

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)									DATE February 1997	
BUDGET ACTIVITY 6 - Management and Support				PE NUMBER AND TITLE 0603402F Space Test Program (Space)					PROJECT 2617	
COST (\$ In Thousands)	FY 1996 Actual	FY 1997 Estimate	FY 1998 Estimate	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	Cost to Complete	Total Cost
2617 Free Flyer Spacecraft Missions	44,731	43,439	42,241	56,157	51,748	53,536	55,360	57,444	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0	0

(U) A. Mission Description and Budget Item Justification

(U) Space Test Program (STP) is a Budget Activity 6 RDT&E Management Support program. It provides support to the DoD space research community by centrally financing the launch and initial operations costs for experiments with military relevance whose scope ranges from basic research to advanced development. STP missions are the most cost-effective way to flight test new space systems technologies, concepts and designs, providing an inexpensive way to:

- Demonstrate the feasibility of new space systems and technologies,
- Improve operational design by characterizing the space environment and event or sensor physics proposed for an operational system or system upgrade,
- Provide early operational capabilities to evaluate usefulness or quickly react to new developments,
- Perform operational risk reduction through direct flight test of prototype components,
- Develop the knowledge base from which to plan new and improved operational systems and system upgrades, and
- Exploit unanticipated discoveries and opportunities.

This DoD program provides the primary spaceflight capability to perform fly-before-buy, risk-reducing demonstrations of advanced technologies in operational space environments. The Secretary of Defense issued a policy statement in November 1995 reaffirming STP's role as the primary provider of spaceflight for the entire DoD space research community.

(U) The space research experiments that STP supports are justified, developed and delivered by various Service laboratories and DoD agencies, with the goal of improving DoD's current and future operational space systems' performance. Experiments are considered for spaceflight based on the priority that they are assigned by a DoD Space Experiments Review Board, a group that is independent of the STP Program Office, and is comprised of Air Force, Army, Navy, BMDO and other representatives with expertise in DoD operational space requirements. The Board gives the prioritized list of experiments to STP, who then seeks out the most cost effective means of spaceflight so as to maximize the number of experiments flown within the constraints of priority, opportunity and available funding. The most common spaceflight opportunities include piggybacking on military or commercial satellites, both foreign and domestic, and the various payload modes of the Space Shuttle. For those experiments whose requirements cannot be satisfied with these "secondary" opportunities, dedicated STP spacecraft and launch vehicle hardware are procured within the constraints of available funding and according to experiment requirements. These include Small and Medium Launch Vehicle class satellites, as well as Small Launch Vehicle class boosters (such as Pegasus, Taurus, and LMLV) themselves. Medium Launch Vehicle class boosters are provided as required by PE 35119F. If a particular manifested experiment fails to materialize or is deemed impractical to fly given current funding, or if the appropriate spaceflight opportunity becomes unavailable, STP shifts what resources remain to provide spaceflight support for the next highest priority experiments.

(U) The Air Force requires a stable funding level and the flexibility necessary to take advantage of whatever means of spaceflight is deemed to be most cost effective for a given experiment or complement of experiments. This flexibility is essential to take advantage of inexpensive "target of opportunity" space hardware, including

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<p>operational spacecraft, where margin is usually firmly identified during the later stages of spacecraft development. This assures that the greatest amount of space research is accomplished with the limited funds available. Without the requested funding DoD would lose its most successful and most cost-effective capability to launch and test new technologies prior to their incorporation into our nation's very expensive and demanding operational space systems. Insufficient funding would also force each of the Services and DoD agencies to create individual launch capabilities in an attempt to duplicate STP's current low-cost, risk mitigating capability. Such a redundancy would result in the loss of the contractual economy of scale that a single space test organization provides, as well as the filtering function of the STP Space Experiment Review Board in assuring quality experiments and minimum duplication.</p>		
<p>(U) <u>FY 1996</u></p> <ul style="list-style-type: none"> - (U) \$ 9,622 Piggyback/secondary payload launch/mission studies, Aerospace support, mission support, Program Office support, and contract close-out costs. - (U) \$ 2,516 Space Shuttle payload engineering, analysis, pre- and post-launch processing, and launch support. - (U) \$32,148 Development and construction of Space Test Experiments Platform Mission 4 (STEP-4), Advanced Research & Global Observation Satellite (ARGOS), and Tri-Service Experiments Mission 5 (TSX-5) satellites; incremental funding of Pegasus XL boosters, and booster integration for STEP-4 and the Fast On-Orbit Recording of Transient Events (FORTE) missions. - (U) \$ 445 Launch processing and initial operations support for Radiation Experiment II (REX II) mission. - (U) \$44,731 Total <p>(U) <u>FY 1997</u></p> <ul style="list-style-type: none"> - (U) \$11,638 Piggyback/secondary payload launch/mission studies, Aerospace support, mission support, and Program Office support. - (U) \$13,539 Completion of STEP-4 and ARGOS satellites; launch processing and initial operations support for STEP-4, ARGOS, and FORTE missions. - (U) \$ 2,815 Space Shuttle payload engineering, analysis, pre- and post-launch processing, and launch support. - (U) \$15,447 Continue development of TSX-5 satellite and launch service; incremental funding of Taurus for Multispectral Thermal Imager (MTI) mission. - (U) \$43,439 Total <p>(U) <u>FY 1998</u></p> <ul style="list-style-type: none"> - (U) \$13,004 Piggyback/secondary payload launch/mission studies, Aerospace support, mission support, and Program Office support. - (U) \$ 4,350 Contract close-out and operations support for ARGOS and STEP-4. - (U) \$ 2,900 Space Shuttle payload engineering, analysis, pre- and post-launch processing, and launch support. - (U) \$21,987 Complete development of TSX-5; begin development of TSX-6 and first EELV mission (dedicated STP mission); incremental funding of Taurus for MTI mission; launch processing and initial operations support for TSX-5 mission. - (U) \$42,241 Total 		
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- (U) FY 1999
- (U) \$ 12,193 Piggyback/secondary payload launch/mission studies, Aerospace support, mission support, and Program Office support.
- (U) \$ 3,000 Space Shuttle payload engineering, analysis, pre- and post-launch processing, and launch support.
- (U) \$ 15,961 New mission studies/development. (Experiments to be selected based on 1997 and 1998 Space Experiments Review Board results.)
- (U) \$ 25,003 Close out TSX-5 contract; continue development of TSX-6 and EELV missions; launch processing and initial operations support of MTI mission.
- (U) \$ 56,157 Total

(U) B. Program Change Summary (\$ in Thousands)

	<u>FY 1996</u>	<u>FY 1997</u>	<u>FY 1998</u>	<u>FY 1999</u>
(U) Previous President's Budget	45,032	44,752	45,731	46,701
(U) Appropriated Value		44,752		
(U) Adjustments to Appropriated Value				
a. Cong Gen Reductions		-1,174		
b. SBIR		-139		
c. Omnibus or Other Above Threshold Reprogram				
d. Below Threshold Reprogramming	-13			
e. Rescission	-288			
(U) Adjustments to Budget Years Since FY97 PB			-3,490	9,456
(U) Current Budget Submit/President's Budget	44,731	43,439	42,241	56,157

(U) Change Summary Explanation:
 Funding: FY96 reductions for higher priority Air Force requirements. FY98-FY03 dollars increased due to PDM I adds. FY98 dollars phased into FY99 by OSD because of execution.

Schedule: Not applicable.

Technical: Not Applicable.

(U) C. Other Program Funding Summary (\$ in Thousands):

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<u>Related RDT&E:</u> (U) PE #305119F, Medium Launch Vehicles Experiments are funded by many S&T PE's in: Air Force, Army, Navy, ARPA, BMDO, NASA, and NRO programs.		
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(U) **D. Schedule Profile** (Current projection. Experiments are added as newspaceflight opportunities and budget permits)

	FY 1996				FY 1997				FY 1998				FY 1999			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(U) STS-72 FLEX BEAM, STL/NIH-C (P93-6)		X														
(U) REX II (P94-2)		X														
(U) BINRAD (COSMOS) (P93-1)		X														
(U) STS-76 TRIS II (S85-2)		X														
(U) STS-77 LMTE (LiTE), STL-A (S93-5)			X													
(U) STS-78 STL, MSX			X													
(U) STS-79 MSX, SIMPLEX				X												
(U) STS-80 CCM-A, MSX					X											
(U) STS-81 CREAM, MSX						X										
(U) STS-82 MSX						X										
(U) STS-83 CRYOFD, MSX						X										
(U) STS-84 RME-III, CREAM, MSX, SIMPLEX							X									
(U) MPTB (Classified Host) (S96-1)								X								
(U) FORTE (P94-1)								X								
(U) STEP 4 EMPE, OOAM, DIDM (P95-A)								X								
(U) ARGOS - ESEX, USA, GIMI, CIV, SPADUS, HIRAAS, HTSSE II, EUVIP (P91-1)								X								
(U) STS-85 CFE, MSX, SIMPLEX								X								
(U) STS-86 MSX, SIMPLEX, CREAM								X								
(U) STS-87* MSX, SIMPLEX									X							
(U) STS-88* MightySat I, MSX, SIMPLEX									X							
(U) POAM III (SPOT IV) (S96-2)										X						
(U) STS-89* CREAM, MSX, SIMPLEX										X						

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	FY 1996				FY 1997				FY 1998				FY 1999			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
(U) TSX-5 STRV II, CEASE (P95-2)											X					
(U) POGS-II (S92-1)														X		

*NOTE: NASA does not manifest shuttle flights (STS) beyond 18 months. Experiments are proposed.