

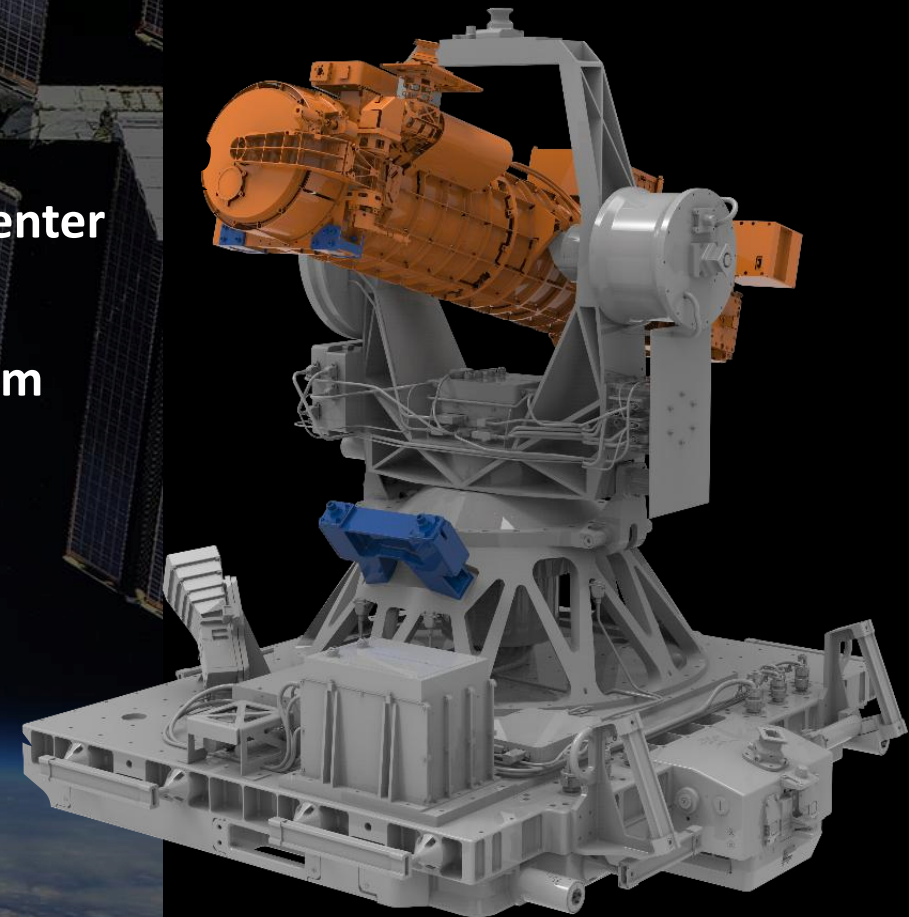
The COronal Diagnostic EXperiment (CODEX): First Light

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Jeff Newmark, Marta Casti & the CODEX Team



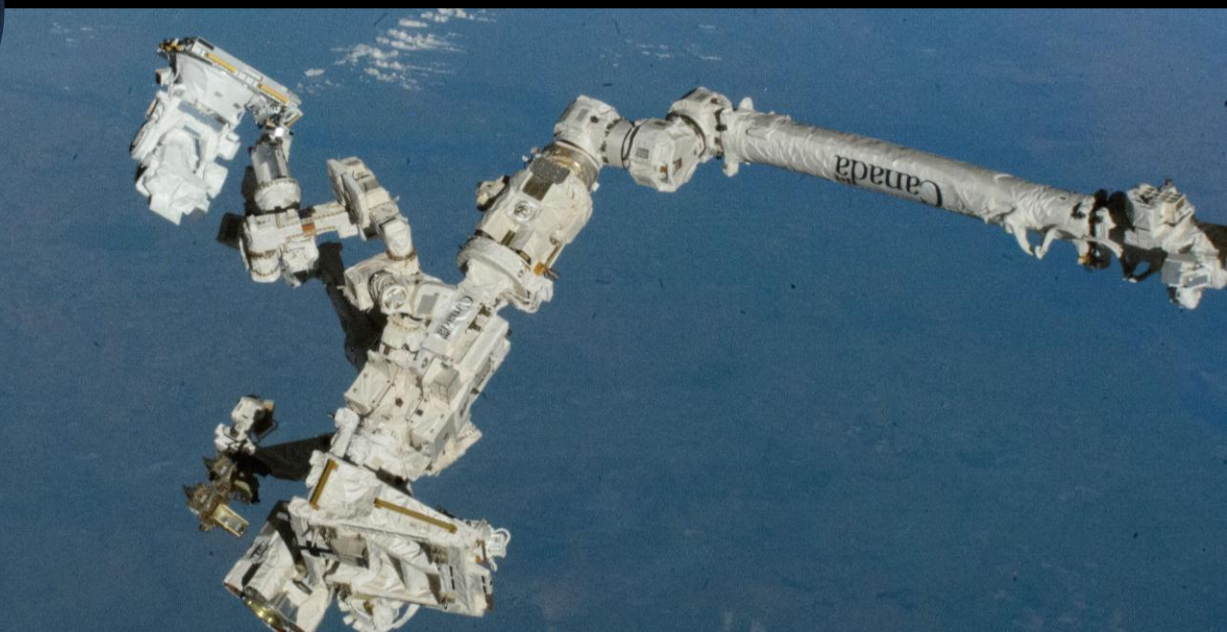
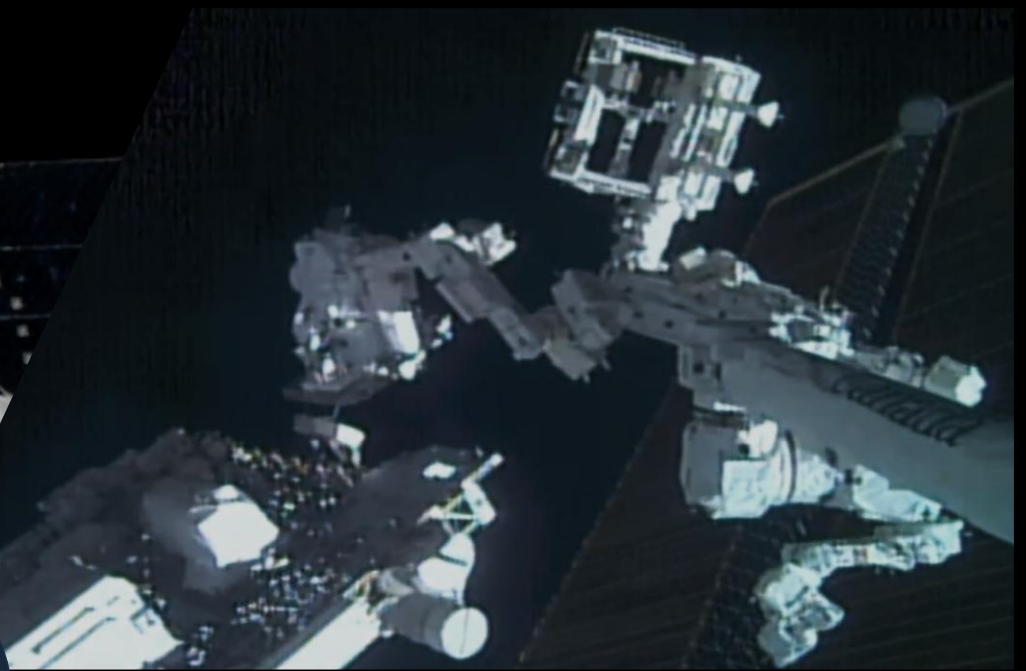
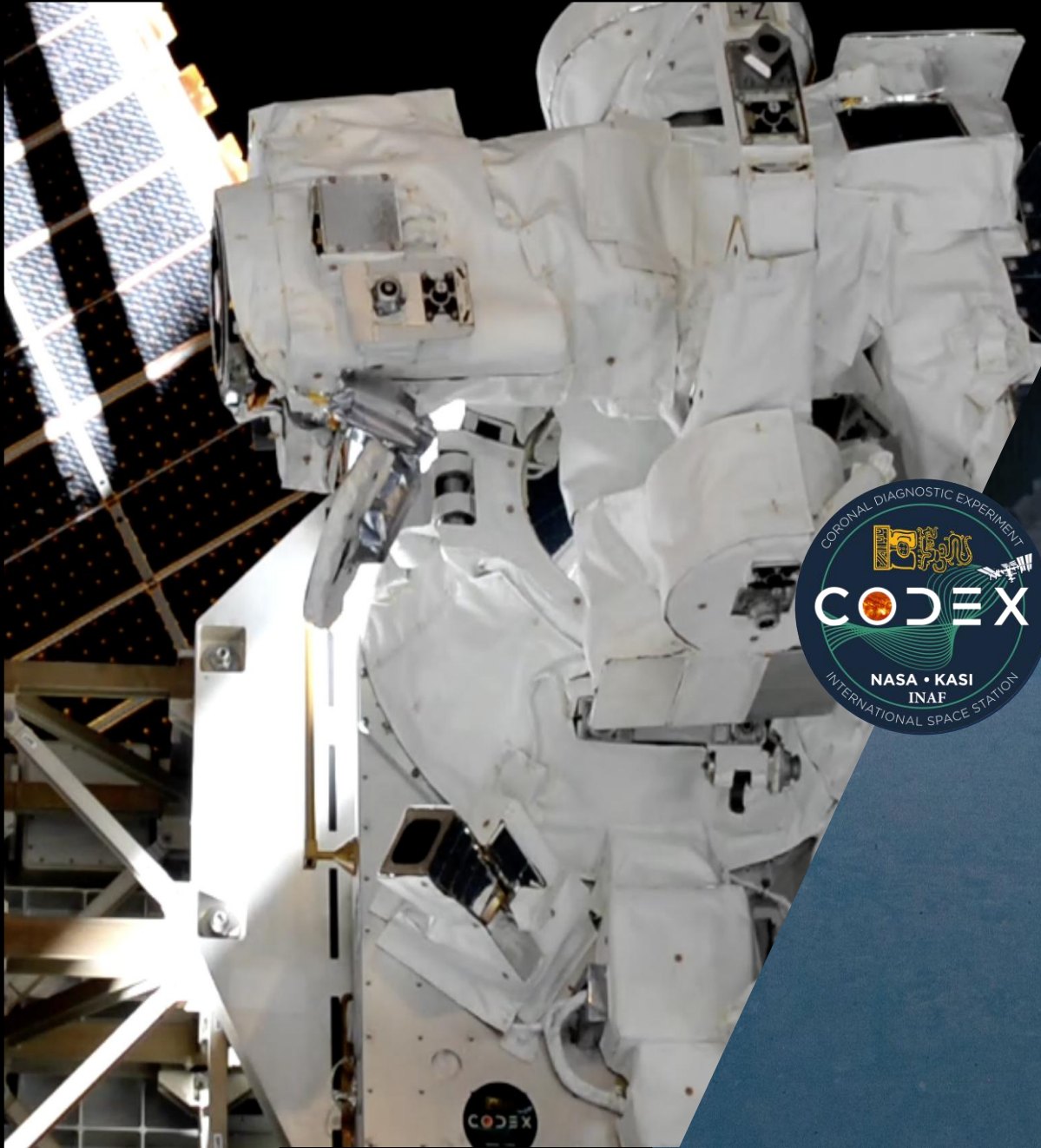
The total solar eclipse seen on August 21, 2017 reveals the solar corona



Photo Credit: NASA/Aubrey Gemignani

<https://www.nasa.gov/image-feature/2017-total-solar-eclipse>

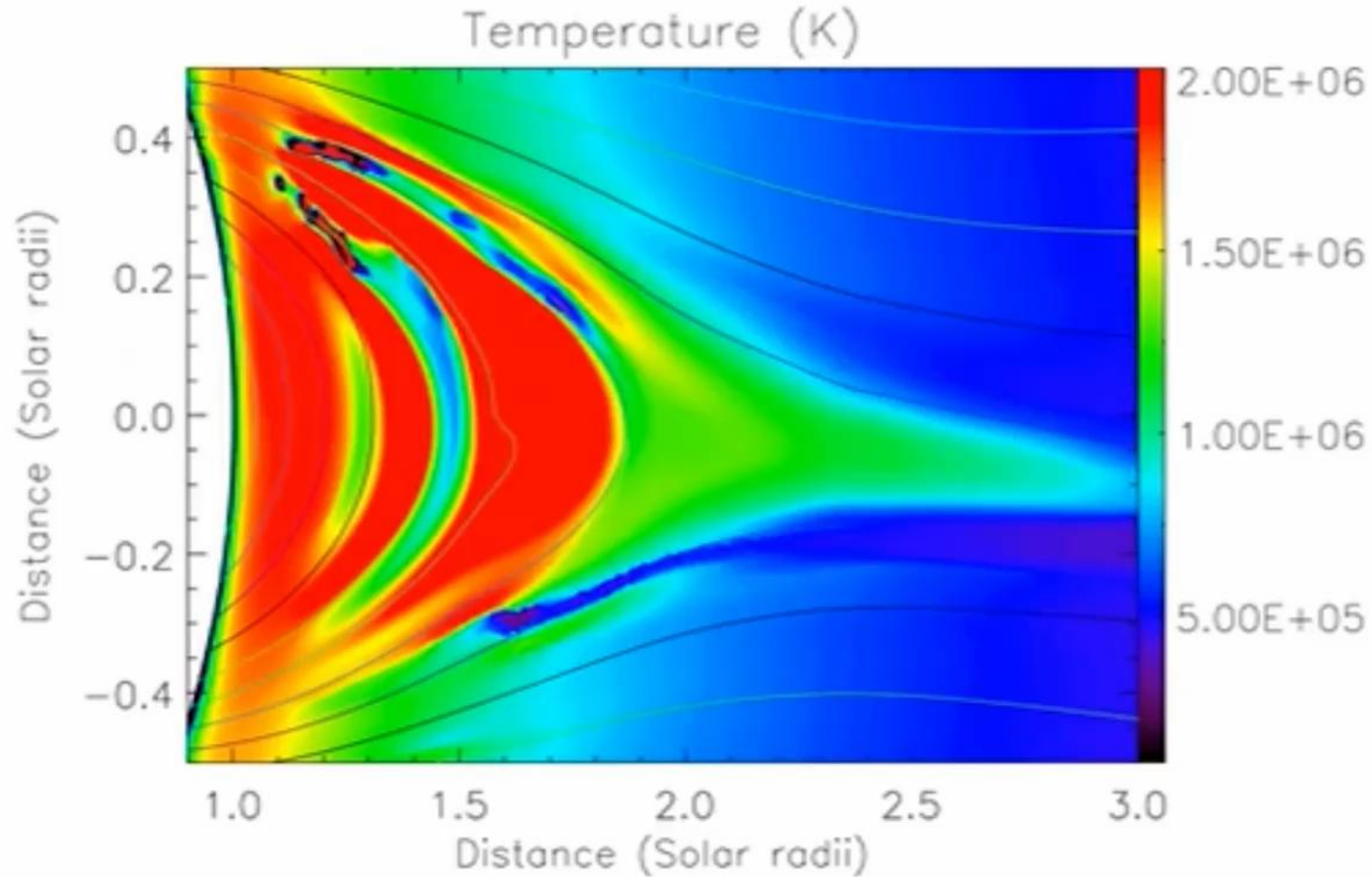
CODEx Installed on the ISS





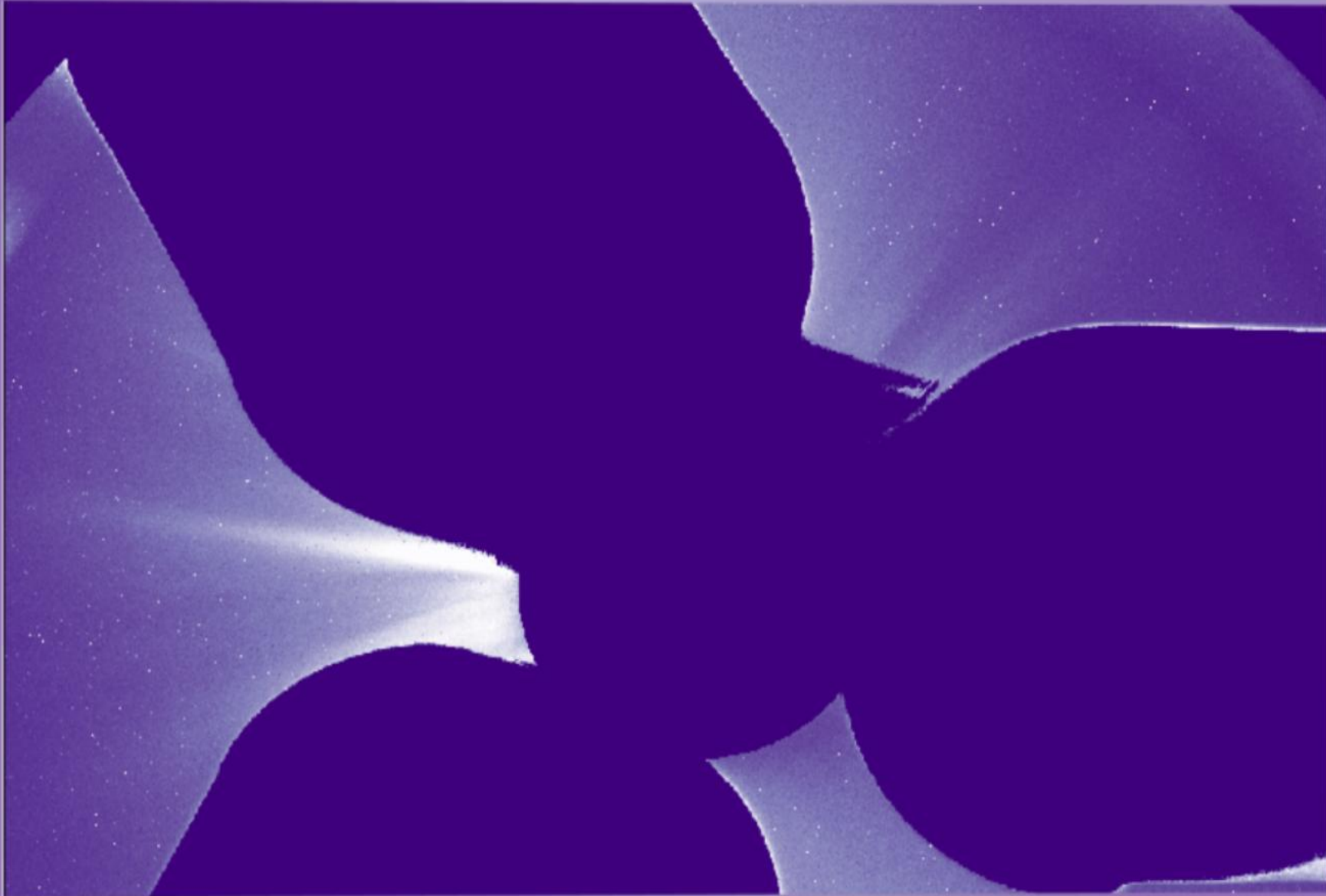
- CODEX is a next-generation solar coronagraph that combines, for the first time, simultaneous measurements of density, temperature, and velocity of the electrons in corona.
- CODEX tests fundamental theories of solar wind formation and provide crucial constraints on predictive models of the solar wind.
- NASA Goddard Space Flight Center leads the scientific and technical breakthroughs, supplemented with expertise from the Naval Research Laboratory (NRL), the Korea Astronomy and Space Science Institute (KASI), and National Institute for Astrophysics (INAF-OATo).

Models and data show that even the 'quiet' corona is highly structured and variable as it makes solar wind

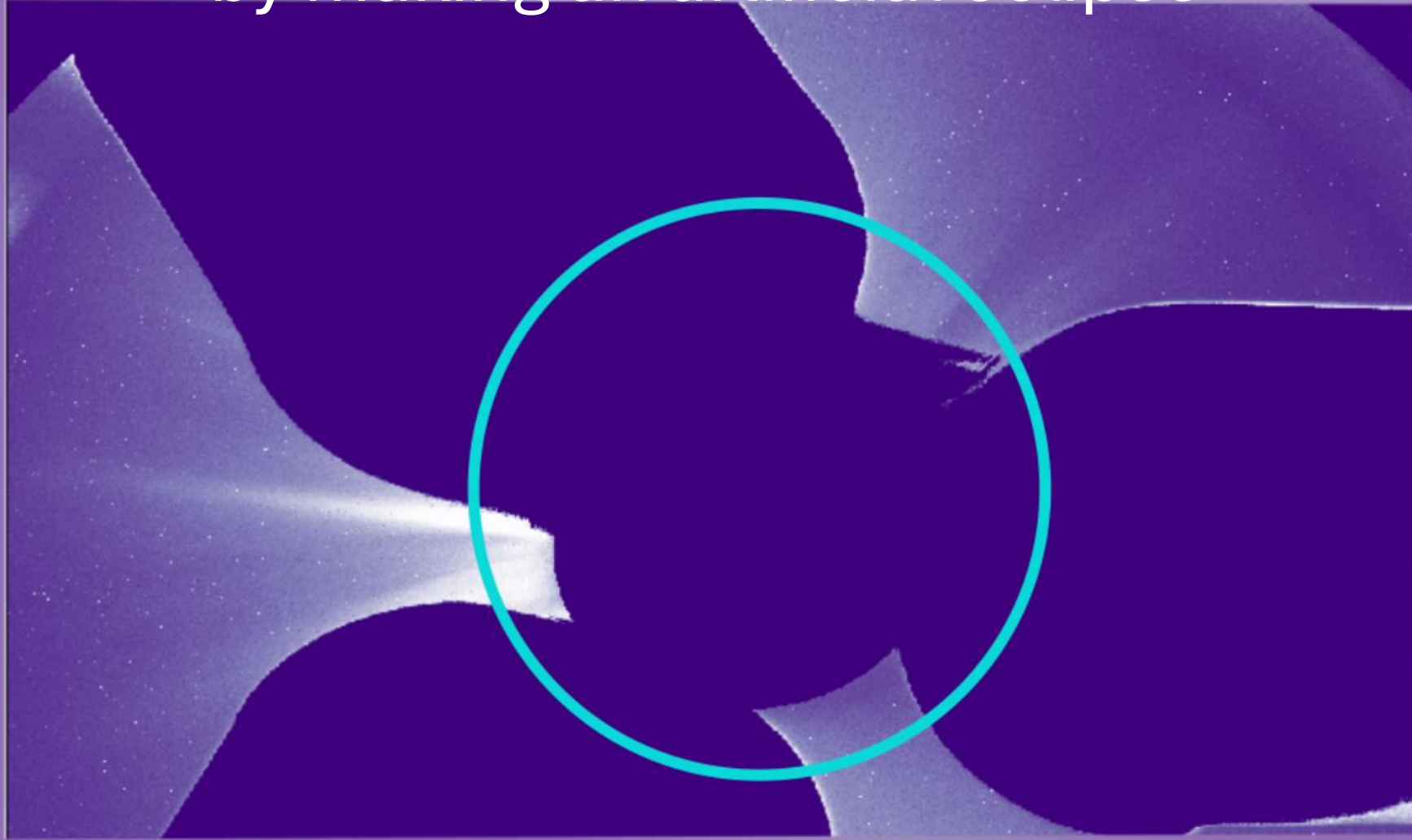


Schlenker et al. 2021

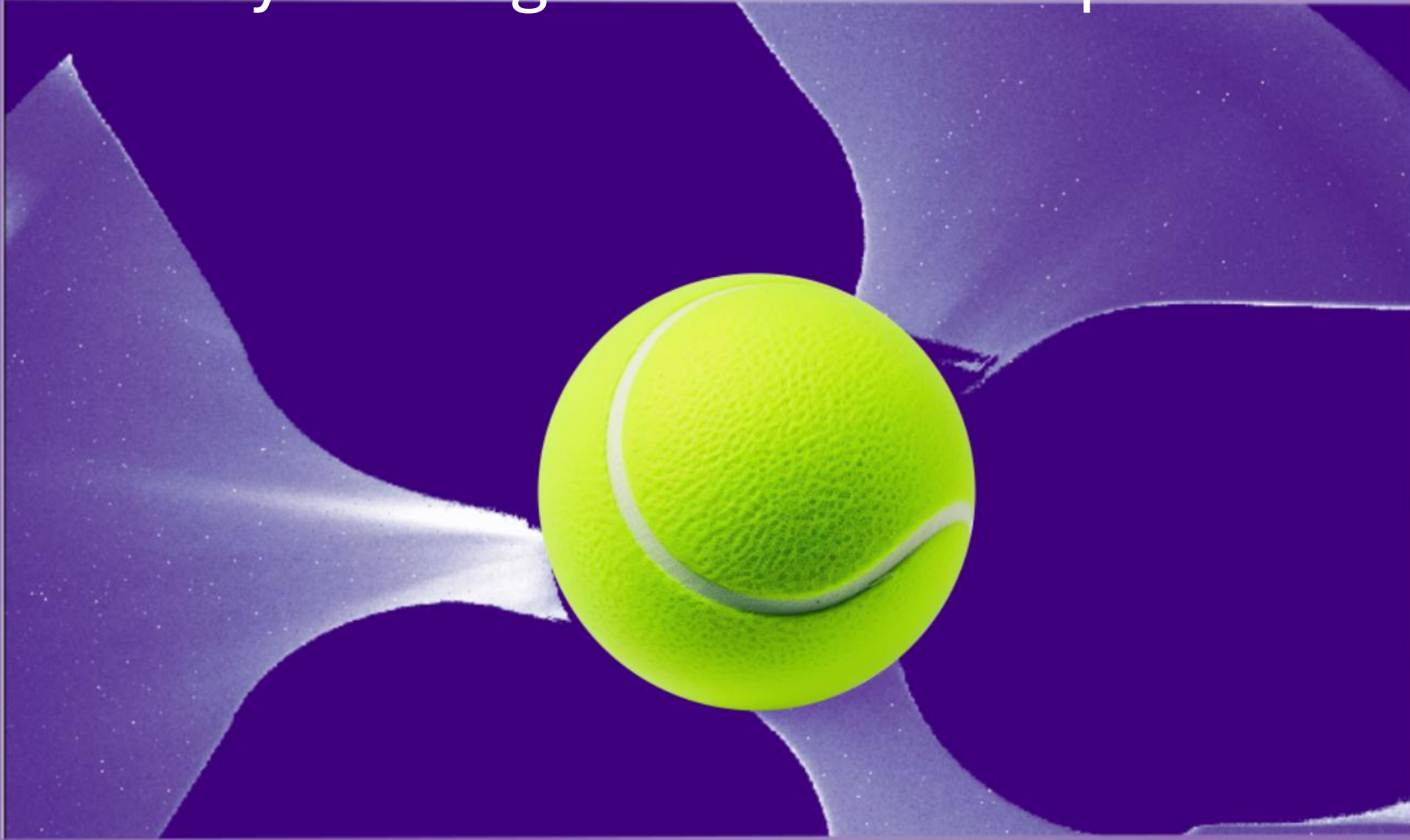
CODEx Measures the Solar Corona and Solar Wind by making an artificial eclipse



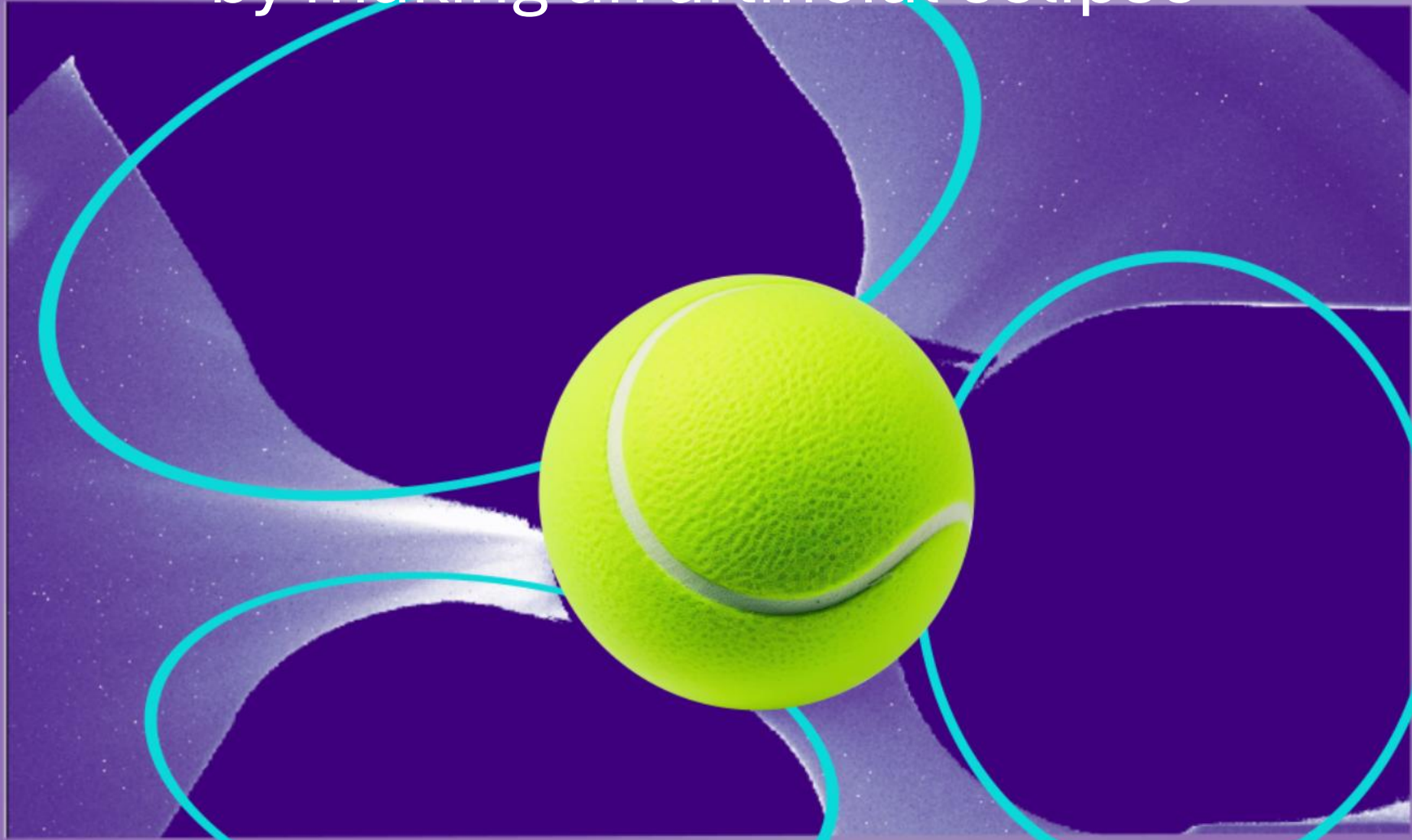
CODEX Measures the Solar Corona and Solar Wind by making an artificial eclipse

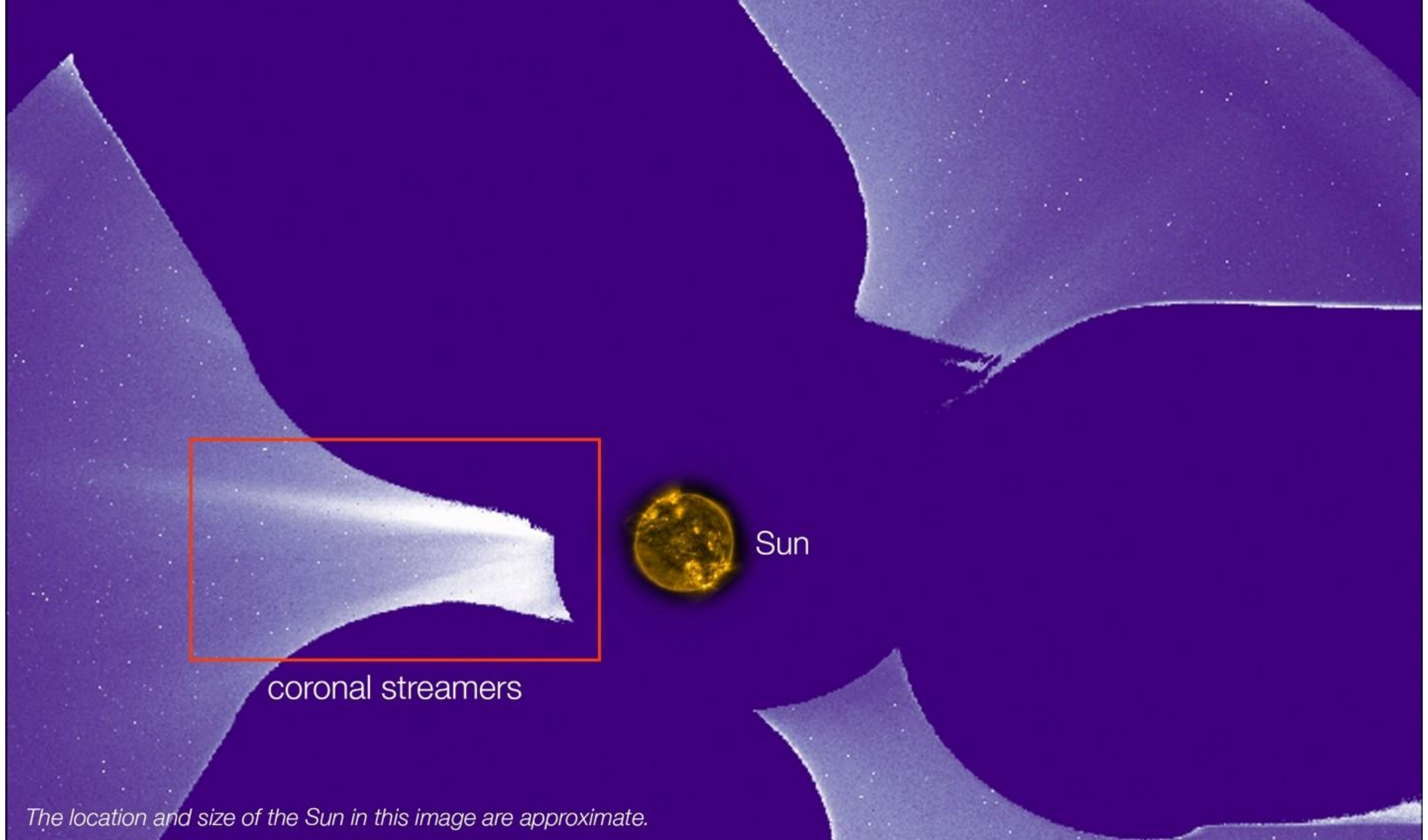


CODEx Measures the Solar Corona and Solar Wind by making an artificial eclipse



CODEx Measures the Solar Corona and Solar Wind by making an artificial eclipse



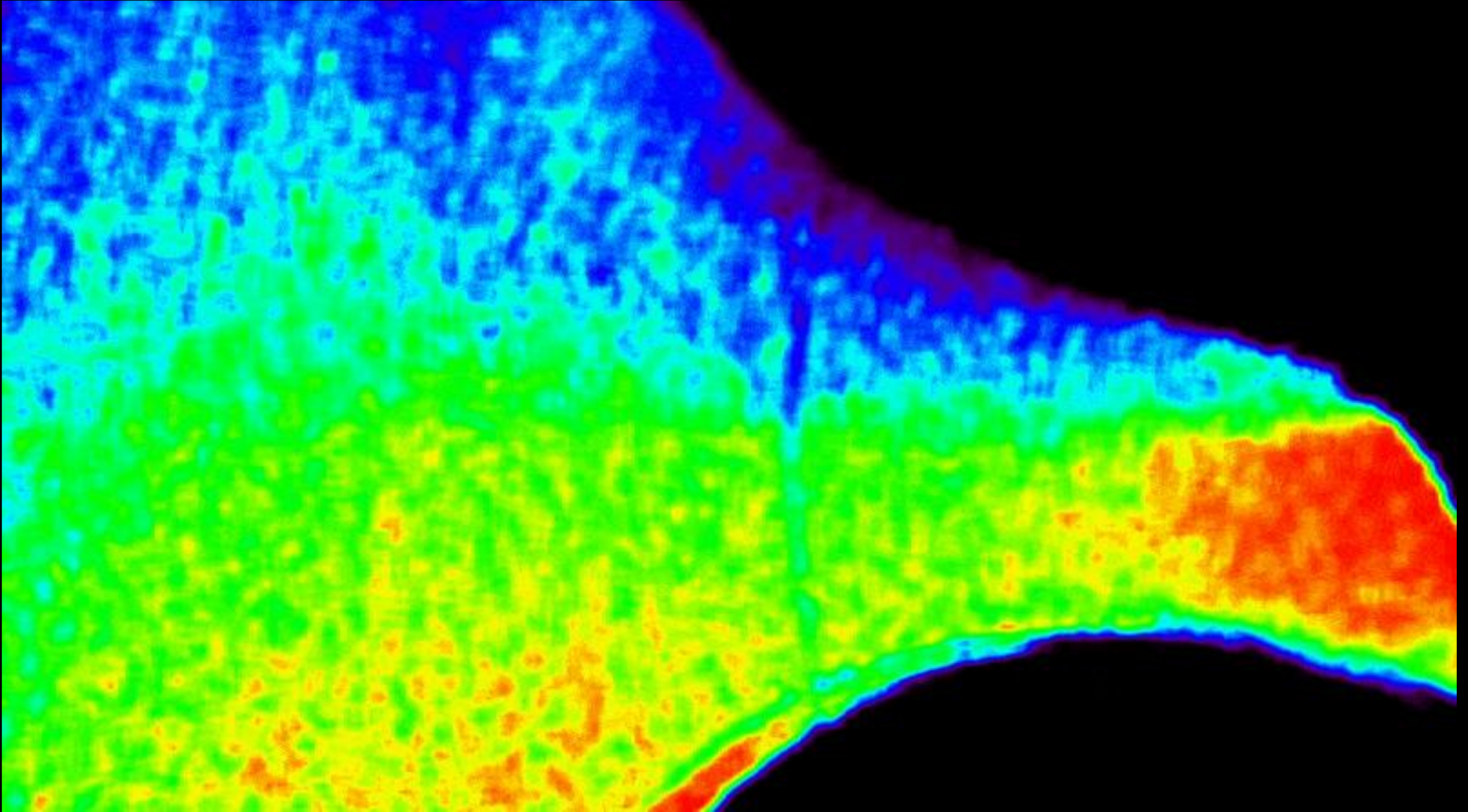


Sun

coronal streamers

The location and size of the Sun in this image are approximate.

CODEx Measures the Temperature of the Corona



CODEX links structure on the Sun with the solar wind

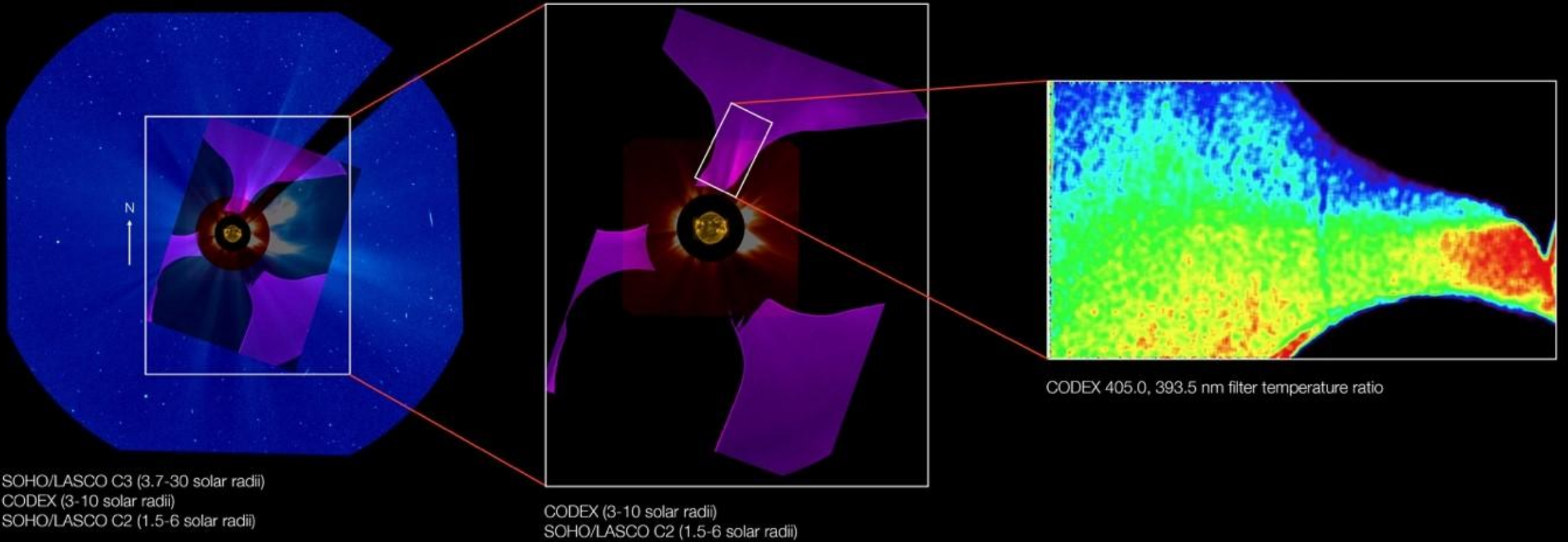
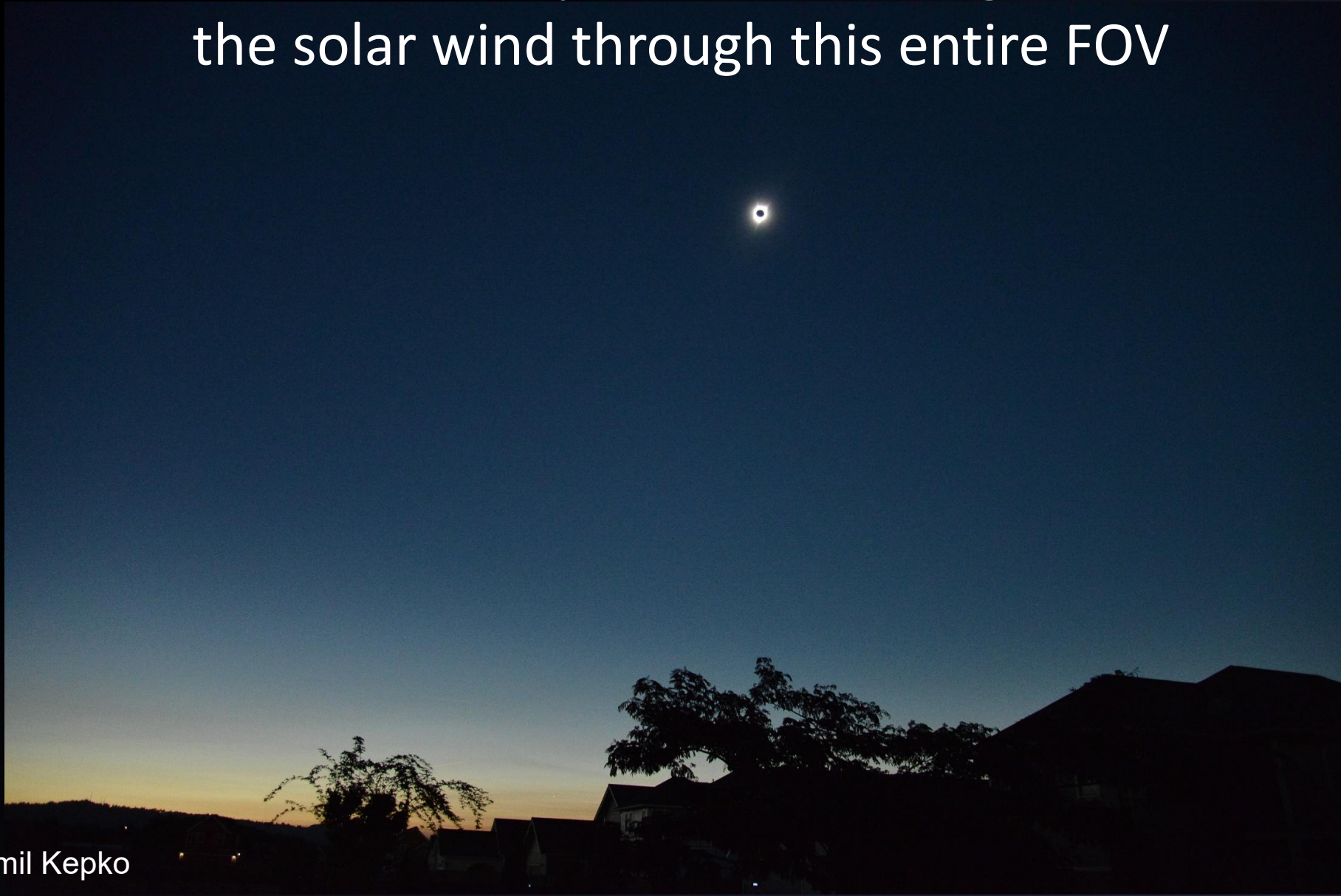
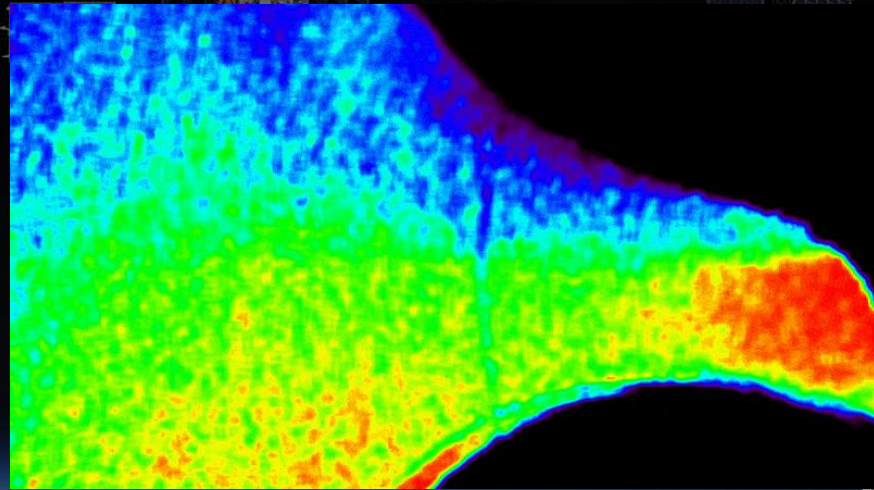


Image location and size comparisons are approximate.

CODEX plus other Heliophysics assets provides new understanding of how the Sun makes the heliosphere; combining with PUNCH captures the solar wind through this entire FOV



CODEX provides new understanding of how the solar corona forms the solar wind



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