



**ASKATOON
SKIES**

Sept 1982

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Number 9





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September

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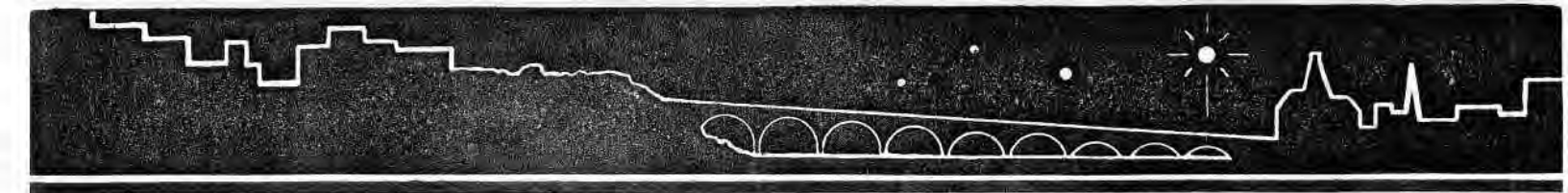
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Some Thoughts on the Correct # of Vanes for Spiders

by Doug Miller

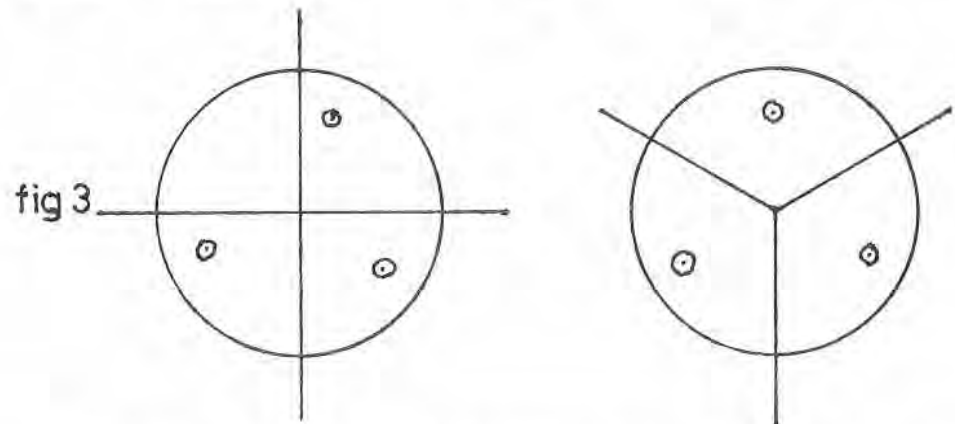
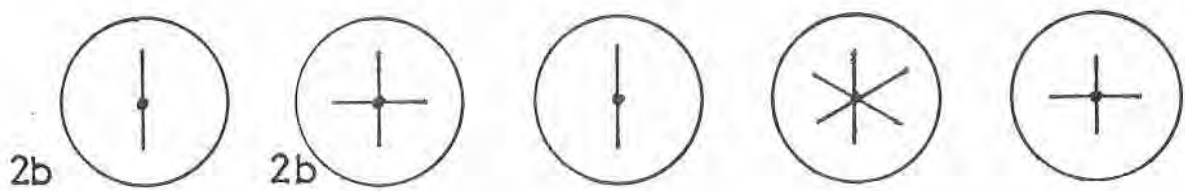
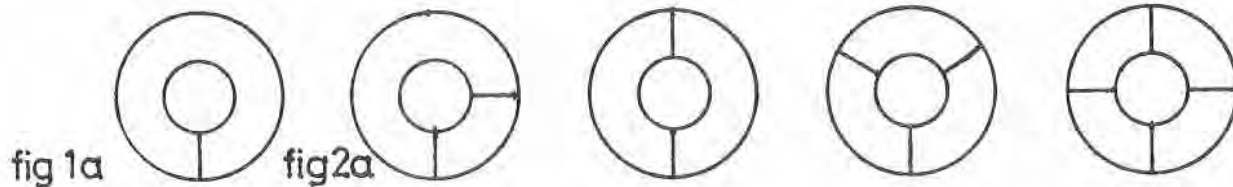
In many amateur telescopes, a spider is required to support a secondary mirror; a flat in a Newtonian or a convex mirror in a Cassegrain. Traditionally, the spider has been held in place by four vanes attached to the telescope tubing. In the following discussion I will give reasons why the appropriate number of vanes should be three.

Each vane introduced into the system causes two diffraction spikes to form which are seen on the image of bright stars. This effect is particularly noticeable during photography. One vane extending halfway across the aperture (figure 1a) will cause two diffraction spikes as shown in figure 1b which extend an equal distance on either side of the star image. Another vane extending halfway across the aperture perpendicular to the first vane will introduce another pair of diffraction spikes which are perpendicular to the other diffraction spikes (figure 2a and 2b). The traditional philosophy is to place four vanes at right angles to each other. This produces only four visible diffraction spikes. What is actually happening is that the diffraction spikes of opposing vanes are superimposed on each other.

With three vanes located at 120 degree intervals, six diffraction spikes result. At first glance this would appear to be worse than the case of four vanes. However, the amount of energy diffracted is proportional (assuming the same vane thickness) to the total vane length. Three vanes thus diffract only $\frac{3}{4}$ as much energy as four vanes. As well, this energy is equally split into six spikes versus four spikes. The net result is that each diffraction spike from a three vane system has only half as much energy as the diffraction spikes in a four vane system. On photographs taken with a three vane system, stars should much less conspicuous spikes compared to a four vane system.

This reduction in the number of vanes can be carried only so far as it compromises the spider's rigidity if the number of vanes is reduced to less than three. Small telescopes ($4\frac{1}{4}$ " or less) are available which use a single thick vane ($1\frac{1}{8}$ " or more) to support the secondary but this is impractical for larger systems.

SPIDER SUPPORT SYSTEMS



There are two other side benefits from three vane systems. The reduction in the number of vanes gives a slight decrease in the primary mirror obscuration. As an example, a 10" Newtonian with a 2.6" diagonal and 1/16" thick vanes will have obscurations of 8.28% and 8.62% for three and four vane spiders respectively. This is not a large improvement but it is an improvement nevertheless.

The other advantage is a practical one. Three vane spiders should be easier to orient in the telescope as there is one less nut to loosen or tighten compared to a four vane spider. As well, adjustment screws for the secondary tilt can be arranged for easier access for three vane spiders. This is shown in figure 3. The four vane spider gets in the way of the three adjustment screws.

In conclusion, the advantage of four vane spiders in giving only four diffraction spikes versus six diffraction spikes for three vane spiders is no advantage at all. There is less total diffracted energy in the spikes of the three vane spider. The diffraction spikes of the three vane spider will be only half as bright as the spikes in a four vane system. As well, a three vane spider is (mechanically) simpler to adjust.

INTERNATIONAL UNION
OF AMATEUR ASTRONOMERS

During recent years the greater sophistication of professional instrumentation and the ability to study astronomical objects from above the confines of the Earth's atmosphere have somewhat reduced the scope of the serious amateur astronomer who wishes to undertake a programme of scientifically useful work. In some areas of study there has been a change of emphasis, in others a need for increased specialization; but the amateur can still play a vital role and this is recognized by professional astronomers.

It had long been felt that the value of amateur observations would be enhanced if there existed an international organization to correlate them and when, in 1966, a joint proposal to this effect from Patrick Moore (Great Britain) and Ulf R. Johansson (Sweden) appeared in Sky and Telescope, it brought a large and immediate favourable response. Tentative steps towards the formation of such an organization were taken during August 1967, when a number of amateurs happened to be in Prague, Czechoslovakia, attending the Thirteenth General Assembly of the International Astronomical Union. An informal meeting was held, at the suggestion of Dr. L. Perek, General Secretary of the I.A.U., which resulted in the setting up of a provisional committee with Mr. Moore as chairman. In 1968 the committee accepted an invitation from the Italian Astronomical Society and the Bologna Astronomical Association to hold an inaugural congress in Bologna, on April 19-21, 1969. And thus, on April 19, 1969, the International Union of Amateur Astronomers became a reality, with the acclamation of representatives from sixteen nations.

The main role of the I.U.A.A., to co-ordinate the activities of amateur astronomers throughout the world, is undertaken by Commissions, which, like those of the I.A.U., facilitate the international exchange of information by publishing, in the Union's quarterly newsletter, Communications,

summaries of recent developments supplemented by extensive bibliographies. The Union in no way impinges upon the autonomy of national organizations, nor encroaches upon the valuable work they undertake, since it does not attempt to collect or evaluate observational data, but rather provides references to where such data may be obtained. It is anticipated that the Union will enable a better liaison to be achieved between amateur and professional astronomers, and that, as a consequence of this it will be able, if requested, to suggest to national organizations ways in which their observing programmes could be amended so as to ensure maximum scientific usefulness.



The I.U.A.A. is an amateur body and as such gives a new dimension to amateur astronomy; however, with neither the official backing nor the financial resources of its professional counterpart, the I.A.U., its success or failure depends largely upon the degree of support it receives from national organizations, local societies and individuals. There are two categories of Union membership, Corporate and Individual, for which the current rates are 24.50£ Sterling and 8£ Sterling respectively.

Members are entitled to attend the Union's General Assembly, held as a rule every three years, and to receive its publications, namely the Proceedings of the General Assembly, and the quarterly newsletter, Communications. Membership forms are available from the Union Official whose name and address are given below, who will also be pleased to answer any specific enquiries about the Union.

Through the I.U.A.A. amateur astronomers now have the chance to benefit from international collaboration: it is up to them to make the best use of this opportunity.

Mr. C. Kilbride
Executive Secretary, I.U.A.A.
60 Laurel Pk., Laurel Lodge
Castleknock, Co. Dublin
IRELAND

Reprinted from Nova Notes Vol. 13
No. 4

STELLAFANE 1982: A Personal Interpretation
by Peter Jedicke

Some months before the end of the year, everybody's favourite astronomy magazine, Sky & Telescope, will come out with a colour spread about Stellafane. The article will say that the annual meeting of telescope makers and astronomy buffs on Breezy Hill near Springfield, Vermont was attended, as usual, by dozens of telescopes, hundreds of vehicles and well over a thousand people. The article will mention the big splash that Steve Dodson, of North Bay, made once again this year with his 56cm portable Dobsonian, and how more and more large aperture amateur telescopes are being seen on the Hill every year. There will be glowing words describing the lecture by Philip Morrison on the topic of Quasars and how Morrison described theories of quasar physics that are so new they are still in the publishing pipeline. No doubt brief mention will be made of the numerous tent-talks which were presented on Friday night and Saturday afternoon, August 13 and 14, presenting such

subjects as the upcoming eclipse in Indonesia. You will be able to read all about that in Sky & Telescope.

But Sky & Telescope won't tell you that I didn't attend any of the talks on Saturday afternoon because I was too busy rubbing elbows with my own selection of the world's most special people: amateur astronomers. You won't read about my experience on Friday night, in the dark, when I listened to only one slide presentation. It was Alistair Ling's, and I was paying attention because Alistair is a friend of mine. Tripping on the rocks because dim red flashlights were not intended to light the way of a giant meandering on a steep hillside, I was amazed at how amateur astronomers develop the ability to recognize one another by voice alone. Introductions are made between people who may walk right past each other the next morning without recognition, unless they hear themselves talking.

Stellafane represents the ultimate triumph of amateur astronomy. Where else can you be surrounded in a clearing far from home and still be confident that you are among people whose personalities are all tilted the same way your's is? Stellafane people are people of all ages; both youngsters and oldsters share in the glory of the dark skies. Shawn DeCaluwe, one of the London Centre's younger members, enjoyed his first Stellafane immensely, and he didn't attend any talks, either.

There's something utterly unique about looking at a hillside crammed with people and knowing that this is not a screaming mob at a stupid rock concert, these people are not waiting eagerly to see a sports personality or a Hollywood actor, but that every one of those folks perched on rocks, leaning, sitting, lying all over each other, share your thrill at listening to Philip Morrison expound on quasars. You can see it in their faces.

You won't see THAT in Sky & Telescope magazine.

Reprinted from Astronomy London, Vol. 14
No. 10

NEWSLETTER

Mailing Address:

**The Royal Astronomical Society of Canada
Saskatoon Centre
Sub P.O. No. 6, Box 317
SASKATOON, Saskatchewan
S7N 0W0**

Members of the Executive Council

HONORARY PRESIDENT Dr. Ray Skinner	PROGRAMMING CO-ORDINATOR Mike Burianyk
PRESIDENT Gordon Patterson	ACTIVITIES CO-ORDINATOR Pat Skinner
VICE PRESIDENT Mike Wesolowski	LIBRARIAN Joan Badger
SECRETARY Lillia Wilcox	EDITOR John Greer
TREASURER Mike Williams	COUNCILLORS Walter Fernets
CENTRE REPRESENTATIVE Doug Miller	Len Herrem
RYSTROM COMPLEX COMMITTEE John Greer	Gordon Mack
Rick Huziak	Jim Young
Merlyn Melby	MIRROR GRINDING COMMITTEE Rick Huziak
Gordon Patterson	Doug Miller
Mike Wesolowski	Mike Wesolowski

Notice of Meeting

Place... Room. B111, Health Sciences Bldg., U. of S. Bldg.

Date... October 18, 1982..... (Day) ... Monday.....

Time... 8:00 p.m..... (Central Standard)

Purpose... October General Meeting... *Election of Executive *

Program... Dr. J. Koehler... on "Radio Telescopes".....

.....

The Royal Astronomical Society of Canada
Saskatoon Centre
P.O. Box 317 Sub 6
Saskatoon, Saskatchewan
S7N 0W0

NEWS RELEASE

PROBING THE UNIVERSE

For most of man's history, his perception of the universe has been limited by what he could see with his eyes alone. The invention of the telescope expanded his vision, but he was still limited to seeing in visible light. The discovery of radio waves from the center of our galaxy during the 1930's has resulted in the construction of increasingly more sophisticated radio telescopes. This new means of looking at the universe has resulted in the discovery of many exotic objects, and may even be the means by which we will communicate with other life in the universe.

The general public is invited to attend the next General Meeting of the Saskatoon Centre of the Royal Astronomical Society of Canada, when Dr. J. Koehler, of the Institute of Space and Atmospheric Studies, will present an illustrated talk entitled "Radio Telescopes". Anyone interested in joining the Saskatoon Centre is urged to attend as this will be the first meeting of the fiscal year.

MONDAY, OCTOBER 18, 1982
8:00 PM

ROOM B-111, HEALTH SCIENCES BUILDING
UNIVERSITY OF SASKATCHEWAN

The meeting will adjourn to the U of S Observatory for coffee and viewing through the 7" telescope, weather permitting. There is NO ADMISSION CHARGE. Current members are urged to renew their memberships at this meeting. For additional information, contact Mike Wesolowski at 374-3331.

Please display, publish or broadcast this news release/public service announcement on behalf of the Royal Astronomical Society of Canada, Saskatoon Centre. Mike Wesolowski, Vice President.

Mike Wesolowski

MINUTES OF AN EXECUTIVE MEETING

Saskatoon Centre of the Royal Astronomical Society of Canada

PLACE - - - U of S Observatory, U of S Campus
DAY/DATE - Monday, September 20, 1982

TIME - 7:00 p.m. C.S.T

Present: Gordon Patterson, Mike Wesolowski, Jim Young,
Lillia Wilcox, Patrick Skinner, Joan Badger, John Greer,
Doug Miller, Walter Fernets, Mike Williams.

<u>ITEM</u>	<u>DETAIL</u>	<u>ACTION</u>
113.	A review of the past summers activities and financial statement was given.	G.N. Patterson
114.	A possible slate for next years executive was discussed.	G.N. Patterson
115.	A motion to be introduced at the General Meeting for the disbursement of the sum of \$100.00 for the purchase of bond paper for the printing of the newsletter was discussed.	John Greer
b)	An increase of \$1.00 per year in the subscription rate of the newsletter to help cover mailing costs was discussed.	John Greer
116.	Some maintenance is required at the dark site; those willing to help, please contact Gordon Patterson or John Greer.	G.N. Patterson

MINUTES OF A GENERAL MEETING

Saskatoon Centre of the Royal Astronomical Society of Canada

PLACE - - - Room B.111 Health Sciences Bldg. U of S Campus

DAY/DATE - Monday, September 20, 1982

TIME - 8:00 p.m. C.S.T

Executive Members Present: Gordon Patterson, Mike Wesolowski
Jim Young, Lillia Wilcox, Patrick Skinner, Joan Badger,
John Greer, Doug Miller, Walter Fernets, Mike Williams.

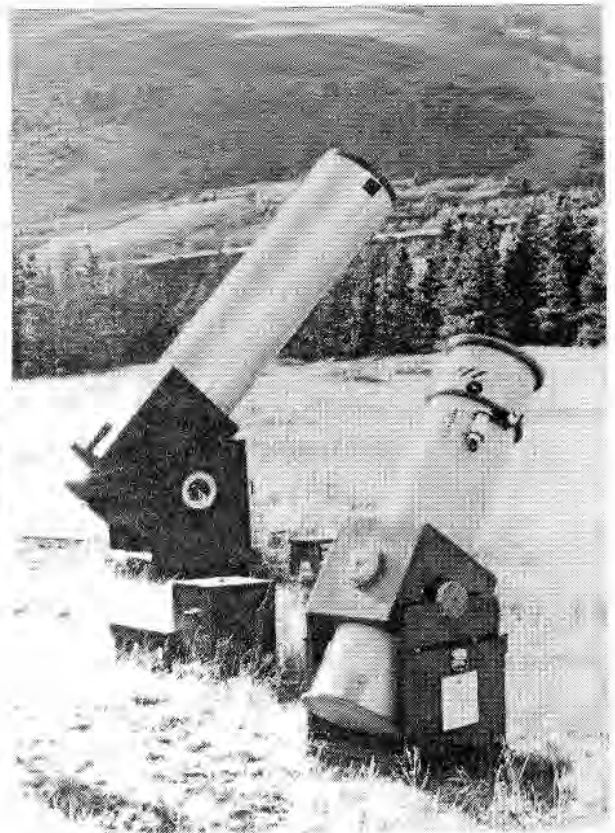
- | <u>ITEM</u> | <u>DETAIL</u> | <u>ACTION</u> |
|-------------|---|---------------------------|
| 117. | Meeting called to order at 8:00 p.m. | G.N. Patterson |
| 118. | July and August minutes adopted as published
Ron Waldron
Jim Young | G.N. Patterson
CARRIED |
| 119. | Membership fees are due next month (October),
please remit as soon as possible. | G.N. Patterson |
| 120. | Proposed slate of candidates as follows:
Hon. President.....Ray Skinner
Past President.....Gordon Patterson
President.....Mike Wesolowski
Vice President.....John Greer
Secretary.....Lillia Wilcox
Treasurer.....Mike Williams
Programming.....Ron Waldron
Activities.....Walter Fernets
Librarian.....Joan Badger
Editor.....John Greer
Councillors.....Len Herrem
Pat Skinner
Tarek Fahmi
Gordon Mack
Doug Miller
Richard Huziak
Centre Rep.....Jim Young | |
| 121. | The Rystrom Complex Committee is as follows:
John Greer
Mike Wesolowski
Merlyn Melby
Gordon Patterson | |

MINUTES OF A GENERAL MEETING - Continued

<u>ITEM</u>	<u>DETAIL</u>	<u>ACTION</u>
122.	A motion was made that the Centre disburse \$100.00 toward the purchase of bond paper for the printing of the newsletter.	John Greer Jim Young CARRIED
b)	Motion that the subscription cost of the newsletter be increased by \$1.00 per year to cover increased mailing costs.	John Greer Wendel Frenzel CARRIED
c)	The above motion means that membership costs for the coming year will be: Adult \$25.00 Youth \$17.50	
123.	Newsletters will be mailed to members who are unable to pick them up at the observers group or General meetings.	John Greer
124.	Classes in Fundamentals of Astronomy and Astrophotography will be held at 79 Baldwin Cres. on Sat. nights at 7:00pm starting after the october General Meeting.	G.N. Patterson
125.	Members interested in participating in the Messier photographic catalogue project please contact John Greer at 664-2933.	John Greer
126.	A slide presentation of the summer activities was presented, including; Astronomy Day, G.A. '82, Public Star Nights, Perseid Meteor Shower Watch, Construction on the 16 inch Centre Telescope.	G.N. Patterson Mike Wesolowski
127.	Meeting adjourned to U of S Observatory at 9:20 pm.	G.N. Patterson



All in one car!



Eetook and the monster



John Dobson



Telescopes on tour

AROUND THE CENTRE

A Résumé on the Activities of the Centre



The Dobson Tour in Waterton National Park ...John Greer

During the past summer, the San Francisco Sidewalk Astronomers came to Canada, touring through British Columbia and the Alberta mountain National Parks.

On August 15, Joan Badger and I left Saskatoon to drive to Waterton National Park in southwestern Alberta, where we were to join the tour during its stay in the area.

The logistics of transporting Eetook (the Centre's 12½ inch Dobsonian reflector), several other telescopes, a large quantity of photographic equipment, a load of camping gear, and ourselves, became most interesting when we began loading everything into the vehicle we were using as transport, a Mazda GLC. A previous trip into northern Saskatchewan with Eetook proved it could be carried in two GLC's, and on this trip we discovered it was indeed possible to do the job with one only.

The drive to Waterton was accomplished without incident, aside from a number of quite astonished looks from occupants of other cars, gas station attendants and innocent bystanders, as well as some interesting findings concerning the handling characteristics of a very small car with a rather large telescope on top in strong crosswinds and side drafts from semi's.

We arrived at Waterton townsite only to find, after some time spent searching, that the Tour was to be found at Crandell Campsite, some distance up a side valley west of town. After a few miles of driving, and a considerable climb in altitude, we found the astronomers and telescopes of the Tour set up in the campsite playground. Quite a few members of the public were in attendance with many questions and a great deal of interest being displayed under the clear, DARK sky. It should be noted that this location is about seven miles from the nearest electric lights and the mountain skies are very clear and very dark—at least Waterton skies, as the Tour had been almost totally clouded out for the past two weeks in Banff and Jasper Parks.

The next morning, we were able to meet everyone and see the telescopes in daylight, as well as set up our own equipment. After several years of use, we had become used to thinking of Eetook as a large telescope, but after seeing it in comparison with the collection of monsters the Sidewalk Astronomers had brought with them, it seemed to shrink down to pocket size. The full collection of telescopes in attendance at Waterton was a most impressive sight. In addition to the 24 inch, the Sidewalk Astronomers brought with them a sixteen inch, a couple of twelve's, and a smaller solar telescope, all of the dobsonian type we have come to know so well. The solar telescope, which uses an aluminized glass filter held at a 45° angle so that it also acts as a diagonal, provided excellent views of the sun during the day when all of the other telescopes were out of use.

In attendance as well were Ken Hewitt-White of Vancouver, who brought a 12½ inch equatorial newtonian, which is usually in use in the Community Astronomy program. Ken was the person with the interesting job of co-ordinating the Canadian portion of this year's Tour, including the task of getting all the equipment through the tender mercies of our Customs and Excise people. Also from Vancouver, Craig McCaw brought

his recently completed 17½ inch Dobsonian, which uses Coulter optical components and gives superb performance. Dave Belcher of Edmonton had his Questar 7 maksutov which he successfully guarded against a number of covetous astronomers.

The interest shown by the crowds at the evening lecture and question sessions did a great deal to ease the fatigue caused by being awakened at dawn by curious mule deer wandering through the campsite-this after being up observing past 4:00 am. Dawn comes very early in the mountains.

The feelings caused by being able to meet people who share your interests and who you have only read about up until that point, combined with the chance to be involved with a public astronomy program of such magnitude in which you have the chance to use telescopes which are normally found only in rainy evening fantasies is quite impossible to describe. The culmination of the trip was, of course, to meet John Dobson, one of the most fascinating members of the astronomical community. John has the energy and vitality of any ten astronomers and has been involved in astronomy as long as any ten astronomers. His contributions to public astronomy are enormous and continuing, and the chance to be involved in this undertaking with him was an enormous pleasure.

Special thanks go from us to the Sidewalk Astronomers, to Ken Hewitt-White, who invited us and skillfully kept the show on the rails, and to the staff and naturalists of Waterton Park, who when faced with a varied group far out of the realm of their normal activities, gave their full co-operation.

The Sidewalk Astronomers will be back, and so will we.

Astronomical Society of the Pacific

Recently, a number of copies of the ASP's Materials Catalogue have arrived here in Saskatoon. The ASP offers a selection of posters, photographs, slides and books related to astronomy and space science as well as other materials of interest including an invitation to become a member of the ASP.

For information, contact the editor at 664-2933 in Saskatoon.

Monsters on the Ground

Coulter Optical of California has recently introduced the latest member of the Odyssey line of telescopes, a 29 inch aperture Dobsonian which is billed as the world's largest production telescope. Also available is a line of lightweight finished optics and mirror blanks.

The Odyssey 29, the only telescope on the market which has a trailer option, retails for US \$3495.00.

1983 Memberships & Executive

The October meeting of the Saskatoon Centre will have two important functions-membership fees for the 1983 year are due, and the coming year's executive is to be elected.

Fees are set at; ADULT \$25.00, YOUTH \$17.50. These include Centre membership and newsletter subscription for the coming year. Please pay your fees as soon as possible as those who have paid on time will get first crack at the 1983 Observers Handbooks as soon as they arrive.

Celestron Releases

Celestron International has announced a number of new products for 1983, chief among them the C65, a Maksutov-Gregorian spotting telescope in the familiar orange wrapper with an aperture of 65mm. Also introduced is a new levelling tripod designed to satisfy the many thousands of Celestron owners who don't observe from perfectly level paved parking lots. Other new offerings include a number of eyepieces, and a new star atlas for Celestron users.

Telescope Wars

The battle between the orange and the blue appears to be heating up again as both sides prepare for the coming sales year.

Rumours to the effect that both sides have begun hiring armed mercenaries should not be taken too seriously, although reports that a number of optical designers and advertising copywriters have been admitted to California hospitals suffering from severely strained throat muscles caused by screaming matches are being investigated.

On another note, Criterion Scientific has been purchased by the Bushnell company, of binocular fame. In future, CSI products will be marketed under the Bushnell trademark, through their dealer network in Canada and the United States.

Astronomy, as it marches on, is becoming big business.



EDITORS PAGE

-Getting Busy-

With the end of the summer doldrums, it would appear that the Saskatoon Centre is coming back to life.

Well-not really, because the Centre's activities never came to a halt this summer. Usually, as the temperature rises and the nights get shorter, astronomy usually grinds slowly to a halt. However, this last summer, Centre members stayed unusually active here in Saskatoon and in other places.

We have played host to quite a number of visitors to the Centre and have been fortunate to welcome a few old friends back home.

The coming winter will also be far from idle for the members of the Saskatoon Centre. Several of the instruments that have been under construction for the last few years are nearing completion, a number of new telescopes and pieces of equipment have been purchased by members, and work on the Centre 16 inch is proceeding at a good pace.

The Rystrom Complex will soon be home to several ongoing observing projects, including the Messier photographic group, most of whom will be getting their first real taste of astronomy under extreme Arctic conditions, complete with helpful sled dog.

Come back to life indeed.

STAR TRAK

INSTRUMENTS

A WIDE RANGE OF ASTRONOMICAL SUPPLIES -

SPECIALSPECIALSPECIALSPECIALSPECIALSPECIALSPECIALSPECIALSPECIALSPECIAL

BINOCULAR PACKAGE:

includes.....7x50 Bushnell binoculars
10" Phillips planisphere
"The Friendly Stars" by Martin & Menzel
Night vision flashlight

package price
.....\$85.00save \$11.14

BEGINNERS BOOK PACKAGE

includes.....10" Phillips planisphere
"All About Telescopes" by Sam Brown
"The Friendly Stars" by Martin & Menzel

package price
.....\$25.00save \$4.95

BEGINNERS TELESCOPE PACKAGE

includes.....4 $\frac{1}{4}$ inch Newtonian hand held telescope
(1 $\frac{1}{4}$ inch Kellner eyepiece included)
10" Phillips planisphere
"All About Telescopes" by Sam Brown
"Astronomical Companion" by Guy Ottewell

package price
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Note That 1983 R.A.S.C. Memberships Available At Our Shop.....

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