Why is the Cloud Top Height Important?

The Baseline Cloud Top Height product estimates the top of the cloud in feet. This is an important parameter for aviation forecasting. Cloud Top Height is computed from both satellite data and from numerical model estimates of surface and tropopause features, and model vertical profiles of temperature, height and pressure.

Cloud Top Height Temporal Cadence and Band Requirements

<table>
<thead>
<tr>
<th>Domain</th>
<th>Temporal Refresh</th>
<th>Local Zenith Angle Range</th>
<th>ABI Bands Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Disk</td>
<td>60 minutes</td>
<td>Quantitative from 0° to 62°</td>
<td>11.2 μm, 12.2 μm, 13.3 μm</td>
</tr>
<tr>
<td>CONUS</td>
<td>5 minutes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mesoscale</td>
<td>5 minutes</td>
<td></td>
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</tbody>
</table>

Impact on Operations

**Primary Application:** Cloud Top Height is computed only for cloudy pixels. A principle application is for aviation forecasting.

**Application:** Cloud Top Height is derived simultaneously with Cloud Top Pressure and Temperature with the ABI Cloud Height Algorithm -- ACHA.

Limitations

**Limitation:** Misclassification can occur near coastlines, for warm low clouds, for regions far from nadir, and over snow cover.

**Limitation:** The accuracy requirement is 500 m.
**Image Interpretation**

1. Low clouds are typically purple and dark blue.

2. Jet stream cirrus – in this case subtropical jet – are cyan and green.

3. Strong convection is yellow, orange and red. Red clouds are the highest clouds.

4. New snow cover can show up as low clouds that do not move; this means the Clear Sky Mask has misidentified a feature as a cloud.