NATIONAL NEWSLETTER

April, 1979

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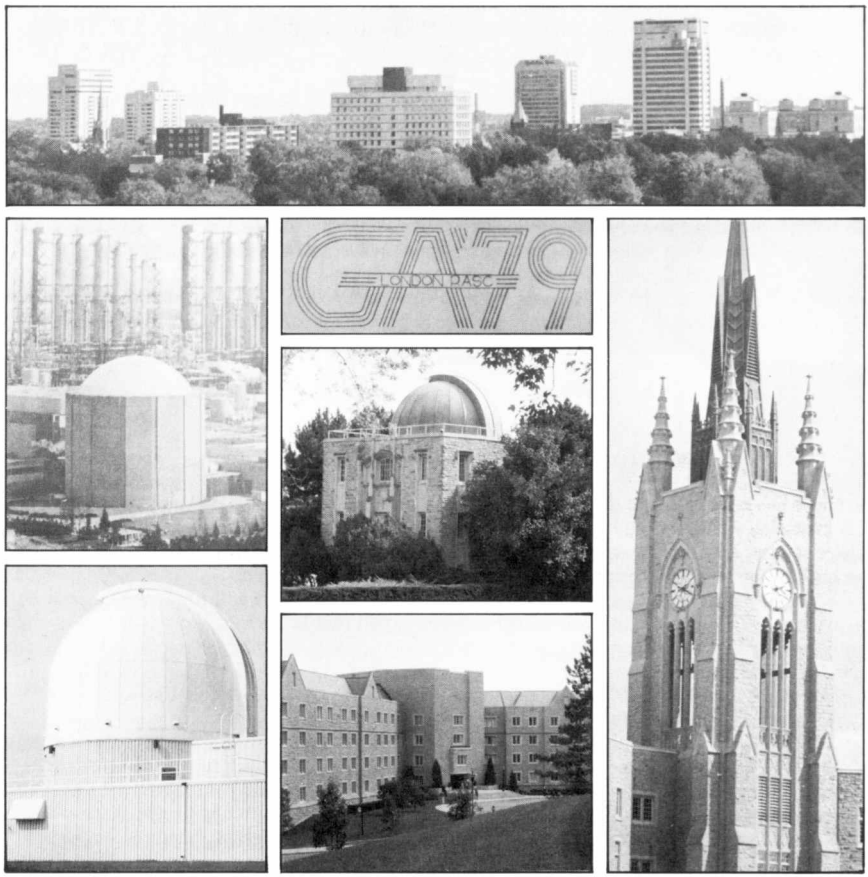

GENERAL ASSEMBLY 1979, LONDON, ONTARIO, May 18-21. Clockwise from top: "FOREST CITY"; Middlesex College; Delaware Hall; Elginfield Observatory; Douglas Point Power Station; Hume Cronyn Memorial Observatory. See February *Newsletter* for Registration.

"LONDON IS FINE IN SEVENTY-NINE"

NATIONAL NEWSLETTER

April, 1979

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

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Deadline is six weeks prior to month of issue

Vancouver to Acquire Observatory for Public Viewing

News has been released that Vancouver Museums and Planetarium will build an astronomical observatory through a donation from the Gordon T. Southam family and the Provincial Government. The observatory will be named the MacMillan Southam Observatory, and will be built in Vanier Park, near the Planetarium.

While RASC members may feel that this city-central location will limit its research and astrophotographic capabilities, it must be remembered that those installations suited to such activities are limited in the other aspect of their operations, availability as public initiators into the Art of the Astronomer.

The H. R. MacMillan Planetarium, through the pages of *NOVA*, the Vancouver Centre Newsletter, is seeking volunteers in operating the observatory facility for students and the general public. Operators should be familiar with observational astronomy and must be able to deal with large groups of people. A course on equipment operation will be given in early 1979.

Volunteers must be willing to devote at least one observing period per month to the program (afternoon or evening). Public sessions may entitle volunteers to after-hour use of the facility. The main observatory instrument will likely be a reflector of moderate aperture.

The program will be administered by the MacMillan Planetarium and operated by the Museum/Planetarium docent coordinator.

Please apply in writing to: David A. Rodger, Curator, H. R. MacMillan Planetarium, 1100 Chestnut Street, Vancouver, B.C., V6J 3J9.

International Astronomical Youth Camps

By Lori Walton
Edmonton Centre

Last summer I attended an International Astronomy Youth Camp that was held in the Netherlands from July 25 to August 12, 1978. The camp far exceeded my expectations, and I learned not only more about astronomy, but also about the lands and cultures of the other participants.

I first read about the camp in an issue of *Sky and Telescope*, and after I wrote for more information, I found that the conditions for participation were:

1 You had to be between 16 and 22 years of age
2 Have a basic knowledge of astronomy.
3 Capable of speaking and understanding the official camp language, which (lucky for me) was English.

The cost of the camp ($153.00 last year) included accommodation, food, instruction, two excursions, and other conveniences. The Dutch government subsidized most of the expense of the camp (which was why the cost was so cheap), so my major expense was my airfare.

It was held in a Volkshogschol (school for the people) in the village of Havelte in northern Holland. There were two buildings in the camp, which were separated by a large cow pasture. One of the buildings contained the kitchen, dining room, lecture rooms, darkroom, and a large gymnasium area. The other building was where we slept and did our laundry.

Each participant in the camp picked a working group to be in. Each of these six working groups was headed by one or two leaders who provided instruction. The six groups were:

1 General
2 Sun and Planets
3 Astrophysics
4 Variables
5 Astrophotography
6 Meteors

There were 48 participants in the camp from: Netherlands (13), Great Britain (11), West Germany (7), Belgium (4), 2 each from Poland, Switzerland, Sweden, and Yugoslavia, and 1 each from Canada, France, Portugal, Italy and the United States.

The nine leaders were from various countries as well.

A typical day at camp would begin between 11:30 am and 1:30 pm when breakfast was available. The six groups would begin at 2 pm in their respective workrooms and work through the afternoon. Dinner was at 7 pm. After dinner there would be volleyball, chess, ping-pong, movies (Joe, Animal Farm, The Omega Man), games, slides and general meetings, until about 12 midnight when observing would begin if it was clear outside. Everyone would usually go to bed between 3 and 5 am whether they observed or not.

The weather for the first five days of the camp was good, but then turned miserable until the end of the camp. Observing could only be done whenever the clouds cleared for an hour or two during the night. Some of the leaders and participants from Europe who drove to the camp brought telescopes, and there was no shortage of cameras, tripods, and binoculars. This equipment was kept in a separate building in the field where the observing was done.

At the end of the camp, each of the six working groups printed a final report of the work it did. Each person in the group was responsible for a section of the final report.

The topics covered by each group were as follows:

Astrophysics

This is the group I was in, and we were the only group that did not have to do any observing, although we were free to observe if we wanted to. We studied the most important or well-known methods of determining stellar parameters:

Distance
1 Trigonometric, Secular, and Spectroscopic Parallax.
2 Cepheids Method.
3 Exercise from *Sky and Tel*. to determine Hubble Constant.
4 Determining the distance to the Hyades Cluster.

Mass of Stars
1 How to compute the mass of a binary system, and of each component.
2 Minimum value of the total mass.
3 Other methods.

Brightness
1 Magnitude Scales.
2 Corrections.
3 Absolute Magnitude.

Radius
1 Formula for the bolometric magnitude.
2 Michaelson Interferometer.
3 Occulation by the moon.
4 Eclipsing binary stars.

Spectral Classifications
We learned how stars are classified and then we did an exercise out of *Sky and Telescope*.

Constitution of a Normal Star
1 Hydrostatic equilibrium.
2 Mean molecular weight.
3 Thermal contents of a star.
4 Energy contents of a star.
5 Nuclear reactions.
6 Energy transport.
7 Radiation.

Stellar Models

The **General Group** worked on projects that included measurement of distances using parallax and cepheid variables, diurnal variation, atmospheric absorption, velocity of a sporadic meteor, magnitudes and candelas, SI units and Stonehenge. The **Meteor Group** looked at methods of visual observation, photographing meteors, magnitudes for different lenses, errors in visual observation of meteors, and searching for radiants using simultaneously observed meteors. This group also observed the Perseid meteor shower. The **Variables Group** studied the theory of eclipsing variables, calculating a theoretical light curve, how to observe variables, and an example of determining the parameters of an eclipsing binary from its light curve. Using a 12 cm., 7.5 cm. and 6 cm. refractor as well as a variety of 35 mm. cameras and lenses, the **Astrophotography Group** looked at film, guiding, resolution, telescopes, spectroscopes, solar and lunar photography, making developers, and light, electricity, and wave-particle duality. Finally, the **Sun and Planets Group** did an exercise from *Sky and Telescope* for determining the rotation of Saturn and its rings, looked at the orbits of Earth and Mars and the path of Viking One, Kepler's Laws, observations of sunspots, the nature of light, the motions of the exterior planets and the interiors of Sun and Jupiter.

Each participant in the camp received a set of the six final reports. There was also an optional group anybody could work with that searched for novae during the camp. The Nova Search group also made up a final report.

The only bad time at the camp was the very last day, when everyone had to say good-bye. It was one of the saddest days of my life to know that I probably would not see many of these people again. From what I have heard since the camp ended, most of the participants are writing to at least one other person they met at the camp. I am writing to three people from the Netherlands, two from England, one from Italy, and one from Poland (she was my roommate during the camp). Because the camp language was English, the other participants, for which English a second language, benefitted greatly by being forced to speak and listen to English for three weeks.

Even though we did study astronomy at the camp, we also had to put up with the eating, sleeping, and working habits of other people, which taught me to be more tolerant and understanding even when parties were going on in the next room, or when late night observers would stomp up the stairway at 6 am and wake everyone up. To me, this was the major part of the camp, since it taught me as much about people as it did about astronomy.

Editor's Note Since the above was received, the following information has come to hand about the 1979 plans:

> The campsite will be Violau (W. Germany), a very small village, situated in Bavaria some 50 miles from Munich. There will be a small observatory (e.g., 12-inch refractor, Schmidt camera, etc.) and observing conditions in the area are predicted to be favorable.
> The camp will start on July 20, and will run for three weeks ending on August 10.
> Further information can be obtained by writing to:
>
> I.A.Y.C. 1979,
> c/o Tjalling Vis,
> Haven N.Z. 113,
> 7602 EG Almelo,
> Netherlands.

Must Archives be Musty?

by Peter Broughton
Society Archivist

Certainly not, but many people seem to automatically associate the adjective with the noun. The Society's historic materials are stored in steel file cabinets in the air-conditioned national office, though some of our oldest items, such as minutes of the earliest meetings, are kept only in copy form, the originals having been sent to the Public Archives in Ottawa for safe-keeping. So, the Society's archives are not musty in the sense of smelling of mold.

But are they musty in the sense of being antiquated? Some of the material is a hundred years old but holds increasing interest partly because of its age. Regrettably, there is not much in our archives of recent vintage, and it is primarily because of this that I have been asked to encourage you to contribute to its holdings. We are very much in need of photographs of our members in action, and of their accomplishments; telescopes, equipment, and observatories have been built, Comet Meier and Nova Cygni 1978 have been discovered, outstanding celestial photographs have been taken, and practically none of these attainments are remembered in our archives.

If you have any suitable news clippings, photographs, or whatever, please send them to me at the national office. If you do not want to part with the original, send a copy or ask us to return the original after we have copied it. The Society will pay any costs involved. I hope to be at the General Assembly, so you might prefer to bring your contributions there. It might be possible to put some of them on display.

Remember, today's events are tomorrow's history.

Like Watching Jupiter?

from
Winnicentrics

Starting in December, amateurs from around the world are invited to work together observing Jupiter. Photos, drawings, transits and histories of Jovian features are all needed. These will be used to help analyse images of the planet relayed from the two Voyager spacecraft during their 1979 flybys.

The observing group is organized by Meudon Observatory Planetary Group under Profession A. Dollfus, and the Lab. for Planetary Atmospheres under Dr. G. Hunt. It will work like this: every month information will be sent to each observer, including the times of Jupiter imaging sequences, and standard observing forms.

At the end of the month observers will send all negatives, drawings, and other observations to the Paris observatory for duplication. Originals will then be returned to each observer.

The worldwide observations will be merged into a data base, along with some digitized photos, to be used by a Voyager Mission Headquarters to help interpret the Voyager images.

For detailed notes on the program, write to:

Peter Muller,
Lab. for Planetary Atmospheres,
University College,
Gower Street, London WC1E 6BT
England.

The Four Brightest Stars

by Peter Broughton
Toronto Centre

Besides the Sun, four stars of magnitude 0.0 or brighter are visible to most northern hemisphere observers. In fact all these stars are simultaneously above the horizon on a spring evening. Can you name them? Here are some hints:

If you arrange the stars in order of declination, south to north, they will also be ranked in decreasing apparent brightness.

If you put their common names in alphabetical order, the stars will then be arranged in the order of their colours (or spectral types) from red to blue, but if you use their Bayer or constellation names in alphabetical order, it turns out that the radial velocities progress from red shift to blue.

There are two giants (the red stars, naturally) and two main sequence stars; a supergiant can be added to the list by including the fifth brightest star but it is a variable and spoils these little "rules" for other reasons too.

Beta Tritium

by Dr. Roy L. Bishop
Halifax Centre
from *Nova Notes*

The light from stars such as Beta Cygni or Beta Orionis contributes much to the beauty of the night sky; nevertheless this light is too feeble to be of much use as illumination while fumbling for an eyepiece or a slow-motion control on a telescope. Recently I came across one

form of beta light that appears to be ideally suited for stumble-free navigation around a telescope on a dark night.

While browsing in a yachting equipment store, I found small, sealed light sources which require neither batteries nor wires. Called "Betalight Marine Markers", they are meant to be used around the deck of a boat as nighttime markers. I bought one, partly out of curiosity, and found it is ideal for locating eyepieces in a dark box, for marking tripod legs, control knobs, etc. The light output is sufficient to be useful yet does not interfere with dark adaption.

Phosphorescent powders excited by the radioactive decay of radium and its daughter isotopes have been in use on watch dials for more than half a century. However, since the association of gamma radiation must be kept within safe limits, the light output is quite feeble. Within the last couple of years a different type of light source has appeared. The "Betalight Marine Marker" is one example, "Permaglow" backlighting for the LCD. watch dials is another. The concept is the same as for the smaller radium sources: a radioactive substance excites a phosphorescent powder; however, instead of radium, hydrogen is used.

Three types of hydrogen neclei occur:

Isotope	Natural Abundance	Stability	Common Name
${}_1H_0^1$	99.985%	Stable	Light Hydrogen
${}_1H_1^2$	0.015%	Stable	Deuterium
${}_1H_2^3$	—	Half-life 12.3 years	Tritium

The two subscripts give, respectively, the number of protons and the number of neutrons in each atomic nucleus, while the superscript is the sum of these two numbers. Not only is H^1 the more abundant of the two stable isotopes of hydrogen, it is also the most abundant nuclide in the Universe. Since H^3 (tritium) is unstable with a half-life comparable to that of a dog, it does not occur naturally.

Although the radium source used on watch dials (Ra^{226}) has a half-life of only 1620 years, it does occur in nature because it is in the alpha decay sequence of uranium^{238}, which has a half-life of 4×10^9 years, about the same as the age of Earth. Since all uranium nuclei have been synthesized from lighter ones by supernovae, those of you who have the older style of luminous watch dial are literally viewing the embers of ancient super-novae explosions from which the stuff of the Solar System was later assembled. Owners of the newer, brighter, "Permaglow" digital watches have a somewhat less romantic glow: tritium is produced in nuclear reactors (typically by neutron absorption in H^2). True, reactors are fuelled with uranium; however, the connection between the glow due to tritium and those incredible blasts of ten billion years ago is much less direct.

Why can tritium light sources be safely made much brighter than radium light sources? The answer is that the decay of a tritium nucleus does not involve any higher energy photons (gamma rays):

$$ {}_1H^3 \rightarrow {}_2H^3 + {}_{-1}e^- + \bar{\nu}_e $$

For historical reasons this type of decay is known as "beta" decay, and the electrons (e^-) so produced are known as "beta rays". The helium nucleus (He^3) is formed in its ground state, and is stable. The rather low decay energy of 18 keV is shared in a random way mainly by the electron (e^-) and the anti-electron-type neutrino ($\bar{\nu}_e$). Thus the electron has the same sort of energy as an electron in a TV picture tube: sufficient to cause a phosphor which it strikes to glow brightly, but not so high as to cause a significant radiation hazard. Although the neutrinos from these sources completely riddle everything in sight, they are so extremely penetrating that they rarely strike anything. Thus they present no radiation hazard. Hence tritium lights are brighter yet safer than radium lights. They do have one minor disadvantage: with a half-life of 12.3 years they become appreciably dimmer after a decade or two.

In summary, a new light has appeared. Bright enough to be useful yet with negligible light pollution, it is rugged, compact, inexpensive, and will operate for many years with no attention. Those of us who carry telescopes into the dark will likely find several uses for the light of Beta Tritium.

Maktomkus Observatory.

Pick Your Pollution Now

by Barry Matthews
Hamilton Centre

In the early days of Western Prairie roads there were stories of sections of "highways" where things got a trifle rough, and one would encounter signs reading; "Pick your ruts here, you're going to be in them for the next thirty miles." It would seem that a similar choice of the Way to Go is before the authorities that arrange for (and sell) our streetlighting, and other forms of creating artificially shortened nighttime. Perhaps we must point out that we need to choose our ruts with care at once.

Many of us know from first-hand experience that the intensity and extent of light pollution are increasing in frightening proportions. This has been well documented in the study published in our *Journal**. We need only to remind ourselves that back when prairie roads were rough, it was still possible to see the Milky Way from the middle of our largest cities, while now on nights which the inhabitants call "clear" it may be possible to see the brightest stars if they are near the zenith.

What is shocking to consider is that neon and mercury vapour have been used to create brighter outdoor lighting and now a large array of more and more gases is being developed and already being used to deliver more of the same. However, there may be some hope. The trends and technologies that produced so much air and water pollution continued unabated for many years, until the cry arose: "Halt the pollution!" Now a reversal of the trend is to be seen, so that in a few places cleaner air and water are reappearing. We hope that the same thing can be brought about for the case of our night sky.

We have been blessed with technologies of great capability. With some desire, and with sufficient effort, the mills which produce the hardware that we seem to want so feverishly, can be made to operate both efficiently and cleanly, leaving our air and water undamaged. If the desire and effort is also there, men should be able to have many of the benefits of lighting without encroaching on the rights of those who want to view and study the night sky which surely must be nature's greatest jewel.

We should proclaim to all that we want to have, and protect the right of all men, to see, enjoy, and if they so choose, study the celestial wonders.

It really is more interesting to see the light from a star that exploded a hundred million years ago, or one that is a dozen parsecs distant and may have a planet like our own, than it is to see expensively, artificially, and perhaps unnecessarily produced light coming from a device twenty meters away.

We really would rather see starlight than streetlights.

A Shot in the Dark

by Michael Rogers
Winnipeg Centre

When Cro-Magnon man roamed the earth, a hint of light emerged from a dim and dusty star, to begin its remarkable journey. Through the great void it sped, oblivious to the wondrous

*J. Roy. Astron. Soc. Can., Vol. 72, No. 4, 1978, *198*

sights it must have passed, heeding nothing but the gentle pull of gravity and the rigid laws of physics. At last the journey came to a fateful end; caught in the amber-like emulsion of a photographic film; trapped for the present and preserved for the future.

What's the purpose of astrophotography? Your answer probably depends upon the line of work you are in. To an astronomer, the photographic plate is an eagle-eyed scribe. Patiently it collects and records the faintest light imaginable; light that the telescope-eye combination could never detect.

As I write this I am looking at a photograph of literally thousands of stars, caught by the camera. With simple apparatus, an aesthetically pleasing, extremely useful photograph has been produced; one which reveals the presence of a multitude of stars which might very easily have escaped tired old eyes. For the astronomer, the photographic plate simplifies the task of searching for faint objects. A photoelectric detector may prove more sensitive, but it suffers from tunnel vision compared with the film or plate. When it comes to searching for changes in the sky from one night to the next, or looking for an elusive nebula or nova, the photographic emulsion is far its superior.

The sight of a brilliant and beautiful cluster of stars hung silently against the black velvet night is indescribable. There are those who, though not particularly interested in astronomy, can appreciate an astrophotograph as a work of art. For very different reasons, astrophotography appeals to both artist and scientist.

I have had the pleasure of working with several amateurs in the astrophotography field. Perhaps the ground we covered had already been trodden before; and yes, perhaps our results were not up to contemporary standards, but no matter. Personally, the joys of learning, from experience mainly – and from Kodak partially – has more than offset that disappointment when the nights proved rainy.

The progress we have made in a relatively short time should encourage others already interested, and who may become interested.

From constellation work, star trails, 'piggy-back' and prime-focus astrophotography, a virtual smorgasbord of techniques, we have obtained some exceptional photographs. We have also taken some that, to be honest, are best laid to rest in what is now an overflowing bin.

We began by pointing randomly and shooting. We are still guessing, and learning. (At least I am guessing; I should not perhaps condemn anyone else without asking!) Probably, in spite of all the assistance we receive and have received, there will be times when we continue guessing.

May I say – taking a shot in the dark?

Double Stars

by Herb McGrath
Temiskaming Astronomical Society

On a clear summer night, swing your scope to point at the foot of the Northern Cross embedded in the Milky Way, and you will pick up one of the beauty spots of the sky. Here is Albireo (even the name has a musical ring to it); two points of starlight, the brighter orange, the fainter blue, against a background of faint stars filling the field of view – an excellent way to introduce yourself to the observation of double stars, for a 50mm lens will resolve this pair with a magnification of only 20x. Here is one of the attractions of double-star observing; the game is to split a pair, to see the space between the two components, with as small an aperture and as low a power as possible or available, a good activity with smaller telescopes or binoculars.

What classes a star as a double star? The term is indeed a loose one, for we apply it not only to gravitationally related pairs (relatively strongly of course, since all objects in the galaxy are really gravitationally related), but also to two stars appearing close together on the celestial sphere but actually separated along the line of sight by perhaps many light years. A

distinction is made between physical pairs (binary pairs – Ed.) and optical pairs; the physical pairs showing evidence of orbital motion or a common proper motion against the stellar background.

One early scheme used to classify two stars as a double, set a limiting separation of 10 seconds of arc for sixth magnitude stars, and 40 seconds for second magnitude. Such a scheme, however, excluded many striking pairs and even some established binaries whose orbits have since been determined – including 61 Cygni! So we leave the term to be loosely used, and the amateur with a small or medium/telescope will find many pairs of striking appearance to fit his idea of a double star.

Several publications have good lists for the double star observer to choose from, and in any season some will be available for almost any size of instrument. The *Skalnate-Pleso Atlas Catalogue* has a comprehensive list beginning on page 187, followed by a section on binaries with physical and orbital details. The *Observer's Handbook* has a short list, although not many of these are observable with a small telescope. *Norton's Star Atlas* has a list accompanying each map, making it easy to locate a pair quickly. *A New Handbook of the Heavens* by Bernhard, Bennett, and Rice has a good list for a small telescope, as does Webb's *Celestial Objects for Common Telescopes*. These latter two are old publications so some of the material in the remarks may have been revised since they were issued. However, the coordinates, magnitudes, and usually the separation and position angle given will still be valid. If the last two references are seen to be different by the observer, it will mean that the stars have moved in their relative orbits since the books were published. If you want to detect this, look for a combination from the lists of short period and fairly wide separation.

A few pairs may be classed as naked-eye doubles, not likely to be physically related. The classic pair is of course Mizar and Alcor. Mizar is the second star from the end of the handle of the Big Dipper, Alcor "the rider" being just above it when the dipper is right-side-up. The Arabs were supposed to have used this pair as a test for eye-sight, but either they were very old Arabs, or proper motion has had time to change their appearance (the stars, not the Arabs), or they all had sand in their eyes, for even I can split them providing the night and I are both steady enough! Although Mizar and Alcor are not physically related, Mizar itself is a fine double, a true binary observable with a small telescope, with Alcor in the field of view together with another fainter star between them.

Another naked-eye double is α Capricorni-Algedi- separated by 6½ minutes of arc. The components α 1 and α2 are each a double in its own right. When Hipparchus made the first star atlas in 130 B.C., he recorded this as one star, but proper motion of the components has been increasing the separation by 7″ a century through the intervening 2100 years, so now we easily see two stars in this spot. β Capricorni – Dabih – just misses qualifying as a naked-eye double, the separation being 205″, again each component being a telescopic double. Zubenelgenubi – α Librae – is an easy naked-eye double of magnitudes 3 and 6. The famous double ε Lyrae is claimed as a naked-eye double by some observers, but most of us need a little optical aid. The two stars seen in binoculars or the finder are resolved with a six- or eight-inch telescope into two pairs of similar magnitudes and similar separations with the position angles approaching a right angle, a fine sight indeed.

An interesting binocular double is ν Draconis, in the head of Draco, close to the northern border of Hercules. This pair is a perfect match, each star being 4.6 magnitude and both white. The separation is 62″ so any pair of binoculars resolves it well. Less than 7° distant from ν Draconis is μ Draconis, a double, each component of which is magnitude 5, both white also but separated by only 2.2″. In 7x 35 binoculars the appearance of ν is just like μ viewed in a large telescope at a magnification of 200x . ν is a binary; μ is not.

The finest pairs for observations are those in which the components differ greatly in colour, such as Albireo, β Scorpii, γ Andromedae, and many others within the range of small instruments. The lower the power needed to resolve a pair, the finer the view, as many are against beautiful background star fields. Perhaps the best challenge to eye and instrument are pairs that differ widely in magnitude. It has been said that Polaris can be split with a one-inch telescope. I would like to own such quality optics!

Why not look up some interesting pairs in the lists and test your observing ability on them. They're beautiful, they're thought-provoking, and they're fun!

The Typical R.A.S.C. Type?

Sydney Harris, in his column in the *Daily Colonist* (Victoria) quotes the following from a biography of Sir John Frederick William Herschel:

> "In private life, Sir John was a firm and most active friend; he had no jealousies; he avoided all scientific feuds; he gladly lent a helping hand to those who consulted him in scientific difficulties; he was pleased by appreciation of his work without being solicitous of applause. It was truthfully said of him that his life was full of the serenity of a sage and the docile innocence of a child."

Haven't you met him in the R.A.S.C.? Not in person, but in personality, perhaps.

Sydney Harris derives from the above one of the finest descriptions of the ideal person to be found in literature:

> This is what, we instinctively feel, a person is meant to be and do; it is what most of us lamentably cannot live up to; but we know it is as admirable as it is rare, and we use these traits and virtues as a touchstone for judging the conduct of ourselves and those around us.
>
> Or course, different societies have evolved rituals and customs that seem bizarre or perverted to us – but we cannot find one in which hostility is preferred to friendship, deceit preferred to honesty, treachery preferred to loyalty, cruelty preferred to kindness, within the group itself. And for great men, the "group" becomes the human race.
>
> ... a character like Sir John Herschel's makes us realize that while a good man is always hard to find, he is easy to recognize, no matter what his costume, his colour, or his century.

Centre Exchanges

Centres in Eastern Canada seem to have a decided advantage; they are near enough to each other that they keep in touch and can exchange program ideas, or even equipment or personnel. Niagara Centre can sometimes arrange an exchange across the border; their Meeting Notice for January lists a presentation on "Sundials" given by Olga and Edward Lindberg of Bowmansville, N.Y., for example. Perhaps Western Centres, if distances and that bogeyman the weatherman make personnel exchanges unreliable, could benefit by seeing what ideas or gadgets, slides, films, even manuscripts or accounts of activities could be "borrowed" (or stolen) from the exchange of Centre Newsletters that is supposed to be automatic.

Also, be sure to bring to the attention of your own *National Newsletter* personnel any ideas that you would be willing to share with an exchange partner, if one can be found. It's only a Newsletter when it has the news.

Reflections

by David Dodge
Vancouver Centre

There are few things more pleasurable than communing with the stars. It gives you a feeling of oneness with the firmament. With only the sounds of the night for company, you have time to reflect on our miniscule place in the universe; time to absorb the visual impression that has travelled aeons, to be absorbed in part and travel on; time to consider the roots of that light; time to speculate when, why, how and if. The ever moving image that we see is just a snapshot, but one full of drama and excitement that will never be fully developed.

News from a New Member in Japan

from Lloyd Higgs
Ottawa

A newly-joined member of the R.A.S.C. in Japan has recently communicated to the Society some observations he has made of a new variable star in Cancer. The star, at $\alpha_{1900} = h^h 57^m 56^s$ and $\delta_{1900} = 8° 35'.9$, had been photographically detected as a semi-regular variable by Dr. Huruhata, the retired director of the Tokyo Astronomical Observatory (*Information Bulletin on Variable Stars*, IAU Comm. 27, No. 1401, 1978), using a 10-cm reflector. Our new member, Mr. Osao Shigehisa, has observed this star since its discovery in 1975, using 20 and 25-cm reflectors, and has refined its period to 118 days with a visual magnitude range of 10 to 11.3. The most recent maximum he reports was on Jan. 28, 1978. Mr. Shigehisa is the editor of the English-language *Variable Star Circular* of the Japan Astronomical Study Association and sends his best wishes to members of the R.A.S.C.

It may surprise Society members that our publications are read in Japan but, indeed, we have several members there as well as institutional subscribers (nearly 20 in all). It is always pleasing to hear from members so far removed from our National Office in Toronto, and I am sure that we all extend our best wishes to Mr. Shigehisa.