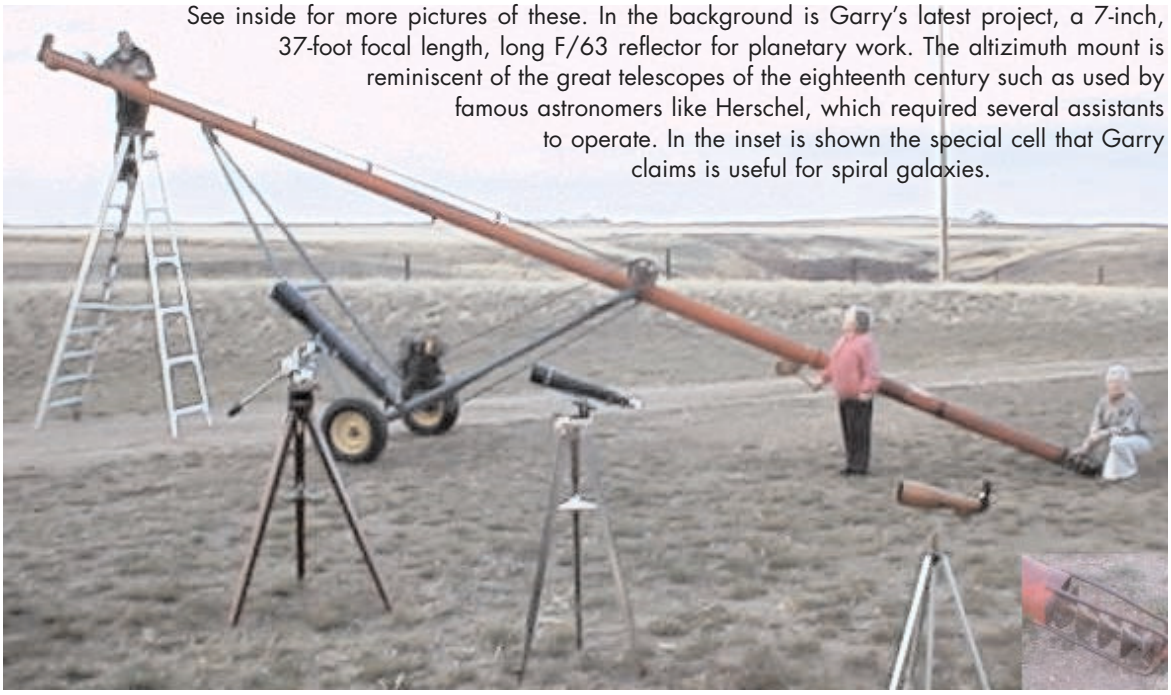
Saskatoon Skies

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

Vol. 35, No. 5 **May 2004**

Stone work... of a different kind.

Here is a picture which arrived too late for the April issue of Saskatoon Skies. It shows the telescopes and telescope mounts which Garry Stone built over the last two years. In the foreground are three refractors. See inside for more pictures of these. In the background is Garry's latest project, a 7-inch, 37-foot focal length, long F/63 reflector for planetary work. The altizimuth mount is reminiscent of the great telescopes of the eighteenth century such as used by famous astronomers like Herschel, which required several assistants to operate. In the inset is shown the special cell that Garry claims is useful for spiral galaxies.



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, Mike Clancy, or renew through the National Office and let Mike 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 2004**
- **The Journal of the RASC** (bimonthly)
- **SkyNews Magazine** (bimonthly)
- use of the Centre library
- discounts to **Sky & Telescope Magazine**
- discounts of Sky Publishing merchandise
- free, no-cost, no-obligation, 3-month temporary membership if you don't want to join right now!

Saskatoon Centre's main officers:

President – Rick Huziak
Vice-President – Ron Waldron
Secretary – Al Hartridge
Treasurer – Barb Young

U of S Observatory

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 .JPGs (.GIFs also accepted). Send e-mail submissions to the editor at <tuomi@sasktel.net>. 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

Canadian Tire Money collected to date is $34.25. Thank you to all who contributed to our fundraising for the Centre. Please bring your bottles and Canadian Tire Money to the 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.

2004 RASC Calendar of Events

DATE	EVENT	CONTACT	TELEPHONE
May 17	**General Meeting** – Rm 175 Physics, U of S, 7:30 p.m. – **The Geology of Mars** – Kim Mysyk	Rick Huziak	665-3392
May 22	**Noctilucent Cloud Season begins**	Rick Huziak	665-3392
June 7-8	Possible **Road Trip** to Flin Flon, MB for Venus Transit	Rick Huziak	665-3392
June 8	**Transit of Venus** – Canadian East Coast or Eastern Hemisphere		
June 21	**General Meeting** – program & location tbd, 7:30 p.m.	Rick Huziak	665-3392
July 8-11	**AAVSO, ALPO, AL Annual Meeting** – Oakland, CA	Rick Huziak	665-3392
July 15-18	**Alberta Star B-Q**, Eccles Ranch, Caroline, AB, *http://www.syz.com/rasc/starbq2004.htm*	Rick Huziak	665-3392
Aug. 11-12	**Perseid Meteor Shower Peak**	Rick Huziak	665-3392
Aug. 12	**Noctilucent Cloud Season ends**	Rick Huziak	665-3392
Aug. 12-15	**Saskatchewan Summer Star Party (SSSP '04)** – Cypress Hills Interprovincial Park	Les Dickson	249-1091
Aug. 14-22	**Mt. Kobau Star Party** – Osoyoos, BC	Jim Failes	(250) 763-6962
Sept. 9-12	**Alberta Star Party**, Eccles Ranch, Caroline, AV, *http://www.syz.com/rasc/asp2004.htm*	Rick Huziak	665-3392
Sept. 17-19	**Northern Prairie Starfest**, East Alberta, *http://edmontonrasc.com/nps.html*	Rick Huziak	665-3392

Minutes of the Executive Meeting
April 19, 2004, 6:30pm – Rm 175 Physics, U of S

Recorded by Al Hartridge

1. Meeting called to order at 6:30pm.
2. Astronomy Day Report: given by Brent Burlingham. Will be held at Lawson Heights Mall on Saturday April 24th.
3. Sleaford: Bill Hydomako reports some minor vandalism at the Sleaford site.
4. List of things to do discussed.
5. Light Pollution Committee: The last presentation made to city counsel was well received with no negative feed back. A motion was made by Ron Waldron and seconded by Jim Young and carried that we take out a membership for the centre to the International Dark Sky Association. The fee is $50.00.
6. Hobby Show November 12 and 13. If we wish to participate we will likely need to pay $100.00 for a booth.
7. SSSP: The brochure is done and printed. 100 copies will be sent to the larger centers, the web site is being updated, the banquet will be similar to last year.
8. Storage cabinet is needed for coffee supplies and brochures that will fit in room 175.
9. Pojects to commit to: What will be the club's purpose over the next five years? What are our goals? Ron Waldron willing to run a workshop for goal planning.
10. Meeting adjourned at 7:30pm.

Minutes of the General Meeting
April 19, 2004, 7:30pm – Rm 175 Physics, U of S

Recorded by Al Hartridge

1. Meeting called to order at 7:30pm.
2. Rick Huziak described the SSSP brochure and encouraged all to attend also showed the new Sky Trails paper.
3. Astronomy Day – Brent Burlingham described the details.
4. Program: A stargazer's dreaming – a multimedia view of astronomy – by Kathleen Houston.
5. Meeting adjourned at 9:30pm.

Monday, May 17, 7:30pm
Room 175 Physics, U of S

Presenting:

The Geology of Mars
by Kim Mysyk

"With all the current interest in Mars, I will give a presentation on Mars geology, including the general background, previous Mars missions and current rover results."

Note: There will be an Executive meeting at 6:30 p.m.

BOOKS FOR SALE *by Bruce Brandell, Sales Coordinator*

We have a number of books, calendars and pins left over from SSSP Sales. Call 249-1119 or email ***bruce_brandell@yahoo.com***

Title	Author	No. Avail.	Price Cdn$
RASC 2004 Calendar	Rajiv Gupta, Editor	9	$ 5.00
Astrophotography	G.N. Patterson	oodles	$ 5.00
SSSP 2003 Lapel Pin		5	$ 5.00
SSSP 2002 Lapel Pin		34	$ 4.00
SSSP 2001 Lapel Pin		24	$ 4.00
RASC Centenary Mugs		36	$ 9.00

The following books can be ordered from Sky Publishing (Sky and Telescope). Discounts are available for Centre members.

Parallax: the Race to Measure the Cosmos, Alan W. Hirshfeld. This is a very interesting biographical history of the origins of modern astronomy, bringing to life the long standing controversy, esp. 16th to 19th centuries, between the Ptolamic and Corpernican concepts of the universe, and the astonishing attempts to use parallax to determine distances to the stars. $23.95 US

June 8, 2004: Venus in Transit, Eli Maor. $17.95 US

The Cambridge Star Atlas, Wil Tirion $24.95 US

Transit, When Planets Cross the Sun, Michael Maunder & Patrick Moore $39.95 US

Touring the Universe through Binoculars, Philip S. Harrington $34.95 US

The Deep Sky, An Introduction, Philip S. Harrington $24.95 US

Observing Variable Stars, David Levy $19.95 USD

How *Sky & Telescope* Discounts Work *by Rick Huziak*

The Sky Publishing Corporation runs a club discount program that provides a discount on their *Sky & Telescope* magazine subscription and Sky Publishing merchandise, such as books, charts and other materials they sell. In order to take advantage of this program, our Centre has to have a minimum number of subscriptions to *Sky & Telescope*. If we maintain the minimum 5 subscriptions, both the subscribers and the Centre retain a 10% discount on a 1-year subscription and 10% to 20% off Sky Publishing merchandise, and at times the Centre receives wholesale pricing. Subscribers must renew their subscriptions through our Centre's treasurer, Barb Young. Subscribers with valid subscriptions will receive the discount if they order directly from Sky Publishing and state they want the discount. (Their subscriptions are coded). As a service to members who do NOT subscribe to *Sky & Telescope*, our Centre can pass on savings if merchandise is ordered through the Centre. Periodically publications coordinator Bruce Brandell places orders for books the Centre sells at events, and on top of this, we can order books for our non-subscribers, and pass on whatever savings we get at cost. However, we only order periodically, and we don't bug Bruce with monthly or small orders. So, if you want to subscribe to the *Sky & Telescope* magazine, likely the best astronomy magazine available (with apologies to Astronomy, which is very good, too), then it benefits you and others to subscribe through the Centre.

The National Questionnaire & Other Club Stuff *by Rick Huziak, President*

This summer, you will be receiving a questionnaire from National, asking your opinion regarding how you perceive services and value for your membership dollar. The National Council has a big dilemma – they need more money to keep operating, and are discussing the need for an increase in membership fees. An increase of $6 per year is being considered. There are a number of valid reasons for this increase, but before this is decided, Council wants to survey membership to determine if you perceive good benefit for the membership cost. One of the main expenses is the cost of the publications – the expense of producing the Handbook and the Journal and providing *SkyNews* magazine (a non-RASC publication) as a benefit. One way to defray rising costs is to review how these publications are handled. Other methods are to provide fewer services (such as speaker or council travel assistance.

It is very important that National Council receives a large percentage of these survey forms back so that whatever decisions they have to make are based on the wishes of the largest percentage of membership. PLEASE make an extra effort to answer this survey and get it back by the prescribed day. If you need any questions explained or clarified feel free to call me. I'd like to see our Centre have the best per capita response. If you'd like to save postage, bring the survey to the June meeting and the Centre will pay your postage.

On a similar topic, at the April Executive meeting, I brought up the topic of **Centre Direction & Goal Planning**. After a discussion on what our club "should" be doing, Vice-president Ron Waldron took on the task of developing a set of goals for our Centre. My concern was that we currently have a few projects that we do yearly, such as putting on SSSP and Astronomy Day, but beyond that, we do not have long-term goals with the exception of a hope of continuing construction at the Sleaford Observatory. Currently, most of our activities are planned and executed by about 15 members in our 85-member club. The working group does what they can handle and what they are interested in. A few other tasks, such as school & public talks or the pursuit of a Light Pollution Bylaw are being done by 2 or 3 people. Observing sessions are picking up, often with the participation of 10 or so members. But are there other activities that other members would like to do, and what is the goal of the club as a whole? Certain tasks are impossible to do without goals or further information and planning. We also need to provide variety and long-term activities to stifle Centre stagnation and retain members for more than a few years. We'd like others to become active in Centre planning and activities, so we'd like to hear your opinions of what we "should" be doing. Call Ron Waldron or me with your ideas.

Astronomy Day – I'd like to thank everyone who helped out at the Astronomy Day display and starnight. We had good club participation with about 18 members either helping at the Mall at Lawson Heights or at Beaver Creek afterward.

International Astronomy Day – April 24, 2004 *by Brent Burlingham, Observing Group Coordinator*

International Astronomy Day was celebrated on April 24th this year by astronomical organizations around the world, and was an opportunity to perform some public outreach activities, let the community in general know more about astronomy, and recruit new members for astronomical groups.

The RASC Saskatoon Centre celebrated Astronomy Day with two major events – a public information session and telescope display at the Mall in Lawson Heights during the day, and a public star night at Beaver Creek Conservation Area in the evening.

Attendance at the day session was excellent – there were about a dozen members helping at various times during the day to set up the booth, answer questions, and show off the telescopes that members had brought to display. The location provided by the Mall wasn't ideal – the booth was on one level at the entrance to the food court, and telescopes were set up on a lower level, but we made the best of things and even managed to sign up several trial memberships.

I was reminded at one point of the importance and scope of Astronomy Day activities when Ron Waldron, our Vice-President, commented that it was pretty impressive to think that groups like ours all over the world were doing exactly the same thing – sharing our love and knowledge of astronomy with others.

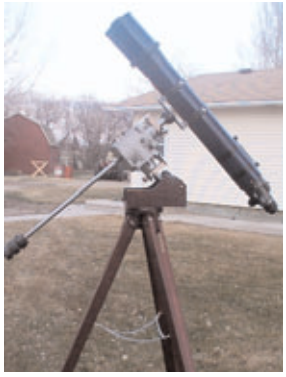
Members gathered for a quick supper after the display session, and it seemed prospects for the public star night were grim – it was mostly cloudy, extremely windy, and raining intermittently.

Almost on cue, the clouds parted and the wind died down as we made our way to Beaver Creek for a slide presentation and public star night. President Rick Huziak did a slide presentation featuring astronomical highlights for the uninitiated, and talked a bit about efforts to curb light pollution. The star night began at 9:00 p.m., with a large number of visitors taking advantage of the opportunity to observe Venus, Saturn, Jupiter, the Moon and some deep sky objects through member's telescopes.

I was reminded by the day's events that my interest in astronomy was kindled by those who took the time to share their knowledge and pass along some of their passion, and how important it is for all of us to continue doing the same for others. See you at Astronomy Day 2005!

Garry Stone's Homemade Telescopes

This is a ball bearing equatorial mount built from an aluminum gear box to hold a SkyWatcher 120 mm F/8 refractor.



Last winter's project was a fibreglass telescope tube to hold an 80 mm, F/7 air spaced objective purchased from Sky Instruments in Vancouver. The focuser is from a war surplus bomb sight. Note the fine adjustment for horizontal motion.

This winter's project was a wooden refractor with a fast 83 mm F/4 cemented objective from Sky Instruments. Even the focuser is wood. This work of art was displayed at the March general meeting, and at the April 24 Astronomy Day display in Saskatoon.

National Observing Certificate Stats – WE'RE STILL DOING WELL!

by Tenho Tuomi <toumi@sasktel.net>

In February 2002 Mike Stephens wrote in Saskatoon Skies that even though Saskatoon Centre makes up only 1.7% of the National Membership, our members have been awarded 9.8% of the FNGC Certificates and 4.8% of the Messier certificates. Five and a half percent of our Centre members have earned their FNGC Certificates, and 12.3% of our members have earned their Messier Certificates. Only Montreal has us beat with 22.7% of its members having their Messier Certificates. However, no one in Montreal has a FNGC Certificate!

Our good standing is certainly due to the promotion these certificates have received in our club. Rick had the Messier, H-400 & H400-II, FNGC, Binoc & EtU Club lists in almost every issue of Saskatoon Skies as far back as I could check. It missed two issues now when I took over as Editor, but I hope to have it back regularly.

Here are some statistics about where the different awards have gone. Note the number of Centres whose members have never applied for these certificates. I have only 26 Centres listed even though there are 27 now, but Montreal has an English and a French Centre which are lumped together in the lists I took from the National web site.

Messier certificate list: January 1985 - March 2004

Edmonton, AB	24	Vancouver, BC	3
Toronto, ON	22	Victoria, BC	3
Halifax, NS	17	Sarnia, ON	2
Ottawa, ON	17	Belleville, ON	1
Montreal, QC	15	Kitchener-Waterloo, ON	1
Calgary, AB	14	Moncton, NB	1
Kingston, ON	14	Thunder Bay, ON	1
London, ON	13	Charlottetown, PEI	
Windsor, ON	12	Niagara Centre, ON	
Saskatoon, SK	11	Quebec, QC	
Winnipeg, MB	11	Prince George, BC	
Regina, SK	10	St John's, NF	
Okanagan, BC	7	Unattached	4
Hamilton, ON	5	USA Member	3
		Total	**211**

Finest NGC certificate list: February 1995 - March 2004

Toronto, ON	6	St John's, NF	1
Calgary, AB	5	Thunder Bay, ON	1
Kingston, ON	5	Vancouver, BC	1
Halifax, NS	4	Victoria, BC	1
Ottawa, ON	4	Charlottetown, PEI	
Saskatoon, SK	4	Hamilton, ON	
Edmonton, AB	3	Kitchener-Waterloo, ON	
London, ON	3	Moncton, NB	
Okanagan, BC	3	Montreal, QC	
Regina, SK	3	Niagara Centre, ON	
Windsor, ON	3	Prince George, BC	
Winnipeg, MB	3	Quebec, QC	
Belleville, ON	1	Unattached	4
Sarnia, ON	1		
		Total	**56**

What excites me is that if we could get one more FNGC Certificate we could tie with Calgary and Kingston for the second highest number of Certificates awarded to any Centre in Canada. If Scott Alexander and I both complete our FNGC lists we could even tie with Toronto for first place in Canada! Wouldn't that be something for a Centre considered small compared to the rest.

We certainly aren't doing badly in the Messier lists either. Edmonton is hard to beat but if those who are more than half done their lists would finish we could tie for third place in Canada.

In the Herschel 400 list of awards, 5 of the 8 that can be identified as Canadians are from Saskatchewan, with 4 of those from Saskatoon. When I asked Rick why this is so, he replied, "The propensity for Sask observers is certainly driven by Fr. Luke. As he was one of the original team that put the 400 together, we feel it is our 'duty' to follow in his footsteps. :-) We're also the mostest awesomest, sweetest observers on the face of the planet and have the bestest skies. :-)" So there you are.

Let's all do some organized observing. I know many of you have observed Messier objects, maybe all of them, but have never written down when you saw them, or sent in totals to Saskatoon Skies. Brent Burlingham who is our Observing Group Coordinator has agreed to look after the Messier, H-400 & H400-II, FNGC, Binoc & EtU Club lists. Start keeping track of your observing and send reports to him at brent.burlingham@usask.ca, or phone 244-9872.

SKY BUYS & MIRROR CELLS

The Saskatoon Centre's Swap and Sale Page!

For Sale: ***Astronomy 2002,*** by Robert Burnham – colour sky charts, planet information, etc. – $15.00.

35mm Bausch & Lomb Plossl eyepiece, fully coated. Excellent shape, in original box with dust caps – $80.00. Call Darrell at 374-9278.

For Sale: RASC Royal Centenary coffee mugs. Pick yours up at the next General Meeting – $9 each

For Sale: ***Millennium Star Atlas,*** 3-volume set – $200; **REALSKY CD's** – $200. Call Dale Jeffrey at (306) 223-4447 or dalejeffrey@sk.sympatico.ca

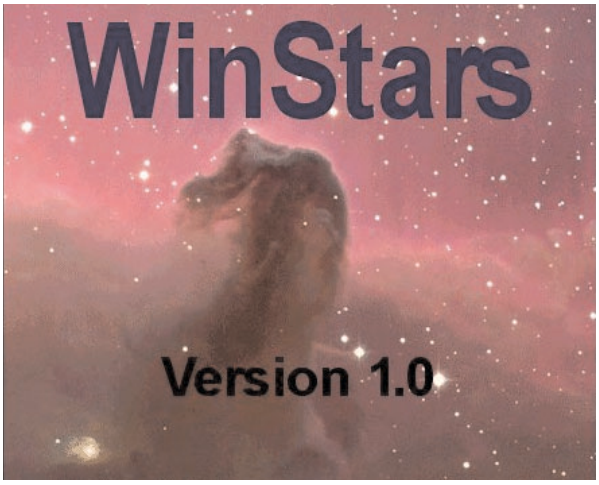
REMEMBER…

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.

FREE Planetarium Programs

by Tenho Tuomi <tuomi@sasktel.net>

There are many free planetarium programs available for download from the internet. I have tested three of them on my Windows 95.



While browsing through the Edmonton RASC web site I saw a link to Software Downloads / Free Software. One of the new downloads available was WinStars 1.0 from http://www.winstars.net/english/index2.html

It claimed, "WinStars is a complete planetarium, displaying the appearance of the sky, as seen from anywhere on Earth, for any date. With a click of the mouse, it's possible to review information about all objects displayed using this program. WinStars is freeware."

I downloaded it in October and was not disappointed. In fact I was amazed at how much it offered for a free program. The English version of this program became available 08/27/2001.

The basic download of 3.3 MB gives a database of 10,000 stars and 10,000 deep sky objects. That seems to provide everything that a basic astronomy planetarium program should have, plus extras like a telescope drive. By downloading the Sky2000 (7 MB) and Tycho2 (43 MB) catalogues the database can be expanded to 2,500,000 stars, to magnitude 13. Other smaller separate downloads are available for showing planetary satellites, Messier objects, and optional landscapes. WinStars requires 20 MB for a basic install, and less than 80 MB for all modules.

WinStars also has a big database of asteroids and comets, and I used it to follow comet 2P/Encke as it went through the summer triangle last November. New comet and asteroid updates can be downloaded at any time. It shows the positions of the planetary moons as well. It has been invaluable for my FNGC hunting.

Of the programs I am reviewing here WinStars is the most like Starry Night. It may lack some of the features of the other programs but I found it to be the easiest to use, intuitive, not needing a lot of reading to be able to use it. However, some may find it difficult to install for it does not come with a full install program like the others. You have to create your own program startup menu or icon after loading it on your hard drive.

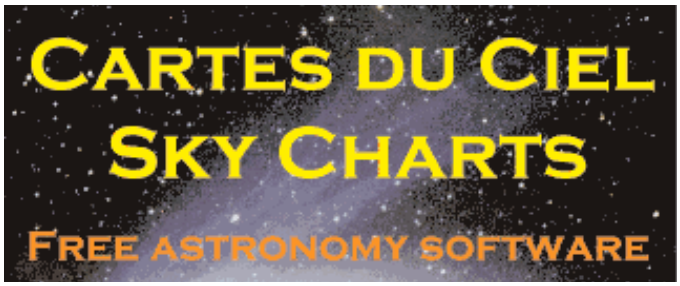
Hallo Northern Sky

Lately I downloaded another free planetarium program from http://www.hnsky.org/software.htm

The basic HNSKY program download of 3 MB installs in only 8 MB of drive space. It gives you an SAO star database to magnitude 8, comets, asteroids and 26,000 deep sky objects. This can be expanded with several databases, from a 4.7 MB PPM download to give 470,000 stars to magnitude 10, up to a 303 MB GSC download or CD to give you 15 million stars to magnitude 15. Many other supplements and images are available as well. With the Tycho2 database it requires only 41 MB of drive space.

This snappy program is somewhat different from others and takes a little practice to learn how to use. It does not try to be realistic by limiting the number of stars according to sunlight like the others, but it seems to be very accurate and can be used to print very good sky maps.

Cartes du Ciel



Another program that I tested was downloaded from http://www.stargazing.net/astropc/

The author of this says, "Therefore I decided to distribute it as freeware. I feel that you should rather invest your money in buying a good eyepiece than to waste it on software!"

The basic cdcbase download, including stars up to magnitude 9, is 4 MB in size and expands to 13 MB on install. It can be expanded with further downloads like the other programs, taking a total of 76 MB with the Tycho2 download. This appears to be a very popular freeware program but I found it to be the hardest to use and configure, though it does show the most realistic sky, down to compensating for moonlight, and even showing the position of the GRS on Jupiter. It also prints fairly good sky charts.

All of these programs have many other features that I have not explored yet. I highly recommend one or more of these programs if you don't have a planetarium program yet, or have an older computer like my Pentium 166 that is too slow for the latest commercial programs. For my use I find these programs to be simple but still doing everything that I want in a planetarium program. It looks as if I will be using all three programs for each one has some unique feature that I like.

The Planets This Month, May 2004

by Murray D. Paulson, Edmonton Centre

Spring has come on full blast since last month and the planets have been lined up across the sky. In late March you could cast your gaze across the sky from Mercury to Jupiter, covering all the visible planets in one smooth sweep. On several evenings the moon was well placed to complete the visual spectacle. What a blast/beautiful sight. May is a month of excitement, the final countdown to the Transit of Venus. As I write this in early April, I can feel the tingle of excitement as preparations are made to find various of our numbers in places to witness this event. There is an expedition from the Edmonton area to somewhere in Manitoba to catch the last bit of the event as Venus departs the sun and there was mention of a chartered bus. Contact Paul Campbell for more information on it. Another group from Edmonton will find itself in the Greek islands steeped in Greek culture and antiquities. Calgary Center will mount an expedition to Egypt where the transit will be witnessed from Luxor, land of the Pharaohs. These are just the locals on tour, there will be all kinds of people traveling afar to grace themselves in this the most rare of astronomical sights.

Venus...
at one-week intervals

As May begins **Venus** is obviously on its way back down to meet the sun. Its brightness hasn't changed much at -4.4 but the planet shows a 43" crescent in the eyepiece now. Venus is now moving about .8 degrees a day toward the sun and this pace will pick up until June when it will be moving 1.6 degrees per day. In mid month Venus will show a 46" crescent, by the May long weekend it will be a very thin 51.6" crescent. By the first of June, things get a bit more dramatic. Venus is now only 10 degrees from the sun and is a razor thin crescent. It shines at magnitude -3.9 and is an interesting hunt in the daytime sky. How close to the sun can you follow it? I have seen Venus about 6 degrees from the sun with a refractor. I will get my chance to see exactly how close I can catch it in the week before the transit. This is a tough and somewhat dangerous pursuit. **Be extremely careful not to point an unfiltered telescope at the sun.** The good thing is that the sun will be moving away from where you have the scope pointed.

Our wonderful apparition of **Mercury** in April leads us into the more disappointing May apparition. This is a morning apparition and greatest elongation occurs on May 14, 26 degrees from the sun, about a week before dichotomy on May 20th. It will be 7.5" Morning apparitions in springtime are poor because the ecliptic is tipped south almost parallel to the horizon. Even though Mercury's elongation is near an extreme, it is lost in the twilight glare. This is very similar to Venus last September, lost in the evening twilight. For Daytime observers this is not a problem, so do enjoy it.

Mars has receded from its close encounter with Venus and is now headed up the ecliptic to its May 24 conjunction with Saturn. This is a chance to see the odd couple in the midst of Gemini the Twins. On this night the two will be separated by 1.5 degrees and Mars shines at magnitude 1.5 compared to Saturn's 0.1. The color contrast will be quite nice and the view will be quite nice in a low powered eyepiece. This will be a nice photo op for a medium wide field showing Gemini with extras.

Saturn shines at a rather constant magnitude 0.1 over the month and its disk will shrink imperceptibly from 17.1" as it sinks lower into the early evening sky. By early June that disk will be just under 16.8". Saturn is on its way out, so get your best last looks because it will be a while before we see it again.

Jupiter has presented us with some exciting moments with great shadow transits over the last few months. A new phenomenon in the equatorial zone, the Great Blue Streak, is a feature that has popped up during this apparition. I have glimpsed it and it shows up very well in the images I have taken. Jupiter starts off the month at magnitude -2.1 and shows a disk of 38.8". By the beginning of June, it will have dimmed to magnitude -2.0 and the disk will shrink just perceptibly to 36.8". Here are my picks for shadow transits over the next month. The Calisto event is fairly rare, so don't miss it.

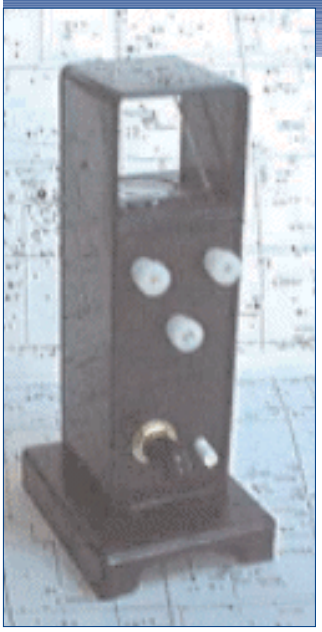
Jovian Moon Events

Note UT is 6 hours later than time here in the central time zone. For example May 15 at 4:40 UT occurs on May 14 at 9:40 pm (21:40).

DATE	HOUR	MOON	EVENT
15-May	4:40	I	Sha end
15-May	4:47	II	Tra start
15-May	7:18	II	Sha start
15-May	7:39	II	Tra end
22-May	4:19	I	Sha start
22-May	5:20	I	Tra end
22-May	6:34	I	Sha end
3-Jun	5:07	IV	Sha start
3-Jun	7:51	IV	Sha end

Fixing your Rigel QuickFinder

by Rick Huziak



If your Rigel QuickFinder breaks, it can be fixed, even though they are not built to be fixed. Likely they were designed as a 'throw-away' replacement, even though they do come with a 5-year warranty. However, just because you're not supposed to fix it shouldn't stop you from trying!

The first thing you have to do is disassemble the case, but the first thing you will find is that the electronics are not designed to ever be removed from the case, since the shaft of the on/off/brightness potentiometer makes removal impossible. Well – not quite impossible. The backside of the square plastic case is glued onto the U-shaped 'rest of the case' with a cyanoacrylate-type (Crazy Glue) adhesive. To remove the back-side, you can either dissolve the adhesive with a cyano dissolver (acetone) which may melt the plastic, or more easily, you can carefully grab the back wall with long needle-nose pliers and keep wiggling the glue joint slowly until the joint fails. If you are patient, you can do this without cracking the case. Once fixed, Crazy Glue the back on again.

The QuickFinder is pretty straightforward in design. It uses an LED and a target overlay to project the target image on a 45-degree piece of clear plastic that can be adjusted to the sky with 3-point setscrews. The nice feature is that the target can be dimmed *and* pulsed at variable speed. To do this, a second potentiometer (pot) controls a 555 timer IC. So, what can break on the QuickFinder is simple – either the on/off/brightness pot or the timer pot or the 555 IC itself or the LED breaks. (There are about 4 other capacitors or resistors that support the timer). If you can get the case open, you can likely fix this unit easily. The one I fixed had a broken on/off pot – I was able to pry open the back of the pot, and re-bend the metal tabs that fix the internal element wiper).

Other than that, the finder seems to work OK. Coin-cell replacement batteries (DL 2032) are $6, though, and they do not last very long in the cold. I still prefer a good lens finder – at least an 8x50 – to this type of 1x 'spotter'. My 8x50 doesn't need batteries and doesn't break.

Numerical Listing of Finest NGC Objects

by Tenho Tuomi <tuomi@sasktel.net>

In the Observer's Handbook there is a good list of Messier Objects in numerical order, but no such similar list for the Finest NGC objects. Many times when looking at an NGC object, or reading about one, one wonders if it is in the list of finest NGC objects. It is difficult and time consuming to look through all the objects on the seasonal list to see if it is there, so using the data from the Handbook I made a numerical list which I would like to share with you. If you find it useful you could make a copy of it and put it in your handbook as I did.

NUMERICAL LISTING OF FINEST NGC OBJECTS

NGC	Sky	Con	NGC	Sky	Con	NGC	Sky	Con	NGC	Sky	Con	NGC	Sky	Con
IC289	Aut	Cas	2024	Win	Ori	3521	Spr	Leo	4526	Spr	Vir	6572	Sum	Oph
40	Sum	Cep	2194	Win	Ori	3607	Spr	Leo	4535	Spr	Vir	6633	Sum	Oph
185	Aut	Cas	2237+	Win	Mon	3628	Spr	Leo	4559	Spr	Com	6712	Sum	Sct
246	Aut	Cet	2261	Win	Mon	3877	Spr	UMa	4565	Spr	Com	6781	Sum	Aql
253	Aut	Scl	2359	Win	CMa	3941	Spr	UMa	4567/8	Spr	Vir	6802	Sum	Vul
281	Aut	Cas	2371/2	Win	Gem	4026	Spr	UMa	4605	Spr	UMa	6818	Sum	Sgr
457	Aut	Cas	2392	Win	Gem	4038/9	Spr	Crv	4631	Spr	CVa	6819	Sum	Cyg
663	Aut	Cas	2403	Win	Cam	4088	Spr	UMa	4656/7	Spr	CVa	6826	Sum	Cyg
772	Aut	Ari	2440	Win	Pup	4111	Spr	CVa	4699	Spr	Vir	6888	Sum	Cyg
869	Aut	Per	2539	Win	Pup	4157	Spr	UMa	4725	Spr	Com	6939	Sum	Cep
891	Aut	And	2655	Win	Cam	4214	Spr	CVa	4762	Spr	Vir	6940	Sum	Vul
936	Aut	Cet	2683	Spr	Lya	4216	Spr	Vir	5005	Spr	CVa	6946	Sum	Cep
1023	Aut	Per	2841	Spr	UMa	4244	Spr	CVa	5033	Spr	CVa	6960/92	Sum	Cyg
1232	Aut	Eri	2903	Spr	Leo	4274	Spr	Com	5466	Spr	Boo	7000	Sum	Cyg
1491	Aut	Per	3003	Spr	LMi	4361	Spr	Crv	5746	Spr	Vir	7009	Aut	Aqr
1501	Aut	Cam	3079	Spr	UMa	4388	Spr	Vir	5907	Spr	Dra	7027	Sum	Cyg
1514	Win	Tau	3115	Spr	Sex	4414	Spr	Com	6210	Sum	Her	7129	Sum	Cep
1535	Aut	Eri	3184	Spr	UMa	4438	Spr	Vir	6369	Sum	Oph	7293	Aut	Aqr
1788	Win	Ori	3242	Spr	Hya	4449	Spr	CVa	6445	Sum	Sgr	7331	Aut	Peg
1931	Win	Aur	3344	Spr	LMi	4490	Spr	CVa	6503	Spr	Dra	7635	Aut	Cas
1973+	Win	Ori	3384	Spr	Leo	4494	Spr	Com	6520	Sum	Sgr	7662	Aut	And
2022	Win	Ori	3432	Spr	LMi	4517	Spr	Vir	6543	Spr	Dra	7789	Aut	Cas

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

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, T. Tuomi

George Charpentier	Up!	101
Mike Oosterlaken		93
Lorne Jensen		88
Mike Clancy		83
Wade Selvig		75
Brent Burlingham		58
Garry Stone	New!	53
Kathleen Houston		48
Brent Gratias		39
Les Dickson		28
Ellen Dickson		22
Brian Friesen		15

FINEST NGC CLUB

Certified at 110 Objects:

R. Huziak, D. Jeffrey, G. Sarty, D. Chatfield

Tenho Tuomi	Up!	101
Scott Alexander		97
Sandy Ferguson		23
Mike Oosterlaken		20
Bill Hydomako		20
Mike Clancy		4

Chatfield BINOCULAR CERTIFICATE

Certified at 35 Objects:

M. Stephens, T. Tuomi, M. Clancy

Mike Oosterlaken		32
Rick Huziak	Up!	23

EXPLORE the UNIVERSE

Certified for Certificate:

M. Clancy, T. Tuomi

HERSCHEL 400 CLUB

Certified at 400 Objects:

D. Jeffrey, R. Huziak, D. Chatfield

Gord Sarty		251
Scott Alexander	Up!	117
Mike Oosterlaken		68
Sandy Ferguson		18

HERSCHEL 400-II CLUB

Certified at 400 Objects:

Richard Huziak	Up!	206
Darrell Chatfield		143

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 lists will be available at each general meeting or can be mailed out on request to distant members. Each month I'll be posting updates.

RASC Observing Group Notes

by Brent Burlingham, Observing Group Coordinator

George Charpentier is closing in on completing his Messier list with 101 objects in total this month. Garry Stone decided to make his Messier observing official by logging 53 objects. The tireless Tenho Tuomi has brought his FNGC total up to 101 objects, completed his Messier list again with his 80mm scope, and logged 66 Messiers with his 30mm scope. Scott Alexander has brought his Herschel 400 total up to 117 objects. Congratulations to George, Garry, Tenho and Scott!

International Astronomy Day was celebrated on April 24th with an enjoyable and well-attended public information session and telescope display during the day at the Mall in Lawson Heights, and a successful public star night at Beaver Creek Conservation Area in the evening. See the report elsewhere in this issue.

Drop me a line or phone (brent.burlingham@usask.ca or 244-9872) any time you add to your observing totals, or any time you do any observing you'd like to share with the club.

Upcoming observing events to note on your calendars:

The Chatfield Binocular Challenge – Part II

Uncooperative weather made our first attempt at the Chatfield Binocular Challenge unsuccessful, so we intend to hold another session sometime around the new moon in May. Attend the May meeting for confirmation on the date, or contact me for details (brent.burlingham@usask.ca or 244-9872).

Clear Skies!

Brent Burlingham, Observing Group Co-ordinator

On-line Messier List – For those who'd like an electronic Messier list (with DSS images), check out:

http://www.seds.org/billa/dssm/messier.html

On-line Finest NGC List – For those who'd like an electronic FNGC list, check out the Edmonton Centre's version at:

http://www.edmontonrasc.com/catalog.html