Earth Science Technology Program (ESTP)

Current Events

February 25, 2003

George Komar
Program Manager
301-286-0007

ESTO Active Projects (FY02-03) By Organization and Product Line

ESTO

JPL (30)
- Instruments 17
- Info Systems 3
- CT 5
- Platforms 5

LaRC (12)
- Instruments 11
- Info Systems 1

GRC (2)
- Info Systems 2

GSFC (38)
- Instruments 20
- Info Systems 9
- CT 5
- Platforms 4

ARC (1)
- Platforms 1

Instruments:	**65**
Info Systems:	**35**
CT:	**28**
Platforms:	**12**
Other :	**2**
Total:	**142**

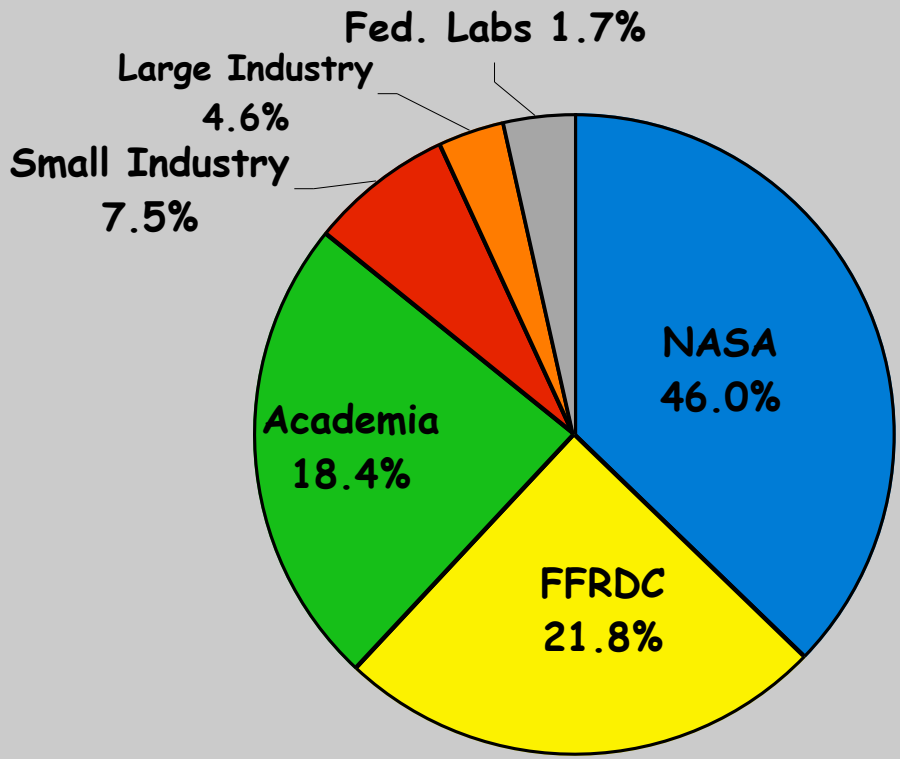
National Labs (10)
- Aerospace Corp. (Instruments 1)
- Air Force Research Lab (Instruments 1; Info Sys 1)
- Applied Physics Lab (Instruments 1; Info Sys 1)
- Draper Laboratories (Info Sys 1)
- Lawrence Berkeley NL (CT 1)
- Naval Research Lab (Info Sys 1)
- NCAR (CT 1)
- NOAA NWS (Instruments 1)

Small Corps. (10)
- Barr Associates, Inc (Instruments 1)
- Fibertek, Inc. (Instruments 1)
- GST (Info Sys 1)
- Pico Dyne, Inc. (Info Sys 1)
- Polatomic (Instruments 1)
- QorTek Inc (Instruments 1)
- SSAI (CT 3)
- Syagen Technolgies (Instruments 1)

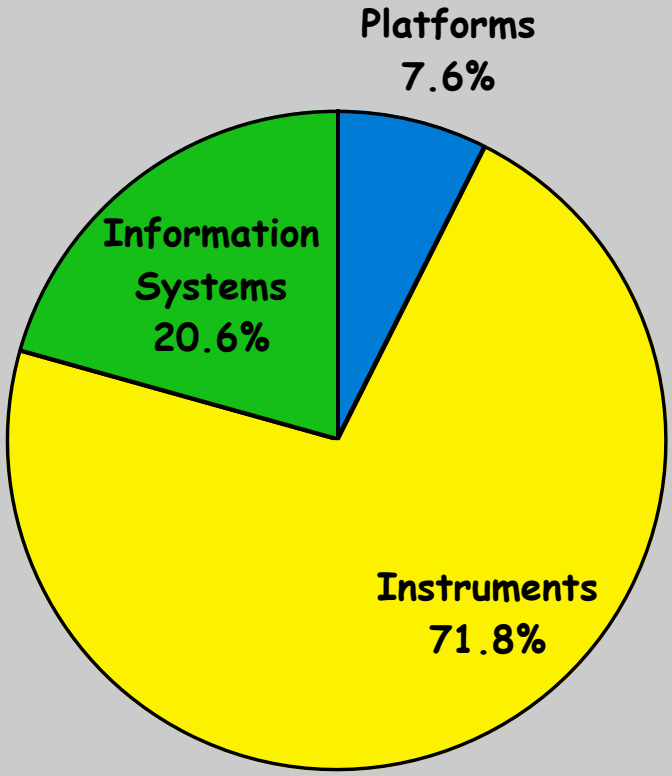
Academia (34)
- Ben Gurion U. (Other 1)
- Cal Institute of Tech (CT 1)
- Clemson U. (CT 1)
- Drexel U. (CT 1)
- George Mason U. (Info Sys 1; CT 1)
- George Washington U. (Other 1)
- Georgia Tech (Platforms 1)
- Harvard Univ. (Instruments 1)
- Howard Univ. (Info Sys 1)
- Johns Hopkins Univ. (Instruments 1)
- MIT (CT 1)
- Michigan Tech (CT 1)
- Morehead State U. (Platforms 1)
- Ohio State Univ. (Instruments 1)
- Stanford Univ. (Instruments 1)
- UCLA (CT 1)
- U. of Alabama, Huntsville (Info Sys 4)
- U. of Arizona (Info Sys 1)
- U. of Colorado, Boulder (Instruments 2)
- U. of Illinois at Urbana-Champaign (CT 1)
- U. of Maryland, Balt. County (CT 3)
- U. of Michigan (Instruments 1; CT 1)
- U. of Tennessee (CT 1)
- U. of Virginia (Info Sys 1)
- U. of Washington (Info Sys 2)

Large Industry (5)
- Ball Aerospace (Instruments 1; Info Sys 1)
- ITT Industries (Info Sys 1)
- Lockheed Martin (Info Sys 1)
- SAIC (Info Sys 1)

FY 02-03 ESTO Technology Investments by Organization Type



FY 02-03 ESE Technology Investments by Product Line (%$)



Does not include IIP Round 3 and AIST Round 2

Earth Science Summary Schedule - 2003

January 24, 2003
For internal planning purposes only!!

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
External	CES @ WDC	1/27-29	3/11-13 CESDU; 3/24-26 SSB @ WDC		NASA-NOAA Transition Report	6/19-20 SSB @ TBD					11/11-13 SSB @ Beckman	
Interagency				CCSPO Strategic Plan			TBD - Earth Observation Summit					
Agency	FY04 Budget Request & Strategic Plan	2/3	1st NASA Space Architecture; 3/19-20 NAC @ SSC			6/10-11 NAC @ HQ		FY05 Budget to OMB	9/9-10 NAC @ ARC	OMB Passback	12/3-4 NAC @ HQ	
Enterprise		Draft ESE Strategic Plan for SSB Review			TBD - ESSAAC				ESE Strategic Plan		TBD - ESSAAC	
Science		1/31 Roadmap baseline		Draft Research Plan					Research Plan			
NPP			MPDR; MCR									MCDR
LDCM	1/6 RFP Released	2/20 Proposals Due				Award				Delta PDR		
OSTM			Payload PDR			MCR (may slip)						
GPM		*In formulation; discussion with international partners*										
Other		*Pre-formulation studies*										
Exploratory		*Risk mitigation phase for ESSP Round 3 mission concepts*							Formulation phase start for Round 3 missions			*Begin writing AO4*
SEEDS							Formulation recommendations finalized			*NRC Review*		
Applications			REASoN Selections	Draft Applications Plan					Applications Plan			
Technology				Draft Technology Plan		6/24-26 Technology Conference @WDC			Technology Plan			
Education & Outreach			GLOBE Selections	Draft Education Plan					Education Plan			

ESE Strategic Plan

- Mid-Feb draft for SSB
- First NASA Space Architecture in March
- ESSAAC currently being reconstituted; likely next meeting in April/May
  - All next tier plans in draft prior to this meeting
- Final draft of ESE plan in June; publish complete set of plans by end of August

Technology Requirement Validation Workshop

NASA ESTO Technology Planning Workshop

(Instruments & Platform Technologies)

March 5-6, 2003

Pasadena Hilton Hotel

Pasadena, California

Validated Technology Requirements will become available on-line through ESTIPS by May 2003.

Each technology requirement will be traceable to a parent science requirement.

ESTIPS 2003 will replace CNSAT 2000.

Strategic Organization
A Whole New Approach

PREVIOUS

Enterprises

- Human Exploration & Dev. Of Space
- Space Science
- Earth Science
- Bio & Phys Res
- Aerospace Technology

NEW

Mission-Driven

- Space Science
- Earth Science
- Bio & Phys Res
- Aeronautics

Education

Space Flight Capabilities

- Space Flight
- Crosscutting Technology
- Safety & Mission Assurance
- Institutional Support

FY 2004 Budget Request by Theme: Our 18 Strategic Areas

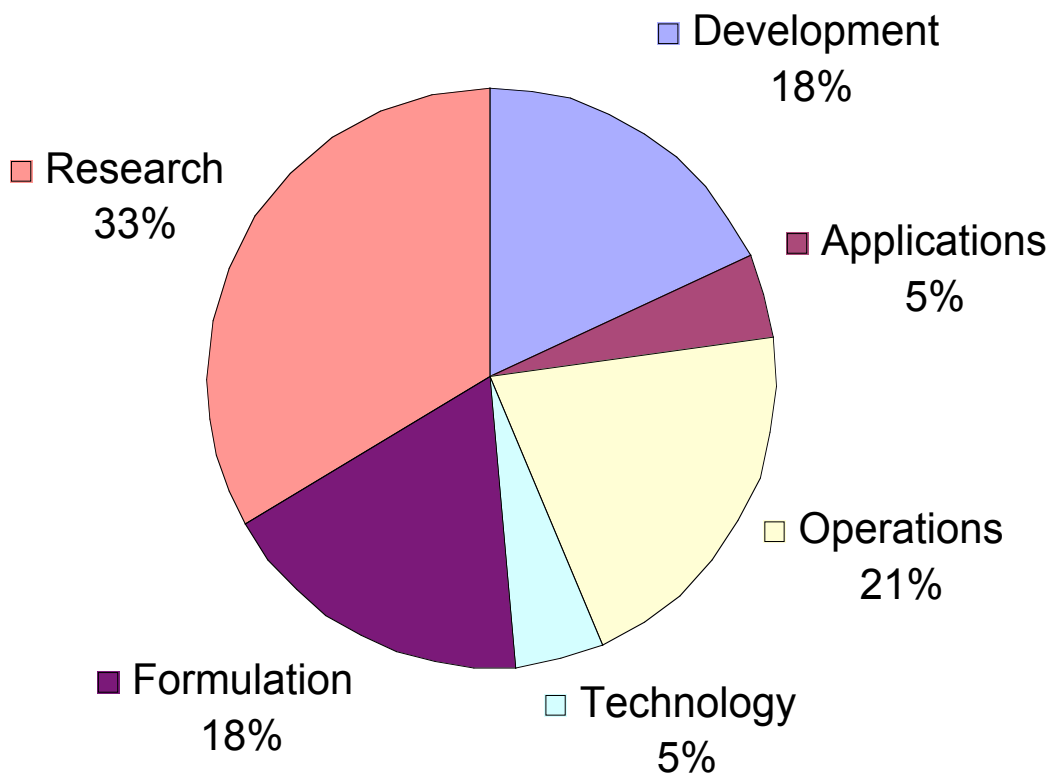
ENTERPRISE	Theme	Budget ($m)*	
		FY03	FY04
Space Science	Solar System Exploration	1,046	1,359
	Mars Exploration	551	570
	Astronomical Search for Origins	799	877
	Structure & Evolution of the Univ.	398	432
	Sun-Earth Connections	674	770
Earth Science	Earth System Science	1,529	1,477
	Earth Science Applications	81	75
Biological & Physical Research	Biological Sciences Research	304	359
	Physical Sciences Research	351	353
	Research Partnership & Flt Supt	254	261
Aerospace Technology	Aeronautics Technology	949	959
	Space Launch Initiative	1,150	1,065
	Mission & Sci. Measurement Tech	434	438
	Innovative Tech Xfer Partnerships	183	169
Education	Education	160	170
Space Flight	Space Station	1,851	1,707
	Space Shuttle	3,786	3,968
	Space Flight Support	471	434

*Note: FY03 estimate is shown in full cost for illustrative purposes only and based on Pres. FY03 Request

Total Request - Summary

	Prior	Request FY03	Notional Full Cost FY03	FY04	FY05	FY06	FY07	FY08	Total
Total Enterprise FY04 Request		**1628.4**	**1610.3**	**1552.2**	**1525.3**	**1598.3**	**1700.4**	**1725.0**	
Earth System Science		**1248.8**	**1529.0**	**1477.4**	**1440.3**	**1511.0**	**1606.3**	**1628.9**	
Development		332.7		278.5	172.2	137.5	125.6	122.2	
Aura	621.6	85.3		52.5	4.6	3.4	0.1	0.1	767.6
GIFTS	56.8	22.3		27.0	15.5				121.6
Cloudsat	93.6	27.4		16.5	2.7	1.7			141.9
Calipso	86.0	33.8		28.4	7.6	4.5	3.0		163.3
Special (SORCE, ICESat, SeaWinds)	461.2	6.2		6.6	5.2	4.7	4.7	0.8	489.4
EOSDIS		74.3		98.3	98.6	100.6	99.4	104.7	575.9
Algorithms		59.7							
Polarimeter development				23.2	21.3	8.4	2.1		55.0
Aqua	942.9	4.7		5.0	1.0	0.4	0.2	0.2	954.4
Landsat	505.2	1.7		2.0					508.9
Grace	91.5	2.1		4.1	1.3	0.4			99.4
Other/support		15.2		14.9	14.4	13.4	16.1	16.4	
Operations		247.8		322.2	302.3	300.7	315.6	306.9	
Tech and Advanced concepts		311.0		353.3	414.8	506.3	564.1	594.8	
Technology Infusion		65.0		78.9	61.8	86.6	114.3	126.7	
Missions in Formulation		246.0		274.4	353.0	419.7	449.8	468.1	
Research		357.3		523.4	551.0	566.5	601.0	605.0	
Earth Science Applications		**61.7**	**81.3**	**74.8**	**85.0**	**87.3**	**94.1**	**96.1**	
Research/Nat apps		20.8		24.0	25.4	25.3	29.4	30.1	
Research/Education		18.1		20.8	21.1	21.3	22.2	22.7	
Adv concepts/Cross cutting solutions		22.8		30.0	38.5	40.7	42.5	43.3	
Institutional		**317.9**							

Total Request – Summary – FY04



Technology Request – Changes from 03 Request

Budget Authority ($ in millions)	Prior	FY02	FY03	FY04	FY05	FY06	FY07	FY08	BTC	Total
Technology Infusion	0.0	71.8	65.0	78.9	61.8	86.4	114.3	126.7	0.0	604.9
Instrument Incubator Program		15.0	22.0	27.1	26.5	26.0	27.0	26.8		170.4
Advanced Info Systems Technology		9.5	9.8	11.5	14.1	15.3	15.9	15.9		92.0
Advanced Technology Initiatives		19.7	8.5	12.3	15.2	19.8	24.8	25.2		125.5
Computational Technology		21.8	19.0	21.9						62.7
NMP Future Missions						19.3	40.4	52.5		112.2
IDPT		5.8	5.7	6.1	6.0	6.0	6.2	6.3		42.1
										0.0
Changes since FY 03 Pres. Budget	-26.8	-30.0	-22.3	1.7	-7.0	-11.7	14.4	0.0		-81.7
Full Cost				14.2	13.0	18.6	20.7			66.5
EO-3 Funding to development	-26.8	-30.0	-22.3	-10.2	-7.6	-3.9	-2.0			-102.8
Corporate G&A				3.5	2.7	2.7	3.1			12.0
NMP future missions				-5.8	-15.1	-29.1	-7.4			-57.4

FY03 President's Budget	101.8	87.3	77.2	68.8	98.1	99.9
Instrument Incubator Program	15	22	22	22	22	22.9
Advanced Info Systems Technology	9.5	9.8	9.8	9.8	9.8	10.2
Advanced Technology Initiatives	19.7	8.5	8.5	8.5	8.5	8.8
Computational Technology	21.8	19	15			
NMP EO-3	30	22.3	10.2	7.6	3.9	2
NMP future missions			5.8	15.1	48.1	50
IDPT	5.8	5.7	5.9	5.8	5.8	6

Additional Topics

- Four Initiatives for FY 05 Budget Request
  - SAR
  - Laser
  - Atmospheric Chemistry
  - Computational technology
- NASA Space Architect Planning
  - Retreat
- Integrated Space Plan

Summary

Challenges to Enable Future Science

- Laser/Lidar technology to enable atmospheric science measurements
- Large Deployables to enable future weather/climate/natural hazards measurements
- Intelligent Distributed Systems using optical communication, on-board reprogrammable processors, autonomous network control, data compression, high density storage
- Information Knowledge Capture through 3-D Visualization, holographic memory and seamlessly linked models.