

Terra/Aqua Direct Broadcast: An Update

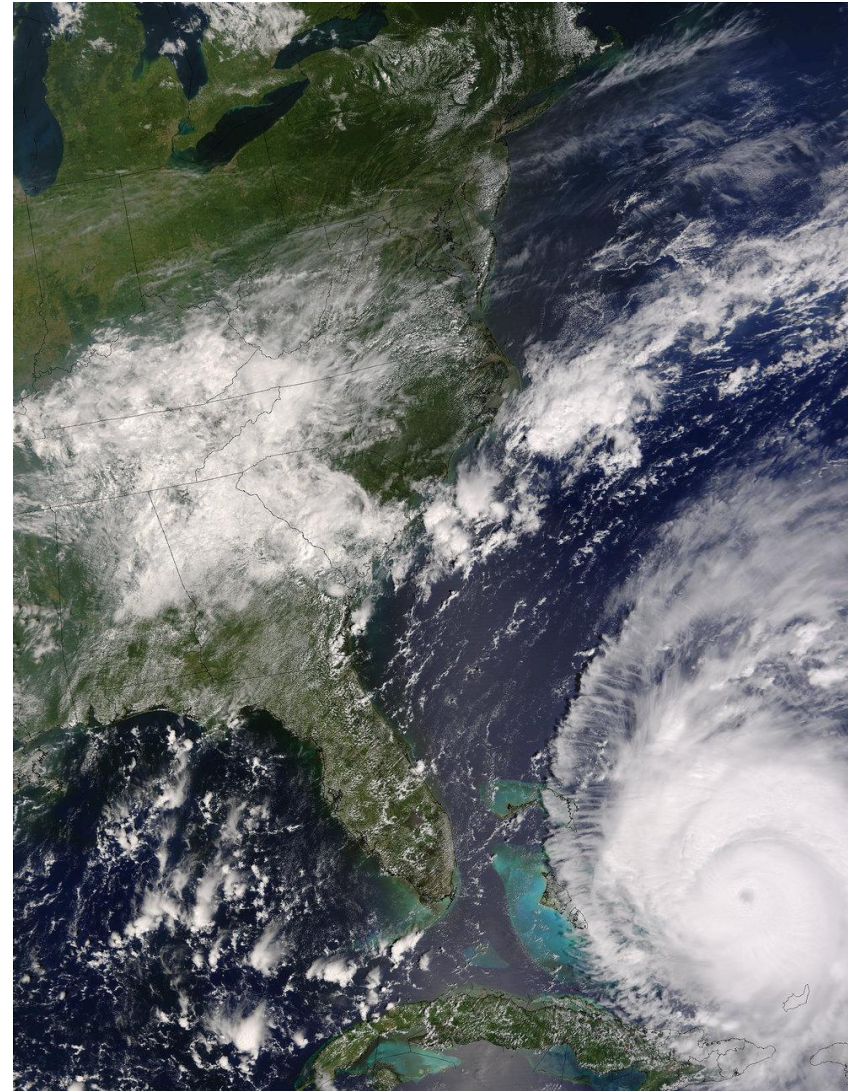
**Liam Gumley
Allen Huang
Kathy Strabala
Jun Huang**

**Cooperative Institute for
Meteorological Satellite
Studies**

**University of Wisconsin-
Madison**

Mar. 24, 2005

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.



Hurricane Frances, 2 Sep. 2004, Terra DB

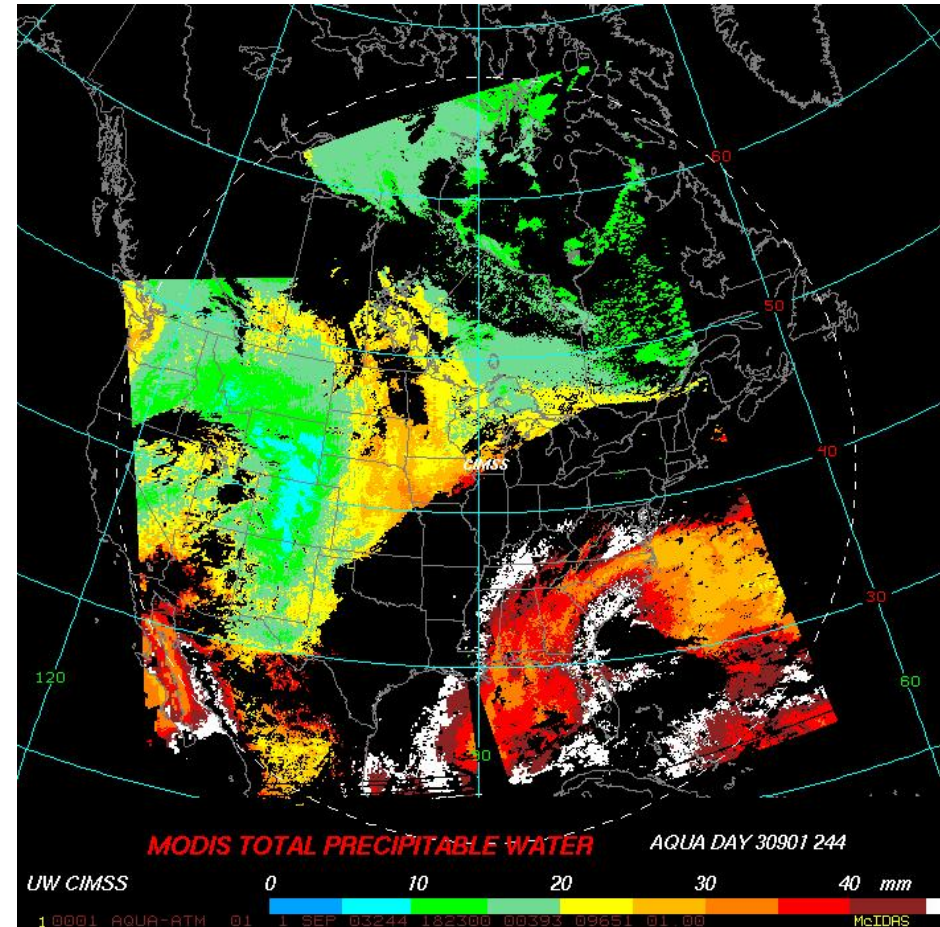
Direct Broadcast Software, Products, Algorithms, Meetings

Software: IMAPP updates and new features

Products: Realtime GeoTIFF for ice monitoring

Algorithms: MODIS/AIRS retrievals, AMSR-E precipitation

Meetings: ITSC Beijing, Intl. EOS/NPP Benevento



Aqua MODIS realtime TPW

Direct Broadcast Software: International MODIS/AIRS Processing Package (IMAPP)

Current MODIS Level-2 Algorithms:

Level 1

Cloud Mask

Atmospheric Profiles (T/q)

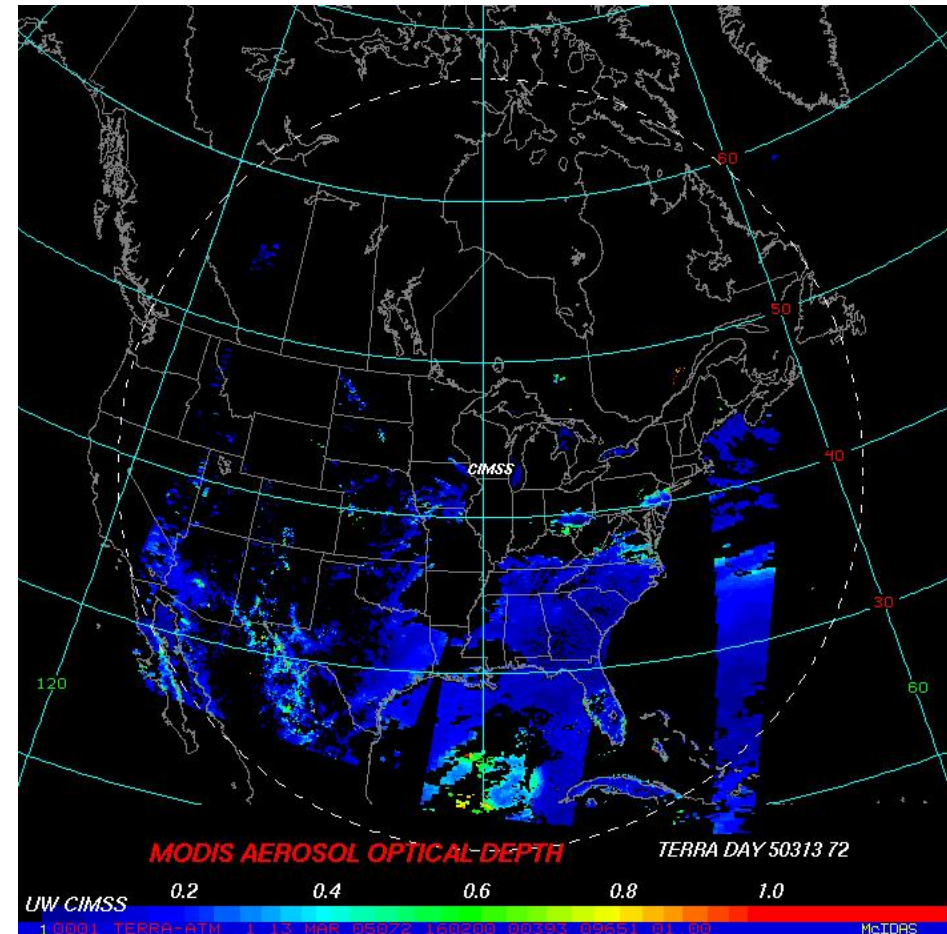
Cloud Top Properties (IR)

Aerosol Optical Depth

Sea Surface Temperature

Near-IR Water Vapor

These will all be updated to
Collection 5 in 2005



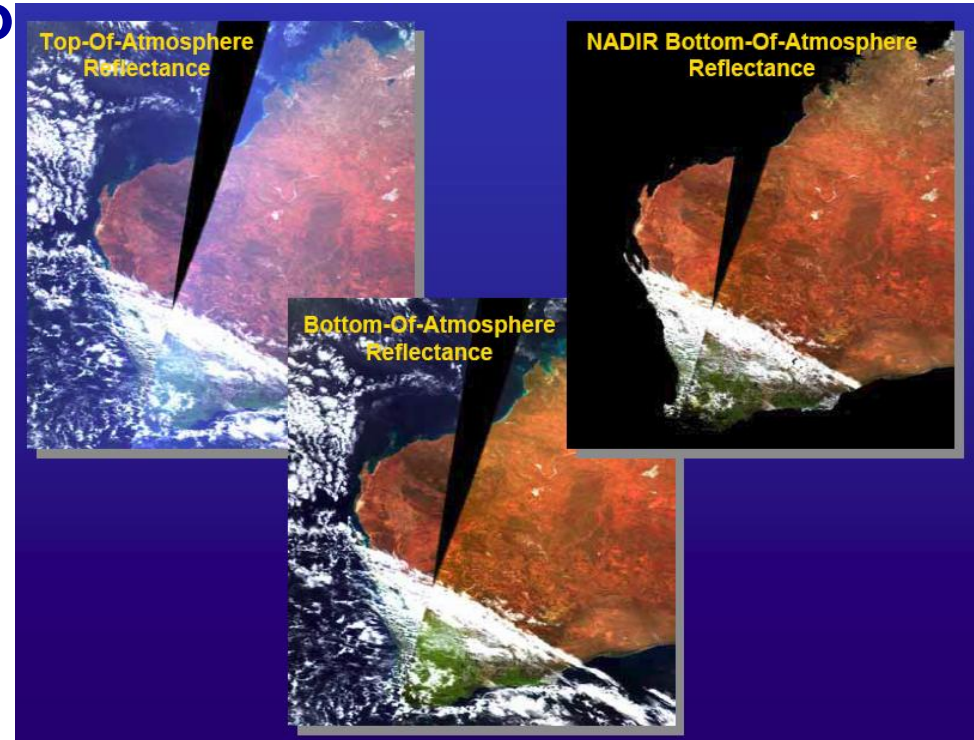
Terra MODIS realtime AOD 2005/03/13

New MODIS Level 2 Algorithms for IMAPP

MODIS Level-2 Algorithms to be ported to IMAPP:

**Cloud Optical Properties
Land Surface Reflectance
BRDF
Snow/Ice Detection**

These will all be ported and released in 2005



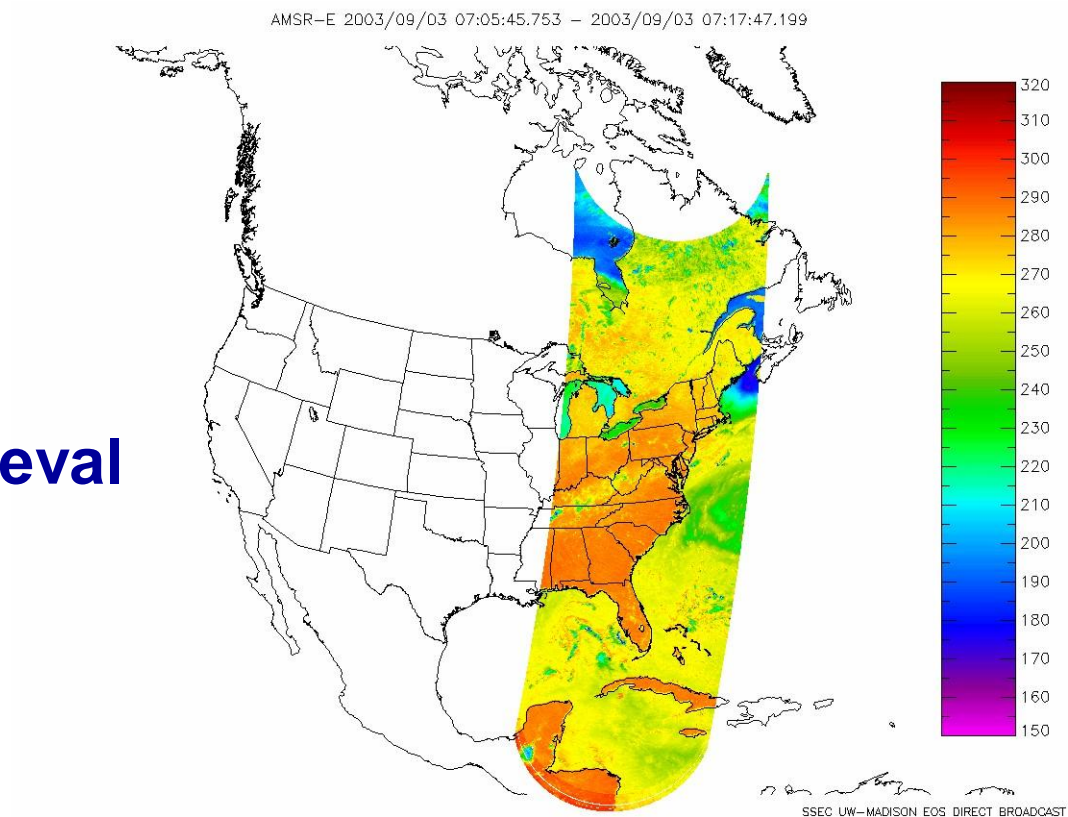
**Terra MODIS BRDF corrected true color
Courtesy of DLI, W. Australia**

AIRS/AMSU/AMSR-E Software in IMAPP

**Current Algorithms:
Level 1B for AIRS/AMSU
Level 1B for AMSR-E**

**In Development:
AIRS/AMSU Level 2 Retrieval
AMSR-E Precipitation**

**These will be released in
2005**



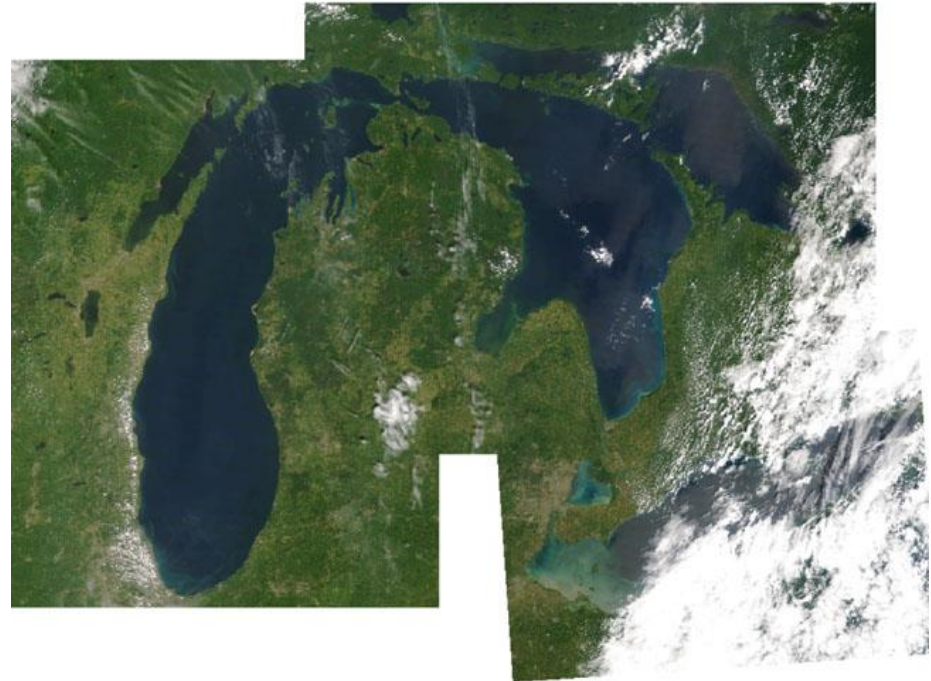
**AMSR-E 89 GHz from 2003/09/03
From SSEC DB**

Realtime GeoTIFF products for the Great Lakes

Terra and Aqua MODIS 250 meter true color images are produced daily for each of the Great Lakes

GeoTIFF format in UTM projection (GIS compatible)

NOAA Coastwatch, National Ice Center, and Canadian Ice Service download the images in realtime



NOAA Great Lakes CoastWatch

http://coastwatch.glerl.noaa.gov/

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Welcome to the NOAA CoastWatch Great Lakes Node

What's New
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AVHRR Imagery
GLSEA
[Contour Maps](#)
[GOES Imagery](#)
[RADARSAT](#)
[MODIS Imagery](#)
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[Image Archive](#)
[Software](#)
[Documentation](#)
[Validation](#)





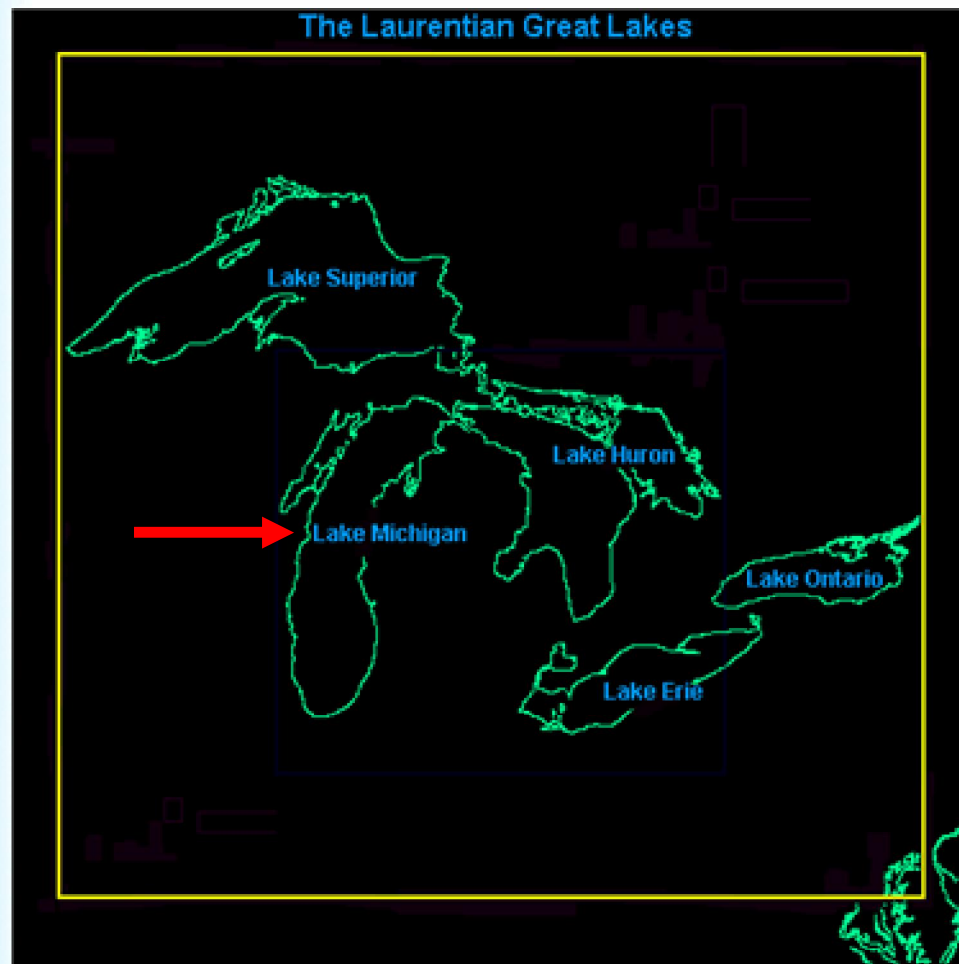
Great Lakes CoastWatch Node
**NOAA/Great Lakes Environmental
 Research Laboratory**
 2205 Commonwealth Blvd.
 Ann Arbor, MI 48105-2945
 Fax: 734-741-2055
<http://coastwatch.glerl.noaa.gov>

George A. Leshkevich,
Manager

Songzhi Liu,
Operations Assistant

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[Home](#) > Region Map



- [Lake Superior](#)
- [Lake Michigan](#)
- [Lake Huron](#)
- [Lake Erie](#)
- [Lake Ontario](#)

click in map or links

For current MODIS imagery, click in region of interest

MODIS data acquired by [direct broadcast](#) and processed at the [Space Science and Engineering Center](#),
University of Wisconsin-Madison

[Home](#) > [Region Map](#) > Lake Michigan

NOAA CoastWatch - Great Lakes Region

Lake Michigan MODIS Imagery - True Color, 250 m Resolution

Current time: 03/24/2005 14:17:55 GMT

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03/23/2005 18:17 GMT



03/23/2005 16:38 GMT



03/22/2005 19:12 GMT



03/22/2005 17:33 GMT



03/22/2005 15:56 GMT



03/21/2005 18:29 GMT



03/21/2005 16:50 GMT

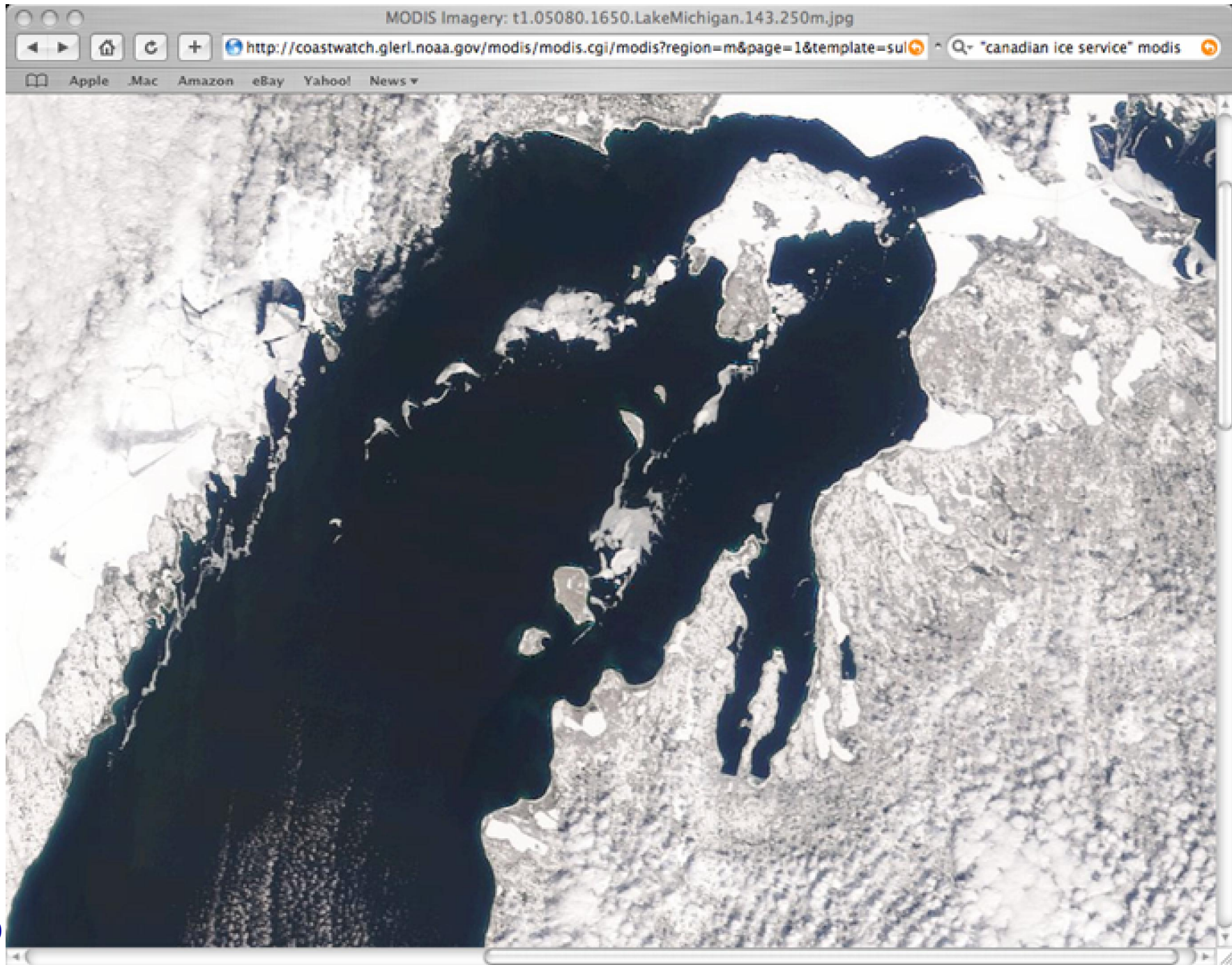


03/20/2005 19:24 GMT

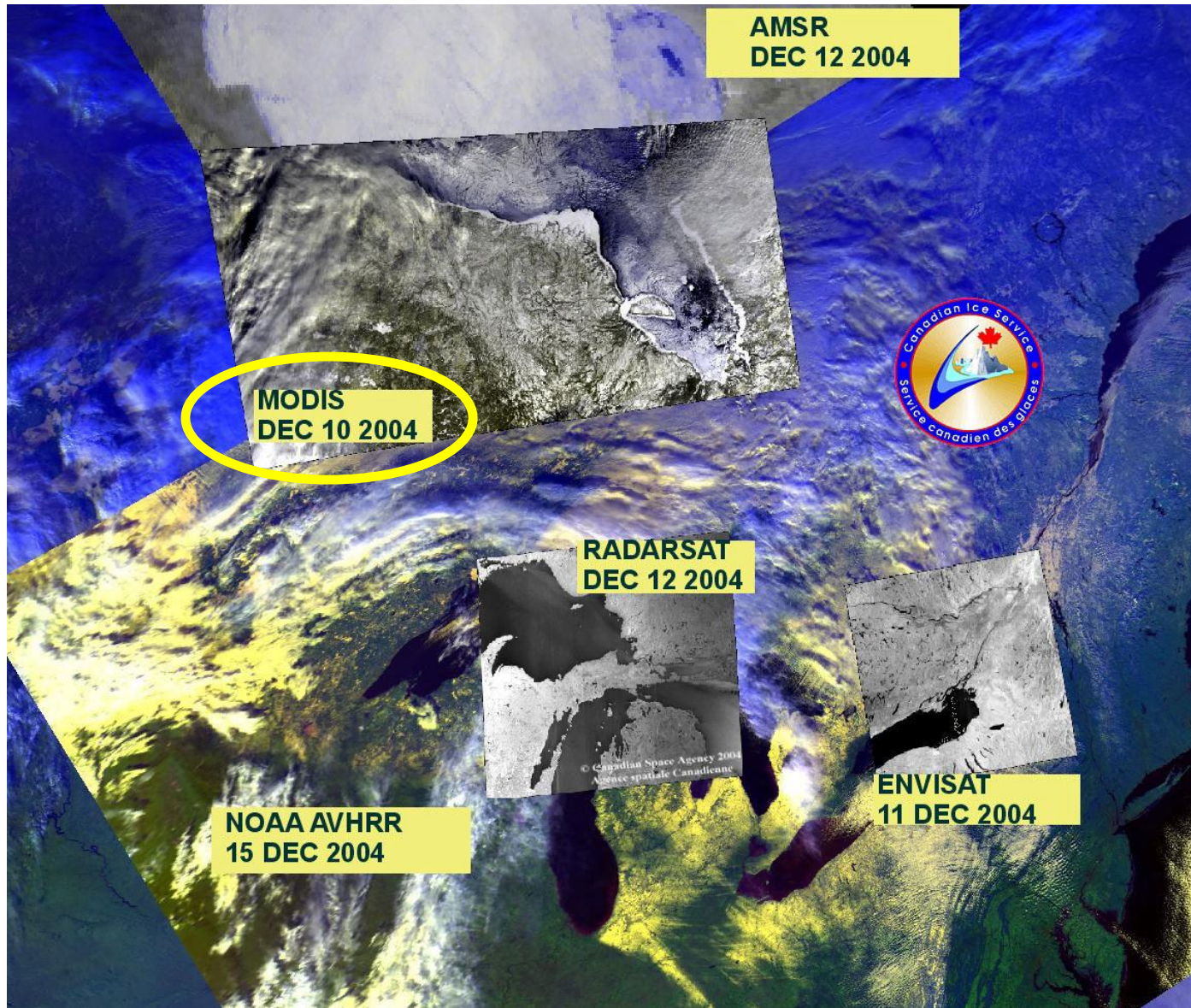


03/20/2005 16:08 GMT

MODIS data acquired by [direct broadcast](#) and processed at the [Space Science and Engineering Center](#),
University of Wisconsin-Madison



Canadian Ice Service integrates MODIS into operational data stream for ice monitoring

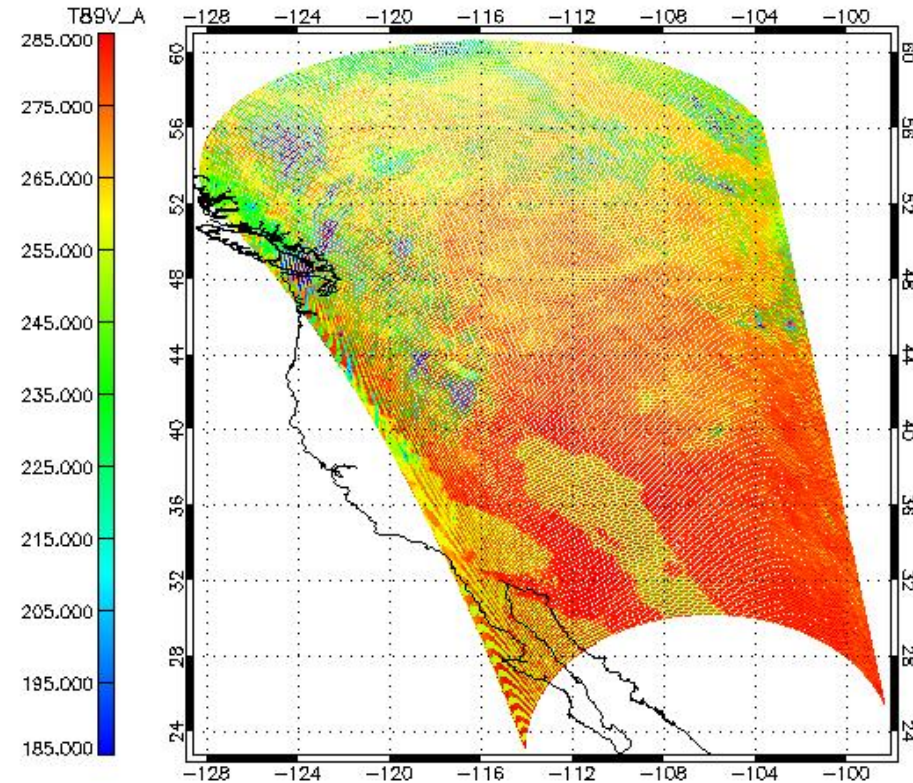


Algorithm Development

**Aqua MODIS/AIRS:
Synergistic retrieval
algorithm has been
developed**

**AMSR-E: Precipitation and
soil moisture algorithms
have been ported from
official versions**

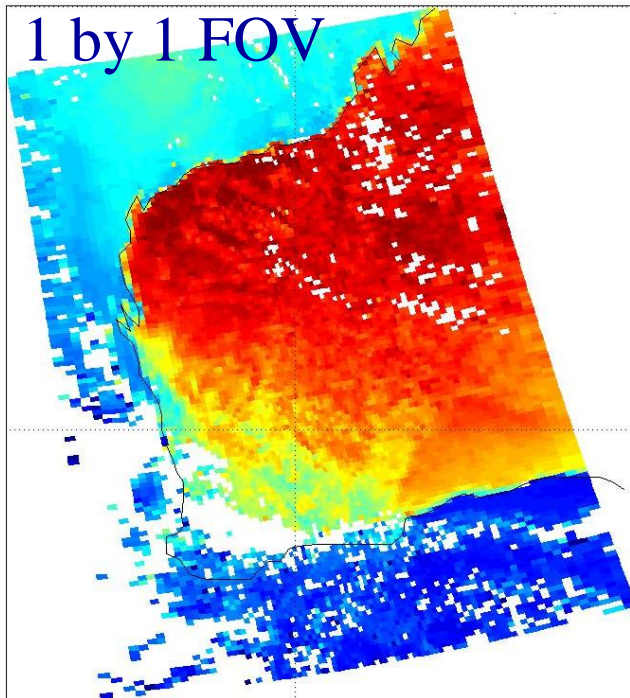
**These algorithms will be
released in IMAPP in 2005**



**AMSR-E 89 GHz, 2004/01/28, 20:22
from SSEC DB**

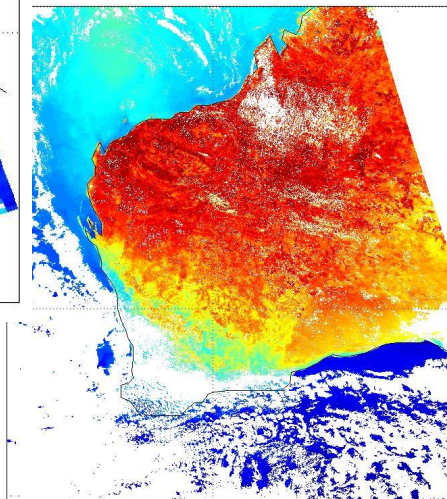
AIRS Operational and Direct Broadcast **Value Added** “Cloud Clearing” Brightness Temperature Comparison **MODIS Band 20 (3.7 Micron)**

UW Nstar 1ch_31calc_32qc conv. MODIS Band 20, Granule 058



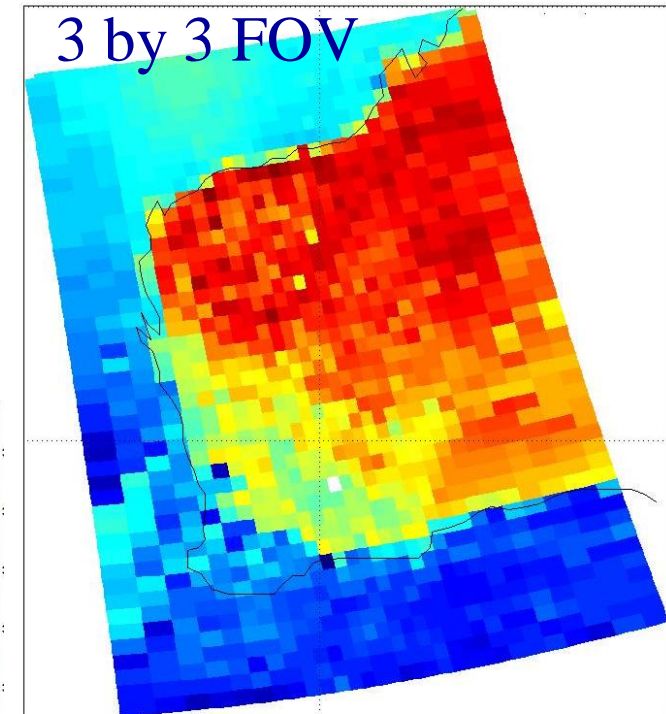
**AIRS DB
(14km x 14km)**

MODIS Band 20 clear pixels, Granule 058



MODIS (1km x 1km @nadir)

JPLCC conv. MODIS Band 20, Granule 058

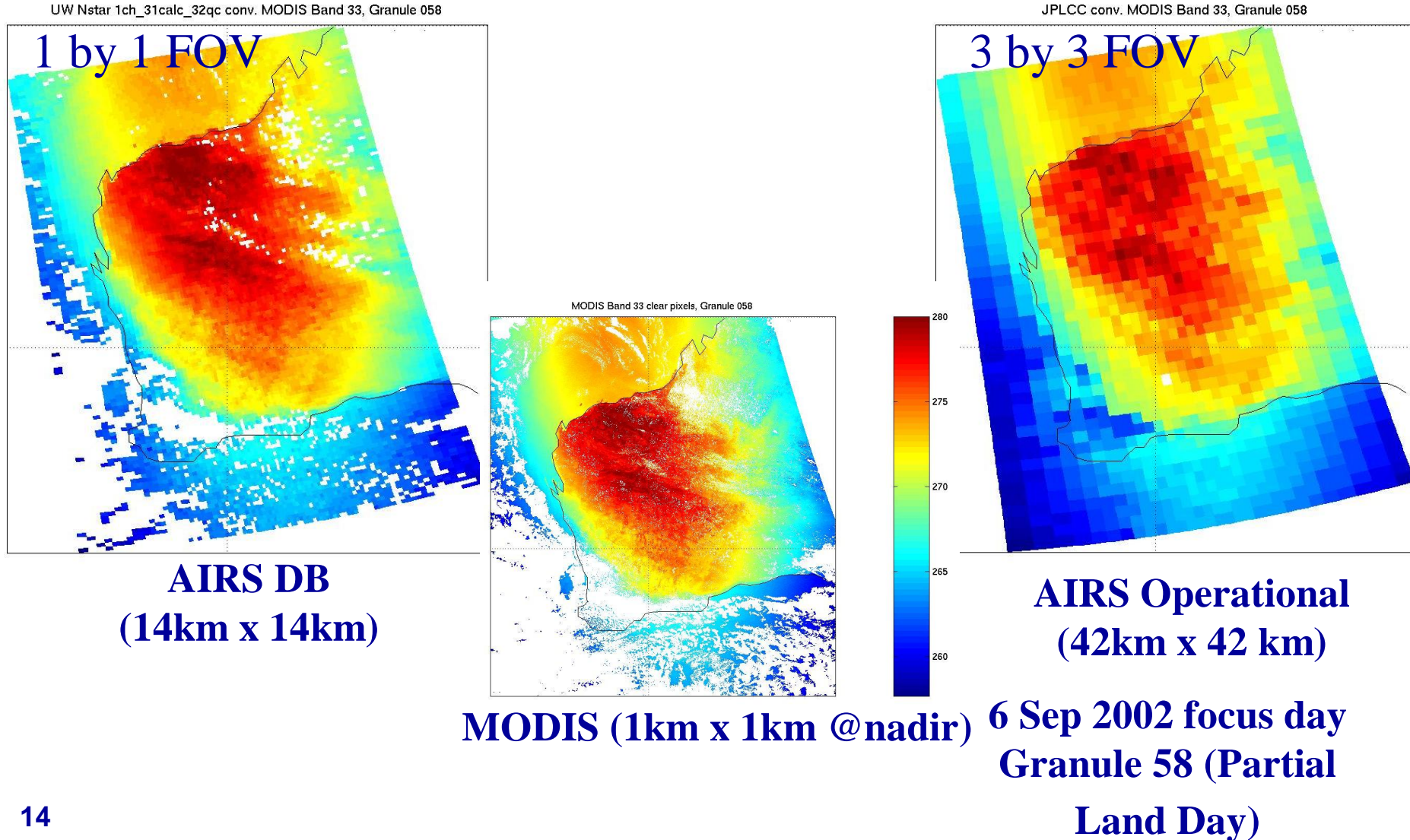


**AIRS Operational
(42km x 42 km)**



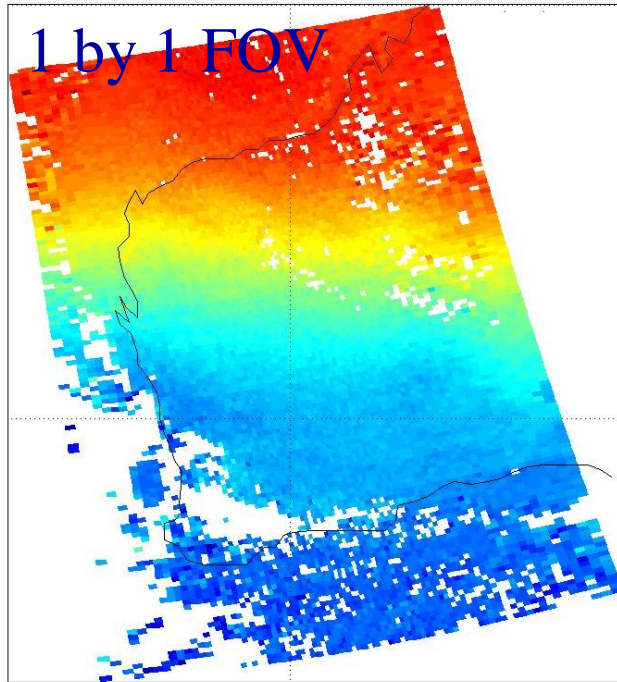
**6 Sep 2002 focus day
Granule 58 (Partial
Land Day)**

AIRS Operational and Direct Broadcast **Value Added** “Cloud Clearing” Brightness Temperature Comparison MODIS Band 33 (13.3 Micron)



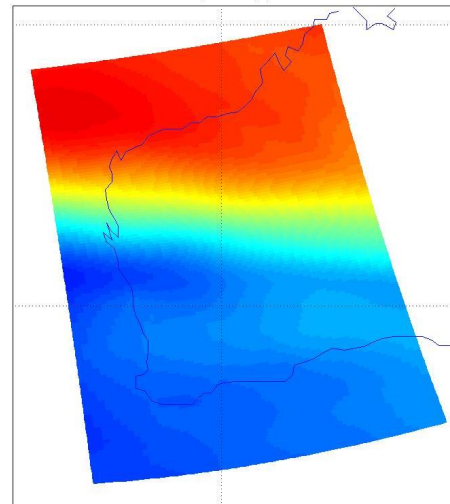
AIRS Operational and Direct Broadcast **Value Added** “Cloud Clearing” Retrieval Comparison 500 mb Temperature

AIRS.2002.09.06.058.atm_prof_rtv_npc30_1ch_31calc_32qc.img
retrived temperture (K) at 496.63 mbar



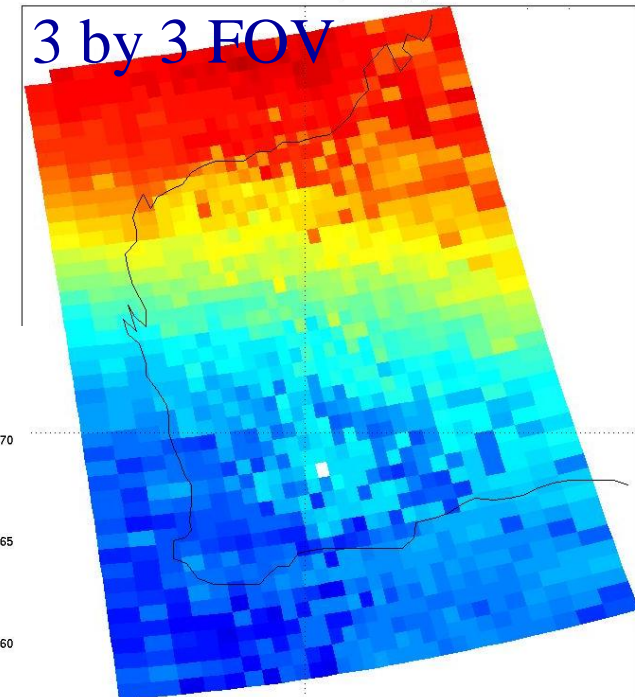
**AIRS DB
(14km x 14km)**

ECMWF.2002.09.06.T06Z.uad_GrbF00.A02292062954
ECMWF temperature (K) at 496.63 mbar



ECMWF (110km x 110km)

AIRS.2002.09.06.058.L2.RetStd.v3.5.0.0.Test3_5_0.T04056195913.hdf
Granule058 retrived temperature (K) at 500 mbar



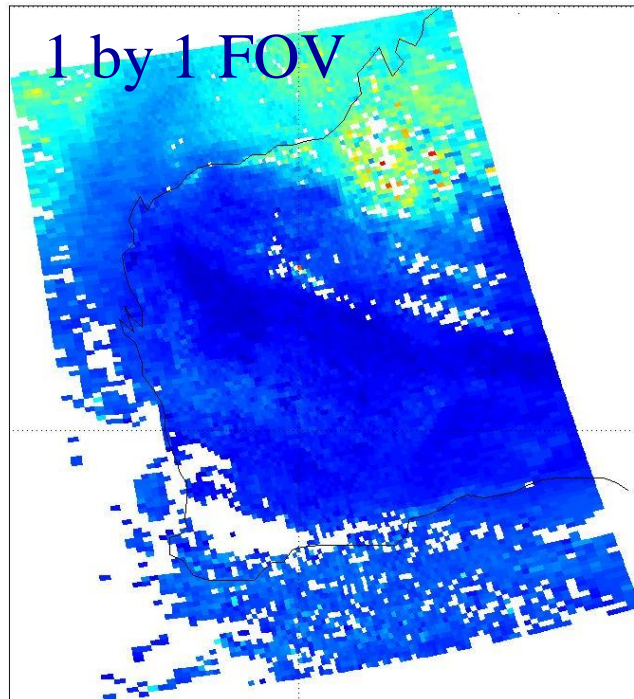
**AIRS Operational
(42km x 42 km)**

**6 Sep 2002 focus day
Granule 58 (Partial
Land Day)**

AIRS Operational and Direct Broadcast **Value Added** “Cloud Clearing” Retrieval Comparison

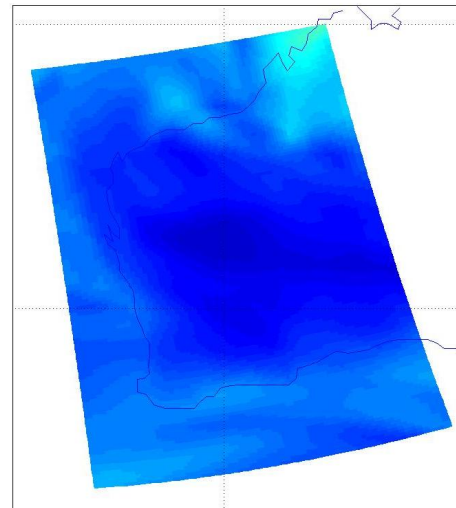
Total Precipitable Water

AIRS.2002.09.06.058.atm_prof_rtv_npc30_1ch_31calc_32qc.img
retrived T.P.W



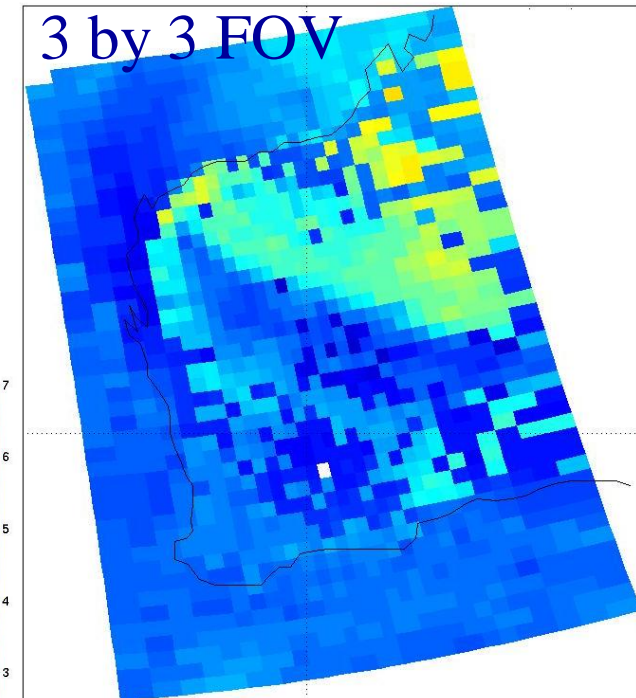
**AIRS DB
(14km x 14km)**

ECMWF.2002.09.06.T06Z.uad_GrbF00.A02292062954
T.P.W.



ECMWF (110km x 110km)

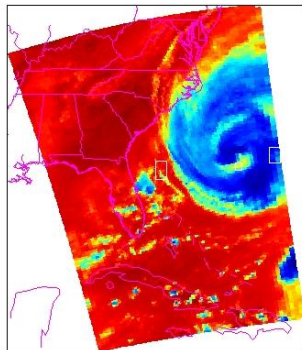
AIRS.2002.09.06.058.L2.RetStd.v3.5.0.0.Test3_5_0.T04056195913.hdf
Granule058 T.P.W



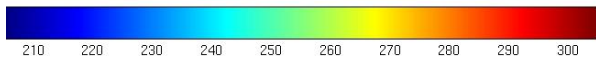
**AIRS Operational
(42km x 42 km)**

**6 Sep 2002 focus day
Granule 58 (Partial
Land Day)**

Hurricane Isabel AIRS Brightness Temperature, Cloud Mask, & Cloud- Cleared Estimates

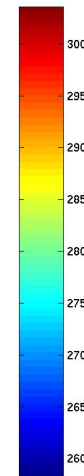
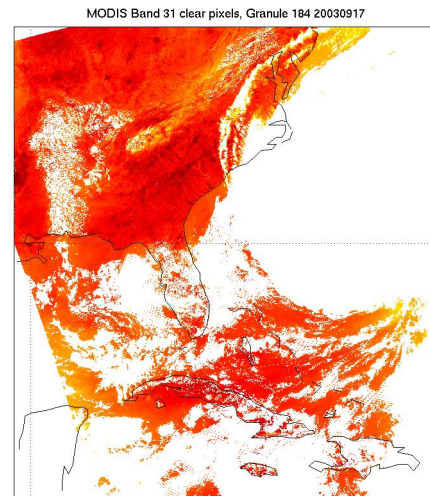
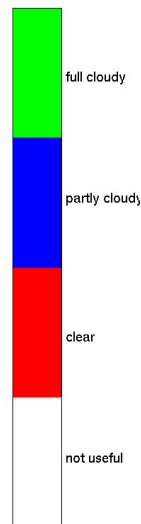
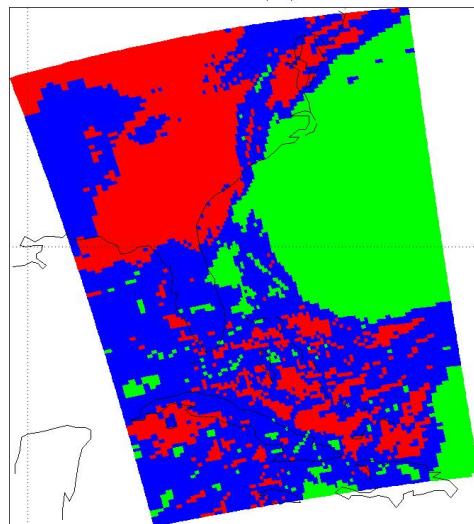


Brightness Temp.



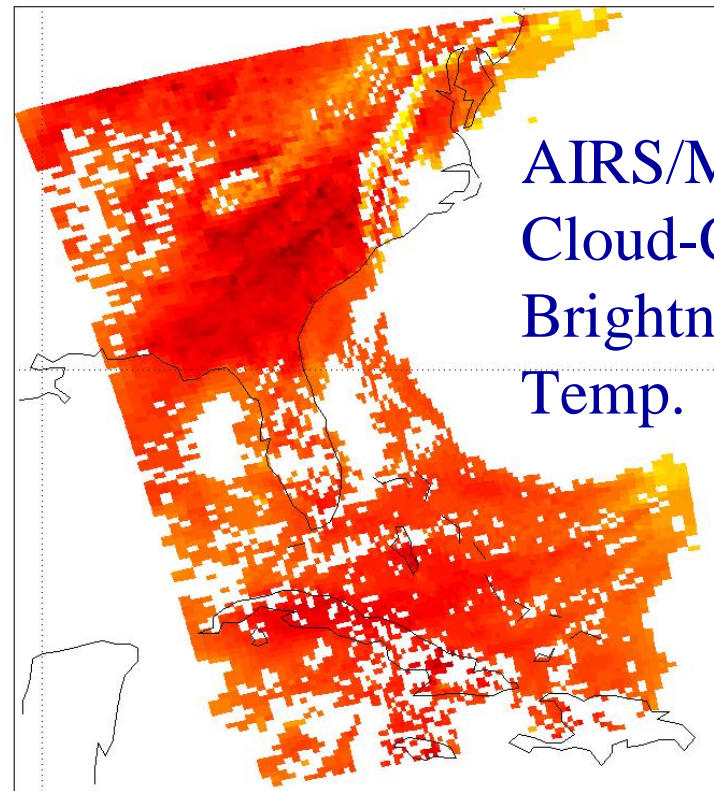
Isabel airs cloudmask (184) 20030917

AIRS
Cloud
Mask



MODIS
Clear
Brightness
Temp.

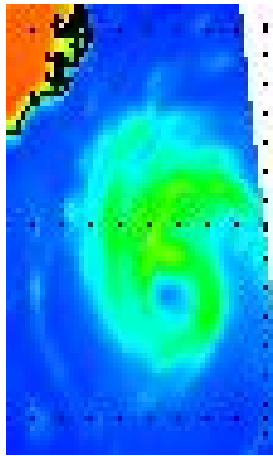
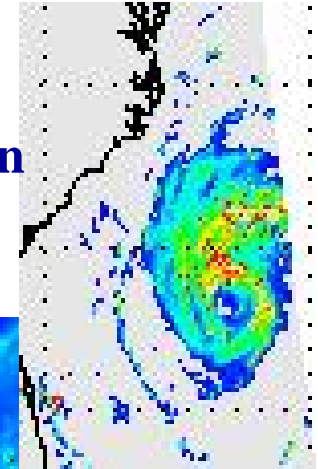
UW Nstar v2_Nov30 conv. MODIS Band 31, Granule 184 20030917



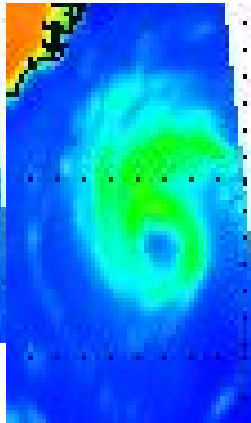
AIRS/MODIS
Cloud-Cleared
Brightness
Temp.

Hurricane Isabel AMSR-E Brightness Temperature & Precipitation Estimates

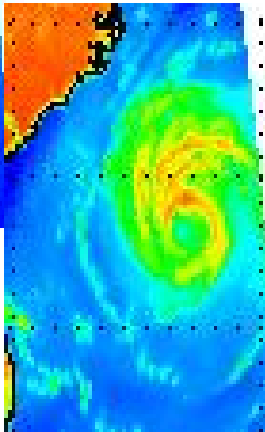
Precipitation



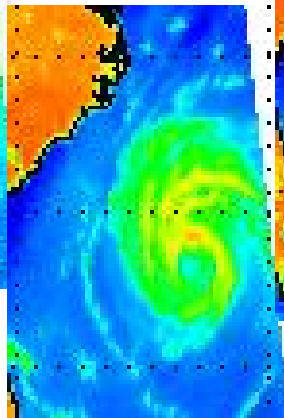
10H



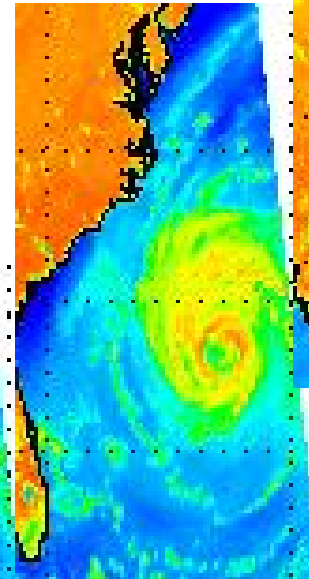
10V



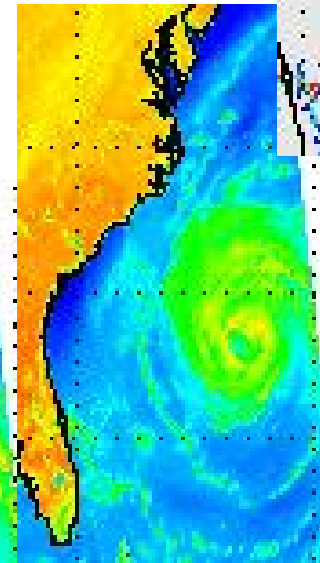
18H



18V



36H



36V

International TOVS Study Conference

May 25-31, 2005

Beijing, China

Pre-meeting Workshop will provide theoretical and hands-on introduction to MODIS, AIRS, AMSU, and AMSR-E applications

Meeting will discuss EOS DB software/applications, and preparations for NPP/NPOESS

URL:
cimss.ssec.wisc.edu/itwg

QuickTime™ and a
TIFF (Uncompressed) decompressor
are needed to see this picture.

International EOS/NPP Direct Broadcast Meeting

October 3-6, 2005

Benevento, Italy

1. Status of current and future satellite systems (EOS, NPP, NPOESS)

2. Processing Software and Science Applications

3. Receiving System Technology

URL:

dbmeeting.gsfc.nasa.gov

QuickTime™ and a
TIFF (LZW) decompressor
are needed to see this picture.