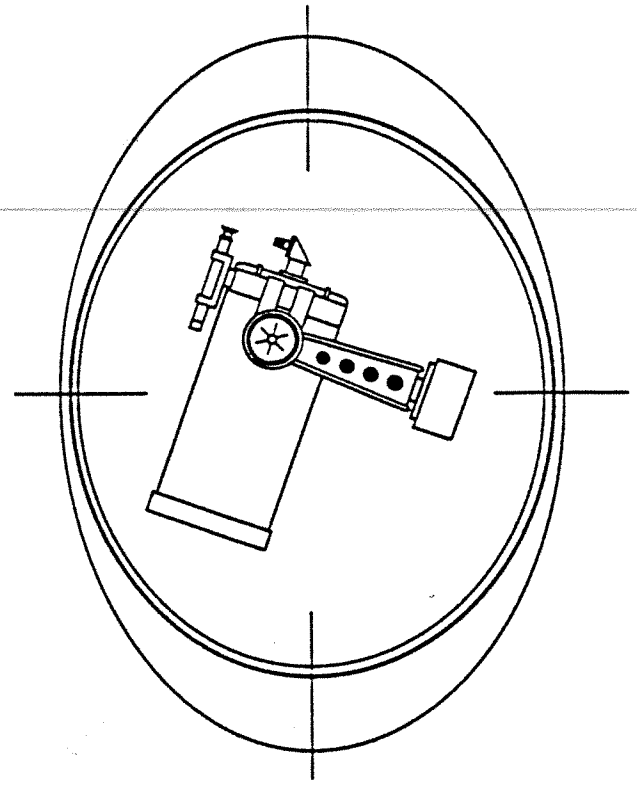
The WINNICENTRICS

A Publication of
The Royal Astronomical Society of Canada
Winnipeg Centre



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Winnipeg , MB
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Vol. 28 No. 6 November/December 1988

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Observatory Director	- Lorence Mlodzinski (668-3974)
WINNICENTRICS Editor	- Myra Rutkowski (269-7553)

** Please send WINNICENTRICS articles to:
P.O. Box 1918, Winnipeg, Manitoba, R3C 3R2
(204) 269-7553

- SHOW A KID THE SKY: Hats off to Dave Trimble and Rene Gauthier for all the kids' groups they are looking after this fall. One of our Society's mandates is to help educate and increase the public's awareness of astronomy. Helping kids earn their badges and explore the sky is a fun way to do that. If you can spare an evening to help Dave and Rene, please call Dave at 237-3858 (evenings) or Rene at 889-0983 (days).

- ASTRONOMY 10000000001 & HOW TO CHOOSE A TELESCOPE: Finding your way around the sky for the first time and figuring out which telescope is best for you can be very frustrating by yourself. A one or two evening introduction to both these subjects will be offered later this year. For more info contact Chris Brown at 775-6392.

MARS WATCH

Friday, Oct. 7, 1988, found many of our Centre members at a Public Mars Watch at Assiniboine Park. Paul Paradis, Ed Hlady, John Haines, Chris Brown, Stan Runge and several others including a couple of Rutkowski's all participated by helping the crowd observe various celestial phenomena. About ten scopes were out, and long lines formed at each one. The crowd was estimated at about 250 people, easily one of the best public observing sessions ever. We had a fair amount of publicity for the event from both TV and newspapers. Chris Brown was interviewed by CBC-TV at the site, and his lucidity was awe-inspiring. This Mars Watch was presented as a co-operative effort by the Winnipeg Centre and the Manitoba Planetarium.

Shooting Stars

- WE NEED YOUR ASTRO-PHOTOS: Members of our centre are making a short presentation for a Spring Planetarium show. It will be about amateurs at a star party. We need all sorts of photos, both of things in the sky and of people, telescopes and the like. Bring your photos to the next meeting or call Chris Brown at 775-6392. We promise they will be treated like gold.

- UP-COMING STAR PARTY DATES:

  Saturday, Nov. 5, 1988
  (if cloudy, Sat. Nov. 12)

  Saturday, Dec. 3, 1988
  (if cloudy, Sat. Dec. 10)

  Held at the Glenlea Observatory from dusk 'til...

  These parties are a great chance to meet other members, share views of the sky and check out other telescopes to see what you like.

  If you come after dark, please remember to turn off your headlights and use parking lights only on the driveway.

  New members: Ask one of the executive listed at the front of this issue for directions to the observatory. There is a warm-up room but dress very warmly and bring a thermos if you like.

Up-Coming Meetings

NOVEMBER 18, 1988 (NOT the 11th!)
8:00 p.m.
100 St. Paul's College

Professor Douglas Forbes, a Visiting Lecturer in Astronomy at the University of Manitoba, will present a talk on everybody's favorite element, Helium! He will tell us about its abundance in the galaxy, its distribution in the Solar System, and also exactly why our voices sound funny when we inhale some of it.

DECEMBER 9, 1988
8:00 p.m.
Room 237, University College (NOT St. Paul's!)

Dr. Richard Bochonko will present his lecture on the latest news about Supernova 1987A (named after our own Ian Shelton). The lecture is in University College so that we can watch part of the presentation on the giant videodisc system which is installed in that room. The screen is 15 feet high, and date I mention the sound system? Waugh!

JANUARY 13, 1989
8:00 p.m.
100 St. Paul's College (back to normal!)

Wayne Jaworski, former Centre Council member, is now with Apple Computers, and he has just returned to Winnipeg after completing his Masters in Astronomy in Victoria. He will present information from his work on the Tail of Halley's Comet, done at the Dominion Astrophysical Observatory.

The Political Astronomer

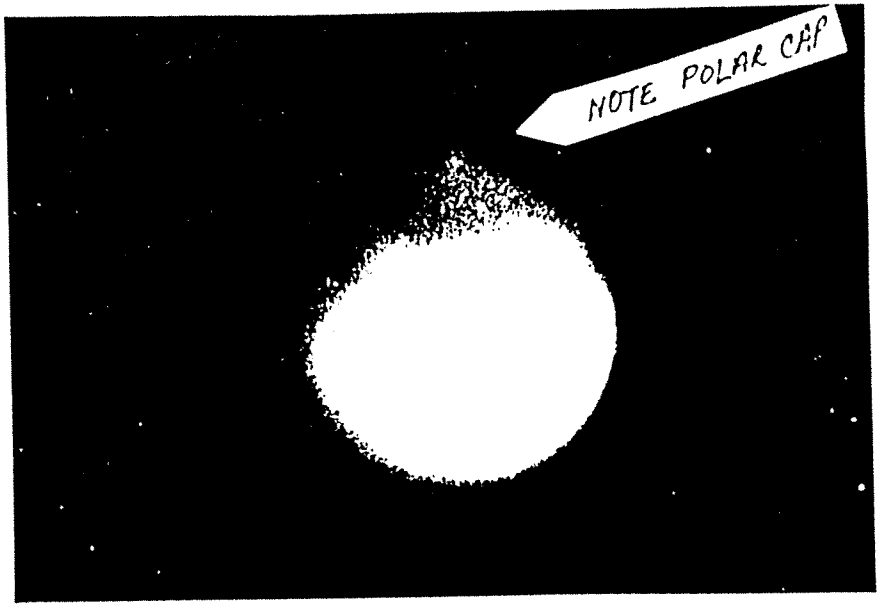
by Chris Rutkowski,
President, Wpg. Centre, RASC

This past spring, John Haines, who was then President of the Winnipeg Centre, called me up to get my help in planning the September Meeting. He suggested that it would be very interesting if we were to get Federal representatives of the three political parties to speak at the meeting and offer their platforms on funding the sciences, and in particular, astronomy. He asked for my help in arranging things, as he would be busy for the next few months, and needed my assistance. Not only would the event be an RASC meeting, but it could also be the first joint RASC/St. Paul's College offering of the Astronomy Lecture Series at the University of Manitoba. Having St. Paul's College agree to the meeting was the easy part.

I initially had to determinewho we would ask to come and speak with us. The Minister of State for Science and Technology is Frank Oberle, although his duties are somehow shared with Robert de Cotret. I found out who the science critics were for the Liberals and NDP, then sent all three letters detailing our request and asking for a reply within a month. Since our Meeting was early in September, we would need to know who was coming by mid-August, so that we could announce the event publicly and put the notice in Winnicentrics, our Centre newsletter.

Of course, by the deadline at the beginning of August, none of the MP's had replied. As it happened, I had to go to Ottawa to use the National Library, so I decided to drop in at the House of Commons as well during that week. I spoke with all three offices, but none were willing to commit themselves to come to Winnipeg, each for their own reason. I returned home and called John Haines. I explained the situation, and we discussed alternatives. We decided that instead of Federal Representatives, we would get Provincial politicians to act on behalf of their National Parties. Well, it seemed logical.

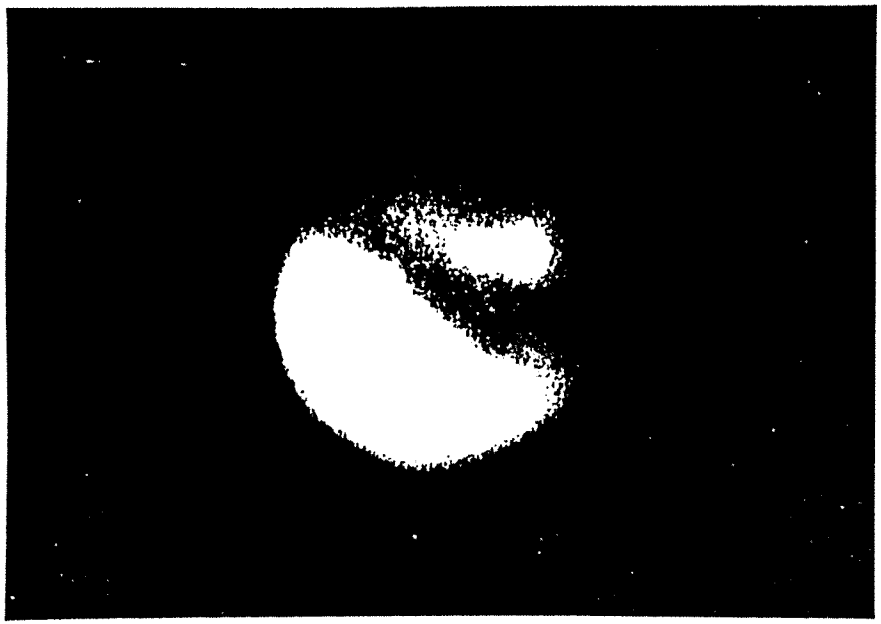
I then contacted each Provincial Party headquarters and tried to find out who was the Science critic. One office didn't know if they had one. Eventually, I spoke with John Angus for the Liberals, Jim Ernst for the Conservatives, and Harry Kelly, who was a researcher for the NDP. I then had to send each of them a formal letter of invitation, and requested that they reply as soon as



4) If you are not sure what you are doing, ask one of the members, like myself, who are familiar with the telescope.

I have included several pictures of my success with this article.

Stan Runge



possible. Finally, I was able to get their verbal committment to attend. I notified St. Paul's College, and Dr. David Lawless helped us by arranging to have a press release sent out. I worked on posters and other advertising. Dr. Lawless also agreed to be Chairman for the event.

A week away from the meeting, a few snags began to appear.

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I first received a telephone call from the office of David Berger, a Liberal MP who was working with John Turner on a Science Policy. It seemed that he was going across Canada promoting the policy, and his first stop was Winnipeg. HIs office indicated he would attend. As I sat pondering this news, I looked over my mail. Among the miscellany was a large package from the office of Mr. Bruce Howe, under Frank Oberle. The package consisted of several documents outlining PC science policies and programs, and a letter telling us that Mr. Howe would be attending. Reading through the literature, my attention was drawn to a mention that NDP MP David Orlikow was involved in a number of Standing Tripartisan Committees on Science Policy. Since he was a Winnipeg MP, I called his office to let them know of the event. As it turned out, he was in the office, on a Parliamentary break from Ottawa. He needed little prodding to agree to attend. Our number of guest speakers had doubled.

I then recontacted the media to let them know of the change. Some said that they never received the original press release. So I ended up calling all the TV, radio and newspaper news directors to let them know. Most apologized to me, saying that since our meeting was on a Friday night, it was too difficult and expensive to get staff to cover such an event. However, one TV station thought that they might be able to get a crew out if they had a slow news day.

The next crisis occurred when I found out that no advertising had reached the offices of Department Heads of the Universities. I dashed over to the Faculty of Science with a poster and spoke with the Assistant Dean. She was most interested, and attempted to spread the word to the Faculty. This was already only a few days before

the event.

Finally the night of the meeting came. All six politicians arrived, primping themselves for the expected media extravaganza. This would be one of the most rare events where a set of Provincial and a set of Federal Science representatives would meet together to debate and discuss Science Policy!!

First of all, there were no media at all. None. Zippo. Not one. Second, only a small group of Centre members turned out for the event. And only a handful of Faculty were there. Altogether, including the guests and their entourage, we had about 45 people at the meeting.

Nevertheless, the information presented at the meeting was itself rather fascinating. Among the dry political jargon telling us of policies, programs, proposals, and "funding potential", there were several gems. Catfighting broke out between some parties. The NDP talked about Free Trade (of Astronomy?) and the Conservatives insisted that they had been doing a good job of funding the Sciences all these years. Others seemed to disagree. During the question period, a physics professor in the audience got into a heated argument about nuclear energy and waste disposal.

There was no clear "winner" of the debate, though since the Conservatives were outnumbered, their views were critisized most often. Unfortunately, the funding of Astronomical research was rarely mentioned, so we really did not get any idea how the various parties differed in their platforms on that subject. But since astronomers form a very small part of the voting public, perhaps there wasn't much to say. There was considerable discussion about university funding, and a review of the record of the National Research Council. It seemed that the emphasis was on the broad category of Science rather than the specifics of individual fields of study.

One problem we found was that although we made an audio recording of the meeting, the lack of microphones allowed the politicians who were the less powerful orators to fade into the background hum of the room. Some Centre members, who came to the meeting innocently expecting a regular kind of discussion about astrophotography of whatever, came away from the evening a little

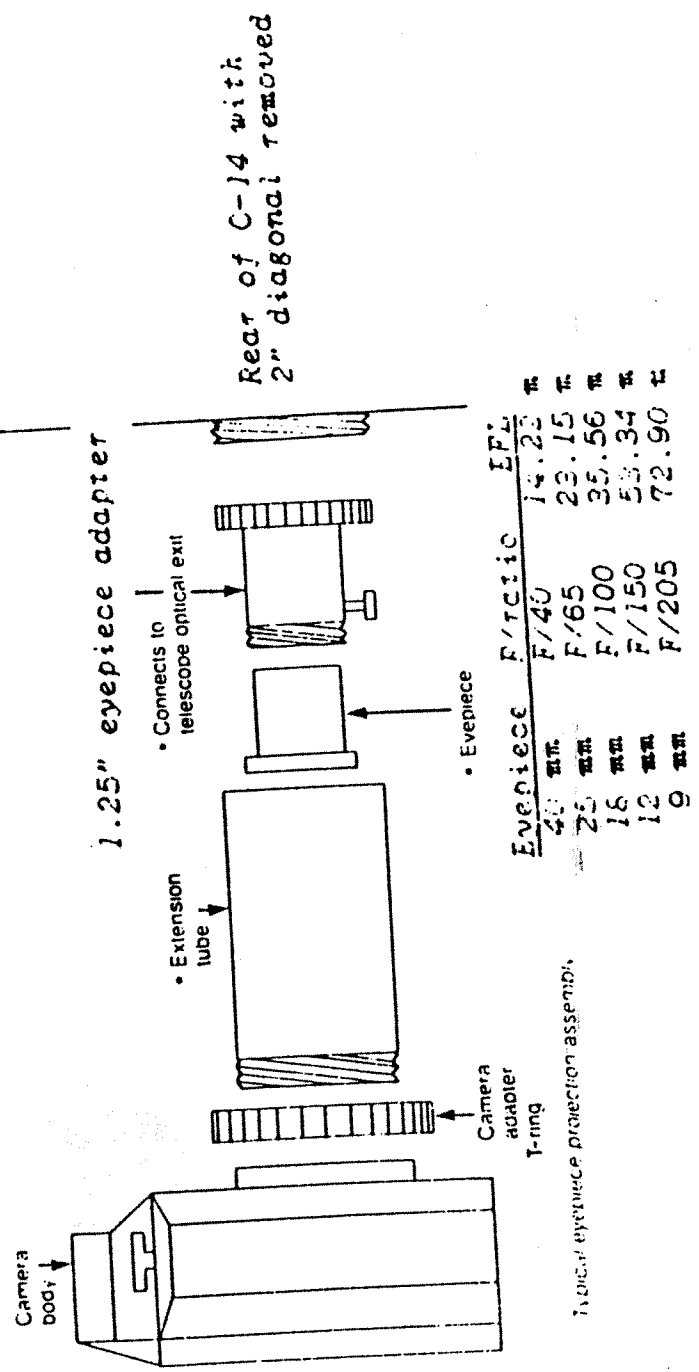


Figure 1

x equiped with C-14

The hat trick method involves the utilizing of a cover at the end of the telescope as an exterior shutter. I use a large piece of cardboard painted black (about 24" square). With the end of the telescope covered with the cardboard, the camera shutter is locked open using the bulb setting of the camera. The cover is first lifted off the scope and held in front while the telescope vibrations are allowed to settle down. The cover is then dropped for the required length of time and then the scope is covered again. The shutter on the camera is then allowed to close. This method is best done with two persons, one at the camera and one at the cover.

The focusing of the telescope is a problem that most people find difficulties with, especially with the screen of the normal camera. I use an image magnifier and plenty of patience in this area. With Mars at a suitable image size, the detail on the planet is visible on my screen. To ensure that I get a picture well in focus, I take plenty of pictures. The film is cheap when compared to the amount of time and effort needed. I will take a range of exposures (+/- one f-stop) and will refocus the telescope several times during each visit.

There are several other rules to be followed.

1) Move as little as possible during exposures.

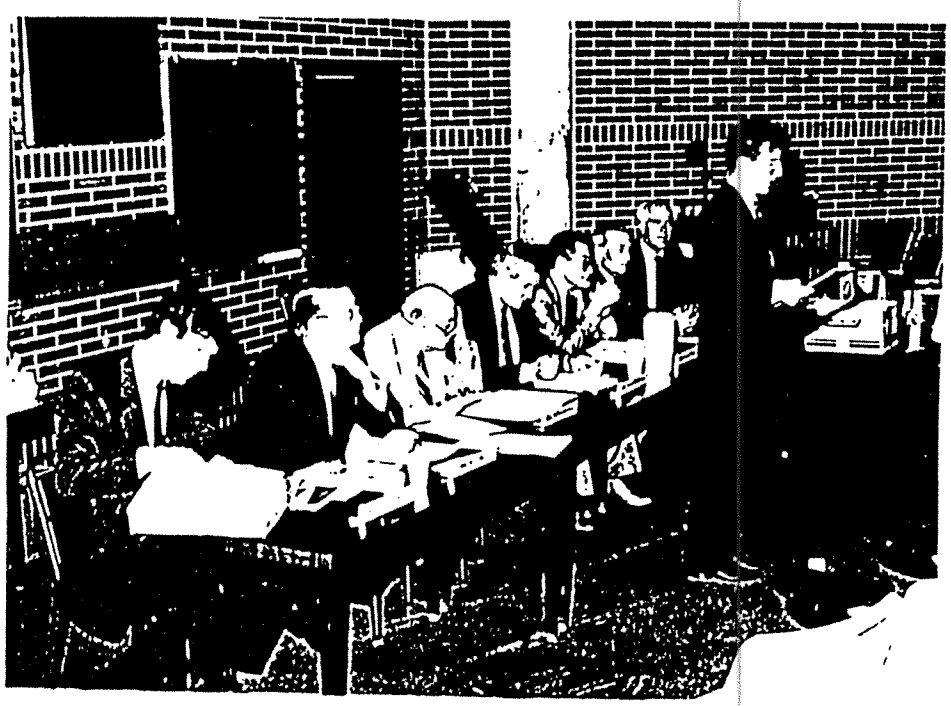
2) Make sure the telescope has cooled down to the ambient temperatures.

3) I turn off all the lights in the dome (red included). This helps in focusing and eliminates stray light during hattrick exposures.

dazed, and wondering what happened to our Centre.

Well, at least we learned a few things from the experience. First, the issue of government funding of science programs is a sticky one. Cutbacks mean that some programs scientists might feel are essential may be eliminated in favor of short-term projects that produce results that are publicly more attractive. Second, for our next major Lecture, we'll have to come up with more ideas to get the media and the general public to attend. The RASC needs a higher profile in Winnipeg. One politician thought we were an Astrological Society. And another had to call his Ottawa consorts to find any information about the RASC at all; nothing was available in Winnipeg (?).

And there was one other thing we learned: Astronomy and Politics don't mix.



MARS and the C-14

The planet Mars came within 36 million miles of Earth during it's recent opposition of Mars. That translated into an image size of nearly 23 arc seconds in diameter at it's maximum. The combination of a excellent view of the changing landscapes and the chance of sandstorms, made Mars far too tempting to ignore. To capture all the details, I decided to attempt to photograph the planet using the best instrument available, the Centre's C-14. This article will discuss the methods which I used.

The image size of Mars, as with the photography of all the planets, is far too small to be taken at the prime focus of the C-14. We must utilize eyepiece projection to increase the effective focal length (EFL). Our basic goal is to obtain an image of at least 1/10th of an inch on the film. To determine the EFL required to produce a suitable image use this chart:

Size (arc seconds)	EFL Required (metres)	(inches)
12	43.7	1720
18	29.2	1150
23	22.8	900

The equipment setup required to achieve these focal lengths is shown in figure 1. This diagram shows equipment attached to the back of the C-14. The 2" diagonal has been removed and the 1.25" eyepiece holder has been attached directly to the back of the scope. We would place one of the various eyepieces (dependent upon the EFL desired) into the holder. The projection tube is placed over top of the eyepiece. To this the member's camera with the appropriate T-adapter are attached.

To determine the eyepiece to use, see the chart on the diagram. It shows the eyepieces, the EFL and the resulting focal ratio (EFL divided by the 14" aperture). Note that the projection bar will not fit over top of all eyepieces, but those of the Centre's eyepieces listed will.

The film to use for Mars should have a high contrast and fine-grain to obtain the maximum amount of details. I use Kodak's Technical Pan 2415 film developed in HC-110 Developer (Dilution B) for 12 minutes @ 20 degrees C. This combination gives me a film speed (ASA) of about 240 and a contrast value of 2.4 . An alternative would be to use the 2415 in Kodak's D-19 Developer for 4 minutes (ASA of 125, Contrast of 2.6).

The exposure time used will be depend upon the focal ratio of the system and the speed of film type used (as well as the brightness of the planet). The chart below provides a starting spot for exposures (in seconds) based on various film speeds and focal ratios for the Planet Mars.

F/ratio	2415 @ ASA 125	2415 @ ASA 250	TRI-X @ ASA 400
65	0.6 (1/2)	0.3 (1/4)	0.15 (1/8)
100	1.3	0.67	0.4 (1/2)
150	3.0	1.5	1.0 (1)
205	(n/r)	2.8	1.75

For the exposures of 1 second of less, I try to use the camera shutter (exposures shown in brackets). This involves locking up the mirror of my camera and using a cable release to trigger the exposure. For exposures longer than 1/2 second I will use the a "hat trick" exposure.