



NOVA

April, 1980
Vancouver, Canada

c/o Allen Stoneberg
2807 W. 7 Ave., V6K 1Z5

IN THIS ISSUE

SPACE PUZZLE III

by Trish Linke

GRAZING OCCULT-
ATION

by Alan Whitman

TRUE GRIT

by David Dodge

STAR PARTY PREP

by Niel Laffra

HATE MAIL

PRAISE MAIL

ALL THIS AND

HAPPY APRIL FOOL

nov^a **E**ditors

h^eLD FOR RAN's Om

By **S**AMURAI

COMET SKETCHERS

Send CASH TO

ABOVE ADDRESSES

April

NOVA

1980

A NEWSLETTER OF THE VANCOUVER CENTRE
ROYAL ASTRONOMICAL SOCIETY OF CANADA

Allen Stoneberg, Gregg Winter and Gordon Herke Editors

EDITORIAL



NOVA has been in its present format since 1973. When we took the helm of NOVA in September 1979, we assured David Dodge (former editor) that the format would remain unchanged. The time has come, however, for us to re-evaluate the newsletter. We feel

that not only should the exterior format be altered but also the layout within. The actual format has not been chosen by the editors yet but it is likely that we will adopt a $5\frac{1}{2} \times 8\frac{1}{2}$ (sheet folded in half) as opposed to the current $8\frac{1}{2} \times 10$ size.

Inside there will be many additions and changes. Starting next month the minutes of the council meeting will be printed in a paragraph form. This will give you an idea of what goes on at the council meetings and maybe something to base next year's vote on. We're hoping that someone will volunteer for writing the "Last Month's Meeting" summary. Photographs will not be uncommon in the future NOVA so send those pix in. We're thinking of including a President's column (Tom doesn't know yet). News of activity in other centres of the RASC and many American societies may become a regular item. The newsletter's recent subscription to I.A.U., IOTA and Comet Digest will result in NOVA being ahead of the major astronomical magazines in terms of the latest news. Finally, we are seeking to incorporate paid advertisements from local astronomical dealers. Two half-page advertisements should pay for our postage!! Also we could sell our leftovers (usually app. 40) in the bookstore at the Planetarium for cost. The net result of these changes should be a more attractive, more informative, better organized and less expensive newsletter. We hope you'll like it.

We have discovered that our cover was utterly destroyed by the special attention of the Post Office. It burns our %&&\$ when we make a special effort and pay an exorbitant rate for the extra weight to go first class only to have the local postie run the photo-cover thru the automated ink-slopper-and-paper-crumpler. Oh well, have a good night, happy observing and write some articles.

LAST MONTH'S MEETING

Last Month's meeting started with our president Tom Tothill announcing the sale of the late Dale MacKelvie's Celestron 8 telescope. With the telescope were many accessories such as a large diagonal and a solar screen to name but a couple. The proud owner of the C-8 was Dr. Tony O. Myo-lwin (aren't you sorry you got your NOVA on time that month).

For those who did not attend (for shame) that meeting, the C-8 was sold for \$2258 by a sealed bid. Good viewing Tony.

It was also mentioned that on April 18 or 19 the RASC is going to put on a star-party at Campbell Valley Park with members of an engineering technician's society. Attend the April meeting for more information.

We would like to thank Chandra Madhosingh for bringing a short film entitled "Dice with the Universe" which helped diversify the meeting. Also, thanks go to Basil Chiu for his talk and slide show that were most interesting.

Ken Hewitt-White also gave a short talk on past, present and hopefully future observatory sites as our center is now contemplating what to do for our 50th anniversary. If you have any idea for a golden anniversary project please come to the meeting and let someone know.

* * * * *

THIS MONTH'S MEETING

The meeting this month is on APRIL 8th at the CENTENNIAL AUDITORIUM, H.R. MACMILLAN PLANETARIUM at 8:00 PM.

Rumor has it that Tony Barrett from the University of British Columbia will be giving a talk on the history of astronomy. Also, this meeting promises the usual amount of confusion and pandemonium.

* * * * *

TAURUS MAJORIS

---- The Editors have been connived into compiling yet another members list. The lists will be distributed at the April meeting.

---- For those of you with telescopes larger than 6", Pluto is in opposition on April 9th.

---- Allen Stoneberg recently announced his engagement to Barbara Curry of Olympia, Washington to the deleriously happy contingent of NOVA staff.

---- The Question of the Month : SS Cygni is a;
Courtesy of the Hamilton Centre's ORBIT

- a) a cruise ship
- b) the first black hole discovered
- c) a pulsar
- d) an irregular variable

LETTERS TO THE EDITORS

Dear Sirs:

I'd like to take this time to say congratulations on another excellent NOVA. I have been impressed with NOVA since I received my first issue last November. The articles are always interesting and the editorials enlightening. The thing I enjoy the most is getting my NOVA hand delivered monthly by the editor. Keep up the good work!

Sincerely,
Barbara A. Curry,
Washington State University

I'd like to unequivocally deny any rumour that the above letter was solicited or construed. The fact that I personally hand deliver her copy in no way constitutes special treatment since I am only seeking to cut down on postage costs. Ed. (A.S.)

* * * * *

Dear Samurai Comet Sketchers:

Your attempt at publishing my handdrawn artistic representation of Comet Bradfield as observed February 2, 1980, was an abomination. The drawing found in NOVA last month in no way compares to my manuscript that I hand delivered to your office. The written description even illustrates better the actual observed appearance- no tail visible between the head and the "bright patch." It is for this reason that I refuse to accept the royalties cheque of a mere \$437.82; I do have my principles!

Niel Laffra

Mr. Laffra; We forwarded your letter to the current address of the Samurai Comet Sketchers and may we say that the effect of the letter on their moral was very spontaneous. As most people know, comet sketchers in general are very emotional characters and the Samurais are no exception. Their first response to the letter was to withdraw their weapons and engage in a furious assault on NOVA's telecommunication equipment. Later they burst into the streets of Kitsilano and were last heard mumbling something about "Hewitt-White and Kohoutek." Ed.

* * * * *

Dear Editors:

Enclosed please find a change of address for NOVA mailings. I have also enclosed a cheque for \$5.00 to help cover postage for another year.

Since I left Seattle, NOVA has been one of my major bridges to the area I still consider "home." Keep up the good work.

Ronald L. Ravenberg
Columbus, Ohio

Thanks Ron, its good to hear from you..... Ron was instrumental in the organization of joint functions and newsletters between the RASC and the Seattle Astronomical Society. Ed.

HOW I SAW A GRAZING OCCULTATION FROM MY BACK YARD

Alan Whitman

(DESPITE DOING EVERYTHING WRONG)

A Centre member who has been on several organized graze expeditions which were unsuccessful asked me to submit this account of a graze observed from my own backyard in Kelowna on Mar. 8, 1980. Refer to track 39 on page 76 of the 1980 "Observer's Handbook". This track crosses the Okanagan although on this very small-scale map it appeared to pass somewhat north of Kelowna. I did not send a request to Dr. Dunham for the details of the event so I only knew that there would be a near graze or a near miss (which seemed more likely) at my location. In November I had added the notation " graze" to the Handbook's list of March events.

Now I work a shift which requires that I arise at the miserable hour of 4 A.M. On the evening of Mar. 7, only six hours before that time, I was checking the Handbook for upcoming events rather than sleeping as I should have been. To my great dismay, I was reminded that there was a graze at 2:02 A.M. (time of central occultation). Thus I was faced with sacrificing most of my sleep before going to work and compromised by setting the alarm for as late as possible, which is my excuse for nearly blowing the whole event.

I got up in a rush, brought out the telescope, looked around in the dark for my extension cord which my three-year old had dragged off, focused quickly on Gamma Virginus, and finally had my 20 cm. Newtonian pointing at the moon only five minutes before scheduled central occultation. The moon was bright (64% illuminated) and fairly low (just rising out of the trees-in Scorpius), the mirror hadn't yet settled down, and the star ZC 2280 is fairly faint at mag. 6.8. There was no star visible at either the south or north limbs and I regretted not having followed it in the previous half-hour. I decided that if it wasn't already occulted it must be at the southern limb as this was a southern limit graze (obvious enough perhaps but this mad rush wasn't very conducive to calm consideration of geometry). Finally I noticed what appeared to be an illuminated peak on the limb just beyond the terminator. In desperation I watched it just on the off chance that I was wrong and it was, in fact, the star. To my surprise, it blinked out about a minute after I started watching it! I don't own a stopwatch and made no attempt at timings, not even mentally. However, it was probably gone at least twenty seconds when it

WANTED: V.M.P.A. seeks mature men to work with the visitor service department in the Gordon MacMillan Observatory or elsewhere in the planetarium & museum complex. For further information contact: Mrs. Beth Wynne at 1100 Chestnut St. Vancouver, 736-4431

reappeared, stayed visible perhaps twenty seconds, then disappeared for about two to three minutes before reappearing a second time and moving away from the moon. I was surprised that the first reappearance lasted as long as it did.

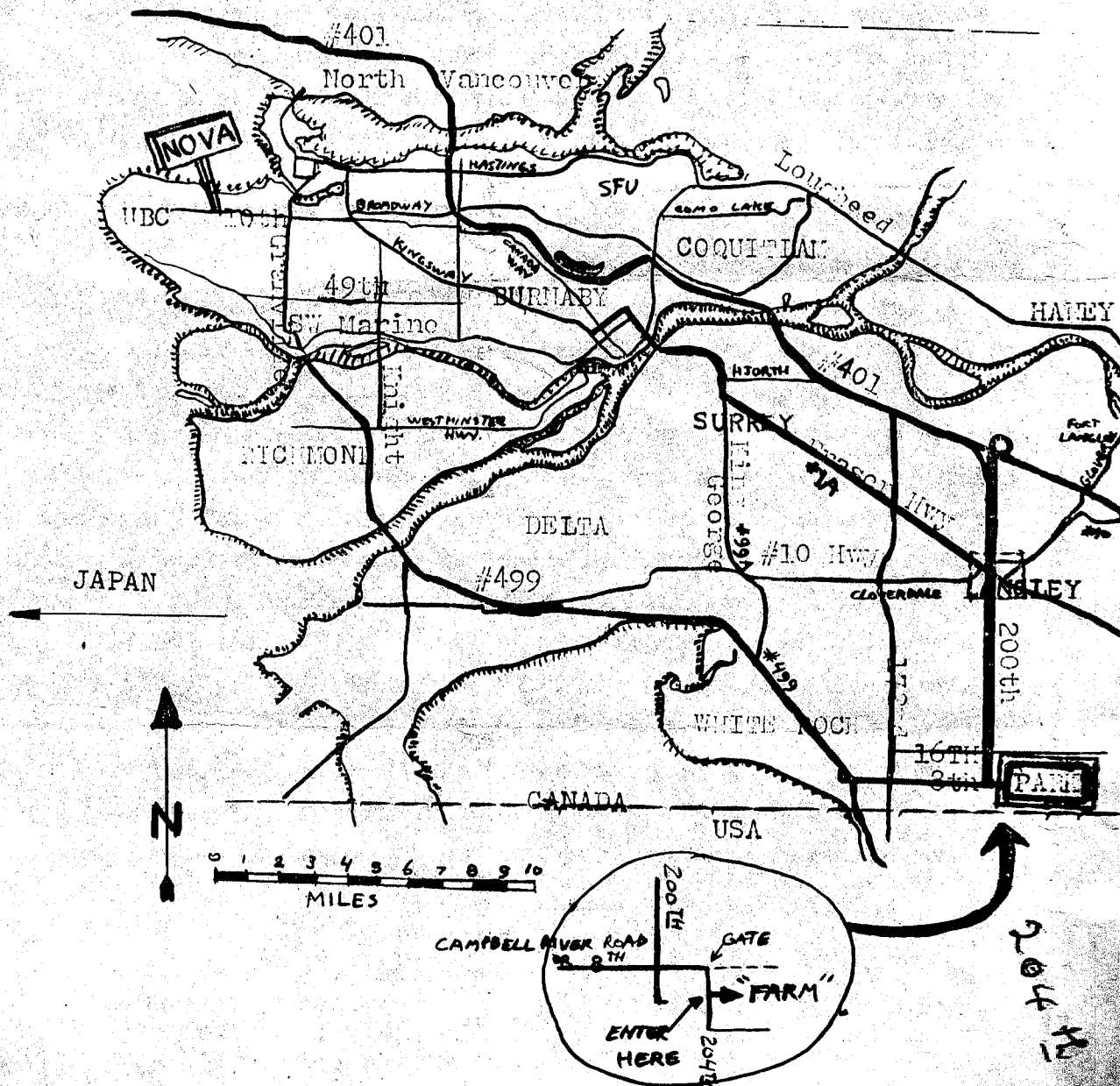
The libration in latitude was at minimum (south limb exposed) on March 8 and the south limb was more rugged than I ever recall seeing it before. The path of the graze would thus be abnormally wide and it is to this that I attribute my good fortune in seeing my first graze from my regular observing site.

* * * * *

ROAD TO CAMPBELL VALLEY PARK

Samurai Map Sketchers

Here are the directions to the site of the April 18 or 19 star party. Attend the April meeting for more information. Once again we must apologize to Niel for having to trim here or there.



THE SKY ON APRIL 18-19 and 19-20, 1980
(positions of objects at 0 hr. UT 18, 19, 20 th.)

Compiled by N. Laffra

OUR U.T. = 4 PM P.S.T. ON 17, 18, 19 TH.

Object	R.A.	DEC.	Sets	Rises	
<u>Sun</u>	1 ^h 44.5 ^m 1 48.2 1 51.9	10°48.2' 11°09.0' 11°29.7'	} APPROX. 7 pm PST	APPROX. 5 am PST	
<u>Moon</u>	4 ^h 25 ^m 5 23.7 6 20.7	16°36.2' 18°31.8' 19°19.8'			23:30 PST --- 00:28 PST
<u>Mercury</u>	0 ^h 22 ^m 16 ^s 0 27 54 0 33 38	-0°26'58" 0°10'17" 0°48'34"			true distance= 102 million miles Apparent diameter= 6"(4878km.) Magnitude= 0.5 (SUNRISE ONLY!!)
<u>Venus</u>	4 ^h 45 ^m 14 ^s 4 49 01 4 52 46	26°19'22" 26°28'16" 26°36'38"	True distance= 56 million miles apparent diameter= 27"(12104km.) Magnitude= -4.1 phase= 50%		
<u>Mars</u>	9 ^h 59 ^m 10 ^s 9 59 39 10 00 10	15°02'33" 14°57'32" 14°57'32"	true distance= 85.6 million miles Apparent diameter= 10"(6794km.) magnitude= 0.0 phase= 92%		
			--"light-time" distance 7.7 minutes --due to rotation, the visible face of Mars will be vacant of major dark areas; central meridian will be between 160-210° both nights from 10 pm to 4 am.		
<u>Jupiter</u>	10 ^h 11 ^m 31 ^s 10 11 25 10 11 20	12°31'47" 12°32'10" 12°32'29"	true distance= 446 million miles apparent diameter= 38"(142796km.) magnitude= -1.8 "light-time" 40.5 min.		
<u>Jupiter's Moons</u>		<u>Time(PST)</u>	<u>Event</u>		
April 18	Io	22:41	Occultation Disappearance (3640km.)		
19	Europa	19:55	" (3130km.)		
	Io	19:57	Transit ingress		
	Ganymede	20:03	Transit ingress (5280km.)		
	Io	21:01	SHADOW INGRESS		
	Io	22:12	Transit egress		
	Io	23:16	SHADOW EGRESS		
	Ganymede	23:34	Transit egress		
Apr. 20	Ganymede	00:29	SHADOW INGRESS (WILL LAST ± 1.5 HRS)		
	Europa	00:53	eclipse reappearance		
<u>Saturn</u>	11 ^h 31 ^m 22 ^s 11 31 10 11 30 58	5°41'37" 5°42'47" 5°43'55"	True distance= 803 million miles Apparent diameter= 17"(120000km.) Magnitude= 0.9 "light-time" 72min.		
			RINGS- 43.4"x1" "dark" side towards Earth		
<u>Saturn's Moons</u>		<u>Time(PST)</u>	<u>Event</u>		
April 18	Enceladus	22:30	Transit ingress ((500km))		
(PM)	Mimas	22:30	" ((400km.))		
	Rhea-Tethys	22:30	Possible occultation of Rhea		
Ap. 19	Mimas	00:00	Transit egress		
(AM)	Enceladus	00:30	" "		
	Tethys	2:20	Transit ingress (1000km.)		
	"	3:40	Transit egress		
	Mimas	4:20	possible occultation by Enceladus		
AP. 19	Enceladus	22:20	possible occultation by Dione		
(PM)	Mimas	23:10	Transit egress		
	Tethys	23:30	possible occultation by Mimas		
	"	23:50	Occultation by planet		

THE SKY OF APRIL 18-19 and 19-20(con't)

Saturn's Moons (con't.)

April 20	Rhea	2:15	possible occultation by Titan
(AM)	Tethys	2:30	Occultation reappearance
	Tethys	2:50	Possible occultation by Dione
	Dione	3:30	Transit ingress
	Mimas	3:45	West Elongation

(Magnitudes: Mimas= 12.9 ;Enceladus= 11.8 ;Tethys= 10.3;
Dione= 10.4 ;Rhea= 9.7 ;Titan= 8.4)

(Moon occultations are estimates only,from ephemeris;for more updates,check April "Sky and Telescope")

<u>Uranus</u>	15 ^h 29 ^m 16 ^s	-18° 38' 32"	True distance= 1,665 million miles
	15 29 08	-18° 38' 01"	Apparent diameter= 3.8"(50800km.)
	15 28 59	-18° 37' 29"	Magnitude=+5.8
<u>Neptune</u>	17 ^h 27 ^m 46 ^s	-21° 50' 03"	True distance= 2,753 million miles
	17 27 42	-21° 49' 59"	Apparent diameter= 2.4"(48600km.)
	17 27 39	-21° 49' 54"	Magnitude= +7.7
<u>Pluto</u>	13 ^h 39 ^m 57 ^s	8° 39' 37"	True distance= 1,879 million miles
	13 39 33	8° 41' 48"	Apparent diameter= 0.6"(3000km.)
	13 39 09	8° 43' 47"	Magnitude= 13.7

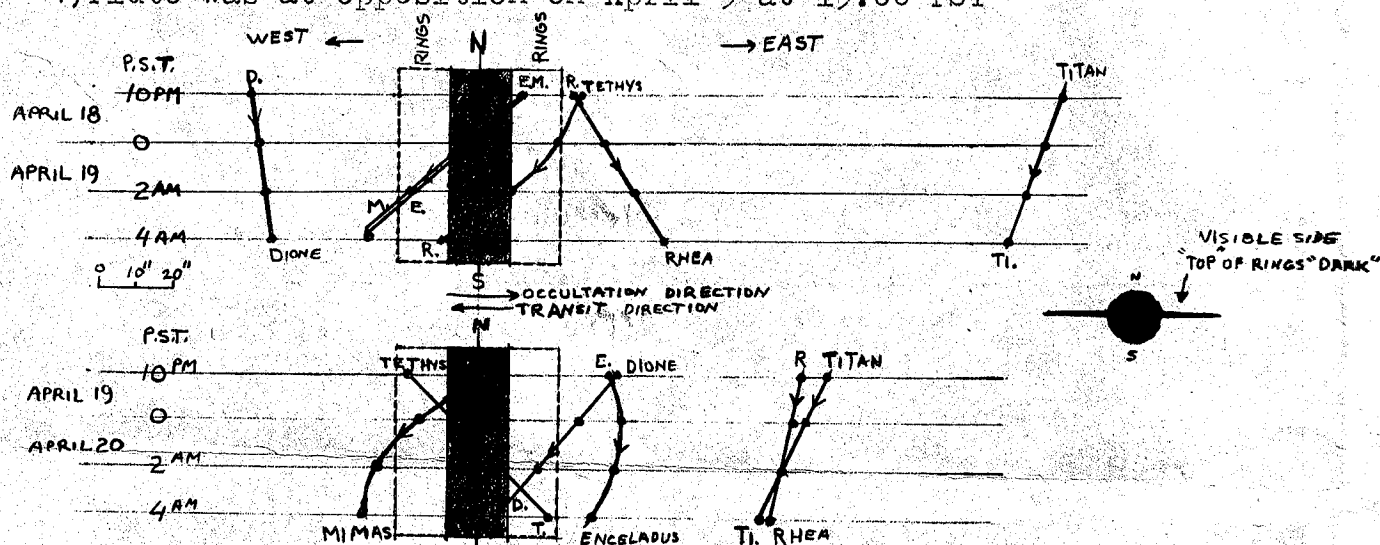
*** April 19 at approximately 4:00 PST the planet passes
*** within about 2.5' North 6.0 mag. star HR5156.

*** See Handbook, page 93 for diagram.

(on April 17, Pluto has two transits of our meridian in one day)

OTHER EVENTS:

- 1) April 17 20:23 PST Aldebaren Occulted by Moon (p.a. 66°)
21:16 PST Aldebaren Re-appears (p.a. 284°)
- 2) Meteor shower: Lyrids peak on April 21(from Lyra direction)
- 3) Venus will be 9° N. of Moon April 18 at 1:00 PST
- 4) Pluto was at opposition on April 9 at 19:00 PST



(FIG. 1) Appearance of Saturn System: April 18-19 & 19-20, 1980
(because the rings are at a very narrow angle to Earth, there should be good opportunities to see the inner moons, especially Mimas and Enceladus as they are next to each other on Friday night.)

STAR-GAZING WORD SEARCH

R	B	R	O	J	A	M	A	S	R	U	L	Y	B
F	I	R	S	T	U	R	S	A	M	I	N	O	R
S	O	G	R	I	V	L	A	N	O	R	O	C	P
P	R	P	E	E	R	N	E	C	L	T	D	O	O
I	L	A	V	L	R	I	L	A	E	Y	L	A	L
C	E	N	T	A	U	R	U	S	C	A	N	M	L
A	O	O	M	R	P	L	U	S	R	D	A	X	U
S	U	N	G	Y	C	E	E	I	R	E	R	F	X
S	P	L	X	L	G	L	S	O	R	I	O	N	R
U	E	I	I	L	I	V	M	P	M	N	X	T	B
P	S	I	E	B	R	E	O	E	V	I	H	E	I
E	X	T	R	S	D	G	R	I	E	M	N	G	L
L	E	A	Y	A	B	A	N	A	L	E	V	O	L
B	I	G	D	I	P	P	E	R	D	G	H	P	R

WORD LIST

Andromeda

Aries

Betelgeuse

Big Dipper

Boötes

Cassiopeia

Centaurus

Corona

Cygnus

Deneb

Gemini

Leo

Leo Minor

Lepus

Libra

Lynx

Lyra

Orion

Polaris

Pollux

Pyxis

Rigel

Sirius

Spica

Taurus

Ursa Major

Ursa Minor

Vega

Vela

Virgo

Dear Nova Editors:

When I saw the Word Search in the last issue, I was prompted to send in my one and only astronomical Word Search - (they are as scarce as the proverbial hen's teeth.)

T. Linke

For those of you that have selective amnesia, I am in the process of constructing a 14.5" telescope, the following is a brief progress report.

Grinding commenced on January the twelfth after many delays. Previous to the first stroke of the tool, I had to re-construct my mirror grinding machine. This was no small feat as the machine had not been used in over four years. Once satisfactorily de-bugged the machine worked and indeed is still working admirably.

I began grinding the mirror with #60 grit supplied by a local opthamalogical company. They were generous with the amount of grit that they gave me (2.5 lbs.) but, as it turned out, that was not enough. After approximately 12 hours, the grit was used up. I carried on with a supply of #30 grit that was part of the Mac-Kelvay estate, but that too was consumed after another 12 hours. I am currently grinding with #43 grit that was actually purchased (GAD!) from a lapidary shop in North Vancouver.

At the moment my sagitta is approximately 0.125" or in other words, I'm nearly $1/3$ of the way down to my desired sagitta of 0.625 for f5. At the moment I have spent nearly 30 hours grinding my glass (praise the Lord that I'm using a machine).

One other detail concerning the grinding process is that I have ground out two of mu ceramic tools. Luckily they are inexpensive and easy to make. For anyone who would like to know how to construct one of these ceramic tools I recommend that you pick up a copy of this season's "Telescope Making" (#6) and read the article that deals with the process, or you can see me after this month's meeting. There are a few details that the author has skipped and there are a few secrets that I have discovered for myself.

Perhaps in some future issue of NOVA I'll give a further progress report that will include some sketches of my proposed telescope and also at that time I'll be further along in the polishing process.

..... This report just in from our correspondant in the MacMillan Planetarium: David Dodge, working at a feverish pace, has already surpassed the f/9 mark. Recent conversations with his wife (Joanne) indicate that Dave is showing no signs of fatigue.

