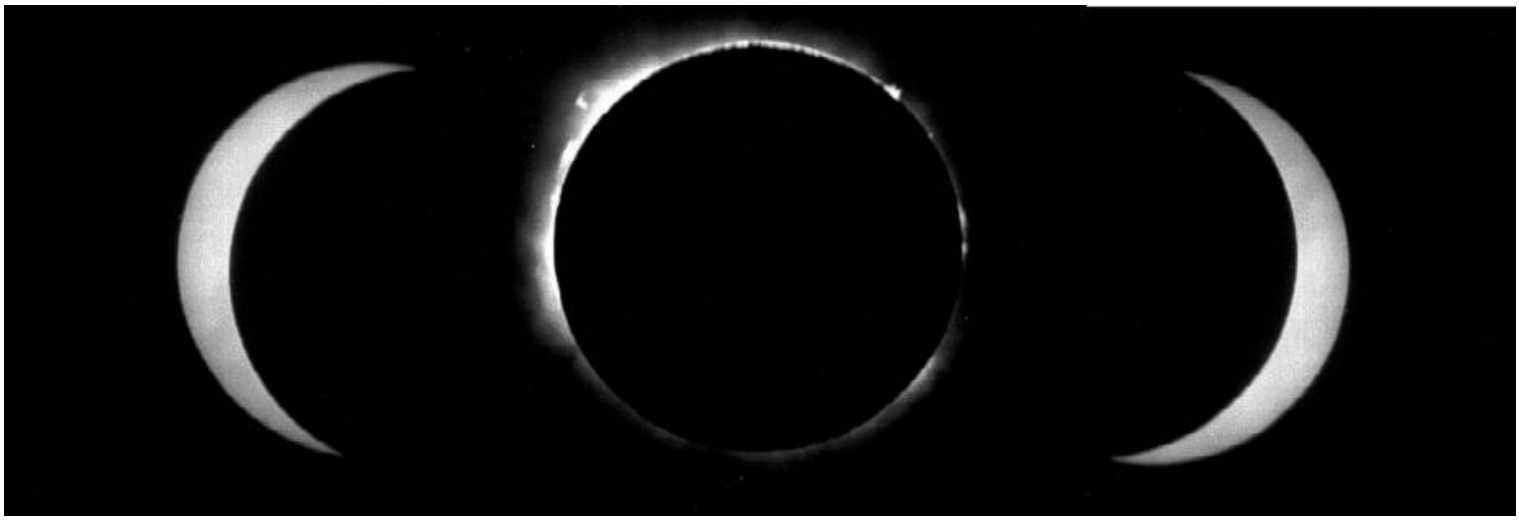
Volume 57 Issue 5 September –October 1999

Winnicentrics

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



Summer is Dead. Long Live the Fall.

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Deadline for the next issue is October 31, 1999

Summer seems to be coming to an end. The fall rains have started, smoke from stubble is beginning to pester the sky, it's dark now at 6, and the Sun no longer has the warmth to sustain the night. Fog occasionally repels the dawn. Observing requires a jacket as well as repellant as the mosquitoes are in an even more frenzied blood lust to find one last victim to allow the gene pool to persist through another winter.

It's been a wonderful summer of sorts. RASC members travelled across Europe to see the eclipse and the South Saskatchewan Star Party was a cloudy trial with eventual success. Devil's Tower in Wyoming tempted a few who checked the weather and decided to pass on the SSSP and head elsewhere.

But good weather is still ahead of us before the snow flies, with the Milky Way now shining with its full glory in the evening. Cygnus and Lyra swing overhead in their nightly cycle, tempting with nebulae and clusters. Nights are now dark. While others regret the summer's end, astronomers celebrate in the best skies of the year. This is the time of year we wait for most.

Once again we enter another cycle of monthly RASC meetings, observing nights, planning for the GA, preparing our observatory and warm room for the season ahead and searching out the dark sky delights. Saturn and Jupiter now beckon as Mars departs. Perhaps winter will be a little kinder or skies a little less cloudy and

WHO, WHERE, WHAT and WHEN?

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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

September

Sept
10

Place: **St John's College, Room 118**
Time: **7:00 PM Beginners' Session**
7:30 PM Regular meeting
Friday September 10, 1999

September's meeting will feature the solar eclipse. Five club members travelled to locations along the eclipse track in Europe and Turkey, and will describe their experiences in the quest for the lunar shadow. And, since August was also the month of the South Saskatchewan Star Party, we'll get a report from a second group of cloud-dodgers. Who got the clear skies and who didn't? And in keeping with the eclipse theme – a discussion of cycles.

We have two months of astronomy updates to catch up on as new and old spacecraft and telescopes brought a wealth of fresh discoveries. The beginners session will discuss the ins and outs of

October

Oct
8

Place: **St John's College, Room 118**
Time: **7:00 PM Beginners' Session**
7:30 PM Regular meeting
Friday October 8, 1999

The October meeting is used for one of our more important functions – namely the election of new officers for the club. But that's only a small moment in the evening's activities and only a small part of the meeting will be devoted to this function. This will be a meeting to review the observing successes of the past month – with lots of pictures we hope— and plan for the occultation of Uranus by the moon on the 18th. November has some dynamic events coming too (the Leonids and a transit of Mercu-

September

Sept
18

Observing night

Place: Fort Whyte Centre parking lot
Time: 7:30 PM Saturday Sept 18
Weather permitting

September is the beginning of the best time of year for observing, with warm to slightly cool nights, early darkness, generally dry atmosphere and the brilliant Milky Way overhead. Saturn and Jupiter are up in the morning skies replacing Venus and Mars which have disappeared into the Sun in the evening. There are a few new comets about – not very bright, but easy in telescopes.

The big problem is the Moon – a day past first quarter and hanging brightly in the sky until just after midnight. But at

October

Oct
16

Observing night

Place: Fort Whyte Centre parking lot
Time: 7:00 PM Saturday Oct 16
Weather permitting

October, if it behaves, is also a great month for observing with night coming on early and only frosty temperatures to concern us (well – fog and lake cloudiness as well). On the 16th the Moon is a day before first quarter sets a little after 11 PM. The sky, dominated by the Milky Way , is full of clusters and nebulae, some visible in binoculars. This is the time to explore the heavens.

Objects to Look for in September and October Skies

Sagittarius with its plethora of nebula and clusters is prominent on the southern horizon in September, but so too is the Moon and so good viewing conditions will have to be sought out elsewhere – high overhead. Globular clusters such as M13, M71, M92, and M56 are higher in the sky. Nebulae such as M57 and M27 are also high, along with open clusters such as M29, M39 and M52 are available for binocular examination.

October will offer slightly easier fare in view of a lower and slightly less intense Moon and the higher altitudes of Jupiter and Saturn, especially late on. Galaxies are beginning to make their appearance, with Andromeda and its companions rising in the northeast. Open clusters still abound, with M34 easy and the Pleiades just rising in the east – an early sign of the oncoming winter.

Binocular Vistas (1)

Binoculars are sometimes the instrument of choice for the urban astronomer who, for a variety of reasons, is unable to make the trip to a favourite dark site outside the city limits. Binoculars are light, easy to transport, and take up little room when stored. They are quick to set up on a tripod, and cool down quickly when taken outside. When mounted on a tripod, either using a tripod adapter or fixed to a binocular mount, they offer a steady, rich-field view of the sky. They are able to pull in many thousands of objects which remain invisible to the unaided eye.

A pair of 7x50 or 10x50 binoculars increase the light gathering capacity of the human eye over 50 times. If an observer wants another fifty-fold increase in light gain over binoculars, a telescope with an aperture of 14 inches is required to achieve this goal. The club's C14 at Glenlea will do just fine.

This first article of a series extends an invitation for you to do a quick star-hop and exploration of the constellation Lyra which remains high in the skies of early autumn evenings. This small constellation is easily recognizable by its shape - an isosceles triangle joined to a parallelogram at its apex. Vega, its brightest star, forms part of the easily found asterism of the Summer Triangle.

Vega, or **α Lyrae**, is a beautiful blue-white star. At magnitude 0.04, it is the second brightest star north of the celestial equator. Only Arcturus, at magnitude -0.1, shines more brightly in the northern celestial hemisphere. It is also a very hot star, hotter and therefore bluer in colour than Deneb in Cygnus. The difference in the colour of these two stars is discernable when they are viewed through binoculars on clear nights when both stars are still high above the horizon.

The star **β Lyrae** is a double separated by 46" of arc. Binoculars may resolve this star into its two components, one of magnitude 3.3 and the other of magnitude 8.9. The brighter star, Beta A, is an eclipsing binary star. Its magnitude fluctuates from 3.3 to 4.3 over a period of slightly less than 13 days. The two stars of Beta A are in such close proximity to one another that their shapes are distorted into ellipsoids. The light curve of this pair is wave-shaped, unlike the light curves of other types of eclipsing binary stars such as Algol, which exhibit a flat maximum and a flat minimum. The β Lyrae system is actually a complex grouping of at least seven stars, but these others are too faint to be observed with binoculars.

The star **ε Lyrae** is well known to amateur astronomers as the Double-Double. This binary system can be separated using the naked eye by anyone with good eyesight. The two magnitude 5 stars are easily resolved using binoculars, as their separation is 3.5'. Each member of this double is further resolved into a tight pair when it is observed with a 3 inch telescope at a magnification of at least 100x on a very clear night. These four stars are part of a single star system.

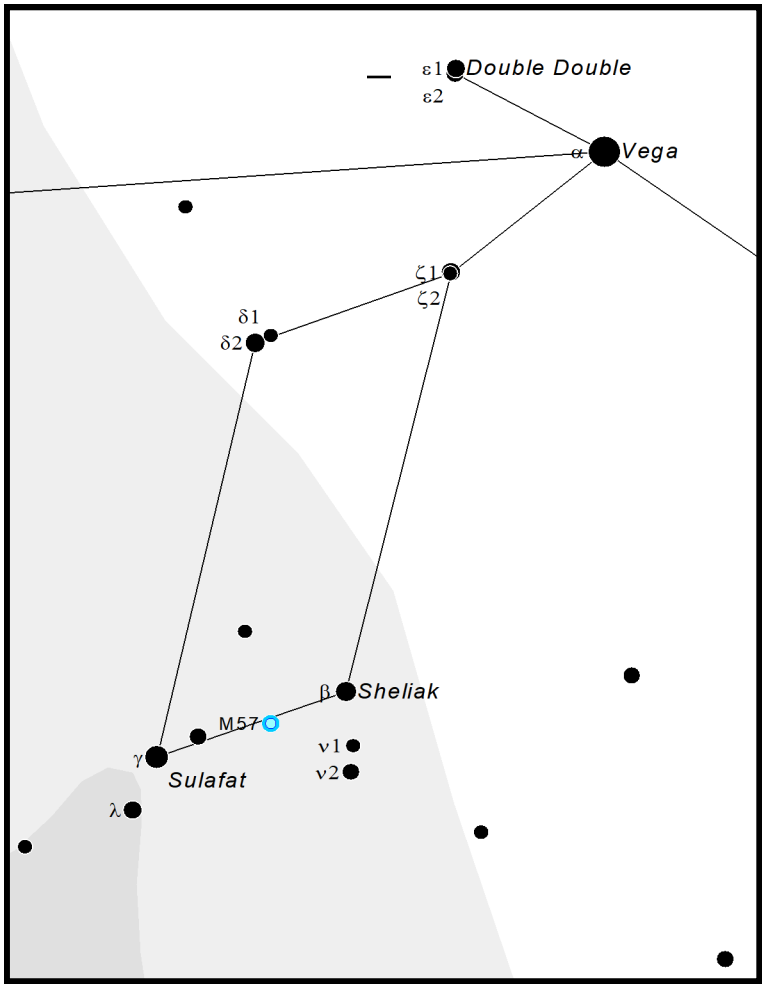
The star **ζ Lyrae** is another tight binocular double. The couple is separated by 44" and can be resolved in 10x50 binoculars. This pair is also a true binary system. **Delta (δ) Lyrae** is an easy naked eye double with a 10' separation. The westernmost star, Delta 1, is a magnitude 5.5 blue star, while Delta 2 is an orange variable which ranges in magnitude from 4.5 to 5.0. Just to the east of Delta 1 is a small cluster of six stars visible in binoculars. This group is associated with the Delta pair.

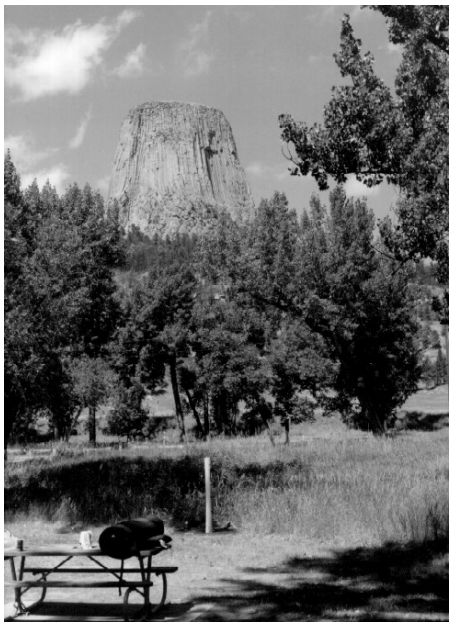
One of the challenges of amateur astronomy is the hunt for "faint fuzzies", - galaxies and nebulae which are often, but not always, best viewed under dark skies with a telescope. When viewed from an urban environment, many of these objects are decidedly faint and quite fuzzy. One such object is **M57**, a planetary nebula better known as the Ring Nebula. When observed from the city using binoculars, it appears as a very faint fuzzy star located about two fifths of the way from **β Lyrae** to **γ Lyrae**. A higher magnification (30x to 40x) is required to begin to resolve its smoke-ring shape.

These interesting objects fit in just a little less than two binocular fields of view. It is rewarding to search for them under often less than ide-

al observing conditions-somewhat akin to fishing for the big ones with light tackle. A few are near the limits of 50 mm binoculars. Best of all, it is an enjoyable and relaxing way to spend a bit of time outside just before retiring for the night.

Gil Raineault





Why is this picture here? Because Kevin Black and Ray Andrejowich decided to head here at the last minute when forecasts showed that the SST would be cloudy. This is Devil's Tower in Wyoming – a one day drive away– and a place of wonderful skies...

Upcoming Events in the Sky

The Moon passes in front of Neptune on the afternoon of September 22nd, but alas is below the horizon at the critical moment for us. Still, it's an easy way to look for Neptune in a telescope or binoculars, because the planet will lie only a short distance to the right of the Moon as it is rising at 7 PM.

On the following night– the 23rd– the Moon will occult Uranus, but this occurs well before moonrise in Manitoba, and the two are well separated by 8 PM when the Moon is low in the southeast.

The equinox: Thursday September 23 at 6:31 AM.

On October 18… at 11:30 PM the Moon begins to cross in front of Uranus again, but this time it's visible from Manitoba. The event is a short one – only a half hour– and the Moon is low in the west, about 20 minutes from setting, but it's an excellent opportunity to find the planet and watch the two bodies close in on each other. If we make a trip farther north, we could see a grazing occultation of the planet, though moonset comes earlier!

Miniature Book Reviews

Meteorites
by Robert Hutchison & Andrew Graham

Meteorites are of interest to just about everybody. This book, written in an easy to read style and liberally illustrated with black and white and color photographs, manages to convey a lot of information, some of it quite technical, without assuming that the reader is already an accomplished geologist or cosmologist. Starting off with the obvious chapter, "What are meteorites", it goes on to explain different types, from whence they come, and where and how they are found. We learn the composition of these arrivals from outer space, and how their ages are determined.

Meteorites have three ages: from the formation of the parent body until some mishap kicked off bits to orbit about the sun as meteoroids; how long they floated in space being bombarded by cosmic winds; and how long they lay on the earth before being found. How can we tell if a meteorite came from an asteroid? A comet? The moon or Mars? It's all there. If you have ever seen a shooting star, made a wish and then wondered about what makes those beautiful, fleeting trails across the sky, then, this is definitely a book for you. As an astronomer, if you want information about the structure, composition and formation of the solid bodies in space, then this book is for you. I rated it "excellent".

Reviewed by: F. Lindsay Price

The Museum of Science and Art Vol. VII

This review is focused on the astronomy chapters. The chapters start with a discussion on how to view the heavens using the eyes with or without a telescope. The chapters discuss star movement, the axis and the poles of stars. Our Solar System is reviewed as far as Neptune, the last planet known at the time.

The stars are separated into categories, fixed stars, constellations and the zodiac. The origin of their names and history surrounding them are discussed. There is an extended discussion of how distances are calculated, using parallax, star magnitudes and their distribution in space.

Vol. VIII

Space outside our Solar System is continued in this volume. Binary stars, star clusters and the motions of the stars are reviewed. The Milky Way and Nebulas are discussed in the book.

Reviewers Editorial Comment

This book is interesting to read when you realize that it was written before confederation. The advances that were being made in the sciences at the same that the voyagers were traveling the lakes and rivers of North America is staggering.

Reviewed by: Diana Wood

THE UNIVERSE: From Flat Earth to Quasar
by Isaac Asimov

Starting with the knowledge and beliefs widely held in 600 BC, Asimov traces the steps by which people expanded their horizons and how the concept of all creation grew from a small flat earth to Einstein's theory of general relativity. He writes of the amazing ingenuity of people who made significant leaps in human knowledge, exemplified by the early Greeks who calculated the size of the earth to a surprising accuracy by measuring the shadows of two sticks. Along the way we learn of stars' life cycles, the age of the earth and solar system and theories on the age and size of all the universe. It is a book of both history and science, and every page is fascinating. I could even understand it. I only wish I could remember everything I read.

Reviewed by Lindsay Price

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 Councilor 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

Three councillors' terms are coming to an end –Jarod Matwiy, Paul Paradis, and Kevin Georgison. Since this is the first term for each of them, they can be re-nominated for office. Any members interested in standing for one of the council positions can contact Jay Anderson (474-1485) to arrange nomination or prevail upon one of the other club members to sign the nomination form on the next page.

COPY ME 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 1999/2000 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 _____ 1999

Signature _____