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THE PRAIRIE ASTRONOMER

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That Big 236-Inch Russian Telescope: Not A Disaster After All

After several years of speculation among astronomers that the world's largest telescope was a failure, an American scientist has used the instrument, which sits on a summit in the Caucasus Mountains of the Soviet Union, to obtain spectrums of distant, faint stars that he says are "just fabulous."

So powerful is the telescope, he says, that as it swings to a new target some of the stars appearing in the field of view are too bright to be viewed comfortably.

The astronomer is Dr. A. G. Davis Philip of the Dudley Observatory, an independent institution in Schenectady, N.Y., operated in cooperation with Union College (N.Y.).

Although groups from Britain, France, West Germany and East Germany have used the telescope at Zelunchukskaya, little information about its history has been disclosed. According to the accounts of European astronomers, it appears that it took four tries for Soviet scientists to install the key element of the telescope, a massive mirror 236 inches in diameter.

The first mirror was unusable, the second was cracked and the surface of the third had a number of imperfect areas that would have blurred

the images, the astronomers say. On the fourth, successful attempt, a new thinner design was apparently used.

The Soviet mirror's "resolving power", or ability to record fine detail, appears to be comparable with that of the Palomar Mountain reflector. The latter, with the aid of electronic image intensifiers, can reportedly see fainter objects, but the larger size of the Soviet mirror makes for greater light-gathering ability, an advantage in obtaining spectrums like those sought by Dr. Philip and his co-observer, Dr. Nikolai Samus of the Sternberg Institute in Moscow.

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DECEMBER MEETING ANNOUNCEMENT

The December meeting of the Prairie Astronomy Club will be held at Hyde Observatory, Tuesday, December 30, 7:30 p.m.

Jack Dunn will have "the missing videotape" of the Voyager 1 Saturn encounter. We'll have information on how to use your telescope for anybody who got one for Christmas, plus the arrival of club shirts and RASC Observer's Handbooks.

Also, Jeanne Miller wants to talk about a trip to Hutchinson, KS to see the Imax System.

For Those Who Didn't Attend:

A RECAP OF THE NOVEMBER PRAIRIE ASTRONOMY CLUB MEETING

We will try to condense the minutes rendered by our new club secretary, Merton Sprengel, who waxes extremely poetic, apparently, when seated in front of a glowing VDT, because the minutes ran to an incredible five (count 'em, five) tightly-packed pages, on last month's meeting. I was there, but I don't remember that much happening. Maybe I dozed off! Anyway, for those with an inclination to discover what really goes on in these meetings, complete with editorial interpretations, your editor suggests you get hold of a copy of Merton's Official Minutes. Oh, and if you wish to avoid Going Down In History, best watch what you say during meetings from now on.

Announcements: November star party attracted only three hearty souls. December star party was scheduled for the 5th. Income from posters in November was about \$21. Since March, income at the Observatory has totalled nearly \$250.

The Astronomical League Midstates Convention plans were announced by Earl Moser, and include possible ex-

cursions to NU's Meade facility, to Hyde Observatory, Mueller Planetarium, the State Museum, the Omaha Club's "Astro Park", and the planetarium in Fremont. Don Taylor may be one of the speakers. There will be display space, and the club may put together a display, according to President Ron Veys.

The week of November 30-December 6 was designated National Planetarium Week.

A pamphlet produced by the club on "How To Buy A Telescope" was available to gift-givers again this year. The December meeting will be devoted partially to explaining the use of telescopes to those lucky enough to have received instruments as Christmas gifts.

Jeanne Miller reported on the status of the club's shirts, and orders were taken for same. A minimum of 18 must be ordered at \$11.25 each. The color is dark blue. The logo was chosen by club members in a secret ballot. The winner, Entry "F", was submitted by Jeanne Miller, and

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Russian Telescope Works

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The chief disadvantage of the new Soviet instrument is the weather over the site at Zelunchukskaya. Dr. Philip says that he and his colleague were lucky in being able to observe on three of the six nights allocated to them.

The Soviet astronomers knew their site in the Caucasus was far from ideal. Placing an observatory in the arid region southeast of the Ural Mountains was ruled out because of the difficulty of transporting so huge a mirror there. When Chile was ruled by a government that was friendlier to Moscow, the Russians reportedly began negotiating for a site in the Andes. Discussions ended when the Chilean Government was overthrown.

The new mirror produces no noticeable distortions, according to Dr. Philip. The astronomer's field of view at most of the telescope's observing stations is only one-tenth the apparent field of the Moon as viewed from Earth, although a television display at one station shows a larger field. The position of the object to be viewed must therefore be known with great accuracy.

The aiming mechanism sets the telescope "very nicely", Dr. Philip says, but because of the telescope's novel mount the star images fly past in dizzyingly random directions as it swings to a new target. Most astronomical telescopes are mounted on an axis parallel to the

spin axis of the Earth. To keep the target in view, once it has been found, it is then only necessary to rotate the mount around that axis in a direction opposite the Earth's rotation.

The Soviet instrument, however, is mounted like a large naval gun, whose aim depends both on rotating the turret and elevating the barrel. To track a point in the sky as the Earth rotates, a computer controls constant motion in both rotation and elevation. Because the field of view rotates, the photographic plate holder must also be rotated.

While such mounts are rare, they are well adapted to heavy installations, such as the world's largest fully movable radio telescope in West Germany, and the multiple-mirror optical telescope on top of Mount Hopkins in Arizona.

(--From THE NEW YORK TIMES)

RASC Handbooks Arrive

If you purchased a RASC Handbook for 1981, be sure to attend the December meeting--the shipment has arrived. As you will recall, this year advance payment was necessary, so copies are pre-paid and belong to those whose names appear on the sign-up list. No extras were ordered.

Side note: You remember the condition of last year's package from Canada after the postal service had its way? Well, it was a near-miss this year, too. Again, the package

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NOVEMBER MEETING RECAP

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the final design has now been rendered by artist Ron Veys (our multi-talented Chief Executive Officer). It consists of a processed photo of M51, minus its companion galaxy, below the words "PRAIRIE ASTRONOMY CLUB". Jeanne gets a free shirt for her conceptualization of the logo. Ron gets our eternal gratitude for his work.

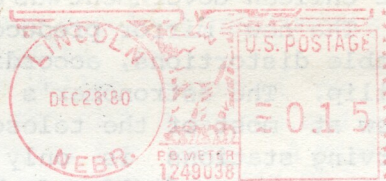
The program, minus the videotape of Saturn announced in the newsletter, consisted of a computer-simulated flyby of Saturn and a potpourri of slides from the Voyager 1 Saturn flyby, freshly purloined from one of Jack Dunn's secret sources at NASA.

Jack made a plea for club members to write their congressmen in support of more space research funds, particularly with the change in Administration and inevitable reshuffling of the Federal budget.

The meeting adjourned at a time not recorded by the Club Secretary. (It was the only detail he missed during the whole evening.)

HANDBOOKS (From Page 3)
had apparently been opened for customs inspection and rewrapped in a plastic baggie. The baggie just barely survived transit--one of the handbooks was jutting ominously out of a hole in the bag when the postman wedged it into my mailbox.

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