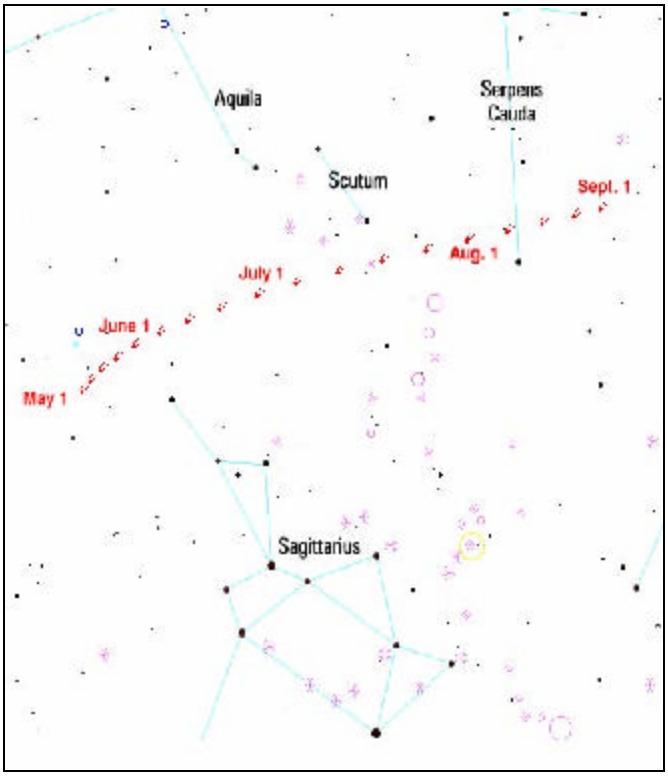
Regulus

Newsletter of the RASC Kingston Centre Issue 96-04 July/August 1996

Hale-Bopp



The Great Comet of 1997?
Comet Discovered: July 23, 1995
Earth Closest Approach: March 22, 1997 (1.315 AU)
Sun Closest Approach: March 31, 1997 20:52 UT (0.917 AU)
Current Distance From Earth: 3.116 AU (289.7 Million Miles)
Current Distance From Sun: 4.068 AU (378.2 Million Miles)

The ephemeris (see page 9) is computed from the elements on MPC 27287 with full consideration of planetary perturbations. Although total (m1) magnitudes are given, you are warned that comet brightnesses are often unpredictable by several magnitudes either way. A single asterisk indicates that the comet is within 30° of the sun.

On July 23, 1995, an unusually bright comet outside of Jupiter's orbit was discovered independently by Alan Hale, New Mexico and Thomas Bopp, Arizona. The new comet, designated C/1995 O1, is the farthest comet ever discovered by amateurs and appeared 1000 times brighter than Comet Halley did at the same distance. Normally, comets are inert when they are beyond the orbit of Jupiter, so it has been speculated that Comet **Hale-Bopp** is either a rather large comet or experienced a bright outburst. As the comet approaches the Sun, its brightness should increase even more. Anticipation is high that in early 1997, the new comet may be the brightest naked eye comet since Comet Hyakutake in 1996. Astronomers warn however, that it is still possible that Comet Hale-Bopp may fizzle out, and could follow the way of past disappointments such as Comet Kohoutek (1973) and Comet Austin (1990). On the other hand, Comet Hale-Bopp may put on a dazzling celestial show to Earth observers. Only time will tell.

In This Issue

1997 General Assembly in Kingston, Ontario Canada
Friday June 27th to Monday June 30th, 1997

The Centre

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

Newsletter Submission Info:
Deadline is the Friday before regular meetings in odd numbered months.
email: ***kell@cliff.path.queensu.ca***
Fax: 1-613-545-2907 (with cover page to Kevin Kell)
Post: Box 2033 Kingston Ontario K7L5J8 Canada
ascii or most major word processors (WP6.1 for windows preferred) via email or 3.5" DOS floppy disk

Our Web page can be found at:
http://crp.kingston.on.ca/rasc/rasc.htm

Officers and Executive Council

President:	Peggy Torney
Vice President:	David Stokes
Secretary:	John Baker
Treasurer:	Kim Hay
Editor:	Kevin Kell
National Council Rep:	Cathy Hall
Alternate Rep:	Kim Hay
Librarian:	Kevin Kell
Honourary President:	David Levy

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

Committee Chairs

Astronomy Day:	Cathy Hall	613-
Education:	Kim Hay	613-
Publicity:	Christine Kulyk	613-
Observing:	Peggy Torney	613-
Light Pollution:	John Baker	
GA:	Peggy Torney	613-2

Centre Address: RASC - Kingston Centre, PO Box 1793, Kingston, Ontario K7L 5J6 Canada

Upcoming Meetings

June 27-July 1st: 1996 General Assembly in Edmonton
July 12th: Regular Meeting
August 9th: Regular Meeting
September 13th: Regular Meeting
October 11th: Annual General Meeting & '97 Elections
November 8th: Regular Meeting
December 13th: Annual Awards Dinner & Meeting

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

Special Events:

July 12-14,1996 North Bay Astronomy Club Star Party Munro Park, Powassan, Ontario
August 9-12: StarFest '96. The Annual North York Astronomical Association Star Party at Mt. Forest.
August 9-12: Stellafane '96, Syracuse
August 14th - 18th Kobau Star Party contact: Ann Murphy RR#6, 713 Paret Rd. Kelowna, B.C. V1Y 8R3
Monday August 19th: Terry Dickinson's Charleston Lake Provincial Park Lecture & Observing Session
September 5-8, 1996 Huronia Star Party, southwestern Ontario's newest star party is held each year in Huronia, Ontario. HSP 96 is run by the South Simcoe Amateur Astronomers (SSAA).

Regulus is published 6 times per year. Views and opinions expressed herein do not necessarily reflect the official position of the Royal Astronomical Society of Canada or its officers and members.
Subscriptions: Members of the Kingston Centre receive Regulus as a benefit of membership. Non-members may subscribe for $10 per year.
Advertisements are free to members of the Centre. Commercial advertising is $25 per half page, $50 for full page and must be camera ready copy.
Contributions are more than welcome. Submitted material may be edited for brevity or clarity.

From The Editor/ Librarian

Recent donations to the Library... Thanks! From **Ian Levstein:**
Webb Society Deep Sky Observer's Handbooks, Edited by Kenneth Glyn Jones
Volume 8 Variable Stars
Volume 7 The Southern Sky
Volume 6 Anonymous Galaxies
Volume 5 Clusters of Galaxies
Volume 4 Galaxies
Volume 3 Open and Globular Clusters
Volume 2 Planetary and Gaseous Nebulae
Volume 1 Double Stars
And in my confused state I recall Hank Bartlett donated the following (profuse apologies if I've screwed up the attributes!):
Serendipitous Discoveries in Radio Astronomy, Proceedings of an NRA workshop May 1983, Edited by K Kellermann
Stephen Hawking's A Brief History of Time Reader's Companion

Welcome New Kingston Centre Members:

Terry McGinn, Susan Phillips, Don Timperon, which brings us up to 159 And Norman Wellbanks from Yarker and a temproary member Edo Knopper from Kingston

CASCA '96 was held June 1-5 at Queen's University. Leo Enright hosted a tour to the Holleford Crate Sunday morning June 2nd, which was well attended by CASCA and RASC members.

From the Prez

Peggy may still be driving through the wilds on her way back from the Edmonton GA...

National News

The 1996 General Assembly has come and gone. Kingston was well represented with myself and Peggy Torney driving out to Edmonton, Leo Enright, Christine Kulyk, Ruth and Terry Hicks and even Leo Brodeur (recently moved to Alberta!) Made an appearance. Weather was good, attractions were good, I made several new acquaintances and contacts.

If after reading through the following pages of the motions of both national council meetings and minutes of the General Assembly meeting you may be interested in picking up a copy of the National Constitution, online at all three of the BbS's listed later in the newsletter.

Minutes and Minutia

This info provided by Peter Jedicke
RASC Motions of National Council 1996 06 28
Note: the following is presented merely to foster discussion and immediate feedback during the General Assembly to National Council. This list of the motions considered at the meeting of National Council is **completely unofficial** and is the responsibility of the National Recorder. For official purposes, wait for the completed minutes in a few weeks.

MOTION 96101 It was moved by Mr. Lane and seconded by Mr. Ascroft that the agenda be approved as circulated. The motion was CARRIED.
MOTION 96202 It was moved by Mr. Enright and seconded by Mr. Hladiuk that the minutes of the meeting of National Council of 1996 03 23 be approved. The motion was CARRIED.
MOTION 96203 It was moved by Mr. George and seconded by Mr. Ceravolo that the Society enter into a contract with the University of Toronto Press for membership services and publication distribution, essentially on the terms contained in the draft memorandum of agreement between the University of Toronto Press and the Society. The motion was CARRIED.
MOTION 96204 It was moved by Dr. Brooks and seconded by Mr. King that the persons named on the list of new and unattached members as circulated be elected as members of the Society. The motion was CARRIED.
MOTION 96205 It was moved by Dr. Brooks and seconded by Mr. Pat Kelly that an NGC Certificate be awarded to Mr. David J. Lane (Halifax). The motion was CARRIED.
MOTION 96206 It was moved by Dr. Brooks and seconded by Mr. Attwood that Messier Certificates be awarded to **Mr. Ray Berg (Kingston)**, Mr. Peter Dawes (London) and Mr. Brian Cheaney (Toronto). The motion was CARRIED.
MOTION 96207 It was moved by Dr. Brooks and seconded by Mr. Enright that the schedule of prices for the 1998 Observer's Handbook included in the report of the Editor of the Observer's Handbook be adopted. The motion was CARRIED.
MOTION 96208 It was moved by Mr. Enright and seconded by Mr. Ascroft to approve the preparation of an advertisement for the third edition of the Beginner's Observing Guide to be inserted in SkyNews.
Mr. Ceravolo pointed out that the Society would have a half page available in SkyNews for the six issues of 1997. On the understanding that the Beginner's Observing Guide be included prominently in the first advertisement, Mr. Enright and Mr. Ascroft withdrew MOTION 96208.
MOTION 96209 It was moved by the Constitution Committee that the by-laws of the Ottawa Centre be approved, subject to approval by the Ottawa Centre of the changes made by the Society's solicitor. The motion was CARRIED.
MOTION 96210 It was moved by the Nominating Committee that Mr. Scott Young be appointed Astronomy Day Co-ordinator. The motion was CARRIED.
MOTION 96211 It was moved by the Publications Revitalization Committee that the name of the Society's publication be "Polaris."
MOTION 96212 It was moved by Dr. Chou to table MOTION 96211 until the next meeting of Council, on Sunday, June 30. The motion to table MOTION 96211 was CARRIED.
MOTION 96213 It was moved by the Publications Revitalization Committee that the Society create an Editorial Board to

develop, oversee, and edit its new publication; that the Board consist of the chairperson of the Publications Committee, the Editor and Associate Editor, and additional members appointed by the President of the Society upon the recommendation of the Publications Committee; that the chairperson shall be one of the editorial board members and elected by the board, and that, until such time as the Society's by-laws are amended, the Editors of the Journal and the Bulletin (as defined by the by-laws) shall assume the responsibilities of the Editor and Associate Editor, respectively, of the new publication.
The motion was CARRIED.
MOTION 96214 It was moved by Mr. Lane to remove MOTION 96121 from the table. The motion was CARRIED.
MOTION 96121 was DEFEATED.
MOTION 96215 It was moved by Mr. Broughton and seconded by Mr. Ceravolo that the April issue of the new publication of the Society contain all the information formerly contained in the Annual Report.
MOTION 96216 It was moved by Mr. Watson and seconded by Mr. Ascroft to table MOTION 96215. The motion was CARRIED.
MOTION 96217 This motion dealt with details of how Centres can "market" themselves to unattached members. The text of the motion will be available shortly.
MOTION 96218 It was moved by Dr. Brooks and seconded by Mr. Lane that Ruth Hicks and Henry Lee be appointed as scrutineers for the ballots in the election of the 1st Vice President
The motion was CARRIED.

RASC Minutes of the Annual Meeting
1996 06 30 General Faculties Boardroom, University Hall University of Alberta, Edmonton, Alberta
The meeting was called to order at 13h09 mdt by the chair, RASC National President Dr. Hube. Dr. Hube welcomed delegates to the 1996 General Assembly. Dr. Hube called the roll of Centres. Thirteen Centres were represented and there were also several unattached members present. Approximately seventy members were in attendance. Dr. Hube asked that anyone holding proxies or election ballots make these known to the National Secretary, Dr. Brooks. Dr. Hube announced that unassigned proxies had been distributed among persons from various Centres. Dr. Hube announced that Council had appointed Mr. Henry Lee and Mrs. Ruth Hicks as scrutineers for the election of the 1st Vice-President. Dr. Hube asked Dr. Brooks to read the roll of members who were deceased during the calendar year 1995. A moment of silence was observed.
1. APPROVAL OF AGENDA
MOTION AM9601 It was moved by Dr. Chou and seconded by Mr. Dick to approve the agenda. The motion was CARRIED.
2. ADOPTION OF MINUTES OF THE 1995 ANNUAL MEETING
MOTION AM9602 It was moved by Mr. Hurley and seconded by Mr. Runge to adopt the minutes of the 1995 Annual Meeting. The motion was CARRIED.
3. REPORTS
Dr. Hube announced that officers and committees had reported to Council at the meeting of 1996 06 28.
3.1 PRESIDENT
Dr. Hube said that it had been an honour to serve as National President and to meet many members of the Society across Canada and to visit the Centres. Dr. Hube expressed his gratitude for the hospitality he had enjoyed wherever he visited. Dr. Hube thanked all those members who had written to him during his term of office.

Dr. Hube reported on deliberations of the Executive Committee, particularly the upcoming changes at national office after the retirement of the Executive Secretary. Dr. Hube asked Mr. George to describe the draft agreement with University of Toronto Press for handling membership services, which had been approved by Council. Mr. George invited Centres or members to contact him if any problems arose in the coming months. Mr. George said Centres would still be able to elect new members, and if any person is refused membership, the fees would be refunded. Mr. George said that Centres not represented at this meeting would be informed of the new arrangements. Mr. George said it was hoped that the new arrangements would take effect with the beginning of the 1997 membership year.

Mr. George also reported on the new arrangements for the Society's bi-monthly publication.
3.2 NATIONAL SECRETARY
Dr. Brooks referred to his report, which appeared in the Annual Report.
3.3 TREASURER
Dr. Gupta said that the operations of the Society resulted in a surplus in 1995, and referred to the statements in the Annual Report. Dr. Gupta said that a deficit seemed likely for 1997 because of the expense of new initiatives, but that the long-term outlook remained good.
MOTION AM9603
It was moved by Dr. Gupta and seconded by Mr. Attwood to adopt the audited financial statement as published in the 1995 Annual Report.
Dr. Gupta explained that investment interest had been higher in 1995 than in the years immediately prior to 1995 because of rearrangements in the Society's investments. Dr. Gupta commented that the deficit in 1996-1997 might be from zero to $20,000. Dr. Gupta expressed gratitude to the Executive Secretary for her continuing assistance. A round of applause followed.
The motion was CARRIED.
3.4 NATIONAL RECORDER
There was no report.
3.5 NATIONAL LIBRARIAN
Dr. Brooks reported on behalf of Mr. Macdonald that the library was in good order, and that certain older books had been sent to York University for distribution to third-world countries. Dr. Brooks reported that Mr. Macdonald was working on an update to the Society's library catalogue.
3.6 EDITOR OF THE JOURNAL
Dr. Turner reported that matters related to the Journal were in order. Dr. Hube thanked Dr. Turner for his continuing efforts. A round of applause followed. Mr. Attwood said that he had heard many compliments concerning the quality of recent issues of the Journal.
3.7 EDITOR OF THE BULLETIN
Mr. Kelly reported on the status of the Bulletin. Dr. Hube thanked Mr. Kelly for his continuing efforts. A round of applause followed.
3.8 EDITOR OF THE OBSERVER'S HANDBOOK
Dr. Hube reported on the recommendation from Dr. Bishop that the price of the 1998 Observer's Handbook be increased. Dr. Hube expressed appreciation for Dr. Bishop's continuing efforts. A round of applause followed.
3.9 EDITOR OF THE BEGINNER'S OBSERVING GUIDE
Mr. Enright reported on the success of the second edition and the publication of the

third edition. Mr. Enright said that initial response to the third edition was favourable. Dr. Hube thanked Mr. Enright for his continuing efforts. Mr. McCurdy asked if it was possible to permit new members to choose to receive the Beginner's Observing Guide rather than the Observer's Handbook, and Mr. Enright said this matter would be considered. A round of applause followed. Dr. Hube reported that Mr. Broughton had copies of the book "Looking Up" for purchase during the General Assembly.

3.10 STANDING COMMITTEES

3.10.1 AWARDS COMMITTEE

Mr. Broughton said there was nothing to report.

3.10.2 CONSTITUTION COMMITTEE

Mr. Watson said that the Constitution Committee was anticipating that it would deal with some significant matters in the coming months, as a result of recent initiatives undertaken by Council. Dr. Brooks said that he had been contacted by some members regarding MOTION AM9511, and Mr. Watson said that the Committee routinely considered whether by-law amendments were as simple as possible, and that Council had determined that no change in the status of the Committee was desirable.

3.10.3 HISTORICAL COMMITTEE

Mr. Broughton reported on developments concerned with co-operation between the Society and the Canadian Astronomical Society (CASCA) on historical matters.

3.10.4 MEMBERSHIP AND PROMOTION COMMITTEE

Mr. Jedicke said that Mr. Hladiuk had prepared a booklet about Comet Hale-Bopp, and that a copy of this booklet was available for each Centre. Mr. Kell reported that he had promotional items available for sale during the General Assembly. Mr. George reported that the form which new members would submit to University of Toronto Press was under development, and there was some discussion about whether requesting additional information on this form would be useful. Mr. George said that each Centre would be permitted to customize the form.

3.10.5 NOMINATING COMMITTEE

Mr. Broughton reported that Mr. Scott Young had accepted the nomination as the new Astronomy Day Co-ordinator. A round of applause followed.

3.10.6 PROPERTY COMMITTEE

Mr. May reported that matters relating to the Society's property had been discussed at the meeting of National Council on 1995 06 30.

3.10.7 PUBLICATION COMMITTEE

Mr. George said there was nothing further to report.

3.10.8 ASTRONOMY DAY CO-ORDINATOR

Mr. Scott Young said there was nothing to report.

3.11 SPECIAL COMMITTEES

3.11.1 COMPUTER USE COMMITTEE

Mr. Lane reported on his work to maintain a current list of E-mail addresses of members of the Society. Mr. Lane reported on the development of RASCList, an E-mail mailing list which currently had about 80 subscribers, and that RASCList was connected to a similar interchange of messages on FIDONet. Dr. Turner pointed out that a world wide web home page had been established for the Journal. Dr. Hube expressed thanks to Mr. Lane for his continuing efforts. A round of applause followed. Mr. Lane acknowledged the continuing support of St. Mary's University, which had provided the internet connection for RASCList and the national world wide web home pages of the Society.

3.11.2 GENERAL ASSEMBLY GUIDELINES COMMITTEE

Dr. Brooks reported on activities of the Committee.

3.11.3 LIGHT POLLUTION COMMITTEE

Mr. King reported on the membership and activities of the Committee.

3.11.4 LONG-RANGE PLANNING COMMITTEE

Mr. Ceravolo said that there was nothing to report.

3.11.5 PUBLICATIONS REVITALIZATION COMMITTEE

Mr. Lane reviewed the activities of the Committee. Mr. Lane reported that the position of Production Manager of the Society's new publication had been advertised, that a number of applications had been received, and that no decision had been reached. Mr. Lane said that the Committee would be disbanded and the responsibility for the new publication would fall upon the Publications Committee. Dr. Turner said that there would continue to be some peer-reviewed papers in the new publication. Dr. Turner said that timeliness will be a priority of the new publication. Mr. Lane reported on the plan to have the date printed on the new publication reflect the actual date of issue.

4. BY-LAW AMENDMENTS

There were no by-law amendments to be considered.

5. ELECTION OF OFFICERS OF THE SOCIETY

Dr. Hube announced that, as announced in the agenda, Mr. George was acclaimed to the office of President. A round of applause followed.

Dr. Hube announced that, as announced in the agenda, Dr. Robert Garrison was acclaimed to the office of 2nd Vice-President.

Dr. Hube announced that, as announced in the agenda, Dr. Brooks was acclaimed to a second term as National Secretary. A round of applause followed. Dr. Hube expressed appreciation for the continuing efforts of Dr. Brooks.

Dr. Hube announced that Mr. Randy Attwood had won the election as the Society's 1st Vice-President. A round of applause followed.

MOTION AM9604

It was moved by Dr. Brooks and second by Mr. Ascroft that, subject to a request for a recount of the ballots, the ballots be destroyed within 24 hours of the end of the meeting. The motion was CARRIED.

6. SELECTION OF AUDITOR

MOTION AM9605

It was moved by Dr. Gupta and seconded by Mr. Enright that C. J. Tinkham and Associates be reappointed as auditors for the Society.

Dr. Gupta reported that the cost of the annual audit was approximately $2000 and that the cost of additional ongoing services of the auditors was approximately $3500. Dr. Hube directed that a letter of appreciation be sent to the auditors for their efforts.

The motion was CARRIED.

7. OTHER BUSINESS

Dr. Kennedy reported on preparation of a historical summary for the Society. Dr. Kennedy requested that the Treasurer contact the heir of Walter Helm to inform the heir of Walter Helm of activities concerning the Walter Helm Memorial Fund.

Mr. Pow asked about the disposition of MOTION AM9511. Dr. Hube reported that the Executive Committee had

determined that the Constitution Committee should continue as a Standing Committee. Dr. Brooks reported that it was felt that use of teleconferencing for Council meetings was too expensive to be effective. Mr. Watson reviewed the provisions of the Constitution regarding the role of Council in relation to the Annual Meeting.

Mr. Connors asked about the recent statistics regarding new life members. Dr. Gupta pointed out that there had been a substantial increase in the fee for life members around 1992, and that the Finance Committee would consider whether any change was required.

Dr. Brooks reported that any Centre which requested a copy of a national publication for its library would receive it from the national office. Dr. Brooks explained that automatic distribution of such publications to Centres would not be effective because some Centres do not maintain a library.

Dr. Gupta expressed the opinion that the possible deficit situation of the Society in the immediate future was an exceptional condition, and that the general intent of the Society's operation remained that the Society operate without a deficit.

Dr. Hube congratulated the newly elected officers of the Society and thanked Mr. Ceravolo for his efforts on behalf of the Society. A round of applause followed.

MOTION AM9606
It was moved by Mr. Watson that the meeting adjourn. The motion was CARRIED at 15h06 mdt.

Respectfully submitted, Peter Jedicke, National Recorder.

RASC Motions of the National Council Meeting held 1996 06 30

Note that this list of motions is provided subsequent to the General Assembly in Edmonton in the interest of fostering communication within the Society. This list is entirely unofficial. For official purposes, wait for the full minutes of the National Council meeting. The National Recorder assumes full responsibility for any errors or omissions in this summary.

MOTION 96301 It was moved by Mr. Enright and seconded by Mr. Scott Young that the agenda be approved. The motion was CARRIED.

MOTION 96302 It was moved by Mr. Scott Young and seconded by Mr. Ascroft to approve the composition of the Standing Committees. The motion was CARRIED.

MOTION 96303 It was moved by Mr. Watson and seconded by Mr. Scott Young that the General Assembly Guidelines Committee be disbanded. The motion was CARRIED.

MOTION 96304 It was moved by Dr. Hube and seconded by Dr. Turner that the Long Range Planning Committee be constituted as a special committee of the Society, to be composed of the 2nd Vice-President and up to three additional members, and that the committee be asked to present a report within two years to Council.

MOTION 96305 It was moved by Mr. Broughton and seconded by Mr. Lane to amend MOTION 96304 to include the 1st Vice-President on the Long Range Planning Committee and chair the Committee. The motion to amend MOTION 96304 was CARRIED.

MOTION 96306 It was moved by Mr. Dick and seconded by Dr. Hube to amend MOTION 96304 to remove the 2nd Vice-President from the committee. The motion to amend MOTION 96304 was CARRIED.

MOTION 96304, as amended, was CARRIED.

MOTION 96307 It was moved by Mr. Hurley and seconded by Mr. King to approve the composition of the Special Committees. The motion was CARRIED.

MOTION 96308 It was moved by Mr. Lane and seconded by Mr. Dick that MOTION 96211 be removed from the table. The motion was CARRIED.

MOTION 96309 It was moved by Mr. Watson that MOTION 96211 be amended to be "moved that the name of the Society's new publication be the current name."

MOTION 96310 It was moved by Dr. Gupta and seconded by Mr. Hladiuk to table MOTION 96309. The motion to table MOTION 96309 was DEFEATED. MOTION 96309 to amend MOTION 96211 was DEFEATED. MOTION 96211 was DEFEATED.

MOTION 96311 It was moved by the Publications Revitalization Committee that the name of the Society's new publication be "Astronomy Canada" with the appropriate sub-titles.

MOTION 96312 It was moved by Mr. Lane and seconded by Dr. Brooks to amend MOTION 96311 to add that the change of name would be subject to the approval of the Society's solicitor. After some discussion, MOTION 96312 was WITHDRAWN. After further discussion, MOTION 96311 was WITHDRAWN.

MOTION 96313 It was moved by Mr. Broughton that the meeting be adjourned. The motion was DEFEATED.

MOTION 96314 It was moved by Mr. Dick and seconded by Mr.Scott Young to reintroduce MOTION 96311. The motion to reintroduce MOTION 96311 was DEFEATED.

MOTION 96315 It was moved by Mr. Watson and seconded by Mr. Flegel to keep the name of the Society's publication the same. The motion was CARRIED.

MOTION 96316 It was moved by Mr. Hladiuk and seconded by Mr. Shearman that the booklet "Comet Hale-Bopp Guide Book" be reproduced and distributed to Centres with a budget of $300. The motion was CARRIED.

MOTION 96317 It was moved by Mr. Flegel and seconded by Mr. Enright that the Society confer Life Membership on Dr. Amelia Wehlau in recognition of meritorious service to the London Centre.

MOTION 96318 It was moved by Mr. Hladiuk and seconded by Mr. Broughton to refer MOTION 96317 to the Awards Committee. MOTION 96318 was WITHDRAWN.

MOTION 96317 was CARRIED.

MOTION 96319 It was moved by Dr. Hube and seconded by Dr. Chou that the Society confer Life Membership on Mr. Clinton Constant in recognition of meritorious service to the Edmonton Centre. The motion was CARRIED.

MOTION 96320 It was moved by Mr. Ascroft and seconded by Dr. Brooks that the next meeting of National Council be held on October 19, 1996, in Montreal, and that if the executive of the Montreal Centre should withdraw this invitation, the meeting would be held in Toronto. The motion was CARRIED.

MOTION 96321 It was moved by Mr. Dick and seconded by Ms. Torney that, if the next meeting of National Council were held in Toronto, it be held on October 26, 1996. The motion was CARRIED.

MOTION 96322 It was moved by Mr. May that the meeting be adjourned. The motion was CARRIED.

General Submissions

"Kingston Centre encourages its members to write in with news of astronomy in their area and/or updates on their recent observations..."

Submitted by Cathy Hall:
"Thank you" to Vic Smida! In my article about our Centre's Astronomy Day activities, I inadvertently left out a name when I thanked those who participated... It's a little belated, but - thank you Vic Smida for your help! We really appreciated it!
- Cathy Hall Astronomy Day Coordinator

New planets: The San Francisco State University planetsearch team has put another extrasolar planet on their website. Come on over and check it out!! This one is similar to 51 Peg and 55 Cancri: P = 3.3128 days! K = 468 m/s semi-major axis = 0.0462 AU circular orbit. inferred Mini = 3.86 Jupiter masses, much large than 51 Peg and 55 Cancri.

The star is HR5185 (tau Boo): Distance to star is 19 parsecs F7V And the star is photometrically stable to the milli-mag level! Check out on planetsearch and detections project: *http://cannon.sfsu.edu/~williams/planetsearch/planetsearch.html*

Astronomers Find Possible Planets Around Nearby Star
A University of Pittsburgh astronomer announced the discovery of one or more planets orbiting a star only 8 light-years from the Earth this week, the latest and closest discovery of extrasolar planets.

"The main point is that I see something going around the star," said George Gatewood, who presented his results at the American Astronomical Society meeting in Madison, Wisconsin.

The star in question is Lalande 21185, a small red star about 8 light-years from the Earth, and closer than all but a handful of known stars. Gatewood, using a 75-cm (30-inch) telescope at Pittsburgh's Allegheny Observatory, had been monitoring an unusual wobble in the motion of the star.

The complicated wobble suggests that more than one object is orbiting the star, but the data cannot resolve the number or sizes of them. The data also cannot determine whether the object is a planet or a more massive but more distant brown dwarf.

Gatewood has plans to continue his work using a larger telescope in hopes of being able to distinguish the number and masses of the objects orbiting the star.

Software News

Deep Space Ver 5.5
http://www.simtel.net/pub/simtelnet/msdos/astronmy/dspac550.zip
ftp://ftp.simtel.net/pub/simtelnet/msdos/astronmy/dspac550.zip 1430057 bytes

Deep Space Ver 5.5 is a small but substantive upgrade from Ver 5.21. The new features are 1) a 2-tone Milky Way, 2) an option to generate a printed moon phase calendar, and 3) local horizon files may be associated with each observing site. Deep Space is an observer-oriented astronomy program. It prints high quality star maps in a variety of useful formats designed for use outside at night. It supports our own Deep Space Navigator telescope interface, several models of digital setting circles, and the LX200 line of telescopes.

This is a Shareware version with limited database, but all functions work as in the commercial version. Printing is to Postscript printers or files. The commercial version comes with a Postscript interpreter which cannot be distributed with the Shareware version. David Chander *dschandler@frumble.claremont.edu* *http://www.csz.com/dschandler*

The Earth Centered Universe (ECU) V2.0B is a Planetarium and Telescope Control Program for Amateur Astronomers. It is capable of simulating many of the features visible in the Earth's night sky. You only need to enter your geographic location and the time; the local sky will then be simulated on the screen in a colourful display.

This includes, the stars, planets, Sun, Moon, comets, asteroids, and "deep sky" objects. Constellation, constellation boundary, coordinate grid, ecliptic, and local horizon lines are also displayed. It prints high quality star charts using any Windows-compatible printer and also controls modern computerized telescopes.

ECU is a tool for the observing amateur astronomer, but is equally useful to the "armchair" astronomer.

Some of ECU's Features

ECU is fast compared to many other astronomy programs. It uses mostly integer math for drawing the sky, so a math co-processor is not needed. It is fully supported, however, to improve the speed of solar system calculations.

✷ high quality star charts can be printed on any Windows compatible printer or plotter. These charts are highly

✷ ECU displays the local time, universal time, latitude and longitude, RA/DEC, AZ/ALT, field size, magnitude limits,

✷ sidereal time, and Julian date.

✷ Includes the Yale star catalogue (9100 stars to magnitude 6.5), the SAO star catalog (about 250,000 stars to
magnitude 9.5), and a deep sky database containing over 10,000 objects including the Messier Catalog.

ECU will also access the NASA Hubble Guide Star Catalog CD-ROMs!
✶ Includes the planets, the Sun, the Moon, and up to 50 comets and asteroids.
✶ Clicking on an object causes an information box to pop up. All objects provide their RA, DEC, azimuth, altitude, rise and set times, and magnitude. Planets, the Sun, and the Moon provide their distance (AU or km), angular size
✶ The sky can be displayed as white on black or black on white, or, of course, in full colour. Two "red" modes protect your night vision when ECU is used in an observatory.
✶ ECU's animation mode allows time increments from 1 minute to four years. The display can be "locked" to the Sun,
Moon, a planet, an AZ/ALT or an RA/DEC. Trails of objects can be drawn.
✶ Extensive support is provided for the Meade LX200 telescope series and for most models of digital setting circles including Nova Astronomics' Micro-Guider. This includes a cross hair or field circles on the screen, and coordinate readout. For the LX200, hand controller support is provided and the scope can also be "slewed" to an object.
✶ System requirements: 386/486 100% PC compatible; Math co-processor beneficial; Windows 3.1; VGA or better screen; minimum 1.5 M free memory; Mouse
Price including air mail shipping: ECU V2.0B with all features and databases: ($70 CDN) $50US (Canadians must add 7% GST.)
David J. Lane, Nova Astronomics
PO Box 31013, Halifax, Nova Scotia B3K 5T9 Canada E-Mail: *dlane@hercules.stmarys.ca*

The shareware software mentioned above is also located at the following Kingston BBS's
✶Observatory East (Mark Kaye)
613-353-6495 FidoNet 1:249/109
2400-28800 bps 8N1V.34
✶ StarStream (Kevin Kell)
613-546-6403 FidoNet 1:249/112
14400-28800 bps 8N1V.34
✶ Moonlight Cascade (Kim Hay)
613-353-7369 FidoNet 1:249/133
2400-28800 bps 8N1V.FC

Telescope status

The telescope was last seen after Astronomy day, in the care of Theo. The Binoculars are in the care of Jan.
"Veni, vicidobsonus, vidi..."
(I came, I got a large aperture Dobsonian, I saw...)

Internet Tidbits

RELEASE: I96-5
INTERNET IMAGE SHOWS GALILEO ON TRACK

NASA's Galileo spacecraft, currently in orbit around Jupiter, has sent to Earth an optical navigation image that shows the spacecraft is on track for its June 27 close flyby of Jupiter's moon Ganymede.

The low-resolution navigation image, one of several that the spacecraft will take to help fine-tune its flight path as it approaches Ganymede, is available on the Internet at the following URL:
http://www.jpl.nasa.gov/releases/glopnav.html
http://www.jpl.nasa.gov/galileo

The series of images, used for navigation purposes only, are the product of new computer processing capabilites on the spacecraft that allow Galileo to send back the information required to show the spacecraft is properly targeted and that Ganymede is where navigators calculate it to be.

RELEASE: 96-108
CHEMICAL MEASUREMENTS OF COMET HYAKUTAKE SUGGEST A NEW CLASS OF COMETS

Astronomers observing the close approach of Comet Hyakutake to the Earth in March discovered large quantities of the gases ethane and methane in the comet. This is the first time these or other molecules classified as "saturated hydrocarbons" have been found in a comet, strongly suggesting that at least two basic types of comets inhabit the Solar System.

Ethane has never before been detected in comets or in interstellar matter, the ultimate source material from which the Solar System was formed. Yet, comet investigators found
levels of ethane in Comet Hyakutake that are about 1,000 times greater than can be explained if the molecules were formed by normal physical processes within the gases of the primordial solar nebula, the birth cloud of the Solar System.

"The discovery of ethane was a blinding surprise," according to research team leader Dr. Michael J. Mumma of the Laboratory for Extraterrestrial Physics at NASA's Goddard Space Flight Center, Greenbelt, MD. The spectral lines, or identifying signature of ethane gas, "were so bright they seemed to leap off the computer screen when we got the first observation," Mumma said.

As a comparison to comets, there are three major categories of asteroids. Some of the rocky bodies now considered to be asteroids may in fact be dead nuclei of short-period comets.

RELEASE: 96-104
HUBBLE ASTRONOMERS UNVEIL "CRAB NEBULA -- THE MOVIE"

Probing the mysterious heart of the Crab Nebula, the tattered remains of a stellar cataclysm witnessed more than

900 years ago, astronomers using NASA's Hubble Space Telescope have found that the Crab is even more dynamic than previously understood, based on a cosmic "movie" assembled from a series of Hubble observations.

Though ground-based images of the Crab had shown subtle changes in the nebula over months or years, the Hubble movie shows sharp wisp-like features streaming away from the center of the nebula at half the speed of light.

In a dramatic series of images assembled over several months of observation, Hubble shows what happens as this magnetic pulsar "wind" runs into the body of the Crab Nebula.

The glowing, eerie shifting patterns of light in the center of the Crab are created by electrons and positrons (anti-matter electrons) as they spiral around magnetic field lines and radiate away energy. This lights up the interior volume of the nebula, which is more than ten light years across.

The Crab Nebula, the result of a supernova explosion witnessed by Chinese astronomers in 1054 AD, also is widely studied because it offers a unique opportunity to study high energy astrophysical phenomena. The physical processes that are at work in the centers of distant active galaxies and quasars are thought to be much like the processes at work in the center of the Crab, only on a vastly larger scale.

RELEASE: 96-129
HUBBLE TELESCOPE MEASURES DIAMETERS OF PULSATING STARS

The Hubble Space Telescope has been used successfully to measure the diameters of a special class of pulsating star called Mira variables, which rhythmically change size. The results suggest these gigantic, old stars aren't round but egg-shaped.

Knowing more about these enigmatic stars is crucial to understanding how stars evolve, and may preview the fate of our Sun, five billion years from now.

Due to their distance, the stars are too small for their disks to be resolved in conventional pictures (taken in visible light), so astronomers used Hubble's Fine Guidance Sensors (FGS) to achieve visible light observations of the angular diameters (a measure of apparent width) of two Mira variables, R Leonis and W Hydrae.

Hubble's Fine Guidance Sensors are normally used for tracking astronomical targets that are observed with the other scientific instruments aboard Hubble. Instead of taking pictures, the FGSs make an interference pattern from incoming starlight. The resulting bright and dark zones created by the interference pattern, which resemble ripples in a pond, can be used to measure extremely small angles on the sky of only 1/100 of an arcsecond across (the apparent width of a dime at about 200 miles away).

The FGS measurements show with unprecedented clarity that the atmospheres of the two stars aren't perfectly round, but rather slightly elongated, like an egg. The unusual shape might be produced in a number of ways. One possibility is that as the stars pulsate they do not expand equally in all directions. Alternatively, there might be large dark spots on the star's visible disk that give the illusion of a non-spherical shape.

FGS measurements show that R Leonis' apparent diameter (in visible light) is 70 x 78 milliarcseconds (eight by nine hundred million miles at the star's distance of about 390 light-years) along the star's long and short axis, respectively, and 76 by 91 milliarcseconds (with linear dimensions similar to those of R Leonis) for W Hydrae. If placed within our solar system, both of these stars would extend well beyond the orbit of the Earth and almost to that of Jupiter.

GALILEO - THE TOUR GUIDE

The Galileo Tour Guide is now available on the Galileo home page: *http://www.jpl.nasa.gov/galileo/* You will need Adobe's Acrobat Reader to view the Tour Guide. The Galileo Project prepared this guide to help you share with us a unique experience. The Galileo spacecraft tour is the first time an orbiter has explored an outer planet and its satellite system.

The basics are here - our reasons for going, the journey so far, the spacecraft structure for both orbiter and probe, the instruments aboard each, our arrival at Jupiter with a quick look at the science results, and the satellite tour itself.

C/1995 O1 (Hale-Bopp)

The discovery of this comet by A. Hale and T. Bopp was announced on IAUC 6187 issued on 1995 July 23.

The ephemeris below is computed from the elements on MPC 27287 with full consideration of planetary perturbations. Although total (m1) magnitudes are given, you are warned that comet brightnesses are often unpredictable by several magnitudes either way. A single asterisk indicates that the comet is within 30° of the sun.

C/1995 O1 (Hale-Bopp)
Elements MPC 27287

Date	TT	R. A. (2000)	Decl.	m1
1996 05 27.0		19 32	-15.2	7.1
1996 06 01.0		19 29	-14.7	6.9
1996 06 06.0		19 24	-14.3	6.8
1996 06 11.0		19 19	-13.8	6.7
1996 06 16.0		19 14	-13.4	6.6
1996 06 21.0		19 08	-12.9	6.5
1996 06 26.0		19 01	-12.4	6.4
1996 07 01.0		18 55	-11.9	6.3
1996 07 06.0		18 48	-11.4	6.2
1996 07 11.0		18 41	-10.9	6.1
1996 07 16.0		18 33	-10.4	6.0
1996 07 21.0		18 26	- 9.9	5.9
1996 07 26.0		18 19	- 9.4	5.8
1996 07 31.0		18 12	- 9.0	5.7
1996 08 05.0		18 06	- 8.5	5.7
1996 08 10.0		17 59	- 8.1	5.6

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1996 08 15.0    17 54   - 7.7     5.5
1996 08 20.0    17 49   - 7.4     5.5
1996 08 25.0    17 44   - 7.0     5.4
1996 08 30.0    17 40   - 6.7     5.4
1996 09 04.0    17 37   - 6.4     5.3
1996 09 09.0    17 34   - 6.1     5.3
1996 09 14.0    17 32   - 5.8     5.2
1996 09 19.0    17 31   - 5.6     5.1
1996 09 24.0    17 30   - 5.3     5.1
1996 09 29.0    17 30   - 5.1     5.0
1996 10 04.0    17 30   - 4.9     4.9
1996 10 09.0    17 31   - 4.6     4.9
1996 10 14.0    17 32   - 4.4     4.8
1996 10 19.0    17 33   - 4.1     4.7
1996 10 24.0    17 36   - 3.8     4.6
1996 10 29.0    17 38   - 3.5     4.5
1996 11 03.0    17 41   - 3.2     4.4
1996 11 08.0    17 44   - 2.8     4.3
1996 11 13.0    17 48   - 2.4     4.2
1996 11 18.0    17 52   - 2.0     4.0
1996 11 23.0    17 56   - 1.5     3.9
1996 11 28.0    18 01   - 1.0     3.7
1996 12 03.0    18 06   - 0.4     3.6
1996 12 08.0    18 12   + 0.3     3.
1996 12 13.0    18 17   + 1.1     3
1996 12 18.0    18 23   + 1.9     3.1*
1996 12 23.0    18 30   + 2.8     2.9*
1996 12 28.0    18 37   + 3.9     2.7*
1997 01 02.0    18 44   + 5.0     2.4*
1997 01 07.0    18 52   + 6.3     2.2*
1997 01 12.0    19 00   + 7.8     2.0
1997 01 17.0    19 09   + 9.4     1.7
1997 01 22.0    19 19   +11.2     1.4
1997 01 27.0    19 29   +13.2     1.2
1997 02 01.0    19 41   +15.5     0.9
1997 02 06.0    19 53   +18.0     0.6
1997 02 11.0    20 08   +20.8     0.3
1997 02 16.0    20 24   +24.0    -0.1
1997 02 21.0    20 44   +27.4    -0.4
1997 02 26.0    21 06   +31.0    -0.7
1997 03 03.0    21 33   +34.8    -1.0
1997 03 08.0    22 06   +38.5    -1.2
1997 03 13.0    22 45   +41.8    -1.5
1997 03 18.0    23 30   +44.4    -1.6
1997 03 23.0    00 19   +45.7    -1.7
1997 03 28.0    01 09   +45.6    -1.8
1997 04 02.0    01 56   +44.2    -1.7
1997 04 07.0    02 38   +41.7    -1.6
1997 04 12.0    03 13   +38.6    -1.5
1997 04 17.0    03 42   +35.3    -1.3
1997 04 22.0    04 07   +31.9    -1.0
1997 04 27.0    04 27   +28.6    -0.7
1997 05 02.0    04 44    +25.4    -0.5
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Space Calendar

The Space Calendar covers space-related activities and anniversaries for the coming year. This Calendar is compiled and maintained by Ron Baalke. Please send any updates or corrections to ***baalke@kelvin.jpl.nasa.gov***

You can find this on the web at:
http://newproducts.jpl.nasa.gov/calendar

This Month in Space History -

July 1996

Jul 12 - Moon Occults Venus
Jul 15-17 - International Workshop Tunguska '96, Bologna, Italy
Jul 16 - Comet Spacewatch Perihelion (1.54 AU)
Jul 16 - Asteroid Victoria at Opposition
Jul 17 - Venus At Greatest Brilliancy (Mag -4.5)
Jul 18 - Neptune at Opposition
Jul 20 - 20th Anniversary (1976), Viking 1 Mars Landing
Jul 24 - Comet Gunn Perihelion (2.4619 AU)
Jul 25 - Uranus at Oppostion
Jul 27 - Comet 1996 E1 (NEAT) Perihelion (1.31 AU)
Jul 29 - South Delta-Aquarids Meteor Shower
Jul 31 - Comet Brorsen, Near-Jupiter Flyby (0.4785 AU)

August 1996

Aug 01 - STS-79 Launch, Atlantis, 4th Mir Docking
Aug 02 - Asteroid Toro Near-Earth Flyby (0.2208 AU)
Aug 06 - Asteroid 3103 Eger Near-Earth Flyby (0.1151 AU)
Aug 08 - Asteroid Nausikaa at Opposition
Aug 08-12 -[Jun 05] Starfest '96, Toronto, Canada
Aug 12 - Perseids Meteor Shower (Potential Meteor Storm)
Aug 17 - Asteroid Lutetia at Opposition
Aug 17 - Asteroid Dembowska at Opposition
Aug 18 -[Jun 05] Comet 1996 A1 Jedicke Perihelion (4.06 AU)
Aug 19 - Asteroid Urania at Opposition
Aug 19 - Venus Reaches Greatest Elongation (46 Degrees)
Aug 20 - Comet Shoemaker-Holt 2 Perihelion (2.663 AU)
Aug 20 - Asteroid Laetitia at Opposition
Aug 21 - Mercury At Its Greatest Elongation (27 Degrees)
Aug 28 - Asteroid 1991 CS Near-Earth Flyby (0.0508 AU)
Aug 31 - Comet Wild 4 Perihelion (1.989 AU)

September 1996

Sep 03 - Asteroid Thyra at Opposition
Sep 04 - Venus Passes 3 Degrees South of Mars
Sep 06 - Galileo, 2nd Ganymede Flyby (Orbit 2)
Sep 09 - Comet Wirtanen Closest Approach to Earth (1.4917 AU)
Sep 09 - Asteroid 1994 PC Near-Earth Flyby (0.1706 AU)
Sep 10 -[Jun 04] Asteroid 24 Themis Occults LU 2610
Sep 12 - 30th Anniversary (1966), Gemini 11 Launch

Buy, Sell & Trade

RASC Promotional Items For Sale:
Items in stock: (Prices and shipping costs)
✯ RASC lapel pins (blue, white & silver)$4.00 each (+$1.00 shipping)
✯RASC stickers (blue with white overlay)$1.25 each (add $0.50 shipping per order)
✯Golf shirts (white,sm,med) lt blue (med) $20.00 each ($4.00 shipping)
✯Toques (Black with Yellow writing)$15.00 each ($2.00 shipping)
✯RASC Mugs (Thermal mugs-Blue/ white) $4.00 each (1.50 shipping)
✯RASC Keychains(Clear acrylic-Blue/ white) $2.00 each ($0.50 shipping)
All taxes included in prices. If at anytime you have questions or future ideas for RASC Promotions please contact me with the address below.

Mail: Mrs. Kim Hay, RR#2 , Perth Road, Ontario, K0H 2L0, Canada
phone: 613-353-1189 email: ***Kim.Hay@moonlight.crp.kingston.on.ca***

Check out the Kingston Centre WWW Home Page for pictures of the items mentioned above!
Please make Canadian cheques and Money Orders payable to : Royal Astronomical Society of Canada (RASC)

For Sale: 10 inch Meade reflecting telescope equatorial mount motor drive assorted accessories asking about $900 For info, phone Irmie & Brian Underwood 613-839-0547 Carp,

Ontario Source for Surplus Scientific and Electrical Equipment:
W.J. Ford Surplus, 21 Market Street Smiths Falls, Ontario (613)-283-5195 Open Saturdays 8.00 - 4.45, have to ring doorbell (once you locate the door!). Phone for other times.
This place has a wealth of used equipment - electronic testing devices, microfiche readers, computer parts, sextants, old World War II equipment, chart recorders, camera parts, microscopes, old instrument boxes and trunks, little motors, etc.. The building is a 2 storey warehouse, across the road from the municipal parking lot. It is one street in from the main street of Smiths Falls - turn at the Royal Bank, and go one street over. It is worth a trip!