

A Science Service Feature

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? WHY THE WEATHER ?

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TWINKLING AND SHADOW-BANDS

WHENEVER WE look at the sky we have to look through our own atmosphere. If this ocean of air is rough and turbulent, it disturbs light travelling through it from distant sources, so although stars do not themselves really twinkle, they appear to twinkle, especially after sudden atmospheric changes. Prof. Stetson of Harvard points out that if a star were bright enough, the flickering or scintillation of its light could be seen on a white surface. And if the star were a narrow line instead of a point of light, parallel shadow bands instead of irregular patches of light and shade would be observed. This condition really occurs when at the time of an eclipse the sun is narrowed to a thin crescent. Shadow bands do not always accompany eclipses, and vary greatly in type. Their character seems dependent upon the condition of the atmosphere, turbulent air apparently favoring prominent shadow bands, such as those of last January's eclipse. Mr. P. R. Bassett of the Sperry Gyroscope Company, following an earlier experiment by W. H. Pickering, produced artificial shadow bands very similar to those observed at the recent total eclipse. He employed a 60-inch searchlight with a beam candle power of 800,000,000 and obtained conspicuous displays of shadow bands at a distance of two miles.

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