NATIONAL NEWSLETTER

December, 1981

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Vol. 75, No. 6

The partial lunar eclipse of 16–17 July 1981 was photographed by Peter M. Preston of Brantford, Ontario, from Halls Lake in the Haliburton Highlands of Central Ontario. He writes that the mosquito activity forced him to "beat a hasty retreat" shortly thereafter. Photographed through 8-inch Meade Schmidt-Cassegrain and Barlow lens with Nikon camera on Kodak 2415 film, 1/50 sec.

NATIONAL NEWSLETTER

December, 1981

Editor: RALPH CHOU
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Regional News Editors
Centres français: DAMIEN LEMAY, 477, Ouest 15ième rue, Rimouski, P.Q., G5L 5G1
Winnipeg and west:
B. FRANKLYN SHINN, Box 32, Site 55, RR#1, Lantzville, B.C. V9S 5N7

Centre and local items, including Centre newsletter should be sent to the Regional News Editor. With the above exception, please submit all material and communications to:

Dr. B. Ralph Chou,
School of Optometry,
University of Waterloo
Waterloo, Ontario, N2L 3G1.

Deadline is six weeks prior to month of issue

Editorial

Anyone who has become involved in the organisational aspects of the Society, either at the centre or national level, knows the difficulty of learning how to manage the efficient operation of an all-volunteer activity. In this issue, we present an article by R. J. Livesey of the British Astronomical Association which addresses many of these problems, and which we hope will be of interest and value to our readers. We thank Mr. Livesey, and Mr. Colin Ronan, Editor of the *Journal of the British Astronomical Association*, for permission to reprint this paper.

One specific problem which your editors have, is locating and/or soliciting contributions to these pages. As most of you are aware, much of what is printed in the NNL is reprinted from Centre publications. We hope that this practice will continue, and therefore ask writers to indicate to their Centre editors whether their work may be used by the NNL, upon submission of manuscripts to Centre publications. We will give proper credit for whatever we reprint. Therefore, belated thanks are extended to *Stardust* (Edmonton Centre) for two articles used in this current volume, "A Fire in the Sky" and "Chasing the Monsoon Eclipse", to *Orbit* (Hamilton Centre) for "The Failure of Scottish Astronomy", as well as to *Saskatoon Skies* (Saskatoon Centre) for "Moving into Space?". The credits were inadvertently omitted when these articles were printed. These unfortunate oversights will, we hope, not recur in future.

Recently your editors have been deluged with submissions *directly* to the NNL! In this issue we have no less than five items based on observations made this past summer. We hope this will be the trend in 1982. Observers, please use these pages to communicate your results to the Society's readers. In the past we've printed much material of the "How to ..." variety – it is now time to see the results. Any submissions written in the Queen's English (ou en francais) as the case may be, are more than welcome. Who knows, perhaps your work will bring a Newcomb Award or Chilton Prize!

Finally, let me thank the following without whose help this first year of my editorship would not have been possible: Ian McGregor, Frank Shinn, Damien Lemay and Harlan Creighton, my associate editors; Robyn Pires and Al Weir of the University of Toronto Press; Rosemary Freeman; the writers whose work has appeared in this my first volume; and last, but not least, you, the readers, for your encouraging comments and support. To all of you, best wishes for a happy holiday season, and clear skies in 1982.

B. R. Chou

Management and the Amateur Astronomical Society

by R. J. Livesey

This paper reviews the motivation of an amateur astronomical society and the management strategy required to meet the objectives of the membership. Societies are all about people and human relationships as much as about astronomy. Consequently the applications of techniques from personnel management have a place in the Sun.

Management may be defined as the art of organizing human activity in order to achieve a stated objective. The amateur society's objective is to promote an interest in astronomy among its members, so that the activities of the society have to be organized to achieve this end. Whereas a business enterprise acts corporately to achieve its goals, the amateur society's corporate activities require to be directed to the satisfaction of the individual members.

The amateur astronomer feels a need to learn about the science, a need for companionship with like-minded people and a need for esteem and self-realization by achieving some act such as making a telescope or an observation, and having the fact recognized by others. These basically are the psychological needs of the individual which the society has to fulfil.

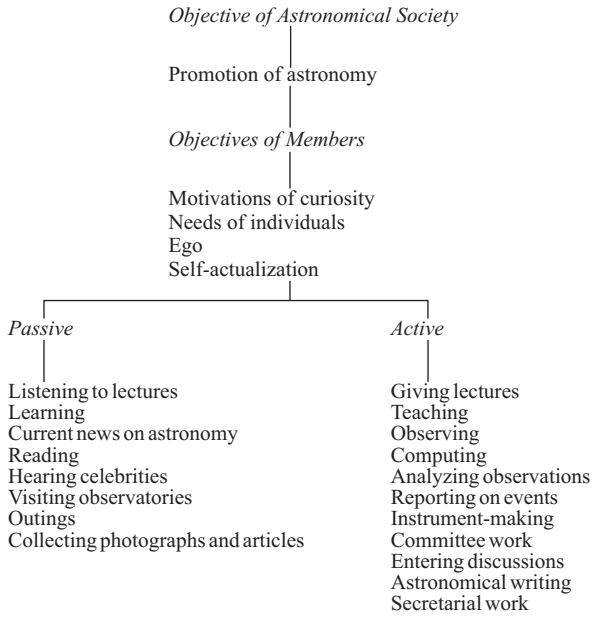
Amateur astronomers come from all walks of life and may or may not have had scientific training to be able to understand astronomy fully. More important, some members may not have received training in the logical process involved in scientific thinking. The society must nevertheless cater for the lesser skilled and offer them every opportunity to improve their position with tact and consideration. Nothing will destroy a society more quickly than the development of factions having different levels of expertise on a "holier than thou" basis.

The discipline of a business enterprise stems from the fact that the employees require to work in order to stay alive, and whatever their job satisfaction or motivation, the survival instinct is of importance in keeping the system going. It is noticeable that with the introduction of Social Security this factor has a lesser influence on the discipline of the work force. The amateur society has no survival factor and all members work voluntarily for the common good, but personalities and other influences can hinder development if a strong moral bond is not achieved with the leaders who have an obligation to the membership to operate efficiently.

In business, most problems involve people, whereas technology tends to look after itself. The running of a society involves human relationships so that the managers should be picked to handle human beings rather than to handle astronomy. It is no good having management in the hands of an expert in astronomy if he is incapable of talking to beginners at a level that they can understand. The key to any society is its ability to commmunicate to its members and to the public who may wish to become members. This involves the development of a satisfactory image and methods of communication which have to be seen to be efficient. Irregular circulars, late notices of meetings, and the like, present a bad image and discourage membership, which may thereby fall off. The management must be readily available to the membership and *vice versa* so that no psychological barrier develops to form a "we and they" condition.

Recruitment and retention of members depends largely upon the image presented to them on first contact and the subsequent follow-up after joining. The length of time that a member stays relates to the degree with which his three basic needs are fulfilled by the society. The management must therefore be extrovert in its approach to the members, offering a practical councellorship to every individual. The public relations work, internal and external that the

EXAMPLE OF THE TYPICAL NEEDS AND ACTIVITIES OF THE MEMBERSHIP IN AN AMATEUR ASTRONOMICAL SOCIETY



management has to undertake is vital to the society's well-being and can never be overestimated in value.

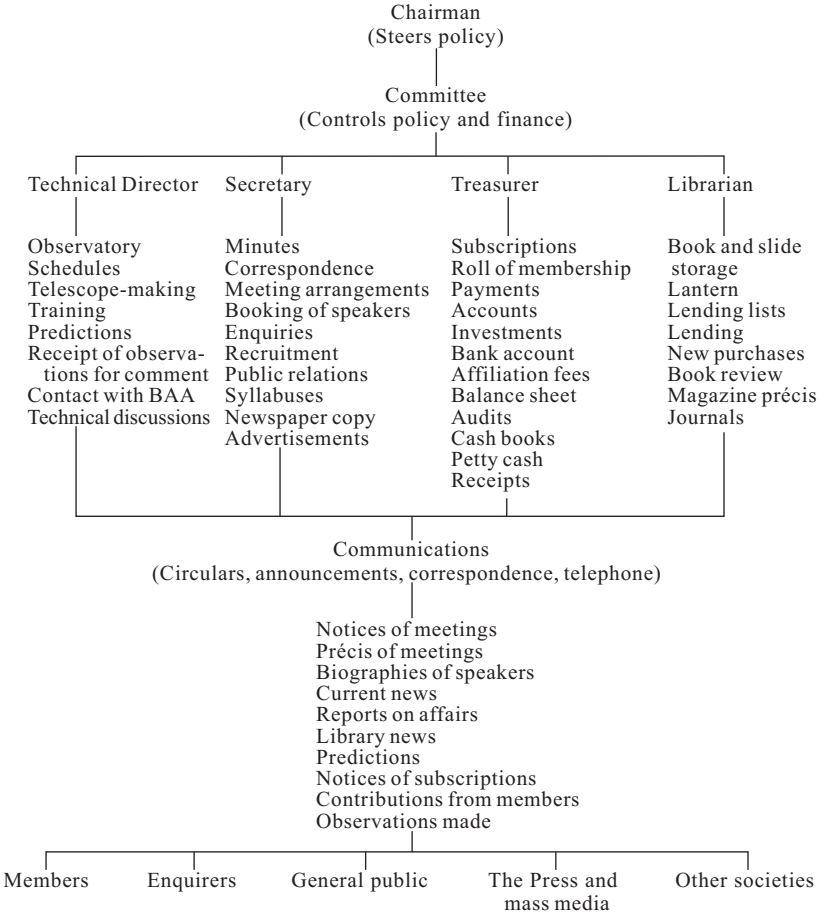
The average society is managed by a committee elected by the members, which promotes policy and carries it out. As with boards of directors, its major preoccupation is with financial budgeting between income and expenditure. However, key officials such as the secretary, treasurer and librarian, can have considerable influence on the society's well-being by reason of their positions, for they form the front line of public relations. It is not necessary for these officials to be experienced astronomers, but it is essential that they should be skilled in handling human relationships and have an extrovert approach. The society may also have a technical section to undertake instrument making, operate an observatory or give guidance to telescope owners. The accent here is on teaching ability in the skilled leaders, again involving the human factor. The section's aim is to teach astronomy, to demonstrate to members what they read about or hear of in lectures, and to encourage people to do things for themselves. The individual's desire for self-realization can be achieved by setting tasks and, above all, studying the results.

The motivation for beginning amateur observing is self-interest in the subject. This would soon lose interest were it not for the ability to discuss results with others of like mind. However, greater motivation is obtainable if the observer can feel that his results are of some value, no matter their minuteness, to the advancement of science. Effort should therefore be made to encourage observers to undertake useful observations, such as may be found in BAA projects, leading to the ultimate in self-realization. Observations that just disappear into dusty files and are never heard of again may have been of interest to make, but do nothing for the observer unless he or she is sharing in some sort of larger plan. To be wanted is a major human need. The society circular has an obligation not only to inform the member of events both

technical and social, but to make him feel that he belongs to the group, that he is a part of something in which he is active. It must encourage participation both in the contents of the circular and in the society.

Unfortunately, in most societies, only a small proportion make up the really active membership. The passive membership have to be catered for and means found to this end. Talks and lectures by invited speakers have to be geared to the intellectual level of the membership as a whole, for there is no point in having a professor of this and that fill the blackboard with differential equations if the audience can barely comprehend elementary algebra. It is necessary therefore for the management to have an efficient intelligence service for screening its potential speakers, and to gauge the subject matter to interest the membership.

THE BASIC ORGANIZATIONAL LAYOUT OF A TYPICAL AMATEUR ASTRONOMICAL SOCIETY



Correspondence also forms an interface between management and the individual, be he a member or enquirer. Correspondence can be stuffy and formal or can be chatty and informative. Again the accent must be on the extrovert, friendly, helpful timely approach. It is in this region that the secretary can wield considerable power for good or ill by his approach to letter writing.

The theme throughout this paper has been the commonsense approach to human relationships which form the basis not only of industrial management but the working of an amateur astronomical society. The writer doubts, however, if many charged with the task of running a society have got down to analyzing in depth the problems and solutions with which the management structure has to deal. Perhaps aspiring chairmen, committee members and secretaries ought to read a few good books on personnel management and psychology[1]. The accent on good management should be on sorting out the human problems, and the astronomy will follow its course.

The writer is grateful to the Astronomical Society of Glasgow for management experience in various capacities, which he has compared with professional business practice. He is also grateful to various members of the BAA with whom he has discussed the importance of reliable communications, motivation for observing and the development of image as they affect members.

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46 Paidmyre Crescent
Newton Mearns
Glasgow G77 5AQ
Scotland

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Getting Our Due$

We remind members that 1982 membership fees were due on 1 October 1981. Members of Centres should remit to their Centre treasurer; unattached members should send fees to the National Office. Please include apartment numbers and postal codes in your address with your renewal.

Membership fees are $20.00 for regular members, $12.50 for youth members (under age 18 years) with proof of age required to be eligible for the youth rate. Life membership is $300.00. Some Centres levy additional surcharges. Please consult your local treasurer for details.

Centre Treasurers are reminded that membership fees received by 31 December 1981 must reach the National Office by 15 January 1982 in order that an updated mailing list is available for distribution of the February *Journal* and *National Newsletter*.

Hot Stuff

On 8 September 1981, Alexandre Farkas of the Societe d'Astronomie de Montréal reported the theft of his Celestron 8. The stolen telescope is equipped with straight and right-angle finders, a piggyback camera holder, and antireflection-coated optics. The instrument bears serial number 360576.

Persons with information on this telescope should contact Station 52 of the Montreal Police at (514) 934-2252.

Let the Search Begin or Shall We Offer a Reward?

by D. G. Graham
Vancouver Centre

Those amateur astronomers who attended the August 7th public astronomy session at Campbell Valley Regional Park (a few miles south of Langley, B.C. at 204th St. and 8th Ave.) were fortunate to witness afterwards, an uncommon phenomena nothing less than spectacular.

The astronomy session itself warrants mention as having been a worth-while activity enjoyed by all present. An easily managed group of about thirty to forty people keen on learning astronomy were treated to a slide show sponsored by the H. R. MacMillan Planetarium, and to a telescope session courtesy of a few volunteer participants. The appreciative public was introduced to telescopic views of the first quarter moon, several Messier objects, and a few colorful double stars. This event was more or less typical of the many successful sessions held at that park in the past.

About an hour after the public left, however, the unexpected appeared.

I was just considering another blow-dry treatment for my instrument's dewed optics and somewhat dreading the inevitable packing-up of equipment when, upon hearing an enthusiastic shout in the darkness, I quickly turned skyward to a breath-taking spectacle – a blazing sporadic fireball, streaking from slighty west of zenith downward steeply over the meridian to the northern horizon.

Oh fantastic!!

At that moment, the few of us present were quite fortunate to have both the "good seeing" conditions that evening and the clear celestial expanse the park so considerately afforded. For low in the north, at about twenty degrees altitude, the extremely brilliant white object broke-up suddenly and completely into a shower of bright yellow-orange fragments which continued along the flight path before abruptly disappearing behind the distant Coast Range Mountains of Golden Ears Provincial Park.

One could not help but be impressed by the large apparent size, outstanding brightness and spectacular break-up of this fine object. It did not display the fleet bright streak so characteristic of average meteors. Instead, the luminous portion had a brilliant white, comet-like nucleus of nearly a half lunar-disk proportion heading a subtle blue-green cone and long wide hollow-furrow-like, bluish luminescent contrail.

Preceding break-up the intense almost blinding white light, comparable to that of a flare with magnitude somewhere in the high negatives, briefly illuminated the open field around us. Howard Morgan noted the ground visibility extended outward to the northern end of the field.

The trail luminescence lasted only a short while, not nearly the duration one would expect of such a prominent object. For this reason and the fact that I missed the meteor's emergence to visibility, it becomes difficult to determine the trail's total length, and quite impossible to

ascertain the radiant position. We do know, however, that the meteor traversed well over half the sky in a short period lasting about five seconds, thereby ruling out the possibility of an artificial satellite re-entry.

The time was 00:07:36 PDT by Howard's watch which not long before had been set to the Universal Time Signal of WWV Fort Collins, Colorado.

My best estimate of the meteor's apparent direction (to where the object disappeared from view) was azimuth bearing ten to twelve degrees east. Knowing this as well as the meteor's approximate altitude and passage relative to zenith, I deduced the meteor's bearing to be closer to twelve degrees east, giving a trajectory east of Vancouver, west of Langley and Haney, over Golden Ears/Garibardi Provincial Parks, west of Lillooet, near Williams Lake, over Fort St. John, and about 180 km east of Fort Nelson.

Like most meteors, this object probably first glowed into existence at an altitude of 100 km. But unlike most, it continued its downward plunge far below the usual 'burn-out zone' of 55 to 80 km.

The following day I phoned other amateur astronomers, hoping to find another witness to assist in triangulating the meteor's destination. Being unsuccessful, I then phoned CJJC and on behalf of the M.R.A.A.S., had the Langley-based radio station run a public service request for information. Unfortunately, again, there were no witnesses to the grand spectacle, or at least none forthcoming.

A few days later when conferring with David Dodge, I learned of two other reports received by the H. R. MacMillan Planetarium: one from Don Bunyan in the Whistler area; the other from an anonymous caller in Prince George.

From the Whistler/Garibaldi Provincial Park area, Don observed the meteor to have flare-like brilliance; while another witness nearby noted a bright streak, seen through the wall of his tent! After its passing, one heard a "distant muffled explosion" first thought to be the sound of an impact, but now believed to be the initial sonic boom of a bolide. Judging from the time the meteor passed from view till the instant the sound waves reached him, Don figured the point of origin to be over Anderson Lake – a location which, incidently, aligns favorably with the plotted trajectory.

At Prince George the meteor's thunderous sonic boom was clearly heard, and the meteor itself (more probably its largest fragment) was easily seen to the east – still heading north!

From out Campbell Valley vantage point, the fore-shortening effect accompanied by the object's exceptional brilliance initially gave observers a false impression of the meteor seeming to be very close and having a steep angle of entry. Since we now know the distances involved to be vast, we can safely deduce that originally this sporadic bolide had substantial mass perhaps not unlike a small asteroid! And though the path of entry is much less sloped than was previously believed, indicating a longer burn period, such still would not preclude the possibility of actual impact by some of the larger fragments. At this moment, complete disintegration of particles seems unlikely and has not been reported.

It is well known that when particles enter the Earth's atmosphere, air resistance quickly heats them to incandescence. The intense heat of a meteor not only causes it to glow but also ionizes the molecules in the surrounding air. According to author James Muirden, the transient streak of ionization can be recorded on radar and its velocity and direction can be measured very accurately.

Contacting the Vancouver International Airport, I learned further that any detection of a great meteor would have been viewed merely as interference. And unless such persisted for an abnormally long period, it would definitely not have been recorded. Besides, the airports serving the northern communities, including the one at Prince George, are without radar scan capability.

The possibility of hot debris scattered over a tinder area of the province seemed a very real one, and prompted me to approach the B.C. Forest Service. I was informed by a local representative that the publicized forest fires about 100km south of Forth Nelson were ignited the afternoon before by seasonal thunderstorms; and that further inquiry should wait a few days till the fires could be brought under control.

When rain finally doused the area some two weeks later, I placed a direct call to the District Manager at Fort Nelson; and since, have written to the Forest Service offices at Fort St. John and Dawson Creek. I am now patiently awaiting any information from the north region that could help establish the bolide's fate and determine possible impact sites, as well as aid in the discovery of meteorites and identify their composition – aerolite, siderite, siderolite, or whatever.

Presently, I assume the meteor's destination to have been near Fort St. John. I hold as a definite possibility the eventual discovery of meteorites in that area.

I will of course forward further developments to all interested parties , including the Meteor Centre of the Herzberg Institute of Astrophysics, the Director of the Geological Survey of Canada, and so on. Perhaps, if all goes well, I may be able to obtain specimens to study and to display.

1855 Holdom Ave.
Burnaby BC V5B 3Wl

Getting Started in Variables

by David H. Levy
Kingston Centre

My variable star observing totals are down and it's all Delta Cephei's fault.

It all began when a new and very active astronomy club member asked me this question: "if I were to start variable star observing tomorrow night, with what star should I begin?"

"Delta Cephei," I answered without hesitation. Mike Magee, the new member, looked at me, waiting for an explanation. For a few seconds I couldn't give one. Why had I chosen Delta Cephei so quickly among the thousands of variable stars visible from here, even among the dozen or so variables that AAVSO includes in its beginner program?

Mike and I had a long discussion about that, and at the end of it I realized that Delta Cephei is an ideal star for several very good reasons, and that it fulfills four basic laws for beginners. Had I not had this discussion with Mike, and had I had the time to do this article instead, I might have illustrated Delta's advantages in the form of the four commandments that follow:

Commandment one: Thou shalt be easily found, either in a major constellation or at least near an easily located asterism. For the beginning observer careth not to waste his time digging you up from some anonymous stellar junk yard.

Commandment two: Present thyself with a bright light, preferably between fifth and seventh magnitude, in order that the new observer can behold thee with a minimum of optical aid. The goal of these first two commandments is to usher the observer to thy beacon as easily as possible.

Commandment three: Do something! Spend your nights in hard and active labor so that the fruit born thereby can be easily observed by the beginner. For a star that is lazy will quickly be abandoned as the observer loses interest.

Commandment four: Make thy variations interesting, and throw in a few surprises so that the watcher will be kept alert and interested.

I thought about these commandments for some time, frivolously at first, but then quite seriously as I considered how many prospective variable star observers were turned off or who had lost their interest in this special type of star simply because the first star they looked at was either so hard to find or so faint that the whole thing just wasn't worth the trouble. If you are in charge of your astronomy club's observing program, for goodness' sake follow those commandments religiously, and if you are the new observer who is just getting started, make sure, by examining the charts, that the star you have chosen will not send you on a wild goose chase through a celestial morass of complex star patterns. Delta Cephei fulfills the four commandments quite well. Just look at that lovely triangle of Zeta, Epsilon, and Delta Cep.

The triangle is used both for finding and for estimating the brightness, for Zeta and Epsilon make ideal comparison stars. Zeta, at visual 3.6, and Epsilon, at 4.2, "frame" the variable.

Delta Cep is the type star of the Cepheid variables. Its variation is quite accurate and regular over a period of several days. It is also typical that this star enjoys a leisurely decline to minimum that is followed by a last minute rush to maximum. Why is Delta Cep so bright? One reason is that it, as well as the other stars in its family, are very much larger and more luminous than the sun. It is the relationship between the great luminosity of these stars and their periods of variation that prompted the Harvard astronomer, Henrietta Leavitt, to suggest that these wonderful stars could be used as galactic beacons, and these stars have since become most helpful in determining distances of clusters in our corner of the universe.

The relationship is simple. In 1912, Leavitt published her period-luminosity relationship from a study of variable stars in the Magellanic Clouds. She found that the periods of variation of these stars were directly proportional to their absolute magnitudes. Because of this, a simple comparison of apparent magnitudes as seen from earth and their absolute brightnesses could create a yardstick, or should I say a "par-stick" to determine stellar distances.

So when you begin observing this star, you will be examining an important part of history as well, and your observations will replay in basic fashion the careful research of Henrietta Swan Leavitt. Just as she carefully measured the brightnesses of stars on plate after plate of the Magellanic Clouds you will be uncovering the brightness period and shape of the light curve of this most famous Cepheid of all.

And the brightness is another good factor: at its brightest Delta Cephei is easily visible at magnitude 3.6, and at its faintest it drops only to 4.3. If you estimate every day or two you will soon see how it seems to pulsate to the slow measured beat of a cosmic folk song.

With its two easily found comparison stars the field of Delta Cep offers an unexpected bonus. On the other side of the comparison stars from Delta lies the famous "Garnet" star – Mu Cephei, a completely irregular red giant star. With R Leporis just South of Orion Mu Cep shares our current award for the reddest star in the sky. Try estimating Mu Cep once a week. I can't tell you how and even if you will detect its variation for Mu marches to its own drummer and I have problems even hearing the beat. While you may be lucky and see the star change, it could turn against you and do little or nothing.

My friend Mike (remember Mike?) talked for some time about Delta Cephei and the value of beginning with a reliable star such as that. Two other stars also offer easy and pleasant starting points to the odyssey of a variable star observer. Both of these stars were suggested to me in 1966 by Isabel Williamson, a well-known Canadian amateur, and 15 years later I am offering them to you. The first is Beta Lyrae, and I have already described its pattern of variation in the May 1980 *Star and Sky*. A fainter companion eclipses the primary in a slow, majestic pattern and over a period of just under two weeks the star changes by about a magnitude.

It might be useful to use Isabel Williamson's system for recording estimates of this star, especially if you are just getting started. If Beta is as bright as Gamma when you first watch it call it "1". If it is slightly fainter than Gamma call it "2". Give it a "3" if you think the culprit is halfway between Gamma and Zeta. If the star is slightly brighter than Zeta give it "4", and a "5" would indicate that Beta is as faint as Zeta. You will be estimating to a fifth of a magnitude. If you want to estimate to a tenth of a magnitude you can use 1.5, 2.5, and so on for the intermediate stages. Beta Lyrae is bright enough that it will yield easily to the unaided eye or binoculars. Make an observation every clear night.

And now back to Cepheids, with the very slightly more challenging Eta Aquilae. It varies like Delta Cephei, in Cepheid fashion, with a range of just under one magnitude and a period of less than eight days. Use Delta and Iota Aquilae as comparison stars and follow the same idea as with Beta Lyrae, giving Delta a value of "1" and Iota a value of "5":

1 as bright as Delta
2 lightly fainter than Delta
3 halfway between
4 slightly brighter than Iota
5 as faint as Iota

And finally, a project that you can use as a teaser for astronomy club star parties. Giving each member a blank sheet of paper and pencil when they are outside, ask them to list the stars of the big dipper in order of apparent brightness. Since some of these stars differ from each other by only a fifth of a magnitude or so the results could be interesting. The correct order, brightest to faintest, is:

Epsilon U Ma:	1.79
Alpha	1.81
Eta	1.87
Zeta A	2.26
Beta	2 37
Gamma	2.44
Delta	3.30

These photoelectric magnitudes may be off somewhat when compared to visual estimates. Also, Epsilon and Alpha are almost identical in brightness.

Mike Magee and I tried this one night and we had a lot of fun comparing results. If this gets him and you happily started in variables, missing some recent variable observing would have been worthwhile!

Attention Solar Observers

For many years the Solar Division of the AAV.S.O. has played a major role in recording sunspot activity. Recently it was announced that the long-time chairman of this group, Casper Hossfield, had stepped down and been replaced by Dr. Robert Ammons of Missoula, Montana.

As of January 1981 the Zurich Observatory discontinued work on the determination of Zürich Relative sunspot numbers. The A.A.V.S.O. is hence one of the few continuing sources of such data. Effective immediately, solar observers wishing to contribute data to the A.A.V.S.O. Solar Division should correspond with the following:

(1) Sudden enhancement of signal data (radio flares) Reports:

Dr. Roberts Ammons
411 Keith Avenue
Missoula, Montana 59801

(2) Sunspot Reports:

Mr. Peter Taylor
11 Fayette Drive
Ocean Ridge, Florida 33435

Lunar Eclipse of July 16–17

by Bruce Barnes
Toronto Centre

A cloudless sky and a comfortable 18°C were perfect conditions to observe the lunar eclipse from my suburban Toronto backyard. I have discovered, when using my 6-inch f/6 reflector, the city's vast amount of light pollution greatly hampers my planetary observations. However, when I have a look at the moon, I get sharp, clear images with excellent resolution of small craters and mountains.

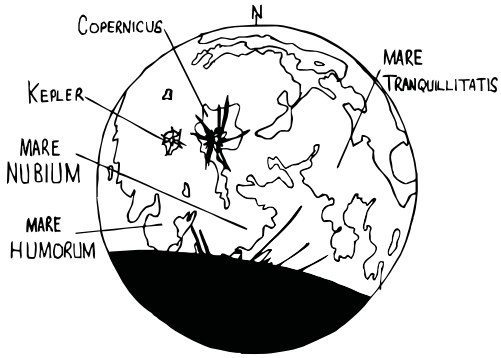

FIG. 1. Moon has entered umbra, time 23:00.0 EST July 16, has been in earth's shadow for 35.2 minutes. (Drawings for this article made by the author.)

My younger brother and I took periodic observations while the moon travelled through the penumbra, during which time the moon took on a slight tint of coppery-orange. This change in colour was, however, extremely hard to define.

As the moon entered the Earth's umbra at 22:24 EST, the surface features became lost under the creeping blanket of blackness. Acting as a darker and faster moving terminator, the leading edge of the umbra moved up past Tycho, Mare Humorum and Mare Nubium. Moving like a glacier, it reached a terminal line which was several degrees north of the crater Kepler and well south of Copernicus and Mare Tranquillitatis. At this point, slightly more than 55% of the visible surface of the moon was hidden from view.

The umbra seemed to stay in this position for a few minutes before Kepler slipped out of night and into day again as the shadow began to recede. It slipped off the moon at precisely 1:08 EST, July 17, the day after it had first appeared. The third diagram was drawn almost thirteen minutes before the moon left the umbra.

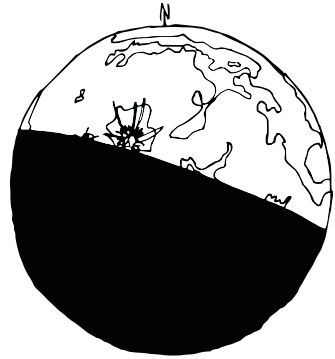

FIG. 2. Middle point of eclipse, time 23:46.8 EST July 16, at least 55% of moon's surface covered.

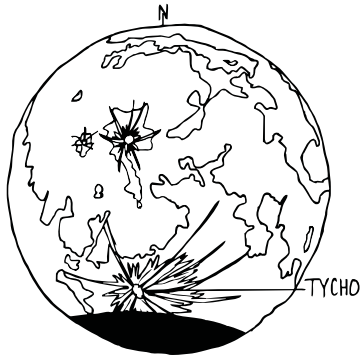

FIG. 3. Moon about to leave umbra, time 00:56.0 EST July 17, exit from penumbra at 02:28.4.

After missing the February 26, 1979 eclipse of the sun due to bad weather in Toronto, I made sure that I didn't miss out on this lunar eclipse! After viewing a number of solar eclipses on television, I am still not sure which is more spectacular.

Perseids 1981

by Bruce Waters
Toronto Centre

"Wow", is about the best word to describe it, as our group of three were enchanted to see over a thousand meteors grace our skies. Bill Katz, Kai Millyard, and I arrived up at the Toronto Centre Observatory on Sunday August 9th, at about 23:47 Eastern Daylight Time and stayed until 5:30 EDT.

An average of 30 meteors an hour was seen until the moon set at approximately 2:00. After that, the rate increased notably. By the time it was getting too bright to do any more constructive observing we had seen 580 meteors, a better catch than a lot of Perseid nights. Since this night was two nights before the shower maximum, we agreed that we would meet again at the Observatory on Tuesday night no matter what the weather might be.

Tuesday night, Perseid maximum

Bill and Kai arrived there (the Toronto Centre Observatory), at approximately 22:00 EDT. Bill set up immediately and Kai went into the warm-up hut to get a few good hours of sleep, since the meteors would not really start to make their appearance until approximately 1:00. I had already had my few hours of sleep at home and felt well rested when I arrived at 1:15, at which time I set up the tape recorder (our official time keeper). By the time we were all comfortable and looking in our designated areas the time was 1:30.

We were expecting that other observers would come, but none did. This was probably due to the night falling on a weekday. I also heard some people say that when they took a glance out the window it looked cloudy. Often the sky may be overcast in Toronto but be clear up at the observatory. This was the case, for the skies were basically clear throughout the night except for one half hour when the clouds covered forty per cent of the sky.

Our meteor rate increased all night until it peaked at around 4:00 to 4:30, when we observed approximately 190 meteors. Figuring that many of these meteors were seen by more than one person, our observer rate for an hour would be about 140 per person, slightly less than triple the average rate for a single observer given in the *Observer's Handbook*. The probable reason for our group seeing so many meteors is that the comet (1862 III) which is associated with this meteor shower is making its first predicted return. This comet could be as late as two years, and since to my knowledge there have not yet been any confirmed sightings of it, this may be the case. If so, next year's meteor shower may be even better.

One strange thing that we noticed was the abundance of fairly bright meteors (of magnitude + 1 to – 1) in the East. This is probably a coincidence, but you could say it was luck since I was the one who was looking in that direction. Something else that we noticed was that the Perseids seemed to have another radiant. Several meteors that had the same appearance as the Perseids didn't seem to originate from the radiant, but from a point about seven degrees eastward. We also didn't see any really bright meteors (of magnitude –6 to –7) which are common with the Perseids. We did see two magnitude –4 meteors, one on Sunday night and one on Tuesday night.

At approximately 5:18 EDT we wrapped it up, got out of our sleeping bags, and slowly crept off the chairs. I say "crept" because it isn't easy to move after being in one place for nearly four hours without much moving around. We each had previously selected the number of meteors which we thought the group had seen that night, and the person who came closest to the right number would receive an 8 x 10 enlargement of the best picture taken that night. Bill chose 850, Kai chose 840, and I, being the pessimist, chose 750. Well, Bill won, for when we made the final count our number came out to *1017*!!!

Time Period	Number of Meteors
Until 1:30	173
1:30–2:00	28
2:00–2:30	70
2:30–3:00	79
3:00–3:30	120
3:30–4:00	131
4:00–4:30	175
4:30–5:00	142
After 5:00	42
Subtotal	960
Other Meteors (Estimated)	57
Total Meteors (Estimated)	1017

Observing meteors

Meteor observing is very easy to do, so long as you are prepared. All you need is a chaise lounge chair, a sleeping bag, a pillow if so required and your eyes. You then just sit back and watch the show in complete comfort. During the last Geminid meteor shower about 12 people showed up on the grounds of the David Dunlap Observatory to observe the meteors. Since this takes place during the middle of December, the temperature went down to –25°C with the wind chill factor accounted for. Yet those who prepared themselves were warm enough to have gone to sleep, and could have since it was cloudy for the five hours we were out there.

Observing with a group is the best way to observe meteors, since the whole sky can be covered. About nine observers would do normal watching, which means to call the meteor (to get a proper time for it), tell the colour of the meteor, give the brightness of the meteor, where the meteor came from (its radiant), and any unusual characteristics. Meanwhile other observers could be watching the sky with binoculars to see the meteors that are far below the naked eye limit (around magnitude 5), while still others could be listening to weak FM radio stations to try and pick up any meteors from radio interference.

Meteor observing is fun, and a lot about the night sky can be learned from just one good observing session. No experience is needed at all, but a lot gained. Next year the Perseids fall near the end of the week, and it would be nice to see a lot more people observing.

Our tally is for Tuesday night. More meteors were actually seen than were recorded on the tape, but due to technical difficulties beyond our control (the tape recorder stopped) these are the most reliable records we have.

The next good major meteor shower is the Quandrantids which occurs on January 4, 1982. This meteor shower is also one of the best with its single observer rate of forty meteors an hour ... Happy Observing!

Nouvelles des centres français

de Damien Lemay

Le samedi 26 septembre 1981 était la date du rendezvous annuel des amateurs au Mont Mégantic. Le Centre de Quebec y avait délégué une pleine autobus de 47 places. Quelques membres de la S.A.M., plus un certains nombre provenant de clubs de l'A.G.A.A. étaient également de la partie, pour un total d'environ soixante-quinze personnes. Nous remercions le Dr. Gilles Fontaine qui s'est déplacé a cette occasion pour répondre à nos questions.

Alphonse Tardif du Centre de Quebec s'est vu remettre le "Prix du Loisir Scientifique", décerné annuellement par la Fédération Quebequoise du Loisir Scientifique. Entre autre, on se rappellera que Alphonse est membre de l'executif du Centre de Quebec depuis plusieurs années, et Directeur de l'Observatoire du College de Levis.

Report of the Nominating Committee

The Nominating Committee of the Society consists of the three immediate Past Presidents (Drs. A. H. Batten, J. D. Fernie and J. R. Percy) and the President (Dr. I. Halliday) *ex-officio*. In 1982, five positions on the National Council will fall vacant; President, First Vice President, Second Vice-President, Librarian and Recorder. After careful consideration, the Nominating Committee recommends the following slate of candidates. The first two positions have been filled by "progression through the ranks", as is the custom. The last three positions have been filled by new candidates. Brief biographies of them are included below.

President: Franklyn Loehde, Edmonton Centre.
First Vice-President: Dr. Roy Bishop, Halifax Centre.
Second Vice-President: Mary Grey, Ottawa Centre.
Librarian: Phil Mozel, Toronto Centre.
Recorder: Leo Enright, Kingston Centre.

MARY GREY holds a B.Sc. in Civil Engineering, and is Head of the Astronomy Division of the National Museum of Science and Technology, in Ottawa. Her career has been devoted to the promotion of public interest in and knowledge about astronomy, and she is known and respected by amateur and professional astronomers across Canada. She is a Past President of the Ottawa Centre.

PHIL MOZEL holds a B.Sc. in Microbiology and is Supervisor of the Microbiology Department of the Retail Research Foundation of Canada. He is an active member of the Toronto Centre, in which he serves as Archivist, Property Custodian and Chairman of the Public Education Committee. He has a strong interest in the history of astronomy, and is a member of the Historical Committee of the National Council.

LEO ENRIGHT holds a B.A. from the University of Ottawa, a Teachers' Certificate Type A, from the University of Toronto, and is a teacher of English at Sharbot Lake High School. He is a Past President of the Kingston Centre, Editor of that Centre's newsletter and – last but not least – an active observer.

October 31, 1981.

John R. Percy,
Chairman

National Council Report

by Harlan Creighton
National Recorder

The National Council of the Society held its fall meeting at Head office in Toronto on September 26. A wide range of matters was discussed, a few of which are summarized here. Full particulars may be obtained by consulting the Minutes of the meeting, copies of which have been sent to your Centre's National Council Representatives; or by writing the National Office.

All members will be delighted to learn that a new centre has been formed in Sarnia, Ontario. Official centre status was achieved on October 1, 1981. Welcome to the Society, Sarnia members!

The National Secretary, Peter Broughton, reported that the amendments to our by-laws that were passed at the General Assembly in June have been acknowledged by the Minister of Consumer and Corporate Affairs and came into effect in the latter part of August.

All Centres are reminded that the National Office needs a copy of your current constitution and by-laws as soon as possible. As of September 28, the following centres had not responded to this request and are asked to do so immediately: Kingston, Société d'astronomie de Montréal, St. John's and Windsor.

Your Council approved three applications for travel grants under a programme that provides funds to help underwrite part of the transportation costs incurred by centres participating in an exchange of speakers for meetings. Applications were approved for the following pairs of centres: Edmonton/Vancouver, Edmonton/Saskatoon, and Edmonton/Winnipeg. In approving these grants, your Council laid out a number of guidelines designed to ensure that rapidly rising transportation costs do not reduce the effectiveness of this programme in the future.

The matter of money for the on-going maintenance and repair of equipment and buildings owned by centres was discussed at length. Council decided to adopt the policy that Centres with observatories and/or equipment (such as telescopes, etc.) are responsible for the establishment of adequate reserve funds to take care of the maintenance and repair of equipment and buildings; and that the National Council will not normally assist in these areas in the future. As well, Council agreed to circulate among centres a proposal from Dr. Alan Batten under which participating centres would act together to run their own insurance scheme for observatories.

A proposal for an up-to-date membership list for members was debated and it was decided that the Society should try to publish a membership list once every five years in the cheapest possible format. The list would be for members only, and under no circumstances would it be available for commercial use.

Peter Jedicke of the London Centre reported that his centre would be celebrating its 60th anniversary in March. To mark the event, London Centre is planning to invite Dr. Bart Bok to give the H. R. Kingston Lecture around March 19.

Peter Broughton, National Secretary noted that in addition to the London anniversary, there were several other notable dates in 1981 and 1982. The Hamilton Astronomical Society was formed 80 years ago, in 1911; the Ottawa Centre reaches the age of 75 on December 20 1981; Vancouver Centre celebrates its 50th birthday on November 10, 1981; and 1981 marks the 70th year of the *OBSERVER'S HANDBOOK*. London Centre will be 60 years old on February 11, 1982, and Edmonton Centre 50 years old March 8, 1982. The year 1982 also marks the 40th anniversary of the Quebec Centre.

Finally, it is a pleasure to report that Membership Certificate awards were approved for the following members, in grateful recognition of their service to the Society: OTTAWA CENTRE: Miss Margaret E. Bower, Mr. Ronald F. Rodgers; VANCOUVER CENTRE: Mr. David Dodge, Mr. Art Holmes, Mr. Neil Laifra, Mrs. Doreen McLeod, Mr. David A. Rodger, and Major Paul Sykes; WINNIPEG CENTRE: Mr. Greg Bailey, Mr. Tom Cairns, and Mr. Del Stevens. Congratulations, and thanks for a job well done!

The 1982 General Assembly of the R.A.S.C.

The 1982 General Assembly of the Royal Astronomical Society of Canada will be held at the University of Saskatchewan, Saskatoon, during the May holiday weekend, May 21st, 22nd, and 23rd, Friday to Sunday inclusive. Monday, a statutory holiday is not included to avoid the excessive charges involving double-overtime.

Registration will be $20.00 per person, and a package deal covers room and board in a university residence on campus. All displays, film and slide sessions and paper sessions will take place in the Physics Building, a five-minute walk from the residence. A Wine-and-Cheese party is programmed for the opening festivities on Friday evening, together with the normal slide shows, songs. etc. Papers will start Saturday morning with the annual banquet on Saturday evening and the GA Meeting on Sunday afternoon. This GA it is also planned to have the IAPP organization (International Amateur-Professional Photoelectric Photometry), present papers on Sunday morning, in addition to their exhibits. As many RASC members are interested in this subject, this will provide an excellent opportunity to learn more about the subject first hand.

On the competitive side, exhibits will be largely concentrated on the observational capabilities, both photographic and visual. One new topic has been added, "The Most Improved Newsletter" which should promote considerable interest among Centre Editors.

Papers for the General Assembly are solicited, and anyone who plans on presenting a paper is requested to submit a condensed transcript, about 150 words long, to the Papers Chairman, Dr. Ray Skinner, c/o Saskatoon Centre.

A complete listing of details, including registration forms etc, may be obtained by writing to the following address:

Saskatoon Centre, R.A.S.C.,
PO Box 317, Sub 6,
SASKATOON, Sask.
S7N 0W0

Chaos Epilogue

by Dr. Donald MacRae

The Observatory building has now been more or less restored to normal, the dust and debris largely cleaned up, and the rooms returned to their proper functions. Bright red EXIT signs burn through the night, encouraging one to go home. By day one still hears the occasional hammer blow, strangers with tool boxes still wander about, and last week a leak was discovered in the sprinkler system in the library stacks. Tom has a list as long as his arm of items that still have to be attended to before it can be claimed that the architectural integrity of the building has been properly preserved. He presented it to the men from the Superintendent's Office and the Contractor when they were here for an inspection. Very likely we'll have more to report on that part of the affair in months to come.

Caution: If you enter the dark cloakroom in the basement (perhaps weary and done-in from along night's observing) don't accidently flip the left hand switch instead of the right hand one beside the door (they're 5 inches apart). If you do, bells will sound and lights will flash on at the WELLS FARGO ALARM SERVICES OF CANADA LIMITED at far-off Avenue Rd. and Davenport and the Richmond Hill Fire Department, inexorably galvanized into action, will very soon be at the door.

As part of the inspection last week, mainly for the benefit of the representative of the insurance firm, the group stepped into the PDS room. The insurance man said "Why, I didn't know there was a computer in the building. This room should have had a Halon gas system installed, not a sprinkler!" Tom (Bolton) was shocked and speechless as he recollected the five month battle he had fought to have a gas system put in there (as was done in the plate storage room) all to no avail; he met with adamant refusal on the part of the "authorities".

Finally the inspection was over, the men were standing in the foyer waiting for their chauffeur. "You know", said the senior of the two university architects, "a building like this really doesn't need to have a sprinkler system installed. I recommended last spring that it not be done".

Then they departed.

Reprinted from *The David Dunlap Doings*

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