# Saskatoon Skies

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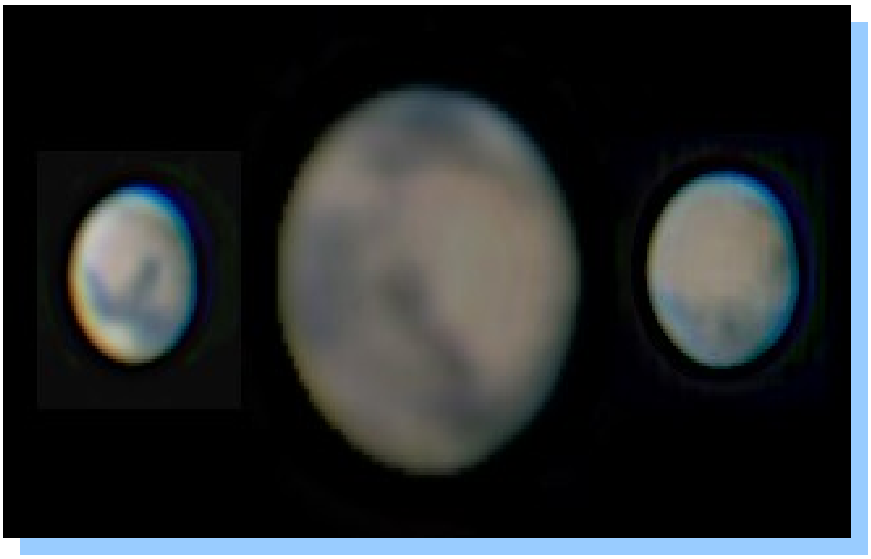
No. 1
January
2008

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


## Mars Returns

Mars made its closest approach to earth in December and was greeted by our local Mars watcher, Al Hartridge. He said that his best seeing was on December 16. At its opposition on Christmas eve, Mars was only 63% of its size that it was in August of 2003 during its historic closest approach, but higher in the sky for us Northern observers and therefore easier to observe, if you didn't mind the cold weather. This might be our best view of Mars until 2016.

*Photo by Al Hartridge*



## In This Issue:

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# Happy New Year!

# MEMBERSHIP? IT'S NEVER TOO LATE TO JOIN!

**Regular: $65.00 /year  Youth: $34.25 /year  Lifetime: $1100**

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**

- knowledgeable & friendly amateur astronomers
- 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
- rent the Centre's Telescopes
  *http://www.usask.ca/psychology/sarty/rasc/telescopes.html*
- discounts to Sky & Telescope Magazine*
- free, no-cost, no-obligation, 3-month temporary membership if you don't want to join right now!

** New subscription or renewal of Sky & Telescope? Send new info or renewal notice, plus credit card # to Norma Jensen, 128 - 4th Street East, Saskatoon, SK S7H 1H8, or email her at* njensen@scs.sk.ca.

## 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** |

## SASKATOON CENTRE'S MAIN OFFICERS:

**President –** Garry Stone, *857-4707*
**Secretary** – Al Hartridge, *373-0034*
**Vice-President** – Barb Wright, *249-1990*
**Treasurer –** Norma Jensen, *244-7360*

## BOTTLE DRIVE & CANADIAN TIRE $

by Darrell Chatfield

If you cannot make it to a meeting but would like to contribute, your Canadian Tire money please call me at 374-9278.

**LIGHT POLLUTION ABATEMENT WEBSITE AT: www.ras.sk.ca/lpc/lpc.htm**

**Newsletter Editors** – Tenho Tuomi, Ken Maher **Copy & Collate**– Les & Ellen Dickson **Labels & Temps** – Mike Clancy **Web Posting** – Gord Sarty

Saskatoon Skies is published monthly by the Saskatoon Centre of the RASC. Distribution is approximately 100 copies per issue. Saskatoon Skies welcomes unsolicited articles, sketches, photographs, cartoons, and other astronomy or space science articles. Articles can be sent by mail in any format to the Centre's mailbox. Submitted materials can be returned upon request. Submissions may also be sent by e-mail – preferred as plain unformatted ASCII text files without line breaks. Images sent by e-mail should be attached .JPGs (.GIFs also accepted). Send e-mail submissions to the editor at <tuomi@sasktel.net>. Please send articles in "generic" formats with simple formatting – one tab at the beginning of paragraphs, one space after commas and periods. A separate by-mail subscription to Saskatoon Skies is available for $15.00 per year. Saskatoon Skies is also posted on our Saskatoon Centre homepage as a .pdf file and can be downloaded free-of-charge. Members may choose to receive the newsletter by regular mail or via the Internet. Articles may be reprinted from Saskatoon Skies without expressed permission (unless otherwise stated), but source credit is requested. DEADLINE for submissions is the 26th of each month. Saskatoon Skies accepts commercial advertising. Please call the editor for rates. Members can advertise non-commercial items free of charge.

# RASC CALENDAR OF EVENTS

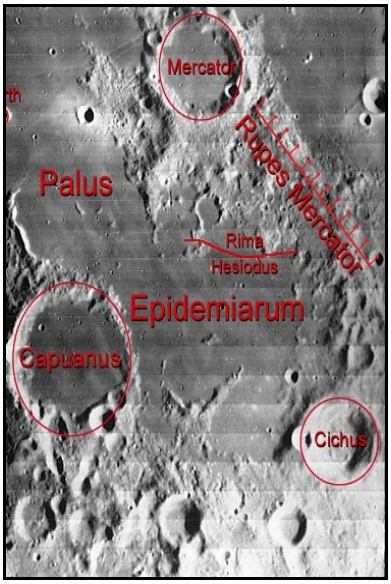
| | | | |
|---|---|---|---|
| **Jan 21** | **RASC Executive Meeting** - 6:30 pm., 175 Physics, U of S. | Garry Stone | 857-4707 |
| **Jan 21** | **RASC General Meeting** - 7:30 pm., 175 Physics, U of S. | Garry Stone | 857-4707 |
| **Feb 1** | **Observers Group** - 7:00 pm., Sleaford Observatory | Larry Scott | 934-5801 |
| **Feb 11** | **RASC Executive Meeting** - 6:30 pm., 175 Physics, U of S. | Garry Stone | 857-4707 |
| **Feb 11** | **RASC General Meeting** - 7:30 pm., 175 Physics, U of S. | Garry Stone | 857-4707 |
| **Mar 1** | **Observers Group** - 7:00 pm., Sleaford Observatory | Larry Scott | 934-5801 |
| **Mar 10** | **RASC Executive Meeting** - 6:30 pm., 175 Physics, U of S. | Garry Stone | 857-4707 |
| **Mar 10** | **RASC General Meeting** - 7:30 pm., 175 Physics, U of S. | Garry Stone | 857-4707 |
| **Mar 29** | **Messier Marathon Warm-Up**, Sleaford Observatory | Larry Scott | 934-5801 |
| **Apr 14** | **RASC Executive Meeting** - 6:30 pm., 175 Physics, U of S. | Garry Stone | 857-4707 |
| **Apr 14** | **RASC General Meeting** - 7:30 pm., 175 Physics, U of S. | Garry Stone | 857-4707 |
| **May 12** | **RASC Executive Meeting** - 6:30 pm., 175 Physics, U of S. | Garry Stone | 857-4707 |
| **May 12** | **RASC General Meeting** - 7:30 pm., 175 Physics, U of S. | Garry Stone | 857-4707 |
| **Jun 9** | **RASC Executive Meeting** - 6:30 pm., 175 Physics, U of S. | Garry Stone | 857-4707 |
| **Jun 9** | **RASC General Meeting** - 7:30 pm., 175 Physics, U of S. | Garry Stone | 857-4707 |

# LUNAR OBSERVATIONS - THE "CLOCK FACE" FEATURE

**by Mike Clancy**

I was doing some lunar observing from my Hidden Ridge deck on the evenings of 25/26Sep07 and found an unusual (to me at least) feature in the south-western limb of the terminator. (On Arnold Schwarzenegger that would be his left leg as long as he was looking North - OK, OK, bad pun!)

I was looking through the objects on Rukl map 63 for the objects on the Isabel Williamson Lunar Observing List, Palus Epidemiarum (the "Marsh of Epidemics", sounds like quite the spot for a posh resort) and Lacus Timoris (the "Lake of Fear", yup, definitely a place you'd want the mother-in-law to vacation). I was observing with the Celestron 90mm Maksutov-Cassegrain using the X-Cell 5mm ocular and a lunar filter.




I observed these features between 2100 - 2130 hrs local time with the winds near still and an ambient temperature of ~8°C. What I saw was what appeared to be a "clock-face" with the time set to 10 minutes before 6. What it really was turned out to be the darkish basin of Palus Epidemiarum with the small crater Cichus to the east at approximately the 5 o'clock position. The "big hand" is actually a small range of mountains or domes, probably the remnants of older, unnamed crater walls while the "little hand" is a portion of a disintegrated crater referred to as "H" just west of Cichus. There is also a barely discernible line running through the clock face from roughly the 1 o'clock to the 9 o'clock positions; this is Rimae Hesiodus which is a wide rille or valley forming an extensive feature in the area.

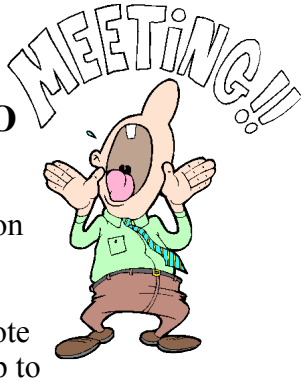
Of note in the system is crater Capuanus which was very indistinct due to its highly eroded walls - few shadows were thrown by them and so the crater was distinguished more by being slightly lighter than the Palus feature. Lacus Timoris was also seen but there were few features to note other than it was more oval than jagged, or so it seemed. Please note: This picture was downloaded from the Lunar and Planetary Institute's website at **http://www.lpi.usra.edu/resources/lunar_orbiter**

My own lunar photography simply isn't up to the challenge at the moment!

# MONDAY, JANUARY 21 7:30 PM
# ROOM 175, U OF S

*There will be an Executive Meeting at 6:30 pm.*

- **50 pictures of comet 17P/Holmes,** by Tenho Tuomi
- **TBA,** by Rick Huziak




## IMPORTANT NOTICES TO ALL MEMBERS

Meetings from February on will be on the second Monday of the month.

The February meeting will have a vote on bylaw amendments to bring us up to date, and for effective running of your RASC centre. It is important that you come to that meeting for we need a quorum to pass those amendments.

# SKY BUYS & MIRROR CELLS

*The Saskatoon Centre's Swap and Sale Page!*

**FOR SALE:** Meade LX90GPS scope and Meade DSI color camera, both for the rock bottom price of $1,000. Bob Johnson bjohnson53@shaw.ca

**FOR SALE:** Intes MN56 telescope. Incredible optics, but could use an improved focuser. Found most of my Messiers with this one. It doesn't look new, because it's not. $450.00. gcharpentier@shaw.ca

### To Make a Charitable donation to RASC Saskatoon Centre

write a cheque out to RASC and place on the bottom that the donation is to the Saskatoon centre – a tax receipt will be issued in December of that year . Mail or give to the current treasurer.

# BOOKS FOR SALE

*by Bruce Brandell, Sales Coordinator*

All items will be available at our next meeting or call 249-1119, or email bruce_brandell@yahoo.com

| *Title* | *Author* | *#Avail* | *Price* |
|---|---|---|---|
| RASC 2008 | RASC | 14 | $14.00 |
| RASC 2007 | RASC | 3 | $5.00 |
| Skywatcher's 08 | S. Shadick | 11 | $18.00 |
| Skywatcher's 07 | S. Shadick | 6 | $5.00 |
| Skywatcher's 06 | S. Shadick | 1 | $2.00 |
| **Miscellaneous** | | | |
| RASC Centennial Mug | | 2 | $5.00 |
| RASC Stickers, blue or white | | lots | $1.00 |
| SSSP 2001 Pin (Summer Triangle) | | 13 | $2.00 |
| SSSP 2002 Pin (Comet) | | 24 | $2.00 |
| SSSP 2006 Pin (10) | | 46 | $4.00 |
| SSSP 2007 Pin (DSP) | | 35 | $5.00 |
| **Books** | | | |
| The Backyard Astronomer's Guide | Dickinson & Dyer | 2 | $45.00 |
| The Beginner's Observer's Guide | L. Enright | 4 | $19.00 |
| Observer's Handbook 2006 | RASC | 5 | $10.00 |
| Observer's Handbook 2005 | RASC | 1 | $5.00 |
| Isabelle Williamson Lunar Observing Program | RASC | 7 | $10.00 |
| Skyways – Astronomy Handbook for Teachers | M.L. Whitehorne | 1 | $16.00 |
| Pocket Sky Atlas | R. Sinnott | 3 | $27.00 |

| *Title* | *Author* | *#Avail* | *Price* |
|---|---|---|---|
| **Books** | | | |
| Binocular Highlights | G. Seronik | 3 | $28.00 |
| Exploring the Sky by Day | T. Dickinson | 4 | $9.50 |
| Exploring the Night Sky | T. Dickinson | 13 | $9.50 |
| Summer Stargazing | T. Dickinson | 5 | $18.00 |
| Night Sky Atlas | R. Scagell | 3 | $27.00 |
| Stargazing with a Telescope | R. Scagell | 2 | $14.00 |
| The Moon Observer's Guide | P. Grego | 4 | $14.00 |
| The Sun Observer's Guide | T. Spence | 3 | $14.00 |
| Stars | Zim, Baker & Chartrand | 1 | $10.00 |
| Firefly Planisphere | Firefly | 2 | $19.00 |
| Firefly Astronomy Dictionary | Firefly | 2 | $14.00 |
| Night Sky Star Wheel | Sky Publishing | 1 | $19.00 |
| Patterns in the Sky | K. Hewitt-White | 5 | $19.50 |
| Scientific American Book of the Cosmos | D.H. Levy | 1 | $48.00 |
| Deep-Sky Wonders | W. Houston | 2 | $24.50 |
| Mars Observer's Guide | N. Bone | 2 | $14.00 |
| Deep Sky Observer's Guide | N. Bone | 1 | $14.00 |
| Practical Astronomy | S. Dunlop | 4 | $14.00 |
| Field Map of the Moon | Sky & Telescope | 8 | $17.00 |
| Moon Map (laminated) | Sky & Telescope | 7 | $10.00 |
| Messier Card (not laminated) | Sky & Telescope | 9 | $5.00 |
| Messier Card (laminated) | Sky & Telescope | 2 | $5.00 |
| Saskatoon's Stone | Mysyk & Kulyk | 10 | $3.00 |
| The Messier Objects | S.J. O'Meara | 1 | $39.00 |

# Creating a Relationship with the Sky - The Horizon Effect Project (Part 1)

**by Kathleen Houston**

I have questions about how the horizon effects us, and what meaning is embedded in our experience. Here is my story.

I am a stargazer and art-maker, and I love to walk. In September my friend Shirley and I went on an all day trek into Grasslands National Park, in southern Saskatchewan. We were heading to an extraordinary tipi ring site. Somewhere between markers, I stopped for a moment. I looked around to notice some familiar hills and situate new landmarks on the next leg of the journey. I was thinking about the me-in-the-land encompassed-by-the-sky experience. I stopped and squinted at the sun and lowered my gaze to the horizon. What is happening? What am I experiencing? I wonder: what effect does the horizon have on me?

It is hard to translate my experience into words. My thinking, energy and wellbeing are changed by the land. What am I connecting to that is usually silenced? Is there such a thing as the Horizon Effect? Away from conventional mapping and habitual life, I feel different.

After consulting the map numerous times together, Shirley and I came to realize that the path does not exist. It is a bonus to find one of the mapmaker's markers. Usually trails would fizzle out into rocks and sand and lose legibility.

On my Grasslands six-hour solitary walk in April, missed and missing markers kept me on the verge of feeling lost. I read the land frequently for clues and stayed on task. This experience reminds me of a stargazing session out at our Sleaford Observatory, where I became lost in the Virgo Cluster of galaxies. The star map locates the deep sky objects to the east of Leo's butt. At the telescope, it is hard to identify which fuzzy galaxy is in the eyepiece. I became disoriented and frustrated. The sheer number of worlds out there is beyond the scope of my imagination. I needed to find an alternate route to the star destination I was looking for.

Out on the recent September walk, the earth and stones crunch under my hiking boots. We are heading east past Eagle Butte, where multiple pathways are created organically. The animal and human footprints and water carved ruts become the vocabulary of the land. The hike in April took me on a snowy east-west route, where general textures of the land stood out, but I lacked detailed footpath information. This alternate west-east fall route to the tipi rings is teaching me to connect both experiences together as an internal mapping process.

In April on the Grasslands plateau, I connected to the idea of geological alignments, where several tipi rings are found. This is where Shirley and I are headed. The native groups must have used the horizon as a calendar. I thought of Chaco culture in New Mexico and their use of the horizon as a calendar marker. They also created a lunar/solar observatory up on Fajada Butte, at a central valley location.

Kathleen Houston November 2007.
Earth Balance Art

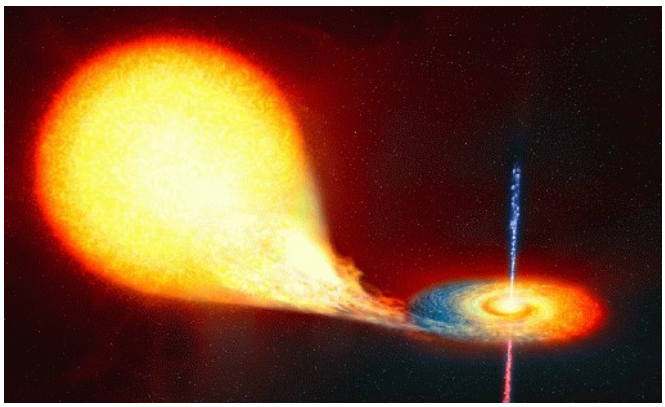
# High Mass X-Ray Binaries: Extreme Variable Stars

**by Gordon Sarty**

Last October I gave a presentation at our monthly meeting on High Mass X-Ray Binary stars (HMXBs). Here I'll give a brief summary of what I talked about; I've promised Tenho this article since October and here it finally is.

HMXBs have become the centre of my astronomy passion (obsession?) as I move towards professional astronomy with the research I do as a professor at the University. My interest in HMXBs began with my first sabbatical leave from my teaching job in the beginning of 2006 with a visit to see Kinwah Wu at the Mullard Space Science Laboratory in England. I was looking for areas of astronomical research that I could do with my background in mathematics and would be fundable by federal granting agencies.

I had been observing variable stars visually for many years (as an amateur), particularly stars known as cataclysmic variables (CVs). So Kinwah suggested that I could become involved in an effort to discover the orbital periods of HMXBs through photometry. I have taken his suggestion seriously. Since then I have been to Siding Spring Observatory in Australia four times to make HMXB observations with 24 inch, 40 inch and 2.3 meter telescopes. I have expanded the HMXB project by collaborating with observers from the American Association of Variable Star Observers (AAVSO), most notably with Rick Huziak who has formed the backbone of that effort.



The AAVSO observers have made tens of thousands of observations so far. I have involved three undergraduate students in the project to date and have made a grant application for two twenty inch telescopes for the University. One telescope will go to Sleaford, the other to Siding Spring. (We will know if the grant application is funded next April.) Finally, I have expanded Kinwah's original vision to measuring the radial velocities (RV) of HMXBs using spectra from the 72 inch telescope at the Dominion Astrophysical Observatory (DAO) in Victoria B.C. To date, I have had three observing runs at DAO.

Rick Huziak has been essential in the success of those runs and will likely be giving a presentation about his experiences with the 72 inch telescope at one of our future monthly meetings. See his JRASC article in last October's issue about his first trip to DAO last April. His latest trip was in December where the weather was considerably better than it was in April. Rick will tell you about the observing trips. Here, I'll give a brief overview of what HMXBs are so that you'll all know what I'm so excited about.

The best place to start is with the CVs. A major class of CVs are known as dwarf novae and they are exciting for variable star observers because they are very active. Dwarf nova are faint at 12 to 14th magnitude for several weeks and then they explode to a much brighter 8 to 10th magnitude for a few days before fading again. So there is lots of action to see if you follow a dozen or so of these CVs every time you get your telescope out. CVs are close binary stars with one star being a white dwarf sucking gas from an ordinary (main sequence) dwarf red star. The dwarf nova explosions are actually a brightening of the accretion disk of gas spiralling down to the white dwarf. As the gas actually hits the white dwarf, X-rays are given off as the kinetic energy of the gas is converted to light.

So, CVs represent a class of X-ray binaries, a star visible to X-ray telescopes, like the Chandra telescope, orbiting the Earth. A second class of X-ray binaries are the Low Mass X-ray Binaries (LMXBs) which are similar to CVs except that instead of a white dwarf, the red dwarf orbits around a neutron star or a black hole and an accretion disk forms around the neutron star or black hole. Neutron stars and black holes have masses in the range of 1.4 to about 10 solar masses (the dividing line is about 3 solar masses) while the red dwarf is only a fraction of a solar mass in weight. Now imagine that we keep the neutron star or black hole and replace the low mass red dwarf with a high mass blue star of 10 solar masses or more. Then you'd have an HMXB.

There are two main classes of HMXB: the supergiant HMXBs (SGXs) and the Be HMXBs (BeXs). Here Be means that the blue star is a B spectral class star with emission (e) lines in its spectrum. The SGXs are imagined to look like the artist's conception shown here. Gas is sucked off the supergiant blue star into an accretion disk around the neutron star or black hole. The orbital periods of SGXs are around 3 or 4 days. So, many of the SGX orbital periods are known because they can be determined from data obtained during a typical professional telescope observing run. The most famous SGX is Cygnus X-1, the first X-ray source to have a confirmed (based on mass) black hole and the first black hole to have a rock song written about it (by the Canadian band Rush).

The orbital periods of the BeXs tend to be a lot longer, tens to a couple of hundred days; so most of the objects in our HMXB program are BeXs. The orbit of the neutron star (usually, rather than a black hole) in a BeX tends to be elliptical, but there are some orbits (like X Per) that are known to be circular. Since the neutron star was formed by a supernova explosion, the difference shows that in one case (the elliptical orbit) the supernova explosion was asymmetrical (giving a kick) while in the other case (the circular orbit) the supernova was more symmetrical (no kick).

With the elliptical orbits, the HMXB experiences an X-ray burst as the neutron star passes periastron (the point of closest approach) and a temporary accretion disk forms. The circular orbit HMXBs tend to be low level, constant X-ray emitters. In addition to the astrophysics of mass transfer and accretion disks, the Be stars themselves present complex and interesting astrophysics. They pulsate, may have star spots and have a "decretion" disk of dust and gas spewing off the equator of the Be star by virtue of its very rapid rotation. The decretion disk is the source of the emission lines seen in the spectrum and the structure of the decretion disk is constantly changing. The changes in the decretion disk produce light curve changes and quite dramatic changes in the spectrum of the star - changes we can see from night to night in our DAO spectra.

Apart from the fact that HMXBs are very cool objects, why are they "scientifically hot"? In other words, why do we think that granting agencies will fund the project? The answer lies in the evolution of HMXBs. Close binary stars in general evolve differently from single stars because of the exchange of mass between the two stars. HMXBs also experience two supernovae in their lifetime. Supernovae provide the cosmos with all the heavier elements and HMXB supernovae can be physically different from single star supernovae.

For example there is strong evidence that symmetrical supernovae can only happen in close binary stars. After the supernovae we are left with binary neutron stars, or binary black holes (or a mix) that are strong emitters of gravitational radiation and, when they merge, will give rise to short-duration gamma-ray bursts. Short-duration gamma-ray bursts have recently been shown to be due to neutron star mergers (long-duration gamma-ray bursts are believed to be a powerful type of supernova) so their connection with HMXBs is of some interest.

Gravitational wave telescopes are the next big thing for observing the universe. So the future of astronomy twenty years and more down the road will have a large focus on gravitational waves and where they come from. Understanding the astrophysics of HMXBs will therefore provide the foundation of some astrophysics that we can only guess about now, astrophysics that our kids and grandkids will be fascinated by.

# Ron's "Other" Observatory

**by Ron Waldron**

In the summer edition of Saskatoon Skies, I showed you my new observing shed that my wife and I built to house my new telescopes.

At the December potluck social, I was sitting with the Tuomis and Darrell Chatfield discussing plans for Christmas. The conversation turned to a description of my wife's Christmas Village. Wouldn't you know it - the first question I was asked was if the village included an observatory. You can imagine the surprise when I quickly answered yes to that question.

Thinking I may need to prove its existence, here is a photo of a portion of the village as it was setup this year. The observatory is at the highest point on the top of the hill in the background. Although you cannot see it, there is a sign on the observatory that says "Comet Viewing Tonight".

I'm not sure what size the telescope in the dome is but I would estimate it to be a 1/2 cm reflector :-)

All the best in the New Year to all of you

# National News - January 2008

**by Les Dickson, National Council Representative Saskatoon Centre**

A National Council Meeting was held November 24, 2007 in Winnipeg by teleconference. The main agenda items were outlined in the previous "National News" article published in the November issue of "Saskatoon Skies". Below is a summary of the main items presented and passed at that meeting.

Membership Fee Increase. Council voted in favour of enacting the fee increase to $59 from $55 that was originally passed at the 2007 General Meeting.

2008 Budget. Council voted in favour of the budget developed by the Finance Committee and submitted by the Board Pilot Committee. The more pertinent items of the budget are: a deficit of $20,000; the Executive Committee's Discretionary Fund increased from $5,000 to $10,000 to cover increased costs of legal and accounting professional services; revenues from publications such as the "Observer's Handbook" and the "RASC Calendar" are expected to be $176,000, a drop $15,000; the new software system (iMIS) is expected to come in substantially under budget. It was noted that publication revenue has been dropping since 2003, and that the high Canadian dollar has hurt US sales of RASC publications.

Membership Survey Results. The Membership and Publications Committee presented the results of the Membership Survey carried out in October 2007. Some of the results are summarized here.

Membership in 2007 increased to 4,282, up from 4,138 in 2006 but down from the recent high of 4,887 in 2003. Mississauga and Quebec centres had the largest increases in membership, 74% and 15%, respectively, while Sarnia and Montreal had the largest decreases in membership, 18% and 9%, respectively. Of the 1,499 people who responded, 86% said they would renew their memberships in 2008, 2% said they would not, and 5% were undecided. The remaining 7% were life members.

The members were asked to rank the Society's publications in terms of their "value" on a scale of 1 to 5 (most to least value). The "Observer's Handbook" was ranked 1 or 2 by 76% of respondents, "Sky News" was ranked 1 or 2 by 68% of respondents, Centre newsletters were ranked 3 or 4 by 45% of the respondents, the "Journal" was ranked 3 or 4 by 51% of respondents, and the "Bulletin" was ranked 4 or 5 by 69% of respondents.

The members were given a choice of different scenarios of combinations of fee increases and making certain publications optional. The preferred scenario was that of a fee increase of less than $5 plus making "Sky News" an optional publication available at a reduced subscription fee.

Members supported using non-membership revenues (publications and other) to support RASC programs and projects rather than to subsidize membership fees.

IYA2009. The International Year of Astronomy will be a global celebration of astronomy and its contributions to society and culture. It is an initiative by the International Astronomical Union (IAU) and the United Nations Educational, Scientific and Cultural Organization (UNESCO). The RASC is partnering with the Federation des Astronomes Amateurs du Quebec (FAAQ), the Canadian Astronomy Society (CASCA), the Herzberg Institute of Astrophysics (HIA), the Canadian Space Agency (CSA) and representatives from the media, planetaria and science centre communities to coordinate Canadian activities related to IYA2009. The RASC is calling for proposals for projects to help celebrate IYA2009 from RASC committees and Centres. The RASC is committing $20,000 to be spent in 2008 for such projects, with another $20,000 available in 2009. Information on how to prepared funding proposals can be obtained from your National Representative (me).

David Dunlop Observatory. the University of Toronto has announced its intentions to divest itself of the David Dunlap Observatory. A request for proposals for the lands and buildings has been issued with a reply deadline of February 15, 2008. The David Dunlap Observatory is Canada's largest optical telescope at 74". Dedicated in 1935 it is the enduring legacy of Clarence Chant, a giant in the history of our Society and creator of the Observer's Handbook. The Toronto Centre is leading a project to "develop and promote a proposal to use the David Dunlap Observatory property for a community-based astronomy outreach, education and research facility (the "Observatory Park Project")". It has already put $5,000 towards this effort. RASC National Council voted to pledge matching funds from the Ruth Northcott Fund towards this effort. Additional information on this effort is available from your National Representative.

Other items. A new Centre, the Sunshine Coast Centre based on the west cost of B.C. will be joining the Society once acceptable by-laws have been adopted by the Centre. Our Society Treasurer, Al Whitman, submitted his resignation in October 2007. Al had been Treasurer only since the 2007 GA in Calgary. Nominations are now open for the following Executive positions: President, 1st Vice President, 2nd Vice President, National Secretary, and Treasurer. These positions will be filled at the 2008 GA.

# The Planets This Month, January 2008

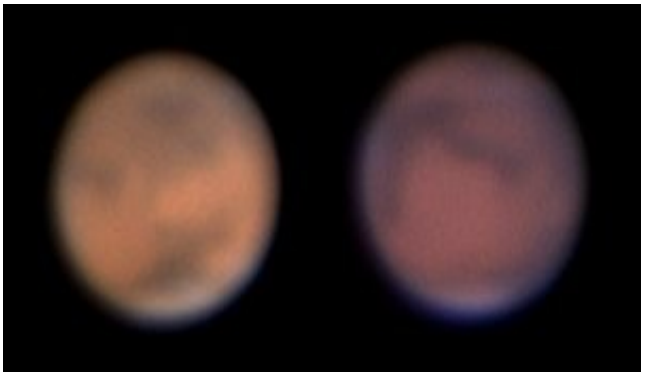
by Murray D. Paulson, Edmonton Centre

New Year's resolution #1, get out and put the eye to the telescope more often! Too many New Year's resolutions are things that you would like to do to better yourself. Rid yourself of bad habits, weight, or some other negative thing in your life, but I would just like to spend more quality time with my dear old friends, the planets...

Our new year starts off with a situation very similar to the 2001 January apparition of **Mercury**. Over the course of the month, Mercury rises on a very favourable ecliptic in the evening sky. We will see the greatest eastern elongation on the evening of January 21st when Mercury sets an hour and 46 minutes after the sun (6:48 p.m. local time). It is 18.6 degrees from the sun and shines at magnitude -0.5. In the eyepiece you will see its 56% illuminated 7" disk, and if you check nearby, you might glimpse the planet Neptune as well.

On the evening of January 22nd, Mercury passes only 16 arc minutes away from **Neptune**. Mercury will pass north of it, and Neptune shines at magnitude 7.8. In the eyepiece you may see its 2.4" disk depending on the sky conditions. There is an interesting resonance for me, because in 2001, I had noticed that Mercury and Uranus were to pass 22 minutes of arc apart on this exact same day in January. A few days later a very new moon sat close to Mercury, but we do not share that luck this year. Mercury is fairly bright in the week before the elongation, magnitude -0.8, but fades rapidly in the week afterwards to magnitude +0.7 one week later. By February 6th, Mercury is in inferior conjunction with the sun.

**Venus** is now sinking down around the bottom of the ecliptic, and is well south in the morning sky. Catch it early enough and you can contrast Venus's brilliant white magnitude -4.0 to the red giant Antares at magnitude +1.0. Look for Antares 7 degrees below and to the west of Venus. In the eyepiece Venus presents a 13.8" gibbous disk at the beginning of January, and shrinks slightly to 12.1" by the beginning of next month.



*Mars on Dec 18 & 21*

The night sky is dominated by **Mars**'s brilliant red presence. Every night I look up to it in the twins, I am amazed at how high it rides into the night sky. Unfortunately the December skies weren't all that kind, only giving me a few good nights for shooting Mars. The subtle continental features and clouds were rewarding on the occasion of good seeing. January starts off with Mars shining at magnitude -1.2 and it shows a 14.6" disk in the eyepiece. We have passed opposition, and Mars shrinks much more rapidly on the way out than it did on the way to opposition. By Early February, Mars will have shrunk to 11.1" and it will shine at magnitude -0.3. Despite this Mars will still dominate the night sky and provide many an opportunity to study the features on the disk. In mid month, the Tharsis and Solus lacus regions will face us in the late evening. By months end Sinus Meridiani will be prominent on the disk and in the first week of February Syrtus Major will again be well placed on the disk.

**Jupiter** is making a return to the morning sky. The one significant event is that on February 1st, Jupiter and Venus are in a close conjunction in the early morning sky. At 7 am local time, the two are only 35 arc minutes apart. It will be quite a spectacular conjunction, and worth starting the day with.

**Saturn** shines at Magnitude +0.5 and sits below the belly of Leo over the month. It rises just before 9 p.m., but isn't well placed until the very late evening hours. By month's end it will brighten up to magnitude +0.3, and in the eyepiece will show a 19.9" disk. It now rises just after 7 p.m., and is well placed for observing later in the evening. Quite a treat for the eye! The rings are quite shallow now, and the moons do not pass so high above the planet.

# 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 40 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, B. Johnson, M. Clancy, L. Dickson*

| | |
|---|---|
| Brent Burlingham | 109 |
| Ken Maher | 109 |
| Ron Waldron | 105 |
| Norma Jensen | 100 |
| Donna May | 97 |
| Brent Gratias | 96 |
| Mike Oosterlaken | 93 |
| Lorne Jensen | 89 |
| Kathleen Houston | 84 |
| Margo Miller | 77 |
| Wade Selvig | 75 |
| Garry Stone | 57 |
| Ellen Dickson | 30 |
| Jeff Swick | 24 |
| Barb Wright | 23 |
| Brian Friesen | 15 |
| Bruce Brandell | 5 |
| Katelyn Metanczuk New! | 4 |

**FINEST NGC CLUB**
**Certified at 110 Objects:**
*R.Huziak, D.Jeffrey, G.Sarty, D.Chatfield, T.Tuomi*

| | |
|---|---|
| Larry Scott | 110 |
| Scott Alexander | 97 |
| Bill Hydomako | 55 |
| Sandy Ferguson | 23 |
| Mike Oosterlaken | 20 |
| George Charpentier | 13 |
| Ken Maher | 10 |
| Mike Clancy | 7 |

**Chatfield BINOCULAR CERTIFICATE (35 Objects):**
*M.Stephens, T.Tuomi, M.Clancy, R.Huziak, K. Maher*

| | |
|---|---|
| Brent Gratias | 36 |
| Mike Oosterlaken | 32 |
| Anna Clancy | 24 |

**EXPLORE the UNIVERSE**
**Certified for Certificate:**
*M.Clancy, T.Tuomi, K Maher, Brent Gratias*

| | |
|---|---|
| Katelyn Metanczuk New! | 15 |

**HERSCHEL 400 CLUB**
**Certified at 400 Objects:**
*D.Jeffrey, R.Huziak, D.Chatfield*

| | |
|---|---|
| Gord Sarty | 251 |
| Tenho Tuomi | 222 |
| Scott Alexander | 117 |
| Mike Oosterlaken | 68 |
| Sandy Ferguson | 18 |

**HERSCHEL 400-II CLUB**
**Certified at 400 Objects:**

| | |
|---|---|
| Darrell Chatfield | 304 |
| 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 and Finest NGC lists, charts and logbooks - check out:
**http://www.rasc.ca/observe.htm**
On-line Herschel 400 List - check out the official site at:
**http://www.astroleague.org/al/obsclubs/herschel/hers400.html**

# Observer's Group Notes

**by Larry Scott**

This has been an entirely depressing time for me. My last observing notes are from November 2nd and although I've been out in my yard once or twice since then, it's been a season of too cloudy, too cold or too busy. Thankfully all the Christmas parties and family gatherings are finally over. My new year's resolution will be to get out under the sky more often.

December's Observer's Group on the 7th was clouded out as usual and I missed the Geminid meteor shower due to family commitments. Looking to the future, there will be dark skies from January 26th till February 9th and I'm planning on getting out to Sleaford at least a couple of times. (Including the Observer's Group on February 1st.)

For those of you wanting to keep abreast of current astronomical activities, I recommend a daily dose of **http://spaceweather.com** .

This site is updated daily and includes some brilliant photo galleries. Check out the photos of Comet 8P/Tuttle passing by M33.

See you at Sleaford.