McIDAS-X Software Development and Demonstration

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2 June 2009

PDA Animated Weather (PAW) Status
by
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Overview

- McIDAS-X 2008, 2009.1
- McIDAS-XRD 2008, 2009.1
- Software Development and Plans in 2009
- PAW Status

McIDAS-X 2008

- MTSAT updates
- MSG corrections
- Metop FRAC Level 1b server
- GeoTIFF write server improvements
- GOES-R ABI simulated data
- OpenMTP server
- MODIS CREF product server

MTSAT Updates

- Navigation module
  - Update to account for variable subpoint
  - Corrected transformation for points near limb
  - Satellite, sun, and relative angles available for ANGLES program
- List of bands can be input for IMGCOPY

MSG Updates

- Navigation module
  - Update to account for variable subpoint
  - Corrected transformation for points near limb
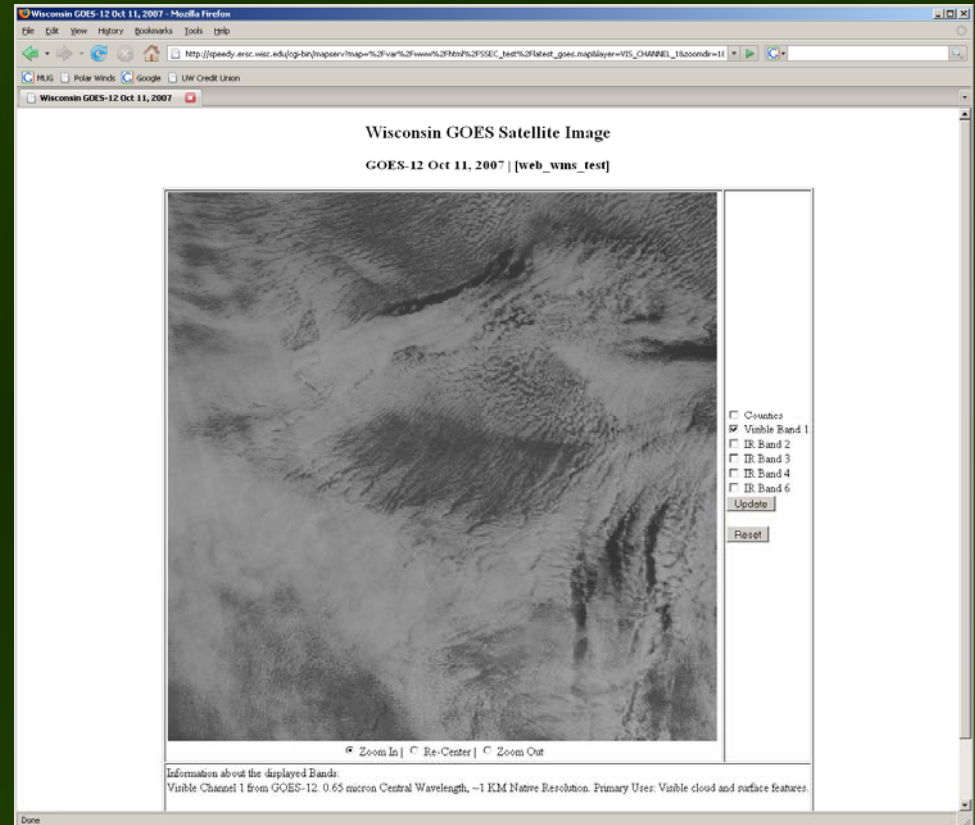
Metop FRAC
(Global full resolution)

2 0002 METOP-A   28 MAY 09148 100708 03768 00626 01.00   McIDAS
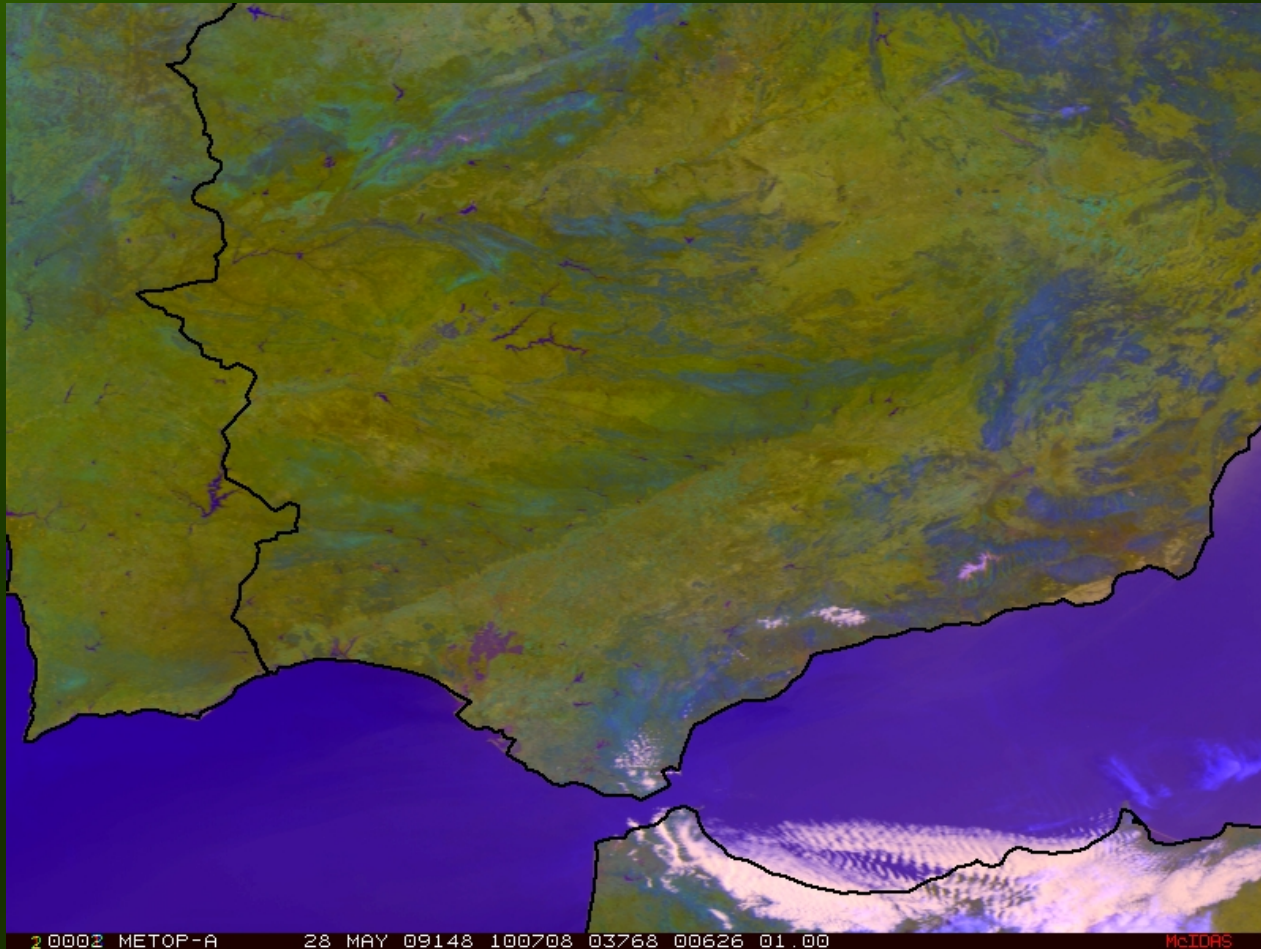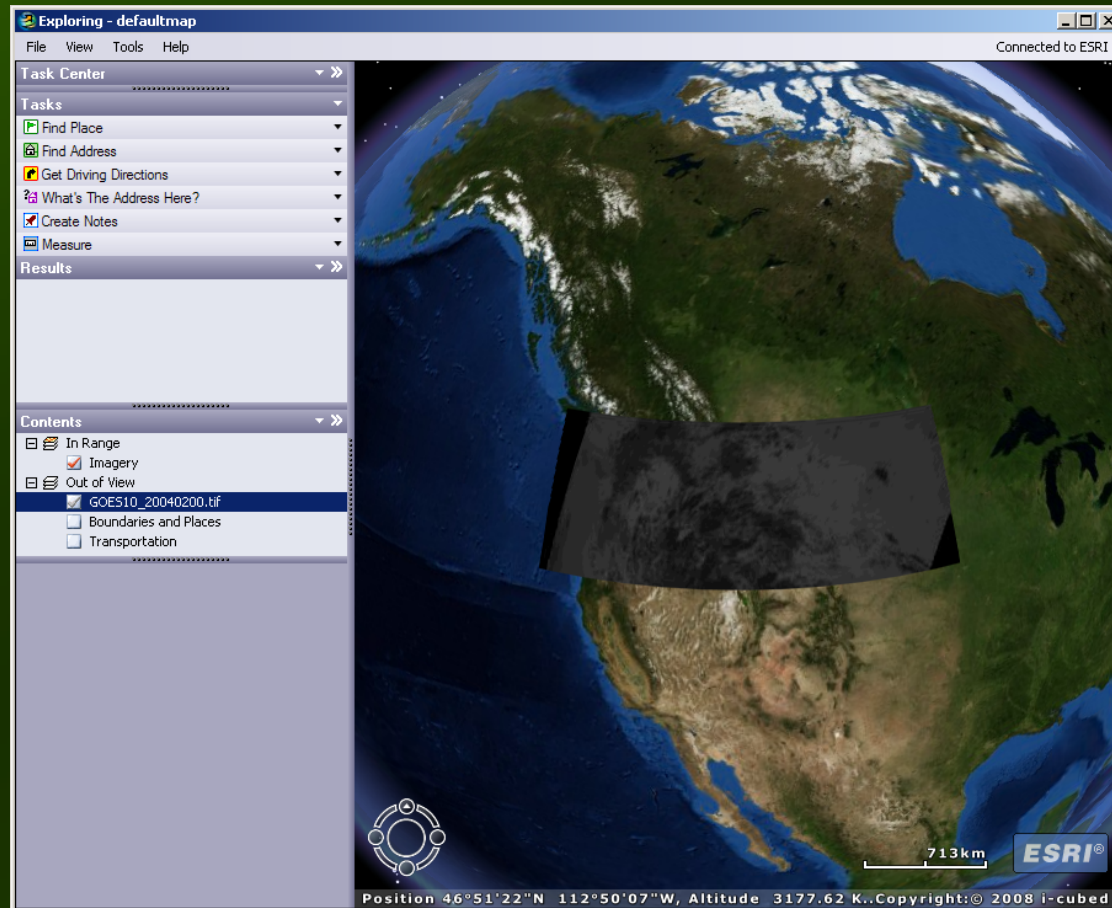
3-color combination

GeoTIFF Server Update

- Added and corrected GeoTIFF tags used by GIS packages
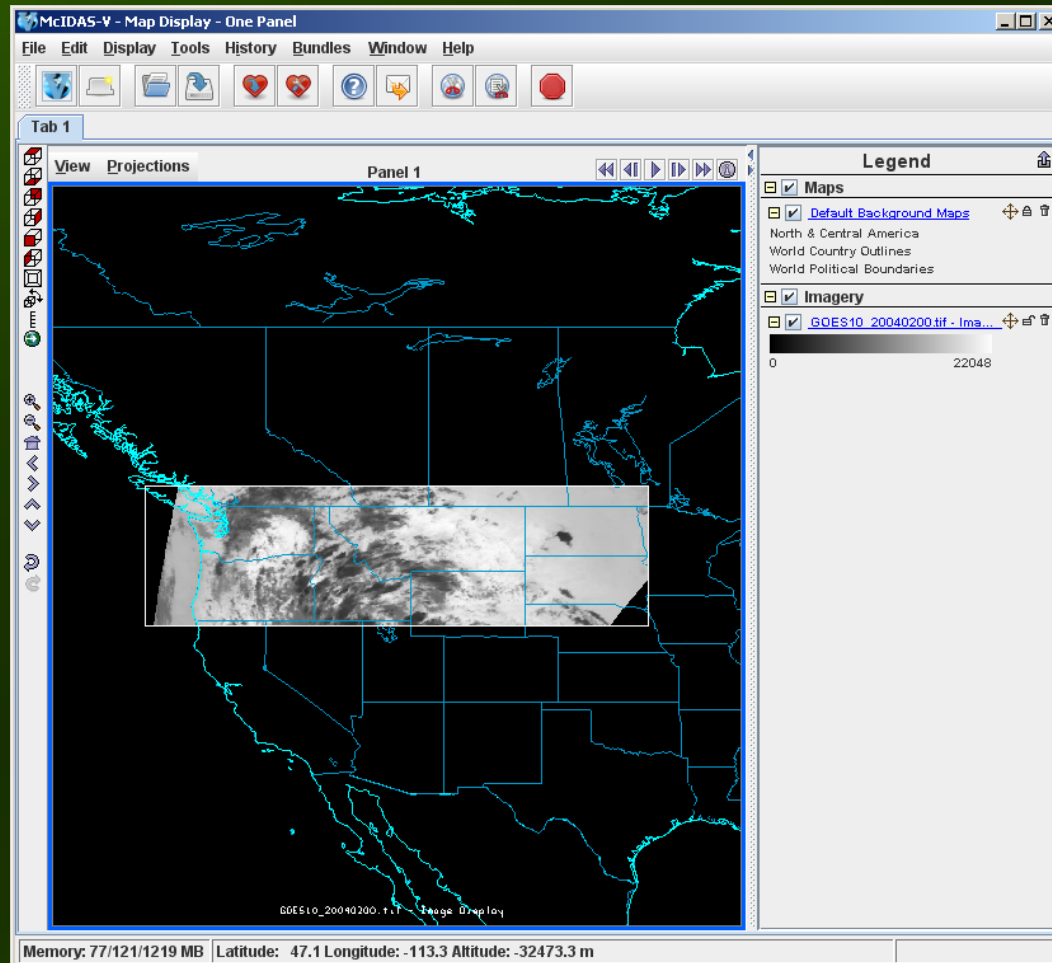- Updated to use WGS 84

Web Map Service
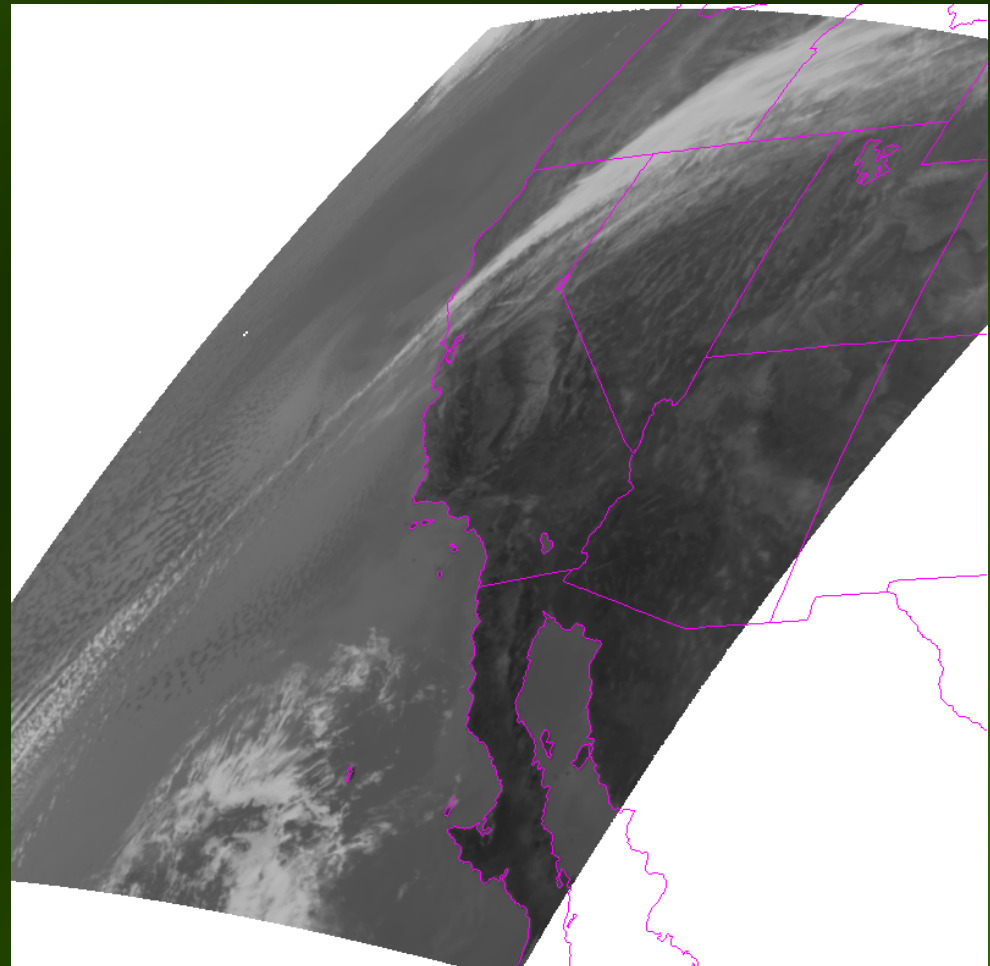
GeoTIFF update
(ArcGIS)
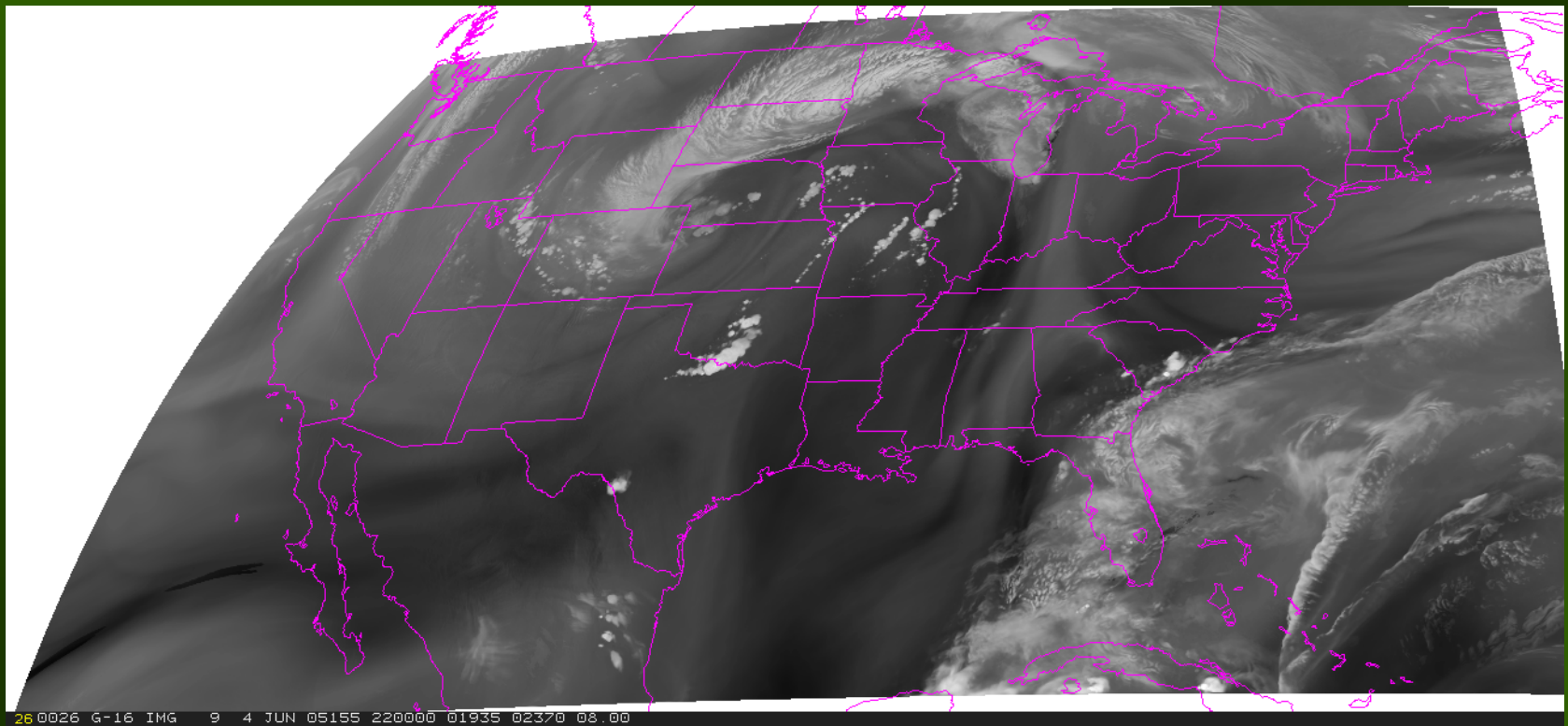
GeoTIFF update
(McIDAS-V)

GOES-R

- Advanced Baseline Imager (ABI) navigation and calibration modules

- Being used with simulated data (this example uses MODIS)

25 0025 G-16 IMG 14 26 OCT 07299 185500 02825 02805 04.00

GOES-R

26 0026 G-16 IMG   9   4 JUN 05155 220000 01935 02370 08.00

Simulated water vapor channel (6.95 µm) a from high resolution model

OpenMTP Server

- OpenMTP (Meteosat Transition Programme) is a EUMETSAT satellite image archive format
  - Server works with Meteosat-7 data that the SSEC Data Center receives from NOAA
  - Server needs some work for use with data ordered from EUMETSAT archive
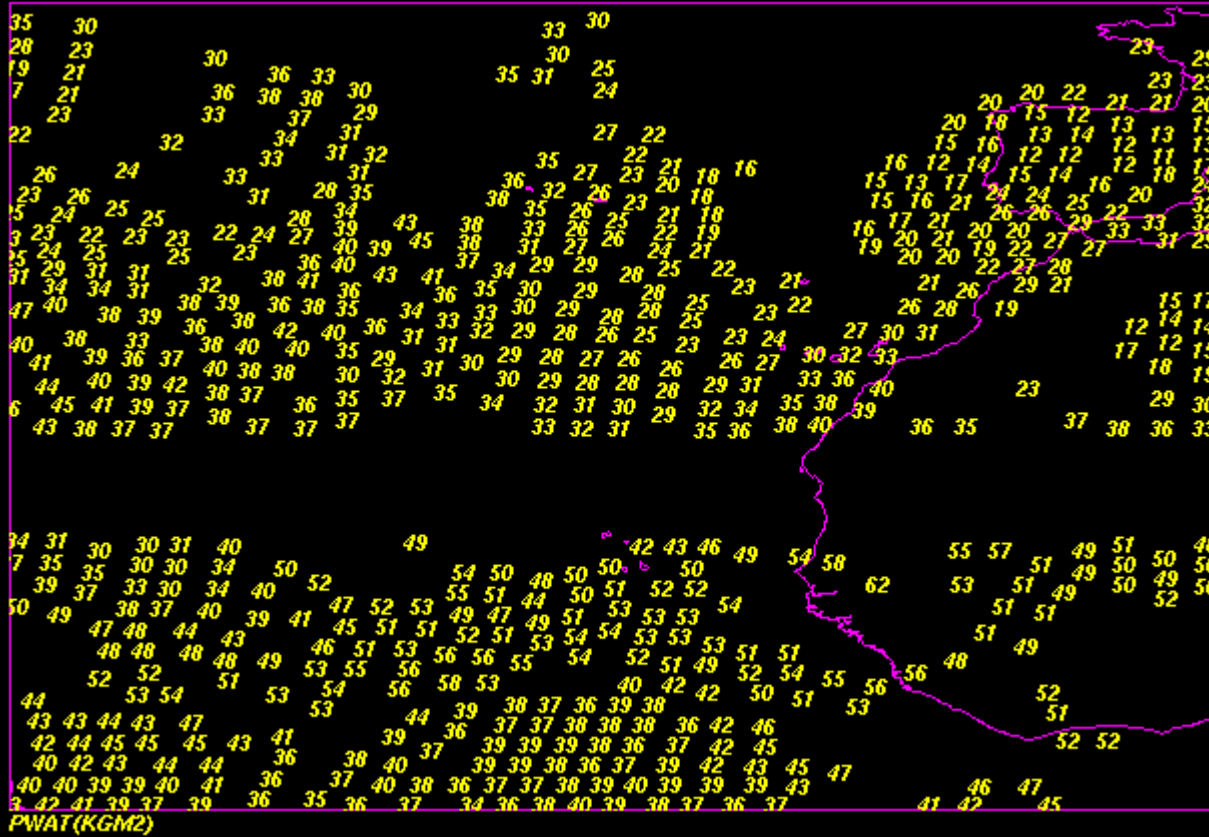
MODIS CREF server
(Corrected reflectance)

- The corrected reflectance product is an atmospheric correction

- Does not remove aerosols

- Results in better true color composites

McIDAS-X 2008

- METAR cloud coverage definition
- BUFR server
- NOAAPORT Grid additions
- Tangent cone projection fixed

METAR Cloud Cover

SFC SKY[C12] at 14 UTC on 29 May 2009

METAR value of FEW is defined as 5 in MD file

BUFR Server

NOAAPORT Grid Additions

```
DSINFO G RTGRIB2

         Dataset Names of Type: GRID  in Group: RTGRIB2

Name            NumPos   Content
------------    ------   ----------------------------------------
ALL             99999    All grids
DGEX-AKPS       99999    DGEX - Limited Domain Alaska/PS 12 km spacing
DGEX-ALL        99999    DGEX - All Downscaled GFS with ETA Extension grids
DGEX-USLC       99999    DGEX - Limited Domain CONUS/LC 12 km spacing
GFS-AKPS2       99999    GFS - Alaska/PS; unknown resolution
GFS-AKPSHRES    99999    GFS - Alaska/PS; high resolution
GFS-ALL         99999    GFS - All Global Forecast System grids
GFS-GLME0P5D    99999    GFS - Global/Merc; 0.5 deg resolution (.0p5deg files)
GFS-GLME1P0D    99999    GFS - Global/Merc; 1.0 deg resolution (.1p0deg files)
GFS-GLME2P5D    99999    GFS - Global/Merc; 2.5 deg resolution (.2p5deg files)
GFS-NHPS        99999    GFS - N Hemi/PS; forecast and analysis
GFS-PRME        99999    GFS - Puerto Rico/Merc
GFS-USLC2       99999    GFS - CONUS/LC; double resolution
GFS-USLCAWI4    99999    GFS - CONUS/LC; AWIPS 16X resolution
GFS-USPS2       99999    GFS - CONUS/PS; double resolution
GLW-UNKNME      99999    Great Lakes Wave Model; Unknown Mercator resolution
LMP-ALL         99999    LAMP - All Local AWIPS MOS Program grids
LMP-USLCAWI4    99999    LAMP - CONUS/LC; AWIPS 16X resolution
MGWM-AKME       99999    MGWM - Global Multi-Grid Wave Model - Alaska Coastline M
MGWM-ALL        99999    MGWM - All Global Multi-Grid Wave Model files
MGWM-ECGMME     99999    MGWM - Global Multi-Grid Wave Model - US East and Gulf C
MGWM-EPME       99999    MGWM - Global Multi-Grid Wave Model - Eastern Pacific Me
MGWM-GLME       99999    MGWM - Global Multi-Grid Wave Model - Global Mercator
MGWM-NPME       99999    MGWM - Global Multi-Grid Wave Model - North Pacific Merc
MGWM-WAME       99999    MGWM - Global Multi-Grid Wave Model - Western Atlantic M
MGWM-WCHIME     99999    MGWM - Global Multi-Grid Wave Model - US West Coast and
MGWM-WCME       99999    MGWM - Global Multi-Grid Wave Model - US West Coast Merc
NAM-AKPS45KM    99999    NAM - Alaska/PS; AWIPS (.awipak files)
NAM-AKPSAWI4    99999    NAM - Alaska/PS; AWIPS quad resolution
NAM-ALL         99999    NAM - All North American Mesoscale numerical model grids
NAM-USLC2       99999    NAM - CONUS/LC; double resolution
NAM-USLCAW12    99999    NAM - CONUS/LC; AWIPS 12 km (.awip218 and .awip12 files)
NAM-USLCAW20    99999    NAM - CONUS/LC; AWIPS 20 km (.awip20 and .icwf20 files)
NAM-USLCAW40    99999    NAM - CONUS/LC; AWIPS 40 km (.awip3d files)
NAM-USPS90KM    99999    NAM - CONUS/PS; 90 km spacing (.grbgrd files)
NDF-AKPS        99999    NDFD - Alaska Polar Stereographic
NDF-ALL         99999    NDFD - All National Digital Forecast Database grids
NDF-USLCAWI4    99999    NDFD - CONUS/LC; AWIPS 16X resolution
NMM-ALL         99999    NMM - All Non-hydrostatic Mesoscale Model grids
NMM-USLCAW40    99999    NMM - CONUS/LC; AWIPS 40 km spacing (.icwf3d files)
NMM-USLCAWI4    99999    NMM - CONUS/LC; AWIPS 16X resolution
PSS-AKPS        99999    PSS - Alaska Polar Stereographic
PSS-USLCAWI4    99999    PSS - CONUS/LC; AWIPS 16X resolution
RTM-AKPS        99999    RTMA - Alaska Polar Stereographic
RTM-ALL         99999    RTMA - All Real-Time Mesoscale Analyses grids
RTM-USLCAWI4    99999    RTMA - CONUS/LC; AWIPS 5 km
RUC-ALL         99999    RUC - All Rapid Update Cycle model grids
RUC-USLC13KM    99999    RUC - CONUS/LC; 13 km resolution
RUC-USLC20KM    99999    RUC - CONUS/LC; 20 km resolution (.sgrib20 files)
RUC-USLC40KM    99999    RUC - CONUS/LC; 40 km resolution (.sgrib files)
RUC-USLC80KM    99999    RUC - CONUS/LC; 80 km resolution
SREF-ALL        99999    SREF - All Short Range Ensemble Forecast model grids
SREF-EPME       99999    SREF - Eastern North Pacific Region
SREF-USLC2      99999    SREF - CONUS/LC; double resolution
SREF-USME       99999    SREF - US Mercator
```

Tangent Cone Projection Fixed

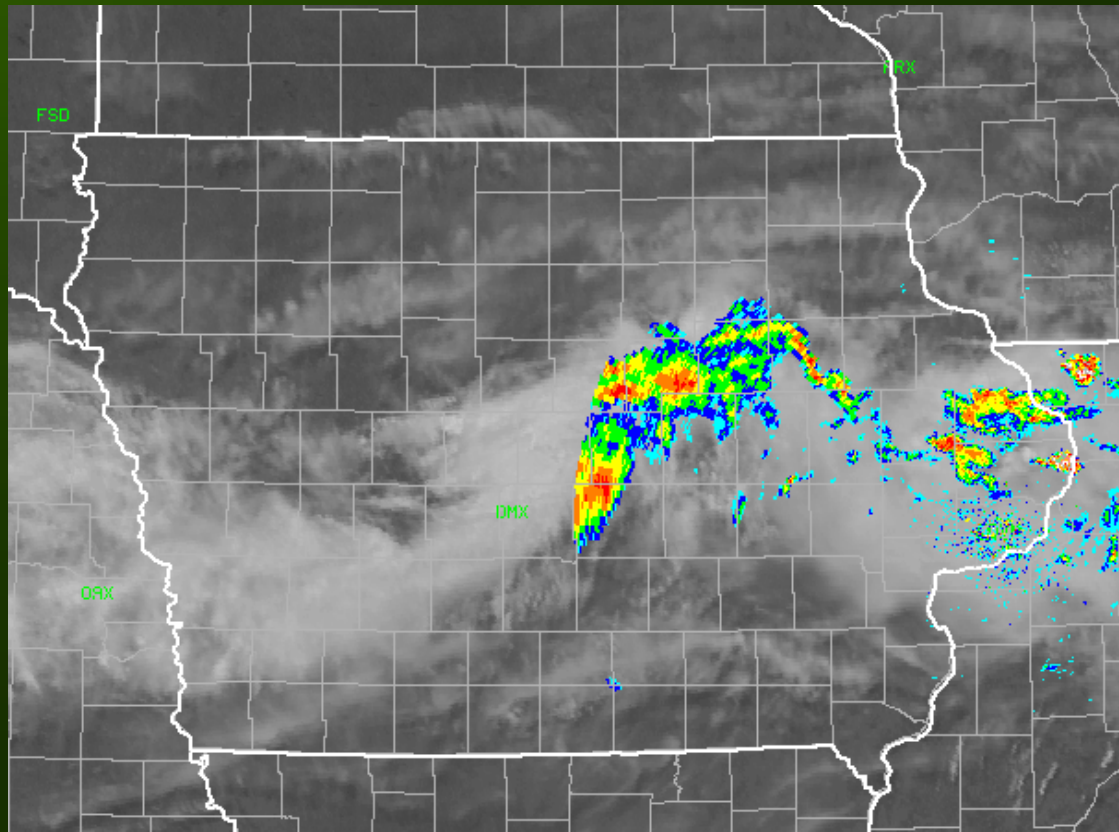- Corrected for use in Southern Hemisphere
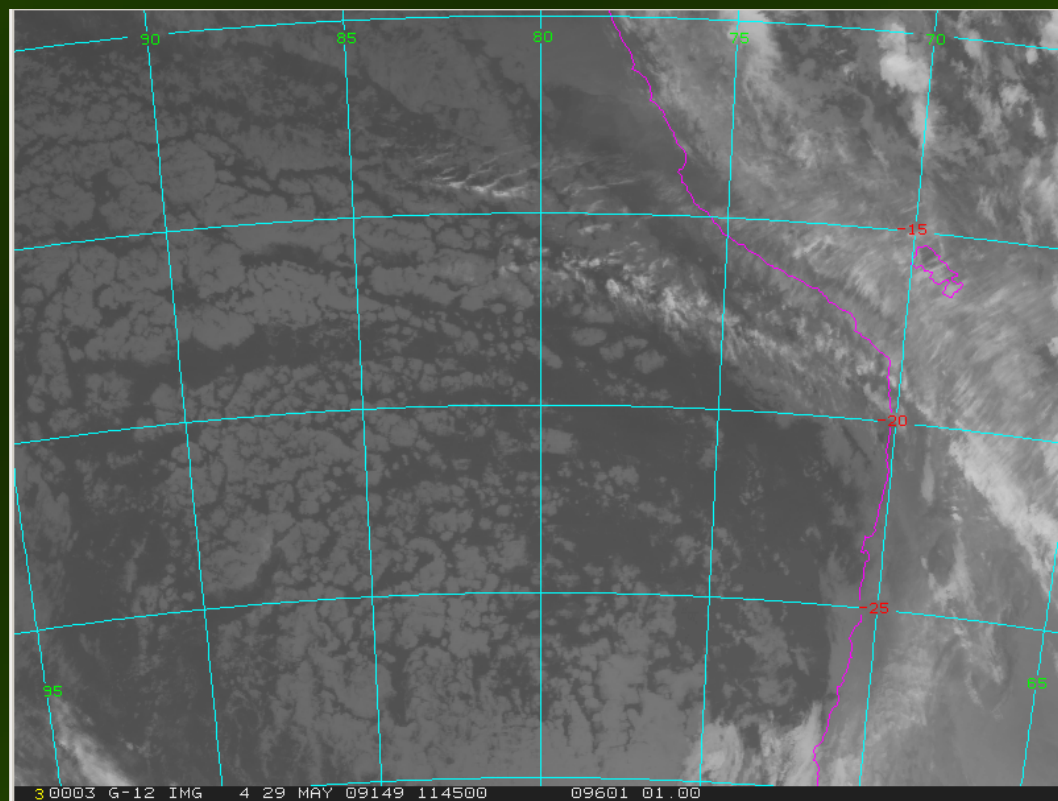
McIDAS-X 2009.1

- GOES-13 calibration coefficients updated
- NOAA-19 updates
- MOSRPT defaults to GFS
- POES server returns navigation compatible with McIDAS-V (LALO navigation)

McIDAS-XRD 2009.1

- IMGGRA
- MAP2TEXT
- MCAWIPS
- AMRR server
- MODL server
- BEEP

# IMGGRA
(Display image as a graphic)
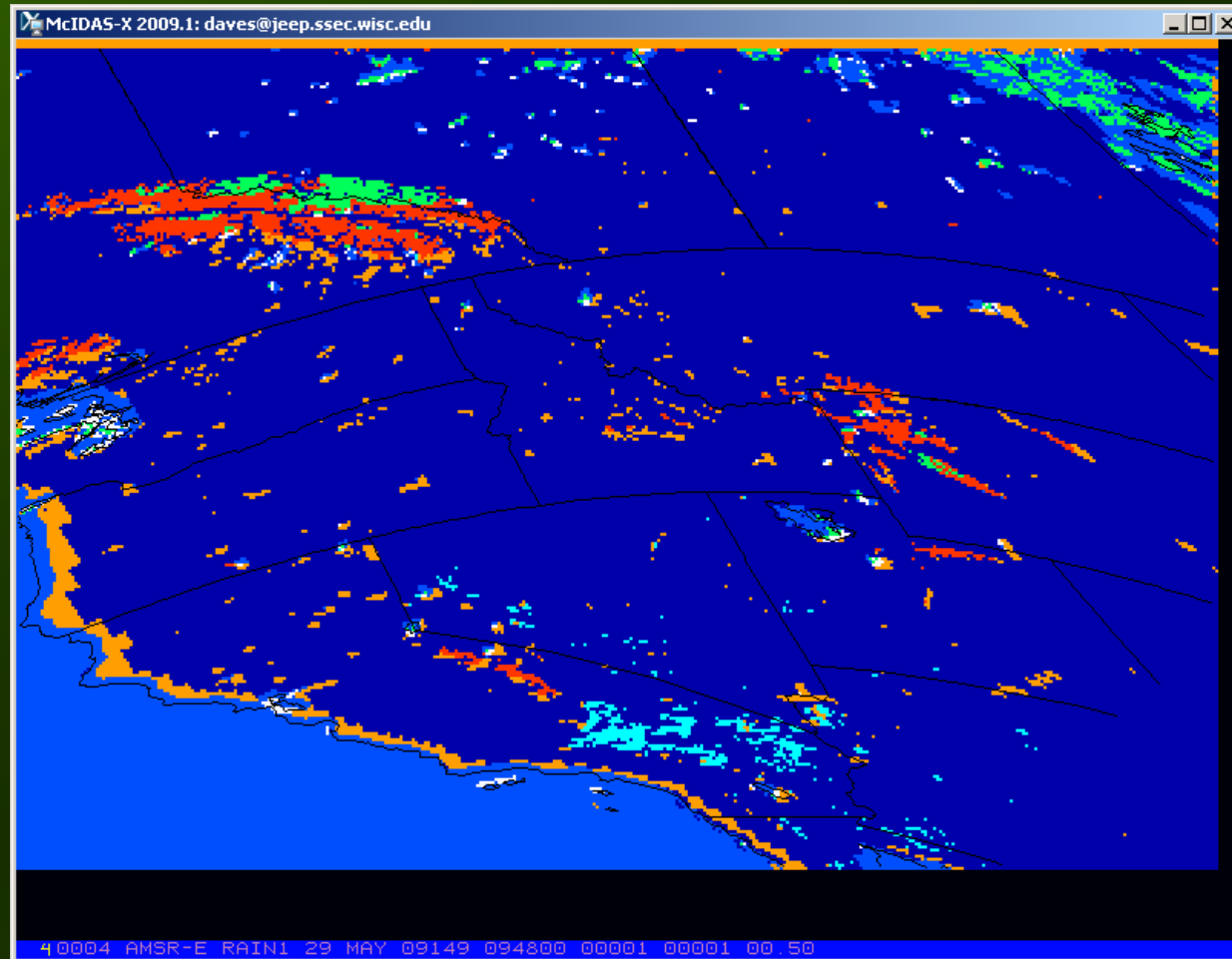

Radar graphic over visible image

MAP2TEXT

- Convert a McIDAS-X map file into a text file of a list of latitude/longitude segments
- This file can be edited and then converted back to a map file using MAKEMAP

MCAWIPS

- ADDE server writes out AWIPS-compatible netCDF files
- Products used throughout the NWS regions
- Capability first developed at MSFC
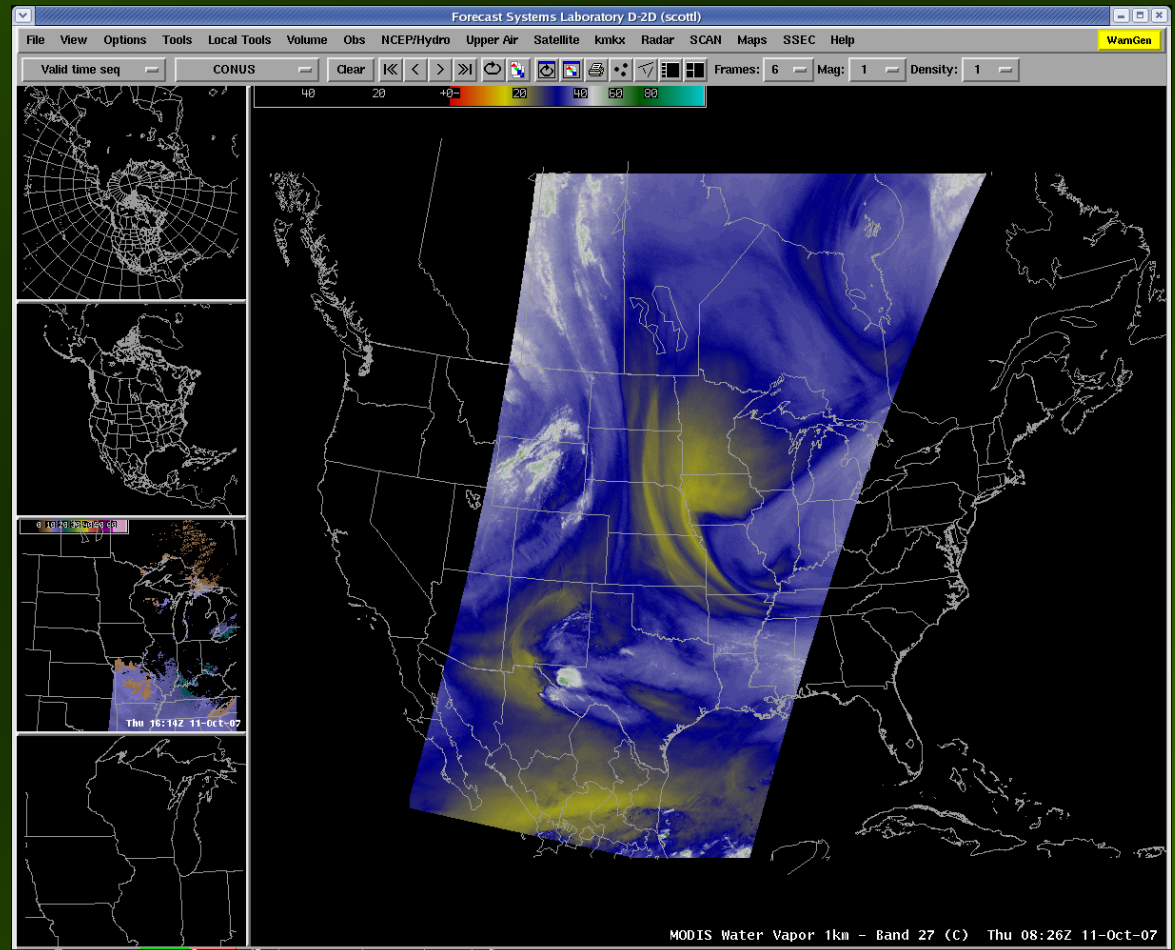
AMRR Server

AMSR-E Rainrate product

MODL Server
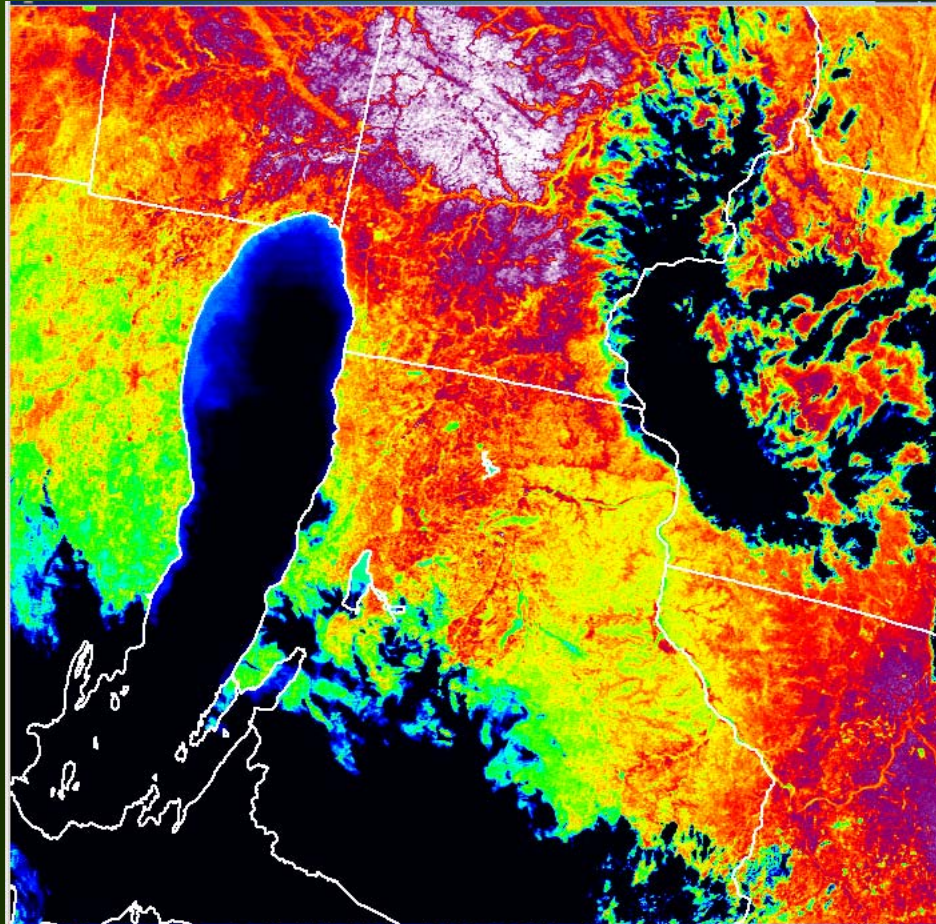
MODIS land surface temperature product

Software Plans for 2009

- IMGCOPY
  - Retain negative values when writing to netCDF file
  - Write McIDAS-V compatible netCDF files
- SNDSKEWT to work with GOES sounding retrieval files
- Ability to serve MSG HRIT files on AIX
- Replacement for IMGBOWTIE
- AVHRR Products from CLAVR-X (-XRD)

Bow tie correction
(correction for MODIS scanning)
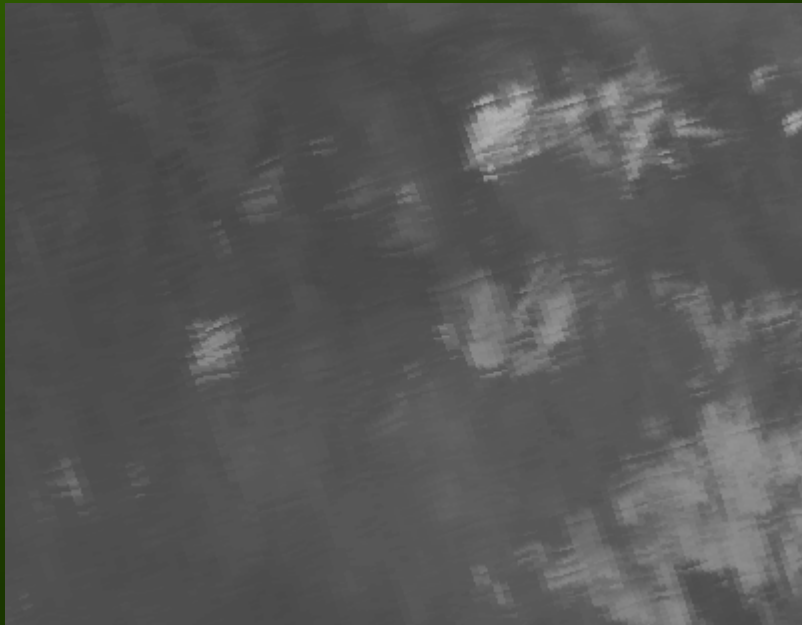
IMGREMAP
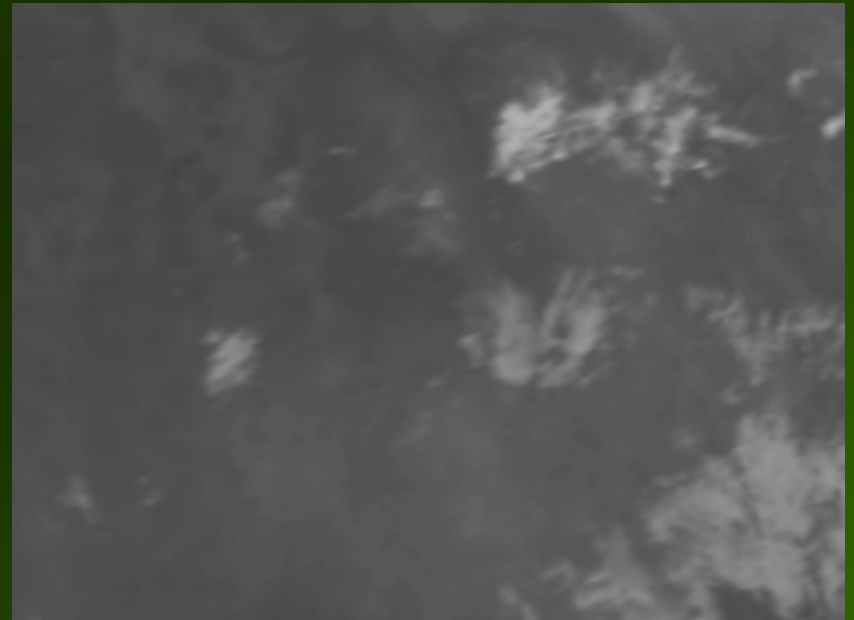
Bow tie corrected

AVHRR Products

- Purpose: ADDE servers were developed to access products from Clouds from AVHRR Extended (CLAVR-x) for eventual transfer into AWIPS.
    - To provide forecasters with high (1km) resolution data from polar orbiters to supplement current MODIS data.
    - To have a tool for quick display of CLAVR-x products

- What is available
    - OBSX: Calibrated and navigated reflectances and brightness temperatures
    - SSTX: Masked SST and skin temperature
    - CLDX: Cloud type, height, temperature, optical depth and effective radius
    - ASHX: Volcanic ash detection, mass loading, etc. (in development)

- Contact:
    - Russ Dengel
    - William Straka III

Visible and Cloud Type
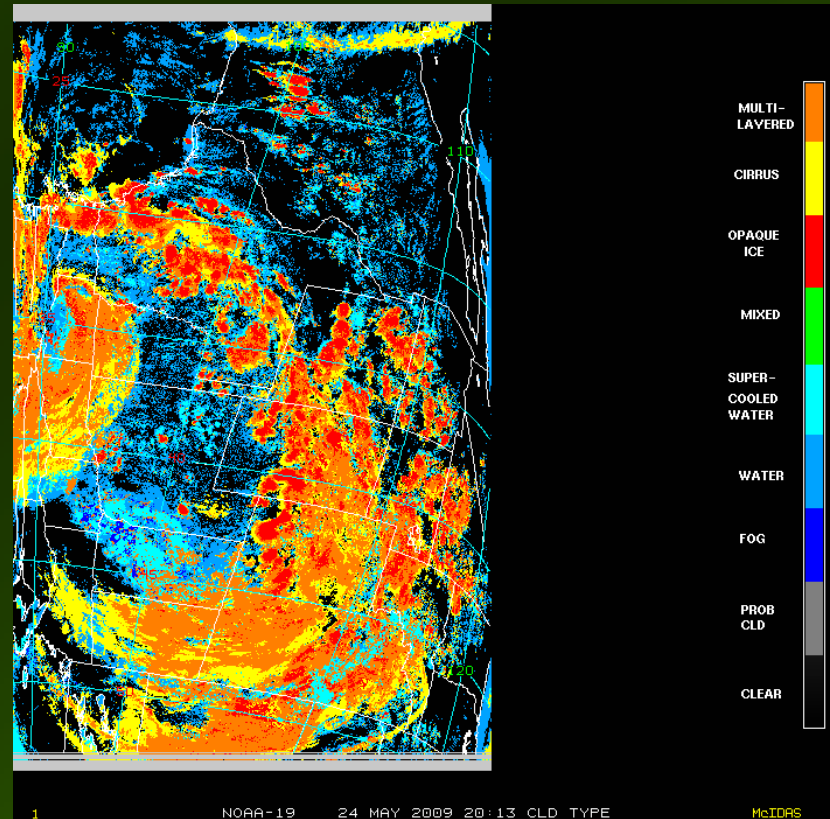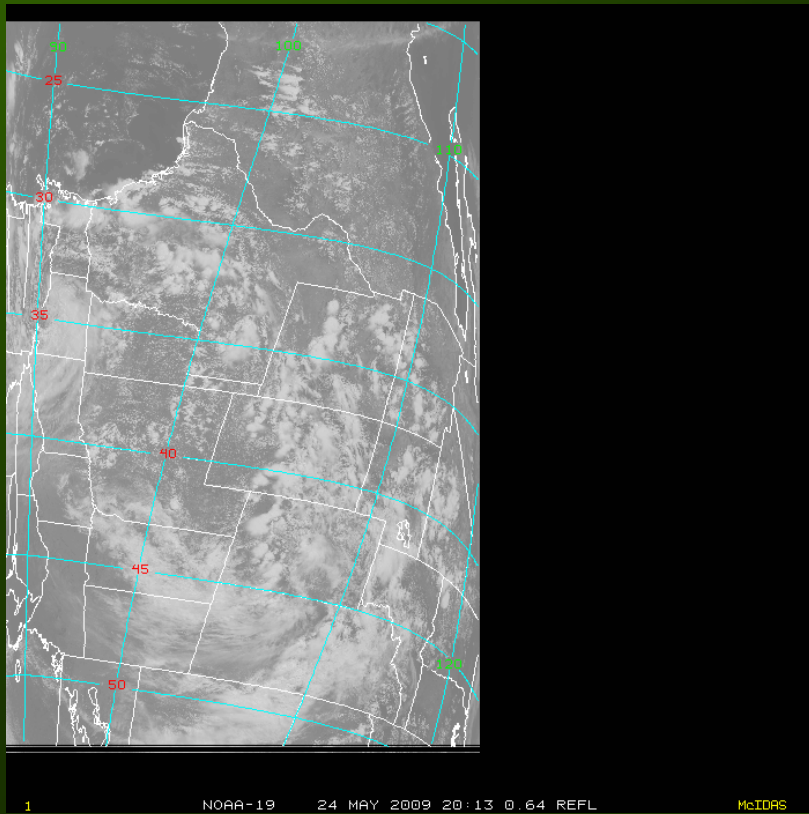
Cloud Height and Optical Depth
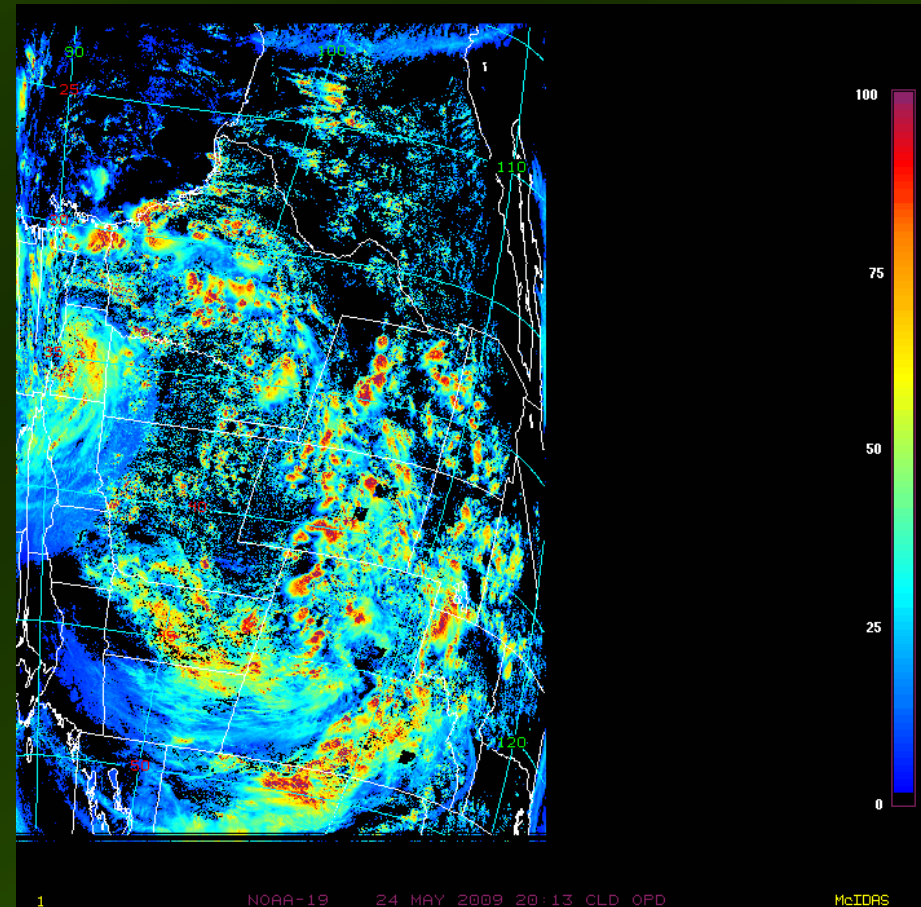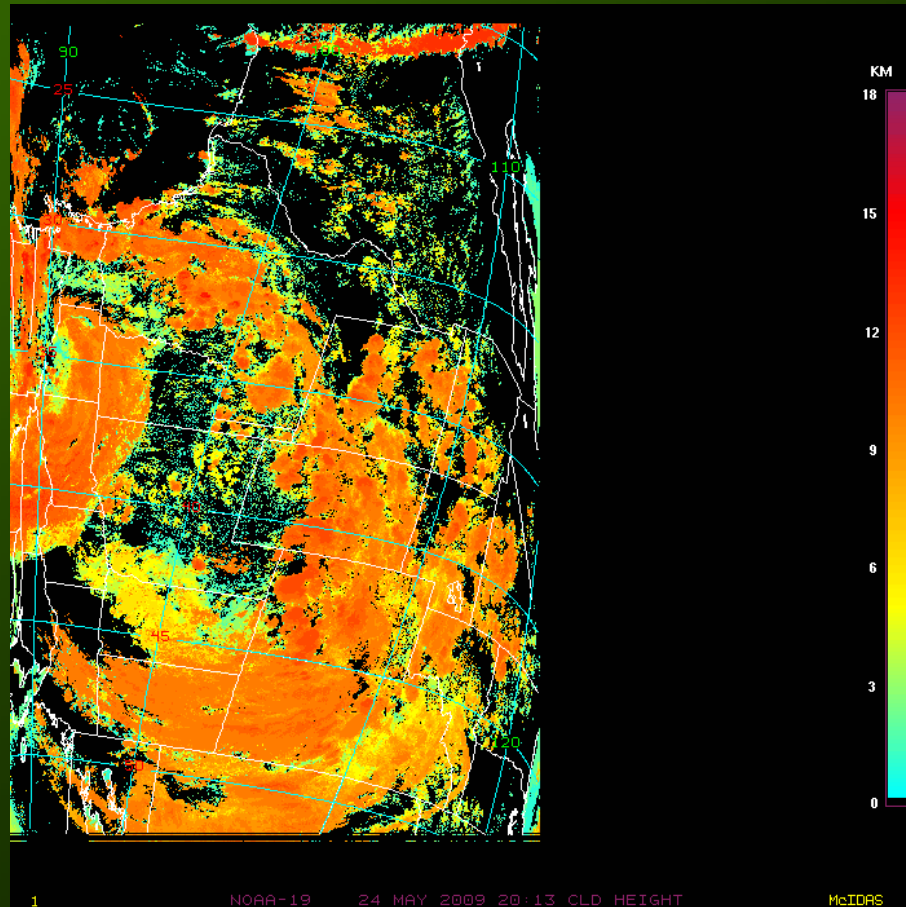
Volcanic Ash
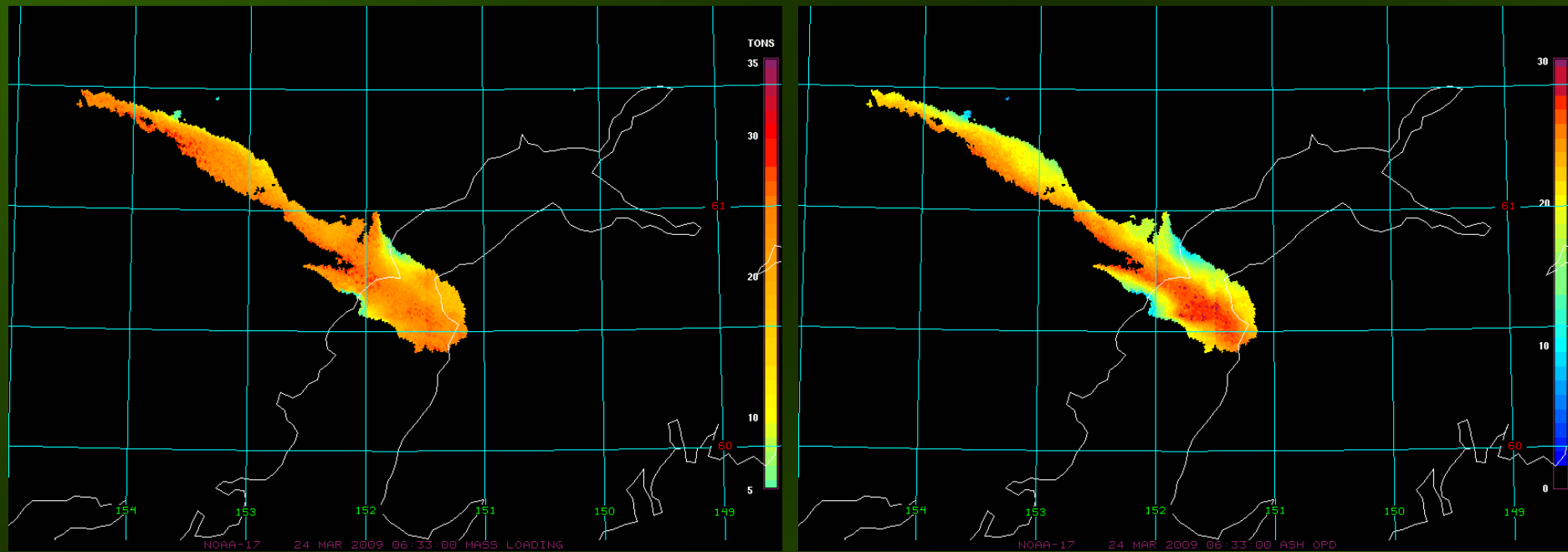
Redoubt, Alaska 24 March 2009

McIDAS-Lite and OpenADDE Status

- Neither has been updated in a couple years.
- A version of McIDAS-Lite continues to be included with the International MODIS/AIRS Processing Package (IMAPP) for visualizing MODIS products at Direct Broadcast reception sites.
- McIDAS-V replaces McIDAS-Lite
- OpenADDE will be phased out as new servers and data delivery methods are investigated as part of McIDAS-V.

PDA Animated Weather (PAW) Status

- 5,000,000 hits per month

- Google gadget available