

Saskatoon Skies

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

Vol. 35, No. 7/8

July/August 2004



The Transit of Venus

Transit of Venus

June 8, 2004 10:25 UT

Thunder Bay, Ontario



For this historic transit of Venus across the sun the editor traveled to Thunder Bay, Ontario where the transit was visible for an hour longer than at home. Our host in this picture is Randy McAllister from the Thunder Bay RASC club. It seems that Saskatchewan was mainly clouded over for the event, but those determined to see it still found clear skies, even if they had to travel to chase holes. See the Venus reports in this issue by the presidents of our two Saskatchewan clubs, Rick Huziak from Saskatoon and Vance Petriew from Regina, who did witness the event from close to home.

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Saskatoon Centre

The Royal Astronomical Society of Canada

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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**
- 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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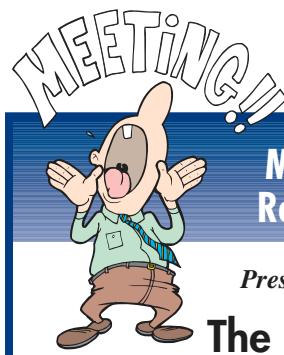


Bottle Drive & Canadian Tire \$

by Darrell Chatfield

Canadian Tire Money collected to date is \$50. 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
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, AB, 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
Sept. 20	Executive Meeting – Rm 175 Physics, U of S, 6:30 p.m.	Rick Huziak	665-3392
Sept. 20	General Meeting – Your Summer Astronomy Vacation: SSSP, the AAVSO/ALPO Meeting & More – Rm 175 Physics, U of S, 7:30 p.m.	Rick Huziak	665-3392



Monday, Sept 20, 7:30PM
Room 175 Physics, U of S

Presenting:

The 2004 Cypress Hills Saskatchewan Summer Star Party

by Les Dickson and others

The AAVSO, ALPO, ASP & AL Annual Meeting in Oakland, California

by Rick Huziak

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



SSSP Volunteers Needed

by Rick Huziak

This is an appeal to members who are registered for or may register for SSSP. The event is more or less organized, but we could use some volunteers to help run the show once we are there. The SSSP relies on members of the Saskatoon and Regina clubs to provide the resources to pull off the best star party in Saskatchewan! But it takes people to do this. And with a committee of 7, we cannot do everything at the star party.

So if you are coming, and would like to volunteer a few hours of your star party time, we'd really appreciate it. We need the following jobs done so if you volunteer, we can put you to work.

- 'taxi' driver
- gopher
- grocery shopper
- pop sales
- observing coffee gopher
- Meadows security
- workshops
- Wapiti Room helper
- kitchen helper for coffee making/sales

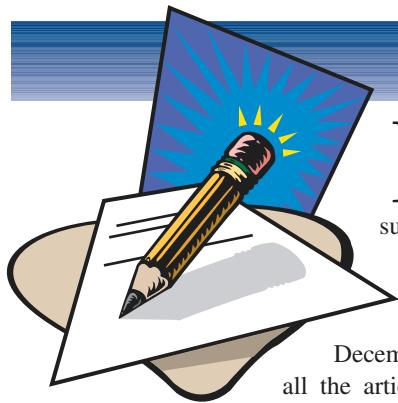
If you'd like to help out, give me a call, so we can add your name to the volunteer listing. (Rick – 665-3392) Any materials required for these jobs is covered by the SSSP. Thanks in advance.

Sky Publishing Corporation Pulls the Discount Plug

by Rick Huziak

The S&T discount program I described for you a few months ago [May issue] has been cancelled in part by Sky Publishing (customer service custserv@SkyandTelescope.com). In their words: "The 10% discount for book and products order has been discontinued. We still offer the discount for club members who subscribe to Sky & Telescope magazine through their club. Thank You, Anna Tanner, Customer Service".

The Editor's Corner *by Tenho Tuomi*



It looks as if everyone has survived my first months as editor of *Saskatoon Skies* after taking over from

Rick Huziak last December, thanks to Rick, and all the articles that everyone sent in.

It certainly has been a learning experience. I quickly found out that as editor I am only one part of a team that produces the newsletter.

In the April 2002 issue of *Saskatoon Skies*, Rick gave a detailed description of what is entailed in putting out the newsletter each month. It was appropriately entitled "To Scare Off the Next Editor". Some things have certainly changed since then to make the editor's job easier. The formatting and layout which used to be a big part of the editor's job is now done by Linda Janzen who produces the finished masters ready for printing and the pdf files ready for posting on the Internet, though in June I got a taste of that part of the job when Linda was away.

I wanted to see others of the team in action as they actually print the newsletter, so last December 9 I arrived at the WBM office at 5 p.m. The crew was all assembled: Linda Janzen and Yannis Pahatourogliou, Les and Ellen Dickson, Jim Young, Mike Clancy, and Rick Huziak.

First a decision was made about how many copies to print. Then I watched as Brian Friesen rolled in the Risograph machine, and with Yannis supervising the order in which to print so that the correct pages print back to back, and that the fresh ink does not smear, the pages spit out faster than I could count. After that the

crew walked around the table of stacks of pages and assembled the newsletters, which they then stapled and folded and put into envelopes. Mike provided the mailing labels. I don't think the whole process took even one hour. All I could do is stand out of the way and watch, as everyone else seemed to know exactly what he or she was doing.

Then according to tradition, as Rick reported in the April *Saskatoon Skies*, as many as were able to stay walked over to Earl's Restaurant across the street where we talked about music, good books that we had read, and a little bit about astronomy. I enjoyed Jim's description of how beautiful the sky looks even from the city when walking to work at 4 in the morning.

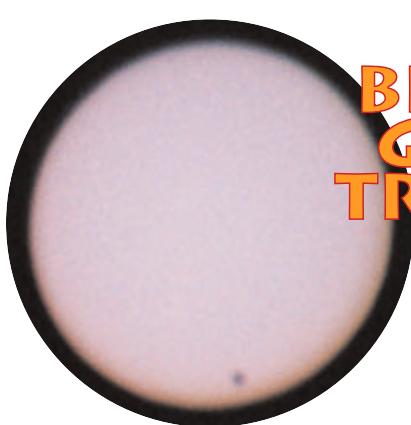
Part of the team behind the scenes is Gordon Sarty, another former editor, who capably looks after the Centre's web pages, and each month posts the latest *Saskatoon Skies* for downloading.

Of course all of you who contribute articles are a very important part of the team also. I would especially like to single out Murray Paulson who has been writing the popular Planets This Month for 12 years, and which currently appears in newsletters of five Centres.

The big event of last month was the transit of Venus, at least for those of us who were able to find a hole in the clouds that morning. The rest of the year does not have anything coming up that would seem to compare, but the skies have surprises so don't stop looking up. We can always make our own special events. In the middle of July I was at the lake, so I set up my telescope to show Venus in the daytime. It was a hit with those who stopped to look.

See you all at the Saskatchewan Summer Star Party at Cypress Hills.

THE BIG FAT GREEK TRANSIT



Yannis Pahatourogliou managed to combine a holiday visiting his family in Greece and joining the Edmonton expedition on Crete for the Transit of Venus. Above is an image captured by Yannis using a point-and-snap camera through his binoculars.

The Edmonton expedition to Crete, Greece, sets up on their hotel roof to view the Transit of Venus. Though the morning started off very cloudy, the crew managed to observe all but one contact.



Adventures in Planetary & People Motions by Richard Huziak

What we were trying to accomplish seemed to be an admirable goal. It was to see another world – as large as the earth – cross the face of the sun. This doesn't happen everyday. As a matter of fact, no one living on the earth today had seen Venus move across the sun. In the last few attempts to view this important event in the 1700's and 1800's, people actually died in pursuit of this adventure.

And so, in honour the efforts of all those long deceased people in the distant past, our week was also planned to be an adventure. Original plans were to book a Greyhound to take RASC members from Calgary and Edmonton through Saskatchewan, picking up Saskatoon and Regina members. We were to have a big barbecue in my backyard before making a beeline for Manitoba to make the observations. In Manitoba, the sun would be higher in the sky during the last parts of the event – this would be welcome for any observer who has tried to see detail at the horizon. But everything was to be against us.

Calgary and Edmonton both mounted major expeditions to other parts of the world – Edmonton to Crete, and Calgary to Egypt, and so the pool of local observers was diluted, and so, the bus was out. However, a dozen Edmontonian holdouts decided to mount an expedition by carpool. The plan was for them to drive to Saskatoon on Sunday, sleep over, then travel on Monday to find a suitable spot in Manitoba for Tuesday early morning's transit. But even this simplified plan did not pan out either.

As early as Saturday (the transit was Tuesday), we knew we had a problem – the weather! June is generally hot and dry around here, but the forecasts for the transit were dismal to say the least. Almost monsoon conditions were predicted for the entire time – Sunday through Tuesday. Plans to move toward the east for a better horizon had to be modified, and this was modified every 6 hours as new weather models were released and Alister Ling, Edmonton's Environment Canada weather forecaster, interpreted the clouds. As the time came closer, it seemed that the best sky would be to the northwest, with nothing at all available in the east to the Ontario border! With time running out on Sunday, Edmonton members made a decision to split their group into 3 parties, and in this way, the odds were that at least someone would get successful observations. So, one group headed for Fort McMurray, Alberta (the best option), one group headed for Prince Albert, SK, and the other group headed to Saskatoon. The hope remained that we could decide to make a dash on Monday to a clearing hole somewhere in Western Canada.

The Edmonton/Saskatoon expedition arrived here at 7:30 pm on Sunday night, and our planned barbecue went ahead. Bruce McCurdy and John Cliff joined with the Hydomako's, Hartridge's, Dickson's and me to eat, drink and be merry for Sunday evening, while we waited for final weather guidance on Monday morning. Sharon Tansey, another Edmonton crew member, camped nearby but did not attend the barbecue.

When Monday morning arrived, the weather report was even worse. There were no holes predicted in the clouds, and the best bet was still northern Alberta or the American border. Each was going to be a long drive, and neither offered any height advantage – as a matter of fact, each had the sun lower in the sky than

Saskatoon could have offered. After coming all this way, Bruce and John decided to play the odds and make the 8-hour drive back up to Fort McMurray. The Manitoba hope had evaporated. However, not all of us had the option of heading for Northern Alberta. Sharon Tansey was headed for the Wisconsin, and did not want to backtrack. At the last minute, Saskatoon transit expedition adventurers Bill Hydomako, Gord Sarty and I did not want to drive that far, and besides, I had to be in Regina by Tuesday afternoon for a Light Pollution talk. We made a different plan. We were going to run for whatever hole we could find.

So, with only 3 hours sleep, we woke up at 12:30 am on Tuesday, and checked the weather to see what we had to do. The weather report indicated that clearing was coming from the west, but exactly where and when it was clear was anyone's guess. All we knew was that we had a deadline. No matter what, the sun was going to rise at 4:44 am, and by that time we had to find a NE horizon that was clear to the ground. Because we couldn't travel east to get the sun higher, we were stuck with a transit that would last only 40 minutes and occur while the sun was no higher than 3.3 degrees up. We decided we would drive as far northwest as we could – west to find clearing, and north as not to lose more altitude. We packed two cars with 4 telescopes and off we drove toward Edmonton. With time running out, and after 272 kilometers, we finally found a half-decent observing site 35 km north of Maidstone, SK. It was 4:00 am, and we needed to get set up.

But things went well. Sharon managed to duct tape her Baader filter to a 3.1" refractor she borrowed. I set up my 6" John Dobson solar scope, Bill got the C-8 going, and Gord filtered a 3" refractor he brought along. We were set, but a strip of cloud still covered the first 2-degrees of the horizon. At 4:44 the sun rose, but we were still blocked. For an agonizing half hour, we waited until, at last, the sun rose above the cloud.

The sight was amazing. A huge ink-black round spot was just touching the edge of the sun, maybe 90% on. We had just missed third contact, but the sun was clear from now on. Although we tried, we could not see Venus naked eye, though it was plenty big enough. It was just too close to the horizon, and the edges of the sun were boiling. Venus could be seen slowly creeping for the edge. It has a bright rusty ring around it, brighter on the north side, but its edges were very sharp. As Venus moved off the solar disk, both Sharon and I could see the planet projected against the sun's bright corona. But once Venus was more than half off, this phenomenon was not longer visible. Slowly, the planet left the disk and we all called the time we thought 4th contact occurred. Gord had brought a tape recorder and recorded out timing and comments, and later submitted this to Sky and Telescope's transit timing program. To cap things off, at the very end of the event, a juvenile moose came out of the bush a few hundred feet away to see what was going on.

We piled back in the cars, and drove back to Saskatoon. Sharon packed up and drove onward to the East. I went to work for a while, then drove to Regina, stopping 5 times on the way to wake myself up! A 6-hour drive to see only a half hour of a Venus transit? Was it worth it? You bet! It was an awesome sight! This doesn't come around very often. Your next chance will be 8 years hence – June 2012. Don't miss it!

Notes from a Backyard Astronomer

by Vance Petriew

The transit of Venus is not only a rare event happening twice every 130 years, it also holds historical significance in calculating the size of our solar system over the last 400 years. The rarity of this event sparked my interest in making an observation of Venus passing in front of the sun.

My adventure started with the alarm clock going off at 4:00 AM. I dragged myself out of bed to the window to be greeted by a complete blanket of clouds. This didn't surprise me even though it was a complete contradiction to the weather forecast only 12 hours earlier. I went downstairs to check the satellite images to see what the cloud situation looked like for the transit. The satellite told the story as most of Saskatchewan was covered in clouds with the exception of the western part along the border and a hole in the south. I decided that a drive towards the southern hole would be my best bet since I was already packed from the night before.

When I got out on the highway, I could see a lighter area of clouds towards the south but it didn't look very promising. I speedily drove south watching the southern and eastern horizons hoping to see some holes in the clouds.

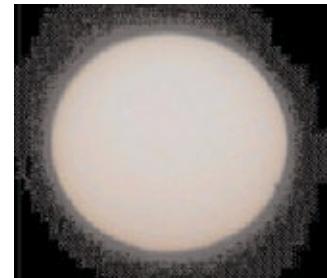
After about 15 minutes of driving, I could see a well-defined edge to the clouds towards the south. My hopes were lifted although the cloud edge still looked a long way away. The clock turned 4:44 AM. Sunrise was starting but I was still under the cloud layer. I watched the eastern horizon as I drove hoping to catch a glimpse of the rising sun through a hole in the clouds. I knew the sun was rising because I could see the earth's shadow in the cloud hole ahead. Seeing this also lifted my spirits as well since that meant that there were no high-level clouds above the lower cloud deck. I increased my speed.

At 4:55 AM, I finally passed below the edge of the clouds and was greeted by a last quarter moon shining brightly against the pale blue sky. What a wonderful sight! As I continued south on Highway 6, the tops of the clouds started to become bright red so I knew the sun was close to appearing. I surveyed the hills to the west looking to see if the sun was shining on them. Nothing. I scanned the horizon looking for signs of sunshine and to my surprise saw a Saskatchewan landmark lit up by the sun. The grain elevator of Pangman, SK was slowly being illuminated by golden

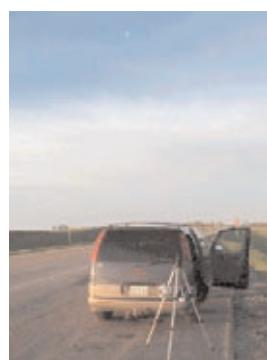


rays from the morning sun. The time was 5:06 AM and I knew my destination was near. A quick look towards the east revealed the sun peeking excitedly over the clouds. I raced on looking for a good spot to pull over. Conveniently, a turn-out appeared about a mile down the road.

I quickly set up my camera on the tripod and took some exposures through the Baader solar filter on my digital camera. The time was 5:10 AM. A quick look at the pictures revealed Venus already halfway off the limb. I took some more pictures zoomed in to 27x and proceeded back to the van to grab my finderscope. I held the solar filter up to my face and was rewarded with my first visual encounter of Venus and the Sun with my naked eye. The partial spot on the sun was easy to see and appeared larger than I was expecting. I quickly set up my finderscope and taped the solar filter on using masking tape. I then taped the whole finderscope to my camera tripod with more masking tape. The view through the finderscope was awesome! The pictures are nice but there's something special about seeing a transit with your own eyes. The images and feelings become etched in your brain in a way that pictures cannot. By 5:21 AM, Venus was no longer visible and the transit was over.



I was euphoric about the historical event I had just witnessed and took my time packing up my gear. The countryside looked so peaceful basking in the glow of the sun. I started back home and didn't get more than a mile down the road when I noticed the distinct shadow cast on the ground by the clouds. The elevator was still glowing in sunlight but clouds were moving in and I was glad they had waited until now to hide the sun.



The drive back was long and I was surprised at how far I had traveled in such a short time. I was greeted by rain once I reached the city limits of Regina, which made me feel even better about the morning events. Definitely an adventure to remember! I'm already looking forward to seeing the next Venus transit in 2012.

[Reprinted from the May/June *Stargazer*, by permission]



The Chatfield Binocular Challenge – Part 1

by Rick Huziak

Over the last few months I decided that I should do a bit more deep-sky observing, so decided to do the Chatfield Binocular Challenge using 8 x 50 binoculars. I have found that since I was observing a much wider field (approximately 5-degrees) that I tended to take more notes about the interesting areas surrounding the target objects. It should be noted that the descriptions currently given on the Binocular listing are actually telescopic descriptions. The descriptions through 8 x 50 binoculars are markedly different. I hope that my descriptions will help new observers first find the Chatfield objects, but also learn a bit about observing – seeing more than just the target object and spending time in a field to discover everything about the object and everything around it as well.

The 4-part series of articles will explore 10 Chatfield objects each month, although 71 different objects are described altogether.

ANDROMEDA – M31 (NGC 224) – Our closest spiral neighbor is a very nice sight in binoculars. It is very large, running 1/2-degree wide by 4-degrees long. This is 8 times the size of the moon! In a 5-degree binocular field, the arms fill almost the entire width. The nucleus is very bright, but is not star-like at this power. Within the glow of the disk, M32 (NGC 221) is visible as a faint splotch. Also nearby at the edge of the field is M110 (NGC 205), a very ghostly oval smudge.

ANDROMEDA – NGC 752 – NGC 752 is a large, 1-degree diameter fuzzy ball with maybe fifty 9th and 10th magnitude stars. There is an asterism of about 5 stars forming a golf club shape to the SW, with the tip of the club being a wide double. Due to this asterism, the common name for this area is the “Club & Ball Cluster”, with NGC 752 being the ball.

AQUARIUS – M2 (NGC 7089) – This globular cluster is small in the field – only about 3' in diameter, but at 7th magnitude it can be easily found. The fuzzy spot is slightly brighter to the middle. The field is barren, except that M2 is at the SW end of a right angle pattern of stars that extends 3-degrees NE then turns NW for 3-degrees. The pattern contains 24, 25, 26 Aquarii.

AURIGA – M38 (NGC 1912) – M38 is a wonderful open cluster found by scanning NE from the line of bright stars, 16, 17, 18, 19 Aurigae. It is a bright and large fuzzball, about 1/4-degree in diameter that breaks up into 20 to 25 9th magnitude stars if the binoculars are held steady. If you know exactly where else to look in the field, another open cluster, NGC 1907, can be barely spotted just S of a line formed by two horizontal 7th magnitude stars that just touch the SE and SW flanks of M38. At the SE edge of the field is M36 (NGC 1960). M36 is different from M38 in that it is concentrated to the center and is only half the size, though it is the same total brightness.

AURIGA – NGC 2281 – This open cluster is found by drawing a line from alpha (Capella), though beta Aurigae, then extending the line one distance to the east. Here you find the loose asterism formed by psi-1 through psi-7 Aurigae. Just 1' SE of psi-7 is NGC 2281. The cluster is a nice fuzzy spot 1/4-degree in diameter with a tight double star at the center. Approximately 15 stars can be distinguished to 9.5 magnitude.

CAMELOPARDALIS – KEMBLE 1 – This object was first described in a 1966 issue of *Sky and Telescope* by Saskatchewan amateur Fr. Lucien Kemble. Walter Scott Houston, the observing editor of the magazine coined the object “Kemble’s Cascade”. In some catalogues, the cluster is also known as Kemble 1. Although Lucien never made a catalogue of objects, this cluster and another asterism, Kemble 2 are perpetuated in the databases. Kemble’s Cascade is a very interesting string of about 16 stars, immediately obvious through binoculars. It will run almost the entire breadth of the binocular field in a very straight line of 7 to 9.5 magnitude stars. In the middle is a single 7th magnitude star and to the W is a line of three 7th magnitude stars that can be used as a guidepost to find this asterism. NGC 1501 is an open cluster found at the S end of the Cascade. It can be seen as a 5' wide ball of about 5 stars with a bit of fuzz around them. The Cascade runs from SE to NW.

CANCER – M44 (NGC 2632) – The famous Beehive or Praesepe Cluster is an excellent binocular object. More than 50 stars can be easily counted in this star cluster, one of the nearest to the earth. The stars are all 7th to 10th magnitude, and likely all the stars in the field except for the 3 brightest stars are true cluster members. In good skies, upward of 75 stars can be glimpsed. The cluster is flanked by gamma Cancri at the top left, and delta Cancri at the bottom left. The triangular enclosure of M44 is completed by the fainter star eta Cancri.

CANES VENATICI – M3 (NGC 5272) – M3 is a globular star cluster that is very small at 2' in diameter but easy all the same. It is very bright, concentrated to the center, about 8th magnitude, round and blue. There is a 7th magnitude star just 1/2-degree SW that is light red. A 7.5 magnitude star 1-degree SE completes a long triangle. Scan over from beta Com to find the field.

CANIS MAJOR – M41 (NGC 2287) – M41 is a pleasing open cluster about 1/4 degree in diameter. Fifteen to eighteen stars can be distinguished in the 8th to 10th magnitude range, despite this cluster’s lowness to the south horizon. There is a fairly bright 7th magnitude star, 12 Canis Majoris, to the SE. Otherwise, this is a fairly sparse field.

CASSIOPEIA – NGC 7789 – This is a fairly easy open cluster found about half way between 7 & 8 Cassiopeiae, but slightly closer to the red 7 Cas. It is a 1/4-degree homogeneous faint white fuzzball of about 8th magnitude, quite spherical. No stars can be resolved.

Going from Messier & FNGC to Herschel 400 Club

by Tenho Tuomi

The Messier and Finest NGC lists have no overlap, but the Herschel 400 list includes many objects from these two lists. If you complete the Messier and FNGC lists you already have 96, or almost a quarter of the Herschel 400 list done. There are six other Messier and FNGC objects that you will have to revisit to identify components to get eight more objects for the Herschel 400 list.

Messier List

The following 19 Herschel 400 NGC objects correspond to objects in the Messier list:

205	M110
598	M33
650	M76 Note 1
1961	M36
2158	M35
2422	M47
2548	M48
3034	M82
3414	M105
3558	M108
3992	M109
4258	M106
4303	M61
4594	M104
4596	M90
5195	M51 Note 2
5866	M102
6171	M107
6514	M20

Note 1

The Little Dumbbell Nebula, M76 is made of two overlapping components NGCs 650 and 651. You have to identify NGC 650 separately for the Herschel 400 list.

Note 2

The Whirlpool Galaxy, M51 is made of connecting NGCs 5194 and 5195. You have to observe the fainter NGC 5195 for the Herschel 400 list.

Finest NGC list

The following 79 Finest NGC objects are included in the Herschel 400 list:

40, 185, 246, 253, 457, 663, 772, 891, 936, 1023, 1501, 1535, 1788, 1931, 2022, 2024, 2194, 2392, 2403, 2440, 2539, 2655, 2683, 2841, 2903, 3079, 3115, 3184, 3242, 3344, 3432, 3521, 3607, 3628, 3877, 3941, 4026, 4088, 4111, 4214, 4216, 4274, 4361, 4414, 4438, 4449, 4490, 4494, 4526, 4535, 4559, 4565, 4631, 4699, 4725, 4762, 5005, 5033, 5466, 5746, 5907, 6369, 6445, 6520, 6543, 6633, 6712, 6781, 6802, 6818, 6826, 6939, 6940, 6946, 7000, 7009, 7331, 7662, 7789.

The following four FNGC objects have components in the Herschel 400 list:

- Both clusters of the Double Cluster, NGCs 869 and 884, have to be identified for the Herschel 400 list.
- Both lobes of the faint planetary NGC 2371/2 have to be observed for the Herschel 400 list.
- Only one galaxy, NGC 4038, in the “Antenna” interacting galaxies counts for the Herschel 400 list.
- Only one galaxy, NGC 4656, of the 4656/7 superimposed pair counts for the Herschel 400 list.

In the RASC application forms for the Messier and FNGC certificates there are places for remarks, but these notes seem to be optional and not required for the certificate. However for the Herschel 400 certificate one of the requirements is that there must be a short note describing your observation of the object. Therefore if you don't want to go over your Messier and FNGC observations all over again for the Herschel 400 list like I had to, best to start filling those remarks now for all your observations.

[Note by Rick]:

The official Herschel 400 site can be found here:

<http://www.astroleague.org/al/obsclubs/herschel/her400.html>

You might be interested in numbers: 000 (third entry), 221, 232, 255 & 282 found here:

<http://www.astroleague.org/al/obsclubs/herschel/her400wn.html>

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

LUNAR TRANSIENT PHENOMENA RESEARCH PROGRAM

DAVID O. DARLING

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<http://www.ltpresearch.org/> (<http://www.ltpresearch.org/>)

I am sending this letter to inform you for the need for lunar observers. They are needed to participate in a global effort to monitor the Moon for Lunar Transient Phenomena. Lunar Transient Phenomena is short-lived changes detected on the Moon and can consist of glows, flashes, darkening of the limb, etc. We need the talents and efforts of the professional and amateur astronomical community from around the world to monitor the Moon during upcoming spacecraft missions to the Moon. This concerted effort will be to assist all observers who choose to participate with the latest information about lunar transient phenomena and the latest information on reported events. There will also be coordinated observing programs to examine the behavior of historical lunar transient phenomena sites under similar lighting conditions.

This L.T.P. Research web site will also be an effective tool for observers with similar interests to communicate with each other concerning their own study of this phenomena and to present ideas on other lunar topics by utilizing the Internet and email as a cost effective conduit.

The primary function though is to attempt to establish a worldwide network of observers that can be contacted when a lunar transient phenomena event takes place. Due to cost involved the use of Internet can be extremely effective and allow almost immediate notification to observers all over the world. Also being part of this network will help people learn of other observers within their region who also share an interest in this phenomena.

I have had the pleasure of establishing and running two major ground-based operations in coordination with the Clementine mission and the Lunar Prospector mission. With both of these programs I had about 150 observers in many different countries participate with great success. What I did not have was a web site to allow more interaction with the observers and have the ability to post the latest information about recently observed phenomena. The information about these two missions is located on my web page under Past Ground Based Observing Programs.

It is generally expected that observers participating with this program would have a background in lunar observing. This is very helpful but should not discourage the newcomer to lunar observing. I have established a manual for frequently asked questions about how to observe and document lunar transient phenomena. Also there are many books on lunar observing that have been published that will assist the observer in a better understanding of this subject.

You are probably wondering what is this going to cost you. In the form of money – nothing. I require no dues or fees for your participation. I only require that you observe, document, and submit observations. The time commitment to the program is up to you. There are generally four levels of participation. The first level is to just monitor the Moon whenever out observing and if you detect something unusual you submit a report and if possible activate the lunar transient phenomena network to attempt to get a confirmation. The second level is to systematically observe selected features on the Moon monitoring them for any changes or abnormal appearance. The third level is to participate in coordinated observing sessions of a specific lunar feature, recording and documenting what is observed during that observing window and submitting your reports to be evaluated and analyzed. The fourth level would be to monitor the Moon during a space mission to the Moon. Presently there are no missions at the Moon. The Lunar Prospector was the last and the observations from that have been posted on my web page under Past Ground Based Observing Programs. Future missions on the drawing table are the Smart 1 by the European Space Agency, planned arrival to the Moon in December 2004, and the Lunar A to be launched in 2004 or 2005 by the Japanese Space Agency. Both of these missions I have contacted the Principle Investigator and they have endorsed our participation by monitoring the Moon during their time in orbit around the Moon. The third mission called Lunarsat will happen in 2005 and is by the European Space Agency. The fourth mission on the table is again by the Japanese and is called Selene and expected to launch in 2004 or 2005. There is also a private company called Trans Orbital that is planning a Moon shot to conduct live video and high-resolution imaging of the lunar surface, December 2004. This mission will only last for three months. Those who decide to participate with the program at whatever level you chose will be kept informed by monthly newsletters and updates being placed onto the LTPRESEARCH web site.

If you want to become a part of this international program click on my web site and complete the registration form and join the great adventure.

Thank you for taking the time for reading this request and I hope to hear from you soon.

My Web Site is: <http://www.ltpresearch.org/> (<http://www.ltpresearch.org/>) you then go to Observer Registration and complete the form.

Thank You.

David O. Darling

Association of Lunar & Planetary Observers & British Astronomical Association, Assistant Lunar Transient Phenomena Recorder

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*

Larry Scott	Done!	110
George Charpentier		101
Mike Oosterlaken		93
Lorne Jensen		88
Mike Clancy		83
Brent Gratias	Up!	81
Wade Selvig		75
Brent Burlingham	Up!	64
Garry Stone		57
Kathleen Houston		51
Les Dickson		28
Ellen Dickson		22
Brian Friesen		15



RASC Observing Group Notes

by Brent Burlingham, Observing Group Coordinator

Late sunset and early sunrise have taken their toll on observing this month, but some hardy observers braved the mosquitoes and short nights to up their totals.

It was “Brent Month” for the Messier list as Brent Gratias moved forward to 81 objects, and yours truly finally managed to locate a few more Messiers and move up to a total of 64.

Ron Waldron, Bill Hydomako and I enjoyed a beautiful evening at Sleaford early in July merrily observing until the dew finally won out. We really are fortunate to have such a great observing site so close to Saskatoon, and to have members so dedicated to maintaining and upgrading the facility. If you haven’t visited Sleaford and would like to have a tour or spend a night observing, please contact me.

Tenho Tuomi added to his FNGC list this month, bringing his total to 106 objects. He is still trying for the two faintest FNGC objects (40 and 289), and is hoping the skies (or perhaps a few minutes at someone’s larger scope) at SSSP in Cypress Hills will help.

Rick Huziak has completed all 40 objects in the Chatfield Binocular Certificate list – he will be providing a 4 part series detailing his

FINEST NGC CLUB

Certified at 110 Objects:

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

Tenho Tuomi	Up!	106
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

Rick Huziak	Done!	40
Mike Oosterlaken		32

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	117
Mike Oosterlaken	68
Sandy Ferguson	18

HERSCHEL 400-II CLUB

Certified at 400 Objects:

Richard Huziak	211
Darrell Chatfield	Up! 155

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.