

# The WSA Dashboard: Current and Future Capabilities

Alison O. Farrish<sup>1,2</sup>, Daniel da Silva<sup>1,3</sup>, Shaela I. Jones<sup>1,4</sup>, Jaime A. Landeros<sup>5</sup>, Samantha Wallace<sup>1,6</sup>, C. Nick Arge<sup>1</sup>, Evangelia Samara<sup>1,4</sup>  
<sup>1</sup>NASA Goddard Space Flight Center, <sup>2</sup>George Mason University, <sup>3</sup>University of Maryland, Baltimore County, <sup>4</sup>Catholic University of America, <sup>5</sup>University of California, San Diego, <sup>6</sup>Embry-Riddle Aeronautical University

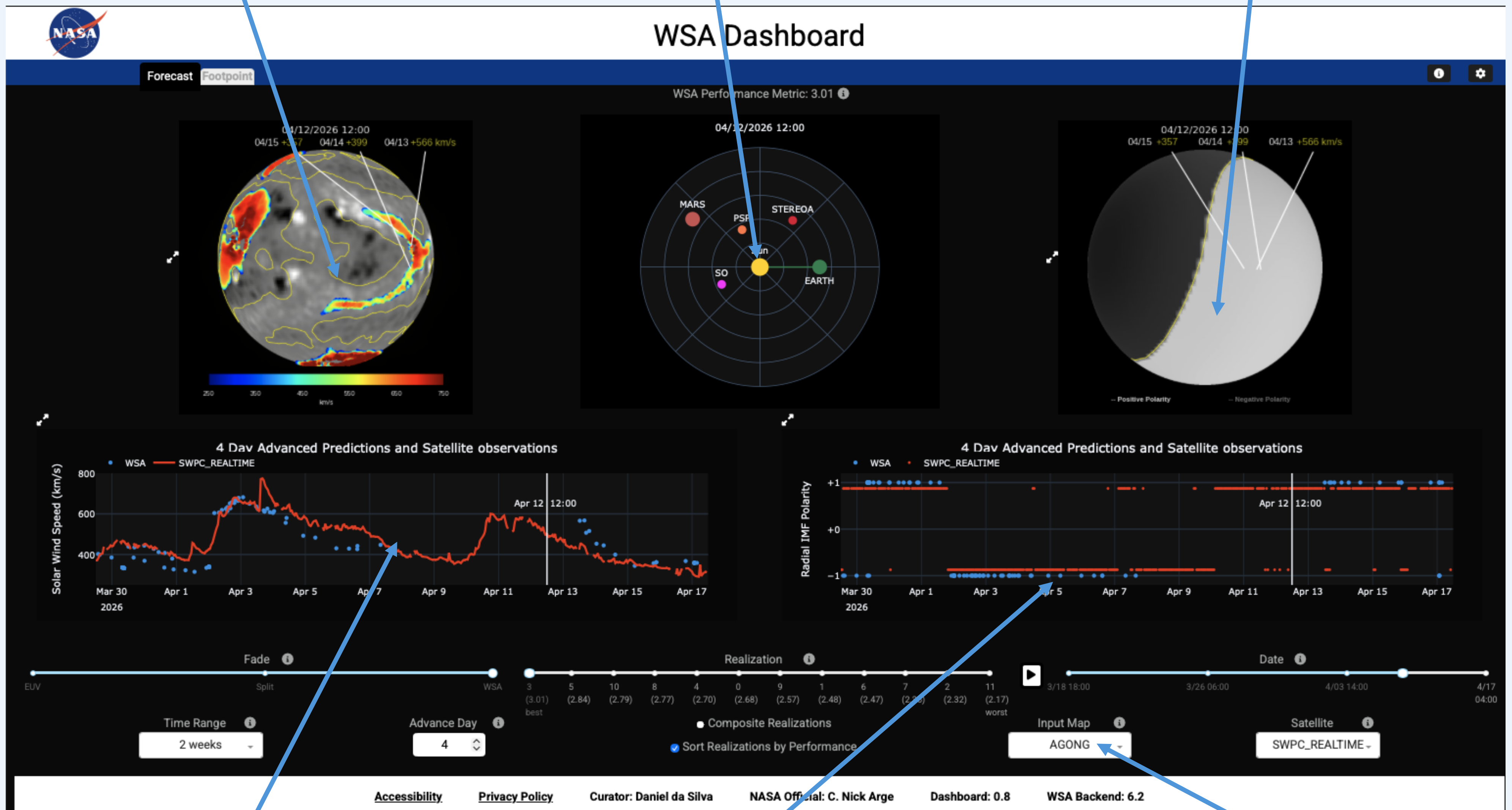
## Overview

The Wang-Sheeley-Arge (WSA) model is a combined empirical and physics-based model of the corona and solar wind. It has been operational at the U.S. National Weather Service (NWS) since 2011 and is now routinely used to help make forecasts worldwide. Recently, the model's real-time predictions have been made publicly available via an online tool called the WSA Dashboard with a focus on forecaster needs.

Sources of solar wind, WSA coronal hole solutions, and photospheric map

Choice of in situ satellite/planet for comparison to solar wind data

Predicted magnetic connectivity relative to heliospheric current sheet at  $5R_{\text{Sun}}$



WSA-predicted solar wind speed compared to spacecraft data

WSA-predicted solar wind interplanetary magnetic field (IMF) polarity compared to spacecraft data

Choice of input map data source

## Future Outlook for WSA and Dashboard

In addition to its usefulness for space weather forecasting, WSA is also widely used for basic research purposes. The WSA team is now working to build an online archive of current and past predictions designed to support the basic and applied research needs of the community, including PUNCH-related science.

Possible future data products:

- False white-light images
- Coronal density data cubes
- B-field data cubes
- Coronal field line tracings
- Harmonic coefficients (e.g., global dipole and quadrupole components)
- Open flux and/or global open and closed fractional areas
- Suggestions?

Feedback from the PUNCH community is *highly encouraged!*  
 alison.o.farrish@nasa.gov  
 charles.n.arage@nasa.gov



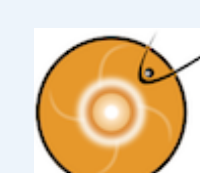
CCMC Version

[ccmc.gsfc.nasa.gov/wsa-dashboard/](http://ccmc.gsfc.nasa.gov/wsa-dashboard/)



Development beta version

[wsa-dashboard.helioanalytics.io](http://wsa-dashboard.helioanalytics.io)



Community Coordinated Modeling Center