Oct. 24.

No. 454

A Science Service Feature

? WHY THE WEATHER ?

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CORONAS AND IRIDESCENT CLOUDS

Everyone is familiar with the rainbow, and most with the halo, yet many fail to observe other beautiful prismatic colorings on clouds, such as coronas and iridescence. These phenomena are caused by "diffraction", or the divergence and resulting interference of rays in passing around minute cloud particles, while rainbows and halos are due to "refraction", or the differential bending of rays in passing through larger droplets or through snowcrystals.

Coronas and iridescence may usually be observed on clouds near the sun, especially when such clouds are rapidly forming, as in the cold windy weather just after a northwest wind has begun to blow. The colors are best seen when the eyes are protected by dark glasses or the light is diminished in intensity by reflection from plate glass, and when the hand or some other object protects one's eyes from the direct rays of the sun. Coronas are more or less concentric rings of color in spectral successions at moderate angular distances from the sun or moon. Around the moon, coronas are easily seen as the light is not blinding. The blue is always on the inside and red on the outside of each series of rings. Iridescence, however, is a bright to faint coloring from any or several parts of the spectrum, in irregular splotches like mother-of-pearl, or in bands paralleling the edge of a cloud. As the cloud moves toward or from the sun, the colors change; they are most brilliant within 20 or 30 degrees. Iridescence on clouds seems to be merely a mixture of coronas of different radii resulting from particles being of varying sizes in different portions of the cloud.

Tomorrow: "Late Autumn Work For Weather Men".

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