

National Aeronautics and Space Administration



# SMAP

Soil Moisture Active Passive



*Mapping Soil Moisture and  
Freeze/Thaw State from Space*

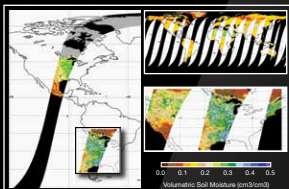
[www.nasa.gov](http://www.nasa.gov)

# SMAP

## Soil Moisture Active Passive

### Mapping Soil Moisture and Freeze/Thaw State from Space

#### SMAP Simulated Level 2 and Level 3 Soil Moisture Products



SMAP's conically-spinning antenna will allow both instruments to collect data jointly across a 1000-kilometer wide swath.

NASA's Soil Moisture Active Passive (SMAP) mission, scheduled to launch in late 2014, is designed to collect continuous global observations of surface soil moisture and freeze/thaw state every 2-3 days at 3 to 40 kilometer spatial resolution. SMAP will carry an active microwave radar and a passive microwave radiometer that will measure across a 1000-kilometer wide swath. These measurements will allow scientists to better understand the processes that link the Earth's water, energy, and carbon cycles, as well as enhance the predictive skills of weather and climate models. Scientists can also use SMAP data to develop improved flood prediction and drought monitoring capabilities.

#### SMAP Mesh Reflector Antenna Deployment



What makes the SMAP observatory unique is the lightweight, deployable mesh reflector antenna measuring 6 meters in diameter. This assembly will spin at ~14 revolutions per minute, resulting in conically scanned data at a constant chosen incidence angle of 40°.

For more information, visit: [smap.jpl.nasa.gov](http://smap.jpl.nasa.gov)