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Laurence A. Marschall
Gettysburg College

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Catching Shadow Bands

Abstract

Even though shadow bands are only visible for a few fleeting minutes, it is possible to catch them if you prepare in advance. Get a large piece of white cardboard or white-painted plywood to act as a screen--the bands are subtle and can be more easily seen against a clean, white surface. (*excerpt*)

Keywords

shadow bands, eclipse, solar eclipse, totality

Disciplines

Astrophysics and Astronomy | The Sun and the Solar System

Catching Shadow Bands

by Laurence A. Marschall

Even though shadow bands are only visible for a few fleeting minutes, it is possible to catch them if you prepare in advance. Get a large piece of white cardboard or white-painted plywood to act as a screen—the bands are subtle and can be more easily seen against a clean, white surface. A large white sheet staked to the ground may be more portable and will serve in a pinch, but ripples in the sheet can mask the faint gradations of the shadow bands.

Lay out on the screen one or two sticks marked with half-foot intervals (yardsticks will do nicely). Orient the sticks at right angles to one another so that at the first sign of activity you can move one stick to point in the direction that the shadow bands are moving. Then, using the marks on that stick, make a quick estimate of the spacing between the bands (typically 4–8 inches; 10–20 centimeters). Finally, using a watch, make a quick timing of how long a bright band takes to go a foot or a yard. Jot down the figures or, better yet, dictate your measurements into a small audio recorder. If you practice this procedure before the eclipse, you will be able to see the shadow bands and then swing your attention back to the sky to catch the diamond ring, Baily's beads, and the onset of totality.

The second stick, by the way, is reserved for marking the direction of the shadow bands *after* totality, if they are visible.

After the eclipse, you can take stock of your data. Do the shadow bands seem to move at all? At some eclipses, especially when the air is very still, they just shimmer without going anywhere. If they move, how fast? Typical speeds are about 5–10 miles per hour (8–16 kilometers per hour). Do they change directions after eclipse? Usually they do, unless you happen to be standing directly along the central line of totality.

Dr. Laurence A. Marschall is Professor of Physics (Emeritus) at Gettysburg College and Deputy Press Officer, American Astronomical Society.