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EXTRACT FROM REPORT SUBMITTED BY DR. LAPAZ ON 20 DECEMBER 1948:

December 14:

1:00 a.m., Mr. Mimo Sanchez (Wagon Mound, N.M.)

2. The Real Path of the Only Green Fireball so Far Observed at Two Separate Stations. Among the numerous observations so far made, there is only one pair of corresponding observations i.e., those made simultaneously by different groups of observers at widely separated stations. The only such observations are those obtained on the night of December 12 by one group of observers near Starvation Peak (Bernal, New Mexico - see report on incident of 1948, December 12, 9h 2m plus or minus 30s), and a second pair of observers stationed within the Los Alamos reservation. By graphic reduction of the simultaneously made observations, the following facts have been determined: The green fireball of December 12, 9h 2m plus or minus 30s appeared very near a point with the coordinates latitude $35^{\circ} 50'$, longitude $106^{\circ} 40'$ and disappeared near a point with the coordinates latitude $35^{\circ} 45'$, longitude $107^{\circ} 50'$ traversing a nearly or exactly horizontal path with a length of very nearly twenty-five (25) miles at an altitude above the surface of the earth of approximately 8 to 10 miles, depending on the estimate of angular altitude employed in the reduction; the velocity with respect to the earth works out at between 8 and 12 miles a second, depending on the duration estimate used. It should be observed that the above results are obtained under the assumption that the points of appearance and disappearance of the fireball were seen simultaneously by both the Bernal and Los Alamos groups. In case this assumption is not fulfilled, the real path could very easily be no more than 10 to 12 miles long, the velocity with respect to the earth then working out at between 3 and 6 miles a second. While there is thus considerable uncertainty because of the lack of confirming azimuth observations from a third station, concordance in the five (5) different estimates of angular elevation make it most unlikely that the linear height of the fireball was much less than 8 miles and much more than 10 miles. It is interesting to observe that the backward extension of the 25-mile path first given passes almost centrally across the Los Alamos reservation.

3. Significant Differences Between the Fireballs Observed in the Interval December 5-13 and Typical Meteors.

3.1 The horizontal nature of the paths of most of the December fireballs is most unusual. Genuine meteors are rarely observed to move in horizontal paths.

3.2 Again the very low height of the December fireball discussed in section 2 above sets it off in sharp contrast from the genuine meteors for which heights of the order of 40 or more miles are normally observed.

3.3 The velocity determined for the fireball of December 12 is much less than the velocities determined from typical meteors (and yet is considerably greater than the speeds of the V-2 Rockets or jet planes or of conventional flares).

NOTE 1

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