

SMAP Orbit Overpass Calculator

The SMAP Orbit Overpass Calculator allows users to compute a *simulated* 8-day sequence of satellite overpasses at a user's point location (latitude and longitude). All overpasses are listed for which the point location falls within the 1000-km SMAP swath centered on the nadir track. Since SMAP orbits in an exact 8-day repeat, the sequence of satellite overpasses repeats every 8 days. Note that while the coverage pattern indicated is a representative simulation the actual SMAP reference orbit will not be available until final orbit adjustments are completed after launch.

The calculator requires the following user inputs:

Lat: Latitude of point location, ranges from -90 to 90

Lon: Longitude of point location, ranges from -180 to 180

Date: Date at which to start 8-day coverage, formatted as mm/dd/yyyy

Time: Time at which to start 8-day coverage, formatted as hh:mm:ss in GMT

When the "compute 8-day coverage" button is clicked the calculator will output on the screen a list of the overpasses within the 8-day cycle. A link is provided to enable the output to be saved as an Excel file in .csv format.

Date: Date of overpass, formatted as yyyy-mm-dd

Time: Time of overpass, formatted as hh:mm:ss in GMT

Distance From Track: A signed measure of the distance (km) of the point location from the nadir track (center of the swath). Positive means the point location is to the right side of the nadir track when viewing in the spacecraft velocity direction.

Ascending/Descending: Describes whether the spacecraft is in the northward (ascending) or southward (descending) portion of the orbit.