# GPS/GNSS-RO DATA
## FOR MISSION-CRITICAL GOVERNMENT, DEFENSE, AND INDUSTRY LEADERS

Better Data. Better Forecasts. Better Outcomes.

## What is GPS/GNSS-RO?

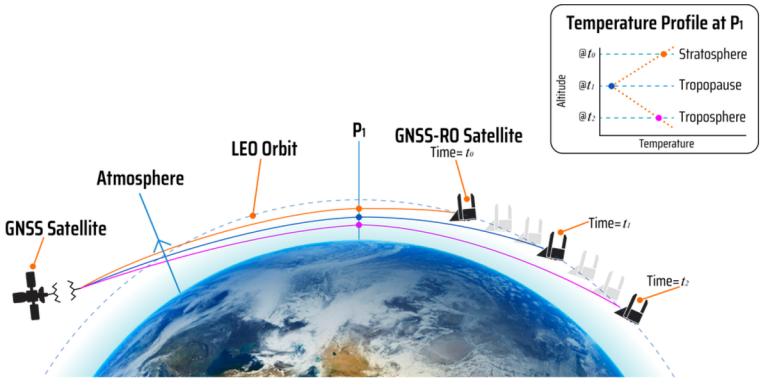
GPS/GNSS Radio Occultation (GNSS-RO) data is collected when signals from GNSS satellites in MEO are bent as they pass through Earth's atmosphere, captured by PlanetiQ satellites in LEO, and translated into atmospheric and space weather profiles. This data improves weather and space weather forecasting, as well as climate modeling.

## Why use GNSS-RO?

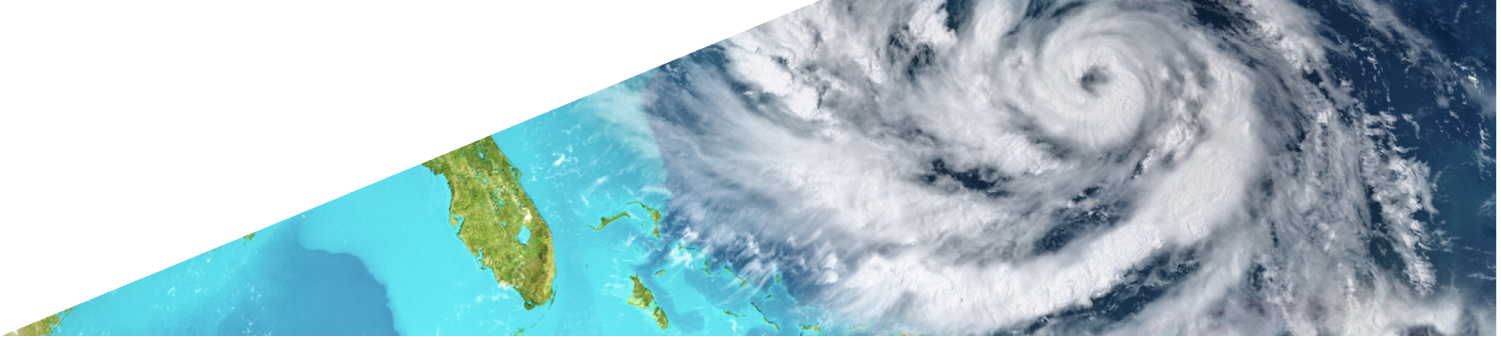
GNSS-RO is one of the most cost-effective sources of atmospheric data, leveraging the existing GNSS satellite constellations and low-cost receiving satellites. It ranks among the top contributors to forecast accuracy, with both the UK Met Office (UKMO) and the European Centre for Medium-Range Weather Forecasts (ECMWF) recognizing GNSS-RO as providing the greatest incremental improvement in performance of all EO technologies when added to forecasts.

## PlanetiQ's Advantage

PlanetiQ delivers GNSS-RO data with the highest signal-to-noise ratio (SNR) available, over seven times higher than other sources. This superior SNR enables deeper penetration into the lower troposphere and boundary layer, where most weather and water vapor reside. It also supports precise detection of atmospheric ducting events and their frequency, as well as highly accurate identification of GNSS jamming and spoofing activity.




PlanetiQ satellites in LEO (right) receive the refracted signal from GNSS satellites (left) in MEO.



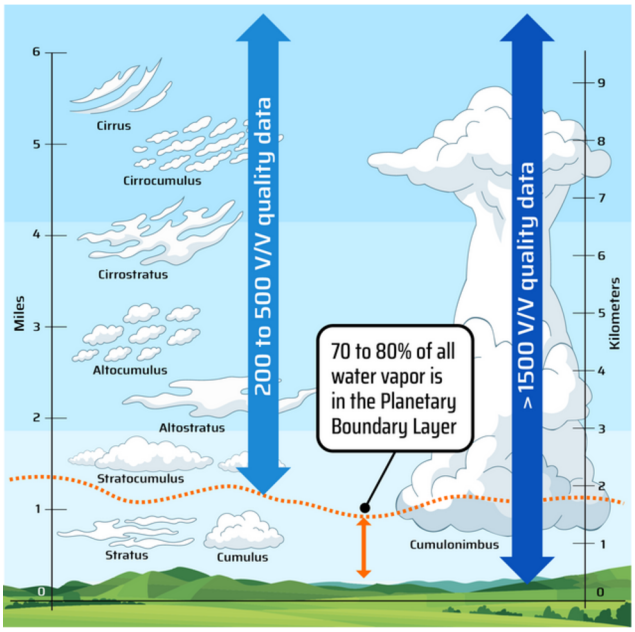
# Performance

PlanetiQ delivers the highest-quality GNSS-RO data available, with a signal-to-noise ratio (SNR) of 1500 V/V* (60 dB-Hz), compared to just 200 V/V (43 dB-Hz) from other RO sources.

Organizations choose PlanetiQ for advantages that matter:

- 4+ years of historical archive for model development and AI training
- 100 m vertical resolution
- Truly global coverage from pole to pole
- Atmospheric data from the surface to the stratosphere
- A decade of proven experience, with a team rooted in the earliest RO missions

* V/V = Volts of signal/Volts of noise




PlanetiQ's high SNR enables deeper penetration into the lower troposphere and boundary layer, where most weather and water vapor reside.

# Data Products

### Temperature
Neutral atmosphere parameter

### Pressure
Neutral atmosphere parameter

### Density
Neutral atmosphere parameter

### Refractivity
Neutral atmosphere parameter

### Humidity
Neutral atmosphere parameter

### Heavy Precipitation
Neutral atmosphere polarimetric RO

### Vertical Structure of Cloud Ice
Neutral atmosphere polarimetric RO

### Total Electron Content
Ionosphere parameter

### Scintillations
Ionosphere parameter

### Local Energetic Particles
Ionosphere parameter

### F-Region
Ionosphere parameter

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