

logarithms indicated that this should be adjusted to 10.1 miles per second, which value was adopted. This method of determining the velocity from the zenith attraction is reasonably accurate for velocities and radiant as low as this.

We can now assemble the results on the detonating meteor in tabular form:

Time of fall	(75th meridian) 1913, February 9, 9:06 ¹ P.M.
Longitude of appearance	80° 48' West
Latitude of appearance	44° 41' North
Height of appearance	67 miles
Longitude of bursting	79° 46'
Latitude of bursting	43° 23'
Height of bursting	25 miles
Length of path	116 miles
Projected length	109 miles
Apparent velocity	10.1 miles
Geocentric velocity	7.33 miles
Heliocentric velocity	21.11 miles
Azimuth apparent radiant	151° from south
Altitude apparent radiant	20°
R.A. apparent radiant	327° 15'
Decl. apparent radiant	+56° 40'
Altitude corrected radiant	7° 18'
R.A. corrected radiant	315° 15'
Decl. corrected radiant	+46° 16'
R.A. heliocentric radiant	32° 0'
Decl. heliocentric radiant	+31° 22'

COMPARISON WITH REPORTS OF OBSERVERS

The Ontario reports are typical in that most give what the observers thought was the direction of travel, rather than the directions of appearance and disappearance. For some, fictitious lengthening along an almucantar of altitude is very great. Making due allowance for these psychological errors, however, the agreement of the computed path with the reports is very good.

The adopted radiant and velocity fit the Ann Arbor report perfectly since that was used in deriving them. A graphical check showed good agreement with the Bermuda fireball, and satisfactory agreement with the rather indefinite reports on the second Ontario fireball, the fireball from Patagonia, and the showers referred to earlier in this paper as reported from Canada, the United States, and the Atlantic Ocean. No doubt, nearly all the meteors reported on that night were from the same shower, and the radiant and velocity must have been very close to that which we have adopted. While the path of this detonating meteor cannot be considered as well determined as those from modern measures, the reports are so numerous and complete that we believe it is determined much better than most paths based on the older observations.

THE ORBIT

From the heliocentric radiant and velocity the orbit about the sun was computed. The orbit is direct, and it resembles the orbits of the small asteroids which come close to the earth, rather than those of comets.