

*The Royal Astronomical Society of
Canada*

Kingston Centre

presents the

1997 General Assembly



**June 27-July 01, 1997
Queen's University at
Kingston, Ontario**

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Many heartfelt thanks to all our donors & sponsors for their generous support!



Table of Contents

This Program Handbook contains information on GA97 programming and speakers, as well as details on registration, tours and maps. We hope that it is of use to you in planning your conference activities. Please bear in mind that last minute changes to speaker schedules may occur.

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Important Phone Numbers

Kim Hay - Registration Desk - Cellular Phone xxx-xxxx (June 26-July 1st inclusive)
Kevin Kell - Display Area - Cellular Phone (June 26 - July 1st inclusive)
Susan Gagnon - Tours & Transportation - Cellular Phone (June 26 - July 1st inclusive)
Peggy Torney - Head Chairperson type Astronomer - Cellular Phone xxx-xxxx
Victoria Hall Front Desk (24 hrs) 613-545-2531

Look for people wearing astronomically distinctive baseball caps and/or coloured ribbons on their nametags ... these will be members of the Organizing Committee and will hopefully have at least a little clue!



RASC GA Chair (& Centre President too!) Message

Now that you are here, unpacked and starting to rest up a bit, let me take this opportunity to say "welcome" on behalf of the Kingston Centre, the City of Kingston and the GA Committee. We certainly hope that you will enjoy your weekend with us and take home some fond memories of this General Assembly the RASC. There is a lot going on this weekend and you may have to make some choices. Inside this book there should be information to help you make those choices informed ones. And, if you can't find what you are looking for... ask someone wearing an astronomical ball cap and/or a ribbon on their name tag. They should be able to assist or get you assistance. If you can't find one of them? Go to the Hospitality Desk in Lower Victoria Hall (commonly known as 'lower Vic') and someone can help you from there.



Your name tags should be kept with you throughout the weekend. You see, you have a number on that tag and we will be using that number for 'spot' door prizes. There is some good stuff to be given away. There are also some very nice things to be raffled; so don't forget to buy some tickets.

We tried to include many of the highlights of Kingston in the weekend, but we know we missed some things. If you have some time and want to go exploring, check out the information around the Room Registration Desk. There are a couple of museums and historical buildings that we just couldn't fit into the timetable and they are within walking distance! This is all the space I'm being allowed; so again, I wish you welcome and have a Great weekend! See you around (I'm in one of the purple hats)
) :-)

Clear Skies, Peggy Torney, GA Chair and Kingston Centre Pres.

National Presidential Message

I would like to welcome you, on behalf of the Royal Astronomical Society of Canada, to the 1997 General Assembly. An enthusiastic team of Kingston Centre volunteers has been working very hard to bring you an excellent programme for the weekend.

The General Assembly has developed its own traditions over the years, such as the Murphy Slide contest, the song contest, and the annual human pyramid. Even so, each GA has its own unique flavour. The city of Kingston brings us its wonderful waterfront environment, old world charm, and local attractions like Fort Henry. At the paper sessions and evening talks, we will be informed and entertained by a series of guest speakers including Eugene Shoemaker, Terence Dickinson, David Levy, Judith Irwin, and Martin Duncan.

The best feature of the annual General Assembly is that it brings together members with varied interests and backgrounds from across Canada. This is your chance to meet new friends from St. John's to Victoria, share your interests, and learn from each other.

In conclusion, I would like to thank the members of the Kingston Centre for their efforts in organizing this General Assembly. Hosting an event such as this is a major undertaking. The members of the Organizing Committee should be congratulated on arranging such an ambitious programme.

Doug George, RASC National President



Queen's University Principal



THE PRINCIPAL
AND VICE-CHANCELLOR

Queen's University
Kingston, Canada
K7L 3N6
Tel 613 545-2200
Fax 613 545-6838

March 20, 1997

It is a pleasure to welcome you to the 1997 General Assembly of the Royal Astronomical Society of Canada.

We are pleased you have chosen Queen's University and Kingston as the site of this year's Assembly. Our beautiful historic campus, its academic buildings, walkways, and shoreline are yours to discover and enjoy.

For more than three decades Queen's has served as a meeting place for our local Kingston chapter of the Society and our partnership with its members represents a fine tradition of shared events including timely public lectures and observing sessions.

You are to be commended for your efforts in developing a strong conference program and especially for your interest in encouraging public participation through the offering of the lectures to be given by Terence Dickinson, David Levy and Gene Shoemaker.

My best wishes are sent for a productive assembly and a pleasant stay in Kingston.

Yours truly,

William C. Leggett
Principal and
Vice-Chancellor

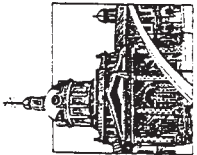


The Premier
of Ontario

Le Premier
ministre
de l'Ontario

Legislative Building
Queen's Park
Toronto, Ontario
M7A 1A1

Hôtel du gouvernement
Queen's Park
Toronto (Ontario)
M7A 1A1



OFFICE OF THE
MAYOR
THE CORPORATION OF
THE CITY OF KINGSTON

March 17, 1997

Dear Royal Astronomical Society of Canada Member:

On behalf of Council and the citizens of Kingston may I extend a warm welcome to the City of Kingston during your 1997 Annual General Assembly meeting of the Royal Astronomical Society of Canada to be held June 27 through July 1, 1997. It is my privilege to serve as Mayor of one of Canada's finest Cities. I am particularly proud to be representing a community that can confidently claim to be the former Capital of Canada.

To quote one of Kingston's many celebrity visitors -- "... *Kingston is one of Canada's best kept secrets*". Kingston's charm and warmth is made possible by many dedicated citizens, community groups, and merchants. Kingston possesses a small town charm along with many "Big City" amenities. Recently, Kingston was singled out by The Globe and Mail Report on Business Magazine as one of Canada's top five cities for business, as well as for many other outstanding attributes, to name but a few -- "*quality of life, big-time, ... with its rich past, strong academic and cultural institutions and fabulous sailing, families tired of the turmoil of the Toronto axis are looking hard at Kingston.*"

Kingston's pleasant and varied climate and strategic geographic location is attracting more and more people to our area to enjoy our pristine waterfront, experience our rich heritage and to participate in the wide variety of artistic and cultural activities available.

During your time in Kingston, may I extend an invitation to visit a very popular tourist attraction, our historic City Hall, located opposite Confederation Park on Ontario Street. Our Tour Guides are available during the summer months from 10:00 a.m. to 4:30 p.m. daily. Please feel free to contact City Hall to arrange for a tour or for any further information.

Sincerely,

Gary H. Bennett,
Mayor

Greetings from the Premier

**ROYAL ASTRONOMICAL SOCIETY OF CANADA
1997 GENERAL ASSEMBLY
June 27-July 1, 1997**

On behalf of the Government of Ontario, I am pleased to welcome everyone attending the 1997 General Assembly of the Royal Astronomical Society of Canada in Kingston.

I'd like to extend warm greetings to members and guests who have travelled a long way to take part in this conference. If this is your first time in Kingston, I hope you will find some free time to enjoy the sites and activities of this historic and picturesque city. With the extensive facilities of Queen's University at your disposal, I am sure you will be well provided for by your hosts.

As the father of two young boys, I know the fascination of watching the stars and the moon in the night sky. From this humble beginning, amateur astronomers dream of studying the stars for a living. Few of us will ever make important discoveries, but we follow the findings of your members with delight. For all the amateur astronomers of Ontario, I commend the Royal Astronomical Society of Canada for its contribution to this compelling science.

Please accept my best wishes for a rewarding and successful conference.

Michael D. Harris, MPP





General Info

Registration

The main residence desk is manned 24 hours/day (Victoria Hall Front Desk 613-545-2531) and you will be able to get your room & check in even if the Registration Desk is closed. Registration will be held in the Victoria Hall Main Lobby (up the stairs) at the following dates and times:

Friday June 27th: 12:00-21:00
Saturday June 28th 08:00-18:30
Sunday June 29th: 08:00-17:30 (moved from the Upper Lobby to the Lower Common Room)

Name Tag

A sample name tag is shown below. This will have your name, affiliation and icons which denote what events you have registered and paid for. Please wear this to all conference events (it also contains a number used in door prize drawings!)

Meals

The buffet-style breakfast is included for delegates staying in the University Residence (Victoria Hall) and is held at the Ban Righ Hall Cafeteria.

Those not staying in residence can get breakfast at the cafeteria for \$9.02 cash at the door.

Vegetarian selections are available at every meal.

Special dietary needs (diabetic, kosher, low-salt) can be accommodated by letting us know in advance.

Lunch is not included in the package and delegates will be on their own. Suggestions include: Chip trucks on Stuart and Union Streets, hot dog vendors on University Ave & Union Streets, KGH cafe at the main entrance of the hospital and the KGH Cafeteria, one floor beneath the main entrance. See maps on site for more directions.

Dinners are a combination of on-your-own, an organized BBQ and Banquet.

The Banquet dress is a matter of tradition, that being as formal as you can with what you have.

The menu for the BBQ is: Creamy Cole slaw, Marianted Tomato Salad, Tossed Garden Salad, Potato

1997 RASC GA			
Hosted by the Kingston Centre			
Your Name Here			
Unattached/Centre Affiliation			
Other info			
Geology	Trolley	Ft Henry	Holleford
C&E	1000 Islands		
Banquet	BBQ	Wine&C	



Salad, Vegetables with Dip, Potato Chips, Rolls, Bread, Butter, beverage, hamburgers, chicken.

The menu for the Banquet is: Tomato juice with lemon wedge, tossed green salad, prime rib of Beef au Jus, Yorkshire pudding, baked potato with sour cream, horseradish, green beans amandine, glazed baby carrots, dinner rolls, butter, strawberry shortcake, coffee, tea
-we have wine with this as well.

Parking

Parking is included free to delegates staying in the Victoria Hall Residence. You will need to pick up a parking permit at the registration desk for your vehicle for Monday only (Sat, Sun & Tues are holidays a permit is not required). For other delegates contact the registration desk staff when you arrive.

Rooms

The majority of rooms in Victoria Hall are singles. The residence is designed as a big X with 4 wings and a core section. There are common rooms on each floor equipped with fridges. Each floor has several individual shared washrooms, some with showers & baths. The rooms are not air conditioned but being right by the lake offers a breeze most of the time. Check your room number carefully as sometimes you can get turned around and end up in a different wing than you thought you were! Rooms are not equipped with telephones but *ARE* equipped with RJ45 (8pin) ethernet connections. You will require a TCPIP stack which supports DHCP, your own ethernet card & drivers and the adapter to wall cable. This is the first year of having this service available in the residence and because of this and other factors, there is *NO* technical support available. Either it works or it doesn't.

Hospitality Area

The Victoria Hall Lower Common Room will be hosting the Display Area, Registration starting mid-Saturday and a Hospitality area where you can come on down and chat with folks. There will be a notice board down here as well. The whole area will be locked up outside of the Display area times, in order to protect the displays.

Venues

There are only a few major venues:

Dunning Hall for the evening Invited Speakers (event is open to the public)

Grant Hall for the Northcott Lecture (event is open to the public)

Ellis Hall for the Paper Sessions and Annual General Meeting

Victoria Hall for the Display Area, National Council Meetings, Wine & Cheese and more.

Items for Sale

We have arranged for some commercial dealers, as well as interested delegates, to display their wares in the Display Area. This will include GA T-shirts, pins, photos and other RASC souvenir items.

Need Help? Answers?

Look for people wearing astronomically distinctive baseball caps and/or coloured ribbons on their



nametags. In addition there will be at least one person on duty with a cellular phone. Those numbers are listed on page 3.

Communications

There are pay telephones located within the residence and the residence desk will be staffed 24 hours/day.

We are attempting to provide at least one computer system with access to internet services (telnet, pop3 mail, etc).

\$Money\$

There is a TD Green machine ATM located in Victoria Hall (your residence), 2 more in Mac-Corry Hall, a Bank of Montreal ATM behind the arena (Clergy & Division), all within walking distance.

Liquor Stores: The Beer Store (Beer products only) is located at 500 Princess (on the corner of University & Princess Streets, a 10 minute walk from campus). The Liquor Stores are located some distance farther ... 34 Barrack at King (downtown) and 905 Princess Street at Bath Road.

Banks:

Bank of Montreal: 297 King Street East (at Clarence); and the Princess & Barrie St Branch

Royal Bank: 366 King St East (just moved to the corner of King & Princess in the Royal Trust Bldg)

TD Bank: King & Brock Streets

CIBC: Bagot & Brock Streets

Bank of Nova Scotia: 145 Princess Street (at Bagot)



Kingston Centre GA Committee

Chair: Peggy Torney 613-xxx-xxxx
 Secretary: Christine Kulyk
 Treasurer: Kim Hay 613-xxx-xxxx
 Publicity: Bill Broderick 613-xxx-xxxx
 Registration: Kim Hay 613-xxx-xxxx
 Accommodation: Kevin Kell 613-xxx-xxxx
 Papers: Leo Enright 613-xxx-xxxx
 Hospitality: Ruth Hicks 613-xxx-xxxx
 Tours: Susan Gagnon
 Transportation: Dieter Brueckner

Members at Large: Laura Gagne, David Levy

Thanks to all those that helped out!! And we mean *all*. As usual, specific names are withheld to protect the innocent! And boy would it be embarrassing to list 37 people and miss out on 1 name.

Web Sites:

GA '97 <http://members.kingston.net/rasc/>
 GA '98 (Victoria) <http://freenet.victoria.ba.ca/rasc/rascvic.html>
 RASC National <http://www.rasc.ca/>

Logo Design & Comments

The logo image for the 1997 General Assembly of the RASC was designed by Peggy Torney, Kingston Centre President and 1997 GA Committee Chair-person. It features two distinctive objects near and dear to the hearts of Kingston Centre members:

* the Murney Tower (part of Kingston's 19th- century fortification system, it is considered one of the finest examples of Martello Tower design in North America), located in a lakeside park which has been the site of many of our observing sessions

* the constellation Corona Borealis, whose name means "Crown of the North"

A Look Back at the Founding of the Kingston Centre

by Leo Enright

On the occasion of the Kingston Centre's hosting its first General Assembly of the RASC, it would be appropriate to reflect briefly on the founding of this Centre. The Kingston Centre fits somewhere in the "middle" of the Society, when one considers the history of the 23 Centres that now make up the national organization. It is not an "elder or senior" member of the group, such as we have with the Centres in London, Ottawa and Winnipeg, for example, all of which have been proud parts of our national organization for more than 75 years; nor is it an "adolescent or youth" member of the group, such as we have with the fine additions that we welcomed to the organization in the 1980's and 1990's, the Centres in Thunder Bay and the Okanagan being two examples that could be mentioned.

With our Kingston Centre this year celebrating its 36th anniversary, it is one of the "right in the middle" groups within our Society. At the age of 36 years, a person is often considered to have lived



long enough to be entering the “maturer years”, perhaps to be confident of his/her position “in the scheme of things”, but if living in a contemporary society, to be aware also of the potential for a “mid-life crisis”! If it is a group of which we are speaking, perhaps the group has become confident enough (or, is the term “foolhardy”?) to undertake the task of providing a convention for about two dozen other such groups from all parts of a vast nation. Having retained a few memories of the “youth years” of our Centre, I know that those who were members at that time would never have considered the hosting of such an event as even remotely possible. However, aging has also brought some confidence based on real growth and maturity. Aging has changed the makeup and focus of the Centre from what it was in its early years, 25-35 years ago, when growth within the group was slow and tentative.

As those who are familiar with Peter Broughton’s book on the history of the Society, *Looking Up*, will perhaps know, there was interest in astronomy in the Kingston area for many years prior to the founding of the Centre in 1961. In fact, the Kingston Observatory, the first in Ontario, had opened in 1855, and Astronomy had been taught at Queen’s University as early as 1863. In the early years of the century Queen’s professors and others from the area had become members of the Society. In 1939, Dr. A. Vibert Douglas, who for a number of years had been active in the Montreal Centre, moved to Queen’s University. She was at the time Second Vice-President of the Society and in 1943-44 would become National President. It was very largely due to the “ground-breaking” work of Dr. Allie Vibert Douglas that the Kingston Centre was formed in 1961 as the 16th Centre of the Society. Because of her dedication and that of a number of individuals, the Centre, after its modest beginnings and relatively slow growth over its first decade, flourished in time and has since become one of the very active Centres of the Society.

To remind us of the historic events relating to our Centre’s beginnings, I have located in the Society’s archives a number of interesting documents from the year 1961. The first is the report of the organizational meeting held in January 1961 to explore the possibility of setting up a Centre in Kingston. With it is the letter subsequently sent to the National Office.

Organizational Meeting, Kingston Centre, Royal Astronomical Society of Canada

About 20 students and members of Queen’s University Faculty met in room 221 of Ellis Hall on Thursday January 19, 1961 at 7:30pm. The chair was taken by Dr. A. Vibert Douglas, Professor of Astronomy, and a past-president of the Royal Astronomical Society of Canada, who outlined the history and purpose of the RASC.

After presenting a description of the Handbook and the Journal of the Society and mentioning the annual fee as \$5 per year with a special rate of \$3 per year for students, the chairman called on Dr. George Harrower to explain the facilities of the Observatory. He suggested that members might be invited to observe with the large and the smaller telescopes one evening a week with the guidance of a graduate student in Astronomy. From time to time public lectures might be arranged.

After most of those present indicated their desire to form such a Centre and join the Society, the chairman gave an illustrated address on Telescopes and the Universe They Reveal. After the lecture, 9 of those present paid the membership fee and a tentative announcement was made of an informal observational meeting to be held in the Observatory on Thursday January 26. The meeting then adjourned.



GA Schedule

GA Schedule

Friday June 27

	No events scheduled
Morning 1	
morning 2	
afternoon 1	12:00-21:00 Registration Opens Victoria Hall Upper Lobby
	Display area is not open until Saturday morning
afternoon 2	18:45 Gather for tour outside registration area in Vic Hall Lobby (10 minute walk) for Miller Geology Museum Tour (Pregistered Tour \$3)
	19:00-20:00 Miller Hall Geology Museum Tour #1: walking tour to Miller
Evening	20:00-until the cows go home. Stirling Hall Astronomy Tours (guided groups of up to 20) (Free) Historical displays in the lobby and special 10-15 minute tours to the “really good stuff”
Night	20:00- until the cows go home. Ellis Hall Observatory Tours (guided groups up to 10?) (Free)

This weekend there is an Arts & Craft Exhibit? Show? In Conferedation Park, right on the waterfront across from City Hall (within Walking Distance)

Walking Tours: Other Sites of Interest within Walking Distance of the Residence are:

★ Bellevue House, ★Correctional Service Of Canada Museum, ★Three Waterfront Museums, ★Murney Tower Museum, ★Agnes Etherington Art Centre, ★Frontenac County Schools Museum, ★International Ice Hockey Federation Museum, ★Kingston Archaeological Centre, ★Kingston Haunted Walk, ★Queen's University Archives, ★Royal Military College Of Canada Museum And Fort Frederick , ★Union Gallery



Saturday June 28

	Registration Victoria Hall Upper Lobby (may move downstairs during the day)	Display Area Vic Hall Lower Common Room	07:30-08:30 Breakfast at Ban Righ Hall Cafeteria (included in room rate, meal tickets can be purchased for \$9.02 at the cafeteria door for those not staying in residence)	
Morning 1	Open 08:00	Open 08:00	9:45 Bus departs for C&E Museum Tour	09:00-12:00 National Council Meeting #1 Vic Hall Ground Floor E Wing Games Room
	Open	Open	11:30 Bus departs for Fort Henry Tour (lunch included)	
morning 2	Open	Open		
lunch	Open	Open	12:00-13:00 On Your Own Lunch: Chip trucks, KGH, local restaurants	
afternoon 1	Open	Open	Ellis Hall 14:00-15:00 Canadian Campaign for Dark Skies Presentation	13:00-17:00 National Council Meeting #1 continues Vic Hall Ground Floor E Wing Games Room
	Open	Open	15:00-1600 Member Slides & Videos	
afternoon 2	Open	Open	16:00-17:00 Sudbury Neutrino Observatory Report	
Dinner	Open until 18:30	Closed	17:00-19:00 Open Dinner Local restaurants: See Registration/Display for maps & menus	
Evening	Closed	Closed	19:00-19:30 Opening Ceremonies Dunning Hall 19:30-21:00 Invited Speaker: Terence Dickinson "Universe of the Eye & Mind" Dunning Hall Open to the Public. Reserved seating for delegates	
Night	Closed	Closed	21:00-22:30 Wine & Cheese Reception Lower Vic Common Room	
			21:30- Ellis Hall Guided Observatory Tours (free)	

GA Schedule

Time to Kill? Walk down to the Farmers Market Saturday morning on King St and Brock (right behind City Hall)



GA Schedule

Sunday June 29		
	Registration & Display Area Vic Hall Lower Common Room	07:30-08:30 Breakfast at Ban Righ Hall Cafeteria
Morning 1	Open at 08:00	09:00-12:00 Paper Session #1 Ellis Hall Auditorium 09:00-09:20 Don Hladiuk (Calgary) 09:20-09:40 Michael Watson (Unattached) 09:40-10:00 JE Kennedy (Saskatoon)
	Open	10:00-10:15 coffee break Ellis Hall Lobby
morning 2	Open	10:20-11:00 Judith Irwin Invited Speaker - Queen's Univ. 11:00-11:20 Richard Schmude (Kingston) 11:20-11:40 Rajiv Gupta (Vancouver) 11:40-12:00 Dave Lane (Halifax)
	Open	12:05-12:15 Group Photo Victoria Hall Front Steps (Ellis Hall Aud if raining)
lunch	Dealer's tables open after Group Photo	On Your Own Lunch: Chip trucks, Hospital Cafeterias, local restaurants
afternoon 1	Open	RASC Annual General Meeting 13:30-17:30 Ellis Hall Auditorium
	Open	
afternoon 2	Open until 17:30 Dealer tear down	
Dinner	Closed	17:30-18:45 BBQ Dinner Leonard Field
Evening	Closed	19:30-21:00 Invited Speaker: David Levy "Shoemaker Levy 9: Joys, Fears & Implications" Dunning Hall Open to the Public. Reserved seating for delegates.
Night	Closed	21:00-22:30 Murphy Slide Show, Poem & Song Contest, Conference Door Prizes Dunning Hall Not open to Public



Monday June 30

	Registration & Display Area Vic Hall Lower Common Room	07:30-08:30 Breakfast at Ban Righ Hall Cafeteria	
Morning 1	Closed	09:00- 12:00 Paper Session #2 Ellis Hall Auditorium 09:00-09:20 Laura Gagne (Kingston) 09:20-09:40 Robert Dick (Ottawa) 09:40-10:00 Steven Manders (Kingston)	
coffee	Closed	10:00-10:15 coffee break Ellis Hall Lobby	
morning 2	Closed	10:20 -11:00 Martin Duncan Invited Speaker - Queen's Univ. 11:00-11:20 Peter Broughton (Toronto) 11:20-11:40 Phil McCausland (St. John's) 11:40-12:00 Raymond Auclair (Unattached)	
lunch	Closed	12:00-13:00 On Your Own Lunch: Chip trucks, KGH cafeterias, local restaurants	
afternoon 1	Open at 13:00 for display tear down	13:00-16:30 National Council Meeting #2 Victoria Hall Ground Floor E Wing Games Room	12:45 Meet at Vic Hall for Miller Hall Geology Museum Tour B
	Open		14:00-15:00 Panel "The Changing Scene for Women in Astronomy" Ellis Hall
afternoon 2	Open until 16:30 for tear down		15:00-16:00 Panel "Meet the Shoemaker-Levy 9 Team" Ellis Hall
Dinner	Closed	Bar (17:00-17:30) Ban Righ Banquet (17:30-18:30) Ban Righ Dress-as-best-you-can Awards (18:30-19:30) Ban Righ	
Evening	Closed	20:00-21:30 Northcott Lecture Gene Shoemaker " Impact Cratering Through Geologic Time" Grant Hall Open to Public. Reserved seating for delegates.	
Night	Closed	21:30-22:00 Closing Ceremonies Grant Hall	

GA Schedule



GA Schedule

Tuesday July 1st	
	07:00-08:00 Breakfast at Ban Righ Hall Cafeteria Note Earlier Times!
Morning 1	07:45 Meet in Vic Hall Lobby for 08:00-11:00 Holleford Crater Tour Transport by chartered school bus Latest checkout by 12:00 Noon For those traveling by bus, train or air, we will arrange a place to store your luggage
morning 2	
lunch	11:30 Meet in Vic Hall Lobby 11:45 Bus departs Vic Hall for Boat tour 12:00-16:00 1000 Islands Boat Tour (lunch incl) For those staying over, there are several fireworks displays around the city. The closest will be outside of Kingston City Hall at Confederation Park just after dusk, near the docks where the boat tour departed.
afternoon 1	
afternoon 2	



Paper Session Schedule

Sunday June 29

09:00-11:30 Paper Session I (Ellis Hall Auditorium)

08:55 Introduction & announcements

09:00-09:20 Speaker #1 **Sky Science: Don Hladiuk - Calgary Centre**

09:20-09:40 Speaker #2 **The Next Transit of Venus in 2004: Michael Watson - Unattached**

09:40-10:00 Speaker #3 **Accomplishments in Astronomy: Dr. A.V. Douglas (1894-1988):
Professor J.E. Kennedy - Saskatoon Centre**

10:00-10:20 Coffee Break (lobby)

10:20-11:00 Speaker #4 **Galaxies: Island Universes or Open Boxes?:
Dr. Judith Irwin - Queen's University (invited speaker)**

11:00-11:20 Speaker #5 **Observations and Measurements of Mars during 1996-1997:
Dr. Richard Schmude - Kingston Centre**

11:20-11:40 Speaker #6 **Tricolour Astronomical Imaging:
Dr. Rajiv Gupta - Vancouver Centre**

11:40-12:00 Speaker #7 **The Halifax Centre's new "St. Croix Observatory":
Dave Lane - Halifax Centre**

12:05-12:15 Group Photo on Victoria Hall Front Steps (or in Ellis Hall if raining)

Monday June 30

08:55-12:00 Paper Session II (Ellis Hall Auditorium)

08:55 Introduction & announcements

09:00-09:20 Speaker #8 **Is Anyone Out There? - Looking For Life On Other Worlds: Laura
Gagne - Kingston Centre**

09:20-09:40 Speaker #9 **Success of a Light Pollution Abatement Program:
Robert Dick - Ottawa Centre**

09:40-10:00 Speaker #10 **The Origin of Ice Ages: Steven Manders - Kingston Centre**

10:00-10:20 Coffee Break (lobby)

10:20-11:00 Speaker #11 **The Kuiper Belt: Its Structure & Possible Origins:
Dr. Martin J. Duncan - Queen's University (Invited Speaker)**

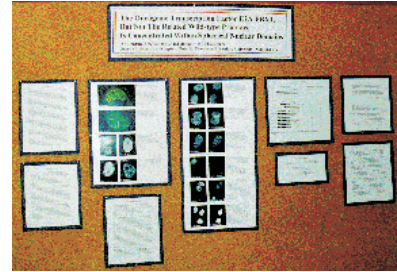
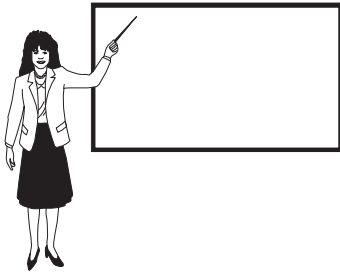
11:00-11:20 Speaker #12 **Examples of Astronomy in the Kingston Area in the Nineteenth
Century: Peter Broughton - Toronto Centre**

11:20-11:40 Speaker #13 **On To Mars - Why?: Phil McCausland - St. John's Centre**

11:40-12:00 Speaker #14 **Using a Ten-step Approach to Measure RASC Performance:
Raymond Auclair - Unattached**



Paper Session Abstracts



1. **Sky Science** Don Hladiuk Calgary Centre

Abstract

In September 1996, Alberta Education introduced astronomy as a mandatory core science subject for Grade 6 students. The unit is called Sky Science. Although astronomy has always been one of the most popular science subjects in Alberta elementary schools, it was never a core science subject. This paper will outline the objectives and benefits of Sky Science, and discuss opportunities for local RASC Centres to become more involved in assisting teachers in introducing astronomy to their students.

Biographical Sketch

Don Hladiuk started with the Winnipeg Centre in 1973 and moved to Calgary in 1979. He has held various Centre Council positions, including twice Centre President. Don has been active in sharing his interest in astronomy with students and the general public for many years. He is a member of the National Councils's Membership and Promotion Committee. Don's observing interests are primarily with solar system objects and with chasing solar eclipses. He received the Society's Service Award in 1991. Don is currently employed with Gulf Canada Resources Limited as a Senior Exploration Geologist.

2. **The Next Transit of Venus in 2004** Michael Watson Unattached

Abstract

No one alive today has ever seen one of the rarest of celestial phenomena, a transit of Venus. The next such event is now less than seven years away. In this paper I will review the circumstances of the transit, consider prime observing locations, and place this in historical context. As well, a brief preview of the transit of 2012 will be offered.

3. **Accomplishments in Astronomy: Dr. A.V. Douglas (1894-1988)** Professor J.E. Kennedy Saskatoon Centre

Abstract

Dr. Douglas was appointed Dean of Women at Queen's University in 1939 and later became Professor of Astronomy. She served as the first woman President of the Royal Astronomical Society of Canada, spearheaded the effort to form the Kingston Centre of the R.A.S.C., was responsible for construction



of a dome and installation of a telescope on Ellis Hall and wrote the biography of her former teacher and mentor at Cambridge University, Sir Arthur Eddington. In retirement she spoke and wrote extensively on a variety of astronomical topics, and served on a number of national and international committees and commissions. Her contributions to the science were recognized by honorary degrees and awards. To her co-eds at Queen's University she was affectionately known as "Dr. D." and to her close friends as "Allie". She was dearly loved and highly respected by astronomers of all vintages.

Biographical Sketch

Professor Emeritus of Physics at the University of Saskatchewan, Saskatoon, Professor J.E. "Ed" Kennedy is a former President of the Royal Astronomical Society of Canada, Honorary President of the Saskatoon Centre, a member of the International Astronomical Union, and a fellow of the Royal Astronomical Society of London. For more than four decades Ed has carried out research on the history of astronomy, often emphasizing the close association between astronomy and early surveying. As a member of Commission 41 of the IAU, dedicated to the history of astronomy, he has benefited greatly from not only the outstanding leadership provided by the late Dr. A.V. Douglas but also the encouragement she afforded him to continue with his studies in this area of the science.

5. Observations and Measurements of Mars during 1996-1997

Dr. Richard Schmude Kingston Centre

Abstract

An intensive photometric study was undertaken during the 1996-1997 Mars opposition. An SSP-3 solid state photometer and the 51-cm reflecting telescope at Villa Rica, GA have been the instruments used in this study. Average solar phase coefficients for longitudes from 130W to 250W have been measured in 1996-1997, and are $[0.0154\pm 0.0011]$, $[0.0128\pm 0.0032]$, $[0.0127\pm 0.0024]$ and $[0.0094\pm 0.0011]$ for B, V, R, and I filters respectively. The normalized magnitudes of Mars over the same longitude range were measured as $B(1,0) = -0.24\pm 0.002$; $V(1,0) = -1.50\pm 0.03$; $R(1,0) = -2.79\pm 0.05$ and $I(1,0) = 13.20\pm 0.07$, while the colour indexes are: $B-V = 1.35$; $V-R = 1.20$ and $R-I = 0.41$. The current values are consistent with values from earlier apparitions and with the appearance of Mars. In addition to photometry, visual studies were once again undertaken during 1996-1997. The North Polar Cap shrunk at a similar rate to what it did in 1995-1996. Large bright clouds were visible in the Tharsis Region and just west of Mare Acidalium. Hellas was very bright even in the central meridian during March ($L_5 \text{ } ^{\text{TM}}95^\circ$); this brightening was also observed during 1995 and during the early 1980's by members of the British Astronomical Association. My results during 1996-1997 will be summarized in the talk, and values will be updated.

Biographical Sketch

Dr. Richard Schmude Jr. grew up in Texas and attended the local public schools there. He then enrolled at North County College and later at Texas A&M University where he received a Bachelor of Arts Degree in Chemistry and Physics, a Master of Science degree in Chemistry and a Ph.D. degree in Physical Chemistry. He is currently teaching both Chemistry and Astronomy at Gordon College; he has held this position for 2.5 years. Dr. Schmude has been interested in Mars since he was 7 years old,



and has studied it since 1984. His first Mars publication appeared in 1988. He has published five research papers related to Mars in the Journal of the RASC and has given several talks about Mars.

6. Tricolour Astronomical Imaging Dr. Rajiv Gupta Vancouver Centre

Abstract

Most colour images from professional observatories are produced using a tricolour process which combines three different black and white exposures taken through various filters. This technique produces superior results. However, few amateur astrophotographers have used it, largely because of the tedium involved in registering the exposures and producing the final image. In this talk I will show a modified tricolour process that I have recently been applying to exposures taken on medium format film with a 125mm refractor. A key component of this process is a suite of C-programs which automatically registers the digitized images. Some recent examples will be shown.

Biographical Sketch

Dr. Rajiv Gupta has been an avid astrophotographer for the last ten years. Some of his images have appeared in the RASC Observer's Calendar, which he also produces. Recently he has been combining traditional film-based photography with modern digital techniques on a computer with a ridiculous amount of memory.

7. The Halifax Centre's New "St. Croix Observatory" Dave Lane Halifax Centre

Abstract:

The dream of many Halifax Centre members was realized on June 21st, 1997 when the centre's new observatory was officially opened. This paper will discuss the planning, construction, and future plans for the observatory.

Biographical Sketch:

David Lane is a past-president of the Halifax Centre. He currently edits Nova Notes, Halifax Centre's newsletter and helps with the production of the RASC Journal. He recently received the RASC's Chant Medal and Ken Chilton Prize.

8. Is Anyone Out There? - Looking For Life On Other Worlds Laura Gagne Kingston Centre

Abstract

The discovery of possible life forms in a meteorite believed to be from Mars has sparked new interest in the Red Planet, and has generated new interest in the search for extraterrestrial intelligence. The probability of finding life on a planet other than earth has been a topic of scientific debate since at least the 1970's and recently it has been taken quite seriously. We know a fair amount about the early years of life on earth because of our fossil record, but we cannot be sure that our own evolution is typical in the universe. There are several ways to detect life on other worlds, some practical and others not. If there is intelligent life out there, willing and able to communicate with us, just imagine how discovering it could change our ideas about our place in the cosmos! This talk is non-mathematical and suitable for



everyone with an interest in the scientific aspects of science fiction.

Biographical Sketch

Laura Gagne is an amateur astronomer who lives in the Kingston area. She is an adult student at LaSalle Secondary School studying sciences and mathematics. In the fall she plans to attend Queen's University to study astrophysics in order to turn her hobby into a career. She has spoken to both adult and youth groups about astronomy and done public star nights with other members of the Kingston Centre. Laura is currently the Secretary of the Kingston Centre and is actively involved in promoting astronomy to the public. At the school she attends, she assists the physics teacher with his astronomy club; they try to take the students out as frequently as possible to use their telescopes. She has also worked with a local Cub Pack and with an area elementary school for their star evenings. For her, astronomy is a passion. She considers the search for extraterrestrial life to be one of the most interesting aspects of astronomy, outside of cosmology. Laura has talked to the Kingston Centre on this topic and has been invited to speak to the Belleville Astronomy Club on the same topic.

9. **Success of a Light Pollution Abatement Program** **Robert Dick** **Ottawa Centre**

Abstract

The talents of the Ottawa Centre have been taxed over the last two years as it engaged in a Light Pollution Abatement Program (LPAP). This program was created in 1995 to save the dark skies around the Centre's observatory and the observing sites of its members. The program has been very successful in motivating government and business to adopt lighting policies that, in the short term, will slow the growth of light pollution and reduce it, in the long term. This paper will briefly outline the LPAP and show examples of its success.

Biographical Sketch

Since joining the RASC in 1969 and graduating with engineering degrees in 1975 and 1981, Robert Dick has pursued concurrently careers in engineering, science, and education. In these three disciplines he has nurtured his talents as a problem solver, developed advanced technical products for the Canadian, American and European space program, and brought astronomy to the general public and university students. He was chairperson of the Ottawa Centre's Observers' Group in 1979 and 1980 and Centre President in 1994 and 1995; he was also National Council Rep for several years and has been Chair of the Light Pollution Abatement Committee. He has built numerous telescopes of aperture from 6 inch to the 24-inch in his observatory located half-way between Kingston and Ottawa. This observatory has been used for photography, CCD imaging, videography, cinematography, spectroscopy, and star gazing. Many of his images have been used in his introductory course in astronomy and elsewhere nationally and internationally. He has discovered one comet; unfortunately it had been discovered a century earlier.

10. **The Origin of Ice Ages** **Steven Manders** **Kingston Centre**

Abstract

The cause of the ice ages and interglacial periods has been extensively researched by many



scientists who have systematically eliminated all possible causes. The reason for the lack of answers lies in the solar model which needs revision. The solar core slowly overheats while the outer half cools a few percent over tens of thousands of years causing periodic convection currents from the core. This action refuels the core which is confirmed by the neutrino deficiency and helioseismology. Such a process also fits the patterns of temperature change on Earth very well.

Bibliographic Sketch

Steven Manders has been a passionate amateur for the last ten years. In 1991 he was awarded the Messier Certificate for observing all 110 Messier Objects in the dark skies from his home near Sydenham, Ontario. Physics has always been his forte, though chemistry his background. They blended together to form an obsession for solar physics as it became apparent how much was known but how little was understood on the subject.

12. Examples of Astronomy in the Kingston Area in the Nineteenth Century

Peter Broughton Toronto Centre

Abstract

Three strands weave their way through astronomical history in nineteenth century Canada -- an appreciation of the beauty and structure of the universe, the use of astronomy as a practical science in surveying, and the furtherance of both these characteristics through education. All these features were evident in the Kingston area because of some enlightened citizens and the city's strategic location and its university.

Biographical Sketch

Peter Broughton has served the RASC in nearly every national office, including President, and has written a book on the history of the Society. As a Torontonian living under a canopy of light pollution, but with access to fine libraries, Peter's interests tend to an appreciation of what astronomy others have done. He is especially interested in the development of astronomy in Canada.

13. On to Mars -Why? Phil McCausland St.John's Centre

Abstract:

In the nearly quarter century since Gene Cernan was last to walk on the Moon, and while robotic explorers pushed out into the solar system, humans have established a sustained presence in low earth orbit. As the robotic Mars Pathfinder and Global Surveyor head on to meet with Mars this year, there is fresh interest in the human exploration of Mars. While this appears technologically feasible, questions of purpose remain: "Why go to Mars? Is human exploration important?"

It is nearby, has good surface access. It offers a somewhat familiar working environment, and an opportunity for sustained comparative study to develop our understanding of how planets works. Only human exploration can produce the serendipitous discoveries that will be not only about Mars, but about us. Establishing a human presence on Mars will spur economic and technological development, and provide a positive focus for purpose and hope in the world, as well as the best opportunity to search for possible signs of fossil or present extraterrestrial life.

The human experience of Mars will fundamentally alter our view of our home world, and of our



place in the universe. For all of the above reasons, Mars is an experience well worth pursuing.

Biographical Sketch:

Phil McCausland, 27, is a member of the RASC St. John's Centre and is currently completing his M.Sc in Geology with Memorial University of Newfoundland.

**14. Using a ten-step approach to measure RASC performance
Captain Raymond Auclair Unattached**

Abstract:

Is the size of our membership a true indicator of our success? I will argue that it is not, and that it is even possible that “as our attention is turned more and more on the number of members and the quality (and quantity) of service to our members, our objective, at least at the national level, has been neglected. I am afraid that we have fallen into the Statistician’s pitfall: we concentrate on the “easy to count” instead of what really counts.

Biographical sketch:

Raymond Auclair joined the RASC in 1969 and became a life member in the early 1970's. He has remained an unattached member all those years, and in 1989 on their behalf he hosted in Sydney, NS a General Assembly of the Society. In that year he also received the Service Award. Since 1968 he has worked for Transport Canada, as a ship officer, teacher and Chief of Training (Dean) at the Canadian Coast Guard College, and now as Director of Risk Management for the Transportation of Dangerous Goods programme.



Invited Speakers

Martin J. Duncan



The Kuiper Belt: Its Structure & Possible Origins

Physics Dept., Queen's University

Since the discovery of its first member in 1992, the trans-Neptunian Kuiper belt has been transformed from a theoretical construct invoked to explain the origin of short-period comets to a bona fide constituent of the solar system. In this talk I will summarize the interplay between theory and observations over the last 5 years that has shaped our current thinking about the current structure of the belt and the implications of these studies for our understanding of solar system formation.

Dr. Martin Duncan, an astrophysicist at Queen's University in Kingston, is a leading authority on the recently discovered Kuiper belt, a billion-comet reservoir located just beyond the orbit of Neptune. His cutting-edge research on Kuiper belt objects has coincided with his investigations into the fascinating implications of chaos theory in relation to solar system orbits.



Dr. Judith Irwin

Galaxies: Island Universes or Open Boxes?

Queen's University Physics Department.

When the "spiral nebulae" were first referred to as "Island Universes", it was in an attempt to understand whether these nebulae might be separate and distinct systems outside of our own Milky Way galaxy. Today, the extra-galactic nature of the spiral nebulae is well established. However, we might well ask the same question in a somewhat different context. Modern observations, especially at non-optical wavebands, are suggesting that galaxies may not be the separate and distinct systems originally envisioned. Evidence for extended dark mass distributions and gas outflows suggest that some--and perhaps most--galaxies may be intimately and profoundly connected with their surrounding environments. This talk will summarize current evidence related to the Island Universe /Open Box issue and consider its implications for our understanding of galaxy evolution.

Dr. Judith Irwin, of Queen's University, has been involved in public astronomy as well as research since the 1970s. Specializing in radio astronomy, she has worked at observatories in locations as diverse as Japan, New Mexico, and Hawaii. Her research has focussed on the nature and composition of the interstellar medium in spiral galaxies, and on the dynamic interaction between star formation in galactic disks and gaseous outflow into the halo regions around them.



Invited Speakers

Dr. David Levy



Shoemaker-Levy 9: Joys, Fears, and Implications
Lunar & Planetary Institute

The impact of Shoemaker-Levy 9 was a milestone in our understanding of the nature of impacts in the solar system. This talk will review, through music, poetry, and images, the story of this fascinating comet.

This talk will be open to the public.

Dr. David H. Levy, Canadian comet hunter extraordinaire, who currently resides in Vail, Arizona, is a long-time friend and Honorary President of the RASC Kingston Centre. He has achieved world renown as discoverer or co-discoverer of 21 comets, including the famous Comet Shoemaker-Levy 9 that crashed into Jupiter in 1994. A native Montrealer who attended Queen's University in Kingston, David Levy is the author of numerous astronomy books and articles.



Terence Dickinson

Universe of the Eye and Mind
Editor of Skynews

Terry has promised us a multi-projector-slide-show audio-visual extravaganza featuring many of his own stunning astronomical images. This talk will be open to the public.

Terence Dickinson, of Yarker, Ontario, is Canada's foremost astronomy writer and popularizer. The award-winning author of many astronomy books and editor of SkyNews magazine, Terry Dickinson also appears regularly on radio and TV. Recently named a Member of the Order of Canada, Terry is also the 1996 recipient of the Klumpke-Roberts Award for outstanding contributions to the public understanding and appreciation of astronomy.

Dr. Aksel Hallin

The Sudbury Neutrino Observatory
Queen's University, for the SNO Collaboration

The Sudbury Neutrino Observatory is a 1000-ton heavy water neutrino detector, currently in the final stages of construction. It is located 6800 feet underground in Inco's Creighton mine. The observatory will measure the number, type, and energy of neutrinos that are emitted from the sun. This experiment tests the standard solar model in a unique way, and may also determine whether or not neutrino oscillations occur. The talk will describe the facility, outline its current status, and discuss the various astrophysical and particle physics experiments.



The Ruth Northcott Memorial Lecture

Eugene Shoemaker



About the Event

The Ruth Northcott Lecture will be open to the public and held at Grant Hall on Queen's University Campus the evening of Monday June 30th starting at 8:00pm. Reserved seating for conference delegates.

Impact Cratering Through Geologic Time

Abstract:

New data on lunar craters and recent discoveries about craters on Earth permit a reassessment of the bombardment history of Earth over the last 3.2 billion years. The combined lunar and terrestrial crater records suggest that the long-term average rate of production of craters larger than 20 km in diameter has increased, perhaps by as much as 60 percent, in the last 100 to 200 million years. Production of craters larger than 70 km diameter may have increased, in the same time interval, by a factor of 5 or more over the average for the preceding 3 billion years.

A large increase in the flux of long-period comets appears to be the most likely explanation for this long-term increase in the cratering rate. Two large craters, in particular, appear to be associated with a comet shower centered at about 35.5 million years ago. The infall of cosmic dust, as traced by ^3He in deep sea sediments, and the ages of large craters, impact glass horizons, and other stratigraphic markers of large impacts seem to be approximately correlated with estimated times of passage of the Sun through the galactic plane, at least for the last 65 million years. These are predicted times for increased near-Earth flux of comets from the Oort Cloud induced by the combined effects of galactic tidal perturbations and encounter of the Sun with passing stars. Long term changes in average comet flux may be related to changes in the amplitude of the z-motion of the Sun or stripping of the outer Oort cloud by encounter with GMCs, followed by restoration from the inner Oort Cloud reservoir.

About the Speaker:

Eugene Shoemaker has recently retired as a geologist with the U.S. Geological Survey. He has had a long career in planetary science, beginning with his studies of terrestrial impact craters and the geology of the Moon in the late 1950s. He was co-investigator on the Ranger project, principal investigator on the Surveyor and Apollo projects, and a member of the imaging team with the Voyager project. Most recently he has been the science team leader for the Clementine mission to the Moon. Gene served as a professor at the California Institute of Technology, 1969-1985, where he originated the Palomar Asteroid and Comet Survey. He is on the staff at Lowell Observatory and is a research professor of



astronomy at Northern Arizona University. He has co-discovered 29 comets and many asteroids.

From David Levy:

Eugene M. Shoemaker is likely the most famous planetary scientist alive. Born in 1928, Gene received his college education at Caltech, and his Ph.D. from Princeton. For his thesis he made the first positive identification of the impact origin of a crater on Earth-- the famous Meteor Crater east of Flagstaff, Arizona. Some five years later, in the early 1960s, he established a similar origin for Germany's Ries Basin. A leader of the science teams for the Ranger and Surveyor lunar mission programs, he helped determine the cratering rate on the Moon, which was essential to understanding how Earth was battered over billions of years as well. He has devoted many years to identifying and studying other craters on Earth, particularly in Australia.

In the early 1970s Gene began a program of searching for the impacting objects-- the potential Earth hitting asteroids and comets. Gene's wife, Carolyn, joined him in this project a decade later. Working with other scientists like Henry Holt and David Levy, the Shoemakers took more than 26,000 exposures of the night sky from Palomar's 18-inch telescope. The couple has found 32 comets in this way.

In March 1993, the Shoemaker-Levy team made its most important discovery, a comet that, a few months earlier, had been catastrophically disrupted into many pieces after a close approach to Jupiter. In July 1994, Gene watched as the 21 pieces of this comet slammed into Jupiter at enormous velocity. It was the culmination of his life's dream: after contributing so much to understanding the importance of impacts on the history of Earth and of life on Earth, Gene actually got to see his theories confirmed in a spectacular way. The impacts of Comet Shoemaker-Levy 9 were inspiring, and produced the most dramatic explosions ever seen in another world.

The Lecture:

The Ruth Northcott Memorial Lecture is sponsored by the RASC. It is held biennially (in odd numbered years), usually after the Awards Banquet at the General Assembly.

Selection of the speaker is made by the President of the Society and the Chair of the Local Organizing Committee hosting the General Assembly.



Awards

The Chant Medal

The Chant Medal of the Society was established in 1940 in appreciation of the great work of the late Professor C.A. Chant in furthering the interests of astronomy in Canada. It is awarded not more than once a year to an amateur astronomer resident in Canada for extensive and original work of value in astronomy.

The Chilton Prize

The Chilton Prize was established in 1977 in remembrance of Kenneth E. Chilton, an active member of the Hamilton Centre. The prize is awarded annually to an amateur astronomer, resident in Canada, in recognition of a significant piece of astronomical work carried out or published during the year.

Heather Cameron is a 16 year old student at Horton District High School in Nova Scotia. Her studies in solar astronomy began a few years ago with a small photometer given to her by her father. Since then, she has advanced to the level where she has designed, built and operated her own Solar Observation Station from her home. Heather's observatory is a VLF radio receiver that observes the Sun indirectly by collecting data on the status of the Earth's ionospheric D-layer. Over a one year period of daily observations, she was able to untangle the observed changes from such daytime interference as thunderstorms, the living room TV set, the kitchen stove, electric lights and so on. Heather was able to detect the aurora borealis, solar flares, coronal holes in the Sun's atmosphere, the solar rotation, and a miniature "sunset effect" that occurred during an annular eclipse of the sun.

As a result of her work she has won top awards at many science fairs, both locally, nationally and internationally. She has continued her studies by building additional equipment to supplement her existing receiver, and she is able to correlate her results with those of other researchers via the Internet.

The Service Award

The Service Award, in the form of a bronze medal, recognizes outstanding service to a Centre or to the National Society over a period of at least ten years.



The Simon Newcomb Award

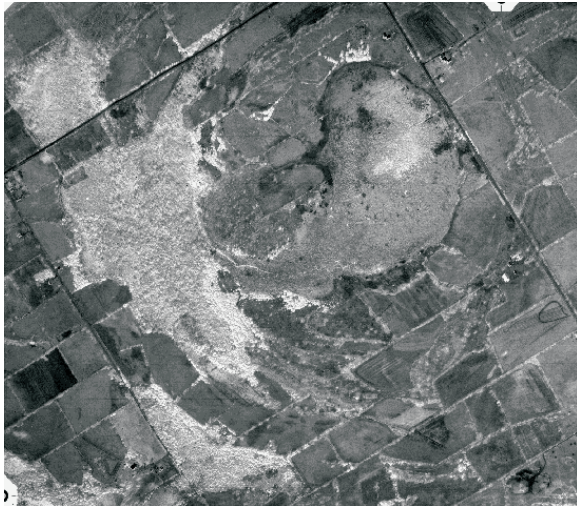
The Simon Newcomb Award is named in honour of the famous astronomer, Simon Newcomb (1835-1909), who was born in Nova Scotia and later served for 20 years as Superintendent of the American Ephemeris and Nautical Almanac Office at the United States Naval Observatory in Washington. The award was created in 1978 by the RASC National Council on the initiative of the Halifax Centre, though the terms were broadened in October 1994, and a cash prize as well as a trophy and books are now offered.

The intention is to encourage members of the Society to submit well-written articles of general interest and to recognize the best of these through the award. Details can be found in the December 1994 Bulletin, or in the Minutes of the National Council for October 1994.

The Plaskett Medal

Canada's two national astronomical societies, the Royal Astronomical Society of Canada and the Canadian Astronomical Society, have joined together in the sponsorship of a new award for students of astronomy at Canadian Universities. The joint RASC/CAS award entitled the Plaskett Medal is awarded in recognition of the pivotal role played by John Stanley Plaskett in the establishment of astrophysical research in Canada. An award is made annually to the graduate from a Canadian university who is judged to have submitted the most outstanding Doctoral Thesis in astronomy and astrophysics in the preceding two calendar years. An award need not be made every year.

The Plaskett Medal winner was Alain Beauchamp. He gave his lecture and received the medal in Edmonton on Sunday, June 15, during the annual meeting of CASCA.



Holleford Crater

"The aerial photograph (#A27097-50) of the Holleford crater that appears here is (c)1987 Her Majesty the Queen in Right of Canada, and is reproduced from the collection of the National Air Photo Library with permission of Natural Resources Canada."

Holleford Crater Tour GA'97

The Highlight Tour of the Conference will be to the Holleford Crater Tour on the morning of Tuesday July 1st. Travel will be by chartered school bus and private vehicles if necessary. Don't miss out on the Miller Hall Geology Museum Tour (two sessions during the

conference) which will put some background information at hand before the actual Crater Tour.

The Ancient Meteorite Crater at Holleford Ontario

by Leo Enright

Holleford Crater, an interesting and very ancient meteorite impact feature, is named after the tiny village located partly within its boundaries. It is a circular depression about 30 metres deep and 2.35 km in diameter, located at latitude 44 deg 47 minutes north, longitude 76 deg 38 minutes west, about 27 km north-north-west of Kingston, Ontario.

Although several farms had been maintained at the site for over 100 years, its discovery and confirmation as a meteorite impact site dates only to the mid-1950's. The 1950's research was led by Canadian scientists from the Dominion Observatory in Ottawa, and the project that led to its discovery was the result of the discovery of two other meteorite impact sites, the New Quebec Crater and the crater at Brent, Ontario.

First identification of the feature was a result of a 1955 study of 200,000 aerial photographs of areas of the Canadian Shield conducted by the Dominion Observatory under the direction of Dr. Carlyle S. Beals, the Dominion Astronomer at the time.

Subsequently, the research program included a study of the surface geology by the Geological Survey of Canada, and a series of four geophysical studies, namely (1) magnetic observations of the area, (2) seismic studies which proved consistent with the theory that it was an impact site, (3) gravity studies which also proved consistent with the impact theory, and (4) a diamond drilling program in which 3 holes were drilled. The drill core contained breccia and similar materials at depths predicted for a meteorite impact site.

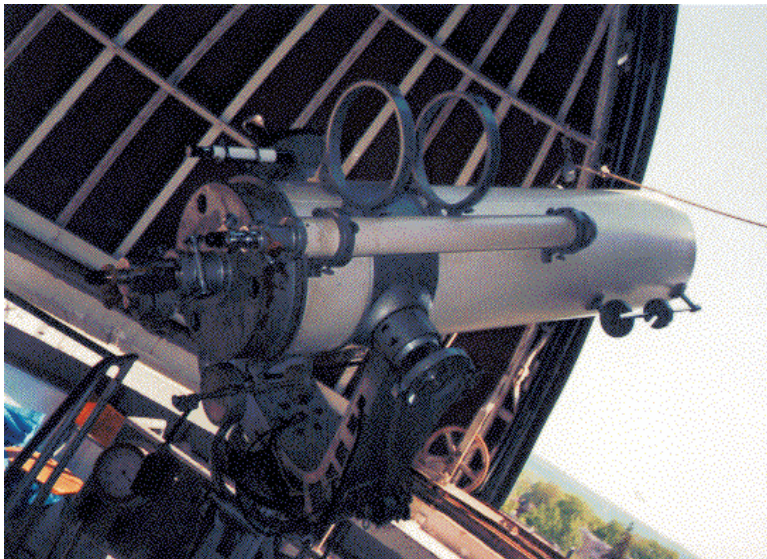
The conclusions were that the feature outlined a very ancient meteorite impact crater formed in the Precambrian Bedrock below. It was over a half-billion years old, and probably formed by an impacting



body 100m in diameter, travelling at 20 km/s with an energy of impact six times that of the object that formed the Barringer Crater. Primary reference for the research conducted at Holleford is Volume XXIV of the Publications of the Dominion Observatory (1960).

Queen's Observatory

The observatory is in a dome located on the roof of Ellis Hall on the main campus of Queen's University, and is run by the Queen's Astronomy Research Group. It houses a 15" Cassegrain reflecting telescope, installed in 1960. Used primarily for public demonstrations, undergraduate observing projects and Astronomy Club activities, the Queen's observatory is also available to visiting



groups (Cub Scouts, Brownies, Science Quest (science camp for teenagers), primary and high school classes, etc. who may schedule tours (at no charge). Open Houses are held during astronomical events such as lunar/solar eclipses, the approach of comets etc., when we typically get a few hundred people passing through our doors (remarkably even when the skies are cloudy!). The Astronomy Group also has an 8" Meade reflecting telescope, a 4" Questar, and an SBIG ST-6 CCD camera.

Adopt-A-Star, and help Queens buy a new telescope! The Queen's University Astronomy Research Group (QUARG) and Queen's University have begun a fund-raising campaign in order to upgrade the 37 year-old observing facilities. The goal is \$140 000, a sum which would allow the purchase of a brand-new, state-of-the-art telescope, a new observatory dome (the current dome dates back to the early part of this century), an observing deck for public viewing sessions, in addition to a number of other upgrades to the facility.

Fund-raising efforts are well underway! For fixed donations, individuals can 'adopt' a star visible in the Kingston sky. In return for your donation, you will receive: A tax receipt, a certificate with your name and the name of the star you have adopted, an information sheet describing the star and the constellation in which it is found, a star chart showing the position of the star in its constellation, a copy of a recent piece of constellation artwork donated by a local artist, and a sky map of the constellations.

Pick a star in your favourite constellation! If you like big red stars, how about Betelgeuse? Or do you prefer something in the Big Dipper? This is a great gift idea for loved ones! Prices vary depending on the brightness and popularity of the star, ranging from \$25 to \$2500. Donations are tax-deductible, and all proceeds go to the upgrade of the Observatory. Please help bring a few more real stars within reach of students and the community!



Tour Information

These are the organized tours which appeared on the GA Registration Forms. Some of the tours space *may* still have spaces available. Please check at the GA Registration Desk for more information.

Miller Museum Of Geology Friday June 27th and Monday June 30th (Page 40 map, item #12)

Explore the science of geology, the study of the Earth, at this fascinating museum at Queen's University. Here you will find a large gallery of minerals, fossils (including a duckbill dinosaur skull), and a working seismograph on display. A good backdrop to the Holleford Meteor Crater Tour on Tues July 1st. Geology and Fossils of the Kingston Area are highlighted in other displays. Miller Hall, Queen's University, Union & Division St. Open year round except Statutory Holidays

Stirling Hall Astronomy Tours Friday June 27th 20:00-? Free (Page 40 map, item #11)

A BRIEF HISTORY OF ASTRONOMICAL OBSERVATORIES IN KINGSTON

The growth of astronomy in Canada owes its origins to solving the problems associated with timekeeping, surveying, and navigation, and the first such activities in Kingston were organized by the British Ordinance Department, which was also the centre for meteorological and geodetic information. A few "Gentleman Amateurs" were involved.

The solar eclipse of May 26, 1854 aroused great public interest and, when the Murney property was being laid out as a park (now City and McDonald Parks), the committee of observers volunteered to arrange the erection of an observatory building, and the acquisition of a 6-1/4 inch refracting telescope, with mounting and clockworks, from Alvan Clark of Boston.

After five years operation by the Gentleman Amateurs, Queen's College offered to manage and develop the Observatory facilities and provide the services of a qualified observer. The College's civic duties included publishing their twice-daily barometric and thermal readings, and applying weekly corrections to the City Hall clock, as well as delivering public lectures and demonstrations. The most experienced observer was Nathan Fellowes Dupuis, who graduated from Queen's in 1862 and became Professor of Mathematics and, in 1894, the first Dean of the Faculty of Practical Science. In order to reduce the cost of operating the Observatory, Dupuis built several of the necessary clocks and instruments himself, and only his ingenuity and mechanical skills kept the Observatory operational.

Annually-mounting debts thwarted upgrading of the Observatory from amateur status and, by 1865, lack of funds, interruptions from public activities in the park, continual vandalism, and eventually a question of right of occupancy, resulted in the Observatory being relocated to the College campus near Carruthers Hall.

The third, updated observatory, a limestone building planned by Dupuis, was built in 1909 at the corner of Stuart Street and University Avenue. A four inch transit telescope was added, and the facility was used for undergraduate training and demonstrations. It was demolished in 1946 to make way for the university's Mechanical Engineering building, McLaughlin Hall.

In 1960, under the guidance of the distinguished astronomer Dr. Alice Vibert Douglas, the current Observatory was constructed atop Ellis Hall. Its primary instrument, a 15 inch Cassegrain reflecting telescope made by J.W.Fecker, is used for undergraduate laboratory experiments and public demonstrations.

The Alvan Clark telescope, the large transit telescope, Dupuis' clocks, and other items from past Kingston and Queen's observatories are now stored and displayed in Stirling Hall at Queen's University.

Military Communications & Electronic Museum Saturday June 28th (Page 40 map, item #25) Canada's newest military museum features the stories of the men and women who have served Canada, from peacekeeping with the United Nations to helping develop Canada's northern communities.

Fort Henry Saturday June 28th (Page 40 map, item #24)

Fort Henry is a "must stop" for any group tour itinerary. It is one of the largest tourist attractions in Eastern Ontario, offering visitors the most spectacular view of Kingston and Lake Ontario. Frequent group visitors from France,



Japan, Germany, Italy, Holland, Australia and England, often tell us this visit is the highlight of their trip. Live person interpretation, music and military drill all combine to make your guests' visit to Kingston, Ontario, Canada most memorable. Regular tours plus "Military Musters" available to your groups. **Late breaking news! During the Tour there will be a sailpast of the Tall Ships and a cannon duel/battle between the Ships and the Fort.**

Kingston 1000 Islands Cruises Tuesday July 1st (Page 40 map, item #18)

Featuring Live Entertainment & Fabulous Meals 3 HOUR "HEART OF The ISLANDS" TOUR
Save valuable time by planning your group's lunch aboard our ships. Eliminate the on/off bus monotony and avoid rushing through lunch. Sit back, relax and see the sights while enjoying our fine quality luncheon and service. General sightseeing, breakfast and dinner cruises also available. Handicap Accessibility - yes
Special Arrangements - Lunch/dinner groups receive pre-boarding privilege and reserved table seating.

Holleford Meteor Crater Tour Tuesday July 1st

This is a guided trip to the Holleford Crater (a lot more details available on page 30) by chartered school bus.

Other Tours (Walking or otherwise)(no formal tours, but something to do if you get bored! See the maps in your room, or the Display Area)

Confederation Tour Trolley Saturday June 28th (Page 40 map, item #16)

Hop aboard the Confederation Tour Trolley for a 50-minute exploration of Kingston's historic past! View Kingston's beautiful waterfront and charming limestone heritage with highlights including the Royal Military College, Fort Henry, Penitentiaries, Olympic Harbour, Bellevue House and Queen's University.
10:00 - 5:00 Mid-May - June 30 Length of Time for tour - 50 minutes, Wheelchair accessibility - Yes

Bellevue House (Page 40 map, item #9)

An Italian Villa built in the early 1840's, Bellevue House was a home of John A. Macdonald, who became Canada's first Prime Minister. The house and gardens are restored to the late 1840's when the Macdonalds lived there. Staff dressed in period costume interpret Macdonald's family life and demonstrate period activities. In the Visitor Centre, a film and an exhibit introduce the life of Sir John A. Macdonald. 35 Centre Street, Kingston, ON K7L 4E5

Correctional Service Of Canada Museum (Page 40 map, item #7)

Built as the Warden's residence of Kingston Penitentiary between 1871 and 1873 by convict labour, "Cedarhedge" houses a fascinating collection of artifacts and documents relating to the correctional history of Canada. Displays range from early punishment and restraint equipment to modern inmate industrial and hobbycraft products. The museum is fittingly located between Kingston Penitentiary and Canada's Federal Prison for Women. 555 King Street West Kingston, ON K7M 4V7

Three Waterfront Museums (Page 40 map, items #13,14,15)

The Marine Museum of the Great Lakes Buildings that were once part of the Historic Kingston Shipyards, are now used to showcase the shipping heritage of the Great Lakes. Open year round. Explore the Museum Ship "Alexander Henry" a 3,000 ton Canadian Coast Guard Ship. Operates Mid-May to Mid-October, Bed & Breakfast - (seasonal).
The Pump House Steam Museum See what got the world all fired up! Steam was the fuel of nineteenth Century society - powering locomotives, engines and the pumps of this 1850's waterworks. See for yourself the monster engines that saved buildings from fire and changed lives by providing clean water. Discover our extensive model train layout and numerous smaller steam engines. Mid-May to Labour Day. A 5 minute walk to downtown.
Admission 55 Ontario Street Kingston, ON K7L 2Y2

Murney Tower Museum (Page 40 map, item #13)

The stout stone Murney Tower was built in 1846 to protect Kingston from American naval bombardment. It



has been maintained as a museum by the Kingston Historical Society since 1925. Its massive Bloomfield cannon and two carronades, along with military and domestic artifacts on three floors, tell the story of soldiers and families who lived inside. Its primitive Victorian facilities may inconvenience the disabled. Kingston Historical Society (King St. at Barrie St.)

Agnes Etherington Art Centre (Page 40 map, item #11)

Kingston's only art museum and one of Canada's most attractive galleries features seven galleries pulsating with constantly changing exhibitions of contemporary and historical art. Art cards, posters and catalogues available. Queen's University, University Avenue at Queen's Crescent. Open Tues. to Fri. (10am-5pm); Sat. & Sun. (1-5pm); Holiday Mondays in May, Aug. & Sept. (1-5pm) and Canada Day Admission: 2\$ Adults; 1\$ Seniors & Students; Children under 12 free. Free Admission every Sunday afternoon

Frontenac County Schools Museum (Page 40 map, item #22)

This Museum is chock-full of artifacts from the historic school-houses of Frontenac County. The main exhibit is a pre-1920 era Schoolroom. The Museum's collection, which includes school equipment, archives, and textbooks, gives the visitor a complete look at education as it used to be in early Ontario. 559 Bagot St. Open Feb.1 to June 30, Mon. to Fri.(9am-noon, 1-4pm); July 1 to Aug.31, Mon. to Fri.(9am-4pm), Sat. by group appointment; Sept.1 to Dec.15, Mon. to Fri.(9am-noon, 1-4pm); closed statutory holidays. Admission.

International Ice Hockey Federation Museum (Page 40 map, item #10)

Add a new dimension to your visit to Kingston by stopping by the world-renowned International Ice Hockey Federation Museum. The Canadian tradition of hockey now enjoys an international influence from top-calibre NHL players whose memorabilia are on display. York & Alfred Streets Admission.

Kingston Archaeological Centre (Page 40 map, item #8)

The Centre maintains an interpretive area depicting the 8000 year history of human occupation of the Kingston region. Displays include historic maps, illustrations and artifacts excavated from local archaeological sites characterizing different cultural periods. We encourage access to our research library and collections located in an historic waterfront brewery complex. 370 King St. W.(Part of J.K.Tett Centre) Open Mon. to Fri.(9am-4pm),

Kingston Haunted Walk

Ghosts, hangings, graveyards and haunts will give you goosebumps during an evening walking tour of Kingston's dark past. Tours led by Upper Canada Walking Tours depart from Tourist Information Office (across from City Hall) from May 9 to October 31. Approximately 1 ½ hours. No reservations necessary.

Queen's University Archives (Page 40 map, item #30)

The Queen's University Archives is open year round for research purposes. The collection contains records relating to Queen's University, Kingston, Eastern Ontario; Kingston and district families and businesses; Canadian literary figures; Canadian political figures and Ontario political parties. There are also land registry copybooks for Kingston and surrounding region. Kathleen Ryan Hall, Queen's University Campus Open Sept. to April(9am-5pm); April to Sept.(8:30am-4:30pm). Free Admission. (613) 545-2378

Royal Military College Of Canada Museum And Fort Frederick (Page 40 map,

item #23) Housed in Fort Frederick Martello Tower, largest of the Kingston towers, this museum records the story of Canada's century-old centre of military education, the exploits of its graduates, and the story of the Royal Dockyard which once occupied Point Frederick. There is also the internationally renowned Douglas Arms Collection. RMC grounds, off Hwy.#2 east. Open last weekend in June to Labour Day (10am-5pm), at other times, group visits by arrangement. Free admission. (613) 541-6000 ext. 6663/6652 (office)



A thank you from the GA 1997 Chair

Here you are, at the end of the book, and at the end of the General Assembly. We here in Kingston hope you enjoyed your stay with us and are going home with a lot of great memories.

As the Chairperson of this event, I would like to take this opportunity to thank many of those people who made this GA possible. Firstly, thank-you to all our speakers, invited and submitted. You are the main reason why people attend a GA. Secondly, to our organizing committee, most especially to Ruth Hicks, Kim Hay, Kevin Kell, Christine Kulyk, Susan Gagnon, Leo Enright, Laura Gagne, David Levy, Dieter Brueckner, Bill Broderick, and Cathy Hall. And to those who started this process and could not continue with us, Stan Hanna, Denise Sabatini and Ian Levstein. Thirdly, to our volunteers, without whom this Assembly would not have come together as it did. Give yourselves a pat on the back. And a personal thank-you to John. Finally, a thank you to all of you for coming out and allowing us to share with you.

Next year we hope to see you all again, in Victoria!

Clear Skies, Peggy Torney

Info from Victoria: GA 1998

THE 1998 GENERAL ASSEMBLY

The Victoria Centre extends a warm welcome to all Centre representatives and other members who will be attending the 1998 General Assembly.

Even though there are still twelve months to go, our GA committee has already begun to make many of the arrangements which will ensure that delegates will thoroughly enjoy their stay with us. Those of you who had visited Victoria for earlier GA's have already said that they are looking forward to another GA on Vancouver Island -- and renewing old acquaintances and meeting old friends.

Reps. and members attending next year's GA will find the "Welcome" mat laid out from the moment they arrive at the airport until we take them back there for their trip home.

We have chosen the Lester B. Pearson College of the Pacific as the GA venue, largely because it has everything a GA needs at one location, such as accommodation, an auditorium, dining hall, swimming pool, a splendid observatory overlooking the ocean and an idyllic forested location at the water's edge. Being situated on the southernmost tip of Vancouver Island our visitors will not be pestered by mosquitoes and summer humidity is low, with cool nights, allowing a good night's sleep!

Pearson College is a popular place for conventions and, unfortunately, we were unable to obtain the traditional dates that GA's are usually held on. The dates we settled on are from June 18 to June 22. As our preparations slip into high gear we will keep you informed of our progress through the RASCList [Ed: RASCList is an electronic email list hosted by Dave Lane in Halifax].



1997 RASC General Assembly Delegate List

This is the registrant list as of 1997 June 17th and is intended to allow delegates to contact each other after the GA.

Last Name, First Name	Affiliation	City, Prov/State	<i>Email</i>
Ascroft, Catherine	Guest	Montreal West, Quebec	
Ascroft, George	Montreal Centre	Montreal West, Quebec	
Attwood, Randy	Toronto Centre	Mississauga, Ontario	
Auclair, Michel	Centre Francophone de	Montreal Montreal, Quebec	
Auclair, Raymond	Unattached	Orleans, Ontario	
Babcock, Mr.	Guest	Hartington, Ontario	
Badham, Mark	Tour Guide-MillerHall	Kingston, Ontario	
Baker, Sally	Vancouver Centre	Vancouver, BC	
Bartlett, Hank	Kingston Centre	Newburgh, Ontario	
Berg, Raymond	Kingston Centre	Crown Point, Indiana	
Berrys, Gertie	Guest	Cote St-Luc, Quebec	
Berrys, Heinz	RASC-Unattached	Cote St. Luc, Quebec	
Bird, Bonnie	National	Toronto, Ontario	
Bishop, Evelyn	Conference Delegate	Kingston, Ontario	
Bishop, Roy	Halifax Centre	Avonport, Nova Scotia	
Blasko, Trisha	Kingston Centre	Ottawa, Ontario	
Boltwood , Paul	Ottawa Centre	Ottawa, Ontario	
Broderick, Bill	Kingston Centre	Shannonville, Ontario	
Brodeur, Leo	Kingston Centre	Cold Lake, Alberta	
Broughton, Marilyn	Guest	Toronto, Ontario	
Broughton, Peter	Toronto Centre	Toronto, Ontario	
Brownridge, Clifford	RASC-Unattached	Mississauga, Ontario	
Brownridge, Noreen	Guest	Mississauga, Ontario	
Brueckner, Dieter	Kingston Centre	Kingston, Ontario	
Buchanan, Jonathan	Ottawa Centre	Nepean, Ontario	
Burns, Joanne	Kingston Centre	Trenton, Ontario	
Clarke, Tessa	Kingston Centre	Kingston, Ontario	
Connors, Martin	Edmonton Centre	Edmonton, Alberta	
Covington, Arthur	Kingston Centre	Kingston, Ontario	
Covington, Charlotte	Guest	Kingston, Ontario	
Dean, Thomas	Kingston Centre	Kingston , Ontario	
Dempsey, Frank	Toronto Centre	Pickering, Ontario	
Dempsey, Jennifer	Toronto Centre	Pickering, Ontario	
Dick, Robert	Ottawa Centre	Rideau Ferry, Ontario	
Dickinson, Terry	Toronto Centre	Yarker, Ontario	
Duncan, Dr. Martin	Guest Speaker	Kingston, Ontario	
Enright, Leo	Kingston Centre	Sharbot Lake, Ontario	
Faris, Sue	Kingston Centre	Kingston, Ontario	
Fritz, Steve	Kingston Centre	Picton, Ontario	
Gada, Andreas	Conference Delegate	Toronto, Ontario	
Gagne, Laura	Kingston Centre	Joyceville, Ontario	
Gagne, Sylvain	Guest	Joyceville, Ontario	



Last Name, First Name	Affiliation	City, Prov/State	<i>Email</i>
Gagnon, Susan	Kingston Centre	Kingston, Ontario	
Garrison, Robert	Toronto Centre	Richmond Hill, Ontario	
Goodman, Dennis	Calgary Centre	Calgary, Alberta	
Gupta, Rajiv	Vancouver Centre	Vancouver, BC	
Hall , Cathy	Kingston Centre	Ottawa, Ontario	
Hallin, Dr.Aksel	Queens	Kingston, Ontario	
Hawley, Glenn	Calgary Centre	Calgary, Alberta	
Hay, Gary	Guest	Perth Road , Ontario	
Hay, Kim	Kingston Centre	Perth Road, Ontario	
Hay, Sara	Guest	Perth Road, Ontario	
Henderson, Mary	Ottawa Centre	Ottawa, Ontario	
Hicks, Ruth	Kingston Centre	Kingston, Ontario	
Hicks, Terry	Kingston Centre	Kingston, Ontario	
Hladiuk, Don	Calgary Centre	Calgary, Alberta	
Hube, Douglas	Edmonton Centre	Edmonton, Alberta	
Hube, Joan	Guest	Edmonton, Alberta	
Hurley, John	Windsor Centre	Essex, Ontario	
Hutjens, Rick	Guest	Mississauga, Ontario	
Irwin, Dr. Judith	Kingston Centre	Kingston, Ontario	
Janke, Janet	Guest	Edmonton, Alberta	
Janke, Keith	Edmonton Centre	Edmonton, Alberta	
Jedicke, Diane	Guest	London, Ontario	
Jedicke, Peter	London Centre	London, Ontario	
Johnson, Sharon	Ottawa Centre	Ottawa, Ontario	
Jones, J. Donald	RASC	Castlegar, British Columbia	
Kaye, Mark	Kingston Centre	Georgetown, Ontario	
Kell, Kevin	Kingston Centre	Kingston, Ontario	
Kennedy, Prof. Ed	Saskatoon Centre	Saskatoon, Saskatchewan	
Kennedy, Virginia	Guest	Saskatoon, Saskatchewan	
Kulyk, Christine	Kingston Centre	Kingston, Ontario	
Lane, David	Halifax Centre	Halifax , Nova Scotia	
Lantz, Janis	Guest	Kingston, Ontario	
Larivee, Greg	Toronto Centre	Port Elgin, Ontario	
Lemay, Lise	Guest	Rimouski, Quebec	
Lemay , Damien	Quebec Centre	Rimouski, Quebec	
Levy, Dr. David	Kingston Centre/Guest	Speaker Vail, Arizona	
Levy, Wendee	Guest	Vail, Arizona	
Loehde, Franklin	Edmonton Centre	Edmonton, Alberta	
Low, Jim	Toronto Centre	Toronto, Ontario	
Manders, Steven	Kingston Centre	Harrowsmith, Ontario	
Marsh, Gordon	Montreal Centre	Montreal, Quebec	
Marshall, J.W. Stewart	Montreal Centre	Dorval, Quebec	
Mascle, Ank	Conference Delegate	Knowlton, Quebec	
May, Robert	Toronto Centre	Scarborough, Ontario	
McCausland, Phil	St.John's Centre	St. John's, NFLD	
Meier, Linda	Guest	Carp, Ontario	
Meier, Matthew	Guest	Carp, Ontario	



Last Name, First Name	Affiliation	City, Prov/State	<i>Email</i>
Meier, Rolf	Ottawa Centre	Carp, Ontario	
Meli, Marinella	Toronto Centre	Toronto, Ontario	
Moreau, Suzanne	RASC-Unattached	Montreal, Quebec	
Morrison, Warren	Kingston Centre	Cavan, Ontario	
Mullings, Timothy	Toronto Centre	Mississauga, Ontario	
Nason, Guy	Toronto Centre	North York, Ontario	
Nayer, Anu	Guest	Vancouver, BC	
Nickle, Diane	Conference Delegate	Kingston, Ontario	
Park, Sung-Won	Conference Delegate	Kingston, Ontario	
Perrett, Kathy	Tour Guide- EllisHall	Kingston, Ontario	
Pfoll, Judith	Guest	Maidstone, Ontario	
Phillips , Susan	Kingston Centre	Gananoque, Ontario	
Pow, Ronald	Montreal Centre	Westmount, Quebec	
Pow, Ruth	Guest	Westmount, Quebec	
Purser, Jim	Kingston Centre	Kingston, Ontario	
Rixen, Robert	Toronto Centre	Toronto, Ontario	
Russ, Nonna	Toronto Centre	Ajax, Ontario	
Schmude Jr., Dr. Richard	Kingston Centre	Barnesville, Georgia	
	<i>Schmude@Falcon.gdn.peachnet.edu</i>		
Shaw, Brenda	Kingston Centre	Kingston, Ontario	
Shepley, Frank	Windsor Centre	Maidstone, Ontario	
Shoemaker, Carolyn	Guest Speaker	Arizona	
Shoemaker, Dr. Gene	Guest Speaker	Arizona	
Smida, Victor	Kingston Centre	Kingston, Ontario	
Smith, Walter	Kingston Centre	Kingston, Ontario	
Southwood, Jeanette	Guest	Rideau Ferry, Ontario	
Stokes, David	Kingston Centre	Kingston, Ontario	
Stokes, Elma Vanags	Guest	Kingston, Ontario	
Stuart, Audrey	Toronto Centre	Toronto, Ontario	
Szabototh, Charles	Conference Delegate	Port Elgin, Ontario	
Torney, Diane	Conference Delegate	Brooklin, Ontario	
Torney, Peggy	Kingston Centre	Sharbot Lake, Ontario	
Towgood, Jim	Kingston Centre	Kingston, Ontario	
Travers, David	Guest	Kingston, Ontario	
Troyer, Frederic	Toronto Centre	Toronto, Ontario	
Vettese, Franca	Toronto Centre	Mississauga, Ontario	
Watson, Michael	RASC-Unattached	Toronto, Ontario	
Whitman, Alan	Okanagan Centre	Okangan Falls, BC	
Ziomkiewicz, Bernie	Tour Guide-StirlingHall	Kingston, Ontario	

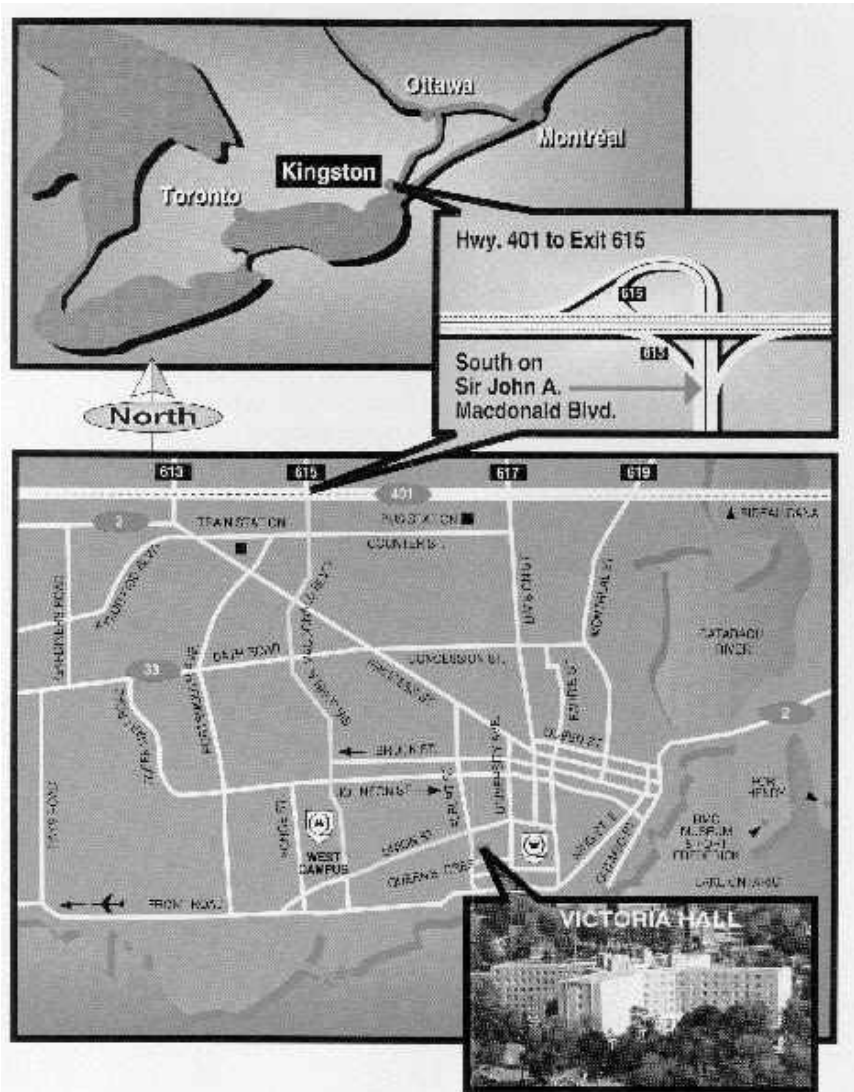


Maps

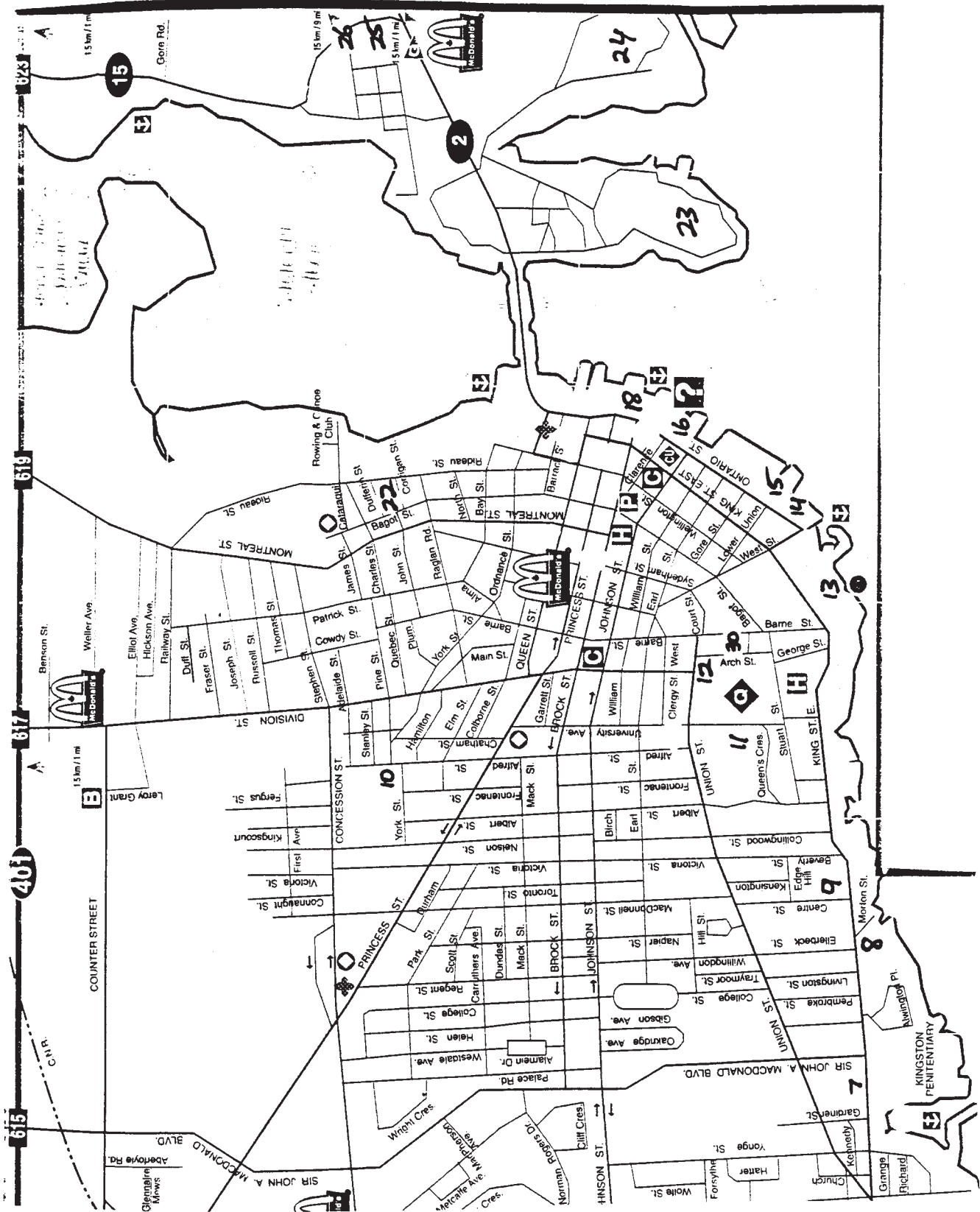


Location: The City of Kingston and the Townships of Kingston, Ernestown and Pittsburgh combine to form Greater Kingston, the largest urban centre located along highway #401, between Toronto, Montreal, Ottawa and Syracuse.

Geography: Represents a land area of 713 square kilometres (275 sq. mi.) of generally flat terrain due to limestone bedrock left by receding of ancient lakes; clay and sandy loam soils with some glacial till; tree covering is a mix of hard and softwoods; region sits at end of Great Canadian Shield offering dramatic outcroppings of granite.



Travel by Road: Take the 401 Highway to exit 615 (Sir John A MacDonal Exit) and follow it down to Union Street. Turn left onto Union and follow this to University Avenue. Turn right on University Avenue and right again on Queen's Crescent. Victoria Hall is on your right and looks like this! (Picture below)





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WC = West Campus



Program At A Glance

(See pages 12-16 inside for more detailed day-by-day schedules)

Fri June 27	Sat Jun 28		Sun June 29	Mon June 30	Tue July 1st	
	07:30-08:30 Buffet Breakfast at Ban Righ Hall Cafeteria				07:00-08:00 Breakfast at Ban Righ Hall Cafeteria	
	08:00-13:00 Registration & Display areas Open	9:45-11:15 C&E Museum Tour 11:30-15:30 Ft. Henry tour (incl lunch)	09:00-12:00 National Council Meet#1 Vic Hall E-Wing Games Room	09:00-12:00 Paper Session #1 Ellis Hall 10:00-10:15 coffee break 10:20-12:00 Paper Session #1 continues 12:05 Group Photo Vic Hall steps	09:00-12:00 Paper Session #2 Ellis Hall Aud 10:00-10:15 coffee break 10:20-12:00 Paper Session #2 continues	07:45-11:00 Holleford Crater Tour 11:30-16:00 1000 Islands Boat Tour (lunch incl) Latest Checkout at 12:00
	12:00-13:00 Open Lunch: Chip trucks, KGGH, local restaurants		12:15-13:30 Open Lunch: Chip trucks, KGGH, local rest. Dealer Tables Open	12:00-13:00 Open Lunch: Chip trucks, KGGH, local restaurants		
Registration Opens Vic Hall Upper Lobby At 12:00, closes at 21:00	13:00-18:30 Registration still open 13:00-17:00 Display area open	Ellis Hall 14:00-15:00 Dark Skies 15:00-16:00 Slides & Videos 16:00-17:00 Sudbury Neutrino Observatory Report	13:00-17:00 National Council Meet#1 Vic Hall E-Wing Games Room	12:00-17:30 Display Area/Dealer tables open Vic Hall LCR 13:30-17:00 Annual General Meeting Ellis Hall 17:00-17:30 Dealers tear down	13:00-16:30 National Council Meet#2 Vic Hall E- Wing Games Room Display area open for tear down 12:45-14:00 Miller Hall Geology MuseumTour B 14:00-15:00 Panel #2 Women in Astro Ellis Hall 15:00-16:00 Panel #3 SL-9 Team Ellis Hall	
19:00 Miller Museum Tour #1	17:00-19:00 Open Dinner Local restaurants -see Registration/ Hospitality Display		BBQ 17:30-18:45 Leonard Field		Bar (17:00-17:30) Ban Righ Hall Banquet (17:30-18:30) Awards (18:30-19:30)	
20:00 Stirling Hall Tour	19:00-19:30 Opening Ceremonies Dunning Hall 19:30-21:00 Invited Speaker Terry Dickinson Dunning Hall		19:30-21:00 Invited Speaker David Levy Dunning Hall	20:00-21:30 Northcott Lecture Gene Shoemaker Grant Hall		
	21:00-22:30 Wine & Cheese Reception Lower Vic Common Room		21:00-22:00 Murphy Slide Show & prizes Dunning Hall	21:30-22:00 Closing Ceremonies Grant Hall		
20:00(Fri) 21:30 (Sat) Ellis Hall Observatory Tours						