

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA

STANDING COMMITTEE ON OBSERVATIONAL ACTIVITIES

Bulletin No. 3

METEOR SECTION

THE GREAT LEONID METEOR STORM OF 1966

The Leonids have done it again! With practically all of Canada clouded out, and with many observers in the United States giving up too early, this unpredictable shower struck with the greatest intensity since 1833. In the western U.S., observers persevering after 3:00 a.m. Mountain Standard Time were rewarded with a display they never dared hope to see. Meteors kept arriving at a faster and faster rate, until the incredible value of 40 PER SECOND was reached at 5:00 a.m., M.S.T. Of course, this was only an estimate - all recorders were in utter confusion before this occurred. Photographs taken in this period are covered with Leonid trails - one exposure recorded 43 in as many seconds. What a sight it must have been! - read the accounts in "The Review of Popular Astronomy" (Jan/Feb-67) and "Sky and Telescope" (Jan-67) and see what we missed!

Mr. and Mrs. E.E. Bridgen, former stalwart observers in the Montreal Centre and now residing in Victoria, appear to have been the only ones in Canada to see anything of this meteor display, and they were badly hampered by clouds. Their report notes: "With 102 meteors in half an hour, there was little more than one observer - I was kept busy recording".

METEOR SHOWERS OF LATE WINTER AND SPRING

This is not a particularly good season for meteor observers. The weather is usually cold and/or cloudy and meteors few and far between. In fact, the strongest showers occur during the daytime and are observed only by radar techniques. Unless you are willing to accept an expensively high ratio of exposures per meteor, photography is not recommended during this period. However, brilliant fireballs are just as likely to happen now as at other times. Of the night-time showers, only the two noted below have enough visual meteors to emerge noticeably from the background of "sporadics".

The LYRIDS (21-22 April) have a single observer hourly rate of 15. The diffuse radiant is close to Vega (α Lyra), and culminates (reaches its highest point in the sky) at 4:00 a.m. local time. Although a weak shower now, it was formerly much stronger, reaching a near-storm value in 1803. On the night of 21 April, 1922, the observed rate per hour was a miserable 3 in the United Kingdom, but a magnificent 96 in Greece. Observing conditions will not be favourable this year - a full moon featuring a total eclipse occurs 2 days after the maximum.

The AQUARIDS (5-6 May) have a single observer hourly rate of 20. The radiant culminates at 7:00 a.m. local time - not a shower for those who like to retire early! Observing conditions will be favourable with the moon well past last quarter. This shower is thought to be associated with Halley's Comet, as is the Orionid shower of 21 October. However, this cometary association is still in doubt as there are many uncertainties about the orbital characteristics of both showers.

SUGGESTIONS ON SETTING UP A VISUAL OBSERVING STATION

As more dust, smoke and light reach the skies above our cities, the selection of a site for a meteor observing station becomes difficult. It is necessary to accept less than perfect sky conditions in return for the convenience of accessibility and electric power. The site should be chosen and "checked out" both in daylight and at night before the station is established.

A typical observing station might consist of:

- (a) a Recorder's Position in the centre, equipped with table, chair, clock with second hand, radio for receiving time signals, record sheets, flashlight covered with red plastic, spare batteries, and a supply of pencils.
- (b) a total of eight Observers' Positions surrounding the Recorder's Position and facing away from it. Reclining chairs can be used. If the observers intend to plot meteors, they should be equipped with charts mounted on boards, plus pencils and red plastic-covered flashlights.

It is desirable to have more people than positions, permitting a relief system whereby each person spends no more than an hour in an observing position, and is off duty for half an hour before his next shift.

When a meteor is observed, the individual (or individuals) shouts "Time". The recorder notes the clock time of the meteor arrival opposite the consecutive number on his record sheet, announces this number to the observers and asks for details (shower or non-shower, magnitude, location, and any peculiarities such as colour and persistent train). If the observer is plotting the meteor, its number should be noted beside its plotted track and the direction of travel indicated by an arrow head. Make a note in the margin of the chart of this number, together with an estimate of the visual magnitude of the meteor.

Even during mid-summer, it gets cold in the early morning hours, especially in the country, so dress warmly and keep a supply of blankets available.

The above brief outline of setting up a visual observing station is by no means adequate information. The experience of a few nights will teach you more than all that has been written - lots of luck!

Stan Mott, National Co-ordinator,
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28 February, 1967.