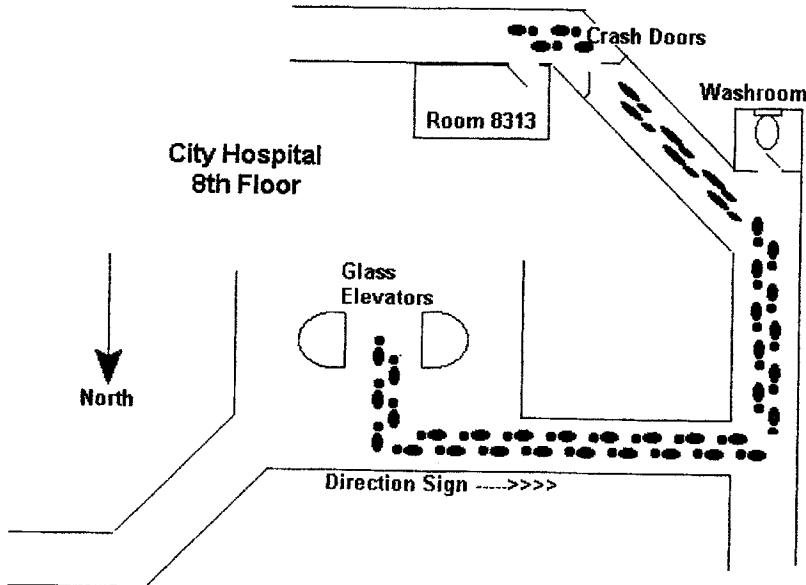


# *Saskatoon Skies*

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

**Volume 30, Number 11  
November 1999**



## **New Location of RASC Meetings**

Beginning with the November meeting, take note of our new meeting room at the new City Hospital, Room 8313. Follow the map. Park on Queen Street or another side street for this month – we will confirm whether or not we can use the Hospital Parking lots before the December Meeting. To find the meeting room, enter through the main doors from Queen Street. Proceed to the left, past the information desk, and take one of the two glass elevators up to the 8th floor. Follow the signs to room 8313.

## RASC Calendar Happenings

Date (1999)	Event	Contact	Telephone
Nov 9	Executive Meeting Rm. 8313 City Hosp. 7:30pm	Les Dickson	931-1091
Nov 11/12	New 'Linearid' Meteor Shower in Uma?	Rick Huziak	665-3392
Nov 15	Transit of Mercury (at sunset)	Rick Huziak	665-3392
Nov 15	General Meeting- Alister Ling (Edmonton)	Les Dickson	249-1091
Nov 17/18	Leonid Meteor Shower (storm?)	Rick Huziak	665-3392
Nov 19	Junior Astronomers Meeting	Sandy Ferguson	931-3184
Nov 20	30th Anniversary Gastronomy - Tarragon's	Bob Christie	931-2115
Dec 3 or 4	Observers Group at Sleaford	Andrew Krochko	955-1543
Dec 13	General Meeting - NOTE EARLY DATE	Les Dickson	249-1091
Dec 13/14	Geminid Meteors Peak	Rick Huziak	665-3392

## Sky Buys and Mirror Sells

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

**For Sale:** Great astronomy books: *Burnham's Celestial Handbook* (hardcover, 3 vol.) \$50.00. Other titles available, including a great book on Jupiter. Call Darrell Chatfield, tel. 374-9278.

**For Sale:** 1-1/4" eyepieces & filter - Kellner 9mm eyepiece \$40.00, Antares 10mm Plossl eyepiece \$100.00, Orion OIII Filter - \$85.00. Call Darrell Chatfield for trials. tel. 374-9278.

**For Sale:** Tasco Model 11TR 4-1/2" aperture, 900 mm f.l. Newtonian telescope. Comes with 20 mm and 4 mm eyepieces, 2X barlow, moon filter, equatorial mount and tripod. Call Gerald at 244-9918.

**For Sale:** 2" Lumicon Deep Sky (Light Pollution) Filter. \$200.00 obo. Call Andrew Krochko at 955-1543.

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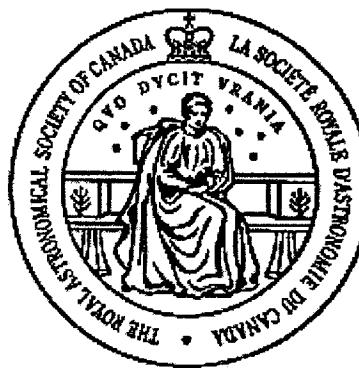
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***Saskatoon Skies*** is published monthly by the Saskatoon Centre of the RASC. Distribution is approximately 140 copies per issue. ***Saskatoon Skies*** welcomes unsolicited articles, sketches, photographs, cartoons, and other astronomy or space science articles. Articles can be sent by mail in any format to the Centre's mailbox. 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 .GIFs, .JPGs or similar. Send e-mail submissions to the editor at <[huziak@SEDSystems.ca](mailto:huziak@SEDSystems.ca)>. Submitted materials can be returned upon request. Please send articles in "generic" formats, with standard grammatical formatting appreciated - 5 spaces at the beginning of paragraphs, two spaces after periods, one space after commas. A separate subscription to ***Saskatoon Skies*** is available for \$12.50 per year. Articles may be reprinted from ***Saskatoon Skies*** without expressed permission (except where 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.

## Erich Keser's Last Hurrah

by Erich Keser, (Past)-president

All things must come to an end. It's been two years since my somewhat controversial election in October 1997, and many things have happened over that period.

Our observatory has moved from its friendly, but increasingly light-polluted home at the Rystrom farm to its new, really dark Sleaford School site. A fledgling Junior program which had involved a dozen of our kids and their friends has boomed into a Youth and a Junior program drawing over 30 members from as far away as Kamloops BC to Adis Ababa, Ethiopia. The time and structure of our monthly meetings has changed to emphasize educational presentations and discussions. SSSP, which had just had its first huge success in 1997 has become a regular, much more streamlined event and our biggest single activity. Fundraising was an almost dollar-by-dollar, bottle-by-bottle activity in 1997; we've since demonstrated that we can periodically raise thousands of dollars and also generate steady income in a variety of ways.

The Sleaford School site was a great find because the friendly support of the people and RM Councillors of Colonsay facilitated the purchase and adaptation of the site. However, it was only when we managed to beat the snow and hard frost and not just move our Warm-up Shelter but make it operational in the fall of 1997, that our long overdue move to a really good observing site became a reality.

Over the last two years, many of you helped to make our Sleaford site safer and more comfortable by participating in a series of weekend mobilizations. However, special credit must go to Bill Hydomako, Darrell Chatfield, Rick Huziak as well as others like Ron Schnor for their continuing evening and weekend forays to perform such pleasant tasks as squeezing under buildings to install mouse-flashing (If Edmonton Centre has its *Badger Campbell*, why shouldn't we have our own *Gopher Huziak*?).

And the U of S Physics Department has really got into the act, too. Suddenly last summer, (I can still remember the flatbed truck screeching up!) their huge new roll-off observatory appeared. This summer, four telescopes were installed, including a brand new, \$12,000 12" Meade LX-200. (And now that the building has been completed and all the telescopes have been aligned and over a hundred astronomy students a week are using the site, time and money may even finally be found to install a modern toilet!)

The Friday Oct. 15th and Saturday Oct. 16th *Open Houses and Starnight* (two of the former, one of the latter) drew large numbers of the public because of the sustained and effective publicity efforts of Stan Shadick and the U of S Physics department- even on the cloudy Friday night. Fortunately, Debbie Anderson, Brent and Tracy Gratias, Barb Ellis and Ron Schnor were there to pitch in, sell books and talk to people. And the wonderful work that Terry Beebe and the *Friends of the Sleaford* have done in renovating the schoolhouse really showed its benefits, as dozens of people came in to have coffee and donuts, and buy books and calendars from us. Apparently, the Saturday night, when Rick and Darrell and half a dozen others pitched in was even better.

Two years ago, much of what we had to do at Sleaford seemed very difficult because of lack of funds. Since then, David Cornish has demonstrated that our Centre really can raise money through the raffle he organized, which you, the membership, made a sellout success. Others like Al Hartridge and Bob Christie drove the point home with a silent auction and two Bingos. Just a couple of weeks ago, I received a \$2000 cheque from the Kalium Mine (Colonsay). This was the result of a meeting John Fraser helped to set up for Darrell Chatfield and Bill Hydomako with that mine's administration. Our cause was likely helped by

using the spiffy fundraising document that Bill and Rick Huziak had put together, and which has since been sent on to the RASC National Council with a request for several thousand dollars. We're learning that our Centre can raise significant sums for special projects.

Ongoing fundraising has increased, too. Asking for honouraria for our presentations was a controversial idea until we found out that other Centres (and organizations!) do so, too. Since then, Rick Huziak and Sandy Ferguson have continued the steady flow of honorarium cheques for the presentations they give. And Jean Dudley has opened up a new and highly appropriate fundraising area with her outstanding book and calendar sales, which are now expanding to include the *Sky Publishing* catalogue as well as *Firefly Books* and the *RASC-* and *Skywatcher 2000* calendars. These steady sources of funds have augmented coffee and donut sales at meetings and Darrell Chatfield's ever-continuing bottle drive to provide the solid base our newsletter and the operation of the Sleaford Site.

One rather controversial decision we made during my tenure as president was to no longer hold Executive meetings right before General meetings. This has allowed us to move the starting time of General Meetings from 8:00 p.m. to 7:30 p.m. This does make it necessary for Executive (Council) members to meet on a separate night every month or two. However, the earlier meeting time, coupled with the practice of starting meetings with a presentation by an invited speaker whenever possible, seems to have significantly increased attendance (as Centres like Calgary, Edmonton and Winnipeg assured us it would!).

Another stolen idea (this time from a Florida Astronomy Club!) that has flourished have been "Gastronomy Nights". They provided a wonderful way to say goodbye to the Rystroms and thank a friend around the site move. We've since found other excuses to hold these, and a very good one will be coming up shortly.

Our dear, much-missed friend, the late Professor Ed Kennedy organized the first meeting of the Saskatoon Centre as we know it for November 17th, 1969. Bob Christie, Les and Ellen Dickson and Al Hartridge are already looking for a venue and would love to have your help and suggestions for:

***THE SASKATOON CENTRE'S THIRTIETH ANNIVERSARY GASTRONOMY BASH***

(see you there!)

**Postscript.** Something I will long remember happened at the Friday October 15th Site Open House, during my last 48 hours as President. A rather feisty senior who was also very much a part of our first Sleaford Open House in October 1997 really brought home what a trust the RASC and the U of S have been given with that beautiful, peaceful site and schoolhouse. Francis Ely, who spent her school years in that schoolhouse, came up and gave me a folded cheque "*for the site*", apologizing for the smallness of the donation. I thanked her and said that any size of donation is welcome. It was only on opening the cheque to put it in my wallet that I noticed that it was a significant contribution indeed, and offered her a charitable receipt...and free coffee. (Yes, our ninety year old friend still drinks coffee at night!).

Francis is one of the founding members of a group called the *Friends of the Sleaford*. Other members include Robert Grey, who owns the fields that surround the site, and Jim Markowski, who was Secretary-Treasurer of the Co-operative that owned the school. Jim did much running around to pay out shares and organize the sale, and also sits on the *Regional Municipality of Colonsay* council. Terry Beebe, whose father attended the school, and whose grandfather, from Sleaford, England, may have been the source of its name, is a real mover and shaker with this organization. Through the efforts of Beebe and the others,

thousands of dollars have been raised to repair and maintain this building from sources as high as the former Minister of Education, and as far away as Sleaford, England.

The *Friends of Sleaford* have no formal rights or contractual mention in the partnership agreement that Rick and I have so long been negotiating with the U of S, as represented by Stan Shadick and Yannis Pahatourogloou. However, there are unwritten obligations which every decent human being takes on - to neighbours, to community, to our fellow human beings which also have no formal legal basis. It is high time that we recognize our obligations toward these people, their organization and their many supporters in the surrounding community by cooperating with the general effort to preserve the Sleaford Schoolhouse as a useful structure and by doing our best to fit this into our overall site plan.

## *Time to Renew for the 1999-2000*

**Membership runs from Oct. 1 to Sep.  
30.**

**Please send payment to the Centre  
mailbox.**

**Regular - \$40.00**

**Youth - \$22.50**

**Life - \$720.00**

## **How the Dinosaurs Really Died Newsletter of the Victoria Centre of the RASC:**

Scientists have shown that the Moon is moving away at a tiny, although measurable, distance from Earth every year. If you do the math, you can calculate that 65 million years ago the Moon was orbiting Earth at a distance of about 35 feet from Earth's surface. This would explain the death of the dinosaurs; the tallest ones, anyway.

## **The Colorization of the Newsletter *Apologies of a Newsletter Editor***

*So I got a bit wild with the colors last month! I received many comments, most questioning my sanity (which doesn't need to be questioned because I know how crazy I am!) At any rate, the color cylinders were just sitting there - right in front of me - *begging* to be used - actually talking to me! Use me! Use me! they cried. What can I say - I used them! How could I refuse? At least you were spared the purple and yellow cylinders that I couldn't get to fit into the machine no matter how hard I pushed!*

## **The Messier, FNGC, Herschel List Takes a Rest**

Yup - these lists are taking a rest. I have limited room this month, and no one sent in updates anyway. This popular list will return next month. ***Don't use this as an excuse  
not to observe!!***

***And Now - Introducing the New Guy.....*****Message from the New President****Dr. Les Dickson, President**

I would like to thank the membership of the Centre for having enough confidence in me to elect me as President for the 1999-2001 term. Time will tell if this is a blessing or a curse.

I would like to thank Erich Keser, who is stepping down as President after a term that has seen many changes within the Centre, for his many hours of hard work on our behalf. Over his term we have seen the Sleaford Observatory become a great asset to the Centre membership and the surrounding community, and the Saskatchewan Summer Star Party grow to become one of the largest star parties in Canada. I am glad we will still have Erich around to help us as Past-president and Chairman of the Star Party Committee.

None of these and other accomplishments would have been possible without the tireless efforts of other members of the Centre. Darrell Chatfield has been active as our Observing Group Coordinator, Sleaford Construction Coordinator, Fundraising Committee member, and Vice-President. He is taking a needed break and is turning the Observing Group over to a capable new member to our Centre, Andrew Krochko. Andrew's excellent observing skills and enthusiasm are a welcome addition to our group. Rick Huziak continues to be our Newsletter Editor, and along with Sandy Ferguson, gives the bulk of the Centre's astronomy presentations to school and community groups. Sandy also organizes our Youth and Junior Astronomer groups, as well as being Co-Librarian and our Centre Representative to National. Jean Dudley has done an excellent job coordinating sales of books and magazines to Centre members and star party attendees. Special thanks go to the members of the Fundraising Committee - Darrell Chatfield, Rick Huziak, John Fraser, Terry Nelson and others - who secured a \$2000 building grant from IMC Kalium Mines to be used at the Sleaford site, and to Bill Hydomako, Merlyn Melby and many others who volunteered their time and efforts over the last two years to get our Sleaford site up and running. Many others have been working hard behind the scenes to keep our Centre working smoothly: Dr. Al Hartridge, Barb and Jim Young, Brian Friesen, Brent Gratias, Bob Christie, Scott Alexander, Mike Williams, Dr. Gord Sarty, and Ellen Dickson. We should also thank all of those often-neglected spouses who have put up with all of this "astronomy nonsense" over the last two years.

As you can see, our Centre of almost 90 members has been run by a relatively small number of people who put in many hours of volunteer work for *YOUR* benefit. I am sure that some of our Executive members are nearing burnout, and they could certainly use a rest. I hope to encourage the rest of you to volunteer to your time to help out wherever and whenever you think you can.

As a new President, I will be busy over the next two to three months coming up to speed on many aspects of the running of the Centre. I hope I can count on your patience and help as I see us into the next millennium (which starts 1 January 2001, not 2000). Please feel free to call me or come and participate in our Executive meetings. I welcome your input on any issues or priorities that concern you.

Clear-and dark-skies to you all!

## R.A.S.C. Saskatoon Centre - 30th Anniversary Dinner

by Bob Christie

The 30th Anniversary of the R.A.S.C. Saskatoon Centre will be celebrated Saturday, Nov. 20th, 7:00 p.m., at:

**Tarragon's Restaurant**  
119 - 3rd Ave. South.

At the next meeting (Monday Nov. 15th), please be prepared to confirm your attendance and vote on your preferred menu:

**Menu 1** \$21.95 + tax + 15% gratuity

*Roasted Winter Vegetable Soup*

A hardy blend of 16 roasted winter vegetables, simmered in chicken stock and presented with creme fraiche.

*Herb Roasted Pork Tenderloin "Au Poivre"*

A beautiful tenderloin of pork rolled in fresh rosemary and cracked pepper, roasted to a juicy medium and served with a brandied green peppercorn sauce.

*Banana Rum Crepes*

French vanilla ice cream wrapped in paper thin crepes and blanketed with David's unforgettable rum sauce.

**Menu 2** \$24.95 + tax + 15% gratuity

*Tarragon's Market Salad*

Crisp baby greens artfully presented with our unique tomato herb dressing

*Breast of Chicken "Marcel"*

A boneless chicken breast stuffed with allumette vegetables, baked in puff pastry and served on a white mushroom sauce.

*Tiramisu*

A light and delicious Italian dessert prepared with marscapone cheese and coffee soaked lady fingers.

Please advise Chef David Powell (664-3599) if you have allergies or are vegetarian.



**POTENTIAL 'SURPRISE' METEOR SHOWER ON NOVEMBER 11?****from Ron Baalke <BAALKE@kelvin.jpl.nasa.gov>**

The recently discovered Comet LINEAR (C/1999J3) may serve to give rise to a new meteor shower on November 11.

The circumstances concerning a prospective "Linearid" display on the evening of November 11th is most intriguing. The moment when Earth passes closest to the ascending node of C/1999J3 at 2:41 p.m. EST/11:41 a.m. PST. Unfortunately - daylight for North America, although well into evening darkness over Europe.

The radiant for this prospective display very near to the star Phecda, the lower left star in the bowl of the Big Dipper. From my own calculations, I come up with an RA of 11h 40m, Dec. +53 deg. So even for Europeans, the radiant stands only about a mere 5-degrees above the northern horizon (at latitude 40N) at the time that the shower may reach its peak!

Nonetheless ... the separation between the Earth's orbit and that of the parent comet is just over 0.011 a.u. As to what type of activity might be expected, it should be noted that the 1985 Giacobinids briefly produced an outburst of ZHR's of 600 to 800 from Japan, with the Earth following 21P/Giacobini-Zinner to its node by just 26.5 days. The separation between the orbit of the comet and Earth was 0.033 - or three times the separation between the upcoming case of Earth and C/1999J3.

In 1933, when a major Giacobinid storm (ZHR = 3000 - 29000) occurred, these values were 80 days and 0.005 a.u. Earth is following LINEAR to its ascending node by ~39.9 days. Hence, the situation regarding the prospective LINEARIDS is roughly midway between the two above cases.

Among the chief differences between Giacobini-Zinner and LINEAR is that Earth intersected comet debris on the inside of Comet G-Z's orbit, whereas we would intersect debris on the outside of comet LINEAR. In addition, the dust-distribution surrounding LINEAR is completely unknown. Also, Giacobini-Zinner is a well-known short-period comet of 6.5 years and has been observed to circle the Sun on many other occasions, whereas LINEAR is a newly discovered long-period object of ~63,000 years.

Nonetheless . . . I would strongly urge all observers to carefully monitor the skies for possible meteors from this shower, especially during the pre-dawn hours of November 11 (when the radiant is high up in the northeast sky), as well as later that evening. It appears that should any significant outburst occur, those in western and central Asia would have the best chance of viewing it (for them, in the after-midnight/pre-dawn hours of November 12 local time).

Although we know that the Earth will be closest to the comet's ascending node at ~19.6 UT on November 11, this doesn't mean that the actual peak of a prospective LINEAR display could not occur many hours earlier or later. An example of this occurred one year ago with the 1998 Giacobinids: the time when Earth was predicted to cross the node of 21P/Giacobini-Zinner was 20:53 UT on October 8; but the shower actually reached its peak at 13:15 UT -- more than 7.5 hours earlier.

Thus, I would strongly suggest that all interested observers should be on high-alert for a 24-hour interval on either side of the predicted nodal crossing time of 19.6 UT/November 11.

Who knows? It might prove to be an interesting warm-up for the Leonids, which are due to peak just a week later!

## The Transit of Mercury

Just hours before the November 15<sup>th</sup> General meeting Mercury makes a rare transit of the sun. See your *Observer's Handbook*, pp. 177 - 180 for details. You will need a proper protective solar filter if you plan to observe this through binoculars or a telescope, or if you don't have a filter, use projection techniques.

The transit begins just after 3:00 p.m. Saskatoon time and lasts for about the next hour, so you may have to take time off work.

Many RASC members will have their solar scopes set up at *Cosmopolitan Park* on Sask. Crescent just north of the top of the Broadway Bridge to view this event.

## The Leonid Storm - All That Waiting if Finally Over!

Another 'can't miss' event is the possible **Leonid Meteor Storm**. I've been waiting 31 years for this (since the last storm was in 1966 and I began observing in 1968!) However, a prospect of a real storm over North America on Nov. 17/18 is slim, with predictions for it occurring over Europe before it gets dark here. However, last year's shower produced an unexpected brilliant fireball show for all night on Nov. 16/17. Note that the shower is only visible from 2 am local time until sun-up since Leo doesn't rise until after midnight! Call Rick Huziak for details if you want to observe this shower!

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## A Perseus and Cassiopeia Binocular Tour

By Andrew Krochko, Observing Coordinator

Tonight I will take you on a tour of the outer reaches of our galaxy, the Milky Way. The outer spiral arms of most galaxies are rather faint compared to their central hub and our galaxy is no exception. Despite this faintness there are still many objects to observe here. Most of the objects on this tour are open star clusters but there are also two double stars and a variable star. The descriptions in this tour are based on my observations with 8x36 binoculars from my Saskatoon backyard. With larger instruments or darker skies the objects here will appear brighter and be easier to see. Any reasonable star atlas such as *Sky Atlas 2000* will show the objects I am describing here.

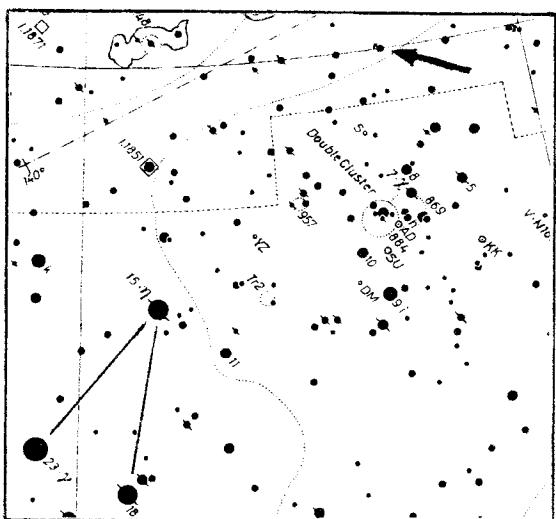
The first two objects for tonight are in the W-shaped constellation of Cassiopeia. The star clusters NGC 654 and M103 are located in between Epsilon and Delta Cassiopeiae. When I am dark-adapted I can see both of these objects

immediately. NGC 654 appears as a big hazy patch. M103 looks like a hazy star and forms a close pair with a 7th magnitude star. Proper focusing is essential when trying to distinguish objects like M103 from stars. Make sure you individually focus each half of your binoculars.

The double cluster (NGC 884 and NGC 869) is a beautiful pair of open clusters. To locate it start at Gamma Cassiopeiae and scan towards Delta Cassiopeiae and continue scanning for about 10 degrees (one and a half binocular fields). Both clusters appear compact and partially resolved. I can see both clusters easily without an optical aid.

In the same field is a double star. The magnitudes of the components are 6.5 and 7. They are separated by 63" with a PA (position angle) of 200 degrees. I could not split this double immediately but after very carefully focusing my binoculars and holding them very steady I was able to split it. See the chart below. Also in the

same field as the double cluster is the enormous star cluster Stock 2. I would have missed this cluster had I not been looking for it. At first it looked like just a slight brightening in the sky background but after a few minutes of observation it became more apparent and has the shape like a butterfly. On one exceptional night I was able to resolve it into many very faint stars.

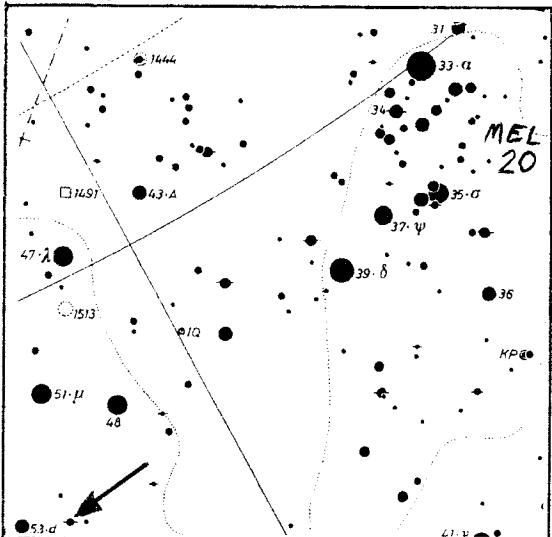


Find the double described in the text by hopping north from the Double Cluster

Now turn your binoculars towards Alpha and Delta Persei. These are just the brightest of the hundreds of members of the cluster Melotte 20. This is the only cluster on this tour that is fully resolvable in binoculars and it can be seen without any optical aid.

Just to the west of Melotte 20 is another binocular double star. The magnitudes of the stars are 6 and 7.5 with a PA of 70 degrees and a separation of 58". I found this double to be exceptionally difficult with my binoculars. It took at least five minutes of careful observation to be sure that I could see the 7.5 magnitude star. I found steadyng my binoculars against a fence and

slowly playing with the focus helped bring out the faint companion.



Use the Perseus 'OB' Association (Melotte 20 to find the second double star.

Beta Persei is a well known eclipsing variable star and is also known as Algol. This star is normally magnitude 2.1 but every 2.867 days it fades to magnitude 3.4. It is this faint for a couple of hours and takes several hours to fade and rebrighten. It is normally about the same brightness as Gamma Andromedae but it looks fainter during an eclipse. The eclipses that can be seen this November are: November 10, 10:58pm; November 13, 7:47pm; November 28, 3:51am. All times are Central Standard Time.

Our last object is the open cluster M34. Find this cluster by sweeping from Beta Persei to Gamma Andromedae. It is an obvious hazy patch that can be partially resolved upon closer inspection.

This is only a small sampling of what this area has to offer. Just scanning around on a dark night will reveal many more star clusters than I have room to discuss here.

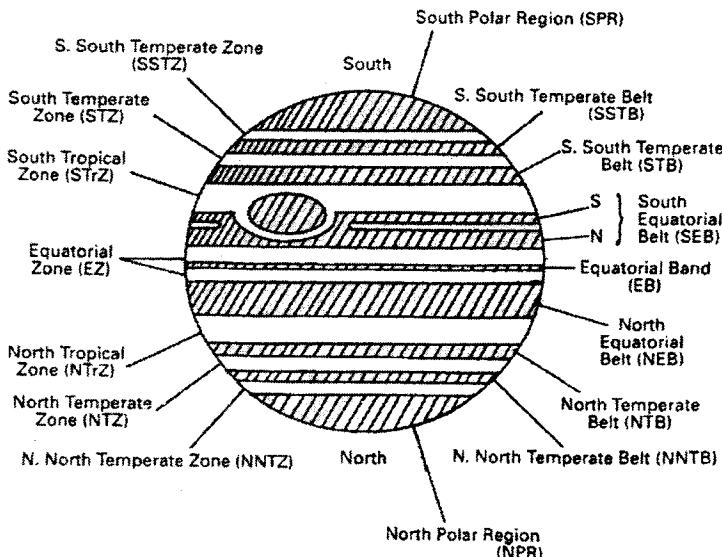
## Planet Report - October/November 1999

by Murray D. Paulson (Edmonton Centre)

**Mercury** has just passed greatest eastern elongation in the evening sky and is heading back toward the sun. It will be at inferior conjunction on Nov. 15, when it will be involved in a grazing transit of the sun. This event will occur in late afternoon and will be worth the effort to observe it. The edge of Mercury's 9.9" disk will only get 6.3" within the disk of the sun. It will start at about 3:11 p.m. local time and last for one hour. Mark it in your calendar.

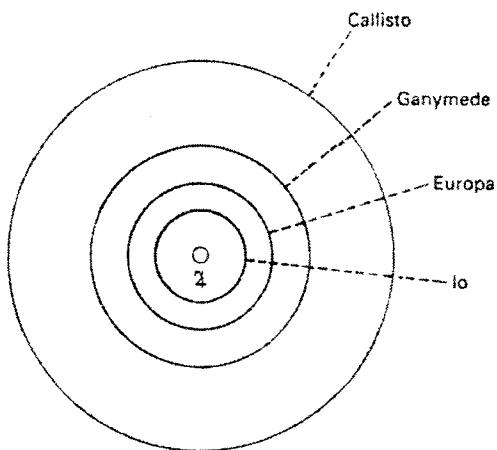
**Venus** has climbed high in the morning sky and has shrunk to 27.7" and just less than 1/2 phase. It shines at magnitude -4.5 and will head for greatest western elongation on October 29. If you are following it, look for the point where dichotomy, exactly 1/2 phase, occurs. There is a discrepancy between when it occurs and when you perceive it to occur. By the November meeting, Venus will shrink to 21" and will start showing a slight gibbous phase.

**Jupiter**, on Oct. 25 is 49.66" in diameter and shines at magnitude -2.9. Jupiter is in center stage, at opposition on October 23 and by now, a familiar companion of the evening sky. Jupiter is a dynamic planet, a gas giant in constant change. The dance of the satellites, the shadow transits, the many features that you can watch from night to night make Jupiter a great planet to observe. At opposition, Jupiter is 3.963 au distant and shines at magnitude -2.9 showing an oblate disk of 49.66" equatorial diameter. The first thing that hits you when you first see Jupiter in the eyepiece is how big and bright it is. At 142,980 km diameter, just over two and a half Jupiters would fit between the Earth and the moon. A 2" telescope will show the equatorial belts and the moons. A 3" scope will show the shadow transits and a 4" or bigger scope will show more belts and features on those belts. With my 94 mm Brandon refractor, I could recognize the disks of the larger satellites and with a bigger scope and some high power, you can see the disks of all the moons. Their sizes range from 1.0", Europa, to 1.7", Ganymede. The now pallid Great Red Spot is 45,000 km long by 11,000 km high, a larger-than-Earth-sized hurricane



that has survived over 300 years. One arc second of the planet translates in to a distance of 2900 km. When you see white ovals in the planet's belts, remember the scale of these features. Fantastic!

The North Equatorial Belt, the lower one in the Newtonian view or the upper one in a diagonal (SCT or refractor), is the more active of the two belts, sprouting festoons, projections or ovals. You may see rifts, barges or notches in it as well. If you have good eyes, you may even be able to discern colors in the belts. Tinges from blue to red have been reported.



The South Equatorial Belt has the Great Red Spot and the GRS hollow. I have seen a group of white ovals embedded in the SEB just following the GRS and a rift in the belt. The temperate regions have associated belts and they show some irregularities and features as well. In the polar regions, you generally see the dark polar hood, but occasionally with good seeing you see belts and ovals as well. I have noted dusky spots on the edge of the South polar hood.

I have included a diagram of Jupiter and its belts to clarify some of the terminology. The diagram was taken from Fred Price's excellent book, The Planet Observers Handbook, highly recommended. Another good book is Observing and Photographing the Solar System, by Dobins, Capen and Donald Parker. There is a good section on Jupiter in our Observer's Handbook as well. For times of satellite phenomena, consult the Observer's Handbook.

The vivid black shadow of a moon is a sight I never tire of. Watching a moon disappear or reappear is interesting as well. The slow fade or reappearance is fun to observe. Plan to see at least one of these events. Let me know what you are observing, and show me your drawings of the planet. I would love to see them.

Trailing a short distance behind Jupiter is **Saturn**, which will be at opposition just 2 weeks later. It is amazing how much the rings are tilted toward us. You can just barely see the ball of the planet peering over the edge of the rings. By then, the planet will show a 20.16" disk and will shine at magnitude 1.5 from its 8.206 AU distance. As we close in on opposition, watch the planet's shadow projected on the rings switch sides. Saturn is farther from the sun than Jupiter, therefore has less activity in its clouds. Occasionally you can see some scalloping on the edge of the equatorial bands and the occasional oval in the belts. I can see a shading graduation in the polar hood and some lighter markings in the higher latitudes. The rings are particularly captivating and it is a test of the conditions to see the divisions in the rings. The Observer's Handbook has a section that shows the positions of the moons so you can easily identify them. Another observing tool is a program on our web site by Dan Bruton of Texas A&M University that plots out Saturn and all its visible moons for any given time. What's nice about this program is that it shows the view from any orientation of scope, SCT/ Refractor to Newtonian and it shows the moons as you would see them, above and below the planet. With a 5" or 6" scope you can see 5 moons, but the inner ones take a careful search. Bigger aperture can show more moons and details on Saturn, so enjoy the view. Till next month, clear skies.

You are invited to the  
**General Meeting of the Saskatoon Centre**  
**Monday, November 15, 1999 at 7:30 p.m.**  
Room 8313, New City Hospital  
Queen Street

Presenting:  
**Alister Ling**  
(Edmonton Centre, RASC)

This event is open to the general public. There is no admission charge.

**NOTE THE NEW MEETING LOCATION:**

**Scenic Room 8313 at the City Hospital**

**The Sleaford Page**

*Longitude: 105 deg 55' 13" +/- 13" W Latitude: 52 deg 05' 04" +/- 08" N*  
by Darrell Chatfield, Site Coordinator

**Oct. 23, 1999:** This turned out to be a beautiful day on which to work. A small crew consisting of Bill, Ron, Bob, Jim and myself all arrived at the site around 10:30 a.m. this day. Ron, Bob, and Jim proceeded to dig out the conduit running to the 10' Patterson Dome. This was done in order to hook up to a 2" pipe running outside the dome for future wiring. Meanwhile, Bill and I were inside the warm-up shelter. We built the partition wall between the toilet area, and our addition part. After Ron and Bob left, Jim helped us drill holes to pull the wiring through. Bill and I mounted electrical boxes on the walls, with the wire running to them. A special thank-you to the ditch-diggers, and Bill, for helping with the wiring.

**Oct. 27, 1999:** Bill, Rick, and I went out for a short trip to the site and completed more electrical box and wire installation. Rick finished the aluminum sheeting under the shelter. We all thought the school was on fire as we drove out, but it proved to be the farmer burning off piles of stubble in the field around the site. This produced a lot of smoke, which turned away the U of S astronomy class that had come out to observe!

## Minutes of the General Meeting - Monday, October 18, 1999

held at the National Hydrology Conference Room, Saskatoon, 7:30 p.m.  
recorded by Al Hartridge, Secretary

1. Meeting called to order at 7:36 p.m.
2. New Meeting Site - starting next month the general meetings will be held at City Hospital on the 8th floor in a meeting room on that level.
3. Membership Renewals are due.
4. Elections will be held at this meeting. Results posted later in these minutes.
5. Presentation: by Doug Miller "Optical Terminology demystified". The difference between surface error and wave front error was discussed along with MTF and spot diagrams. A good review of a difficult subject.
6. Sleaford Open House and Star Night: Stan Shadick stated that were about 100 people on the Friday and about 250 on the Saturday evening.
7. Sleaford Site Report: 3 weekends ago, Bill, Darrell, Ron, and Rick opened up the common wall in the warm up shelter and got rid of the mice in the common wall. The underneath of the shelter has also been mouse-proofed. Wiring of the addition will be done next Saturday.
8. 30th anniversary of the Saskatoon Centre comes up in November. A party at Tarragon Restaurant on Sat. Nov. 20th will be organized by Bob Christie. It will be around \$20.00 to \$ 25.00 a head.
9. Observing Report: The next OG will be on Nov. 5 or 6th .
10. Fundraising: Kalium Mine has donated \$2000.00 and also suggests that we apply again next year.
11. Letters of Thanks: will be sent to Kalium Mine for their generous donation to the Sleaford fund and also to the Hydrology Department for the use of their meeting room over the past two and one half years.
12. Results of the Election of Officers:

Position	New Executive
President	Les Dickson
Vice-president	Darrell Chatfield
Honorary President	vacant
Past President	Erich Keser
Secretary	Al Hartridge
Treasurer	Jim & Barb Young
Centre Rep.	Sandy Ferguson
Newsletter Editor	Richard Huziak
Co-Librarians	Sandy Ferguson & Ellen Dickson
Councilor	Merlyn Melby
Councilor	Scott Alexander
Councilor	Ken Noesgaard
Youth Coordinator	Sandy Ferguson

Observing Coordinator	Andrew Krocko
Activities Coordinator	Brian Friesen (note 1)
Fundraising Coordinator	Richard Huziak (note 2)
SSSP Coordinator	Erich Keser
Sleaford Building Coordinator	Darrell Chatfield
Sleaford Site Coordinator	Bill Hydomako
Publication Sale Coordinator	Jean Dudley
Membership Coordinator	Bob Christie

Note 1: Brent Gratias will help with Activities coordination.

Note 2: Darrell Chatfield will help with Fundraising coordination.

13. Meeting adjourned at 9:30 p.m.



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## REFRACTORS

<b>TELEVUE</b>	- 70mm/85mm/101mm/ incredible optics	<b>Let's Talk !!!</b>
<b>Sky Watcher</b>	- 70mm entry level F7.1 or F10	- \$200 - \$330
<b>Omcon</b>	- 80mm F7 - Great Starter Scopes	- \$360 - \$600
<b>Vista</b>	- 80mm F5/F11.4	- \$300 - \$580
<b>Vista</b>	- 90mm F11.4	- \$510 - \$580
<b>Vista</b>	- 102mm F9.8 equitorial,K10&25 6x30 finder	- \$700
<b>Omcon</b>	- 105mm F9.5 eqitorial,K10&25 6x30 finder	- \$1060
<b>Antares</b>	- 105mm F9.5 equitorial,PI10&25 6x30 finder	- \$1290
<b>Sky Watcher</b>	- 120mm F8.3 "The BIG One"-2" focuser&Diag	-\$1000
<b>Antares</b>	- 120mm F8.3 - Vixen Premium Optics	-\$1760
<b>Sky Watcher</b>	- 150mm F8 "New for November"	-\$1530

## REFLECTORS -by Omcon, Vista, Sky Watcher, Antares

3" F9.3, - Tripod, K25, &1.25 focuser	-\$150-\$160
4.5" F8, - Tripod, eyepieces, 1.25 format, AZ mount	- \$200
4.5" F8, - Tripod, equitorial mount, eyepieces and more	- \$240-\$380
5" F8, - Tripod, equitorial mount, optical window	- \$490
130mm - F6.9, neat small scope, equitorial mount, etc.	- \$390
150mm - F6.7, an affordable/portable 6" scope	- \$730
150mm - F5, parabolic mirror, EQ.mount, 6x30 finder	- \$780-\$800
200mm - F5,(8") parabolic mirror, EQ.mount 9x50finder	- \$1180
200mm - F5 (8") Top of the Line, 10x50finder, 2" focuser	- \$1250
6" Dob. - F8, spherical mirror, 1.25 focuser	-\$490
8" Dob. - F6,1.25 focuser,PI 26+2xbarlow -Great Scope	-\$650



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