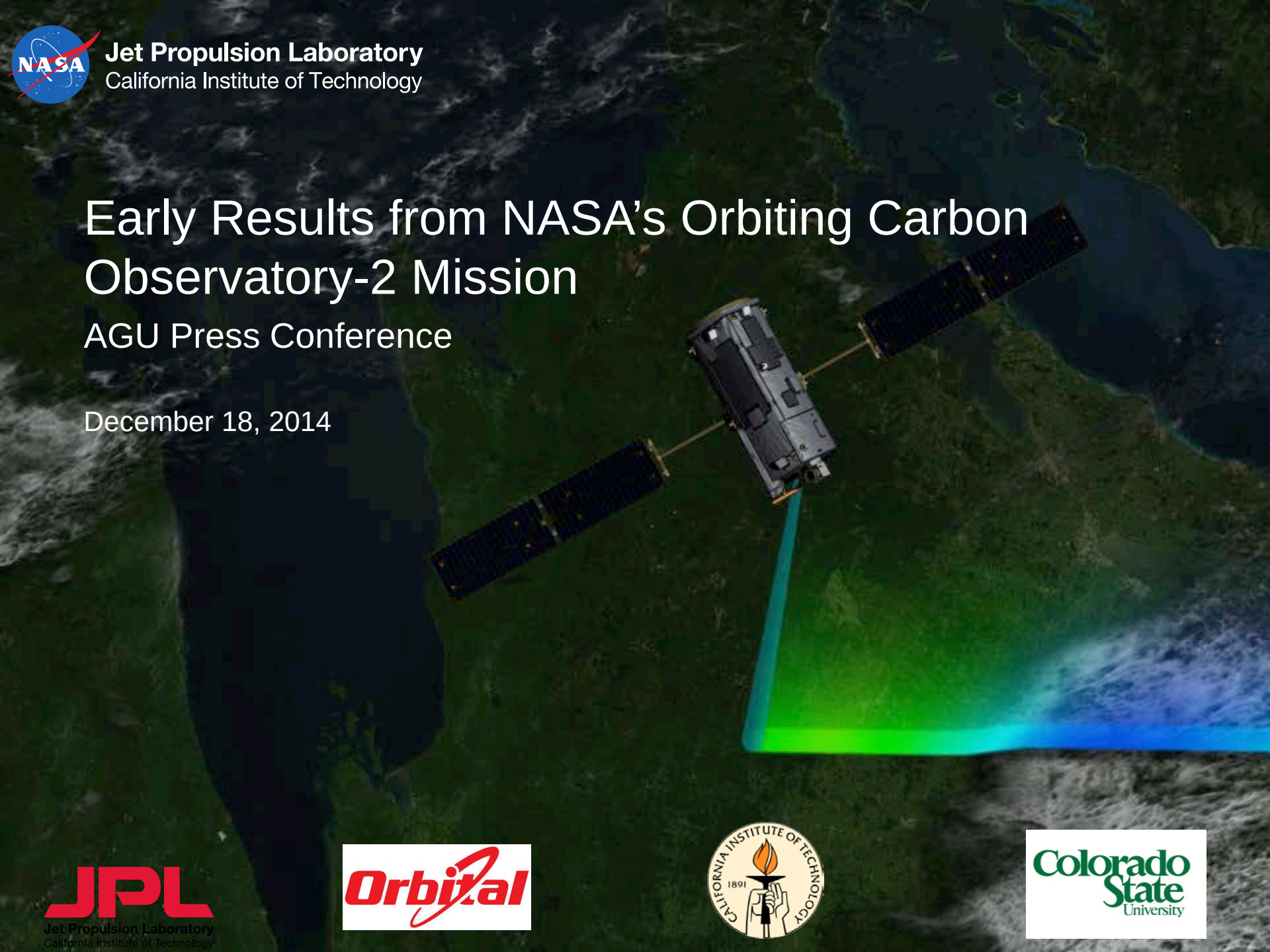
Jet Propulsion Laboratory
California Institute of Technology

Early Results from NASA's Orbiting Carbon Observatory-2 Mission

AGU Press Conference

December 18, 2014



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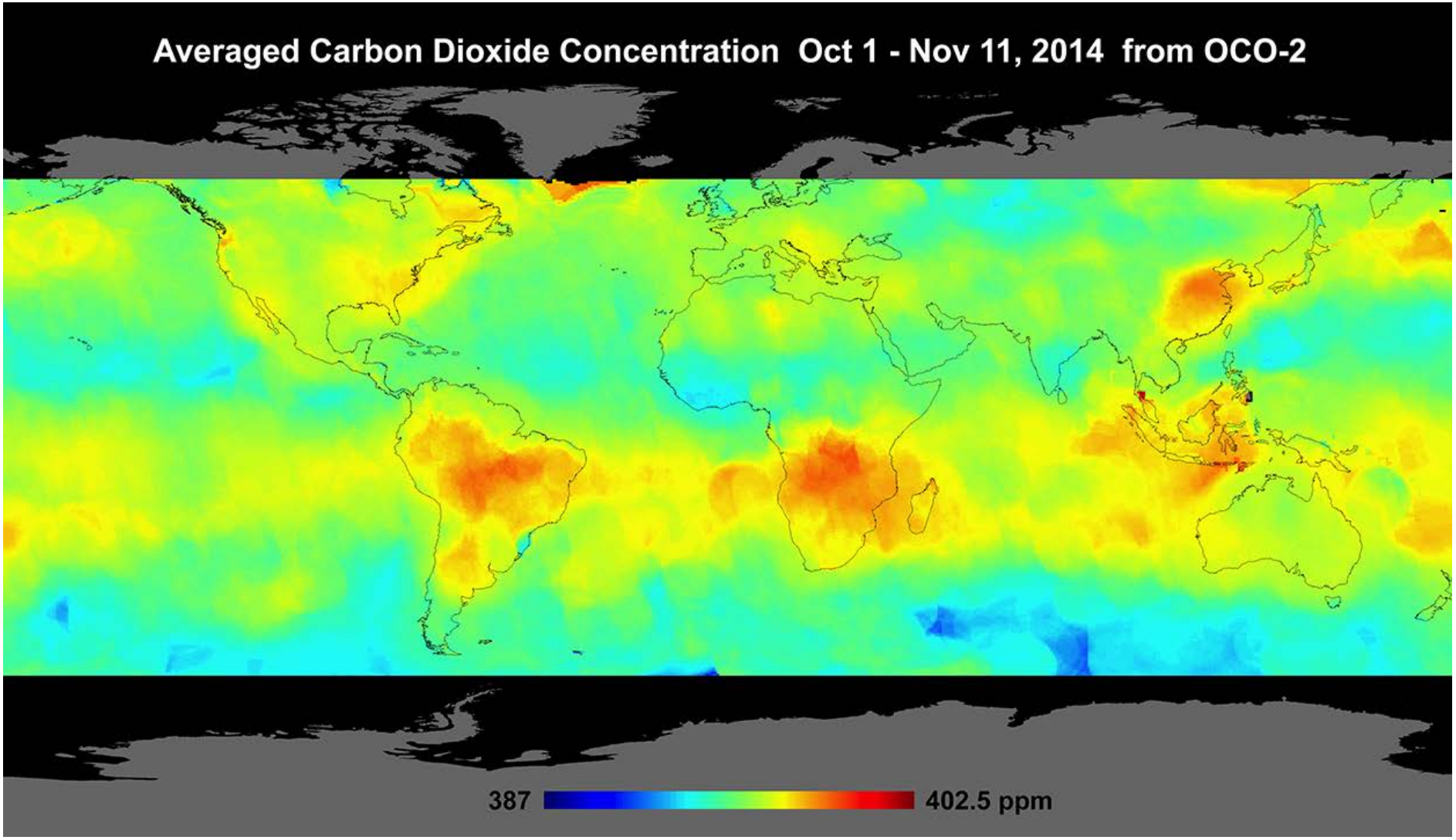
The OCO-2 Mission

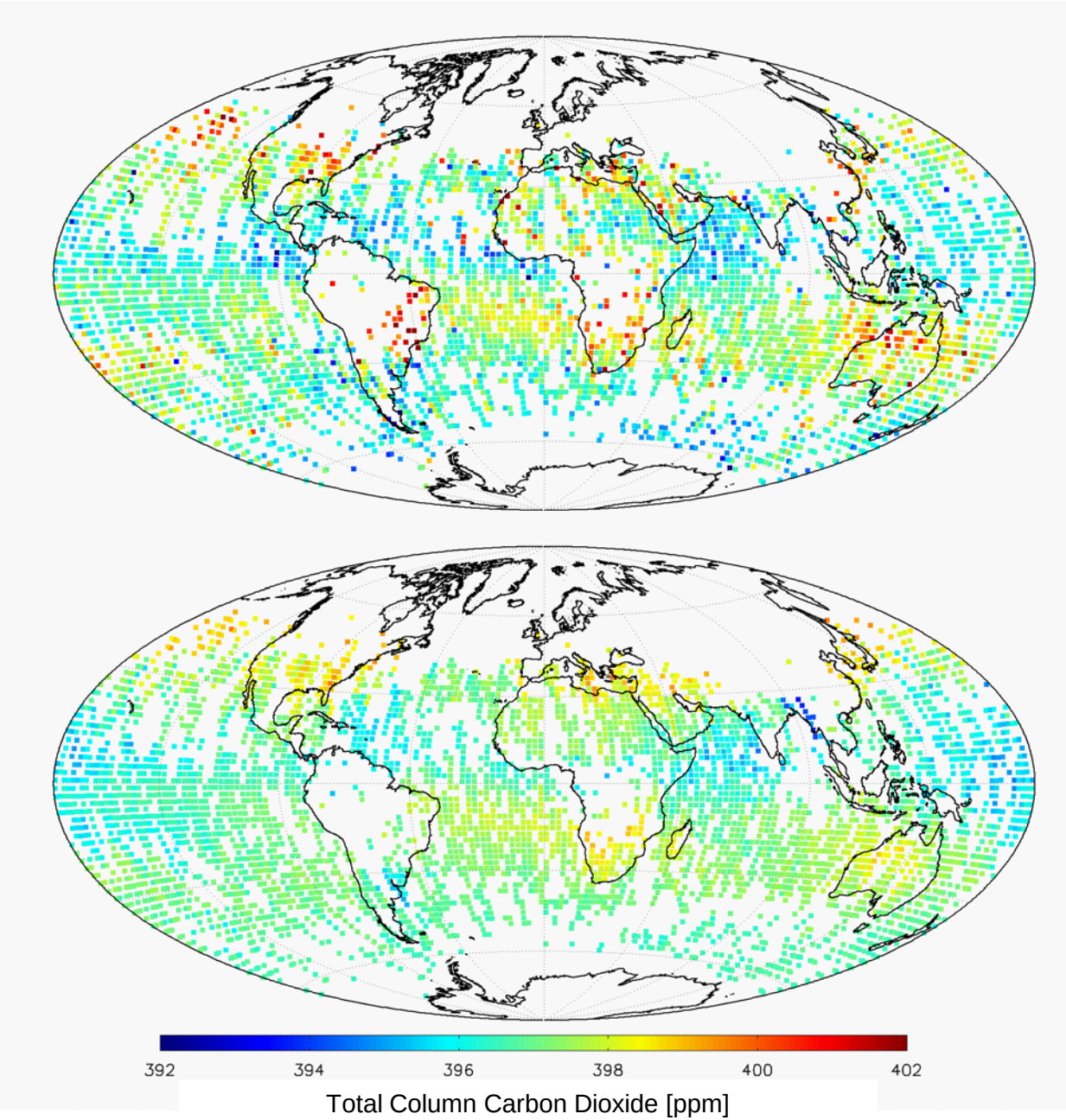
OCO-2 Launched July 2, 2014

OCO-2 Global Sampling

First OCO-2 Global View of Carbon Dioxide



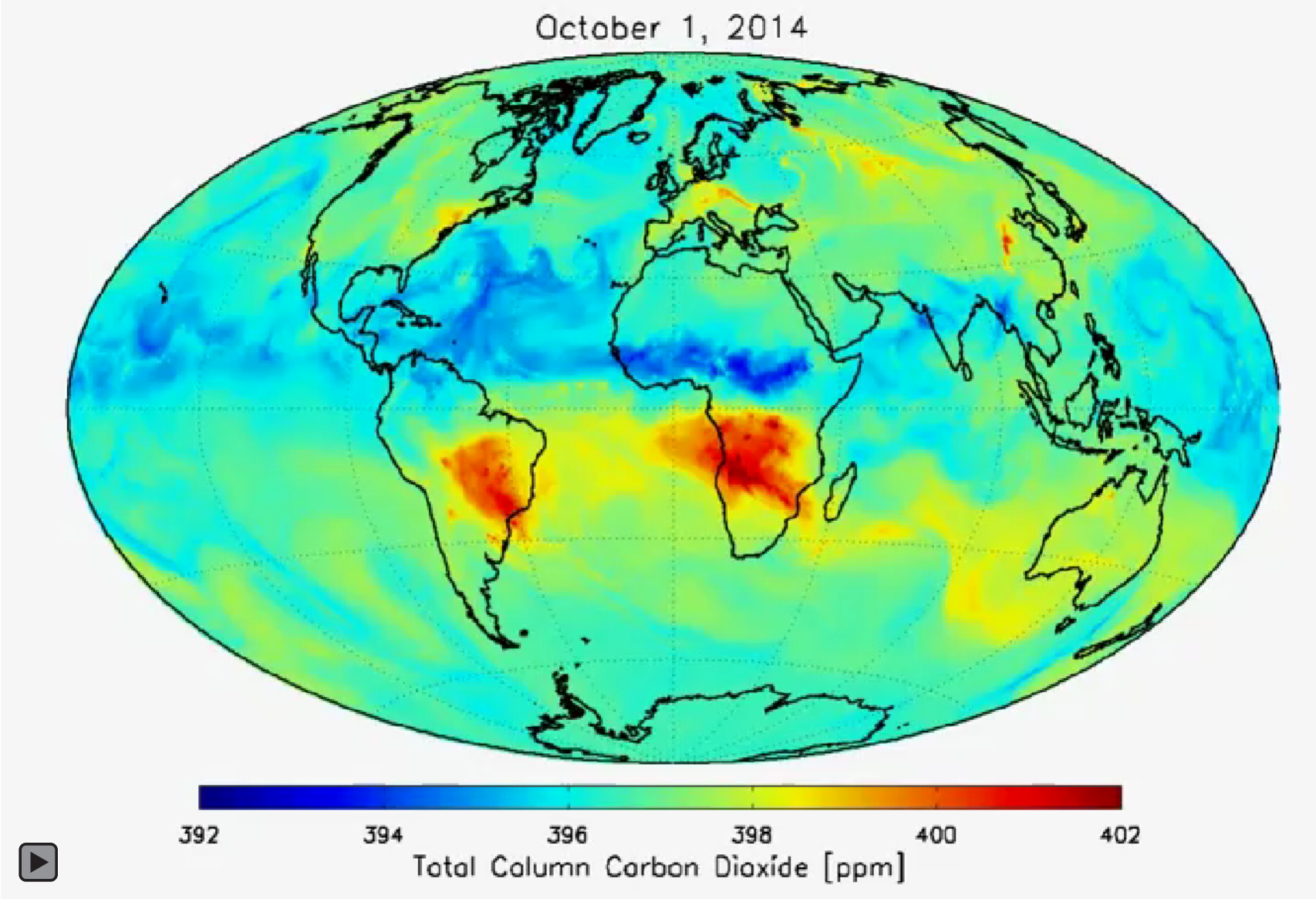
Glint Mode Carbon Dioxide : Oct. 31 – Nov. 11, 2014



OCO-2 Observations

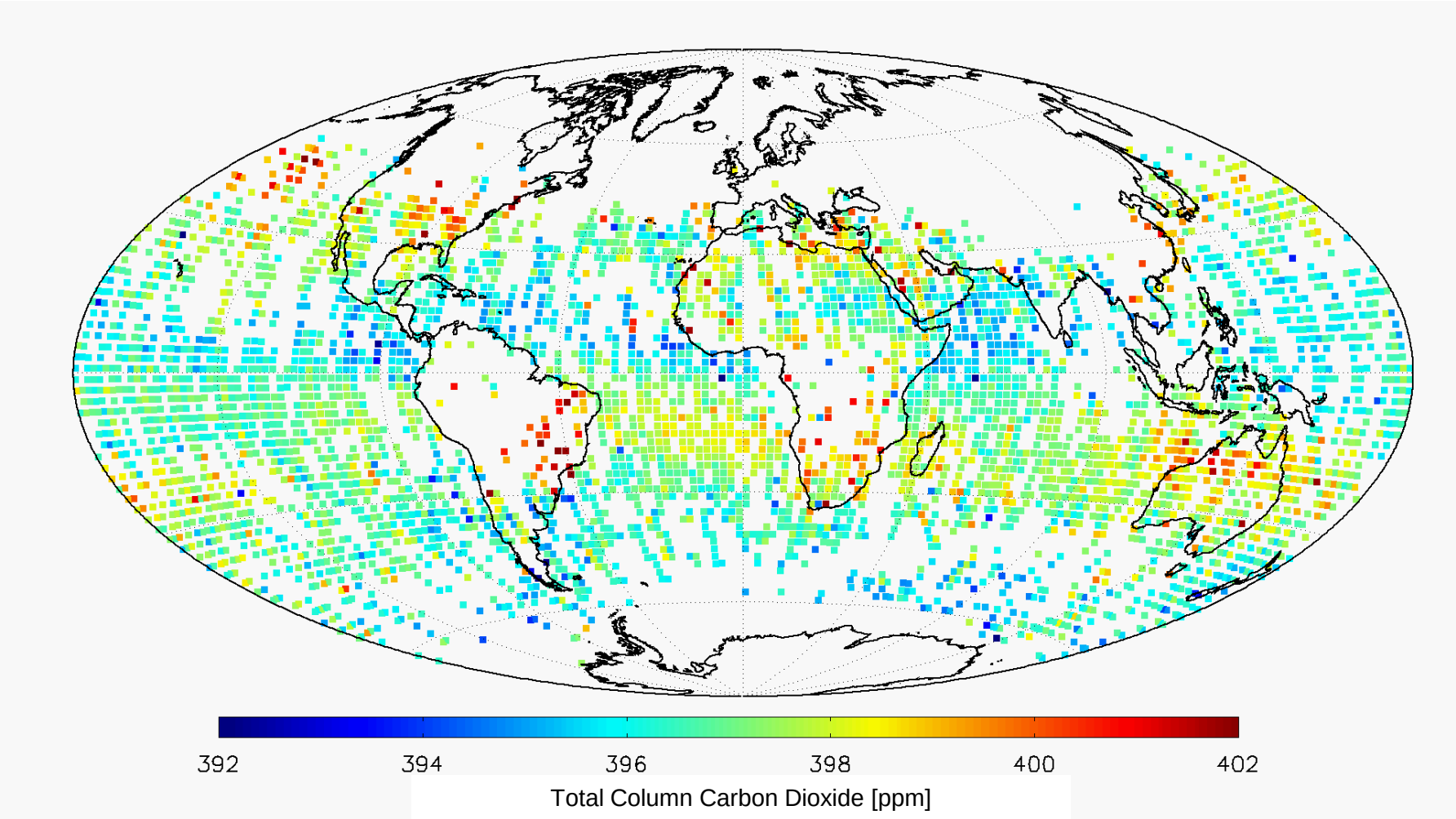
Theoretical Observations Based on GEOS-5 Model

Carbon Dioxide Simulation from NASA GEOS-5 System

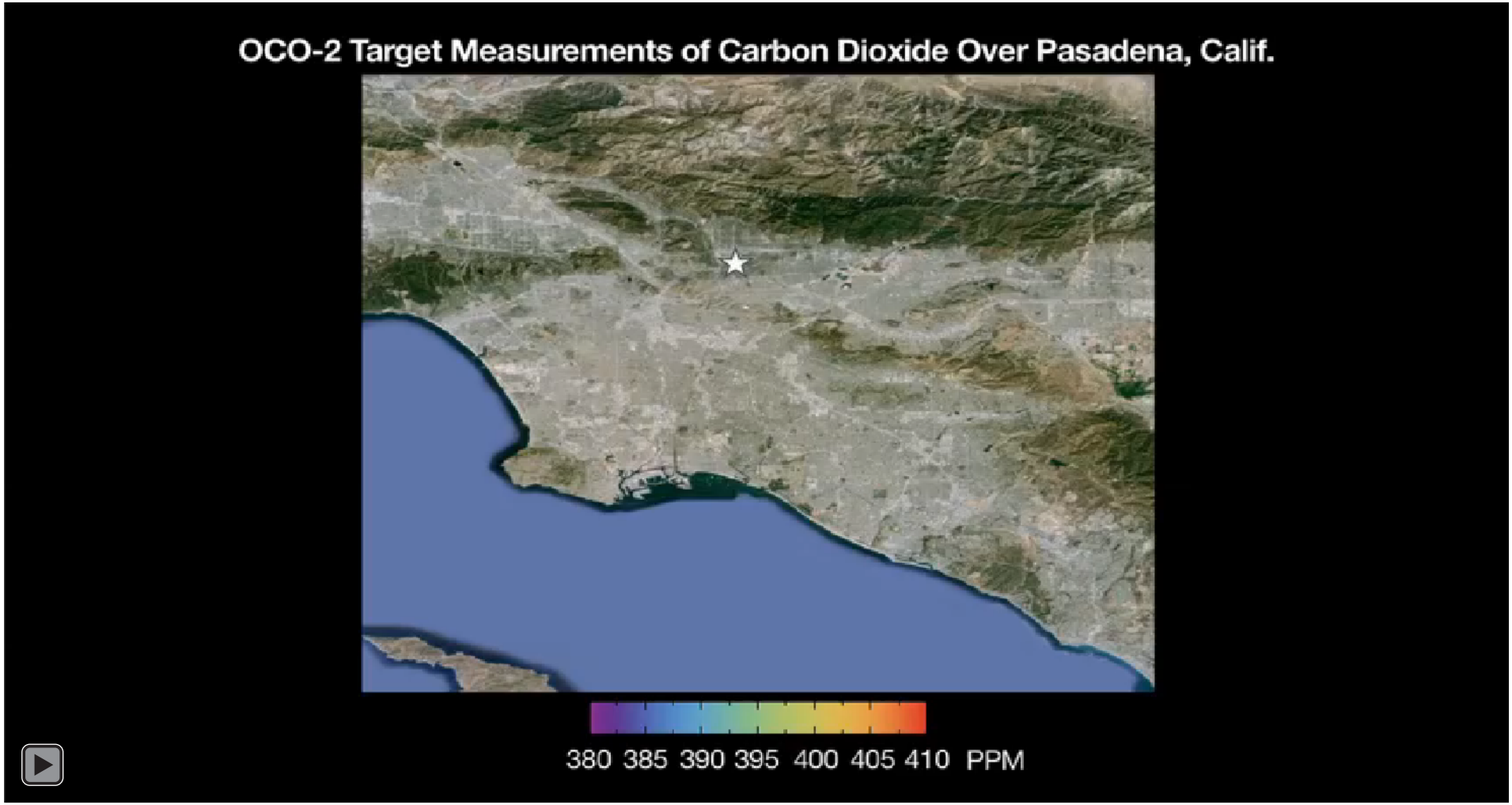


Glint Mode Carbon Dioxide : Oct. 31 – Nov. 11, 2014

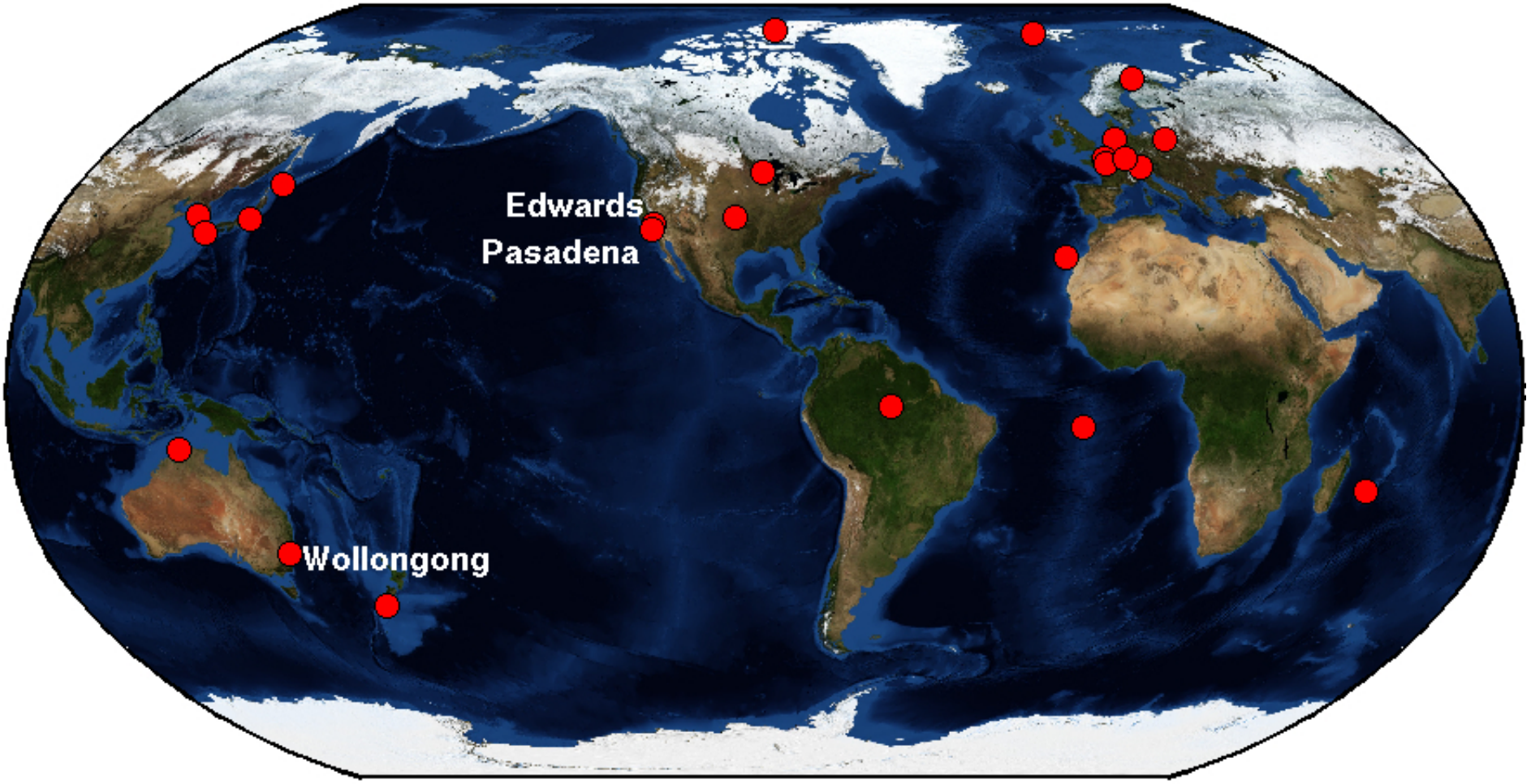
OCO-2 Observations



OCO-2 Target Measurement Movie

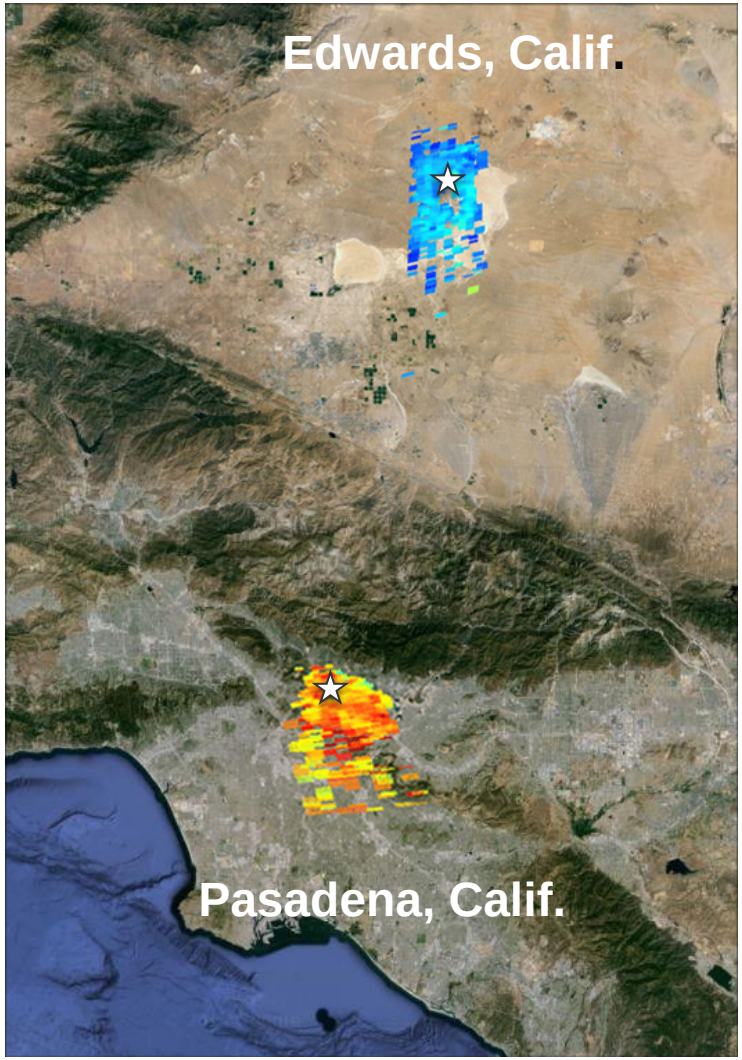

OCO-2 Target Measurements of Carbon Dioxide Over Pasadena, Calif.
380 385 390 395 400 405 410 PPM

Map of TCCON Site Locations

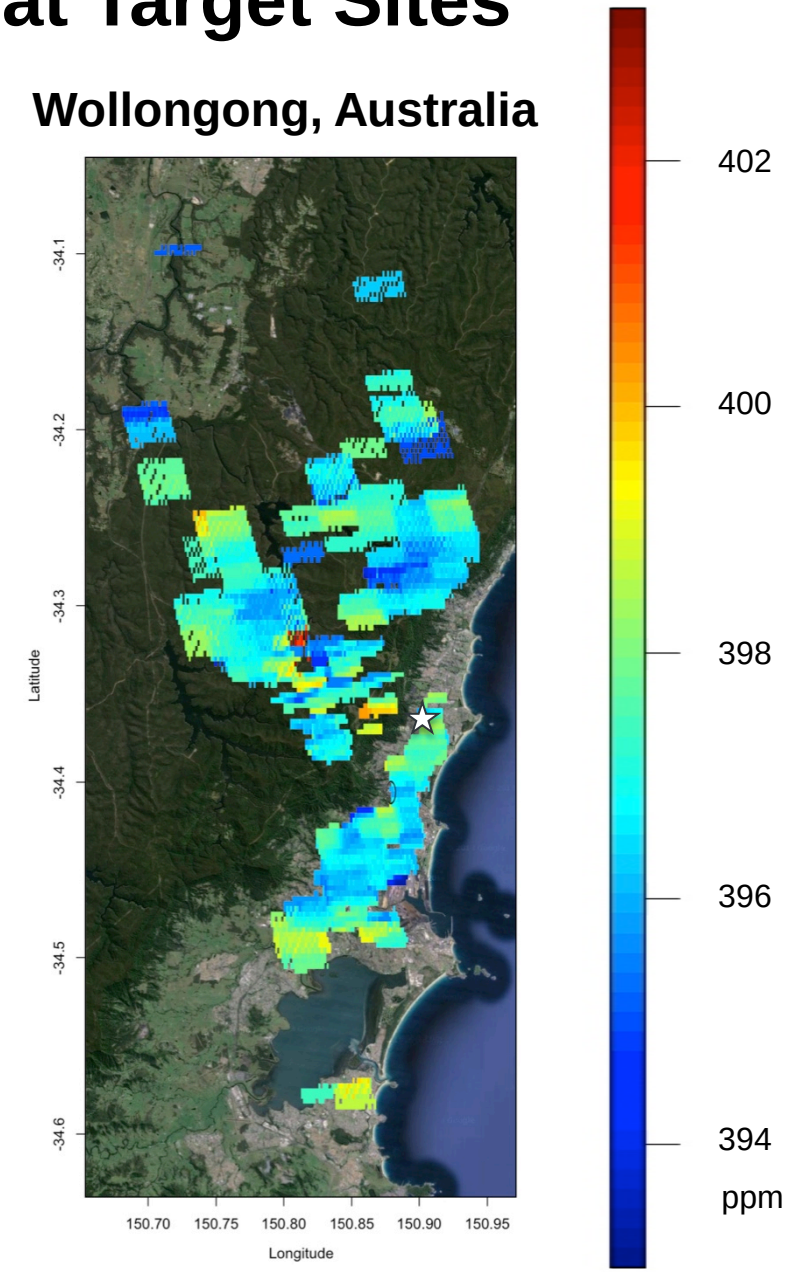


www.tccon.caltech.edu

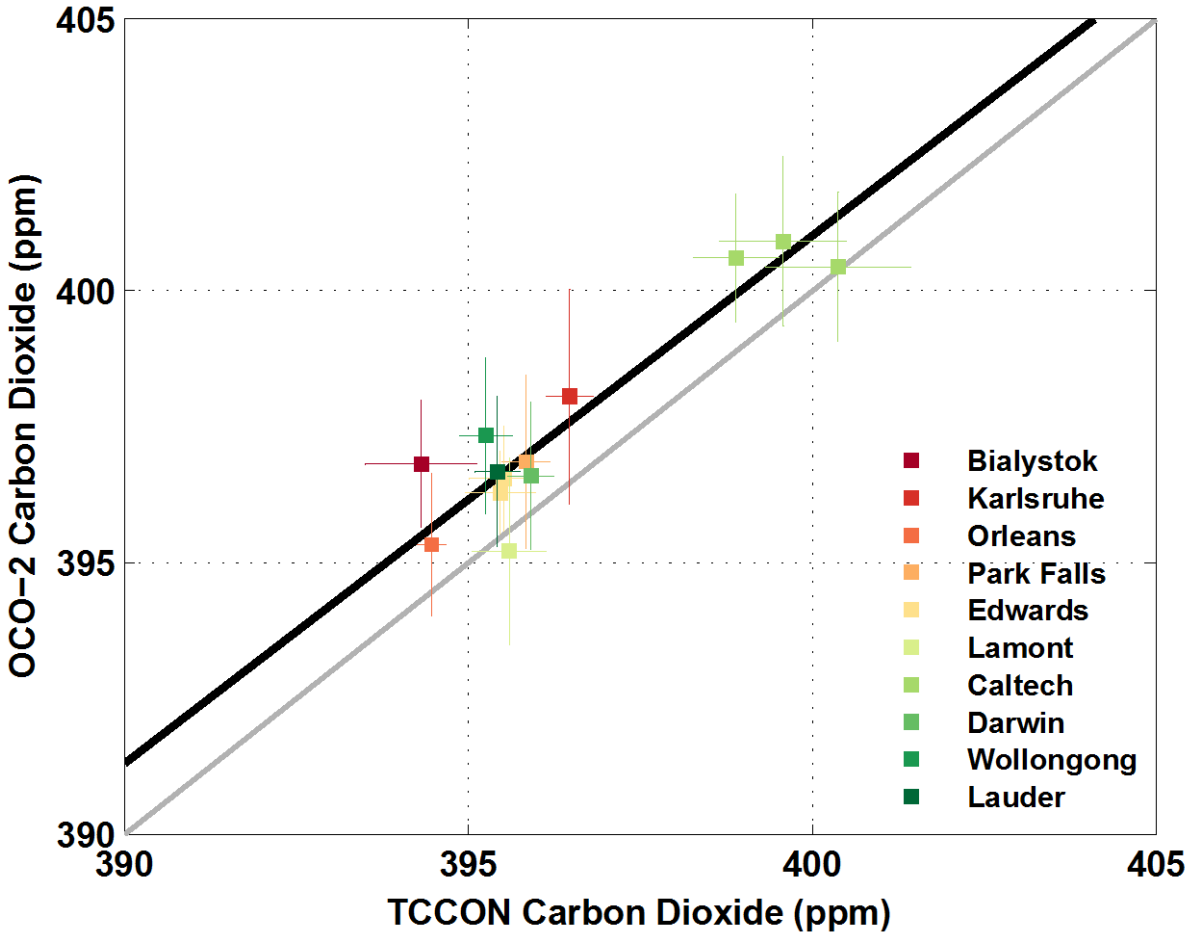
Averaged Carbon Dioxide at Target Sites

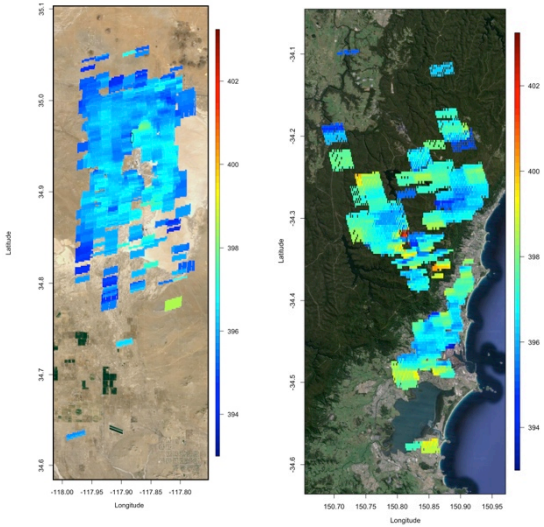


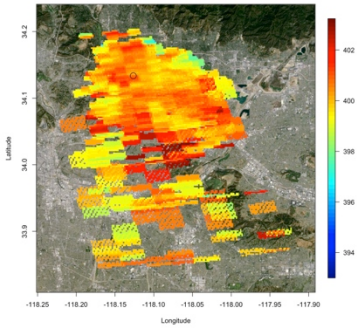
Wollongong, Australia



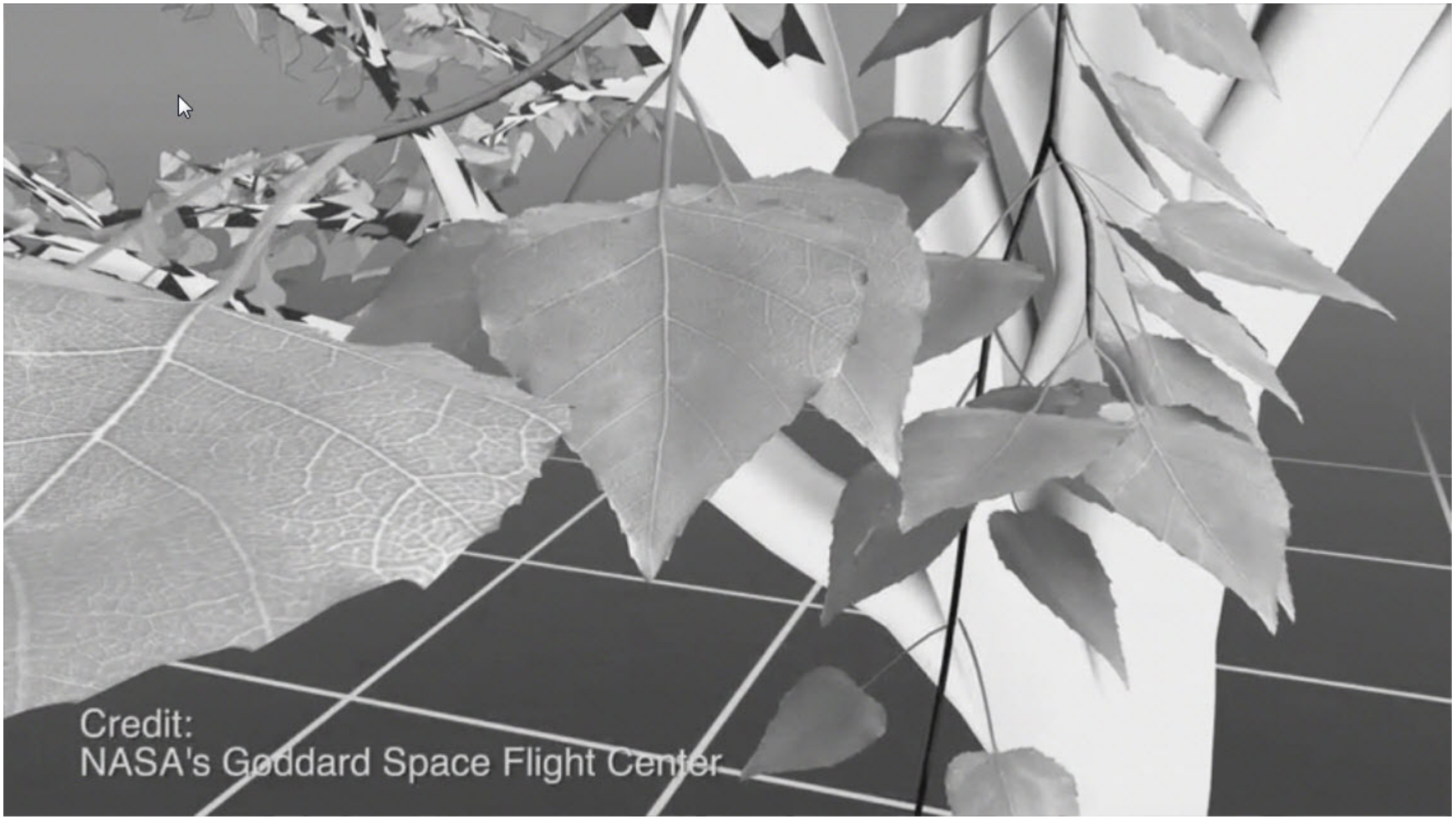
Comparison of TCCON and OCO-2

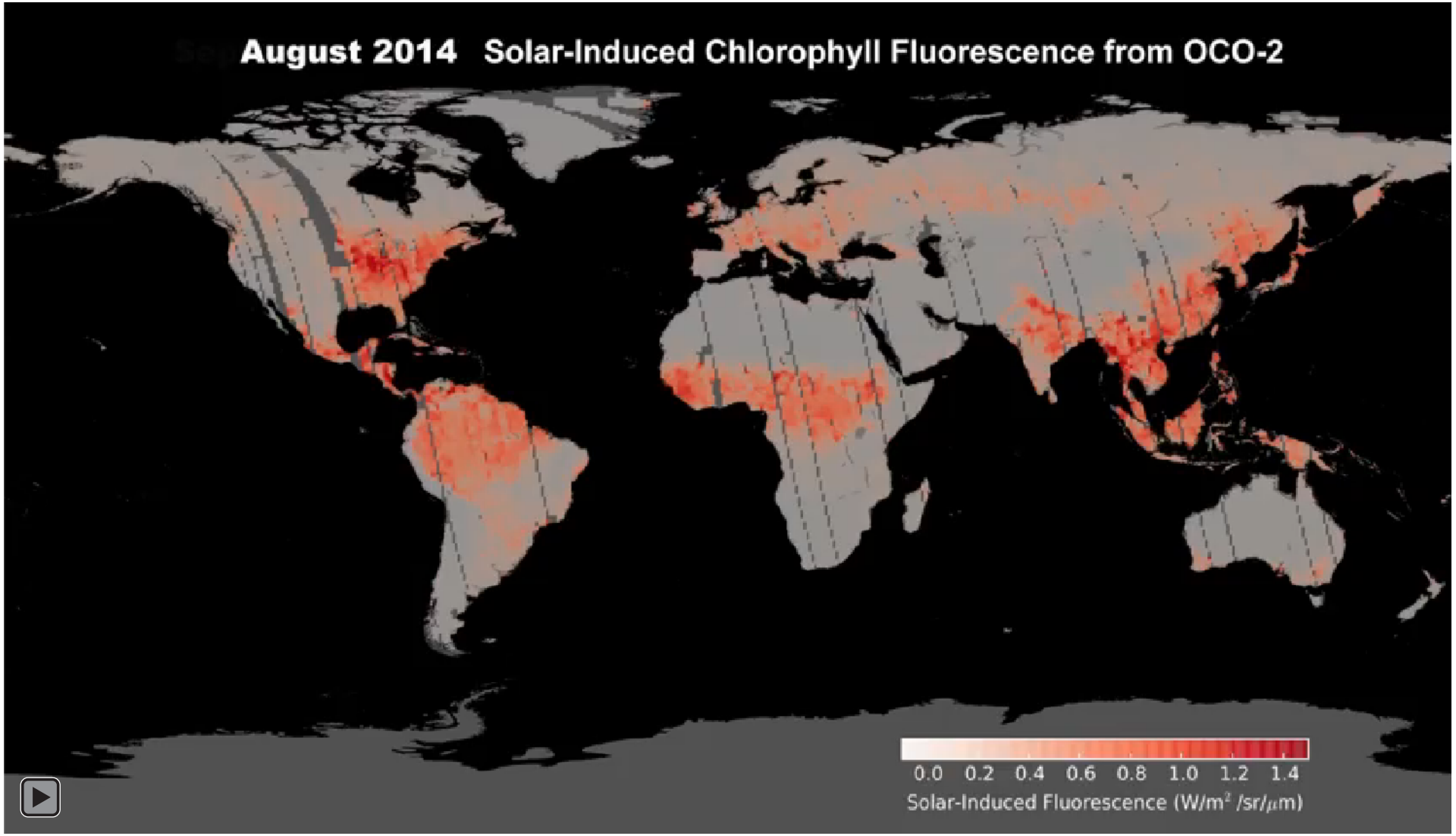




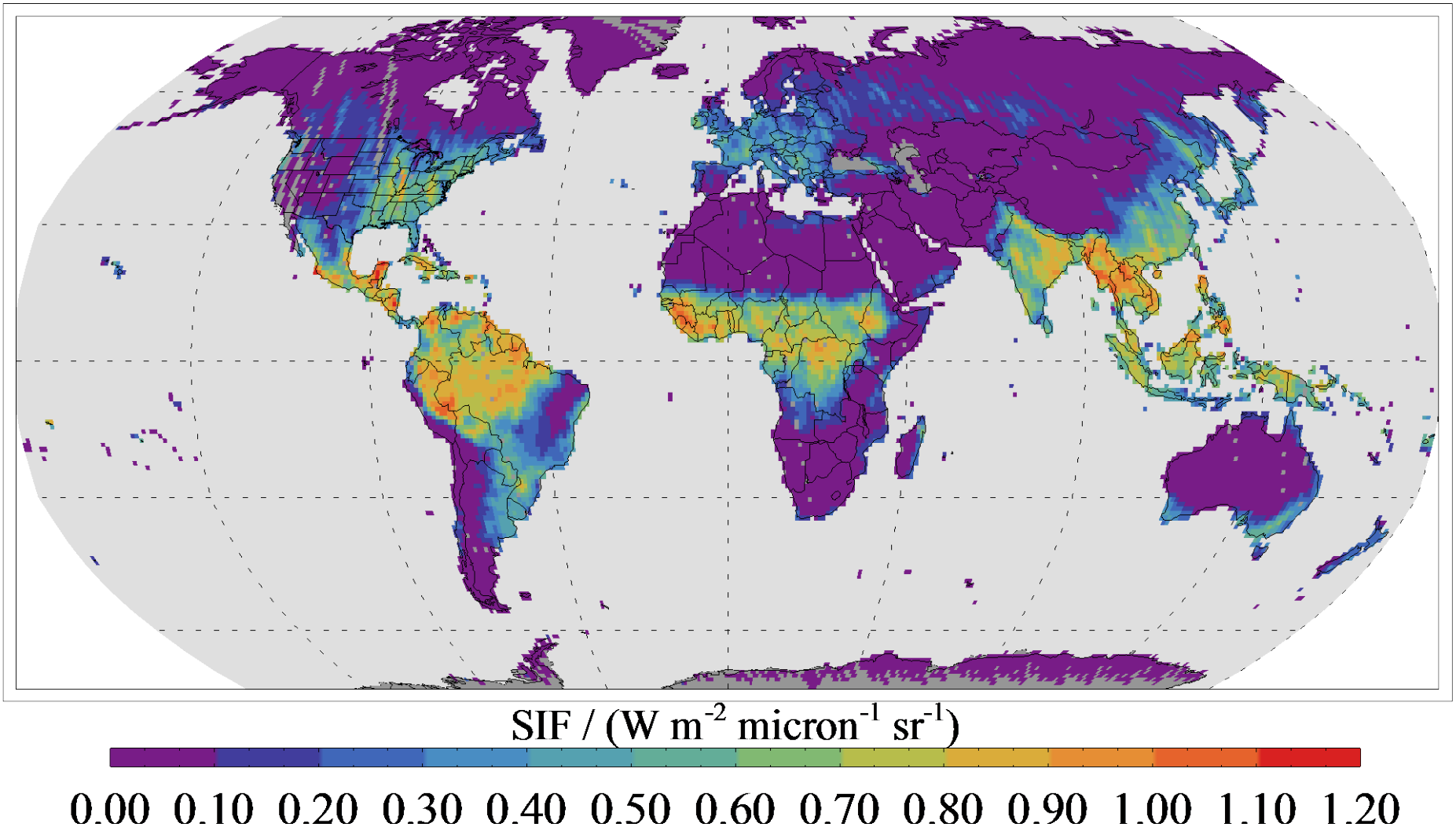


Solar-Induced Chlorophyll Fluorescence (SIF)




August 2014 Solar-Induced Chlorophyll Fluorescence from OCO-2
0.0 0.2 0.4 0.6 0.8 1.0 1.2 1.4
Solar-Induced Fluorescence (W/m² /sr/μm)

OCO-2 Solar-Induced Fluorescence Aug.-Oct. 2014



Summary

- OCO-2 is taking global carbon dioxide measurements with unprecedented precision, resolution, and coverage.
- These data are being carefully validated against a ground-based network.
- A new data product, solar-induced fluorescence, is also being produced from OCO-2, helping us understand the contributions of plants to the natural carbon cycle.
- Data release starts this year.

For More Information…

http://oco2.jpl.nasa.gov

http://www.nasa.gov/oco

First data release by Dec. 30, 2014

http://disc.sci.gsfc.nasa.gov/OCO-2

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