Saskatoon Skies

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

Vol. 36, No. 4 **April 2005**

Path to the stars...

A new path to the observatory after a March winter storm

— PHOTO BY TENHO TUOMI

In this issue...

Saskatoon Centre

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Regular: $58.00/year Youth: $31.25/year Lifetime: $1000

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

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- use of the Sleaford Observatory
- use of the U of S Observatory (after training)
- *Saskatoon Skies* Newsletter
- **Observer's Handbook**
- **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 – Ron Waldron
Vice-President – Garry Stone
Secretary – Al Hartridge
Treasurer – Norma Jensen

Light Pollution Abatement website at:
www.ras.sk.ca/lpc/lpc.htm

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...

Newsletter Editors – *Tenho Tuomi, Linda Janzen*
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Bottle Drive & Canadian Tire $

by Darrell Chatfield

Canadian Tire Money donations of $13.00 from Ellen D. and $2.25 from Barb added to our fund raising efforts. Thanks to all contributors. 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.

2005 RASC Calendar of Events

DATE	EVENT	CONTACT	TELEPHONE
Apr. 15	**International Astronomy Week** – 7:30 - 10:00 p.m., Lakewood Civic Centre	Jeff Swick	373-3902
Apr. 16	**International Astronomy Day** – Lawson Heights Mall/Beaver Creek	Jeff Swick	373-3902
Apr. 18	**Executive Meeting** – 6:30 p.m., 175 Physics, U of S	Ron Waldron	382-9428
Apr. 18	**General Meeting** – 7:30 p.m., 175 Physics, U of S – **The 3rd High Energy Astrophysics & the 94th Spring AAVSO Conferences in Las Cruces** – Rick Huziak	Ron Waldron	382-9428
Apr. 30	**RASC Fundraising Dinner** – 6:00 p.m., Partner's Bar & Grill, Best Western, Idylwyld Drive	Norma Jensen	244-7360
May 4	**Aquarid meteors peak**		
May 6	**Observers Group** – Sleaford Observatory	Bill Hydomako	384-4781
May 16	**Executive Meeting** – 6:30 p.m., 175 Physics, U of S	Ron Waldron	382-9428
May 16	**General Meeting** – 7:30 p.m., 175 Physics, U of S – program TBA	Ron Waldron	382-9428
May 20-23	**RASC General Assembly** – Kelowna, BC – www.rasc.ca:8080/rasc	Jim Failes	(250) 763-6962
June 20	**Executive Meeting** – 6:30 p.m., 175 Physics, U of S	Ron Waldron	382-9428
June 20	**General Meeting** – 7:30 p.m., 175 Physics, U of S – program TBA	Ron Waldron	382-9428
July 7-10	**Alberta Star B-Q** – Eccles Ranch Obs. Caroline, AB – www.syz.com/rasc/starbq2005.htm	Roland Dechesne	(403) 246-4498
July 30-Aug. 7	**Mt. Kobau Star Party** – Osoyoos, BC	Jim Failes	(250) 763-6962
Aug. 4-7	**Saskatchewan Summer Star Party** (SSSP'05) – Cypress Hills Inter-provincial Park, www.usask.ca/psychology/sarty/rasc/starparty.html	Les Dickson	249-1091
Sept. 1-4	**Alberta Star Party** – Eccles Ranch Obs. Caroline, AB – www.syz.com/rasc/asp2005.htm	Roland Dechesne	(403) 246-4498

Monday, April 18, 7:30 PM — Room 175 Physics, U of S

Presenting:

The 3rd High Energy Astrophysics & the 94th Spring AAVSO Conferences in Las Cruces by Rick Huziak

Rick Huziak and Vance Petriew attended the AAVSO Spring Meeting in New Mexico. The 25 sessions provided a chance for professional and amateur astronomers to present their research results, which all use AAVSO variable star data. We took lots of pictures!

Sky Buys & Mirror Cells

The Saskatoon Centre's Swap and Sale Page!

For Loan to Members: Slide set for talks on general astronomy and light pollution. You can borrow this set any time you want to give a talk to your favourite group. **Contact Rick Huziak at 665-3392.**

For Sale:

Meade LX90 8" Schmidt-Cassegrain Go-To Telescope

Includes:

- UHTC coatings
- Meade Series 4000 Super Plossl 1.25" eyepieces (6.4, 9.7, 12.4, 15, 20, 26, 32, 40 mm)
- Meade aluminum carry case for eyepieces
- Meade field tripod with 2" chromed-steel legs and accessory tray
- Autostar II hand controller
- Meade 8x50 finderscope
- Telrad finder
- 1.25" diagonal prism
- Meade equatorial wedge with adapter plate (for astrophotography)
- Kendrick dew shield
- AC Power cord for household outlets (120V)
- Adapter for automobile cigarette lighter plug (12V)
- Instruction manual, original shipping boxes and all receipts

Hardly used, this system is complete and in brand new condition.

Asking $2750 Cdn. (current replacement value is approx. $4000)

Shipping is free within Canada.

Steven B.
Victoria, BC
Phone: (250) 370-4489 (voicemail)
Email: steven.b@telus.net

Minutes of the EXECUTIVE MEETING
March 21, 2005, 6:30pm – Rm 175 Physics, U of S

1. Meeting called order at 6:30 p.m.
2. Approval of Minutes of previous meeting. Moved by Jeff and seconded by Bruce and carried.
3. **Revised Goals:** Ron Waldron with executive advice assigned responsibilities for the different goals.
4. **Astronomy Day:** will be on April 16th. Some discussion and planning done.
5. **Al Whitman's email letter:** was read and discussed. Les Dickson will be the alternate centre rep at the next GA. He will carry the message that our centre is opposed to the ideas in this letter.
6. **Events Committee:** Jeff Swick would like Astronomy Day expanded to an astronomy week.
7. **SSSP:** Les announced that Ivan Seminuk will be the guest speaker at SSSP 2005. Government ministers will be present on Thursday and usual wiener roast will be replaced by a Government-sponsored barbeque and star night.
8. **Insurance:** the insurance will be updated to be in line with U of S expectations. Our buildings and equipment will be insured for a total of $15,000.00.
9. Meeting adjourned at 7:30 p.m.

Minutes of the GENERAL MEETING
March 21, 2005, 7:30pm – Rm 175 Physics, U of S

1. Meeting called to order at 7:30 p.m.
2. **Highlights of Executive Meeting:** discussed by Ron Waldron.
3. **Final Goals**, their implications and those responsible for their execution were presented by Ron Waldron.
4. **Fundraising:** A motion was made by Ellen Dickson and seconded by Tyrone that we go ahead with a raffle to culminate at SSSP2005. Carried.

   Barb Young suggested holding a steak night to raise funds. This viewed favorably.
5. **Astronomy Day:** will be similar to last year's display and star night. Display will be held at Lawson Heights Mall. A gastronomy supper will follow.
6. **Presentations:**
   - Paul Campbell – AAVSO's Sudden Ionospheric Disturbance Program
7. Meeting adjourned at 9:30 p.m.

BOOKS FOR SALE
by Bruce Brandell, Sales Coordinator

Some of the items are left from the Star Party. All will be available at our next meeting on April 18/05. Call 249-1119, or email <bruce_brandell@yahoo.com>

Title	Author	No. Avail.	Price Cdn$
Calendar, RASC 2005	Rajiv Gupta, Editor	1	$ 5.00
Messier Cards, laminated	Sky Publishing	4	$ 6.00
Messier Poster, colored	Sky Publishing	2	$20.00
Milkyway Poster	Sky Publishing	2	$25.00
A Short History of Nearly Everything	Bill Bryson	3	$17.00
The Moon Map	Sky Publishing	1	$15.00
The Mars Map	Sky Publishing	1	$15.00
Astrophotography	G.N. Patterson	27	$ 5.00
Pins SSSP 2004		14	$ 5.00
Pins SSSP, other years			$ 4.00

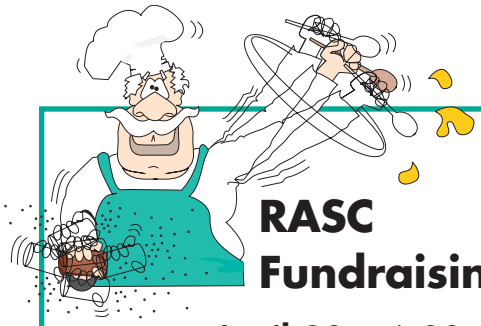
Saskatoon RASC Web Page Relocated

The computer currently hosting the RASC Saskatoon web pages will be scrapped this summer. So the RASC web pages have been moved to:

http://www.usask.ca/psychology/sarty/rasc/

The pages at the old location are still there but will be replaced by a re-direction page soon; that page will disappear when the host computer does.

– Gordon Sarty



RASC Fundraising Dinner

April 30 – 6:00 p.m.
Partner's Bar & Grill
Best Western, Idylwyld Drive
$12 a ticket

Tickets available at the April meeting and from Barb Wright (email wrightb@sasktel.net or phone 249-1990).

There will be various draws and a silent auction – contact Norma at 244-7360 for objects to donate.

Who said this?

"No one in his senses, or imbued with the slightest knowledge of physics, will ever think that the earth, heavy and unwieldy…, staggers…around its own center and that of the sun; for at the slightest jar of the earth, we would see cities and fortresses, towns and mountains thrown down."

Answer in next month's issue. – Ellen Dickson

Editor's Corner

by Tenho Tuomi

March started with the kind of observing days that we had been waiting for all winter, warm and clear. I made good progress on open clusters for the Herschel 400 club. The second week of March I concentrated on the planets with sightings of Mercury, and some of the best pictures of Saturn and Jupiter that I have been able to get with my modest digital camera. However the clear skies did not last. It clouded over from March 11 to 23, at least for me. I understand it was still clear at Sleaford for the Messier Marathon on March 12, though cold and windy. There were some holes in the clouds and I did get a picture of the moon one night. Those thirteen days were the longest I have been without observing since I started into astronomy three years ago, at least for weather reasons.

Lately I have been emailing with my relatives in Finland. They go to Astronomy club meetings in Helsinki but have no telescopes. Last weekend they were going out into the country so I suggested that they do some star watching since they were going to be away from light pollution. They e-mailed back that they had seen Jupiter's moons for the first time with binoculars on Saturday night, March 26. Eight hours later Jupiter rose here with the moons all on one side in order of distance, but it was cloudy and I missed it.

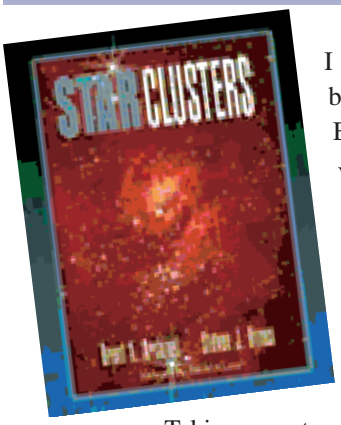
Some special events to keep in mind:

April 15 – **Sidewalk Astronomy** at the Lakewood Civic Center from 7:30 till 10:00 as part of Astronomy Week. Members are encouraged to bring their 'scopes. See Jeff Swick, 373-3902 for details.

April 16 – **Astronomy Day** will be held at the Lawson Heights Mall starting in the morning with setup time from 9:00 to 9:30. Please bring your telescopes for display and be prepared to answer questions that the public may have. Pack up your telescopes by six, eat, and then relocate your telescopes to Beaver Creek by 7:30 for a public star night.

Book Review: Star Clusters

by Jeff Swick



I thought I'd share a bit about a book I purchased from Willman-Bell called *Star Clusters*.

With just under 500 pages featuring chapters on the history of discovery of clusters, the astrophysics of both open and globular and even has a chapter devoted to "the missing clusters".

Taking over ten years to complete one is taken from the discovery and subsequent re-discovery of clusters and sorts out those misidentified over the years through the various catalogs. There are 5,045 individual items cataloged in this effort with a total of 13,949 alias names.

One would expect a book taking on a project of this scope to be rather unwieldy and hard to absorb. In fact the book is well laid out and is not only a good read but a must have reference book that belongs on everyone's astronomy bookshelf.

As if clusters and asterisms in the galaxy wasn't enough the authors Steven J. Hynes and Brent Archinal look at items misidentified as clusters in several of the local group of galaxies including 2,025 objects in the Large Magellanic Cloud, 419 objects in the Small Magellanic Cloud, 578 objects in the Andromeda Galaxy and 6 objects in the Fornax Dwarf Galaxy.

Although many of these objects are outside the grasp of my 8-inch reflector just as many objects are within reach. For those that I wish to study on those cloudy nights (there's been way to many of those this year) one can retrieve information from the various digital sky surveys such as at the following url http://cadcwww.dao.nrc.ca/cadcbin/getdss.

I originally purchased this book last summer and figured I'd whiz though it in a couple of months but I can safely say this book will keep me both entertained and busy for the next few years at the very least.

You can purchase the book through Sky Publishing or direct from the publisher Willmann-Bell Inc. by going to http://www.willbell.com/. Be warned however that they also have a great selection of reference books available on their page. I went there to gather additional information for this report and ended up spending another 100 bucks.

Land of Living Skies, eh? Well, what about the OTHER 12 hours?

by Richard Huziak, Saskatchewan Light Pollution Abatement Committee

Everyone marvels at the wonderful Saskatchewan horizons, but why do they all stop caring once it gets dark? We have among the largest number of clear nights in North America, beautiful sunsets, a *huge* sky, the Milky Way, cool meteor showers and awesome auroral displays. But our generation is removed from these nighttime pleasures. Most of us, and especially our kids, are born in over-lit cities, and many have never seen a dark night sky. You don't miss what you don't know you could have! Many of us are even scared of the dark. Combine this with the misconceptions about light and crime, and all of a sudden you live in a world of light, 24 hours a day!

You can see this within our culture. Even though no one buys cars after 9 p.m. on weekends, the car lots' lights glare all night. Your back alleys are lit up all night, to make then "safer". Guess what – they aren't! Check the graffiti on the garbage cans or take a lone pleasant, relaxing stroll there at 2 a.m. I wouldn't! Idylwyld Drive is lit up like daylight even though your car has headlights you can't turn off! My work parking lot is lit by 50 globe lights all night long, yet no one works past 5 p.m. Your backyard light is on all night even though this really promotes someone swiping your stuff, since they easily can see exactly what you have. Saskatoon also has a few projects in mind that they are working on: *"Saskatoon Shines"* and *"The City of Lights"*. Any brain surgeon can see that this can't be good!

But what all of this boils down to is **education**. Most people still have never heard the words "light" and "pollution" used together, and fewer still really understand why controlling it is so important. Yet most people grumble over their power bills every month as they pay them, and whine about the neighborhood's petty crime last night. If you don't think that eliminating light pollution is important, then I might as well pour a tonne of rat poison in the South Saskatchewan River, because "it will just wash downstream" and not affect me, or even better, pee on your front lawn, because "the next rain will just wash it away!" (I've always wanted to use that line!) None of these are legitimate reasons that justify the actions. The bottom line is: ***it is there, it pollutes, and removing it benefits everyone!*** (It even benefits the power company, since they can now sell their excess power to an ever-expanding cross-border market for higher rates).

Even so, the most common question everyone asks is: *"What will it cost me?"* This is a two-part simple answer. First, it is *free* if we just use responsible lighting practices for all future lighting and install appropriate lights from the start. The second part, retrofit of bad lights is very costly. However, if this is done through attrition at the end of the fixtures' service lives, it becomes much less expensive. Governments aren't the only lighting users – businesses and private residences also are offenders and need to start following the same rules of good lighting and eventual retrofit.

SSSP 2005 Update

by Les Dickson

This is the third in a series of articles on the Saskatchewan Summer Star Party, to be held August 4-7 at the Cypress Hills Interprovincial Park and Dark Sky Preserve.

I am pleased to announce that our Special Guest Speaker for this year is Ivan Semeniuk, producer and astronomy columnist for Discovery Channel's Daily Planet. Ivan will give the Fr. Lucien Kemble Memorial Lecture on the afternoon of Saturday, August 6. His talk will be titled "Seven Worlds in Seven Days: A Tour of the Body Celestial". He describes his talk this way:

> *"The week has seven days in part because ancient astronomers recognized the sky was inhabited by a family of seven objects that shone brighter than and moved separately from the background stars. Now the same seven objects – the Sun, Moon, Mars, Mercury, Jupiter, Venus and Saturn – lie at the heart of a renaissance in space exploration. While our ancestors could only observe from afar, our generation is the first to experience the solar system at close range – seeing, touching and tasting the Sun, Moon and planets through the electronic eyes and robotic arms of our spacecraft surrogates. These spacecraft are collectively laying the foundations for a new science, a template that explains how nature builds worlds and ignites the sparks of life."*

Ivan Semeniuk, science writer and broadcaster, is one of Canada's best known popularizers of astronomy and space exploration. As producer and astronomy columnist for "Daily Planet", Discovery Channel's award-winning science show, he has covered every major planetary mission of the past decade. A contributing editor to *SkyNews* magazine, his reports of astronomical exploration have also appeared in *Sky & Telescope, New Scientist* and *The Globe and Mail*. He is also a former staff member of the Ontario Science Centre where he developed science exhibits and programs for over a decade.

I had the opportunity to meet Ivan at the George Moore's Astronomy Workshop a few years ago. He is personable, approachable, and an engaging speaker. If you haven't come to SSSP before, you now have even less of an excuse not to come: Ivan is not to be missed!

You can get further updates on SSSP at our website:

http://www.usask.ca/psychology/sarty/rasc/starparty.html

Amateur and Professional Collaboration in Las Cruces

by Rick Huziak

It was a tough decision to attend this year's AAVSO spring conferences in Las Cruces, New Mexico, mostly because of the lack of available cash and holidays. But Vance Petriew needed to attend this meeting to discuss an all-sky database the AAVSO is adopting, and so we made the decision to drive down to save money. With everything planned, we loaded up Vance's van with 30-inches of telescopes and headed south on the morning of March 20th. After 25-1/2 hours, we arrived at our destination.

This year, the American Association of Variable Star Observers (AAVSO) meeting consisted of two back-to-back conferences: the NASA/AAVSO sponsored 3rd High-Energy Astrophysics Workshop for Amateur Astronomers and the 94th Spring Meeting of the AAVSO. We had not really planned to attend the whole HEA conference, missing the first day while still on the road, but in hindsight, this was a poor decision. On days two and three, there were several excellent presentations by professional astronomers from Kitt Peak, NASA Huntsville, Sonoma University and elsewhere. These astronomers use AAVSO variable star light curve data for their professional research, and they showed us how our data and their data work together to create a more coherent picture over extended parts of the spectrum. One revelation was that our data, in many cases, pointed out problems with current theories of certain variables such as blazers (active galaxies), polar (magnetic) stars and over-contact binary stars. All the astronomers requested more observations from the AAVSO so that the discrepancies could be worked out. So after two days, I had already accumulated about a half dozen new visual and photometric projects that needed to be worked on.

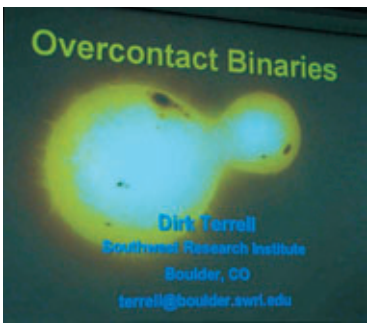
After the HEA concluded, a tour to the Very Large Array (VLA) radio telescopes was planned, but Vance and I declined, having seen this 2 years ago on the way back from the 92nd Spring Conference in Tucson. Instead, we decided to drive to the nearby Sacramento Mountains and tour the National Solar Observatory at Sunspot, and the Apache Point Observatory. The NSO is a predecessor to the solar observatory on Kitt Peak, and contains mostly telescopes dedicated to solar research, such as a very large evacuated vertical tower solar scope, and a tracking chronographic scope that creates artificial eclipses to study the solar corona. Apache Point contains a 3.5-metre scope, two 1-metre scopes and the Sloan Digital Sky Survey (SDSS) scope, featured in *Sky & Telescope* a few months ago. The SDSS telescope is designed to take up to 600 spectra of distant galaxies per exposure and is creating a 3-D map of the universe for about 1/4 of the sky.

The 94th AAVSO Spring Meeting began on Thursday, March 24th. This conference featured talks from mostly amateur AAVSO researchers on topics that included Sudden Ionospheric Disturbances (SIDs), eclipsing stars, pulsating stars, SDSS variables, supernovae, astronomy education, the Deep Impact comet mission, photometry techniques, and about a dozen other topics. A highlight of the talks was a visit by David Levy, who spoke about Clyde Tombaugh's discovery of cataclysmic variable TV Corvi during his ultimately successful search for the planet Pluto. In attendance in the crowd was Patsy Tombaugh, Clyde's wife. The Tombaugh's were residents of Las Cruces. Clyde died only a few years ago.

Canadians at the AAVSO conference in Las Cruces, New Mexico. L to R: Vance Petriew (Regina), Bob Nelson (Prince George), Gary Billings (Calgary) and Rick Huziak (Saskatoon).
PHOTO BY PEBBLE RICHWINE (TUCSON)

The conference was attended by a very international crowd of over 160 amateur astronomers that included observers from Finland, England, Argentina, Ireland, Canada and the USA. We all had a chance to meet a lot of new observers and renew friendships over many lunch and supper meetings to discuss the excellent lectures of the day! The conferences concluded with the annual banquet, where new AAVSO director Dr. Arne Henden gave out the annual observer awards and interim director Elizabeth O. Waagen gave a great talk on a recent conference trip she attended to visit the New Zealand Variable Star group.

Vance and I left Las Cruces immediately after of the banquet (10 p.m.), driving all night, and a mere 26 hours later, we arrived back in Regina. What kept us awake on the drive was the planning of all the new projects that we would be doing over the next year!



The sky is full of these amazing stars, but they are not well understood.

For those of you who have never attended a meeting of this nature, I highly recommend it. You will be astounded at the quality of the talks by amateur astronomers whose driving forces is a love of sky, and the awesome research of the professional astronomers. The next meeting in 2006 will be in Washington, D.C., but the 2007 meeting will likely be in Calgary in conjunction with the General Assembly. This meeting would be easily accessible to all of our members!

The Planets This Month, April 2005

by Murray D. Paulson, Edmonton Centre

The end of March saw **Mercury** sitting in superior conjunction with the sun, and with its fabulous speed, it will range out to its next elongation by the end of April. Unfortunately this morning elongation is slanted against us. In springtime, the morning ecliptic is tilted down toward the horizon, so Mercury rises only a quarter hour later than the sun even at greatest elongation. So once again, the best view of this little speedster is in the daytime sky with your goto telescope or a good set of setting circles.

Last month I managed to do a daytime sighting of **Venus** when it was only 5 degrees from the sun. I had decided to try the task with only a pair of 8x30 binoculars. A conveniently placed house shielded me from the sun showing the wonderful clarity of the atmosphere. Venus was a small white speck drifting in the morning sky. Cool! Venus was in superior conjunction with the sun on March 30, so now moves into the evening sky. This marks the half synodic cycle since the Transit, but it now sits behind the sun. By the end of April, Venus will sit 9 degrees from the sun, and should be visible in the early evening twilight. It will set 50 minutes after the sun, shines at magnitude -3.9 and will show a 9.9" disk in the eyepiece. On May 8th, a 19 hour old moon will join Venus in the evening sky. Look 2 1/2 degrees directly north of Venus, and slightly higher in the sky. Venus will help you locate where to look and help you focus on the slim crescent. Good luck! This will be a very difficult challenge.

The month of April starts off with **Mars** sitting in the midst of Capricorn. It shows a magnitude 0.8, 6.0" disk in the eyepiece. On the morning of May 2, (night of May 1) the moon and Mars will sit in close proximity, about 4 1/2 degrees apart. By early May, Mars will sit in the constellation of Aquarius. It now shows a 7" gibbous disk in the eyepiece and shines at magnitude 0.5. You may be able to see the south polar cap which is tilted well toward us.

Start of April **Jupiter** shows a 44.2" disk and shines at magnitude -2.5. The night of April 3rd Jupiter passed through opposition and now rises at 6:40 pm. The king of planets continues to sidle up against the back of Virgo, and will continue to do so for the rest of this apparition. Porrima, or gamma Virgo, is just above Jupiter, and it is one of the rapidly moving binaries. Give it a try. This year it is getting tight, 0.6", so you will need aperture and steady skies. In 2006, it will shrink to 0.4", an implausible task for all but adaptive optics. On April 22, the Moon and Jupiter rise about 5 degrees apart at 6:30 pm. Half way around the globe, Europeans will get to see the pair only 1.3 degrees apart.

Saturn, still beautiful, and well placed for Astronomy days is the early evening beacon for planetary observers. In early April, it shines at magnitude 0.0 and will show an 18.4" disk in the eyepiece. In one month's time, Saturn will diminish slightly to 17.7" and magnitude 0.1. On April 15th, a half full moon sails 4 1/2 degrees above Saturn. It will make a nice spectacle for the Friday evening viewing of Astronomy days. Remind your viewers that Saturn sits only 9 arc minutes above the ecliptic, whereas the inclination of the moon puts it high above the ecliptic.

Digital Camera ISO Tests

by Tenho Tuomi

My Canon A75 digital camera has options of what ISO speed to use. It recommends using the higher ISO speeds to reduce camera shake, for taking pictures in the dark without a flash, and for getting fast shutter speeds, but warns that high ISO speeds increase the image noise. It is usually assumed that ISO 400 is required for photographing stars, especially through a telescope, but I wanted to do some tests to see if this was true.

For my test object I chose M67, for the magnitudes of the stars in it are documented on page 61 of the *Observer's Handbook 2005* for checking Limiting Telescope Magnitudes, and also that object is ideally located at this season. I took the pictures afocal at 50 power using a 25 mm eyepiece on my 8 inch Meade Starfinder Newtonian. For 100 power I added a 2x Barlow. For picture size I chose 1024 x 768 pixels. Paint Shop Pro was used to enhance the pictures.

On my first evening of testing I came up with the following results:

Speed	Magnitude of faintest star before enhancing	Magnitude of faintest star after enhancing	Magnitude improvement by enhancing
At 50 power			
ISO 50	9.12	12.26	3.14
ISO 100	11.19	12.57	1.38
ISO 200	12.01	13.04	1.03
ISO 400	13.04	13.35	0.31
At 100 power			
ISO 200	12.26	13.61	1.35
ISO 400	13.04 - 13.35 (3 pictures)	13.35 - 13.61	0.3
Stacked	13.35	13.96	0.61

continued next page

The ISO 400 pictures at 100 power were done the next day. The last row shows the results of stacking those three pictures with RegiStax.

Also the next day I checked my Limiting Visual Magnitude with the 8 inch scope at 160 power using M67. I came up with 12.26. A 200 mm scope should see down to 14.2. Maybe the sky was not perfect, or the scope needs collimating, or my vision is not that good.

Regarding the higher power, because of the digital camera's small lens, higher power uses more of the telescope's objective. With my camera's 1.9 mm lens, 50 power uses 95 mm, and 100 power uses 190 mm of my 200 mm telescope objective. Higher powers than 100 should not photograph fainter stars with my camera with a 200 mm telescope though I did not test this.

Conclusions:

- Computer enhancing benefits lower ISO pictures much more.
- Stacking improves the picture by reducing the noise and allowing more enhancing.
- Higher powers will photograph fainter stars, up to a point.
- I can photograph 1.7 magnitude fainter stars than I can see. Others might not.
- ISO 400 still seems to be the best for photographing stars.

The Goals of the Saskatoon Centre, RASC

by Ron Waldron

It's official! At the March meeting of the RASC, the executive and the membership present approved the following goals for our centre. In addition they assigned responsibility for each goal to individuals sub-committees within our organization.

This represents the culmination of a process that began in November with the Appreciative Inquiry workshop entitled Planning for the Future. Having these goals does many things for us. First, it acts as a compass with which to steer the direction of our organization. Second, it allows us to focus our efforts in the areas that mean the most. Finally, it helps us filter out what we will do and not do depending on how it fits our goals.

As meeting many of these goals will require money, I am pleased to report that Darryl Chatfield and the Fundraising Committee are working on ways to raise the necessary funds, beginning with selling tickets at Astronomy Day and special public star events with the draw taking place at the end of SSSP in Cypress Hills in August. Bill Hydomako is reforming the Sleaford Site Committee to come up with a cost estimate and building sequence to get the construction of a 16" telescope dome back on track. We hope to hear from them by the May or June meeting.

GOAL	RESPONSIBILITY
Astronomy Outreach	
✓ Astronomy day and public star nights	Activities Coordinator
✓ Educational support for teachers (Classroom and Brightwater star talks)	Ron Waldron with assistance from Centre members
✓ SSSP (Saskatchewan Summer Star Party at Cypress Hills)	SSSP Organizing Committee
Sleaford Observing Site	
✓ Completion of the 16-inch telescope project	Bill Hydomako and the Sleaford Site Committee
✓ Addition of a library	
✓ Overnight facilities	
Regular Monthly Meetings	
✓ Exchange of information among club members	Present executive members
✓ Astronomical project mentoring	Experienced members
✓ Recognition of achievements for members	Present executive

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, L. Scott, G. Charpentier

Mike Clancy		97
Brent Gratias		96
Mike Oosterlaken		93
Lorne Jensen		89
Brent Burlingham		85
Les Dickson	Up!	83
Wade Selvig		75
Garry Stone		57
Kathleen Houston		53
Ken Maher		35
Ellen Dickson		23
Brian Friesen		15
Barb Young		6

FINEST NGC CLUB

Certified at 110 Objects:

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

Scott Alexander	97
Bill Hydomako	55
Sandy Ferguson	23
Mike Oosterlaken	20
Larry Scott	15
Mike Clancy	4
George Charpentier	4

Chatfield BINOCULAR CERTIFICATE

Certified at 35 Objects:

M. Stephens, T. Tuomi, M. Clancy, R. Huziak

Brent Gratias	36
Mike Oosterlaken	32
Ken Maher	28
Anna Clancy	24

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
Tenho Tuomi	Up!	176
Scott Alexander		117
Mike Oosterlaken		68
Sandy Ferguson		18

HERSCHEL 400-II CLUB

Certified at 400 Objects:

Darrell Chatfield	214
Richard Huziak	211

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 Herschel 400 list is available at the web site listed below. The Binocular List will be available at each general meeting or can be mailed out on request to distant members.

On-line Messier List – For those who'd like an electronic Messier list (with DSS images), check out:
http://www.seds.org/billa/dssm/messier.html

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

On-line Herschel 400 List – For those who'd like an electronic Herschel 400 list, check out the official site at:
http://www.astroleague.org/al/obsclubs/herschel/hers400.html

RASC Observing Group Notes

by Bill Hydomako, Observing Group Coordinator

The last Observing Group session which was to be a Messier Marathon run turned out to be very cold. We had four members show up and everybody had enough by 1:30 a.m. The next tries are scheduled for April 1 & 2 and April 8 & 9. We'll see if the weather turns out better then. As for the following month, the observing group session is scheduled for Friday, May 6. The program is still TBD but I think we'll get into open clusters as well as the spring constellations.

An Internet Machine Shop for Very Small Orders?

Ever wonder how to get a gear or an adapter made for a cost that won't warrant just buying a new scope? Well now it seems that someone has created an Internet business specializing in very small runs of miscellaneous "things"! Check out: www.emachineshop.com. The site allows you to download a computer-aided design (CAD) program to design your part. You then email your design in, and presto! – a few weeks later your part arrives in the mail!