

SKIES

Volume 23, Number 3

March 1993

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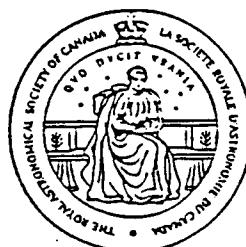
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Saskatoon Skies Information

Commercial vendors wishing to advertise in the "Saskatoon Skies" may do so at the following rates: \$50.00 per page, \$25.00 per half page and \$12.50 for business card ads. Individual RASC members and other parties (at our discretion) may advertise items and events for free.

Next month's deadline is Saturday, April 3, 1993. Please have any submissions in to me by then in order to be included in the next issue. Submissions may be in typewritten form or on a floppy diskette (3.5 or 5 inch size and formatted for MSDOS) preferably as ASCII files. I prefer electronic submissions as it saves me some typing. Mail or bring your submissions to:

Gordon Sarty OR Saskatoon Centre RASC
422 Edmund Park, Box 317, RPO, University
Saskatoon, Sask. Saskatoon, Sask.
S7H 0Z4 S7N 4J8 .
phone: 374-8803



E-mail submissions to sarty@math.usask.ca will also be accepted. *Saskatoon Skies* is a monthly publication of the Saskatoon Centre of the Royal Astronomical Society of Canada.

Minutes of the February Executive Meeting

Room B-111, Health Sciences Building

February 15, 1993

7:00 p.m.

Attendees: Gord Sarty, Al Hartridge, Rick Huziak, Sandy Ferguson,
Ed Kennedy, Bill Hydomako.

Absent: Don Friesen, Mike Williams, Daryl Rybotycki.

ITEM	DETAIL	ACTION
1.	Term deposit for the telescope: free up \$1000.00, put additional \$3000.00 into another term loan.	
2.	Rick passed out charitable donation receipts.	
3.	Mike Williams is out of 1993 Observer's Handbooks.	
4.	Light pollution: Gord Sarty presented steps on reducing light pollution - see his handout. [see page 8] Motion to form a light pollution committee. Second.	Al Hartridge Gord Sarty
	Motion carried by show of hands.	
5.	Committee formed by Gord Sarty and Al Hartridge.	
6.	Carol Blenkin has stepped down as a councillor so a spot is vacant.	R. Huziak
7.	Observer's Group Meeting: 20 Feb. and 20 March, Saturdays.	R. Huziak
8.	Public star night set for Friday and Saturday, 24 and 25 July [corrected to July 23 & 24 -Ed.]	R. Huziak
9.	Astronomy day set for May 1, 1993.	S. Ferguson
10.	Fall starnight on 19 Sept 93. [corrected to 17 & 18 Sept. -Ed.]	S. Ferguson
11.	Dr. Helen Hogg has passed away. Saskatoon Centre to send a letter of condolence.	R. Huziak
12.	Motion for adjournment. Carried by show of hands.	Al Hartridge

Minutes of the February General Meeting

Room B-111, Health Sciences Building

February 15, 1993

ITEM	DETAIL	ACTION
13.	Called to order. 8:06 p.m.	R. Huziak
14.	In the future there will be short presentations on basic astronomy.	R. Huziak
15.	Motion to adopt the January minutes as published in the <i>Saskatoon Skies</i> Second.	S. Ferguson
16.	Covered topics as discussed in the executive meeting: - light pollution. - Carol Blenkin has stepped down as councillor, leaving open position. - Astronomy day is May 1/93 in Market Mall. - July 24 and 25 for public star night. [corrected to 23 & 24 -Ed.] - Fall star night on Sept 19/93. [corrected to 17 & 18 -Ed.]	G. Sarty R. Huziak
17.	Dr. Kennedy gave a short presentation on Dr. Helen Hogg in memorial to her passing away.	R. Huziak
18.	Setting up a time for a site survey for the 16" telescope.	R. Huziak
19.	The Beginner's Guide is still available for \$5.35.	R. Huziak
20.	Tonights presentation by Dr. Louis Delbaere: "Space Shuttles, Space Stations and Crystals"	R. Huziak
21.	Meeting adjourned 9:28 p.m. Motion.	G. Sarty

EDITOR'S NOTES

Our newsletter is typically 10 pages long but I've gone overboard this month. Rick tells me that we can afford the extra postage of going overboard once or twice a year - so I'm using that freedom now! The thicker newsletter is due to the unusual amount of contributed articles that I've received this month as well as my desire to enclose some finder charts for several asteroids and a comet visible this month. I even have an article about cleaning optics that will have to wait until next month. This is Editor's heaven!

Before I get into the solar system news, I would like to mention some Centre activities currently being organized. Kim Mysyk is interested in getting together a band of people to go search for meteorites! This sounds like fun and I've already told him that I'd be interested to search. See page 11 for more information. Sandy Ferguson's first presentation for beginning amateur astronomers will be during the upcoming March General Meeting and that should be interesting. Her related article is on page 5. On page 8 the formation of a new Light Pollution Committee is described. Finally, Bill Hydomako has promised to whip us itinerant telescope makers into shape so that we might actually finish the 16 inch telescope soon.

Also note that the Centre's address has changed. The new address is printed on the front of the newsletter at the bottom of the page. But I still have a couple months supply of Carol Blenkin's beautiful envelopes, so the post office will just have to bear with us until the envelopes are used up. It looks to me like the post office changed the postal code of the university so they have to expect a transition period.

Now onto the Solar System News. The brilliant planet of January skies, Mars, is now fading in the distance as it resumes its high speed westward apparent motion against the stars of Gemini in March. Saturn is still behind the Sun this month but the other naked eye outer planet, Jupiter, rises before midnight these days and on March 30th, the Sun, the Earth and Jupiter will form nearly a straight line as Jupiter reaches opposition. The inner solar system planets will both also line up with the Sun and the Earth this month as both Mercury and Venus pass between the Sun and the Earth. Mercury passes between the Earth and the Sun (inferior conjunction) on the 9th while Venus does so on April 1 (no fooling!).

Venus will actually be visible as both a "morning star" and an "evening star" few a few days surrounding April 1 since Venus actually passes about 8° north of the Sun as seen by us, instead of exactly between us and the Sun. More information on that phenomenon can be found on page 128 of the *Observer's Handbook 1993* or in the article by David Chapman called "Recurrent Phenomena of Venus and the Venus/Earth Orbital Resonance" in *The Journal of the Royal Astronomical Society of Canada*, volume 80, page 336, 1986. Of course, Venus will be very low then on the morning and evening horizon and binoculars will be required to see it.

But Venus will also be in an excellent position for daytime viewing this month. The article by Don Friesen on page 9 gives the techniques on how to actually find Venus during the day and I have reduced the information in the *Observer's Handbook 1993* to the table and diagram on page 10, right after Don's article. The positional information for Venus in the second and third columns of the table were taken from pages 38 to 42 of the *Observer's Handbook 1993* while the Sun's position is found on page 58 there. I have included the information in the table so that you may correct my addition if I have made any errors. The diagram shows the motion of Venus in the sky relative to the Sun as Venus passes between the Earth and the Sun. Although the article by Don stresses the use of an equatorial mount, the diagram shows the sky roughly as it appears around noon so one with an altazimuth mount might try treating Right Ascension as horizontal and Declination as altitude. This method is not as sure-fire as the equatorial approach but those with Dobsonians may wish to try it. **WARNING:** Be very careful in daytime viewing not to accidentally point your telescope at the Sun when you are looking through it as this will cause instant and permanent blindness.

In addition to the regular planets, there are several minor planets or asteroids visible to the amateur astronomer this month. I have made finder charts for the asteroids Juno, Hebe and Iris as well as finder charts for the periodic Comet Schaumasse. The asteroids should be visible even from the city (in a telescope) but you may have to go to the Rystrom site or other country site to see the comet. I've seen Juno earlier this year from my front yard but so far Comet Schaumasse has remained invisible to me from the city - because of light pollution!

Gordon Sarty

NOTICE OF MARCH'S GENERAL MEETING

The March General Meeting will take place on Monday Evening, March 15, 1993 at 8:00 P.M. in Room B-111 of the Health Sciences Building. This month's presentation is a demonstration of the Department of Education's portable planetarium, **Starlab**, by Ron Waldron.

Also, Centre member Sandy Ferguson will be giving a short informative presentation aimed at beginning amateur astronomers. After the meeting the university telescope will be made available for viewing through at the observatory across the street from the Health Sciences Building - if the weather cooperates!

NOTICE OF OBSERVERS GROUP MEETING

The next Observer's Group meeting will be at the Rystrom Observatory at 9 P.M. on Saturday, March 20, 1993, weather permitting. To find the Observatory, drive south on hiway #11 to the Grasswood Esso station and drive-in, turn left past the KOA campground and head down the road approximately 1.5 miles to the last mailbox on the right before the railway tracks. The mailbox is the Rystrom's. Go down the driveway past two homes and around the large equipment building to the right. Be sure to dim your lights.

The first session of a novice's observing program will be conducted at this months Observer's Group Meeting. More information is given in the next item below.

In addition to the observers group meeting, members are welcome to visit the Rystrom site at any time provided you phone ahead. The number to call is 955-2370, ask for Nelson or Gloria. If you do not have a key, find a member who does and talk them into a trip to the dome. After you have been checked out on the equipment there you are entitled to a key of your own.

UPCOMING EVENTS FOR 1993

March 20 - Observers' Group Meeting at Rystrom Observatory. Come out and celebrate the Vernal Equinox - a carrot cake will be served in honour of the occasion! (Carrots are good for you night vision, don't you know!!) The first novices' observing session is planned, with instruction on finding your way about the sky. Jupiter is the featured planet, and there are lots of late winter and spring objects to be seen.

April 24 to May 1 - International Astronomy Week: The Centre will be celebrating Astronomy Day, Saturday, May 1, 1993, at the Market Mall, where we will have our display table set up indoors, together with a solar telescope in the parking lot, weather permitting. More about this in the April issue.

July 23 & 24 - Public Starnight in Diefenbaker Park: Members will have their telescopes set up in the park so that the citizens of Saskatoon can get a look at a crescent moon, Mars, Jupiter and Saturn and some summer objects. A few early Perseids should also be around.

August 12 - The annual Perseid meteors peak at 09:00 local time this morning, so it might be a good idea to have an observing session the night of 11/12. The moon will be 2 days past Last Quarter and a bit of a nuisance in the early morning, but still worth observing the shower. More about this later.

Sept. 17 & 18 - Our second starnight of the summer. Location to be announced. Saturn will be the best planet for this evening and some of the autumn objects will be available for viewing. There will also be a crescent moon.

Contact Sandy Ferguson at 382-0898 for any information on the above or to arrange rides to the observatory.

UNIVERSITY OBSERVATORY HOURS FOR PUBLIC VIEWING AND CLASSES

The university observatory will be open to the public on Saturday evenings from 8:30 - 10:30 p.m. in March. Visitors will be able to view: Mars, the Orion Nebula, the Pleiades and other celestial objects.

Observatory assistants will be present to answer questions about astronomy and to assist the public in viewing through the telescope. The observatory is located on campus, one block north of the corner of Wiggins Ave. & College Drive.

An evening course for adults concerning "The Milky Way and Other Galaxies" will be offered starting March 3. A "Build Your Own Telescope Course" for youth (ages 8 - 11) will be offered March 30. Register through the University Extension Division by phoning 966-5539.

Stan Shadick, Astronomy Instructor, 966-6434

NOVICES' CORNER
by
Sandy Ferguson

Anyone who seriously wants to learn about astronomy and the night sky realizes sooner or later that he or she has to give up his or her cosy "armchair" astronomer lifestyle to join the ranks of the seasoned (alternately frostbitten or insect-bitten) observer, in order to learn his or her way around the heavens. Unfortunately, the wonderful wealth of printed material available to help you learn about astronomy is of limited help, unless you get out there in the dark and look up. It's a sad tale, but it's true!

This series is aimed at the beginning amateur astronomer - those of you who have long dreamed of becoming one with the universe, but hesitated to take the plunge! We will make learning the sky as easy as possible for the absolute beginner, but still provide some observing ideas for those who have acquired some familiarity with the night sky. If you have a copy of *The Beginner's Observing Guide* by Leo Enright (available from Rick Huziak 665-3392), it can be used as a source of additional information and material.

So what is necessary to get started on some serious observing? The answer to that is "not much". You already have the most important items and they are your eyes. There is a lot of naked-eye observing to be done. If you have some common, garden variety birdwatching binoculars, they are an asset, but not necessary. A chaise longue garden chair, with adjusting back, enables you to lay back comfortably without craning your neck. The importance of winter clothing cannot be emphasized too much at this time of year, as observing is a lazy pastime and you can become chilled very, very quickly! Other than that, you need only a spot in your backyard or local park, where you won't be bothered by house or street lights, and your horizon is not blocked by tall trees or buildings. You may wish to have a small red-light flashlight (any household flashlight which has been covered by red cloth or red cellophane) to refer to any printed material you have with you. Red light has the least affect on your night vision. Once you have waited for 20 minutes to 1/2 hour for your eyes to become dilated and your night vision acute, being blitzed by white light of any kind will set you back to square one! You may also wish to have a log book with you to record any observations.

Getting Your Bearings

Well, you've made it into the backyard, or where ever. If this is one of your first times looking around, you may be content sitting in your chair (perhaps up to your neck in your sleeping bag) just taking in anything that goes through your line of vision. Besides the moon, planets and stars that are available on any particular night, these may include some bright satellites, sporadic meteors ("shooting stars"), an aurora ("Northern Lights"), not to mention those bright flashing lights you will see preparing to land and taking off from Saskatoon International! All these objects you will see no matter what direction you are facing.

However, if you wish to become familiar with the constellations it is necessary to know what direction you are facing and the direction in which the constellation you want to find can be found. We all know the four points on a compass or a map - North, East, South and West. Here in Canada it is handy to know North as a reference point. If you are familiar with the Big Dipper, a pattern of stars (called an "asterism") in the constellation Ursa Major (or the "Big Bear"), you can use it at any time of year to find true North. Its two "pointer stars" (named Dubhe and Merak) point to The North Star (called Polaris).

If you are not familiar with the Big Dipper, you can still locate North and South quite easily. As the avenues in Saskatoon run North and South, you could orient yourself facing North on any avenue or parallel roadway, by consulting a city map and placing your back to any landmark, nearby street, or part of town you know to be south of you on the map. This would put you in a position to identify the Big Dipper and use it to locate true North. CHAPTER 3 OF THE BEGINNER'S OBSERVING GUIDE DESCRIBES IN DETAIL THE USE OF THE BIG DIPPER TO FIND NORTH. SEE FIGURE 1 OF THIS ARTICLE WHICH SHOWS HOW THE POINTER STARS ARE USED TO FIND POLARIS.

Constellation of the Month

You will also note from Figure 1 that the two opposite stars in the bowl of the Big Dipper, (named Pheca and Megrez) can be used as pointers as well. They can be used to locate the constellation Leo (the "Lion"), which is getting high in the sky this month and is a good Spring constellation with which to become

acquainted. Even from the city Leo is easy to spot. Figure 2 is a more detailed chart of the constellation, with some naked eye objects to be found easily, noted in the upper right hand corner.

If you watch the constellation over the spring and summer, you will note its orientation with respect to the horizon. When it is rising the asterism "the Sickle" (a backwards question mark - the "head and mane" of the lion) first becomes evident over the eastern horizon. As it clears the horizon and night progresses, it straightens out and rights itself, then as it sets in the west, the Sickle is the first to disappear. This is a phenomenon that happens to most constellations we see here in Canada, except for the circumpolar constellations that remain above the horizon all year round. (More about them another time).

Other objects to observe in the constellation are the brightest stars, which are labelled. Also, in the month of November the annual Leonid shower can be observed (named for Leo as the point of origin of the meteors (radiant) appears to be there).

In the adjacent constellation of Cancer is a large open cluster known as the Beehive (or Praesepe). It also has a designation of M-44 (more about "M" objects later, too!), and in the constellation of Hydra the "head" is quite distinctive under dark skies.

See you next month!

FIGURE 1

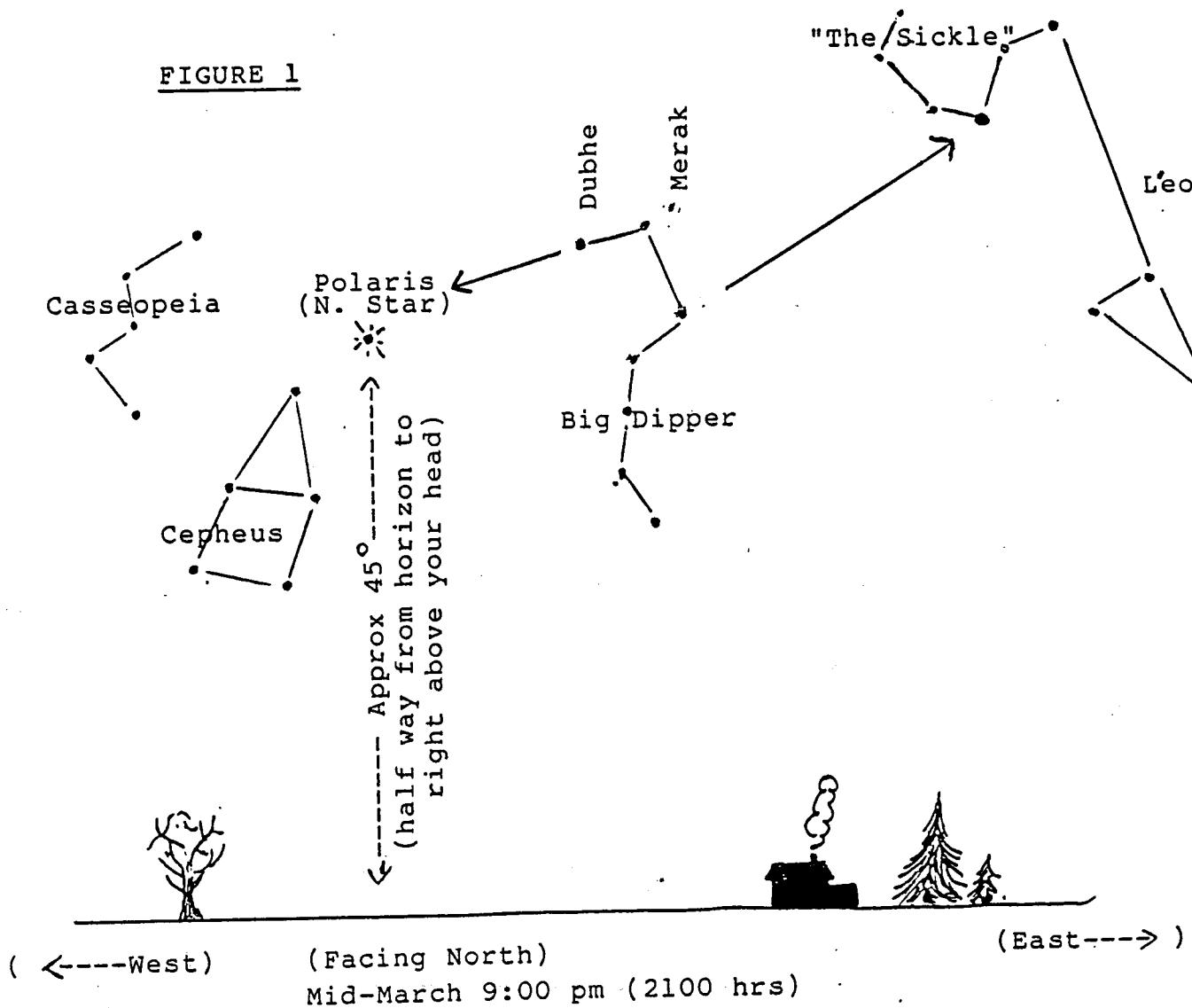


CHART ADAPTED FROM:
Nightwatch: An Equinox Guide to Viewing the Universe

by Terence Dickinson (and House)
Naked Eye Viewing:

1. Orientation of constellation's rising and setting.
2. 'The Sickle' asterism.
3. M-44 or 'Praesepe/Beehive' cluster in adjacent Cancer.
4. Brightest stars Regulus, Denabola and Algeiba.
5. Head of Hydra, adjacent Constellation; brightest stars are 3rd magnitude.
6. Leonid Meteors - November

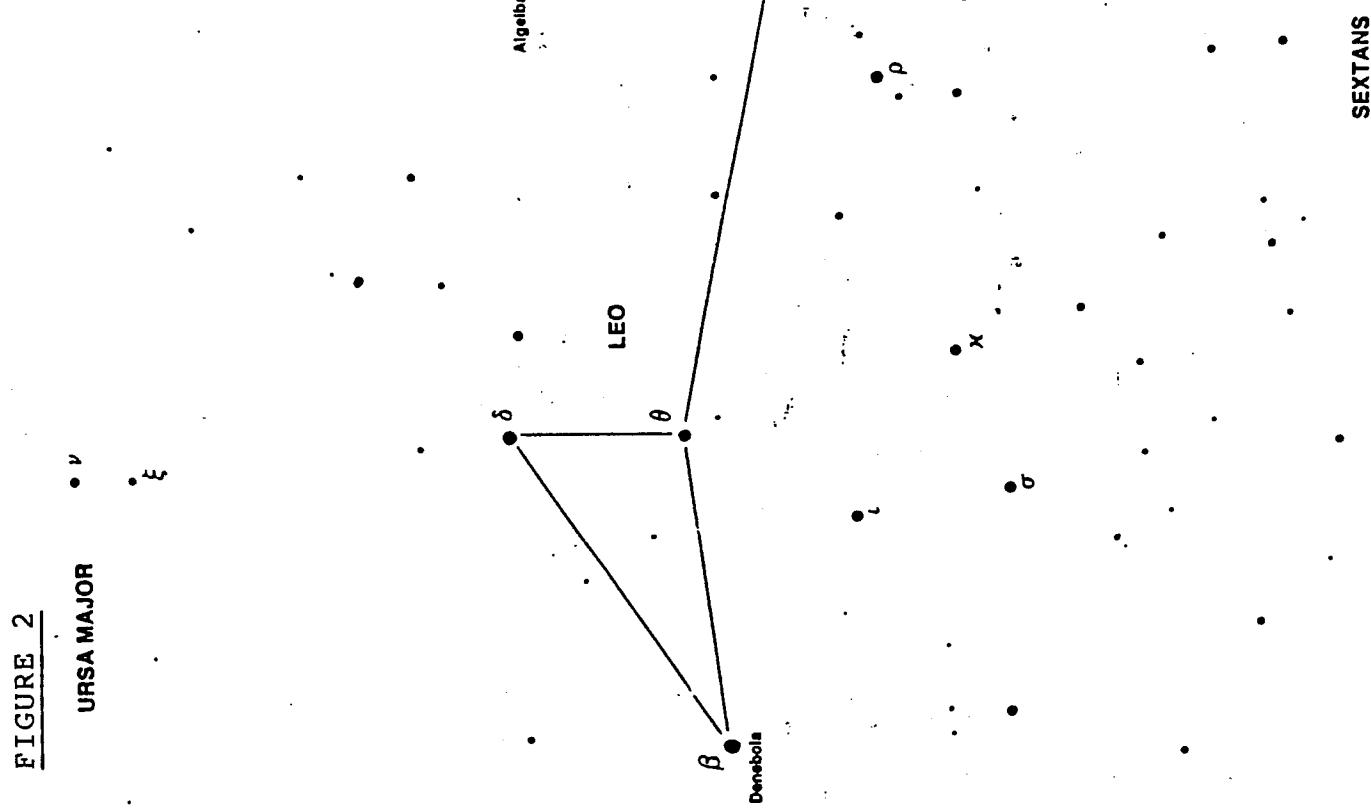


FIGURE 2

LIGHT POLLUTION COMMITTEE

As mentioned in the Minutes on page 2, a Light Pollution Committee has been formed within the Saskatoon Centre. The committee presently consists of myself and Al Hartridge. We desperately want more committee members. You don't have to be an executive member to join the committee. Please phone me at the number on the front of this newsletter or Al Hartridge at 373-0034 if you want to get involved. Our basic plan, presented at the February Executive Meeting is presented below. We are presently on Step 1 and, in addition to the IDA (International Dark Sky Association), we will write letters to Dr. Tom Bolton in Richmond Hill, Ontario and Ruth Lewis of the Calgary Centre asking for suggestions as well since they have both been involved in programs to reduce light pollution.

PLAN TO REDUCE LIGHT POLLUTION IN SASKATOON

- Step 0 Get commitment of Saskatoon Centre to form a Light-Pollution Committee.
- Step 1 Write to IDA, show them our plan and ask for suggestions.
- Step 2 Assemble list of people to write letters to. In particular write to the City Clerk at City Hall explaining who we are and that we have concerns about outdoor lighting policies. Ask for names of people and committees responsible for these policies and decision making. (Mention Sun article and S-P article.) Some possible contacts:
 - Margaret Asmus and Ann Coxworth of the Sask. Environmental Society.
 - Cherneskey and city councillors.
 - Paul Gauther of City Planning Committee.
 - City Engineer.
 - Community Associations.
 - Other environmental groups.
 - Newspaper, radio, TV.
- Step 3 Write letters to those in the assembled list explaining our concern about lighting with emphasis on economy, safety and education of children (by being able to see the sky). Send each an information package and invite them to an IDA slide presentation. Where appropriate, ask for support and advice from the person being written to.
- Step 4 At presentation, ask for support of all present so that we may make a presentation to city council asking for new lighting by-laws and/or policies. We will have a rough form of our requests for city hall ready by then. Get suggestions from groups present.
- Step 5 Send letter to City Clerk with information package. Ask for presentation date.
- Step 6 Announce City Council Presentation to Media.
- Step 7 Present to City Council.
- Step 8 Observe in peace.

Gordon Sarty

NOTICE TO EXECUTIVE MEMBERS

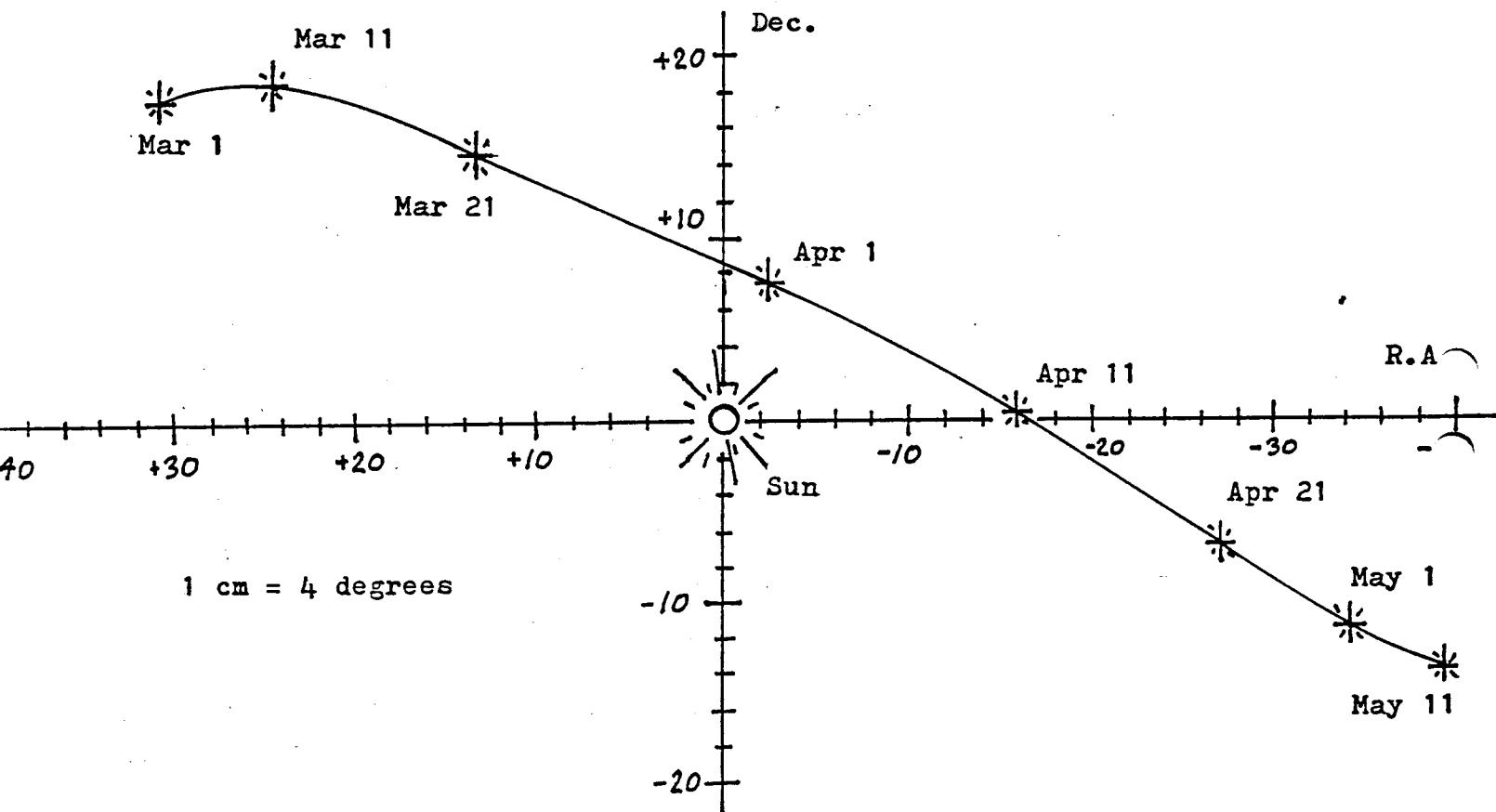
Next Executive Meeting:
March 15, 1993, 7:00PM
at the University of Saskatchewan Observatory
(before the General Meeting)

A good way to find Venus is to note the days that Venus is near the crescent Moon [March 23, 24 and 25; April 18, 19 and 20; May 17, 18 and 19; June 15, 16 and 17 this year - Ed]. You can more easily see the Moon because it is larger although the surface is dimmer than Venus usually. Once you have found Venus by naked eye viewing you will be able to locate it more easily. You can also use binoculars to locate it initially. Once you find it in binoculars you can move along the Earth until you can place a pole or tree limb or other closer objects in line with Venus. Then you can take the binoculars away and using the pole or tree locate Venus by eye.

You may also consult the *Observer's Handbook* to determine when Venus is close to the Moon in the daytime to help you in seeing it with your naked eye.

Submitted by Don Friesen
92-93 President, RASC Saskatoon Centre.

Path of Venus past the Sun in 1993



Date	Venus		Sun		Difference		Difference in decimal degrees		Separation of Venus and Sun
	RA	Dec	RA	Dec	RA	Dec	RA	Dec	
Mar 1	0 ^h 58 ^m	+12° 07'	22 ^h 55 ^m	-5° 44'	+2 ^h 03 ^m	+17° 51'	+30.75°	+17.85°	35.11°
Mar 11	1 ^h 03 ^m	+14° 20'	23 ^h 25 ^m	-3° 47'	+1 ^h 38 ^m	+18° 07'	+24.50°	+18.12°	30.14°
Mar 21	0 ^h 54 ^m	+14° 35'	0 ^h 01 ^m	+0° 09'	+0 ^h 53 ^m	+14° 44'	+13.25°	+14.73°	19.17°
Apr 1	0 ^h 32 ^m	+12° 06'	0 ^h 42 ^m	+4° 28'	-0 ^h 10 ^m	+7° 38'	-2.50°	+7.63°	8.03°
Apr 11	0 ^h 14 ^m	+8° 21'	1 ^h 18 ^m	+8° 14'	-1 ^h 04 ^m	+0° 07'	-16.00°	+0.12°	16.00°
Apr 21	0 ^h 07 ^m	+5° 13'	1 ^h 55 ^m	+11° 47'	-1 ^h 48 ^m	-6° 34'	-27.00°	-6.57°	27.73°
May 1	0 ^h 16 ^m	+3° 44'	2 ^h 33 ^m	+15° 01'	-2 ^h 17 ^m	-11° 17'	-34.25°	-11.28°	35.84°
May 11	0 ^h 35 ^m	+3° 54'	3 ^h 12 ^m	+17° 50'	-2 ^h 37 ^m	-13° 56'	-39.25°	-13.93°	41.27°

Positional data for the Sun and Venus from March to May

DAYTIME TECHNIQUES FOR VIEWING PLANETS!!!

You should have a 2" or larger scope, the larger the better. You must have an equatorial mount, a finder, and good setting circles. The R.A. circle should be driven if possible but this is not absolutely necessary. You must have clear blue skies. Venus is easiest to see then Jupiter and then Saturn or Mars.

Line up your mount on the north Celestial Pole. Leave the mount in position or mark the position of the legs so that you can set the scope up on the pole accurately in the daytime. (This is vital!) Next, look up the coordinates of the Sun and the planet involved for that hour of your day. In most cases it is best to take the 0^h Universal Time Coordinates for the next day for both the Sun and the planet. You may get these coordinates from the *Observer's Handbook*. Write down the R.A. and Dec. for both the Sun and the planet.

Put your scope in position for correct polar alignment. Focus the finder and the scope for infinity for your eye. You should use the widest possible field of view, low power eyepiece in the scope. If you have a solar filter you may use it to focus the scope on the sun spots. You may also cover up the main scope and use the solar filter on your finder to focus it on infinity. The finder MUST be focused on infinity. Be sure that the finder and the main scope are collimated to each other.

Now when you have all of the above done, you are ready to find planets. First point the scope at the Sun with the solar filter on the scope or with the scope covered over. If you do not use the solar filter there is still a way for you to accurately point at the Sun without looking through the finder. Have the finder cast a shadow on the palm of your hand. Cause the image of the Sun through the finder to be cast in the center of the shadow of the finder in your hand and you will be properly lined up on the Sun.

Using the data that you have written down from the *Observer's Handbook*, set the R.A. circle of the scope for the R.A. of the Sun. (Note the Dec. circle!). If the Dec. reading is not correct as the data given, note the difference + or - and change the reading for the Dec. of the planet accordingly. Now turn the scope in Dec. first and then in R.A. for the position of the planet you are searching for, in accordance with the readings from the *Observer's Handbook*.

Look carefully in the finder for the planet. Relax your eye, take your time, use the crosshairs to get your eye to focus on infinity. The planet is no more than a white dot of light. You should have at least a 6×30 finder although a 7×50 or larger is better. If you do not find it after searching then go back and repeat the procedure and check all data for the correct day and R.A. and Dec..

It will help if the finder is on the same side of the scope as the planet as this puts the finder in the shadow of the scope to shield your eye. If you do not have a driven R.A. circle be sure to reset it after looking for a while. When you find the planet move it to the center of your scope and you can then change to a higher power. GOOD SEEING!!!

- You must have:
- 1) Blue sky and planet high in sky
 - 2) Accurate polar alignment
 - 3) Finder and scope well collimated
 - 4) Finder and scope focused on infinity
 - 5) Accurate R.A. and Dec. for the Sun and planet
 - 6) The *Observer's Handbook* 1993

Submitted by Don Friesen
92-93 President, RASC Saskatoon Centre.

NAKED EYE VIEWING OF VENUS IN DAYLIGHT!

From the time Venus is in quadrature (90 degrees between the Sun and the Earth [this event happened on Jan. 21 - Ed.]) it is possible to see Venus in the daytime. Very clear blue sky is required. It is also necessary to shield your eyes from the Sun. You can do this by standing in the shadow of a building or a tree or telephone pole. You must force your eyes to focus on infinity and this is sometimes hard to do. Your eyes will focus on a distance of about 200 feet if you just stare into space on a blue sky day with nothing to give you any reference for distance.

MORP FIELD WORK ANYONE ?

The Meteorite Observation and Recovery Project (MORP) camera system operated from 1971 to 1985 with 12 stations from eastern Alberta to western Manitoba. Forty - four (44) events were recorded by the cameras. Some field searches have been conducted and one meteorite, the 2 kg Innisfree, was recovered as a direct result of the MORP sighting.

There is considerable potential for further meteorite recovery with a bit of diligent field work. If anyone is interested we will attempt to get organized to conduct 1 or 2 brief searches this summer. There are numerous potential sights in Saskatchewan, some of them not very far from Saskatoon. The field work would be conducted on weekends. Here's a chance to get some fresh air and exercise!

Three articles are available for those interested:

- Halliday et al (1978): The Innisfree Meteorite & the Canadian Camera Network. J. RASC 72(1)15-39.
- Halliday et al (1989): Detailed Records of Many Unrecovered Meteorites in Western Canada for which Further Searches are Recommended. J. RASC 83(2)49-80.
- Brown & Zalcik (1992): Recent Field Research on Potential Meteorite Falls from the Meteorite Observation & Recovery Project. J. RASC 86(3)130-139.

Watch for further information.

Kim Mysyk 374-2485

FINDER CHARTS FOR ASTEROIDS JUNO, HEBE, IRIS AND COMET SCHAUMASSE

The finder charts on the following pages were made using the information on pages 157 and 173 of the *Observer's Handbook 1993* and using photocopies of my *Uranometria 2000.0* star charts, cut and pasted together. The positions of Comet Schaumasse for days not listed on page 173 of the *Handbook* where calculated by myself using the orbital elements given on that same page and using the Earth's orbital elements given on page 10. (I have written a small FORTRAN program to do these calculations. Although it's not very "user friendly" I will give you a copy if you ask me.)

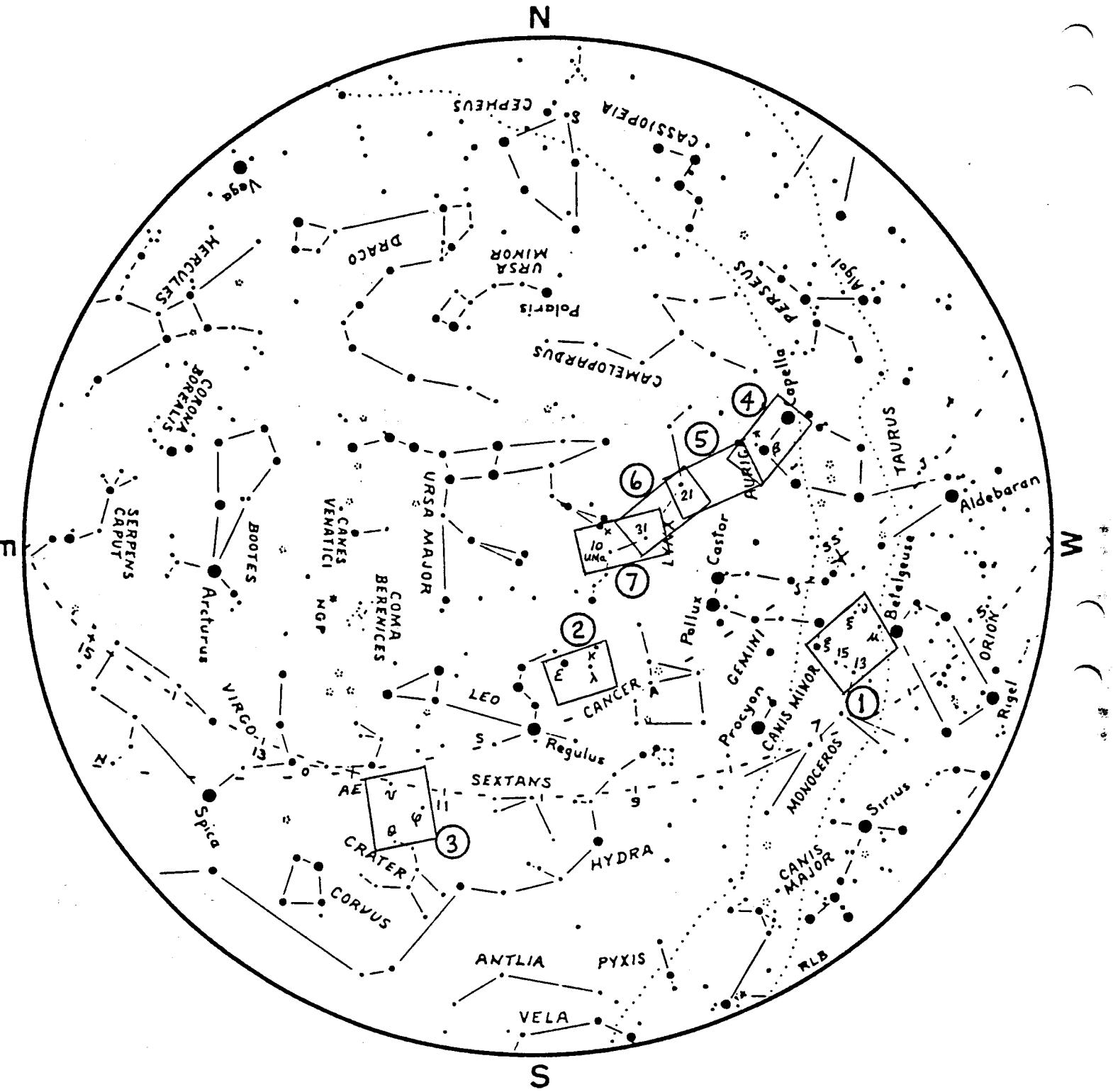
The copy of the all-sky chart on the next page was taken directly from the *Observer's Handbook 1993*. On it, the areas of the sky covered by each finder chart is marked. As well, the stars marked with Greek letters on the all-sky map may be used to begin your star-hop in the more detailed finder charts. For example, ξ Geminorum is marked both on the all-sky map and Map 1 for Juno. So one strategy for finding Juno would be to get ξ Geminorum in your finder and using Map 1, star hop to the field where Juno is. Note that the squares on the finder charts are 1° squares so a circle inscribed in the square is roughly the field of view of a low power eyepiece.

Dates are marked on the maps in the same way as in the *Observer's Handbook*; M4 means 0^h UT on March 4 etc.

Predicted magnitudes for the objects can be found on page 157 of the *Observer's Handbook 1993* for the asteroids and page 173 for Comet Schaumasse. Briefly, the magnitude ranges of the objects over the time span plotted on the charts are given as follows: Juno fades from magnitude 9.1 to 9.5; Hebe fades from magnitude 9.6 to 10.0; Iris brightens from magnitude 9.5 to 9.1 on March 14 and then fades to magnitude 9.9. Finally, Comet Schaumasse is at this apparition's maximum magnitude 8.1 on March 4 and fades to magnitude 9.6 by April 13.

If you find the charts for Comet Schaumasse too small to use, call me at 374-8803 and I can provide you with a full size copy.

Gordon Sarty



MARCH

IN MEMORY
of
Dr. Helen Sawyer Hogg

Professor Emeritus Helen Sawyer Hogg of the Department of Astronomy, University of Toronto, a former President of The Royal Astronomical Society of Canada, died on 28th January 1993 at the age of eighty-seven.

Dr. Hogg's special field was the study of variable stars in globular clusters, a field in which she was recognized as the world authority. In addition to publishing more than 200 research papers, she was working on the 4th edition of the catalogue on variable stars. Beginning her study of globular clusters at the Dominion Astrophysical Observatory in Victoria more than sixty years ago, she continued her program at the David Dunlap Observatory in Richmond Hill, accumulating more than 2000 photographic plates of the 130 globular clusters in our galaxy.

The many honours bestowed on Dr. Hogg recognizing her contributions to astronomy undoubtedly will be summarized in obituaries which should appear in the *Journal of The Royal Astronomical Society of Canada* and in the *Proceedings of the Royal Society of Canada*.

At various times every member of the Saskatoon Centre has been exposed to Dr. Hogg's true love of astronomy through the Helen Sawyer Hogg Lectures, through her weekly columns in the *Toronto Star*, or by meeting this truly outstanding individual at a General Assembly of the Society.

Dr. Hogg has left our small group of astronomers in Saskatoon a heritage of which we are very proud:

"Out of Old Books" was a section of the RASC Journal which she authored for many years. When the pressures of research forced her to abandon this series, Dr. Hogg discovered reprints in her office enabling her to collate and have bound 23 volumes of her articles. Number 20 of this limited edition came to Saskatoon as a valued addition to the B. W. Currie collection at the University of Saskatchewan Library;

The Stars Belong to Everyone, a book by Dr. Hogg that is the product of 30 years of lecturing, 25 years of writing a weekly column on astronomy and 20 years of poring over old books. A copy of this enjoyable text is held by the Physics-Geology Branch Library at the University of Saskatchewan; and

On a visit to Saskatoon, Dr. Hogg discovered among my old books an English translation of Rambosson's *Astronomy*. Sensing that the two volumes should be in close proximity, she immediately sent me from her personal library a copy of the original French edition published in Paris four years earlier. Her generosity to me as a colleague was typical of Helen.

We also were most fortunate to receive a personally inscribed copy of her biography, *Helen Sawyer Hogg - A Lifetime of Stargazing* by Michael Webb. It will remain one of our more cherished possessions. This is one in a series of books documenting the lives of exceptional scientists. The name of Helen Hogg thus became associated with those of Frederick Banting, Alexander Graham Bell, Marie Curie and Louis Pasteur; very distinguished company and a recognition which she richly deserved.

A few days before her death, Dr. Hogg participated in a video, produced at the University of Toronto, designed to encourage women to enter the field of natural sciences. Her own career in astronomy clearly illustrated any barriers or prejudices could be overcome and unquestionably exemplified what could be accomplished.

Canada mourns the loss of our most distinguished astronomer, Dr. Helen Sawyer Hogg.

J. E. Kennedy