MODIS Data at NSIDC

*MODIS Science Team Meeting – Jan 27, 2010*

Outline

- NSIDC overview
- ECS status and plans
- MODIS distribution metrics
- Other MODIS-related products & services at NSIDC

Our Mission

To make fundamental contributions to cryospheric science and excel in managing data and disseminating information in order to advance understanding of the Earth system.
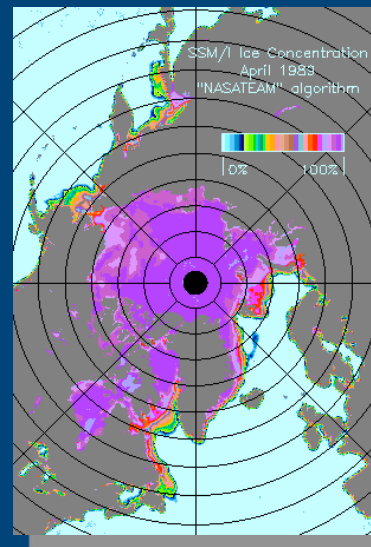

Data Management and Distribution
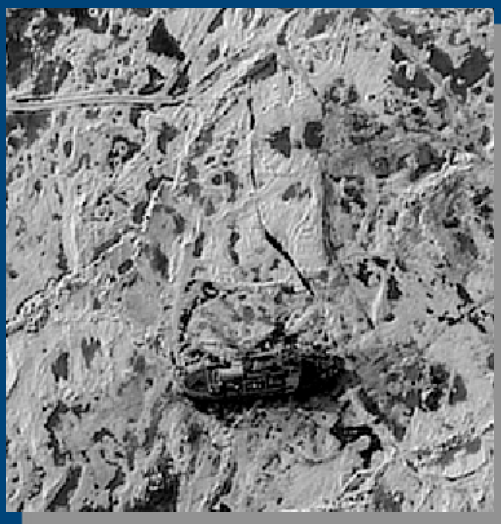
Outreach

International Data Activities

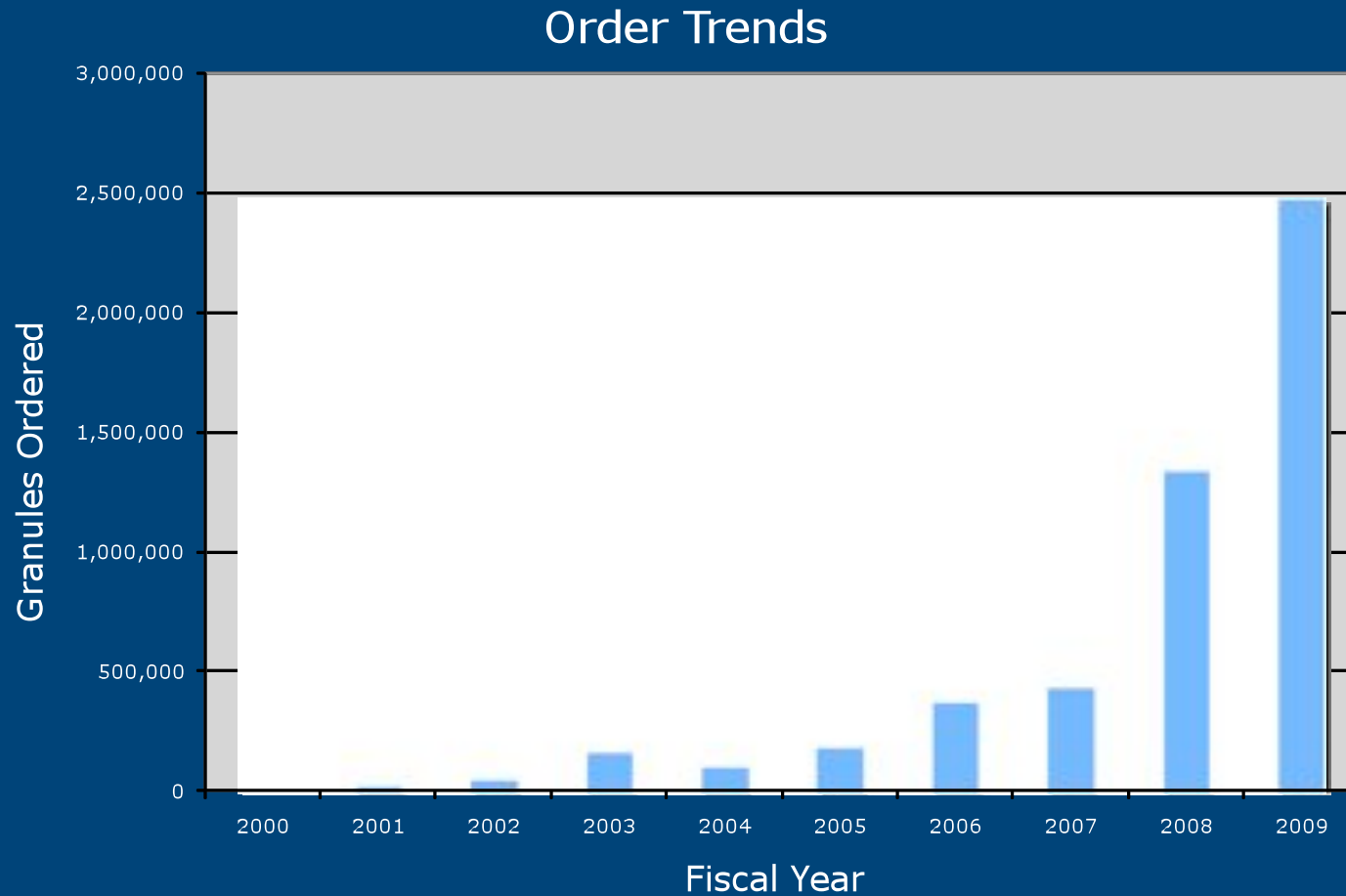*Research*

Institutional Relationships

- Part of the University of Colorado

- Within the CU Cooperative Institute for Research in Environmental Sciences (CIRES) Cryospheric and Polar Processes Division

- Chartered by NOAA's National Environmental Satellite, Data, and Information Service. Affiliated with the NOAA National Geophysical Data Center (NGDC)

- Funded by NASA, NOAA, NSF, and others at the program level

- Part of the World Data Center system
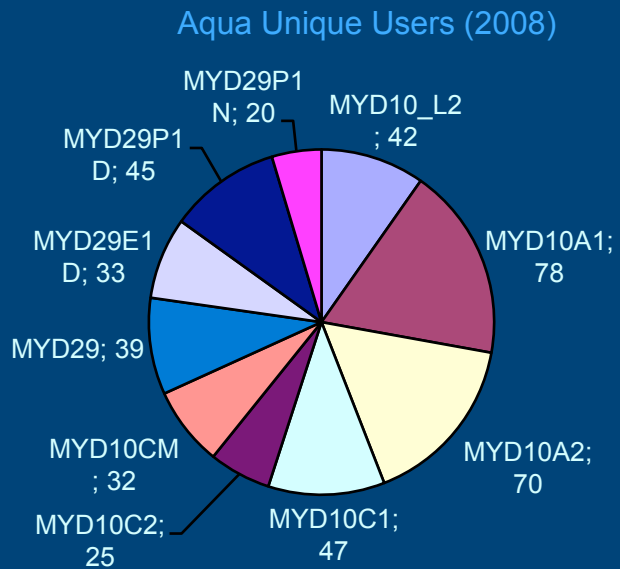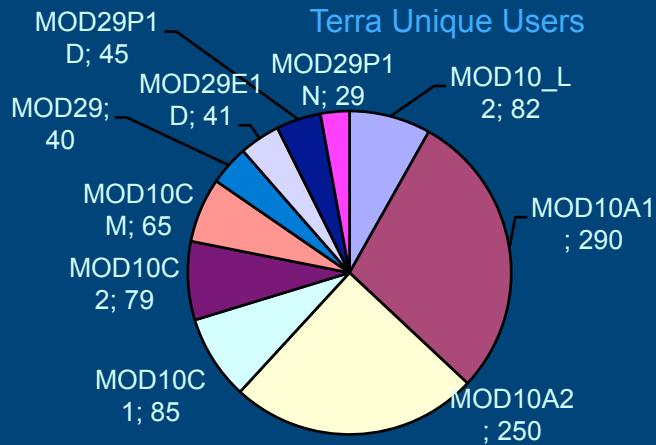
Data System Status and Plans

- NSIDC's MODIS support provided by the NASA supplied ECS data system
- ECS reconfiguration continues
  - Removal of the Powderhorn Tape Archive complete
  - ECS production software now running completely on Linux platforms
  - Rel 7.23 delivery and installation this spring
    - Will include new capability to order Browse data
- Entire DAAC archive is now stored on an on-line archive
  - Collection 5 MODIS snow and ice products are available on-line
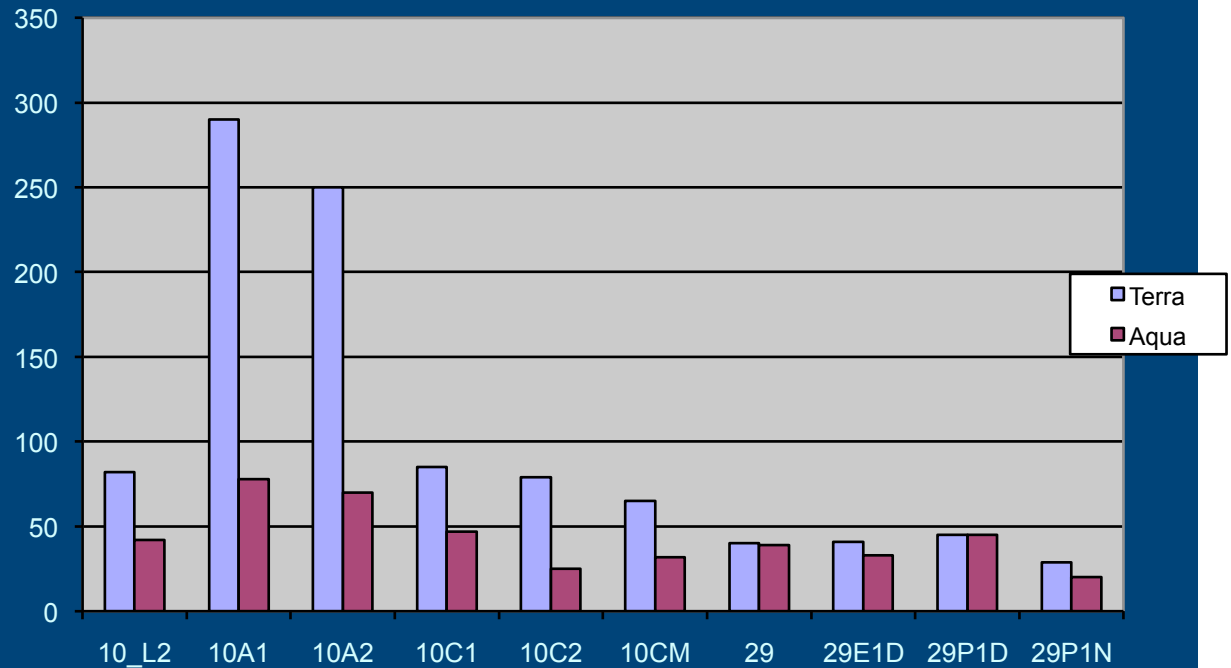
MODIS Data Orders

Order Trends

MODIS Data at NSIDC - D. Fowler
Presented at the MODIS Science Team Meeting, January, 2010

Metrics - Distinct MODIS Users - 2008

Terra Unique Users

- MOD29P1 D; 45
- MOD29E1 D; 41
- MOD29; 40
- MOD10C M; 65
- MOD10C 2; 79
- MOD10C 1; 85
- MOD29P1 N; 29
- MOD10_L 2; 82
- MOD10A1 ; 290
- MOD10A2 ; 250

Aqua Unique Users (2008)

- MYD29P1 N; 20
- MYD29P1 D; 45
- MYD29E1 D; 33
- MYD29; 39
- MYD10CM ; 32
- MYD10C2; 25
- MYD10C1; 47
- MYD10_L2 ; 42
- MYD10A1; 78
- MYD10A2; 70

1437 unique MODIS users

Unique Users by Product

Legend: ☐ Terra ☐ Aqua

X-axis: 10_L2, 10A1, 10A2, 10C1, 10C2, 10CM, 29, 29E1D, 29P1D, 29P1N

NSIDC DAAC

NSIDC
National Snow and Ice Data Center

Metrics - Distinct MODIS Users - 2009

Terra Unique Users (2009)

MOD29E1D; 19
MOD29P1D; 60
MOD29P1N; 30
MOD29; 37
MOD10_L2; 97
MOD10CM; 84
MOD10A1; 317
MOD10C2; 96
MOD10C1; 123
MOD10A2; 261

1597 unique MODIS users

Unique Users by Product

Legend: Terra, Aqua
X-axis: 10_L2, 10A1, 10A2, 10C1, 10C2, 10CM, 29, 29E1D, 29P1D, 29P1N

Aqua Unique Users 2009

MYD29P1D; 48
MYD29P1N; 19
MYD10_L2; 26
MYD29E1D; 25
MYD29; 53
MYD10A1; 121
MYD10CM; 25
MYD10C2; 22
MYD10C1; 53
MYD10A2; 61

Metrics - Granules Ordered - 2008

Granules	Ordered
Aqua	206959
Terra	1132878
Combined	1339837

Legend: ■ Terra ■ Aqua

Categories: 10_L2, 10A1, 10A2, 10C1, 10C2, 10CM, 29, 29E1D, 29P1D, 29P1N
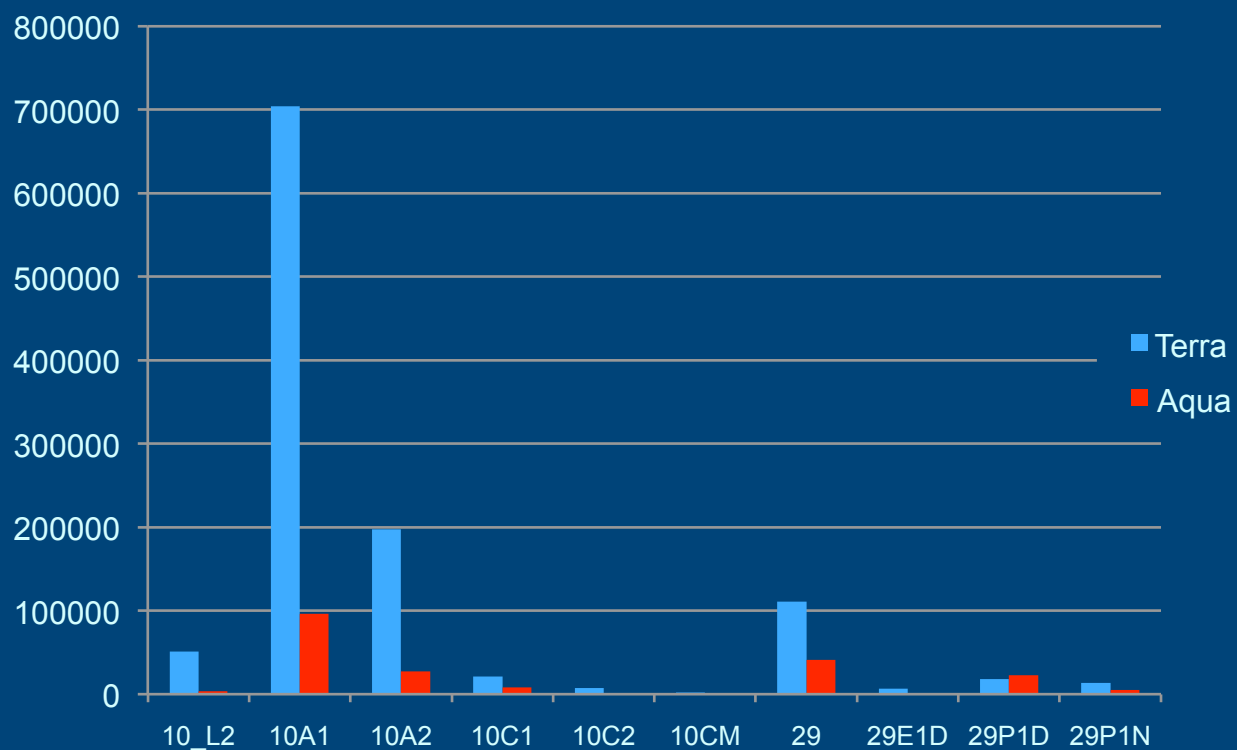
Metrics - Granules Ordered - 2009

Granules	Ordered
Aqua	819713
Terra	1132878
Combined	2473294

Legend: ■ Terra ■ Aqua

X-axis categories: 10_L2, 10A1, 10A2, 10C1, 10C2, 10CM, 29, 29E1D, 29P1D, 29P1N
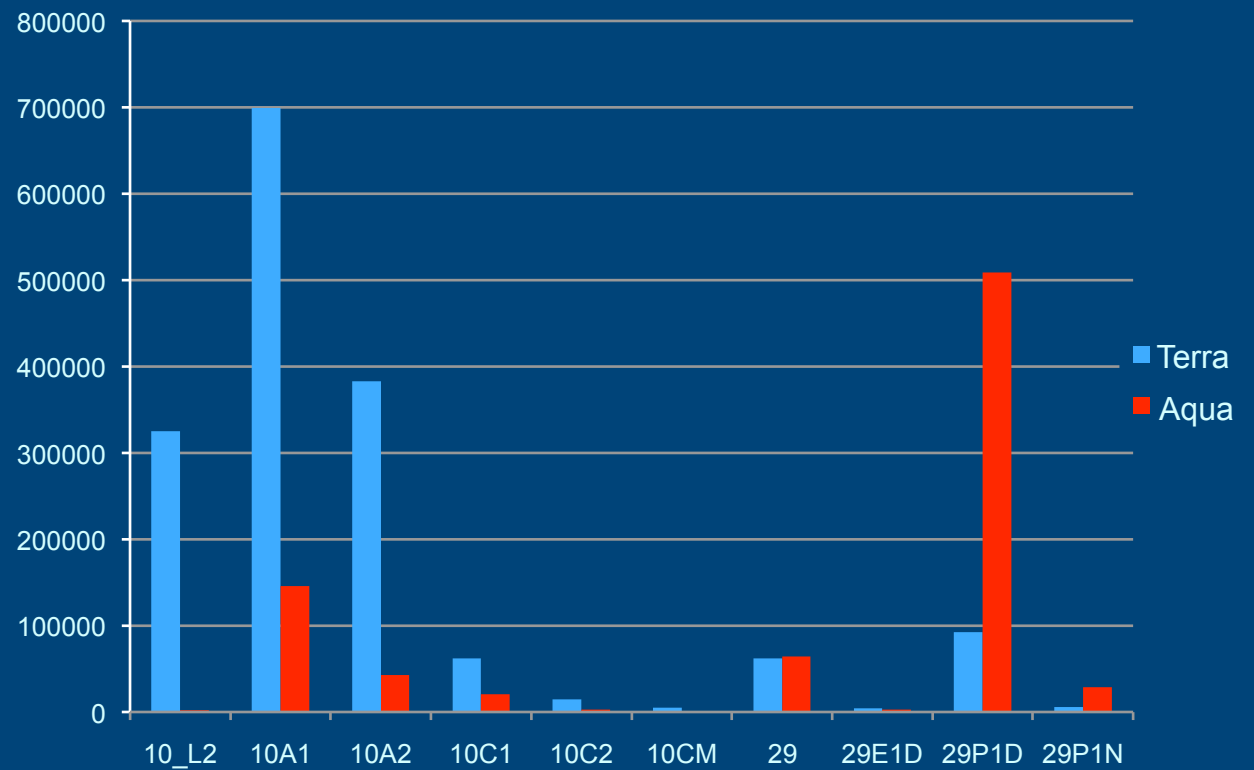
Other MODIS-based Products

- Surface morphology and snow grain size (Antarctica)
- MODIS-enhanced radar and ICESAT altimetry-based DEM of West Antarctica
    - ~1 m accuracy with resolution of ~250 m)
- Blended snow products
    - Currently using SSM/I & MODIS
    - Plans to use AMSR-E & MODIS
- MODIS Melt Pond product (awaiting approval ?)
    - Daily, EASE-grid fractional coverage of melt ponds, white ice, snow-covered ice and open water in the Beaufort/ Chukchi Seas

MODIS-related Interfaces and Services

- Map-server interface to the Mosaic of Antarctica
  - http://nsidc.org/data/moa/
- Atlas of the Cryosphere
  - http://nsidc.org/data/atlas/
  - WMS, WFS, and WCS access to underlying MOA and Blue Marble data
- WMS, WCS services for MOD10C1 re-projected to a polar projection on-the-fly, northern hemisphere only

# *MODIS-related Interfaces and Services (cont.)*

- MODIS Interactive Subsetting Toolkit (MIST)
  - MOD09A1, MOD10A1, MOD11A2, MCD43A1 subsets over GC-NET and IASOA stations
  - On-line interactive graphics and analysis support
  - Which of these additional capabilities would be helpful?
    - Additional stations
    - Data from other spacecraft (e.g., AMSR-E)
    - Other MODIS products
    - GC-NET and IASOA in-situ station data
    - Additional graphics/analysis capabilities
    - Generic subset specification (location and size)
    - Data in other formats
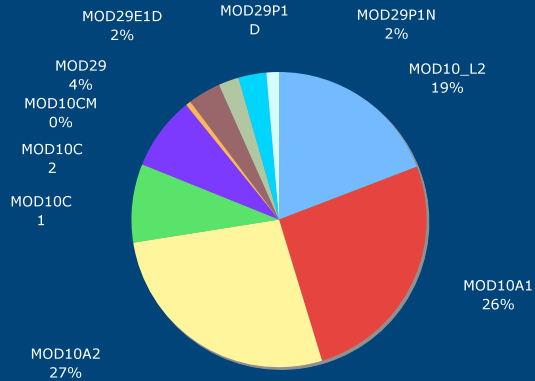
Backup Slides

MODIS Data Orders
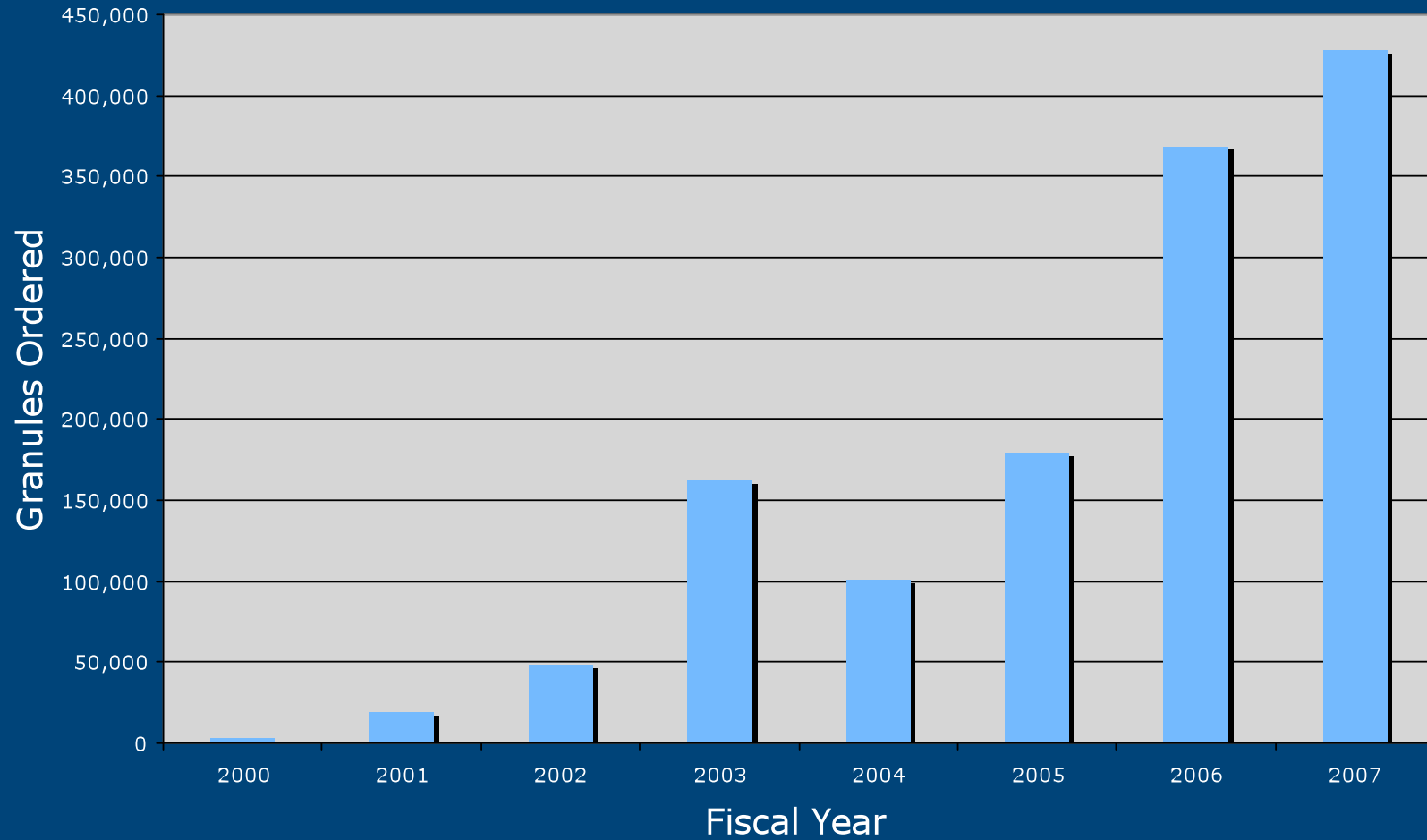
Order Trends

Metrics - Distinct MODIS Users

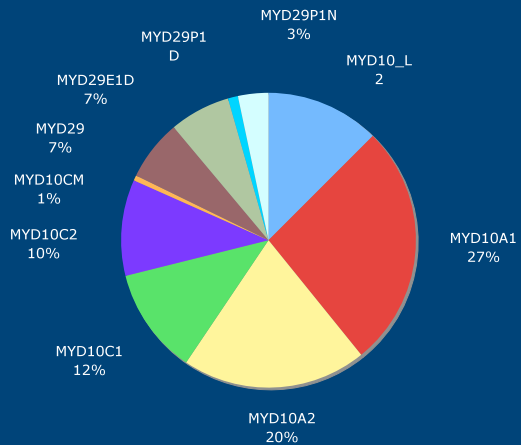### Terra Distinct Users (2007)

453 distinct MODIS users in 2007

Distinct Users by Product
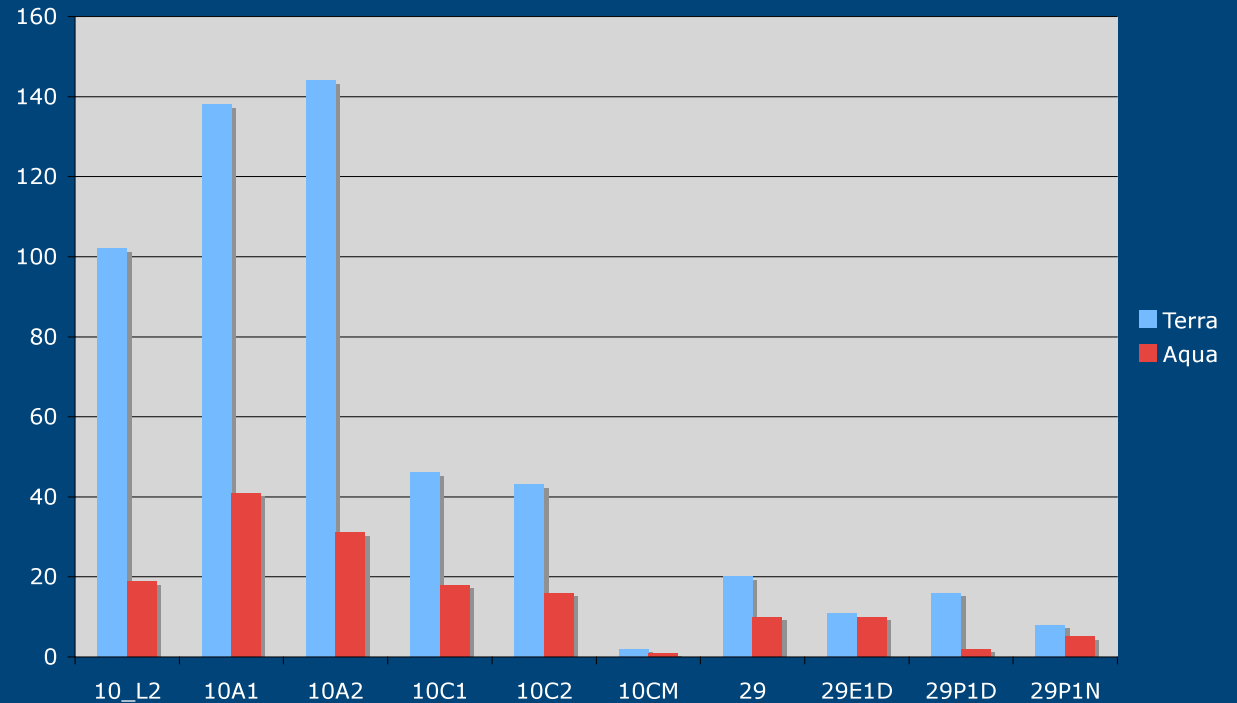
Aqua Distinct Users (2007)

Metrics - Granules Ordered

Terra Products Ordered (2007)

MOD29E1D 0% · MOD29P1D · MOD29P1N 0%
MOD29 9%
MOD10CM 0%
MOD10_L2 3%
MOD10C 2
MOD10C 1
MOD10A2 20%
MOD10A1 63%

Aqua Products Ordered (2007)

MYD29E1D 1% · MYD29P1D · MYD29P1N 0%
MYD29 12%
MYD10_L 2
MYD10CM 0%
MYD10C2 1%
MYD10C1 8%
MYD10A2 5%
MYD10A1 66%
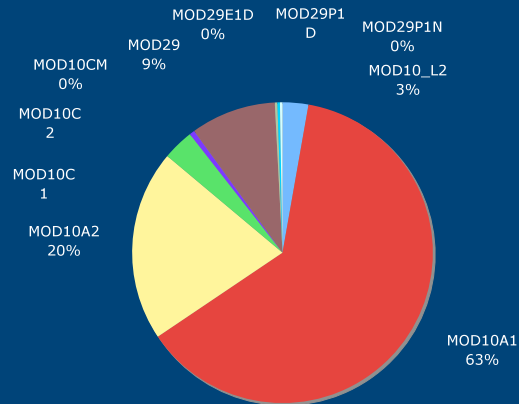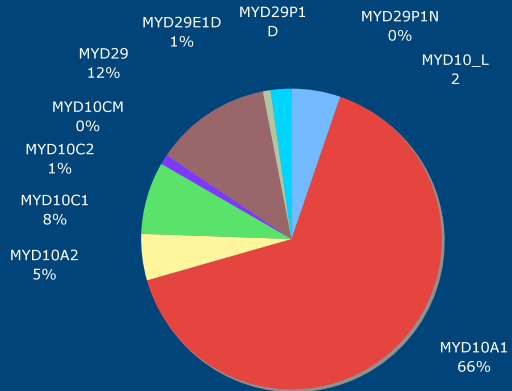
Granules	Ordered
Aqua	54,450
Terra	373,225
Combined	427,765

% of Archive Ordered in 2007