

# Saskatoon Skies

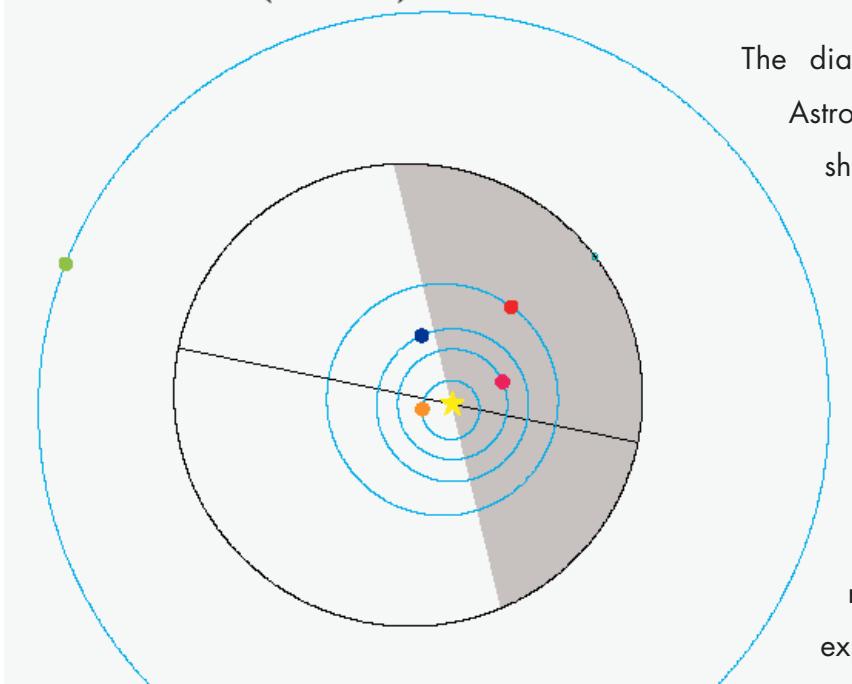
The Newsletter of the Saskatoon Centre of the Royal Astronomical Society of Canada

Vol. 35, No. 2

February 2004

## Asteroid Named After Local Astronomer

### (4143) Huziak



The diagram, prepared by the International Astronomical Union's Minor Planet Center, shows the orbit of newly named asteroid (4143) Huziak. That's right, an asteroid named after our own tireless Centre President Richard Huziak! Huziak is the 5th object from the sun in the diagram which shows the asteroid and the other planets as they were on January 14, 2004 when Huziak was named. See story inside for a complete explanation of the diagram.

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### Saskatoon Centre

The Royal Astronomical Society of Canada

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# Membership?

**It's never too late to join!**

**Regular: \$52.00/year**

**Youth: \$27.50/year**

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 2004**
- **The Journal of the RASC** (bimonthly)
- **SkyNews Magazine** (bimonthly)
- use of the Centre library
- discounts to **Sky & Telescope Magazine**
- discounts of Sky Publishing merchandise
- free, no-cost, no-obligation, 3-month temporary membership if you don't want to join right now!

## About this Newsletter...

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*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](mailto: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.

## 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



by Darrell Chatfield

Canadian Tire Money collected to date is \$34.25. Thank you to all who contributed to our fundraising for the Centre. Please bring your bottles and Canadian Tire Money to the General meetings. I will collect them after the meeting concludes. If you cannot make it to the meeting but would like to contribute, please call me at 374-9278.

2004 RASC Calendar of Events			
DATE	EVENT	CONTACT	TELEPHONE
Feb. 9-23	<b>Zodiacal Lights</b> visible in west after sunset		
Feb. 13	<b>Light Pollution Committee meeting</b> with Cypress Hills in Swift Current – Topic: Dark Sky Preserve (rescheduled)	Rick Huziak	665-3392
Feb. 15	<b>SSSP Committee meeting</b> – Barb Young's – 2:00 p.m.	Les Dickson	249-1091
Feb. 16	<b>Executive meeting</b> – Rm 175 Physics, U of S, 6:30 p.m.	Rick Huziak	665-3392
Feb. 16	<b>General meeting</b> – Rm 175 Physics, U of S, 7:30 p.m. – <b>What to Observe</b> – Darrell Chatfield	Rick Huziak	665-3392
Feb. 20	<b>Chatfield Binocular Challenge</b> observing session – Sleaford Obs. – all welcome, no previous experience needed; bring binocs – dusk	Brent Burlingham	244-9872
Mar. 4/5	<b>Two shadows visible on Jupiter</b> (also on 11/12, 18/19, 22, 29)		
Mar. 14-27	<b>Messier Marathon dark period</b>	Brent Burlingham	244-9872
Mar. 15	<b>Executive Meeting</b> – Rm 175 Physics, U of S, 6:30 p.m.	Rick Huziak	665-3392
Mar. 15	<b>General Meeting</b> – Rm 175 Physics, U of S, 7:30 p.m. – <b>Detecting</b> – Les Dickson	Rick Huziak	665-3392
Mar. 20	<b>Messier Marathon Night</b> at Sleaford Observatory – sunset to sun-up (will likely also go Mar. 21)	Brent Burlingham	244-9872
Mar. 29	<b>Venus &amp; Mercury at greatest eastern elongation</b> (visible in west after sunset) – best view of Mercury in 2004		
Apr. 17	<b>Saskatchewan Winter Warm-up</b> – BBQ with Regina Centre at Sleaford Observatory – Details tba	Rick Huziak	665-3392
Apr. 19	<b>General Meeting</b> – program & location tbd, 7:30 p.m.	Rick Huziak	665-3392
Apr. 21/22	<b>Lyrid Meteor Shower Peak</b>		
Apr. 24	<b>International Astronomy Day</b> – mall display tbd	Brent Burlingham	244-9872
Apr. 24	<b>International Astronomy Day Starnight</b> – location tbd	Brent Burlingham	244-9872
May 4	<b>Rosthern Astronomy Students</b> at Sleaford Obs. (May 6 backup date)	Rick Huziak	665-3392
May 17	<b>General Meeting</b> – program & location tbd, 7:30 p.m.	Rick Huziak	665-3392
May 22	<b>Noctilucent Cloud Season begins</b>	Rick Huziak	665-3392
June 8	<b>Transit of Venus</b> – Canadian East Coast or Eastern Hemisphere		
June 21	<b>General Meeting</b> – program & location tbd, 7:30 p.m.	Rick Huziak	665-3392
July 20-24	<b>AAVSO, ALPO, AL, ASP Annual Meeting</b> – Oakland, CA	Rick Huziak	665-3392
Aug. 12	<b>Noctilucent Cloud Season ends</b>	Rick Huziak	665-3392
Aug. 12-15	<b>Saskatchewan Summer Star Party (SSSP '04)</b> – Cypress Hills Interprovincial Park	Les Dickson	249-1091
Aug. 14-22	<b>Mt. Kobau Star Party</b> – Osoyoos, BC	Jim Failes	(250) 763-6962

**MEETING!!** Monday, Feb. 16, 2004 – Room 175 Physics, U of S\* – 7:30 pm



*Presenting:*  
**What to Observe**  
by Darrell Chatfield

**NEW MEETING LOCATION\***

Darrell will explain not only what to look at, but what equipment and techniques should be used to get the most out of your observing session.

**Note: There will be an Executive meeting at 6:30 p.m. \* SEE LOCATION MAPS AT END OF NEWSLETTER**

## Online Saskatoon Skies Problems

by Tenho Tuomi, [tuomi@sasktel.net](mailto:tuomi@sasktel.net)

Those of you who have updated to Microsoft Internet Explorer 5.5 or newer, or XP which comes with IE 6, will have problems reading the online Saskatoon Skies for that updated browser is not compatible any more with our web site. However there are ways to work around this problem.

If you have a Netscape browser, you can use it to read Saskatoon Skies. It still works.

What always works is to save or download the Saskatoon Skies pdf file first to your hard drive, and then open it separately with Acrobat Reader. Right click on the address and choose "Save As ...", making note of where you saved it so that you can find it later with Acrobat Reader.

If you want to experiment with configuration changes, you could try one of the following which some have found will enable them to open the online Saskatoon Skies normally with Explorer 6:

1. In Internet Explorer / Tools / Internet Options / Advanced / HTTP 1.1 settings, uncheck "use HTTP 1.1".
2. In Acrobat Reader / Edit / Preferences / Options, uncheck "Check Browser Settings When Starting Acrobat".
3. In Acrobat Reader / Edit / Preferences / Options, uncheck "Display PDF in Browser". Computer might have to be rebooted for this change to take effect. This change does not make IE 6 to actually read Saskatoon Skies, just always gives you an option to download it first.

## SKY BUYS & MIRROR CELLS

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

**For Sale: Astronomy 2002**, by Robert Burnham – colour sky charts, planet information, etc. – \$15.00.

**35mm Bausch & Lomb Plossl eyepiece**, fully coated. Excellent shape, in original box with dust caps – \$80.00. Call Darrell at 374-9278.

**For Sale: RASC Royal Centenary coffee mugs**. Pick yours up at the next General Meeting – \$9 each

**For Sale: Millennium Star Atlas**, 3-volume set – \$200; **REALSKY CD's** – \$200. Call Dale Jeffrey at (306) 223-4447 or [dalejeffrey@sk.sympatico.ca](mailto:dalejeffrey@sk.sympatico.ca)

**For Sale: 1.25 inch Antares ALP LPB-1 broadband nebula filter** – more suitable for blocking out light pollution from urban skies than for viewing from my dark site – \$60. Tenho Tuomi, [tuomi@sasktel.net](mailto:tuomi@sasktel.net) or (306) 858-2453.

## Newsletters from Other Centres

by Ellen Dickson

Hello all. As Librarian, I get to see all the newsletters that are coming in. As a new item to the Saskatoon Skies, I would like the opportunity to list here all the newsletters that have been received for the past month. This way, if you want to read them, you will know what is available and what other Centres have been doing.

### January 2004

Saskatoon Skies (Saskatoon Centre)\*

Aurora (Windsor Centre) – *Northern Lights and Solar Spots*

The StarSeeker (Calgary Centre) – *Astroday Hawaii Style or Telescopes & Volcanoes*

The StarSeeker (Calgary Centre) – *January 2004 Astronomy Quiz*

Stardust (Edmonton Centre) – *Newby Makes a Mirror, New Award for Project of the Year*

### December 2003

Saskatoon Skies (Saskatoon Centre)\* – *The Big Event of November*

Scope (Toronto Centre) – *A Perfect Eclipse*

Stardust (Edmonton Centre) – *A Serendipitous Nugget*

### Returned Items as of 2004-01-17

#### May

Skyward (Montreal Centre - English) – *CCD Digital Cameras: Not Just For Family Photos Anymore*

Stardust (Edmonton Centre) – *Money Motions, Stardust Streetcar, Summer Star Party Dates*

#### June

Aurora (Windsor Centre) – *The Big Dipper and a Big Love*

Nova (Vancouver Centre) – *Nothing is Stable*

Scope (Toronto Centre) – *CAO Open House & Picnic (May 31, 2003)*

Stardust (Edmonton Centre) – *Observing at Blackfoot, The Perseids Meteor Shower*

The StarSeeker (Calgary Centre) – *Lunar Eclipse, Space Day (May issue)*

The StarSeeker (Calgary Centre) – *RASC Calgary Centre Annual BBQ (celebrating 45 years)...*

#### August

Nova (Vancouver Centre) – *Where Can I Begin...?*

Scope (Toronto Centre) – *GA by the Sea*

Skyward (Montreal Centre - English) – *H-alpha*

#### September

Aurora (Windsor Centre) – *Analemma Dilemma*

Nova (Vancouver Centre) – *Mars Week*

Regulus (Kingston Centre) – *2003 – The Year of The Observatory Pt. 1*

Stardust (Edmonton Centre) – *Miracles Do Happen!*

The StarSeeker (Calgary Centre) – *Alberta Star Party 2003*

#### October

Aurora (Windsor Centre) – *Mars God of the Block-Party*

Scope (Toronto Centre) – *MarsFest 2003*

Skyward (Montreal Centre - English) – *Mars Strikes Back*

Stardust (Edmonton Centre) – *Star Party Wrap-Up*

The StarSeeker (Calgary Centre) – *A Close Approach of Mars!*

#### November

Nova (Vancouver Centre) – *Merritt Star Quest*

Regulus (Kingston Centre) – *2003 – The Year of The Observatory Pt. 2*

Saskatoon Skies (Saskatoon Centre)\* – *And Now For My First Trick...*

Stardust (Edmonton Centre) – *Rental Scope Program, Diamonds in the Rings*

The StarSeeker (Calgary Centre) – *November 8th Lunar Eclipse*

\* Listed here just in case someone did not get their copy or is a new member.

# Should We Move Meeting Rooms? ...and other Presidential Rambling

by Rick Huziak, President

Circumstances at the City Hospital have caused us to accelerate trying out a new possible meeting room at the University of Saskatchewan. For the last two months, we have had our Executive or General meetings diverted to small and crowded Room 8311 in City Hospital. We have no weight when it comes to getting a room, and we are not allowed to book more than one month in advance. So we have always had the worry of ending up with NO room at all with less than a month to make alternate arrangements. We've been lucky until now.

However, Yannis's generous offer of a new meeting room at the U of S came at the right time. Since we do not want to get caught in the small meeting room again at City Hospital, we have decided to move the February meeting to Room 175 at the Physics Building, University of Saskatchewan. The time and date of the meeting do not change – Monday, February 16, at 7:30 p.m., with an Executive meeting at 6:30 p.m.

To check to see if parking would be an issue, we purposefully scheduled our annual Joint Sleaford Management Committee meeting in Room 175 on Monday, Jan. 26 at 8:00 p.m. We chose this date because we knew it would mimic our General meeting – Monday, starting after students were in class, and as it turned out, it was one of the coldest days of the year. We all parked in the recommended underground car park beneath the Agriculture Building, accessed from Science Road. We found ample spots available, despite the cold weather – I saw at least 8 open spots without even trying; I'm sure there were more. The cost to park is \$2.00 (underground or street meters) for the entire time from 6:00 p.m. to 10:00 p.m. after which parking is free. I think we will not have too much trouble with parking. (The future multi-level parkade now being built near Griffiths Stadium will have a walkway to the Administration Building, easing parking further). Yannis has produced the maps in this newsletter to help everyone find parking and access to the meeting room. For those familiar with the Physics Building, the meeting room is right at the junction of the old and new buildings. Please come and see us in February – I think you'll like the room, and it will help us to decide if we will move permanently.

We've made some progress in the Observing Group with several organized events at Sleaford. Brent Burlingham has organized a Feb. 20th Chatfield Binocular Challenge night – bring your binoculars or scope (you can use your spotter instead), and earn this certificate. On March 20 (and likely the 21st) we'll do the all-nighter Messier Marathon, and on April 17th, we get together with the Regina Centre for a technology tour, a BBQ and an observing night. Come out to all of these fun events!

You'll also see an ad from SkyVue Telescopes in this issue. Please support Blaire Colborne's company and buy your new accessories at his excellent sales prices. Blaire is an awesome supporter of the Summer Star Party, and has contributed expensive door prizes every year!

Finally, Tenho has expanded this newsletter to be more than the normal 10 pages since we knew we would be overweight for mailing. This is because those that receive the newsletter by snail-mail will receive a copy of the current membership list. Those who receive the newsletter via the Internet will receive the membership list as a separate attached file. The membership list is not posted in the newsletter or on the website to prevent unwanted spamming.

## BOOKS FOR SALE

by Bruce Brandell, Sales Coordinator

We have a number of books, calendars and pins left over from SSSP Sales. Call 249-1119 or email [bruce\\_brandell@yahoo.com](mailto:bruce_brandell@yahoo.com)

Title	Author	No. Avail.	Price Cdn\$
RASC 2004 Calendar	Rajiv Gupta, Editor	10	\$ 5.00
Skywatcher's Calendar	Stan Shadick	1	\$ 5.00
Messier Marathon	Howard Tennington	1	\$42.00
Nightwatch	Terrance Dickenson	1	\$28.00
Astrophotography	G.N. Patterson	oodles	\$ 5.00
SSSP 2003 Lapel Pin		5	\$ 5.00
SSSP 2002 Lapel Pin		34	\$ 4.00
SSSP 2001 Lapel Pin		24	\$ 4.00
RASC Centenary Mugs		14	\$ 9.00

The following books can be ordered from Sky Publishing (Sky and Telescope):

**Parallax: the Race to Measure the Cosmos**, Alan W. Hirshfeld. This is a very interesting biographical history of the origins of modern astronomy, bringing to life the long standing controversy, esp. 16th to 19th centuries, between the Ptolemaic and Copernican concepts of the universe, and the astonishing attempts to use parallax to determine distances to the stars.

**June 8, 2004: Venus in Transit**, Eli Maor.

**Transit, When Planets Cross the Sun**, Michael Maunder & Patrick Moore.

**Touring the Universe through Binoculars**, Philip S. Harrington

**The Cambridge Star Atlas**, Wil Tirion

# MERCURY, VENUS, MARS, HUZIAK, JUPITER ...

by Gordon Sarty <gordon.sarty@usask.ca>

## Rewrite the text books.

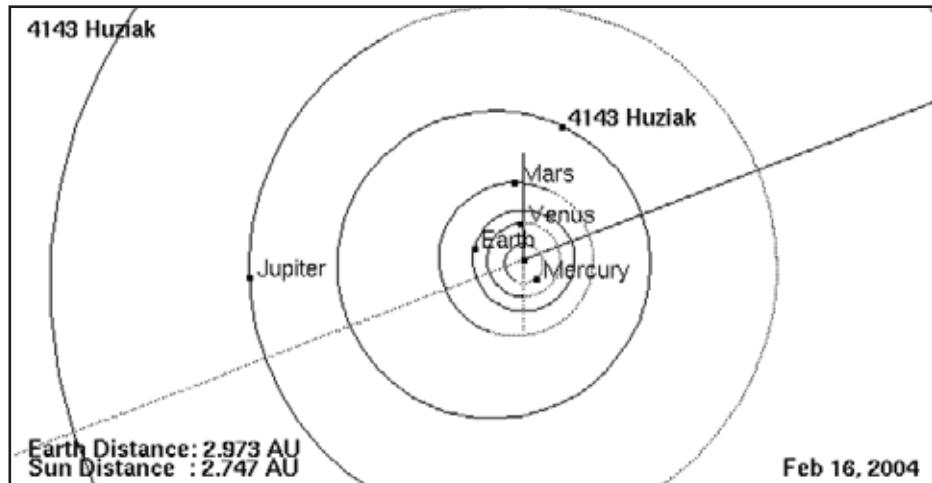
Relearn the order of the planets from the Sun because there's a new kid in the solar system. Asteroid number 4143 Huziak! Actually the asteroid is probably very old but its name is brand new. As of January 14, 2004 a piece of space rock, or more properly a minor planet or asteroid, is officially known as Huziak after our very own Rick Huziak. Huziak (the asteroid, that is) was named by the International Astronomical Union (IAU) in a citation that reads as follows:

*"Richard Huziak (b. 1957) is a Canadian amateur astronomer with wide-ranging interests, which he pursues with a 0.25-m telescope. He has been a most enthusiastic supporter of the Royal Canadian Astronomical Society, Saskatoon Centre, as well as of the American Association of Variable Star Observers."*

Huziak is a main belt asteroid which means that it orbits the Sun, along with thousands of other main belt asteroids, between the orbits of Mars and Jupiter.

In 1778 Johann Elert Bode, along with Johann Titius, formulated a mathematical rule-of-thumb, known as the Titius-Bode Law, for computing the distance of the known planets from the Sun. The law worked well except it predicted that there should be a planet between Mars and Jupiter where none was then known. Now we know the answer: Huziak orbits between Mars and Jupiter! Actually, Ceres was the first asteroid to be discovered, in 1801 by Giuseppe Piazzi in southern Europe (modern northern Italy) with the discovery of several more asteroids following in the next few years. Huziak was discovered in 1981 by L. G. Taff from Socorro, New Mexico.

It is now believed that the thousands of asteroids that orbit between Mars and Jupiter are the remains of a planet that failed to form 5 billion years ago when the other planets were forming out of the dust disk left behind from the formation of the Sun. The Bode-Titius Law, a geometrical series, is believed to be roughly related to the mechanics of planet condensation from the original solar dust disk. I like to think of the main asteroid belt and the Kuiper belt out beyond the orbit of Neptune as the Sun's rings, a grander



version of the rings that we see around the planet Saturn.

So what kind of a rock is (4143) Huziak? Well not much is known yet. It is probably small and covered with dark soil and it doesn't get very bright as seen from Earth. In fact, in January it was somewhere in the constellation of Pisces at 17.8 magnitude. So you'll need real dark skies and maybe a 20 inch telescope or larger to see it. The brightest it ever gets is magnitude 15.1 which will occur in April of 2008. That'll be bright enough to see in the Centre's 12.5 inch telescope at Sleaford. The closest Huziak ever comes to Earth is 1.5 AU where an AU = Astronomical Unit is the distance from the Earth to the Sun (about 98 million miles for those of us that haven't completely gone metric). I guess Huziak knows enough to stay away from crazy humans!

The diagrams here and on the cover of this newsletter show the orbit of Huziak in the Solar System. Both views show the solar system from "above" (technically from the north ecliptic pole). The plane of the Earth's orbit around the Sun is known as the ecliptic and the diagram on the cover shows the tilt of Huziak's orbit relative to the ecliptic by shading the part of the orbit below the ecliptic and not shading the part above the ecliptic. Huziak's orbit is only slightly tilted at 2.0337 degrees. The Moon's orbit, for comparison, is tilted by about 5 degrees relative to the Earth's orbit. Huziak's year, the time it takes to orbit the Sun, is 5.4221 Earth years. The closest Huziak gets to the Sun (the perihelion) is 2.49 AU, which happened last on June 7, 2003, and the farthest it gets (the aphelion) is 3.68 AU.

So remember now, Mercury, Venus, Earth, Mars, Huziak, Jupiter, Saturn, Uranus, Neptune and Pluto. Congratulations Rick! A well deserved recognition of your work.

# Confessions of an Amateur Astronomer: Keeping the Wife Interested! *by Mike Clancy*

**Any amateur astronomer** demanding improved support from his family has to ask just what his expectations are. Is it realistic to expect that you'll be accompanied to a dark site on a cold night for a marathon observing session? Is it realistic to expect that you'll get the go-ahead to spend one quarter of the Family Domestic Product on astronomical equipment? Is it realistic to expect that you'll be spending your vacation at the Saskatchewan Summer Star Party rather than wintering in the Bahamas? Depending on your self and your family, these may, or may not be, completely valid expectations. In my case the answer to most of these questions is negative, but I still feel fortunate. The morning after an observing session I am able recount the more interesting sites I've seen and display any sketches I've made. More often than not I get appropriately positive responses, sometimes accompanied by praise and interest. During evening walks my wife is usually attentive as I point out constellations and any associated objects of interest. From time to time, she will spend a few minutes observing with me in the back yard. Any astronomy related purchases that I make are cautiously supported when reasonable, and flatly refused when they're not. In short, she is supportive of my interest, but she would definitely not stand by as I ignore my family responsibilities. I don't think that it is reasonable to ask for anything more.

If your significant other just flat out refuses to take any interest in what you're doing, doesn't bother to look when you point something out in the sky, doesn't even politely glance at a sketch or photograph that you slaved over, doesn't hide a snicker when you so much as mention the coming lunar eclipse, and doesn't disguise hateful looks at your collection of eyepieces, then there can be only two possibilities: your significant other is psychotic or you have repeatedly screwed up. I'll give you a hint: It's probably the latter. Remember the Possum Lodge Credo: "I'm a man, and I can change if I have to, I guess!"

The moral of the story: Don't get involved with a psychotic and don't screw up. But let us say that you have screwed up, admitted it, apologized for it, that you are addressing the mistakes you've made, and that you are not going to make them again. (Yeah, like they haven't heard that before!) Then just stick to your guns, be patient, and the situation will improve. In time your significant other will forgive you and may even take a moment to ponder this hobby that you are so interested in. In only a few short decades you may find the two of you out enjoying long clear nights of observing.

But what if you are not that patient (or that young)? Well, then you have got to find a way to kick-start the healing

process. Firstly, make sure that you have in fact addressed the problems. Nothing I'm about to say will help you if you haven't. In general, as you try to introduce someone you care about to the hobby, give credit where credit is due, be as supportive as possible, and don't ever talk down to your significant other. These apply to non-astronomical pursuits as well. Share your equipment until they've decided they want to try their own luck as it keeps the cost down and lets you demonstrate your enthusiasm and prowess. Mind you, only ask her to come out and look when you've got that "faint fuzzy" centered and not bother with all the waiting about while you fiddle endlessly.

In the next installment I'll talk a bit about improving those relationships by gently bringing the partner on-side. Sooner or later they'll come around! Anna and the boys are now quite supportive although not ready to join the ranks just yet; I'll tell you how that happened.

## More Boneheaded Moments in Astronomy

*by Rick Huziak*

The amount of media preparedness in this country astounds me on a daily basis! Did any of you watching the Toronto Molson Indy Cart Series car race on last year, when Global reporter Lori Belanger interviewed Canadian astronaut Chris Hadfield?

Obviously excited about her very first encounter with a real astronaut, she blurted out the one and only question she had prepared for the day:

"Chris. Can you top walking on the moon in the rest of your life?"

(That's right – the exact quote – I played the tape back over and over!)

Dr. Hadfield handled the question without a flinch, though I'm sure his gut died like all of us go through when asked a bone-headed question during a live interview. He calmly changed the topic and brought the interview more into the context of the day, explaining his experiences with the shuttle blast-off in terms of g-forces and acceleration; comparing the shuttle flight to the forces felt in the Indy cars!

Oh, brother! News would often be much better if reporters weren't involved in any way! (And I apologize if I spelled Lori's name wrong. I didn't bother to do my research either!)



# The Planets this Month, February 2004

by Murray D. Paulson, Edmonton Centre

The planet **Mercury** starts off the month coming from a most favorable morning apparition and is heading on its way back to the sun. I have word from Saskatoon that a few amateurs there caught a glimpse of Mercury during this elongation. It passes through Sagittarius and Capricorn as it dwindles in size to 5.5" on its journey to the other side of the sun. Mercury will be in superior conjunction with the Sun on March 4th, when it will be 1.5 degrees below the sun.

I am always delighted on my ride home from work to the sight of **Venus** in the south west. It has really become prominent since Christmas. As we head toward spring, the ecliptic will rise and shift north, carrying Venus on the crest of a wave. In the beginning of the month, Venus shines at magnitude -4.1 and will show you a 15" gibbous disk. By the beginning of March, Venus has grown to 18.5" and will now be almost 44 degrees from the sun and has brightened subtly to magnitude -4.2. It will show a slightly gibbous phase in the eyepiece. Wear your sun shades!

My last look at **Mars** with a scope showed it's tiny 7.3" gibbous disk with some subtle dusky markings. It was nestled in the "V" of Pisces on one of our few clear weekend evenings. At the beginning of February, Mars sits at 1.44 AU distance and shines at magnitude 0.8. It will present a 6.5" gibbous disk in the eyepiece which will shrink over the month to 5.6" as the ecliptic carries it higher and further north.

At the beginning of February, **Jupiter** shows a 43.4" disk in the eyepiece, and it shines at magnitude -2.3 from its vantage below Leo the Lion. Rising at 8:00 pm, it has become an evening object, but you must wait till after midnight to see it transit the meridian. By the beginning of next month, Jupiter rises just after 6 pm and it grows slightly in the eyepiece to 44.2". Its brightness increases slightly to magnitude -2.5. Jupiter passes 4 arc minutes above the 4.6 magnitude star, chi Leonis on the night of February 28. There are a few close associations with the moon over the next month, the first being on the evenings of Feb. 8 & 9. On these evenings you will see Jupiter 7 degrees from the Gibbous moon. Almost one lunar month later on March 5 & 6, we see a repeat of the event. This is not a particularly good photographic opportunity due to the distance of the moon, but it still presents a fine sight in the evening sky. Getting on to the Jovian moons, we have a number of good evenings with interesting events and one evening with a dual shadow transit coming up over the next month. We even get another Callisto event, the clouds snatched the last ones for me! There are many events listed in the observers handbook, but the ones I detail are my pick of the lot. The 5th of March is the night of the dual event.

Early in the month, **Saturn** sits high in the sky just after darkness falls, and is a fine object to seek out with your

scope. It will show you a 20.1" disk shining at magnitude -0.2 with a host of moons arrayed about it. We are a month past opposition, so the shadow of the planet on the rings will be again prominent. By early March Saturn will have shrunk a bit in the eyepiece to 19.1" and it will shine at magnitude 0.0. We have a close conjunction of the Moon with Saturn on the night of Feb. 29 when the moon will sit 4.5 degrees above Saturn. Last year we had all those chances to see the moon occult Saturn thwarted by bad weather. Saturn has moved and the moon's orbit has precessed, so we will now get to see just how high the inclination of the moon's orbit will carry it above Saturn. Well, maybe...

Till next month, clear skies.

## Jovian Moon Events

Note UT is 6 hours later than time here in the Central Time zone. For example February 13 at 5:37 UT occurs on February 12th at 11:37 pm (23:37) local time.

DATE	H	MIN	MOON	EVENT
7-Feb	2	40	IV	Sha end
7-Feb	4	11	III	Sha start
7-Feb	5	4	IV	Tra start
7-Feb	6	42	III	Tra start
7-Feb	7	39	III	Sha end
7-Feb	7	45	IV	Tra end
7-Feb	9	58	III	Tra end
14-Feb	8	8	III	Sha start
14-Feb	10	1	III	Tra start
20-Feb	2	46	II	Sha end
20-Feb	3	23	II	Tra end
20-Feb	3	34	I	Sha start
20-Feb	3	53	I	Tra start
20-Feb	5	50	I	Sha end
20-Feb	6	8	I	Tra end
27-Feb	2	30	II	Sha start
27-Feb	2	50	II	Tra start
27-Feb	5	22	II	Sha end
27-Feb	5	28	I	Sha start
27-Feb	5	37	I	Tra start
27-Feb	5	39	II	Tra end
27-Feb	7	43	I	Sha end
27-Feb	7	51	I	Tra end
5-Mar	5	5	II	Tra start
5-Mar	5	7	II	Sha start
5-Mar	7	20	I	Tra start
5-Mar	7	21	I	Sha start
5-Mar	7	54	II	Tra end
5-Mar	7	59	II	Sha end
5-Mar	9	35	I	Tra end
5-Mar	9	37	I	Sha end

## **Minutes of the EXECUTIVE MEETING**

Jan. 19, 2004, 6:30pm – Room 8313, City Hospital

### *Recorded by Al Hartridge, Secretary*

1. Adoption of the agenda, moved by Mike Clancy and seconded by Brent Burlingham and carried.
2. Adoption of the minutes of the previous meeting of December 15th, 2003. Moved by Ron Waldron and seconded by Ellen Dickson and carried.
3. Treasurer's Report: SSSP 2003 finances are basically closed out.
4. Secretary's Report: Annual Report to National will be filed before the end of January.
5. SSSP Committee Report: The profit made at the last SSSP will be close to \$1500.00.  
  
The guest speaker for 2004 will be Joshua Roth, the senior editor for Sky and Telescope. The information regarding the next SSSP will go up on the web site soon. Bill Hydomako will be attending a meeting in Calgary in the near future and will pass out handouts re: the star party. The banquet will be replaced this year by a brunch and by an evening barbecue at the Meadows that will be catered. The star party has also been listed by Sask. Tourism.
6. Fundraising: Saskatoon Foundation will be approached again.
7. Observing and Activities: Brent Burlingham will organize a Chatfield binocular list challenge in February. Also a Messier Marathon will be held in March at the Sleaford site. Brent would like members to send him information on what astronomical activities they have been up to this winter and a record of their observations to add to the various lists. He also stated that Astronomy Day will be April 24th.
8. Honorariums: will be kept by Ron Waldron for his time spent at Brightwater camp, etc.
9. Slide show and scripts: will be put together by Rick Huziak, Ron Waldron and Marcia Klein and these can be used by anyone wishing to.
10. Sask. Winter Warm up between Saskatoon and Regina Clubs will be held on April 17th at Sleaford.
11. Membership: there are 81 members at present which includes 6 Youths. Three memberships are in arrears at present. A poor response to the Youth Group questionnaire occurred.
12. Meeting adjourned at 7:30 p.m.

## **Minutes of the GENERAL MEETING**

Jan. 19, 2004, 7:30pm – Room 8313, City Hospital

### *Recorded by Al Hartridge, Secretary*

1. Announcements:
  - Blair Colborne of Sky Vue Telescopes, is having a sale, Feb.12 - 15.
  - The next SSSP meeting will be held at Barb Young's on Feb.15 at 2:00 p.m.
2. Presentations:
  - Special award to Tenho Tuomi of the "Exploring the Universe" certificate.
  - Rick Huziak has had an asteroid named after him. Information report at the meeting by Gord Sarty.
  - Les Dickson, "Detecting Earth-like Planets Around Other Stars."
  - Ron Waldron "A Tour Through the Universe" – a planetarium show produced by Ron.
3. Adoption of the agenda: moved by Les Dickson and seconded by Ellen Dickson and carried.
4. Adoption of the Minutes of the previous meeting. Moved by Chris Martin and seconded by Ellen Dickson and carried.
5. SSSP Committee report: A profit of approximately \$1500.00 made from last year's star party.  
  
The guest speaker for the coming SSSP will be Mr. Joshua Roth, the Senior Editor for Sky and Telescope. He will speak free of charge – a considerable saving to our club. The traditional banquet on Saturday evening will be replaced by a noon hour brunch and there will also be a barbecue at the Meadows at 5:00 p.m., that will be catered.
6. Meeting Place: the February meeting will be held in the Physics building, room 175, at the regular time.
7. Mars photos are wanted for the Journal cover. These need to be in by the end of January.
8. Observing /Activities Coordinator report: Brent Burlingham would like people to send in a record of their observations to update the lists and would like info on what members have been doing. He has also designated Friday, February 20th as the Chatfield Observing List Challenge at the Sleaford site. March 20th will be a Messier Marathon at Sleaford. Astronomy Day will be held in April at one the local malls.
9. Sask. Winter Warm-up – will be held at Sleaford with the Regina Club on April 17th.
10. Sales: Calendar prices have been reduced. Mugs still available at \$9.00 each.
11. Meeting adjourned at 9:50 p.m.

# The Messier, H-400 & H-400-II, FNGC, Binoc & EtU Club

**Join the Club! Observe all 110 Messier, 110 Finest NGC, 400 Herschel I or 400 Herschel II, Explore the Universe, or 35 Binocular objects and earn great OBSERVING CERTIFICATES!**

## MESSIER CLUB

Certified at 110 Objects:

*R. Huziak, G. Sarty, S. Alexander,  
S. Ferguson, D. Jeffrey, D. Chatfield,  
B. Christie, K. Noesgaard, M. Stephens,  
B. Hydomako, T. Tuomi*

Mike Oosterlaken	93
George Charpentier	90
Lorne Jensen	84
Mike Clancy	81
Wade Selvig	75
Brent Burlingham	58
Brent Gratias	39
Kathleen Houston	Up! 30
Les Dickson	28
Ellen Dickson	17
Brian Friesen	15

## FINEST NGC CLUB

Certified at 110 Objects:

*R. Huziak, D. Jeffrey, G. Sarty,  
D. Chatfield*

Scott Alexander	97
Tenho Tuomi	46
Sandy Ferguson	23
Mike Oosterlaken	20
Bill Hydomako	20
Mike Clancy	4

## Chatfield BINOCULAR CERTIFICATE

Certified at 35 Objects:

*M. Stephens, T. Tuomi, M. Clancy*

Mike Oosterlaken	32
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## EXPLORE the UNIVERSE

Certified for Certificate:

*M. Clancy, T. Tuomi*

## HERSCHEL 400 CLUB

Certified at 400 Objects:

*D. Jeffrey, R. Huziak, D. Chatfield*

Gord Sarty	251
Scott Alexander	102
Mike Oosterlaken	68
Sandy Ferguson	18

## HERSCHEL 400-II CLUB

Certified at 400 Objects:

Richard Huziak	196
Darrell Chatfield	117

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 Binocular List & Herschel 400 lists will be available at each general meeting or can be mailed out on request to distant members. Each month I'll be posting updates.



## RASC Observing Group Notes

A reminder to e-mail or phone me ([brent.burlingham@usask.ca](mailto:brent.burlingham@usask.ca), (306) 244-9872) with updates on your observing activities.

Only one new observing total for this month – apparently the cold and annoyingly consistent cloud cover have everyone in hibernation mode.

Two upcoming Observing Group sessions at Sleaford to note on your calendars:

### Friday, February 20th – Chatfield Binocular Challenge.

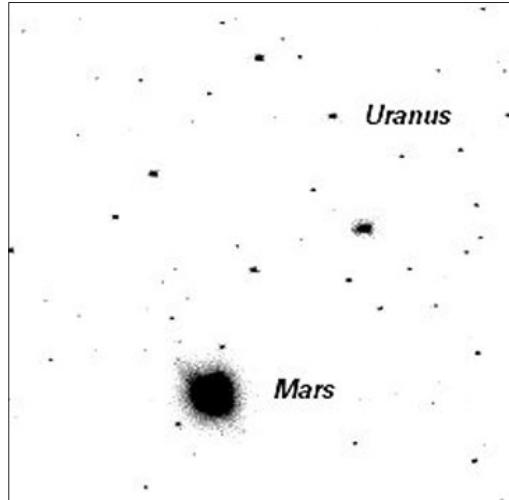
Daryl Chatfield's list of 40 objects (35 of which are required for a certificate) will be available. Rules are: binoculars only, and no help from others finding the objects.

### Saturday, March 20th – Messier Marathon.

Attempt all 110 Messier objects in one night.

Please come out and enjoy the dark skies and wonderful facilities (including a cozy warm-up shelter) at Sleaford. Clear Skies!

Mars and Uranus 4 degrees apart,  
September 30, 2003.  
Picture by Editor



# The AAVSO Year-end Report is out – how did Canadians fare?

by Richard Huziak <[huziak@sedsystems.ca](mailto:huziak@sedsystems.ca)>

*from the RASCals Discussion List  
<rascals@lists.rasc.ca>*

**Date: Wed, 21 Jan 2004 00:58:34 -0600**

Well – the AAVSO year-end report is (mostly) out and it gives us a first look at how the Great Canadian Observing Challenge did. First off, I'd like to thank the approximately 35 RASClst subscribers that took up the challenge and actually observed a variable star (or many variables in some cases) AND took the effort to report their observations to the AAVSO. Bravo! You did a wonderful job. Janet Mattei, the AAVSO Director, has commented several times on the fine work you have done, and the AAVSO head office has certainly noticed the influx of new observers and their observations! Several others intended to observe or never reported their results on time – thanks anyway – we'll get there next time!

I'd also like to thank specifically the efforts of Geoff Gaherty, Vance Petriew, Alister Ling, Dan Taylor, and Pat Abbott who have been promoting variable star observing and mentoring new observers with first-hand help or promotion through talks. I'm sure I've missed a few others – if so, I really do appreciate all of your efforts! Thanks a lot!

So... here's the poop!

**USA** – 271 observers – 133,800 observations

**Hungary** – 72 observers – 17, 581 observations

**Canada** – 57 observers – 26,194 observations  
(Australia, Belgium & USA had more observations per country than Canada)

**Germany** – 38 observers – 22, 588 observations

Remember that the goal was to have 100 Canadians reporting, so the Challenge fell significantly short of the target. All in all, we still did a VERY good job! We were 7th in the # of observers category when we started. But we ended up 3rd in observers, and 4th in totals. And for the first time ever, we beat every US States' totals. Not bad. A full summary of the GCOC will appear in the Journal, sometime soon.

Looking at this in reflection, some things come to mind:

- if only 1 in 20 RASC members observed variables stars, we'd equate to the USA total number of observers and give them a run for their (falling) money! Hmm... The Canadian Association of Variable Star Observers – CAVSO! Sounds good, but it's up to YOU!
- Some of you missed the point of the GCOC, some of you got it. The point of the challenge was to expand your observing horizons – to have an alternate observing plan (of any kind!) if you couldn't do deep sky or whatever type of program you currently do. This was reflected in the diverse types of Challenges I had to observe in return – great and interesting challenges, (and admittedly, there are 2 challenges I did not complete). However, EXPAND your observing horizons....
- and to continue – KEEP them expanded. I'd just love to see the SAME observers report a few more variable star observations THIS year to the AAVSO. You did it once, you can do it again! (And I can guarantee the star you observed has changed brightness by now! – It needs another observation!) New blood is always very welcome. You don't need a Challenge to jump on board!

If I do this challenge again – the stakes will go up. I think we'd go to a minimum of 10 observations per person, and a target of... HOW MANY people did you say? Well – we'll see. Since the sky is clear across the country due to the horrendous cold – what else do you have to do besides observe? Grab the scope and make a few estimates! Heck – Betelgeuse is brightening – why not estimate that naked eye?

<http://www.aavso.org/observing/charts/> and then request *alpha Ori*

There are 4000 other charts you can download as well – the sky's the limit!

[http://duke.usask.ca/~ges125/rasc/The\\_Great\\_Canadian\\_Observing\\_Challenge.htm](http://duke.usask.ca/~ges125/rasc/The_Great_Canadian_Observing_Challenge.htm)

Best wishes to everyone, no matter what your observing program and thanks again!

# RASC Saskatoon Centre Financial Report

**The Royal Astronomical Society of Canada  
Saskatoon Centre Incorporated  
Balance Statement  
September 30, 2003 and 2002**

**The Royal Astronomical Society of Canada  
Saskatoon Centre Incorporated  
Balance Statement  
September 30, 2003 and 2002**

	2003	2002	2003	2002
<b>Current Assets:</b>			<b>Income:</b>	
Cash	18,740.82	14,852.10	Membership fees	2,078.19
Telescope fund	2,227.94	2,226.52	Life member grants	52.80
Raffle account	325.71	395.71	Member surcharge (newsletter)	15.00
Inventory books	388.53	189.17	Member surcharge (key fee)	5.00
Deposit Cypress Hills	400.00	400.00	Donations	862.98
Total current assets	22,083.00	18,063.50	Cypress Hills Star Party	9,034.81
<b>Fixed assets @ cost:</b>			Books & calendars	799.50
Office equipment (see Note e)	0.00	2,225.00	Telescope rentals	40.00
Sleaford observatory	7,840.01	7,840.01	Interest	2.99
Warm-up shelter	10,273.08	10,273.08	Coffee fund	83.00
	18,113.09	20,338.09	Mug & pin sales	624.00
Less accumulated amortization	13,416.95	12,905.36	Total	13,598.27
	4,696.14	7,432.73		12,727.74
Library	1.00	1.00	<b>Expenses:</b>	
Equipment	7,326.00	7,326.00	Fees to National Office	208.00
Total fixed assets and equipment	18,113.09	14,759.73	Newsletters & postage	402.82
Total assets	4,696.14	32,823.23	Educational Activities	283.76
<b>Liabilities and Equity:</b>			Star Party	6,150.64
Deferred Revenue	388.53	189.17	Books & calendars	939.17
Total current liabilities	388.53	189.17	Library	—
<b>Equity:</b>	35,575.25	32,634.06	Office Administration	158.23
(per accompanying statement)			Insurance	393.00
			Sleaford observatory	571.75
			Sleaford (to U of S)	482.30
			Miscellaneous	188.46
			Total	9,778.13
				10,553.42
			Surplus before amortization	3,820.14
			Amortization	511.59
			Net income	3,308.55
				1,472.73
			<b>Equity, beginning of year</b>	32,266.70
			<b>Equity, end of year</b>	35,575.25
				32,266.70

## Notes to Financial Statements – September 30, 2003 and 2002

### Significant Accounting Policies

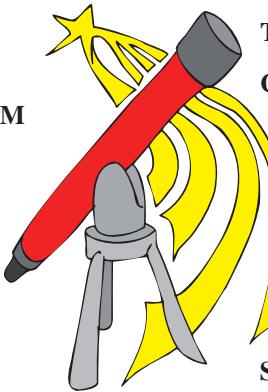
- a) Observatory and buildings are recorded at cost and are amortized using the straight-line method over 20 years.
- b) Observing equipment is recorded at cost and is not amortized.
- c) Library items are carried in the accounts at a nominal value of \$1; new additions are expensed during the current period.
- d) Office equipment is recorded at cost and amortized using the straight-line method over 3 years.
- e) Value of office equipment in 2002 was improperly amortized. Current value is \$0.00.

# Hug Your Telescope Valentine Sale



## EYEPIECES:

ALL TELEVUE PLOSSL EYEPIECES ON SALE  
 ALL TELEVUE RADIAN EYEPIECES, \$295.00 EACH  
 ALL TELEVUE PANOPTIC EYEPIECES ON SALE  
 ALL TELEVUE NAGLER EYEPIECES ON SALE  
**TELEVUE 8-24mm. CLICKSTOP ZOOM EYEPIECE \$290.00**  
 ALL VIXEN LV SERIES LANTHANUM EYEPIECES, FROM \$150.00 EACH  
 ALL VIXEN LVW SERIES (65 AFV, 20mm. LER.), FROM \$290.00 EACH  
**VIXEN LANTHANUM 8-24mm. ZOOM EYEPIECE \$215.00**  
**OMCON SUPER PLOSSL 7.5;10;12.5;17; 20; 26mm. YOUR CHOICE \$40.00 EACH**  
**OMCON SUPER PLOSSL 32mm. OR 40mm. YOUR CHOICE \$45.00 EACH**  
**ANTARES 15mm. ULTIMA 5 ELEMENT, MC. PLOSSL, \$85.00 EACH**  
**ANTARES 40mm. ERFLE, 65 AFV.; MC.; 6 ELEMENT. \$100.00 EACH**  
**ANTARES SPL 20mm. MC. \$30.00**  
**ANTARES 10mm. illuminated reticule, guiding eyepiece \$150.00**  
**ANTARES 5.8; 8.6; 14; 19; 25mm. MC. 70AFV, ALL 5 WITH CASE \$300.00**



## TELESCOPES:

**VIXEN: D=102mm. F9, ED GLASS REFRACTOR C/W GP MOUNT \$3400.00 incl .GST**  
**VIXEN: D=114mm. F5.3, ED GLASS REFRACTOR C/W GP MOUNT \$4900.00 incl. GST**  
**TELEVUE PRONTO + TELEPOD MOUNT \$2150.00**  
**CELESTRON 130GT. GO-TO F5 REFLECTOR \$500.00**  
**SKYWATCHER 13065-EQ2; F5 REFLECTOR \$330.00**  
**SKYWATCHER 1309-EQ2; F6.9 REFLECTOR \$260.00**  
**SKYWATCHER 200mm. f6, DOBSON \$490.00 EACH**  
**SKYWATCHER 250mm. f5, DOBSON \$800.00 EACH**  
**SKYWATCHER REFRACTORS ALL ON SALE**

## OTHER STUFF: (Phone for more stuff!)

**FUJINON Bino's; 7x50 FMT-SX \$800.00 incl.GST; 10x70FMT-SX \$1000.00 incl. GST**  
**FUJINON Bino's; 10x70 MT-SX \$770.00 incl. GST**  
**ANTARES Bino's; 11x80 or 15x80 MC. Japan, YOUR CHOICE \$395.00 EACH**  
**LOSMANDY GM8 MOUNT \$2100.00**  
**NEBULA FILTERS; THOUSAND OAKS; BROADBAND, NARROWBAND, OXYGEN III, H-BETA; 1.25" \$120.00 EACH, 2" \$240.00 EACH**  
**ANTARES NEBULA FILTER; 1.25" \$75.00, 2" \$130.00**



## SKY VUE TELESCOPES



BLAIR COLBORNE



144 Edgehill Cl. N.W.  
 Calgary, AB T3A 2X1  
 (403) 239-8386  
 email: [skyvue@telus.net](mailto:skyvue@telus.net)

Telescopes, Binoculars, Astronomical Accessories

Sale prices in effect  
**February 12, 13, 14, 15 only**

Sale prices apply to  
**in-stock merchandise only.**

Many items are one of a kind.  
 Shop early for best selection.

## Venus on the Half Shell *by Murray D. Paulson*

**Where will you be on June 8 2004?** I will be in the Mediterranean region setting up my scope to watch a most rare event; the Transit of Venus. Eclipses of the sun are commonplace in comparison; spectacular, but commonplace none the less! About every 117 years the planet Venus passes directly between the planet Earth and the sun. At that time there are two events spaced 8 years apart, then a long absence of another 117 years before the next pair of events. No person alive today has seen such an event. The entire transit event lasts for about 6½ hours as Venus traverses its chord across the sun. So what is the big deal anyway? We only get about 6 or so hours of night in June, and what's the chance that we would miss it altogether? You guessed it! Bull's eye! Nada! Shutout! The planet Venus enters upon the sun shortly after our local sunset here in western Canada, and pops back off the sun's face just around sunrise on the Saskatchewan-Manitoba border! Dang!!! You can see some part of the event just about anywhere in the world, except here in western Canada. People in the Pacific regions see the beginning of the event, but not the end of it. People in Eastern North America see just the end of the event with the people straddling longitude -25 seeing all of it (read Europe and the middle east and Africa).

Many years ago as a youth I saw Venus pass 6 degrees below the sun on a lovely July afternoon with my home built refractor. At that time I had read that this particular event would come 37 years later, and if I was alive I vowed I would see it. We live in interesting times with the close encounter of Mars that has Just passed us, robots wandering around on the red planet and the wonderful evening duet that Mars and Venus will be putting on this spring leading up to the transit in June. If you are the adventurous sort, then find a place to watch it and make some plans.

If you are interested in what Murray is up to, drop him an email or a phone. [mpaulson@ecn.ab.ca](mailto:mpaulson@ecn.ab.ca) 780-459-1168



## Interesting Websites *by Mike Clancy*

As we all know, the Hubble Space Telescope is taking some marvelously detailed pictures of deep space objects. These images are exquisitely more detailed than anything ever before, and several have been gathered into one presentation called "The Best of Hubble" and have been put on the internet for our viewing pleasure. Just follow this link and be patient; it's a big file and takes a while to load the streaming video. Click on F11 once it starts to maximize the screen size, turn up the speakers and enjoy scenes that Captain Kirk would envy!

<http://wires.news.com.au/special/mm/030811-hubble.htm>

[addition by Editor] — excerpt from —

Meteors for February... and info on handout material  
RASCals Discussion List <rascals@lists.rasc.ca>  
Date: Tue, 27 Jan 2004 22:32:09 -0500  
By: C.L. Hall <chall@cyberus.ca>

For an interesting web cruise on cloudy February nights, check out the constellation pages of the Hawaiian Astronomical Society at

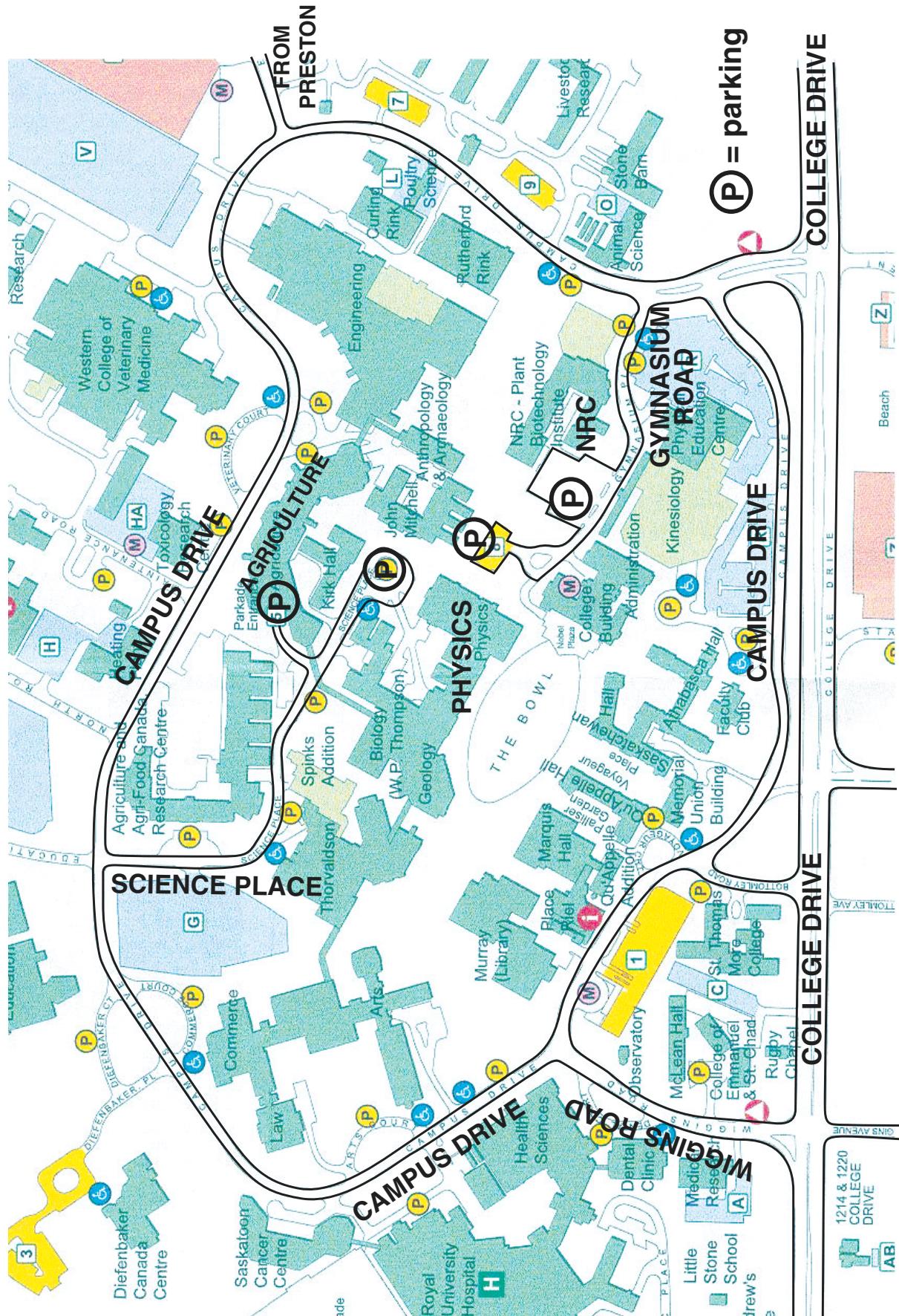
<http://www.hawastsoc.org/deepsky/index.html>

The main showers we have this month come from Centaurus, Leo, Norma and Virgo. At this site every constellation has a page. For example, under Virgo we learn about the myth of Persephone, who Virgo is identified with. She was the daughter of Zeus' sister Demeter – and both her father and her uncle were one and the same – Zeus. She was kidnapped by Zeus' brother Hades, who wanted to marry her, and in the end worked out an arrangement with Zeus' mother Rhea to spend part of the year on earth and the rest in the underworld with uncle Hades.

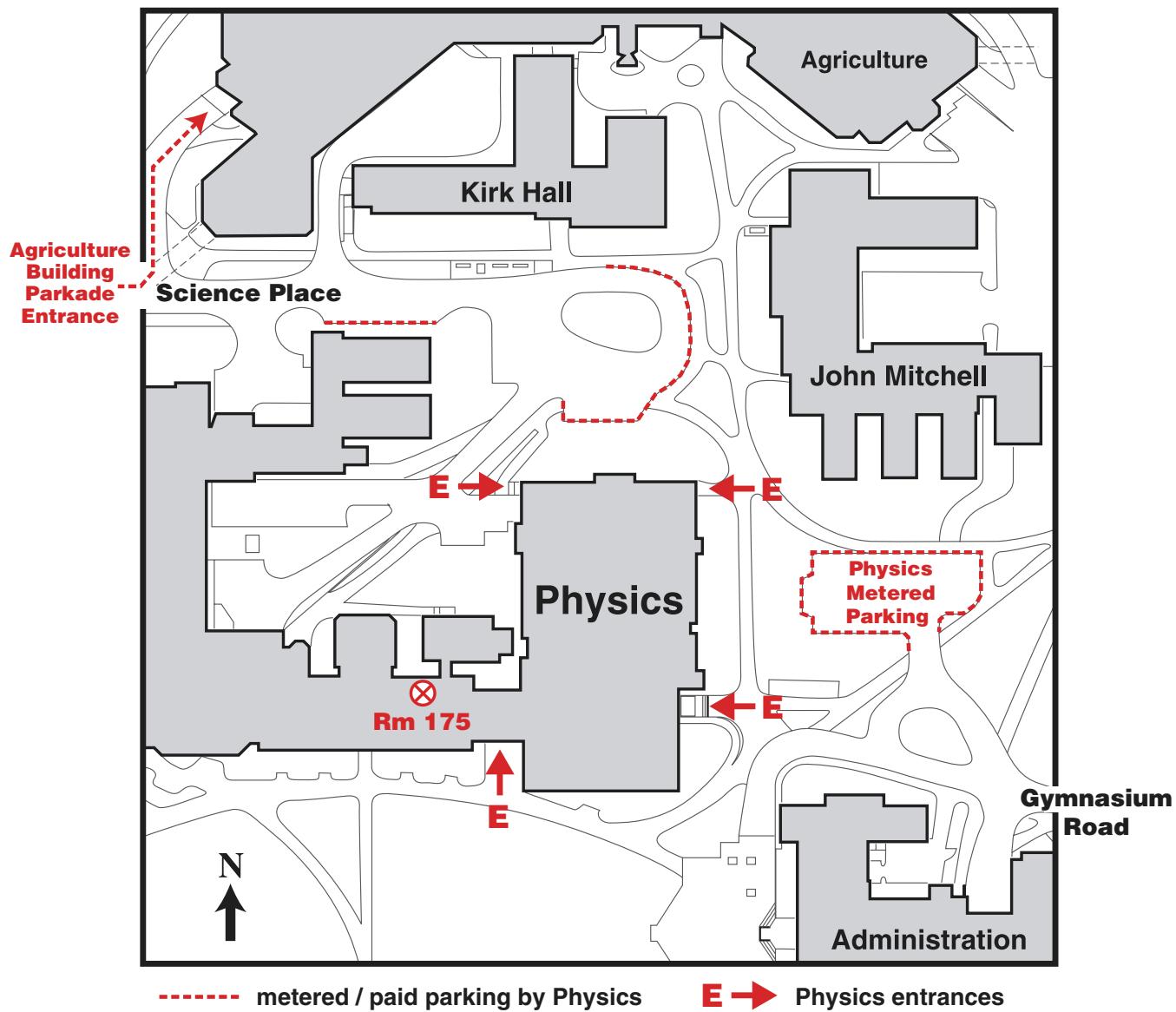
The Hawaiian website – besides lots of mythological info – has wonderful constellation maps. These maps are both wide sky and close-up and even have special printable versions. They are excellent. For each constellation, the site also has photos and details on deep sky objects - galaxies, clusters, nebulae. These constellation pages are a wonderful resource for all observers – from visual meteor observers interested in learning the sky better, to amateur astronomers into telescopic observations of the night sky!

Keep these maps handy for finding your way to **ROOM 175 PHYSICS**.

Follow **Campus Drive** to **Science Place** or to **Gymnasium Road**. Parking is available in the Agriculture Building parkade, at meters, in a small metered parking lot by Physics or in the parking lot by the NRC building (NOTE: no public parking nearest to NRC building).



# Meeting in Room 175 Physics, U of S



Metered and parkade parking are the nearest to the Physics building.

Bring your change as **parking meters need to be fed until 10 pm** (evenings are cheaper than daytime and you can park for up to 4 hours at a meter).

You may find some free spots in the NRC parking lot just a little ways down Gymnasium Road. Be sure not to park in the 24-hour reserved spots nearest to the NRC Building.