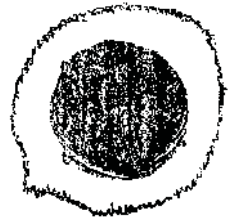


THE NEWSLETTER OF THE
ROYAL ASTRONOMICAL SOCIETY OF CANADA - KINGSTON CENTRE
AND THE
QUEEN'S UNIVERSITY ASTRONOMY CLUB



MARCH 1, 1979

THE TOTAL SOLAR ECLIPSE OF 1979 - AN EVENT WELL ATTENDED BY MEMBERS OF OUR CENTRE

There are probably few astronomical groups in this part of the country in which members can say "Over 40 per cent of our group was there in the path of totality and saw the solar eclipse of February, 1979".

Not only did the members of our centre who went to Manitoba see an eclipse, one of the great spectacles of nature, under very good weather conditions, but all of the ones I have heard from also were very close to, or perhaps precisely on, the very centre line of the wide path of totality which swept through southern Manitoba. As a result, those people had the great fortune of viewing totality for about 98% or more of the length of time that totality could theoretically be viewed from anywhere on earth during this eclipse. (I understand that at the site of the point of theoretical maximum viewing time or location very near to it, the weather prevented any viewing whatever of the total eclipse.)

Let me mention the names of the people who had an experience they will probably never forget. Mike Fayette and Lyte, Angelika and Bob, and David viewed totality from a very short distance north of the centre line, at a site just south of Lundar; Mike Kennedy was precisely on or extremely close to the centre line, at a site on Highway #6 at or near Clarkleigh; Chris Sargeant and I were south of the centre line, at Gimli airfield almost due east of where the others were.

All of us were awed and more than impressed by the whole event, most notably the diamond ring, Bailey's Beads, the intense symmetrical corona, and the eerie surroundings. Regarding the observation of stars or planets, only Mike Kennedy, as far as I am aware, recorded seeing Venus and noted that it was visible for a minute after totality ended.

At least three or four of us recorded photographically some aspects of totality, and if the results that I have seen so far are any indication, there will be many pictures that will be cherished for years and years.

There was at least one other member of our centre at still another site and perhaps we may hear from him later. Altogether, our shared recollections can provide us with hours of conversation and 'comparing notes'.

SOME IMPRESSIONS OF A TOTAL SOLAR ECLIPSE

It was one of the truly great, fortunate, and memorable experiences of mine to be able to see the total solar eclipse of February 26th, 1979. Time and again as I recollect the events, as I am sure is the case for the others who witnessed it, the words 'awesome', and 'spectacular', and 'incredible' recur over and over. To say that a total solar eclipse is a wondrous event, unique in all of nature is an understatement; to have seen one under clear skies, near mid-day, is an experience, indescribable and one which touches the core of your being.

There was uncertainty in the minds of over one hundred people as a group of amateur astronomers travelled to Gimli, Manitoba. The weather forecasts called for cloud and wind and blowing snow; yet the eyes which peered from the two aircraft could see that the eastern sky where the sun was about to rise was clear. The horizon seemed to stay clear. The sun was a long, long time in rising but the sky now looked almost entirely clear. Was it too much to hope that these conditions would hold? Did miracles of weather still happen?

We were In Gimli an hour before we expected. Breakfast on the aircraft! Decisions to be made! Factors to be weighed! Would the weather hold? A hundred and sixty-seven seconds of totality if it stayed clear, but what if it changed? Would we make the right decision an hour before totality? Would we have to fly above the clouds and share a window for our viewing and photography? Would more of the windows 'fog up' if we went up through clouds? Would we have only a few precious seconds at a window before relinquishing it to someone waiting his turn? How long is sixty-six and two-thirds seconds, really? How long is a hundred seconds? Is it long enough to do that dozen photographs that I want? The decision will soon be made.

Equipment is set up. Telescopes. Cameras. The weather holds. It is still clear and calm. It is amazingly calm. Perfect! The decision is made. No one wants to go above. Unanimous! There is a little haze at 30,000 feet. There are a very few, white, scatted clouds. Almost perfect! There is more activity on the airstrip. Equipment must be aligned. Filters must be in place. Those batteries seem a little weak. It must be the cold. It is cold here. I heard the natives say it has been the coldest winter in memory. That time signal from Fort Collins is coming in well - loud and clear. That black dog doesn't seem to mind the cold.

It is almost time for First Contact. There is a shout. It has been detected. First Contact right on schedule. Did he say, "Fifteen hours, thirty-eight minutes, Coordinated Universal Time."? It is nine thirty-eight, Central Standard. Almost an hour and ten minutes until totality! Photos at five or ten minute intervals! A lot of equipment is at the ready. Must get warm once more before totality. The weather is still great. Fantastic!

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The incredible moments of totality provided me and many others with a flood of experiences. I remember people shouting loudly and pointing to the west-south-west to the great, wide, open landscape where the shadow was rushing toward us. I remember things being grey and shadowy, dark and eerie, but there are not many words to describe something that approaches at the speed of the shadow. If only I could look in two or three directions at once and be able to take in the sun, the darkness around, and the orange glow to the south.

I Was gazing at the eastern limb of the solar disk. Indescribable things were happening. There was a great reddish-orange flash. Were there two or three flashes? The diamond ring is absolutely incredible! Bailey's beads! There they are! That one is searing and then it disappears. Those couple of seconds were so awesome! People had been yelling and screaming near me. I had taken one photograph.

I adjusted a switch on the camera and did not take another picture for ten or fifteen seconds; doing that likely made me seem much more calm than those around me. Then I stood as if in a trance; I seemed temporarily transfixed: my gaze was glued to the blue-black ball which hung in the sky with the fiery corona around it.

Many times I had seen pictures of the corona, but it was never like this. It seemed that all the pictures in the world magnified many times could not do justice to what we were witnessing. It was certainly not the static brightness that those photos depicted. It was seething, searing, and boiling. It was moving, and dancing, and active beyond words. Of course, it was white, but it was so awesomely, brilliantly white around that black-blue disc! Yes, all those pictures were such a pale representation. No doubt pictures taken here will also be a paltry representation of the real thing.

Still I stood almost transfixed in the direction of the blackened sun with its searing corona. All around, it was eerie and cold but in excitement I could not tell how much colder than it had been before. I managed to take over a dozen pictures. The feeling as totality continued was one of awe, and privilege at being able to see this phenomenon, and exhilaration. A friend later wrote about a deep sense of satisfaction and an understanding of the powerlessness of humans to change and control nature. I would certainly not disagree. One hundred and sixty-seven seconds pass very quickly. Those fleeting moments are gone forever.

Totality ended with a glowing brightness on the right-hand side of the lunar disc and then a gigantic explosion of light as the brightness burst into one huge bead at the three o'clock position. There was a mighty coloured flash of orange or red and totality was over. I could hear bursts of shouting as a last store of energetic emotion was released. They told of an experience charged in a way that could never be described. The events of less than three minutes had been overpowering.

It would be about one hour and fourteen minutes until Fourth Contact but all of this partial phase would be very much an anti-climax in the comparison to the high-pitched moments of totality. Warmth returned and it was pleasant to walk about and savour the glow of satisfaction that seemed to rise collectively from the countenances of everyone.

It was time for more photographs and conversation. I wonder how many thousands of photographs were taken here in Gimli today? Fourth Contact or the very end of the eclipse came about three minutes after twelve noon Central Time.

Over a hundred happy people boarded their aircraft and left Gimli with a great feeling of satisfaction. The venture had left us all with memories of an event we were privileged to share.

NOW I UNDERSTAND THESE THINGS

Many people, I am sure, who have experienced a total solar eclipse under a clear sky can understand or appreciate certain things in a way that others might not.

For one thing it is easy to appreciate the desire of some people to see as many eclipses as possible. I understand why one man I met at Gimli could be happy to say that he had experienced twenty-eight minutes of totality and he was looking forward to surpassing the thirty-minute mark by being at the right place in Africa next year.

Secondly, I understand why plans are made years in advance and so many preparations are undertaken before eclipse expeditions.

Thirdly, I understand why in years past people struggled on with heavy packs, in canoes through swampy wilderness, or up steep mountain passes, or across barren deserts to view precious minutes or seconds of totality - with always the prospect of cloudy weather and no hope of a plane to go above it.

Fourthly, certain historical events can be seen in a new light and with a different appreciation. After the solar eclipse of May 28th, 585B.C. the battle between the Lydians and the Medes at Ankara near the Halys River stopped and a peace treaty was concluded. The Lydian king, Alyattes, who otherwise might have died in a battle that had just begun, was left to reign on in his kingdom for nearly sixty years and handed on to his successor, Croesus. So easy it is for a historian to say that the soldiers may not have all understood eclipses and may have been filled with panic as they watched the sun in the late afternoon that day, but he should merely be reminded of the overpowering impression the event has left on moderns who have witnessed one, even astronomers who have studied eclipses for years. (Besides an eclipse in that very year had been predicted by Thales, and it may be that eclipses were predicted before that time.) Whether one understands its cause or not, the event is still an awesome phenomenon.

OBSERVING REPORTS, REMINDERS, AND OTHER ITEMS

1. At least a couple of us saw a young moon on the night of February 27th. It was far from any records for seeing a young moon but it was interesting to see it the day after a solar eclipse.
2. I believe I saw a fairly intense Zodiacal Light on February 28th but by the time I prepared a camera to photograph it, it was not nearly so intense. I am reminded of the time I saw it about a year ago, and I want to suggest that over the next month you should keep it in mind if you have a good view of the western horizon after sunset.
3. We may have been generally clouded out for observing the occultation of the stars suggested in the last newsletter for the night of March 5th. Please prepare for the occultation suggested for April 28th. Let's not let this project slip by without a good effort.
4. Were you able to detect any of the penumbral phase of the lunar eclipse immediately after moonrise on March 13th? If so, please let me know. Were you able to photograph the moon that night after moonrise and before the end of the penumbral phase of the eclipse?
5. Plan now on where you will be and how you will observe the early morning occultation of Mercury on April 24th. It just may be possible to see it if everything is right.
6. Please report at the next meeting if you saw Mercury near the time of its Greatest Eastern Elongation earlier this month.
7. I am very pleased to welcome a new member to our centre. He is Mr. Roger Schell of Morrissville, Pennsylvania, and he joined while on the Eclipse Expedition last month. Welcome, Mr. Schell.

Welcome also to Lyte, Mike's wife.

8. Please remember two important upcoming meetings:

(1) Thursday March 22 - Election of officers for next year
- We hope there will be more pictures of the eclipse.

(2) Thursday April 5 - A talk by Dr. A.V. Douglas, the honorary president
of our centre.

9. Congratulations again to Enrico on winning the Get-To-Know-Your-Observer's -
Handbook Contest! Good observing!

A handwritten signature in cursive script, appearing to read "Leo.", is positioned to the right of the text in item 9.