MODIS Direct Broadcast Products at UW-Madison

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Recent Highlights

- 3000+ Terra MODIS passes acquired
- IMAPP Level 2 Atmosphere Products released in May 2002
- IMAPP Level 1 and 2 Products for Aqua MODIS in beta test

Terra MODIS 2002/05/22 16:16 UTC

SSEC Direct Broadcast

International MODIS/AIRS Processing Package (IMAPP)

Goal

- Provide freely available, portable, easy to install software for processing raw MODIS and AIRS/AMSU/HSB

Example Users

- University of Dundee
- Curtin University (Australia)
- German Remote Sensing Data Center →
- ScanEx Corporation (Russia)
- University of Tokyo
- MODIS Land Rapid Response System

http://cimss.ssec.wisc.edu/~gumley/IMAPP/

IMAPP Level 1 Products for Terra MODIS (v 1.3)

Overview

- Components include Level 1A, Geolocation, Calibration
- Uses downlinked ephemeris and attitude for realtime processing

Installation

- IRIX, SunOS, AIX, HP-UX, Intel Linux (gcc), Solaris x86 (gcc)
- Only toolkit required is HDF version 4.1
- Includes script for automated Level 0 to Level 1B processing

Relationship to operational algorithm

- Calibration algorithm version 3.0.0; lookup tables version 3.0.0.7

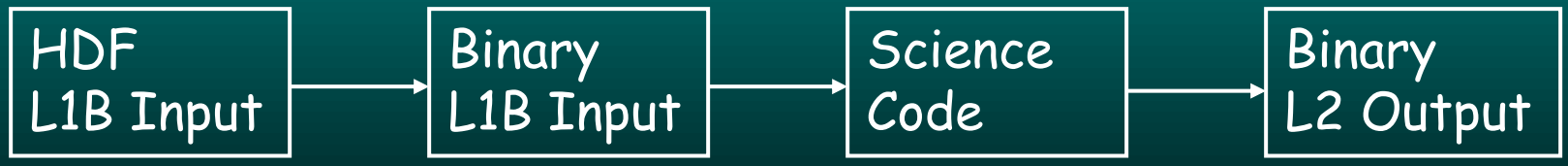
IMAPP Level 2 Products for Terra MODIS (v 1.1)

Overview

- Products include Cloud Mask, Cloud Top Pressure, Cloud Phase
- Atmospheric Profiles is in beta test
- Ancillary data are available from SSEC via anonymous FTP

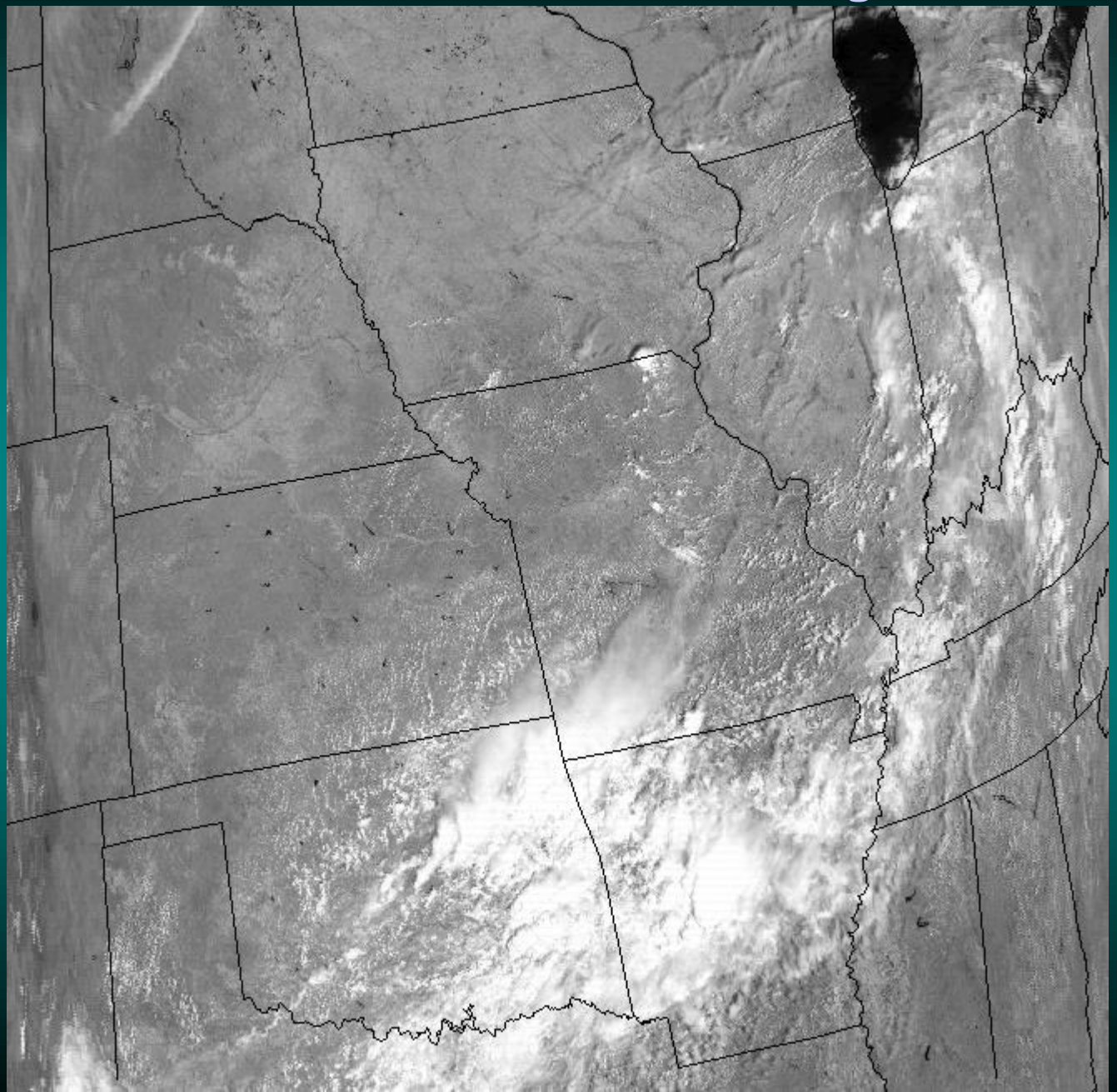
Details

- All IMAPP platforms are supported
- Both IMAPP and DAAC format Level 1B may be used as input
- Binary BIL intermediate file format is used (ENVI compatible)



- Output binary files may be converted to HDF

IMAPP Level 1B Image

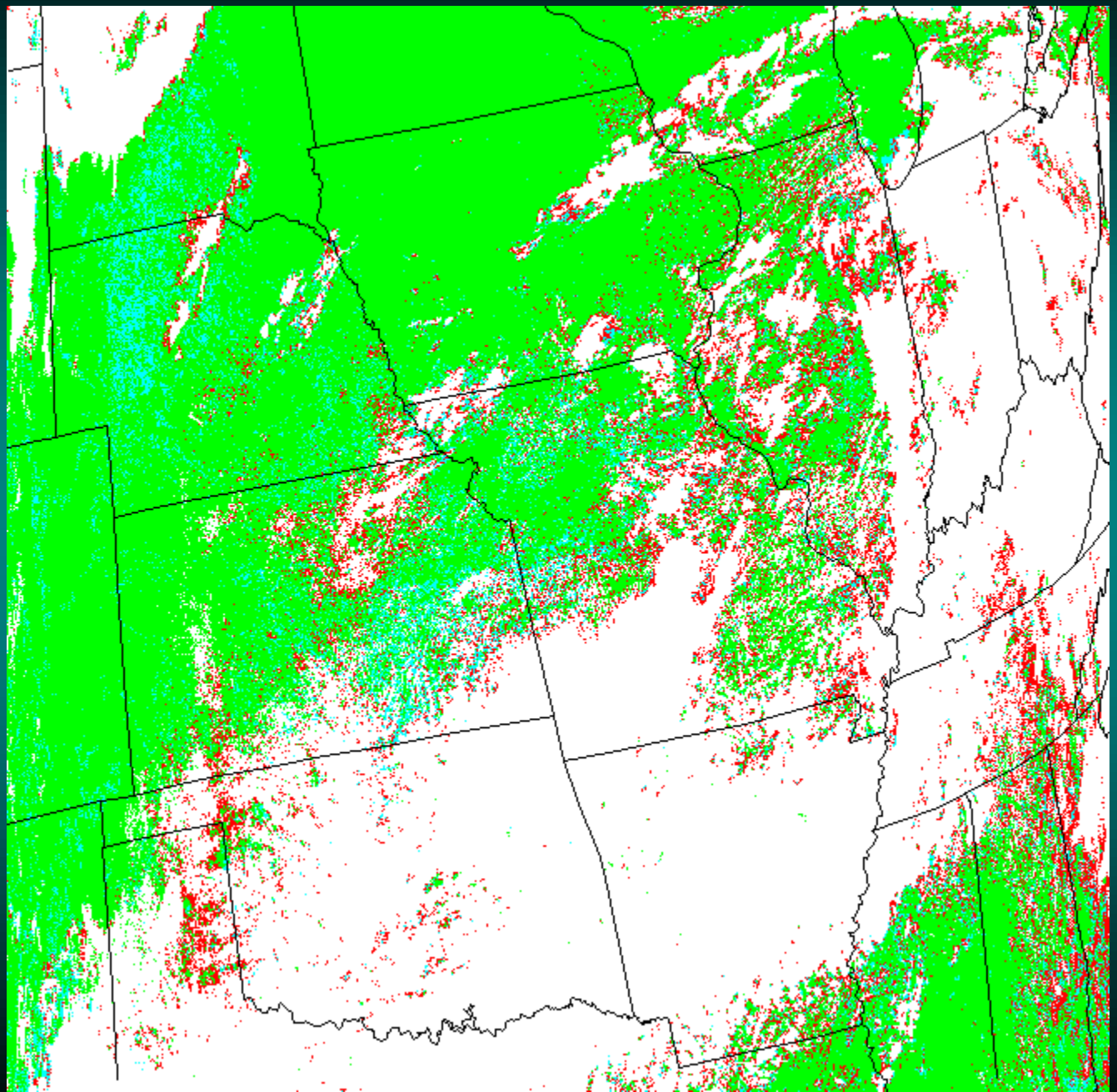


Terra MODIS
Band 2
0.87 microns
17:05 UTC
2002/07/17

IMAPP Level 1B Image

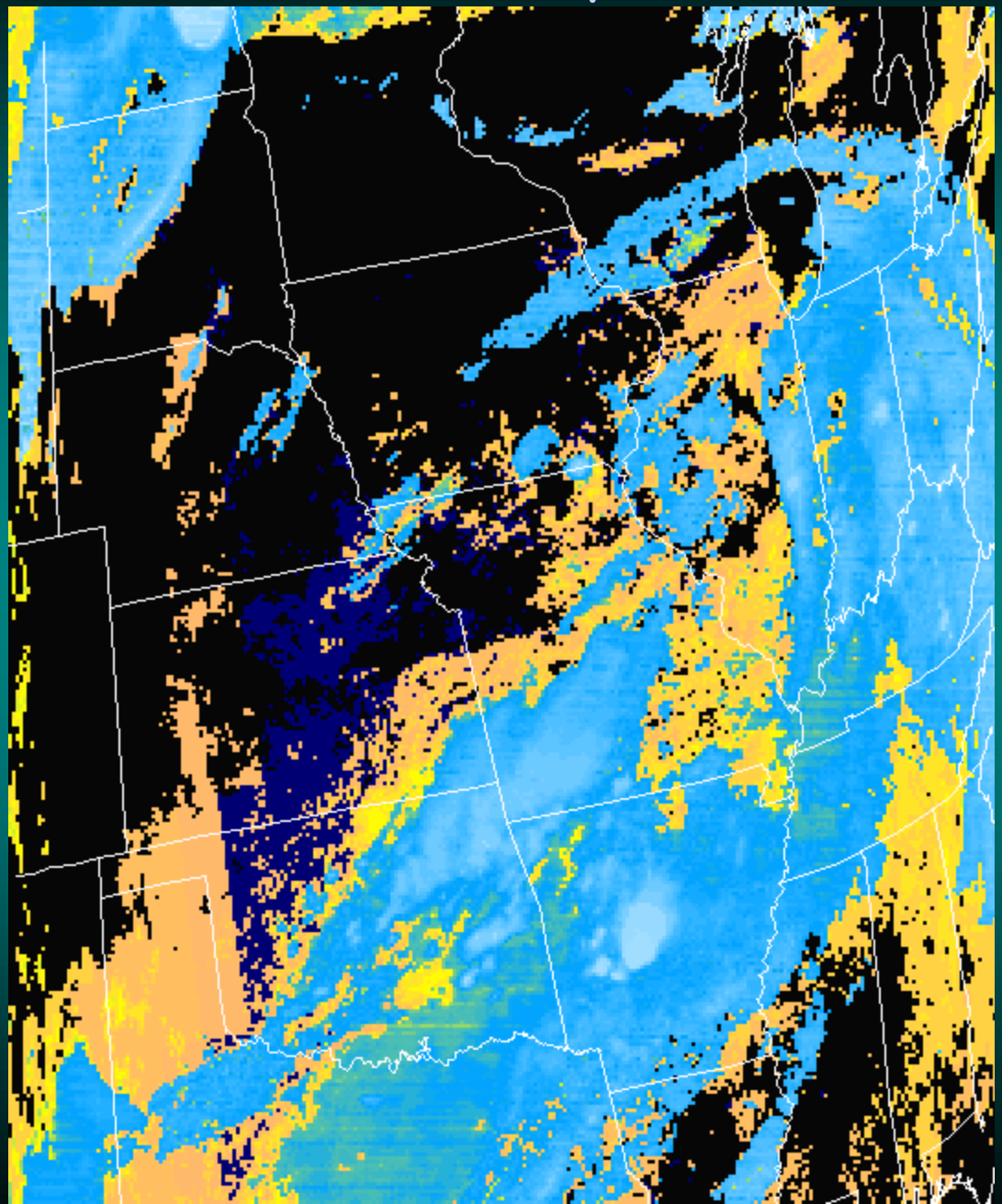
Terra MODIS
Band 26
1.38 microns
17:05 UTC
2002/07/17

IMAPP Cloud Mask



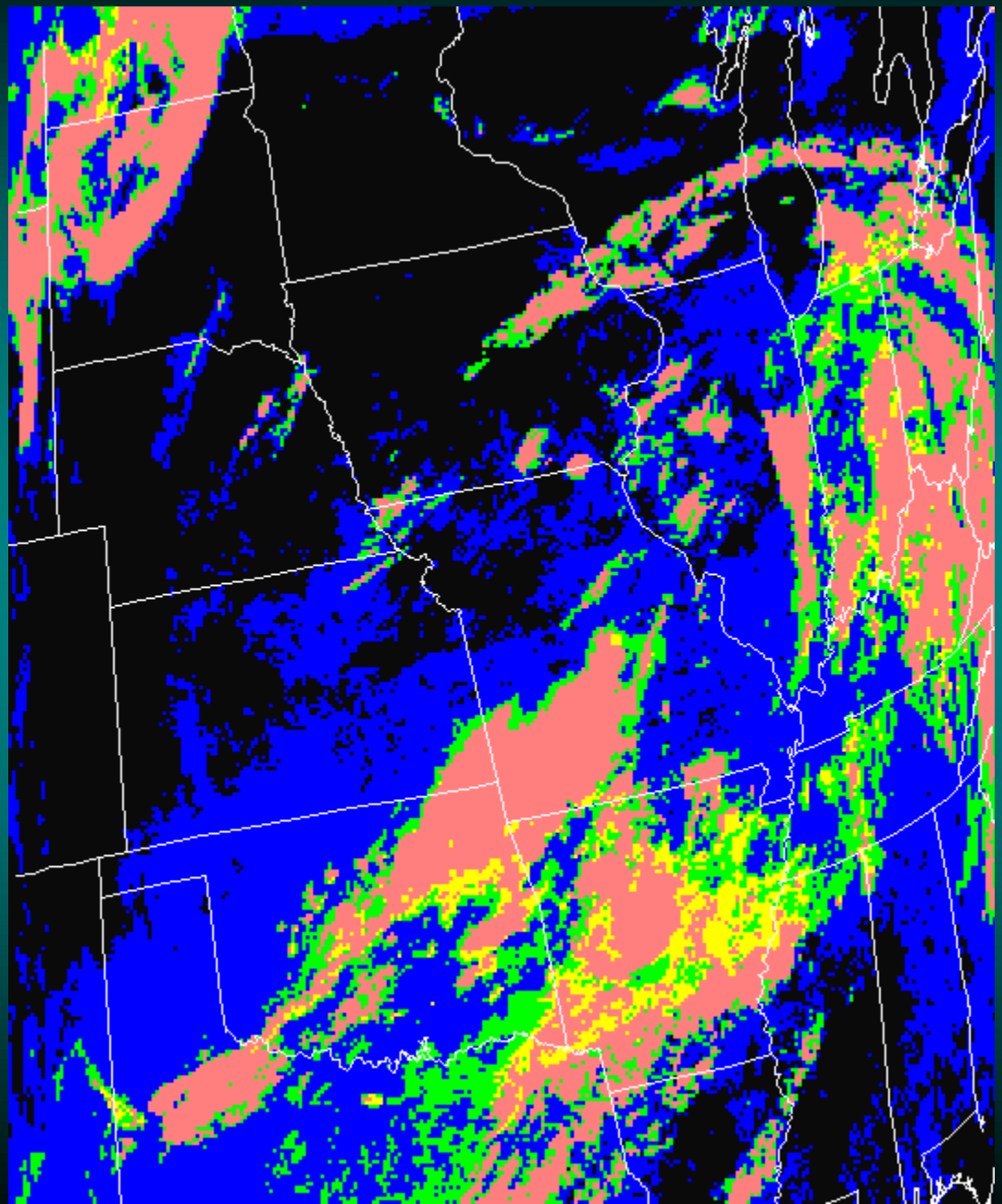
Green: Clear
Red: Uncertain
White: Cloudy

IMAPP Cloud Top Pressure



Orange: Low
Yellow: Mid
Blue: High

IMAPP Cloud Phase



Blue: Water
Pink: Ice
Yellow: Mixed
Green: Uncertain

IMAPP Level 1 and 2 Products for Aqua MODIS

Overview

- Shared Terra/Aqua code for Level 1A, Geolocation, and Calibration
- Will eventually requires separate Terra/Aqua code for Calibration
- Uses downlinked GBAD ephemeris/attitude for realtime processing
- All IMAPP platforms are supported

Current Status

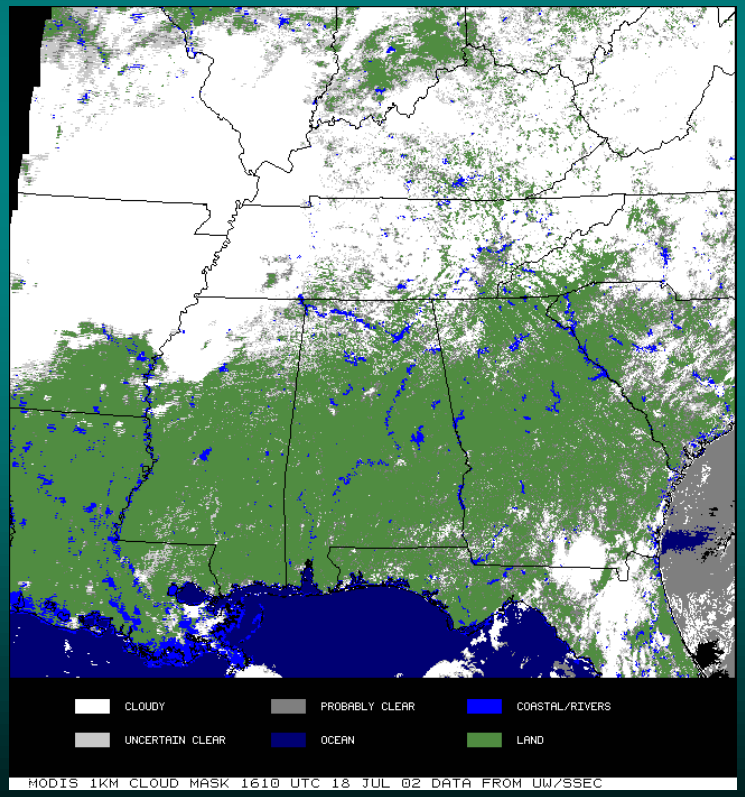
- Beta testing in progress (UW, GSFC, U. Hawaii)
- Assessing impact of GBAD ephemeris/attitude on Geolocation
- Level 1 available for release in August 2002
- Level 2 available in fall 2002

Realtime Applications

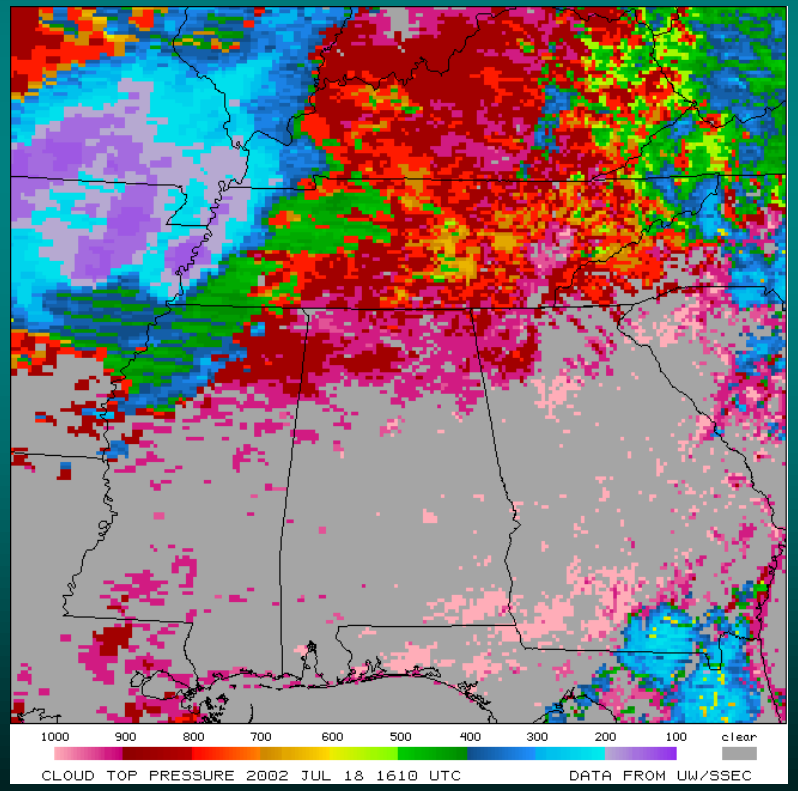
NASA/MSFC Short Term Prediction Research and Transition Center

- Infusion of ESE data into NWS regional forecast operations

Terra MODIS 2002/07/18 16:10 UTC



Cloud Mask



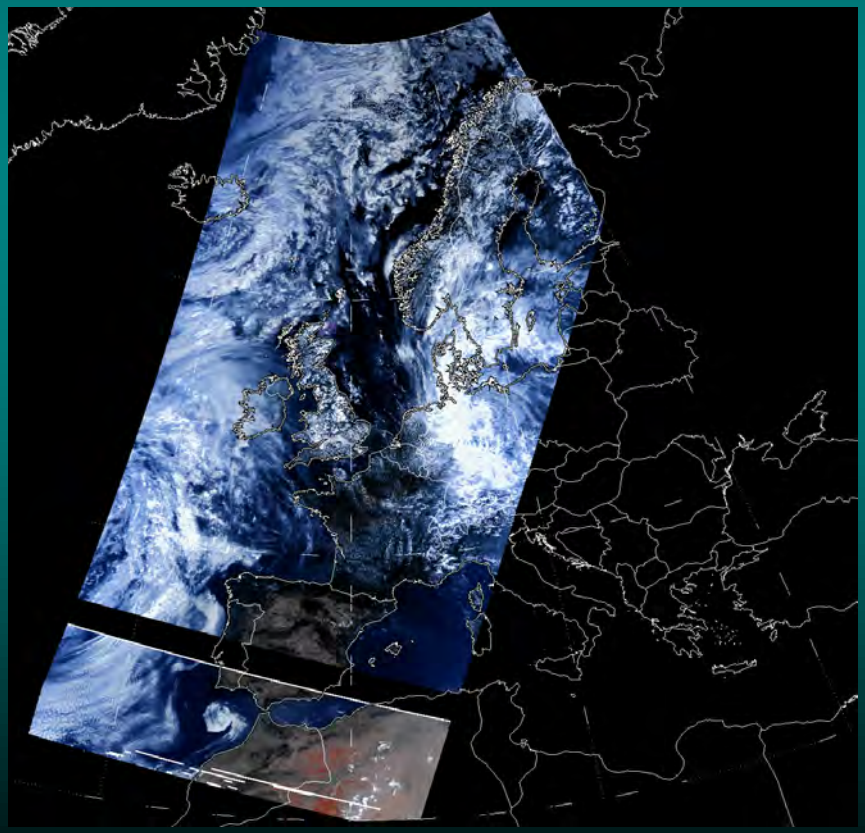
Cloud Top Pressure

Realtime Applications

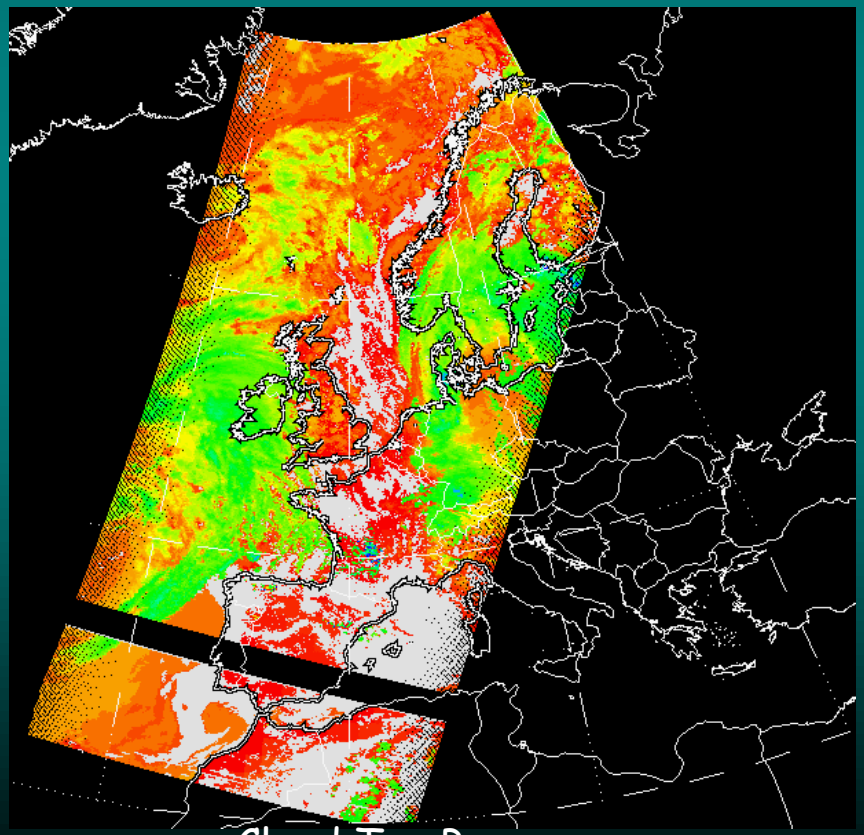
Plymouth Marine Laboratory, CLOUDMAP2

- Characterize sub grid-scale processes in NWP models

Terra MODIS 2002/07/18 11:09 UTC



True Color Composite



Cloud Top Pressure

Future Work

MODIS

- Release Aqua compatible IMAPP Level-1 s/w(August 2002)
- Release Aqua compatible IMAPP Level-2 s/w (September 2002)
- Update Terra/Aqua calibration algorithm to v 4.0 (by end of 2002)

AIRS/AMSU/HSB

- Evaluate and test pre-launch version of Level 1A s/w
- Obtain post-launch version of Level 1 suite (by end of 2002)
- Near realtime production of Level 1 products (by end of 2002)
- Modify Level 1 s/w for inclusion in IMAPP (early 2003)
- Release Level 1 s/w as part of IMAPP (summer 2003)