



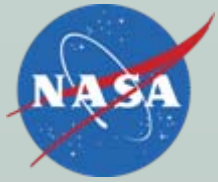
NASA Overview

Ed Sheffner

Earth Science Division
NASA, Headquarters

Civil Commercial Imagery
Evaluation Workshop

March 14, 2006



Topics

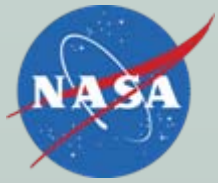
- NASA organization and strategy
- Role of the commercial sector in NASA plans and projects
- Status of LDCM



NASA Organization

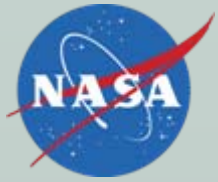
Four Mission Directorates

- Aeronautics
- Exploration Systems
- Space Operations
- **Science (four divisions)**
 - Earth Science
 - Research
 - Applied Sciences
 - Helio Physics
 - Solar System
 - Universe



NASA is a research and development agency formed in 1958 with responsibility for all US government, non-military aeronautic and space activities. Objectives included:

- Expansion of knowledge of atmospheric phenomena;
- Development and operation of vehicles carrying instruments in space;
- Establishment of long range studies of the potential benefits accrued through the utilization of space for scientific purposes;
- Assurance of US leadership in space science and technology and the application of that technology in peaceful activities "within and outside the atmosphere"; and,
- Cooperation with other nations in the pursuit of peaceful application of NASA developed technology.



The mandate provided NASA in 1958 remains embedded in the current mission statement of the agency to understand and protect planet Earth, explore the universe, search for life, and inspire the next generation of explorers.



NASA Strategic Goals*

1. Fly the Shuttle as safely as possible until its retirement, not later than 2010.
2. Complete the International Space Station in a manner consistent with NASA's international partner commitments and the need of human exploration.
3. **Develop a balanced overall program of science, exploration, and aeronautics consistent with the redirection of the human spaceflight program to focus on exploration.**
4. Bring a Crew Exploration Vehicle into service as soon as possible after Shuttle retirement.
5. Encourage the pursuit of appropriate partnerships with the emerging commercial space sector.
6. Establish a lunar return program having the maximum possible utility for later missions to Mars and other destinations.

*NASA 2006 *Strategic Plan*



Strategic Goal #3

- A. **Study Earth from space to advance scientific understanding and meet societal needs.**
- B. Understand the Sun and its effects on Earth and the solar system.
- C. Advance scientific knowledge of the origin and history of the solar system, the potential for life elsewhere, and the hazards and resources present as humans explore space.
- D. Discover the origin, structure, evolution and destiny of the universe, and search for Earth-like planets.
- E. Advance knowledge in the fundamental disciplines of aeronautics, and develop technologies for safer aircraft and higher capacity airspace systems.
- F. Understand the effects of the space environment on human performance, and test new technologies and countermeasures for long duration space exploration.



The Earth Science Division supports research projects that exploit the observations and measurements acquired by NASA Earth observing missions, and Applied Sciences projects that extend NASA research to the broader user community and address societal needs.



Current NASA Earth Observing Systems

Aqua*

CHAMP

FAST

Geotail (with Japan)

ICESat*

EO-1*

NOAA-M(POES)

QuickSCAT

SeaWinds* (with Japan)

TERRA*

TRMM* (with Japan)

Aura

Cluster (with ESA)

GOES-M*

GRACE*

JASON-1*

Landsat-7*

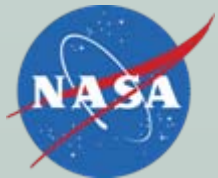
Polar

SAGE III (with Russia)

SORCE

TIMED

*Land observations

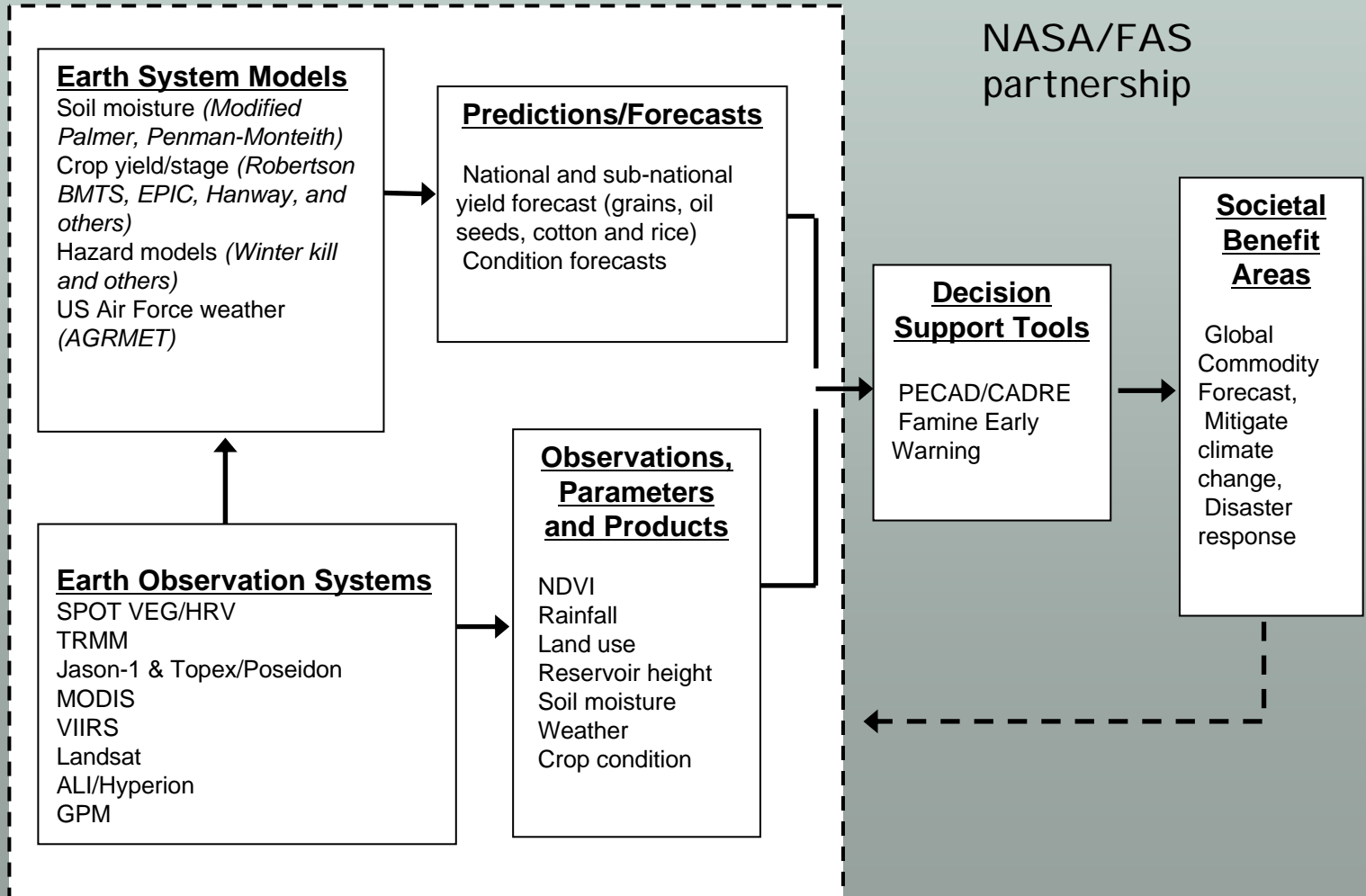


Planned NASA Earth Observing Systems

Aquarius	(2009)
CALIPSO	(2006)
CloudSat	(2006)
GPM	(2010)
LDCM	(2009)
NPP	(under review)
NPOESS	(under review)
OSTM	(2008)
OCO	(2008)



NASA transfers technology to the user community through partnerships and an “integrated systems solution” model.

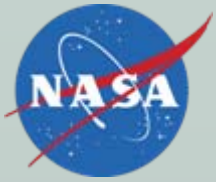




NASA ISS Model

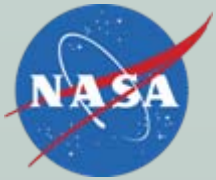
Model characteristics:

- Enhance decision making
- Incremental process
- Verifiable impact through benchmarked results



Commercial Role in NASA Earth Science

- Supply data for research and applied sciences projects.
 - As needed and in conjunction with NASA data sets.
- Serve as third party for users in enhancement of, and operational support for, decision support systems.
 - Extend the benefits of NASA regional and global modeling down to the local level.
 - Participate as partners with users in NASA solicitations.



Landsat Data Continuity Mission

- Intention for Landsat 7 follow-on dates back to 1992 law that authorized Landsat 7 (Land Remote Sensing Policy Act of 1992).
 - Options for the system: a) commercial system, b) government build, c) government/private sector joint venture, d) international consortium.
- Recommendation for a joint venture led to solicitation for Landsat Data Continuity Mission (LDCM) in 2002.
 - RFP cancelled by NASA in 2003.
- 2003: Office of Science and Technology Policy (OSTP) issued memo outlining plan for operational Landsat type instrument.
 - Plan called for NASA to build instrument(s) for inclusion on NPP and/or NPOESS.



Landsat Data Continuity Mission (continued)

- December 2005: OSTP memo "Landsat Data Continuity Strategy Adjustment"
 - NPOESS to proceed without Landsat type instrument;
 - NASA will acquire a single LDCM free flyer to collect data and deliver to USGS for distribution;
 - USGS responsible for operations of LDCM and for "collection, archiving, processing and distribution of the land surface data to U.S. Government and other users;"
 - NASA and USGS will implement the LDCM in a manner that does not preclude different approach to follow-on systems;



Landsat Data Continuity Mission (continued)

- Goal remains to make Landsat a “sustained operational program” managed by the USG, or an international consortium, or a commercial partnership.
- OSTP, with NASA, USGS and other agencies will develop a plan for sustainable operational land imaging in accord with the goals and objectives of the US Integrated Earth Observation System.



Contact Information:

Ed Sheffner

edwin.j.sheffner@nasa.gov

202-358-0239