



# CrIS

## Cross-track Infrared Sounder

**Mission:** Produce high vertical resolution temperature and water vapor information needed to maintain and improve weather forecast skill out to five to seven days in advance

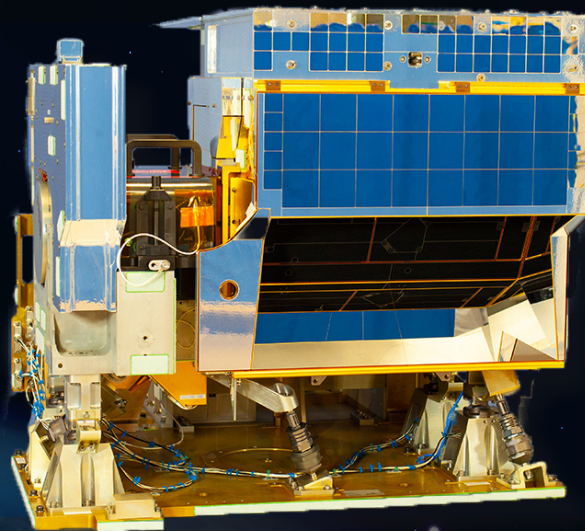
**Instrument Contractor:** L3 Harris, Fort Wayne, Indiana

**2211 Spectral Channels:** from 3.92  $\mu\text{m}$  to 15.38  $\mu\text{m}$

**Resolution:** FOV 14 km diameter; 1km vertical layer

**Scanned Swath:** 2200 km

**Average Data Rate:** 1,900,000 bps



## What is CrIS?

The Cross-track Infrared Sounder (CrIS) instrument provides more accurate, detailed atmospheric temperature and moisture observations for weather and climate applications. CrIS works best in clear to partly cloudy conditions because infrared energy doesn't penetrate thick clouds. For this reason, CrIS works in tandem with the Advanced Technology Microwave Sounder (ATMS), since microwave energy from this instrument can penetrate most cloud cover.

Together, the CrIS and ATMS instruments construct global, high-resolution and three-dimensional atmospheric temperature, pressure, and moisture profiles from space.

CrIS is a key instrument currently flying on the Suomi NPP and NOAA-20 satellites. CrIS will also fly on the JPSS-2, -3 and -4 satellites.

CrIS also gathers information on greenhouse gases, primarily in the middle and upper atmosphere. Both CrIS and ATMS provide essential atmospheric sounder information for weather forecasting.

## Benefits

- Daily CrIS measurements are used by NOAA's National Weather Service to enhance numerical weather prediction model forecasts, aiding in both short- and long-term weather forecasting. Over longer timescales, they will help improve understanding of climate phenomena, such as El Niño and La Niña—including continental transport of greenhouse gases.
- CrIS also measures atmospheric chemistry and can detect the concentration of greenhouse gases in the atmosphere, including carbon dioxide.
- The information from CrIS helps significantly improve weather and climate prediction, including both short-term weather "nowcasting" and longer-term forecasting.