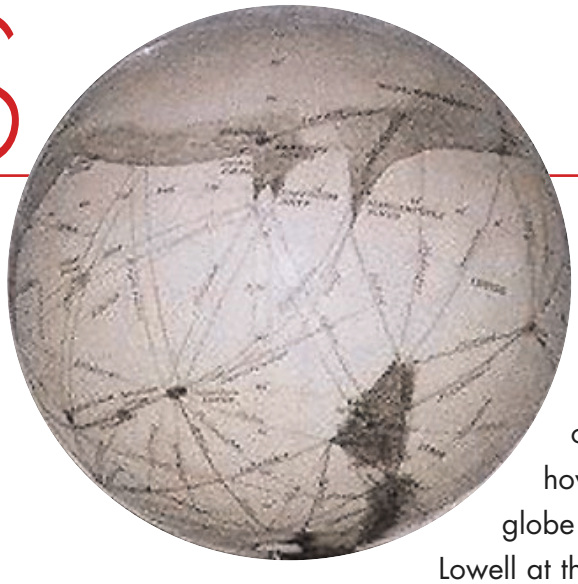
Saskatoon Skies

The Newsletter of the Saskatoon Centre of the Royal Astronomical Society of Canada

Vol. 34, No. 6 **June 2003**

MARS



This summer's Planet of Choice is Mars, which makes a very close approach to Earth! Murray Paulson's article on page 6 let's you know how best to see it! This globe was made by Percival Lowell at the turn of the century.

PHOTO BY RICHARD HUZIAK

In this issue...

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Membership?

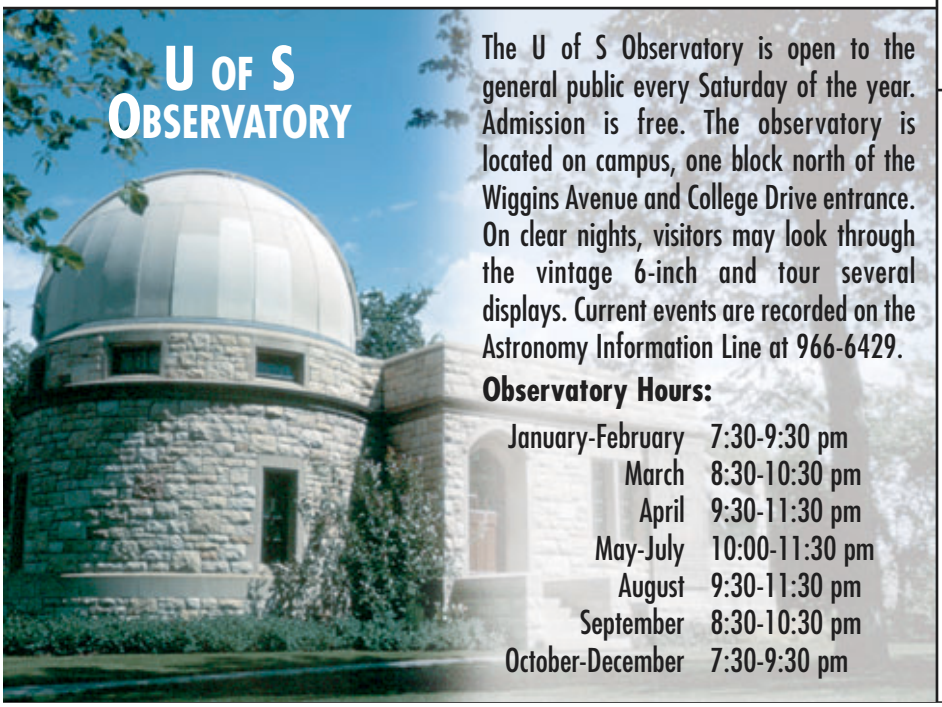
It's never too late to join!

Regular: $52.00/year
Youth: $27.50/year

The Saskatoon Centre operates on a one-year revolving membership. You will be a member for the next 12 months no matter when in the year you join. If you do not want to join at this time, ask to get onto our FREE 3-month Temporary Membership list. You will receive regular mailings of our *Saskatoon Skies* newsletter and will be invited to participate in Centre activities. Members are encouraged to renew early to avoid disruption in publications. Renew through the membership coordinator, Bob Christie, or renew through the National Office and let Bob know that you did!

Benefits of Membership in the Saskatoon Centre

- knowledgeable & friendly amateur astronomers
- use of the Sleaford Observatory
- use of the U of S Observatory (after training)
- *Saskatoon Skies* Newsletter
- **Observer's Handbook 2003**
- **The Journal of the RASC** (bimonthly)
- **SkyNews Magazine** (bimonthly)
- use of the Centre library
- discounts to **Sky & Telescope Magazine**
- discounts of Sky Publishing merchandise
- discounts to Firefly Books
- free, no-cost, no-obligation, 3-month temporary membership if you don't want to join right now!



The U of S Observatory is open to the general public every Saturday of the year. Admission is free. The observatory is located on campus, one block north of the Wiggins Avenue and College Drive entrance. On clear nights, visitors may look through the vintage 6-inch and tour several displays. Current events are recorded on the Astronomy Information Line at 966-6429.

Observatory Hours:

January-February	7:30-9:30 pm
March	8:30-10:30 pm
April	9:30-11:30 pm
May-July	10:00-11:30 pm
August	9:30-11:30 pm
September	8:30-10:30 pm
October-December	7:30-9:30 pm

About this Newsletter…

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Saskatoon Skies is published monthly by the Saskatoon Centre of the RASC. Distribution is approximately 100 copies per issue. Saskatoon Skies welcomes unsolicited articles, sketches, photographs, cartoons, and other astronomy or space science articles. Articles can be sent by mail in any format to the Centre's mailbox. Submitted materials can be returned upon request. Submissions may also be sent by e-mail – preferred as **plain unformatted ASCII text files without line breaks**. Images sent by e-mail should be attached .EPSs, .TIFs or .JPGs (.GIFs also accepted). Send e-mail submissions to the editor at <huziak@SEDSystems.ca>. Please send articles in "generic" formats with simple formatting – one tab at the beginning of paragraphs, one space after commas and periods. A separate by-mail subscription to ***Saskatoon Skies*** is available for **$15.00** per year. ***Saskatoon Skies*** is also posted on our Saskatoon Centre homepage as a .pdf file and can be downloaded free-of-charge. Members may choose to receive the newsletter by regular mail or via the Internet. Articles may be reprinted from ***Saskatoon Skies*** without expressed permission (unless otherwise stated), but source credit is requested. **DEADLINE for submissions is the 26th of each month.** ***Saskatoon Skies*** accepts commercial advertising. Please call the editor for rates. Members can advertise non-commercial items free of charge.

Bottle Drive & Canadian Tire $

by Darrell Chatfield

Please remember our on-going bottle and now Canadian Tire money drive to fundraise for the Centre. Bring them to General meetings. I will collect them after the meeting concludes. If you cannot make it to the meeting but would like to contribute, please call me at 374-9278.

RASC Calendar of Events

DATE (2003)	EVENT	CONTACT	TELEPHONE
May 22	**Noctilucent Cloud Season begins**	Richard Huziak	665-3392
June 16	**General Meeting – The Urban Observing Certificate, Noctilucent Clouds & the Upcoming SSSP** – Room 8313, City Hospital, 7:30 p.m.	Les Dickson	249-1091
June 21	**A Day Tour with Tenho & Garry**	Richard Huziak	665-3392
June 26	Possible **June Bootids/Draconids Meteors**	Richard Huziak	665-3392
June 27-30	**General Assembly in Vancouver**	Rajiv Gupta	www.rasc.ca
July 3-6	**Alberta Star BQ**	Richard Huziak	665-3392
Jul.26-Aug.3	**Mt. Kobau Star Party**	*contact tbd*	
July 29	**South delta Aquarid Meteor Peak**	Richard Huziak	665-3392
Aug. 12	**Noctilucent Cloud Season ends**	Richard Huziak	665-3392
Aug. 12-13	**Perseid Meteor Peak** (full moon)	Richard Huziak	665-3392
Aug. 22-24	**Sask. Summer Star Party 2003** – Cypress Hills Provincial Park	Les Dickson	249-1091
Sept. 15	**General Meeting – "What I Did This Summer" – SSSP & More** – Room 8313, City Hospital, 7:30 p.m.	Les Dickson	249-1091
Sept. 25-28	**Alberta Star Party**	Richard Huziak	665-3392
Oct. 20	**General Meeting – Annual Elections** – Room 8313, City Hospital, 7:30 p.m.	Les Dickson	249-1091
Nov. 8	**Total Eclipse of the Moon** – 5:00 p.m. to 10:22 p.m.	Richard Huziak	665-3392

General Meeting

Monday, June 16, 2003, 7:30 pm – Room 8313, City Hospital

Presenting:

The Urban Observing Certificate

Mike Clancy

What can you see from your light-polluted back yard? From personal experience, Mike will present an idea for a new observing certificate for everyone!

Don't Like Variables? Try Noctilucent Clouds!

Richard Huziak

We are now one month into the four-month long Noctilucent Cloud season. What's a Noctilucent Cloud? Check this out!

The Upcoming SSSP An Invitation to New Members

Les Dickson

If you haven't been to the SSSP, you're missing a great time! Watch this!

Sky Buys & Mirror Cells

The Saskatoon Centre's Swap and Sale Page!

For Sale: ***Sky Catalog 2000 - Vol.2,*** by Sinnott – $30.00. ***Astronomy,*** 2002, by Robert Burnham – Color sky charts, planet information, etc., – $15.00. ***Guide to Stars and Planets,*** by Patrick Moore, 256pp, softbound, 1995. Color photos and star charts – $12.50. **35mm Bausch and Lomb Plossl eyepiece,** fully coated. Excellent shape; in original box with dust caps – $80.00. Call Darrell at 374-9278.

For Sale: Meade 4400 4.5" Newtonian upgraded with **Celestron 6x30 finder, Meade MA25** and **MA9 1.25" eyepieces, RA motor drive** – $300 or best offer. Call Brent at 224-9872 or e-mail brent.burlingham@usask.ca

For Sale: Kendrick 2" Laser Collimator. Used only a few times. Did not fit my MN56 drawtube properly. Call George Charpentier at 242-3916.

REMEMBER... YOU CAN SIGN UP TO GET THIS NEWSLETTER ON THE INTERNET instead of waiting for snail-mail. Current electronic subscribers *save us over $320/year* in mailing costs.

Minutes of the Executive Meeting
Room 8313, City Hospital, May 12, 2003

Recorded by Al Hartridge, Secretary

1. Additions to the agenda and approval of the revised agenda. Moved by Rick Huziak, seconded by Jim Young and carried.
2. Approval of minutes of the Executive meeting of March 17, 2003. Moved by Ellen Dickson, seconded by Jim Young and carried.
3. Astronomy Day: Good turn out of volunteers and scopes, low volume of people.
4. Treasurer's Report: No change.
5. Membership: 73 members have paid up.
6. Fundraising: Turned down by the Saskatoon Foundation.
7. Sleaford: Work needs to be done on the deck and main door. A railing has to be built for the deck. There has been minor vandalism at the site. Several light bulbs have been broken. Occurred between the 3rd and the 8th of May.
8. Observers Group: Nobody out to the variable star clinic.
9. SSSP: Cheque sent to the Park to hold accommodations for the star party. Amount equals $1750.00. Next planning meeting is May 25th at 2:00pm at Sandy's.
10. Lunar Eclipse: a group will meet at the Bessborough Park on Thursday.
11. INVENTORY: Needs to be drawn up to keep track of our stuff.
12. Tour of Tenho and Garry's facilities will take place in June on a Saturday or Sunday.
13. Reimbursement: Of expenses to Rick Huziak to pay for a new projector bulb of $23.00 approved.
14. Meeting adjourned at 7:30pm.

Quick Notes on Recent Events

Astronomy Day Display – May 10th

This display was held at the Mall at Circle and 8th from 9:30am to 5:00pm. The display consisted of several telescopes, books, posters, a slide show and a computer demonstration by George Charpentier. At least 17 members helped out during the display. Thank you, everyone! The crowd was quite light, but many people stopped to talk to us. The gastronomy after the display was attended by 16 members.

Astronomy Day Starnight – May 10th

A planned starnight at Beaver Creek Conservation Area was lightly attended by the public – only about a dozen families made the trip, but one family did travel quite far – they were from Siberia! Again, member turnout was super – maybe our best showing for many years. At least 18 members brought their scopes! (I didn't know we had that many!)

The Total Lunar Eclipse of May 15, 2003 – A Cloudy Sidewalk

We planned a last minute Sidewalk Astronomy session to attempt to show the passing public the total eclipse of the moon. Jim Young set up his C-8 and Rick Huziak set up his 10". However, cloudy weather at the east horizon stopped us from seeing the eclipse. Chris Martin was the only one who spotted anything, seeing the later partial phase though a 3-second long break in the clouds. By the time we turned around, it was gone! Rick Huziak entertained the crowd during the wait by showing daytime & twilight Jupiter and its moons through the thin haze. This time, 10 members/family members helped out.

Skywatcher's Calendar 2003 Wins Two International Awards!

Media Heritage House <theheritagegroup@shaw.ca>

Skywatcher's Calendar 2003 has recently earned two international awards in the Chicago-based Calendar Marketing Association's thirteenth annual National Calendar Awards competition.

Competing against 290 entries from Brazil, Canada, Germany, Italy, Israel, and the United States, Skywatcher's 2003 won the Silver Award for the "Most Informative Wall Calendar" in the National Awards Retail Division. It also won the Bronze Award for "Most Original Calendar" in the World Calendar Division. This is the first year that Heritage House has entered this juried competition, which ranks as the calendar industry's premier competition, recognizing the highest quality calendar design and production.

Skywatcher's Calendar 2003 features over 20,000 words of informative text and celestial insights, spread over 365 days. First published in 1997, Stan Shadick's annual calendar-book has evolved into a unique educational tool and sky-chart reference guide for children and adults alike. Enhanced annually with original graphics from Articulate Eye and designed by Darlene Nickull of Heritage House, this increasingly popular calendar depicts monthly sky-charts relevant to night skies from latitudes 37° north (San Francisco) to 60° north (the Arctic Circle). The range includes all Canadian communities, U.S. cities from Washington D.C. to San Francisco and points north, Great Britain, and most of Europe.

Stan Shadick teaches astronomy courses at the University of Saskatchewan, as well as supervising the University's observatory. He also writes a monthly astronomy column for the Saskatoon Sun.

Skywatcher's Calendar 2004 will be published in June 2003 (ISBN 1-894384-62-8; $15.95 CND, $12.95 USD).

The URBAN OBSERVING CERTIFICATION

by Mike Clancy, <mclancy@sasktel.net>

The purpose of the certification is to encourage astronomical observation by as wide a range of persons as possible, regardless of ability, equipment or suitability of site. There are many people who do not understand just how insidious a problem light pollution can be; they have grown up unaware of the grandeur of the Milky Way and do not know the wonder of a dark, starry night. There are also those that do know these things but think that only expensive equipment and dark sky sites are suitable fro astronomical observing. Even worse, perhaps; they've purchased or been given poor quality equipment and are frustrated by their lack of success with it. Another hindrance to regular observing is the time required to find a suitable site, pack up all the kit, drive there, set up, swat bugs, pack up, drive home, and grumble about it to whosoever will listen. For these reasons I have begun to work on a series of nested urban observer's certificates (UOC) that could be granted (if approved) by the RASC, Saskatoon Chapter, to successful applicants. The certificates would emulate the evolution many of us undergo in this hobby, distilling decade's worth of "looking up and wondering" into a few month's of planned observing.

All observations should be taken from an urban site where light pollution is minimized (don't stare at a streetlamp!), but still from within an urban setting. Your back yard will do quite nicely. It is quite alright to accept help from more experienced observers for the first level or two, but the last two levels should be completed individually. Indeed, groups are encouraged to work through the first level together although it isn't necessary to do so.

The first level would be suitable for naked eye viewing, looking for the asterisms and constellations that make up the major landmarks of our skies. Directions given would be "right and left, up and down," with the magnitude of the brightest stars given more for reference than guide post. There would be patterns featured through each season, encouraging the habit of looking up. This would be, however, the simplest of the levels as an interested observer could see all the objects on one (albeit long) night. One requirement of the program would be the creation and maintenance of a log book for observing notes; an easy level like this would lay the base for more extensive observations in later levels.

Having established a proficiency in navigating the heavens via major constellations and stars, the use of binoculars would be a logical progression. The choice of objects for this level would begin branching out to include nearby galaxies, nebulae, clusters, binary stars and colored stars. Again, the use of a logbook is mandatory and the observer would be encouraged to borrow guide books from the local library to narrow their searches. This level would also be fairly easy although some thought would have to be given to recording the night's clarity by comparison with naked eye observations of several dim stars (i.e. the "handle" stars of Ursa Minor). Planetary observations could begin for the brighter ones.

The third level would be for telescope observations of dimmer objects. I would recommend advertising the center's rental scopes for this purpose to ensure that those willing have access to such equipment. Dimmer galaxies, clusters and nebulae would be featured and the observer would be challenged to seek specific objects at certain seasons. Planetary moons and features would be observed as well as their motion documented as part of their log book.

The fourth level would be a challenge. The assumption is that observers would own a small telescope of their own at this point, or have constant access to one. Variable stars would need serial observations, proximal objects must be resolved, and a reasonably detailed understanding of the night sky would be expected. By the time this level has been reached, one would expect the observer to be fairly proficient and (hopefully) a member of the Centre. They should already have begun looking at dark sky sites on their own accord, simply to improve their own views and observations.

Applicants should submit their log books for verification to the Centre's Observing Committee, from which certification will be authorized. Those applying for certification as part of a group observation (e.g. scout troops or school classes) will be awarded group certification to minimize impact on committee members' time and resources.

The Planets this Summer, 2003

by Murray D. Paulson, Edmonton Centre <mpaulson@ecn.ab.ca>

In last month's installment, I mentioned that Mercury would sit at greatest western elongation on June 3 when it will sit 24.3 degrees from the sun. It continues on to dichotomy on June 9th when it shows a 7.15" half disk. As the month progresses, Mercury will continue to catch up with Venus on their way back toward the sun, eventually catching up and passing on June 20st & 21nd. At this time, it will be a very close encounter when both will show near full disks. They will be 24 minutes of arc apart, visible together in the same high power telescopic field! Mercury will shine at Magnitude -0.9 and will show a 5.8" disk while Venus will be the brighter and bigger of the two, 10.2" and magnitude -3.9. The pair now sits 15 degrees from the sun and about one degree below the ecliptic. This is definitely an excellent photo opportunity. Please let me know if you have some luck at this. As always when hunting for planets near the sun, take great care not to inadvertently point the telescope at the sun. Serious eye damage will result. With the pair 1 hour to the west of the sun, and if the scope is left unattended, the sun will be in the field of view and pose a hazard. Mercury is in superior conjunction with the sun on July 5th where it will pass above and behind the sun. It will swing into the evening sky over the next month and sit at greatest eastern elongation on August 14th where it will show a 7.39" half phase at magnitude +0.3. This evening apparition will be lost in the evening twilight glare due to the incline of the evening ecliptic. So observe Mercury in the daytime with setting circles or your computer goto scope. If the seeing is great, look for subtle details on it!

Venus spends the whole summer getting closer to the sun. It catches up with old sol on August 18th when it will pass one degree above the sun, but on the opposite side from the earth. If you were to look at it, you would see its magnitude -3.9, 9.64" diameter disk. This is quite the contrast of what you will see in exactly one half synodic cycle, June 8th, 2004, when it passes in front of the sun with a 57.75" silhouette.

Mars is the big show this summer. Most of the rest of the solar system has fallen into the twilight zone of the sun and won't make its reappearance until fall. Neptune and Uranus are the notable exceptions, which will sit at opposition this summer, but more on them later! Mars's opposition is on August 28th when it will outshine even Jupiter at magnitude -2.9 and show a 25.1" disk! This is one of the closest oppositions in over 15 years, and as Bruce McCurdy points out in his article in the Journal, one of the closest in modern history. Well, now that I have gotten you excited, here's the bad news. Mars never rises higher than 22 degrees in our night sky. To add insult to injury, Mars is fully 6 degrees below Uranus and the ecliptic! Dang! The only solution is to move south. At the summer star parties, we will gain another 3 degrees of altitude, which will help enormously. Despite these handicaps, this is the best you will get to see Mars for another 15 years, so get out often and when the conditions are good you will be rewarded with a wealth of details.

If you stay up late enough or get up early enough in the morning to watch Mars, as the summer goes by, you will see it as it progresses through retrograde east of Capricorn. Retrograde is the apparent reversal of a planet's motion across the sky due to the Earth's motion. Mars passes through the eastern arc of this loop on July 28th as it curves south and then west for the next two months. On September 27th it passes through the western apex of the retrograde loop as it curves back to the north to start its journey east again. On July 28th Mars is 23 degrees above Saskatoon's horizon and it shines at Magnitude -2.2. From this point on to the end of September it will be larger than 21" and be brighter than magnitude -2.2. It declines a few degrees altitude in the sky as it passes through opposition and then climbs again as it goes round the western curve of retrograde. In the eyepiece you will see the southern polar cap subside as Martian spring progresses toward summer. The southern hemisphere of Mars is tilted more than 18 degrees toward us in July and the tilt will continue to increase until late in the year when it will max out at 26 degrees. The Martian summer solstice will occur late in our month of September.

Mars transits very late in the morning sky in July and improves to near 2 a.m. by the end of August. So I believe that late August and the fall will become the prime Mars Observing Season. For good maps of Mars, look in the July issue of *Sky and Telescope*, *The RASC Observer's Handbook* and *Astronomy Magazine*. I have noted a good conjunction on the night of July 16th to the morning of the 17th, the moon passes 21' of arc below Mars at 2 a.m. local time.

June is the last hurrah of Jupiter as it plummets into the twilight glare of the sun. A wonderful season of mutual events and an interesting parade of transits will be this year's highlight. Jupiter sets just before 1 a.m. local time in June, so there are a few good sessions left over the next month. This will be the first season that Jupiter will not accompany us at the star parties in over a decade.

Although Jupiter and Saturn are gone, Uranus has risen enough up the ecliptic to make it a worthy target on these summer nights. It now sits 19 A.U. away in Aquarius, east of Capricorn in the sky above the Helix Nebula. Uranus is at opposition only a few days before Mars, on August 24th. It will show a 3.71" disk and shines at magnitude 5.7. While you are at the star parties, or watching Perseids, see if you can find Uranus naked eye. This will boost your total of naked eye planets to 8. Just

continued next page

make sure you have a good finder chart. All 6th magnitude stars look the same! While you are at it, you can hunt down Uranus's moons. Titania is at mag. 13.9, Oberon at 14.1 and Ariel at 14.3. Well, maybe Titania. This is a challenging observation, but some fun.

Neptune is at opposition on August 4th when it will exhibit a 2.35" magnitude 7.8 disk. This is well beyond naked eye status, but it will show up as an aqua-marine disk in the eyepiece at high power. Neptune is farther away than Uranus, at 29 A.U., but its moon Triton shines at magnitude 13.4, so it is a much easier target than Uranus's moons. The glare from Neptune is less as well, so good luck hunting for it.

We end our walk through the summer's planets with Pluto. It was at opposition on June 9th when it shone at magnitude 13.7. It is within the grasp of an 8" scope, but at its low altitude in the sky, it suffers atmospheric extinction and becomes a serious challenge. Our summer twilight will make it even more challenging yet, so you may have to wait till August to make that Pluto connection. When you do, tuck a good Pluto finder chart in your books when you go out to hunt it down. Denis Boucher puts up an excellent finder chart made with Guide on the RASC Edmonton web site. Study the chart and your atlas before you go and it will be a lot easier when you hunt it down. Good luck and have a good summer.

Data used in my column courtesy of Guide 7.0 and Earth Centered Universe

Tenho Tuomi's Little Barn Observatory

by Tenho Tuomi <tuomi@sk.sympatico.ca>

Even though I started with a design I had never seen before the observatory has worked well. I haven't needed to change anything on it, except to cut some lower portion doorways to make it easier to step into the observatory. I usually keep the north roof closed for some wind protection, and also to shield me from the yard light. If observing North, I turn the yard light off and open both sides of the roof as in the last picture.

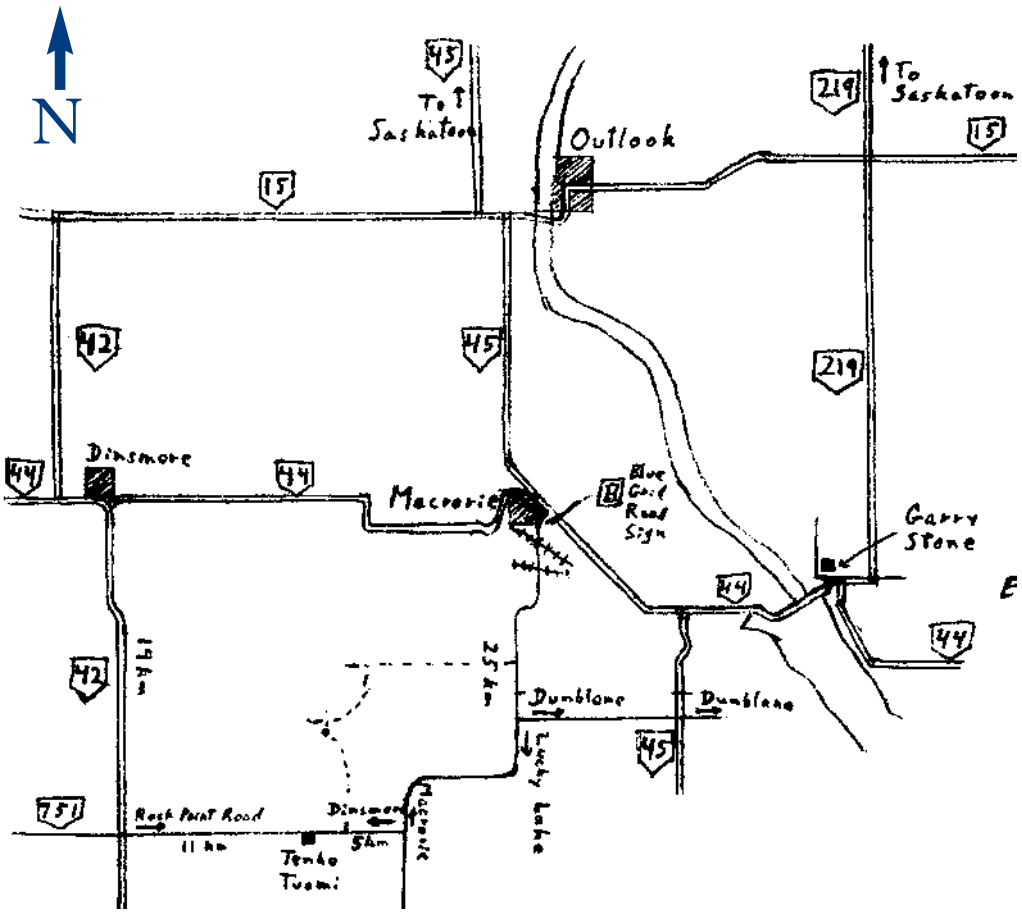
This picture of my observatory is scanned from a 1 minute time exposure 35 mm picture taken Dec 12, 2002 by moonlight. The bright star in the sky is Pollux.

The observatory is 8 feet square. Eight 3.5 foot long 4 x 4 posts were used for the foundation posts. I used seven sheets of plywood for the walls and roof, plus 2 x 4's and 2 x 2's for ribbing and stiffening. The walls are 2 x 8 foot 3/8-inch plywood. Each side of the roof is one 4 x 8 foot 3/8-inch plywood and one 2 x 8 foot 1/4-inch plywood. The overlapping and removable end pieces needed some engineering to be able to cut them from two sheets of 3/8-inch plywood. I might replace the roof plywoods with aluminum roof sheeting to cut the weight down for opening.

Looking over the old *Sky and Telescope* magazines I saw that my observatory design was not original. There were many variations of it over the years, most with counterweights or motors to help open the roof. However I did not see any with a hip roof like mine. That design enabled me to make an 8 x 8 foot observatory that is just big enough to house a 8 inch wide x 48 inch long Equatorial Newtonian, and still see down to the horizon in all directions. Besides, it matches the other building behind it.

My observatory, also on the right, but the picture is a 4 minute time exposure taken Dec 28, 2002 at night during aurora and thin overcast to show on the left, the glow from Regina lights 200 km away. The glow from Saskatoon and Swift Current lights is often seen from here about 100 km away, but the glow of Regina and Moose Jaw lights is sometimes seen as well. The lights on the right are Lucky Lake, 20 km away.

Attend a Club Tour to Tenho's & Garry's Astronomy Havens – June 21st



Schedule

(somewhat flexible)

Leave Saskatoon	1:00 pm
Tour Gardiner Dam Visitor's Centre	2:00 pm
Leave Gardener Dam for Tenho Tuomi's	3:15 pm
Tour of Tenho's Weather Station & Observatory	4:00 pm
BBQ at Tenho & Velma's	5:00 pm
Leave Tenho's for Garry Stone's	7:30 pm
Tour the Gardiner Pump Station	8:00 pm
Tour Garry's Observatory	8:30 pm
Dessert at Garry & Myrna Stone's	8:30 pm
Stay and observe at Garry's or return to Saskatoon (1 hour drive)	

The club is planning a tour out to members' Tenho Tuomi's and Garry Stone's weather station and observatory. This will be an all-day event on Saturday, June 21st, the Summer Solstice. Members and their spouses and families are welcome to attend. If you plan to attend, please ***RSVP to Richard Huziak by June 18th*** so we can get a head-count. **Huziak@SEDSystems.ca** or **665-3392**. We will levy a cost per participant of $4 each to offset the cost of food; pay Rick Huziak at the event.

If you'd like to tour the Gardiner Dam Visitor's Centre, leave Saskatoon by or before 1:00 pm, and meet in the parking lot at the Dam by 2:00 pm. (If you need to car-pool, call someone on your own. We will not be meeting as a group in Saskatoon before we leave). We can tour the station (there is no admission, but there is a gift shop and restaurant) then leave as a group for Tenho's afterward. If you do not want to tour the station, go straight to Tenho's and arrive by 4:00 pm. It is about 1 hour 45 minutes from Saskatoon.

At Tenho's, we'll tour his climatological station that he looks after for Environment Canada, the magnetometer station that he looks after for the University of Tokyo, and the Little Barn Observatory, of course. His wife, Velma is offering to provide a barbecue at about 5:00 p.m. for the group.

Then from Tenho's place, we drive to Garry Stone's, a half hour drive. For those who are interested we can detour by way of the highest point of land, elevation 2600 feet, from where you can see the Rosetown terminals and Mount Blackstrap. That road is rough and requires high clearance vehicles. Tenho can take his supercab truck. The rest of us can take better roads and drive straight to Garry's.

Garry lives next to Gardiner Dam, so we're just about back to where we started. Garry looks after the irrigation pumping station and he offers to take us on a tour through it. The tour will culminate with Garry's observatory and dessert courtesy of Garry and his wife, Myrna.

You can stay and observe if the sky ever gets dark (since it is the Solstice). Bring your scope if you like. It is a little over an hour drive from there back to Saskatoon when you decide to return. Garry has a few spots for tents or RVs if you'd like to stay overnight.

Remember, send an RSVP or questions to Rick Huziak.

Ask AstroNut

The **Ask AstroNut** column is an anonymous question and answer advice column, where you can ask any question you want, boneheaded or brilliant, and the editor will find someone who will give you a somewhat educated answer.

Dear AstroNut: Let me add my kudos on your excellent Jovian sketches and appreciation for the work that must have went into it. Just curious, you were using a 3X barlow with a 12 mm. As I've used nothing but a 90mm refractor, excuse my ignorance, but you must have some big aperture to handle that kind of magnification? I was happy to be able to just make out Callisto's shadow that night – with no barlow!

AstroNut answers: For high power applications, especially for 'brighter' objects like planets, and even for deep sky, I believe you should always try to use the highest power you can, despite what you telescope may be 'rated' for. There really is no limit to how much power you can use, because you can always stack more and more barlows onto your eyepiece (if you can borrow enough from friends around you :-). I've had my 10" scope up to 1200x last year at our SSSP star party, and Saturn was as big as a baseball and crystal clear.

The bottom line is to push whatever power you can – keep going until one or more of the following happened:

- your main optics are not good enough,
- your eyepieces are not good enough,
- the sky is not good enough,
- observer experience fails.

Nine times out of 10, the culprit is poor seeing or poor transparency of the sky – there may be 10 nights a year where I can use 600x on my scope and 1 or 2 a year where the 1200x is steady. Most nights I'm limited to around 400x, some nights even less. The general 'rule' of working magnification is that your optical system under an average sky should be able to use 50x per inch of aperture, so your 90mm should always be able to use 3.5"x50 = 175x and on better nights, 100x per inch will be double (= 350x).

However, I find that smaller scopes have fewer lens/mirror defects (spherical aberration, wave-front error, coma, etc.), so you should be able to push your normal powers higher. Also, the longer your focal length, the 'easier' it is to achieve high power (since scope focal length times eyepiece f.l. = magnification), and you also have a darker background sky (higher contrast). This is the usual reason why longer focus refractors of smaller aperture see planets 'better' than shorter focus large aperture scopes. For example, I used to have a 4.25" f/10.8 Newtonian, on which I regularly used 800x and got good images, but I cannot get the same image scale with my 10", since usually 400x is the working limit due to more 'defects' showing up at the shorter focal length of f/4.5! Never believe in fixed limits for magnification! (And make sure your optics are clean and very-well collimated).

This aside, my use of a barlow is supplemented by the 12mm being a very nice and well-corrected Radian eyepiece ($350). If my barlow was a Televue Powermate instead of a cheapo Meade POS, I'd push the power successfully even higher most nights! If I could afford Naglers (at $700+), views would be even better. The quality of your barlow and eyepieces goes a long way, and is likely the most important part of any visual system (i.e. spend as much as you can on eyepieces even if you have a small scope)!

Lastly, the experience of the observer is really number 1 in the equation. Observing often is the key to 'knowing' what to expect in a view, and then taking enough time to really 'observe' what is in the eyepiece. Typically, I will look at the face of Jupiter for 10 or 15 minutes before I decide I'll sketch it to the detail that I have in the on-line pdfs on our website. Many observers simply give it a 3-second glance and then declare they "don't see anything!" You have to give it time, since often there are a few seconds of exceptional seeing mixed in with minutes of real crud. You have to get enough of those seconds in, even if they are not consecutive. Some of my deep sky searches have lasted 45 minutes or more viewing time per object so that I can see arms or starclouds in faint, fuzzy galaxies of 13th or 14th magnitude! Take your time!

My favourite planetary scope remains a 3.1" (80mm) f/12 refractor that I borrowed for a 3-year period. The small, well-corrected optics and the long focal length gave me fabulous views of Jupiter and Saturn. However, to see the really finest detail of white spots, festoons, good colour and things of that nature, you really need a larger aperture and hopefully a long focal length.

The Centre Inventory...*Please Help*

We've noticed recently that we have Centre assets scattered all over the place, residing in many member's basements. In some cases, we have 'lost' some Centre-owned articles and suspect members really have these somewhere. To rectify the situation, we are asking ALL MEMBERS to provide us with an inventory of whatever they might have that really belongs to the Centre. Please make a list of items in your possession (even if you think we might know), list model and serial numbers if applicable, and mail the list to the Centre mailbox or email to dicksonl@sasktel.net or Huziak@sedsystems.ca What you may have is: library books or newsletters, telescopes, slides or pictures, photocopiers, collimators, telescope making supplies, banners, signs, etc. It is imperative that we get this list together by the early summer.

The Messier, H-400 & H-400-II, FNGC, Binoc & EtU Page

Join the Club! Observe all 110 Messier, 110 Finest NGC, 400 Herschel I or 400 Herschel II, Explore the Universe, or 35 Binocular objects and earn great OBSERVING CERTIFICATES!

MESSIER CLUB

Certified at 110 Objects:
R. Huziak, G. Sarty, S. Alexander, S. Ferguson, D. Jeffrey, D. Chatfield, B. Christie, K. Noesgaard, M. Stephens, B. Hydomako

Tenho Tuomi	Appy	110
Mike Oosterlaken		93
George Charpentier		79
Wade Selvig		75
Mike Clancy		72
Lorne Jensen		69
Brent Gratias		39
Stan Noble		28
Tyrone Klassen		26
Brent Burlingham		20
Debbie Anderson		17
Brian Friesen		15
Les Dickson		14
Kathleen Houston		13
Ellen Dickson		6

FINEST NGC CLUB

Certified at 110 Objects:
R. Huziak, D. Jeffrey, G. Sarty, D. Chatfield

Scott Alexander		97
Ken Noesgaard		24
Sandy Ferguson		23
Mike Oosterlaken		20
Bill Hydomako		15
Mike Clancy	NEW	3

Chatfield BINOCULAR CERTIFICATE

Certified at 35 Objects:
M. Stephens

Tenho Tuomi	Appy	36
Mike Oosterlaken		32
Mike Clancy		27

EXPLORE the UNIVERSE

Certified for Certificate:
M. Clancy

Tenho Tuomi	Applied!	LOTS

HERSCHEL 400 CLUB

Certified at 400 Objects:
D. Jeffrey, R. Huziak, D. Chatfield

Gord Sarty	251
Scott Alexander	102
Mike Oosterlaken	68
Ken Noesgaard	44
Sandy Ferguson	18

HERSCHEL 400-II CLUB

Certified at 400 Objects:

Richard Huziak	196
Darrell Chatfield	106

The Messier & Finest NGC lists can be found in the *Observer's Handbook*. The Explore the Universe list is available on the National web site. The Binocular list & Herschel 400 list will be available at each general meeting for 50 cents (covers photocopying) or can be mailed out on request to distant members. Each month I'll be posting updates.

Notes from the Editor

Brent Burlingham writes: *"I suddenly realized the other day that a bunch of my first Messiers were done with my ETX-60, which is cheating. I'm currently at 40 total, but I have 20 to re-do manually. Maybe best to take me off until I re-do the 20…I'll let you know once I'm done. Sheepishly yours."*

Brent is playing strictly by the current rules for the Messier and Finest lists, where all objects are to be found manually by hopping or by the use of manual setting circles. Quite frankly, I see this as more of a matter of personal matter, since what I find most important is that you put the effort in to go out and observe, regardless of whether or not you used a manual or go-to scope. With the prevalence of go-to scopes, I'm sure this restriction will soon change. I've put his number back to 20 at his request [Ed.] Unfortunately, **Tenho's Messier Certificate** is being held up due to bureaucratic processes at National. Updates have been received from Darrell Chatfield, Lorne Jensen, Brent Burlingham, me, George Charpentier, Tenho Tuomi, Tyrone Klassen, Mike Clancy, Les Dickson, Scott Alexander.

I'd also like to congratulate **Vance Petriew** of the Regina Centre for completing his Herschel 400 requirement. Darrell Chatfield is now reviewing his logbook so an application can be sent to the AL.

You may have noticed that I have included a new observing category – the **Herschel 400 II** certificate – for very advanced observers. Some of us are working on it.

On-line Messier and Finest NGC Lists – For those who'd like electronic Messier or FNGC lists, check out the Edmonton Centre's version at:
http://www.edmontonrasc.com/catalog.html

If you promise to look at M13 (Hercules Globular) sometime in the next few months with eyeballs or binocs, I'll enter you onto the Messier Club as '1' object, and you can go from there!