

regard to the tops of two tall trees, one behind the other, the farther one slightly the lower. The leaders passed this gap as shown in sketch. The lower one level with top of taller tree 55



METEORS AS SEEN IN BERMUDA

feet above the height of the eye, and 93 feet base line, giving an angle of about 30° .

Distance from Bermuda. We are agreed that these were much nearer than 131 miles and considerably over 26 miles high. The Royal Mail Steam Liner *Arcadian* arrived in Bermuda on the 10th February and must have come a course almost parallel to the display; it would be worth while writing the captain about it, the watch must have seen it.

Think you will agree with me in the supposition that the trailers had no origin separate from the main bodies and that certainly the whole of them which passed these Islands were off shoots from the leader's or from leaders which had disintegrated before reaching here.

I base this opinion on the following points:—two leaders only reached Bermuda; the number of trailers was enormously increased, whereas from the fact the tail end was observed all

along the line to be dying out they should have decreased; explosions took place at intervals, one was witnessed in Bermuda, which threw off portions of the envelope which developed tails of sparks; the trailers near the large bodies had very long tails and the others gradually shortened up until they at last disappeared; the groups were in irregular intervals caused by the greater or less frequency of the explosions; the explosions and the increase in the number of trailers evidently account for the remainder of the large bodies seen in Ontario.

This display was unlike anything we have seen before and is not as far as I can find accounted for in any astronomical work. We shall be pleased to get any further information that is obtainable. The general behavior was more like that of semi-gaseous bodies than that of the ordinary aerolite.

THE AMERICAN METEOR DISPLAY OF FEBRUARY 9TH, 1913.

BY M. DAVIDSON

On reading the account of this remarkable phenomenon in the *JOURNAL* of the Royal Astronomical Society of Canada, I found it difficult to account for the very long flight, at least 2400 miles, in spite of atmospheric resistance. The motion must have been nearly horizontal; indeed, so perfect was the adjustment between the velocity of the bodies and the resistance of the atmosphere, that they appeared to describe an orbit about the earth's centre.

I have given a discussion of this problem in the *British Astronomical Journal* for November; a very brief summary of the results arrived at is given below.

As the velocity which would cause a body near the surface of the earth to describe a circular orbit is 4.93 miles a second, the bodies must have had a velocity near this. A greater velocity would imply an elliptic orbit, and they would rise from the surface of the earth; a less velocity would mean that they would slowly descend. I assumed a velocity of 5.15 miles a second when the