

Winnicentrics

The Journal of the Winnipeg Centre of the Royal Astronomical Society of Canada

Taurus - Top Dead Centre by Lindsay Price

January 23, ten o'clock at night, temperature +27 °, Taurus straight overhead. Sound too good to be true? Not if you are in Mexico, lying flat on your back on a golf course far from any city lights.

It was quite a holiday. A telescope would have put me over my baggage limit, and a tripod looks too much like a shoulder mounted, multibarrel rocket launcher to try and take on an airplane, so I satisfied myself with some trusty Starry Night printed star charts and a pair of 10x50 binoculars. It seemed as if all my planning would go for naught as one cloudy night led to another, but then one evening there were holes in the clouds and the next it seemed quite clear; at last.

Looking at the sky from a distant latitude takes some adjustment. The first thing I noticed was that on the moon, Mare Crissium was right at the top in the twelve o'clock position. To find the features I recognize, I had to cock my head over to the left. Looking like a chiropractor's nightmare, I drew the concern of my wife for my health if not my sanity. "I'm fine." said I. "It's how we look at the moon. All astronomers do that." Shaking her head, she returned to her book, but from averted vision I caught her casting me sidelong glances for a while after that. Not wanting to distress her further, and growing nervous at the glowers of 100 kg boyfriends who were misinterpreting which heavenly bodies I was scanning with my binoculars at pool side, I gathered up my binos and retired to the golf course. My former friend, the glorious full moon, now became my blinding enemy, but I had my list of southern targets and set out to see things I had never seen before.

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Deadline for the next issue
is April 20, 2003



Meetings

March 14

Beginners Session 7:00

Regular Meeting 7:30

<p>March 14 Friday</p>

**Guest Speaker: Richard Huziak from the Saskatoon Centre on
“The Great Canadian Observing Challenge”**

Our first introduction to observing is to complete the Messier and Finest NGC lists. Since this requires dark skies, many observers put their scopes away as soon as the new moon period ends, then find a multitude of excuses why NOT to observe if sky conditions are not excellent or if they can't get out of town. However, there are so many useful observations that can be made in light polluted or moon-washed skies right from our backyards. Serious studies of variable stars, asteroid occultations, sunspot counts, meteor counts and planetary features can be done anytime and under almost any sky. It's amazing how few observers pull out their telescopes with the moon out, even though satisfying observing and real scientific study can be easily done. It is even more amazing that fewer than 100 RASC members out of over 4500 actually REPORT their observations to the AAVSO, IOTA, IMO or NAMN...at least until the “Great Canadian Observing Challenge” came along!"

Plus the regular features: “What’s New” with Lloyel Hull, “Explore the Universe” Observing Certificate by Lindsay Price and Gail’s “Constellation of the Month” looks at Gemini the Twins.

April 11

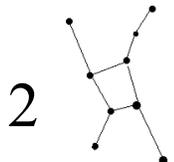
Beginners Session 7:00

Regular Meeting 7:30

<p>April 11 Friday</p>

Aurora

Past-President Scott Young will tell us all about Aurora – what they are and where they come from. Learn to appreciate their beauty even when they get in the way of deep-sky observing! Plus the regular features: “What’s New” with Lloyel Hull, “Explore the Universe” Observing Certificate by Lindsay Price and Gail’s “Constellation of the Month” looks at Hydra the Water Snake.



OBSERVING

**March
15
Saturday**

Members Observing Nights
7:00 p.m. to ???
Glenlea Observatory

**April
12
Saturday**

Bring your telescopes and binoculars and come out and work on your observing certificates. If it's cloudy, we'll meet and do some telescope training, learn how to read star charts, whatever you would like help with.

The following members are working toward their:

Messier Certificates:

Eugene d'Auteuil	41
Mike Karakas	99
Robin Woods	75
Lindsay Price	11
Wayne Keith	20
Kilmeny Jones	3

Finest NGC's:

Stan Runge	69
Sean Ceaser	61
Gail Wise	105

Explore the Universe:

Janice Low	37
Lindsay Price	29
Kilmeny Jones	9

Herschel 400's

Stan Runge	54
Sean Ceaser	115
Gail Wise	249

Congratulations to **Berni Plett**

on qualifying for his
Messier Certificate!

DON'T HAVE ONE? BORROW ONE!

The Winnipeg RASC owns a number of telescopes which are available for loan.

They consist of:

- ▶ a 75mm f16 polarex(unitron) refractor with an alt/az tripod
- ▶ a 4.5"f8 newtonian on a dobsonian mount
- ▶ a 6" f8 criterion on an equatorial mount
- ▶ a 8"f6 newtonian on a dobsonian mount
- ▶ a Celestron C8 8"f10 schmidt cassegrain with equatorial wedge/tripod.

All of these telescopes come with eyepieces and finder scopes. They are available on a first come-first served basis, and can be booked for 1 month at a time.

The Celestron requires a 1 year WPG RASC membership to book. The telescopes can be had by calling Ray Andrejowich at 667-6896, and can be picked up at his house or at the astronomy club meetings. Picking up and dropping off at the astronomy club meetings is the preferred method of acquiring, but alternative arrangements can be made with Ray.

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Humans in Space

by Ray Philippe

This series takes us on a journey through time to explore the human race's quest for space flight.

Part 11

Continued from last issue

One of the objectives of the Gemini program was to train astronauts and ground crew in the areas of rendezvous, stationkeeping, and docking in Earth orbit. This would be the focus of the *Gemini 6* mission.

An unmanned target vehicle known as Agena was designed to be launched into Earth orbit prior to a Gemini mission, and used for rendezvous and docking practice. The Gemini Agena Target Vehicle (GATV) had a docking collar at the front end into which the nose of the Gemini capsule could be inserted and held with docking latches. The GATV was a 6 metre long cylinder with a diameter of 4.9 metres. It was equipped with propulsion systems, and a rendezvous beacon and a number of communication antennas to aid tracking and command of the vehicle.

Navy divers assist Gemini 6 crew to open hatches after splashdown Gemini 6 was scheduled for launch on October 25, 1965. The Agena would be launched into orbit first; then, Gemini 6 would blast off an hour and a half later and give chase. Pilot Tom Stafford and Mercury 8 veteran commander Wally Schirra waited patiently in their seats inside the Gemini

capsule, atop the nine-story Titan II rocket. The Agena lifted off, carried by an Atlas rocket. Five minutes after launch, the Agena separated from the Atlas rocket successfully, and all signals were normal. But 1 minute 8 seconds later, just as Agena's primary propulsion system fired for Earth orbit insertion, the vehicle exploded. Without Agena in orbit, there was no point in launching Gemini 6. The Gemini 6 launch was scrubbed.

Within 24 hours, Gemini Program managers had come up with a bold new plan. Instead of attempting another synchronized Agena and Gemini 6 launch for the purpose of practicing rendezvous and stationkeeping, they would launch *Gemini 7* next, followed a few days later by Gemini 6. The two Gemini spacecraft would be in orbit at the same time, and Gemini 6 would rendezvous with Gemini 7 instead of an unmanned Agena vehicle. Gemini 7 would be the fourth manned Gemini mission, while Gemini 6, redesignated *Gemini 6A*, would be the fifth.



Photo of Gemini 7 taken from Gemini 6A



On December 4, 1965 Gemini 7 was launched from Cape Kennedy carrying astronauts Frank Borman and Jim Lovell into a 14 day mission in space. This flight would prove beyond a doubt that humans could endure a two-week mission to the Moon and back. The mission priorities of Gemini 7 were (1) to demonstrate a 2-week flight; (2) to perform stationkeeping with stage 2 of the Gemini launch vehicle; (3) to evaluate the 'shirt sleeve' environment and the lightweight pressure suit; (4) to act as a rendezvous target for Gemini 6, and (5) to demonstrate controlled reentry close to the target landing point.

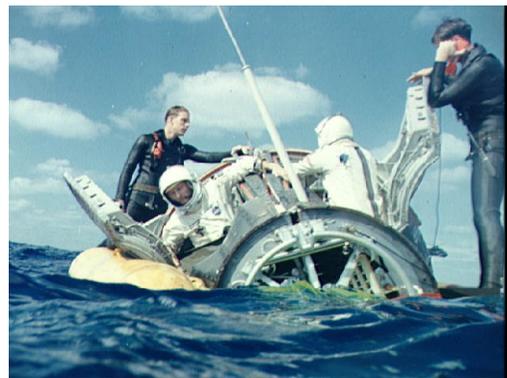
Immediately after separating from the Titan II second stage, Gemini 7 began stationkeeping operations with it at distances of 6 metres to 80 km. Over the next few days, Lovell and Borman conducted experiments and spacecraft tests, and took turns working in a shirtsleeve environment.

Gemini 6A was scheduled to launch on December 12, 1965, but the launch was aborted one second after engine ignition. This was the first time a manned mission was aborted after ignition start. Schirra had his hand on the ejection lever, concerned that the rocket might explode. But he elected not to eject, which turned out to be the right decision. The problem was quickly traced to an engine intake cover that had been mistakenly left on.

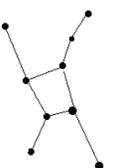
The mission launched successfully from Complex 19 on December 15. Upon achieving orbit, Gemini 6A trailed Gemini 7 by about 1900 km. Four major

thruster burns were performed to catch up to Gemini 7. Rendezvous was achieved and stationkeeping started with the two Gemini spacecraft 110 metres apart in zero relative motion. Stationkeeping maneuvers, involving the spacecraft circling each other and approaching and backing off, continued for over three and a half orbits. Because the craft had no docking adapters, they could not dock together but they remained as close as 1 foot apart for about three hours during these maneuvers. At one point while the spacecraft were very close together, Wally Schirra held a sign up to his Gemini 6A window that read "BEAT ARMY". This was a joke aimed at Frank Borman, the only U.S. Army graduate among the four astronauts (the other three were Navy graduates). Schirra and Stafford exchanged pleasantries with the crew of Gemini 7, Borman and Lovell, and then returned to Earth on December 16. This marked the first time two spacecraft were maneuvered with respect to each other by their crews. Gemini 7 remained in Earth orbit and reentered two days later.

Navy divers assist Gemini 6 crew to open hatches after splashdown



Continued in next issue



The Winnipeg Centre Executive Council

President	Gail Wise	253-8297	wgail@mts.net
Past-President	Scott Young		sdyoung@mb.sympatico.ca
1 st Vice-President	Robin Woods	586-4173	robin.woods@uwinnipeg.ca
2 nd Vice-President	Lindsay Price	831-0150	flprice@mts.net
Secretary	Jay Anderson	474-1485	jander@cc.umanitoba.ca
Treasurer	Stan Runge	261-9984	stan.runge@mts.mb.ca

Councilors

Fred Wood	774-3238	fred_wood@shaw.ca
Jennifer West	284-6548	umwestjl@cc.umanitoba.ca
Lloyel Hull	256-6510	lloyelhull@shaw.ca
Mike Karakas	253-5379	mkarakas@mb.sympatico.ca
Ron Berard	668-6551	rcberard@mts.net
Sean Ceaser	797-4509	drceaser@netscape.net

Appointed Positions

Librarian	Fred Wood	774-3238	fred_wood@shaw.ca
Observatory Director	Ray Andrejowich	667-6896	randrejo@hotmail.com
Webmaster	Kevin Georgison		keving@gray.mb.ca
Winnicentrics Editor	Gail Wise	253-8297	wgail@mts.net

At the March meeting we will be electing our NATIONAL COUNCIL REPRESENTATIVE

(1) Every Centre is entitled to be represented on the National Council by one member of the Centre for each two hundred voting members of the Centre or portion thereof, which representatives are known as "National Council Representatives." The number of National Council Representatives to which a Centre is entitled during a year shall be determined from the number of members of the Centre as of the end of the previous year (including any members whose memberships expire in December), according to the membership records of the Society. A new Centre shall be entitled to one National Council Representative for the year in which it becomes a Centre. (amended; July 1999)

(2) Subject to Article 4_08(4), the National Council Representatives of a Centre shall be elected by the members of the Centre in accordance with the procedure established in Article 4_07(2) for the election of Centre Council members.

(3) The term of office of a National Council Representative is one year. No person may hold the office of National Council Representative for more than three consecutive terms, but such person may be re-elected after a lapse of one year.

(4) If for any reason a National Council Representative of a Centre is unable to attend a meeting of the National Council, then the Council of the Centre may appoint another member of the Centre as an alternate for that National Council Representative. The alternate will be entitled to exercise all the rights of the National Council Representative for whom he or she is the alternate only upon presentation to the National Council of proof in writing from the President or Secretary of the Centre as to the due appointment of the alternate.

(5) Every National Council Representative shall be an ordinary or life member of at least twenty-one years of age. (amended; July 1993)

(6) A National Council Representative may be removed from office by special resolution of the Centre that he or she represents. A National Council Representative whom it is proposed to remove from office is entitled to receive notice of the meeting at which such removal shall be proposed and of the intention to propose such removal, and to make representations on his or her behalf at the meeting at which the vote is held. (amended; May 1991)



Taurus - Top Dead Centre *continued from page 1*

Not totally successful, I had hoped to see Fomalhaut, a nearby star apparently with a surrounding disc that in a few million or billion years should be planets. Fomalhaut, however, was shy and appeared only briefly at sunset, and set itself before the sky was fully dark. On the other hand, was Alpha Centauri. I have long wanted to stand and watch our closest neighbour, but I guess I never wanted to observe it badly enough to get out of bed at 05:00 on my holidays. Successes did come to reward my hopes though. There are a number of stars that are actually above our horizon, but so low that I had never seen them until this trip. Canopus was easy to spot, and although its name was very familiar to me, I could not remember what it was about Canopus that made it special. It is at times like that, that one realizes how used a person can get to having reference materials, and astronomy friends close at hand, and how much you can miss them when they are not. Then raising my gaze toward Orion, I saw for the first time, the stars of the constellation of Lepus the Bunny, (that is probably the "Hare", but I talk to a lot of kids about sky pictures.) Another gratifying coup, was that after years of easily seeing Sirius, I actually saw the rest of the stars that make up Canis Major for another first! Mrs. Price thought it strange when I told her that I was so excited to see the Big Dog's bum, and after a few seconds of reflection I decided not even to try to explain myself.

All in all, the modern astronomy was good, if not great. A full moon and a lot of cloud certainly interfered, and seeing Jupiter and Saturn high and bright, made me miss my telescope even more. But I saw things easily that I had never seen before, and my observing log is three pages longer, and I am certainly glad we went.

The old astronomy was also even more interesting than I expected. We got some insight into the ancient Mayan calendar, that is more accurate than our own. The tour guides did not have the time, (or possibly the inclination) to fully explain it as to understand it one needs to have the concept of a base 20 numeracy system, and some understanding of the time for an orbit of Venus. But we gleaned enough information to intrigue us and entice to seek out some of the literature on it. By the way, 2012 Dec 21, is the end of an age, (not necessarily the end of the world as some suggest.)

At the largely restored Mayan city of Chichen Itza, I took special interest in (you guessed) a 1400 year old observatory. The main part of the building is aligned with the cardinal points. One wall faces exactly north, the second, east, etc. But the second story, which holds the observatory is twisted by what I estimate to be about a 10 degree angle. This is so that the rising sun, on the day of summer solstice shines in one window, draws a bright line across the floor and continues out through the window in the opposite wall. Neat eh? Especially when you remember that it had to be all prior knowledge to building it! Then there was the fact that all the buildings were made of stone, some quite tall, and all constructed without using the wheel. Mayan civilization knew about the wheel, they just did not use it. No-one is sure why. Maybe they just felt that future archeologists needed something to ponder.

Pool side, in shirt sleeves in January, with a beer in one hand, a Cuban cigar in the other, and looking up at a beautiful dark sky, my only prayer was, "Take me now Lord, I am already half way into heaven!"

By the way, there is more than astronomy in Cancun. You can swim.



ATM Journal 2: Introduction and Design Notes

By Gordon Tulloch

We have a couple of telescope designs in mind (as described last time) - an 8" f5 portable telescope, and an 8" f10 decidedly non-portable instrument. The common thread is that each will require an 8" mirror to be bought or made. While an 8" mirror is fairly inexpensive (approximately \$200-250) we will do things the old fashioned way: grinding our own.

Mirrors can be created using a huge variety of materials, including various glasses, Pyrex, and ceramics. The criteria one must consider when looking at materials is ability to hold a figure, and thermal characteristics. For example, if you have a portable scope that you want to haul out of the house into the back yard and observe with, you will want to choose a material that will cool to the ambient temperature quickly to avoid changes in the figure of the mirror due to differing thermal zones in the mirror.

For my 8" planetary scope I've chosen to try Black Vitreous Ceramic (BVC) which is conveniently available from a Canadian company named ASM Products in Ste-Basile, PQ (pages.infinit.net/asmprod.) BVC has excellent thermal characteristics, and is softer than glass or Pyrex so grinding will be faster. An 8" blank from ASM costs \$44.95US. A kit containing a BVC blank, a glass tool (used as the surface against which the mirror is ground), plus supplies for grinding and polishing a mirror is also available but although this is what I purchased originally, I suggest you not bother with the kit. We will in fact be casting a tool to use for grinding as well as a separate tool for polishing. Also, the abrasives provided by ASM are in some cases not required and in some cases of insufficient quantities (at least for inexperienced grinders). My 8" glass tool provided by ASM will in fact be ground into the 8" f5 mirror - glass isn't the best material thermally but since it's lying around anyway, I might as well make a mirror out of it!

Abrasives and other supplies must be purchased as well. I suggest purchasing the following from ASM or US companies such as www.GotGrit.com:

- 1 lb. Aluminum Oxide 120, 240
- 1/2 lb. Aluminum Oxide 500, 1000 and 2500
- 1/2 lb. Cerium Oxide
- 1/2 lb. Pitch
- Spray Bottle and water (mark it H²O, you'll feel very scientific!)
- Sponges - one per abrasive grade (very important!)
- Bucket
- Towels

Silicon Carbide can also be used but is more aggressive than Aluminum Oxide and more suitable for glass or Pyrex rather than softer BVC.



The process of grinding a mirror is astonishingly simple, considering the result will be a surface that deviates from perfection by millionths of an inch! Generally, the tool is attached to the top of a grinding platform such as a barrel (I use a 4 sided 2x4 pier embedded in concrete in a garbage can.) The mirror is ground against the tool using progressively finer grades of abrasives. As the grinder strokes the surfaces together, she also periodically rotates the mirror one way, and steps in the opposite direction around the grinding platform (or in some other way causes the tool to rotate.) As the work progresses, the mirror and tool can be interchanged - Mirror On Top (MOT) will generally increase the curve of the mirror, Tool On Top (TOT) will decrease the curve. Different phases of the process will require different strokes.

Speaking of tools, in the bad old days people rubbed two pieces of glass together and then used the same piece of glass as the foundation for a polishing tool. Unfortunately, using a flat piece of glass can lead to problems with polishing, so mirror makers have almost universally moved to a channeled tool, either by grinding channels in glass tools, or more commonly casting a tile tool from some form of plaster.

To cast a plaster tool, obtain some Dental Stone from a dental supply company (Dental Plaster will also work well although not as hard as Stone - other plasters are to be avoided since they're not waterproof). This material can be cast into a very hard tool and is waterproof so it doesn't need to be sealed. You'll also need some 1x1 unglazed mosaic tiles. These tiles (commonly found at Home Depot or tile specialty stores) are joined together using nylon or rubber into 12"x24" mats, which makes them perfect for creating a regular, hard grinding surface on a tool. Since the tool needs to match the face of the mirror exactly (particularly if you buy a mirror with a pre-generated curve) we cast the tool on top of the mirror. The cost for a sheet of tile as of Oct. 2002 is \$6. If you have problems finding tiles, contact the author, I have a limited supply on hand.

Prepare the tiles by placing the mirror on top of the mat of tiles and tracing its outline onto the tiles. Try to include as many complete tiles or large sections as possible. Depending on the mirror size you can either cut the tiles using a tile nipper, or remove incomplete tiles from the mat for mirrors larger than 12". Don't keep tiles smaller than 50% as they are prone to lift and scratch the mirror. If you do cut tiles, put a bevel on the cut tile with a carborundum stone (commonly found in the Tiles section in Home Depot) or whetstone. Clean any grease or dirt off the tiles with hot water and dish detergent.

Place the mirror face up on a flat surface. Next, cover the surface of the mirror with cooking oil to allow easy release of the tool. Cover the cooking oil with plastic cling wrap, getting as much of the air out as possible. Next place a dam around the edge of the mirror - this will hold in the plaster while it sets. The dam should be about 3" taller than the mirror thickness. You can use wax paper, aluminum foil, or other materials for dams, although I prefer to use thicker aluminum sheeting (from the car body repair section in Canadian Tire) since it's very stiff and easy to snugly fit around the mirror. Place the tile mat face down on the surface of the plastic wrap.



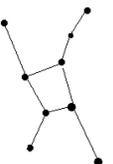
Mix up some Dental Stone in a bucket, ensuring that the mixture is kept fairly wet to avoid it hardening in the bucket. When the mixture is wet but not sloppy, pour enough onto the mirror surface to create a 2" thick layer. The stone should hold its shape but liquefy when vibrated. Make sure to run more water into the pail and agitate to avoid the stone hardening, and never pour Dental Stone down the drain unless you're skilled in using explosives, because that's the only thing that will clear a drain blocked by this material! Note that the stone will harden quite quickly so work fast.

Give the mirror and dam a few taps to get rid of any bubbles and to flatten the back of the tool. Using a skewer or chopstick to press down on the tiles through the stone to make sure none have lifted (agitate to get rid of the holes left by the skewer.) Using a flat scraper, scrape the back of the stone as it hardens to ensure it is flat. When the material is dry (but not yet too hard) you can remove the dam and slide the tool off the face of the mirror. If you've timed it right, the tool should be quite hard, but wiping the tile face should wash away some of the stone from the face so you can deepen the channels between the tiles with a clothe or a sponge. Again, do this from the bucket to avoid getting stone into your plumbing. If the stone is too hard to deepen the channels, use a whetstone on edge to grind away stone from the channels. You now have a grinding tool! Save your dam as you'll use the same technique later to cast a polishing tool (without the tiles).

For very detailed instructions on this process send me an email (gtulloch@shaw.ca) and I'll send you a Word document from Richard Schwartz, who while not originating this technique has refined it greatly.

Final word: You might wish to check out "How to Make a Telescope Second Edition" by Jean Texereau published by Willmann-Bell Inc. This is the classic text for making telescopes, particularly grinding, polishing and figuring mirrors. The Winnipeg Public Library has multiple copies held at the Centennial Library, or get it from www.willmann-bell.com. We will deviate from Texereau in some ways but it's well worthwhile to read at least the mirror making sections of this book to understand what the deviations are and why they were developed.

Next time: Rough Grinding



THREE SIMPLE DEMONSTRATIONS

By Fred Wood

Over the next 3 issues, I am going to give you a simple demonstration that you can use with neighbours.

This issue, the demo might be helpful with the lights of your neighbour.

Ask neighbours with a blinding, outward-facing security light to stand in the street while you walk toward their property, disappearing behind the wall of light it emits. They will realize that theirs is really an “anti-light”, concealing rather than revealing, and they may be moved to do something about it.

You may not be able to convince all your neighbours, especially in high-crime areas, that a dark environment can be as much of a deterrent to wrongdoers as a brightly lit one, but you can certainly point out that a real human being outside at night is a far better security device than any lamp: an astronomer can take action if (s)he sees or hears anything suspicious, but a security light cannot.

Next time: a demo for when downward-directed lights are installed.

Now for those who want to help with this issue of light pollution, Gord Tulloch has set up a group with yahoo groups. This group is members only so you will be asked to register. When you register, I will be asked to approve you. When I approve you, you can use the group to send LPAC messages to everyone in the group. The group is found at:

<http://groups.yahoo.com/group/wpglpac/>

New Members

Terra Jentsch, Winnipeg

Gary Taylor, Winnipeg

Don Fox, Winnipeg

Ken Metcalfe, Portage la Prairie

Welcome to our club!



SOME INTERESTING UPDATES ON THE GAS GIANTS

By Mike Karakas

Those of us observing Jupiter and Saturn on a regular basis realize that each has exhibited some interesting detail lately. Furthermore, experts anticipate that more activity is yet to come. This article will help to keep you up to date.

Jupiter

Jupiter is always an easy target and even casual observing yields the detection of several cloud belts and the famous great red spot (GRS) in even small instruments.

If you remember the views of Jupiter last year and look at the planet now, you will notice something is missing – the North Temperate Belt! There is still a dark segment here and there, but it has mostly disappeared.

The GRS is proving to be the most interesting feature of this apparition. It has changed from the pale colour of last year to a more red colour, particularly in its core. Even more intriguing are the many features and eddies which follow in its wake. These features seem to change in the matter of days rather than weeks due to the turbulence around the GRS, so it's worth observing this area often to witness the changes first hand. Also, just recently, a section of the South Temperate Belt at the Red Spot's longitude has darkened. Visual observers with a "south is up" view at the telescope are presented with what looks like an "eyebrow" with the Red Spot being the "eye". Still further south and almost centered over the GRS, no less than six white ovals can be detected in moderate sized scopes. Ovals spaced this close together likely converge at some time in the future, and may prove to be another telescopic point of interest for Jupiter observers.

Saturn

Unlike last year, Saturn's current apparition has seen an unusual amount of activity. Since last September, a total of 3 white ovals (or storms) have been detected, and their formation has generated considerable interest for several reasons.

1. Their frequency–

The first oval was imaged on September 29, 2002, the second on November 19 and the third on December 22.

2. Their locations–

Each oval occurred very near –42 degrees in latitude, within the South Temperate Region of the planet.

3. Their longevity–

Each storm seems to be short lived and appeared to dissipate over a period of just a few weeks.

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The true nature of how or why these storms have formed is just speculation at this point, but we do know that Saturn is currently near perihelion (as it is every 30 years) and is closest to the sun.

Some theorize that this may be responsible for an increase in solar radiation, leading to a build up of convection as Saturn's atmosphere heats up, which in turn creates the storms. For all we know, similar storms may have occurred 30 years ago when Saturn was last at perihelion, but our imaging equipment then was not as sophisticated as it is today. Using current CCD or even webcam/digital cameras, amateur astronomers of today are able to image planetary detail much better than professional astronomers could of that era – isn't technology wonderful!

To address their location, one possible theory is that the -42 degree latitude may correspond to the angle of the planet that receives a higher concentration of solar radiation, or that the storms more easily reach the upper atmosphere at that latitude for some reason. Having the rings open to their maximum may also be a factor. Their short lifespan may be due to the rapid convection currents in the atmosphere, but it's really anybody's guess.

It's important to note that these ovals were detected by amateur astronomers and that the value of amateur astronomers cannot be overlooked in the field of planetary study. Although these ovals are low contrast features and difficult to detect visually, they are rare and worth the effort to observe. So, on the next clear night when the seeing is steady, have a look at Saturn – you might catch a glimpse of one yourself.

A word about Mars

2003 will be forever known as the year for Mars. It reaches perihelion opposition on August 27, and its diameter will measure a huge 25.1 arc seconds – larger than Saturn and almost as large as Venus is right now. The amount of detail that can be seen in backyard telescopes will be truly remarkable (barring another dust storm!). In an upcoming newsletter, I will discuss how to prepare for this observing event of a lifetime.



THE RASC WINNIPEG CENTRE MEMBERSHIP SURVEY NOVEMBER 2002

Robin Woods

The survey was distributed at the meeting held on November 8th 2002 and those present were asked to complete and return it at the meeting. Subsequently the survey was emailed to all members with email addresses and sent, by Canada Post, to those members without email. We received 69 completed surveys, representing over 50% of the membership. The responses to the factual questions are listed below. The replies to Questions 17, 25 and 35, which asked for suggestions for topics to be covered in the Beginners' and Regular sessions and for centre-maintained telescopes, and general comments will be published in the next issue of Winnicentrics.

1. How many meetings do you attend per year? 67 responses.

1 to 4	15 (25.0%)	5 to 8	17 (25.4%)	9 to 12	28 (41.8%)
New members	5 (7.5%)	Out of town	1 (1.5%)		
3. Do you come to the Beginners' Session? 66 responses.

Always	20 (30.3%)	Most of them	15 (22.7%)
Some of them	21 (31.8%)	Never	10 (15.2%)
3. Do you come to Members' Observing Nights at Glenlea? 65 responses.

Always	2 (3.1%)	Most of them	8 (12.3%)
Some of them	34 (52.3%)	Never	21 (32.3%)
4. Do you attend RASC Star Parties? 64 responses.

Always	4 (6.25%)	Most of them	6 (9.4%)
Some of them	31 (48.4%)	Never	23 (35.9%)
5. Do you think that the Centre should organise more Public Viewing Sessions? 62 responses.

Yes	51 (82.3%)	No	9 (14.5%)	Undecided	2 (3.2%)
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6. If Yes, should they be:

For specific events	19 (38.8%)	Regularly scheduled	2 (4.1%)	Both of the above	28 (57.1%)
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7. Where do you do your observing? 67 responses.

My backyard	19 (28.4%)	Glenlea	6 (8.9%)	Dark site outside the city	9 (13.4%)
Backyard & Glenlea	8 (11.9%)	Backyard & Dark site	11 (16.4%)		
Glenlea & Dark site	3 (4.5%)	Backyard, Glenlea & Dark site	11 (16.4%)		
8. How frequently do you observe? 66 responses.

1x / month or less	42 (63.6%)	About 1x / week	15 (22.7%)	> 1x / week	9 (13.6%)
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9. What do you observe? 67 responses.

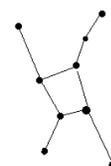
Solar System	14 (20.9%)	Sun	10 (14.9%)	Moon	36 (53.7%)	Planets	42 (62.7%)
Asteroids	7 (10.4%)	Satellites	14 (20.9%)	Messier Objects	45 (67.2%)		
NGC Objects	19 (28.4%)	Variable Stars	10 (14.9%)	Double stars	26 (38.8%)		
Other (lunar grazes, meteor showers, auroras, comets, carbon stars, occultations, Herschel 400 objects) 8 (11.9%)							
Anything	1 (1.5%)						
11. Have you been to the RASC observatory at Glenlea? 68 responses.

Yes	56 (82.4%)	No	12 (17.6%)
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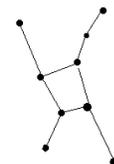
Will you go to Glenlea more frequently now that there is a toilet? 62 responses.

Yes	28 (45.2%)	No	34 (54.8%)
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12. Are you interested in using the 12" LX200 at Glenlea? 65 responses.

Yes	52 (80.0%)	No	13 (20.0%)
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13. Have you taken the course to learn how to use the 12" LX200 at Glenlea? 67 responses.
Yes 17 (25.4%) No 50 (74.6%)
14. Which of the facilities at Glenlea are important to you? 67 responses.
The Warm Room 40 (63.5%) The Toilet 17 (27.0%) The LX200 31 (49.2%)
The 14" Newtonian 16 (25.4%) The Observing Pad 33 (52.4%)
15. Are the topics covered in the Beginners' Session appropriate? 55 responses.
Yes 52 (94.5%) No 3 (74.6%)
16. Are the topics in the Beginners' Session useful and informative? 52 responses.
Yes 52 (100%) No 0 (0%)
18. Would you like more Beginners' Sessions featuring members demonstrating their own telescopes?
46 responses.
Yes 40 (87.0%) No 6 (13.0%)
- Are the following items of the Regular Session valuable?
19. The President's Report. 61 responses.
Yes 55 (90.2%) No 4 (6.7%) Undecided 2 (3.3%)
20. Constellation of the Month? 64 responses.
Yes 62 (97.0%) No 2 (3.0%)
21. What's New! 64 responses.
Yes 62 (97.0%) No 2 (3.0%)
22. Explore the Universe Observing Certificate. 56 responses.
Yes 50 (89.3%) No 4 (7.1%) Undecided 2 (3.6%)
23. Are the topics of the Feature Presentations Appropriate? 62 responses.
Yes 59 (95.2%) No 2 (3.2%) Undecided 1 (1.6%)
24. Do you find them useful and informative? 61 responses.
Yes 60 (98.4%) No 1 (1.6%)
26. Do you think that it is difficult for new members to get to know others? 60 responses.
Yes 28 (46.7%) No 31 (51.7%) Undecided 1 (1.7%)
27. Do you think that there is sufficient opportunity for social interaction at the meetings? 62 responses.
Yes 40 (64.5%) No 19 (30.6%) Undecided 3 (4.8%)
28. If No, which would you prefer? 25 responses.
A 30 min. break 9 (36.0%) End the meeting at 9.45, chat, then pizza. 5 (20.0%)
Both of the above 11 (44.0%)
29. How many times have you borrowed a loaner telescope? 19 responses.
1 to 3 13 (68.4%) 4 to 5 3 (15.8%)
6 to 10 2 (10.5%) Many 1 (5.3%)
30. Which telescope(s) have you borrowed?
Celestron 8 inch SCT 4 8 inch Newtonian (Dob) 6
6 inch Newtonian (EQ mount) 6 4.5 inch Newtonian (Dob) 6
70 mm refractor (Alt/Az) 3
31. Do you think that the centre should have more loaner telescopes? 35 responses.
Yes 17 (48.6%) No 14 (40.0%) Undecided 4 (11.4%)
32. If Yes. What kind would you prefer?
ETX with Autostar 7 Newtonian (Dob) 9 Newtonian (EQ) 2
Newtonian (Alt/Az) 1 Refractor (EQ) 3 Refractor (Alt/Az) 2
- 33a. Are you interested in using the 12" LX200? 58 responses.
Yes 47 (81.0%) No 7 (12.1%) Undecided 4 (6.9%)



- 33b. Are you interested in using the 14" Newtonian? 53 responses.
 Yes 39 (73.6%) No 11 (20.8%) Undecided 3 (5.7%)
34. Would you like to see more Centre-maintained telescopes at Glenlea? 45 responses.
 Yes 16 (35.6%) No 26 (57.8%) Undecided 3 (6.7%)
35. Do you own one or more telescopes? 69 responses.
 Yes 51 (73.9%) No 18 (26.1%)
36. Do you have a solar filter?
 Yes 22 (43.1%) No 29 (56.9%)
37. If you are thinking of buying a telescope, would you like advice on what to look for?
 Yes 13 (81.3%) No 2 (12.5%) Undecided 1 (6.3%)
38. Do you own binoculars?
 No 5 (7.2%) 7 x 50 22 (31.9%) 10 x 50 18 (26.1%) Other 12 (17.4%)

Telescope Ownership

Question 36 asked members to list the telescopes that they owned.

SCT - 17 Refractor - 23 Newtonian - 36 Maksutov-Newtonian - 5 Maksutov - 6
 Total number of telescopes - 87 Average/member (49) - 1.8

The number of telescopes owned by individual members was:

None - 18 One - 31 Two - 8 Three - 5 Four - 5 Five - 1 Eight - 1

The Centre Council has already taken decisions in the light of the survey.

1. Public Viewing Sessions: May 10th - Astronomy Day, May 16th - Lunar Eclipse.
 We need more members to volunteer their time if we are to put on more of these sessions.
2. Beginners' Session: Jay Anderson has drawn up an annual list of topics.
3. Social interaction: the coffee break has been extended to 30 minutes and we are trying to end the meetings earlier!
4. Members' Observing Nights at Glenlea: these are now scheduled for the Saturday after each meeting.
5. LX200 training: sessions are now scheduled for the Saturday two weeks after each meeting.

Thanks to all of you who took the time to complete the survey. The results will help the Council in many ways and allow us to serve the membership better.

Winnicentrics is published six times each year by the Winnipeg Centre, RASC.
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