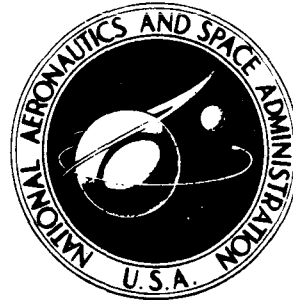


NATIONAL AERONAUTICS AND SPACE ADMINISTRATION



CHRONOLOGICAL HISTORY
FISCAL YEAR 1975
BUDGET SUBMISSION

Prepared by:
NASA Comptroller
Office of Budget Operations
Code BTF Ext. 58466

8/13/75
FINAL

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Space Applications.....	4	12	26	35	40	43	47			
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Johnson Space Center.....	6	--	--	35	40					
Langley Research Center.....	6	--	--	35	40					
Lewis Research Center.....	6	--	--	35	40					
Marshall Space Flight Center.....	6	--	--	35	40					
Wallops Station.....	6	--	--	35	40					
Various Locations.....	7	14	29	35	40					
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1975 Budget Submission
(In thousands of dollars)

I T E M	A U T H O R I Z A T I O N							A P P R O P R I A T I O N					Difference From Budget Submission	Difference From Authori- zation
	NASA Budget Submission	House Comm. Approved H.R. 13998 Rep. 93-983 4/10/74	House Approved 4/25/74	Senate Comm. Approved H.R. 13998 Rep. 93-818 5/6/74	Senate Passed 5/9/74	Conf. Comm. Appd 6/18/74 Rep. S 93-886 P.L. 93-316 6/22/74	Difference From Budget Submission	House H.R. 15572 Rep. 93-1139 6/21/74	Senate Comm. H.R. 15572 Rep. 93-1056 8/1/74	Senate Comm. H.R. 15572 Rep. 93-1091 8/15/74	Conf. Comm. Appd 8/21/74 Rep. 93-1310 P.L. 93-414 9/6/74			
TOTAL APPROPRIATIONS:														
Research & Development..	2,346,015	2,257,070	2,362,070	2,370,115	2,370,115	2,372,815	+26,800	2,327,380	2,349,080	2,326,580	2,326,580	-19,435	-46,225	
Construction of Facilities.....	151,490	146,490	146,490	147,490	147,490	144,490	-7,000	135,670	144,490	140,155.3	140,155	-11,335	-4,335	
Research and Program Management.....														
Basic Submission.....	(749,624)	(749,624)	(749,624)	(749,624)	(749,624)	(749,624)	(---)	(740,000)	(749,124)	(740,000)	(740,000)	(-9,624)	(-9,624)	
Supplemental.....	(19,975)	(19,975)	(19,975)	(19,975)	(19,975)	(19,975)	(---)	(19,975)	(19,975)	(19,975)	(19,975)	(---)	(---)	
TOTAL R&PM.....	769,599	769,599	769,599	769,599	769,599	769,599	---	759,975	769,099	759,975	759,975	-9,624	-9,624	
GRAND TOTAL.....	3,267,104	3,273,159	3,279,059	3,287,204	3,287,204	3,286,904	+19,800	3,223,025	3,262,669	3,226,710.3	3,226,710	-40,394	-60,194	
R&D Appropriation:														
OMSF.....	1,124,800	1,129,800	1,129,800	1,119,800	1,119,800	1,119,800	-5,000	*	*	*	*	*	*	
OSS.....	547,015	547,015	547,015	548,015	548,015	550,015	+3,000	*	*	*	*	*	*	
QA.....	177,500	177,500	179,500	200,500	200,500	196,300	+18,800	*	*	*	*	*	*	
QAST.....	241,200	247,255	251,155	246,255	246,255	251,200	+10,000	*	*	*	*	*	*	
OTDA.....	250,000	250,000	250,000	250,000	250,000	250,000	---	*	*	*	*	*	*	
OTU.....	5,500	5,500	5,500	5,500	5,500	5,500	---	*	*	*	*	*	*	
TOTAL R&D.....	2,346,015	2,357,070	2,362,970	2,370,070	2,370,070	2,372,815	+26,800	2,327,380	2,349,080	2,326,580	2,326,580	-19,435	-46,235	
CoF Appropriation:														
OMSF.....	86,955	77,955	77,955	82,955	82,955	79,955	-7,000	76,015	79,955	*	*	*	*	
OSS.....	22,400	26,400	22,400	22,400	22,400	22,400	---	17,520	22,400	*	*	*	*	
QAST.....	10,405	10,405	10,405	10,405	10,405	10,405	---	10,405	10,405	*	*	*	*	
OTDA.....	1,430	1,430	1,430	1,430	1,430	1,430	---	1,430	1,430	*	*	*	*	
Comptroller.....	30,300	30,300	30,300	30,300	30,300	30,300	---	30,300	30,300	*	*	*	*	
TOTAL CoF.....	151,490	146,490	146,490	147,490	147,490	144,490	-7,000	135,670	144,490	140,155.3	140,155	-11,335	-4,335	
R&PM Appropriation:														
OMSF.....	346,133	346,133	346,133	346,133	346,133	346,133	---	*	*	*	*	*	*	
OSS.....	112,283	112,283	112,283	112,283	112,283	112,283	---	*	*	*	*	*	*	
QAST.....	223,875	223,875	223,875	223,875	223,875	223,875	---	*	*	*	*	*	*	
Supporting Operations...	67,333	67,333	67,333	67,333	67,333	67,333	---	*	*	*	*	*	*	
Subtotal R&PM.....	749,624	749,624	749,624	749,624	749,624	749,624	---	740,000	749,124	740,000	740,000	-9,624	-9,624	
Supplemental Appropriation.....	19,975	19,975	19,975	19,975	19,975	19,975	---	19,975	19,975	19,975	19,975	---	---	
TOTAL R&PM.....	769,599	769,599	769,599	769,599	769,599	769,599	---	759,975	769,099	759,975	759,975	-9,624	-9,624	
TOTAL.....	3,267,104	3,273,159	3,279,059	3,287,204	3,287,204	3,286,904	+19,800	3,223,025	3,262,669	3,226,710.3	3,226,710	-40,394	-60,194	
Special Energy R&D..... Appropriation Act (Funds appropriated to R&D) 37								9,239	4,435	4,435	4,435	4,435	4,435	
TOTAL NASA APPROPRIATION.....								3,231,964	3,267,104	3,231,145.3	3,231,145	-25,059	-55,750	

Prepared by:
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Office of Budget Operations
Code BTF Ext. 38466

* Undistributed.

1 House Conference Report No. 93-1078 is identical to Senate version.

2 Floor action on 8/5/74 resulted in Bill being recommitted to the Committee.

3 Authorized in P.L. 93-316 (NASA Authorization Act).

4 Appropriated by Public Law 94-32 dated 6/12/75.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1975 Budget Submission
(In thousands of dollars)

I T E M	A U T H O R I Z A T I O N							A P P R O P R I A T I O N					
	NASA Budget Submission	House Comm. Approved H.R. 13998 Rep. 93-983 4/10/74	House Approved 4/25/74	Senate Comm. Approved H.R. 13998 Rep. 93-818 5/6/74	Senate Passed 5/9/74	Conf. Comm. Appd 6/18/74 Rep. S 93-886 P.L. 93-316 6/22/74	Difference From Budget Submission	House H.R. 15572 Rep. 93-1139 Appd 6/26/74	Senate Comm. H.R. 15572 Rep. 93-1056 8/1/74 1/	Senate Comm. H.R. 15572 Rep. 93-1091 8/15/74 Appd 8/16/74	Conf. Comm. Appd 8/21/74 Rep. 93-1310 P.L. 93-414 9/6/74	Difference From Budget Submission	Difference From Authori- zation
RESEARCH AND DEVELOPMENT..	2,346,015	2,357,070	2,362,970	2,370,115	2,370,115	2,372,815	+26,800	2,327,380	2,349,080	2,326,580	2,326,580	-19,435	-46,235
Space Shuttle.....	800,000	820,000	820,000	800,000	800,000	805,000	+5,000	*	*	*	*	*	*
Space Flight Operations.	323,300	308,300	308,300	318,300	318,300	313,300	-10,000	*	*	*	*	*	*
Advanced Missions.....	1,500	1,500	1,500	1,500	1,500	1,500	---	*	*	*	*	*	*
Physics and Astronomy...	140,515	140,515	140,515	140,515	140,515	140,515	---	*	*	*	*	*	*
Lunar and Planetary....	266,000	266,000	266,000	264,000	264,000	266,000	---	*	*	*	*	*	*
Launch Vehicle Proc.....	140,500	140,500	140,500	143,500	143,500	143,500	+3,000	*	*	*	*	*	*
Space Applications.....	177,500	177,500	179,500	200,500	200,500	196,300	+18,800	*	*	*	*	*	*
Aeronautical Research and Technology.....	166,400	170,655	170,655	171,500	171,500	171,500	+5,100	*	*	*	*	*	*
Space and Nuclear Re- search and Technology.	74,800	76,600	80,500	74,800	74,800	79,700	+4,900	*	*	*	*	*	*
Tracking and Data Acq...	250,000	250,000	250,000	250,000	250,000	250,000	---	*	*	*	*	*	*
Technology Utilization..	5,500	5,500	5,500	5,500	5,500	5,500	---	*	*	*	*	*	*
CONSTRUCTION OF FACILITIES	151,490	146,490	146,490	147,490	147,490	144,490	-7,000	135,670	144,490	140,155.3	140,155	-11,335	-4,335
Ames Research Center.....	3,660	3,660	3,660	3,660	3,660	3,660	---	3,660	3,660	*	*	*	*
Goddard Space Flight Ctr..	2,110	2,110	2,110	2,110	2,110	2,110	---	2,110	2,110	*	*	*	*
Jet Propulsion Lab.....	8,820	8,820	8,820	8,820	8,820	8,820	---	3,940	8,820	*	*	*	*
Johnson Space Center.....	935	935	935	935	935	935	---	935	935	*	*	*	*
Langley Research Center...	3,505	3,505	3,505	3,505	3,505	3,505	---	3,505	3,505	*	*	*	*
Lewis Research Center.....	3,240	3,240	3,240	3,240	3,240	3,240	---	3,240	3,240	*	*	*	*
Marshall Space Flight Ctr.	4,060	4,060	4,060	4,060	4,060	4,060	---	4,060	4,060	*	*	*	*
Wallops Flight Center.....	1,370	1,370	1,370	1,370	1,370	1,370	---	1,370	1,370	*	*	*	*
Various Locations.....	7,470	11,470	11,470	7,470	7,470	7,470	---	7,470	7,470	*	*	*	*
Space Shuttle Facilities..	86,020	77,020	77,020	82,020	82,020	79,020	-7,000	75,080	82,020	*	77,020	-9,000	-2,000
Rehabilitation and Mod....	14,900	14,900	14,900	14,900	14,900	14,900	---	14,900	14,900	*	*	*	*
Minor Construction.....	4,500	4,500	4,500	4,500	4,500	4,500	---	4,500	4,500	*	*	*	*
Facility Planning and Design.....	10,900	10,900	10,900	10,900	10,900	10,900	---	10,900	10,900	*	*	*	*
RESEARCH AND PROGRAM MANAGEMENT.....	769,599	769,599	769,599	769,599	769,599	769,599	---	759,975	769,099	759,975	759,975	-9,624	-9,624
Basic Submission.....	749,624	749,624	749,624	749,624	749,624	749,624	---	740,000	749,124	740,000	740,000	-9,624	-9,624
Supplemental.....	19,975	19,975	19,975	19,975	19,975	19,975	---	19,975	19,975	19,975	19,975	---	---
TOTAL.....	3,267,104	3,273,159	3,279,059	3,287,204	3,287,204	3,286,904	+19,800	3,223,025	3,262,699	3,226,710.3	3,226,710	-40,394	-60,194
Special Energy R&D Approp. Act (funds approp.) ^{2/}								8,939	4,435	4,435	4,435	+4,435	+4,435
TOTAL NASA APPROPRIATION..								3,231,964	3,267,104	3,231,145.3	3,231,145	-35,959	-55,759

* Undistributed. See Committee report for specific recommendations.

Prepared by:
NASA Comptroller
Office of Budget Operations
Code BTf Ext. 58466

^{1/} Floor action on 8/5/74 resulted in Bill being recommitted to the Committee.

^{2/} Authorized in P.L. 93-316 (NASA Authorization Act).

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1975 Budget Submission
(In thousands of dollars)

I T E M	A U T H O R I Z A T I O N							A P P R O P R I A T I O N				
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RESEARCH AND DEVELOPMENT APPROPRIATION:	2,346,015	2,357,070	2,362,970	2,370,115	2,370,115	2,372,815	+26,800	2,327,380 ^{1/}	2,327,380	2,349,080 ^{1/}	2,326,580	2,326,580
OFFICE OF MANNED SPACE												
FLIGHT.....	1,124,800	1,129,800	1,129,800	1,119,800	1,119,800	1,119,800	---					
Space Shuttle Program.....	(800,000)	(820,000)	(820,000)	(800,000)	(800,000)	(805,000)	(+5,000)					
Orbiter.....	647,500	647,500	647,500	647,500	647,500	647,500	---					
Main Engine.....	92,300	112,300	112,300	92,300	92,300	97,300	+5,000					
Solid Rocket Boosters....	22,600	22,600	22,600	22,600	22,600	22,600	---					
External Tank.....	26,000	26,000	26,000	26,000	26,000	26,000	---					
Launch and Landing.....	11,600	11,600	11,600	11,600	11,600	11,600	---					
Space Flight Operations Program.....	(323,300)	(308,300)	(308,300)	(318,300)	(318,300)	(313,300)	(-10,000)					
Apollo Soyuz Test Proj.. Development, Test and Mission Operations....	114,600	109,600	109,600	109,600	109,600	109,600	-5,000					
Space Life Sciences.....	175,200	165,200	165,200	175,200	175,200	170,200	-5,000					
Mission Systems and Integration.....	18,000	18,000	18,000	18,000	18,000	18,000	---					
Advanced Missions Program.	15,500	15,500	15,500	15,500	15,500	15,500	---					
Advanced Mission Studies	(1,500)	(1,500)	(1,500)	(1,500)	(1,500)	(1,500)	---					
1,500	1,500	1,500	1,500	1,500	1,500	1,500	---					
OFFICE OF SPACE SCIENCE...	547,015	547,015	547,015	548,015	548,015	550,015	+3,000					
Physics and Astronomy Program.....	(140,515)	(140,515)	(140,515)	(140,515)	(140,515)	(140,515)	---					
Large Observatories.....	50,410	50,410	50,410	50,410	50,410	50,410	---					
OSO.....	(7,630)	(7,630)	(7,630)	(7,630)	(7,630)	(7,630)	---					
OAO.....	(2,380)	(2,380)	(2,380)	(2,380)	(2,380)	(2,380)	---					
HEAO.....	(40,400)	(40,400)	(40,400)	(40,400)	(40,400)	(40,400)	---					
Orbiting Explorers.....	33,000	33,000	33,000	33,000	33,000	33,000	---					
Suborbital Programs.....	25,000	25,000	25,000	25,000	25,000	25,000	---					
Supporting Activities....	32,105	32,105	32,105	32,105	32,105	32,105	---					

^{1/} See Committee report for specific recommendations.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1975 Budget Submission
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I T E M	A U T H O R I Z A T I O N							A P P R O P R I A T I O N				
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Lunar and Planetary												
Exploration Program.....	(266,000)	(266,000)	(266,000)	(264,000)	(264,000)	(266,000)	(---)					
Mariner.....	4,119	4,119	4,119	*	*	4,119	---					
Viking.....	89,016	89,016	89,016	*	*	89,016	---					
Outer Planets Missions..	69,761	69,761	69,761	*	*	69,761	---					
Pioneer/Helios.....	33,500	33,500	33,500	*	*	33,500	---					
Supporting Research and Technology/Advanced Studies.....	17,800	17,800	17,800	*	*	17,800	---					
Planetary Astronomy.....	4,200	4,200	4,200	*	*	4,200	---					
Data Analysis.....	10,473	10,473	10,473	*	*	10,473	---					
Planetary Quarantine....	1,500	1,500	1,500	*	*	1,500	---					
Planetary Flight Support	25,500	25,500	25,500	*	*	25,500	---					
Lunar Sample Analysis...	5,798	5,798	5,798	*	*	5,798	---					
Lunar Science Operations	4,333	4,333	4,333	*	*	4,333	---					
Launch Vehicle Procure- ment Program.....	(140,500)	(140,500)	(140,500)	(143,500)	(143,500)	(143,500)	(+3,000)					
Scout.....	13,800	13,800	13,800	13,800	13,800	13,800	---					
Centaur.....	75,000	75,000	75,000	75,000	75,000	75,000	---					
Delta.....	47,700	47,700	47,700	50,700	50,700	50,700	+3,000					
Supporting Research and Technology/Advanced Studies.....	4,000	4,000	4,000	4,000	4,000	4,000	---					
OFFICE OF APPLICATIONS....	177,500	177,500	179,500	200,500	200,500	196,300	+18,800					
Space Applications												
Program.....	(177,500)	(177,500) ^{1/}	(179,500) ^{2/}	(200,500)	(200,500)	(196,300) ^{3/}	(+18,800)					
Weather and Climate.....	35,000	*	*	37,000	37,000	*	*					
Pollution Monitoring....	29,800	*	*	29,800	29,800	*	*					
Earth Resources Survey..	58,600	*	*	73,600	73,600	*	*					
Earth & Ocean Physics...	18,500	*	*	18,500	18,500	*	*					
Space Processing.....	3,500	*	*	3,500	3,500	*	*					
Energy Applications.....	2,000	*	*	8,000	8,000	*	*					
Communications.....	8,300	*	*	8,300	8,300	*	*					
Data Management.....	4,000	*	*	4,000	4,000	*	*					
Earth Observatory												
Satellite Definition..	1,000	*	*	1,000	1,000	*	*					
Shuttle Experiment Def..	4,500	*	*	4,500	4,500	*	*					
Advanced Applications												
Experiment Studies....	4,700	*	*	4,700	4,700	*	*					
Applications Systems												
Analysis.....	5,000	*	*	5,000	5,000	*	*					
Applications Explorers												
Heat Capacity Mapping Mission.....	2,600	*	*	2,600	2,600	*	*					

* Undistributed.

^{1/} \$2,000,000 designated for research on Short-Term Weather Phenomena, and \$1,000,000 is designated for research on hydrogen for ground propulsion.

^{2/} \$2,000,000 added for research on hydrogen production and utilization.

^{3/} \$2,000,000 designated for short-term weather phenomena; \$1,000,000 designated for research on ground propulsion. Effort to be increased on energy R&D (including SSPS study) and ERTS-C to be initiated.

Prepared by:
NASA Comptroller
Office of Budget Operations
Code BIT Ext. 58466

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1975 Budget Submission
(In thousands of dollars)

I T E M	A U T H O R I Z A T I O N							A P P R O P R I A T I O N				
	NASA Budget Submission	House Comm. Approved H.R. 13998 Rep. 93-983 4/10/74	House Approved 4/25/74	Senate Comm. Approved H.R. 13998 Rep. 93-818 5/6/74	Senate Passed 5/9/74	Conf. Comm. Appd 6/18/74 Rep. S 93-886 P.I. 93-316 6/22/74	Difference From Budget Submission	House Comm. Approved H.R. 15572 Rep. 93-1139 6/21/74	House Approved 6/26/74	Senate Comm. Approved H.R. 15572 Rep. 93-1056 8/1/74	Senate Comm. Rep. 93-1091 8/15/74 Senate Appd 8/16/74	Conf. Comm. Appd 8/21/74 Rep. 93-1310 P.L. 93-414 9/6/74
OFFICE OF AERONAUTICS AND SPACE TECHNOLOGY.....	241,200	247,255	251,155	246,300	246,300	251,200	+10,000					
Aeronautical Research and Technology Program.....	(166,400)	(170,655) ^{1/}	(170,655)	(171,500) ^{4/}	(171,500) ^{4/}	(171,500) ^{5/}	(+5,100)					
Research and Technology Base.....	83,900	*	*	*	*	*	*					
Systems and Design Studies.....	5,000	*	*	*	*	*	*					
Systems and Experimental Programs.....	77,500	*	*	*	*	*	*					
Space and Nuclear Research and Technology Program..	(74,800)	(76,600) ^{2/}	(80,500) ^{3/}	(74,800)	(74,800)	(79,700) ^{6/}	(+4,900)					
Research and Technology Base.....	61,500	*	*	61,500	61,500	*	*					
Systems and Design Studies.....	1,600	*	*	1,600	1,600	*	*					
Systems and Experimental Programs.....	6,700	*	*	6,700	6,700	*	*					
Low Cost Systems Program	5,000	*	*	5,000	5,000	*	*					
OFFICE OF TRACKING AND DATA ACQUISITION.....	250,000	250,000	250,000	250,000	250,000	250,000	---					
Tracking and Data Acquisition Program.....	(250,000)	(250,000)	(250,000)	(250,000)	(250,000)	(250,000)	(---)					
Operations.....	192,800	192,800	192,800	192,800	192,800	192,800	---					
Equipment.....	48,000	48,000	48,000	48,000	48,000	48,000	---					
Supporting Research and Technology.....	9,200	9,200	9,200	9,200	9,200	9,200	---					
OFFICE OF INDUSTRY AFFAIRS AND TECHNOLOGY UTILIZATION.....	5,500	5,500	5,500	5,500	5,500	5,500	---					
Technology Utilization Program.....	(5,500)	(5,500)	(5,500)	(5,500)	(5,500)	(5,500)	(---)					
Publication and Dissemination.....	2,900	2,900	2,900	2,900	2,900	2,900	---					
Technology Applications.	2,000	2,000	2,000	2,000	2,000	2,000	---					
Program Control and Evaluation.....	600	600	600	600	600	600	---					

* Undistributed.

^{1/} Increased by \$655,000 to study hydrogen as aviation fuel, increased by \$1,600,000 for aviation safety, and by \$2,000,000 for general aviation.

^{2/} Increased \$1,800,000 for resuming Solar Satellite Power Station project.

^{3/} Increased \$3,900,000 for coal research.

^{4/} Senate agreed that this line item should be increased in areas that were increased specifically by the House. However, the increase of \$5,100,000 earmarks \$1,100,000 for supersonic technology and does not specifically earmark amounts for other areas.

^{5/} Conference Committee agreed with Senate.

^{6/} \$1,000,000 designated for hydrogen production and utilization systems and \$3,900,000 is for coal research.

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1975 Budget Submission
(In thousands of dollars)

I T E M	A U T H O R I Z A T I O N							A P P R O P R I A T I O N				
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CONSTRUCTION OF FACILITIES APPROPRIATION:	151,490	146,490	146,490	147,490	147,490	144,490	-7,000	135,670	135,670	144,490	140,155.3	140,155
AMES RESEARCH CENTER.....	(3,660)	(3,660)	(3,660)	(3,660)	(3,660)	(3,660)	---	(3,660)	(3,600)	(3,660)	(3,660)	(3,660)
R-Addition to flight and guidance simula- tion laboratory.....	3,660	3,660	3,660	3,660	3,660	3,660	---	3,660	3,660	3,660	3,660	3,660
GODDARD SPACE FLIGHT CTR..	(2,110)	(2,110)	(2,110)	(2,110)	(2,110)	(2,110)	---	(2,110)	(2,110)	(2,110)	(2,110)	(2,110)
S-Rehab. and mod. of science and appli- cations laboratories..	890	890	890	890	890	890	---	890	890	890	890	890
S-Mod. for fire pro- tection and safety....	1,220	1,220	1,220	1,220	1,220	1,220	---	1,220	1,220	1,220	1,220	1,220
JET PROPULSION LABORATORY.	(8,820)	(8,820)	(8,820)	(8,820)	(8,820)	(8,820)	---	(3,940)	(3,940)	(8,820)	(8,820)	(8,820)
S-Acquisition of land...	150	150	150	150	150	150	---	150	150	150	150	150
S-Addition to systems development laboratory (SDL).....	4,880	4,880	4,880	4,880	4,880	4,880	---	---	---	4,880	4,880	4,880
S-Addition for inte- grated systems testing facility.....	3,790	3,790	3,790	3,790	3,790	3,790	---	3,790	3,790	3,790	3,790	3,790
JOHNSON SPACE CENTER.....	(935)	(935)	(935)	(935)	(935)	(935)	---	(935)	(935)	(935)	(935)	(935)
M-Mod. of water supply system.....	935	935	935	935	935	935	---	935	935	935	935	935
LANGLEY RESEARCH CENTER...	(3,505)	(3,505)	(3,505)	(3,505)	(3,505)	(3,505)	---	(3,505)	(3,505)	(3,505)	(3,505)	(3,505)
R-Mod. of 6,000 p.s.i. air storage system....	515	515	515	515	515	515	---	515	515	515	515	515
R-Rehab. of 16-foot transonic wind tunnel.	2,990	2,990	2,990	2,990	2,990	2,990	---	2,990	2,990	2,990	2,900	2,900
LEWIS RESEARCH CENTER.....	(3,240)	(3,240)	(3,240)	(3,240)	(3,240)	(3,240)	---	(3,240)	(3,240)	(3,240)	(3,240)	(3,240)
R-Mod. of propulsion systems laboratory....	2,580	2,580	2,580	2,580	2,580	2,580	---	2,580	2,580	2,580	2,580	2,580
R-Mod. of rocket engine test facility.....	660	660	660	660	660	660	---	660	660	660	660	660
MARSHALL SPACE FLIGHT CTR.	(4,060)	(4,060)	(4,060)	(4,060)	(4,060)	(4,060)	---	(4,060)	(4,060)	(4,060)	(4,060)	(4,060)
S-Construction of X-ray telescope facility....	4,060	4,060	4,060	4,060	4,060	4,060	---	4,060	4,060	4,060	4,060	4,060
Wallops Flight Center.....	(1,370)	(1,370)	(1,370)	(1,370)	(1,370)	(1,370)	---	(1,370)	(1,370)	(1,370)	(1,370)	(1,370)
S-Mod. of beach pro- tection system.....	1,370	1,370	1,370	1,370	1,370	1,370	---	1,370	1,370	1,370	1,370	1,370

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Chronological History of the FY 1975 Budget Submission
(In thousands of dollars)

ITEM	AUTHORIZATION							APPROPRIATION				
	NASA Budget Submission	House Comm. Approved H.R. 13998 Rep. 93-983 4/10/74	House Approved 4/25/74	Senate Comm. Approved H.R. 13998 Rep. 93-818 5/6/74	Senate Passed 5/9/74	Conf. Comm. Appd 6/18/74 Rep. S 93-886 P.L. 93-316 6/22/74	Difference From Budget Submission	House Comm. Approved H.R. 15572 Rep. 93-1139 6/21/74	House Approved 6/26/74	Senate Comm. Approved H.R. 15572 Rep. 93-1056 8/1/74	Senate Comm. Rep. 93-1091 8/15/74 Senate Appd 8/16/74	Conf. Comm. Appd 8/21/74 Rep. 93-1310 P.L. 93-414 9/6/74
VARIOUS LOCATIONS.....	(7,470)	(11,470)	(11,470)	(7,470)	(7,470)	(7,470)	(---)	(7,470)	(7,470)	(7,470)	(7,470)	(7,470)
S-Construction of in- frared telescope fac..	6,040	10,040	10,040	6,040	6,040	6,040	---	6,040	6,040	6,040	6,040	6,040
T-Mods. for fire pro- tection and safety at various tracking stations.....	1,430	1,430	1,430	1,430	1,430	1,430	---	1,430	1,430	1,430	1,430	1,430
M-SPACE SHUTTLE FACILITIES	(86,020)	(77,020)	(77,020)	(82,020)	(82,020)	(79,020)	(-7,000)	(75,080)	(75,080)	(79,020)	(79,020)	(77,020)
Construction of orbiter landing facilities (KSC).....	15,880	15,880	15,880	15,880	15,880	15,880	---	15,880	15,880	15,880	15,880	15,880
Construction of orbiter processing facility (KSC).....	13,380	13,380	13,380	13,380	13,380	13,380	---	13,380	13,380	13,380	13,380	13,380
Mods. to launch complex 39 (KSC).....	42,690	35,690	35,690	42,690	42,690	37,690	-5,000	37,690	37,690	37,690	37,690	37,690
Mods. for dynamic test facilities (MSFC; Downey, California)...	3,920	3,920	3,920	3,920	3,920	3,920	---	3,920	3,920	3,920	3,920	3,920
Construction of orbiter horizontal flight test facilities (FRC).....	1,940	3,940	3,940	1,940	1,940	3,940	+2,000	---	---	3,940	3,940	1,940
Mods. for crew training facilities (JSC).....	420	420	420	420	420	420	---	420	420	420	420	420
Mod. of the vibration and acoustic test facility (JSC).....	410	410	410	410	410	410	---	410	410	410	410	410
Construction of materials test facility (WSTF).....	790	790	790	790	790	790	---	790	790	790	790	790
Mods. for solid rocket booster structural test facilities (MSFC)	2,590	2,590	2,590	2,590	2,590	2,590	---	2,590	2,590	2,590	2,590	2,590
Construction/mod. of solid rocket motor production and test facilities (location to be selected).....	4,000	---	---	---	---	---	-4,000	---	---	---	---	---
D REPAIR AND MOD. OF FACILITIES AT VARIOUS LOCATIONS.....	(14,900)	(14,900)	(14,900)	(14,900)	(14,900)	(14,900)	(---)	(14,900)	(14,900)	(14,900)	(14,900)	(14,900)

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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B-MINOR CONSTRUCTION OF NEW FACILITIES AND ADDITIONS TO EXISTING FACILITIES.....	(4,500)	(4,500)	(4,500)	(4,500)	(4,500)	(4,500)	---	(4,500)	(4,500)	(4,500)	(4,500)	(4,500)
B-FACILITY PLANNING AND DESIGN.....	(10,900)	(10,900)	(10,900)	(10,900)	(10,900)	(10,900)	---	(10,900)	(10,900)	(10,900)	(10,900)	(10,900)
Undistributed Reduction..											-4,334.7	-2,335

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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RESEARCH AND PROGRAM MANAGEMENT APPROPRIATION												
BY OBJECT CLASSIFICATION:	(749,624)	(749,624)	(749,624)	(749,624)	(749,624)	(749,624)	(---)	(740,000)	(740,000)	(749,124)	(740,000)	(740,000)
Personnel compensation..	527,202	527,202	527,202	527,202	527,202	527,202	---	*	*	*	*	*
Personnel benefits.....	45,894	45,894	45,894	45,894	45,894	45,894	---	*	*	*	*	*
Benefits for former personnel.....	2,651	2,651	2,651	2,651	2,651	2,651	---	*	*	*	*	*
Travel and transporta- tion of persons.....	16,444	16,444	16,444	16,444	16,444	16,444	---	*	*	*	*	*
Transportation of things Rent, communications, and utilities.....	3,408	3,408	3,408	3,408	3,408	3,408	---	*	*	*	*	*
46,702	46,702	46,702	46,702	46,702	46,702	46,702	---	*	*	*	*	*
Printing and repro- duction.....	4,675	4,675	4,675	4,675	4,675	4,675	---	*	*	*	*	*
Other services.....	87,263	87,263	87,263	87,263	87,263	87,263	---	*	*	*	*	*
Supplies and materials..	11,966	11,966	11,966	11,966	11,966	11,966	---	*	*	*	*	*
Equipment.....	2,605	2,605	2,605	2,605	2,605	2,605	---	*	*	*	*	*
Lands and structures....	739	739	739	739	739	739	---	*	*	*	*	*
Grants, subsidies and contributions.....	52	52	52	52	52	52	---	*	*	*	*	*
Insurance claims and indemnities.....	23	23	23	23	23	23	---	*	*	*	*	*
BY INSTALLATION:												
Johnson Space Center....	118,179	118,179	118,179	118,179	118,179	118,179	---	*	*	*	*	*
Kennedy Space Center....	96,739	96,739	96,739	96,739	96,739	96,739	---	*	*	*	*	*
Marshall Space Flt. Ctr.	131,215	131,215	131,215	131,215	131,215	131,215	---	*	*	*	*	*
Goddard Space Flt. Ctr..	100,579	100,579	100,579	100,579	100,579	100,579	---	*	*	*	*	*
Wallops Flight Center...	11,704	11,704	11,704	11,704	11,704	11,704	---	*	*	*	*	*
Ames Research Center....	47,956	47,956	47,956	47,956	47,956	47,956	---	*	*	*	*	*
Flight Research Center..	12,492	12,492	12,492	12,492	12,492	12,492	---	*	*	*	*	*
Langley Research Center..	84,989	84,989	84,989	84,989	84,989	84,989	---	*	*	*	*	*
Lewis Research Center...	78,438	78,438	78,438	78,438	78,438	78,438	---	*	*	*	*	*
NASA Headquarters.....	67,333	67,333	67,333	67,333	67,333	67,333	---	*	*	*	*	*
BY FUNCTION:												
Personnel.....	579,065	579,065	579,065	579,065	579,065	579,065	---	*	*	*	*	*
Travel.....	16,444	16,444	16,444	16,444	16,444	16,444	---	*	*	*	*	*
Facilities services.....	79,349	79,349	79,349	79,349	79,349	79,349	---	*	*	*	*	*
Technical services.....	34,261	34,261	34,261	34,261	34,261	34,261	---	*	*	*	*	*
Administrative support..	40,505	40,505	40,505	40,505	40,505	40,505	---	*	*	*	*	*
SUPPLEMENTAL	(19,975)	(19,975)	(19,975)	(19,975)	(19,975)	(19,975)	(---)	(19,975)	(19,975)	(19,975)	(19,975)	(19,975)
TOTAL, R&PM.....	769,599	769,599	769,599	769,599	769,599	769,599	(---)	759,975	759,975	769,099	759,975	759,975

* Undistributed.

Prepared by:
NASA Comptroller
Office of Budget Operations
Code BIF Ext. 58466

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Summary of Congressional Action on Authorization and Appropriation Bills
for Energy Research and Development in NASA

(In thousands of dollars)

Energy R&D	NASA Budget Submission	Authorization					Appropriation					Remarks
		House Committee	House Floor	Senate Committee	Senate Passed	Conf. or P.L.	House Committee	House Floor	Senate Committee	Senate Floor	Conf. or P.L.	
NASA Authorization and Appropriation Bills.....	4,435	7,235	13,135	10,435	10,435	16,135	---	---				See remarks below.
Document.....	HR 12689	R93-983	HR 13998	R93-818	HR 13998	SR 93-886						
Date.....	1/6/74	4/10/74	4/25/74	5/6/74	5/9/74	HR 93-1078 PL93-316(6/22/74)						
Space Applications:	(2,000)	(3,000)	(5,000)	(8,000)	(8,000)	(8,800)	(---)	(---)				
Energy Applications.....	2,000	2,000	2,000	8,000	8,000	6,000 ^{1/}	---	---				
Research on Ground Propulsion Systems.....	---	1,000	1,000	---	---	1,000	---	---				Earmarked within basic funds.
Hydrogen Production and Utilization Systems.....	---	---	2,000	---	---	---	---	---				Conf: Reduced to \$1.0 million and transferred to Space and Nuclear Research and Technology.
Satellite Solar Power System.....	---	---	---	---	---	1,800	---	---				
Space & Nuclear Research and Technology:	(2,435)	(4,235)	(8,135)	(2,435)	(2,435)	(7,335)	(---)	(---)				
Coal Research.....	---	---	3,900	---	---	3,900	---	---				
Satellite Solar Power Station.....	---	1,800	1,800	---	---	---	---	---				Conf: Transferred to Space Applications.
Systems and Experimental Program-Energy and Environmental Systems Technology.....	2,435	2,435	2,435	2,435	2,435	2,435	---	---				
Hydrogen Production and Utilization Systems.....	---	---	---	---	---	1,000	---	---				Formerly under Space Applications.
Solar Heating and Cooling Demonstration Act, 1974 (HR 11864).....	---	50,000	50,000	5,000	5,000	5,000						
Documents.....	HR 11864	R93-769	HR 11864	R93-734	HR 11864	R93-1083						
Date.....	2/19/74	1/28/74	2/13/74	3/13/74	5/21/74	P.L. 93-409 9/3/74						The \$50.0 million is authority for a five year period.
Special Energy Research and Development Appropriation Act, 1975 (HR 14434).....	---	---	---	---	---	---	8,935	8,935	4,435	4,435	4,435	
Documents.....	HR 14434						R93-1010	HR 14434	SR 93-903	HR 14434	R93-1123	
Date.....	4/25/74						4/25/74	4/30/74	6/5/74	6/12/74	6/19/74	House: Funds to be appropriated to NASA Research and Development, contingent upon enactment of enabling authority contained in HR 13998 (\$4,435,000) and HR 11864 (\$5,000,000). Senate & Conf: Reduced \$4.5 million not enabled and not included in estimate.
P.L. 93-322											6/30/74	
Geothermal Energy Research, Development, and Demonstration Act of 1974 (HR 14920).....	---	2,500	2,500	3/	3/	2,500						
Documents.....		R93-1112	HR 14920	S 2465	S 2465	R93-1301						
Date.....		6/17/74	7/10/74	5/15/74	7/11/74	P.L. 93-410 9/3/74						
Total Energy Funds.....	4,435	NA	NA	NA	NA	NA	8,935	8,935	4,435	4,435	4,435	
Other NASA Funds.....	3,242,694	3,245,949	3,245,949	3,256,794	3,256,794	3,250,794	3,203,050	3,203,050	3,206,735.3	3,206,735.3	3,206,735	
Total Funds Available*.....	3,247,129	NA	NA	NA	NA	NA	3,211,985	3,211,985	3,211,170.3	3,211,170.3	3,211,170	
NASA Act.....	3,247,129	3,253,184	3,259,084	3,267,229	3,267,229	3,266,929	3,203,050	3,203,050	3,206,735.3	3,206,735.3	3,206,735	
Solar Act.....	---	NA	NA	5,000	5,000	5,000						
Spec. R&D Appn. Act.....	---						8,935	8,935	4,435	4,435	4,435	
Geothermal Act.....	---	2,500	2,500	NA	NA	2,500						

1/ Includes \$4.0 million for general R&D studies including energy, weather, etc.

2/ Reintroduced as HR 15218 with eleven new cosponsors.

3/ Language in Senate Bill S 2465 authorizes such amount as necessary.

* Excludes amounts included in several energy bills where amounts are not specifically identified (indicated by NA (not applicable/available)).

AUTHORIZING APPROPRIATIONS TO THE NATIONAL
 AERONAUTICS AND SPACE ADMINISTRATION

APRIL 10, 1974.—Committed to the Committee of the Whole House on the
 State of the Union and ordered to be printed

Mr. TEAGUE, from the Committee on Science and Astronautics,
 submitted the following

REPORT

together with

ADDITIONAL VIEWS

[To accompany H.R. 13998]

The Committee on Science and Astronautics, to whom was referred
 the bill (H.R. 13998) to authorize appropriations to the National
 Aeronautics and Space Administration for research and development,
 construction of facilities, and research and program management, and
 for other purposes, having considered the same, report favorably
 thereon without amendment and recommend that the bill do pass.

PURPOSE OF THE BILL

The purpose of the bill is to authorize appropriations to the National
 Aeronautics and Space Administration for fiscal year 1975, as follows:

Programs	Authorization
Research and development.....	\$2, 357, 070, 000
Construction of facilities.....	146, 490, 000
Research and program management..	749, 624, 000
Total.....	3, 253, 184, 000

COMMITTEE ACTIONS

RESEARCH AND DEVELOPMENT

SPACE SHUTTLE

NASA requested \$800,000,000 for the Space Shuttle in Fiscal Year
 1975. As has been brought out in testimony before your committee, the
 Space Shuttle Program buildup has been constrained by tight cost
 ceilings in Fiscal Year 1974. Difficulties have been encountered in acti-
 vating main engine test facilities and completing main engine compo-
 nents tests. An increase of \$20,000,000 for the Space Shuttle Program in
 Fiscal Year 1975 will provide for increased funding for the Space
 Shuttle Main Engine work which has encountered technical problems
 typical of early development phases of such a program. These addi-
 tional funds will aid in meeting the current milestones for the Space
 Shuttle program of a first horizontal flight in 1977 and the first manned
 orbital flight in the second quarter of 1979.

The net effect of this addition of \$20 million to the Shuttle Main
 Engine Program should add confidence to meeting schedules and to
 holding total program costs at the current projection. Therefore, your
 committee recommends \$820,000,000 for the Shuttle Program for
 Fiscal Year 1975.

SPACE FLIGHT OPERATIONS

NASA requested \$323,300,000 for Space Flight Operations in Fiscal
 Year 1975, \$232,200,000 less than authorized in Fiscal Year 1974. Of
 the four areas within this line item, your committee made two changes:

Apollo/Soyuz Test Project.—The Apollo/Soyuz Test Project is cur-
 rently on schedule and within projected costs for Fiscal Year 1974.
 A launch on July 15, 1975 is expected to accomplish a rendezvous and
 docking with the Soviets and to conduct experiments in space aug-
 menting a number of experiments conducted on the Skylab program,
 as well as other new experiments. Because of the success of the man-
 agement of the Apollo/Soyuz Test Project, it is possible to reduce the
 funding for the project in Fiscal Year 1975 by \$5 million. It should be
 noted that \$5 million reduction will in no way affect the addition of
 experiments as urged by your committee. The savings can be realized
 from the operational portions of the program. Therefore, your com-
 mittee recommends \$109,600,000 for the Apollo/Soyuz Test Project
 for Fiscal Year 1975.

Development, Test & Mission Operations.—The Development, Test &
 Mission Operations are an essential component of all portions of the
 Manned Space Flight Program. They represent funds which provide
 contractor support to key mission oriented effort. Testimony before
 your Subcommittee indicated a carry-over of \$18.20 million in Devel-
 opment, Test & Mission Operations from Fiscal Year 1974. Based on

this information, your Subcommittee reduced the Development, Test & Mission Operations by \$10 million. Therefore, your committee recommends \$165,200,000 for Development, Test & Mission Operations for Fiscal Year 1975, for a total of \$308,300,000 for the Space Flight Operations line item for Fiscal Year 1975.

SPACE APPLICATIONS

The Committee approved the full amount of the NASA request for the Space Applications Program with the proviso that \$2 million be specifically designated for support of research on short-term violent weather phenomena such as tornadoes, cyclones, etc., and that \$1 million be specifically designated for support of research on ground propulsion systems.

In each instance, the purpose is to take fuller advantage of the scientific and technical talent, expertise, and facilities that exist within NASA.

The Meteorological Satellite Program is one of NASA's oldest and most successful programs. The Committee believes an additional \$2 million can be applied effectively for research on tornadoes and other violent short-term weather phenomena during the forthcoming fiscal year.

NASA is already engaged in work on development of turbine engines for automobiles at the Lewis Research Center, and hydrogen injection in conventional automotive engines at the Jet Propulsion Laboratory. The Committee would like to encourage this type of work in the belief that NASA personnel and facilities are especially well suited to making major contributions to development of energy conserving, efficient ground propulsion systems with clean emission characteristics. Accordingly, an additional \$1 million is earmarked for increased effort in this important work.

AERONAUTICAL RESEARCH AND TECHNOLOGY

NASA's budget request for Aeronautical Research and Technology was \$166,400,000.

To the amount requested, the Committee recommends an increase of \$4,255,000 for a total authorization of \$170,655,000.

In both Subcommittee and full Committee hearings, members expressed concern about the decrease in the FY 1975 amount for aeronautical R&D (\$166,400,000) compared to last year (\$168,000,000). The specific increases are described more fully below and are based on the committee's conviction that problems in aviation can and must be solved at a faster rate than is proposed in the NASA Budget.

Hydrogen as an Aviation Fuel

An increase of \$655,000 from \$755,000 to \$1,410,000 is recommended to expedite investigation of the problems and prospects of liquid hydrogen as an aviation fuel.

In Committee oversight hearings on February 22, the problems and prospects of hydrogen as an aviation fuel were examined in considerable depth. In essence, the promise is bright, but the problems are enormous. Opinions are far more numerous than hard analyses—and the statements about possible use of hydrogen range from 1980 to

2000. This is a subject which warrants additional and continuing Committee inquiry.

The Committee recommends the increase of \$655,000 to be used as follows:

- a. Perform in-house design integration studies in advance of possibly moving to flight and ground operations experiments (\$55,000).
- b. Do trade-off studies between the use of internal and external fuel tanks for aircraft—a major uncertainty (\$200,000).
- c. Examine fuel tank insulation problems (\$100,000).
- d. Work on the difficult problems of compatibility of materials with liquid hydrogen (\$300,000).

Aviation Safety

An increase of \$1,600,000 from \$8,400,000 to \$10,000,000 is recommended to provide for additional research on a number of aviation hazards.

The Committee continues to be concerned greatly about the level of effort and management attention given to aviation safety. It was concluded that NASA could productively increase its work on the following problems.

(1) *Atmospheric research.*—\$190,000 would be used to support work on one or more of the following areas: clear air turbulence, studies of storm turbulence, and persistence of wake vortex turbulence.

(2) *Fire technology.*—\$360,000 would be used to achieve new understanding of the fire hazard environment and the identification of new materials. Specific tasks would be carried out in materials research, fuel modification, smoke and fire detection and quenching, and studying passenger survival in hazardous fire incidents.

(3) *Systems safety technology.*—\$250,000 would be used to support systems studies and accident analysis, cockpit visibility and crew/vehicle interactions.

(4) *Hazard avoidance.*—\$800,000 would be allocated to support such work as wake turbulence marking and detection, wake turbulence flight testing, and runway veer-off and overrun reduction.

General Aviation

An increase of \$2,000,000 from \$4,900,000 to \$6,900,000 is recommended for this important part of aviation—with emphasis on making general aviation aircraft safer, more reliable and more competitive in world markets.

Approximately one year ago NASA established an Office of General Aviation. This action had been recommended in a September 1972 report by the Committee. This office is providing a much needed focus for the special R&D problem of general aviation. NASA's modest effort in the area represents a major policy change from the past. Previously, very little was done in research related to general aviation but the Committee had urged stronger support.

NASA has taken another step recently to provide more support: the formation of a Research and Technical Advisory Committee on General Aviation. This group has wide representation by those concerned with the problem of general aviation.

It is the Committee view that NASA can effectively and productively use the additional \$2,000,000 for the following purposes.

- (1) Expediting its program of structural crash worthiness.
- (2) Expanding work on a new development in wing shape which should make aircraft more efficient and safer.
- (3) Working on designing fuel systems by applying advanced materials and crash proof technology as a means of reducing post-crash fire hazards.
- (4) Incorporating advanced design techniques involving new materials, fabrication process and propulsion concepts.
- (5) Providing additional emphasis on the development of emission reduction technology for piston engines.
- (6) Working on improvements in stability, control and handling qualities required to meet impending aircraft certification requirements.

SPACE AND NUCLEAR RESEARCH AND TECHNOLOGY

Solar Satellite Power Station

An increase of \$1,800,000 from zero funds is recommended for resuming study of this potential source of solar energy.

The Committee noted that a \$1,800,000 addition would make it possible for NASA to reinstitute systems studies and enhance technology programs to attack key problems. These problems are generally in the areas of power processing, power conversion, structures and materials, and microwave power transmission.

A Solar Satellite Power Station would be a large satellite in orbit which would receive energy from the sun and convert it into a form which could be transmitted to the earth—much like a radio signal. Much preliminary work remains to be done to find out what specific problems must be solved and to determine the economics of this kind of energy source.

TRACKING AND DATA ACQUISITION PROGRAM

Tracking and Data Relay Satellite System (TDRSS)

In conjunction with its Fiscal Year 1975 budget request, NASA submitted proposed legislation to amend the National Aeronautics and Space Act of 1958. This amendment would have authorized NASA to enter into a long-term leasing arrangement for a to-be-developed Tracking and Data Relay Satellite System (TDRSS) services.

The TDRSS is a communications concept which, if implemented, would result in the closing of most foreign ground stations presently part of the NASA Tracking and Data Network and bring about considerable cost savings.

The proposed system is essentially an orbital communications network consisting of two satellites placed in synchronous orbit spaced equatorially to permit up to 85 percent coverage of all low earth orbiting manned and unmanned spacecraft below 5000 kilometers. The satellites would receive commands from a ground station located in the U.S. and relay the appropriate data to the spacecraft. This system will also allow the spacecraft to transmit to the TDRSS satellites for transmission to the ground.

The operational and economic merit of the system and the technical risk associated with it are favorable and the Committee recommends proceeding with its development. However, the major problem considered by the Committee was how the system should be procured—leased or bought. The preliminary analysis provided by NASA showed the lease approach to be more expensive than a government purchased system.

Major reasons advanced by NASA in favor of the lease were:

- (1) Leasing defers substantial expenditures past the peak shuttle funding requirements in the late 1970's. A contractor would develop, produce and launch the satellites by 1978 or 1979, but NASA would not begin lease payments for services until the system became operational.
- (2) General Government policy is to lease rather than own communications services.

The Committee devoted an extensive amount of time to examining the NASA proposal. Additional hearings were held beyond those scheduled, lengthy staff discussions were held with NASA, the GAO and the House Legislative Counsel.

However, the Committee finally concluded that insufficient cost analysis comparing a leased system versus a NASA-owned system was presented to allow the Committee to evaluate fully the NASA lease proposal. Particularly troubling to the Committee was that NASA's preliminary analysis showed the leased system to be about 20 percent more expensive than a purchased system—using the discounted dollar technique of analysis.

A compromise settlement was worked out with NASA which would permit NASA to proceed with sending out Requests for Proposals on the lease approach to obtain reliable data—but which calls for NASA to return to the Committee for a review of the program prior to any contract award. In essence, the Committee recommends that instead of amending the Space Act of 1958, the Fiscal Year 1975 Authorization Bill include a new section permitting NASA to enter into a lease contract. However, the authority to enter into and maintain the contract would remain in effect only so long as this provision is included in authorization acts.

The proposed language is in Section 7 of the Authorization Bill. Under the provisions of this Section, if specific authorization for the TDRSS lease is not included in the NASA Authorization Act of FY 1976, NASA would be required to terminate for the convenience of the Government any long-term contract which may be entered into under the authority of the new Section 7. In such a situation the contractor would have a right under the contract to be paid for the contingent liability which might have accrued before the termination.

The approach recommended by the Committee permits NASA to proceed with issuing its Requests for Proposals to industry in order to obtain more accurate information on the "lease versus purchase" aspects of the TDRSS—but makes it clear that no contract should be let before the Committee has been provided with sufficient information to make a final decision. The Committee does not intend nor desire to participate in the contractor selection process associated with this procurement. Rather, the Committee wishes to assure that the

various methods of procurement have been thoroughly analyzed and the approach which is selected would be in the best interest of the Government.

CONSTRUCTION OF FACILITIES

INFRARED TELESCOPE FACILITY

NASA requested \$6,040,000 in the final year 1975 budget for construction of a 3 meter infrared telescope facility. The location of this facility was to be chosen among several sites meeting technical, meteorological and logistics requirements.

This new ground-based planetary research facility is required to provide supporting and comprehensive data to planetary exploration flight programs. The next mission, after Pioneer 11 which will encounter Jupiter in December 1974, is Mariner Jupiter/Saturn scheduled to be launched in August 1977. The infrared telescope will play a major role in obtaining a large scientific return from this mission.

In recognition of the fact that no existing telescopes provide the necessary capability to make such ground-based studies of the planets and other astronomical objects in the middle and far infrared portion of the spectrum, the recently completed National Academy of Sciences' report "Astronomy and Astrophysics for the 1970's" included as third among their recommendations of the four programs of highest priority, "A significant increase in support and development of the new field of infrared astronomy, including construction of a large ground-based infrared telescope . . ."

The Committee agrees with both NASA and the National Academy of Sciences that such a facility is required for the planetary exploration program but that the unique capability of this facility makes it a national scientific resource whose usefulness should extend beyond the year 2000. The Committee specified an increase of \$4,000,000 to optimize the infrared telescope capability and specified the siting of Mauna Kea, Hawaii. Therefore, the Committee recommends that \$10,040,000 be authorized for fiscal year 1975 for construction of an optimized infrared telescope facility at Mauna Kea, Hawaii.

With regard to the proposed infrared telescope in Hawaii, the Committee urges that design and construction be fully coordinated with the National Science Foundation so that the facility will be capable of the broadest possible future use by scientists not involved in NASA's planetary program.

SPACE SHUTTLE FACILITIES

NASA requested \$86,020,000 for construction of facilities for fiscal year 1975 for the Space Shuttle at various locations. The Committee reduced this amount by \$9,000,000 and recommends an authorization of \$77,020,000 for fiscal year 1975 for Space Shuttle Facilities. The changes recommended by the Committee are as follows:

Orbiter Landing Facilities, John F. Kennedy Space Center

This project includes the second increment of the project authorized for this purpose in fiscal year 1974 in the amount of \$28,200,000. The FY 1974 Appropriations Act, however, included only \$17,300,000 with \$10,900,000 of the authorization unfunded. The NASA FY 1975 re-

quest of \$15,880,000 includes \$4,980,000 for new requirements and seeks additional authorization of \$10.9 million for which appropriations were not granted last year. The Committee does not agree with the NASA approach since it would result in duplicate authorization. However, the Committee believes the project should move forward, since the construction contract has already been awarded. Accordingly, the Committee recommends that the full amount requested, \$15,880,000 be authorized, but that the bill be amended to rescind \$10,900,000 authorized last year. Section 1(h), in conformance with the basic act, provides for rescission of \$10,900,000 of the fiscal year 1974 authorization for construction of an Orbiter Landing Facility at the John F. Kennedy Space Center.

Modification of Launch Complex 39, John F. Kennedy Space Center

NASA requested \$42,690,000 for modifications to Launch Complex 39, John F. Kennedy Space Center in fiscal year 1975.

This project is the first increment of an approximately \$95 million project to meet the launch requirements for the Space Shuttle, involving modifications to the Vehicle Assembly Building, one mobile launcher and one launch pad. The Committee endorses NASA's proposal that this work proceed at the earliest practicable date and recommends approval of the scope of work for the first increment of effort. However, the Committee considers that it is highly unlikely that the full amount requested could be obligated during FY 1975. A 360 day contract for final design has just been awarded; this coupled with a six to twelve month delay in procurement of critical materials and the need to determine specific "work packages" for the project lead to the Committee determination that a portion of the funding could be deferred. Accordingly, the Committee recommends *deferral of* \$7.0 million, and authorization of \$35,690,000 for modifications to Launch Complex 39 in fiscal year 1975.

Construction of Orbiter Horizontal Flight Test Facilities, Flight Research Center

NASA requested \$1,940,000 for a project to provide a minimum size flight test hangar, limited shop space and temporary office space housed in trailers, justified solely on the basis of meeting the 12-18 month horizontal flight test program for the shuttle orbiter. The Committee believes such a facility should be built to serve future requirements, designed to meet long range aeronautical research needs, and used initially to support the shuttle. There are no other available hangars at the Flight Research Center to meet either the shuttle or the long term aeronautical research needs.

A large C-5 type hangar of 300 feet x 275 feet by 76 feet high will be required ultimately to meet the long term needs. Rather than build a specialized shuttle hangar, the Committee considers that the first increment of a more appropriately large hangar should be built as a basic institutional need which would also serve shuttle horizontal flight test needs on an interim basis. It is envisioned that this first increment would provide a high bay hangar 275' x 130' x 76' high together with appropriate administrative and shop space at an estimated cost of \$3,940,000. The second increment to complete this facility in future years is estimated to cost \$3.4 million.

This approach will remove the hangar from the program as a unique shuttle facility and identify it as being more aeronautical program oriented, yet "shuttle related".

Accordingly, the Committee has increased the amount to be authorized by \$2.0 million and recommends a total authorization of \$3,940,000.

Construction/Modification of Solid Rocket Motor Production And Test Facilities, Undesignated Locations

NASA requested \$1,000,000 for undefined facilities construction and modification for solid rocket motor production in fiscal year 1975.

The Committee is not convinced that a valid requirement currently exists for these facilities. The selection of the prime contractor for the development of the solid rocket motor has been protested by one of the unsuccessful bidders. Facilities requirements are not firm, and in fact, there is some indication that expenditure of federal funds for these purposes may not be required, depending upon the outcome of the protest now under consideration. Pending the development of firm requirements, the Committee recommends that the \$4.0 million requested for the solid rocket motor effort be deferred and has deleted this request in its entirety.

COMMITTEE VIEWS

CONTRIBUTIONS TO CRITICAL NATIONAL NEEDS

It is the view of the Committee that NASA's scientific and technical competence in terms of personnel, and its extensive network of sophisticated facilities and equipment, some not fully used, provides an opportunity to utilize these capabilities in high technology areas critical to our nation's needs, such as energy, transportation and environmental control. Therefore, your Committee requests that NASA undertake a scientific and technological inventory of the capability within its control as well as NASA contractors and subcontractors, and provide to the Committee not later than August 1, 1974 their assessment of the capability available and applicable to critical national needs.

FORWARD PERSONNEL PLANNING

The Committee noted that the problem of bringing new young professional people into NASA continues, although it has been slightly alleviated by the stabilized personnel ceiling achieved by NASA with the FY 1975 Budget. While the average age of the professional work force is still increasing and is still of concern, another dimension of the problem requires investigation: the age distribution of the work force. It is noted that top and middle management of several NASA Centers are approximately the same age. This portends a large retirement at a future date of a significant portion of NASA management talent. The Committee recommends that NASA analyze this problem and report to the Committee on its findings by August 1, 1974.

ERTS PROJECT

The Committee wishes again to emphasize the importance that it places on the ERTS project. ERTS-1 has been an unqualified success. The data from this remarkable spacecraft has already proven its worth to several scientific disciplines, particularly geology and cartography. ERTS-1 data is also being used in a quasi-operational sense for a variety of purposes such as repetitive low cost agricultural inventories, fresh water management, environmental surveys, and pollution monitoring. Because of its pervasive coverage, the quality of its data and the many uses to which it can be applied, ERTS-1 has come to be considered an incomparable tool. Seldom has any enterprise been so widely acclaimed, by experts and laymen alike, for its potential contributions to the betterment of mankind's condition.

The Committee notes with approval that authorization has been requested for the development of a new five-channel multispectral scanner during the forthcoming fiscal year. Although ERTS-C is not currently part of the NASA Program, it is assumed that the new five-channel multi-spectral scanner will ultimately be flown in an ERTS-C

spacecraft. The Committee takes this opportunity to urge that an ERTS-C mission be included as part of the NASA Program next year. In this connection, the Committee wishes to emphasize its view that the momentum of the ERTS project should be continued, and that every effort should be made to avoid a hiatus in the acquisition of ERTS data during the remainder of this decade, that is, during the period prior to the availability of the Space Shuttle.

Finally, the Committee notes the fact that funding for support of investigations and for data analysis has been reduced sharply during the past year or so. Inasmuch as the ultimate goal of the ERTS project is the acquisition and analysis of data, and its application to many practical problems here on earth, the Committee wishes to state its concern that this aspect of the project may not be adequately funded.

ADVANCED TECHNOLOGY LABORATORY

During testimony on the FY 1975 Authorization covering the space and nuclear research and technology area, the Committee was informed of NASA's planned Advanced Technology Laboratory to provide for the use of the Europe-developed Spacelab to provide the Office of Aeronautics and Space Technology with the capability to do multi-discipline research and technology in space.

Further inquiry revealed that NASA plans to lease a 747 type aircraft in order to conduct the experiments. In coordinating this activity with the Manned Space Flight Subcommittee it was learned that the Space Shuttle program will require a 747 or C-5A type aircraft to ferry the Shuttle Orbiter from the assembly site at Palmdale, California to Cape Canaveral for launch.

The Committee urges NASA to investigate the possibility of using the same vehicle required for Shuttle as their airborne testbed for the Advanced Technology Laboratory effort thereby potentially realizing a permanent savings to the government.

AIRCRAFT NOISE ABATEMENT

The Committee noted that as a result of its December oversight hearings on aircraft noise, the EPA has formed an ad hoc "Aviation Noise Control Requirements Study" group. NASA should be urged to continue its participation in this group in an aggressive manner, and that EPA should be commended for organizing the group and proceeding with the study.

One of the major subjects discussed during the Committee's December 1973 oversight hearings on aircraft noise was the possibility of the FAA proceeding with a rule making approach which would, for all practical purposes, eliminate potential use of a NASA-developed refan retrofit technology. The Administrator of the FAA, Alexander P. Butterfield, testified that the subject would be given his close personal attention. However, on March 26, 1974 the FAA announced a Notice of Proposed Rule Making (#74-14; Docket 13582), which for all practical purposes, could eliminate the refan retrofit as a viable option for the airlines because of the completion date for compliance established in the FAA notice—July 1, 1978. Extensive testimony taken during the December hearings showed that the refan retrofit technology would provide substantially greater noise reductions than the retrofit which will be required under the FAA proposed rule cited

above. This action reinforces the Committee's concern that the \$44 million authorized to NASA for the refan retrofit technology is "down the drain". Continued action by the Committee to preclude this from happening is warranted.

SUPERSONIC CRUISE AIRCRAFT TECHNOLOGY

Committee oversight hearings were held on this subject on February 22, 1974 during which NASA emphasized that the research being done was not a "supersonic aircraft program". It was stressed that the research is a part of the entire flight regime from general aviation to the hypersonic area.

After considerable discussion on this research area, the Committee decided to call for a report by NASA describing and explaining alternative approaches to proceeding with supersonic research and technology in terms of major objectives, program content, and funding levels during the next decade.

PLUM BROOK STATION AT THE LEWIS RESEARCH CENTER

The budget data presented to the Committee confirmed NASA's intention to place the Plum Brook Station, located near Sandusky, Ohio, in a standby status at the end of FY 1974. Due to the far reaching impact such action would have on our national research capability, the Committee held an additional day of hearings on this subject.

Plum Brook Station represents a unique and valuable national resource. The land facilities and equipment at this station are valued at \$118.9 million. Located at the station are "one of a kind" type facilities such as the Space Power Facility constructed at a cost of \$25 million. This facility is truly unique. It is the world's largest space environment simulation chamber, is equipped with a solar simulation system and has excellent instrumentation and data acquisition facilities.

Testimony revealed that several departments and agencies are interested in and negotiating for the use of the capabilities offered by Plum Brook. The Air Force and Navy are considering the use of the Space Power Facility for testing space satellites, and negotiations are underway at this time. Some interest has been expressed in long range use of the facilities by the National Oceanic and Atmospheric Administration and the Atomic Energy Commission. Discussions are also in progress concerning the use of Plum Brook for joint NASA/AEC Terrestrial Power Systems programs. The NASA/NSF cooperative program on the investigation of full scale wind driven energy devices will be conducted at Plum Brook.

The Committee has adopted a strong position opposing the NASA proposal to place Plum Brook in a standby mode. It is believed that a minimal 50-man operating force, over and above the small planned standby force, should be retained at this station for at least one year pending the outcome of negotiations with potential users of the facilities. Although some assurance has been received from NASA that a minimal operating force will be maintained beyond FY 1974 for a "reasonable period of time", the Committee believes that continuous and active attention on the part of NASA is required to keep Plum Brook operating as a valuable national resource. This subject will be an active oversight action during the coming year.

COAL RELATED RESEARCH

During both Subcommittee and full Committee hearings various energy-related research and development projects were reported to the Committee. The information was provided both in prepared testimony and as a result of Committee questions.

Dr. James G. Fletcher, Administrator of NASA, reported that during the past year NASA has intensified its interest and activity in advanced research related to the extraction and combustion of coal. Discussions have been held by NASA with the Department of Interior on ways that NASA might help in technology areas related to the mining of coal, mine safety, equipment reliability, and efficient non-polluting conversion of coal energy to electric power.

The Committee strongly supports the application of space-related research toward the solution of problems related to coal, and urges that working arrangements be vigorously developed and expanded. The Committee is pleased that cooperative relationships are being developed by NASA in conjunction with the Department of the Interior in this vital area.

SPACE BENEFITS INFORMATION

It is the sense of the Committee that NASA should be doing much more in the area of disseminating *space benefits* information to the public at large through its Public Affairs Organization.

Fully recognizing the statutory limitation on information dissemination by a government agency, but also that statutory requirement under the Space Act to inform the American public, it is the view of the Committee that more can be accomplished within the means available to the Public Affairs Office.

The Committee strongly urges the Administrator of NASA to consider the following recommendations in trying to fulfill this requirement:

- (a) Better utilization of available resources within the agency through coordinated efforts such as the Technology Utilization area.
- (b) More emphasis on Space Benefits versus program status—through coordinated efforts such as the Technology Utilization area.
- (c) Consideration of coordinated efforts with other executive agencies such as Departments of Interior, State, Agriculture, NOAA, HUD, HEW, DOT, etc.
- (d) Strengthen educational programs through more extended use of the Spacemobile program and other type forums.
- (e) Possible involvement of Industrial users.
- (f) Additional appearances by key NASA officials addressing the subject of Space Benefits.
- (g) Better balance of media emphasis with press, TV and radio.
- (h) Disseminate artifacts, mockups, etc., where public audiences can be expected.

Therefore, the Committee wishes to emphasize that the Administrator of NASA should strengthen the agency's Public Affairs Program wherever possible so as to accomplish the goal of providing the public with this much needed information.

GRANTS TO INSTITUTIONS BARRING RECRUITING PERSONNEL

The Committee has not included in the legislation any provision concerning grants to nonprofit institutions barring armed forces recruiting personnel from campuses. This type of provision, which has been included in NASA authorization legislation for the past five years, required the Secretary of Defense to report on a semi-annual basis to the Administrator of NASA, those institutions which barred military recruiters from college campuses, and prohibited NASA from making grants to those institutions. The amendment was originally introduced by the Senate at the time of the Vietnam conflagration, a period which was characterized by widespread campus disorders.

Although 29 colleges and universities had been listed at least once by the Department of Defense as barring armed forces recruiters from their premises, NASA had conducted business with only one. The campus policy of that one institution, which barred recruiting personnel, remained in effect for a period of three months during 1970 after which time the University changed its policy to once again permit recruiters on campus.

Due to a number of factors, including the Vietnam disengagement, the Secretary of Defense now indicates that military recruitment is permitted nationwide at all but seven institutions of higher learning. These institutions tend to be smaller liberal arts schools to which NASA has never made grants. Furthermore, there are no active grants or contracts outstanding at any of the seven named institutions.

This favorable change in the college environment therefore encourages the Committee to drop the legislative requirement prohibiting grants to those institutions barring military recruiters. However, this does not imply any sanctioning by the Committee on this type of campus policy or campus activity; indeed, the Committee remains firm in its opposition to such institution policies.

The Committee therefore requests that the Administrator or his designee, in coordination with the Department of Defense, ascertain semi-annually the extent to which Armed Forces recruiting personnel are being barred from the campuses of nonprofit institutions of higher learning and that the Administrator inform the Chairman of the Committee of his intent to make any grant to such institutions. In this manner, the Committee will be permitted to continue to monitor NASA's relationship with these institutions to determine whether prior legislative sanctions need to be reinstated.

SECTIONAL ANALYSIS

[A bill to authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes]

Section 1

Subsections (a), (b), and (c) would authorize to be appropriated to the National Aeronautics and Space Administration funds, in the total amount of \$3,253,184,000, as follows: (a) for "Research and development," a total of 11 program line items aggregating the sum of \$2,357,070,000; (b) for "Construction of facilities," a total of 19 line items aggregating the sum of \$146,490,000; and, (c) for "Research and program management," \$749,624,000. Subsection (c) would also authorize to be appropriated such additional or supplemental amounts as may be necessary for increases in salary, pay, retirement, or other employee benefits authorized by law.

Subsection 1(d) would authorize the use of appropriations for "Research and development" without regard to the provisions of subsection 1(g) for: (1) items of a capital nature (other than the acquisition of land) required at locations other than NASA installations for the performance of research and development contracts; and (2) grants to nonprofit institutions of higher education, or to nonprofit organizations whose primary purpose is the conduct of scientific research, for purchase or construction of additional research facilities. Title to such facilities shall be vested in the United States unless the Administrator determines that the national program of aeronautical and space activities will best be served by vesting title in any such grantee institution or organization. Moreover, each such grant shall be made under such conditions as the Administrator shall find necessary to insure that the United States will receive benefit therefrom adequate to justify the making of that grant.

In either case no funds may be used for the construction of a facility in accordance with the subsection the estimated cost of which, including collateral equipment, exceeds \$250,000, unless the Administrator notifies the Speaker of the House, the President of the Senate and the specified committees of the Congress of the nature, location, and estimated cost of such facility.

Subsection 1(e) would provide that, when so specified in an appropriation Act, (1) any amount appropriated for "Research and development" or for "Construction of facilities" may remain available without fiscal year limitation, and (2) contracts for maintenance and operation of facilities and support services may be entered into under the "Research and program management" appropriation for periods not in excess of twelve months beginning at any time during the fiscal year.

Subsection 1(f) would authorize the use of not to exceed \$35,000 of the "Research and program management" appropriation for scientific consultations or extraordinary expenses, including representation and official entertainment expenses, upon the authority of the Administrator, whose determination shall be final and conclusive.

Subsection 1(g) would provide that of the funds appropriated for "Research and development" and "Research and program management," not in excess of \$10,000 per project (including collateral equipment) may be used for construction of new, or additions to existing, facilities, and not in excess of \$25,000 per project (including collateral equipment) may be used for rehabilitation or modification of existing facilities; however, of the funds appropriated for "Research and development," not in excess of \$250,000 per project (including collateral equipment) may be used for construction of new facilities or additions to, or rehabilitation or modification of, existing facilities required for unforeseen programmatic needs.

Subsection 1(h) would rescind \$10,900,000 which represents that part of the authorization included in Section 1(b)(12)(I) of the National Aeronautics and Space Administration Authorization Act, 1974, for which appropriations have not been made.

Section 2

Section 2 would authorize the 10 per centum upward variation of any of the sums authorized for the "Construction of facilities" line items (other than facility planning and design) when, in the discretion of the Administrator or his designee, this is needed to meet unusual cost variations. However, the total cost of all work authorized under these line items may not exceed the total sum authorized for "Construction of facilities" under subsection 1(b), paragraphs (1) through (18).

Section 3

Section 3 would provide that not more than one-half of 1 per centum of the funds appropriated for "Research and development" may be transferred to the "Construction of facilities" appropriation and, when so transferred, together with \$10,000,000 of the funds appropriated for "Construction of facilities," shall be available for the construction of facilities and land acquisition at any location if (1) the Administrator determines that such action is necessary because of changes in the space program or new scientific or engineering developments, and (2) that deferral of such action until the next authorization Act is enacted would be inconsistent with the interest of the Nation in aeronautical and space activities. However, no such funds may be obligated until 30 days have passed after the Administrator or his designee has transmitted to the Speaker of the House, the President of the Senate and the specified committees of Congress a written report containing a description of the project, its cost, and the reason why such project is necessary in the national interest, or each such committee before the expiration of such 30-day period has notified the Administrator that no objection to the proposed action will be made.

Section 4

Section 4 would provide that, notwithstanding any other provision of this Act—

(1) no amount appropriated pursuant to this Act may be used for any program deleted by the Congress from requests as originally made to either the House Committee on Science and Astronautics or the Senate Committee on Aeronautical and Space Sciences;

(2) no amount appropriated pursuant to this Act may be used for any program in excess of the amount actually authorized for that particular program by subsections 1(a) and 1(c); and,

(3) no amount appropriated pursuant to this Act may be used for any program which has not been presented to or requested of either such committee,

unless (A) a period of 30 days has passed after the receipt by the Speaker of the House, the President of the Senate and each such committee of notice given by the Administrator or his designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such proposed action, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

Section 5

Section 5 would express the sense of the Congress that it is in the national interest that consideration be given to geographical distribution of Federal research funds whenever feasible and that the National Aeronautics and Space Administration should explore ways and means of distributing its research and development funds whenever feasible.

Section 6

Section 6 would amend section 203(b) (9) of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2473(b) (9)) so as to substitute (1) "5 U.S.C. 3109" for "section 15 of the Act of August 2, 1946 (5 U.S.C. 55a)," and (2) "but at rates for individuals not to exceed the per diem rate equivalent to the rate for GS-18;" for "at rates not to exceed \$100.00 per diem for individuals;"

The purpose of this amendment is to permit NASA to hire, in accordance with 5 U.S.C. 3109, the temporary or intermittent services of experts or consultants, or organizations thereof, including stenographic reporting services, at rates for individuals not in excess of the daily equivalent of the rate for GS-18 under the General Schedule. Such rate is at present in excess of the \$100.00 per diem now authorized by the section 203(b) (9) being amended.

Section 7

Section 7 would authorize the National Aeronautics and Space Administration to enter into a contract for tracking and data relay satellite services for a period of one fiscal year unless provision is made for extending the authorization in subsequent fiscal years. This section stipulates that the government shall incur no costs prior to the furnishing of services to be provided, except that contracts negotiated may provide for payment of contingent liability of the government. Annual reports to the cognizant Committees of Congress are required.

Section 8

Section 8 would provide that the Act may be cited as the "National Aeronautics and Space Administration Authorization Act, 1975".

COST AND BUDGET DATA

The bill will authorize appropriations for Fiscal Year 1975 in the amount of \$3,253,184,000.

In accordance with the requirements of Section 252(b) of the Legislative Reorganization Act of 1970, the Committee's estimate for the next five years of the NASA budget request is as follows:

Fiscal year:	Millions
1975 -----	\$3,247
1976 -----	3,464
1977 -----	3,324
1978 -----	3,029
1979 -----	2,692

These estimates do not include provisions for any new program or program augmentations that may be recommended, nor do they include any provisions for administrative adjustments that may be required.

COMMITTEE RECOMMENDATION

A quorum being present, the Committee unanimously approved the bill by voice vote of those present.

NASA RECOMMENDATION

This is a National Aeronautics and Space Administration legislation item approved with the exceptions noted in this report by the Office of Management and Budget, as indicated by the following letter:

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION,
Washington, D.C., February 4, 1974.

HON. CARL ALBERT,
Speaker of the House of Representatives,
Washington, D.C.

DEAR MR. SPEAKER: Submitted herewith is a draft of a bill, "To authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes," together with the sectional analysis thereof. It is submitted to the Speaker of the House of Representatives pursuant to Rule XL of the House.

Section 4 of the Act of June 15, 1959, 73 Stat. 73, 75 (42 U.S.C. 2460), provides that no appropriation may be made to the National Aeronautics and Space Administration unless previously authorized by legislation. It is the purpose of the enclosed bill to provide such requisite authorization in the amounts and for the purposes recommended by the President in the Budget of the United States Government for the fiscal year ending June 30, 1975. The bill would authorize appropriations totaling \$3,247,129,000 to be made to the National Aeronautics and Space Administration as follows:

- (1) for "Research and development" amounts totaling \$2,346,015,000;
- (2) for "Construction of facilities" amounts totaling \$151,490,000; and
- (3) for "Research and program management," \$749,624,000.

The enclosed draft bill follows the format of the National Aeronautics and Space Administration Authorization Act, 1974 (Public Law 93-74). However, the bill differs in substance from the prior Act in several respects. First, subsections 1(a), 1(b), and 1(c), which would provide the authorization to appropriate for the three NASA appropriations, differ in the dollar amounts and the "Construction of facilities" projects for which authorization to appropriate is requested.

Second, the language of section 1(c) of the prior Act, which limits the amount available for personnel and related costs, and section 4(b) of that same Act, which sets forth related similar language, have

been omitted from the draft bill. Such limitation is considered unnecessary for the fiscal year beginning July 1, 1974.

Third, the bill omits what in the earlier Act was subsection 1(h). This provision placed a restriction on use of appropriations for grants to nonprofit institutions of higher education where Armed Forces recruiting personnel were barred from the premises thereof. Based on recent experience, this limitation no longer appears to be necessary.

Fourth, section 2 of the bill has been modified in order to authorize variations upward by 10 percent, rather than 5 percent, in the amounts prescribed in the "Construction of facilities" line items. This has been necessitated by widening fluctuations in costs of construction. The section is also modified to permit a delegation of the authority contained therein.

Lastly, the substance of sections 6, 7, and 8 of the prior Act has been omitted. Sections 6 and 7 amended the National Aeronautics and Space Act of 1958; section 8 amended title 5 of the United States Code. Since these amendments are permanent law, their inclusion in the bill is not required. In substitution thereof, one new section is proposed.

The new section 6 would amend the National Aeronautics and Space Act of 1958, to permit NASA to hire, as authorized by 5 U.S.C. 3109, the temporary or intermittent services of experts or consultants, or organizations thereof, including stenographic reporting services, at rates for individuals not in excess of the highest daily rate for GS-18 under the General Schedule (approximately \$138.00 per diem), rather than being limited to \$100.00 per diem as under the present section 203(b)(9) of the Space Act. When NASA was first established in 1958, section 203(b)(9) was included in NASA's organic act in the present form to permit NASA to pay up to \$100.00 per diem for the services of experts or consultants. At that time, the generally applicable statute, the Act of August 2, 1946 (5 U.S.C. 55a), in effect, provided for a significantly lesser rate. In the 15 years since 1958, the General Schedule rates have been increased several times and NASA, rather than being in a favorable position to hire experts or consultants pursuant to section 203(b)(9), as was intended, now finds that several other agencies, authorized to pay the maximum rate paid to a GS-18, are authorized to pay their experts or consultants at a rate higher than the NASA rate. The bill would remove this \$100.00 per diem limit from the statute and bring into effect a daily rate not in excess of the maximum rate paid to a GS-18.

Finally, the last section of the draft bill, section 7, has been changed to provide that the bill, upon enactment, may be cited as the "National Aeronautics and Space Administration Authorization Act, 1975," rather than "1974".

Where required by section 102(2)(C) of the National Environmental Policy Act of 1969 (42 U.S.C. 4332(2)(C)), environmental impact statements covering NASA installations and the programs to be funded in fiscal year 1975 have been furnished to the Committee on Science and Astronautics.

The National Aeronautics and Space Administration recommends that the enclosed draft bill be enacted. The Office of Management and Budget has advised that such enactment would be in accord with the program of the President.

Sincerely,

JAMES C. FLETCHER,
Administrator.

CHANGES IN EXISTING LAW

In compliance with clause 3 of rule XIII of the Rules of the House of Representatives, there are herewith printed in parallel columns the text of the provision of existing law which would be amended and the corresponding section of the bill:

EXISTING LAW

National Aeronautics and Space Administration Authorization Act, 1974 (Public Law 93-74)

Section 1(b)(12)

(I) Construction of Orbiter landing facilities, John F. Kennedy Space Center, \$28,200,000;

National Aeronautics and Space Act of 1958 (Public Law 85-568)
42 U.S.C. 2473(b)

(9) to obtain services as authorized by Section 15 of the Act of August 2, 1946, at rates not to exceed \$100 per day for individuals;

THE BILL

Section 1(h) of the Bill amends Section 1(b)(12)(I) of the National Aeronautics and Space Administration Authorization Act, 1974, as follows:

The authorization for the appropriation to the National Aeronautics and Space Administration of \$10,900,000, which amount represents that part of the authorization provided for in section 1(b)(12)(I) of the National Aeronautics and Space Administration Authorization Act, 1974 for which appropriations have not been made, shall expire on the date of the enactment of this Act.

Section 6 of the bill reads as follows:

SEC. 6. Section 203(b)(9) of the National Aeronautics and Space Act of 1958, as amended (42 U.S.C. 2473(b)(9)), is amended to read as follows:

"(9) to obtain services as authorized by section 2102 of title 5, United States Code, but at rates for individuals not to exceed the per diem rate equivalent to the rate for GS-18;"

ADDITIONAL VIEWS

HONORABLE KEN HECHLER

Testimony before the Committee indicated that NASA has done considerable research which can be related to more effective utilization of coal. For a number of years the Lewis Research Center, the Ames Research Center, and other NASA Centers have been doing research which directly relates to the mining and combustion of coal and improvement of the safety of mining operations. For example, in conjunction with the detection of methane in coal mines, the Marshall Space Flight Center is evaluating for NASA and the Bureau of Mines twenty General Electric hydrocarbon detectors that had previously been used to detect hydrogen leaks in launch vehicle fuel tanks. As another example of past work, an unmanned surveillance vehicle for mines has been constructed under a NASA/Bureau of Mines agreement using NASA Lunar Rover technology. The University of Kentucky has done the work. For future applications, NASA is already working on fire retardant materials at the Ames Research Center—also jointly with the Bureau of Mines.

Most expert observers agree that the near-term answer to the nation's energy needs lies in the development and utilization of coal prior to the availability of other forms of energy such as solar, geothermal, wind energy and nuclear fusion. At my request and the request of the Committee, NASA has furnished a list of research projects dealing with improvements in mine safety and better utilization of coal. Each of these projects has been carefully reviewed with NASA to make sure that the funds could be effectively spent on urgent problems.

I intend to offer an amendment to provide an additional \$3,900,000 to the Authorization Bill for additional technology advances in a selected number of coal extraction, coal energy conversion, and mine safety areas. The funds would be allocated as follows:

\$2,000,000 would be used to initiate the effort required to develop and demonstrate the improved materials and fabrication technology required to obtain the high temperature necessary for more efficient ground power systems using coal or coal derived fuels. Also, the funds will be used to define the materials technology program required to achieve improved efficiency, long life and reliability in the large sizes, at the cost required to meet central station power plant requirements. Finally, NASA could profitably direct its vast knowledge and experience in the development of materials for systems operating in hostile environments to underground coal mining equipment.

\$1,000,000 would be used to investigate various coal combustion techniques designed to produce more efficient, cleaner-burning fuel in the future.

\$300,000 would be used to apply NASA's spacecraft environmental control and life support experience in mining and other hazardous en-

vironments. This work would be based on NASA's success in applying high capacity, low-weight breathing systems to fire fighter life support requirements.

\$200,000 would be used to utilize NASA's "stored energy" technology—specifically, highly efficient, low-weight nickel-zinc batteries in mine vehicles and miner personal safety equipment.

\$100,000 would be used to assess how NASA's work in magnetic fluids can be applied to separate scrap from coal more efficiently.

NASA has the capability to work cooperatively with the Department of Interior on the projects which have been cited above. However, the list is preliminary and more work must be done to identify problems and determine the extent to which NASA can contribute toward their solution.

\$300,000 would be provided for a study effort to perform the necessary analysis. Listed below are representative problems which are seriously affecting miner safety, mining productivity and economic, cleaner-burning use of coal. The list is by no means exhaustive and provides general guidance rather than limiting the extent of the proposed study.

COAL MINING RESEARCH AREAS

I. Extraction Technology

- A. Techniques for high recovery of coal in thick seams (15-100 ft) using deep mining techniques.
- B. Remote control mining.
- C. Longwall mining techniques.
- D. Shortwall mining techniques—emphasis on transport systems.
- E. Coal haulage systems.

II. Health and Safety Related Technology

- A. Dust control.
- B. Roof control—materials and techniques.
- C. Methane problems.
- D. Electrical cables; spark-free environment.
- E. Communications.
- F. Miniaturization of lights and personal equipment which miners carry.
- G. Fire suppressant techniques.

III. Other Mining Related Technology

- A. Acid drainage control.
- B. Subsidence control.
- C. Controlled caving techniques.
- D. Backstowing of mine wastes as part of ongoing mining operation.
- E. In situ gasification of coal.
- F. Research of mines seals—materials and techniques.
- G. Pumping of methane gas for commercial use.
- H. Collection of data on reserves, particularly western deep mine reserves through use of NASA techniques (other than the standard core drilling approach).
- I. Coal waste disposal technology.

KEN HECHLER.



Calendar No. 796

93d CONGRESS }
2d Session }

SENATE

{ REPORT
No. 93-818 }NASA AUTHORIZATION FOR
FISCAL YEAR 1975REPORT
OF THE
COMMITTEE ON
AERONAUTICAL AND SPACE SCIENCES
UNITED STATES SENATE

ON

H.R. 13998

AN ACT TO AUTHORIZE APPROPRIATIONS TO THE
NATIONAL AERONAUTICS AND SPACE ADMINISTRA-
TION FOR RESEARCH AND DEVELOPMENT, CON-
STRUCTION OF FACILITIES, AND RESEARCH AND
PROGRAM MANAGEMENT, AND FOR OTHER PURPOSES

MAY 6, 1974—Ordered to be printed

U.S. GOVERNMENT PRINTING OFFICE

29-156

WASHINGTON : 1974

COMMITTEE ON AERONAUTICAL AND SPACE SCIENCES

FRANK E. MOSS, Utah, *Chairman*

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 RALPH E. VANDERVORT, JR., *Assistant Chief Clerk*

CHARLES F. LOMBARD, *Minority Counsel*

(ii)

Calendar No. 796

93D CONGRESS }
2d Session }

SENATE {

REPORT
No. 93-818AUTHORIZING APPROPRIATIONS TO THE NATIONAL
AERONAUTICS AND SPACE ADMINISTRATION

MAY 6, 1974.—Ordered to be printed

Mr. Moss, from the Committee on Aeronautical and Space Sciences,
submitted the following

REPORT

[To accompany H.R. 13998]

The Committee on Aeronautical and Space Sciences, to which was referred the bill (H.R. 13998) to authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes, having considered the same, reports favorably thereon, with an amendment striking out all after the enacting clause and inserting the committee amendment, and recommends that the bill be passed.

CONGRESSIONAL ADJUSTMENTS TO NASA FISCAL
YEAR 1975 REQUEST—Summary

	Budget request	House action	Senate com- mittee action
Research and development:			
Space Shuttle.....	\$800,000,000	\$820,000,000	\$800,000,000
Space flight operations.....	323,300,000	308,300,000	318,300,000
Advanced missions.....	1,500,000	1,500,000	1,500,000
Physics and astronomy.....	140,515,000	140,515,000	140,515,000
Lunar and planetary exploration.....	266,000,000	266,000,000	264,000,000
Launch vehicle procurement.....	140,500,000	140,500,000	143,500,000
Space applications.....	177,500,000	179,500,000	200,500,000
Aeronautical research and technology.....	166,400,000	170,655,000	171,500,000
Space and nuclear research and technology.....	74,800,000	80,500,000	74,800,000
Tracking and data acquisition.....	250,000,000	250,000,000	250,000,000
Technology utilization.....	5,500,000	5,500,000	5,500,000
Total.....	2,346,015,000	2,362,970,000	2,370,115,000
Construction of facilities.....	151,490,000	146,490,000	147,490,000
Research and program management.....	749,624,000	749,624,000	749,624,000
Grand total.....	3,247,129,000	3,259,084,000	3,267,229,000

PURPOSE OF THE BILL

The purpose of this bill is to authorize appropriations totaling \$3,267,229,000 to the National Aeronautics and Space Administration for fiscal year 1975, as follows:

	Budget request	House action	Senate committee action
Research and development.....	\$2,346,015,000	2,362,970,000	\$2,370,115,000
Construction of facilities.....	151,490,000	146,490,000	147,490,000
Research and program management.....	749,624,000	749,624,000	749,624,000

LEGISLATIVE HISTORY

The fiscal year 1975 budget request for the National Aeronautics and Space Administration was introduced in the House under H.R. 12689, and in the Senate as S. 2955. After holding hearings, the House Committee on Science and Astronautics reported out a clean bill, H.R. 13998, which was passed by the House, with two floor amendments, and subsequently referred to this Committee.

The Committee held hearings on S. 2955 during February, March and April, 1974. During its consideration of the bill the Committee determined amendments were required.

The Committee has reported out H.R. 13998 with an amendment striking all after the enacting clause and inserting the Committee amendment.

SUMMARY

The NASA budget request is for a total of \$3,247,129,000, of which \$2,346,015,000 was for "Research and Development", \$151,490,000 was for "Construction of Facilities", and \$749,624,000 was for "Research and Program Management". The House approved an authorization total of \$3,259,084,000, of which \$2,362,970,000 was for "Research and Development", \$146,490,000 was for "Construction of Facilities" and \$749,624,000 was for "Research and Program Management".

The Committee is recommending an authorization of \$3,267,229,000, an amount \$20,100,000 above the NASA request and \$8,145,000 above that in the House-approved bill. Of the total amount the Committee recommends \$2,370,115,000 for "Research and Development", which is \$7,145,000 above the House-approved amount and \$24,100,000 above the NASA request for this appropriations category; recommends \$147,490,000 for the "Construction of Facilities", which is \$1 million above the House amount, and \$4 million below the NASA request; and, recommends \$749,624,000 for "Research and Program Management" which is identical with the amount approved by the House and requested by the NASA. The reasoning accompanying the actions of the Committee is contained in this report under the various programs or items herein.

The appropriations level authorized by the bill as reported by the Committee would equal about 1% of the federal budget for Fiscal Year 1975, and is a half billion dollars below the "constant level" NASA budget endorsed by the Congress two years ago. The Committee was pleased that the budget request for FY 1975 reverses, in absolute dollars, the downward trend of recent years, but notes that the increase, of about 3% over the budget plan for the current year, will not keep pace with inflation.

Nevertheless, within these harsh funding restraints, the authorization recommended would support a balanced program of great value to the Nation. Essential ongoing programs would be continued, and important new starts made in space science and applications programs.

The Committee has given special attention to support required for the continued development of the Space Shuttle, which is the key element of the space transportation system designed to provide efficient and economical access to space, thereby allowing the Nation to exploit space for the many benefits that are emerging: for a progressive step-by-step planetary exploration program designing more sophistication into future missions thereby building on the current successes experienced in the program; and, for maintaining a strong and viable aeronautical research program striving to maintain U.S. leadership in world aviation. In particular, the Committee has emphasized, through additions to the budget request, the importance of those activities conducted in the Space Applications program including the Earth Resources Technology Satellite series and the growing contributions which NASA technology and scientific and engineering talent can make to the solution of the many critical problems facing the Nation in energy, environmental protection and resource conservation, and related areas. The Committee added \$16 million to the NASA request for the procurement and launch of a third spacecraft in the ERTS series to provide for continued availability of this increasingly

valuable data to a growing number of users. The Committee also added \$6 million to support activities underway and the initiation and application of new ideas in the energy and environmental areas. It is becoming increasingly clear that as the NASA aeronautics and space programs mature ever-increasing demands for problem-solving assistance are being made by other organizations, both in government and industry, for the technology and know-how developed in these programs. Therefore, the Committee is firmly convinced that its additions to the NASA request in these specific areas will repay the investment many times over and that these activities should be considered to be an integral part of NASA's overall program in addition to its aeronautical and space research charter.

The Committee adopted three legislative amendments—one establishing a cost ceiling on each individual Space Shuttle facility project recommended in the bill, one providing NASA a one-year authorization to undertake preliminary cost assessment actions and to lease tracking and data relay satellite services, and one amending the National Aeronautics and Space Act of 1958 to increase the NASA maximum allowable daily rate for consultant services. Each of these items is discussed in more detail in the Legislative Amendments Section of this Report.

The Committee held hearings on this bill on February 5, 26, 28, March 13, 20, April 2 and 4. During the course of the hearings, the Committee examined space and aeronautics programs of the various departments and agencies of the government wherein coordination is required with NASA programs. The Committee received testimony from witnesses from within and outside the government.

The Committee met in Executive Session on April 23, 1974, to mark up the bill and prepare its recommendations to the Senate. The bill was ordered unanimously to be reported.

RESEARCH AND DEVELOPMENT

	Budget request	House action	Senate committee action
Research and development:			
Space Shuttle	\$800,000,000	\$820,000,000	\$800,000,000
Space flight operations	323,300,000	308,300,000	318,300,000
Advanced missions	1,500,000	1,500,000	1,500,000
Physics and astronomy	140,515,000	140,515,000	140,515,000
Lunar and planetary exploration	266,000,000	266,000,000	264,000,000
Launch vehicle procurement	140,500,000	140,500,000	143,500,000
Space applications	177,500,000	179,500,000	200,500,000
Aeronautical research and technology	165,400,000	170,655,000	171,500,000
Space and nuclear research and technology	74,000,000	60,000,000	74,000,000
Tracking and data acquisition	250,000,000	250,000,000	250,000,000
Technology utilization	5,500,000	5,500,000	5,500,000
Total	2,346,015,000	2,362,970,000	2,370,115,000

SPACE SHUTTLE PROGRAM, \$800,000,000

COMMITTEE COMMENT

The Committee has been notified of technical difficulties encountered in modifying facilities at the Santa Susana Test Facility to provide the capability to support component and subsystem development testing for the Shuttle main engine, and that additional funds

will be transferred within previously appropriated shuttle funding to complete this facility modification project. The Committee notes that, in conjunction with the preparation of the FY 1975 budget, a complete reexamination of cost and schedule for the Space Shuttle program was undertaken resulting in a schedule extension of four to six months with a small increase in total estimated cost. The Committee, therefore, expects that this review and subsequent adjustments as reflected in testimony before the Committee should have accounted for any actions required to keep the total program in balance. Against this background, the technical and managerial control expected on NASA programs, and the flexibility that NASA has to accommodate difficulties experienced as the program proceeds, the Committee does not concur with the House addition of \$20 million to this program.

SPACE FLIGHT OPERATIONS PROGRAM, \$318,300,000

COMMITTEE COMMENT

The House cut the Apollo-Soyuz Test Project request by \$5 million on the basis that this project was underrunning its estimate. Inasmuch as this project has a specific activity termination date and the project is in a very advanced state wherein all costs should be identified, the Committee agrees with the House reduction in this project.

The Committee also noted that a reduction of \$10 million was made by the House in the funding for development, test and mission operations activities in the Space Flight Operations program. Since this funding category supports the establishment and maintenance of the basic on-going in-house capability at the several manned space flight installations and in view of the reductions that have been made in previous years in this area as manned space flight activities decreased, the Committee does not concur in the further reduction.

ADVANCED MISSIONS PROGRAM, \$1,500,000

COMMITTEE COMMENT

The Committee notes that this program has been funded under a separate line item for a number of years by NASA authorization requests. NASA should consider, as the shuttle era approaches, whether long-range program planning and funding efforts in NASA should not be more closely integrated rather than separated into "manned" and "unmanned" categories.

LUNAR AND PLANETARY EXPLORATION PROGRAM, \$264,000,000

COMMITTEE COMMENT

The Committee noted the significant cost increase experienced in the Viking project, subsequent to hearings on the FY 1974 authorization request, which necessitated a reprogramming action to increase

the FY 1974 Lunar and Planetary Exploration program ceiling. While the Committee appreciates that development difficulties may be encountered in complex programs, it believes that particular attention must be given to cost control, especially in the latter phases of a project wherein compensating adjustments are difficult to accommodate. The Committee urges that the Viking project be closely monitored until completion, and it is recommending a \$2 million cut in the FY 1975 request for the Lunar and Planetary Exploration program with the expectation that every effort will be made to achieve savings in program activities.

LAUNCH VEHICLE PROCUREMENT PROGRAM, \$143,500,000

COMMITTEE COMMENT

The Committee added \$3 million for initiation of the procurement of a Delta launch vehicle to be used to launch the ERTS-C spacecraft for which the Committee is also adding funding in the Space Applications program. The total recommendation for this program is \$143,500,000.

SPACE APPLICATIONS PROGRAM, \$200,500,000

COMMITTEE COMMENT

ERTS-C.—The Committee notes that following provision made by the Congress in the FY 1974 NASA Authorization Act, NASA is making preparations to launch the ERTS-B earth resources technology satellite in early 1975 to continue to provide the increasingly valuable Earth Resources data which has been so well received by users engaged in many disciplines. ERTS-B will be a duplicate of ERTS-A and will be launched without the 5th, or thermal channel, on the multispectral scanner. However, development of the multispectral scanner with the additional channel will continue in FY 1975. The Committee is aware that the Executive Branch, in spite of continuous urging by this Committee for the organization of an operational Earth Resources survey program, has not developed any plan as yet and, therefore, following the launch of ERTS-B the Nation will be in a similar position as it is now with respect to ERTS-A—no provision for the continuity of remote sensing data which, based upon testimony presented to the Committee, is most clearly becoming increasingly important to an ever-enlarging number of users. Therefore, the Committee is adding \$13 million to the Space Applications program to initiate the development of an ERTS-C spacecraft incorporating the 5th or thermal channel multispectral scanner. Concurrently with this action, the Committee has added \$3 million to the Launch Vehicle Procurement program for the Delta vehicle to launch the ERTS-C spacecraft.

In making this recommendation, the Committee wants to emphasize its conviction that the United States should press ahead with the development of Earth Resources sensing satellites, and with the advancement of related ground equipment and the training of users.

The user community embraces many disciplines. Some are already making use in their normal operations of data from the first, experimental satellite. Others are only beginning to be aware of the potential this new technique offers.

In testimony before the Committee, one user likened the development of the remote sensing satellite to the invention of the microscope in terms of its importance to science and technology. One observer recently claimed that the value of mineral resources discovered from space over the past year will exceed the total investment in NASA programs over the past 17 years.

But users—present and potential—are understandably reluctant to invest time and capital in enhancing their capability to use ERTS data unless they can rely on its availability. By closing, and hopefully eliminating, the gap between the first two ERTS satellites, the government has taken the first step toward assuring continuity of data.

The Executive Branch has been slow to recommend an operational system. Indecision over ultimate organizational arrangements for such a system plays a part in this delay.

We have passed the point where lack of certainty as to cost-benefit ratios or optimized institutional roles should prevail. Unless a third satellite is started in the coming fiscal year, a sizable and unacceptable gap in data after ERTS-B is assured.

NASA should proceed with the third satellite, and through it provide a "service-in-common" to users at the federal level and, through appropriate federal agencies, to state, local and private users. This assured, continuing service should be provided in close cooperation with all appropriate federal agencies, and in such a way as not to prejudice the ultimate institutional arrangements for managing a fully operational system.

ERTS Data Handling.—The Committee received testimony indicating that the systems and mechanisms for processing and distributing ERTS data to users could be improved to enhance the utility of the data and to reduce delays, thereby increasing the benefits to be realized from the ERTS project. Accordingly, the Committee also added \$2 million to the Space Applications program to support increased effort to improve the ERTS processing and distribution activity.

Energy.—Following the identification of an energy subproject in the Applications program in FY 1974, it is clear from testimony presented to the Committee that NASA has several meaningful efforts underway and has the potential, with its wealth of technology and scientific and engineering talent, to make a significant contribution to the solution of many of our national energy problems. The Committee believes that this is an area which should be exploited and, therefore, is adding \$6 million to the Space Applications program to support the initiation of and/or the continuation of energy related

activities within NASA. This funding is designed to support work in addition to that which NASA might undertake as a "performing agency" on a reimbursable basis for "funded" agencies. The Committee noted, as discussed elsewhere in this report, that the House added \$1.8 million to the Space and Nuclear Research and Technology program for a systems study of a satellite solar power station. This effort is directly related to work already underway in the Space Applications program, and the Committee would expect NASA to continue research on technologies critical to this system within the \$6 million added to the Space Applications program for energy activities. This approach is intended to avoid fragmentation of the energy functions within the NASA program activities. Earlier efforts on such systems were conducted with funding from this line item. The Committee also intends that work on hydrogen production and utilization systems, hydrogen injection automobile engines and coal continue at appropriate funding levels, as mandated by the House, but takes no position on the precise level of effort required.

Other matters.—The Committee recognizes the need to expand research efforts on short-term weather phenomena, and agrees with the House in identifying this need. However, the Committee believes the importance of this effort, as underscored by recent events, warrants the addition of \$2 million to the Space Applications program rather than reserving \$2 million within the existing funding level as specified in the House bill.

In summary, the Committee recommends increasing the Space Applications program from \$177,500,000 to \$200,500,000, an addition of \$23 million of which \$13 million is for ERTS-C, \$2 million is for ERTS data processing and distribution systems, \$6 million is for energy activities, and \$2 million is for short-term weather phenomena research.

AERONAUTICAL RESEARCH AND TECHNOLOGY PROGRAM,
\$171,500,000

COMMITTEE COMMENT

General.—The House added \$4,255,000 to this program, \$2 million for general aviation research, \$1.6 million for aviation safety research, and \$655,000 for aircraft hydrogen fuel research. The Committee concurs that additional research in these areas is very worthwhile, and also believes that a nominal increase in supersonic technology research should be made to supplement those activities designed to explore and understand the technology, the problems and the impacts of this aspect of environmentally and economically acceptable aeronautical technology. Accordingly, the Committee is recommending the addition of \$5.1 million to this program, increasing the total from \$166,400,000 to \$171,500,000, of which \$1.1 million should be applied to increased effort on supersonic technology.

Refan program.—In its report, the House criticizes the FAA Notice of Proposed Rule Making of March 22, 1974 (#74-14; Docket E3582), "which, for all practical purposes, could eliminate the refan retrofit as a viable option for the airlines because of the completion date for compliance established in the FAA notice—July 1, 1978." The House is concerned "that the \$44 million authorized to NASA for the refan retrofit technology is 'down the drain'."

Your Committee has strongly supported the NASA refan program as a possible means of reducing engine noise in a large portion of the current jet fleet (*i.e.*, all jet aircraft utilizing Pratt & Whitney JT8D engines: Boeing 727 and 737, and McDonnell Douglas DC-9) to a level *noticeably* lower than that required by FAR Part 36. The new FAA Notice would require only that these aircraft *meet* the noise level required by FAR Part 36—an option which would be less expensive.

What has not been determined, and what should be carefully considered by the FAA, is whether the public will be satisfied with FAR Part 36 noise levels in 1978 and beyond when the technology is readily available to make noise levels much lower. Also to be determined, in either case, are the costs of fleet retrofit and how they would be borne.

Certainly since only the final \$1 million in the total \$44 million refan program is being requested for FY 1975, that program should be completed as currently planned so that this lower noise level option will be available should the FAA or the Congress decide that these lower noise levels are desired in the public interest.

SPACE AND NUCLEAR RESEARCH AND TECHNOLOGY, \$74,800,000

COMMITTEE COMMENT

The House added \$1.8 million to this program for a systems study of a satellite solar power station.

The Committee vigorously supports NASA's activities in the energy area and believes that these studies should be conducted. However, it is noted, as stated in connection with the Space Applications program, that this work is closely associated with solar power conversion and delivery systems effort projected as a part of that program and, therefore, the Committee believes that this additional effort should be integrated with the other solar power activities NASA has underway or proposes to initiate as a part of the Space Applications program. Therefore, the Committee does not concur in the increase to the Space and Nuclear Research and Technology program, but has provided for undertaking the proposed study at an appropriate level of funding as a part of a larger addition this Committee has made to the Space Applications program for energy-related activities. The Committee has made similar provision for coal-related research and technology activities approved by the House.

TRACKING AND DATA ACQUISITION PROGRAM, \$250,000,000

COMMITTEE COMMENT

In a letter to the President of the Senate dated March 8, 1974, the Administrator of NASA submitted the draft of a bill to amend Section 203(b) of the National Aeronautics and Space Act of 1958, and suggested that it be included as a section in the FY 1975 NASA authorization bill. This proposed legislation would authorize NASA, when so provided in an appropriation act, to enter into a contract to lease tracking and data relay satellite services.

By greatly increasing the percentage of time during which data can be received from, and commands sent to, most earth orbital satellites, a Tracking and Data Relay Satellite System (TDRSS) would markedly enhance the productivity of such satellites, as well as substantially reduce space program operating costs since it would permit closing most of the ground stations in the present worldwide tracking and data network supporting those satellites. Accordingly, the Committee strongly endorses prompt deployment of a Tracking and Data Relay Satellite System.

However, it is less clear whether NASA should contract for the development and operation of a Government-owned system, or for services provided through a privately-owned TDRSS. In the remainder of this Committee Comment, "NASA-owned" refers to a TDRSS consisting of satellites and ground facilities procured by NASA under contract with private industry, and operated for NASA under service contracts with private industry, much in the manner of the existing tracking and data acquisition network stations; "leased" refers to the arrangement proposed by the Administration, under which a private concern would build, own and operate the TDRSS, selling the service to NASA under long-term contract.

Under the proposed lease arrangement for tracking and data relay satellite services, the Government would incur only minor costs prior to the furnishing of such services, which are estimated to begin in 1979. However, the lease could provide (and in all probability would provide) for the payment of contingent liability on the part of the Government which would accrue in the event the Government decided for its convenience to terminate the lease before the end of the contract period. Estimates provided to the Committee show that this contingent liability could reach \$150 million in the year just before the service would be initiated.

The Committee examined the NASA proposal carefully. NASA cost studies, described in NASA testimony as preliminary, estimate the cost in 1973 dollars for a dedicated leased Tracking and Data Relay Satellite System for service beginning in 1979 and extending to 1989 to be \$584 million. Only small amounts of new obligational authority would be needed for FY 1976 through 1978, rising to \$29.2

million in FY 1979 and then to between \$50 and \$60 million per year through 1988 and \$27.1 million for FY 1989.

The cost in 1973 dollars for a NASA-owned TDRSS is estimated in the NASA study to be \$299 million—\$285 million less than the leased system. However, a NASA-owned system would require substantial new obligational authority during the remainder of the 1970's, estimated as follows:

Fiscal Year 1975	\$14,700,000
Fiscal Year 1976	\$23,600,000
Fiscal Year 1977	\$49,000,000
Fiscal Year 1978	\$48,400,000
Fiscal Year 1979	\$22,300,000

During the 1980's, except for the early and late years, the estimated operating costs are between \$10 and \$20 million per year. Fiscal Year 1980 and 1981 costs are estimated at \$22.0 million and \$30.0 million, respectively, and are down sharply to \$6.7 and \$3.4 million, respectively, for FY 1988 and 1989.

Discounted at 10%, the leased TDRSS service is estimated to cost \$184 million (discounted dollars) as against only \$151 million (discounted dollars) for a NASA-owned system.

The cost analysis provided the Committee assumed that the satellites were dedicated to providing TDRSS services, as at least the NASA portion of any such satellites probably must be. However, according to the testimony, satellites larger than required for NASA's needs could be built, with a part of the larger system being dedicated to TDRSS purposes and the remainder used for other customers. The Committee received testimony that such an arrangement might reduce the cost of the leased system to NASA but that no firm proposals for such shared satellites exist. Moreover, the testimony before the Committee states that a leased TDRSS would be more difficult to integrate into the total NASA system than would be a NASA-owned TDRSS.

After closely examining the NASA proposal, the Committee recommends to the Senate that NASA be authorized to proceed with a Tracking and Data Relay Satellite System in Fiscal Year 1975 in a manner that will permit a more accurate determination during FY 1975 as to the probable costs of a leased and a NASA-owned TDRSS. The Committee has no objection to a leased TDRSS provided that method of procurement is the most advantageous to the Government, cost and other factors considered. The preliminary information presently available does not indicate the leased system to be the most advantageous.

In proceeding with any TDRSS procurement, NASA is requested:

(1) to report to the Committee, based on an evaluation of the actual proposals received and such other information found pertinent by the Administrator of NASA and *prior* to entering into a contract, on the projected cost of the lease arrangement as compared to refined cost estimates of an equivalent NASA owned TDRSS system;

(2) to expedite the TDRSS procurement process to be able to so report to the Committee in a timely manner during consideration of the FY 1976 authorization request.

The Committee believes that such reviews are essential for it to make any final recommendation regarding the TDRSS.

The Committee is convinced that TDRSS should be available to support the first manned orbital flight of the Space Shuttle, now scheduled for the second quarter of 1979. To be able to meet that deadline with a NASA-owned system, if that should be indicated as the course most advantageous to the Government, cost and other factors considered, NASA should take steps to be in a position to contract for the development of such a system as soon as possible after such a decision is reached, and the Committee would expect NASA to exercise its authority under Section 4 of the Authorization Act, if necessary.

In its action on the NASA-proposed legislation, the House is recommending that a new Section 7 be added to the NASA Authorization Act, 1975, (1) to provide authority for NASA to enter into the proposed long-term contract (the lease arrangement), but (2) to specify also that such authority shall remain in effect only as long as provision therefor is included in NASA Authorization Acts for FY 1976 and subsequent fiscal years. The House Committee has requested that, prior to entering into the long-term contract, NASA furnish to that Committee a detailed analysis comparing the cost of a lease arrangement with the projected cost of a NASA-owned TDRSS.

Since the approach recommended by the House will permit the Congress to review this entire matter next year in the light of more detailed information, the Committee recommends that the language included as Section 7 in the House bill be accepted by the Senate.

CONSTRUCTION OF FACILITIES

CONSTRUCTION OF INFRARED TELESCOPE FACILITY, MAUNA KEA, HAWAII, \$6,040,000

COMMITTEE COMMENT

The House added \$4 million to this project designed to build in an additional capability to that proposed in the NASA project, and retitled the project as "Optimized Infrared Telescope Facility". The Committee does not have any testimony on the proposed expansion, and is not aware of any plans or specifications on which to base cost estimates or to assess schedule or other impacts on the original project proposal.

In addition, there appears to have been little, if any, coordinated consideration in the Executive Branch with respect to an enlarged facility.

The Committee accepts the NASA justification for this infrared telescope facility as a firm requirement to acquire planetary data to aid in targeting the Mariner Jupiter-Saturn 1977 (MJS 77) spacecraft and with which to enhance the mission through the availability of comparative data. Accordingly, the facility ready date is keyed to the MJS 77 missions. These missions are approved and substantial funds have already been committed and, therefore, the Committee believes that no action should be taken which would reduce or impair the scientific effectiveness of these missions. The facility, as presently planned, will have a large capability for continuing use in planetary astronomy following its use for the MJS 77 missions.

In view of the foregoing, the Committee does not concur in the addition of \$4 million to this project.

SPACE SHUTTLE FACILITIES, \$82,020,000

Construction of Orbiter Landing Facilities, John F. Kennedy Space Center, \$15,880,000.

COMMITTEE COMMENT

In view of the documentation submitted by NASA in support of its request for additional authorization for Orbiter Landing facilities at the Kennedy Space Center and the discussion of the FY 1974 and FY 1975 authorizations for these facilities under this item 16(A), the Committee is not convinced of the need for legislative action to rescind the unfunded portion of the FY 1974 authorization. Accordingly, the Committee has not included a provision comparable to Section 1(h) in the House bill.

Modifications to Launch Complex 39, John F. Kennedy Space Center, \$42,690,000.

COMMITTEE COMMENT

The Committee, during its hearings on the FY 1975 NASA authorization bill, specifically examined the timing of the need for the modifications to Launch Complex 39, Item 16 (C), and was persuaded that the schedule, as proposed, is necessary to meet the Space Shuttle launch readiness date. The House cut this project \$7 million on the basis that this amount could be authorized in the next fiscal year in time to proceed with the work. The Committee understands that the \$7 million does not represent a distinct work package in the total project request of \$42 million for Launch Complex 39, and therefore, the cut would require some complex repackaging and/or reordering of the procurement process for the work scheduled on the Vehicle Assem-

bly Building. Based upon the foregoing, and difficulties being experienced in obtaining materials for such projects in a timely manner, the Committee has restored the House cut against this item. To delay some undefined portion of the construction is to invite increased impact of inflation. No sound reason is seen for departing from the normal practice and incrementally funding this NASA construction project.

Construction of Orbiter Horizontal Flight Test Facilities, Flight Research Center, \$1,940,000.

COMMITTEE COMMENT

The House added \$2 million to the Space Shuttle facilities project, Item 16(E), Orbiter Horizontal Flight Test Facilities, at the Flight Research Center, to provide for the construction of expanded facilities that would serve on-going NASA aeronautical research activities following completion of Orbiter flight testing. While the Committee appreciates the need to provide adequate facilities to support the NASA aeronautical research programs, it is not clear from the information available to the Committee that the total NASA needs for all its programs at this Center are sufficiently well defined to justify proceeding with an expanded project at this time. In addition, it is understood that the \$2 million added to the project funding, as originally proposed, would not provide the total funding necessary to complete the expanded hangar facilities of the size desired for aeronautical research. Therefore, the Committee did not concur with the House addition of \$2 million to this project.

Construction/Modification of Solid Rocket Motor Production and Test Facilities, Undesignated Locations, -0-

COMMITTEE COMMENT

The Committee appreciates the inability of NASA to define precisely the facility requirements for the solid rocket motor production and test facilities pending the resolution of the protest of the contract award for the motor. The Committee understands that if the NASA selection is confirmed some small amount of facility funding may be required in FY 1975. Conversely, if the NASA selection is overturned, then it appears an amount much larger than the request may be required. In view of the situation, therefore, the Committee concurs with the House action in deleting the \$4 million request for solid rocket motor facilities. However, should the contract award be resolved and facilities be required to support the Shuttle development schedule prior to the next authorization request, the Committee would give timely consideration to a reprogramming or other action to satisfy such a requirement.

COMMITTEE COMMENT

Consistent with its position on Shuttle facility projects for the preceding three years, the Committee has amended the request for Space Shuttle facilities, C of F Item 16, to specify the estimated cost for each subproject, C of F Items 16 (A) through (I) rather than to authorize the total Shuttle facilities funding as a lump sum amount.

RESEARCH AND PROGRAM MANAGEMENT

Summary

	Budget request	House action	Senate committee action
Personnel compensation	\$526,092,000	\$526,092,000	\$526,092,000
Personnel benefits	45,696,000	45,696,000	45,696,000
Benefits for former personnel	2,759,000	2,759,000	2,759,000
Travel and transportation of persons	16,444,000	16,444,000	16,444,000
Transportation of things	3,408,000	3,408,000	3,408,000
Rent, communications, and utilities	46,902,000	46,902,000	46,902,000
Printing and reproduction	4,675,000	4,675,000	4,675,000
Other services	88,263,000	88,263,000	88,263,000
Supplies and materials	11,966,000	11,966,000	11,966,000
Equipment	2,605,000	2,605,000	2,605,000
Lands and structures	739,000	739,000	739,000
Grants, subsidies, and contributions	51,000	51,000	51,000
Insurance claims and indemnities	24,000	24,000	24,000
Total	749,624,000	749,624,000	749,624,000

COMMITTEE COMMENT

Earlier this year the Committee held a hearing to review NASA's Equal Employment Opportunity program. It became clear that NASA's performance in this area was less than satisfactory, a condition forthrightly acknowledged by the Deputy Administrator at this hearing and by the Administrator during the initial hearing on the FY 1975 authorization request. At the same time, however, these top management officials outlined a series of goals and timetables and committed NASA to an aggressive program to comply with national policy. While the Committee recognizes the highly technical composition of the NASA workforce, and the fact that this may in itself impose some recruitment and employment difficulties, and while the Committee is also aware that NASA has been in a reduction-in-force posture for the last several years thereby limiting the number of available openings for new recruitment, the Committee is not satisfied with NASA's per-

formance to date and strongly urges that the top management move aggressively, taking such actions as may be necessary, including an increase in EEO staff, to assure that the goals and objectives presented to the Congress for its Equal Employment Opportunity program are realized. Further, the Committee expects that NASA will continue to furnish the Committee quarterly reports on its progress in its Equal Employment Opportunity program following the report already submitted to the Committee for the first quarter of Calendar Year 1974.

The Committee used the NASA estimate as a starting point to prepare its estimate. The Committee estimate for FY 1975 exceeds the NASA estimate by \$20.1 million which is the sum of the Committee recommended additions and reductions as explained throughout the report.

The Committee future year estimates are higher than the NASA estimates because of the Committee recommendation that NASA proceed with the ERTS-C spacecraft. Total cost of that project is estimated to be \$33.6 million including the launch vehicle.

The estimates given in this report are not an estimate of what the NASA budget will be in future years. As existing programs and projects are phased out, new programs and projects may be requested; the Congress will have an opportunity to exercise its judgment on these new programs and projects when authority and funds are requested to proceed with them.

LEGISLATIVE CHANGES

The Committee has considered and adopted three legislative amendments in the NASA FY 1975 authorization bill.

The first amendment modifies Section 1(b) "Construction of Facilities", item 16, Space Shuttle facilities at various locations, \$82,020,000 to specify the estimated cost for the individual facilities projects recommended for authorization in subline items 16(A) through 16(I) in lieu of a total amount for all facilities authorized under item 16.

The second amendment, included as Section 6 of the bill, amends Section 203(b)(9) of the National Aeronautics and Space Act of 1958, as amended, to permit NASA to obtain the services of experts and consultants at rates not in excess of the daily rate equivalent for GS-18 under the Classification Act General Schedule (approximately \$138.00 per day at the present time). Section 203(b)(9) currently establishes a ceiling of \$100 per day for such services. This amendment is necessary to enable NASA to be in the position to obtain consultant services, when required, at rates which the Committee has determined are authorized to be paid by other government agencies for similar services. The Committee expects that NASA will recognize this authorization as a maximum rate and that rates for specific services will be negotiated that are commensurate with the expertise required and

being offered for the work to be accomplished. This change in the maximum rate for consultant services was requested by the Administrator of NASA in conjunction with the presentation of draft legislation to the Senate for the FY 1975 authorization act. The House adopted an identical provision in its action on this authorization bill.

A third amendment, as Section 7 of the bill, authorizes NASA to enter into a contract to procure, through a lease arrangement, tracking and data relay satellite services. This Section permits NASA to issue requests for proposals, obtain and analyze proposals, and award a contract for such services. However, since Section 7 provides a one-year authorization only, subsequent authorization would have to be obtained to continue any such contract, or the contractual arrangement would have to be terminated. In event of such termination of any activity under Section 7 prior to subsequent authorization in FY 1976, the estimated liability of the government would be minimal. However, such liability is not expected to be incurred since it is the intent of the Committee in recommending this Section 7 that it will permit NASA to, and that NASA will proceed expeditiously to secure firm proposals and develop definitive data which will permit the Congress to evaluate fully the merits of obtaining these services through a lease arrangement and through a government-owned system. Subsequent authorization, based upon the facts and circumstances developed, will be considered at such time as it is necessary. This Section 7 originated from a March 8, 1974, request to the President of the Senate from the Administrator of NASA, introduced as S. 3175, to amend Section 203(b) of the National Aeronautics and Space Act of 1958, as amended, to add a new paragraph (14) to provide NASA the authority to enter into a lease arrangement for such services, including the authority to pay for any contingent liability in the event the government cancelled the contract for its convenience prior to full performance. The Committee believes that it should not authorize a long term commitment pending full development of the comparative costs of lease versus ownership of the system and the identification of the amount of contingent liability that would exist. However, the Committee believed that in order for the government to achieve an early availability of the economies that this system offers, it was necessary to permit NASA to proceed on a limited basis. The House adopted an identical provision in Section 7 in its action on this legislation.

CHANGES IN EXISTING LAW

In compliance with subsection 4 of rule XXIX of the Standing Rules of the Senate changes in existing law made by the bill are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in *italic*, existing law in which no change is proposed is shown in roman):

NATIONAL AERONAUTICS AND SPACE ACT OF 1958

Public Law 85-568 (72 Stat. 426)

* * * * *
TITLE II—COORDINATION OF AERONAUTICAL AND SPACE ACTIVITIES
 * * * * *

FUNCTIONS OF THE ADMINISTRATION

SEC. 203. (a) * * *

(b) In the performance of its functions, the Administration is authorized—

* * * * *
 [(9) to obtain services as authorized by section 15 of the Act of August 2, 1946 (5 U.S.C. 55a), at rates not to exceed \$100 per diem for individuals;]
 (9) to obtain services as authorized by section 3109 of title 5 United States Code, but at rates for individuals not to exceed the per diem rate equivalent to the rate for GS-18;

SPACE BUDGETS OF OTHER AGENCIES

(The following table, the source for which is the Office of Management and Budget, shows new obligational authority of all Government agencies:)

SPACE ACTIVITIES OF THE U.S. GOVERNMENT—HISTORICAL SUMMARY AND 1975 BUDGET RECOMMENDATIONS, JANUARY 1974¹

[In millions of dollars (may not add due to rounding)]

	NASA		Department of Defense	AEC	Com-merce	Interior	Agriculture	NSF	Total ² space
	Total	Space							
1955	56.9	56.9	3.0						59.9
1956	72.7	72.7	30.3	7.0				7.3	117.3
1957	78.2	78.2	71.0	21.3				8.4	178.5
1958	117.3	117.3	205.6	21.3				3.3	347.9
1959	305.4	235.4	489.5	34.3					759.2
1960	523.6	461.5	560.9	43.3				.1	1,065.8
1961	964.0	926.0	813.9	67.7				.6	1,808.2
1962	1,824.9	1,796.8	1,298.2	147.8	50.7			1.3	3,294.8
1963	3,673.0	3,626.0	1,549.9	213.9	43.2			1.5	5,434.5
1964	5,099.7	5,045.3	1,599.3	210.0	2.8			3.0	6,861.4
1965	5,249.7	5,167.6	1,573.9	228.6	12.2			3.2	6,985.5
1966	5,174.9	5,094.5	1,688.8	186.8	26.5			3.2	6,999.8
1967	4,957.6	4,862.2	1,663.6	183.6	29.3			2.8	6,741.5
1968	4,550.6	4,455.5	1,521.6	145.1	28.1	0.2	0.5	3.2	6,551.4
1969	3,990.9	3,822.0	2,013.0	118.0	20.0	.2	.7	1.9	5,975.8
1970	3,745.8	3,547.0	1,678.4	102.8	8.0	1.1	.8	2.4	5,340.5
1971	3,311.2	3,101.3	1,512.3	94.8	27.4	1.9	.8	2.4	4,740.9
1972	3,306.6	3,071.0	1,407.0	45.2	31.3	5.8	1.6	2.8	4,574.7
1973	3,406.2	3,093.2	1,623.0	54.2	39.7	10.3	1.9	2.6	4,824.8
Budget:									
1974 est.	3,038.0	2,762.4	1,668.0	42.2	62.8	8.9	1.9	2.0	4,548.2
1975 est.	3,244.7	2,933.5	2,032.0	36.6	62.2	7.6	1.9	2.0	5,075.8

¹ Historical amounts are estimates based on best data available.
² Excludes amounts for aircraft technology in 1959 and succeeding years. Amounts for NASA-NACA aircraft and space activities not separately identifiable prior to 1959.
 * May not add due to rounding.

COST AND BUDGET DATA

NASA's budget plan and request for Fiscal Year 1975 is \$3,247,129,000.

This bill, H.R. 13998, as recommended by your Committee would authorize appropriations for the National Aeronautics and Space Administration (NASA) for Fiscal Year 1975 in the amount of \$3,267,229,000. This is \$20,100,000 more than the Administration's budget request. The differences are explained in this report.

In accordance with the requirements of Section 252(a) of the Legislative Reorganization Act of 1970, the estimates for the next 5 years of NASA budget (obligational authority) are as follows:

[In billions of dollars]

Fiscal year:	NASA estimate	Committee estimate
1975	3.247	3.267
1976	3.454	3.475
1977	3.324	3.328
1978	3.029	3.031
1979	2.592	2.692

The above estimates are future year funding requirements for the continuation or completion of the NASA programs (including the development of the Space Shuttle) provided for in the bill. These estimates do not provide for the initiation of any new program or project during these future years nor do they include any provision for administrative adjustments that may be required.

The Committee used the NASA estimate as a starting point to prepare its estimate. The Committee estimate for FY 1975 exceeds the NASA estimate by \$20.1 million which is the sum of the Committee recommended additions and reductions as explained throughout the report.

The Committee future year estimates are higher than the NASA estimates because of the Committee recommendation that NASA proceed with the ERTS C spacecraft. Total cost of that project is estimated to be \$33.6 million including the launch vehicle.

The estimates given in this report are not an estimate of what the NASA budget will be in future years. As existing programs and projects are phased out, new programs and projects may be requested; the Congress will have an opportunity to exercise its judgment on these new programs and projects when authority and funds are requested to proceed with them.

SECTION-BY-SECTION ANALYSIS

Section 1. Subsections (a), (b), and (c) authorizes to be appropriated to the National Aeronautics and Space Administration funds, in the total amount of \$3,267,229,000 as follows: (a) for "Research and development," a total of 11 program line items aggregating the sum of \$2,370,115,000; (b) for "Construction of facilities," a total of 19 line items aggregating the sum of \$147,490,000; and, (c) for "Research and program management," \$749,624,000. Subsection (c) would also authorize to be appropriated such additional or supplemental amounts as may be necessary for increases in salary, pay, retirement, or other employee benefits authorized by law.

Subsection 1(d) authorizes the use of appropriations for "Research and development" without regard to the provisions of subsection 1(g) for: (1) items of a capital nature (other than the acquisition of land) required at locations other than NASA installations for the performance of research and development contracts; and (2) grants to nonprofit institutions of higher education, or to nonprofit organizations whose primary purpose is the conduct of scientific research, for purchase or construction of additional research facilities. Title to such facilities shall be vested in the United States unless the Administrator determines that the national program of aeronautical and space activities will best be served by vesting title in any such grantee institution or organization. Moreover, each such grant shall be made under such conditions as the Administrator shall find necessary to insure that the United States will receive benefit therefrom adequate to justify the making of that grant.

In either case no funds may be used for the construction of a facility in accordance with the subsection the estimated cost of which, including collateral equipment, exceeds \$250,000, unless the Administrator notifies the Speaker of the House, the President of the Senate and the specified committees of the Congress of the nature, location, and estimated cost of such facility.

Subsection 1(e) provides that, when so specified in an appropriation Act, (1) any amount appropriated for "Research and development" or for "Construction of facilities" may remain available without fiscal year limitation, and (2) contracts for maintenance and operation of facilities and support services may be entered into under the "Research and program management" appropriation for periods not in excess of twelve months beginning at any time during the fiscal year.

Subsection 1(f) authorizes the use of not to exceed \$55,000 of the "Research and program management" appropriation for scientific consultations or extraordinary expenses, including representation and official entertainment expenses, upon the authority of the Administrator, whose determination shall be final and conclusive.

Subsection 1(g) provides that of the funds appropriated for "Research and development" and "Research and program management," not in excess of \$10,000 per project (including collateral equipment) may be used for construction of new, or additions to existing, facilities, and not in excess of \$25,000 per project (including collateral equipment) may be used for rehabilitation or modification of existing facilities; however, of the funds appropriated for "Research and development," not in excess of \$250,000 per project (including collateral

equipment) may be used for construction of new facilities or addition to, or rehabilitation or modification of, existing facilities required for unforeseen programmatic needs.

Section 2. Section 2 authorizes the 10 per centum upward variation of any of the sums authorized for the "Construction of facilities" line items (other than facility planning and design) when, in the discretion of the Administrator or his designee, this is needed to meet unusual cost variations. However, the total cost of all work authorized under these line items may not exceed the total sum authorized for "Construction of facilities" under subsection 1(b), paragraphs (1) through (18).

Section 3. Section 3 provides that not more than one-half of 1 per centum of the funds appropriated for "Research and development" may be transferred to the "Construction of facilities" appropriation and, when so transferred, together with \$10,000,000 of the funds appropriated for "Construction of facilities," shall be available for the construction of facilities and land acquisition at any location if (1) the Administrator determines that such action is necessary because of changes in the space program or new scientific or engineering developments, and (2) that deferral of such action until the next authorization Act is enacted would be inconsistent with the interest of the Nation in aeronautical and space activities. However, no such funds may be obligated until 30 days have passed after the Administrator or his designee has transmitted to the Speaker of the House, the President of the Senate and the specified committee of Congress a written report containing a description of the project, its cost, and the reason why such project is necessary in the national interest, or each such committee before the expiration of such 30-day period has notified the Administrator that no objection to the proposed action will be made.

Section 4. Section 4 provides that, notwithstanding any other provision of this Act—

(1) no amount appropriated pursuant to this Act may be used for any program deleted by the Congress from requests as originally made to either the House Committee on Science and Astronautics or the Senate Committee on Aeronautical and Space Sciences;

(2) no amount appropriated pursuant to this Act may be used for any program in excess of the amount actually authorized for that particular program by subsections 1(a) and 1(c); and,

(3) no amount appropriated pursuant to this Act may be used for any program which has not been presented to or requested of either such committee,

unless (A) a period of 30 days has passed after the receipt by the Speaker of the House, the President of the Senate and each such committee of notice given by the Administrator or his designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such proposed action, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

Section 5. Section 5 expresses the sense of the Congress that it is in the national interest that consideration be given to geographical

distribution of Federal research funds whenever feasible and that the National Aeronautics and Space Administration should explore ways and means of distributing its research and development funds whenever feasible.

Section 6. Section 6 amends section 203(b)(9) of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2473(b)(9)) so as to substitute (1) "5 U.S.C. 3109" for "section 15 of the Act of August 2, 1946 (5 U.S.C. 55a)," and (2) "but at rates for individuals not to exceed the per diem rate equivalent to the rate for GS-18;" for "at rates not to exceed \$100.00 per diem for individuals;".

The purpose of this amendment is to permit NASA to hire, in accordance with 5 U.S.C. 3109, the temporary or intermittent services of experts or consultants, or organizations thereof, including stenographic reporting services, at rates for individuals not in excess of the daily equivalent of the rate for GS-18 under the General Schedule. Such rate is at present in excess of the \$100.00 per diem now authorized by the section 203(b)(9) being amended.

Section 7. Section 7 authorizes the National Aeronautics and Space Administration to enter into a contract for tracking and data relay satellite services for a period of one fiscal year unless provision is made for extending the authorization in subsequent fiscal years. This section stipulates that the government shall incur no costs prior to the furnishing of services to be provided, except that contracts negotiated may provide for payment of contingent liability of the government. Annual reports to the cognizant Committees of Congress are required.

Section 8. Section 8 provides that the Act may be cited as the "National Aeronautics and Space Administration Authorization Act, 1975".

NATIONAL AERONAUTICS AND SPACE
ADMINISTRATION AUTHORIZATION

MAY 30, 1974.—Ordered to be printed

Mr. Moss, from the committee of conference,
submitted the following

CONFERENCE REPORT

[To accompany H.R. 13998]

The committee of conference on the disagreeing votes of the two Houses on the amendment of the Senate to the bill (H.R. 13998) to authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the House recede from its disagreement to the amendment of the Senate and agree to the same with an amendment as follows:

In lieu of the matter proposed to be inserted by the Senate amendment insert the following:

That there is hereby authorized to be appropriated to the National Aeronautics and Space Administration:

(a) For "Research and development," for the following programs:

- (1) Space Shuttle, \$805,000,000;
- (2) Space flight operations, \$313,300,000;
- (3) Advanced missions, \$1,500,000;
- (4) Physics and astronomy, \$130,515,000;
- (5) Lunar and planetary exploration, \$266,000,000;
- (6) Launch vehicle procurement, \$133,500,000;
- (7) Space applications, \$100,000,000, of which \$2,000,000 is designated for research on Short Term Weather Phenomena; and \$1,000,000 is designated for research on ground propulsion systems;
- (8) Aeronautical research and technology, \$171,500,000;
- (9) Space and nuclear research and technology, \$79,700,000, of which \$1,000,000 is designated for research on hydrogen production and utilization systems;
- (10) Tracking and data acquisition, \$250,000,000;
- (11) Technology utilization, \$5,500,000;

(b) For "Construction of facilities," including land acquisition, as follows:

- (1) Addition to flight and guidance simulation laboratory, Ames Research Center, \$3,660,000;
- (2) Rehabilitation and modification of science and applications laboratories, Goddard Space Flight Center, \$890,000;
- (3) Modifications for fire protection and safety, Goddard Space Flight Center, \$1,220,000;
- (4) Acquisition of land, Jet Propulsion Laboratory, \$150,000;
- (5) Addition to systems development laboratory, Jet Propulsion Laboratory, \$4,880,000;
- (6) Addition for integrated systems testing facility, Jet Propulsion Laboratory, \$3,790,000;
- (7) Modification of water supply system, Lyndon B. Johnson Space Center, \$935,000;
- (8) Modification of 6,000 pounds per square inch air storage system, Langley Research Center, \$515,000;
- (9) Rehabilitation of 16-foot transonic wind tunnel, Langley Research Center, \$2,990,000;
- (10) Modification of propulsion systems laboratory, Lewis Research Center, \$2,580,000;
- (11) Modification of rocket engine test facility, Lewis Research Center, \$660,000;
- (12) Construction of X-ray telescope facility, Marshall Space Flight Center, \$4,060,000;
- (13) Modification of beach protection system, Wallops Station, \$1,370,000;
- (14) Construction of infrared telescope facility, Mauna Kea, Hawaii, \$6,040,000;
- (15) Modifications for fire protection and safety at various tracking and data stations, \$1,430,000;
- (16) Space Shuttle facilities at various locations as follows:
 - (A) Construction of Orbiter landing facilities, John F. Kennedy Space Center, \$15,880,000;
 - (B) Construction of Orbiter processing facility, John F. Kennedy Space Center, \$13,380,000;
 - (C) Modifications to launch complex 39, John F. Kennedy Space Center, \$37,690,000;
 - (D) Modifications for dynamic test facilities, Marshall Space Flight Center, and National Aeronautics and Space Administration Industrial Plant, Downey, California, \$3,920,000;
 - (E) Construction of Orbiter horizontal flight test facilities, Flight Research Center, \$3,940,000;
 - (F) Modifications for crew training facilities, Lyndon B. Johnson Space Center, \$420,000;
 - (G) Modification of the vibration and acoustic test facility, Lyndon B. Johnson Space Center, \$410,000;
 - (H) Construction of materials test facility, White Sands Test Facility, \$790,000;
 - (I) Modifications for solid rocket booster structural test facilities, Marshall Space Flight Center, \$2,590,000;

(17) *Rehabilitation and modification of facilities at various locations, not in excess of \$500,000 per project, \$14,900,000;*

(18) *Minor construction of new facilities and additions to existing facilities at various locations not in excess of \$250,000 per project, \$4,500,000;*

(19) *Facility planning and design not otherwise provided for, \$10,900,000.*

(c) For "Research and program management," \$749,624,000, and such additional or supplemental amounts as may be necessary for increases in salary, pay, retirement, or other employee benefits authorized by law.

(d) Notwithstanding the provisions of subsection 1(g), appropriations for "Research and development" may be used (1) for any items of a capital nature (other than acquisition of land) which may be required at locations other than installations of the Administration for the performance of research and development contracts, and (2) for grants to nonprofit institutions of higher education, or to nonprofit organizations whose primary purpose is the conduct of scientific research, for purchase or construction of additional research facilities, and title to such facilities shall be vested in the United States unless the Administrator determines that the national program of aeronautical and space activities will best be served by vesting title in any such grantee institution or organization. Each such grant shall be made under such conditions as the Administrator shall determine to be required to insure that the United States will receive therefrom benefit adequate to justify the making of that grant. None of the funds appropriated for "Research and development" pursuant to this Act may be used in accordance with this subsection for the construction of any major facility, the estimated cost of which, including collateral equipment, exceeds \$250,000, unless the Administrator or his designee has notified the Speaker of the House of Representatives and the President of the Senate and the Committee on Science and Astronautics of the House of Representatives and the Committee on Aeronautical and Space Sciences of the Senate of the nature, location, and estimated cost of such facility.

(e) When so specified in an appropriation Act, (1) any amount appropriated for "Research and development" or for "Construction of facilities" may remain available without fiscal year limitation, and (2) maintenance and operation of facilities, and support services contracts may be entered into under the "Research and program management" appropriation for periods not in excess of twelve months beginning at any time during the fiscal year.

(f) Appropriations made pursuant to subsection 1(c) may be used, but not to exceed \$35,000, for scientific consultations or extraordinary expenses upon the approval or authority of the Administrator and his determination shall be final and conclusive upon the accounting officers of the Government.

(g) Of the funds appropriated pursuant to subsections 1(a) and 1(c), not in excess of \$10,000 for each project, including collateral equipment, may be used for construction of new facilities and additions to existing facilities, and not in excess of \$25,000 for each project, including collateral equipment, may be used for rehabilitation or

modification of facilities: Provided, That of the funds appropriated pursuant to subsection 1(a), not in excess of \$250,000 for each project, including collateral equipment, may be used for any of the foregoing for unforeseen programmatic needs.

(h) The authorization for the appropriation to the National Aeronautics and Space Administration of \$10,900,000, which amount represents that part of the authorization provided for in section 1(b) (12) (I) of the National Aeronautics and Space Administration Authorization Act, 1974, for which appropriations have not been made, shall expire on the date of the enactment of this Act.

SEC. 2. Authorization is hereby granted whereby any of the amounts prescribed in paragraphs (1) through (13), inclusive, of subsection 1(b) may, in the discretion of the Administrator or his designee, be varied upward 10 per centum to meet unusual cost variations, but the total cost of all work authorized under such paragraphs shall not exceed the total of the amounts specified in such paragraphs.

SEC. 3. Not to exceed one-half of 1 per centum of the funds appropriated pursuant to subsection 1(a) hereof may be transferred to the "Construction of facilities" appropriation, and, when so transferred, together with \$10,000,000 of the funds appropriated pursuant to subsection 1(b) hereof (other than funds appropriated pursuant to paragraph (19) of such subsection) shall be available for expenditure to construct, expand, or modify laboratories and other installations at any location (including locations specified in subsection 1(b)), if (1) the Administrator determines such action to be necessary because of changes in the national program of aeronautical and space activities or new scientific or engineering developments, and (2) he determines that deferral of such notice until the enactment of the next Authorization Act would be inconsistent with the interest of the Nation in aeronautical and space activities. The funds so made available may be expended to acquire, construct, convert, rehabilitate, or install permanent or temporary public works, including land acquisition, site preparation, appurtenances, utilities, and equipment. No portion of such sums may be obligated for expenditure or expended to construct, expand, or modify laboratories and other installations unless (A) a period of thirty days has passed after the Administrator or his designee has transmitted to the Speaker of the House of Representatives and to the President of the Senate and to the Committee on Science and Astronautics of the House of Representatives and to the Committee on Aeronautical and Space Sciences of the Senate a written report containing a full and complete statement concerning (1) the nature of such construction, expansion, or modification, (2) the cost thereof including the cost of any real estate action pertaining thereto, and (3) the reason why such construction, expansion, or modification is necessary in the national interest, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

SEC. 4. Notwithstanding any other provision of this Act—

(1) no amount appropriated pursuant to this Act may be used for any program deleted by the Congress from requests as originally made to either the House Committee on Science and Astro-

navitics or the Senate Committee on Aeronautical and Space Sciences,

(2) no amount appropriated pursuant to this Act may be used for any program in excess of the amount actually authorized for that particular program by sections 1(a) and 1(c), and

(3) no amount appropriated pursuant to this Act may be used for any program which has not been presented to or requested of either such committee.

unless (A) a period of thirty days has passed after the receipt by the Speaker of the House of Representatives and the President of the Senate and each such committee of notice given by the Administrator or his designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such proposed action, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

Sec. 5. It is the sense of the Congress that it is in the national interest that consideration be given to geographical distribution of Federal research funds whenever feasible, and that the National Aeronautics and Space Administration should explore ways and means of distributing its research and development funds whenever feasible.

Sec. 6. Section 203(b)(9) of the National Aeronautics and Space Act of 1958, as amended (42 U.S.C. 2473(b)(9)), is amended to read as follows:

"(9) to obtain services as authorized by section 3109 of title 5, United States Code, but at rates for individuals not to exceed the per diem rate equivalent to the rate for GS-18:".

Sec. 7. The National Aeronautics and Space Administration is authorized, when so provided in an appropriation Act, to enter into a contract for tracking and data relay satellite services. Such services shall be furnished to the National Aeronautics and Space Administration in accordance with applicable authorization and appropriation Acts. The Government shall incur no costs under such contract prior to the furnishing of such services except that the contract may provide for the payment for contingent liability of the Government which may accrue in the event the Government should decide for its convenience to terminate the contract before the end of the period of the contract. Title to any facilities which may be required in the performance of the contract and constructed on Government-owned land shall vest in the United States upon the termination of the contract. The Administrator shall in January of each year report to the Committee on Science and Astronautics and the Committee on Appropriations of the House of Representatives and the Committee on Aeronautical and Space Sciences and the Committee on Appropriations of the Senate the projected aggregate contingent liability of the Government under termination provisions of any contract authorized in this section through the next fiscal year. The authority of the National Aeronautics and Space Administration to enter into and to maintain the contract authorized hereunder shall remain in effect as long as provision therefor is included in Acts authorizing appropriations to the National Aeronautics and Space Administration for subsequent fiscal years.

SEC. 8. This Act may be cited as the "National Aeronautics and Space Administration Authorization Act, 1975".

And the Senate agree to the same.

FRANK E. MOSS,
JOHN C. STENNIS,
HOWARD W. CANNON,
BARRY GOLDWATER,
CARL T. CURTIS,

Managers on the Part of the Senate.

OLIN TEAGUE,
KEN HECHLER,
DON FUQUA,
J. W. SYMINGTON,
C. A. MOSHER,
ALPHONZO BELL,
JOHN WYDLER,

Managers on the Part of the House.

JOINT EXPLANATORY STATEMENT OF THE COMMITTEE OF CONFERENCE

The managers on the part of the House and the Senate at the conference on the disagreeing votes of the two Houses on the amendment of the Senate to the bill (H.R. 13998) to authorize appropriations to the National Aeronautics and Space Administration for FY 1975 for research and development, construction of facilities, and research and program management submit the following joint statement to the House and the Senate in explanation of the effect of the action agreed upon by the managers and recommended in the accompanying conference report:

The NASA request for Fiscal Year 1975 totaled \$3,247,129,000. The House authorized \$3,259,084,000, and the Senate amendment authorized \$3,267,229,000. The committee of conference agrees to a total authorization of \$3,266,929,000, as follows:

CONGRESSIONAL ADJUSTMENTS TO NASA FISCAL YEAR 1975 BUDGET REQUEST

	Budget request	House	Senate	Committee of conference
Research and development:				
Space Shuttle.....	\$800,000,000	\$820,000,000	\$800,000,000	\$805,000,000
Space flight operations.....	323,300,000	308,300,000	318,300,000	313,300,000
Advanced missions.....	1,500,000	1,500,000	1,500,000	1,500,000
Physics and astronomy.....	140,515,000	140,515,000	140,515,000	140,515,000
Lunar and planetary exploration.....	266,000,000	266,000,000	264,000,000	266,000,000
Launch vehicle procurement.....	140,500,000	140,500,000	143,500,000	143,500,000
Space applications.....	177,500,000	179,500,000	200,500,000	196,300,000
Aeronautical research and technology.....	166,400,000	170,655,000	171,500,000	171,500,000
Space and nuclear research and technology.....	74,500,000	50,500,000	73,800,000	79,700,000
Tracking and data acquisition.....	250,000,000	50,000,000	250,000,000	250,000,000
Technology utilization.....	5,500,000	5,500,000	5,500,000	5,500,000
Total.....	2,346,015,000	2,362,970,000	2,370,115,000	2,372,815,000
Construction of facilities.....	151,490,000	146,490,000	147,490,000	144,490,000
Research and program management.....	749,624,000	749,624,000	749,624,000	749,624,000
Grand total.....	3,247,129,000	3,259,084,000	3,267,229,000	3,266,929,000

The points in disagreement and the conference resolution of them are as follows:

1. The House authorized \$820,000,000 for the Space Shuttle program, adding \$20,000,000 to the NASA request.

The Senate authorized \$800,000,000.

The Conference substitute authorizes \$805,000,000.

The Conference agreement recognizes that funds have been utilized from the program management reserve to solve the unanticipated technical difficulties encountered in the preparation of the Santa Susana test facilities to support Space Shuttle main engine component and subsystem development testing.

2. The House authorized \$308,300,000 for the Space Flight Operations program.

The Senate authorized \$318,300,000.

The Conference substitute authorizes \$313,300,000 for this program.

The Conference substitute is a reduction of \$10,000,000 from the NASA request and both Houses were in agreement that \$5,000,000 of this reduction is to be made against the Apollo-Soyuz Test Project. The Committee of Conference agrees that the additional \$5,000,000 reduction in the NASA request contained in the Conference substitute is to be taken from Development, Test and Mission Operations authorization provided, however, none of the reduction is to be applied against the supporting activities at the Mississippi Test Facility.

3. The House approved \$266,000,000, the NASA request, for the Lunar and Planetary Exploration program.

The Senate authorized \$264,000,000.

The Committee of Conference adopts the House position authorizing \$266,000,000 for this program.

4. The House authorized \$140,500,000 for the Launch Vehicle Procurement program, the amount of the NASA request.

The Senate authorized \$143,500,000 for this program, an increase of \$3,000,000 to initiate procurement of the Delta launch vehicle to be used to launch the ERTS-C spacecraft.

The Committee of Conference adopts the Senate position.

5. NASA requested \$177,500,000 for the Space Applications program. The House authorized \$179,500,000, an increase of \$2,000,000, and specifically designated in the bill that \$2,000,000 of the authorized funds are to be used for research on short-term weather phenomena, \$2,000,000 for research on hydrogen production and utilization systems, and \$1,000,000 for research on ground propulsion systems.

The Senate authorized \$200,500,000, adding \$23,000,000 to the request—\$13,000,000 to initiate the ERTS-C spacecraft, \$6,000,000 for additional energy research, \$2,000,000 for research on short-term weather phenomena, and \$2,000,000 for ERTS data processing activities.

The Conference substitute authorizes \$196,300,000 for this program and designates \$2,000,000 for research on short-term weather phenomena and \$1,000,000 for research on ground propulsion systems.

The Committee of Conference agrees that NASA should initiate promptly the ERTS-C spacecraft project and should apply added resources to its energy research and development activities including the solar satellite power station study.

6. NASA requested \$166,400,000 for Aeronautical Research and Technology.

The House authorized \$170,655,000, an increase of \$4,255,000 for additional effort in selected areas of aeronautical research.

The Senate authorized \$171,500,000, an increase of \$5,100,000 in the NASA request, with generally similar objectives to those of the House.

The Conference substitute adopts the Senate position.

7. The House authorized \$80,500,000 for the Space and Nuclear Research and Technology program, increasing the NASA request \$5,700,000 for coal and other energy-related research.

The Senate authorized \$74,800,000, the amount of the NASA request.

The Conference substitute authorizes \$79,700,000, designating \$1,000,000 for research on hydrogen production and utilization systems.

The Conferees agree that \$3,900,000 of the additional authorization is to be applied to coal-related research.

8. The House authorized \$10,040,000 for an optimized infrared telescope facility to be constructed at Mauna Kea, Hawaii.

The Senate authorized \$6,040,000 for this facility as requested by NASA.

The Conference substitute adopts the Senate position.

9. NASA requested \$42,690,000 for modifications to Launch Complex 39, John F. Kennedy Space Center, to accommodate the Space Shuttle.

The House authorized \$35,690,000 for this project, a reduction of \$7,000,000.

The Senate authorized \$42,690,000.

The Conference substitute authorizes \$37,690,000.

10. The House authorized \$3,940,000 for the construction of orbiter horizontal flight test facilities at the Flight Research Center, an increase of \$2,000,000 above the NASA request to provide a capability for long-term aeronautical research.

The Senate authorized \$1,940,000 for this facility.

The Conference substitute adopts the House position.

11. The House authorized a lump sum amount of \$77,020,000 for Item 16, Section 1(b) for the several projects authorized for the Space Shuttle program.

The Senate authorized each individual Shuttle project with a specified amount therefor in lieu of a lump sum total for all projects.

The Conference substitute adopts the Senate position.

12. The House inserted Section 1(h) in the bill rescinding \$10,900,000 of FY 1974 authorization for the construction of Orbiter landing facilities at the John F. Kennedy Space Center.

The Senate did not include a comparable provision in its action on this bill.

The Committee of Conference adopts the House position.

13. The Committee of Conference adopts the House position opposing the NASA proposal to place the Plum Brook Station in a standby mode and considers that every effort should be made to maintain this facility in a minimum operating condition so as to continue to provide support for NASA and other associated research activities for at least one year.

FRANK E. MOSS,
JOHN C. STENNIS,
HOWARD W. CANNON,
BARRY GOLDWATER,
CARL T. CURTIS,

Managers on the Part of the Senate.

OLIN TEAGUE,
KEN HECHLER,
DON FUQUA,
J. W. SYMINGTON,
CHARLES A. MOSHER,
ALPHONZO BELL,
JOHN WYDLER,

Managers on the Part of the House.

○



An Act

88 STAT. 240

To authorize appropriations to the National Aeronautics and Space Administration for research and development, construction of facilities, and research and program management, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there is hereby authorized to be appropriated to the National Aeronautics and Space Administration:

(a) For "Research and development," for the following programs:

- (1) Space Shuttle, \$805,000,000;
- (2) Space flight operations, \$313,300,000;
- (3) Advanced missions, \$1,500,000;
- (4) Physics and astronomy, \$140,515,000;
- (5) Lunar and planetary exploration, \$266,000,000;
- (6) Launch vehicle procurement, \$143,500,000;
- (7) Space applications, \$196,300,000, of which \$2,000,000 is designated for research on Short Term Weather Phenomena; and \$1,000,000 is designated for research on ground propulsion systems;
- (8) Aeronautical research and technology, \$171,500,000;
- (9) Space and nuclear research and technology, \$79,700,000, of which \$1,000,000 is designated for research on hydrogen production and utilization systems;
- (10) Tracking and data acquisition, \$250,000,000;
- (11) Technology utilization, \$5,500,000;

(b) For "Construction of facilities," including land acquisition, as follows:

- (1) Addition to flight and guidance simulation laboratory, Ames Research Center, \$3,660,000;
- (2) Rehabilitation and modification of science and applications laboratories, Goddard Space Flight Center, \$890,000;
- (3) Modifications for fire protection and safety, Goddard Space Flight Center, \$1,220,000;
- (4) Acquisition of land, Jet Propulsion Laboratory, \$150,000;
- (5) Addition to systems development laboratory, Jet Propulsion Laboratory, \$4,880,000;
- (6) Addition for integrated systems testing facility, Jet Propulsion Laboratory, \$3,790,000;
- (7) Modification of water supply system, Lyndon B. Johnson Space Center, \$935,000;
- (8) Modification of 6,000 pounds per square inch air storage system, Langley Research Center, \$515,000;
- (9) Rehabilitation of 16-foot transonic wind tunnel, Langley Research Center, \$2,990,000;
- (10) Modification of propulsion systems laboratory, Lewis Research Center, \$2,580,000;
- (11) Modification of rocket engine test facility, Lewis Research Center, \$660,000;
- (12) Construction of X-ray telescope facility, Marshall Space Flight Center, \$4,060,000;
- (13) Modification of beach protection system, Wallops Station, \$1,370,000;
- (14) Construction of infrared telescope facility, Mauna Kea, Hawaii, \$6,040,000;
- (15) Modifications for fire protection and safety at various tracking and data stations, \$1,430,000;

National Aeronautics and Space Administration Authorization Act, 1975, Research and development.

Construction of facilities.

88 STAT. 241

(16) Space Shuttle facilities at various locations as follows:

- (A) Construction of Orbiter landing facilities, John F. Kennedy Space Center, \$15,880,000;
 - (B) Construction of Orbiter processing facility, John F. Kennedy Space Center, \$13,380,000;
 - (C) Modifications to launch complex 39, John F. Kennedy Space Center, \$37,690,000;
 - (D) Modifications for dynamic test facilities, Marshall Space Flight Center, and National Aeronautics and Space Administration Industrial Plant, Downey, California, \$3,920,000;
 - (E) Construction of Orbiter horizontal flight test facilities, Flight Research Center, \$3,940,000;
 - (F) Modifications for crew training facilities, Lyndon B. Johnson Space Center, \$420,000;
 - (G) Modification of the vibration and acoustic test facility, Lyndon B. Johnson Space Center, \$410,000;
 - (H) Construction of materials test facility, White Sands Test Facility, \$790,000;
 - (I) Modifications for solid rocket booster structural test facilities, Marshall Space Flight Center, \$2,590,000;
- (17) Rehabilitation and modification of facilities at various locations, not in excess of \$500,000 per project, \$14,900,000;
- (18) Minor construction of new facilities and additions to existing facilities at various locations not in excess of \$250,000 per project, \$4,500,000;
- (19) Facility planning and design not otherwise provided for, \$10,900,000.

(c) For "Research and program management," \$749,624,000, and such additional or supplemental amounts as may be necessary for increases in salary, pay, retirement, or other employee benefits authorized by law.

(d) Notwithstanding the provisions of subsection 1(g), appropriations for "Research and development" may be used (1) for any items of a capital nature (other than acquisition of land) which may be required at locations other than installations of the Administration for the performance of research and development contracts, and (2) for grants to nonprofit institutions of higher education, or to nonprofit organizations whose primary purpose is the conduct of scientific research, for purchase or construction of additional research facilities, and title to such facilities shall be vested in the United States unless the Administrator determines that the national program of aeronautical and space activities will best be served by vesting title in any such grantee institution or organization. Each such grant shall be made under such conditions as the Administrator shall determine to be required to insure that the United States will receive therefrom benefit adequate to justify the making of that grant. None of the funds appropriated for "Research and development" pursuant to this Act may be used in accordance with this subsection for the construction of any major facility, the estimated cost of which, including collateral equipment, exceeds \$250,000, unless the Administrator or his designee has notified the Speaker of the House of Representatives and the President of the Senate and the Committee on Science and Astronautics of the House of Representatives and the Committee on Aeronautical and Space Sciences of the Senate of the nature, location, and estimated cost of such facility.

Research and program management.

Program specifications.

Notice to Speaker of the House, President of the Senate and congressional committees.

(e) When so specified in an appropriation Act, (1) any amount appropriated for "Research and development" or for "Construction of facilities" may remain available without fiscal year limitation, and (2) maintenance and operation of facilities, and support services contracts may be entered into under the "Research and program management" appropriation for periods not in excess of twelve months beginning at any time during the fiscal year.

(f) Appropriations made pursuant to subsection 1(c) may be used, but not to exceed \$35,000, for scientific consultations or extraordinary expenses upon the approval or authority of the Administrator and his determination shall be final and conclusive upon the accounting officers of the Government.

(g) Of the funds appropriated pursuant to subsections 1(a) and 1(c), not in excess of \$10,000 for each project, including collateral equipment, may be used for construction of new facilities and additions to existing facilities, and not in excess of \$25,000 for each project, including collateral equipment, may be used for rehabilitation or modification of facilities: *Provided*, That of the funds appropriated pursuant to subsection 1(a), not in excess of \$250,000 for each project, including collateral equipment, may be used for any of the foregoing for unforeseen programmatic needs.

(h) The authorization for the appropriation to the National Aeronautics and Space Administration of \$10,900,000, which amount represents that part of the authorization provided for in section 1(b) (12) (I) of the National Aeronautics and Space Administration Authorization Act, 1974, for which appropriations have not been made, shall expire on the date of the enactment of this Act.

Sec. 2. Authorization is hereby granted whereby any of the amounts prescribed in paragraphs (1) through (18), inclusive, of subsection 1(b) may, in the discretion of the Administrator or his designee, be varied upward 10 per centum to meet unusual cost variations, but the total cost of all work authorized under such paragraphs shall not exceed the total of the amounts specified in such paragraphs.

Sec. 3. Not to exceed one half of 1 per centum of the funds appropriated pursuant to subsection 1(a) hereof may be transferred to the "Construction of facilities" appropriation, and, when so transferred, together with \$10,000,000 of the funds appropriated pursuant to subsection 1(b) hereof (other than funds appropriated pursuant to paragraph (19) of such subsection) shall be available for expenditure to construct, expand, or modify laboratories and other installations at any location (including locations specified in subsection 1(b)), if (1) the Administrator determines such action to be necessary because of changes in the national program of aeronautical and space activities or new scientific or engineering developments, and (2) he determines that deferral of such action until the enactment of the next Authorization Act would be inconsistent with the interest of the Nation in aeronautical and space activities. The funds so made available may be expended to acquire, construct, convert, rehabilitate, or install permanent or temporary public works, including land acquisition, site preparation, appurtenances, utilities, and equipment. No portion of such sums may be obligated for expenditure or expended to construct, expand, or modify laboratories and other installations unless (A) a period of thirty days has passed after the Administrator or his designee has transmitted to the Speaker of the House of Representatives and to the President of the Senate and to the Committee on Science and Astronautics of the House of Representatives and to the Committee on Aeronautical and Space Sciences of the Senate a written report containing (1) the nature of such construction, expansion, or modification, (2) the cost

Scientific consultations or extraordinary expenses.

Limitations.

87 Stat. 171. Unappropriated 1974 funds, expiration date, cost variations, authority of Administrator.

Unforeseen program changes, transfer of research funds to construction.

Report to Speaker of the House, President of the Senate and congressional committees.

thereof including the cost of any real estate action pertaining thereto, and (3) the reason why such construction, expansion, or modification is necessary in the national interest, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

Use of funds, restriction.

Notice to Speaker of the House, President of the Senate and congressional committees.

Research funds, geographical distribution. 42 USC 2459 note.

72 Stat. 429.

80 Stat. 410. 5 USC 5332 note.

Satellite services, contract authorization. 42 USC 2463.

Report to congressional committees.

Sec. 4. Notwithstanding any other provision of this Act--

(1) no amount appropriated pursuant to this Act may be used for any program deleted by the Congress from requests as originally made to either the House Committee on Science and Astronautics or the Senate Committee on Aeronautical and Space Sciences,

(2) no amount appropriated pursuant to this Act may be used for any program in excess of the amount actually authorized for that particular program by sections 1(a) and 1(c), and

(3) no amount appropriated pursuant to this Act may be used for any program which has not been presented to or requested of either such committee,

unless (A) a period of thirty days has passed after the receipt by the Speaker of the House of Representatives and the President of the Senate and each such committee of notice given by the Administrator or his designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such proposed action, or (B) each such committee before the expiration of such period has transmitted to the Administrator written notice to the effect that such committee has no objection to the proposed action.

Sec. 5. It is the sense of the Congress that it is in the national interest that consideration be given to geographical distribution of Federal research funds whenever feasible, and that the National Aeronautics and Space Administration should explore ways and means of distributing its research and development funds whenever feasible.

Sec. 6. Section 203(b) (9) of the National Aeronautics and Space Act of 1958, as amended (42 U.S.C. 2473(b) (9)), is amended to read as follows:

"(9) to obtain services as authorized by section 3109 of title 5, United States Code, but at rates for individuals not to exceed the per diem rate equivalent to the rate for GS-18."

Sec. 7. The National Aeronautics and Space Administration is authorized, when so provided in an appropriation Act, to enter into a contract for tracking and data relay satellite services. Such services shall be furnished to the National Aeronautics and Space Administration in accordance with applicable authorization and appropriation Acts. The Government shall incur no costs under such contract prior to the furnishing of such services except that the contract may provide for the payment for contingent liability of the Government which may accrue in the event the Government should decide for its convenience to terminate the contract before the end of the period of the contract. Title to any facilities which may be required in the performance of the contract and constructed on Government-owned land shall vest in the United States upon the termination of the contract. The Administrator shall in January of each year report to the Committee on Science and Astronautics and the Committee on Appropriations of the House of Representatives and the Committee on Aeronautical and Space Sciences and the Committee on Appropriations of the Senate the projected aggregate contingent liability of the Government under

June 22, 1974

Pub. Law 93-316

88 STAT. 244

termination provisions of any contract authorized in this section through the next fiscal year. The authority of the National Aeronautics and Space Administration to enter into and to maintain the contract authorized hereunder shall remain in effect as long as provision therefor is included in Acts authorizing appropriations to the National Aeronautics and Space Administration for subsequent fiscal years.

Sec. 8. This Act may be cited as the "National Aeronautics and Space Administration Authorization Act, 1975".

Approved June 22, 1974.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 93-983 (Comm. on Science and Astronautics)
and No. 93-1078 (Comm. of Conference).

SENATE REPORTS: No. 93-818 (Comm. on Aeronautical and Space Sciences)
and No. 93-886 (Comm. of Conference).

CONGRESSIONAL RECORD, Vol. 120 (1974):

Apr. 25, considered and passed House.

May 9, considered and passed Senate, amended.

May 30, Senate agreed to conference report.

June 12, House agreed to conference report.

93^d CONGRESS } HOUSE OF REPRESENTATIVES { REPORT
2d Session } No. 93-1139

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT; SPACE, SCIENCE, VETERANS AND CERTAIN OTHER INDEPENDENT AGENCIES APPROPRIATION BILL, 1975

JUNE 21, 1974.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. BOLAND, from the Committee on Appropriations, submitted the following

REPORT

[To accompany H.R. 15572]

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND DEVELOPMENT

1974 appropriation-----	\$2,189,307,000
Estimate, 1975-----	2,341,580,000
Recommended in bill-----	2,327,380,000
Decrease below estimate-----	-14,200,000

¹ Excludes \$4,693,000, a comparable amount shown in the report accompanying the Special Energy Research and Development Appropriation Bill for 1975.
² Excludes \$4,435,000 which was considered in the Special Energy Research and Development Appropriation Bill for 1975.

During the past year, the National Aeronautics and Space Administration marked the end of an era. The original manned space program, which began with Project Mercury, ended with the highly successful flight of Skylab. Except for the Apollo-Soyuz mission, American men will not return to space until the first Space Shuttle Mission in 1979. As the space program moves into the next era, NASA is to be congratulated for the role it has played in contributing to the technological leadership of the Nation.

The 1975 budget request proposes continuation of the Space Shuttle; the American-Russian Apollo-Soyuz project; the Viking program, which is scheduled to make a soft-landing on Mars in 1976; various weather and scientific satellites; and further development of a strong aeronautics research program.

The 1975 budget also requested initial funding for three new space flight projects—a Pioneer Venus mission proposed for 1978; SEASAT, a satellite designed to observe, measure and forecast ocean dynamics; and a Heat Capacity Mapping Mission designed to locate targets for the further exploration of mineral resources.

The Committee recommends an appropriation of \$2,327,380,000 in this bill. An additional \$4,435,000 has also been provided in the Special Energy Bill. The total recommended is \$14,200,000 below the budget request and is \$41,000,000 below the authorization.

Within the total recommended, the Committee suggests a number of changes from the amounts requested in the current budget plan.

1. The Committee recommends that the \$6,200,000 requested for planning funds for the Large Space Telescope be denied. The total cost of this project is estimated at between \$300,000,000 to \$500,000,000. The Committee notes that the LST is not among the top four priority telescope projects selected by the National Academy of Sciences, and suggests that a less expensive and less ambitious project be considered as a possible alternative.

2. The Committee recommends that the \$8,000,000 requested to initiate SEASAT be deferred. The Committee suggests that this satellite be configured to fly on an early operational shuttle flight. This will provide additional shuttle payload experience and could result in cost savings—particularly if SEASAT is launched in combination with another payload.

3. The 1975 NASA authorization provided \$16,000,000 to initiate a third Earth Resources Technology Satellite. Because the ERTS program has provided a wealth of valuable data, the Committee urges NASA to reprogram the necessary funds to begin work on ERTS "C" as soon as possible.

4. The conference report on the 1975 NASA authorization indicates that \$3,900,000 is to be applied to coal related research. No funds are provided in this bill for that purpose. If NASA's expertise and facilities can be utilized effectively for vital coal research, then the necessary funds should be provided from the \$400,000,000 available in the Department of the Interior as part of a coordinated program in this energy discipline.

5. The Committee directs that NASA not reprogram funds provided in this bill for further cost overruns on Project Viking, without requesting such additional funds. The Committee notes that more than \$40,000,000 of 1974 funds have been reprogrammed for this mission and is concerned that large additional reprogrammings in 1975 could restrict other important NASA activities.

The bill contains the appropriation language requested that will permit initial proposals for a tracking and data relay satellite network to be considered. This language is authorized by Section 7 of the National Aeronautics and Space Administration Authorization Act of 1975, and is available for one year.

Finally, the Committee hopes that the \$45,000,000 invested in the JTSD jet engine refan program will not be lost in a bureaucratic struggle over how much and what kind of commercial jet noise abatement is appropriate. The Committee is aware that the Federal Aviation Administration's proposed rule covering a sound absorption system could negate much of the work NASA has completed on refan technology. Based on technological considerations, it has been estimated that a refan retrofit of the DC-9 aircraft could begin in mid-1976 and work on the 727 aircraft could begin in mid-1977. The Committee hopes that no action will be taken that would effectively eliminate the work of NASA in this field until all the facts and various alternatives are carefully weighed and digested. NASA is urged to make every effort to insure that the valuable refan work completed is put to use as soon as possible.

CONSTRUCTION OF FACILITIES

1974 appropriation.....	\$101,100,000
Estimate, 1975.....	151,490,000
Recommended in bill.....	135,670,000
Decrease below estimate.....	-15,820,000

The Committee recommends \$135,670,000 for the construction of new facilities requested in the budget estimate. The funds approved are the same, except in four instances.

The Committee recommends that the \$4,880,000 requested for an addition to the Systems Development Laboratory at the Jet Propulsion Laboratory be denied. The new facility is proposed, in part, for Project Viking. With substantial unused space available at other NASA facilities, recent capabilities added at the Laboratory, and completion of earlier missions, construction of additional space for a specific project does not appear warranted at this time.

The Committee recommends that the \$1,940,000 requested for construction of an Orbiter Horizontal Flight Test Facility at the Flight Research Center be denied. The Committee received testimony indicating that NASA had explored the possibility of making use of existing hangar facilities. It is suggested that such efforts be continued. Funds necessary for modification of existing facilities could be reprogrammed from the total available in this appropriation. The shuttle orbiter should be of sufficient high priority to command existing hangar space at this location.

The Committee recommends a \$5,000,000 reduction in the proposed modifications to launch complex 39 at the Kennedy Space Center, and a \$4,000,000 reduction for construction of solid rocket motor test facilities. These decreases are in line with similar reductions made in the 1975 authorization bill.

The effect of the decreases outlined above is a \$15,820,000 net reduction below the budget estimate. The amount provided is \$34,570,000 above the 1974 appropriation, largely reflecting the additional requirements for modified or new Space Shuttle facilities.

RESEARCH AND PROGRAM MANAGEMENT

1974 appropriation.....	\$744,600,000
Estimate, 1975.....	749,624,000
Recommended in bill.....	740,000,000
Decrease below estimate.....	-9,624,000

The Committee recommends \$740,000,000 for research and program management, a reduction of \$9,624,000 below the budget request. With the continued contraction of NASA civil service employment and the partial closing of selected facilities, the level recommended should be sufficient to meet the management requirements of NASA in the coming year. Included in the reduction is \$500,000 representing a ten percent decrease in the estimated payment to GSA for space rental.

GENERAL PROVISIONS

The Committee recommends that the general provisions applicable to the Department and agencies carried in the current year be continued essentially the same in 1975, except for the addition of Section 405 relating to payments to be made to the General Services Administration discussed earlier in the report.

PERMANENT NEW BUDGET (OBLIGATIONAL) AUTHORITY—TRUST FUNDS

National Aeronautics and Space Administration: Miscellaneous trust funds (indefinite).....	35,000,000	23,000,000	-12,000,000
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COMPARATIVE STATEMENT OF NEW BUDGET (OBLIGATIONAL) AUTHORITY FOR FISCAL YEAR 1974 AND THE BUDGET ESTIMATES FOR FISCAL YEAR 1975

[Note.—All amounts are in the form of appropriations unless otherwise indicated.]

Agency and item (1)	New budget (obligational) authority, fiscal year 1974 (2)	Budget estimates of new budget (obligational) authority, fiscal year 1975 (3)	New budget (obligational) authority recom- mended in bill (4)	Bill compared with	
				New budget (obligational) authority, fiscal year 1974 (5)	Budget estimates of new budget (obligational) authority, fiscal year 1975 (6)
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION					
Research and development.....	\$2,189,307,000	\$2,341,580,000	\$2,327,380,000	+\$138,073,000	-\$14,200,000
Construction of facilities.....	101,100,000	151,490,000	135,670,000	+34,570,000	-15,820,000
Research and program management.....	744,600,000	749,624,000	740,000,000	-4,600,000	-9,624,000
Total, National Aeronautics and Space Administration.....	3,035,007,000	3,242,694,000	3,203,050,000	+168,043,000	-39,644,000

93D CONGRESS }
2d Session }

SENATE

REPORT
No. 93-1056

LIMITATION ON VEHICLE USE

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT; SPACE, SCIENCE, VETERANS, AND CERTAIN OTHER INDEPENDENT AGENCIES APPROPRIATIONS BILL, 1975

August 1, 1974.—Ordered to be printed

Mr. PROXMIRE, from the Committee on Appropriations, submitted the following

REPORT

[To accompany H.R. 15572]

For the Space Programs, the Committee recommends an appropriation of \$3,242,694,000 which is the same as the budget estimate and \$39,644,000 over the House allowance.

The Committee has also concurred with the House by incorporating a flat 10 percent reduction from the sum requested by the Department and agencies for the payment of space rental provisions levied by the General Services Administration, in accordance with the Public Buildings Amendments of 1972, Public Law 92-313, approved June 16, 1972. In concurring with the House action, the Committee also felt that the 10 percent reduction will have the effect of bringing the charges imposed by the General Services Administration in consonance with the costs of services provided.

PERMANENT OBLIGATION AUTHORITY—FEDERAL FUNDS AND TRUST FUNDS

Considerable sums are provided the Department and other agencies through so-called "back door" financing, which is authority granted by permanent legislation to borrow from the Treasury for certain insurance and guaranty programs, and through so-called "side door" financing, better known as contract authority for certain veteran and subsidized housing programs. The estimates for this authority aggregated \$1,085,106,000 in Federal funds and \$902,438,000 in trust funds for FY 1975 and are tabulated in the tables appearing at the end of this report.

The Committee has added a provision to the bill which in effect restates existing law and restricts the usage of government vehicles. Section 638a of Title 31 of the United States Code prohibits the use of government vehicles for other than "official purposes." It also states that "official purposes" shall *not* include the transportation of government officers and employees between their domiciles and their places of employment.

The exceptions to this prohibition are extremely limited and include the President and his Cabinet, medical doctors on out-patient duty, and those employees engaged in field work who live far from their headquarters.

The hearings of this Committee over a two year period indicate that this prohibition is violated by almost every agency under its jurisdiction, for which various excuses are given.

It was claimed by one non-Cabinet official that he was justified in being driven to and from his home in McLean, Virginia because he was on "field work." Others stated that since Congress in the past had provided funds for cars and drivers we have acquiesced in the practice and the clear and obvious prohibition found in the law does not apply.

In order that there may be no doubt as to the position of this Committee that existing law must be observed, language was added to the bill stating that none of the funds in the act may be expended in violation of Section 638a of Title 31 and Section 101 of Title 5, USC. While it may seem to be unnecessary to state that the existing law must be carried out it is vitally necessary because of the excuses and legerdemain of the officials involved.

The only officer to whom such limitation would not apply in this bill would be the Secretary of Housing and Urban Development who is specifically excluded by the provisions of Title 5, Section 101 of the United States Code, as a Cabinet officer. No other official is excluded from the provisions of the law.

The Committee also directs the Comptroller General of the United States to determine that the provisions of the law and of this Act are scrupulously adhered to and to exercise such authority as he has to see that the provisions of Section 638a are carried out.

Section 638a provides for the suspension or removal of any officer or employee who willfully uses or authorizes the use of any vehicle to transport officials between their domiciles and places of employment.

As a result of the activities of this Committee and its Members, considerable progress has been made in reducing the number of limousines (Class VI, V, and IV cars) in Washington. We have been less successful in preventing the abuse of Section 638a. What we are too often seeing now is chauffeur driven Pintos instead of chauffeur driven Cadillacs.

In addition to the fundamental proposition that the law should be obeyed there are two additional and compelling reasons why driving officials to and from their homes is wrong. First, during this period of high fuel prices and shortages, it means a doubling of the mileage. The car goes both ways twice in a single day. Second, our hearing established that the average annual earnings, including overtime, of

the chauffeurs is about \$15,000. In one case it was \$20,000 a year. This is an absolutely unnecessary expense at a time of rampaging and double digit inflation.

The provision in the bill as well as this report language are designed to leave no question that it is the intention of this Committee to see that the law is obeyed.

GENERAL PROVISION

The Committee concurs with the House and recommends that the General Provisions applicable to the Department and agencies in fiscal year 1974 be continued in fiscal year 1975.

Also, the Committee agrees with the House and adds a new Section 405, relating to the reimbursement to be made to the General Services Administration as previously discussed in this report.

Further, the Committee has added a new Section 406, which prohibits the use of any funds appropriated in the bill by the Central Intelligence Agency.

Also added by the Committee is a new Section 407, which places certain restrictions on the use of Government vehicles.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND DEVELOPMENT

1974 appropriation.....	\$2,189,307,000
Estimate, 1975.....	2,341,580,000
House allowance.....	327,380,000
Committee recommendation.....	349,080,000

¹ Excludes \$4,693,000 shown in report accompanying Special Energy Research and Development Appropriation bill for 1975.

² Excludes \$4,435,000 appropriated in aforementioned bill.

The Committee recommends an appropriation of \$2,349,080,000 for funding NASA's Research and Development program. This amount is \$7,500,000 over the budget estimate and \$21,700,000 over the allowance in the House bill.

The Committee approved all budgeted items in this account, including \$6,200,000 for the Large Space Telescope (LST) and \$8,000,000 for SEASAT, funding for which had been denied by the House. The Committee also added \$7,500,000 to commence work on a Third Earth Resources Technology Satellite (ERTS "C"), which is authorized in the amount of \$16,000,000 and for which the House directed that funds be reprogrammed "to begin work on ERTS "C" as soon as possible."

The LST, would provide a permanent astronomical observatory above the Earth's atmosphere, increasing ten-fold our ability to observe the universe. These funds will support refined studies of the LST design and cost. On the basis of these studies, the Congress will be in a better position to consider the project when it is proposed as a new start.

SEASAT, an experimental satellite for studying the oceans, offers the promise of great benefits to environmentally safe off-shore drilling, ocean-going shipping, and better understanding of the effects of the oceans on our weather.

Data from the ERTS program is proving invaluable in numerous fields, including crop monitoring, land use, forestry, pollution control,

and the search for new sources of energy. Despite the obvious need for continuity of data in this new program, the Administration has not sought funds for starting the third ERTS satellite. To minimize the gap between ERTS B and C, \$7.5 million of the \$16 million authorized is provided.

The Committee notes with dismay the large and continuing overruns in the admittedly sophisticated Viking program. Further reprogrammings of funds for Viking will be considered only with the greatest reluctance.

The Committee was informed that NASA's program of research and development is directed toward advancing man's knowledge of earth and its space environment and toward developing and utilizing aeronautics and space technology to accomplish National goals. The program is conducted through the following elements:

Manned space flight: A program building on the success of the Apollo and Skylab missions to demonstrate an international cooperative space docking capability and to develop a new space transportation system significantly improving the access of man and instruments to space.

Space science: An unmanned space flight program to further man's knowledge of the earth, the atmosphere, the moon, the sun, the planets, interplanetary space, and the stars.

Applications: A research and development program using ground, air, and space systems to demonstrate space techniques to benefit mankind in such areas as weather and climate, pollution monitoring, earth resources survey, earth and ocean physics, communications, and space processing.

Aeronautics and space technology: A program to acquire fundamental knowledge and develop the technology needed to continue United States leadership in aeronautics and space programs.

Tracking and data acquisition: A worldwide program to support the manned and unmanned programs of the agency.

Technology utilization: A program to accelerate the dissemination to industry and other users of the technological and engineering information gained during conduct of the agency missions.

CONSTRUCTION OF FACILITIES

1974 appropriation.....	\$101,160,000
Estimate, 1975.....	151,490,000
House allowance.....	135,670,000
Committee recommendation.....	144,490,000

For Construction of Facilities, the Committee recommends an appropriation of \$144,490,000, which is \$7,000,000 below the budget estimate and \$8,820,000 above the House allowance.

The Committee recommendation provides funds for all authorized construction projects including \$4,880,000 for the Systems Development Laboratory, which had been denied by the House, and \$3,940,000 for the Shuttle Hanger, for which the budgeted amount of \$1,940,000 for a temporary facility had been denied by the House.

The Systems Development Laboratory addition at the Jet Propulsion Laboratory, is for an addition to an existing building which would meet requirements for 3 additional floors to support "mission

control" for the 1976 Mars Viking landing mission. The alternative is to lease off-site space for this requirement or relocate other functions off-site in leased space, either of which is costly and requires extensive electrical mechanical, structural and control system rearrangements which could endanger the mission.

The other 3 floors in the addition would be used to reduce the operational inefficiency and leasing costs involved in existing off-site space. The total savings from this project are estimated to recover the construction costs in 5½ years.

The Orbiter Horizontal Flight Test Facilities (shuttle hanger), at the Flight Research Center, is required to support the space shuttle sub-orbital flight test program over the Mojave desert. No existing hangars or other facilities are available for this purpose. The funding provided will allow construction of a permanent aeronautical research facility.

This appropriation provides for contractual services for the design, major rehabilitation, and modification of facilities; the construction of new facilities; minor construction; the purchase of related equipment and advanced design related to facilities planned for future authorization.

The program for 1975, in many aspects, reflects a continuation of prior years' endeavors, especially in regard to:

- (a) Space shuttle facilities
- (b) Facility rehabilitation and modification and minor construction programs
- (c) Facility planning and design.

SPACE SHUTTLE FACILITIES

The purpose of this project is to rehabilitate, modify and add to existing government-owned facilities and to construct those limited new facilities necessary to meet unique requirements in support of the space shuttle program. In FY 1975, these facilities are primarily for the launch and landing requirements at John F. Kennedy Space Center. The work includes completing the construction of the landing facilities that were initiated with FY 1974 resources, the construction of an orbiter processing facility for maintenance and checkout of the orbiter and modifications to the Launch Complex 39 to support the launch of the space shuttle. FY 1975 requirements at other locations include modifications and additions to existing facilities to provide major ground test capability for dynamic testing of the shuttle vehicle, horizontal flight testing of the orbiter vehicle, crew training, vibro-acoustic testing and material testing. In addition, facility requirements to support the production and tests of the solid rocket motors during the design, development, test and evaluation phase of the program have also been included.

The Rehabilitation and Modification of Facilities program is intended to provide for the rehabilitation and modification of facilities at NASA field installations and Government-owned industrial plants engaged in NASA activities. Included in this project are those priority rehabilitation and modification facility needs for FY 1975 which can be foreseen at the time of the submission of these estimates,

and which are estimated to cost not in excess of \$500,000. The purpose of this program is to protect, preserve, and enhance the capabilities and usefulness of existing NASA facilities, and to insure the continued safe, economical, and efficient use of this physical plant. While, in earlier years, this particular program was specifically directed toward the general nonprogrammable segment of NASA facilities, this is the third year in which additional attention has been given to these types of facility requirements generated by specific programs or projects.

Minor construction funds provide for minor facility construction at NASA field installations and at Government-owned industrial plants engaged in NASA activities. This provides for the construction of minor new facilities or additions to existing facilities, each project of which is estimated to cost not in excess of \$250,000. Such minor construction is necessary in FY 1975 to improve the usefulness of NASA's physical plant by making it possible to accomplish needed adjustments in the utilization and augmentation of its capabilities.

Funds for Facility planning and design are required to provide for the following advance planning and design activities related to facilities activities and projects:

- (a) The accomplishment of necessary development and master planning for field installations and, where not otherwise provided for, the updating of "as-built" drawings and the provision of engineering services.
- (b) The preparation of preliminary engineering reports, cost estimates, and design and construction schedules.
- (c) The preparation of final construction contract plans, specifications, and associated cost estimates and schedules that are required to implement construction projects.
- (d) The accomplishment of facilities siting and other investigations, as well as special facilities studies and reports.

RESEARCH AND PROGRAM MANAGEMENT

1974 appropriation.....	\$744,600,000
Estimate, 1975.....	749,624,000
House allowance.....	740,000,000
Committee recommendation.....	749,124,000

For funds to support NASA's Research and Program Management, the Committee recommends an appropriation of \$749,124,000, which is \$500,000 below the budget estimate and \$9,124,000 over the House allowance. The \$500,000 reduction represents a 10 percent cut in GSA rental space costs, as contained in the House bill.

Personnel cuts of 1,880 in FY 1974 and an additional 354 scheduled for FY 1975 have already been factored into the NASA budget estimate. These reductions resulted in a NASA R&PM budget request only \$5 million above FY 1974 in spite of a \$38 million pay raise imposed by law.

According to NASA, the Research and Program Management appropriation includes funding for research in Government laboratories, management of programs, and other activities of the agency. Principally, it is intended to provide for the civil service staff needed to perform in-house research, and to plan, manage, and support the Research and Development programs; and the other elements of

operational capability of the laboratories and facilities such as logistics support (travel and transportation, maintenance, and operation of facilities), and technical and administrative support.

The in-house personnel funded by the Research and Program Management appropriation are engaged in research and technology and direct and indirect support of project work. Over three-fourths of this appropriation is used to pay salaries and related benefits of these employees. The balance, embracing travel, facilities services, technical services, and administrative support at all NASA installations, provides the test and operational facilities and related activities which make possible the efficient accomplishment of NASA's approved missions.

The Committee notes that NASA has made some progress in meeting its goal of full compliance with the Committee's support of minority hiring. The Committee reminds NASA, however, that it will tolerate no slippage or breakdown in this program.

The Committee directs NASA to prepare an updated safety study out of available funds of the Soyuz/Salyut spacecraft in anticipation of the ASTP and future joint missions.

**COMPARATIVE STATEMENT OF NEW BUDGET (OBLIGATIONAL) AUTHORITY FOR FISCAL YEAR 1974 AND THE
BUDGET ESTIMATES FOR FISCAL YEAR 1975**

PERMANENT NEW BUDGET (OBLIGATIONAL) AUTHORITY—TRUST FUNDS

[Becomes available automatically under earlier, or "permanent" law without further, or annual action by the Congress. Thus, these amounts are *not* included in the accompanying bill.]

Agency and item (1)	New budget (obligational) authority, 1974 (2)	Budget estimates of new budget (obligational) authority, 1975 (3)	Increase (+) or decrease (-) (4)
National Aeronautics and Space Administration: Miscellaneous trust funds (indefinite).....	35,000,000	23,000,000	-12,000,000

**COMPARATIVE STATEMENT OF NEW BUDGET (OBLIGATIONAL) AUTHORITY FOR 1974 AND THE BUDGET
ESTIMATES AND AMOUNTS RECOMMENDED IN THE BILL FOR 1975**

	New budget (obligational) authority, fiscal year 1974	Budget esti- mates of new budget (obligational) authority fiscal year 1975	New budget (obligational) authority recommended in House bill	Committee recommen- dations	Committee recommendations compared with (+) increase (-) decrease		
					Appropria- tions 1974	Estimates 1975	House bill
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION							
Research and development.....	2,189,307,000	2,341,580,000	2,327,380,000	2,349,080,000	+159,773,000	+7,500,000	+21,700,000
Construction of facilities.....	101,100,000	151,490,000	135,670,000	144,490,000	+43,390,000	-7,000,000	+8,820,000
Research and program management.....	744,600,000	749,624,000	740,000,000	749,124,000	+4,524,000	-500,000	+9,124,000
Total, National Aeronautics and Space Administration....	3,035,007,000	3,242,694,000	3,203,050,000	3,242,694,000	+207,687,000	+39,644,000

Calendar No. 1045

93D CONGRESS }
2d Session }

SENATE }

REPORT
No. 93-1091

LIMITATION ON VEHICLE USE

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT; SPACE,
SCIENCE, VETERANS, AND CERTAIN OTHER INDEPENDENT
AGENCIES APPROPRIATIONS BILL, 1975

August 15, 1974.—Ordered to be printed

Mr. PROXMIRE, from the Committee on Appropriations,
submitted the following

REPORT

[To accompany H.R. 15572]

For the Space Programs, the Committee recommends an appropriation of \$3,206,735,000 which is \$35,598,700 more than the budget estimate and \$3,685,300 over the House allowance.

The Committee has also concurred with the House by incorporating a flat 10 percent reduction from the sum requested by the Department and agencies for the payment of space rental provisions levied by the General Services Administration, in accordance with the Public Buildings Amendments of 1972, Public Law 92-313, approved June 16, 1972. In concurring with the House action, the Committee also felt that the 10 percent reduction will have the effect of bringing the charges imposed by the General Services Administration in consonance with the costs of services provided.

PERMANENT OBLIGATION AUTHORITY—FEDERAL FUNDS AND TRUST
FUNDS

Considerable sums are provided the Department and other agencies through so-called "back door" financing, which is authority granted by permanent legislation to borrow from the Treasury for certain insurance and guaranty programs, and through so-called "side door" financing, better known as contract authority for certain veteran and subsidized housing programs. The estimates for this authority aggregated \$1,085,106,000 in Federal funds and \$902,438,000 in trust funds for FY 1975 and are tabulated in the tables appearing at the end of this report.

The Committee has added a provision to the bill which in effect restates existing law and restricts the usage of government vehicles. Section 638a of Title 31 of the United States Code prohibits the use of government vehicles for other than "official purposes." It also states that "official purposes" shall *not* include the transportation of government officers and employees between their domiciles and their places of employment.

The exceptions to this prohibition are extremely limited and include the President and his Cabinet, medical doctors on out-patient duty, and those employees engaged in field work who live far from their headquarters.

The hearings of this Committee over a two year period indicate that this prohibition is violated by almost every agency under its jurisdiction, for which various excuses are given.

It was claimed by one non-Cabinet official that he was justified in being driven to and from his home in McLean, Virginia because he was on "field work." Others stated that since Congress in the past had provided funds for cars and drivers we have acquiesced in the practice and the clear and obvious prohibition found in the law does not apply.

In order that there may be no doubt as to the position of this Committee that existing law must be observed, language was added to the bill stating that none of the funds in the act may be expended in violation of Section 638a of Title 31 and Section 101 of Title 5, USC. While it may seem to be unnecessary to state that the existing law must be carried out, it is vitally necessary because of the excuses and legerdemain of the officials involved.

The only officer to whom such limitation would not apply in this bill would be the Secretary of Housing and Urban Development who is specifically excluded by the provisions of Title 5, Section 101 of the United States Code, as a Cabinet officer. No other official is excluded from the provisions of the law.

The Committee also directs the Comptroller General of the United States to determine that the provisions of the law and of this Act are scrupulously adhered to and to exercise such authority as he has to see that the provisions of Section 638a are carried out.

Section 638a provides for the suspension or removal of any officer or employee who willfully uses or authorizes the use of any vehicle to transport officials between their domiciles and places of employment.

As a result of the activities of this Committee and its Members, considerable progress has been made in reducing the number of limosines (Class VI, V, and IV cars) in Washington. We have been less successful in preventing the abuse of Section 638a. What we are too often seeing now is chauffeur driven Pintos instead of chauffeur driven Cadillacs.

In addition to the fundamental proposition that the law should be obeyed there are two additional and compelling reasons why driving officials to and from their homes is wrong. First, during this period of high fuel prices and shortages, it means a doubling of the mileage. The car goes both ways twice in a single day. Second, our hearing established that the average annual earnings, including overtime, of the chauffeurs is about \$15,000. In one case it was \$20,000 a year. This is an absolutely unnecessary expense at a time of rampaging and double digit inflation.

The provision in the bill as well as this report language are designed to leave no question that it is the intention of this Committee to see that the law is obeyed.

GENERAL EXPENSES

The Committee concurs with the House and recommends that the General Provisions applicable to the Department and agencies in fiscal year 1974 be continued in fiscal year 1975.

Also, the Committee agrees with the House in adding a new Section 405, relating to the reimbursement to be made to the General Services Administration as previously discussed in this report.

Further, the Committee has added a new Section 406, which places certain restrictions on the use of Government vehicles.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND DEVELOPMENT

1974 appropriation-----	\$2,189,307,000
Estimate, 1975-----	2,341,580,000
House allowance-----	2,327,380,000
Committee recommendation-----	2,326,580,000

¹ Excludes \$4,693,000 shown in report accompanying Special Energy Research and Development Appropriation bill for 1975.

² Excludes \$4,435,000 appropriated in aforementioned bill.

The Committee recommends an appropriation of \$2,326,580,000 for funding NASA's Research and Development program. This amount is \$15,000,000 under the budget estimate and \$800,000 under the allowance in the House bill.

The Committee approved all budgeted items in this account, including \$6,200,000 for the Large Space Telescope (LST) and \$8,000,000 for SEASAT, funding for which had been denied by the House. The Committee reduction of \$15,000,000 has not been directed to any specific program because the Committee feels that NASA is better able to apply this reduction with a minimum of disruption in its priorities.

The LST, would provide a permanent astronomical observatory above the Earth's atmosphere, increasing ten-fold our ability to observe the universe. These funds will support refined studies of the LST design and cost. On the basis of these studies, the Congress will be in a better position to consider the project when it is proposed as a new start.

SEASAT, an experimental satellite for studying the oceans, offers the promise of great benefits to environmentally safe off-shore drilling, ocean-going shipping, and better understanding of the effects of the oceans on our weather.

Data from the ERTS program is proving invaluable in numerous fields, including crop monitoring, land use, forestry, pollution control, and the search for new sources of energy. Despite the obvious need for continuity of data in this new program, the Administration has not sought funds for starting the third ERTS satellite. In this connection, the Committee concurs with the House and urges NASA to reprogram the necessary funds to begin work on ERTS "C" as soon as possible.

The Committee notes with dismay the large and continuing overruns in the admittedly sophisticated Viking program. Further reprogrammings of funds for Viking will be considered only with the greatest reluctance.

The Committee was informed that NASA's program of research and development is directed toward advancing man's knowledge of earth and its space environment and toward developing and utilizing aeronautics and space technology to accomplish National goals. The program is conducted through the following elements:

Manned space flight: A program building on the success of the Apollo and Skylab missions to demonstrate an international cooperative space docking capability and to develop a new space transportation system significantly improving the access of man and instruments to space.

Space science: An unmanned space flight program to further man's knowledge of the earth, the atmosphere, the moon, the sun, the planets, interplanetary space, and the stars.

Applications: A research and development program using ground, air, and space systems to demonstrate space techniques to benefit mankind in such areas as weather and climate, pollution monitoring, earth resources survey, earth and ocean physics, communications, and space processing.

Aeronautics and space technology: A program to acquire fundamental knowledge and develop the technology needed to continue United States leadership in aeronautics and space programs.

Tracking and data acquisition: A worldwide program to support the manned and unmanned programs of the agency.

Technology utilization: A program to accelerate the dissemination to industry and other users of the technological and engineering information gained during conduct of the agency missions.

CONSTRUCTION OF FACILITIES

1974 appropriation-----	\$101,100,000
Estimate, 1975-----	151,490,000
House allowance-----	135,670,000
Committee recommendation-----	140,155,300

For Construction of Facilities, the Committee recommends an appropriation of \$140,155,300, which is \$11,334,700 below the budget estimate and \$4,485,300 above the House allowance.

The Committee intends that this economy reduction be absorbed through the deferral of certain projects rather than the elimination of any specific project.

The Committee recommendation provides funds for all authorized construction projects including \$4,880,000 for the Systems Development Laboratory, which had been denied by the House, and \$3,940,000

for the Shuttle Hanger, for which the budgeted amount of \$1,940,000 for a temporary facility had been denied by the House.

The Systems Development Laboratory addition at the Jet Propulsion Laboratory, is for an addition to an existing building which would meet requirements for 3 additional floors to support "mission control" for the 1976 Mars Viking landing mission. The alternative is to lease off-site space for this requirement or relocate other functions off-site in leased space, either of which is costly and requires extensive electrical mechanical, structural and control system rearrangements which could endanger the mission.

The other 3 floors in the addition would be used to reduce the operational inefficiency and leasing costs involved in existing off-site space. The total savings from this project are estimated to recover the construction costs in 5½ years.

The Orbiter Horizontal Flight Test Facilities (shuttle hanger), at the Flight Research Center, is required to support the space shuttle sub-orbital flight test program over the Mojave desert. No existing hangars or other facilities are available for this purpose. The funding provided will allow construction of a permanent aeronautical research facility.

This appropriation provides for contractual services for the design, major rehabilitation, and modification of facilities; the construction of new facilities; minor construction; the purchase of related equipment and advanced design related to facilities planned for future authorization.

The program for 1975, in many aspects, reflects a continuation of prior years' endeavors, especially in regard to:

- (a) Space shuttle facilities
- (b) Facility rehabilitation and modification and minor construction programs
- (c) Facility planning and design.

SPACE SHUTTLE FACILITIES

The purpose of this project is to rehabilitate, modify and add to existing government-owned facilities and to construct those limited new facilities necessary to meet unique requirements in support of the space shuttle program. In FY 1975, these facilities are primarily for the launch and landing requirements at John F. Kennedy Space Center. The work includes completing the construction of the landing facilities that were initiated with FY 1974 resources, the construction of an orbiter processing facility for maintenance and checkout of the orbiter and modifications to the Launch Complex 39 to support the launch of the space shuttle. FY 1975 requirements at other locations include modifications and additions to existing facilities to provide major ground test capability for dynamic testing of the shuttle vehicle, horizontal flight testing of the orbiter vehicle, crew training, vibro-acoustic testing and material testing. In addition, facility requirements to support the production and tests of the solid rocket motors during the design, development, test and evaluation phase of the program have also been included.

The Rehabilitation and Modification of Facilities program is intended to provide for the rehabilitation and modification of facilities at NASA field installations and Government-owned industrial plants engaged in NASA activities. Included in this project are those priority rehabilitation and modification facility needs for FY 1975 which can be foreseen at the time of the submission of these estimates, and which are estimated to cost not in excess of \$500,000. The purpose of this program is to protect, preserve, and enhance the capabilities and usefulness of existing NASA facilities, and to insure the continued safe, economical, and efficient use of this physical plant. While, in earlier years, this particular program was specifically directed toward the general nonprogrammatic segment of NASA facilities, this is the third year in which additional attention has been given to these types of facility requirements generated by specific programs or projects.

Minor construction funds provide for minor facility construction at NASA field installations and at Government-owned industrial plants engaged in NASA activities. This provides for the construction of minor new facilities or additions to existing facilities, each project of which is estimated to cost not in excess of \$250,000. Such minor construction is necessary in FY 1975 to improve the usefulness of NASA's physical plant by making it possible to accomplish needed adjustments in the utilization and augmentation of its capabilities.

Funds for Facility planning and design are required to provide for the following advance planning and design activities related to facilities activities and projects:

- (a) The accomplishment of necessary development and master planning for field installations and, where not otherwise provided for, the updating of "as-built" drawings and the provision of engineering services.
- (b) The preparation of preliminary engineering reports, cost estimates, and design and construction schedules.
- (c) The preparation of final construction contract plans, specifications, and associated cost estimates and schedules that are required to implement construction projects.
- (d) The accomplishment of facilities siting and other investigations, as well as special facilities studies and reports.

RESEARCH AND PROGRAM MANAGEMENT

1974 appropriation	\$744,600,000
Estimate, 1975	749,624,000
House allowance	740,000,000
Committee recommendation	740,000,000

For funds to support NASA's Research and Program Management, the Committee recommends an appropriation of \$740,000,000 which is \$9,624,000 below the budget estimate and the same as the House allowance. The reduction includes a \$500,000, or a 10 percent cut in GSA rental space costs, as contained in the House bill.

Personnel cuts of 1,880 in FY 1974 and an additional 354 scheduled for FY 1975 have already been factored into the NASA budget estimate. These reductions resulted in a NASA R&PM budget request only \$5 million above FY 1974 in spite of a \$38 million pay raise imposed by law.

According to NASA, the Research and Program Management appropriation includes funding for research in Government laboratories, management of programs, and other activities of the agency. Principally, it is intended to provide for the civil service staff needed to perform in-house research, and to plan, manage, and support the Research and Development programs; and the other elements of operational capability of the laboratories and facilities such as logistics support (travel and transportation, maintenance, and operation of facilities), and technical and administrative support.

The in-house personnel funded by the Research and Program Management appropriation are engaged in research and technology and direct and indirect support of project work. Over three-fourths of this appropriation is used to pay salaries and related benefits of these employees. The balance, embracing travel, facilities services, technical services, and administrative support at all NASA installations, provides the test and operational facilities and related activities which make possible the efficient accomplishment of NASA's approved missions.

The Committee notes that NASA has made some progress in meeting its goal of full compliance with the Committee's support of minority hiring. The Committee reminds NASA, however, that it will tolerate no slippage or breakdown in this program.

The Committee directs NASA to prepare an updated safety study out of available funds of the Soyuz/Salyut spacecraft in anticipation of the ASTP and future joint missions.

MAKING APPROPRIATIONS FOR HUD, SPACE, SCIENCE,
 VETERANS

AUGUST 21, 1974.—Ordered to be printed

Mr. BOLAND, from the committee of conference,
 submitted the following

CONFERENCE REPORT

[To accompany H.R. 15572]
 NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Amendment No. 22: Appropriates \$2,326,580,000 for research and development as proposed by the Senate, instead of \$2,327,380,000 as proposed by the House. The committee of conference is agreed that not to exceed \$3,000,000 may be used for further planning for a Large Space Telescope, provided that consideration is given to substantial participation of other nations in a less expensive project to be launched at a later date. The committee of conference is also agreed that SEASAT may proceed within the funds made available under this appropriation.

Amendment No. 23: Appropriates \$140,155,000 for construction of facilities, instead of \$135,670,000 as proposed by the House and \$140,155,300 as proposed by the Senate.

Amendment No. 24: Designates \$77,020,000 for space shuttle facilities, instead of \$75,080,000 as proposed by the House and \$79,020,000 as proposed by the Senate.

Amendment No. 25: Inserts language proposed by the Senate, and earmarks \$1,940,000 for initiating construction of an Orbiter Horizontal Flight Test Facility, instead of \$3,940,000 as proposed by the Senate. The committee of conference is agreed that NASA is not to proceed with the hangar project until the Air Force and NASA agree on the total shuttle facilities plan required at Edwards.

Amendments Nos. 26 and 27: Retain language as proposed by the Senate earmarking \$4,880,000 for an addition to the Systems Development Laboratory.

The committee of conference urges the National Aeronautics and Space Administration to realign its activities among various installations so that there may be greater utilization of existing space before any new construction is undertaken.

Amendment No. 28: Reported in technical disagreement. The managers on the part of the House will offer a motion to recede and concur in the Senate amendment with an amendment transferring up to one-quarter of one percent of the funds between the research and development appropriation and the research and program management appropriation. The managers on the part of the Senate will move to concur in the amendment of the House to the amendment of the Senate.

TITLE IV.—GENERAL PROVISIONS

Amendment No. 60: Deletes language proposed by the Senate relating to the use of passenger motor vehicles.

Amendment No. 61: Restores section number proposed by the House.



Public Law 93-414
93rd Congress, H. R. 15572
September 6, 1974

An Act

Making appropriations for the Department of Housing and Urban Development; for space, science, veterans, and certain other independent executive agencies, boards, commissions, corporations, and offices for the fiscal year ending June 30, 1975, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, for the Department of Housing and Urban Development; for space, science, veterans, and certain other independent executive agencies, boards, commissions, corporations, and offices for the fiscal year ending June 30, 1975, and for other purposes, namely:

Department of
Housing and
Urban Develop-
ment; Space,
Science, Vet-
erans, and
Certain Other
Independent
Agencies Ap-
propriation
Act, 1975.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND DEVELOPMENT

For necessary expenses, not otherwise provided for, including research, development, operations, services, minor construction, maintenance, repair, rehabilitation and modification of real and personal property; tracking and data relay satellite services as authorized by section 7 of the National Aeronautics and Space Administration Authorization Act, 1975; and purchase, hire, maintenance, and operation of other than administrative aircraft, necessary for the conduct and support of aeronautical and space research and development activities of the National Aeronautics and Space Administration, \$2,326,580,000, to remain available until expended.

CONSTRUCTION OF FACILITIES

For advance planning, design, rehabilitation, modification and construction of facilities for the National Aeronautics and Space Administration, and for the acquisition or condemnation of real property, as authorized by law, \$140,155,000, including (1) \$3,660,000 for addition to flight and guidance simulation laboratory, Ames Research Center; (2) \$890,000 for rehabilitation and modification of science and applications laboratories, Goddard Space Flight Center; (3) \$1,220,000 for modifications for fire protection and safety, Goddard Space Flight Center; (4) \$150,000 for acquisition of land, Jet Propulsion Laboratory; (5) \$3,790,000 for addition for integrated systems testing facility, Jet Propulsion Laboratory; (6) \$935,000 for modification of water supply system, Lyndon B. Johnson Space Center; (7) \$515,000 for modification of 6,000 p.s.i. air storage system, Langley Research Center; (8) \$2,990,000 for rehabilitation of 16-foot transonic wind tunnel, Langley Research Center; (9) \$2,580,000 for modification of propulsion systems laboratory, Lewis Research Center; (10) \$660,000 for modification of rocket engine test facility, Lewis Research Center;

(11) \$4,060,000 for construction of X-ray telescope facility, Marshall Space Flight Center; (12) \$1,370,000 for modification of beach protection system, Wallops Station; (13) \$6,040,000 for construction of infrared telescope facility, Mauna Kea, Hawaii; (14) \$1,430,000 for modifications for fire protection and safety at various tracking and data stations; (15) \$77,020,000 for Space Shuttle facilities at various locations, as follows: (A) modification of the vibration and acoustic test facility, Lyndon B. Johnson Space Center, (B) modifications for crew training facilities, Lyndon B. Johnson Space Center, (C) construction of materials test facility, White Sands Test Facility, (D) modifications for dynamic test facilities, Marshall Space Flight Center, and NASA Industrial Plant, Downey, California, (E) modifications for solid rocket booster structural test facilities, Marshall Space Flight Center, (F) construction of Orbiter landing facilities, John F. Kennedy Space Center, (G) construction of Orbiter processing facility, John F. Kennedy Space Center, (H) modifications to launch complex 39, John F. Kennedy Space Center, (I) \$1,940,000 for construction of an Orbiter Horizontal Flight Test Facility, Flight Research Center; (16) \$14,900,000 for minor rehabilitation and modification of facilities at various locations; (17) \$4,500,000 for minor construction of new facilities and additions to existing facilities at various locations; (18) \$10,900,000 for facility planning and design not otherwise provided for; and (19) \$4,880,000 for an addition to the Systems Development Laboratory (SDL) at the Jet Propulsion Laboratory (JPL); to remain available for obligation until June 30, 1977: *Provided*, That, notwithstanding the limitation on the availability of funds appropriated under this head by this appropriation act, and except with respect to items (16) through (18) above, when any activity, for which appropriations under this head made by this act are available, has been initiated by the incurrence of obligations therefor, the amount available for such activity shall remain available until expended.

RESEARCH AND PROGRAM MANAGEMENT

For necessary expenses of research in Government laboratories, management of programs and other activities of the National Aeronautics and Space Administration, not otherwise provided for, including uniforms or allowances therefor, as authorized by law (5 U.S.C. 5901-5902); awards; hire, maintenance and operation of administrative aircraft; purchase (not to exceed sixteen for replacement only) and hire of passenger motor vehicles; and maintenance and repair of real and personal property, and not in excess of \$10,000 per project for construction of new facilities and additions to existing facilities, and not in excess of \$25,000 per project for rehabilitation and modification of facilities; \$740,000,000: *Provided*, That contracts may be entered into under this appropriation for maintenance and operation of facilities, and for other services, to be provided during the next fiscal year: *Provided further*, That not to exceed \$35,000 of the foregoing amount shall be available for scientific consultations or extraordinary expense, to be expended upon the approval or authority of the Administrator and his determination shall be final and conclusive.

GENERAL PROVISION

Not to exceed one-quarter of 1 per centum of the appropriations made available to the National Aeronautics and Space Administration by this Act for "Research and development" and "Research and program management" may be transferred to either of the other mentioned appropriation, but not to exceed the amount authorized therefor by the National Aeronautics and Space Administration Authorization Act, 1975 (Public Law 93-316).

TITLE IV
GENERAL PROVISIONS

Sec. 401. Where appropriations in titles I and II of this Act as expendable for travel expenses of employees and no specific limitation has been placed thereon, the expenditures for such travel expenses may not exceed the amounts set forth therefor in the budget estimates submitted for the appropriations: *Provided*, That this section shall not apply to travel performed by uncompensated officials of local boards and appeal boards of the Selective Service System; to travel performed directly in connection with care and treatment of medical beneficiaries of the Veterans Administration; or to payments to inter-agency motor pools where separately set forth in the budget schedules.

Travel expenses.

Sec. 402. Appropriations and funds available for the administrative expenses of the Department of Housing and Urban Development and the Selective Service System shall be available in the current fiscal year for purchase of uniforms, or allowances thereof, as authorized by law (5 U.S.C. 5901-5902); hire of passenger motor vehicles; and services as authorized by 5 U.S.C. 3109.

Uniforms.

Sec. 403. Funds made available for the Department of Housing and Urban Development under title III of this Act shall be available, without regard to the limitations on administrative expenses, for legal services on a contract or fee basis, and for utilizing and making payment for services and facilities of Federal National Mortgage Association or Government National Mortgage Association, Federal Reserve banks or any member thereof, Federal home loan banks, and any insured bank within the meaning of the Federal Deposit Insurance Corporation Act, as amended (12 U.S.C. 1811-1831).

Legal and banking services.

Sec. 404. None of the funds provided in this Act may be used for payment, through grants or contracts, to recipients that do not share in the cost of conducting research resulting from proposals for projects not specifically solicited by the Government: *Provided*, That the extent of cost sharing by the recipient shall reflect the mutuality of interest of the grantee or contractor and the Government in the research.

Research projects.

Sec. 405. No part of any appropriation, funds, or other authority contained in this Act shall be available for paying to the Administrator of the General Services Administration in excess of 90 per centum of the standard level user charge established pursuant to section 210(j) of the Federal Property and Administrative Services Act of 1949, as amended, for space and services.

Sec. 406. No part of any appropriations contained in this Act shall remain available for obligation beyond the current fiscal year unless expressly so provided herein.

40 USC 492. Fiscal year limitation.

This Act may be cited as the "Department of Housing and Urban Development; Space, Science, Veterans, and Certain Other Independent Agencies Appropriation Act, 1975".

Short title.

Approved September 6, 1974.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 93-1139 (Comm. on Appropriations) and No. 93-1310 (Comm. of Conference).

SENATE REPORTS: Nos. 93-1056 and 93-1091 (Comm. on Appropriations).

CONGRESSIONAL RECORD, Vol. 120 (1974):

June 26, considered and passed House.

Aug. 16, considered and passed Senate, amended.

Aug. 22, House and Senate agreed to conference report.

CHRONOLOGY OF EVENTS

AUTHORIZATION BILLHOUSE (HR 12689) (Superseded by 13998)

2/19/74 Mr. Myers, Mr. Gorman
 2/20/74 Mr. Schneider, Dr. Kerwin, Dr. Gatos, Dr. Moore
 2/21/74 Dr. Oertel, Dr. Maran, Dr. Berry, Capt. Lee
 2/26/74 Dr. Culbertson, Capt. Freitag, Mr. Donlan,
 Mr. Mathews
 2/27/74 Dr. Malkin, Mr. Thompson, Mr. Mathews
 3/5/74 Mr. Gray, Mr. Lord, Mr. Myers, Dr. Norberg,
 Dr. Hovis, Mr. Fischetti
 3/6/74 Mr. Kilgore, Mr. Sherer, Mr. Cherry,
 Mr. Cortright, Mr. Smylie, Gen. Curtin,
 Mr. Gorman, Mr. Myers, Dr. Lucas, Mr. Smith
 3/7/74 Mr. Cherry, Mr. Kier, Mr. Enders, Mr. Winblade,
 Mr. Smylie, Dr. Naugle
 3/12/74 Mr. Cherry, Mr. Kilgore, Mr. Smylie, Mr. Franklin
 Mr. Szalai, Mr. Teren, Dr. Naugle, Mr. Johnson
 Dr. Schardt
 3/13/74 Mr. Lundin, Dr. Mark, Mr. Adcock, Mr. Kilgore,
 Dr. Naugle, Mr. Johnson, Dr. Schardt, Mr. Kraemer,
 Dr. Rasool
 3/14/74 Dr. Naugle, Mr. Johnson, Mr. Kraemer, Dr. Hinners,
 Mr. Mahon, Dr. Rasool
 3/19/74 Mr. Johnson, Mr. Mahon, Mr. Daniels, Gen. Curtin
 3/21/74 Dr. Fletcher, Dr. Low
 4/25/74 HOUSE FLOOR ACTION

SENATE (S 2955) (Superseded by HR 13998)

2/5/74 Dr. Fletcher, Dr. Low, Mr. Shapley, Mr. Lilly
 Mr. Moritz, Mr. Mathews, Mr. Myers, Mr. Kilgore,
 Mr. Johnson, Mr. Truszynski, Dr. McConnell,
 Gen. Curtin, Mr. Griffin, Dr. Garriott
 2/26/74 Dr. Low, Mr. Myers, Mr. Lilly, Mr. Gorman,
 Mr. Schneider, Dr. Malkin
 2/28/74 Dr. Low, Mr. Kilgore, Mr. Smylie, Mr. Cherry,
 Mr. Lilly, Gen. Curtin, Mr. Tulip
 3/13/74 Mr. Gray, Mr. Fischell
 3/20/74 Mr. Barfield, Mr. Lord
 4/2/74 Dr. Naugle, Mr. Daniels, Mr. Truszynski,
 Mr. Mossinghoff, Mr. Bryant, Mr. Lucas,
 Mr. Pozinski
 4/4/74 Dr. Fletcher, Dr. Schmitt, Mr. Mathews,
 Mr. Kilgore
 5/9/74 SENATE FLOOR ACTION

CONFERENCE COMMITTEE ACTION

5/30/74 Conference Committee Report No. 93-886
 6/4/74 Conference Committee Report No. 93-1078
 5/30/74 Senate Approved
 6/12/74 House Approved
 6/22/74 President Approved P.L. 93-316

APPROPRIATION BILLHOUSE (HR 15572)

3/26/74 Dr. Fletcher, Dr. Low, Dr. Petrone, Mr. Shapley, 1/11/74
 Mr. Lilly, Gen. Curtin, Mr. Malaga, Mr. Mathews,
 Mr. Schneider, Mr. Kilgore, Dr. Naugle, 4/2/74
 Mr. Johnson, Mr. Truszynski, Mr. Gray
 6/21/74 Appropriation Committee Report 93-1139
 6/26/74 HOUSE FLOOR ACTION

SENATE (HR 15572)

Mr. Shapley, Dr. McConnell, Mr. Johnson
 Dr. Fletcher, Dr. Low, Dr. Petrone, Mr. Shapley,
 Mr. Johnson, Mr. Kilgore, Mr. Lilly, Mr. Mathews,
 Mr. Malaga, Dr. McConnell, Dr. Naugle,
 Mr. Schneider, Mr. Truszynski
 Dr. Fletcher, Dr. Low, Dr. Petrone, Mr. Shapley,
 Mr. Johnson, Mr. Kilgore, Mr. Lilly, Mr. Mathews,
 Mr. Malaga, Dr. McConnell, Dr. Naugle,
 Mr. Schneider, Mr. Truszynski
 Dr. Currie, Mr. Pollack, Mr. Poritzky,
 Mr. Harford, Mr. Henderson, Dr. Grey
 8/1/74 Appropriation Committee Report 93-1056
 8/15/74 Appropriation Committee Report 93-1091
 8/16/74 SENATE FLOOR ACTION

CONFERENCE COMMITTEE ACTION

8/21/74 Conference Committee Report No. 93-1310
 8/22/74 House Adopted Conference Report
 8/22/74 Senate Adopted Conference Report
 9/6/74 President Approved P.L. 93-414



Public Law 94-32
94th Congress, H. R. 5899
June 12, 1975

An Act

Making supplemental appropriations for the fiscal year ending June 30, 1975, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums are appropriated, out of any money in the Treasury not otherwise appropriated, to supply supplemental appropriations (this Act may be cited as the "Second Supplemental Appropriations Act, 1975") for the fiscal year ending June 30, 1975, and for other purposes, namely:

Second Supplemental Appropriations Act, 1975.

TITLE II

INCREASED PAY COSTS

For additional amounts for appropriations for the fiscal year 1975, for increased pay costs authorized by or pursuant to law, as follows:

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

"Research and program management", \$19,975,000;

TITLE III

GENERAL PROVISIONS

SEC. 301. No part of any appropriation contained in this Act shall remain available for obligation beyond the current fiscal year unless expressly so provided herein.

SEC. 302. Except where specifically increased or decreased elsewhere in this Act, the restrictions contained within appropriations, or provisions affecting appropriations or other funds, available during the fiscal year 1975, limiting the amounts which may be expended for personal services, or for purposes involving personal services, or amounts which may be transferred between appropriations or authorizations available for or involving such services, are hereby increased to the extent necessary to meet increased pay costs authorized by or pursuant to law.

SEC. 303. No part of any appropriation, funds, or other authority contained in this Act shall be available for paying to the Administrator of the General Services Administration in excess of 90 per centum of the standard level user charge established pursuant to section 210(j) of the Federal Property and Administrative Services Act of 1949, as amended, for space and services.

SEC. 304. No part of the funds contained in this Act may be used to force any school or school district which is desegregated as that term is defined in title IV of the Civil Rights Act of 1964, Public

Fiscal year limitation.

GSA, space and services.

40 USC 490, Busing.

42 USC 2000c. Law 88-352, to take any action to force the busing of students; to force on account of race, creed, or color the abolishment of any school so desegregated; or to force the transfer or assignment of any student attending any elementary or secondary school so desegregated to or from a particular school over the protest of his or her parents or parent.

Busing. SEC. 305. (a) No part of the funds contained in this Act shall be used to force any school or school district which is desegregated as that term is defined in title IV of the Civil Rights Act of 1964, Public Law 88-352, to take any action to force the busing of students; to require the abolishment of any school so desegregated; or to force on account of race, creed, or color the transfer of students to or from a particular school so desegregated as a condition precedent to obtaining Federal funds otherwise available to any State, school district, or school.

School transportation funds. (b) No funds appropriated in this Act may be used for the transportation of students or teachers (or for the purchase of equipment for such transportation) in order to overcome racial imbalance in any school or school system, or for the transportation of students or teachers (or for the purchase of equipment for such transportation) in order to carry out a plan of racial desegregation of any school or school system.

U. S. Postal Service, reimbursement. SEC. 306. Unobligated balances of operation and maintenance appropriations available to the Department of Defense—Military, in an amount not to exceed \$18,950,000 in fiscal year 1973 and \$23,891,000 in fiscal year 1974, shall be available to reimburse the United States Postal Service for service rendered to the Department of Defense during those fiscal years.

Approved June 12, 1975.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 94-141 (Comm. on Appropriations) and No. 94-239 (Comm. of Conference).
SENATE REPORT No. 94-137 (Comm. on Appropriations).
CONGRESSIONAL RECORD, Vol. 121 (1975):
Apr. 15, May 22, June 2, 9, considered and passed House.
May 20, 22, June 4, 11, considered and passed Senate.

89 STAT. 210