

The ASTER Global Digital Elevation Model

A case study for the GEO Data Sharing Action Plan

Presented to the

Symposium on the Data Sharing Action Plan for GEOSS and the Benefits
of Data Sharing

GEO –VII

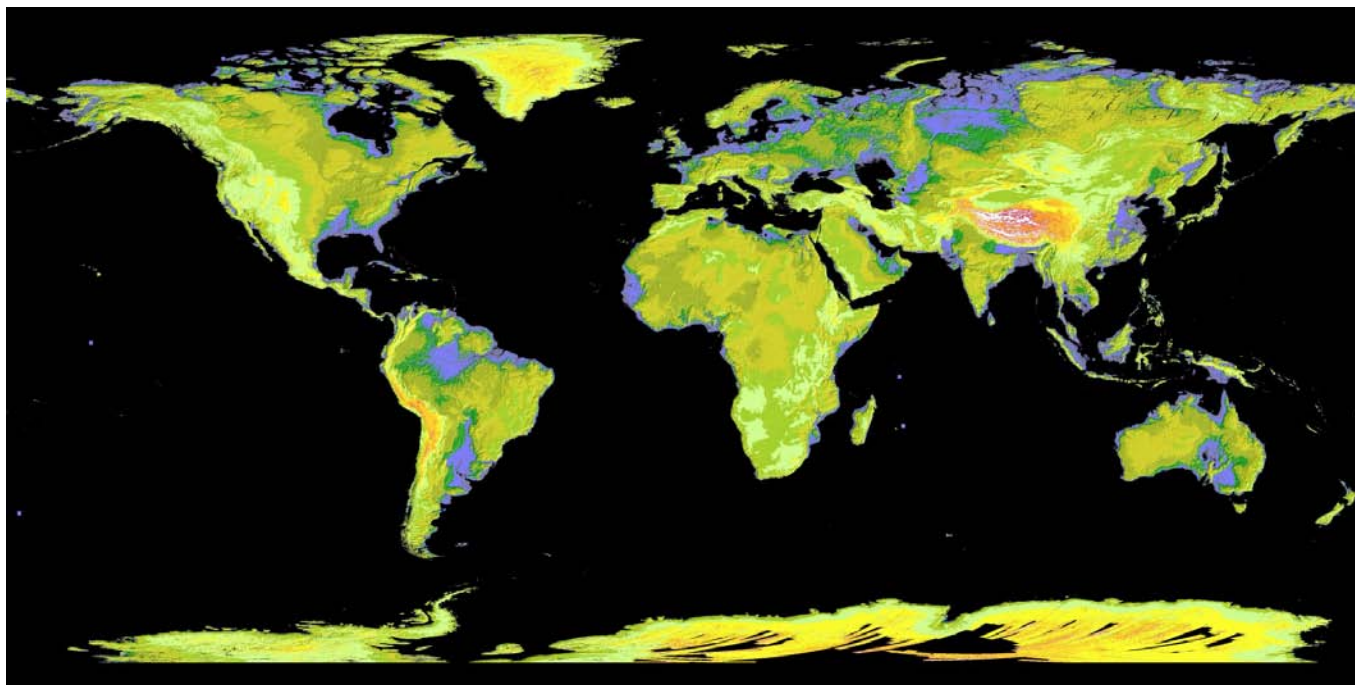
Beijing, China, November 2, 2010

Tom Sohre, Dave Meyer US Geological Survey

Masami Hato METI/ERSDAC

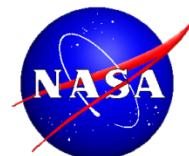
Mike Abrams, Martha Maiden, Jeanne Behnke NASA

ASTER Global Digital Elevation Model



Developed jointly by the Japan's Ministry of Economy, Trade, and Industry (METI) and the US National Aeronautics and Space Administration (NASA).

- 1 arc-sec global coverage ($1^{\circ} \times 1^{\circ}$ "tiles")
- Unprecedented latitude extent (83°N to 83°S)
- Available at no cost to all users worldwide, subject to re-distribution and citation policy
- Validated by USGS & international partners



ASTER Global DEM Case Study

- **Background**

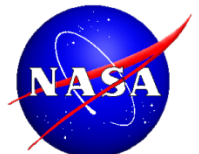
- The ASTER Global DEM (GDEM) demonstrated the impact of moving from “Full and Open” distribution to “Free and Open” distribution.

- **Previous Situation**

- METI and NASA have provided the user community with full and open access to ASTER data products since launch in 1999. An ASTER standard (scene-based) DEM product has been distributed since 2001 for a cost-of-recovery fee.

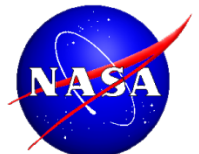
- **Change in Situation**

- A new product, the ASTER Global DEM (GDEM), was contributed by METI and NASA to the GEOSS and released for distribution at no charge to all users on June 29, 2009.

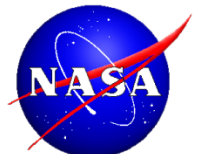
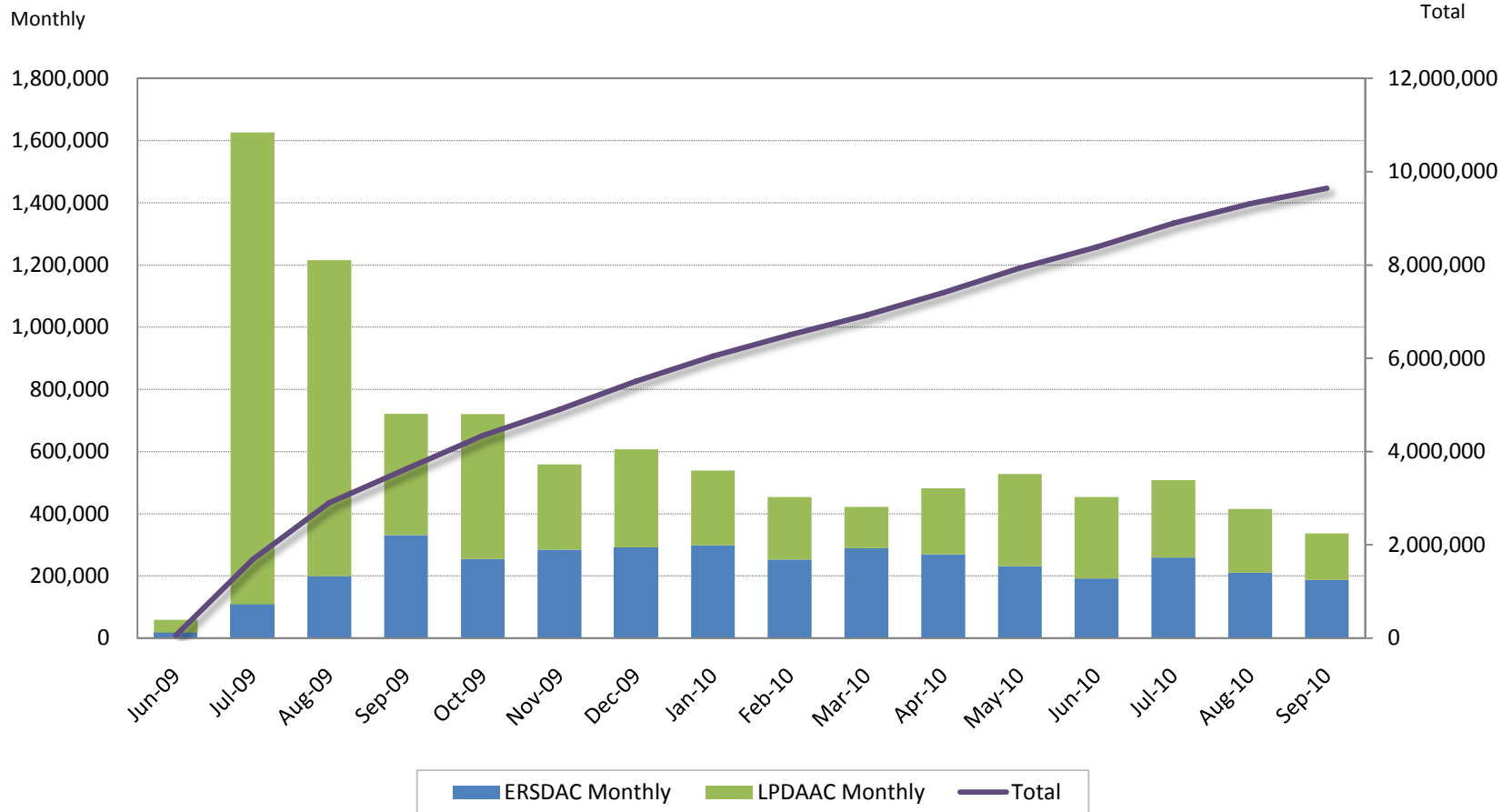


ASTER Global DEM Case Study

- Results Achieved (through September, 2010)
 - ~100,000 users provided with data
 - ~10 million GDEM tiles distributed
- Benefits Achieved
 - Benefits to established research, especially polar and disaster applications.
 - Benefits to individuals, users from smaller institutions.
 - Provides METI, NASA, and the joint Japan-US ASTER Science Team information for improvements to future versions.



GDEM Tiles Distributed by Month



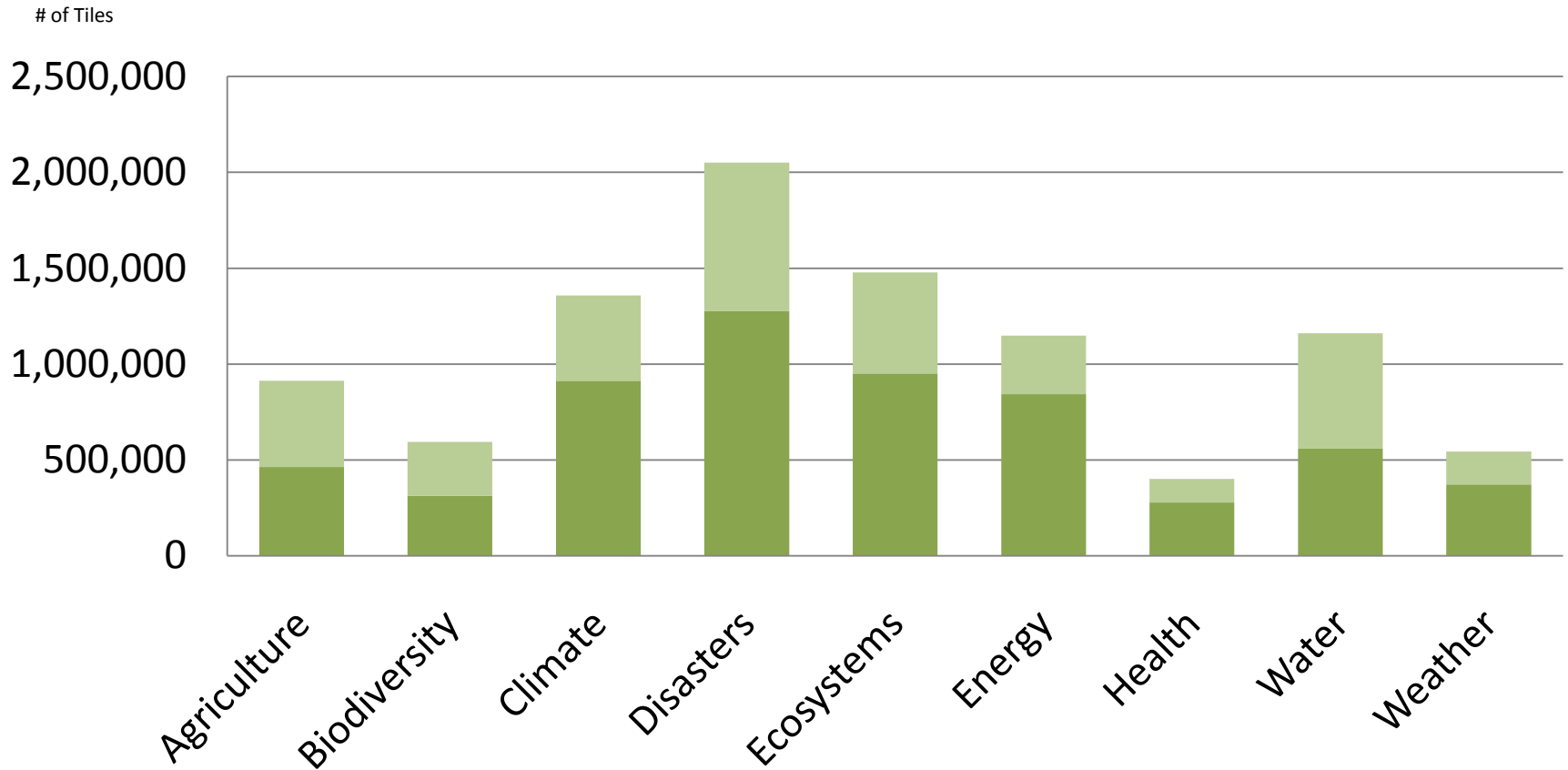
ASTER GDEM Data Access Conditions

- Distributed from Japan's ERSDAC/GDS and NASA's Land Processes Distributed Active Archive Center (LP DAAC) operated by the USGS.
- User registration (including GEO Societal Benefit Area) is required.
- Subject to redistribution and citation policies:
 - Users must agree to redistribute data products only to individuals within their organizations or projects of intended use, or in response to disasters in support of the GEO Disaster Theme.
 - When presenting or publishing ASTER GDEM data, users are required to include a citation stating, "ASTER GDEM is a product of METI and NASA."



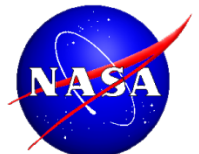
GDEM Data Use Metrics

by GEOSS Societal Benefit Areas (6/09-9/10)

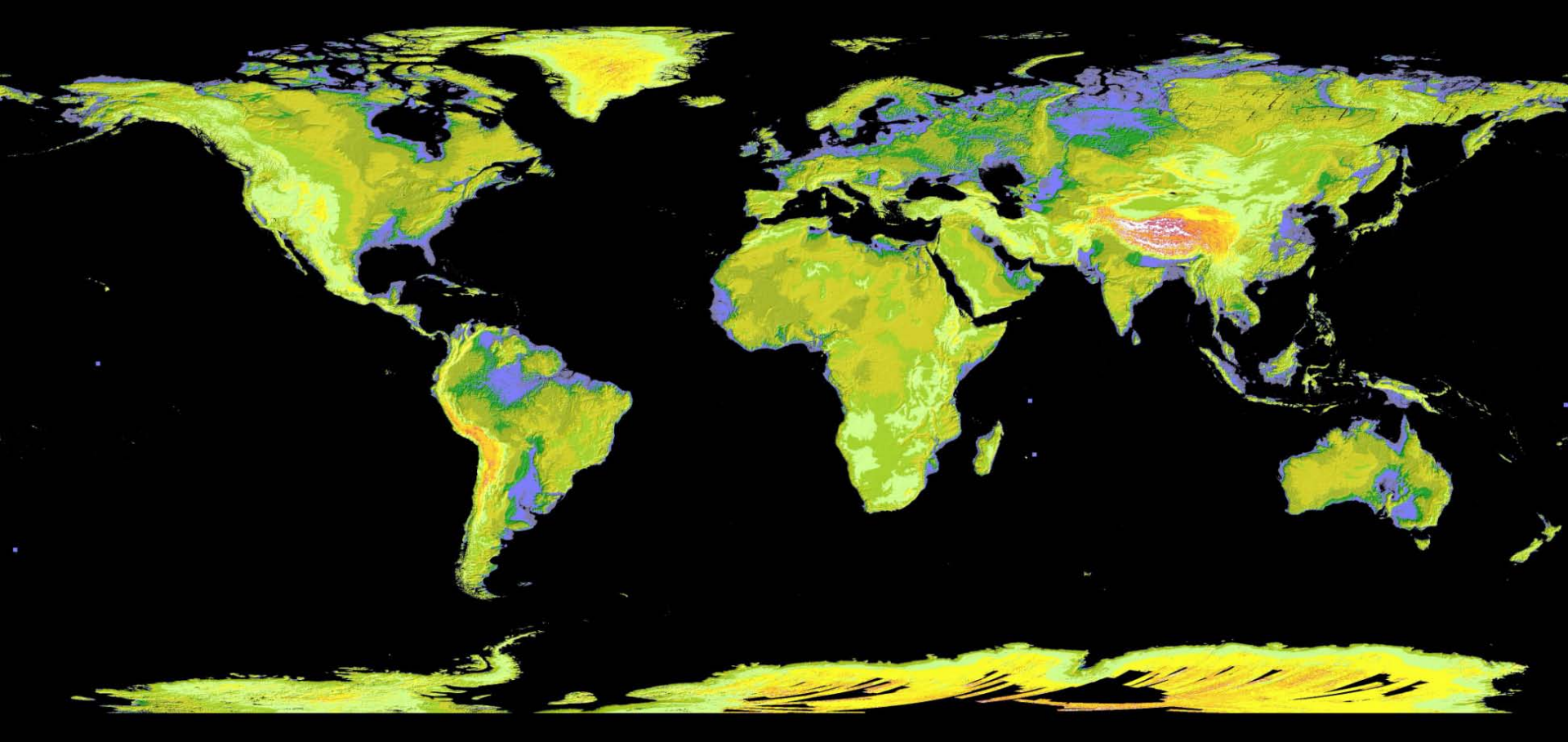


ASTER GDEM Lessons Learned

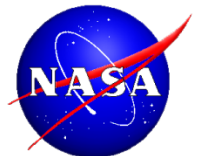
- Considerable demand for the Global DEM
 - Especially for high latitude studies, disaster management.
 - Early requests challenged our distribution systems.
- Community of user includes not only large institutions, but as well “citizen scientists” and educators; for example:
 - National Geographic Fieldscope collaborative mapping projects for education,
 - Flood plain mapping in Philippines (Obermaier)
- Registration is valuable to understanding and characterizing the user community.
- Bandwidth limitations can restrict distribution of large datasets to users
 - LP DAAC now provides hard drive distribution of the entire GDEM dataset upon request.
- Users interested in visual search / access to data
 - LP DAAC, collaborating with George Mason University, implemented the DEM Explorer in October 2010 to enable visual selection and user-defined areas of interest.



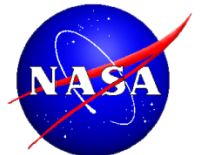
Questions?



Access ASTER GDEM: ERSDAC: <http://www.ersdac.or.jp/>
LPDAAC: <https://lpdaac.usgs.gov/>

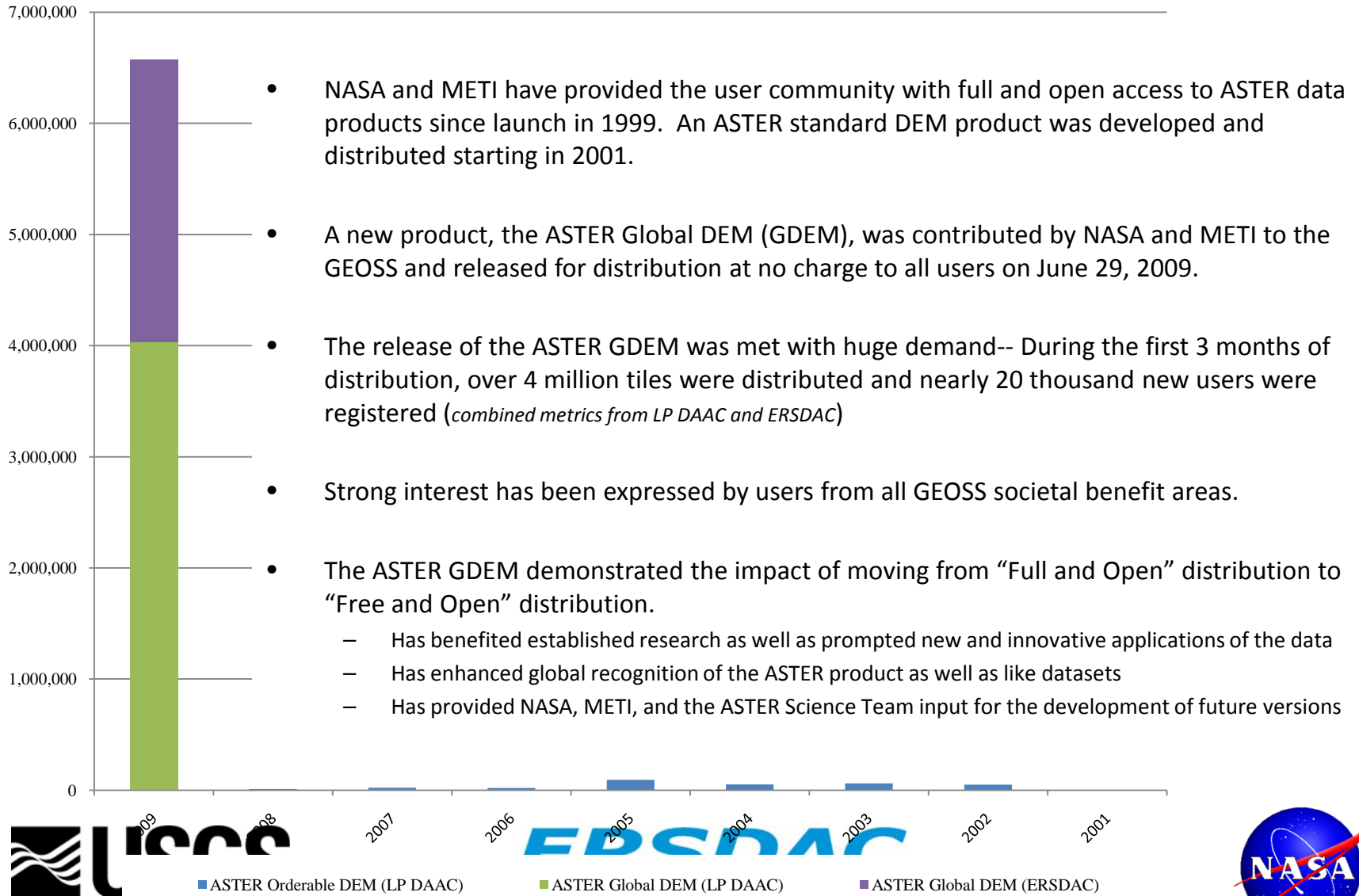


Backup



Case Study:

ASTER Global DEM demonstrates GEOS Data Sharing Principles



ASTER DEM distribution from LP DAAC

