



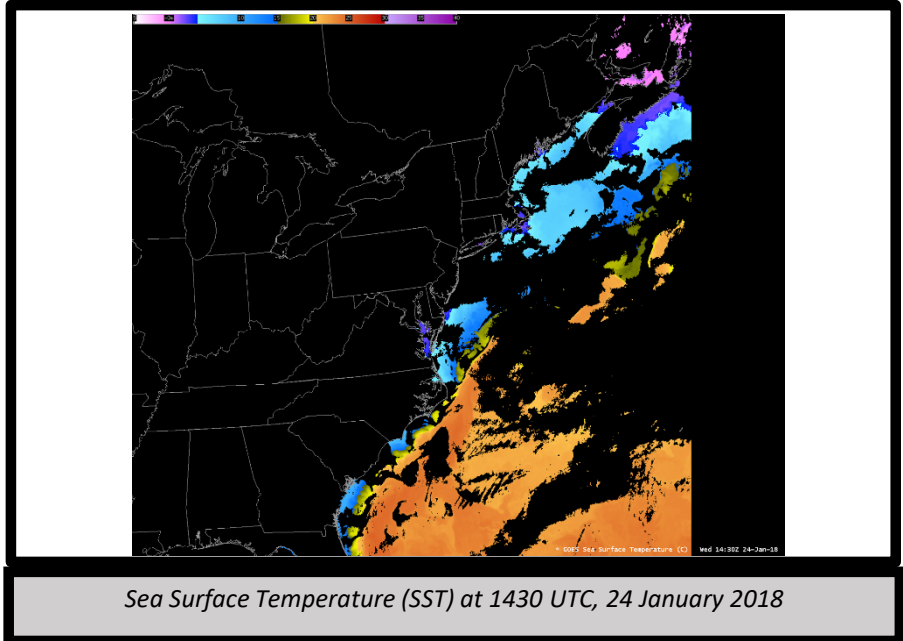
# Sea Surface Temperature Product

## Quick Guide



### Why is the Sea Surface Temperature (SST) product important?

The SST product is useful for analyzing oceanic SST's. Air mass moisture and instability is affected by the SST. Tropical and Extratropical cyclogenesis development is significantly influenced by the SST. The higher temporal resolution will allow for researching diurnal variability, and any impact on sensible weather, given high temporal resolution.



Time resolution	Spatial resolution	Range	ABI Bands Used
60 minutes (15 min. data averaged into 1 hour composite)	2 km (at nadir)	-2 to 40 °C 28 to 104 °F	8.4 μm, 10.3 μm, 11.2 μm, 12.3 μm

Default color table (°F). Note: min/max slightly different than data range.

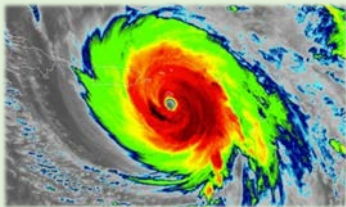


Feel free to modify color table or range based on location and season

### Impact on Operations

#### Primary Applications:

- Hurricane Intensity
- Sea fog (air  $T_d$  vs SST)
- Convection over the ocean
- Impact of onshore flow patterns on coastal county temperatures
- Large-scale climate information
- Ocean forecast models



### Limitations

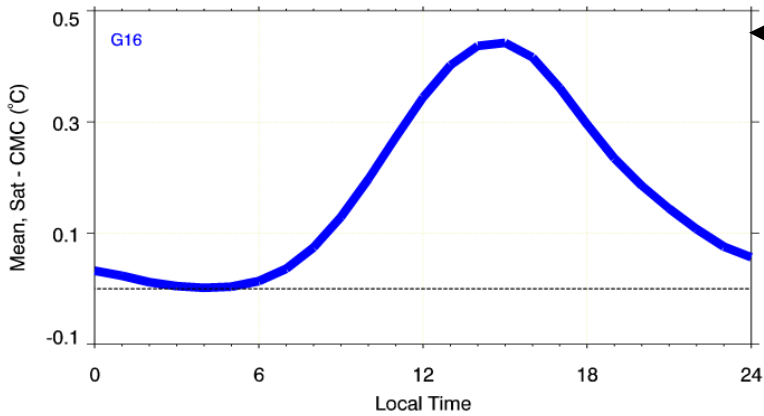
**Missing data in cloudy regions:** Retrievals are only made in clear sky conditions. Cloudy regions will have missing data.

**Precision / accuracy:** Although AWIPS cursor readout displays at 0.1 °C increments, the precision of the data is about 0.45 °C. The accuracy of the data is about 0.2 °C.



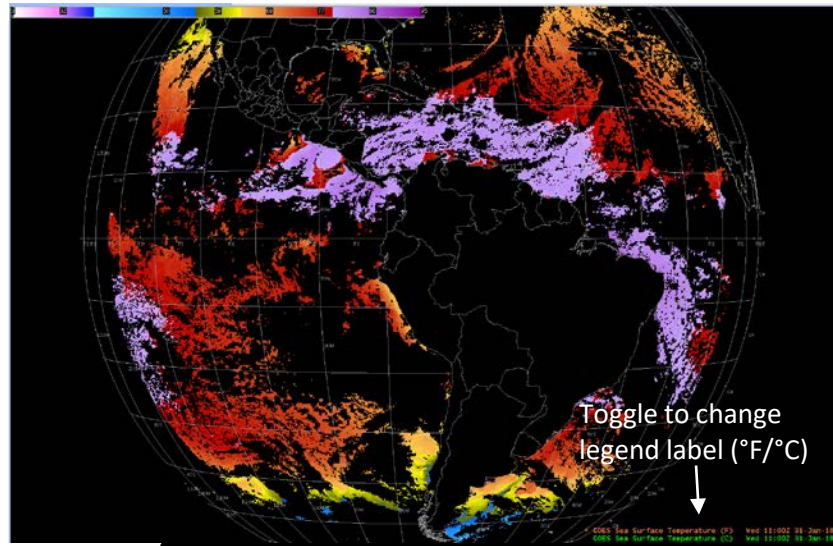
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← Monthly mean diurnal cycle of GOES-16 SST minus global analysis SST (analysis SST does not capture the diurnal cycle, and is representative of nighttime conditions) averaged over the Full Disk for February 2018.

The GOES-16 SST agrees very well with the analysis at night, and shows a full disk average diurnal cycle of about 0.5°C. The instantaneous diurnal cycle, for each particular location and day, may reach 3 to 4 °C, depending upon local insolation and wind speed.



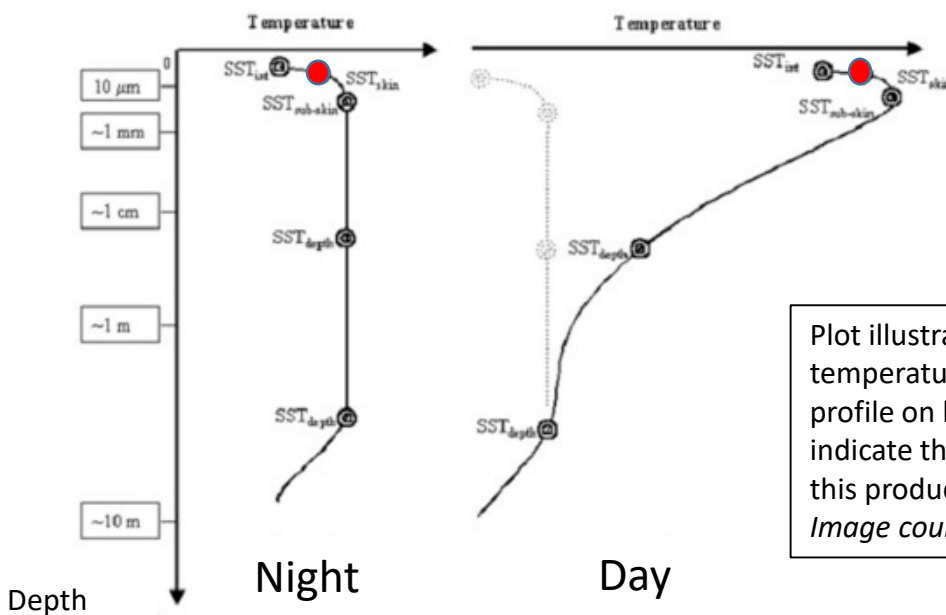
SST product at 1100 UTC, 31 January 2018.

The relatively frequent temporal resolution of this product was designed to observe diurnal SST variations, which are typically greater in calm wind conditions.

### Resources

[ATBD on SST product](#)

Hyperlinks not available when viewing material in AIR Tool



Plot illustrates ocean depth (to 10 m) versus temperature (increasing to the right). Nighttime profile on left, daytime profile on right. Red dots indicate the depth at which SST observations from this product are valid (around 10 micrometers).  
Image courtesy of NASA