters (M45, M13); spiral, elliptical, and irregular galaxies (M31, M87, M82); planetary nebulae (M57); even a supernova remnant (M1); and a pair of close stars (M40). What an educational value the Messier list has! Observing the Messier objects teaches you not only about deep sky objects but also what better way to get familiar with the constellations.

About ten years ago the concept of a Messier Marathon became popular. After all, if seeing all the Messier objects is a good idea, would not seeing all of them in one night be even better? If the purpose of the classical Messier club is to educate, would not a marathon educate faster?

Maybe it would. I am in favour of these marathons only if they are conducted carefully, in the original spirit. If all an observer wants to do is add up numbers of objects, that is not real observing. It is quite a different experience to look carefully at each object, taking notes and comparing it with other objects. My prescription for a meaningful marathon follows:

1. Count an object only if you find it yourself. The object of the game should be to become familiar not only with the object but with the road that leads to it.

2. Don't rush. Examine each object carefully, with several eyepiece powers if necessary. Can you find the central star in M57 (possible with a 16-inch) or the jet off M87 (I saw it one night through a 61-inch!)? Can you see colours in M42?

On March 15/16, 1983, I conducted my own Messier Marathon using mostly a 16-inch reflector. Realizing that I had not seen a number of these objects since I had first finished the list in 1967, I wanted to reacquaint myself with them, and what better way than through a newer and larger telescope and all on the same night? I enjoyed the night immensely, seeing 109 of the 110 objects from the expanded list including the four objects that are not positively identified. I decided that my favourite Messier object was not M47 but the subtle M17, the Omega Nebula. The one I missed was M30, the globular cluster in Capricornus, which rose over the southern mountains when twilight was already too far advanced.

I also had time for 34 other deep sky objects, plenty of soft drinks, and two Star Trek episodes.

Editor: A complete listing of the 110 Messier objects appears in the 1989 *Observer's Handbook*, pp 197-200.

Planetarium Community Looks Ahead

by Ian G. McGregor
Planetarium Association of Canada

The past year has seen many changes in the Canadian planetarium community after many years during which little change occurred.

In total, there are almost 30 Canadian planetariums. These consist of: six major public facilities (in Vancouver, Calgary, Edmonton, Winnipeg, Toronto and Montreal); two medium-sized facilities (in North York and Winnipeg); and an assortment of university, school board, museum and privately owned planetariums of both a permanent and portable nature numbering about two dozen.

There have been few changes in the directorship of the six major planetariums over the past ten years. However, in 1988, three planetariums changed directors. Ken Hewlett-White succeeded David Hurd as director at the H.R. MacMillan Planetarium in Vancouver in January while Claude Lebrun of the Dow Planetarium in Montreal retired in June after 17 years on staff. John Hault left the Edmonton Space Sciences Centre during the summer. At time of writing, the directorships in Edmonton and Montreal still had to be filled.

Staff changes and reorganizations hit the Calgary Centennial Planetarium, now part of the Alberta Science Centre, and the Manitoba Planetarium in Winnipeg. The McLaughlin Planetarium got through 1988 without any changes but lost its Senior Producer in early January 1989 and some changes are happening there.

A major loss to the community was the closing of the medium-sized planetarium at Seneca College in North York in June.

Planetariums serve an important role in the educational community as they serve as vehicles to make science, and especially astronomy and space science, entertaining and understandable to the public. Through public and school shows in star theatres, displays areas, laser light shows, courses, special programs for community groups such as Wolf Cubs, Guides, and navigators, teacher workshops, AV resource centres, public information services, observatories, community programming and the production of educational and teaching materials, planetariums fulfill a unique role as education and entertainment centres.

The Planetarium Association of Canada serves as a link for astronomy educators, teachers, and planetarium staff across Canada. Formed in 1968, the Association is one of twelve affiliate organizations of the world body of planetariums known as the International Planetarium Society. The Association has a quarterly publication known as *North Star* and holds conferences similar to R.A.S.C. General Assemblies every two years. This year the Dow Planetarium in Montreal will be hosting a four-day conference from June 27 to 30. This promises to be an exciting event as the Association has a good reputation for holding enjoyable conferences.

Membership in the Association is open to anyone interested in planetariums whether from a technical, educational or entertainment viewpoint, and to individuals concerned with astronomy education. Professional, Associate, and Library memberships are available for \$15.00 (\$25.00 for two years). Individuals interested in joining the Association should write for further information to: Planetarium Association of Canada, c/o McLaughlin Planetarium, 100 Queen's Park, Toronto, Ontario M5S 2C6.

The Planetary Society in Toronto

by Jennifer Owen
Toronto Centre

The Planetary Society held a SETI (Search for Extra Terrestrial Intelligence) conference at the Ontario Science Centre in Toronto on October 7 and 8. The Planetary Society has 125,000 members, 10,000 of them Canadian. Two of the events that were open to the public.

On Friday, October 7, a panel discussion on the Drake equation was held with Carl Sagan (Cornell University) and Frank Drake (University of California-Santa Cruz) as co-moderators. The panelists

were Phillip Morrison (Massachusetts Institute of Technology), Bruce Campbell (University of Victoria), Diana Reiss (San Francisco State University) and Richard Lee (University of Toronto). Frank Drake explained the equation he developed that tries to estimate the number of intelligent civilizations in the galaxy that we should be able to detect. The panelists discussed the terms in the equation. Bruce Campbell summarized the results of his recent work trying to detect planets around nearby suns. Diana Reiss discussed her work in dolphin intelligence, emphasizing that we are just starting the search for intelligent life other than ourselves on our own planet. Perhaps the lessons we learn from this will help in our recognition and understanding of an extra-terrestrial intelligence. Questions and comments from the audience were discussed by the panel. Philip Morrison summed up the discussion by commenting that the Drake equation is a tool for organizing discussion and thought. The most important lesson is not the answer the question gives but that we continue to think, observe and discover.

On Saturday, October 8, Jon Lomberg introduced Carl Sagan in a lecture/discussion session at the University of Toronto's Convocation Hall. Carl Sagan gave a thought-provoking talk on the history of our efforts to come to terms with the realization that we are not "at the center" of it all. He views finding an extra-terrestrial civilization as the culmination of a sequence of "de-centralizations" for humans that started with Copernicus. The differences that humans perceive between themselves should be reduced at each step, and ultimately we will recognize we are one species on a small and fragile planet. Even discussions about SETI can help us recognize this.

Dr. Sagan, who is President of the Planetary Society, outlined the Society's role in SETI research. Since other organizations (NASA, universities) are constrained by lack of funds, the Planetary Society is filling the gap and playing a leading role in SETI-related activities.

During the audience participation session, Dr. Sagan addressed questions on a wide range of topics, including whale intelligence, spores from outer space, organic molecules in atmospheres, creationism, the face on Mars, Voyager plaques, Mars exploration, and Von Daniken. His comments were candid, informative and often humorous. He was particularly encouraging to the young people who asked questions.

Both events will be long remembered by the audience. Many thanks are due to the Planetary Society and the participants who shared their time and thoughts with us.

For information about the Planetary Society, write to: The Planetary Society, 65 North Catalina Avenue, Pasadena, California USA 91106.

Reprinted from Toronto Centre's *Scope*

Noctilucent Clouds: We're Watching Them Again

**by Mark Zalcik
Edmonton Centre**

Give a kid a toy. He or she will play with it for a short while, then discard it for something better, and only now and then returning to the first object of interest. The relationship between Canada and noctilucent clouds (NLC) is similar. While noctilucent clouds have hovered over us for untold summers, we have studied them in earnest for only a few years at a time since E.H. Vestine first described them in 1934. The latest drought of observations ended in 1988 when a concerted observing programme began under the label of NLC CANAM.

Our fledgling network combines the efforts of several Transport Canada Flight Service Stations and Atmospheric Environment Service weather sites with a crew of enthusiastic amateurs, many of them R.A.S.C. members. Last year from April to the end of the summer, Canadian twilight skies were monitored for the eerie presence of noctilucent clouds in an attempt to piece together a continent-wide synopsis of when, and from where, the clouds could be seen.

Appearing in the accompanying Table are the results. Double dates are confirmed (minimum of two sightings are listed, along with latitudinal and longitudinal extents of those locations recording the incidence of NLC's. Anybody within these areas, who, on the pertinent evenings, remembers seeing silvery cirrus-like clouds hugging the northern horizon well after sunset was probably looking at these

TABLE 1
Geographical Range of Canadian Sites Reporting NLC's in 1988

Date	Number of Observers	Longitude Range (degrees West)	Latitude Range (degrees North)
June 18/19	8	104.2–114.8	49.6–56.8
June 19/20	6	102.7–114.8	49.3–57.4
June 20/21	2	107.1–113.5	53.7–57.4
June 24/25	8	102.7–114.8	50.4–56.8
July 1/2	2	104.2–111.4	51.8–56.8
July 2/3	2	66.7–108.5	54.1–54.7
July 3/4	3	66.7–113.5	53.7–54.7
July 4/5	6	107.1–114.8	53.5–57.4
July 5/6	2	112.4–112.8	49.3–49.6
July 7/8	3	66.7–114.8	53.7–55.3
July 8/9	10	107.7–128.8	49.3–60.1
July 9/10	6	105.3–114.8	53.5–57.4
July 17/18	4	66.7–114.8	51.8–55.3
July 18/19	2	113.5–128.8	53.7–60.1
July 22/23	4	66.9–121.2	52.9–61.8
July 23/24	2	111.4–121.2	56.8–61.8
July 31/Aug 1	3	107.1–128.8	57.4–61.8
Aug 7/8	2	111.4–113.5	53.7–56.8
Aug 8/9	2	66.7–109.2	54.7–62.7

mesospheric apparitions. Activity as a whole seemed to be normal with a pronounced peak during early July.

Some displays were easy to detect. The events of June 18/19 and 24/25 caught the eyes of several observers. Even more prolific was a veritable storm on July 8/9. Like a blob of ice cream dripping down its cone, an array of billows slid over the western prairies, engulfing Edmonton and alerting observers as far south as the U.S. border. To at least ten observers, this unusually cloudy exhibition brightened up an otherwise clear night.

Participating last year were the following: Observers – Michael Boschat, Peter Brown, Helen Hawes, Robert Howell, Alister Ling, Todd Lohvinenko, Cheryl Matsugi, Steve McKinnon, Don Thacker, and Mark Zalcik; A.E.S. sites at Broadview, Cape Parry, Cree Lake, Edson, Fort Reliance, Lethbridge, Meadow Lake, Slave Lake, and Wynyard; and Flight Service Stations at Fort Simpson, La Ronge, Schefferville, Sept-Iles, Sioux Lookout, Swift Current, The Pas, Thompson, Wabush and Watson Lake.

The level of interest during NLC CAN AM's initial season has been most encouraging and we look forward to continued observational endeavours this year. Leave it to the Canadians. They band together with such enthusiasm to actually look for clouds, rather than avoid them.

A Down-To-Earth Put-Down

by Patrick Cosgrove
Edmonton Centre

Unfortunately, deep-sky observing is not for everyone. I have a friend that I tried to get interested in astronomy a while back. I took him out on a clear night in late autumn and showed him a dozen of the finest deep-sky objects that were around that night. Unfortunately, he was not overly impressed. He asked me what the big deal was. After all, everything looked like a fuzzy patch of light. I tried, as best that I could, to convey what made observing so awe inspiring. As I showed him the Andromeda Galaxy

M31, I explained that the light he was seeing had been released by that galaxy in the form of small packets of energy called photons.

Once set upon their course, these photons travelled in a straight line at the speed of 300,000 km/s for over 2.2 million years. Not all of them made it through the long journey. Some were absorbed by dust and gas or scattered from their path. Eventually, these photons encountered a small, insignificant, blue planet around a fairly bland and uninteresting star.

They fought their way through an oxygen-rich atmosphere to finally enter the pupil of a human eye and to strike and be absorbed by the retina.

“Isn’t that an awesome thought?”

“What?”

“That the photons you are seeing now are 2.2 million years old.”

“Big deal! You want old? Look at the ground! Some of the dirt there is almost four billion years old, and you didn’t have to buy a \$2,000 telescope to see it either!”

Reprinted from Edmonton Centre’s *Stardust*

The Moon is a Naked Eye Object

by Paul Campbell
Edmonton Centre

Just after had joined the RASC last year, I was at a star party at the Edmonton Centre’s Waskehegan staging area. There I asked Peter Ceravolo a question that seemed trivial at the time but little did I know that it would have a major impact on my life.

“Peter, how many stars can you see with the naked eye in the Pleiades?”

Peter sat back, looked, and counted.

“1,2,3,4...5...6...7”

This left me deflated, as I only saw a hazy cloud-like object. After all, wasn’t this what the cluster was supposed to look like? In fact, I remember when I first started looking up at the wonders of the sky and one of my first discoveries was that this cloud was a star cluster.

Peter then proceeded to suggest that maybe I needed glasses. Well! My vision had always been pretty good, and decided not to believe him.

Just recently I had the pleasure of showing a group of cub scouts the wonders seen in a telescope. During the course of the evening the cub leader pointed to the Pleiades and asked me if those stars over there were the Little Dipper.

Naturally I explained to him where the Little Dipper was, but was flabbergasted to realize that he could see stars in the Pleiades. Asking the cubs how many they could see, I got answers ranging from four to seven. One cub even told me 12, but I threw out that observation.

Now thanks to astronomy I wear glasses and my life is changed. They require constant cleaning, are forever being misplaced, and are a pain in the (*& %) to carry around. Naked eye observations, however justify the trouble and the expense (about half the cost of a Nagler eyepiece). Now the moon is a crisp object with well-defined edges. I can’t believe that Mare Crisium is a naked eye observation! Faint stars are no longer fuzzed out to the point of invisibility, but are sharp, well-defined points of light.

So take heed from this article. If there is no well-defined detail on the moon, if the Pleiades look like a fuzzy cloud, or if the stars themselves look like miniature planetary nebulae, then you too may need (gasp) glasses, or as I prefer to call them, binary, short focal length refractors.

Reprinted from Edmonton Centre’s *Stardust*

Across the R.A.S.C.

HALIFAX: In recognition of Astronomy Day, the Halifax Centre held a successful mall display and public Mars Watch on October 21 and 22. Several members are participating in a committee to investigate the possibility of having a new planetarium incorporated into the Discovery Centre that is scheduled to be built in downtown Halifax. The Centre is also assembling several slide sets on various aspects of astronomy. These sets are to be made available to science teachers throughout the Maritime provinces in an effort to bring more astronomy into our schools. On September 20, Halifax Centre R.A.S.C. and Saint Mary's University co-sponsored a public lecture on the SETI program. The speaker was Dr. P.E. Barnhart, Department of Physics and Astronomy, Otterbein College, Westerville, Ohio.

KITCHENER-WATERLOO: Jonathan Doupe reports that from September 30 to October 2, the Centre hosted a display at the MidWestern Ontario Hobby Show. Alan Paeth and Mike Gore gave a talk on stepper motors at the November meeting. The club hopes to install a stepper motor as part of our renovations to the telescope at Ayr.

WINDSOR: The Centre in cooperation with the Department of Physics University of Windsor and the Detroit Astronomical Society sponsored a lecture at the university this past November. The feature speaker was Clyde Tombaugh, famous for his discovery of the planet Pluto in 1930. Dr. Tombaugh gave a warm and quite interesting presentation on his discovery to an audience of about 400 people. The talk was the only Canadian appearance he was making on behalf of a scholarship fund for astronomers doing post doctoral research at New Mexico State University. Joady Ulrich reports the event was a high point for the Centre for 1988.

CALGARY: John Howell, a founding member of the Calgary Centre, has donated a 16-inch mirror with Newtonian and Nasmynth focus secondaries, as well as much of the mounting hardware to the centre. This will provide a nice addition to our Wilson Coulee observatory. The chairperson of the Light Pollution Committee, Ruth Lewis, has joined the International Dark Sky Association. She is impressed with the helpful suggestions received to date, and recommends the IDA to others concerned about light pollution. Our light pollution handouts were made available at the public star parties held in conjunction with the Mars Opposition program. A total of about 3000 people attended these "late nights" with the RASCals. Most of these came to the Fish Creek Park site, on the southern edge of Calgary. Turnout at the rural events, averaging 100–200 people per night, was also most gratifying. Six observing expeditions to Medicine Hat, Lethbridge, Drumheller, High River, Canmore and Red Deer were launched over four weekends. Glenn Howley reports the Centre now have a NetNorth address: "RASC@UCNET.UNCA.ADHOCNET.CA" for general communication, or "RASCEXEC@UCNET.UNCA.ADHOCNET.CA" for matters of specific Council interest.

WINNIPEG: Several Centre members have been braving the cold weather for photometry work at the Glenlea Astronomical Observatory. Ian Shelton ("Mr. Supernova") was home for the holidays and visited briefly with some members. Small "protoCentres" in Portage la Prairie and Brandon have been formed, and the possibility of a province-wide Astronomyfest this summer is in the planning stages. Some members have begun experiments with video cameras attached to telescopes., Video views of Mars and Jupiter were presented at the December meeting through the assistance of the University of Manitoba Astronomy Department on their giant projection TV system. The beachball-sized Mars was considered "neat stuff" by some of those in attendance. Finally, the Winnipeg Centre's group proposal for amateur observing time on the Hubble Telescope has reached the second stage, and Chris Rutkowski says they may just squeak into the third stage if they are lucky.

MONTREAL: The Centre mourned the death of its President, Bill Cadloff, in October. Bill had been a member since 1983 and had been Librarian before assuming the Presidency. Another member with a very distinguished service record for the centre, Dennis Ryan, moved to Newfoundland this past autumn. National President, Dr. Lloyd Higgs, visited the centre on December 8. Two days later the annual Christmas party was held.

OTTAWA: At the Annual Dinner in November the following members received awards: Fred Lossing (the "Editor's Special Award"); and David Monoogian ("Best Article of the Year"). Frank Roy has succeeded Sandra Ferguson as chairperson of the Observers Group.

TORONTO: Jack Winzer, director of the Centre's Optical Workshop has planned an ambitious program for 1989. The introductory telescope class is filled up for the first half of the year. Participants will be building 6-inch f/6 Newtonian reflectors. The advanced class is completing 12½ inch Cassegrain reflectors. The primary minors have already been ground and the polishing is underway. Some thought is also being given to a junior member class for ages 11 to 15. A major overhaul of the public education program is also being undertaken by Randy Attwood. Heavy demands from schools, libraries, Cub and Guide groups, church groups and community groups for speakers and from school boards and special education groups for course instructors, all this in addition to regular public programming, has forced a need for a strategic plan for public activities. The Centre is famous for its very active public education programming.

VICTORIA: The December issue of *Skynews* was the 100th issue of the publication. Editor Alice Newton and husband Jack are planning to attend the February Florida Winter Star Party in the Florida Keys. About 350 people are expected to attend this only star party held in the southern United States during the winter months.

SASKATOON: The new editor of *Saskatoon Skies* is Daryl Rybotycki. In his premiere issue, Daryl outlined his plans for the newsletter. These include sending the newsletter to all the high school libraries in Saskatoon.

NIAGARA: The Niagara Centre Raffle Draw held in November was a great success. The first and second prizes were \$200 and \$100 respectively. The Centre hosted the Fall Banquet of the Niagara Frontier Council of Amateur Astronomical Associations (NFCAAA) in November with Dr. Robert Garrison of the University of Toronto as guest speaker. *Niagara Whirlpool* editor Michael Ilnicki is stepping down as editor and the search for a new editor is underway. During his tenure, Michael also wrote a book on the Centre titled 30 Years of Astronomy.

LONDON: The centre is applying to Canada Post for second class postage privileges for *Astronomy London*. March 18 is the date of the Annual Banquet. Dr. P.J. Mann of the University of Western Ontario will be the guest speaker.

EDMONTON: Well-known astrophotographer Bryce Heartwell has been transferred to Calgary by his company. David Levy did a whirlwind speaking tour of Alberta in January. He gave talks to the Edmonton Centre, the Space Sciences Centre, the Calgary Centre, and the University of Calgary as well as doing a colloquium on comets at the University of Alberta.

Across the R.A.S.C. is a regular feature of the *Newsletter*. Centre editors or secretaries should send reports of their centre activities and upcoming events directly to the Editor. Deadline for the June issue is May 1.