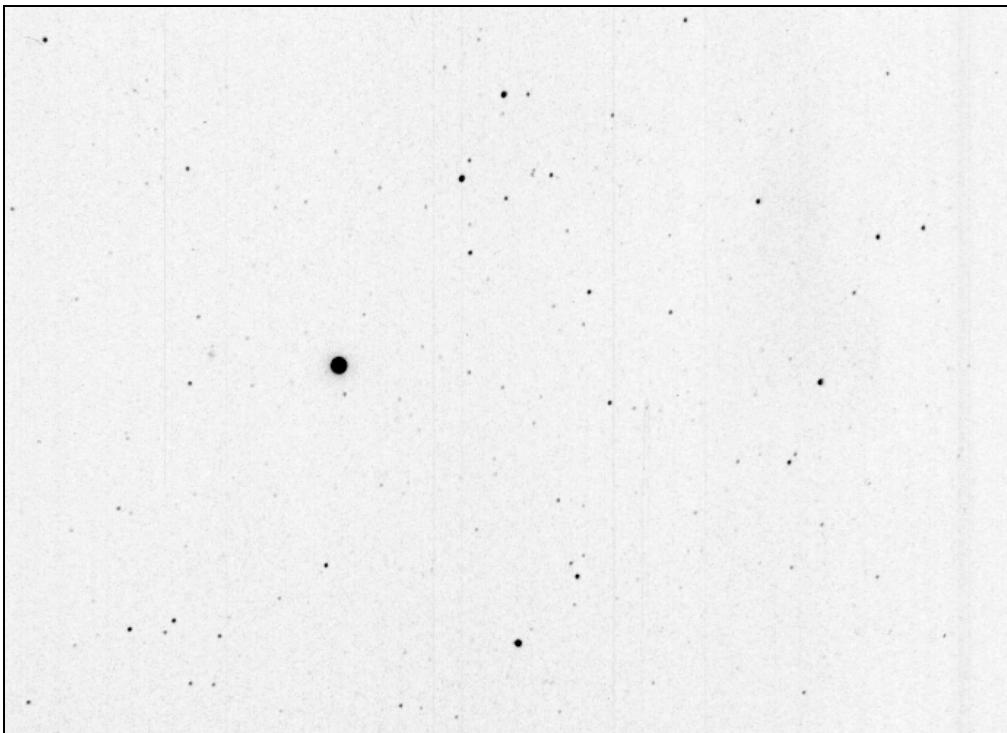


Saskatoon Skies

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

Volume 31, Number 02

February 2000



The eclipsed moon sits in Cancer, next to the Beehive Cluster, in this negative reproduction. Note the moon's small apparent size! Only during an eclipse can an exposure showing the background field stars be taken since the moon is more than 100 times fainter than normal. To the upper right is Gemini; to the lower left, the head of Hydra. The original photograph is a colour positive taken at Blaine Lake on January 20th by member Ellen Kaye-Cheveldayoff. (It is reproduced as a negative to facilitate copying). More on page 5.

RASC Calendar Happenings

Date (2000)	Event	Contact	Telephone
Feb. 14	Best view of Mercury in '00 - 18° E of Sun	Rick Huziak	665-3392
Feb. 17	Executive Meeting - Room 8313	Les Dickson	249-1091
Feb. 21	General Meeting - Dr. P. Bergbusch	Les Dickson	249-1091
Feb. 26	Observers Group at Sleaford	Andrew Krochko	955-1543
Mar 4	Observers Group Alt. Nite at Sleaford	Andrew Krochko	955-1543
Mar 17	Junior/Youth Astronomers Meeting - 7:30 pm at Nutana Collegiate	Sandy Ferguson	931-3184
Mar 20	General Meeting - Murray Paulson (Edmonton)	Les Dickson	249-1091
Apr. 14	Junior/Youth Astronomers Meeting - 7:30 pm at Nutana Collegiate	Sandy Ferguson	931-3184
Apr. 17	General Meeting - Dale Jeffrey's Living Skies Observatory	Les Dickson	249-1091
Apr. 22	Zodiacal Light Season begins	Rick Huziak	665-3392
May 6	Astronomy Day	Brian Friesen	
May 15	General Meeting - BYO Telescope!	Les Dickson	249-1091

Sky Buys and Mirror Sells

The Saskatoon Centre's Swap and Sale Page!

For Sale: 1 1/4" eyepieces: Edscorp 25mm Orthoscopic, 21mm - 3 element "Siebert"(Kellner?), Meade 12mm MA, Celestron 6mm Orthoscopic. \$30 each. Call Ken Noesgaard at 931-4755 or e-mail <ken.noesgaard@siemens.ca>.

For Sale: Great astronomy books & eyepieces: *Burnham's Celestial Handbook* (hardcover, 3 vol.) \$50.00. , Other titles available, including a great book on Jupiter.. Kellner 9mm eyepiece \$40.00, Antares 10mm Plossl eyepiece \$100.00, Orion OIII Filter \$85.00. Call Darrell Chatfield for pricing and trials. tel. 374-9278.

For Sale: 2" Lumicon Deep Sky (Light Pollution) Filter. \$200.00 obo. Call Andrew Krochko at 955-1543.

Astro Goods for Sale - check out past-member Doug Miller's <mildg@sk.sympatico.ca> Web Site at <<http://www.minerals.sk.ca/astronomy/astronomy.html>> for great astro goods.

Wanted: for the Sleaford Observatory's Reference Library - I need binders, bookends, page protectors and similar paraphernalia as well as your favourite observing articles to add to the Sleaford Observer's Reference Binders. I am accumulating interesting observing articles into binders for use at the site. Call Andrew Krochko at 955-1543.

Saskatoon Centre

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 Ferguson, Essar & Krochko



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Saskatoon Skies is published monthly by the Saskatoon Centre of the RASC. Distribution is approximately 165 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. 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 .GIFs, .JPGs or similar. Send e-mail submissions to the editor at <huziak@SEDSSystems.ca>. Submitted materials can be returned upon request. Please send articles in "generic" formats, with standard grammatical formatting appreciated - 5 spaces at the beginning of paragraphs, two spaces after periods, one space after commas. A separate subscription to *Saskatoon Skies* is available for **\$12.50** per year. 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.

Messier Hunting in Leo - Virgo.

Ken Noesgaard <ken.noesgaard@siemens.ca>

I'm sure anyone who has spoken to me this winter has heard me whine about the poor deep-sky observing conditions since fall. It seems that every new moon the clouds roll in and stay until the moon is illuminated enough to wipe out the objects I'm looking for. The nights around the full moon seem to be glorious! I've seen enough of the planets to last me for a while, although my neighbours, family and friends seem to enjoy it. My wife finds it quite funny to see me cursing at a clear blue sky on a beautiful day, just because it's been clouding over at sunset each day for the last two weeks - and promises to do the same for the foreseeable future.

Of course, there were a few clear, dark skies which would have been perfect for some extended observing - had it not been -35°C! I admit it, I chickened out! I have spent many a night at -30° to -40° doing CCD imaging and photometry while my extremities all lost contact with my nervous system, but my tolerance for that kind of self-sacrifice is waning. I'm either getting older, or just wimpier.

It was in just such a state of mind while walking my Akita "Aeron" last Friday, January 28, that I looked up at the sky (as I always do) and was startled by the clarity and steadiness of the stars. I looked for the moon and realized that it was full 8 days ago! I noticed that it wasn't particularly cold **and** it was the start of a weekend! Seemed too good to be true.

I finished the walk, started up ECU on my computer, checked the moon's rise time and the position of the remaining objects in my Messier list. Thirty-one Messier objects to go, mostly in the Leo-Virgo region and Virgo rises about 02:00. I figured if I passed up on this chance, I'd have no more right to complain about conditions. I got out my "*Telescopic Companion to the Messier Objects*" by Roger Fell (Edmonton RASC member), and my newly purchased "*Messier Marathon Field Guide*" (the red book) and started planning my observing session. I would start in Leo and move on to Virgo. That should be enough for a cold night's observing. I donned my red flannel long johns, ski pants, and the rest of my winter gear and headed out to Sleaford at 01:00 Jan 29/2000.

It took 45 minutes to get there and another 15 to set up while my eyes got dark adapted. I looked north and saw nothing but a green glow from west, through zenith, to east. *Oh my god, AURORA!* Just my luck. Well, it wasn't in my field of view yet, and I would just keep observing until it wiped me out.

I located Leo and opened the red book to find M65/M66. The diagram showed them in a line halfway between theta and iota. I positioned my 8" Dobsonian on the spot using my Telrad and the 2 galaxies popped into the eyepiece. Both oblong with a bright nucleus, side by side and easy to see with M65 more flattened than M66. I wrote my observations and sketched the images (I'm no artist) and moved on to M105.

A combination of starhopping and sweeping brought me suddenly to a triplet of fuzzy blobs arranged in a triangle. Referring to the red book, I saw that the brightest and largest was M105, with the other 2 identified as NGC 3384 and NGC 3389. I wrote my observations and did my sketch and then a thought occurred to me... I checked and - *yes!* I had found #55 in the Finest NGC List! I transferred my observations to that list (which I keep in the same binder) and moved on to M96 followed by M95. Leo done - on to Virgo.

I found M104 - the Sombrero galaxy between Corvus and Virgo and then started on the Virgo cluster. I had actually dreaded this since I began my Messier list back in '95 because others had told me how

confusing it was - which is why I left it to last. In reality I found the Virgo cluster a treat. Each galaxy is a little or a lot different from one another, which is easy to see if you look at them in rapid succession. The trick to the Virgo cluster is to always have a "home base" to come back to if you get lost. I like the M59/M60 field for my home base because it has 4 galaxies in one field! That makes it easy to find. From there you find that the Messier objects line up like the two arms of a "Y" and you take each arm in turn, coming back to home periodically. Soon you can scan slowly through, naming each galaxy as it goes by, "M58... M89... M90... M91..."

That night I only got as far as M58 because the moon started to rise and I could no longer feel my feet or fingers, so I packed up and went home. The next day I checked and I had crossed off 11 Messier objects and 1 NGC. I was stoked! The following night I again went out from 02:00 to 04:30 and observed another 12 Messiers and 1 more NGC. Two excellent nights of observing like I haven't seen since I started.

Looking outside now, it is totally overcast and coincidentally - it's new moon. I guess the lesson is that observing conditions don't happen when you're ready - you've got to be ready when they happen. I just had to learn that again.

The Great 2000 Lunar Eclipse

by Andrew Krochko

On January 20th, we witnessed our first total lunar eclipse since 1996. A group of RASC members gathered at the University's observatory to observe the eclipse and show it to the public. People who were initially there were Rick Huziak, Mike Stephens (all the way from Humboldt!), Les Dickson, Ellen Dickson and myself. Rick had his 10" Dobsonian set up and Mike had his 10x50 binoculars on a tripod. Ellen stayed inside the University's observatory and talked to people about the eclipse and gave them information on the Centre. Later on Brent Gratius, Brian Friesen, Al Hartridge and Bill Hydomako showed up. Al had his giant binoculars on a tripod to show the eclipse to people.

The first effect of the eclipse was that the left side of the moon started to look fuzzy and faded. After this the moon started to move into the umbra, the dark part of earth's shadow where it gets no direct sunlight. The moon slowly slipped into the earth's shadow and the reddish color of the umbra started to become apparent. The lines for Rick's scope, Mike's binoculars and the University's telescope began to grow so I let the people waiting in line look at the eclipse through my binoculars.

During totality the moon was light reddish on its lower limb and a very dark red on its upper limb. Near the beginning and end of totality it was possible to see a subtle greenish cast on the moon caused by the refraction of the Earth's atmosphere. One of the biggest surprises of the night came at the end of totality. As a growing sliver of moon came out of the umbra I could see it growing brighter by the second, even without a telescope. I have never seen a celestial object change this dramatically before. It was a great experience to watch the eclipse from start to finish. It brought good publicity for our club and astronomy in general and was interesting and enjoyable to watch.

Asteroid Charts Available - Courtesy Gord Sarty!

Gord Sarty <sarty@levade.usask.ca>

I have made asteroid finder charts for the year - they are on the web page. They're at <<http://maya.usask.ca/~rasc/#charts>>. It takes 6-8 hours to make the charts, but they look good. I was able to do them this year because of my new Linux laptop that I could use at home without taking up work time. The charts are in postscript (.ps) format, so you'll need some sort of interpreter that will read this.

The RASC Saskatoon Web Site Wins Another Award

"Britannica.com" wrote:

> "Dear Webmaster: Britannica.com is contacting you because our editors have selected your site as one of the best on the Internet when reviewed for quality, accuracy of content, presentation and usability.

As a result, we would like to offer you the opportunity to join in the launch of our new link exchange program. This program will give you and other top quality sites the opportunity to add a Britannica search box to your site and thereby provide your users with direct access to Britannica's awarding-winning content, including the trusted and authoritative Encyclopaedia Britannica.

The search box will be accompanied by an award, which will tell visitors to your site that Britannica editors have rated one of the most valuable and reliable on the Internet, in the company of an elite group of Web sites. You can choose to use the search box, the award or both. Most importantly, because each will open another browser window, your users will never have to leave your site to access Britannica content.....

..... We know quality is always difficult to accomplish and maintain. Congratulations on being a selected member of the Britannica Internet Guide. We look forward to our growing association in the future..... *Regards, The Staff at Britannica.com*"

You are Invited to Supper With Dr. and Mrs. Bergbusch
an invitation from Les Dickson, President

We are looking forward to Dr. Peter and Mrs. Jean Bergbusch's visit to the Saskatoon Centre on February 21. In celebration, we will hold a Centre supper at *The Great Buffet of China* at 6:00 p.m. on February 21st, just preceding the General meeting. (22nd St. and Ave. C) Please attend if you can.

February Planet Report

Murray D. Paulson (Edmonton Centre, RASC)

With this month meeting, the planet **Mercury** is at greatest eastern elongation, 17.5 degrees. It sets in the south west an hour and three quarters after the sun. You will need a clear western horizon and look about 15 degrees south of due west around 7 pm. Mercury will be magnitude -0.5. This will be more difficult than Decembers apparition but it is regarded as a favorable one. Mercury will be .943 au away and will show a half phase 7.12" disk on the 14th, the night of our meeting. Once you have spotted it, gaze up 18 degrees and slightly southward to see Mars's ruddy glow in the twilight sky. Mars is at Magnitude +1.2 and shows a 4.5" disk. Mercury is speeding it's way around the sun and is in the process of catching up with us. March first finds Mercury at inferior conjunction, where it will pass between us and the sun. At this time it will be 3.5 degrees above the sun.

Venus rises 6:48 am, an hour and ten minutes before the sun and sits 30 degrees from the sun. At magnitude -4.0 with a 12" disk it is an easy catch in the morning twilight. On the mornings of February 21 and 22 you will be able to watch a Venus - Neptune conjunction. Venus will be .5 degree away and the two planets would fit in a high power eyepiece view. You will need a small telescope or good binoculars to see the pair because Neptune will be a diminutive magnitude 8 compared to the brilliance of Venus at magnitude -4.0. Venus will continue to shrink and slide down the ecliptic toward the sun over the next month at which time it will be 23 degrees from the sun.

Jupiter is still well placed for early evening observing. At magnitude -2.1 at 5.672 au, Jupiter shows a 34.71" disk. Can you remember how big it was at opposition, 49.5"? It has receded from us and the details are not quite as easy as they were a few months ago. I have heard reports of new features visible in the belts, so there still is lots to see.

A short distance away the planet **Saturn** shines at magnitude 2.2 at a distance of 9.772 au. It shows a 16.9" disk and the hasn't shrunk the same percentage as Jupiter. It was 20.2" at opposition. Saturn is well placed as an early evening target. Saturn's inner moons, Rhea, Dione, Tethys and Enceladus zip around Saturn rather quickly and you can see their motion over a half hour to an hour, especially when they are near the extremities of the rings.

Sky and Telescope has an article on a number of bright asteroids well placed for viewing in the coming months. Pallas, Iris, Ceres and Vesta are all close to opposition and are bright enough to make them easy targets in binoculars. The first sortie out with the chart and your binoculars is usually tough, getting the orientation and the scale of the charts down, but the ensuing observations become relatively easy and you can watch the wanderer over the rest of the spring.

I have heard the lunar eclipse was well observed here in Edmonton. I was sent away on a conference during the event and had to suffer the harshness of the climate there while observing the eclipse. This coincidentally was the night of the conference's banquet. Near mid eclipse, I had to resort to putting on a sweater as I gazed at the milky way over Tucson. I wandered back to the bar at the outdoor pavilion where the banquet was held for a celebratory beer. It was rough, but I managed. In a rather curious coincidence the people running the conference had picked an outdoor venue for the banquet named "Stardance" completely oblivious that the eclipse was to happen that evening. The caterers had even supplied a hired astronomer to show people the beauties of the night's sky. The fellow had one of Orion's

Maksutov Newtonians, and I was impressed with the sharp contrasty image it produced. The views of Jupiter and Saturn were great.

I had the good fortune of the loan of Arnold Rivera's camera tracker and I managed to crank off 36 frames on the moon. I was shooting with my 300 mm f4.5 telephoto and a 2 X telextender. I was impressed at the darkness of mid eclipse and my best shots at that point were 4 second exposures. I am always moved by the immensity of the Earth's shadow. It really puts the moon in perspective. I look forward to seeing other members photos of the event. Till next month, clear skys.

=

The Deepsky Observer A Faint Galaxy Cluster in Orion

by Scott Alexander

Hey everyone! How's it going? This month I am going to look at a really nice galaxy cluster in the constellation of Orion. This cluster is in the Orion's shoulder and is called ABELL 539, one of the Abell clusters in the list of Professor George O. Abell, that he made in the 1950's to 1960's.

OK, first look at a picture of Orion. There are 4 main stars in this constellation and 3 more that make up the belt. They are:

Betelgeuse (mag 0.5 red supergiant star)

Sapih (mag 2.1 blue supergiant)

Rigel (mag 0.2 blue supergiant)

Bellatrix (mag 1.6 blue supergiant)

The 3 that make up the belt are called:

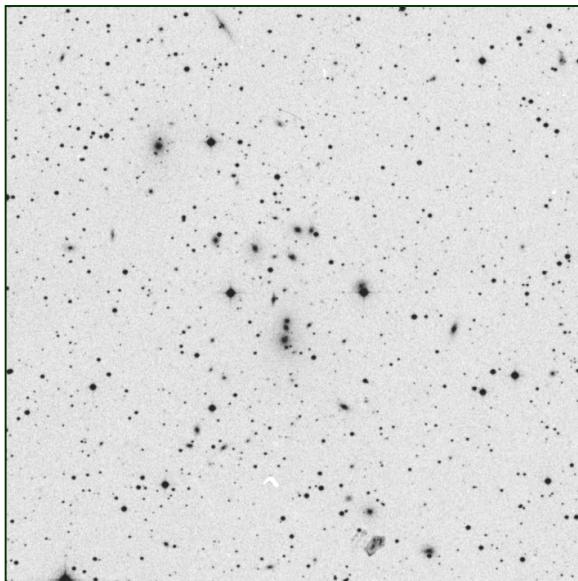
Alnitak (mag 1.8)

Alnilam (mag 1.7)

Mintaka (mag 2.2)

The star we want is in the right shoulder. It is called Bellatrix (or gamma Orionis). This star is the starting point to find this cluster. You should go about 2 degrees over from this star, to the right, or towards the west, and look for a brighter 8th magnitude star. One half degree over from this star, look for two 9th magnitude stars fairly close together. These stars are the stars that lie right on top of the cluster.

Right between the two 9 mag stars you should see a galaxy, which will initially appear to be one galaxy but which is in fact (at least) two galaxies! And above that you will see one more galaxy. You should also see several more galaxies to the



right and down from the central pair (a.k.a. UGC 03274).

To find the second most prominent galaxy go to the left 9th magnitude star and go straight up from it about 1/10th or so degrees. The galaxy should be sitting right there. I have found data on 18 galaxies that you can see with a 14-inch telescope, (found it in *the NEAR EARTH EXTRAGALACTIC DATABASE* or *NED* for short, on the NASA websight. If you want to get to this database just type *NED* into your browser and you should find it).

The 18 galaxies will be scattered around the two 9th magnitude stars, which are the brightest two stars within the center of this cluster. The 18 galaxies will all be within one degree of the centre of the cluster. (I have seen pictures of this cluster with all of the galaxies - over 100 of them - and most of them are too faint to see with amateur scopes, unless you go and get yourself a 30-inch "amateur" scope and spend thousandsand thousands of dollars to buy it!) The image that is with this article shows about 15 to 20 of them. Most are pretty faint but with some luck and perseverance, you will be able to track them down.

HERE IS THE DATA ON THE 15 GALAXIES in the Abell 539 group:

No.	ABELL NAME	R A	DEC	TYPE	MAG.
1	ABELL 0539	05h16m35.1s	+06d27m14s	Gclstr	14.4
2	LEDA 075311	05h16m34.1s	+06d26m58s	G (so)	15.75
3	UGC 03274, NED02	05h16m37.0s	+06d27m06s	G (e)	15.0
4	UGC 03274, NED03	05h16m37.1s	+06d26m53s	G (e)	14.0
5	UGC 03274, NED05	05h16m37.3s	+06d26m27s	G (e)	15.0
6	LEDA 075317	05h16m38.9s	+06d27m52s	G (so)	15.03
7	UGC 03274, NED01	05h16m37.2s	+06d26m13s	G (e)	16
8	UGC 03274, NED04	05h16m37.2s	+06d26m11s	G (?)	?
9	UGC 03274, NED06	05h16m36.1s	+06d26m00s	G	?
10	*UGC 03274	05h16m41.1s	+06d26m14s	Ggroup	
11	*MCG +01-14-014	05h16m36.2s	+06d29m19s	G (so)	16.0
12	MCG +01-14-012	05h16m26.8s	+06d28m21s	G (sb)	16.0
14	CGCG 421-017	05h16m35.7s	+06d30m13s	G (e)	15.6
15	MCG +01-14-013	05h16m33.6s	+06d30m15s	G (so)	15.25
16	CGCG 421-016	05h16m28.8s	+06d24m09s	G (so)	15.6
17	MCG +01-14-018	05h16m38.7s	+06d30m42s	G (so)	16.0

So if you want a challenge to try for, go after the fainter galaxies that I have listed here. You will need a large scope and very clean optics and a very dark night to attempt these galaxies. But try the galaxy cluster *Abell 539* first and than if you can see it try and go for the fainter galaxies in the cluster. So good luck see you next month. *Clear skies!*

[The photo in this article is from the Digital Sky Survey. It is 20' x 20' in size and shows the center of Abell 539. North is up. – Ed]

Astronomy on the Web

by Les Dickson

Welcome to my new and highly irregular column on astronomy resources on the World Wide Web. This month I want to start off by looking at the best starting points for finding astronomy-related websites: the Web Portals, Web Directories and Webrings.

Web Portals. The YAHOO site is a web portal and web indexing service that combines a search engine with an extensive subject index of pages on the web. You can search for "astronomy" using their search engine, or just go directly to <http://dir.yahoo.com/Science/Astronomy/>, where they have over 30 different subject areas, including software, telescopes, and news and media sites related to astronomy. The ALTAVISTA web portal indexes the net much like YAHOO site does. The astronomy-related items can be found at <http://dir.altavista.com/Science/Astronomy.shtml>.

Web Directories. The general purpose web directories provide more value to the user than just listing sites by subject. These sites rank sites by relevance, identify the few "best" sites out of thousands of sites on the web, and often give reviews of sites. Two that I find useful are ABOUT.COM and LINKS2GO. ABOUT.COM uses human guides who organize the web resources by subject and also write original articles and reviews. They also host forums and chat rooms, and maintain a calendar of events related to the subject. The astronomy-related stuff can be found at <http://space.about.com/education/space/index.htm>. LINKS2GO combines a well-organized index of sites by subject with the identification of "key resources", sites that meet its criteria of most representative of each of the topics, based on the number of links to that site by other web pages. There is also a discussion group associated with each topic. The best start page for astronomy here is http://www.links2go.com/topic/Space_and_Astronomy. I noticed that our own webpage, maintained by Gord Sarty, is one of LINKS2GO "key resource" sites under the topic *Canadian_Astronomy*. Way to go, Gord! Check it out.

There are also specialised web directories dedicated just to astronomy. The best of the lot, in my humble opinion, are the related ASTROWEB and STARPAGES sites located at the University of Strasbourg in France. It maintains a database of over 2860 sites related to professional and amateur astronomy. It can be found at <http://www.stsci.edu/astroweb/astronomy.html>. STARPAGES lists over 6200 links to organizations, institutions, associations and companies, and over 5200 personal web pages maintained by professional and amateur astronomers. Its location is <http://cdsweb.u-strasbg.fr/~heck/spages.htm>.

Webrings. Webrings are interesting creatures. Websites related by common interests are connected by linked circles. Within each webring, you can easily go the next site in the ring, visit one at random, or see a directory of all the sites on the ring. The master site for all webrings is WEBRINGS.COM at <http://www.webring.com/>. If you search the master site for astronomy-related sites, you will be presented with a list of over 65 different rings. One interesting ring is "The RASC Member Home Page's Webring", which is the web ring of home sites of members of the Royal Astronomical Society of Canada and affiliated centres across Canada.

That is all for now. Happy surfing! (But only on cloudy nights; let's not get carried away with all this high-tech stuff!)

Dr. Roy Bishop Retires as OH Editor

Dr. Robert Hawkes, Physics Department, Mount Allison University
<rhwakes@mta.ca> (from the RASCList)

Former NRC Associate Committee on Meteorites (the precursor of MIAC, for those new to MIAC/CCMI) member Dr. Roy Bishop has announced that after 19 years as editor of the Royal Astronomical Society of Canada's Observers' Handbook that he is stepping down as editor (see pg. 4 of the 2000 Handbook). Roy has done a superb job of editing this publication, which has a large international distribution as well as to each member of the RASC in Canada. The Handbook has sections on meteors, radio detection of meteors, meteorite identification, fireballs and impact craters, and is one important mechanism by which we reach a much broader audience. Roy's e-mail address is <roy.bishop@acadiau.ca> for those on MIAC who know Roy personally from his ACOM days and wish to send him a personal note of thanks for almost two decades of work as Handbook editor.

Membership Updates

by Bob Christie <[christie@sk.sympatico.ca](mailto:<christie@sk.sympatico.ca>)>

Welcome New and Renewed Members:

Name	Status	Address	Telephone
Brian Friesen	R	314 Johnson Cr., Saskatoon, Sask., S7L 5P9, <bjfriesen@home.com>	384-2963
Erich Keser	R	405 Albert Ave., Saskatoon, Sask., S7N 1G2, <keser@duke.usask.ca>	374-4262
Terry Warren	R	206 A. E. Adams Cr., Saskatoon, SK, S7K 5M9	668-3998

Corrections and added information:

Name	Reason	Correction or addition
Ellen Kaye-Cheveldayoff	Moving Home! (new address effective Mar. 1)	69 Coon's Rd., Richmond, Ontario, L4E 2R2

Remember - let Bob Christie or Jim Young know if there are changes to your address or status!

The Messier, FNGC & H-400 Club

MESSIER CLUB

Certified at 110 Objects: Rick Huziak, Gord Sarty, Scott Alexander, Sandy Ferguson, Dale Jeffrey, Darrell Chatfield, Bob Christie.

Ken Noesgaard	109
Wade Selvig	64
Erich Keser	51
Stan Noble	28
Brent Gratias	26
Ellen Kaye-Cheveldayoff	23
Les & Ellen Dickson	20
Brian Friesen	15
Andrew Krochko	12
Debbie Anderson	8

Join the Messier, Finest NGC and H-400 Club!

Observe all 110 Messier, 100 FNGC or 400 H-400 objects and earn your
CERTIFICATES!

The first 2 lists can be found in *the Observer's Handbook*. The 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.

FINEST NGC CLUB

Certified at 110 Objects: Rick Huziak

Dale Jeffrey -(*applying*)	110
Gordon Sarty (*applying*)	110
Darrell Chatfield	106
Scott Alexander	89
Sandy Ferguson	23
Ken Noesgaard	8
Ellen Kaye-Cheveldayoff	4

HERSCHEL 400 CLUB

Certified at 400 Objects: not yet!

Jeffrey, Dale	376
Rick Huziak	344
Darrell Chatfield	228
Gord Sarty	147
Scott Alexander	98
Sandy Ferguson	18
Ken Noesgaard (*new*)	4

Great News in Observing

I guess the news on this list is Dale's quick climb to the top of the Herschel 400 list! Way to keep observing! Ellen Kaye-Cheveldayoff is also climbing the Messier list rapidly and has entered the FNGC List. We also welcome Ken Noesgaard to the Herschel list as well! (Dropping off the list are non-renewed Tyler Cottenie and Terry Nelson). Every month, there are a few more observers in the Saskatoon Centre! Keep up the good work!

Send observing numbers to
<huziak@SEDSystems.ca>

U of S Observatory Hours

The U of S Observatory is open to the general public **every Saturday evening**. Admission if free. The observatory is located on campus, one block north of the Wiggins Avenue and College Drive entrance. On clear evenings visitors may look through the 6-inch refractor to view Jupiter, Saturn, the moon, star clusters and other exciting astronomical objects. For further information, phone the recorded Astronomy Information Line at 966-6429.

Hours: Feb. 7:30 - 9:30 p.m.

Saskatoon RASC Membership?

**Regular - \$40.00 per year
Youth - \$22.50 per year**

It's not too late to join!

Notice of the General Meeting of the Saskatoon Centre

Monday, February 21, 2000 at 7:30 p.m.

Room 8313, New City Hospital, Queen Street

Presenting:

Dr. Peter Bergbusch, University of Regina

"A Rambling Walk Through Modern Astronomy"

Dr. Bergbusch brings years of observing experience to the forefront with astronomical images he has taken over the years. This talk covers a wide range of astronomical topics - from amateur to professional.

This meeting is open to everyone - members and non-members. There is no admission charge.

The Sleaford Observatory

Longitude: 105 deg 55' 13" +/- 13" W Latitude: 52 deg 05' 04" +/- 08" N
by Rick Huziak

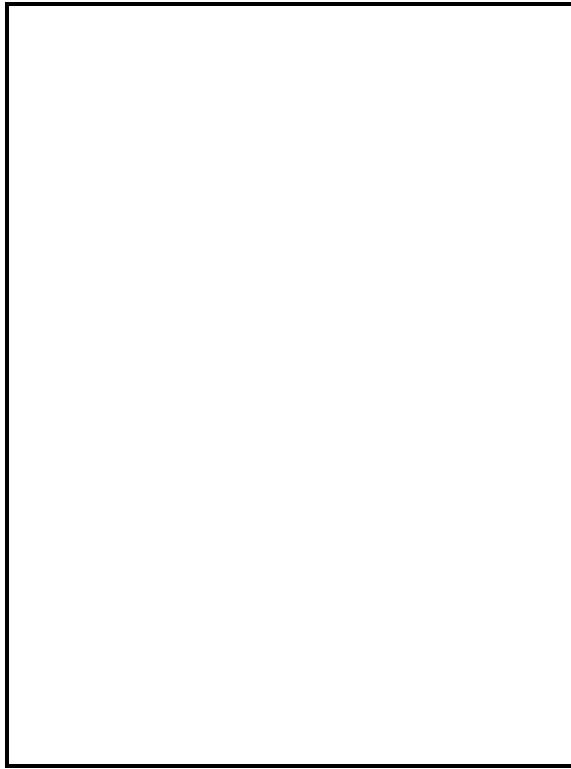
Construction - Several consecutive-week construction days (Mar. 22, Mar. 23, Mar. 30, Feb. 6) have gone a long way to completing the renovation and addition of the warm-up shelter. The rough-in wiring is now complete in the addition, and all outside walls are insulated and vapour barriered. Paneling is now being placed on all of the walls. The separating wall to the toilet will soon be sheeted in and insulated as well. (Thanks to Jim Young, Darrell Chatfield and Rick Huziak for all this work). In addition, Bill Hydomako is continuing renovations of the front room to accommodate the new wiring required for the toilet. This is requiring addition of a third breaker panel (that is always left on) and rewiring of the existing panels and boxes. In addition, all wiring to the pre-existing plugs that have never before been terminated (inside and out) will soon be completed. Please be alert at the site - there is nothing dangerous, but it's beginning to look a lot different!

Snow Clearance - The site has now been cleared of snow by the R.M of Colonsay (the first time required this year), and is now easily passable in any vehicle.

New Key Issued - A key has been given to Humboldt observer, Mike Stephens, who has completed training at the site, and since receiving the key has made the trip to the Observatory from Humboldt several times - the same length drive as from Saskatoon!

Supplies Required at the Site - Remember when going out to Sleaford that contributing a few simple supplies to the site is beneficial to all! Bring your own water. Bring & leave a roll of paper towels, toilet tissue, Kleenex, garbage bags, etc. And please remember to take any garbage that may have accumulated there home with you when you leave (even if you didn't produce it). We'll do the same for you one day!

Photo at right - Darrell suits up to begin insulating



Minutes of the Executive Meeting

Tuesday, January 13, 2000

held at Bob Christie's House, 7:30 p.m.

recorded by Al Hartridge, Secretary

1. Approval of previous minutes - moved by Jim Young and seconded by Ellen Dickson and carried.
2. Beaver Creek key - Jim thinks the guide from Beaver Creek actually has it. It was left with them at the last star party. Rick already has a new key.
3. Secretary's Report - will be drawn up by Al Hartridge.
4. Meeting Room at City Hospital - may no longer be available. Could go to the Physics building on Campus. Rick will look into the matter further.
5. Financial Report - given by Jim Young . See details in the next newsletter.
6. Speakers for upcoming meetings:
 - January- Rick Huziak and Andrew Krochko and Les Dickson & Sandy Ferguson
 - February - Dr. Peter Bergbusch (University of Regina)
 - March - Murray Paulson (Edmonton Centre)
 - April - Dale Jeffrey
7. Speaker Assistance Program - Ellen Dickson made a motion that Rick Huziak send a proposal to National Office to simplify the Speaker Travel Assistance Program (STAP). This was seconded by Bob Christie and carried.
8. SSSP 2000 - Jack Newton or Ralph Meier might be available as a speaker . Maximum allowable stipend for a speaker is set at \$500.00. Dinner Rates have been confirmed for the banquet at \$15.00 per adult including GST and gratuity. More people need to be involved in helping and planning. Erich Keser will make a presentation at the next General meeting.
9. Sleaford - funds are available for the new telescope but not for the 16-ft. dome. Priority now is to finish the Warm-up shelter and the 10-ft. dome. The telescope mount has been finished and has been sandblasted and painted.
10. Surplus astronomy magazines - Andrew would like to photocopy observing articles and produce an observing reference for the Sleaford site.
11. Junior program - Sandy will continue until she feels she no longer wants to do it.
12. Letter of Thanks - has gone to Merlin Motors for the donation.
13. Lunar Eclipse - a group will gather at the U of S observatory on campus to help show the public the total eclipse.
14. Meeting adjourned at 10:00 pm.

Minutes of the General Meeting

Monday, January 17, 1999

held in Room 8313, City Hospital, Saskatoon, 7:30 p.m.

recorded by Al Hartridge, Secretary

1. Minutes of the previous meeting approved.
2. Financial Report - will be available in the upcoming newsletter.
3. Sleaford Site Report - warm-up shelter addition has been insulated, vapour barrier installed, wiring progressing and U of S has purchased a toilet for which we will share the cost.
4. Membership Report - as of this date there are 76 members and one new temporary member.
5. Observers Report - last OG was cloudy. After the last meeting a group went out to Sleaford and enjoyed the Geminid meteor shower.
6. Library Report - a list of books and magazines has been drawn up. A group will get together on Jan. 29 to continue work on organizing the library.
7. Meeting site - will continue to meet at City Hospital till at least next June.
8. New Business - Andrew will create an observing reference to be kept at the new Sleaford site.
9. PRESENTATIONS:
 - *The Perfect Machine: The Corning Glass Works and the 200" Mirror* - Rick Huziak
 - *Observing Deep Sky Objects in the Cold* - Andrew Krochko
 - *The Winter Constellations* - Sandy Ferguson
 - *A Catalogue of Binocular Objects* - Darrell Chatfield

Coming in Next Month's Newsletter:

(I'm out of articles)*get the hint?*