



# EXPERIENCE THE 2017 ECLIPSE ACROSS AMERICA THROUGH THE EYES OF NASA <http://eclipse2017.nasa.gov>

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Credit: Rick Fienberg, TravelQuest International and Wilderness Travel



Credit: S. Habbal, M. Drudekuller and P. Aniol

## SOLAR ECLIPSE MODELING

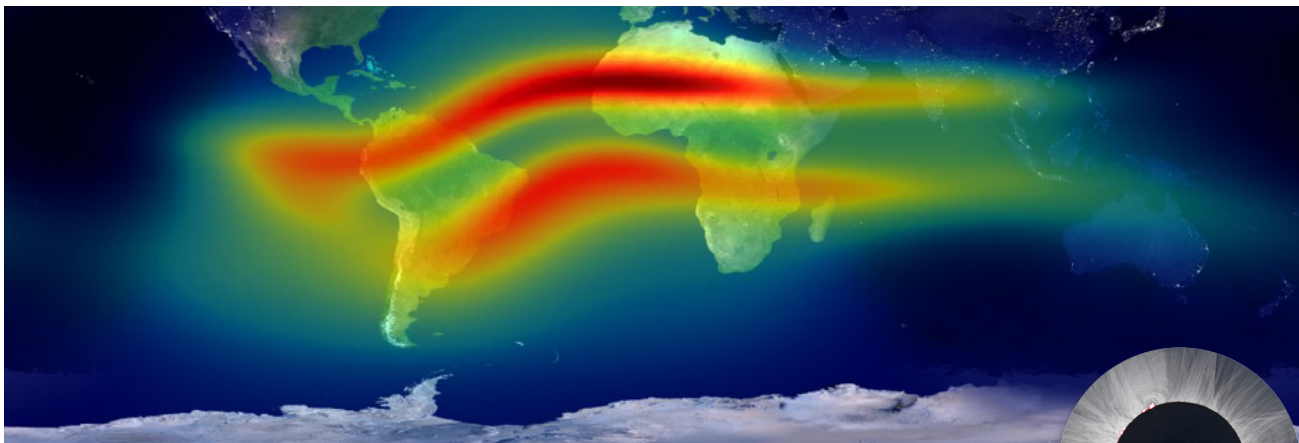
### Overview

The ionosphere—a region of Earth’s atmosphere made of charged particles—is a dynamic area, and one not fully understood. The total eclipse provides Greg Earle and his team at Virginia Tech in Blacksburg the opportunity to understand how the ionosphere responds to changes in Sunlight. The team will use a network of radio transmitters and receivers across the country.

### Eclipse Science

Earle and his team will be stationed across the United States in Bend, Oregon, Holton, Kansas, and at the Shaw Air Force Base in Sumter, South Carolina, us-

ing custom designed ionosodes, instruments that use radio waves to look up into the ionosphere and measure its height and density. Their measurements will be combined with data from a nation-wide network of GPS receivers and signals from the Ham Radio Reverse Beacon Network, both of which are sensitive to the state of the ionosphere. The team will also utilize data from Virginia Tech’s SuperDARN radars, two of which have been placed along the eclipse path in Christmas Valley, Oregon, and Hays, Kansas. By combining all the data, Earle and his team will be able to improve models of the ionosphere and understand what affect the eclipse had on the region.



**ADDITIONAL RESOURCES:** The Sun-Earth Connection: <https://nasa.gov/Sunearth>  
NASA’s ICON Mission Page: <https://nasa.gov/icon>