

R.A.S.C. GENERAL ASSEMBLY



PROGRAM GUIDE
JUNE 28 - JULY 1

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ACKNOWLEDGMENTS

The G.A. Planning Committee wishes
to thank the kind people at:

The University of Alberta,
Edmonton Space Sciences Centre
The Province of Alberta

for their assistance and co-operation.

GENERAL REMARKS

Welcome to Edmonton and the 1985 Royal Astronomical Society of Canada's General Assembly. The Edmonton Centre is proud to be hosting what is our fourth G.A. We have planned a full weekend of enjoyable activities for you. If, during the Assembly, you have any inquiries concerning the weekend's events any of the Planning Committee members listed below will be glad to help you. Edmonton Centre Members can be distinguished by their Blue or anodized aluminum name-tags, as opposed to the white nametags everyone else will be wearing.

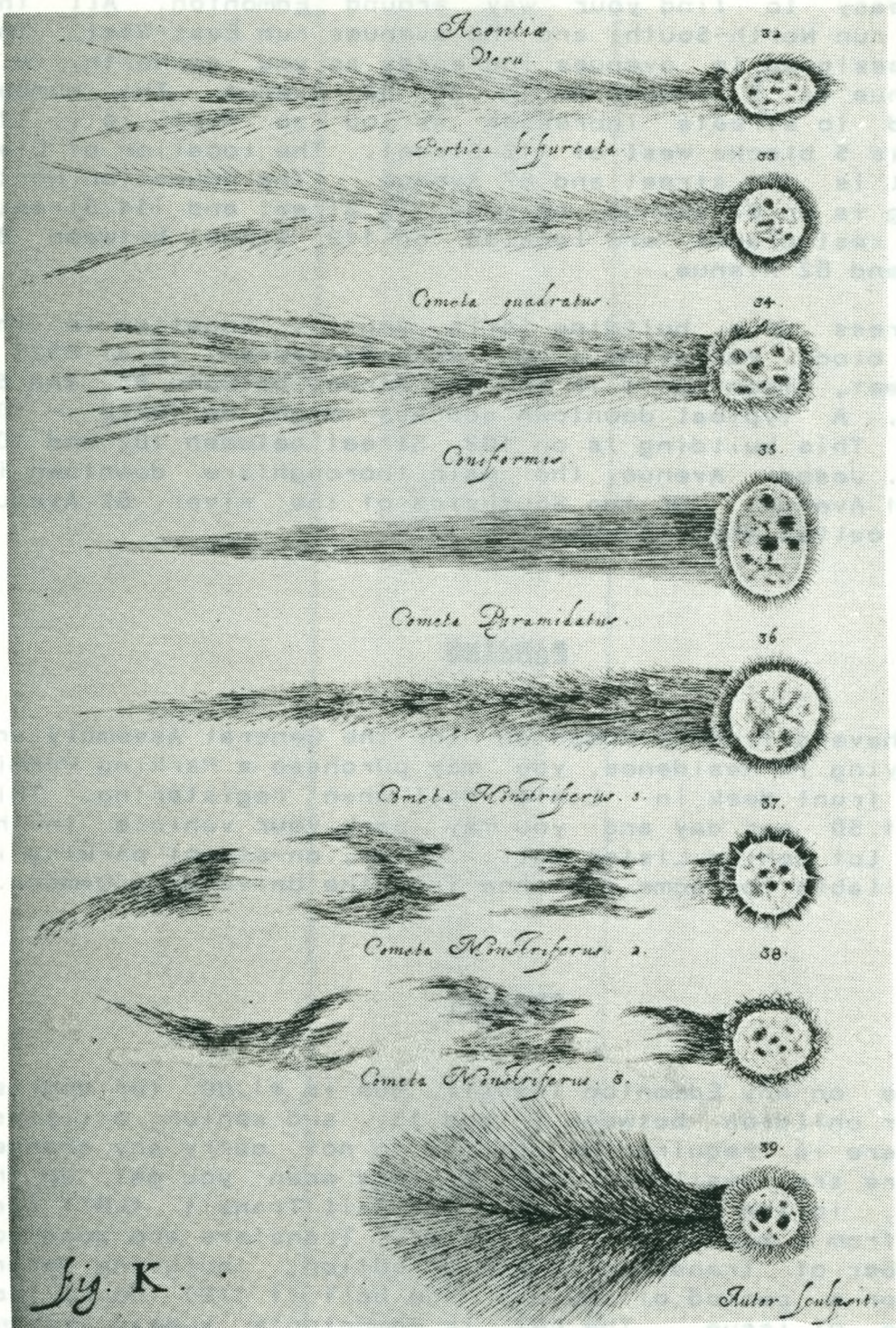
Keep this Program Guide with you - it tells you everything you want to know about what's happening, when it's happening, and where it's happening.

The credit (or blame) goes to the following:

G.A. Planning Committee Chairman	Tony Whyte
Social Events and Refreshments	Joan Hube
	Audrey Loehde
	Jane Hickey
Registrations	Howard Gibbons
Accommodations	Craig Makarowski
	Bob King
Tours and Transportation	Bob Carson
Paper Sessions	Doug Hube
Awards & Displays	Mark Zalcik
	Howard Gibbons
Secretary	Yni Ebbers
Treasurer	Mel Rankin
Printing	Tony Whyte

Planning Committee Members and Assistants:

Joel Charles,	Pawan Varma,	Keith Janke,	Alan Dyer
Dave Belcher,	Annie Whyte,	Peggy Whyte,	Franklin Loehde
Bob Martin,	Jennie Rusch,	Betty Rankin,	Vince Cottrell
Mark Leenders,	Dave Ellis,	John Fleming,	Richard Reid



MISCELLANEOUS INFORMATION

STREETS & AVENUES

It is easy to find your way around Edmonton. All the streets run North-South; and the avenues run East-West. The number assigned to avenues increases as you go North, ie., 87 Avenue is 5 blocks North of 82 Avenue. The number assigned to streets increases as you go West, ie., 117 Street is 5 blocks West of 112 Street. The location of Lister Hall is 116 street and 87 Avenue. The Education North Building is on 87 Avenue, between 112 Street and 114 Street. Several restaurants are located on 112 Street between 89 Avenue and 82 Avenue.

The address of a building tells you its location to the nearest block. For example, Mr. Mike Restaurant is at 8525 - 112 Street, meaning it is on 112 Street between 85 and 86 Avenues. A typical downtown address might be 10220 - 103 Street. This building is on 103 Street between 102 and 103 Avenues. Jasper Avenue, the main thoroughfare downtown is also 101 Avenue. On the Southside of the river, 82 Avenue is also called Whyte Avenue.

PARKING

If you have driven to Edmonton for the General Assembly and are staying in Residence, you may purchase a Parking Permit at the front desk in Lister Hall when registering. This costs \$1.50 per day and you may park your vehicle in the parking lot behind Lister Hall. Free, on-street parking is not available for some distance from the University Campus.

TRANSIT

The fare on any Edmonton Transit bus is \$1.00 for adults, 50¢ for children between 5 and 15, and senior citizens. Exact fare is required as drivers do not carry any change. Transfers are available from drivers when you get on the bus, or, in the case of the Light Rail Transit (LRT) stations, from a machine as you enter. Transfers are good for any number of transfers in any direction, including return trips for a period of one and one half (1 1/2) hours from the time of issue. The LRT is Edmonton's subway system; there are four stations downtown and the line extends North-East to the Coliseum (Home of the Stanley Cup Champion

Edmonton Oilers) and beyond. For route information, consult the Transit Guide included in your registration folder, or phone Transit Information at 421-4636.

EMERGENCY TELEPHONE NUMBER

In the event of an emergency, you may phone the residence of Doug and Joan Hube for Assistance. Their telephone number is 433-6749, or 439-2945.

CHURCHES LOCATED IN CAMPUS AREA

Garneau United 11148 - 84 Avenue
St. George's Anglican 11733 - 87 Avenue
St. Anthony's Catholic 10661 - 82 Avenue

LIQUOR STORES

The nearest liquor store is on 103 street between 78 and 79 Avenue. The address is 7808 - 103 Street. Open from 1030 to 2200 Monday to Saturday. There are also stores in the Southgate Shopping Centre, 111 Street and 51 Avenue; Westmount Shopping Centre, 111 Avenue and Groat Road; and on Whyte Avenue, at 8940 - 82 Avenue.

BANKS

The following banks near the campus have automated teller machines for after hours money access:

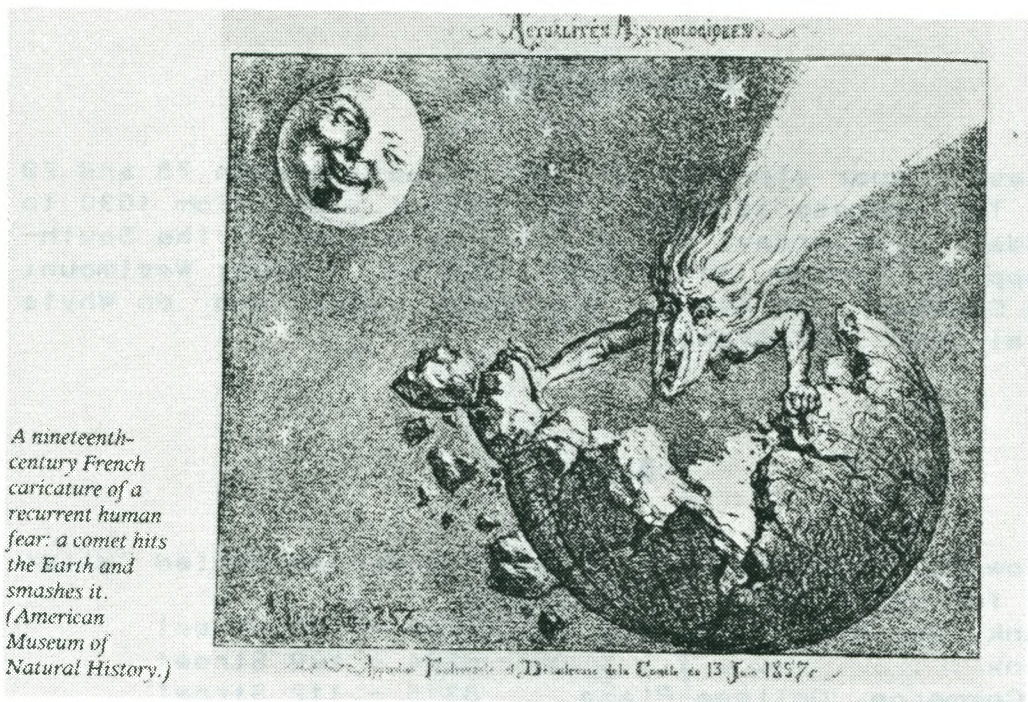
Royal Bank, North end HUB Mall . . 9103 - 112 Street
Royal Bank 8204 - 109 Street
Bank of Commerce, College Plaza . 8215 - 112 Street
Bank of Commerce, Student Union . 89 Ave. & 111 St.
Toronto Dominion Bank 10864 - 82 Avenue
Toronto Dominion Bank 11630 - 87 Avenue

ASTRONOMICAL INFORMATION

Edmonton = 54 degrees North Latitude; Altitude = 668 Metres

Date	Sunrise	Sunset	Moonrise	Moonset
June 28	0503	2210	1804	0218
June 29	0504	2209	1937	0236
June 30	0505	2209	2105	0302

There is a full moon on July 02, 1985.



AGENDA FOR THURSDAY JUNE 27, 1985

WHEN	WHAT	WHERE
1900 - 2100	REGISTRATION DESK OPEN	GROUND FLOOR, LISTER HALL JUST INSIDE THE NORTH DOORS

At registration you will receive a NAMETAG - please be sure that you wear it at all times to ensure that you are not stopped by suspicious campus security guards as we wander in and out of the various University Buildings. This nametag will also be required to allow you to enter the Edmonton Space Sciences Centre shows and Fort Edmonton Park at no additional charge.

AGENDA FOR FRIDAY, JUNE 28, 1985

WHEN	WHAT	WHERE
0800 - 0930	REGISTRATION DESK OPEN	GROUND FLOOR, LISTER HALL JUST INSIDE THE NORTH DOORS
1300 - 1700	NATIONAL COUNCIL MEETING	EDUCATION SOUTH BUILDING SECOND FLOOR, ROOM 255
1800 - 2000	DISPLAYS SET-UP	EDUCATION NORTH BUILDING SECOND FLOOR, KIVA ROOM

Exhibit Committee members will be on hand in the room to assist you in finding the designated spot for your display. All material may be left in the room during the weekend without fear, as the room will be locked when we are not present, and campus security is on duty. Displays may be taken down on Sunday afternoon between 1600 and 1700.

1900	WINE AND CHEESE RECEPTION	OLD POWER PLANT
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To get to the Old Power Plant from Lister Hall, walk east on 87 Avenue (the main roadway in front) past the bright yellow "Butterdome" building to 114 Street. Walk North on 114 Street. to 89 Avenue and turn right (East); continue to just past the Dentistry / Pharmacy Building to the short road leading to the rear of the Dentistry / Pharmacy Building. There will be route markers with "RASC" on them to guide you and a Campus Guide Map is included in your registration package.

2100	SLIDE SHOW & SONG CONTEST	OLD POWER PLANT
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A dark corner of the Old Power Plant has been set aside and provided with a projection screen and slide projector to allow members to show off their astrophotography, or slides of their observatories, telescopes, eclipse trips, etc. This is an informal event and everyone is invited to show and tell. For the first time ever in the glamorous history of the RASC Song Contest, an award "The Golden Radio Telescope Trophy" will be presented to the winning Centre. Come on! Don't let your Centre down! Capture this coveted award for your Centre!

2300	OBSERVING (WEATHER PERMITTING)	CAMPUS OBSERVATORY, ROOF OF PHYSICS BUILDING
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The U of A has a 30 cm Tinsley Cassegrain telescope installed on the roof of the Physics Building to complement its 50 cm telescope at the Devon Observatory, west of Edmonton. Please consult the Campus Guide Map enclosed to find

the Physics Building; signs posted inside the building will guide you to the roof-top observatory.



Head of Halley's Comet, May 12 and 15, 1910.

AGENDA FOR SATURDAY JUNE 29, 1985

WHEN	WHAT	WHERE
0730 - 0900	BREAKFAST	LISTER HALL CAFETERIA
0800 - 1100	REGISTRATION DESK OPEN	GROUND FLOOR, LISTER HALL JUST INSIDE THE NORTH DOORS
0900 - 1130	FIRST PAPER SESSION	EDUCATION NORTH BUILDING SECOND FLOOR, ROOM 2-115

For details of the papers to be presented at this year's G.A., see the list of abstracts starting on page __. Paper presentations will be limited to 10 minutes each. Presiding will be Dr. Douglas Hube of the U of A Physics Department. If you have not already done so, would all those with slides for the paper sessions please get them to committee members as soon as possible this morning so that they may be loaded in the projector and ready for your talk.

0900 - 1630	DISPLAY ROOM OPEN	EDUCATION NORTH BUILDING SECOND FLOOR, KIVA ROOM
1000 - 1015	COFFEE BREAK	OUTSIDE PAPER SESSIONS ROOM
1130 - 1200	GROUP PHOTOGRAPH TO BE TAKEN	OUTDOORS, ON FRONT STEPS OF FIELDHOUSE "BUTTERDOME"

To get to the site for the group photograph, please follow the directions of the committee organizers. In order that the photographer can take our picture and print up the necessary number of copies in time for distribution (and so we can all go to lunch), please assemble as quickly as possible.

1200 - 1300	LUNCH SERVED	LISTER HALL CAFETERIA
1300 - 1600	REGISTRATION DESK OPEN FOR LATE ARRIVALS	LISTER HALL
1300 - 1530	SECOND PAPER SESSION	EDUCATION NORTH BUILDING SECOND FLOOR, ROOM 2-115
1430 - 1445	COFFEE BREAK	OUTSIDE PAPER SESSIONS ROOM
1530 - 1630	COMPUTER UTILIZATION SESSION	EDUCATION NORTH BUILDING SECOND FLOOR, ROOM 2-115
1730	BUSES LEAVE FOR BANQUET AT CONVENTION CENTRE	OUTSIDE, IN FRONT OF LISTER HALL

From Lister Hall the buses will take everybody downtown to the CORONA LRT STATION. You will be given a transit ticket as you get off the bus; keep this with you when you enter the station. At the bottom of the stairs turn right (Edmonton Centre members will be there to direct you) and pass through the gate. As you enter the gate, validate your ticket by sticking it in the small orange machine. Hopefully we can all get the same LRT train so as to stay together. We will travel on the LRT past the BAY and Central stations and will all GET OFF at the CHURCHILL STATION.

We will all use the 99 Street - 102A Avenue North exit from the station and your tour guides will take you on a brief walking tour past City Hall, the Edmonton Art Gallery, Churchill Square, The Citadel Theatre, and the Centennial Library on the way to the Edmonton Convention Centre where the Banquet is being held.

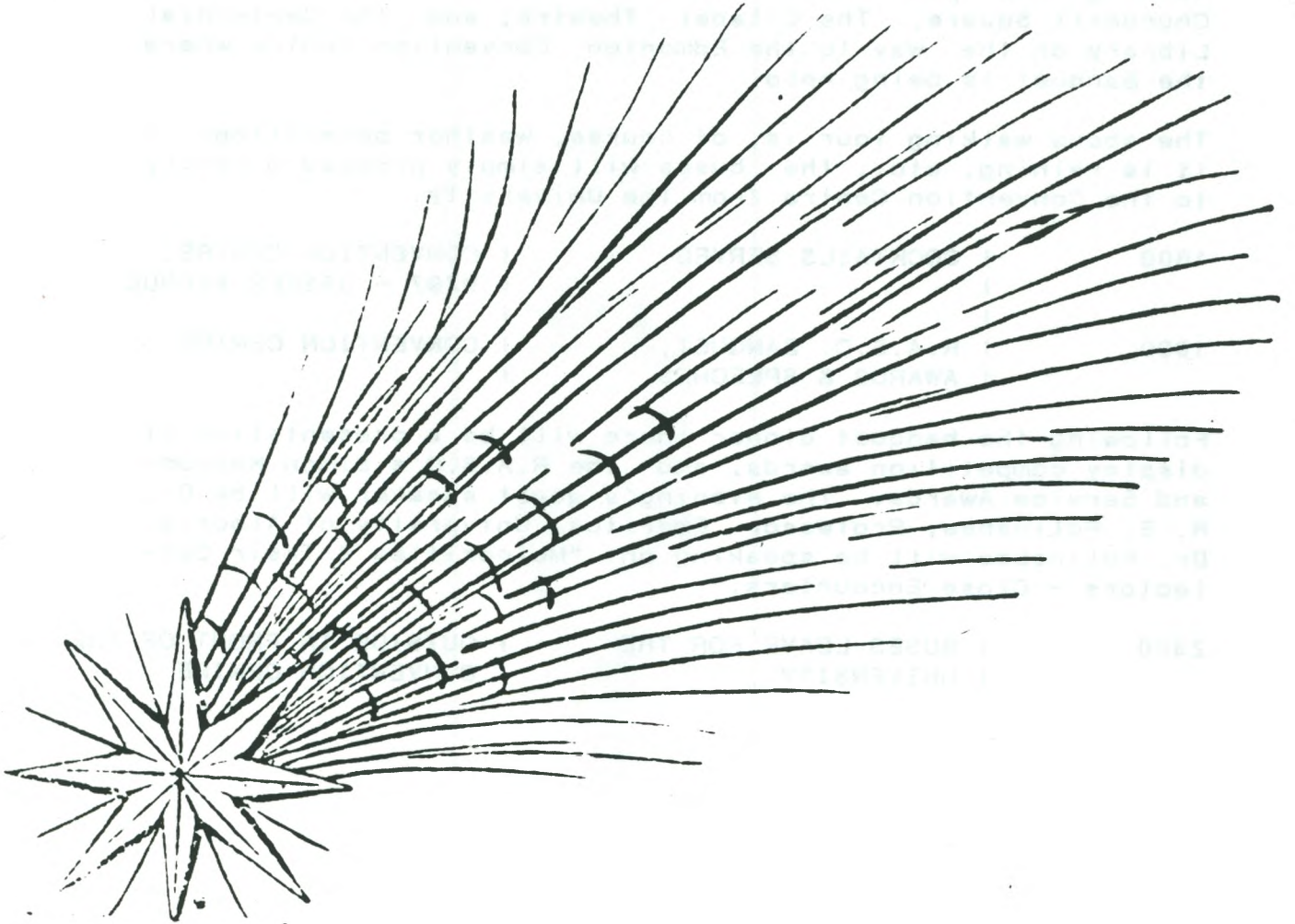
The above walking tour is, of course, weather permitting; if it is raining, etc., the buses will simply proceed directly to the Convention Centre from the University.

1800	COCKTAILS SERVED	CONVENTION CENTRE,
		9797 - JASPER AVENUE
1900	R.A.S.C. BANQUET,	CONVENTION CENTRE
	AWARDS & SPEECHES	

Following the banquet dinner there will be a presentation of display competition awards, and the R.A.S.C's Simon Newcomb and Service Awards. The evening's guest speaker will be Dr. R. E. Folinsbee, Professor Emeritus, University of Alberta. Dr. Folinsbee will be speaking on: "Meteorities & Their Collectors - Close Encounters."

2300	BUSES LEAVE FOR THE	OUTSIDE IN FRONT OF THE
	UNIVERSITY	CONVENTION CENTRE

AGENDA FOR SUNDAY JUNE 30, 1985



WHEN	WHAT	WHERE
0730 SHARP	BUSES DEPART FOR EDMONTON SPACE SCIENCES CENTRE	BUSES DEPART FROM OUTSIDE IN FRONT OF LISTER HALL
0800	BREAKFAST SERVED	EDMONTON SPACE SCIENCES CENTRE, 11211 - 142 STREET

A breakfast of a cold buffet with coffee and tea will be served in the Universe Gallery of the Space Sciences Centre.

WHEN	WHAT	WHERE
0930	"STARS OVER CHINA" PLANETARIUM SHOW	MARGARET ZEIDLER STAR THEATRE, E.S.S.C.
1100	"GRAND CANYON" PLANETARIUM SHOW	DEVONIAN IMAX THEATRE E.S.S.C.
1200	BUSES LEAVE FOR THE UNIVERSITY	OUTSIDE IN FRONT ON THE E.S.S.C.
1230	LUNCH	LISTER HALL CAFETERIA
1200 - 1600	DISPLAYS OPEN	EDUCATION NORTH BUILDING SECOND FLOOR, KIVA ROOM
1400 - 1600	GENERAL ASSEMBLY ANNUAL MEETING	EDUCATION NORTH BUILDING SECOND FLOOR, ROOM 2-115
1500	COFFEE BREAK	OUTSIDE MEETING ROOM
1600 - 1700	DISPLAY REMOVAL MEETING	EDUCATION NORTH BUILDING SECOND FLOOR, KIVA ROOM
1700	DINNER	LISTER HALL CAFETERIA
1830	BUSES LEAVE FOR FORT EDMONTON PARK	OUTSIDE, IN FRONT OF LISTER HALL

From the ultra-modern Space Sciences Centre we now take you to the Edmonton of Yesterday. At the Park you will be free to roam around inside the old Fort Edmonton, which has been reconstructed as it was in 1846, and down 1885 and 1920 Streets. About mid-way through the evening we will be providing light refreshments and, weather permitting, there will be an observing session with members' telescopes.

AGENDA FOR MONDAY JULY 01, 1985

WHEN	WHAT	WHERE
0730 - 0900	BREAKFAST SERVED	LISTER HALL CAFETERIA
0930	BUSES DEPART FOR WEST EDMONTON MALL	OUTSIDE IN FRONT OF LISTER HALL
1300	BUSES DEPART FOR UNIVERSITY	WEST EDMONTON MALL ENTRANCE #44 BY SAFEWAY STORE

West Edmonton Mall is, by its own admission, "the world's largest fun and fashion centre." To see as much as possible of this fabulous, wonderful Edmonton institution read the brief history of W.E.M. on page __ of this guide and make good use of the brochure and map included in your registration folder. Be sure to memorise what Entrance #44 looks like when you enter so you can find your way out again. We will try to have an announcement made on the Mall's public address system to remind you when the bus departure time draws nears, but there is no guarantee that you will be able to hear this. So keep an eye on your watch and have a good time.



The Great Comet of 1861 as seen with a 13-inch telescope on July 3. Drawing by W. de la Rue.

RESTAURANTS

Breakfast will be available at the Lister Hall Cafeteria from 0730 to 0900. You may also wish to sample the fare (delicious) at Uncle Albert's Pancake House, 10370 - 82 Avenue, approximately 10 blocks west of the university area. Of course, don't forget that breakfast on Sunday morning will be served at the Edmonton Space Sciences Centre.

For lunch and dinner, you may wish to try one of the following restaurants that are located within a 10 minute walk of the residence:

- | | |
|-------------------------------|--|
| Mr Mike's Steak House | 8525 - 112 Street;
Steaks, Burgers, etc.
Reasonably priced. |
| Avenue Pizza & Spagetti House | 8515 - 112 Street;
Steaks, Pizza, Spagetti
Take out service |
| La Casa Ticino | 8327 - 112 Street;
Crepes, Pasta, Eggs Benedict
Open untill Midnight Friday
closed Saturday, Sunday
brunch 1100 - 1500 |
| My Second Home | 8215 - 112 Street;
Beef, Pork, Chicken, Salads
Open 1100 to 2400 Friday,
1700 to 2400 Saturday,
1700 to 2100 Sunday |
| Hot Pastrami Delicatessen | 8405 - 112 Street;
Soup, Sandwiches, Pastries
Italian ice cream,
Open until 2300 Monday to Sunday |
| Our Place Restaurant & Club | 8625 - 112 Street |
| The Library Restaurant | 11113 - 87 Avenue;
Beef, Chicken, Seafood
Open 1100 - 0100 Mon to Sat
Closed Sunday. |
| Mandarin Restaurant | 11044 - 82 Avenue
Northern Chinese Cuisene
Open 1130 - 2400 Fri to Sat
1700 - 2300 Sunday |

In addition, the following fast-food outlets are available in HUB, the student shopping centre on the U of A Campus, at 112 Street between 89 and 91 Avenues.

Cafe Casabalnca	Pizza, Pasta, Steak, Sandwiches etc.
Dari Delite	Hot dogs & Ice cream
Dewey's Pub	Food & Booze, Fully Licensed
Ho-Ho Chinese Food	Chinese Food
Hub Burgers	Burgers
Hub Deli	Soup and Sandwiches
Incredible Edibles	Quiche, Salads, Sandwiches, etc.
Java-Jive Coffee	Fancy Coffees
Juicery	Fresh Fruit Juices
La Pasta Trattoria	Pasta, Italian coffee, ice cream
Living Earth Natural Foods	Organic Soup and Sandwiches
Patria	Ukrainian Food
The Bottleneck Restaurant	Korean cuisine
The New Pantry	Soup and Sandwiches

For a more complete and formal evening meal, may we sincerely recommend the following fine restaurants in Edmonton:

Cucci's	Corner of 99 Street & Jasper Avenue; 421-1551
Hy's	10013 - 101A Avenue; 424-4444
Italian Garden	10807 - 106 Avenue; 428-9696
Japanese Village	10126 - 100 Street; 422-6083
Red Diamond House	7500 - 82 Avenue; 465-0755
The Creperie	10220 - 103 Street; 420-6656 for reservations
Walden's	10245 - 104 Street; 420-6363



Biela's Comet, 1846. Drawing by Angelo Secchi.

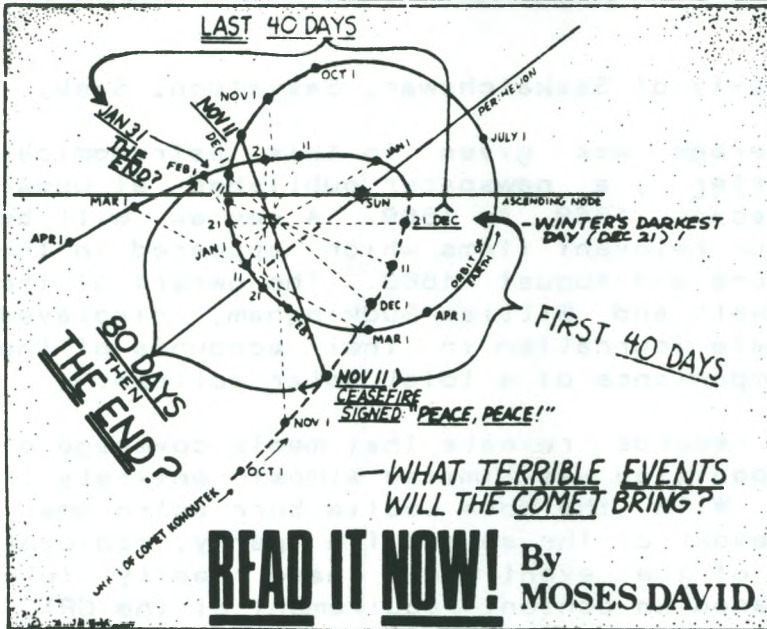
2p
suggested
donation

Twentieth-century
credulity. That
comets are still
good for a prophecy
of doom, appears
in this pamphlet of
1973.

40 DAYS!

and "NINEVAH SHALL BE DESTROYED!"

- WHEN THEY SHALL CRY "PEACE, PEACE" THEN COMETH
SUDDEN DESTRUCTION! COMET'S CHAOS?



©CHILDREN OF GOD TRUST 1973

ERWIN EINLAY - FREUNDLICH, 1895-1994.

A.H. Batten , Dominion Astrophysical Observatory, Victoria,
B. C.

Freundlich, born one hundred years ago, achieved distinction primarily in his efforts to test the general theory of relativity, particularly by measurements of the deflection of starlight passing by the Sun. He was inspired to this by a period of collaboration with Einstein, in the second decade of the present century, when both men were in Berlin. Even before Einstein had completed work on the general theory of relativity, Freundlich hoped to measure the light deflection at an eclipse in August 1914 - a hope frustrated by the outbreak of the First World War. Political events of the 1930's forced him to leave Germany, and he lived and taught in Turkey, Czechoslovakia and Scotland. In this paper, the speaker will present some reminiscences of Freundlich in his later years.

*Alan was an undergrad student of Freundlich
Kopal was his grad. supervisor*

**MEDIA COVERAGE OF THE SOLAR ECLIPSE EXPEDITION OF 1860 TO
NORTHERN CANADA**

J.E. Kennedy, University of Saskatchewan, Saskatoon, Sask.

Extensive press coverage was given to this astronomical event by the Nor'Wester, a newspaper published at Upper Fort Garry in the decade, 1859 to 1869. A review will be presented of the four relevant items which appeared in the Nor'Wester between June and August 1860. The owners of the paper, Willian Coldwell and William Buckingham, displayed scientifically accurate journalism in their accounts of the expedition and the importance of a total solar eclipse.

A search of archival records reveals that media coverage of the 1860 eclipse expedition was limited almost entirely to the medium of print. With the Nova Scotia born astronomer, Simon Newcomb, as leader of the scientific party, radio or television programs of the event would have readily fulfilled the current Canadian content requirement of the CRTC.

TO THE MOON, ALICE!

Chris A. Rutkowski, Winnipeg, Man.

Though selenologists often feel that their subject of interest is overlooked in favour of more exotic astronomical objects, the Moon plays and has played an important part in the development of world culture. The past and present folklore surrounding the Moon are fascinating to explore and examine in detail, especially in view of our modern-day knowledge. The paper describes historical and recent traditions concerning the Moon, and notes their relationship to scientific knowledge of the Moon.

DETERMINATION OF SUNSPOT LATITUDES

E W

H. van Asperen, Kingston, Ont.

Sunspots are observed by projecting an image of the sun onto a screen. A circle with a diameter equal to the diameter of the sun-image is drawn on the screen. The centre is also the origin of the coordinate system. The coordinates of the spots and East and West points of the sun-image are recorded. With the P-value the direction of the axis of rotation is determined. The original coordinates are transformed to a new system in which the ordinate coincides with the axis of the rotation.

Sunspots are on parallels which, when viewed from the Earth, are ellipses. The semi-major and semi-minor axis of the ellipses are functions of B_0 and the unknown latitude. When the transferred coordinates are substituted into the equation for the ellipse, the equation can be solved.

A NEW COSMOLOGICAL MODEL OF THE UNIVERSE

R.S. Iyengar, Mount Allison University, Sackville, N.B.

First the evolution of the existing evolutionary theory of the universe will be briefly reviewed. A new model of a dynamic universe will be presented, a universe which is temporarily infinite, spatially bounded, and pulsating. Symmetry consideration such as in space and time as well as matter and anti-matter will be included; as also some philosophical and aesthetic aspects.

COMET OCCULTATIONS

Peter Broughton, Toronto, Ont.

Occultations of stars by comets have rarely been observed yet these events have the potential to yield information on the size of the cometary nucleus, and on the composition of the coma. Some reasons for this paradox will be discussed and some forthcoming opportunities will be described. The occultation by P/Halley on December 2, 1985, may be of special interest to Western Canadian observers.

DAYTIME OBSERVATIONS OF VENUS AT INFERIOR CONJUNCTION

Fr. Lucian J. Kemble, OFM, Cochrane, Alta.

The latest inferior conjunction of Venus, April 03, 1985, exhibited one of the widest apparent separations of Venus above the Sun (over 8 degrees). An explanation of the phenomenon and distinction made between equatorial and ecliptic conjunctions is followed by description of daytime observing techniques (and dangers!), Five excellent observations obtained at about noon on the days immediately before and after conjunction are described. Atmospheric glow was noted around the whole disk of the planet. The author previously had made observations of a similar inferior conjunction of Venus on April 06, 1977 (almost exactly 8 years to the date) when Venus and the Sun were even closer, 7 degrees 8 minutes. A comparison is made of the two events, and reference given to other near-Sun observations of Mercury, Mars, Jupiter and Saturn.

THE DAYTIME FIREBALL OF MARCH 02, 1985

K. Finstad, R. Folinsbee, D. Hube and D. Smith, University of Alberta, Edmonton, Alta.

On Saturday morning, March 02, 1985, at 1725 UT (1025 local time) residents of northern Alberta and the Northwest Territories were witness to a rare daylight fireball. Using several dozen first-hand reports, a relatively accurate location for the the final burst(s) has been determined. We describe the effort made to identify a potential fall area. This event occurred almost 25 years to the day after the Bruderheim fall, and was followed within 48 hours by two other fireballs in the same area.

A-TEXTBOOK-CASE

Norman Sperling, Oakland, Calif.

Astronomy textbooks purtray the known cosmos. However, an examination of texts since 1725 reveals that their view is too positive and not well proportioned. Examples demonstrate how textbooks deviates from good science and overemphasize acquired just before they were written. Incompetent writers, illustrators, and publishers have committed many howling boners. Some perspectives are systematically lacking: few if any new texts teach comparative planetology, clinging instead to the sideshow-of-freaks method, nor the important questions that astronomy cannot yet answer.

FREE-FALL: A CENTRAL BUT OFTEN-MISUNDERSTOOD CONCEPT IN ASTRONOMY

R.L. Bishop, Acadia University, Wolfville, N.S.

A majority of university science students and virtually all of the lay public do not appreciate Newton's epochal realization that Earth, the Moon, and other astronomical bodies are freely falling. This lack of appreciation is perhaps the single most important barrier to an appreciation of the Universe in the broadest sense.

Part of the difficulty is that we grow up in a culture that is essentially Aristotelian in its view of the world; however, the problem is compounded by elementary textbooks, newspaper reports, and other popular accounts that frequently give incorrect descriptions of orbital motion. A closely-related matter is the difficulty that physics students have in understanding the meaning of $\Sigma F = ma$. Data from freshman physics and astronomy courses will be presented, common misconceptions examined, and a plea made to educators and science writers to use the physics of 1687.

ASTRONOMY EDUCATION IN SASKATOON SCHOOLS.

Ron Waldon, Lester B. Pearson School, Saskatoon, Sask.

This paper will discuss the current status of astronomy education in Saskatoon Public Schools. The Saskatoon Public School System has several innovative programs and projects. Included in this discussion will be:

1. The purchase, implementation and maintenance of two STARLAB portable planetarium systems;
2. The coordination of curriculum with field trips to the University Observatory;
3. The school Board sponsored solar eclipse expedition of February 26, 1979;
4. System plans to purchase a moderate-sized telescope for student use in outdoor education programs;
5. Preparations and planning on a System-level for the return of Halley's Comet in 1985/86.

Finally, the difficulties experienced and the needs of teachers in astronomy education will be addressed.

STARGAZER

David Dodge, Vancouver, B.C.

"Stargazer" is a 10 minute audiovisual show produced for Astronomy Day. The history of the project will be described, and the final results will be shown.

Darrin Parker

The organization of Satellite Centre
Bridgewater + Lunenburg Co.

Mary Gray

Astronomy Day Activities.
"Invent an Alien" idea from ASP

Ian Macgregor

Original of the Constellations (Minsan civ. proposed
by Orendan other)

Michael Watson

Sky in Colour

AN
A L L A R M
TO
E U R O P E :

By a Late Prodigious

C O M E T

seen November and December, 1680.

With a Predictive Discourse. Together with some preceding and
some succeeding Causes of its sad Effects to the East and
North Eastern parts of the World.

Namely, ENGLAND, SCOTLAND, IRELAND, FRANCE, SPAIN,
HOLLAND, GERMANY, ITALY, and many other places.

By John Hill Physician and Astrologer.

The Form of the COMET with its Blaze or Stream as it was seen December the 24th
Anno 1680. In the Evening.



London Printed by H. Benge for William Thackery at the Angel in Duck-Lane.

Title page of *An Allarm to Europe*, written in 1680 by John Hill.

TOURS

LRT AND WALKING TOUR OF DOWNTOWN EDMONTON

Edmonton's Light Rail Transit (LRT) opened in April, 1978, in time for the Commonwealth Games that year. Although the LRT cars are lighter and quieter than normal subway cars the line and its stations have been designed and built to allow future conversion to full subway operation. From the original line of five stations, two new downtown, underground stations (Corona & Bay) have been added to the south end and one above ground station (Clareview) has been added to the northeast end of the line. By 1990 the south end of the LRT line will have been extended to include a new Government station by the Alberta Legislature and across a new bridge to the University of Alberta where at least two stations are planned.

Our LRT trip tonight takes us from the Corona to the Churchill station where we shall begin our walking tour.

As we leave the station and emerge on the corner of 99 Street and 102A Avenue, we will have our backs to Edmonton's City Hall. Across the street to the east is the Art Gallery.

Although the present Gallery building dates only to 1969, the Edmonton Art Gallery as an institution dates back to 1923. The Gallery's permanent collections include extensive holdings of paintings, sculpture, photography and other media. Because the Gallery closes Saturdays at 1700, we are not able to visit it on our walking tour. However just a block further down 99 Street is the Citadel Theatre complex.

After crossing 99 Street to the other side and heading south we are passing by Sir Winston Churchill Square on the opposite side. The Citadel Theatre, the red brick and glass structure coming into view ahead and on our left, is nationally and internationally acclaimed for its artistic achievements in live drama. Founded in 1965 by an Edmonton patron of the arts, Joseph H. Shoctor, the Citadel Theatre got its name from the old Salvation Army Citadel Building in which it first raised the curtain. The first phase of the present, gleaming new building was opened in 1976. This phase featured three theatres, an art gallery, restaurant, lounge and drama workshops. Phase two, which opened just one year ago this weekend, added a round, thrust-stage theatre, and an open amphitheatre for children's plays plus a multi-level garden and waterfall.

We shall enter the Citadel Theatre on the northend and walk through the indoor garden of the Lee Pavilion on an elevated

concourse. Hopefully, you will be able to catch a glimpse of the large metal sculpture that looks suspiciously to us astronomer-types as a artist's depiction of the Mare Imbrium lunar impact event. On our right is the garden, on the left is the waterfall and above that the amphitheatre. We continue our way past the Rice Theatre, the main Shoctor Theatre, the smaller Zeidler Hall, and the restaurant and lounge before exiting on the citadels south end.

Across the street to the west now is Edmonton's main library, the Centennial Library, one of the best-equipped and spacious in Canada. The Edmonton Public Library system has the highest book circulation of any system in Canada.

Continuing our walk another block ahead, we come to Jasper Avenue and just around the corner to our left is the Edmonton Convention Centre, the location of our Banquet this evening.

The Edmonton Centre hopes that you have enjoyed your very brief tour of some of Edmonton's cultural attractions and will be encouraged to visit our city again.

EDMONTON SPACE SCIENCE CENTRE

In 1958 the Edmonton City Council was considering suggestions for commemorating the coming visit of Queen Elizabeth II in 1959. Members of the Edmonton Centre of the R.A.S.C. were instrumental in having the city build Canada's very first public planetarium as its commemorative project. The Queen Elizabeth II Planetarium proved so popular that, as early as 1965, the need for an expanded facility was apparent. Over the years many proposals were put forth, but not implemented, with the result that the Q.E.P. became less adequate with each passing year.

Therefore, in 1978 a new committee, known as the Edmonton Space Sciences Foundation, was established with the objective of promoting the funding, construction, and operation of a new planetarium. The foundation, whose membership included many R.A.S.C. Edmonton Centre members, appointed as project architect the internationally acclaimed Canadian Architect Douglas Cardinal. Funding for the project was provided approximately equally by the City of Edmonton, the Province of Alberta, and the Edmonton Space Sciences Foundation. To raise its share of the approximately \$17.4 million cost, the Foundation has undertaken a number of fund raising activities such as a "Donate a Star" campaign and has persuaded individuals, corporations and philanthropic organizations to make sizable contributions.

Construction of the Edmonton Space Sciences Centre began in April, 1982 and the building was essentially complete a year later and work on the interior, involving installation of the equipment and furnishings, continued throughout 1983 and 1984. The new Space Sciences Centre was opened July 1st, Canada Day, 1984. Dr. Helen Sawyer-Hogg, a Past President of the Royal Astronomical Society of Canada and distinguished Canadian astronomer, cut the ribbon at the opening ceremonies.

Your host for the 1985 General Assembly, the Edmonton Centre, is proud to give you a tour that you of the E.S.S.C. on this, the first anniversary of its opening. We hope that you will enjoy your visit and Edmonton Centre members will be happy to answer any questions you may have.

FORT_EDMONTION_PARK

Fort Edmonton Park was conceived in 1967 as a "living museum" portraying living working conditions in Edmonton from its earliest beginnings. Construction of the Fort, which is based upon its appearance in 1846, began in 1969 using original construction tools, methods and materials. The Fort was opened to the public in 1974. Since then, "1885 Street", a reconstruction of a Edmonton street of the late 1800's and "1905 Street", which depicts a pre-World War I Edmonton, have been completed. Currently "1920 Street" which includes an electric street-car is nearly complete. Edmonton's story begins with the establishment in 1796 of a fur trading post, Fort Augustus, by the North West Company and a nearby Fort Edmonton by the Hudson Bay Company near the present day town of Fort Saskatchewan. This location turned out to be a poor choice due to a shortage of firewood and both forts were moved upstream to a site near where the city's main power plant is now located. In 1821 the two rival fur companies merged under the Hudson's Bay Co. banner and thus the operations of the two forts were consolidated into a single new fort in 1830 located on the present site of the Legislative Building. Fort Edmonton occupied this site until 1915 when it was dismantled.

Settlement began in earnest after the land owned by the Hudson's Bay Co. was transferred to the Dominion of Canada in 1870. Between 1871 and 1891, many former employees of the trading company moved from the Fort and began to farm and establish homesteads in the surrounding country. Despite the fact that the Canadian Pacific Railway decided to build its line some 200 miles further south, a small town developed and attracted new settlers. Edmonton, then in the Northwest Territories (Alberta was not created until 1905), had a population of about 385 hardy souls in 1885.

Persistent and visionary Edmontonians scored two major victories after the turn of the century. They persuaded the C.P.R. to build a branch line from Calgary to Edmonton. Then they succeeded in winning the heated competition to become the capital city of the newly-formed Province of Alberta. The railway and capital status saw Edmonton forge ahead in its growth. Between 1900 and 1914, the city's population soared from 2,000 to 72,000. This era of expansion is represented in "1905 Street."

Industrialization followed the massive immigration to Edmonton. Then came World War I and subsequent economic relapse that led to the Great Depression. The courage and hope that were maintained through these difficult times is portrayed by the partially-completed "1920 Street."

Moder day Edmonton really did not begin until the striking of oil at nearby Leduc in 1947. Since then it has been essentially a period of continuous growth and prosperity, only slightly marred by the recent recession. This latest period is epitomized by Edmonton's civic centre, its sports teams and the Edmonton Space Science Centre.

WEST_EDMONTON_MALL

West Edmonton Mall unashedly bills itself as "the world's largest fun and fashion centre" and, indeed, when the first two phases were completed in August, 1983 Edmonton's newest tourist attraction contained nearly 500 stores, salt-water aquariums, bird aviaries, monkey cages, a NHL-sized indoor skating rink, and Fantasyland- the world's largest indoor Disneyland-type amusement park. Phases I and II together contain 2.5 million square feet of space and cost \$350 million. You will be able to sample at least some of the sights and sounds of W.E.M. on your Monday morning tour. Unfortunately Phase III of the Mall will not be ready until this fall; so you will have to make a return visit to catch this.

When Phase III opens this September, it will bring the total cost to \$900 million. Phase III will also add to the mall's attractions, a ten-acre indoor water park with a wave lake (with two metre high surf), four submarines for viewing sharks and tropical fish, water skiing and water slides; a twelve storey roller coaster; a miniature replica of the Pebble Beach, California Golf Course; and a 360 room luxury hotel. It is truly Disneyland of the North!

EXHIBITS AND PRIZES

The following is a list of the exhibit categories for the 1985 General Assembly. The exhibits may be viewed in the KIVA Room (2-103) of the Education North Building from 0900 to 1630 on Saturday and from 1200 to 1600 on Sunday. The displays will be taken down and removed between 1600 and 1700 Sunday. The displays will be judged on Saturday and prizes will be awarded at the Banquet Saturday night.

EXHIBITS

- | | |
|---------------------------------|------------------------------|
| 1. Solar | 7. Variable Stars |
| 2. Lunar | 8. Radioastronomy |
| 3. Comets, asteroids, & Planets | 9. Centre Display |
| 4. Atmospheric Phenomena | 10. Computer Aided Astronomy |
| 5. Open Category | 11. Open Category * |
| 6. Astro-photography | |

* The open category includes all submissions that were previously classified under the equipment section, i.e., Telescopes, camera equipment, etc.

PRIZES

The organizers of the 1985 Observing and Display Competition wish to thank the following companies and individuals for their generous contribution of prizes. We would urge R.A.S.C. members to return their favor and support them with your business.

Adam Hilger Ltd.,
Bristol, England

THE ADJUSTMENT and TESTING
OF TELESCOPE OBJECTIVES -
1 copy

THE PHYSICS OF PLANETARY
INTERIORS - 1 copy

AstroCards,
Natrona Heights, PA

1 boxed set of ASTROCARDS

Astromedia Corp.,
Milwaukee, WI

1 6 mo. subs. to ASTRONOMY
1 1 yr. subs. to ASTRONOMY
1 1 yr. subs. to TELESCOPE MAKING
1 1 yr. subs. to DEEP SKY

Firefly Books, Ltd.,
Scarborough, Ont.

NIGHTWATCH - 1 copy

Hansen Planetarium
Salt Lake City, UT

1 Comet Halley Poster

Insight Press,
San Francisco, CA

RELATIVITY VISUALIZED - 1 copy
THINKING PHYSICS - 1 copy

Klein Publications
Los Altos, CA

VISIBILITY OF DEEP SKY OBJECTS
(Vols. 1-5)

Lumicon, Livermore, CA

1 \$50 gift certificate
2 \$30 gift certificates

Oxford University Press
Don Mills, Ont.

VIOLENT PHENOMENAIN THE UNIVERSE
1 - copy

Perceptor, Toronto Ont.

1 \$75 gift certificate

Ruhe Company, Sacramento, CA

10 astronomy charts

Saunders College Publishing,
New York, NY

REALM OF THE UNIVERSE - 1 copy
ASTRONOMY: from EARTH to the
UNIVERSE - 1 copy

Sky Publishing Corp.,
Cambridge, M

TIRION 200 STAR ATLAS - 1 copy

Univelt, Inc., San Diego, CA

REALM of the LONG EYES - 1 copy
THE CASE for MARS - 1 copy

W.H. Freeman & Co.,
New York, NY

THE DYNAMIC EARTH - 1 copy
THE UNIVERSE of GALAXIES - 1 copy

Howard A. Gibbons

PRACTICAL ASTRONOMY with your
CALCULATOR - 1 copy

Edmonton Space Science Centre . 1 Book Prize



FIGURE 60. Halley's comet photographed on May 29, 1910,



A drawing of the Great Comet of 1843 made by an observer at the Cape of Good Hope. According to many observers, this was the most brilliant comet of the last century.

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