Volume 56 Issue 5 September 1998

Winnicentrics

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

On your mark, get set….

The GA is coming.

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GA stands for General Assembly. It's the national meeting of all of the RASC centres. We've volunteered to put it on two years hence and our application to do so was accepted by the GA which was held in Victoria this year.

Typically the Assembly is held around the July 1st weekend, though we did run this year's a week early. It actually threw off a lot of personal planning and it was not as well attended as it could have been. We aren't going to break out of the mold – the 2000 GA will be held in Winnipeg at the usual time. We've got a lot of advantages: we're cheap to get to, we've got a central position, we have reasonably decent weather in July, and best of all, we've got a party reputation which is more due to misbehaving visitors than it is to certain unnamed members of the council…

Deadline for the next issue is October 31, 1998

The GA will require a lot of planning, even though it's two years off. We plan to hold it at the UofM, using residences there for accommodation. Meetings will also be held in facilities there, but there will be excursions to the local tourist attractions: the zoo, Old Fort Garry, the Museum, Glenlea, perhaps the Riding Mountains, and so on. There will be a dinner cruise on the Red provided the Red is cruiseable.

We need your help. There are a dozen or more committees needed – program, registration, housing, entertainment, contest, donation, finance, souvenir and so on. We get no extra money for the event, but usually make some spare cash from registration and sales. It's is, more than anything else, a fun event and will probably be long remembered by most of us when the new millennium is well underway. And it's a good way to give something back to the club. The first organizational meeting will be held at

WHO, WHERE, WHEN?

Executive Council

President
Jay Anderson 474-1485

Past-President
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1st Vice President
Kevin Black 224-0182

2nd Vice President
Andora Jackson 775-7675

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Stan Runge 261-9984

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Kevin Georgison 269-8888

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Paul Paradis 883-2411

John Smith 237-3203

Mike Wegner 255-4016

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Winnicentrics Editor
Andora Jackson 775-7675

Winnicentrics is published six times each year by the Winnipeg Centre, RASC. Winnicentrics is produced by and for the members of the Winnipeg Centre, and any opinions expressed are those of the author. If you have comments, questions, or concerns about Winnicentrics, you can contact any of the councillors above, or write to RASC, Winnipeg

September

Sept **11**

Films for Astrophotography

7:30 PM, Friday September 11
Room 118, St. John's College, University of Manitoba

All those nice photos in Sky and Telescope and Astronomy don't come automatically – they demand care in composition, film type, film preparation, technical skill at the telescope, and developing. For September, the discussion will be on film type and preparation: hypersensitizing, cooling, whether to use slide or prints, colour or black-and-white. Jay Anderson and Kevin Black will be your hosts.

Regular features will continue after the main talk. What's up tonight, upcoming events, science update, a look at Lowell Observatory and Meteor Crater and Andora's Spacecraft re-

October

Oct **9**

The Big Planets

7:30 PM, Friday October 9
Room 118, St. John's College, University of Manitoba

October is election month, but that's only a small part of the evening's events. Because of the prominence of the two biggest planets in the sky, we'll be looking at the latest discoveries on Jupiter and Saturn and discussing some observation and photographic tricks. If the weather is suitable, we'll take a look at these two giants during the meeting break.

Our attention on these cool autumn nights will also turn to the all-too-common aurora which always seems to interrupt the best and darkest nights. If you can't beat 'em, join 'em, so we'll have a few words on making the most of auroral photography.

September

Sept
19

Observing night

Saturday September 19
Dusk, Glenlea Observatory

The observing night for September will be on the 19th at the Observatory. Directions to the site can be found on the last page of this issue. This session is for club members and their guests. The night is subject to weather conditions – it will be cancelled if skies are overcast or nearly so.

The main attraction will be the planets Jupiter and Saturn, along with a generous collection of nebula, open and globular clusters, and an occasional galaxy. For those inclined to remain the night, Orion rises ahead of the dawn. Mercury and Venus will also be visible in the dawn sky. Uranus and Neptune can be found low in the south in the

Objects to look for during the September observing night:

Jupiter rises at 8 PM
Saturn rises at 9:15 PM
Uranus and Neptune are 20° high in the South at 10 PM
The globular cluster M71 is high overhead
The Dumbell Nebula, M27 lies just above M71
M56 and M57, a globular and a planetary, are overhead in Lyra
At midnight, the Andromeda galaxy is high in the east

October

Oct
17

Observing night

Saturday October 17
Dusk, Glenlea Observatory

October's observing night will be held a few days ahead of the new Moon, which will form a thin crescent in the morning sky. Once again Jupiter and Saturn will provide the main show, rising early in the evening and continuing through the night. This will also be a good time to look for the Zodiacal light in the east just before morning twilight.

If you are the owner of a new telescope, or want to learn a few new ideas on using an old one, bring them along to the observing site and let one of our expert club members show you a few tricks. And if binoculars are your only optical aid, bring them along too.

Objects to look for during the October observing night:

At dark, Jupiter is glowing brightly in the south and fainter Saturn is rising in the east.
The globular cluster M30 is low in the south.
M2, a globular, is moderately high in the south and the globular M15 is 13° above it.
The asteroid Ceres lies 5° east of Aldebaran in the evening, at magnitude 8.
Asteroid Pallas lies 4.5° under and right of Jupiter at magnitude 9.
Orion and its nebula rise at

Election Fever…

With a number of positions open for change this year, it's a great time to get involved or re-involved with Centre activities. If you're short on time but long on desire, a Councillor's position is a good way to participate without divorcing yourself from your other commitments.

Duties: Executive Council

The **President** arranges and presides over council and Centre meetings. The president is an ex officio member of all committees.

The **First Vice-President** assists the President in all duties, assists with and directs the business and affairs of the Centre, and also presides over all council and Centre meetings in the President's absence.

The **Second Vice-President** assists the President and First Vice President in all duties of the Centre.

Nominees for the above positions must have been members in good standing for two years prior to seeking office.

Councillors

RASC **Councillors** assist in public observing and other public relations activities, act as a contact person for Centre and astronomical information to members and the public, and fulfills other duties as delegated by the executive council.

Nominees for a councillors' position must have been members in good standing for one year prior to seeking office.

To nominate a current member for any of the above positions, or to get more information about the open positions, contact nomination committee chairman Stan Runge at 261-9984. Nominations for Councillor will also be taken from the floor during the October meeting.

Your participation is what makes our Centre practical and fair for all members. A nomination form can be found on the following page

The following positions will be filled at the October meeting:

President
1st Vice President
2nd Vice President
1 Councillor

TEAR ME OUT AND MAIL

Nomination form for Election to the RASC Winnipeg Centre Executive Council

I, _____, being a member in good standing of the Winnipeg Centre of the Royal Astronomical Society of Canada, hereby nominate Centre member

_____

for the position of _____ for the 1998/1999 membership year.

Signed this _____ day of _____ 1998

Signature _____

Witness _____

I, _____, being a member in good standing of the Winnipeg Centre of the Royal Astronomical Society of Canada for two years, do hereby accept the nomination above.

Signed this _____ day of _____ 1998

Signature _____

Nominations Committee
RASC Winnipeg Centre
Box 2694
Winnipeg, MB

September sky map

Highlights (?) of the Sept 3 Council Meeting

Observatory repairs:

- The dome rotation motor bolts have come loose and will be repaired.
- A commercial roofer will be asked for a quote to seal the roof.

Our web page

- Kevin Georgison has arranged the page so that individual members can take responsibility for maintaining individual pages.

Telescopes for loan

- A suggestion to charge a small monthly fee was declined.

Hobby Show

- Once again this year we will participate in the Winnipeg Hobby show in October. A commercial sponsor and volunteers will be sought.

Public Star Parties

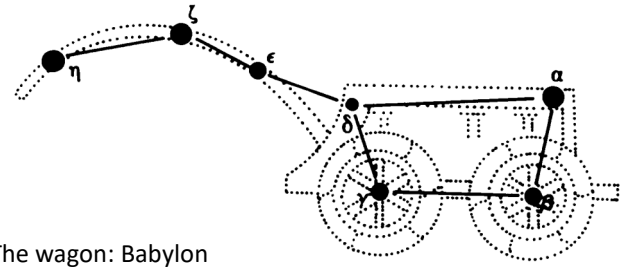
- Now that Jupiter and Saturn are up, we will begin to hold more frequent star parties. Suggested venues include The Forks, Birds Hill Park and Fort Whyte. These groups will be contacted. In general star parties will occur around the first quarter moon.

Planning for the 2000 General Assembly

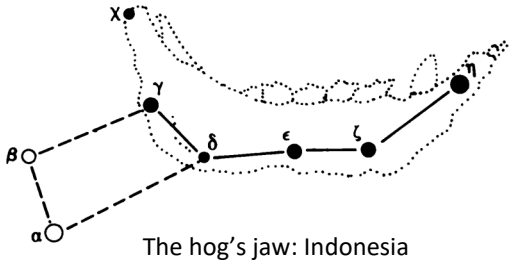
- Volunteers will be sought at the September meeting.
- An organizational meeting will be held at the end of September.

Observing program

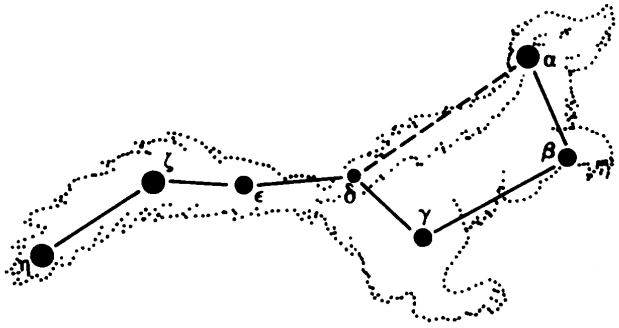
- Chris Brown presented an offer from the UofM to conduct measurements of the changing brightness of Hubble's Variable Nebula, using UofM electronic cameras. It is intended that results be published.



The wagon: Babylon



The hog's jaw: Indonesia



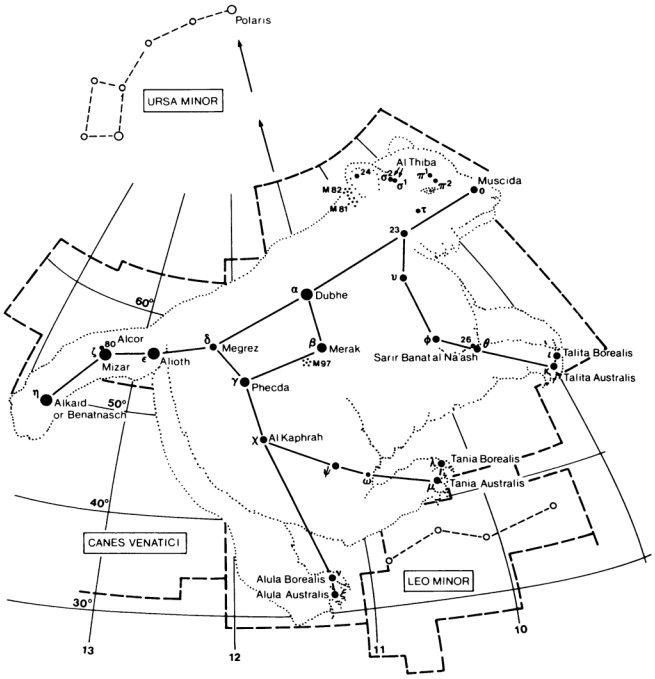
The skunk: Sioux Indian

In a New Light: Other Views of the Constellations

The familiar night sky is crowded with an arena of dragons, maidens, heroes, instruments, fish, goats, and villains. It's a peaceful place now, composed only of the gentle light of stars wheeling across the sky. Their stories reside in our western literature and religion, mostly inherited from Greek and Roman times. There are, in the southern parts, some modern constellations such as Horologium, Reticulum or Octans, but these are poor cousins of their northern counterparts, bereft of mythical underpinnings and all the duller for it.

But less we get too smug with our civilization's "naming" of the stars, we should take a look at some other culture's sky creatures. Indeed, even our Greek ancestors often had several stories and images to match the images in the stars.

The Big Dipper has been recognized for centuries as a bear, though our own conventional modern name – dipper – is much poorer, paying homage to a simple water-cup. The identification with a dipper is a North American custom, for the English see a plough and Germanic peoples recognize a wagon with three horses. The double stars in the middle of the handle of the Dipper are named Mizar and Alcor, and are easily visible to the average eye. In England the fainter, Alcor, is known as "Jack on the Middle Horse", the horse being brighter Mizar. The familiar bowl and handle of the dipper make up only a small part of the whole constellation and dark skies are needed to trace the outline of the constellation in its full size (figure 1).



According to Greek myth, King Lycaon of Arcadia had a beautiful daughter named Callisto, who was fond of hunting. Callisto worshipped Artemis, the Goddess of the Hunt. In her devotion, Callisto promised to honour Artemis her entire life, which meant, among other things, that she would remain a virgin.

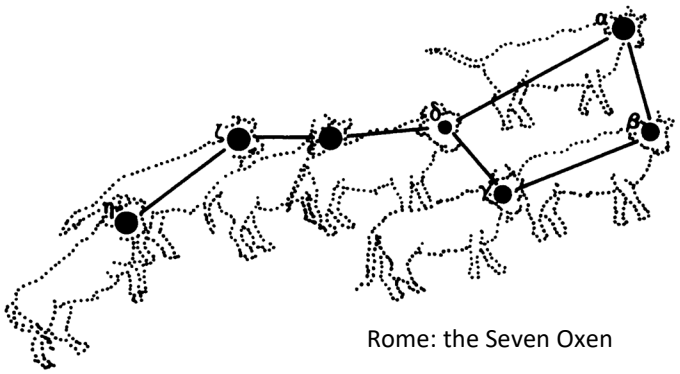
The Earth had been scorched and badly burned by the fatal ride of Phaethon, so Jupiter made an inspection of the place to see what he could put right. Over time, the grass began to regrow, the rivers filled up, the trees came back to life, and in general the place began to turn green again. Alas for Callisto, Jupiter caught sight of her during his inspection tour while she was sleeping, fell in love (or at least into attraction – Jupiter had a lot of love affairs) and decided to pursue her. Being blessed with a few extra powers, he changed himself to look like Artemis and woke her. She quickly spied out his disguise, but could not resist his power, and was soon included in the list of maidens seduced by Jupiter.

Nine months later her misfortune was discovered by her nymph companions and Callisto was driven

from Artemis' retinue. Shortly thereafter she gave birth to Arcas. This was soon discovered by Juno, the wife of Jupiter, who changed Callisto into a bear in a fit of rage.

Over the years, shaggy Callisto roamed the woods while Arcas grew into a fine hunter. One day while hunting he was set upon by a large bear – Callisto, who only wished to embrace him – and would have shot her straight away had Jupiter not caught sight of events and swept them both into the sky. The force of the throw into the heavens stretched the bears' tails into the long shape we see in the constellations.

The Romans saw seven oxen in the shape of the Dipper. One version of the story is that the oxen are tied to the North pole and are driven by Arcturus and his dogs Canes Venatici in order that the rotation of the heavens never ends. In Indonesia, native groups saw the shape of a hog's jaw, or a canoe in five of the seven stars. Before 3000 BC the Chinese saw a bushel or winnowing shovel, but in later years the Chinese saw the God of Literature Wen-chang sitting on his throne (the bowl of the Dipper) attended by four ministers. Each of these was responsible for some aspect of student life and study, bringing reward for effort and punishment for failure.



Rome: the Seven Oxen

American Indians saw many images of a bear in the Dipper stars. One story takes place in an oak forest, where, in early times, the trees were not fixed to one place. At night they would move about, visiting with each other, being careful only to return to their places before sunrise so that the Sun would not catch them out of place. A bear became lost in the forest, and in the night could not find its way out because familiar landmarks were ruined by the social habits of the trees. In his haste he bumped into a large oak tree, failing to apologize to the tree's satisfaction.

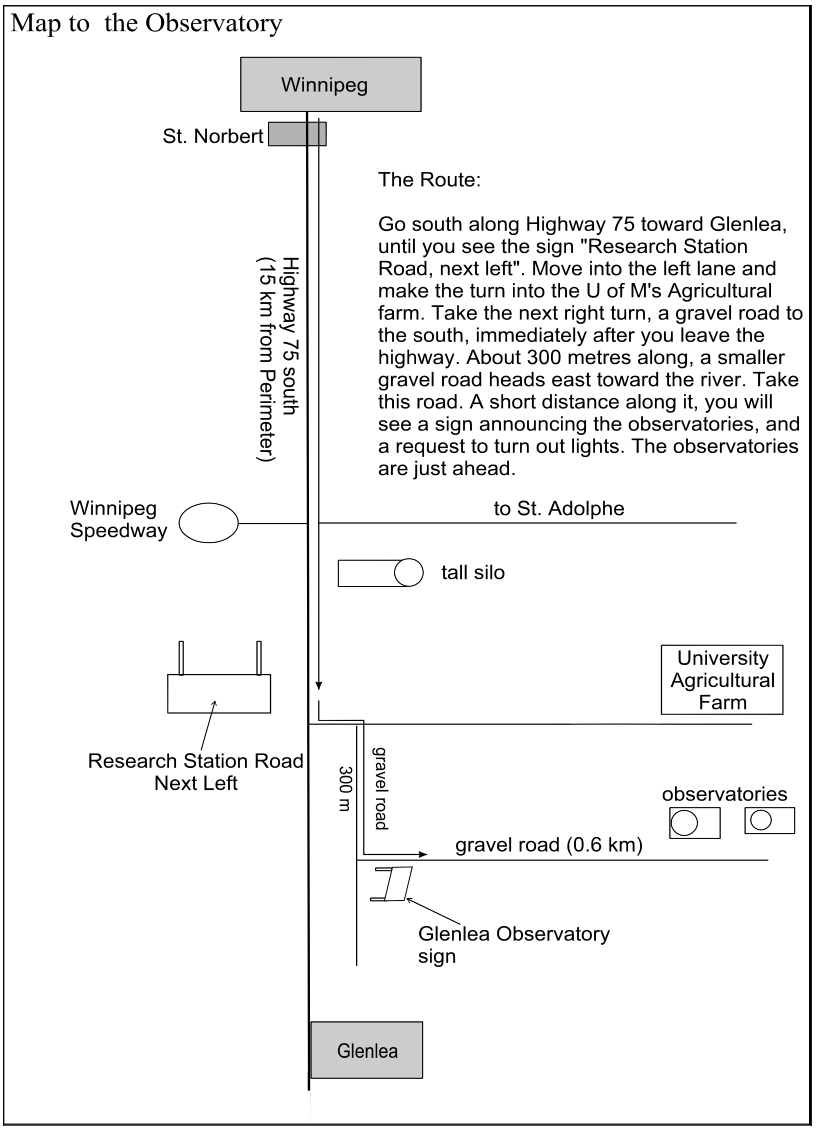
The tree pursued the bear throughout the night, attempting to catch it and punish it for its impoliteness. The bear managed to stay just out of reach until dawn, when in a mighty effort, the oak caught the bear's tail and flung the bear into the sky. Now it can be seen in the dome of Heaven, wheeling about the north pole.

In Cherokee legend, the bear is made up from the bowl of the Dipper, and the tail is three hunters who pursue it round and round the sky. The Iroquois extend the stars in the tail to take in seven hunters, all with bird names. "Robin" shoots the bean in autumn when it is standing on its hind legs: the blood from the bear falls on Robin and colours his breast; the remainder of the blood colours the leaves of the trees. The bear spends winter on his back, a skeleton, before another bear leaves the den in spring.

These beautiful (and tragic) stories are part of the attraction of the night sky. They give the stars a friendly mythical character which just adds to the enjoyment of the rural darkness. In a sense they are friends with whom to share a night on the telescope.

Astronomy in the Journals

- A recent note from England mentioned that authorities are expecting 3 to 9 million people to travel to the southern part of the country next August to view the eclipse of the Sun
- Cosmic rays (fast moving atom nuclei from space) can have enormous energies, but its been hypothesized that there is an upper limit to this energy because of interactions between the particle and the background radiation which pervades the universe. This limit was believed to be about $5x10^{19}$ electron-volts (eV) - that's 5 followed by 19 zeros. But Japanese experimenters have just detected particles with ten times that energy, an amount equivalent to a brick falling from a table from just one atomic nucleus. They're rare – only six since 1990, but the high energy indicates that they should come from a nearby object, somewhere among the nearby galaxies. Just where is a bit of a mystery…
- Astronomers have recently begun to use the light from a quasar to sample distant hydrogen clouds. When light leaves the quasar, it may travel along slightly different paths through a nebula close to the quasar. Ordinarily only one of the paths would be visible to Earth-based telescopes, but if the light is re-directed by the gravitation of an intervening galaxy, then a double image of the quasar is seen on the Earth. The light from each image has travelled through the distant nebula in a different region, and the fine scale structure of the nebula can be deciphered. So far they've determined that the amount of carbon in the distant nebulae can vary greatly across a distance of a few thousand light years. These differences could be the marker of "mini-galaxies". In some clouds structure could be seen on scales of 100 light years.
- A new 500 metre radio telescope is being planned by the Chinese – the largest in the world if completed. The telescope would reside in a natural bowl in the landscape, similar to Arecibo Observatory in Puerto Rico.
- The SOHO satellite (Solar and Heliospheric Observer), drifting since late June because of an error by spacecraft controllers and programmers, has finally responded to attempts to revive it. So far the batteries have been recharged and the fuel tanks have been thawed out, but a number of other spacecraft systems are still in a deep freeze. It is not yet certain that it will recover to useful status.
- Neptune's moon Galatea is late. Not much – just 5.6 minutes after 9 years, but it's enough to catch the attention of planetary scientists. The satellite was spotted by the Canada-France-Hawaii telescope in July. One explanation is just that we didn't know the orbit all that well in the first place, but others suggest that the rings of Neptune are pulling the moon out of its regular orbit, or that another moon is responsible. Both theories would require a reworking of our understanding of affairs around the planet.
- New estimates of the size and matter in the Oort cloud – a collection of cometary bodies orbiting about 20,000 AU from the Earth and responsible for most of the long-period comets – suggests a total mass equal to about 40 times the Earth from 6 trillion comets.



Finding the Observatory

The Winnipeg Centre maintains a working observatory and warm room at the University of Manitoba's Research Farm. The observatory contains a 14" Celestron telescope on a fork mounting. Members of the Centre may sign out the use of this telescope provided they have first taken a short instruction course on its use.

The Celestron provides outstanding views of the night sky. Its large aperture collects more than 2500 times as much light as the human eye. It is capable of magnifying more than 700 times under favourable conditions. The telescope also has a solar filter for those wishing to carry out day-time observing.

The warm room provides a convenient place for members to take refuge from winter temperatures and summer mosquitoes, or to wait out a passing cloud. The building also provides desk space and lighting for planning a night's observing session. A cement pad in front of the warm room and observatory provides a convenient space to place members' telescopes while conducting personal observing programs.

Etiquette requires that you approach the observing site with your headlights off. On newer cars, stop the engine at the Glenlea Observatory sign, engage the parking break by one notch, and then restart. Your headlights should remain off, but you can still use your parking lights to drive. Proceed slowly, and be careful about parked cars along the road, or people walking. If you cannot turn off your headlights, make a cardboard or garbage bag mask to dim the lights. You might wish to turn around at the end of the road so that you are facing the direction back toward the highway at the end of the evening.