

## Help Learn More About a Unique Solar Eclipse Phenomenon

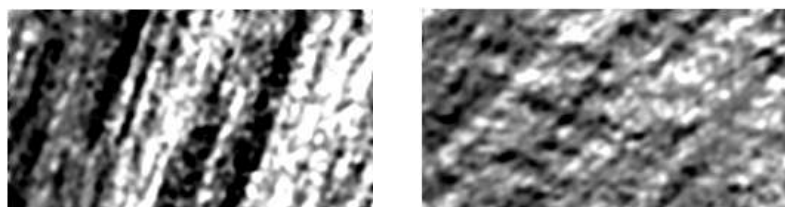
### Join the 2026 Eclipse Shadow Band Citizen Science Project

#### Experience Something Rare

During the few moments before and after totality, rippling patterns called shadow bands race across the ground<sup>1</sup>. This citizen science project invites eclipse observers across Iceland and Spain to record shadow bands and help answer questions that remain largely unexplored.



**Figure 1: Eclipse shadow band experimental setup at the 2024 Eclipse<sup>2</sup>.** This image contains shadow bands that, while difficult to see in the image, are detectable by the human eye during an eclipse and become clear after image processing.



**Figure 2: Eclipse shadow bands extracted from a video recording through an image processing framework<sup>2</sup>.** The left image shows bands that are mostly aligned in the same orientation, but the bands on the right image are multimodal with two sets of bands are traveling in orthogonal directions simultaneously!

#### Why Participate?

- Witness one of nature's rarest optical phenomena.
- Contribute to genuine scientific research.
- Help determine how location and altitude affect shadow band rotation, frequency and intensity.
- Be part of an international citizen science effort.
- Receive detailed observing instructions before the eclipse.

#### What You'll Do

- Build a simple observation board from cardboard.
- Record shadow bands with your smartphone or camera during the eclipse.
- Submit your video and observation details after the event.
- The observation itself takes only a few minutes during totality.

#### We're Looking for Volunteers to be at Specific Experiment Locations

- See the following [eclipse map](#)
- **Experiment Location 1: Edge of center line**
  - This experiment location will test if shadow band rotation correlates with centerline proximity<sup>2</sup>
  - A location that is far as possible from eclipse center line but still within the totality band
  - Example: Bilbao, Spain or Zamora, Spain or equivalent

- **Experiment Location 2: High altitude**
  - This experiment location will test if shadow band frequency and power diminish with altitude<sup>2</sup>
  - A location that is somewhere high in altitude, like on top of a mountain
  - Example: Pico San Millán, Spain or Moncayo, Spain or equivalent
- **Experiment Location 3: Along eclipse center line**
  - This experiment location will provide a baseline for experiments 1 and 2 above
  - A location that is along eclipse center line
  - Examples: La Pola, Spain or Salas, Spain or equivalent

## Experimental Setup

The experimental setup consists of a large white observation board made from inexpensive materials such as cardboard. The board is placed perpendicular to the Sun. Because the 2026 eclipse occurs near sunset, the board must be vertically oriented. Registered participants will receive detailed setup and observing instructions.

Materials Needed:

- Smartphone or digital camera with video capability
- Tripod or phone stand
- White bed sheet or four white poster boards
- Five cardboard boxes
- Packing tape



**Figure 3: Experimental setup for the August 12, 2026, eclipse.** Four cardboard boxes are taped together to form a large observation board covered with a white bed sheet or white poster boards. The board is held in place by a fifth cardboard box. The board is positioned near perpendicular to the Sun, which will be low on the horizon near sunset.

## Safety First

Never look directly at the Sun without certified Eclipse glasses or other approved solar viewing equipment.

## Join the Project

To register, email: [jconti@alum.mit.edu](mailto:jconti@alum.mit.edu). Registered volunteers will receive detailed instructions for building the observation board and recording data.

## About the Organizer

Joe Conti is a Senior Engineering Leader and physics enthusiast based in Lexington, Massachusetts. He first witnessed eclipse shadow bands during the April 2024 North American total solar eclipse. Fascinated by this still poorly understood phenomenon, he developed an image-processing framework<sup>2</sup> to analyze shadow band recordings and organized this independent citizen science project to collect observations from multiple locations during the 2026 eclipse.

## References

1. [https://en.wikipedia.org/wiki/Shadow\\_bands](https://en.wikipedia.org/wiki/Shadow_bands)
2. <https://arxiv.org/abs/2605.09621>
3. <https://nso.edu/for-public/eclipse-map-2026>