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A Science Service Feature

? WHY THE WEATHER ?

Dr. Charles F. Brooks,
Secretary, American Meteorological Society,
discusses:

WHAT METEORS TELL US

In the last quarter century kites and balloons have given us a fairly accurate knowledge of the atmosphere up to 20 miles above the earth, for they have carried to that height self-recording instruments which registered temperature, pressure and humidity. But beyond that height there seems to be little prospect of direct observations. But various luminous phenomena, especially meteors and the aurora, offer scientists excellent opportunities for making deductions of the higher air levels.

Observations of meteors, particularly of their velocities, heights of appearance and disappearance, lengths of paths and their luminosity, are sufficient to permit the computation of their size, the density of the air traversed, and with other aids, the probable temperatures and composition of the air up to a height of 125 miles.

For example, it is argued from meteor observations, that while the temperature of the high atmosphere up to 30 miles is about 65 degrees below zero, from 40 miles to 100 miles it seems to be about 80 degrees Fahrenheit above zero. Above 125 miles the temperature may again be 65 degrees below. The warmth of this stratum is ascribed to an absorption layer of ozone, formed, it is presumed, by the action of ultra-violet light on such oxygen as is present. This absorption seems to be responsible in large measure for the fact that no trace of the ultra-violet solar light beyond a certain part of the spectrum has ever been observed at the earth's surface, even in clear weather.

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