

SASKATOON SKIES

Volume 22, Number 8

September, 1992

- In this issue
- Minutes of Special Executive Meeting (July 13, 1992)
 - Editor's Notes
 - The 490 Veritas Occultation
 - The July Star Night - Part 1
 - Dear Mikey
The editor answers readers' urgent questions on astronomy
 - Happenings at the University of Saskatchewan
 - Seeing Things
Observations from Richard Huziak's Observing Log

Saskatoon Skies Information

Next month's deadline is Friday, September 25, 1992. Please have any submissions in to me by then in order to be included in the next issue. Saskatoon Skies is a monthly publication of the Saskatoon Centre of the Royal Astronomical Society of Canada. Submissions may be sent to one of the following:

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S7J 3C2
373-0137 (home)
931-3425 (work)

OR

Saskatoon Centre RASC
Box 317, Sub P.O. #6
Saskatoon, Sask.
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Submissions mailed to the Centre's address may not be retrieved in time for inclusion unless you tell me it's there.

Minutes of the Special Executive Meeting
University of Saskatchewan Observatory
July 13, 1992

Attendees: A. Hartridge, J. Young, D. Rybotycki, E. Kennedy, M. Wesolowski, R. Huziak,
B. Hydromako, C. Blenkin

Item	Detail	Action
183.	Meeting called to order 7:35 PM.	R. Huziak
184.	Tim Sloboda has changed his name to Harrison.	R. Huziak
185.	We have ordered several copies of <i>The Beginner's Observing Guide</i> from National. It is hoped that they will be here in time for the star night.	R. Huziak
186.	The public star night will be held on July 24/25. We will have some new signs made up by then.	R. Huziak
187.	Mike Wesolowski will be publishing one newsletter for the months of July and August.	R. Huziak
188.	It was suggested that new executive positions, with specific responsibilities, be created and assigned rather than have councillors with no specific responsibilities.	R. Huziak
189.	The telescope committee is ready to begin the design for a new observatory to house the 16".	R. Huziak
190.	A refurbished Eetook has been returned to the dark site.	R. Huziak
191.	Highlights from the just completed General Assembly were discussed: <ul style="list-style-type: none"> - The National Council meeting went from 10 AM to 6 PM. - The motion for the proposed fee increase was defeated with 227 opposed and 57 for. - In the future, the Saskatoon Centre will have to pay more for sending a national representative. - The Journal and other publications were discussed. - The letters which had been sent to the GA were read. - Members were asked to fill out the membership survey. Three hundred eight-nine have been returned to date. - The National Office is looking for an Astronomy Day chairperson. - There is no effort to preserve observations made by the members.. 	E. Kennedy
192.	The meeting was adjourned 9:10 PM.	R. Huziak J. Young

UNIVERSITY OF SASKATCHEWAN OBSERVATORY HOURS

The University of Saskatchewan Observatory will be open to the public on Saturday evenings from 8:30 – 10:30 P.M. during the month of September. Visitors will be able to see Saturn and its rings, the Hercules star cluster, the Albireo double star system and other celestial objects. Observatory assistants will be on hand to answer questions and assist in observing through the telescope.

EDITOR'S NOTES

1) It seems to me that in an earlier issue of this newsletter, I urged members to get out and observe this summer, taking advantage of the warmer weather. As we are all no doubt aware, the warmer weather didn't really put in the expected appearance this summer. So much for my career as a weather forecaster!

2) The next General Meeting will be on Monday, September 21, at the usual location in the Health Sciences Building. The official meeting notice appears elsewhere in this issue.

3) This is a reminder that the October General Meeting will take place on Monday, October 19. This meeting will "wrap up" the summer activities and provide a forum for members to show what they've done this summer. The annual elections also take place at this meeting. Most positions will be open, including mine (see below). You don't have to be technically qualified for any of these positions; the only real qualification is to accept responsibility for the task you are being given. Please consider taking on an executive position. It's not that tough!

4) In a recent visit to the Rystrom observatory, I was reminded that the Rystrom's would prefer it if we phoned ahead first to announce that we were coming. It was likened to having someone walk into your back yard unannounced. I'm as guilty as anyone else of overlooking this courtesy; please remember in the future. The number to call is 955-2370, for Nelson or Gloria.

5) By the time you receive this newsletter, NASA may have launched its latest planetary mission, the Mars Observer. The first of a planned international series of unmanned probes, Mars Observer is intended to orbit Mars for a period of 2 years (one Martian year), mapping the surface and acting as a Martian weather satellite. For additional information, refer to the October, 1992, issue of *Sky and Telescope* magazine, and the September, 1992, issue of *Astronomy* magazine.

6) For the second time in my life, I have acted as the editor for Saskatoon Skies. The first time, I was only a little older than the previous editor, Jeff Phillips. Both of us were still in high school at the time that we served in this position. I wonder what my English teacher would have thought if she knew!

At any rate, I feel that I won't be able to continue in this position during the coming year. At the time of writing (early September), there exists a strong possibility that I will be making several work related trips over the next several months, most likely for periods of one to two weeks, but possibly for up to a month at a time. As a result I would not be able to guarantee that the newsletter would be published early enough for the members to get sufficient notice of meetings and other events. It is to be hoped that the work situation will stabilize by next year at this time.

This can be considered to be an appeal for any members who might want to consider becoming the editor for a minimum period of one year. The minimum equipment required is a typewriter, although for people like me, I would recommend a computer of some sort with either a simple text editor or document publishing software. Depending upon the software you use, it is possible that it can be arranged for your newsletter to be printed on a laser printer, as it is currently. If you are at all interested in this position, give me a call at 373-0137.

THE 490 VERITAS SAO 143850 OCCULTATION

Richard Huziak

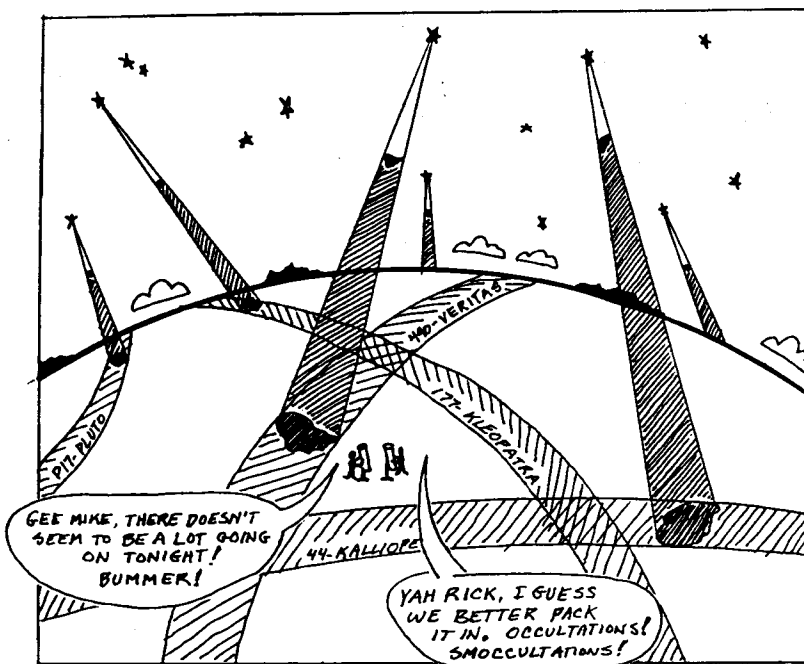
Getting into asteroid occultation work has been quite fascinating. Thus far, Mike Wesolowski and I have attempted to observe 4 occultations. The night of the Perseid Star Night, August 8–9, 1992, presented the opportunity to see an easy occultation of 9th magnitude star SAO 143850 by the 13th magnitude asteroid 490 Veritas. With any luck, we would see the asteroid cover the star for up to 16 seconds, should the track pass directly over us. Initial predictions were for the track to pass a few hundred kilometres north of us, but alternate predictions put the track a hundred kilometres to the south. Split the difference, and we were in business. Mike called the IOTA (the International Occultation Timing Association) hotline that evening, but no clearer prediction was available.

Mike set up a WWV radio and tape recorder, so that we could get accurate timings of the disappearance and reappearance by recording time signals and our voices simultaneously. I used the 12.5" Eetook newtonian while Mike used the C-8 in the dome. Finding the star was not a problem, as at 9th magnitude, it was visible in binoculars and the telescopes' spotters despite the full moon being only 15 degrees away. And then we waited...

Mike began observing at 5:57:00 UT, (11:57PM CST) 11 minutes prior to the predicted occultation. I began two minutes later. The anticipation made my heart palpitate [I think that those who were, watching you were somewhat less excited! – Ed.]. The predicted time grew nearer and nearer. "This should be great", I thought. Then, all of a sudden, nothing happened. Although both of us kept the star in our fields until 6:18:00 UT, no occultation of any sort was seen. Major bummer.

But spirits high, this is not an unvaluable observation. Although we were missed by the occultation path, the clear sky around the asteroid shows what wasn't there, such as a potential satellite. (Some asteroids show evidence of satellites from past occultation results). We will still send our results into IOTA as the results are scientifically useful.

Mid September also will bring a rush of asteroid occultations, and Mike and I will be out watching them. By the time you read this article, we may have actually observed a real occultation instead of the narrow misses we've encountered in all the past trials.



THE PUBLIC STAR NIGHT IN DIEFENBAKER PARK

Richard Huziak

Part 1 – Friday Night

The report on the public star night will come in two parts, as I was able to attend on the Friday night session. Sandy Ferguson will report on Saturday's festivities in next month's issue.

All things considered, Friday night went fairly well. We had about 8 members and five telescopes out including Scott Alexander's 14", and Gordon Sarty's homebuilt 8" (with a mirror he ground AND silvered himself). As always, weather was a problem with the Variable Cloud Watcher Division getting in a wonderful set of observations. But there is good news. We did have large gaping holes in the clouds periodically and did manage to view Saturn, M13, Mizar/Alcor, M27, M11, Alberio, IC 4665, and a number of other objects before we gave up just after midnight. About 30 guests from the general public helped us view through the night, and many of these people vowed to return on Saturday night if the weather was better.

Several members contributed significantly to the star night. Mike Williams got the new Beginning Observer's Handbooks in on time, Carol Blenkin silkscreened some great RASC armbands (so the general public knows who to talk to), Allan Hartridge built a car-battery-operated red-light table for brochures and information, and Sandy Ferguson did a great job of organizing and promotion. Many others helped in other ways to make the starnight a success.

NOW AVAILABLE!

The Beginner's Observing Guide by long-time RASC member, Leo Enright.

1992 edition, 116 pages, softcover, spiral bound

This publication is just what beginning observers need. It has clear and concise descriptions of what to look at, how to see it and what instrument to use. It emphasises using your eyes, binoculars and small telescopes. A great value and excellent resource for the beginner. And at this price, you can afford to buy one for a friend.

Order yours now at only **\$5.35** for pickup orders.

The Guide will be available at the General Meeting, or call Rick at 665-3392 to receive your advance copy. Please include \$1.60 postage if you want the book mailed to you. Make out cheques or money orders to "Saskatoon Centre, RASC".

The Beginner's Observing Guide 1992

An Introduction to the Night Sky
for the Novice Stargazer



Leo Enright
The Royal Astronomical Society of Canada

DEAR MIKEY...

The following are some questions I received a very long time ago for the "Dear Mikey" column. I apologize for the delay in publishing them. I believe that these were questions originally asked by a child. These questions approximate the type of questions I have encountered when making presentations to the Grade 1, 2 or 3 level children. How would YOU answer these?

Where is the Earth in reference to space? Unfortunately, this question cannot really be answered the way it is phrased because "space" encompasses so much. One possible answer is that the Earth is "in" space. Unless the questioner defines what space is, no better answer is possible.

How many craters are there on the moon? The answer is, I don't know. Craters come in all sizes, from some large enough to hold a city to very small ones that can't be seen unless you are actually on the moon. At the very least, hundreds or even thousands can be seen with a telescope alone, on the one side of the moon that we can see. I don't know if anyone has ever tried to count them.

How fast are meteors travelling when they hit the Earth? The *Observer's Handbook 1992* provides a listing of a number of meteor showers that occur throughout the year, and shows that meteors may have speeds of between 18 and 70 km/s when they hit the earth's atmosphere, depending upon the shower. Presumably "sporadic" meteors, those not associated with a known shower, have comparable speeds. As to how fast they are moving if and when they hit the Earth, the *Handbook* also indicates that a paper published in 1989 concluded that a "typical" meteorite had a speed of about 15 km/s and a mass of 0.6 kg when they landed. A factor here is the initial size of the meteor. A very large meteor, for example, a "dinosaur killer", would not likely be slowed down much by the Earth's atmosphere before it hit the earth itself, so the final velocity could be much higher.

How many stars are there? Another difficult question. All the stars we see at night are part of our own galaxy, which is a pinwheel shaped collection of an estimated 100 billion stars. We can only see a tiny fraction of these stars, even with a telescope. Throughout the universe, there are probably hundreds of millions or even billions of galaxies, each with billions of stars. Therefore, the number of stars is very large, and we can only estimate how many there are. Suffice to say that there are a lot of zeros in the number!

What star is nearest Earth? The usual "trick" answer to this question is, the sun, since it is a star. The answer to the implied question "what star is nearest the solar system?" is a star called "Proxima Centauri". This star is located in the constellation Centaurus, and is visible in a small telescope, though not from Saskatoon. It is located about 4.2 light years away.

What is the farthest visible body outside our solar system by an average 8" telescope? The quasar 3C273, located in the constellation Virgo, is located about 2 billion light years away, and shines at about 13th magnitude, which is very near the limit for an 8" telescope. I have actually observed this object, using an 8" Celestron. The *Observer's Handbook 1992* also provides a finder chart on page 229.

Is there life in space? Nobody knows for sure. Chances are there is life somewhere, but whether or not it is advanced enough to communicate with is another question. It could be in the form of bacteria. A number of attempts have been made to detect life, some of which are ongoing. In 1976, the United States landed two robots called Viking 1 and 2 on Mars, equipped with experiments to detect simple life if it existed. These experiments did not detect life forms at all. More recently, an experiment is in progress to attempt to detect radio signals from other stars (more specifically, from unseen planets orbiting these stars).

Is war in space possible? Why would you want to? It costs so much to put equipment into space that I for one would be very reluctant to see it destroyed in a battle. At any rate, the answer to the question is probably yes, but it would not resemble the space battles as presented in movies. Because there is no air in space, spacecraft would not be able to manoeuvre like aircraft, as is often shown (*Star Wars*, *The Last Starfighter*, and probably others of more recent vintage).

SEPTEMBER GENERAL MEETING

"THE MOUNT KOBAN EXPERIENCE"

a presentation by Al Hartridge, Scott Alexander and Jim Young



Monday, September 21, 1992

8:00 P.M.

Room B-111, Health Sciences Building,
University of Saskatchewan Campus

Come and enjoy this lecture by 3 well known members of the Saskatoon Centre RASC as they share their exciting experience of the 1992 Mount Kobau Star Party, one of Canada's most prestigious star parties. Mount Kobau is located near Osoyoos, British Columbia, and was one of the original mountain-top test sites for the Canada-France-Hawaii Telescope. Come hear their stories of observing at 5000 feet in clear skies. What does the Dumbbell Nebula really look like through Scott's 14" telescope? And who will forget the view of the Andromeda Galaxy through an amateur's 36" Dobsonian?.. This and much, much more. Al guarantees lots of excellent photographs. Be there, or be Pegasus (square).

Coffee will be served after the lecture in the U of S Observatory.

UNIVERSITY OF SASKATCHEWAN LECTURES

There are a series of lectures taking place on Saturday, September 19, at the University of Saskatchewan, two of which may be of particular interest to members. Details are:

Room 206 Arts, 11 AM

"Thar She Blows! Solar Eruptions and the Northern Lights"

George Sofko

Room 202 Arts, 12PM

"Space Shuttles, Space Stations and Crystals"

Louis Delbaere

For additional information, call:

Community Relations Office

University of Saskatchewan

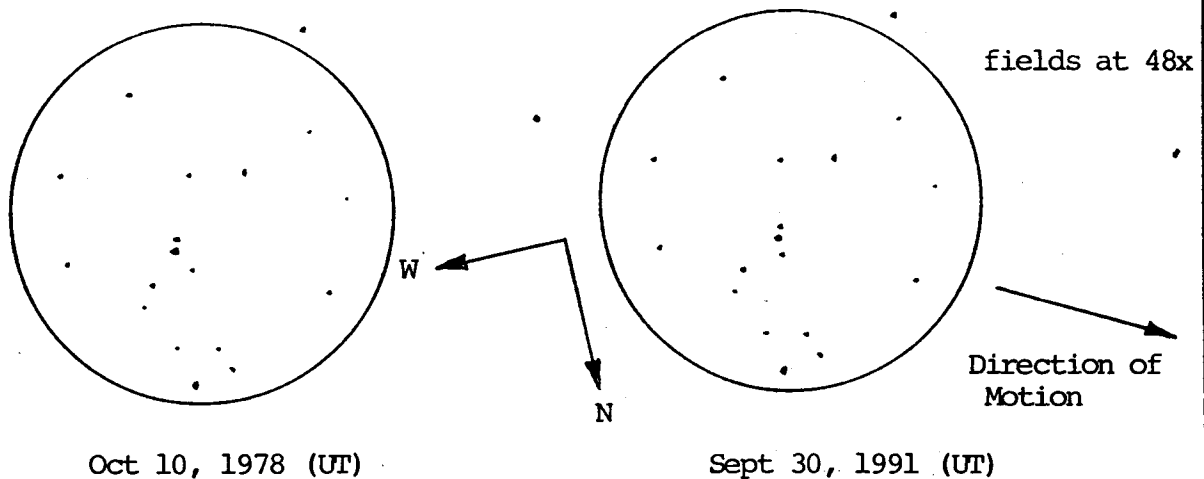
966-6610

SEEING THINGS!

The Proper Motion of 61 Cygni

I find it difficult to plan long term projects in astronomy because I never know how much time I will have to dedicate to them. Back in 1978, however, I committed to a very long term project of trying to see if I could detect the proper motion of 61 Cygni, the fourth closest star system.

61 Cygni is an interesting system, a double star of two red dwarf stars, both about one-half the mass of the sun. A third body of 6 Jupiter masses is suspected in the system as well. In a telescope the orange-red dull glow of these stars is obvious. The components are currently separated by about 40 arc seconds, so it is an easy double in any telescope. But the best part of this system is that it is flying through space at a whopping 5.22 arc seconds



per year! This is so fast that the motion can be detected visually in just a few years.

In 1978, I made an accurate drawing of the field of 61 Cygni. (61 Cygni is the double star near the center of the field). This year, I made the followup observation and recorded the drawing shown at right. The proper motion of 61 Cygni is obvious! After 13 years, the star has moved 68 arc seconds. I find this interesting, as I have now seen a component of the rotation of the galaxy! And I did so with a 4-1/4" telescope! I do intend to make a followup observation again in the year 2004, but in the mean time, I may either photograph the field, or draw it again at a higher power and a higher accuracy so that I can detect the motion in a shorter period. (The one arc second per two month motion would be easily detectible in this way).

I do have one other proper motion project on the books. About the same time as I made the first observation of this star, I also observed and drew Barnard's Star. This star moves at twice the rate of 61 Cygni. I am looking forward to the followup to this.

Richard Huziak