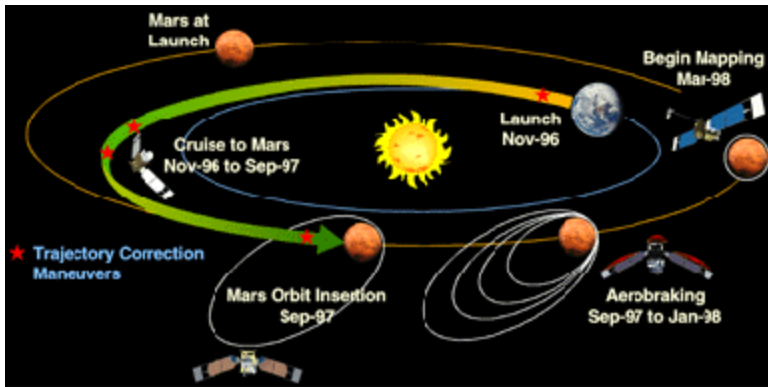




More Mars - The Global Surveyor



The Surveyor spacecraft was launched from the Cape Canaveral Air Station in Florida on 7 November 1996 aboard a Delta-7925 rocket. The 1,062-kilogram (2,342-pound) spacecraft, built by Lockheed Martin Astronautics, will travel nearly 750 million kilometers (466 million miles) over the course of a 300-day cruise to reach Mars on 12 September 1997.

Upon reaching Mars, Surveyor will fire its main rocket engine for the 25-minute Mars orbit insertion (MOI) burn. This manoeuvre will slow the spacecraft and allow the planet's gravity to capture it into orbit. Initially, Surveyor will whirl around the red planet in a highly elliptical orbit that will take 48

hours to complete.

After orbit insertion, Surveyor will perform a series of orbit changes to lower the low point of its orbit into the upper fringes of the Martian atmosphere at an altitude of about 110 kilometers (68 miles). During every atmospheric pass, the spacecraft will slow down by a slight amount because of air resistance. This slowing will cause the spacecraft to lose altitude on its next pass through the orbit's high point. Surveyor will use this innovative "aerobraking" technique over a period of four months to lower the high point of its orbit from 56,000 kilometers (34,800 miles) to altitudes near 400 kilometers (250 miles).

The mapping phase of the mission will begin in mid-March 1998. During mapping operations, the spacecraft will circle Mars once every 118 minutes at an average altitude of 378 kilometers (235 miles). For 687 Earth days, Surveyor will utilize this orbital vantage point to collect scientific data on a continuous basis.

After mapping finishes in late January 2000, the spacecraft will function as a communications satellite to relay data back to Earth from surface landers launched as part of future Mars missions.

RASC Kingston Centre Observers Group

We need to get out under the skies more!

That is the basis for a more formal meeting schedule dedicated to Observing. The concept is that the group will meet on a regular basis at the home of various members with dark sky sites, on or near each new moon, on a Friday or Saturday evening. These meetings are not open to the public and directional-type information should not be made public. They are for RASC Centre members and their guests. To date we have had two meetings (August 15th and September 5th) with about 20 and 10 people showing up. Needless to say the clouds we have on both events damped the observing but we still had fun!

Things to bring: Telescopes, binocs, observing equipment, Chairs, (in case of bad weather, 35mm slides), boats, etc.

Things to do: Use your facilities *before* you come out... not all sites may have bathrooms. Cover your vehicle interior white lights with red.

Gene Shoemaker

Planetary scientist Dr. Eugene ("Gene") Shoemaker, 69, was killed in a two-car accident near Alice Springs, Australia, on the afternoon of 1997 July 18. His wife Carolyn Shoemaker suffered broken bones, and was hospitalized in stable condition.

Gene was our Guest Speaker at the 1997 General Assembly held here in Kingston. It was an honor and a pleasure to meet him and we are saddened to see his departure. A geologist by training, Shoemaker is best known for discovering, with his wife Carolyn and colleague David Levy, a comet near Jupiter. Comet Shoemaker-Levy 9 was broken up by tidal forces from Jupiter, and its fragments collided with the planet in July 1994. Together, the Shoemakers were the leading discoverers of comets this century.



The Centre

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

Newsletter Submission Info:

Deadline is the Friday before regular meetings in odd numbered months. The preferred method is E-MAIL, then disk, lastly paper (I hate retyping... too many mistakes happen). E-mail: kell@cliff.path.queensu.ca
Fax: 1-613-545-2907 (with cover page to Kevin Kell)
Post: Box 2033 Kingston Ontario K7L5J8 Canada
ascii or most major word processors (WP6.1 for windows preferred) via E-mail or 3.5" DOS floppy disk

Our Web page can be found at:
<http://www1.kingston.net/~rasc>

Officers and Executive Council

President: Peggy Torney
Vice President: Christine Kulyk
Secretary: Laura Gagne
Treasurer: Kim Hay
Editor: Kevin Kell
National Council Rep: Kim Hay
Alternate Rep: Susan Gagnon
Librarian: Jim Towgood
Honorary President: David Levy

To Send E-mail to all members of the Kingston Executive, address it to: rascexec@cliff.path.queensu.ca

To join the National E-mail List, send a message to:
listserv@astrotech.stmarys.ca
In the body of the message put:
subscribe rasclist Your Name (Center)

Centre Location: RASC - Kingston Centre, PO Box 1793, Kingston, Ontario K7L 5J6 Canada
Approx Lat: 44 deg 14 min N Long 76 deg 39 min W

Upcoming Meetings

Friday 1997 September 12 Member's Night & Guest

Speaker: The Radio Detection of Meteors is an exciting new series of projects developed by Phil Gebhardt of the Ontario DX Association. . Anyone with a shortwave receiver capable of receiving the amateur bands will be able to participate by listening for radio signals reflected off meteors in the atmosphere. Make your plans to join the fun and become part of this experiment.

Friday 1997 October 10 Annual Elections, Annual General Meeting, Constitutional Amendment vote.

Friday 1997 Nov 14 TBA

Friday 1997 December

12 Annual Holiday Dinner & Awards
Regular Meetings of the Kingston Centre are held on the 2nd Friday of each month (unless noted otherwise) at 20:00 local time in **Room B-201, Mackintosh-Corry Hall** at Queen's University (parking available off Union Street at Frontenac).



Regulus is published 6 times per year. Views and opinions expressed herein do not necessarily reflect the official position of the Royal Astronomical Society of Canada or its officers and members.

Subscriptions: Members of the Kingston Centre receive Regulus as a benefit of membership. Non-members may subscribe for \$15 per year.

Advertisements are free to members of the Centre. Commercial advertising is \$25 per half page, \$50 for full page and must be camera ready copy.

Contributions are more than welcome. Submitted material may be edited for brevity or clarity. Copyright 1997. All rights reserved. Permission is granted to other publications of a similar nature to print material from Regulus provided that full credit is given to the author and to Regulus.



From The Editor

Elections are coming up and quite a few positions will be vacant (ie incumbents not continuing). Please consider running for office! Vacant positions for the 1998 season are: President, Treasurer, National Council Rep, Librarian. The Vice-President, Secretary and Newsletter Editor have not indicated one way or the other if they will be running for those positions again.

The relevant info from our Bylaws are:

Article IV - The Officers and the Executive Council

1. The officers of the Centre shall be Honorary President, President, Vice-President, Secretary, Treasurer, Newsletter Editor, National Council Representative and Librarian.
2. The Executive Council shall be made up of the President, the Vice-President, the Secretary, the Treasurer, the Newsletter Editor, the National Council Representative and the Librarian.
3. The Executive Council shall have the responsibility for the direction and management of the Centre.

Article V - Election of Officers

The conditions of nomination shall be:

1. that the person nominated shall be a member in good standing of the Centre,
2. that the assent of the nominee shall have been obtained,
3. that at least two who are members in good standing of the Centre shall make the nomination.

Article VI - Duties of Officers

1. The President shall preside at all meetings at which he or she is present; if the President is absent the Vice-President shall preside and in the absence of these Officers, the meeting shall appoint a chairman.
2. The Vice-President shall, in the absence of the President, preside at the meetings, and in other ways assist when possible with the management of the Centre.
3. The Secretary shall keep accurate minutes of all regular Centre meetings and the meetings of the Executive Council and other activities of the Centre, conduct the correspondence of the Centre, and work with the Newsletter Editor to see that members are informed about meetings. The Secretary shall submit to the Annual Meeting a report on membership, meetings, and other Centre activities for the preceding year. After the report has been approved by the Executive Council, it will be sent by the Secretary to the Secretary of the RASC before the 15th day of January in each year.
- 4a. The Treasurer shall keep accurate records of all subscription fees and other monies received, pay bills as sanctioned by the Executive Council, and submit to the Annual Meeting a report on membership, meetings, and

other Centre activities for the preceding year including a statement of revenues and expenses and a statement of assets and liabilities. These statements shall, after being approved by the Annual Meeting of the Centre, be forwarded by the Treasurer of the Centre to the Treasurer of the RASC before the 15th day of January in each year.

4b. On the 15th day of January, April, July and October of each year, the Treasurer of the Centre shall submit to the Treasurer of the RASC the required 60% of all membership fees received during the quarter-year ended on the last day of the preceding month along with a report listing the names of the members who paid their fees during the said quarter-year, the amounts paid by each of them and other pertinent information.

5. The Newsletter Editor shall be responsible for the production at regular intervals of the Centre's Newsletter.

6. The Librarian shall be responsible for maintaining the Centre's library of books, periodicals, newsletters and other material.

Some notes from the members who have held these positions:

National Council Representative : (Kim Hay)

This position gives you a voting right on the National Council. You represent your Centre for any motions that your Centre would like to bring to the Council's attention. You also can vote on other motions that are presented at National Council.

There are three meetings per year. One in Spring, the General Assembly which is hosted by a host Centre usually on the July 1st weekend (in 1998 it will be held on the June 18-23 in Victoria BC), and one other meeting in the Fall. The Spring and Fall meetings are usually held in Toronto, but have been known to be held in other Centre Cities.

Notification of meetings are sent to the National Council member with the agenda and minutes from the previous meeting. You are responsible for reporting back to your Centre the happenings of the meetings and to bring to National Council any motions or concerns that your Centre has.

This term runs from Jan 1 to Dec 31 of each year.

Treasurer: (Kim Hay)

For this position:

- you will be responsible for the balancing of the account.
- pay the yearly bills to Post Office, Queen's University, Postage and Printing of Newsletter
- Do monthly reports, report to the Centre every month on the finances
- prepare a year-end report for the Annual Meeting,
- prepare a report to be submitted to National and to the



Journal Annual Report

- Look after sales of the Beginners Observing Guide, the Observers Handbook., and the annual Calendar purchases..
- Replenish supplies of these books and calendars from National Office
- Sales of Centre lapel pins and other promotional items
- the Astronomy and Sky & Telescope Magazine subscriptions. Handle any US Money orders that are required for the above subscriptions, and collection of funds from the members.
- Be responsible for dealing the UTP (University of Toronto Press) in Membership Renewals, and new members. Notify the Editor of new members and address changes, as well as the Secretary so new membership packages can be sent out.
- Answer any questions to all members, Executive Council (local level), and to National Council
- backup to checking Centre mailbox for the Secretary.
- This term runs from Jan 1 to Dec 31 of each year.

Librarian's Duties: (Jim Towgood)

1. Arrive at meetings early to unlock the library and make the sign out/return sheets available.
2. Remain after meetings to allow members access to the library and to lockup.
3. Update the library inventory.
4. Put identification stickers on new acquisitions.
5. Warehouse materials that will not fit in the cupboard.
6. Promote use of library materials and new acquisitions.
7. Attend executive meetings.

Newsletter Editor: (Kevin Kell)

6 times a year, about 2 weeks before the RASC meeting, you start to gather news articles. We limit the newsletter to 10 pages for weight & postage limitations. Filling up 10 pages is usually not too difficult... but the copying, stuffing, sealing and stamping them is. I usually find volunteers who, for the price of a large coffee, will help out on the sealing and stamping part. About 25 members pick up their copies at meetings, the rest (around 125-150) have to be mailed out. I'm willing to stand for reelection.

Secretary: (Laura Gagne)

To the best of my knowledge the job of the secretary is to check the centre PO Box regularly (I usually do it once a week), answer correspondence, send out the new member packages (which he/she must maintain by making photocopies of the materials (I have a copy card for this), purchasing envelopes, folders and stamps, and scrounging for new goodies to put in. The secretary also sends thank-you letters to the guest speakers, records the minutes for the executive and regular meetings, and gets to store all

the paperwork at his/her home. As secretary I also have been active in as many centre-sponsored events as possible (Astro day, GA, observer's group, etc) and basically doing whatever needs to be done.

From The Prez

No submission this issue.

From The Secretary

No submission this month

From The Treasurer

April 13,1997

Dear Kingston Centre Executive Members and Centre Members:

The Kingston Centre-RASC has been trying over the last number of years to obtain its own Non-Profit Taxation number. I have been conversing with Pat Sargent at Revenue Canada on our file (94-552) , and she says there is one amendment we need to add to the Kingston Centre By-laws, making it Article Number 11. The article is a Non-Profit Clause stating the following:

"The Organization shall be carried on without purpose of gain for its members and any profits or other gains to the organization and shall be used in promoting its objectives."

We will also need to redate our Constitution (January 1,1997 according to Pat Sargent), and have three Kingston Centre Officers sign the Constitution.

According to our Centre Bylaws any change to the constitution needs to have the following done:

1) This Constitution may be amended at the Annual Business Meeting by a 2/3 vote by ballot of the members voting.

2) Any proposed amendment to the Constitution must first be sent to the Secretary, in writing, at least one month before the next Annual Business Meeting, where upon the Secretary shall send before such Annual Business Meeting a copy of the Proposed amendment to every member.

Since, on Friday evening the Executive had decided to hold a special Annual Business Meeting on our regular meeting night June 13,1997 to vote on this amendment, we should use our newsletter to inform our membership on the above requested change to our Constitution. This will also need to be a ballot vote.

Respectfully Submitted, Kim Hay, Treasurer , Kingston Centre-RASC

Of course, the meeting was cancelled due to our restricting bylaws, but such is life. **We will have the vote at the**



normally scheduled Annual General Meeting on Friday October 10th.

The Kingston Centre RASC still has many items of promotional nature for sale. Our newest arrival is the **1998 RASC Calendar**. These are colour calendars with many extraordinary pictures from members across the RASC. They are selling now at \$11.00, add an extra \$2.00 for shipping. Hurry now and receive your copy as they will be going fast.

There are still some 1997 calendars available for \$5.00.

Even though the year is almost over they are a collectors item for the pictures themselves.

Still available from the 1997 GA are T-shirts, sizes Large and Xlarge at \$15.00 each with \$1.50 shipping, and sweat shirts Large and Xlarge at \$25.00, with \$2.00 shipping.

For the upcoming eclipse, we have some solar viewers (Mylar) available for \$1.00.

For your library we have the Junior Observers Guide written by Leo Enright, at \$9.50 each shipping add and extra \$2.50. (Soft cover). Also, Looking Up, a History account of the RASC, written by Peter Broughton at \$37.40, add \$5.00 shipping (Hard cover)

If you are interested in any of these items please contact me, Kim Hay at [xxxxx] or write me at Kim Hay, c/o Kingston Centre RASC Promotional Items, [xxx]

National News

At the Annual General Meeting (GA 1997) hosted by the Kingston Centre, there were two business meetings and one General Meeting for all members.

The first meeting was held June 28, 1997 at 9:00 am till approx 4:30 pm. All members of the Executive Council and Chairpersons of all committees read their reports.

The 1st Vice President, Randy Attwood, reported on the ongoing meetings with UTP, and continued work between Centres, National and UTP in regards to memberships. All changes to the forms that UTP sent to the Centre's should be corrected and sent back to aid in the correction of the database at UTP. Renewals will also be mailed out in late August to all members. Please send your payment into UTP with the provided form.

On the questions of New Memberships, once UTP receives the payment and form, the membership is processed (which can take up to 4-6 weeks), and the renewal year is one year from that date in which they process the membership.

Randy also noted that the new cloth RASC crest will hopefully be flying on the STS85 mission.

Also SkyNews has been renewed for the 1998 year, so all members will still receive SkyNews with the Journal.

The National Secretary reported the following Certificates were handed out:

Messier Certificate for Brian McCullough, Ottawa Centre
NGC Certificate for Cathy Hall, Kingston Centre
Membership Certificate awarded to Heinz Berrys, Unattached Member

A Request for a grant to assist in the compilation of an index for the Journal/National Newsletter/Bulletin 1967-1996 was carried and awarded.

The 1998 Handbooks should be available in November 1997, for the 1998 year.

Many other issues were discussed, like the 1998 Calendar and who will take over the shipment and promotion. The work will still be done by members of the Vancouver Centre however, a major portion of the distribution will be handed over to National.

The substitution of the Beginners Observers Guide from the Observers Handbook for the Youth Members was tabled till Monday's meeting due to more discussion and debate.

The day ended with discussions on a Meteorite Coordinator was brought forward by Alan Hildebrant on behalf of MIAC for the RASC. There are currently hotlines for Meteorite activities set up across Canada, with one in Kingston headed by Judith Irwin, Queens University.

For more details on the actual minutes that were taken by the National Recorder, please visit the website <http://www.rasc.ca>

The General Assembly meeting was held on June 30, with many items of discussion and reports from the June 28, 1997 meeting read. There was nothing to really vote on at this Assembly. After the General Assembly was over, there was a discussion period after for about an hour, on why the attendance is so low at the National General Assembly. What can be done to encourage more people to attend? Is the cost too high? Are the cities too far to go? Is the timing wrong? If you have comments or suggestions, please feel free to let yourself be heard and write to your National Council Representative and these can be passed onto the Executive. Or visit the National Website and send an E-mail to one of the Executive members.

The final business meeting held on June 30 at 1:00 pm, just finished any unfinished business from the first business meeting.

The item on the Youth Memberships and the Beginners Observers Guide was somewhat solved, with a voucher being sent to all new members and they will have a discount on the price to purchase the book. There will be more information on this in the near future.

Committee Chairpersons and members of those committees were asked to stay on in their positions. The only change, is the National Librarian is now Andrew



Oakes, Unattached Member. He will serve a 3 year term.

The meeting adjourned around 4:30 pm, to meet again in October 18, 1997 at 10:00 am in Toronto for the fall National Council Meeting.

Kim Hay, National Council Rep., Kingston Centre-RASC

General Assembly News

We're expecting the final bill from Queen's in any day now. Once that is cleared away we should be that much closer to closing the books on this grand adventure.

BBS News

The pictures from the Mars Pathfinder mission continue to accumulate. If you don't have internet access, a computer, modem and telephone line will let you at these local resources.

The following Kingston BBS's are RASC support boards:

- *Observatory East (Mark Kaye) FidoNet 1:249/109
2400-28800 bps 8N1V.34
- * StarStream (Kevin Kell) FidoNet 1:249/112
14400-28800 bps 8N1V.34
- * Moonlight Cascade (Kim Hay) FidoNet 1:249/133
2400-28800 bps 8N1V.FC

1997 Observing Group Schedule

If any of this information is incorrect, let me know ASAP and I'll (Kevin) send out corrected info via the Kingston Centre Email list, with updates in the next newsletter.

Friday October 3rd 6:30-7:00pm (at or around dusk)

The home of Laura Gagne Phone: 613-xxx-xxxx

Email: [xxx]

Lat: 44 deg 21 min 15 sec North

Long: 76 deg 18 min 25 sec West

How to get there: (approx 30 minutes from Kingston)

From Kingston and the 401 Highway

Head north on Highway 15, past the Joyceville Institution, to the Joyceville road cutoff. It is just past the sign that says "Joyceville" on it. Turn left immediately onto concession 6. Follow concession 6 around the corner that veers to the right and keep going until you get to Accommodation Rd.

Saturday November 1st 6:00-6:30 pm (at or near dusk)

At the Campsite of Brenda Shaw Phone: 613-xxx-xxxx

Email: [xxx]

Lat: 44 deg 31 min 00 sec North

Long: 76 deg 05 min 15 sec West

How to get there: (approx 40 minutes from Kingston)

Know how to get to Charleston Lake Park? Just another few km north of the Park.

From Kingston and the 401

Head East on the 401 towards and past Gananoque

Past the Parkway turnoff, look for the Charleston Lake sign.

Turn north onto County Road 3, go north through

Lansdowne North through Outlet and past the Charleston Lake Park turnoff.

Friday November 28th 6:00-6:30 pm (at or near dusk)

The home of Doug Angle Phone: 613-xxx-xxxx

Email:

Lat: 44 deg 23 min 45 sec North

Long: 76 deg 32 min 00 sec West

How to get there: (approx 30 minutes from Kingston)

From Kingston & the 401 Highway

Head north on Sydenham Road, past Elginburg, past Loberough Lake. You'll come to a crossroad at Railton (which has a church and a store on the corner).

December has been cancelled due to its close proximity to Christmas!

1998 Dates due out soon!

Submissions from the Members

From Susan Phillips:

Anybody interested in buying a copy of David Lane's Earth Centred Universe software? The list price for the current version is \$65 plus GST, but if five people want to buy it, we can get it for \$45, including shipping. Call me at xxx-xxxx, or email at [xxx] if you want to be part of this bulk purchase.

ECU version 3 for Windows displays and prints high-quality star charts. It's really easy to use and comes with a big database of deep sky objects. I like the animation features. I used it to see the retrograde motion of Mars, by locking in on the planet and leaving its "trails" on. You can animate in time increments from 1 minute to four years. It has lots of other features which you can check out on the 'net at www.nova-astro.com, or contact me and I'll send you a features list.

From Laura Gagne:

I had some requests for the cookie recipes for the astro-cookies I made at the GA. I finally sat down and wrote out all the recipes, so here is a copy for each of you hard-working members..... Enjoy! Laura Gagne



Comets and Galaxies (same recipe, just cut stars from white dough, and tails from chocolate instead of rolling them up)

2 cups flour
1 teaspoon baking powder
1/2 teaspoon salt
2/3 cup butter or margarine
1 cup sugar
1 egg
1 teaspoon vanilla
2 squares unsweetened baker's chocolate, melted

Mix flour, baking powder and salt. Cream butter. Gradually add sugar and continue beating until light and fluffy. Add egg and vanilla; beat well. Gradually add flour mixture, mixing well after each addition. Divide dough in half; blend chocolate into one half. Galaxies: Roll chocolate and vanilla doughs separately between sheets of waxed paper into 12 x 8 -inch rectangles. Remove top sheets of paper and invert vanilla dough onto chocolate dough. Remove remaining papers. Roll up as for jelly roll (so that the roll is as long as possible, or else the cookies come out too big); then wrap in waxed paper. Chill until firm, at least 3 hours (or freeze 1 hour). Cut into 1/4 inch slices and place on baking sheets. Bake at 375 degrees about 10 minutes or until cookies just begin to brown around edges. Cool on racks. Makes about 4 1/2 dozen.

Comets: Roll the doughs separately as for galaxies, but use a cookie cutter or make a template with cardboard to cut out desired shapes. I drew the shapes on cardboard first then cut them out with a sharp knife. Place the tail on the cookie sheet first, then arrange the star on top so that about 1/4 to 1/2 inch of the narrow end of the tail is tucked under the star. Press firmly in place. Bake the same as for galaxies, but watch the time since they might cook a little faster if you roll the dough out thinly.

Asteroids:

1 cup semisweet chocolate pieces
2 tablespoons butter or margarine
1 egg
1 cup sifted powdered sugar
1/2 teaspoon vanilla
dash salt
1/2 cup flaked coconut
1/2 cup chopped nuts (I used walnuts)
1/2 cup mini chocolate chips

In a medium saucepan melt semisweet chocolate pieces and butter or margarine over low heat, stirring frequently. Remove pan from heat; cool to lukewarm.

Beat in egg till smooth and glossy. Add sifted powdered sugar, vanilla, and salt; mix well. Stir in the 1/2 cup flaked coconut, walnuts and mini chocolate chips. Chill about 1 hour. Form into 1-inch balls. Arrange on a baking sheet. Chill at least 3 hours or till firm. Makes about 2 1/2 dozen balls.

Impact Craters

1 1/2 cups all-purpose flour
1/4 teaspoon salt
2/3 cup butter or margarine
1/3 cup sugar
2 egg yolks
1 teaspoon vanilla
2 slightly beaten egg whites
1 cup coconut
1/3 cup cherry or strawberry preserves
oven 350 degrees

Stir together flour and salt. Beat butter for 30 seconds; add sugar and beat till fluffy. Add egg yolks and vanilla; beat well. Add dry ingredients to beaten mixture, beating till well combined. Cover and chill 1 hour. Shape into 1 inch balls; roll in egg whites, then in coconut. Place 1 inch apart on an ungreased cookie sheet. Press down on centres with thumb. Bake in 350 degree oven for 15 to 17 minutes. Cool on a wire rack. Just before serving, fill centres with preserves. Makes 36.

Kuiper Melts:

1 cup flour
2 tablespoons cornstarch
1/2 cup unsifted confectioners sugar
1 cup butter or margarine, softened
1 1/3 cups (about) flaked coconut
cocoa powder (they are dirty snowballs, remember)

Mix flour with cornstarch and sugar in a bowl. Blend in butter to form a soft dough. Cover and chill, if necessary, until dough is firm enough to handle. Shape into small balls, about 3/4 inch in diameter. Roll in coconut, dust with cocoa powder, and place on ungreased baking sheets, about 1 1/2 inches apart. Bake at 300 degrees for 20 to 25 minutes, or until lightly browned. Makes about 3 dozen.

Black Holes

5 tablespoons unsalted butter
1 egg yolk
2/3 cup sifted confectioner's sugar
3 squares semi-sweet baking chocolate, melted and cooled
1 teaspoon vanilla
instant coffee to taste (about 1 teaspoon), added to melting



chocolate

Cream butter with egg yolk; gradually add sugar, blending well. Stir in chocolate and vanilla. Chill until firm enough to handle. Shape into 1-inch balls. Roll in nuts. Chill until set. Store in refrigerator. Makes about 30. (note: use clean egg with no cracks in the shell).

STAR ADOPTED BY KINGSTON CENTRE FOR ASTRONOMY DAY BABY by Christine Kulyk

At the July meeting of the Kingston Centre, members present dipped into their "spare change" to collect enough funds to adopt a star as a special gift to welcome the "Astronomy Day Baby" (see birth announcement in the August/September issue of REGULUS). Thanks to all contributors, newborn Cynthia Nicole Micholias, daughter of Kingston Centre member Theodore Micholias and his wife Laura, will receive a certificate of adoption for the star Gamma Equulei, located in the constellation of Equuleus, whose name means "little/baby horse." The funds donated will help to support Queen's Observatory's fund-raising campaign. We are delighted to present this special gift to Cynthia and her family to welcome a new addition to our Kingston Centre family and the stargazing community.

South Saskatchewan Star Party (SSSP 97) by Leo Brodeur

The summer season is star party time and nowhere is this more appreciated than in the northern latitudes, above 54° with never ending twilight starting in mid-May and ending the first days of August. The SSSP is hosted in the beautiful vistas of the Cypress Hills. Straddling the Alberta-Saskatchewan borders at 49° 39' North Latitude it's dark skies are a wonderful sight! The SSSP is held in the Saskatchewan side of the Provincial Park situated at an altitude of 1460m (ft), the highest point in mainland Canada between the Rocky Mountains and Labrador. This mighty plateau of lush forest is like an oasis in the middle of the vast prairies with a beautiful lake, Loch Leaven, located in the centre.

A Matter of Time by Bill Broderick

Backward, turn backward, O Time, in your flight, Make me a child again just for tonight.

(Elizabeth Akers Allen, "Rock Me to Sleep")

For most of us time does not represent much of a problem -- except that there never seems to be enough of it. We want to know the time, we look at our watch or look

around for a clock; voila, there is the time!

Clock time, or civil time, is the kind of time we run our lives by. We go to bed at night and get up in the morning in accordance with this time. We come and go from our jobs and/or school, make appointments, pick up the kids from daycare, attend the theatre, watch television programs, all in accordance with civil time.

Civil time, of course, is based on sun time, derived from the diurnal turning of the Earth in relation to the Sun. Before the invention of clocks, the Sun was about all we went by. Up to about 5,000 years ago the Sun was all we needed.

Most of us are aware that the world has been divided up into 24 time zones. In North America we have **Atlantic Time, Eastern Time, Central Time, Mountain Time and Pacific Time**. The only time we usually worry or think about time zones is when we travel from one to another or when we have to telephone somebody in another time zone. A person in the Atlantic Time zone probably shouldn't phone someone in California or British Columbia before noon; conversely, a caller on the west coast shouldn't bother someone in Halifax or New York after about suppertime unless it's a matter of life and death.

What brings the matter of time and time zones sharply to my mind at this time (mid-July) is that my "better-half" is holidaying in Australia. In scheduling phone calls, we have to consider not only the time zone difference (nine hours) but also daylight saving time (in Canada) and the fact that (most of the time) she's a day ahead of me. When it's Monday here, it's Tuesday there. This is a consequence of Australia being **west** of the **International Date Line** (Longitude 180 deg).

The **International Date Line** is a phenomenon all to itself. Travellers have long been accustomed to **adding a day** (24 hours) when crossing the line going west and **subtracting a day** when going east. While total flight time going and coming is about the same (approx. 20 hours), you take off from say Toronto, in the afternoon or evening of one day and arrive in Sydney on the morning of the second day. On the return trip you can take off from Sydney in the morning -- and land in Toronto in the afternoon of the **same day**. Neat, huh? Of course, either way, you're all beat up from the trip. And suffering from jet-lag to boot!

By international convention, the International Date Line governs all civil time on Earth. When it's midnight on the International Date Line, a new day on Earth is beginning. Everywhere within the last 15 degrees of East Longitude (from 165 to 180 deg), which is mostly empty Pacific Ocean, the first hour of the new day has commenced. As the Earth turns, the midnight hour comes to each of the standard time meridians in turn, sweeping across the continents of Asia, Australia, Europe, Africa and finally



coming to North America some 15.5 hours later. Now the "new day" has become the "old day" and yesterday a wedge that gets narrower and narrower as the midnight hour approaches the International Date Line once again. For one brief hour, it is the same day all over the world -- and then the clocks in New Zealand and Fiji and the Marshall and Gilbert Islands indicate once again midnight and the birth of a new day.

Perhaps a brief comment about standard time meridians is in order. These meridians are all 15 degrees apart and in general they mark the boundaries of the standard time zones. But only in general. National and state boundaries often do not conform to the standard meridians and so the standard time zones can be squeezed here and extended there in order to accommodate local consideration, a fact which can cause astrologers to turn gray prematurely because of all the "adjustments" they have to make to the "time" of birth before they can cast a horoscope.

Another thing about standard time zones is that they are purely a modern and very artificial convenience. No matter that clocks everywhere within a time zone may register the same time, astronomical events like sunrise and moonrise (and in the case of astrology, signrise, etc.), occur about an hour apart for observers on opposite sides of a time zone.

Now let me see, if my wife phones me and the clock says its 9:30 EDT Sunday evening, what day and time is it in Cairn's, Australia? The only thing I know for sure is that the time difference is 10 hours. Do I add or subtract? Or both? I may have scratched my head bald trying to figure it out by the time she gets back.

* Note: I think I subtract the time difference and add a day. Or is it the other way around? And what about those times when it's the same day here as there? Oh, my poor head!

Comet Watch

Comets Currently Visible from

http://encke.jpl.nasa.gov/whats_visible.html

Last Updated: 1997 August 11

Long-Period Comets: C/1995 O1 (Hale-Bopp), C/1996 J1 (Evans-Drinkwater), C/1997 J2 (Meunier-Dupouy), C/1997 N1 (Tabur), C/1997 N1 (Tilbrook)

Short-Period Comets: 29P/Schwassmann-Wachmann 1, 48P/Johnson, 81P/Wild 2

C/1995 O1 (Hale-Bopp)

This fading super-star comet is no longer visible in the Northern Hemisphere. It is only visible in the Southern

Hemisphere. It is currently $m=4$ and fading. Details on this comet are provided for the non-astronomer. This page also includes some information of interest to astronomers.

C/1996 J1 (Evans-Drinkwater)

This comet is a very faint object ($m \sim 13.5$) in the morning sky. It should fade slowly.

C/1997 J2 (Meunier-Dupouy)

IAU Circular 6648 (May 8, 1997) reports the discovery of a comet by Michel Meunier (Arbonne la Foret) on May 7.9 UT, only some 6' southwest of comet C/1997 J1. The new comet is perhaps 0.5 mag brighter than C/1997 J1 but having a much slower motion. Philippe Dupouy and J. F. Lahitte (Observatoire de Dax) report additional observations (apparently, they made an independent discovery of the comet). An orbit published on MPEC K05 (May 17, 1997) indicates that this comet will reach perihelion on March 10, 1998 with a perihelion distance of 3.06 AU. This comet is well-placed (high northern declination) for Northern Hemisphere observers. The comet will brighten very slowly as it drifts south and east. The comet is currently about magnitude 12.0.

C/1997 N1 (Tabur)

IAU Circular 6692 (July 3, 1997) reports a discovery of a comet by Vello Tabur, his second. The comet is about 10th magnitude with a very short tail and is moving towards the Sun. It is a Southern Hemisphere object (only) and is visible in the morning sky. IAU Circular 6694 (July 5, 1997) provides a preliminary orbit. Comet Tabur will reach perihelion on August 15, 1997 at a distance of 0.38 AU. The promising perihelion distance won't help because the comet will be on the other side of the Sun from Earth and thus, will not become bright. Looking at the ephemeris, the comet will be solely a Southern Hemisphere object and will brighten to about 6th magnitude before being lost at the beginning of August. It will not be seen by Southern Hemisphere observers after that. Northern Hemisphere observers have even a poorer show...the comet will move away from the Sun in the evening sky in early September and will be perhaps magnitude 7.5. By mid-October, the comet should be a faint telescopic object.

Recent observations have indicated that this object has not brightened as expected. It is possible that it will not survive perihelion.

C/1997 O1 (Tilbrook)

IAU Circular 6705 (July 23, 1997) reports the visual discovery of a comet by Justin Tilbrook (Clare, S. Australia) using a 20cm L. The comet is described as 10th magnitude, 2' coma and no tail. IAU Circular 6707 (July 24, 1997)



provides a preliminary orbit for the comet. The comet reached perihelion on July 16, 1997 and is moving away from both the Sun and the Earth. The comet should fade slowly. Over the next month the comet will be moving towards conjunction with the Sun and should become more difficult to observe. The comet is visible from both hemispheres.

29P/Schwassmann-Wachmann 1

This comet is low in the west for both hemispheres. The comet has irregular outbursts to $m \sim 12-13$. It should be monitored.

48P/Johnson

There is one visual observation of this comet suggesting $m \sim 13.6$. This comet should fade slowly as it drifts south. It is better placed for Southern Hemisphere observers.

81P/Wild 2

This comet is low in the early evening. It is much better placed for Southern Hemisphere observations. The comet is currently about magnitude ~ 12.0 . The comet should fade slowly as it moves south. Perihelion was on May 5, 1997.

Space Calendar

The Space Calendar covers space-related for the coming months. This Calendar is compiled and maintained by Ron Baalke. Please send any updates or corrections to

baalke@kelvin.jpl.nasa.gov

You can find this on the web at:

<http://newproducts.jpl.nasa.gov/calendar>

Last Updated Tuesday, September 02, 1997 at 07:11 AM

September 1997

Sep 10 - Comet Arend-Rigaux Closest Approach to Earth (2.218 AU)

Sep 11 - Comet Grigg-Skjellerup Closest Approach to Earth (1.761 AU)

Sep 12 - Mars Global Surveyor, Mars Orbit Insertion

Sep 12 - [Sep 02] Asteroid 1997 QK1 Near-Earth Flyby (0.155 AU)

Sep 16 - Lunar Eclipse, Visible From the Eastern Hemisphere

Sep 16 - Closest Full Moon of 1997 (356,966 km)

Sep 16 - Comet 1997 G1 (Montani) Perihelion (4.300 AU)

Sep 16 - Mercury at Greatest Western Elongation (18 Degrees)

Sep 16 - Possible Mars Occultation of SAO 159135 (8.9 Magnitude Star)

Sep 18 - Moon Occults Saturn

Sep 21 - Mars Global Surveyor, Mars Aerobraking Begins

Sep 21 - Kuiper Belt Object 1996 TO66 at Opposition (44.748 AU - 21.1 Magnitude)

Sep 21 - Kuiper Belt Object 1993 RO at Opposition (30.484 AU - 22.9 Magnitude)

Sep 22 - Autumnal Equinox (23:56 UT)

October 1997

Oct 09 - Draconids Meteor Shower Peak

Oct 10 - Saturn at Opposition

Oct 11 - Eugene Shoemaker Memorial Service, Flagstaff, Arizona

Oct 15 - Moon Occults Saturn

Oct 19 - Moon Occults Aldebaran

Oct 21 - Orionids Meteor Shower Peak

Buy, Sell & Trade

TELESCOPE WANTED:

Craig Dillon of Harrowsmith is looking for a used telescope to purchase. He'd prefer a reflector of at least 10" aperture. If you have such an instrument for sale, or know where one is available, please call Craig at (613) xxx-xxxx.

Telescope For Sale:

I have for sale a 150mm Celestron Starhopper Dobsonian Reflector Telescope with: -Adjustable Counter Balance System -Telrad Star Finder -25mm(49x)SMA Eyepiece -10mm(122x)SMA Eyepiece

Ideal for planets, galaxies, double stars, nebula's, star clusters and much more.

It's relatively large aperture has excellent light gathering ability especially when compared to a 60mm refractor telescope, which is the most common first telescope of hobbyists. Weight is approx. 45lbs Asking \$ 625.00 (\$844.00 new a year ago-I have the bill) Leave e-mail at [xxx] Serious inquiries only. Derek