



# ATMS

## Advanced Technology Microwave Sounder

**Mission:** Provide sounding profiles of atmospheric temperature and moisture in conjunction with CrIS

**Instrument Contractor:** Northrop Grumman Space Systems, Azusa, California

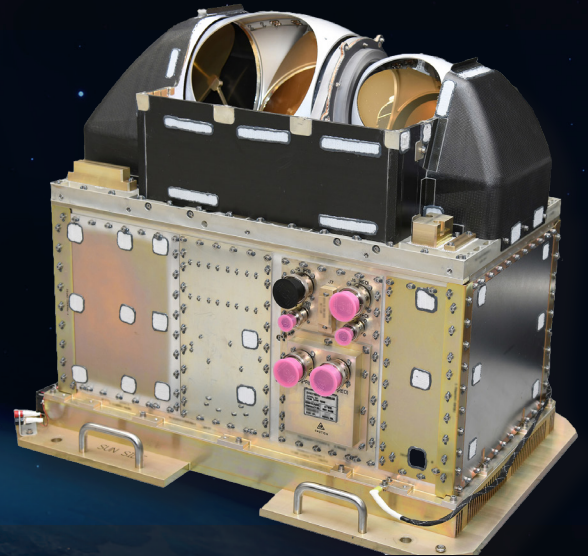
**Coverage:** 22 bands from 23 GHz to 183 GHz

**Nadir Resolution:** 15.8-74.8 km

**Average Data Rate:** 32,000 bps

**Average Power:** 130 Watts

**Mass:** 85 kilograms



## What is ATMS?

The Advanced Technology Microwave Sounder (ATMS) provides information about the physical properties of our atmosphere, such as temperature and moisture, which heavily influence weather patterns.

ATMS observes Earth in the microwave portion of the electromagnetic spectrum, which allows it to see through clouds. ATMS currently flies on the Suomi NPP and NOAA-20 satellite missions and will also fly on the JPSS-2, -3 and -4 satellite missions.

In conjunction with the Cross-track Infrared Sounder (CrIS) instrument, ATMS provides all-weather microwave temperature and moisture data to produce three-dimensional atmospheric profiles.

## Benefits

- Improves the accuracy of short- and medium-term weather forecasting, storm tracking and climate prediction models
- Provides data for farming, flight path planning, extreme weather preparedness, and ship navigation

Together, CrIS and ATMS primarily provide data on the water cycle, which includes water vapor, clouds and precipitation. Because clouds are opaque in the infrared part of the spectrum (measured by the CrIS instrument) and largely transparent at microwave frequencies (measured by ATMS), operating these two instruments together makes it possible to cover a broader range of weather conditions. ATMS provides a view inside and below clouds and can be used to produce images inside storms, including hurricanes. This provides invaluable data for understanding storms and making predictions up to five to seven days in advance of a severe weather event.