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A Science Service Feature

? WHY THE WEATHER ?

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

ECLIPSE WEATHER

The eclipse of the sun, which will occur throughout North America on Monday, September 10, will have its effect on the weather, though, naturally, in an interesting rather than an important way. When the moon shuts off the sunlight or part of it for a few minutes it has the effect of a great cloud suddenly spread over a wide region. The air temperature begins falling as the sun becomes even partially obscured, and during a total eclipse becomes several degrees lower than before or after. This lowering of the temperature contracts the air, and results in a slight inflow from the surrounding unshaded areas, which, however, is not easily detected. Careful observations on both sides of the path of a total eclipse have been required to establish that there is this inflow of air. The air does not, however, flow straight but goes in spirally, for after the air starts to move and before it can reach the center of greatest cooling the earth has turned a little under the moving air so that it misses the center, going to the right of it in the northern hemisphere. Furthermore, the shadow of the moon, or center of greatest cooling, is itself moving rapidly. The air from both sides misses the center, and thus forms what is called the "eclipse cyclone" even though it is made of very weak winds. The eclipse cyclone is of particular theoretical interest because, unlike most spirally inflowing systems of air, the center is cooler rather than warmer than the surroundings. Another effect of the cooling is to cause any sheet clouds which may exist to grow denser for the time being, and to stop the formation of cumulus clouds.

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