Science Mission Directorate

Suborbital Science Program Update for SCOAR

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Restructured Suborbital Science Program

Catalog

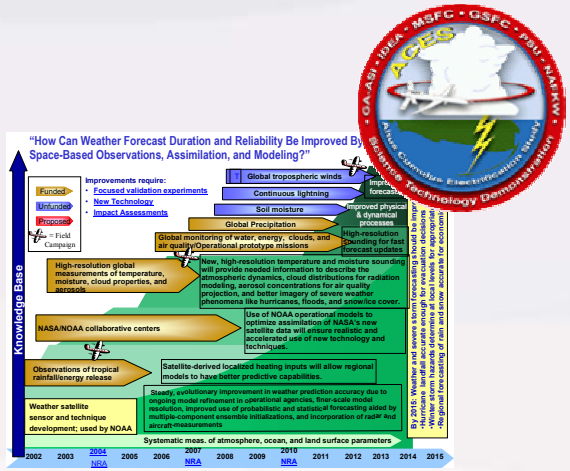
1-5yr task order arrangements for demonstrated or proven platforms from a variety of sources, selected based on 3-5 year science requirements.

New Technology Platforms

Long-term (5-10yrs) leases of experimental platforms, to enable new science from new vantage points.

Science Missions & New Sensors

Competitively-selected PI-mode style missions; potential to include sensor development to accompany new platform capabilities.



FY2005 Platform Catalog

Non-NASA Commercial/University Aircraft (pay-as-you-go): A selection of light aircraft (e.g. Twin Otter, KingAir, etc.) from non-NASA sources.

NASA & Non-NASA Federal Aircraft (pay-as-you-go): GRC Learjet, GRC S-3, NRL P-3, DOE KingAir, NSF C130, NOAA Citation.

NASA & Non-NASA Federal Aircraft (on retainer): DFRC ER2, JSC WB57, NASA DC8, and GSFC/WFF P3B.

Recommended Utilization of Current Earth-Science-Dedicated NASA Assets:

ER2 : Terminate the ER2 airborne science program in 2006 (aircraft will remain in NASA inventory) and transfer high-altitude Earth science missions to JSC's WB57 on a shared basis.

DC8: Conduct safety review and risk assessment for integration of DC8 aircraft into a university-based flight operation in 2005, with the eventual plan to shift ownership and operational control to university/consortium where the aircraft will be a national resource operated and funded by users. In Flyable Storage from now until transfer.

P3B: Transfer P3 missions to a commercial or other non-NASA operation, and put NASA P3B in flyable storage.

Earth Science Capability Project

- Repeat Pass Project: Develop flight control capability to repeat flight path within 10m tube, to support UAV-SAR.
- UAV Missions:
  - NOAA UAV Mission Demonstration, http://uav.noaa.gov
  - Western States FiRE Mission, http://geo.arc.nasa.gov/sge/WRAP/current/future_missions.html
- Advanced Mission Platform requirements analysis (potential platforms include Proteus II, G-V OPV, Adam Aircraft A700)
- Civil UAV Assessment, http://www.nasa.gov/centers/dryden/research/civuav/civ_uav_index.html
  - April 26-28 Workshop in Akron, OH

NASA 5-Year Plan

Mission	FY05	FY06	FY07	FY08	FY09	Start Date	Location	Aircraft	Payload
Atmospheric Composition									
INTEX-B						3/06	Western U.S.	DC-8, P-3	Various
Aura Validation (AVE)						 1/05 9/06 6/07 10/07	NH TX TX, Costa Rica TX	 DC-8 WB-57 WB-57 WB-57	 Various Various Various Various
TWP-ICE (AVE)						1/06	Australia	WB-57, Prot, ER-2?	Various
TC-4 (AVE)						1/07 1/08	Guam Guam	WB-57, DC-8 WB-57, DC-8	Various Various
TRACE-P Next						3/08	Japan, Guam	DC-8, P-3?	
T-REX						4/06	U.S.	WB-57	
Climate									
AIM/ICESat						5/05 6/05	Greenland Greenland	P-3 P-3	ATM/GPS
Artic Sea Ice						3/06?	AK	P-3	AMSR
CALIPSO Validation						8/05 ?	VA VA, DFRC	Learjet, J-31?, TO? Learjet, DC-8?	Lidar, AATS?
Water & Energy Cycle									
MODIS Validation							OK, TX	ER-2	
SMEX							U.S.	P-3	
CLPX							CO CO	DC-8, P-3? DC-8, P-3?	PSR PSR
Weather									
TCSP						6/05	Costa Rica	DC-8, ER-2, WB-57	Various
NPP/NPOESS Validation							?	WB-57, Prot?	
Carbon Cycle & Ecosystems									
NACP							U.S.	P-3, DC-8, Citation	
SOCP							S. Pacific	OPV?	
Solid Earth									
Antarctic Surveys						12/05	Chile?	DC-8, Proteus, TO, OPV/UAV	
Earthscope							?		

Flight Request System

- Suborbital online Flight Request system being developed at NASA Ames by the Earth Science Project Office (ESPO)
- Web page - http://www.espo.nasa.gov/suborbital.html
- Currently allows Investigators ability to login and submit NASA Flight Requests (FR) to database for Suborbital Science Missions.
- Future Goals will duplicate many UNOLS Ship Time Request System capabilities with the Suborbital Science Catalog Aircraft.
  1. Merge FR database with ESPO database (contacts, aircraft, missions, instruments, etc.)
  2. Allow Investigators ability to edit, update, and view FR status.
  3. Allow aircraft operators ability to view and update their specific FR online
  4. Show daily status page of aircraft, sensor, and mission status
  5. Use flight log application to track mission specifics.
  6. Possible integration with UAV Intelligent Mission Management System