2010 HyspIRI Science Workshop

Objectives and Update

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Workshop Objectives

- Update Community on HyspIRI Status
- Explore relevance of HyspIRI to Climate Science
- Explore relevance of HyspIRI to Carbon Cycle Science
- Present new Technologies, Tools, and Products supporting or arising from a HyspIRI Mission
- Explore new Applications for HyspIRI Data
- Vet Domestic and International Partnership Opportunities
- Discuss options for a HyspIRI mission's going forward

Workshop Overview

- Updates regarding HyspIRI Mission Concepts and Level 1 Requirements
- Science Focus: HyspIRI's Importance to Climate and Carbon Science
- Reports from Initiatives at last year's Workshop
  - Sun Glint Subgroup: characterization, scientific impacts, mitigation options, and recommendations (2 talks)
  - Hot Target Saturation Subgroup: Analysis Report
- HyspIRI and the Gulf Oil Spill
- *HyspIRI Preparatory Activities Using Existing Imagery* Project Talks
- New Science, Applications, Techniques and Tools
- Domestic and Foreign Partnerships
- Precursor Science Campaign

Since the Last Workshop

- ROSES 2009 *HyspIRI Preparatory Activities Using Existing Imagery*
  - proposals reviewed and 6 funded
- 2 Subgroups formed to address issues raised in 2009 Workshop
  - Sun Glint
  - Hot Target Saturation
  - Both reporting out at this workshop
- HyspIRI Science Symposium on Ecosystem Data Products
  - May 4-5, NASA GSFC
- Presentations to Mike Freilich, NASA Earth Science Division Director
- Iceland Volcano and Gulf Oil Spill point to the importance of HyspIRI data
- SSG discussions of HyspIRI High-level Objectives for Non-Specialists and Critical Climate Contributions
- Release of NASA Climate Plan
  - June 2010, *Responding to the Challenge of Climate & Environmental Change*
- ROSES 2010 *HyspIRI Preparatory Activities Using Existing Imagery*
  - Review panel last week

NASA Climate Plan: Missions

NASA's FY2011 Budget Accelerates:

- Tier 1 SMAP launch to 11/2014
- Tier 1 ICESAT-2 launch to 10/2015
- Tier 1 CLARREO-1 launch to 11/2017 & CLARREO-2 launch to 2020
- Tier 1 DESDynI launch to 10/2017
- Tier 2 ASCENDS launch to 2019
- Tier 2 SWOT launch to 2020

Also:

- OCO-2 launch in 2/2013; OCO-3 ready for flight as early as 2015
- Expanded Venture-class program
- SAGE-III on Space Station in 2014
- GRACE Follow-on Mission launch in 2016
- Ocean Color and Clouds/Aerosols Polarimetry Mission launch in 2018
- **Other Tier 2 missions launched at rate of ~ 1 per year starting 2021**
  - Based on scientific priorities, Administration objectives, technical maturity & partnership opportunities, NASA will work with USGCRP to determine order for remaining Tier 2 missions.

Accelerated ESD Missions

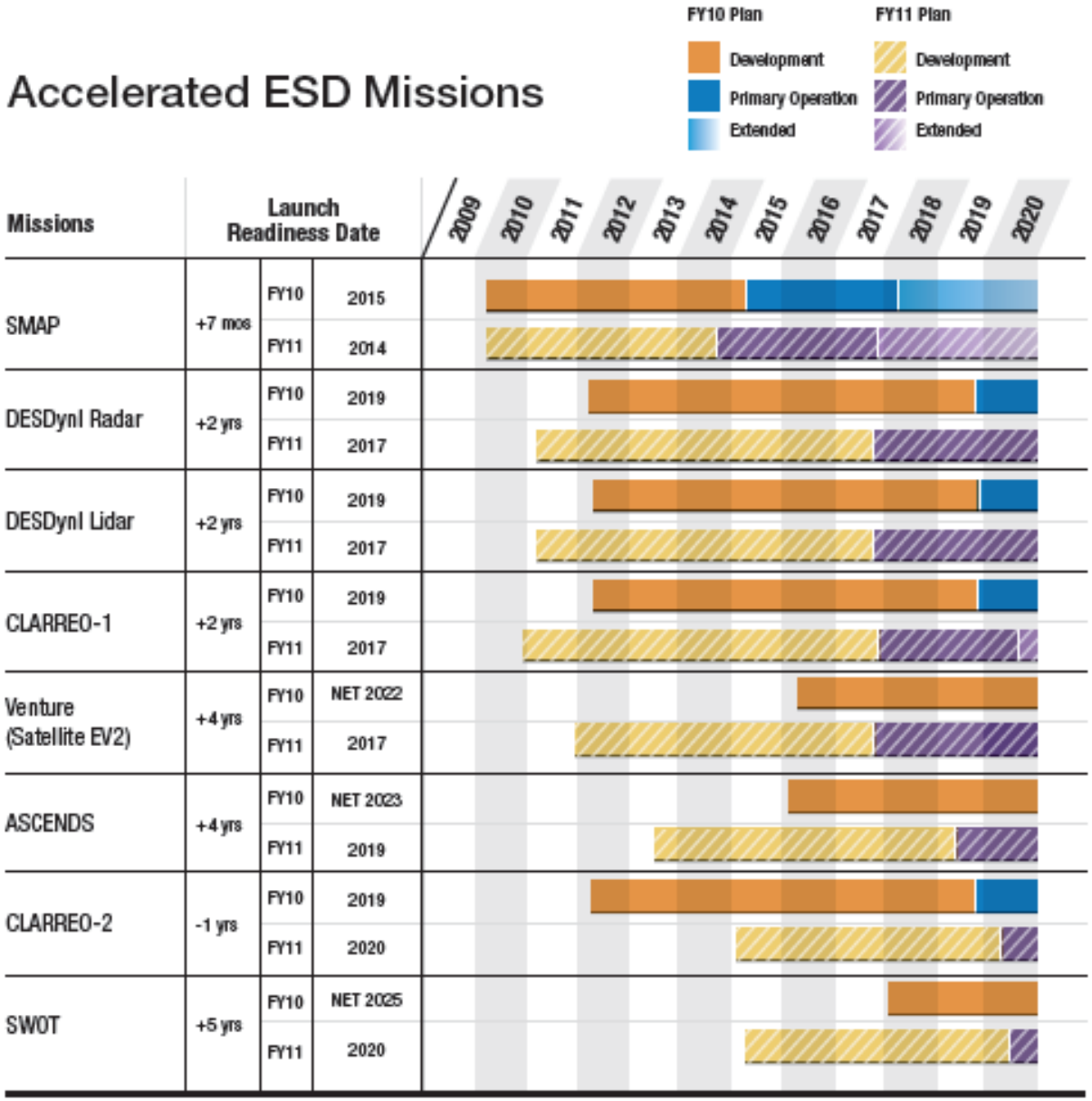

FIGURE 2: Accelerated Missions—This figure compares the timelines for mission development associated with the FY2010 and FY2011 budgets. The FY11 budget request substantially accelerates the development and launch of Decadal Survey-recommended missions.

HyspIRI Next Steps

- Remember what we are:
  - A *global* mission providing VSWIR imaging spectrometry (380 to 2500nm) and multispectral day/night thermal imaging in 8 bands at 60m spatial resolution for global lands and waters <50m depth, with a 19-day repeat for the VSWIR and 5-day repeat for the TIR, and ice sheets and open oceans averaged to 1km
- Build HyspIRI scientific case, with a focus on climate and the carbon cycle
- Mature mission technologies and reduce costs
- Develop precursor scientific opportunities using existing and planned airborne and complementary satellite platforms
- Seek partnerships with domestic and international partners
  - Joint Scientific Campaigns—precursor and flight
  - Calibration/Validation
  - Data Product Development and Use
  - Spacecraft
  - Launch
- Work with other NASA missions, e.g.: DESDynI and PACE
- Be Ready!