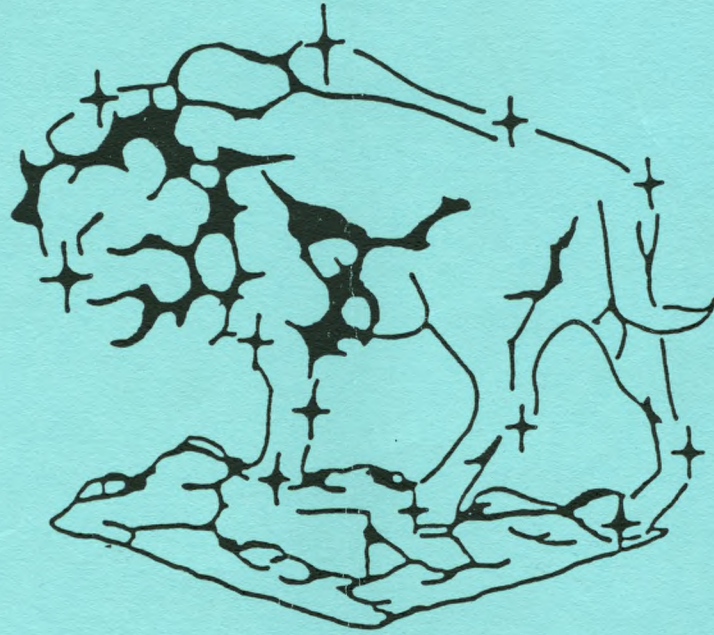


# GENERAL ASSEMBLY



RASC WINNIPEG CENTRE 1986

75TH ANNIVERSARY







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## Acknowledgments

The 1986 General Assembly Planning Committee would like to thank:

The University of Manitoba  
Richardson Greenshields of Canada  
The Edmonton Centre of the R.A.S.C.  
Manitoba Hydro  
Atomic Energy of Canada limited  
Manitoba Planetarium  
Miss E. Dack of Winnipeg

for their co-operation and assistance.

In addition, we wish to recognize in advance the efforts of all the volunteers who helped create an enjoyable time for all



1986 General Assembly

Planning Committee

G.A. Planning Committee Chairman	Stanley Runge
Registration	Lorence Mlodzinski
Former Member Registration	Tom Cairns
Accomodations	Dr. Richard Bochonko
	Bud Fairley
Social Committee	Guy Westcott
	Emile Carriere
Tours and Transportaion	John Haines
	Ed Hlady
Papers and Displays	Chris Rutkowski
	Len Gamache
	Moshen Abdel-Hadi
	Mike Rossier
Publications	Gordon Mathews
Secretary	Bernard Land
Treasurer	Dave Trimble





## Miscellaneous Information

### BADGES

Please note that participants must wear their name-tags during the conference. They must also be worn to be able to get into the various events. Winnipeg Centre members, to whom you may go to for information, are distinguished by their blue name-tags. Other badge colors are used to signify who may or may not attend specific events.

### PARKING

During the weekdays the cost for parking is \$2.00 per day, with passes available at the registration desk. On the weekend and after 6 p.m. weekdays, parking is free in any lot in those areas which are not designated "Twenty-four Hour Reserve" slots. Lot B located adjacent to the south end of University College is the most convenient for those staying in residence

### TRANSIT

The fare on any transit bus is 85 cents for Adult and 35 cents for Senior Citizens and children (exact fare). At the University, bus stops for downtown are located on Dafoe Road, along the side of the Quadrangle. Bus Routes and timetables are provided on posts at the Bus Stops.

### LIQUOR STORES & VENDORS

The nearest liquor store is located at 1737 Pembina Highway. It closes at 8:00 p.m. Monday to Thursday and 9:00 p.m. Friday and Saturday.

There are a few cold beer (includes Canadian brands) vendors located on Pembina Highway, such as;

Cambridge Hotel - 1022 Pembina Highway  
Montcalm Hotel - 2280 Pembina Highway  
Pembina Hotel - Pembina at Parker

### BANKS

There are a few banks near or on campus which have Instant Teller machines. However, their hours vary and 24 hour access is not always available.

Bank of Montreal - Pembina @ Killarney  
Toronto Dominion - 2835 Pembina Highway  
- Pembina @ McGillivray  
Bank of Commerce - In UMSU Building, University of Manitoba  
- Pembina @ Somerset  
Royal Bank - Pembina @ Oakenwald

### RESTAURANT MAP

The next page shows a map of the fine restaurants located along Pembina Highway. All the other addresses identified on this page are also shown.

Your registration package also contains a list of many other restaurants in Winnipeg, and a map.



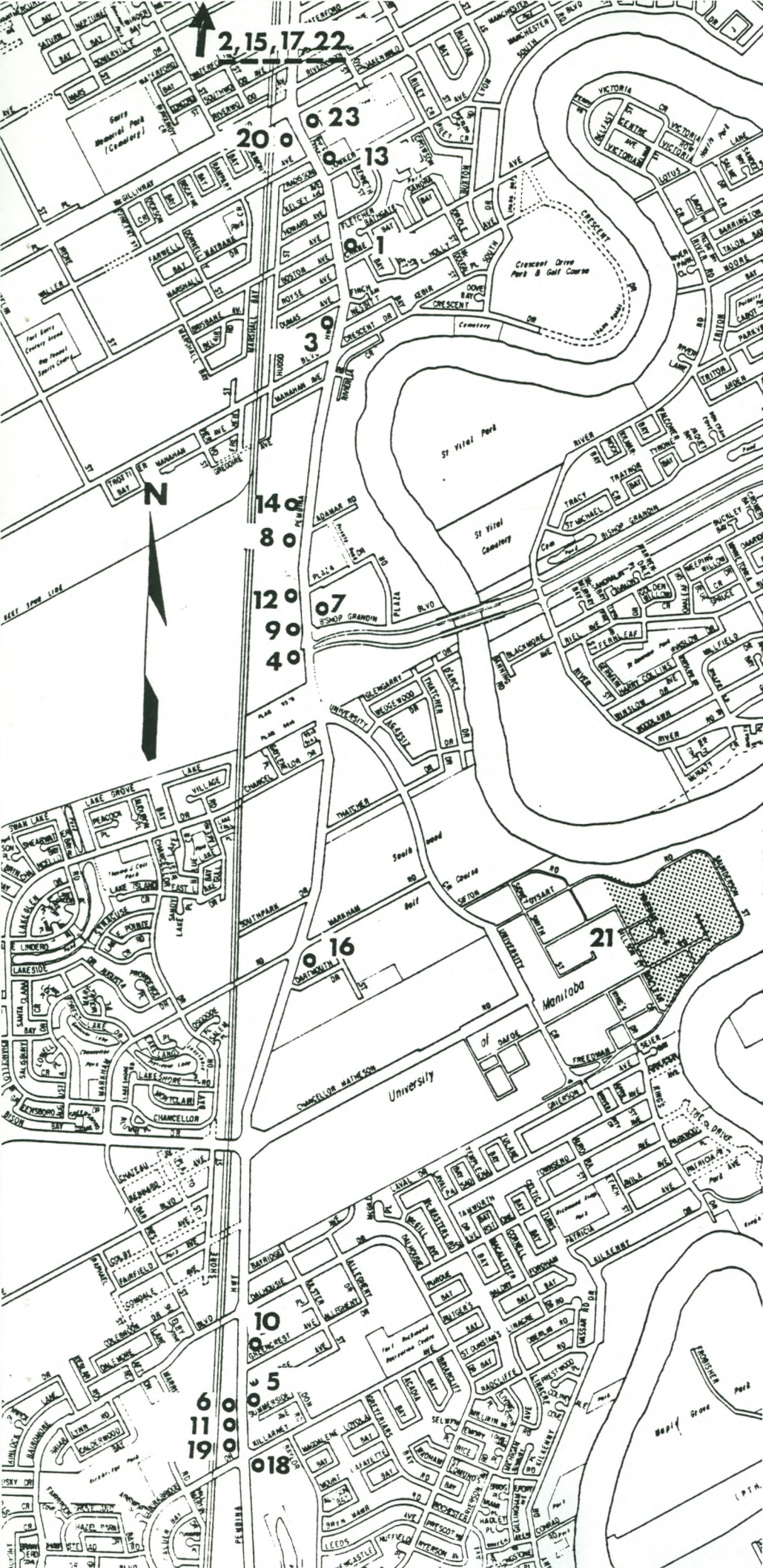


RESTAURANTS

- ( 1 ) Monte Bello  
1480 Pembina Highway
- ( 2 ) Sara's Inn  
1062 Pembina Hwy.
- ( 3 ) D'8 Schtove  
1531 Pembina Hwy.
- ( 4 ) Rib Shack  
1919 Pembina Hwy.
- ( 5 ) Cathay House  
2790 Pembina Hwy.
- ( 6 ) India Gate  
2795 Pembina Hwy.
- ( 7 ) Garbonzo's  
1875 Pembina Hwy.
- ( 8 ) A & W  
761 Pembina Hwy.
- ( 9 ) McDonald's  
1915 Pembina Hwy.
- (10) China Garden  
2740 Pembina Hwy.
- (11) Mr. Steak  
2791 Pembina Hwy.
- (12) Bonanza  
1863 Pembina Hwy.
- (13) Holiday Inn Wpg South  
330 Pembina Hwy.

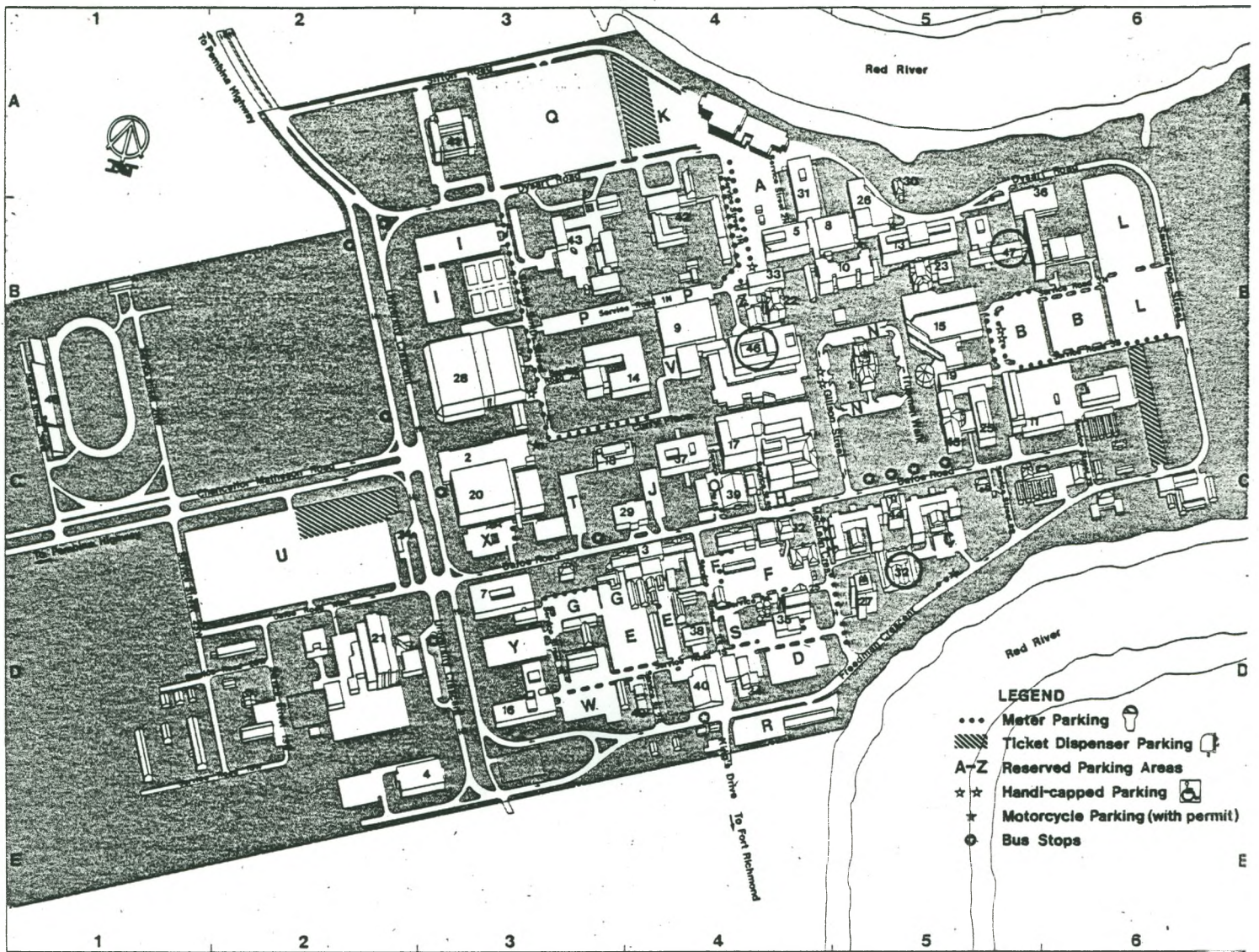
- Other locations:
- (14) Manitoba Liquor Comm.  
1737 Pembina Highway
  - (15) Cambridge Hotel  
1022 Pembina Highway
  - (16) Montcalm Hotel  
2280 Pembina Highway
  - (17) Pembina Hotel  
Pembina @ Parker

- (18) Bank of Montreal  
Pembina @ Killarney
- (19) Toronto Dominion  
2835 Pembina Highway
- (20) Toronto Dominion  
Pembina @ McGillivray
- (21) Bank of Commerce  
UMSU Bldg - U of M
- (22) Bank of Commerce  
Pembina @ Somerset
- (23) Royal Bank  
Pembina @ Oakenwald









### The University of Manitoba Campus & Parking Map

B5	1	Administration Building		B5	26	Machray Hall	♿
C3	2	Administrative Studies	♿	D5	27	Mary Speechly Hall	♿
C4	3	Agriculture Building	♿	B3	28	Max Bell Centre	
E3	4	Agriculture Services Complex		C4	29	Music, School of	
B4	5	Allen Building (Physics)	♿	A5	30	Natural Resources Institute	
C5	6	Alumni House		A4	31	Parker Building (Chemistry)	♿
D3	7	Animal Science		→ D5	32	Pembina Hall	♿
B5	8	Armes Lecture Building	♿	B4	33	Pharmacy Building	♿
B4	9	Bison Building	♿	D4	34	Physical Plant/Energy Management	
B5	10	Buller Building	♿	D4	35	Powerhouse	
C5	11	Canadian Agriculture Research Station		B6	36	Robson Hall (Law)	♿
C4	12	Dairy Science		C4	37	Russell Building (Architecture)	♿
B5	13	Duff Roblin Building	♿	D4	38	Sculpture Building	
B3	14	Education Building	♿	C4	39	Services Building (Campus Police)	
B5	15	Elizabeth Dafoe Library	♿	D4	40	Stores Building	
D3	16	Ellis Building (Food & Soil Sciences)	♿	A3	41	St. Andrew's College	♿
C4	17	Engineering Building	♿	B4	42	St. John's College	♿
C3	18	Fitzgerald Building (School of Art)	♿	B3	43	St. Paul's College	
B5	19	Fletcher Argue Building	♿	C5	44	Tache Hall	♿
C3	20	Frank Kennedy Physical Education Centre	♿	C5	45	Tier Building	♿
D2	21	Freshwater Institute		→ B4	46	University Centre	♿
B4	22	Geology Building (Earth Science)		→ B5	47	University College	♿
B5	23	Human Ecology	♿	C1	48	University Stadium	
C2	24	Information Centre		D4	49	Winnipeg Rh Institute	
C5	25	Isbister Building	♿				





1986 GENERAL ASSEMBLY SCHEDULE

TIMES		EVENT	LOCATION
Start	Finish		
-----			
THURSDAY JUNE 26th			
15:00	19:00	Registration Rides from Airport	Univ. College
20:00	22:00	Helen Sawyer Hogg Lecture	Theatre 200 Fletcher Argue
FRIDAY JUNE 27th			
08:00	09:00	Breakfast	Univ. Centre
09:00	18:00	Registration Rides from Airport	Univ. College
10:00	12:00	Committee Meetings	Per Com. Chairman
12:00	13:00	Lunch	Univ. Centre
13:00	17:00	Council Meeting	Private Dining
13:00	18:00	Display Setup	Display Room
17:00	18:00	Supper	Univ. Centre
19:30	22:00	Buffalo Bash	Faculty Club
22:00	23:00	Murphy Slide Contest Song Contest	Faculty Club
23:00	----	Observatory Visit	Glenlea
SATURDAY JUNE 28th			
08:00	09:00	Breakfast	Univ. Centre
08:00	10:00	Registration	Univ. College
09:00	12:00	GUEST SPEAKER and Papers Displays	Rm 240 U. C. Display Room
12:00	13:00	Lunch	Univ. Centre
13:00	13:30	Photograph	Admin. Bldg
13:30	14:00	Double Decker to Museum	to Museum
14:30	16:00	Touch the Universe	Museum
16:00	17:00	Planetarium Show	Museum
17:00	17:30	Trans. To U of M	to University
17:30	18:30	Supper then Change Up	Univ. College
18:30	19:00	Trans to Riverboat	to Riverboat
19:00	22:00	Riverboat Cruise	Riverboat-
22:00	22:30	Trans To U of M	to University
23:00	----	Observatory	Glenlea
SUNDAY JUNE 29th			
08:00	09:00	Breakfast	Univ. Centre
09:00	12:00	Papers And GUEST SPEAKER	Rm 240 U. C.
09:00	10:00	Display Judging	Display Room
10:00	16:00	Displays Open	Display Room
12:00	13:00	Lunch	Univ. Centre
14:00	16:00	General Meeting	Rm 240 U.C.
16:00	17:30	Council Meeting	Rm 240 U.C.
16:00	18:30	Break & Change	
18:30	19:00	Cocktails	Beausejour Room
19:00	19:30	Awards Presentation	Beausejour Room
19:30	22:00	Banquet, 75th Anniversary President's Outgoing Spe.	Beausejour Room.
MONDAY JUNE 30th			
08:00	09:00	Breakfast	Univ. Centre
09:00	11:00	Trans. To Tours	to Whiteshell
11:00	13:00	TOUR I (Pinawa)	
13:00	14:00	LUNCH	Pinawa Park
14:30	16:00	TOUR II (Seven Sisters)	
16:00	18:00	Trans. To U of M	to University
18:00	19:00	Supper	
CONCLUSION OF EVENTS			
RETURN TRIPS BEGIN			
Rides to Airport			



AGENDA FOR THURSDAY JUNE 26, 1986

TIMES	EVENT	LOCATION
15:00 - 19:00	Registration Rides from Airport	University College
20:00 - 22:00	Helen Sawyer Hogg Public Lecture - Barry Madore	Fletcher Argue Bldg Theatre 200

The 'Helen Sawyer Hogg Lecture' is named in recognition of the outstanding contributions of Helen Sawyer Hogg to astronomical science and education, and particularly to public education. The second annual lecture is sponsored by the Royal Astronomical Society of Canada and the Canadian Astronomical Society / Societe Canadienne d'Astronomie, and will be held with the 1986 General Assembly of the R.A.S.C..

Dr. Barry F. Madore's Lecture is called "SPACE TELESCOPE: MANKIND'S NEW TOOL FOR MEASURING THE ULTIMATE FRONTIER". He is from the Department of Astronomy at the University of Toronto, and has been awarded the prestigious Killam Fellowship by the Canada Council. During the next two years, he will be working on the problems associated with the distance scale in the universe, in particular with the Space Telescope. Here is a summary of the talk:

Space Telescope:  
Mankind's New Tool for Measuring the Ultimate Frontier

In almost every century mankind has felt that it had a broad understanding of the Universe, its origin and its evolution. And yet with sudden abruptness, often forced upon us by technological advances, we have had to change our views completely. Our century is no exception. Several times in the last one hundred years our mental image of the Universe has changed. Almost invariably these conceptual shifts were not planned or anticipated. In that respect the last two decades of the Twentieth Century may prove to be fundamentally different.

As soon as the *Space Shuttle* programme recovers from its recent tragedy, one of NASA's most ambitious scientific programmes will be set in motion. The *Hubble Space Telescope* will be launched into earth orbit and will begin transmitting an unprecedented view of the Cosmos using its 2.5m mirror, unobstructed by the distorting effects of the Earth's atmosphere.

One of the highest priority so-called, *Key Projects* that has been designated for special status in the scheduling of *Space Telescope* is determining the size and age of the Universe. This year's *Helen Hogg Lecture* will discuss this project and the strong Canadian involvement in the calibration of the extragalactic distance scale using *Space Telescope* and other major astronomical facilities around the world.



AGENDA FOR FRIDAY JUNE 27, 1986

TIMES	EVENT	LOCATION
08:00 - 09:00	Breakfast	University Centre
09:00 - 18:00	Registration	University College
	Rides from Airport	
10:00 - 12:00	Committee Meetings	Per Committee Chairman
12:00 - 13:00	Lunch	University Centre
13:00 - 17:00	National Council Meeting	Private Dining Room University College
13:00 - 18:00	Display Setup	Display Room (U.C.)

Members with displays may set them up during this time period. Assistance will be available in the room to help you locate your designated area. Displays are safe in the room as security precautions have been implemented.

17:00 - 18:00	Supper	University Centre
19:30 - 22:00	Buffalo Bash	Faculty Club Tache Hall

This is an informal Wine and Cheese reception held in the comfortable surroundings of the Faculty Club. The club is located south of the Tache residence. Due to the construction, access may be gained by walking around the western end of Tache.

22:00 - 23:00	Murphy Slide Contest	Faculty Club
	Song Contest	Faculty Club

The Murphy Slide Contest is a competition wherein the winning slides will be those which best illustrate Murphy's Law "If Anything Can Go Wrong, It Will".

The R.A.S.C. Song Contest is a friendly competition intended to showcase the different Centres' lyrical prowess and vocal talents. The Winnipeg Centre serves notice that we plan to win this year, so come out and try to prove us wrong.

23:00 - ...	Glenlea Observatory Visit	Glenlea Observatory
-------------	---------------------------	---------------------

Weather permitting, an observing session will be held at the Centre's observatory located at the University of Manitoba's Glenlea Research Station. It is a 25 minute drive south of Winnipeg and transportation will be provided by Winnipeg Centre members.





AGENDA FOR SATURDAY JUNE 28, 1986

TIMES	EVENT	LOCATION
08:00 - 09:00	Breakfast	University Centre
09:00 - 10:00	Registration	University College
09:00 - 12:00	GUEST SPEAKER and Paper Session	Room 240 University College

A tentative paper timetable and the list of abstracts received begin on page 12. Due to the number of papers to be given this year, we request that speakers follow the timetable as closely as possible. Those who require the use of audio-visual materials should make themselves known to the Papers Committee members as soon as possible in the morning (prior to the start of the papers).

Displays are available for viewing today and tomorrow. They will be judged on Sunday from 09:00 to 10:00 and the awards will be presented at the Banquet that evening.

12:00 - 13:00	Lunch	University Centre
13:00 - 13:30	Photograph	Administration Building
13:30 - 14:00	Bus to Museum	Administration Building
14:00 - 16:00	Touch the Universe Display	Museum of Man & Nature
16:00 - 16:50	Planetarium Show	Museum of Man & Nature

The group photograph will be taken in front of the Administration Building, in the heart of the campus.

Following this we will be taken via a Double Decker buses to the Museum of Man and Nature, in downtown Winnipeg. First we will visit the Museum's newly opened 'hands-on' science gallery Touch the Universe. There we will be treated to a new Planetarium show called "Voyager Tales".

17:00 - 17:30	Transportation to University	
17:30 - 18:30	Supper Change-up	University Centre
18:30 - 19:00	Transportation to Riverboat	
19:00 - 22:00	Riverboat Cruise	River Rouge boat
22:00 - 22:30	Transportation to University	
23:00 - ...	Observing Session	Glenlea Observatory

The Riverboat Cruise is a lazy jaunt down the Red River. The boat has Dining facilities for those who wish to dine later, with music and dancing for an enjoyable, relaxing evening.



AGENDA FOR SUNDAY JUNE 29, 1986

TIMES	EVENT	LOCATION
08:00 - 09:00	Breakfast	University Centre
09:00 - 12:00	GUEST SPEAKER and Paper Session	Room 240 University College
09:00 - 10:00	Display Judging	Display Room
10:00 - 16:00	Display Viewing	Display Room

A tentative paper timetable and the list of abstracts received begin on page 12. Due to the number of papers to be given this year, we request that speakers follow the timetable as closely as possible.

Displays are available for viewing today and will be judged. The awards will be presented at the Banquet this evening.

12:00 - 13:00	Lunch	University Centre
14:00 - 16:00	GENERAL ASSEMBLY ANNUAL MEETING	Room 240 (U.C.)
16:00 - 17:30	Council Meeting	Room 240 (U.C.)
16:00 - 18:30	Break and Change Display takedown	
18:30 - 19:00	Cocktails	Beausejour Room University Centre
19:00 - 19:30	Awards Presentation	Beausejour Room
19:30 - 22:00	R.A.S.C. Banquet 75th Anniversary Outgoing President's Speech	Beausejour Room

The Annual R.A.S.C. Banquet will take place in the Beausejour Room which is located in the University Centre Complex (A.K.A. UMSU). Preceding the banquet dinner will be the presentation of R.A.S.C. Service Awards and display awards. The 75th Anniversary of the Winnipeg Centre will be celebrated this evening. Following the dinner, a closing address will be given by the outgoing National President Dr. Roy Bishop. He will then be presented a gift on behalf of all the members. An abstract of his talk is shown here.

What We Bring We Find

The nature of human vision has a subtle yet profound influence on our view of the universe. Users of the Observer's Handbook in particular, should be aware that some properties which we commonly attribute to the night sky are but fabrications of the human brain. Four neglected facets of visual perception and their relevance to observational astronomy will be described.



AGENDA FOR MONDAY JUNE 30, 1986

TIMES	EVENT	LOCATION
08:00 - 09:00	Breakfast	University Centre
09:00 - 11:00	Transportation to Tour I	Meet Parking Lot B
11:00 - 13:00	Tour I	AECL Pinawa
13:00 - 14:00	Lunch - Pinawa Park	AECL Pinawa
14:00 - 14:30	Transportation to Tour II	
14:30 - 16:00	Tour II	Seven Sisters
16:00 - 18:00	Transportation to University	
18:00 - 19:00	Supper	University Centre

An air conditioned bus will provide transportation to the tour location in the Whiteshell area. We will initially go to Pinawa, to see the operation of the Nuclear Research Station. We'll then eat a box lunch at Pinawa Park (or AECL lunchroom if raining) and travel to Seven Sisters, where we will tour a Hydro-electric Generating Station.

CONCLUSION OF EVENTS  
RETURN TRIPS BEGIN  
RIDES TO AIRPORT





ROYAL ASTRONOMICAL SOCIETY OF CANADA  
1986 GENERAL ASSEMBLY  
WINNIPEG, MANITOBA  
June 26-30, 1986

SCHEDULE OF PRESENTED PAPERS

Room 240  
University College  
University of Manitoba

June 28

- 9:00 AM Chairman's Remarks  
9:05 INVITED PAPER: Stephen Edberg: A Look Back at Comet Halley  
10:05 Alan Batten: R.M. Petrie, 1906-1966  
10:20 Hein van Asperen: The Astronomical Position Line  
10:35 Paul Delaney: Arizona's New "Eye in the Sky" 2.4m McGraw-Hill  
Telescope *Software Support*  
10:50 Andrew Lawless: Design of a Microstepping Step Motor  
Controller for Large Telescopes  
11:05 Peter Brown: Forecasting Methods of Geomagnetic Activity Near  
Solar Minima  
11:20 Osao Shigehisa: Herschel Activity in Japan  
11:35 Ed Lepieszko and Andrew Kunz: Computer-Generated Star Charts  
in Amateur Astronomy  
11:50 Chairman's Remarks

June 29

- 9:00 AM Chairman's Remarks  
9:05 INVITED PAPER: David Levy: In the Shadow of Kitt Peak  
10:05 Richard Bochonko and Prasad Gowdar: A Laser Disc System for  
Astronomical Education  
10:20 Ed Kennedy: Historical Research in Astronomy - A Progress  
Report on the Odell Quadrant  
10:35 SPECIAL PAPER: Martin Clutton-Brock: Oddities and Enigmas of  
the Solar System  
11:05 Chris Rutkowski: The Use of Astronomical Instruments for  
Arms Control and Verification Systems  
11:20 Herb Sellin: A Conceptual Outline of a New Specific Theory of  
Relativity  
11:35 Michael Watson: South of Capricorn  
11:50 Chairman's Remarks

~~Made by Odell~~  
Odell succeeded  
Bonchelle  
as AM surveyor

(12)

Dr Tiark, 1817-21  
Surveyed NB-US  
border  
Pres. of King College NB  
in 1846



PAPER SESSIONS

ASTRONOMICAL INSTRUMENTS AND VERIFICATION

C.A. Rutkowski, Winnipeg, Manitoba

Many verification proposals involve the inspection of satellites in orbit or the observation of ground installations from aerial vantage points. Both scenarios would employ optical instruments commonly used for civilian astronomical research. The role of astronomy in arms control and verification programs is more significant than is generally realized.

DESIGN OF A MICROSTEPPING STEP MOTOR CONTROLLER FOR LARGE TELESCOPES

Andrew Lawless, Winnipeg, Manitoba

The use of step motors to drive large telescopes requires the development of a micro-stepping controller capable of reducing the motor step to sub-arcsecond size. A design based on piecewise-linear interpolation from motor characteristics can be used to meet the accuracy and resolution requirements of the Glenlea Astronomical Observatory (GAO). Implementation will be "software intensive" and use an economy of feedback.

R.M. PETRIE 1906-1966

A.H. Batten, Victoria, B.C.

This year is the twentieth anniversary of the death of one of Canada's foremost astronomers. Petrie was Director of the Dominion Astrophysical Observatory from 1952 until his death. Amongst his many services to the Canadian and international astronomical communities was a term of office as President of our Society (1955-57). This paper contains an appreciation of his scientific work and some personal reminiscences of the man.



## ODDITIES AND ENIGMAS OF THE SOLAR SYSTEM

M. Clutton-Brock, Winnipeg, Manitoba

Look in any table of solar system properties, and you will find the orbital and physical elements of the planets and their satellites. Dull stuff, you might say. But look at those figures while asking yourself just how planets and satellites with those particular properties might have been formed, and you will find many of those properties decidedly odd. Some of the oddities, in fact, present profound difficulties for our understanding of solar system origins: they are true enigmas.

Saturn is a gas giant; it should rotate in the same plane as it orbits, but in fact its equator is inclined at  $29^{\circ}$  to its orbit. Even more remarkably, the sun's equator is inclined at  $7^{\circ}$  to the ecliptic. While it's easy to understand the inclinations of the terrestrial planets and of the ice giants Uranus and Neptune, it's very hard to understand the large equatorial inclinations of Saturn and the sun.

It is hard to understand the relatively small masses of the terrestrial planets, especially that of Mercury: there should have been plenty of material in the inner solar system to make larger planets. A related enigma is the presence of numerous small asteroids. The conventional explanation is the gravitational pull of nearby Jupiter prevented the accretion of the asteroids into a single planet, but the trouble is that Jupiter, being farther from the sun, should have formed later than the asteroids, not earlier.

I shall begin by giving a thumbnail sketch of the "best bet" theory of the origin of the solar system, which will make the enigmatic nature of these oddities clear. There are many other oddities, of course: my favorite oddity is the solitary existence of Pluto.

Pluto is not so much a planet as an icy asteroid or perhaps even a giant comet. If that's so, where are all the other Plutos? Are they perhaps just a little dimmer, waiting to be discovered by some amateur with clear skies, good seeing, and a lot of patience?





A CONCEPTUAL OUTLINE OF A NEW SPECIFIC THEORY OF RELATIVITY AS IT  
RELATES TO STELLAR EVOLUTION

H.O. Sellin, Calgary, Alberta

The paper takes a new look at the concept of Newton's Laws of Motion and their relationship to gravitational changes. The result is a new Universal (star) Cycle explaining gravitational changes and their effects on stellar masses, suggesting a new perspective on Stellar evolution. Since the laws of Motion, Relativity, Thermodynamics and Conservation laws make up the fundamental framework of the nature of matter, a new perspective on their interrelationship within a new Universal Cycle diagram leads to a new attitude towards Fission and Fusion. A new explanation of the photoelectric effect is given, which agrees with experimental data. The new perspective embodied in the new conceptual key explains the reasons for the Big Bang, Singularity, Novae, Supernovae, and Black Holes. The solution to the cosmological riddle of the primordial abundances of Helium and Deuterium is postulated. The paper suggests the reasons how and why mass takes on the ability to change. The new conceptual key embodied in the new Universal (star) Cycle diagram displays symmetry. A new interpretation of stellar events is postulated.

FORECASTING PERIODS OF GEOMAGNETIC ACTIVITY NEAR SOLAR MINIMA

Peter Brown, Ft. McMurray, Alberta

This paper presents an introduction to amateur and non-specialist astronomers on the forecasting of periods of geomagnetic activity near solar minima, and its use as an accurate predicting tool of major auroral storms. Emphasis is placed on high-speed wind streams and their predictability, as well as our current understanding of the physical processes which cause evolution in the wind streams. Finally, application of geomagnetic forecasting is discussed with respect to Canadian astronomers.



HISTORICAL RESEARCH IN ASTRONOMY - A PROGRESS REPORT ON THE ODELL  
QUADRANT

J.E. Kennedy, Saskatoon, Saskatchewan

A brief reference to this unusual instrument was made in an earlier paper presented to this Society (Kennedy, J. Roy. Astron. Soc. Can., 53,252,1959). One hundred and forty years have elapsed since this Quadrant was presented to King's College, Fredericton, New Brunswick, in 1846.

Alan Stimson, Head of the Navigation Section of the National Maritime Museum, Greenwich, has described the features of the Odell Quadrant in two reports. The first of these was prepared in 1975 and was based entirely on the examination of photographic prints.

In 1985, the Quadrant was shipped to Greenwich for a direct examination by Stimson. In his summarized findings, he has indicated that the Odell Quadrant passed through three stages before reaching its present form.

The provenance of this 18th century quadrant is by no means complete; the "unknowns" may be greater than the "knowns". Among the museum and archival holdings in Canada, the Odell Quadrant possibly may rank as the most significant of the early astronomical surveying instruments which have been preserved as part of our heritage.

ARIZONA'S NEW "EYE IN THE SKY" 2.4m McGRAW-HILL TELESCOPE

Paul A. Delaney, Tucson, Arizona

The McGraw-Hill Observatory was founded in 1975 and comprised a 1.3m telescope relocated from the State of Michigan. Since then, a great deal of astronomy has been performed at the observatory on Kitt Peak, near Tucson, ranging from x-ray studies through to supernovae and extra-galactic observations.

In 1980, the consortium that operates McGraw-Hill Observatory - University of Michigan, Dartmouth College and Massachusetts Institute of Technology - embarked on a venture to build a second telescope on the Kitt Peak site. This 2.4m telescope and support facilities were completed in late 1985. Designed by DFM Engineering, the facility is fully computerized and operational.

This paper will summarize the highlights of the new telescope and the planned observing programs.



## ASTRONOMICAL POSITION LINE

H. van Asperen, Kingston, Ontario

To determine his position a navigator observes the altitude of three or more stars. From each altitude reading the observer knows he is somewhere on an equal altitude circle. It is not practical to draw this circle on a globe and there is no map projection that allows to draw two or more circles with a pair of compasses. However a computer can circumvent the drawing problem.

When the Mercator mapping is used the "circles" can be mapped using the same Mercator rule. The circles become egg-shaped. The common intersect point is the position. By adjusting the scale the location of the observer can be determined.

The computer allows a precision far greater than the standard intercept method, which is a combination of calculations and a drawing.

Using a computer the intercept method can also be modified to improve the precision.

For both methods knowledge of the "Dead-Reckoning" point is not necessary.





## SOUTH OF CAPRICORN

Michael Watson, Toronto, Ontario

In April 1986 the author travelled to the Australian outback to observe and photograph Comet Halley from one of the darkest observing sites in the world. 'South of Capricorn' is a photographic exploration, with sound track, of the southern skies through the eye of the author's 20-cm Schmidt Camera and other astrophotography equipment.

## COMPUTER-GENERATED STARCHARTS IN AMATEUR ASTRONOMY

Ed Lepieszko and Andy Kunz, Winnipeg, Manitoba

The purpose of this paper will be to describe our program "The Observer's Data Base" which is currently being marketed by our company, MCG Software. The program uses a database containing 2500 stars and objects to create flexible user starcharts which are displayed on a monitor or reproduced on a dot matrix printer. We will be discussing not only the program's features, but also how we feel it can be useful.

## HERSCHEL ACTIVITIES IN JAPAN

Osao Shigehisa, Yamato, Kanagawa, Japan

W. Herschel as an amateur astronomer is well known in Japan from days of old. However, Herschel studied as a musician also before discovering Uranus. Herschel Society of Japan was established in early 1984 by S. Kimura's promotion (who is a B.A.A. member). He attended the Bicentennial anniversary of Uranus, which began unique activities in astronomy and music.

The first concert was performed in March 1985. Several pictures will be introduced with his music.

## INVITED PAPER

### A LOOK BACK AT COMET HALLEY

Stephen J. Edberg, Jet Propulsion Laboratory, California

Halley's Comet provoked not just the greatest scientific effort on a comet, but also the greatest entrepreneurial efforts associated with an astronomical event. The scientific results as well as the human interest aspects of the current Halley apparition are examined.



## Displays

Displays may be viewed in Room 240 of University College on Saturday June 28th from 09:00 - 12:00 and on Sunday June 29th from 10:00 - 16:00. Display setup is on Friday June 27th from 13:00 to 18:00. Judging will be done on Sunday June 29th from 09:00 to 10:00 and prizes will be awarded at the R.A.S.C. Banquet. The following is a list of categories for the 1986 General Assembly:

- 1) Solar
- 2) Lunar and Planetary
- 3) Comets, Asteroids and other Phenomena (except Halley)
- 4) Halley's Comet
- 5) Deep Sky
- 6) Astrophotography
- 7) Variable Stars
- 8) Radioastronomy
- 9) Computer Astronomy and Software
- 10) Centre Display
- 11) Open Category
- 12) Telescopes and Equipment

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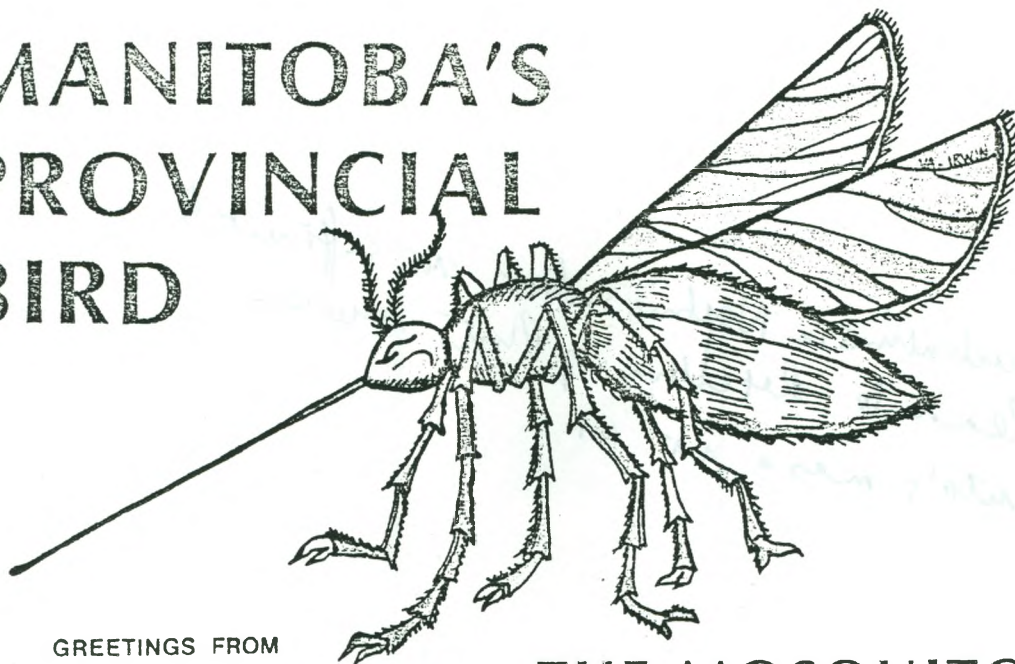
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