

# MODIS Atmosphere Group Summary

- Summary of modifications and enhancements in collection 5
  - Impacts
- MODIS Atmosphere Web Site
- Software and Integration Schedule
- Data Use & IDS Investigations
- Future Directions
  - ATBDs
  - Validation Plan
- Open discussion
  - Access and use of atmosphere data products
  - Modeling users and interactions
  - Climate Data Records

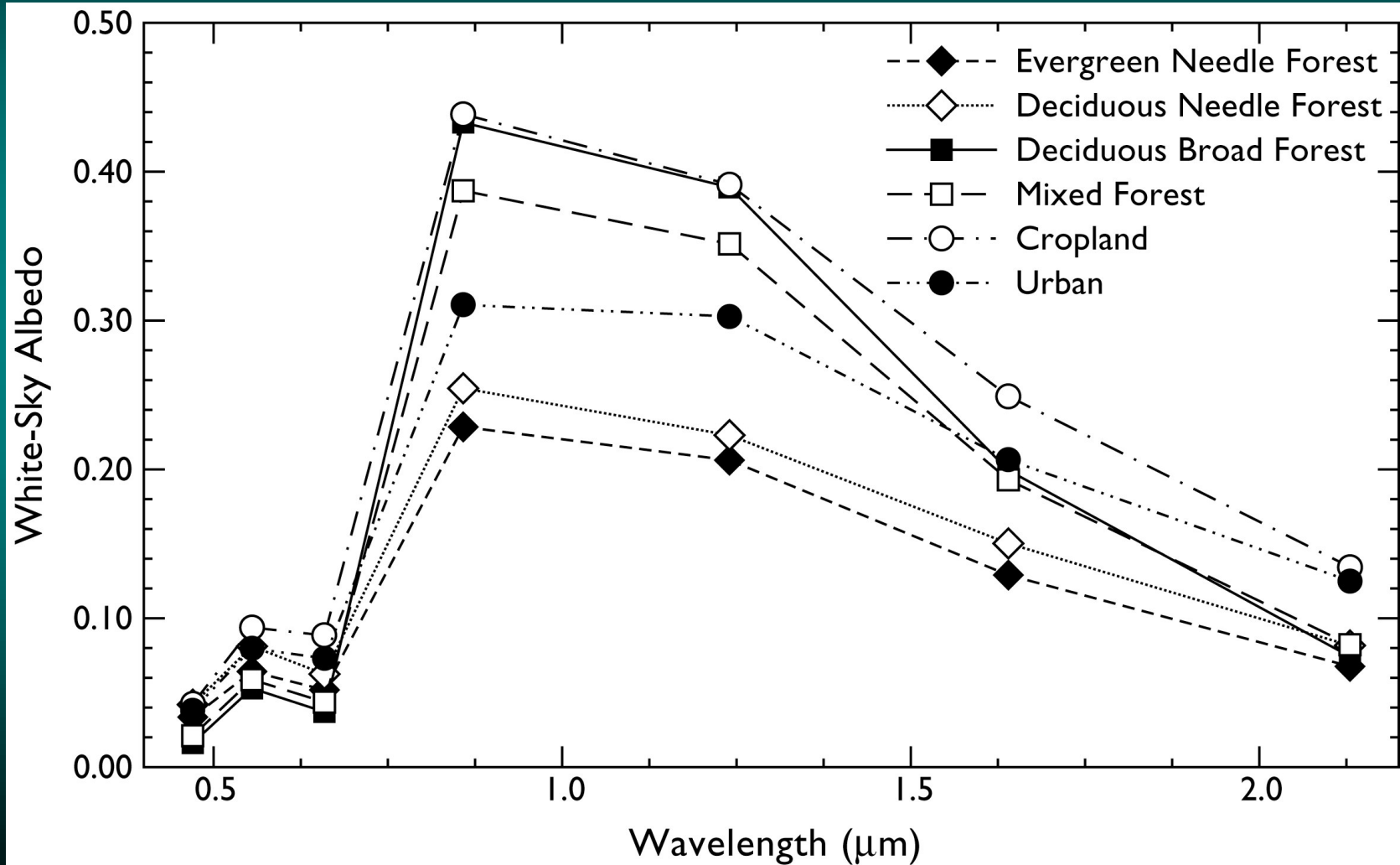


# Collection 5 Software Updates

- Calibration, characterization, and Level-1B
  - Destripping of detectors used as a preprocessor of all Wisconsin algorithms (cloud mask, cloud top properties, atmospheric profiles)
    - ✓ Recommended to incorporate into level-1b production
- Cloud mask
  - Extensive updates in the thermal infrared, including polar regions
  - Zonal cloud cover during daytime and nighttime much closer
- Cloud product
  - New global surface reflectance product (joint atmosphere/land initiative) used as ancillary input to cloud optical properties
  - Cloud top pressure improved for low clouds where algorithm switches between  $CO_2$  slicing and infrared window
  - Multi-layer cloud identification added
  - Uncertainty estimates for cloud optical thickness and effective radius

# Surface Albedo

Ecosystem (Friedl et al.) + MOD43 (Schaaf et al.) aggregation

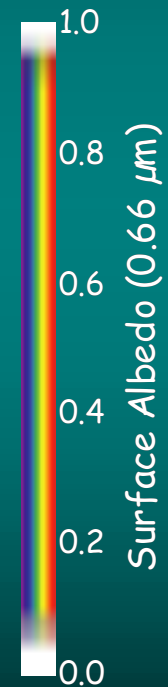
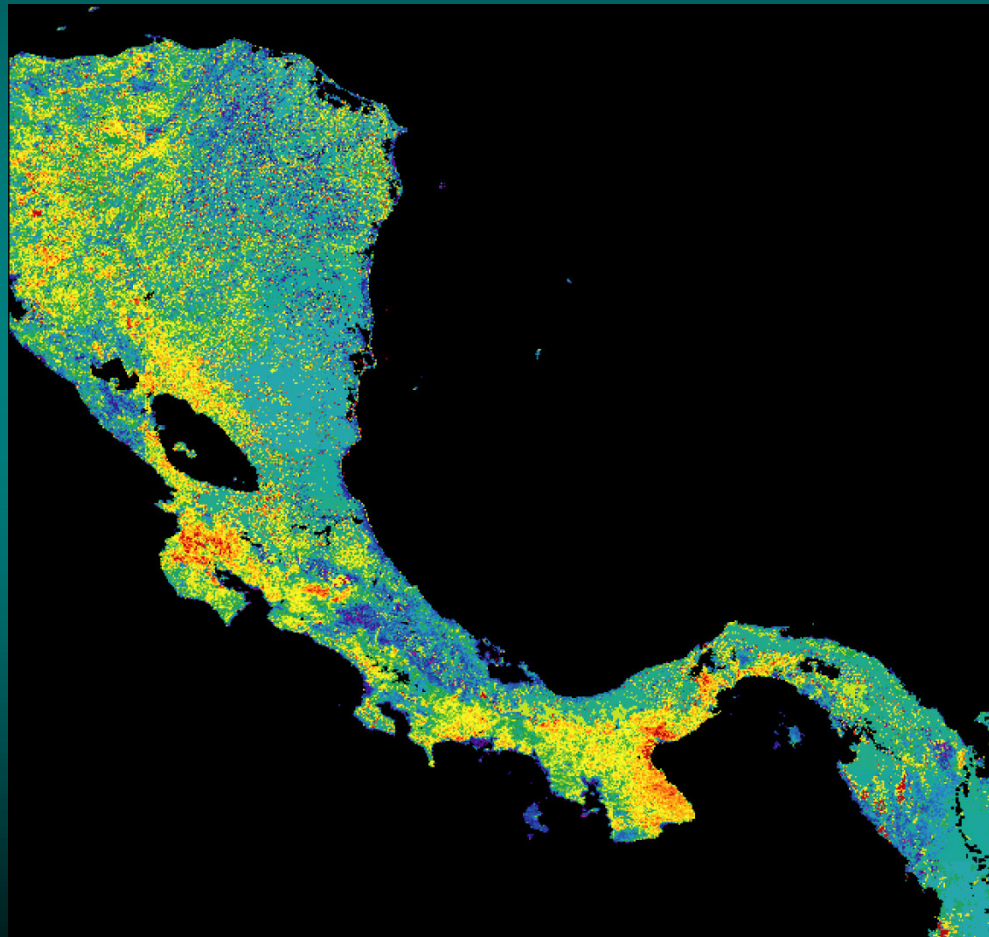


# Surface Albedo of Central America

(E. G. Moody, M. D. King, S. Platnick, C. B. Schaaf, F. Gao)

July 12-27, 2001

Collection 3



# Collection 5 Software Updates

- Aerosol product
  - New spatial variability to improve screening of heavy aerosol and clouds
  - New spectral ratio being considered to improve biases in aerosol optical thickness retrievals over land
- Precipitable water and atmospheric profiles
  - Substantial improvements in total ozone, especially over Antarctica
- Joint atmosphere product (level-2)
  - New product (best of the atmosphere products)
  - Small file size easy to download (3 MB daytime, 1 MB nighttime)
- Gridded level-3 product
  - New parameters in level-2 that will be aggregated
  - Changes in joint histograms

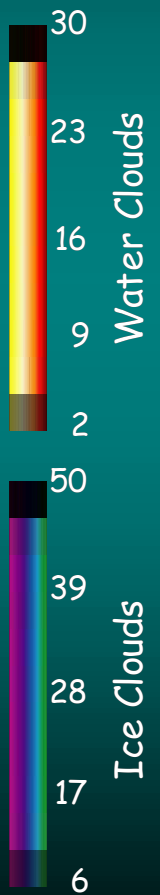
# Daily Joint Atmosphere Product

(B. Wind, M. D. King, S. Platnick et al. - NASA GSFC)

Terra  
October 28, 2003

- Height
  - Cloud top pressure
- Colors
  - Effective radius of water and ice clouds
- Transparency
  - Optical thickness

QuickTime™ and a  
PLATONAL RICH COLOR COMPRESSOR  
are needed to see this picture.



Virtual Reality Visualization  
Reto Stöckli

# MODIS Level-3 Daily Global Browse Images

[modis-atmos.gsfc.nasa.gov](http://modis-atmos.gsfc.nasa.gov)

MODIS Atmosphere

HOME PRODUCTS IMAGES VALIDATION NEWS STAFF FORUM REFERENCE TOOLS HELP

AEROSOL H<sub>2</sub>O VAPOR CLOUD PROFILE CLD. MASK [Level-2 Products]

DAILY EIGHT DAY MONTHLY [Level-3 Products]

DAILY GLOBAL

Introduction  
INTRODUCTION  
FORMAT & CONTENT  
GRIDS & MAPPING  
Terra Production  
BROWSE IMAGERY  
KNOWN PROBLEMS  
MODIFICATION HISTORY  
Aqua Production  
BROWSE IMAGERY  
KNOWN PROBLEMS  
MODIFICATION HISTORY  
Acquisition  
ACQUIRING DATA  
HDF FILENAMES  
Investigation  
ANALYSIS TOOLS  
THEORETICAL BASIS  
VALIDATION  
Creation  
FILE SPEC ★  
SOFTWARE ★  
PRODUCTION PLAN  
SUPPORT TEAM  
★ for the developer

## Terra Browse Imagery

*<sup>1</sup>IMPORTANT: The images on this page are displayed using an optimized (fixed) color scale. The actual data used to generate these images may contain pixels with values outside the range of the noted scale. In those cases, pixels are displayed as red (high) or violet (low).*

Quick Navigation Links (same day, same projection)

|  |  |
|--|--|
| <a href="#">MOD04_L2: Aerosol Global Only</a>      | <a href="#">MOD04_L2: Aerosol Land Only</a>    |
| <a href="#">MOD04_L2: Aerosol Ocean Only</a>       | <a href="#">MOD05_L2: Water Vapor</a>          |
| <a href="#">MOD06_L2: Cirrus Detection</a>         | <a href="#">MOD06_L2: Cloud Top Properties</a> |
| <a href="#">MOD06_L2: Cloud Optical Properties</a> | <a href="#">MOD07_L2: Atmosphere Profile</a>   |

[Return to Browse Menu Frameset](#)     [Load Print Friendly Version](#)

### Cloud (CLOUD OPTICAL PROPERTIES)

Cloud\_Optical\_Thickness\_Combined\_Mean

MODIS/Terra MOD08\_D3\_A2003034\_004\_2003035224633.hdf \*none

03Feb2003

| Mean                  |
|-----------------------|
| Minimum               |
| Maximum               |
| Standard_Deviation    |
| QA_Mean               |
| QA_Standard_Deviation |

roll mouse over statistic bars

Cloud\_Optical\_Thickness\_Water\_Mean

MODIS/Terra MOD08\_D3\_A2003034\_004\_2003035224633.hdf \*none

03Feb2003

| Mean                  |
|-----------------------|
| Minimum               |
| Maximum               |
| Standard_Deviation    |
| QA_Mean               |
| QA_Standard_Deviation |

roll mouse over statistic bars

## PRODUCTS

### OVERVIEW

### AVAILABILITY CALENDAR

- PGE03 History
- PGE04 History
- PGE06 History
- PGE56 History
- PGE57 History
- PGE70 History
- PGE83 History
- ACQUISITION
- KNOWN PROBLEMS
- HDF FILENAMES
- FLOW DIAGRAM

## Processing and Availability Calendar

= Validated (3)  
  = Validated (2)  
  = Provisional  
  = Not Yet Processed  
  = Beta  
  = No Instrument Data  
  = Bad Cloud Data  
 4.0.1 = PGE Version

Last Updated: Monday, 12-July-2004 6:00 AM EDT

| Y | M | J       | JulianDays | AEROSOL 04_L2 |       | H2O VAPOR 05_L2 |       | CLOUD 06_L2 |       | PROFILE 07_L2 |       | CLD.MASK 35_L2 |       | JOINT ATML2 |       | DAILY 08_D3 |       | EIGHT DAY 08_E3 |       | MONTHLY 08_M3 |       |       |      |
|---|---|---------|------------|---------------|-------|-----------------|-------|-------------|-------|---------------|-------|----------------|-------|-------------|-------|-------------|-------|-----------------|-------|---------------|-------|-------|------|
|   |   |         |            | Terra         | Aqua  | Terra           | Aqua  | Terra       | Aqua  | Terra         | Aqua  | Terra          | Aqua  | Terra       | Aqua  | Terra       | Aqua  | Terra           | Aqua  | Terra         | Aqua  | Terra | Aqua |
|   |   |         |            |               |       |                 |       |             |       |               |       |                |       |             |       |             |       |                 |       |               |       |       |      |
| 2 | J | 182-212 | 4.2.2      | 4.2.2         | 4.2.2 | 4.2.2           | 4.2.2 | 4.2.8       | 4.3.2 | 4.3.0         | 4.4.0 | 4.3.0          | 4.4.0 | 4.0.1       | 4.0.1 | 4.2.2       | 4.2.2 | 4.2.1           | 4.2.1 | 4.2.1         | 4.2.1 |       |      |
| 0 | J | 152-181 | 4.2.2      | 4.2.2         | 4.2.2 | 4.2.2           | 4.2.8 | 4.3.2       | 4.3.0 | 4.4.0         | 4.3.0 | 4.4.0          | 4.3.0 | 4.4.0       | 4.0.1 | 4.0.1       | 4.2.2 | 4.2.1           | 4.2.1 | 4.2.1         | 4.2.1 |       |      |
| 0 | M | 121-151 | 4.2.2      | 4.2.2         | 4.2.2 | 4.2.2           | 4.2.8 | 4.3.2       | 4.3.0 | 4.4.0         | 4.3.0 | 4.4.0          | 4.3.0 | 4.4.0       | 4.0.1 | 4.0.1       | 4.2.2 | 4.2.1           | 4.2.1 | 4.2.1         | 4.2.1 |       |      |
| 0 | A | 092-120 | 4.2.2      | 4.2.2         | 4.2.2 | 4.2.2           | 4.2.8 | 4.3.2       | 4.3.0 | 4.4.0         | 4.3.0 | 4.4.0          | 4.3.0 | 4.4.0       | 4.0.1 | 4.0.1       | 4.2.2 | 4.2.1           | 4.2.1 | 4.2.1         | 4.2.1 |       |      |
| 4 | M | 061-091 | 4.2.2      | 4.2.2         | 4.2.2 | 4.2.2           | 4.2.8 | 4.3.2       | 4.3.0 | 4.4.0         | 4.3.0 | 4.4.0          | 4.3.0 | 4.4.0       | 4.0.1 | 4.0.1       | 4.2.2 | 4.2.1           | 4.2.1 | 4.2.1         | 4.2.1 |       |      |
| 0 | M | 032-060 | 4.2.2      | 4.2.2         | 4.2.2 | 4.2.2           | 4.2.8 | 4.3.2       | 4.3.0 | 4.4.0         | 4.3.0 | 4.4.0          | 4.3.0 | 4.4.0       | 4.0.1 | 4.0.1       | 4.2.2 | 4.2.1           | 4.2.1 | 4.2.1         | 4.2.1 |       |      |
| 0 | J | 001-031 | 4.2.2      | 4.2.2         | 4.2.2 | 4.2.2           | 4.2.8 | 4.3.2       | 4.3.0 | 4.4.0         | 4.3.0 | 4.4.0          | 4.3.0 | 4.4.0       | 4.0.1 | 4.0.1       | 4.2.2 | 4.2.1           | 4.2.1 | 4.2.1         | 4.2.1 |       |      |
| 0 | D | 335-365 | 4.1.3      | 4.2.2         | 4.1.3 | 4.2.2           | 4.2.5 | 4.3.2       | 4.3.0 | 4.4.0         | 4.3.0 | 4.4.0          | 4.3.0 | 4.4.0       | 4.0.0 | 4.0.1       | 4.1.1 | 4.1.0           | 4.2.1 | 4.1.0         | 4.2.1 |       |      |
| 0 | N | 305-334 | 4.1.3      | 4.2.2         | 4.1.3 | 4.2.2           | 4.2.5 | 4.3.2       | 4.3.0 | 4.4.0         | 4.3.0 | 4.4.0          | 4.3.0 | 4.4.0       | 4.0.0 | 4.0.1       | 4.1.1 | 4.1.0           | 4.2.1 | 4.1.0         | 4.2.1 |       |      |
| 0 | O | 274-304 | 4.1.3      | 4.2.2         | 4.1.3 | 4.2.2           | 4.2.5 | 4.3.2       | 4.3.0 | 4.4.0         | 4.3.0 | 4.4.0          | 4.3.0 | 4.4.0       | 4.0.0 | 4.0.1       | 4.1.1 | 4.1.0           | 4.2.1 | 4.1.0         | 4.2.1 |       |      |
| 0 | S | 244-273 | 4.1.3      | 4.2.2         | 4.1.3 | 4.2.2           | 4.2.5 | 4.3.2       | 4.3.0 | 4.4.0         | 4.1.2 | 4.4.0          | 4.1.2 | 4.4.0       | -     | 4.0.1       | 4.1.1 | 4.1.0           | 4.2.1 | 4.1.0         | 4.2.1 |       |      |
| 2 | A | 213-243 | 4.1.3      | 4.2.2         | 4.1.3 | 4.2.2           | 4.2.5 | 4.3.2       | 4.3.0 | 4.4.0         | 4.1.2 | 4.4.0          | 4.1.2 | 4.4.0       | -     | 4.0.1       | 4.1.1 | 4.1.0           | 4.2.1 | 4.1.0         | 4.2.1 |       |      |
| 0 | J | 182-212 | 4.1.3      | 4.2.2         | 4.1.3 | 4.2.2           | 4.2.5 | 4.3.2       | 4.3.0 | 4.4.0         | 4.1.2 | 4.4.0          | 4.1.2 | 4.4.0       | -     | 4.0.1       | 4.1.1 | 4.1.0           | 4.2.1 | 4.1.0         | 4.2.1 |       |      |
| 0 | J | 152-181 | 4.1.3      | 4.2.2         | 4.1.3 | 4.2.2           | 4.2.5 | 4.3.2       | 4.3.0 | 4.4.0         | 4.1.2 | 4.4.0          | 4.1.2 | 4.4.0       | -     | 4.0.1       | 4.1.1 | 4.1.0           | 4.2.1 | 4.1.0         | 4.2.1 |       |      |
| 3 | M | 121-151 | 4.1.3      | 4.2.2         | 4.1.3 | 4.2.2           | 4.2.5 | 4.3.2       | 4.3.0 | 4.4.0         | 4.1.2 | 4.4.0          | 4.1.2 | 4.4.0       | -     | 4.0.1       | 4.1.1 | 4.1.0           | 4.2.1 | 4.1.0         | 4.2.1 |       |      |
| 0 | A | 091-120 | 4.1.3      | 4.2.2         | 4.1.3 | 4.2.2           | 4.2.5 | 4.3.2       | 4.3.0 | 4.4.0         | 4.1.2 | 4.4.0          | 4.1.2 | 4.4.0       | -     | 4.0.1       | 4.0.3 | 4.2.2           | 4.0.2 | 4.2.1         | 4.0.2 |       |      |
| 0 | M | 060-090 | 4.1.3      | 4.2.2         | 4.1.3 | 4.2.2           | 4.2.5 | 4.3.2       | 4.3.0 | 4.4.0         | 4.1.2 | 4.4.0          | 4.1.2 | 4.4.0       | -     | 4.0.1       | 4.0.3 | 4.2.2           | 4.0.2 | 4.2.1         | 4.0.2 |       |      |
| 0 | F | 032-059 | 4.1.3      | 4.2.2         | 4.1.3 | 4.2.2           | 4.2.5 | 4.3.2       | 4.3.0 | 4.4.0         | 4.1.2 | 4.4.0          | 4.1.2 | 4.4.0       | -     | 4.0.1       | 4.0.3 | 4.2.2           | 4.0.2 | 4.2.1         | 4.0.2 |       |      |
| 0 | J | 001-031 | 4.1.3      | 4.2.2         | 4.1.3 | 4.2.2           | 4.2.5 | 4.3.2       | 4.3.0 | 4.4.0         | 4.1.2 | 4.4.0          | 4.1.2 | 4.4.0       | -     | 4.0.1       | 4.0.3 | 4.2.2           | 4.0.2 | 4.2.1         | 4.0.2 |       |      |
| 0 | D | 335-365 | 4.1.1      | 4.2.2         | 4.1.1 | 4.2.2           | 4.2.2 | 4.3.0       | 4.3.0 | 4.4.0         | 4.1.0 | 4.4.0          | 4.1.0 | 4.4.0       | -     | 4.0.1       | 4.0.3 | 4.2.2           | 4.0.2 | 4.2.1         | 4.0.2 |       |      |
| 0 | N | 305-334 | 4.1.1      | 4.2.2         | 4.1.1 | 4.2.2           | 4.2.2 | 4.3.0       | 4.3.0 | 4.4.0         | 4.1.0 | 4.4.0          | 4.1.0 | 4.4.0       | -     | 4.0.1       | 4.0.3 | 4.2.2           | 4.0.2 | 4.2.1         | 4.0.2 |       |      |
| 0 | O | 274-304 | 4.1.3      | 4.2.2         | 4.1.3 | 4.2.2           | 4.2.5 | 4.3.0       | 4.3.0 | 4.4.0         | 4.1.2 | 4.4.0          | 4.1.2 | 4.4.0       | -     | 4.0.1       | 4.1.1 | 4.2.2           | 4.1.0 | 4.2.1         | 4.1.0 |       |      |
| 0 | S | 244-273 | 4.1.3      | 4.2.2         | 4.1.3 | 4.2.2           | 4.2.5 | 4.3.0       | 4.3.0 | 4.4.0         | 4.1.2 | 4.4.0          | 4.1.2 | 4.4.0       | -     | 4.0.1       | 4.1.1 | 4.2.2           | 4.1.0 | 4.2.1         | 4.1.0 |       |      |
| 2 | A | 213-243 | 4.1.3      | 4.2.2         | 4.1.3 | 4.2.2           | 4.2.5 | 4.3.0       | 4.3.0 | 4.4.0         | 4.1.2 | 4.4.0          | 4.1.2 | 4.4.0       | -     | 4.0.1       | 4.1.1 | 4.2.2           | 4.1.0 | 4.2.1         | 4.1.0 |       |      |
| 0 | J | 182-212 | 4.1.3      | 4.2.2         | 4.1.3 | 4.2.2           | 4.2.5 | 4.3.0       | 4.3.0 | 4.4.0         | 4.1.2 | 4.4.0          | 4.1.2 | 4.4.0       | -     | 4.0.1       | 4.1.1 | 4.2.2           | 4.1.0 | 4.2.1         | 4.1.0 |       |      |
| 0 | J | 152-181 | 4.1.3      | 4.0.1         | 4.1.3 | 4.0.1           | 4.1.3 | 4.0.1       | 4.1.2 | 4.4.0         | 4.1.2 | 4.0.1          | 4.1.2 | 4.4.0       | -     | 4.0.1       | 4.1.1 | 4.2.2           | 4.1.0 | 4.2.1         | 4.1.0 |       |      |
| 2 | M | 121-151 | 4.1.3      | 4.0.1         | 4.1.3 | 4.0.1           | 4.1.3 | 4.0.1       | 4.1.2 | 4.4.0         | 4.1.2 | 4.0.1          | 4.1.2 | 4.4.0       | -     | 4.0.1       | 4.1.1 | 4.2.2           | 4.1.0 | 4.2.1         | 4.1.0 |       |      |
| 0 | A | 091-120 | 4.1.3      | 4.0.1         | 4.1.3 | 4.0.1           | 4.1.3 | 4.0.1       | 4.1.2 | 4.4.0         | 4.1.2 | 4.0.1          | 4.1.2 | 4.4.0       | -     | 4.0.1       | 4.1.1 | 4.2.2           | 4.1.0 | 4.2.1         | 4.1.0 |       |      |
| 0 | M | 060-090 | 4.1.3      | 4.0.1         | 4.1.3 | 4.0.1           | 4.1.3 | 4.0.1       | 4.1.2 | 4.4.0         | 4.1.2 | 4.0.1          | 4.1.2 | 4.4.0       | -     | 4.0.1       | 4.1.1 | 4.2.2           | 4.1.0 | 4.2.1         | 4.1.0 |       |      |



## TOOLS

Tool Type

GRAPHICAL INTERFACE

WEB BASED

COMMAND LINE

Documentation

BIT INTERPRETATION

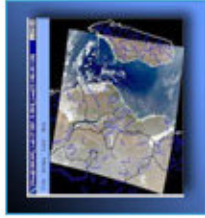
Forum

HDF-EOS USER FORUM

### Graphical User Interface Tools

#### HDFLook

A basic processing and visualization tool for MODIS HDF data within *X-Window* computer environments, HDFLook can visualize structures of an HDF file including: scientific data sets (SDS), vector arrays (V data and V groups), and raster images (24 bits or 8 bits with a look-up table). HDFLook can visualize and local slices of data (up to 6 indexes), display global and local attributes, and automatically detect fill values. HDFLook can also extract SDS ancillary data, export (raw or calibrated) SDS records to binary or HDF files, build reprojected SDS or RGB mosaics, export RGB images to JPEG or HDF files, and print RGB images. For programmers who routinely want jpegs or binary files, HDFLook can be run non-interactively with simple command files to routinely make images or export binary files from hdf (see [HDFLook: How To Examples](#)). For a more powerful tool, users should consider Msphinx (see below) which incorporates HDFLook as its HDF-EOS reader interface. It should be noted that HDFLook and Msphinx are the only known *graphical user interface* tools that can (correctly and fully) read and visualize the new L2 Joint Atmosphere product. **ACQUIRE** ▶▶



**Cost:** Free  
**Current Version:** 4.1  
**Release Date:** January 2004  
**Requirements:** Platform & operating system specific  
**Rating:** ★★★★★  
**Development Team:**

- Laboratoire d'Optique Atmosphérique / U. Lille
- University of Maryland / MODLAND GSFC-923
- Distributed Active Archive Center (DAAC) / GSFC-902

#### Compatibility:

- Macintosh**
  - OS-X 10.3 Panther
  - OS-X 10.2 Jaguar
- Linux**
  - Power PC
  - Intel
  - Cygwin
- Unix**
  - SUN - Solaris 5.7
  - SGI - IRIX 6.5
  - IBM - AIX 4.3.2
  - HP - HP-UX 10.2
  - DEC - OSF/1 v4.0

#### Msphinx

A more powerful tool than HDFLook (outlined above), Msphinx incorporates HDFLook as its HDF reader interface. Msphinx (Motif Satellite Process Handling Images under Xwindow) is a powerful image analysis, data plotting, and format conversion package. Msphinx includes functions to process in the basic data geometry and projection planes, as well as



**Cost:** Free  
**Current Version:** 9.4  
**Release Date:** January 2004  
**Requirements:** Platform & operating system specific  
**Rating:** ★★★★★  
**Development Team:**

- Laboratoire d'Optique Atmosphérique / U. Lille

#### Compatibility:

- Macintosh**
  - OS-X 10.3 Panther
  - OS-X 10.2 Jaguar

# Data Use, Assimilation & Interdisciplinary Science

- Polar winds using Terra and/or Aqua
  - Strong impact demonstrated at ECMWF and GMAO
    - ✓ NCEP, Japan Meteorological Agency, etc. showing interest
- Aerosol over bright surface
  - New algorithm developed for aerosol optical thickness (and single scattering albedo) over bright reflecting surfaces (deserts)
- Modeling activities
  - GOCART model of anthropogenic aerosol radiative forcing
  - New clear sky radiance dataset being developed for ingest at ECMWF
- Interdisciplinary activities
  - Simultaneous retrieval of aerosol optical properties and marine constituents
  - Spatial variability of MODIS and MISR atmospheric products, including studies of 3D error assessment of clouds

# Future Directions

- Algorithm Theoretical Basis Documents
  - Last updated in 1997 following second of two formal peer reviews
  - New algorithms (level-3) that never had ATBDs
  - Update in next year for all atmosphere algorithms
- Validation Plans
  - Less formal, but documentation of past and future plans in validation of data products
  - Last updated in February 2003
    - ✓ Updates will be solicited by new members and integration in next 2-3 months
- Access and use of MODIS data
  - Atmosphere community quite familiar with hdf and it poses no substantial problems

# Terra Order Statistics as of July 9

Statistics from [edgrs.gsfc.nasa.gov:8000/soo/aspdb\\_provider/edgrs3.asp](http://edgrs.gsfc.nasa.gov:8000/soo/aspdb_provider/edgrs3.asp)

## Distribution to Users by Instrument/Datatype Detail

GSFC

2003-10-14 -- to -- 2004-07-09  
2003-287 to 1912004

| DAAC | Instrument/Datatype | Discipline | MediaType | #Orders | #Requests | #Granules | #Files  | #Megabytes |
|------|---------------------|------------|-----------|---------|-----------|-----------|---------|------------|
| GSFC | MODIS /MOD04_L2.003 | ATMOSPHERE | FtpPull   | 10      | 10        | 377       | 992     | 4,399      |
| GSFC | MODIS /MOD04_L2.003 | ATMOSPHERE | FtpPush   | 2       | 2         | 23        | 248     | 268        |
| GSFC | MODIS /MOD04_L2.004 | ATMOSPHERE | 8MM       | 6       | 1,001     | 1,001     | 2,002   | 11,479     |
| GSFC | MODIS /MOD04_L2.004 | ATMOSPHERE | DLT       | 8       | 5,191     | 5,191     | 10,382  | 59,636     |
| GSFC | MODIS /MOD04_L2.004 | ATMOSPHERE | FtpPull   | 1,876   | 1,945     | 228,286   | 474,974 | 2,648,476  |
| GSFC | MODIS /MOD04_L2.004 | ATMOSPHERE | FtpPush   | 54      | 58        | 5,690     | 11,900  | 65,451     |
| GSFC | MODIS /MOD05_L2.003 | ATMOSPHERE | FtpPull   | 1       | 1         | 1         | 2       | 19         |
| GSFC | MODIS /MOD05_L2.004 | ATMOSPHERE | 8MM       | 4       | 1,053     | 1,053     | 2,106   | 12,035     |
| GSFC | MODIS /MOD05_L2.004 | ATMOSPHERE | DLT       | 1       | 45        | 45        | 90      | 486        |
| GSFC | MODIS /MOD05_L2.004 | ATMOSPHERE | FtpPull   | 541     | 552       | 105,526   | 220,248 | 1,310,545  |
| GSFC | MODIS /MOD05_L2.004 | ATMOSPHERE | FtpPush   | 49      | 49        | 5,038     | 10,076  | 91,739     |
| GSFC | MODIS /MOD06_L2.003 | ATMOSPHERE | FtpPull   | 7       | 7         | 26        | 158     | 1,136      |
| GSFC | MODIS /MOD06_L2.003 | ATMOSPHERE | FtpPush   | 1       | 1         | 1         | 4       | 66         |
| GSFC | MODIS /MOD06_L2.004 | ATMOSPHERE | 8MM       | 2       | 439       | 439       | 878     | 28,960     |
| GSFC | MODIS /MOD06_L2.004 | ATMOSPHERE | DLT       | 2       | 403       | 403       | 806     | 26,537     |
| GSFC | MODIS /MOD06_L2.004 | ATMOSPHERE | FtpPull   | 1,308   | 1,338     | 115,885   | 250,032 | 6,944,592  |
| GSFC | MODIS /MOD06_L2.004 | ATMOSPHERE | FtpPush   | 69      | 73        | 8,937     | 18,174  | 575,228    |
| GSFC | MODIS /MOD07_L2.003 | ATMOSPHERE | FtpPull   | 3       | 3         | 5         | 10      | 153        |
| GSFC | MODIS /MOD07_L2.004 | ATMOSPHERE | 8MM       | 4       | 662       | 662       | 1,324   | 20,174     |
| GSFC | MODIS /MOD07_L2.004 | ATMOSPHERE | DLT       | 1       | 43        | 43        | 86      | 1,310      |
| GSFC | MODIS /MOD07_L2.004 | ATMOSPHERE | FtpPull   | 380     | 382       | 7,456     | 27,488  | 227,279    |
| GSFC | MODIS /MOD35_L2.003 | ATMOSPHERE | FtpPull   | 2       | 2         | 4         | 22      | 181        |
| GSFC | MODIS /MOD35_L2.004 | ATMOSPHERE | DLT       | 1       | 45        | 45        | 90      | 2,015      |
| GSFC | MODIS /MOD35_L2.004 | ATMOSPHERE | FtpPull   | 1,460   | 1,474     | 32,856    | 97,648  | 1,474,842  |
| GSFC | MODIS /MOD35_L2.004 | ATMOSPHERE | FtpPush   | 40      | 41        | 496       | 3,240   | 22,216     |
| GSFC | MODIS /MODATML2.004 | ATMOSPHERE | FtpPull   | 38      | 41        | 8,776     | 17,564  | 19,287     |
| GSFC | MODIS /MODATML2.004 | ATMOSPHERE | FtpPush   | 1       | 1         | 8         | 16      | 17         |

# Aura Order Statistics as of July 9

Statistics from [edgrs.gsfc.nasa.gov:8000/soo/aspdb\\_provider/edgrs3.asp](http://edgrs.gsfc.nasa.gov:8000/soo/aspdb_provider/edgrs3.asp)

## Distribution to Users by Instrument/Datatype Detail

GSFC

2003-10-14 -- to -- 2004-07-09  
2003-287 to 1912004

| DAAC | Instrument/Datatype | Discipline | MediaType | #Orders | #Requests | #Granules | #Files | #Megabytes |
|------|---------------------|------------|-----------|---------|-----------|-----------|--------|------------|
| GSFC | MODIS /MYD04_L2.003 | ATMOSPHERE | FtpPull   | 200     | 200       | 9,316     | 24,006 | 107,221    |
| GSFC | MODIS /MYD04_L2.003 | ATMOSPHERE | FtpPush   | 13      | 13        | 103       | 442    | 1,198      |
| GSFC | MODIS /MYD04_L2.004 | ATMOSPHERE | FtpPull   | 163     | 174       | 14,681    | 37,622 | 171,590    |
| GSFC | MODIS /MYD04_L2.004 | ATMOSPHERE | FtpPush   | 5       | 5         | 921       | 1,842  | 10,754     |
| GSFC | MODIS /MYD05_L2.003 | ATMOSPHERE | DLT       | 1       | 8         | 8         | 16     | 154        |
| GSFC | MODIS /MYD05_L2.003 | ATMOSPHERE | FtpPull   | 25      | 25        | 674       | 1,988  | 7,882      |
| GSFC | MODIS /MYD05_L2.004 | ATMOSPHERE | FtpPull   | 30      | 35        | 7,144     | 17,570 | 89,035     |
| GSFC | MODIS /MYD06_L2.003 | ATMOSPHERE | DLT       | 3       | 296       | 296       | 592    | 12,939     |
| GSFC | MODIS /MYD06_L2.003 | ATMOSPHERE | FtpPull   | 162     | 163       | 6,149     | 18,494 | 315,225    |
| GSFC | MODIS /MYD06_L2.003 | ATMOSPHERE | FtpPush   | 86      | 86        | 14,567    | 30,374 | 957,045    |
| GSFC | MODIS /MYD06_L2.004 | ATMOSPHERE | FtpPull   | 127     | 133       | 12,208    | 29,616 | 545,511    |
| GSFC | MODIS /MYD06_L2.004 | ATMOSPHERE | FtpPush   | 11      | 11        | 2,343     | 4,814  | 120,462    |
| GSFC | MODIS /MYD07_L2.003 | ATMOSPHERE | DLT       | 1       | 8         | 8         | 16     | 244        |
| GSFC | MODIS /MYD07_L2.003 | ATMOSPHERE | FtpPull   | 58      | 59        | 2,663     | 8,772  | 81,155     |
| GSFC | MODIS /MYD07_L2.004 | ATMOSPHERE | DLT       | 1       | 31        | 31        | 62     | 945        |
| GSFC | MODIS /MYD07_L2.004 | ATMOSPHERE | FtpPull   | 59      | 60        | 2,462     | 12,646 | 75,037     |
| GSFC | MODIS /MYD35_L2.003 | ATMOSPHERE | 8MM       | 1       | 154       | 154       | 308    | 6,897      |
| GSFC | MODIS /MYD35_L2.003 | ATMOSPHERE | DLT       | 1       | 8         | 8         | 16     | 359        |
| GSFC | MODIS /MYD35_L2.003 | ATMOSPHERE | FtpPull   | 195     | 200       | 6,385     | 24,318 | 286,029    |
| GSFC | MODIS /MYD35_L2.003 | ATMOSPHERE | FtpPush   | 9       | 9         | 39        | 400    | 1,746      |
| GSFC | MODIS /MYD35_L2.004 | ATMOSPHERE | FtpPull   | 284     | 290       | 9,628     | 29,638 | 432,145    |
| GSFC | MODIS /MYD35_L2.004 | ATMOSPHERE | FtpPush   | 11      | 11        | 177       | 974    | 7,927      |
| GSFC | MODIS /MYDATML2.003 | ATMOSPHERE | FtpPull   | 7       | 7         | 463       | 978    | 1,003      |
| GSFC | MODIS /MYDATML2.004 | ATMOSPHERE | FtpPull   | 31      | 32        | 8,284     | 17,516 | 18,683     |

# Future Directions

- Integration of MODIS in modeling communities
  - Three independent MODIS-GOCART assimilation (Georgia Tech, University of Maryland, Colorado State University)
  - GMAO (Peter Norris, Arlindo da Silva, Arthur Hou) working on assimilating MODIS cloud data
  - ECMWF interacting with MODIS cloud group
- Climate Data Records
  - Only limited intercomparisons thus far (ISCCP vs MODIS clouds; HIRS-ISCCP-MODIS high clouds in the tropics)
  - No in-depth discussion
- Miscellaneous
  - Aura launched this morning at 3:02 am PDT, into inclination 98.2° inclination orbit
  - Bill Bandeen passed away on July 2