

THE REAL HEIGHT OF THE DETONATING METEOR

We have two measurements on the apparent height of the detonating meteor. This is good for that number of reports, and it is enough to fix the real height of the path. The first measurement is from Mill Bridge. As Mr. Norman stepped out of a door at the southeast corner of his barn, the bright meteor flashed past the eaves of the roof on the southwest corner. Mr. Norman measured 20 feet from his head to the eaves and 50 feet to a point under the eaves, so the altitude of the meteor must have been the angle whose tangent is 20/50, or 22° . In our calculation, we assume that Mr. Norman did not see the meteor instantly but that the head of the meteor was 5° to the south of due west when he saw it on a level with the eaves of his barn.

The other measurement is from Springville. Rev. D. B. Marsh noticed that the head of the large meteor was eclipsed by the top of a telephone pole. He set up a transit instrument where he had been standing, and measured the azimuth as 49° , and the altitude as $14^\circ 58'$. The measurements determine the real height of the meteor above the projected path at each of the two points, and consequently the real height at all points.

THE POINT OF APPEARANCE

In fixing the points of appearance and disappearance, one must keep in mind that most of the directions refer to the apparent direction of travel rather than to the points of appearance and disappearance, that many of the reports are on the fainter meteors rather than on the detonating meteor, and that there is a psychological tendency to lengthen the path. We selected the reports on the detonating meteor which appeared to fix the direction with the greatest care, and obtained for the point of appearance the following:

- Bolton — a little west of northwest
- Melrose — west or slightly north of west
- Toronto — 34° west of north (but states he did not see the beginning because of a building)

To these we can add the Jackson report, that the meteor was first seen in the northern sky. We have adopted a point a short distance northeast of Jackson and at a height of 67 miles above the projected path as the point of appearance.

For most spectacular meteors the point of bursting, or disappearance, is fixed much better than the point of appearance. The meteor appears unexpectedly, and when an observer looks up his eyes follow the meteor in its motion across the sky. When it disappears, there is nothing to distract his attention and that point is remembered rather well. The Ontario detonating meteor, however, was an exception. About the time it disappeared the attention of observers was distracted by the smaller meteors coming into view. A very small number report the direction of the big meteor at the time of its disappearance. Several comment on the bursting, but without giving the direction more definitely than "hearing the southeast," for example.