

Saskatoon Skies

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

Volume 31, Number 06

June 2000



On April 29th , Fr. Ephraim Mensah dedicated Dale Jeffrey's Living Skies Observatory. Over two dozen people from the Laird community and the RASC attended this event. More inside. (Photos by the editor).

RASC Calendar Happenings

| Date (2000) | Event | Contact | Telephone |
|-----------------|--|---------------|-----------|
| June 17 | Sleaford Observatory Work Day | Bill Hydomako | 384-4781 |
| June 19 | Executive Meeting - Room 8313 - 6:30 | Les Dickson | 249-1091 |
| Jun. 19 | General Meeting - Room 8313 - 7:30 pm | Les Dickson | 249-1091 |
| Jun. 30 -Jul. 2 | General Assembly, Winnipeg | Ken Noesgaard | 931-4755 |
| Jul 29 - Aug 6 | Mt. Kobau Star Party, Osoyoos, BC | Rick Huziak | 665-3392 |
| Aug. 4 | Colonsay/Sleaford Open House | Rick Huziak | 665-3392 |
| Aug 25 - 27 | Sask. Summer Star Party 2000, Cypress | Les Dickson | 249-1091 |
| Aug 31 -Sep 3 | Alberta Star Party, Caroline, AB | Rick Huziak | 665-3392 |

Sky Buys and Mirror Sells

The Saskatoon Centre's Swap and Sale Page!

KIND OF LOST - I misplaced or loaned out my Lumicon OIII filter to someone and I'd like it back. Please own up. This means YOU! - Darrell Chatfield 374-9278.

For Sale: Bushnell/Jason Model 519, Deep Space Series 675x telescope with tripod. Retail value \$179.99. Brand new and unused. If anyone would like to look at it they are welcome to call me at home 373-4914 or at work 975-5336 and make arrangements. \$150 obo. Call Linda

Cunningham <CUNNINGHAML@EM.AGR.CA>

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: Brass-finished Carrying Trunk for C-8 or C11, Antares 10mm Plossl eyepiece \$100.00. 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.

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Astronomy on the Web

By Les Dickson

Welcome back to my highly irregular and idiosyncratic column on astronomy resources on the web. This month I want to look at sites that provide general astronomy information, especially for beginning astronomers, interested children and young adults, and the general public.

One of the best general astronomy sites on the web is the Astronomy Café (<http://itss.raytheon.com/cafe/cafe.html>). This site is run by Dr. Sten Odenwald, an astrophysicist and Chief Scientist with Raytheon Corp. at the NASA Goddard Space Flight Centre and the Public Outreach Manager for the NASA IMAGE satellite program. Odenwald describes his site as "the web site for the astronomically disadvantaged." Two main sections of his site are "Ask the Astronomer" and "Ask the Space Scientist." He claims to answer over 40 questions posted to his site each day. He has posted answers for over 3000 questions he has received. Many of his answers, each of which are mini-essays or FAQs, are accompanied by links to other sites that provide background information and interesting sidebars on the topic in question.

A similar site is run by a gentleman who calls himself "Dr. Sky" (<http://www.drsky.com>). He is Steven R. Kates, a columnist and speaker on astronomy, and has hosted an on-air radio program on astronomy. The site has an Image Gallery, Stories Archives, Media Clips, and a selection of astronomical links in his Reference Lab. As I write this, I am listening to Dr. Sky on a RealAudio feed from his site talking about the most recent Shuttle launch to repair and boost the ISS to a higher orbit. This site warrants a visit.

There are a few sites that bill themselves as sites for beginning astronomers and wannabe astronomers. A few of these sites are: Getting Started in Astronomy (<http://members.aol.com/comet36/index.htm>) and The Complete Newbies Guide to Getting Started in Astronomy (<http://pwl.netcom.com/~dauphinb/newbi.htm>).

Some other sites are aimed at children and young adults. StarChild (<http://starchild.gsfc.nasa.gov/docs/starchild/StarChild.html>) is a NASA site geared to delivering accessible astronomy information to children under the age of 14. An associated site, Imagine the Universe (<http://imagine.gsfc.nasa.gov/docs/mail.html>) is aimed at young adults. Cyberspace (<http://library.thinkquest.org/12659/main.html>) is a site less aimed at astronomy and more geared to the solar system and space exploration. It

has an interactive section with News and Events, Questions and Answers, and a Space Puzzle Game.

Another source for basic astronomical information on the Web are on-line university courses on astronomy. One such is Astronomy 1 (<http://www.bc.cc.ca.us/programs/sea/astronomy/book.htm>), a course run out of Bakersfield College, California. This is a good place to start if you want to learn astronomy at your own pace, and at a basic level.

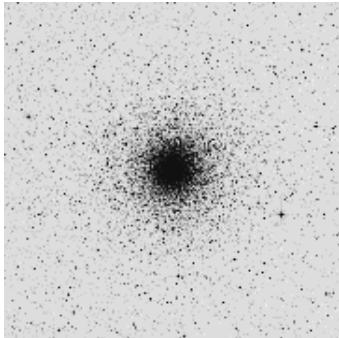
Lastly, I want to close by introducing you a rather different, and fun, site. It is called Bad Astronomy (www.badastronomy.com). It is run by Phil Plait, who it seems has taken it upon himself to shed some much needed light on that darkness that is misinformation and down-right sloppiness regarding astronomy. He takes on "bad astronomy" as it appears on TV, the movies, and news reporting. He has a section called "Bitesize Astronomy", a collection of "short and sweet" articles on astronomy, and another called "Mad Science", where as a member of the "Mad Scientists Network", he answers questions on astronomy and related subjects sent in by students and the general public. Phil has great fun poking fun at all the mistakes he and others come across. Take a look, and enjoy.

That's all for now. Have a good summer. If you can't look at the stars because the clouds are in the way, you can at least have fun surfing the 'Net and learning more about astronomy.

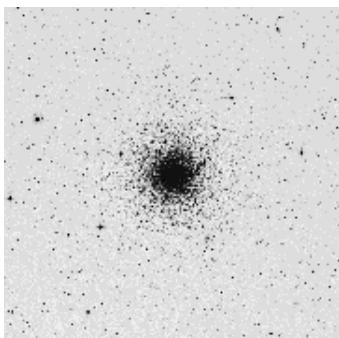
M10 and M12

by Andrew Krochko

While racking up Messier Objects I came across a beautiful pair of globular clusters that I had never seen before. Star hopping from the base of Serpens Caput I first saw M12 in my finder scope and saw how different it appeared from the other globulars I had just looked at like M13, M92 and M5. Looking through my 6" f/5 Newtonian confirmed that this was indeed a very different globular. Rather than having a very tight core it was only concentrated somewhat towards the centre and putting the magnification up to 119x immediately resolved it.



*M10 appears to the left. M12 is to the right. Both fields are 30' across with north up.
Taken from the Digital Sky Survey (DSS).*



After logging, sketching and enjoying this cluster I moved on to M10. Looking through my finder scope I slewed south-east and immediately saw M10. I was struck by how different it appeared from M12. Rather than being a diffuse glow like M12, M10 looked more like a very fuzzy star. Before looking through the main scope I enjoyed both of these globulars at once through the finder scope. Looking through the main scope showed M10 to be a very compact globular. Putting the magnification up to 119x did not resolve it although it was mottled around the edges. After sketching this globular I took one last look at these two very different clusters through the finder scope before heading in for the night.

Globular clusters are not only spectacular but are also quite diverse. They are swarms of up to millions of stars all held together by gravity. On photographs they tend to look more similar than different but through a telescope is a different story. They vary not only in their degree of concentration but many also show chains of stars. Through a large telescope in a dark sky they are simply awesome!

To find M10 and M12 you need at least a star chart and a pair of binoculars (preferably something greater than 35mm aperture). Start by finding the constellation of Serpens Caput. Find the bright pair of stars, delta and epsilon Ophiuchi near the base of Serpens Caput. Sweep slowly about one binocular field to the east (if you are using 7 to 10x binoculars). M12 will appear as a fuzzy patch in the sky and should be quite distinct from a dark sky. Sweep southeast just under a field to find M10. It should appear as a fuzzy star. As you observe these clusters take some time to reflect on the diversity of our universe.

Compton Gamma Ray Observatory Falls to a Fiery Death This Weekend in a De-orbit Plunge into Earth's Atmosphere.

from <<http://www.space.com>>

WASHINGTON - If all goes well when NASA deep-sixes its ailing astronomical satellite next week, the bus-size spacecraft will fall harmlessly into the eastern Pacific Ocean.

But just in case the 15,422-kilogram Compton Gamma Ray Observatory (CGRO) careens out of control, those vulnerable to its scorching bits of debris -- mariners and pilots -- will have been warned.

NASA's Goddard Space Flight Center in Greenbelt, Maryland, has started a plan to inform commercial airlines, the Coast Guard and other federal agencies when and where to expect CRGO to reenter Earth's atmosphere.

"We began dialogue about two months ago," said Preston Burch, deputy associate director for space science operations at Goddard.

Because of a failure of one of its guidance systems, NASA has decided to "deorbit" CGRO in an effort to avoid having it fall onto a populated area. The \$557 million spacecraft was launched in 1991.

Goddard began warning the Air Force, the National Imagery and Mapping Agency's World Wide Navigation Warning Services, the Federal Aviation Administration (FAA) and the U.S. Coast Guard in April that CGRO was expected to come in over the east central part of the Pacific Ocean. The agencies received a three-page letter that outlined NASA's plans for nudging the spacecraft out of orbit.

"It is of paramount importance to protect life and property from the hazard of CGRO reentry debris. The CGRO debris is a significant potential threat to the safety of any aircraft or surface vessels in the debris impact area," the letter said.

The impact zone for the so-called "controlled reentry" of the observatory covers a rectangular 26 kilometers wide and 1,552 kilometers long. That area is about 1,770 kilometers from any land area.

These "hot and fast chunks" will range from paper-thin debris to 7- to 10-kilogram chunks that will be falling several hundred kilometers per hour, Burch said. That could cause potentially devastating damage to a jet flying en route in the Pacific. The debris could slice off a wing or drill a hole through an airliner's cabin causing the plane to explode. Big chunks could also put a hole large enough in the hull of a ship to sink it.

But the FAA said that the chances of any of that happening are slim. "Over the Pacific there is so much airspace and so few aircraft that the chances of the debris causing harm is narrow," said the FAA's Bill Shuman.

The number of flights in the Pacific over an 8-hour period is about 200. That compares to about 1,000 flights over the North Atlantic in the same period. And there are even less commercial flights for the area pinpointed for the Compton deorbit, Shuman said.

Still, the agency plans to warn airlines through a "Notice to Airmen," or NOTAM. This message is delivered via satellite, through e-mail and via fax to carriers around the world who will be flying in that area from June 4th through 6th.

Each day, Goddard will send out a notice describing the location of the hazard area "to minimize loss of usable airspace and ocean area to aircraft and surface vessels," the warning notice said.

There will be a total of eight debris-hazard areas that Goddard will target. These areas will be off limits for about 90 minutes each day, Burch said.

The reentry business is an imprecise one at best because objects can survive and make it all the way to the ground, said Bill Ailor, director for the Center for Orbital and Reentry Debris Studies at The Aerospace Corporation in Los Angeles. "Generally speaking, it is not so easy to predict where they are going to come down," Ailor said.

Objects typically enter the atmosphere at a blazing 9.7 kilometers per second and are often incinerated by friction with Earth's atmosphere. But materials designed to be heat-resistant often can survive the plunge all the way to the ground.

"Typically what we look for are titanium spheres and objects made of stainless steel (to survive)," Ailor said. Glass also can survive. The bus-sized CGRO is made mostly of aluminum, titanium and stainless steel. But there is a positive side to this undertaking.

Several U.S. agencies are interested in documenting the fall of the CGRO to better understand such issues in the face of an increasing number of commercial satellite launches.

And if the 111,760 kilogram MIR space station doesn't survive commercially and the Russians decide to take it out of orbit, such information will be critical to ground controllers plotting its reentry zone.

"MIR has so much stuff on it that the debris field will be so much larger and more dangerous," Ailor said.

<http://www.space.com/scienceastronomy/astronomy/compton_reentry_plan_000525.htm

SSSP 2000 Update

by Ellen Dickson, SSSP 2000 Registrar

Hello. As the registrar of this year's Star Party in Cypress Hills Intra-provincial Park, I want to take this opportunity to give a brief report on what we hope will be a good party.

At present we are sitting well below the number of registrants than we had last year at this time. Mailings have gone out - yet little has come in.

As for accommodations, this has seen a number of units taken increase. So much so, that there are some hotel rooms left as well as some condos. There are NO cabins available at this time.

As a result I see that we have a number of people coming who have reserved accommodations but have yet to pay for their registration! That can only mean that I may be swamped in the next while as the deadline date draws near for the early registration.

In that case, I am going to appeal to you - all of you that are reading this now - PLEASE get your registrations in NOW. Fewer problems may occur later if you take the time to do it now. Fewer problems now means less headaches for you later. If you do so, you will receive my gratitude (for saving my sanity) and thanks.

That's all for now, thanks for your time and precious starnite vision,

"We Want YOU, To REGISTER NOW!!"

(modified from a recruitment poster)

The Summer Planet Report

by Murray D. Paulson

This month, **Mercury** is catching up on us and is falling back from greatest eastern elongation on its way to the next conjunction with the sun. We start off on June 12 with Mercury at 0.9 magnitude, 23 degrees from the sun with an 8.9" crescent. This apparition will be a bit difficult for us northern observers due to the protracted twilight. I suggest using binoculars and a compass to determine the right section of horizon to scan, or take careful note of where the sun sets and scan just south of that point after 11:00 p.m. Mercury is above the ecliptic and sets at an amazing 11:49 PM! On June 3rd it actually set just after midnight at an amazing northern azimuth of 316 degrees (almost exactly due NW). Over the next month, you can watch it's crescent shrink as it plummets toward the sun. If you have setting circles on your equatorial mount, it is a snap to find it during daytime hours where it is far from the horizon and the seeing is far better. A recent Sky and Telescope article on Mercury makes a few good suggestions on observing in the daytime. They suggest orange or red filters to increase the contrast with the background sky. I have used this technique before to observe Jupiter in twilight skies and it works well. A secondary effect is that the longer wavelength - red, is affected a little bit less than the shorter wavelengths by the atmospheric turbulence. Mercury is in conjunction with the sun on July 6th, so if we get much for clear evening skies, you can watch Mercury on it's far northern excursion as it's crescent wanes and grows in size. This is a good opportunity to look for markings on the planet. Please update me on your observations. By the Kobau star party, Mercury will be passing its Western elongation, 19 degrees from the sun in the morning sky.

Venus is at present behind the sun. According to Earth Centred Universe, it went behind the sun at 6:30 PM June 10th and it will come out from behind on June 12th at 10:30 am, 40 hours later. In 2004, Venus will spend just under 8-hrs transiting across the front of

the sun. It is amazing what perspective will do for the view. By the first week of July, Venus will have moved off to 7 degrees trailing the sun. From this point onward it becomes an easy object to pick up with your equatorial in the daytime. (safe too, because if the drive goes off, the sun moves away from the field, not closer) By the Kobau Star Party, it will be 12.5 degrees east of the sun. **Mercury and Venus** will make good daytime observing at the star party.

If there is any interest in learning the technique to find the planets in the daytime, I will be glad to set up an afternoon workshop on daytime planetary observing this summer. It will be an informal affair and we will bring our scopes and meet somewhere (ESSC may be a good central location) and give it a try. Please contact me for details and sign up.

By early July, **Jupiter and Saturn** will reappear in the morning sky. They rise 2 1/2 hrs before the sun at the beginning of the month and 5 hours before the sun in early August, but it still is a long way from their November oppositions. By the Saskatchewan Summer Star Party, they will rise before midnight and add that bit of magic to the night's observing. The other giants, **Uranus and Neptune**, are at opposition on August 11 and July 27 respectively. The summer star parties are the place to search these planets out with the extra few degrees south, they will be 23 degrees above the horizon, and not the 18 degrees we get here. Another project you can try this summer is to see if you can find Uranus naked eye. At magnitude 5.7, you could add a 6th planet to your list of naked eye planets. Neptune is at magnitude 7.8 and won't be visible without optical aid. These distant cold gas giants will show up as blue to blue green dots in all but a high powered eyepiece. Uranus will show a 3.8" disk and Neptune will show 2.5" disk which are pretty much featureless. Stephen Omera has seen details on Neptune, so if you manage to get a view through Dennis Boucher or Barry Arnold's excellent 16" scopes at these planets, ask them to put up the power and look for subtle details.

One last denizen of the outer reaches of the solar system, **Pluto**, needs mention. For the last few years, I have hunted it down at the summer star parties. The southerly latitude the good horizons and pristine skies make it an easy hunt. We didn't get a good enough observing window to chase it down this spring, so if you indeed want to catch it this year, you still have a last chance at the summer star parties. The Handbook has some excellent charts showing where to find these outer planets, and you can also check the guides in *Sky and Telescope* or *Astronomy* magazine.

The month of July is a busy one for **eclipses**, most of which we will only read about. It starts off with a partial eclipse of the sun in the central south pacific on July first at 9:20 UT, then in mid month on July 16th we have a lunar eclipse that would be best seen from that same south pacific location with the mid eclipse happening at 13:55 UT or 7:55 am local time. We will see the earth's shadow creep up on the moon with first penumbral

contact at 4:46 a.m. in full twilight. Sunrise is 45 minutes later, just before moon set and the first Umbral contact happens at 5:57 a.m. local time. So the lunar eclipse is a wash from here, but if you are farther west or south -west, you will get to see more of it. Hawaii would be my choice, but who goes to Hawaii in the summer time? This eclipse promises to be darker than the eclipse of last January, so we will have to get a report from Dave Robinson when he returns from New Zealand.

Last but not least, there is a partial solar eclipse on July 31 (UT), but this one is well placed to see in Edmonton. The maximum 70 % coverage will be up in Baffin Island, and we will get 42% here in Edmonton at 2:56 UT or 8:56 p.m. local time on Sunday July 30 with the sun 4 1/2 degrees above the horizon. The eclipse happens on the first Sunday evening of the Kobau Star Party week. There we will see about 34% coverage with the sun 5 degrees above the horizon at 3:06 UT or 8:06 local time. What a way to kick off a Star Party!

I look forward to a summer of fine observing, so keep looking up and enjoy the planets of summer. We will see you in September.

The ‘Almost’ Planetary Alignment!

by Rick Huziak, Andrew Krochko & Mike Stephens

We decided that it might be an exciting activity to try and observe the recent planetary alignment, despite that the alignment occurred on the *other* side of the sun, and thus would have to be *observed in the daytime!* Although trickier, this was not by any means impossible, since one of us (Rick) has seen all of the brighter planets during the day. The best time to observe this alignment was on the morning of May 17th. On this morning, Venus and Jupiter would be mere *arc-minutes* apart, a surely unforgettable sight!

Andrew and Rick left Saskatoon at 4:00 am, and Mike left Humboldt soon after. Our intention was to use the University’s LX-200 (12-inch) scope to hop directly to these planets, since the computerized scope didn’t need visible stars to navigate. All we would need was *one* reference object to set the sidereal clock, and the moon was still going to be above the west horizon when we arrived.

We arrived at about 4:40 am, just 28 minutes before sun-up. The sky was very bright, and we noted that we were indeed lucky that the moon was up or there would have been no reference objects to begin with! We opened the roll-off observatory, and discovered with some shock that the visual back and eyepieces were missing! Rick scrambled around and

found that the 2-inch diagonal for the C-14 fits, and getting some eyepiece from the warm-up shelter, we were back in business! We set the sidereal time by sighting in the moon, and then star-hopped across the sky using Vega, Alberio, Alamak (gamma And) and Hamal (alpha Ari), which were all easily found by the scope's computer!

Then the most amazing thing happened! Rick pressed the '*Goto Jupiter*' command and all of a sudden, nothing happened! The scope displayed a very annoying and unexpected '*too close to the sun*' message, and did not budge! These planets were, after all, only 7 degrees west of the sun. Still, the thought came to mind, "*What right does Meade have to tell me what we can and can't observe?*" (The solar keep-out function can be turned off, but we didn't know how).

Annoyed, by not defeated, we switched from a 'smart scope' to the standard back-up - setting circles, and manually slewed the scope to where the planets should have been. But alas, they were not visible. We noticed that the sun had risen sporting a white haze around it, and we thought that this thick cirrus may have been the reason for these planets' invisibility. Rick also pulled Eetook out and tried doing a small-step grid sweep of the area *extremely carefully*; a method he used to find the Venus during the 1990 inferior conjunction when it was the same distance away from the sun. (*Don't try this at home!!*)

Despite 3/4 hour of searching, we did not find the planets, so we returned to observing stars during broad daylight. We managed to see Vega and several others stars with the sun 10 degrees above the horizon and detected and split both Alamak and Alberio! So despite no planets, the daylight stars made up for it. *Oh yah, and we may have to write Meade a long letter!*

Notice of the General Meeting of the Saskatoon Centre

Monday, June 19, 2000 at 7:30 p.m.

Room 8313 City Hospital

Presenting

Andrew Krochko - "Equipment for Astronomy - A Beginner's Guide"

"I will cover star charts, flashlights, binoculars, telescopes and eyepieces. I think this presentation is appropriate because as the weather warms and the Milky Way returns many people will be observing and will want to buy."

Les Dickson & Ken Noesgaard - "*The G. A. Displays*"

Les and Ken will show us the two separate displays they are creating for the General Assembly in Winnipeg. The displays will feature a 3-D model of the Sleaford Observatory site and a slide show on the observatory and the Cypress Hills Saskatchewan Summer Star Party.

This is the last general meeting before the summer break!

The Dedication of the Living Skies Observatory

by Dale Jeffrey, Living Skies Astronomical Observatory, Laird, Saskatchewan

On April 29, 2000, many of my friends from Saskatoon Centre as well as from our local community and parish attended the official opening of Living Skies Astronomical Observatory, or as my wife sometimes refers to it, Dale's Folly. The celebration was wonderful, in that it included so many of the folks I love and admire, but also because it formally encompassed my two great interests - faith and science.

We began with Fr. Ephraim Mensah, our local Catholic priest, blessing the telescope, the observatory, and all participants, and amidst songs and prayers, we discussed the relationship between our great faith tradition and the science of astronomy. A bas-relief carving of Galileo Galilei was on display (carved by yours truly), with his words which were said to have been murmured after his trial and formal recantation before the Church. "E pur si mouve", the famous astronomer said, in reference to the Earth, *"It still moves"*.

Galileo's Starry Messenger was displayed prominently, as was the pardon from the present pope, John Paul II. However far away in space and time these events were from Laird, Saskatchewan, somehow they seemed present to us that night, and later as we observed til the wee hours, folks talked and shared and enjoyed both their science and the glory of the heavens.

Thanks to all who attended and participated. Thanks for the donations of food and

especially wine and champagne (no, we didn't break a bottle over the LX200!), and thanks especially to all who, whether sharing the faith or not, nonetheless displayed their respect and affection by attending this event which has meant so much to me. There is a family spirit in our club, and we are all enriched.

Come out and observe with us when you can. All are welcome.



Messier, FNGC, H-400 & Binoc Club

MESSIER CLUB

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

Ken Noesgaard *Completed & Applied!* 110

Wade Selvig 69

Erich Keser 51

Mike Stephens 39

Stan Noble 28

Andrew Krochko 27

Brent Gratias 26

Lorne Jensen 25

Ellen Kaye-Cheveldayoff 23

Les & Ellen Dickson 20

Brian Friesen 15

Debbie Anderson 8

FINEST NGC CLUB

Certified at 110 Objects: Rick Huziak, Dale Jeffrey , Gordon Sarty, Darrell

Scott Alexander 89

Ken Noesgaard 24

Sandy Ferguson 23

Ellen Kaye-Cheveldayoff 4

HERSCHEL 400 CLUB

Certified at 400 Objects: not yet!

Dale Jeffrey WOW!! 398

Rick Huziak 374

Darrell Chatfield 285

Gord Sarty 147

Scott Alexander 98

Ken Noesgaard 44

Sandy Ferguson 18

Chatfield BINOCULAR CERTIFICATE

Noel Enteries 0

Join the Messier, Finest NGC, H-400 & Binocular Club!

Observe all 110 Messier, 100 FNGC or 400 H-400, or 80 Binocular objects and earn your

CERTIFICATES!

The first 2 lists can be found in *the Observer's Handbook*. The Binocular List & Herschel 400 list will be available at each general meeting for 50 cents (covers photocopying) or can be mailed out on request to distant members. Each month I'll be posting updates. Send to <chuziak@SEDSystems.ca>

Great News!

Well, I guess I'm coming up short, and in the end, Dale will most likely beat me to the punch. I managed to get up to 374 Herschel objects by the end of this new moon, but now Virgo is sinking into the sunset, and I think I will be defeated until next March when Virgo once again rises out of the sun. Dale will be able to complete his certificate in a few weeks! I lay my scope at your feet and accept defeat like a man, Dale!

Others are faring well in their quests. I received updates from Darrell, Gord, Mike, Wade and Andrew this month, and their numbers are quickly increasing!

And Darrell was awarded his Messier Certificate at the last meeting.

Congratulations!

U of S Observatory Hours

The U of S Observatory is open to the general public every Saturday evening in May through July from 9:30 pm to 11:30 pm.. 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 the moon, star clusters and other exciting astronomical objects. For further information, phone the recorded Astronomy Information Line at 966-6429.

Interested in **Saskatoon**

RASC

Membership?

Regular - \$40.00 per year

Youth - \$22.50 per year

It's not too late to join!

Even though the year is now half over, you still get full benefits including the 2000 Observer's Handbook. Note that we will ask you to renew for 2000 - 2001 this October, so if you do not want to join for only half a year before renewal, just ask to get onto our FREE Temporary Membership list until

the new membership year begins. You will receive regular mailings of our Saskatoon Skies newsletter and will be invited to participate in Centre activities.

Noctilucent Cloud Season Begins

by Rick Huziak

I've had several inquiries about observing Noctilucent Clouds and how to distinguish these 'space clouds' from earth-bound cirrus clouds.

Those interested in observing these clouds should contact the **NLC Can-Am** Centre and get an introductory package from **Mark Zalcik, 9022 - 132A Avenue., Edmonton, Alberta, T5E 1B3** or at <nlc@planet.eon.net>. The package is free, and contains good information on the observation program, and a colour photocard showing several different NLC displays. The season lasts from mid-May to mid-August. (If you begin to contribute observations, you will then receive the NLC newsletter *Quicksilver*, describing the year's sighting of the clouds, including your observations).

My advice for recognizing these clouds is to begin observing the north **horizon** on every clear night about 1/2 hour after the sun has set and anytime thereafter until 1/2 hour before sunrise. The NLCs are visible when they front scatter light from the sun when the sun is about 6 degrees to 16 degrees below the horizon. The clouds are generally *obvious* when you see them, since they appear to *shine* or glimmer brightly. The clouds are usually silver-blue, and sometimes iridescent, or rainbow coloured. They often have herring-bone (wave) structures throughout, though they appear in many forms - billows, bands, veils and whirls, of a few different sub-types each. They are always brightest directly above where the sun is and follow the sun across the north horizon throughout the night. Capella is usually seen immersed in NLCs.

If you wish, you can call me immediately (665-3392) if you suspect you are seeing NLCs and want a confirmation. **But I am certain that once you have seen your first display, and see how unique these clouds are, that you will then always recognize these Nocti (night) lucent (shining) clouds!**

The Sleaford Observatory

Longitude: 105 deg 55' 13" +/- 13" W Latitude: 52 deg 05' 04" +/- 08" N, tel.: (306) 255-2045

Work Continues: The Sleaford Work Day, May 27, 2000 - by Darrell Chatfield

After having a week of cooler, cloudy and somewhat rainy weather, we finally got a nice day on which we could do something at our site. We enjoyed the sunshine throughout the clouds as we worked.

Some of us arrived before noon, while others made it out by 2:00 P.M. Al, Les, and myself kept busy with gluing indoor-outdoor carpet onto the plywood panels for inside the addition. We later installed a few of them to the walls. Rick, Ellen, and Graham Hartridge scraped the old paint off the Patterson Dome. Rick later primed the dome floor and the exterior walls to seal off any moisture from further warping the hardboard siding. Brent and Ken cut out MDF panels to put inside the toilet area of the addition. Bill was busy making sure we were busy, and he was also able to get more of the re-wiring done in the warm-up shelter.

For lunch, Les tried out his new portable BBQ on us, while using smokies brought out by Bill. This proved to work out very well, along with the donuts that the Dicksons had bought.

At the end of the day, Rick gave a few of us the official lecture on how to use the U. of S. telescopes and roll-off roof structure, though the spectrometer, photometer and CCD camera are currently in town being serviced.

I would like to thank those mentioned here for coming out and making our workday very successful. Even though some of the work is tedious, it still has to be done. Every work day brings us closer to completion of the warm-up shelter, and the soon-to-be functional Patterson Dome.

More Work at Sleaford: June 4, 2000 - by Rick Huziak

Bill Hydomako and I also decided to continue construction on June 4th in order to conduct some jobs best accomplished by a small crew. I arrive at about 5:00 pm and brought out a lawnmower and cut the grass around the U. of S. roll-off and our buildings. When Bill arrived an hour later, we began work on the warm-up shelter. I filled the screw holes in the toilet floor and then fitted and glued down the linoleum floor. Bill began pulling yet more wire through the conduits for the runs that will terminate the expansion wiring into the breaker box. With this work, most wire runs are now complete, and we will begin final termination of the plugs and breaker box.

During the coming week, the large limestone boulder which will hold the commemorative bronze Sleaford plaque will be moved to the site by the R. M. of Colonsay and Friends of Sleaford.

A Friday, August 4th Open House: Please remember this date. The Colonsay Community will be holding a Millennium Reunion, partly at the Sleaford School and they have asked us to open the observatories for public viewing. We should provide staff for this, rain or shine. Please contact Les Dickson if you plan to help out that evening.

NEXT WORK DAY IS JUNE 17th - Contact Bill Hydomako