

R E G U L U S



THE NEWSLETTER OF THE

ROYAL ASTRONOMICAL SOCIETY OF CANADA - KINGSTON CENTRE

NOVEMBER, DECEMBER, 1984

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COMET LEVY HAS BEEN DISCOVERED: CONGRATULATIONS TO DAVID!

During the final hours when this newsletter was being prepared, a story broke which put all other items into second place.

Our member in Tucson, David Levy, has discovered a comet! It has been recognized as his and it will bear the name Comet Levy.

At the moment of writing (in the late evening of November 15th), your editor does not have the full details of the discovery—details which will be known to him and others long before you have a chance to read these words. It has been impossible to reach David directly because he has been "up on the mountain" at Kitt Peak.

The discovery was made on the evening of November 13th-14th when David spotted the object low in the western sky after sunset; it was in the western part of the constellation Aquila. The following evening, at 9th magnitude, it was seen by Terence Dickinson who was the first person to see it from our region. The comet's 1950 coordinates were: Right Ascension-18 hours, 48 minutes; Declination-+10° , and it was moving in a northerly direction. It was close to the open star cluster NGC 6709 and not far from the bright star Zeta Aquilae. It would seem to me that there would be good prospects for the comet's brightening as it approaches the sun; it is not impossible to think of it as becoming a naked-eye object.

How gratifying it is to learn that David's 917 hours of comet-hunting have paid off. This time he was not "cheated" out of recognition for a discovery by an infra-red satellite, as happened with the discovery of the IRAS-comet over a year ago. This time there will be the recognition that is his due. (I understand at the moment that the comet will bear a joint name. What I heard from a telephone recording the name of Comet's co-discoverer was Mr. Rudenko of Massachusetts.)

Our heartiest congratulations go to David Levy on the occasion of this significant achievement. All of us in the Kingston Centre are very proud of you. As a footnote, I want to ask David if he recalls that I told him about a year ago that there was a Comet Levy out there somewhere that was at the time shining at 20th magnitude. I think I would like to say that at this moment there are probably several other Comets Levy well out in the solar system at least two of which are between 23rd and 20th magnitude; we hope to hear more of them within a couple of years.

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"HALLEY'S COMET: WHEN WILL IT BE HERE?"

One question currently being asked of many amateur astronomers is a question which has many possible answers. The question is "When will Halley's Comet be here?" It may even come from people who think that it will be possible to see the comet for only a day or two. Like many questions, this is not a simple

one; it has, in fact, dozens of possible answers depending precisely on what the questioner has in mind when he asks, "Could you tell me when Halley's Comet will be here?" As we shall see the answers may range from "It is already here!" to "Never!"

Let us look at some possible meanings for this very frequent question: "When will Comet Halley be here?" If the questioner means "When on its current approach to perihelion will it be detected by astronomy's most sophisticated photographic equipment?", the answer is "It is already here! It has been here for well over two years!" for the comet was detected on October 16th, 1982 at magnitude 24.3 when it was over 11 Astronomical Units from the sun. If "approaching perihelion" is what is meant by the word "here", the answer is "Since 1948!" which is when the world's most famous comet reached aphelion far beyond the orbit of Neptune and began its 'fall toward the sun' which will reach its conclusion in 1986. If the questioner means "When will it be photographed by amateur astronomers?", then the answer becomes a complicated one, for as of the moment no amateur has photographed it, but within a month or two there may well be reports of the first amateur photographs.

Perhaps the questioner means to ask about its being detected visually: "When can it be seen in large telescopes?" The answer would have to be, "Even using the world's largest telescopes, detecting it visually is still several months away. Nothing fainter than 20th magnitude has ever been detected visually!" Do you mean to ask, "When may one see it in an amateur's telescope?" The answer, then, has to be "Probably not before July 1985 when the comet may reach magnitude 14, but that depends on your location and three or four answers could be given to your question depending on where you want to locate your telescope. Do you say you have only a small telescope and want to know when it will be "here" for you? The answer is that the comet will likely be at tenth magnitude in October 1985 and exactly when you see it will depend on the aperture of the telescope, the location from which you observe, and other factors such as whether or not there is a full moon in the sky.

If the questioner intends to ask, "When may I see the comet, naked eye?", the answer would also be a difficult one. "By December, 1985, the heralded object will be an evening sight in the constellation Pisces and may reach sixth magnitude; it may be visible under good conditions and from a dark observing site." This sounds like a straightforward answer, but in giving such answers, amateur astronomers must beware. The questioner may be unaware of many factors that will seriously hinder his enjoying a spectacle for which he has waited a long time. The latitude from which the observer tries to view the spectacle will very seriously affect his chances of seeing it at all on certain dates in 1986 when it will be very low in the sky from many parts of Canada. If the enquirer means "When will it be brightest in the sky?", the answer should be that present predictions forecast a brightness of at least fourth magnitude during January 1986, but the observer must be sure he knows when and where to look since the object will be low in the west and even bright objects which are diffuse are often difficult to detect when they are immersed in a bright twilight.

Maybe the questioner actually wished to be quite scientific and to ask, "When will the comet come closest to the sun; when will perihelion occur?" The answer then is the simplest of all; it will be on Feb. 9, 1986 at 15 hours 52 minutes 16 seconds Universal time. Maybe he meant to ask,

"When will it be closest to earth?" Here the answer should be given as two statements for during its approach to perihelion the comet makes its closest approach to earth on November 27th, 1985 when it is 0.62 Astronomical Units from earth or about 93,000,000 kilometers away; while it is receding from the sun, its closest approach to earth occurs on April 11, 1986 when it is 0.42 Astronomical Units from us or a mere 63,000,000 kilometers away!

It is even possible that the questioner had other ideas in mind. "When will the tail of the comet be longest, or most visible from my observing site?" To answer such questions is quite difficult and even cometary scientists would hesitate in making precise predictions; suffice it to say that most predictors for Halley's Comet say that a tail of 20 to 25 or even 30 degrees in length is possible during the month of March of 1986, when it will be in the constellation Sagittarius. However, in answering such a question one should hasten to add that from our latitudes in southern Canada the comet will be very low in the sky. In order to appreciate the spectacle that will be offered in March and April of 1986, one should ideally view it from the Southern Hemisphere where it will be possible to see it high in the sky. It is even conceivable that the questioner meant to ask, "When will the Comet be nearest a very bright star or stellar configuration so that I can easily identify it?" The answer here, I would suggest, might be, "The comet will be very near the bright star Theta Scorpii during the night of April 3-4, 1986, but from our northern latitudes it will be extremely low, if not hopelessly so. For our location, one of the most interesting conjunctions will be during the night of November 15-16, 1985 when the comet, easily seen in small telescopes from a dark site, will be passing only two degrees south of the Pleiades. The young crescent moon will set early that evening and will not be a serious hindrance in observing the spectacle." If the person enquiring then asks, "When will the comet be highest in the sky from my latitude?", the answer has to be "In early November, as it swings up through Taurus before approaching the Pleiades, you will see it highest in the northern sky. However, it will certainly not be as bright as it will be three or four months later."

Of course, there is the possibility that the question comes from a city-dweller who wishes to observe from his light-polluted apartment balcony and hopes to see an awesome sight unfolding before his eyes. The answer to his question, "When will I be awestruck by the spectacle?", must be, "Never! You won't see it at all!!" Everyone who has studied the comet knows of its memorable appearance in 1910—a sight to thrill the millions who saw it, but most of those who saw it were unaffected by light-pollution; in 1985 and 1986 the reverse may almost be true: most of those who may want to see it may be seriously hindered, if not prevented, from seeing it by the glare of excessive illumination. Unless they are willing to travel well away from their urban lights, they may be cheated out of seeing one of the great phenomena of nature.

Of all the questions that are asked of astronomers, this one: "When will the comet be here?" must surely be one that can be interpreted in more ways than any other. Before you try to answer the question, be sure you know exactly what is meant by the one who asks it.

A BIBLIOGRAPHY ON HALLEY'S COMET

As a footnote to my talk on Halley's Comet, given at our Centre Meeting of October 26th, and as a way of suggesting some very valuable reading in preparation for the coming appearance of Halley's Comet, I present the following list of books, booklets, and articles from magazines and journals.

1. Comets In 1985 by Brian G. Marsden, with the editor's extensive notes in The Observer's Handbook 1985, pages 130 to 133.
2. The Measurement of Comet Positions by Jeremy Tatum in the Journal of the R.A.S.C. Vol. 76, No. 2., April 1982, p. 97.
3. Preparing For Halley's Comet by Ian Halliday in the Journal of the R.A.S.C. Vol. 77, No. 2., April 1983, p. 63.
4. Four Years And Counting by Roy Bishop in the National Newsletter of the R.A.S.C. Vol. 76, No. 2., April 1982, p. 20
5. The Comet Is Coming by Nigel Calder, Viking Press, 1981.
6. The International Halley Watch Amateur Observer's Manual For Scientific Comet Studies by Stephen J. Edberg, Sky Publishing Corporation.
7. The Comet Halley Handbook, An Observer's Guide by Donald K. Yeomans, a N.A.S.A. - J.P.L. Publication.
8. Halley Watch '86 by Stephen J. Edberg in Astronomy magazine, March 1983, p. 18 to 22.
9. A User's Guide To Halley's Comet by Dennis DiCicco in Sky and Telescope, September 1983, p. 211-212.
10. Brighter Prospects For Halley's Comet by John E. Bortle in Sky and Telescope, January 1984, p. 9 to 12.
11. Dark Skies For Comet Halley Journal Edited by Fred Schaaf and published as a supplement to the Reflector, the newsletter of the Astronomical League in the U.S.
12. To Halley And Beyond by Ray Villard and Terence Dickinson in Star and Sky, April 1980, p. 18 (This is fascinating reading; many of the plans to study the comet by spacecraft have had to be changed.)
13. Hunting Comets by Rolf Meier in Star and Sky, September 1980, p. 28.
14. Comet News Service, newsletter from McDonnell Planetarium, St. Louis, MO.
15. Comets: A Guide To Observation, Photography, and Discovery, Chapter 4 in the book, A Complete Manual of Amateur Astronomy by P. Clay Sherrod, Prentice-Hall, 1981.

This list is not intended to be exhaustive but the books and articles should supply a basic understanding of Halley's Comet and comets in general.

REPORT OF THE SEPTEMBER NATIONAL COUNCIL MEETING

On Saturday, September 29th, 1984, the National Council of the R.A.S.C. met in the Library of the Society's headquarters at 136 Dupont Street, Toronto. Our National President, Dr. Roy Bishop, chaired the meeting and seven Centres of the Society were represented.

The agenda included reports from the officers, from the standing committees, and from three ad hoc committees that had been formed at the June Council Meeting, and there were several important decisions and announcements. Mr. Broughton, National Secretary, reported that he had received a letter from the Department of Consumer and Corporate Affairs stating that the Society's By-law amendments made at the Annual Meeting in June had received ministerial approval. Mrs. Fidler, National Treasurer, reported that the Society's auditors, the firm of C. J. Tinkham and Associates had submitted a bill of \$1,000.00 for their services, and there was a consensus among Councillors that the firm should be retained as our auditors in view of the fact that their work was done well and promptly. As editor of the Observer's Handbook, Dr. Bishop reported that the annual publication was being printed and would be available in about three weeks, with the 1985 edition being eight pages longer than the current one. The report from the Librarian contained information on the new policy of having the National Library open to members on certain Saturdays this year, and on the success of this venture.

On behalf of the Property Committee, Ms. Robinson reported that insurance coverage had been extended to cover the newly-acquired clock, that the fence behind the building had been repaired, and suggestions were offered for improving the cleaning services for the office. Council approved the committee's proposed expenditure of up to \$400.00 to cover the cost of the installation of paving stones in front of the building. The Awards Committee was asked to consider ten applications for the Membership Certificate and to issue a decision on them in time for the Annual Meetings of the various centres. Council also gave its approval to the awarding of four Messier Certificates. Dr. Chou, Chairman of the National Newsletter Committee, reported that a good amount of material was being submitted for publication, that the Newsletter's schedule was being maintained, and that the idea was being considered that in the future the N.N.L. and the Journal might have to be mailed separately if the former were to be true to its mandate as a 'news' publication.

On behalf of the Ad Hoc Committee on Computer Use, Mr. Loedhe reported that efforts were being made to determine the number and type of computers available in Centres across the country; the committee was soliciting advice from knowledgeable members across the country and would make a more complete report at the next meeting of Council. The Committee to Investigate the Representation on Council of Unattached Members received from its chairman, Captain Raymond Auclair, a suggestion that a survey be done of unattached members to ascertain their preferences regarding the type of representation they favoured. Council tabled the suggestion until the proposal and its cost could be further studied. On behalf of the Constitution Committee, its chairman, Mr. Watson, reported that the proposed set of 'Centre By-laws' suggested by the Society's solicitor was being thoroughly examined and more time was needed to consider them in conjunction with the Society's By-laws which also ought to be considered and to be consolidated and renumbered. Council approved the motion to extend the committee's mandate to examining the Society's By-laws as well.

In order to mark the occasion of the fiftieth anniversary of David Dunlap Observatory, Council approved a gift of three pictures, suitably framed, of historically important astronomical instruments – the presentation to be made on the occasion of the celebration marking the anniversary. Council also approved a survey of unattached members residing in Ontario, a project being undertaken by Mr. Dale Armstrong of the London Centre. Support in principle was also extended to the idea that the National President should receive financial assistance for the costs incurred in undertaking visits to the various centres of the Society.

A special guest at the meeting was Mr. Glass, a member of the Royal Astronomical Society of New Zealand, who explained preparations being made by his society, in cooperation with a travel agency, to host visitors from the Northern Hemisphere who would be travelling south in 1985 and 1986 in order to see Halley's Comet. Further information about the project is to be published in the National Newsletter.

In all, a considerable amount of business was conducted on the occasion of the "first anniversary meeting" at the new headquarters of the Society. Full details may be found in the minutes which have been mailed to our Centre President and National Council Representative. A financial statement from the Treasurer and a report from the Journal Editor are attached as appendices to the minutes.

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#### PLANS FOR CELEBRATING OUR SILVER ANNIVERSARY

The Kingston Centre is approaching its silver anniversary. In 1986 we will mark twenty-five years of operation. It is hard to believe, but it has been that long since Dr. A. V. Douglas began the series of meetings and correspondence that led to the formation of our group at Queen's University. It was in the first five months of 1961 that the groundwork was laid, and recognition was given by the Society on June 2, 1961 that interest and membership in the area were sufficient to form a Centre.

A committee has been set up under the chairmanship of Sue Sorensen in order to consider ways of celebrating this important occasion. The first preliminary report of the committee was given at the meeting of September 28th; a number of proposals had been discussed and more information needs to be considered in regard to some of the suggestions. Confirmation has been received regarding the visit to our Centre of Dr. Roy Bishop, our National President, who will join with us in our second January meeting of 1986 marking the twenty-fifth anniversary of the very first meeting held in Ellis Hall in January of 1961. The committee is still willing to receive ideas from any members of the Centre; its final report and suggestions will not be made for several months.

In view of the fact that Dr. Douglas did a tremendous amount of work in establishing this Centre of the R.A.S.C., I hope (and as a member of the committee, perhaps I can work toward it) that beginning in 1986 we can establish an award bearing the name of our Honorary President, Dr. Douglas, and that it can be presented annually for observing, for some project, or for outstanding service to the centre – as the committee shall eventually decide when it establishes the criteria by which the award will be presented.

Any members, who wish to add suggestions about how we can better celebrate this important milestone, are asked to make them known to the committee or a member of our executive as soon as possible.

FOR YOUR COMPENDIUM OF ESOTERIC FACTS

You may be well aware that the star with the largest known proper motion and usually called 'Barnard's Star' has a nickname - 'The Runaway Star'. Did you know that another star - in fact, a double star - with a very large proper motion through the sky bears an equally colourful nickname? It is the famous double, 61 Cygni, which has a motion of over 5" annually and it is sometimes called 'The Flying Star'.

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REPORTS AND OTHER ITEMS

1. In recent weeks, the cloudy and rainy weather has seriously hindered observing plans. Occasional solar observations have generally revealed a sun with few spots—sometimes with none at all. Let us hope for several weeks of good weather in order that we may have a chance to see Comet Levy.
2. We have word from British Columbia that our former president Angelika Hackett and her husband Bob have bought a townhouse in Burnaby and hope to be staying there for a good long time. We extend to them our very best wishes.
3. Our thanks go to Gus Johnson for his recent letter with news about his recent observing, a number of his observation-report cards, and his membership renewal for 1985.
4. Here is another reminder about the membership dues for 1985. Payment should be made to the "Treasurer—R.A.S.C., Kingston Centre" and mailed to the address given below or handed in at one of the regular meetings. For Regular Membership the fee is \$25.00 per year; for Youth Membership it is \$15.50; for Life Membership it is \$300.00.
5. We have received notice about an 8" f-5 Edmund Newtonian telescope which is for sale. It is 3 years old, in good condition, has a fork mount with drive and a 2" focuser. Star test results are very good. Price is \$700.00 Contact Greg Pimento, 1 Morning Dove Crescent, Elmira, Ontario N3B 1E2, (519) 669-1404.
6. All our Regular and Youth Members who have paid their dues for next year should have received their copies of the 1985 Observer's Handbook which is bigger and better than ever before and which was available almost as early as it ever has been. In order to assist our members in getting to know this wonderful observing aid, your editor is once again offering a small prize to the member of the centre who can spot the most errors in the Handbook. This year there are certainly very few, but there happens to be one or more small items that could be called "errors". Entries should be sent to "Editor of Regulus" at the address given below or brought to one of our regular meetings. The deadline is January 25th, 1985.
7. Here are a few things well worth observing over the next few weeks:
  - (1) Comet Levy, of course! I hope to have an ephemeris at the time of our next meeting.

- (2) Comet Schaumasse may also be an interesting object. Consult the Handbook for an ephemeris.
- (3) There are two meteor showers in December. Both of them deserve watching and the moon is not a problem this year for either one. The Geminids reach their peak on December 13th and the Ursids peak during the night of December 21st-22nd.

8. Even though it is several months away, it is not too early to do some preliminary planning for our General Assembly of 1985 which takes place in Edmonton from June 28 to July 2, 1985. Let us try to have a good representation from Kingston.

9. This is a calendar of upcoming meetings and the topics of the presentations:

December 14, 1984	Leo Enright: The 1985 Handbook: A Wealth of Information.
January 11, 1985	Murray Anderson: Planetary Trajectories and Rocket Equations.
January 25, 1985	Hein Van Asperen: Determining The Latitude of Sunspots.
February 8, 1985	Jocelyn Boily: Rocket Designs.
February 22, 1985	To be announced
March 8, 1985	To be announced
March 22, 1985	To be announced

The executive would be delighted to hear suggestions concerning speakers and topics for meetings in 1985. We especially would like to hear from new members who may want to hear discussions of topics which have not been suggested in a long time.

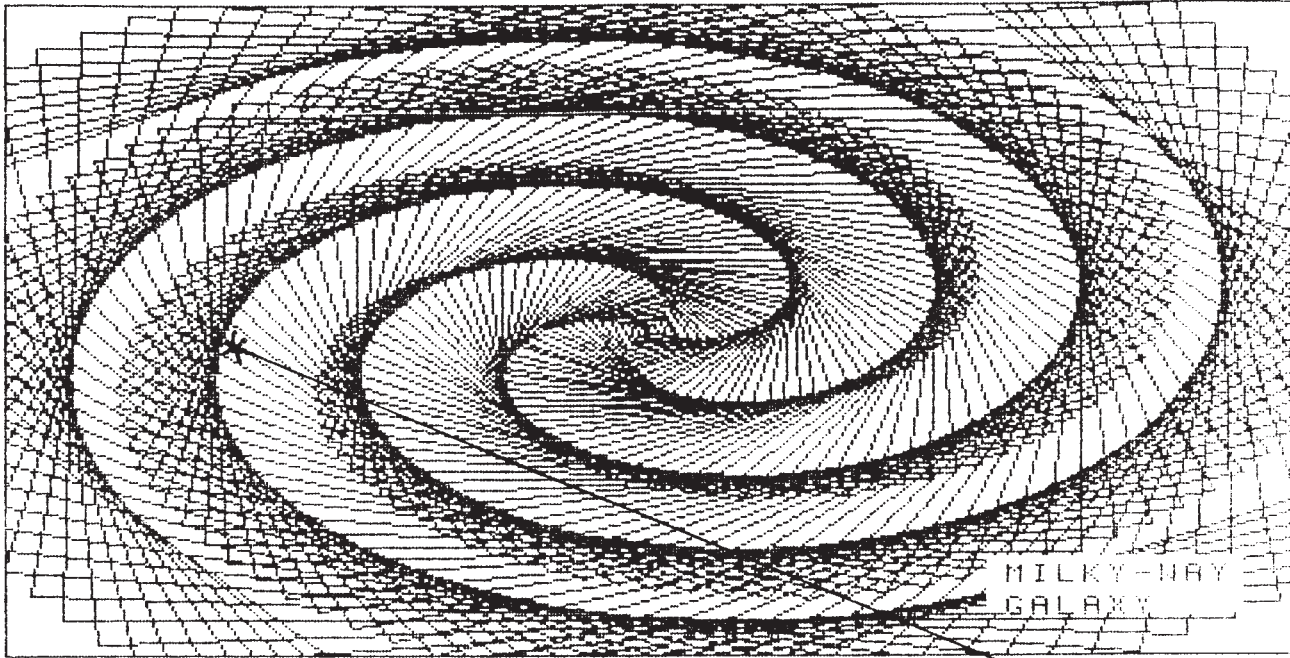
All the meetings begin at 8:00 p.m. and are held in Room 222 in Ellis Hall on University Avenue in Kingston.

10. Your editor would be happy to hear from our readers. The address is:

R.A.S.C. - KINGSTON CENTRE,  
P.O. Box 1793,  
KINGSTON, ONTARIO, K7L 5J6

*Best wishes for a very happy holiday! All the best in 1985!  
Clear skies and good observing!*

*Leo Enright*



THE RASC'S KINGSTON CENTRE IS HERE! →

REGULUS