NATIONAL NEWSLETTER

October, 1982

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Participants at the 1982 General Assembly in Saskatoon (79 in all) posed for this group photograph in a break from the Saturday morning papers session. Gordon Patterson's report on the meeting leads off this issue.

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October, 1982

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The Saskatoon General Assembly

by G.N. Patterson
Saskatoon Centre

The 1982 General Assembly is now entered in the history books of the R.A.S.C., but while the memories are still fresh, I felt they should be recorded for any future reference. After all, most astronomers appear to like reading science fiction. But how does one record an event that seemed to approach near perfection? It is much easier to comment on failures as one can single out individual items that went wrong – it is so much more difficult to itemize all the things that went right.

Two or more years ago, 1979–80, the Saskatoon Centre started planning the G.A. to be held in Saskatoon. At that time, our Honorary President was Dr. B.W. Currie (deceased), a very well known and highly respected individual and scientist. On our behalf, he approached the University of Saskatchewan (U. of S.) Administration and the Centre received a written invitation from the President's Office to hold the 1982 General Assembly on the University Campus. Adequate room space was immediately reserved in the Physics Building and the ground work was started.

Volunteers came forward to fill out the various areas such as Registration, Publicity, Transportation, Papers Chairman, Exhibits, Accommodation, Meals, Tours, the Banquet, Group Photograph, etc. The list seems to go on forever, but people were found for all tasks – even the "gophers" who filled in for so many unexpected or tedious tasks. To thank everyone individually would take considerable space, but an especial thanks goes to our Honorary President who filled in so many capacities, in addition to his duties as Papers Chairman – we felt he should be given a lazy-susan carrying all the different "hats" he had to "wear" during the G.A.

We had hoped that the I.A.P.P.P. (International Amateur and Professional Photometric Photometry) group would provide the morning paper session for May 23, but due to other more pressing

commitments, this planning fell through. However, some papers were mailed in and read by members present, and a photographic display of photometric equipment was included in the Exhibit Display.

The G.A. opened with the Wine and Cheese party held in the Private Dining Room in Marquis Hall. After the party most of the delegates wandered over to the Physics Building across the Campus Bowl where Theatre 107 was used to show many of the members' slides with the highlight of the evening being, of course, the annual song contest. After all the singing(?) was over it was realized there had been no judges selected. The evening terminated with private parties plus several trips to visit some of the Centre's Observatories.

The following morning, Dr. Skinner, wearing one of his many "hats", welcomed all the delegates on behalf of the University President and the Head of the Physics Department. Following coffee break, the paper session got under way under the guidance of Dr. Skinner wearing his Papers Chairmans "hat". Peter Broughton led off with "Do You See Something I Don't See", followed by Norm Sperling talking on "The States of Astronomy". The group broke off for the traditional Group Photograph, and then adjourned for lunch. After lunch, Chris Rutkowski opened the afternoon session with "Pico, Piton and Other Suspected Sites of LTP". This was followed by our member from Japan, Osao Shigehisa (Shigisan) talking on "Light Variation of T Coronae Borealis at Minimum Stage". Jack Newton then followed with "A Supernova in NGC 4490", and the papers terminated for the first part of the afternoon with a paper by Don Jones on "Use of a Computer in Astronomy". Following a coffee break, Professor J.E. Kennedy completed the Paper Sessions for the day with his talk on "A Sudden Outburst of Circumferentors".

The social portion of the Annual Banquet started at 5:00 pm where everyone had a chance to meet each other. Our sponsors were present: Mayor Cliff Wright for the City of Saskatoon, and our MLA, Mr. Duane Weiman, for the Province of Saskatchewan; we even persuaded our good patron, Mr. Ed Rystrom, to whom we owe our use of the Dark Site, to attend and visit with the members and delegates.

Following the banquet, the members at the head table were introduced, and our two sponsors, Mayor Cliff Wright and M.L.A. Duane Weiman gave short talks to the delegates. This was followed by a special presentation by Dr. Halliday to two members of the meteorite search group from Saskatchewan. A short break was taken to enable the kitchen staff to clear the tables and then the presentation of awards took place. Two Service Awards were presented – one to Dr. Doug Hube of the Edmonton Centre which was accepted by one of the Edmonton Delegates in Dr. Hube's absence, and one to Gordon Patterson, President of the Saskatoon Centre. This one caught Gordon completely off-base, and for one of the first times, found him practically speechless. Needless to say, the standing ovation and the reading of the presentation by Dr. Halliday gave him time to get his breath back, and he was able to reply to the presentation. Following the Service Awards the presentations were made for the prize-winning exhibits, with a special prize to our Japanese delegate, Osao Shigehisa.

Dr. Halliday, as the retiring R.A.S.C. President, was the Guest Speaker, and regaled the members present with a talk on the Halley's Comet program, liberally illustrated with slides.

The final note of the banquet was a presentation from the Saskatoon Centre of a wood-carving by a well-known Saskatoon artist.

Delegates spent the rest of the evening in various ways, some visiting Observatories, some night clubs, and others just having good social outings in individual room parties.

The next morning, following breakfast, the Paper Sessions resumed. Initial planning had called for this first period of the morning to be turned over exclusively to the I.A.P.P.P., but other commitments intervened. Dr. Skinner, wearing another of his many "hats" read the paper prepared by Ed. Majden on "An Introduction to the I.A.P.P.P. and Small Observatory Photometry". This was followed by a paper prepared by David Dupuy and Randall Brooks, read by Damien Lemay, on "A Sturdy Lightweight Photometer". John Percy then gave a talk on "An International Professional Amateur Photometric Campaign on Be Stars", and the Paper Sessions wound up with a talk by Alphonse Tardif on "Some Remarks on the Design and Construction of a Solid-State Photometer for Astronomy".

The period following the coffee-break was devoted to a discussion, headed by Dr. Ian Halliday, on participation in the International Halley Watch (I.H.W.).

The General Assembly Meeting took place in the afternoon, and has been fully reported in the G.A. Minutes. The usual Council Meeting took place after the G.A., and other delegates disassembled their exhibits. The business portion of the 1982 General Assembly was over. However, a tour had been

arranged for that evening to the Western Development Museum, and members in residence were transported by chartered bus, via a scenic route to the W.D.M. where everyone appeared to thoroughly enjoy themselves. Following the tour, several members visited the members Observatories, and Gordon provided a personally conducted tour of the University Observatory.

The following day, May 24, all members desiring transport were driven by Centre members to either the airport, train, or bus terminal.

Many letters have been received from delegates commenting upon the enjoyable time they had at this G.A., so we must have done something right. It was wonderful having such a responsive group of people from all over Canada, plus our two members from Bermuda and Japan. Maybe we can do it again sometime.

Prizes Awarded for Entries in the Exhibit Contest

Note: Entries were not registered in all categories, and some entries were not considered adequate for an award by the judges. Plaques were awarded in all categories.

1 *Solar*, visual: no entry.
2 *Solar*, photographic: John & Lorraine Hicks, Handbook of Astrophotography.
3 *Lunar*: no entries suitable.
4 *Comets*: no entries suitable.
5 *Planetary, photographic*: Len Gamache, Handbook of Astrophotography.
6 *Deep Space*: Jack Newton, 20 × 50 Binoculars.
7 *Atmospheric Phenomena*, *visual*: Marl Zalcik, Handbook of Astrophotography.
8 *Atmospheric Phenomena*, *photographic*: Len Gamache & Dave Sine, Tirion Sky Atlas 2000.0.
9 *Variable Stars*: none.
10 *Radio Astronomy*: none.
11 *Equipment*: GN Patterson, 7-inch Schmidt Blank.
12 *Centre Display*: Calgary Centre, $100 cash prize plus 4¼-inch Telescope.
13 *Most Improved Newsletter*: Late Award to the Winnipeg Centre.
14 *Open Category*: Damien Lemay, $100 Cash Award.
15 *Overall Grand Prize*: Calgary Centre.
16 *SpecialAward*: Osao Shigahisa. 'Shigisan' as he is known to all his friends at the G.A. came over 7000 miles to attend this Assembly, contributed an excellent paper, and was the life and fun of all the parties. Everyone enjoyed his presence at the G.A., and he was an excellent ambassador for his country.

Abstracts of Papers Presented at the 1982 General Assembly

Do You See Something! Don't See? Peter Broughton, R.A.S.C., 124 Merton St., Toronto, Ont.

During spring and fall, observers at mid-Canadian latitudes have opportunities (and perhaps obligations) to view parts of the sky not visible to others.

An observer in Saskatoon for example can see part of the night sky which is not visible to someone at more southern latitudes. At the same time of night, the more southerly observer cannot see the portion of the sky because it is below the northern horizon; earlier in the night, he cannot see it because of evening twilight, and later it will not have risen before the morning twilight interferes. The Saskatoon observer will also be able to see part of the sky which someone further north cannot see because twilight may last all night.

At higher latitudes these effects become less useful because of the short night. (Even at the pole, astronomical night occurs only in December and January). At lower latitudes the same phenomena exist but are less important because there are many other observers better situated further north.

The States of Astronomy. Norman Sperling, 429 43rd St., Oakland, Cal. 94609 U.S.A.

From Winter Soltice to Astronomy Day I toured America in my RV, running up over 50,000 km while making 2 or 3 contacts a day among observatories, planetaria, amateurs, professionals, companies, ATM's, writers, and a haphazard sprinkling of unclassifiables as well as a couple of professional conventions and the Shuttle launch. My description of this trip, and some conclusions that I derived from my experiences will be presented.

Pico, Piton and Other Suspected Sites of L.T.P. Chris Rutkowski, PO Box 1919, Winnipeg, Manitoba, R3C 3R2.

There are two prominent features near the perimeter of Mare Imbrium that are noted only occasionally in astronomical literature. They are Pico and Piton, two isolated mountain peaks that cast long shadows at sunrise and sunset, and therefore are ideal for amateur astronomers practicing the measuring of lunar heights. Many amateurs and professionals have sketched the appearances of these peaks, and noted striking changes in them with the advance of selenographic colongitude. Some have interpreted the changes to indicate volcanism, lunar clouds and the creation of frost on their slopes. These changes were in some cases considered L.T.P. (Lunar Transient Phenomena).

Generally speaking, L.T.P. are any noticeable changes in the appearance of features of the Moon. Usually, only one small feature, such as a rille or crater is affected, although there exist reports of the entire lunar surface being photometrically enhanced. L.T.P. are mostly visual observations, although there are notable exceptions. There is a great deal of debate as to the "reality" of L.T.P. Some insist they are caused by varying seeing conditions; others believe L.T.P. are due to particle-induced luminescence on the lunar surface.

On Light Variation of T Coronae Borealis at Minimum Stage. Osao Shigehisa, 3534 Shimo-Tsuruma, Yamato, Kanagawa, Japan 242.

This star is a recurrent nova and had erupted two times in 1866 and in 1946. The star is now at minimum brightness of about 10th magnitude with small variations. I have observed the star since 1972 and found out that the star has the following interesting characteristics.

1 The star has periodic variations in brightness.
2 The variation is different year by year in magnitude and in period.
3 Secondary periods were detected

I obtained observations of 19 maxima and 17 minima of the star and measured mean periods 113.4-day in max. to max., and 113.6-day in minimum to minimum. The period ranges varied between 90 days and 130 days and are different each time. Each period of maximum to maximum and minimum to minimum was plotted in Julian Day order and secondary periods were detected. There seem to be semiregular changes.

A Supernova in NGC 4490. Jack Newton, 2402 Morris Drive, Victoria, B.C. V8X 4G8.

Good luck played a role in obtaining magnitude measurements of the early development of a supernova in the galaxy NGC 4490. The story of this and the excitement involved will be presented, as well as data obtained.

Use of a Computer in Astronomy. Don Jones, 750 Woodland Drive, Castlegar, B.C. V1N 1E9.

Computers can be used to store significant amounts of data. The data can later be retrieved for statistical applications of whatever nature might seem appropriate. For example, one application was to store the data on one hundred globular clusters listed in Antonin Becvar's Atlas of the Heavens. A least squares calculation was programmed to correlate distance and radial velocity. The distance to be subtracted to make the mean cluster distance was interpreted as the distance to the centre of the galaxy. The radial velocity to be subtracted to make the mean radial velocity zero was interpreted as the speed of the Sun in its orbit about the galaxy. From these data and Kepler's third law, the mass of the galaxy can be estimated to be in the neighborhood of 9×10^{10} solar masses. This is only one of many applications available to microcomputer users.

A Sudden Outburst of Circumferentors in Western Canada. J.E. Kennedy, Department of Physics, University of Saskatchewan, Saskatoon, Canada S7N 0W0.

By no means as spectacular as the long-awaited supernova, nor rating the attention given by the media to the Jupiter effect, there was, however, a noteworthy astronomical event in the year 1981; the number of surveyor's compasses known to exist in western Canada increased suddenly from one to three.

The discovery of two superb instruments in Winnipeg renewed interest in the 19th century development of surveying in Canada and its close association with early Canadian astronomy. From a stone pillar on the true meridian line, where William Brydone Jack checked surveyor's compasses for accuracy, it has become possible to determine the type or design of circumferentor which he placed on the top of the stone pillar.

An Introduction to the I.A.P.P.P. and Small Observatory Photometry. Edward P. Majden, Member: I.A.P.P.P.–R.A.S.C. Victoria Centre, 1491 Burgess Road, Courtenay, B.C. V9N 5R8.

A brief history of amateur involvement in photoelectric photometry is presented from its early beginnings with Dr. G.E. Kron's paper in ATM-3 in 1953 to the organization of the I.A.P.P.P. in 1980. The purpose and goals of the I.A.P.P.P. are discussed.

A Sturdy Lightweight Photometer. David L. Dupuy and Randall C. Brooks, Department of Astronomy, Saint Mary's University, Halifax, Nova Scotia B3H 3C3. Read by: Damien Lemay, Member Quebec Center and I.A.P.P.P.

This paper describes a new lightweight student photometer that is easy to mount on the telescope and easy to use. The detector is an uncooled, low dark current photomultiplier tube EM1 9844. Ease of machining, resulting in low cost, was a dominant factor in the mechanical layout of the photometer. Advantages and inconveniences of the design will be discussed.

An International Professional Amateur Photometric Campaign on Be Stars. John R. Percy, Department of Astronomy, University of Toronto, Canada M5S 1A7.

The Be stars are a group of bright B-type stars with emission lines in their spectra. They vary in brightness, by up to a few tenths of a magnitude, on time scales of hours up to years. The nature and cause of this variability is not fully understood. For this reason, an international professional-amateur photometric campaign has recently been organized by Drs. P. Harmanec, J. Horn and P. Koubsky of the Ondrejov Observatory of the Czechoslovak Academy of Sciences. This paper describes the scope and aims of the photometric campaign. It examines the main problems which are encountered in campaigns of this sort: achieving precise observations and reducing them to a standard photomethc system.

Typical light curves of Be stars, obtained with 0.4 m telescopes at the University of Toronto and at the Kitt Peak National Observatory will be shown.

Some Remarks on the Design and Construction of a Solid-State Photometer for Astronomy. Alphonse Tardiff, 9 Mgr Gosselin, Levis, P.Q. G6V 5K1.

Solid-state silicon detectors have many advantages over photomultiplier tubes but also have a few drawbacks. Problems involved with high gain DC amplifiers are examined. A few approaches to the design and construction of a solid-state photometer are considered.

Due$ Due

Yes, once again, it's renewal time: the 1983 membership fees are payable as of 1 October 1982. National fees are $20.00 for regular, and $12.50 for youth members, payable to your Centre treasurer. Unattached members should remit their fees directly to the National Office. Certain centres have surcharges in addition to the national fee structure; members should consult their Centre treasurers. Members wishing to transfer to Life Membership should apply to the National Office, remitting the fee

of $300.00. Members who have not renewed by 15 January 1983 will be dropped from the publications mailing list, so please send your dues now. Don't miss your 1983 *Observer's Handbook*, or any issues of the *Journal* or *National Newsletter*!

Nominations for RASC Officers, 1982–83

The By-Laws of the Society provide for a Nominating Committee composed of the three surviving immediate Past Presidents, whose duty it is to prepare a slate of candidates for the offices of the Society.

Next year, we must elect a National Treasurer. If any member wishes to make suggestions in this regard, he should contact the Committee Chairman, Dr. Ian Halliday, do the National Office of the R.A.S.C. 124 Merton Street, Toronto, Ontario, M4S 2Z2.

The By-Laws provide that "any five members of the Society, in good standing, may nominate candidates for any office, provided that such nomination, accompanied by a letter of acceptance from the nominee, shall be received by the Secretary of the Society, not less than sixty days before the date for the annual meeting".

It would be appreciated if any such nominations, (together with a short résumé) were submitted no latter than *April 1, 1983* in order for the printing and mailing of ballots to be completed as required.

Full details pertaining to nominations are outlined in By-Law 1, Article 11(a), as published in the June, 1969 *Journal*, pages 155–168.

Awards of the RASC for 1982

As outlined in the *Annual Report* of the Society for 1979, awards may from time to time be conferred upon members in recognition of meritorious service or achievement. Recommendation for such awards should in most cases be made through the Council of the local Centre. Members at large may submit recommendations, if they so wish, to the National Office for consideration of the National Council. Centre Councils will, of course, submit recommendations as they see fit, to National Council for final approval.

GOLD MEDAL OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

The Gold Medal of the Society was established in 1905 as an ecouragement to the study of astronomy. It is awarded to the graduating fourth year University of Toronto Arts & Science student who has both an A standing in his fourth year and the highest average mark in the two full courses and two half courses in astronomy which are contained in the Astronomy specialist programme, provided this average is over 80%. If no student satisfies these criteria, the award is not made.

CHANT MEDAL OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

The Chant Medal of the Society was established in 1940 in appreciation of the great work of the late Professor C.A. Chant in furthering the interests of astronomy in Canada. This medal is awarded, not oftener than once a year, to an amateur astronomer resident in Canada on the basis of the value of the work which he has carried out in astronomy and closely allied fields of original investigation.

SERVICE AWARD MEDAL OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

The Service Award was established in 1959 and, on recommendation of a special committee of the National Council, this small bronze plaque is presented to members who have performed outstanding service to a Centre or to the National Society.

KEN CHILTON PRIZE OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

The Chilton Prize was established in 1977 by the National Council of the Society, in remembrance of K.E. Chilton, an active member of the Hamilton Centre. The Prize is awarded annually to an amateur astronomer resident in Canada, in recognition of a significant piece of astronomical work carried out or published during the year.

Nominations (including citations) should reach the National Office by *December 31*. More detailed information on nominating procedures is given in the *National Newsletter*, 71 L47 (October 1977) or can be obtained from the local Centre National Council delegate.

Nouvelles des centres français

de Damien Lemay

1 Eclipse de lune du 5–6 juillet

L'ennuagement quasi général au Québec a interféré avec l'observation de ce phénomène qui avait été bien publicisé. A plusieurs endroits, le public a été déçu de ne pouvoir l'observer, mais a Rimouski, au delà de cinquante personnes ont vu leur patience récompensée lorsque vers deux heures du matin, une trouée d'une durée de quelque quinze minutes a permis de voir la lune partiellement obscurcie par l'ombre de la terre.

A Québec, des membres du centre de la S.R.A.C. qui s'étaient donné rendez-vous sur l'Ile d'Orléans n'ont presque rien vu.

2 Festival du Mont Mégantic

Afin de répondre a l'attente d'un public assoiffé d'astronomie, l'Observatoire du Mont Mégantic, en collaboration avec la population de Notre-Dame-des-Bois, a tenu un festival populaire d'astronomie du 8 au 11 juillet dernier.

Le centre communautaire du village fut le théâtre de plusieurs activités telles que conférences, ateliers, une table ronde, films, etc ... . En soirée, il y avait observation avec le télescope de 1,60 mètre de l'observatoire. Le samedi soir seulement, on estime à 500 le nombre de visiteurs. Ceux qui n'avaient pas la patience de faire la queue pour utiliser le gros télescope pouvaient se consoler auprès des nombreux amateurs qui y avaient apporté leurs instruments.

La température a collaboré avec un ciel excellent pendant toute la nuit du samedi au dimanche, et une qualité moyenne, les autres soirées.

Le tout s'est terminé par un "méchoui" le dimanche soir, suivi de musique aux frais de messieurs Gilles Beaudet et Gilles Fontaine qui ont ainsi démontré qu'en plus des instruments astronomiques, ils savent aussi manier la guitare et l'accordéon. Ont également collaboré à cette réussite, des gens de l'Université Laval du Planetarium Dow ainsi que le Dr Serge Demers, directeur de l'Observatoire du Mont Mégantic.

Cette nouvelle formule fut mise de l'avant un peu sur le tard, mais suite au résultat obtenu, on devrait répéter l'expérience l'année prochaine.

3 Le Congrés de l'A.G.A.A.

Les 18, 19 et 20 juin dernier, avait lieu a Drummondville, le 7^{e} congrès de l'A.G.A.A. qui a réuni plus d'une centaine d'amateurs dont plusieurs membres de la S.A.M. et du centre de Québec.

On y a trouvé une salle d'exposition très bien remplie, qui a donné lieu à plusieurs discussions animées. Il y a eu deux ateliers plus une dizaine de communications. Certaines étaient à caractère scientifique alors que d'autres étaient plutôt divertissantes. Dans cette dernière catégorie, j'ai spécialement aimé un diaporama 3-dimensions, accompagné d'un montage audio de circonstance. Le tout était l'œuvre de Martin Rochette de Drummondville. Il m'a promis de récidiver en 1983, pour le bénéfice de tous ceux qui seront au rendez-vous de Québec. Le conférencier invité le soir du banquet était le Dr Gilles Fontaine de l'Université de Montréal, qui nous a entretenu sur "Les Eléments dans l'Univers". Son exposé fut très apprécié.

Quant à votre éditeur pour les centres français, il s'est vu honoré du "Trophée Meritas" de l'A.G.A.A. pour l'année 1982. Celui-ci consiste en une sphère armillaire de Ptolémée, œuvre de Réal Manseau qui en fit don a l'A.G.A.A. en 1980. C'est en somme, la coupe Stanley de l'A.G.A.A. Suite à Michel Rebetez (actuellement président de l'A.G.A.A.) qui y a gravé le premier son nom en 1981, j'ai eu le plaisir d'y ajouter le mien cette année.

La qualité des conferences et exhibits lors de l'assemblée générale de la S.R.A.C. à Saskatoon ainsi qu'au congrès de l'A.G.A.A. à Drummondville sont de bon augure pour Québec, en 1983.

Fait nouveau cette année, après la visite d'observatoires avoisinants (Rigel – Sagittaire – Hamel) le premier soir, il y avait un feu de camp chez Réal Manseau, avec la commandite de la brasserie O'Keefe. Le feu et les conversations ont pétillé jusqu'aux petites heures du matin.

Damien Lemay, éditeur pour les centres français, tient le Trophée Méritas de l'A.G.A.A., remis à l'occasion du congrès annuel de l'A.G.A.A. à Drummondville, le 20 juin 1982.

Centre News

by Ralph Chou and Peter Jedicke

Effective immediately, correspondence to *Skynews Victoria* should be sent to Muriel Enock, 1586 San Juan Avenue, Victoria, B.C. V8N 2L5.

Recently we reported the demise of the astronomy column in the Toronto *Saturday Star*, which was written by Terence Dickinson of Toronto Centre. We regret to report that the economic pinch has claimed yet a second victim. "Amateur Astronomy" was a weekly column in the *St. Catharines Standard* written by Niagara Centre member Bob Winder. After nine years the paper dropped the feature as part of an attempt to reduce over-all size – no doubt the astrology column remains intact! We wish Niagara centre well in its drive to restore astronomy to the pages of the St. Catharines newspaper.

Calgary Centre members set up telescopes at Glenmore Park to observe the July total lunar eclipse. *Starseeker* reports that about 50 people came to the site. Under mostly cloudy skies, those that persevered were able to view the eclipsed moon between 1:00 and 1:30 a.m. The eclipsed moon was very dark; lunar features were difficult to discern through a telescope. The southern limb appeared to be slightly lighter in colour. As others have reported, the colour was dark rust to grey.

On July 7, a tentative development permit was granted by the town of High River to the Calgary Centre for construction of their new Observatory on the Strathcona-Tweedsmuir school property. The Observatory plans were a feature of the Centre's winning display at the recent General Assembly in Saskatoon.

The Halifax Centre conducted an observing session with over 40 members of a Grade 4 class at Boutilier's Point Elementary School on May 6 under clear skies. On June 18, a similar number turned out at the DesBrisay Museum in Bridgewater, Nova Scotia, for a meeting of the Centre. Walter Zukauskas, Roy Bishop, Peter and Michael Edwards and Randall Brooks all gave brief presentations to the amateurs gathered from the Bridgewater vicinity.

Leo Enright of the Kingston Centre spoke at the regular meeting of the London Centre on July 16. Leo's talk "The Ancient Meteor Crater at Holleford, Ontario," was enthusiastically received by over 20 members.

In Lockhart Hall at the University of Winnipeg, Mr. Roland Schultz addressed an audience of 22 on May 14. He spoke on the structure of the galaxy and the large-scale view of the Universe. Also presented were slides of the Winnipeg Centre's Astronomy Day activities at the Manitoba Planetarium and Lyndale Park. Personal commitments have forced President Greg Bailey to resign and Guy Westcott has assumed the Chairmanship.

The recently-retired National Secretary, Rev. Norman Green, gave a talk entitled "A History of Spaceflight" to 42 persons at the Niagara Falls Public Library on May 14. This was the final regular meeting of the Niagara Falls Centre for the season. The members continued their activities with a star night on May 21, featuring six telescopes, 13 people and clouds streaking the sky.

Fourteen observers spent the night of April 24 at the Montreal Centre's Cedar Crest site with seven telescopes, including the Centre's Celestron 14. Early clouds in the south and an aurora that brightened as the evening wore on were no deterrent to the group, and at least some were able to view all of the planets with various instruments during the course of the night. This is a challenging observational task, the successful completion of which entitles an astronomer to membership in the unofficial "Nine Planets Club."

Long-time Newfoundland member Gary Dymond was married on June 5. He and his wife, Marie, visited Niagara Falls on their honeymoon, and were rumoured to be headed into the United States.

Note – This section is a new feature of the *National Newsletter*. Please address your comments to the Editor. News of recent Centre activities may be sent for inclusion in this column to Peter Jedicke, 1511–205 Oxford Street East, London, Ontario N6A 5G5. News received eight clear weeks prior to date of issue will be considered for immediate publication (e.g. by October 1 to appear in December issue). Late items can be submitted by telephone to (519) 433-2992, evenings.

The Revenge of The Space Pet

by Chris Rutkowski
Winnipeg Centre

Friday night, June 18th, 1982, found many Winnipeggers looking into the sky, bewildered. Reports started trickling in to the Planetarium on the next Tuesday, when the Planetarium's resident UFO investigator began receiving reports of an ovoid-type UFO travelling in a slow, flat trajectory over the St. Vital area in the vicinity of the shopping centre. After an appeal on the radio for additional witnesses, over twenty witnesses were eventually located. I interviewed a dozen of them, getting detailed descriptions and sketches of the object, while my co-investigator assisted with the investiga-

tion by taking individual witnesses aside one by one to get an accurate narration, and asking for relevant information.

The sighting was far too good, and we were immediately suspicious. In addition to the large number of witnesses, there were three separate photographs taken by three separate witnesses. The object was thought by all witnesses interviewed to be quite small, perhaps the size of a beachball, pressed into an ovoid. It was silver-grey in color, slightly brighter on its top than its bottom.

By Friday morning, the Planetarium's spokesman had declared the object to be a "Space Pet", a helium-filled silver balloon often sold at fairs and exhibitions. They are currently being sold in Winnipeg at the Red River Exhibition, and someone came forward with the news that they had lost their "Space Pet". All descriptions of the UFO observed match the balloon fairly well, with some notable exceptions. It has therefore been assumed that the UFO was the balloon. However, certain aspects of the descriptions of the object raise some doubt. All witnesses agreed that the object flew in a level path. At speeds comparable to those reported, a space pet wobbles in the turbulent wind as it sails. Was this turbulence of small scale during the object's flight, and hence no wobble was observed? All witnesses, when asked about the suggestion that the object was a Space Pet, replied to the negative, saying it was "different".

Reprinted from *Winnicentrics*

The Lunar Eclipse From Flagstaff

by James Morton
Halifax Centre

On the night of July 5–6 people all across North America were able to see perhaps the most impressive lunar eclipse in a generation. In Flagstaff, with clear dark skies and two major observatories, the eclipse was watched with special enthusiasm. For the past two months I have been working with the 31-inch Lowell reflector at Anderson Mesa, just outside of Flagstaff. The 31-inch is located at the end of a dirt road of a rather unfriendly nature. Since there are no other telescopes at this site – the turn off for the Lowell 72 inch being about half a mile away – observing at the 31-inch is a very solitary pursuit. In the two months previous to the eclipse the only visitors I had were a small bat, who flew in the dome one night, and a rather large elk, who wanted to pick a fight with my car. Anyway, I decided to try and observe night sky color changes during the eclipse, and so I came out early to catch the sky's color during dusk. Safely locked inside the dome with the radio from Phoenix blasting away I didn't realize that any army of amateurs was setting up camp on my doorstep. Just before totality I stepped outside and was greeted by perhaps 30 amateurs led by Tom Epps, of the U.S. Navy. These amateurs had a vast array of telescopes ranging from the ubiquitous Tasco refractor all the way to a homemade 20-inch. The best view of the eclipse was almost certainly in Tom's 4-inch RFT, however – the larger telescopes had a field of view that was simply too small.

The skies at Anderson Mesa are generally very dark. As the moon entered the earth's shadow the Milky Way leapt into view. Suddenly the Trifid Nebula became visible. The change in darkness was striking. Before the eclipse the sky was around 16 magnitudes per square arcsecond. During totality this dropped to 21 magnitudes per square arcsecond (both taken 20 degrees north of the moon in the visual). The color change was also significant. Before the eclipse the U-B color index was 0.43, while during totality it went to –0.46. But this can't convey the beauty of the eclipsed moon. From Flagstaff the moon went a rusty orange overall, with a clear difference in the brightness across the face of the moon, the southern half being much the brighter. At 8:24 UT totality ended. For a brief while a tiny white cap appeared on the moon's eastern limb. This ever growing cap led Tom to comment, while looking through his RFT; "Looks like we have a pretty good view of Mars and its polar cap – but winter's coming on fast ...". That seemed like an appropriate end to a lunar observing run from Lowell Observatory. It is difficult to think of any other time when the moon might be confused with Mars, especially from the observatory where Mars had its canals studied in such detail.

L60

Apollo 17 – A Personal Reflection

by Roy L. Bishop

The autumn of 1982 marks two anniversaries in man's venture into space: it is 25 years since Sputnik 1 astounded the world, and 10 years since the end of the Apollo voyages to the Moon. Without the first, the second would not have occurred, and without the second the technological momentum that spawned the Mariners, Pioneers, Vikings, Voyagers, and Space Shuttle would have been much slower to develop. The Apollo program was born of international rivalry and presented to the world as a symbol of American vitality and technology. The program came to maturity during the social turmoil of the late 1960's, a turmoil that was accompanied by changing priorities which, in turn, brought the Apollo venture to an early end. Yet despite those circumstances, Apollo capured the spirit of man as no other venture had done before, nor ever can again.

As an undergraduate engineer I recall vividly a clear October evening when Sputnik 1 was announced. Fifteen years later I stood with my son beneath palm trees and saw night transformed into day by the departure of Apollo 17.

Apollo 17 was unique in several respects. Nothing to equal the mass of that rocket has been launched before or since. Together with Skylab, it represented the end of "no deposit-no return" rocketry hardware in the American manned space program. It is unlikely that ever again will such a formidable machine be hurled from Earth's surface for but one flight. As the last manned flight to another world, and most likely the last such flight in this century, it marked the end of an era. When manned flights to the Moon and beyond are resumed, probably never again will they rise from Earth's surface as spaceships complete in themselves. And as the only nighttime launch of the Saturn V rocket, Apollo 17 was awesome.

Aside from the launch itself, other aspects of that warm Florida night a decade ago remain with me. Our viewing site was on the banks of the Indian River, directly west of the launch complex. Despite an estimated half million observers in the area, there was nothing but a wide expanse of water in front of us. During the hours of waiting, pelicans, ducks and egrets occasionally flew by, and once the dorsal fins of a school of dolphins broke the water's surface between us and the moonship. As day departed, the white Saturn rocket dominated the scene with blue-white beams of searchlights fanning out past it up into the moist night sky. During the evening a large, distant electrical storm slowly moved out of the north-east to take up a position over the Atlantic behind the glowing rocket. Pinkish-orange flashes played through the complex clouds and occasionally a bolt of lightning connected to the water below. With distance reddening its colors and silencing its thunder, the storm resembled a scene from an old painting, and was reminiscent of the conditions that must have been responsible for the earliest beginnings of life on Earth. It made a fitting backdrop for the evolutionary step occurring that night.

All that long, warm afternoon there had been a few aircraft in sight, but as the mid-evening launch time approached, the lights of planes and helicopters became more numerous. In the final minutes several dozen were all over the sky, some with brilliant searchlights, no doubt to be available in the event the flight had to be aborted in its early phases. Even from our remote site, the amount of hardware amassed to support the launch was impressive. Then came a hold at the 30 second point. As the minutes passed the activity in the sky subsided together with the emotions of the multitudes in the dark below.

Toward midnight the sky was clearer. High in the east between the horns of Taurus, the planet Saturn shone down on its namesake, the floodlit Saturn V. As the new launch time of 33 minutes into December 7 approached, the activity in the sky increased once again.

The first evidence that the rocket was alive was a sudden orange glow around its base. A few seconds later, and to my great relief, a brilliant, searing, yellow-orange light appeared directly under the rocket. Apollo 17 was rising on a pillar of flame and the gamble I had taken in travelling so far had paid off. The flame from the first stage engines seemed to have the brilliance of the surface of the Sun. But it was not a white Sun, it was the yellow of burning kerosene, the fuel of the first stage and the color of lamps of a century ago. The glare and rays of the floodlights which had dominated the night up to that point were utterly lost in the radiance of that flame, and for miles around night turned into dawn as a strange apparition rose in the east. Even the gigantic white rocket was lost in the dark above its own exhaust.

A Saturn V does not leap into the sky like a smaller rocket or the Space Shuttle. Several seconds passed before it rose its own length and cleared the launch tower. However, gulping 13 tonnes of

kerosene and liquid oxygen every second, the rocket's mass fell away and the fire beneath drove it with an increasing acceleration up into the stars above.

Suddenly a low rumble began and quickly grew to a powerful, chest-shaking thunder. In the wonder of following that ascending flame, now high in the sky, I had totally overlooked the silence of the first minute of the launch. Approximately one percent of the 180 million horsepower of a Saturn V is converted into sound, and now that thundering herd had traversed the 19 kilometres of marsh and water separating us from the launch paid. Soon the pounding roar was joined by the sound of sharp explosions, likely due to the supersonic whipping of the lower end of the flame once it had cleared the launch pad. With the entire coastal region reverberating to this staccato thunder, the loudest sustained sound ever produced by man, it was difficult to think coherently. The fact that three men were riding that flaming machine to another world only compounded the emotional impact of those moments.

As the second minute into the flight passed, the level of both the light and sound dropped rapidly. Soon the yellow flame was but a brilliant point. Then, suddenly it vanished, leaving only the twinkling stars and Saturn itself in the dark above. A few seconds later a bright, blue-white star appeared, like Venus only brighter, as the hydrogen-burning second stage ignited. Over the next few minutes this star dimmed, and dropped toward the horizon as the moonship headed eastward out across the Atlantic toward Africa. Seven minutes after launch it disappeared behind alow cloud bank just to the right of the steaming launch tower. I then turned back to earthly matters and spent the rest of the night coping with a massive traffic jam.

Apollo carried with it the emotions of many people, emotions related to the romance and challenge of the unknown, of space, of a rocket of unprecedented power, of the age-old classic adventure of a lunar voyage, and of the first vision of Earth as a small, turquoise sphere, alone in the black silence. It may well be that the most valuable gift of Apollo was the latter, and the perspective it provided of man and his home. Today as financial support for science and space steadily falls, as funds for weapons to vaporize one another continually increase, we are in danger of losing far more than the spirit symbolized by Apollo.

If man survives himself, long after today's headlines have vanished into the mists of time, our era will be remembered as the one in which man first ventured beyond Earth. To those who would still question Apollo, the best answer I have yet heard was given by Gordon Donaldson, a C.B.C. news commentator during those years. He put it this way: "It's the sort of situation that if you need to ask, you'll never understand the answer".

July's Long Total Lunar Eclipse

by Deane D. McIntyre
Department of Chemistry, University of Waterloo

The total lunar eclipse of 6 July 1982 offered the opportunity for most observers in the western hemisphere to view the longest total lunar eclipse to have occurred since the one of 13 August 1859. According to the 1982 *Astronomical Almanac*, totality was predicted to last 106.4 minutes, the umbral magnitude of the eclipse being 1.722. The AstronomicalvAlmanac predictions assume enlargement of the Earth's umbral shadow by a factor of 0.02 over that calculated from purely geometric considerations, due to refractive effects in the atmosphere. This value is, however, not constant from eclipse to eclipse. For this reason accurate timing of all four umbral contacts as well as crater timings (the time at which specific lunar features are one-half immersed in the umbral shadow) are desirable. With this in mind, and also expecting possible darkening effects caused by volcanic dust in the atmosphere from recent eruptions, 6 July was eagerly anticipated.

The eclipse was observed from the roof of the Chemistry Building at the University of Waterloo, Waterloo, Ontario. Shortly after 4:00 U.T.C. (midnight E.D.T.), the telescope, a 50 mm f/12 Tasco refractor, was set up; 7 × 35 binoculars were also used to observe the eclipse. No clouds were noticed throughout the eclipse, but a fairly heavy haze, such as Waterloo is prone to have on warm summer evenings, was present; it did not have a significant effect upon lunar observations.

The first hint of the penumbral shading was observed on the east limb of the Moon at 4:50 UTC, 28

minutes after the unobservable first contact of the Moon with the penumbra; by 5:10, this outer region of the Earth's shadow was very distinct.

First umbral contact was observed at 5:33.1, or 0.3 minutes later then the predicted time. As the umbra advanced across the disk of the Moon, crater timings, a total of eleven, were obtained with the aid of the telescope. At 5:55, the penumbra appeared to cover half the apparent diameter of the Moon. By 6:10, the portion of the Moon in the umbra could be faintly seen with the telescope; it appeared to have a brownish tint. Second contact, the beginning of the total phase of the eclipse, was observed at 6:37.4, 0.3 minutes earlier than the predicted time. The southern portion of the Moon appeared to be rust-brown in colour and brighter than the northern portion. Was this due to a greater concentration of volcanic dust in the atmosphere of the northern hemisphere of the Earth as compared to the southern hemisphere? At that time (beginning of the total phase) most of the light reaching the Moon would have been refracted in the atmosphere over the Pacific Ocean. At mid-eclipse, 7:30, the Moon was brown with a hint of red; it was darker than the May 1975 eclipse, the estimated Danjon rating being L = 1 as determined with the binoculars.

By 7:50, the Moon appeared even darker than at mid-eclipse, but this may have been related to the haze and the decreasing altitude of the Moon above the horizon. By this time, the entire disk was of uniform brightness. At 8:08, the east limb of the Moon was brightening, and became red as the end of totality approached. Third contact occurred at 8:24.4, 0.3 minutes later than predicted, for a total duration of the total phase of 107.2 minutes. This would indicate enlargement of the umbra by a factor of 0.026, very close to the figure of 0.025 used by V. Oppolzer in his well-known *Canon of Eclipses*.

Five crater timings were obtained as the umbra left the Moon. Fourth contact occurred in a brightening sky as sunrise approached. This and haze hear the horizon made an accurate timing impossible.

This was the sixth total lunar eclipse observed by the author since 1964. For the most part, clouds have been most cooperative as far as observing lunar eclipses is concerned. The same cannot be said of their solar counterparts. Hopefully, on 30 December of this year, we will once more have the opportunity to view the sublime beauty of the totally eclipsed Moon seemingly suspended in the starry heavens.

National Council Report

by Harlan Creighton
National Recorder

The National Council of the Society met during the General Assembly in Saskatoon May 21 to 24, 1982. Here are a few items that were discussed that are of general interest to members. Full particulars may be obtained from National Council representatives or from the National Office.

In my last report, reference was made to an anonymous donation of $30,000 and to a special committee, consisting of three senior officers of the Society, that was set up to review the overall financial picture of the Society. The Committee's report, adopted at the May meeting of Council, recommended "that the income generated by the recent donation to the Society be applied to a system of travel grants to enable and encourage all members of National Council to participate in the January and September meetings of this body". Under the scheme, each centre representative (or alternate), and each national officer is now eligible for a grant of up to 50% of the lowest applicable return airfare to travel to either the January or the September meeting of Council. The number of grants applicable in any calendar year to any one centre is the same as specified by By-Law No. 1, Article 10(a): namely, one for each two hundred members or fraction thereof. The new system of grants is in addition to the existing grants for General Assemblies. Full details of the new programme are contained in Appendix A of the minutes of Council for May 21, 1982.

Dr. Roy Bishop, First Vice-President and Editor of the *Observer's Handbook* has proposed a new publication similar to the Handbook but geared towards the elementary and junior high school level. Included would be star charts, information on binoculars and telescopes, dates of meteor showers, a bibliography, etc. Dr. Bishop would welcome any suggestions for other things that might be included in the new publication.

Our Society has a new solicitor. He is Mr. Blake F. Kinahan, winner of the Society's Gold Medal in 1971. A warm welcome, Mr. Kinahan, and thank you for your offer to help.

Council was pleased to accept a donation of $200 from former National President, Malcolm Thomson. Council decided that this grant should be used for something special and the matter will be discussed at the fall meeting of Council. Thank you, Mr. Thomson, for your donation and for your many years of service and continuing interest in the Society.

Acting on a recommendation from the Awards Committee, the maximum length of submissions for the Simon Newcomb Award has been increased to 2500 words. The Newcomb Award was established at the instigation of the Halifax Centre to encourage literary efforts by amateur astronomers.

National Council passed a motion asking the Editing Committee to investigate various means of speeding up the distribution of our publications to members. One idea was to ship by express the pre-sorted Journals to one or more additional mailing points at strategic locations in Canada. At present, all of our publications are mailed at Toronto.

Congratulations are due to Peter Daniel of Kitchener-Waterloo Centre and John Thompson of Sarnia Centre on being awarded the Messier Certificate; and to Rev. Greg Bailey, former President of the Winnipeg Centre, on his ordination as a deacon in the Anglican Church of Canada. Rev. Bailey has a long record of service to the Society in the Toronto and Winnipeg Centres. We wish him well.

The next General Assemblies will be hosted by the Quebec Centre (May 19–23, 1983) and the Hamilton/Niagara Centres (Dominion Day weekend, 1984).

The May Council meeting marked the retirement of Mr. Fred Troyer as Librarian. Mr. Troyer's service to the Society at both the National and Toronto Centre levels spans more than fifty years. Best wishes, Fred, and many thanks for all your work on the Society's behalf.

Finally, this was my last meeting as National Recorder. My special thanks to Miss Rosemary Freeman for her help over the years and to Dr. Ralph Chou who has acted as recorder when I have been unable to make the trip to Toronto.

SRAC, AAVSO, AGAA
Détails du concours pour l'assemblée générale de 1983 à Québec

Voici la liste des classes de travaux qui pourront être présentés à ce concours. Les entrées pourront être basées ou non sur l'observation, au choix des participants. Les diverses techniques d'observation: visuelles, photographiques, photométriques, etc ..., seront acceptees.

1 Soleil
2 Lune
3 Comètes, astéroides
4 Planètes
5 Objets lointains (Deep Sky)
6 Phénomènes atmosphériques
7 Les étoiles variables
8 La radio-astronomic
9 Équipement et/ou procédure
10 Exposition d'un centre ou club
11 Histoire sur l'Astronomie Canadienne
12 Libre

Règlements

1 Peut s'inscrire, tout membre en règle (ou groupe de membres) de l'une des Sociétés participantes Dans le cas d'un groupe, il y aura seulement un prix remis pour tout le groupe.
2 Tout travail doit être fait avec de l'équipement d'amateur.
3 Les travaux présentés doivent être originaux, c'est-à-dire être presentes pour la premiere fois et avoir été complétés au cours des deux dernières années.
4 Un individu peut participer à un maximum de trois catégories, avec seulement une entrée par categorie.

Les juges décerneront les prix dans les différentes categories, à leur discretion. Par exemple, ils peuvent omettre la distribution du prix pertinent à une categorie, s'il n'y a pas d'entrée valable. Aussi, on espère avoir un Grand Prix pour souligner une contribution exceptionnelle.

Les participants ne seront pas tenus d'assister en personne, bien que ce soit préférable; mais ils devront faire leur propre arrangement concernant la livraison aller/retour de leur matériel.

Commencez à vous preparer dès maintenant, et participer en grand nombre.

RASC, AAVSO, AGAA
Exhibit Details for
1983 General Assembly in Quebec

This is the list of classes for exhibits next year. Entries should be based on observation or not, at the choice of the participants. All observational techniques can be used: visual, photographic, photometric, etc ... .

1 Solar
2 Lunar
3 Comets, asteroid
4 Planetary
5 Deep space
6 Atmospheric phenomena
7 Variable stars
8 Radioastronomy
9 Equipment and/or techniques
10 Centre or Club Display
11 History of Canadian Astronomy
12 Open

Rules

1 Any member in good standing (or group of members) of a participating Society may enter. If a group wins, there will be only one prize for the group.
2 All work must be done with amateur equipment.
3 Entries must be presented for the first time and must have been done within the last two years.
4 Individuals may enter up to a maximum of three categories, with only one entry per category.

The judges may decide to withhold awarding a prize in any category if they consider the calibre of the entry does not warrant an award. Further, it is hoped to have a Grand Prize for the outstanding entry in the exhibit.

Entrants will not be required to appear in person, although this is desirable, but they will be required to make their own arrangements regarding shipment and return of the entry after the exhibit.

Start working right now and participate in large numbers.