APPENDICES

S U P P L E M E N T

October 7, 1968 - January 20, 1969

to the

Preliminary History of NASA

D O C U M E N T A R Y S U P P O R T

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B-4 Associate Administrator H. E. Newell, "Science, Technology, and Society," Address to the Annual Convention, National Council for the Social Studies, Goddard Space Flight Center, November 26, 1968.

B-5 Associate Administrator for Manned Space Flight, G. E. Mueller, Address to the Ninth National Conference of United Press International Editors and Publishers, Washington, D.C., October 8, 1968.

B-6 Associate Administrator for Manned Space Flight, G. E. Mueller, Address to the National Space Club, Washington, D.C., November 26, 1968.

B-7 Associate Administrator for Advanced Research and Technology, J. M. Beggs, "Research and Technology for the Future," Address to the American Nuclear Society, Washington, D.C., November 13, 1968.

B-8 Associate Administrator for Advanced Research and Technology, J. M. Beggs, "Advanced Research and Technology," Address to the Aerospace Industries Association Fall Conference, Phoenix, Arizona, November 20, 1968.

B-9 Associate Administrator for Space Science and Applications, J. E. Naugle, "The Outlook for the Space Program," Address at the NASA Pasadena Office, Third Annual Awards Ceremony, October 4, 1968.

B-10 Associate Administrator for Space Science and Applications, J. E. Naugle, Address to the American Nuclear Society, Washington, D.C., November 13, 1968.

B-11 Deputy Associate Administrator for Space Science and Application, O. W. Nicks, "Applying Surveyor and Lunar Orbiter Techniques to Mars," Address to American Institute of Aeronautics and Astronautics, Washington, D.C., December 5, 1968.

B-12 Assistant Administrator for DOD and Interagency Affairs, General J. E. Smart, "NASA/Interagency Coordination," Address to the Armed Forces Management Association, December 3, 1968.

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APPENDIX A

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A-10 Apollo 8: Excerpt from Log.

Sci Info 9-
Adm Transition

October 7, 1968

MEMORANDUM FOR THE PRESIDENT

Although I know your required reading is extensive, I thought you might like to see the enclosed letter from the father of Astronaut Aldrin and my reply.

His concern of safety and the need for protection from "[illegible]n" is more than that of the father of an astronaut. He and I both have been in this business for a long time and he was expressing as an old friend, something he wanted me to know.

I do hope you will approve the way I am presenting to him the action which you and I have taken with respect to the period from October 7 to January 20. The team here at NASA has reacted outstandingly well to this action which I have explained in very much the same terms as I have used to Aldrin, making it clear that you have established this plan because you believe it is best for continuity and effectiveness in NASA's operation.

Original Signed By
James E. Webb

James E. Webb
Administrator

Enclosures

Cc ltr to Mr. Aldrin
10/7/68.

Cc ltr from Mr. Aldrin
9/29/68

A/Webb:ns

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Sci Info 9-1
Aldrin Transition

October 7, 1968

Mr. Edwin E. Aldrin
15 Brandywyne
Brielle, New Jersey 08730

Dear Ed:

Thank you for your note of September 29, and your frankness about the needs of the program. I agree and have been working very hard with my associates over the past year to make sure that we had a critical examination of every factor. Your own support and the participation of your son as an astronaut make it important, I think, that you fully understand what President Johnson and I are trying to do.

A year ago, when Bob Seamans requested permission to resign as Deputy Administrator in order that he might seek a new career before age 50, I gave the President a very clear view of the need for continuity in the Agency and the necessity for the appointment of a Deputy Administrator who could bring to NASA the qualities required for dealing with science, with engineering, with organization, and also with the relations of these in NASA to the economic, social and political institutions and forces at work in our country. Tom Paine is equal to all of this. I would be very proud if I could say that I had found Tom Paine and assessed him as a man capable of doing this. The President and John Macy were the ones who did find him and I was delighted that after careful examination to find that he did indeed have all the qualities required and in addition -- youth. He is 46 and therefore able to utilize the accumulating knowledge and experience of his work here in NASA over many years, either in Government or in industry.

The net effect of what we have done is that, with my birthday coming before the election and Paine's agreement to serve as Deputy Administrator under either a Republican or Democratic president, we have created conditions that leave the new president completely free to choose an administrator in the knowledge that Tom would be willing to stay. This provides the necessary framework within which the new administration can make its decisions as to how it will proceed with the flights of the Saturn V/Apollo system without extraneous or personal consideration.

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Paine is as willing to leave on January 20, if this is the decision of the new administration, as to stay; but he is also willing to stay and provide continuity of leadership. In the meantime, on January 20, 1969, he and the other senior officials here will have behind them three months of experience and two successful Apollo flights. During this period, I will be available for one-half of my time for advice and consultation, but I can assure you I will not attempt to guide the decisions and actions, but rather to help them and make sure on behalf of the President that all factors are taken into account when the decisions are made. In addition, I will spend some time on the government-wide problems of the transition from one president to another. This should add a little to my value as an adviser and consultant in NASA.

You will recall that I was secretary to the Chairman of the House Rules Committee during the 1932 election and the subsequent period through which President Hoover and President-elect Roosevelt passed, and also during the famous "one hundred days" after Roosevelt was inaugurated in March of 1933. It happens that I have had some involvement in each transition from one president to another since, and served on the Brookings Institution study group at the time of the transfer from Eisenhower to Kennedy.

All of this is to say that I believe you and those like you concerned with the future of this country in the advanced areas of science, technology and management can feel that there will be both continuity and effective leadership in NASA, and that while the staff here has already given me a "Carolina rocking chair" I am not going to occupy it all the time.

No one could be more proud of the fact that Astronaut Aldrin developed the intellectual concepts which permitted the rendezvous operation of Gemini VI and VII and then proceeded to take his seat in the Gemini spacecraft and fly the mission to prove that he was also a man of action. He proved that the United States can bring together the man of the intellect and the man of action. You and I have seen how important this combination is in the development of advanced aeronautical systems for more than thirty years, and I will always remember your participation in the efforts of the National Aeronautics Association in the 1930's to gain support for a forward-looking aeronautical policy. This was at a time when you were carrying heavy leadership responsibilities at Standard Oil and also serving as a pilot.

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With highest regards and all good wishes, believe me

Sincerely yours,

Original Signed By
James E. Webb

James E. Webb
Administrator

A/Webb/eb 10/7/68

cc: The President
w/ay of incoming

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EDWIN E. ALDRIN
15 BRANDYWYNE
BRIELLE, N. J. 08730

29 Sept. 1968

Hon. James E. Webb,
Administrator, NASA,
Washington, D.C.

Dear Jim:

I really am sorry as I can be to see you resign from NASA after all the good work you have done. It has been a remarkable feat to build up such an efficient organization. You must have you own reasons beside the fact you have a birthday coming up. You certainly are not going to retire completely and I hope the plan will your contact not so remote our paths will not cro

I have tried to keep posted on technical aspects of the space program. I do not favor a manned flight of Saturn V until the changes being made have been proven. What is the value of risking lives at this stage? You really need less Yes-men in the space program.

With best wishes,

Sincerely yours,

Ed

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
FY 1970 BUD[illegible]STIMATES
SUMMARY BY P[illegible]M CATEGORY
IN MILLIONS [illegible] DOLLARS

DEC 1[illegible]68

FY 1970 BUDGET SUBMISSION TO BOB

	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 △	FY 1970 BOB Tent. Allow.	FY 1970 △	FY 1970 NASA Reclama	FY 1970 △	FY 1970 Final Allow.
EXT MSF CAPABILITY										
RESEARCH AND DEVELOPMENT	0.	2809.2	2170.7	2084.5	-300.9	1783.6	+260.1	2043.7	-47.0	1996.7
CONST. OF FACILITIES	0.	20.5	10.1	17.9	-7.2	10.7	+3.6	14.3	-0-	14.3
ADMINISTRATIVE OPER.	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
TOTAL	0.	2829.7	2180.8	2102.4	-308.1	1794.3	+263.7	2058.0	-47.0	2011.0
LUNAR EXPLORATION										
RESEARCH AND DEVELOPMENT	0.	46.5	13.6	114.6	-53.6	61.0	+20.0	81.0	-58.5	22.5
CONST. OF FACILITIES	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
ADMINISTRATIVE OPER.	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
TOTAL	0.	46.5	13.6	114.6	-53.6	61.0	+20.0	81.0	-58.5	22.5
PLANETARY EXPLORATION										
RESEARCH AND DEVELOPMENT	0.	107.2	89.8	146.6	-3.7	142.9	+10.0	152.9	+4.7	157.6
CONST. OF FACILITIES	0.	1.9	17.0	17.0	-0-	17.0	-0-	17.0	-0-	17.0
ADMINISTRATIVE OPER.	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
TOTAL	0.	109.1	106.8	163.6	-3.7	159.9	+10.0	169.9	+4.7	174.6
ASTRONOMY										
RESEARCH AND DEVELOPMENT	0.	92.9	90.1	97.1	-19.9	77.2	+9.0	86.2	-9.8	76.4
CONST. OF FACILITIES	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
ADMINISTRATIVE OPER.	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
TOTAL	0.	92.9	90.1	97.1	-19.9	77.2	+9.0	86.2	-9.8	76.4
SPACE PHYSICS										
RESEARCH AND DEVELOPMENT	0.	71.6	59.6	74.7	-8.8	65.9	-0-	65.9	-4.3	61.6
CONST. OF FACILITIES	0.	2.3	4.8	0.5	-0-	.5	-0-	.5	-0-	.5
ADMINISTRATIVE OPER.	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
TOTAL	0.	73.9	64.4	75.2	-8.8	66.4	-0-	66.4	-4.3	62.1
Space Biology										
RESEARCH AND DEVELOPMENT	0.	37.5	30.0	44.5	-3.0	41.5	-0-	41.5	-13.5	28.0
CONST. OF FACILITIES	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
ADMINISTRATIVE OPER.	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
TOTAL	0.	37.5	30.0	44.5	-3.0	41.5	-0-	41.5	-13.5	28.0

REPORT 4 [redacted] RUN 4

NATIONAL AERONAUTICS A[redacted]PACE ADMINISTRATION
FY 1970 BUD[redacted]STIMATES
SUMMARY BY PR[redacted]AM CATEGORY
IN MILLIONS OF DOLLARS

DEC 1 [redacted]

FY 1970 BUDGET SUBMISSION TO BOB

	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 △	BOB Tent. Allow.	△	NASA Reclama	△	Final Allow.
Space Applications										
RESEARCH AND DEVELOPMENT	0.	110.3	105.0	173.7	-49.5	124.2	+30.7	154.9	-6.3	148.6
CONST. OF FACILITIES	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
ADMINISTRATIVE OPER.	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
TOTAL	0.	110.3	105.0	173.7	-49.5	124.2	+30.7	154.9	-6.3	148.6
SPACE TECHNOLOGY										
RESEARCH AND DEVELOPMENT	0.	237.7	193.7	203.5	-36.5	167.0	+27.5	194.5	-4.1	190.4
CONST. OF FACILITIES	0.	0.	0.	8.1	-0-	8.1	-0-	8.1	~~-2.4~~	~~5.7~~ 8.1
ADMINISTRATIVE OPER.	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
TOTAL	0.	237.7	193.7	211.6	-36.5	175.1	+27.5	202.6	~~-6.5~~ -4.1	~~196.1~~ 198.5
AIRCRAFT TECHNOLOGY										
RESEARCH AND DEVELOPMENT	0.	81.4	94.9	125.3	-30.7	94.6	+30.7	125.3	-24.6	100.7
CONST. OF FACILITIES	0.	3.2	0.	16.7	-16.7	-0-	+4.7	4.7	-0-	4.7
ADMINISTRATIVE OPER.	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
TOTAL	0.	84.6	94.9	142.0	-47.4	94.6	+35.4	130.0	-24.6	105.4
SUPPORTING ACTIVITIES										
RESEARCH AND DEVELOPMENT	0.	372.7	346.2	430.6	-59.5	371.1	+52.5	423.6	-37.2	386.4
CONST. OF FACILITIES	0.	5.6	3.8	19.0	-5.4	13.6	+2.4	16.0	-0.4	~~16.0~~ 15.6
ADMINISTRATIVE OPER.	0.	639.3	648.3	644.1	-0-	644.1	-0-	644.1	+6.8	650.9
TOTAL	0.	1017.6	998.3	1093.7	-64.9	1028.8	+54.9	1083.7	~~-30.4~~ -32.8	~~1053.3~~ 1050.9
TOTAL NASA										
RESEARCH AND DEVELOPMENT	0.	3967.0	3193.6	3495.1	-566.1	2929.0	+440.5	3369.5	-200.6	3168.9
CONST. OF FACILITIES	0.	33.5	35.7	79.2	-29.3	49.9	+10.7	60.6	-2.4	58.2
ADMINISTRATIVE OPER.	0.	639.3	648.3	644.1	-0-	644.1	-0-	644.1	+6.8	650.9
TOTAL	0.	4639.8	3877.5	4218.4	-595.4	3623.0	+451.2	4074.2	-196.2	3878.0

REPORT 5 10/11/68 RUN 4

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
FY 1970 BUDGET ESTIMATES
RESEARCH AND DEVELOPMENT
BY PROGRAM CATEGORY
IN MILLIONS OF DOLLARS

DEC 1968

FY 1970 BUDGET SUBMISSION TO BOB

	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 △	BOB Tent. Allow.	△	NASA Reclama	△	Final Allow.
EXT MSF CAPABILITY	(0.)	(2809.2)	(2170.7)	(2084.5)	(-300.9)	(1783.6)	(+260.1)	(2043.7)	(-47.0)	(1996.7)
OMSF	(0.)	(2809.2)	(2170.7)	(2084.5)	(					
ONGOING 1969	(0.)	(2809.2)	(2170.7)	(2028.7)	(-245.1)	(1783.6)	(+245.1)	(2028.7)	(-32.0)	(1996.7)
APOLLO PROGRAM	(0.)	(2524.0)	(2006.8)	(1653.9)	(-100.0)	(1553.9)	(+100.0)	(1653.9)	(-32.0)	(1621.9)*
SPACECRAFT	0.	1104.0	990.3	711.2						729.1
MISSON CONTROL CENTER	0.	52.9	46.9	56.0						56.0
SPACE OPERATIONS	0.	50.5	54.6	66.1						66.1
SATURN IB	0.	141.3	62.8	0.						-0-
SATURN V	0.	1016.2	682.5	671.1						621.1
ENGINE DEVELOPMENT	0.	20.5	7.1	7.6						7.6
LAUNCH OPERATIONS	0.	92.4	116.8	104.6						104.6
LAUNCH INSTRUMENTATION	0.	18.2	18.5	18.8						18.8
SYSTEMS ENGINEERING	0.	28.0	27.3	18.5						18.5
ADVANCED MISSIONS	(0.)	(0.)	(2.5)	(2.5)	(-0-)	(2.5)	(-0-)	(2.5)	(-0-)	
ADVANCED MISSION STUDIES	0.	0.	2.5	2.5						2.5
SUPPORTING DEVELOPMENT	(0.)	(32.0)	(18.2)	(18.2)	(					
SUPPORTING DEVELOPMENT	0.	32.0	18.2	18.2					+.1	18.3
APOLLO APPLICATIONS PROG	(0.)	(253.2)	(135.5)	(345.1)	(-145.1)	(200.0)	(+145.1)	(345.1)	(-0-)	(345.1)*
EXPERIMENT DEFINITION	0.	11.0	0.	10.0						-0-
EXPERIMENT DEVELOPMENT	0.	8.9	10.5	6.5						13.8
S/C DEVELOPENT	0.	40.6	26.4	102.0						109.4
SATURN I WORKSHOP	0.	53.2	38.2	52.0						53.5
ATM SYSTEMS	0.	46.1	19.0	35.1						44.1
ATM EXPERIMENTS	0.	32.0	8.2	12.0						12.0
SATURN IB PRODUCTION	0.	18.6	13.1	32.1						29.0
SATURN V PRODUCTION	0.	2.3	0.	0.						-0-
PAYLOAD INTEGRATION	0.	28.6	15.0	38.0						34.0
MISSION OPERATION	0.	4.0	4.6	27.4						30.1
PROGRAM SUPPORT	0.	7.9	0.5	30.0						19.2
Space Station	(0.)	(0.)	(7.7)	(9.0)	(-0-)	(9.0)	(-0-)	(9.0)	(-0-)	9.0
FSS DEFINITION	0.	0.	2.7	9.0						
FSS EXPERIMENTS	0.	0.	5.0	0.						

*Revised structure for Apollo and AAP attached.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
FY 1970 BUDGET ESTIMATES
RESEARCH AND DEVELOPMENT
BY PROGRAM CATEGORY
IN MILLIONS OF DOLLARS

DE[illegible] 1968

FY 1970 BUDGET SUBMISSION TO BOB	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 △	BOB Tent. Allow.	△	NASA Reclama	△	Final Allow.
MSF OPER + SUPPORT	(0.)	(0.)	(0.)	(0.)	(-0-)	(-0-)	(-0-)	(-0-)	(-0-)	(-0-)
MISSION OPS KSC + MSC	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
MAINT OF INPLANT CAPABIL	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
EXTENSIONS 1970	(0.)	(0.)	(0.)	(6.8)	(-6.8)	(-0-)	(-0-)	(-0-)	(-0-)	(-0-)
ADVANCED MISSION STUDIES	(0.)	(0.)	(0.)	(5.0)	(-5.0)	(-0-)	(-0-)	(-0-)	(-0-)	(-0-)
ADVANCED MISSION STUDIES	0.	0.	0.	5.0	-5.0	-0-	-0-	-0-	-0-	-0-
SUPPORTING DEVELOPMENT	(0.)	(0.)	(0.)	(1.8)	(-1.8)	(-0-)	(-0-)	(-0-)	(-0-)	(-0-)
SUPPORTING DEVELOPMENT	0.	0.	0.	1.8	-1.8	-0-	-0-	-0-	-0-	-0-
NEW STARTS 1970	(0.)	(0.)	(0.)	(49.0)	(-49.0)	(-0-)	(+15.0)	(15.0)	(-15.0)	(-0-)
FUTURE SPACE STATION	(0.)	(0.)	(0.)	(49.0)	(-49.0)	(-0-)	(+15.0)	(15.0)	(-15.0)	(-0-)
FSS DEFINITION	0.	0.	0.	19.0	-19.0	-0-	+15.0	15.0	-15.0	-0-
FSS EXPERIMENTS	0.	0.	0.	30.0	-30.0	-0-	-0-	-0-	-0-	-0-
FSS STATION + EXPER MDM	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
FSS LOGISTICS MDM	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
FSS 6-9 MAN SPACECRAFT	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
FSS INT-21 LCH VEH	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
SATURN IB LCH VEH	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
FY 1970 BUDGET ESTIMATES
RESEARCH AND DEVELOPMENT
BY PROGRAM CATEGORY
IN MILLIONS OF DOLLARS

REPORT S [illegible] RUN 4

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FY 1970 BUDGET SUBMISSION TO BOB

	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 Δ	BOB Tent. Allow.	Δ	NASA Reclama	Δ	Final Allow.
LUNAR EXPLORATION	(0.)	(46.5)	(13.6)	(114.6)	(-53.6)	(61.0)	(+20.0)	(81.0)	(-58.5)	(22.5)
OSSA	(0.)	(46.5)	(6.8)	(11.0)	(-0-)	(11.0)	(-0-)	(11.0)	(+.5)	(11.5)
ONGOING 1969	(0.)	(46.5)	(6.8)	(6.8)	(-0-)	(6.8)	(-0-)	(6.8)	(+.5)	(7.3)
L+P SRT/ADV. STUDIES	0.	4.0	4.8	4.8	-0-	4.8	-0-	4.8	+.4	5.2
L+P DATA ANALYSIS	0.	0.	2.0	2.0	-0-	2.0	-0-	2.0	+.1	2.1
SURVEYOR A-G	0.	33.0	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
ORBITER A-E	0.	9.5	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
EXTENSIONS 1970	(0.)	(0.)	(0.)	(4.2)	(-0-)	(4.2)	(-0-)	(4.2)	(-0-)	(4.2)
L+P SRT/ADV. STUDIES	0.	0.	0.	4.2	-0-	4.2	-0-	4.2	-0-	4.2
OMSF	(0.)	(0.)	(6.8)	(103.6)	(-53.6)	(50.0)	(+20.0)	(70.0)	(-59.0)	(11.0)
ONGOING 1969	(0.)	(0.)	(6.8)	(11.0)	(-0-)	(11.0)	(-0-)	(11.0)	(-0-)	(11.0)
LUNAR EXPLORATION	(0.)	(0.)	(6.8)	(11.0)	-0-	(11.0)	(-0-)	(11.0)	(-11.0)	(-0-)
LUN EXPL DEFINITION	0.	0.	3.5	11.0	-0-	11.0	-0-	11.0	-11.0	-0-
LUN EXPL EXTENDED APOLLO	0.	0.	3.3	0.	-0-	-0-	-0-	-0-	-0-	-0-
Apollo Lun Expl									(+11.0)	(11.0)
EXTENSIONS 1970	(0.)	(0.)	(0.)	(9.0)	(-9.0)	(-0-)	(+9.0)	(9.0)	(-9.0)	(-0-)
SPACE VEHICLE PRODUCTION	(0.)	(0.)	(0.)	(9.0)	(-9.0)	(-0-)	(+9.0)	(9.0)	(-9.0)	(-0-)
SATURN V PRODUCTION	0.	0.	0.	9.0	(-9.0)	(-0-)	(+9.0)	(9.0)	(-9.0)	(-0-)
NEW STARTS 1970	(0.)	(0.)	(0.)	(83.6)	(-44.6)	(39.0)	(+11.0)	(50.0)	(-50.0)	(-0-)
LUNAR EXPLORATION	(0.)	(0.)	(0.)	(83.6)	(-44.0)	(39.0)	(+11.0)	(50.0)	(-50.0)	(-0-)
LUN EXPL DEFINITION	0.	0.	0.	2.0	-5.5	39.0				
LUN EXPL EXTENDED APOLLO	0.	0.	0.	42.5			+11.0	50.0	-50.0	-0-
LUNAR PAYLOAD MISSIONS	0.	0.	0.	39.1	-39.1	-0-				
LUN EXPL CSM PROD	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
LUN EXPL LM PROD	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-

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FY 1970 BU[illegible] ESTIMATES
RESEARCH AN[illegible] EVELOPMENT
BY PROGRAM CATEGORY
IN MILLIONS OF DOLLARS

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FY 1970 BUDGET SUBMISSION TO BOB

	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 △	FY 1970 BOB Tent. Allow.	FY 1970 △	FY 1970 NASA Reclama	FY 1970 △	FY 1970 Final Allow.
PLANETARY EXPLORATION	(0.)	(107.2)	(89.8)	(146.6)	(-3.7)	(142.9)	(+10.0)	(152.9)	(+4.7)	(157.6)
OSSA	(0.)	(107.2)	(89.8)	(146.6)	(-3.7)	(142.9)	(+10.0)	(152.9)	(+4.7)	(157.6)
ONGOING 1969	(0.)	(107.2)	(89.8)	(130.9)	(-0-)	(130.9)	(+10.0)	(140.9)	(+2.8)	(143.7)
L+P SRT/ADV. STUDIES	0.	15.8	15.8	15.3	-0-	15.3	-0-	15.3	+.7	16.0
ADV. PLANET MISSIONS TEC	0.	12.0	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
L+P DATA ANALYSIS	0.	0.6	0.6	0.6	-0-	.6	-0-	.6	+.1	.7
PIONEER F + G	0.	0.	1.0	13.0	-0-	13.0	-0-	13.0	+2.2	15.2
TITAN-MARS 1973	0.	0.	8.1	30.0	-0-	30.0	+10.0	40.0	-0-	40.0
MARINER-MARS 1969	0.	62.9	27.2	4.0	-0-	4.0	-0-	4.0	-0-	4.0
MARINER-VENUS 67 + V	0.	3.4	-0-	0.6	-0-	.6	-0-	.6	-.6	-0-
VOYAGER	0.	0.3	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
MARINER-MARS 1971	0.	0.	18.3	45.0	-0-	45.0	-0-	45.0	+ .4	45.4
EXOBIOLOGY SRT	0.	3.5	3.0	3.0	-0-	3.0	-0-	3.0	-0-	3.0
PLANETARY QUARANTINE	0.	1.8	1.3	3.0	-0-	3.0	-0-	3.0	-0-	3.0
LAUNCH VEHICLES	(0.)	(6.9)	(14.5)	(16.4)	(-0-)	(16.4)	(-0-)	(16.4)	(-0-)	(16.4)
PIONEER/CENTAUR	0.	0.	0.	5.9	-0-	5.9	-0-	5.9	-0-	5.9
T-MARS 73/TIII D/CENT	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
MARINER-MARS 69/CENTAUR	0.	6.9	0.8	0.	-0-	-0-	-0-	-0-	-0-	-0-
MARINER-MARS 71/CENTAUR	0.	0.	13.7	10.5	-0-	10.5	-0-	10.5	-0-	10.5
EXTENSIONS 1970	(0.)	(0.)	(0.)	(3.7)	(-3.7)	(-0-)	(-0-)	(-0-)	(-0-)	(-0-)
L+P SRT/ADVANCED STUDIES	0.	0.	0.	3.3	-3.3	-0-	-0-	-0-	-0-	-0-
L+P DATA ANALYSIS	0.	0.	0.	0.4	-.4	-0-	-0-	-0-	-0-	-0-
NEW STARTS 1970	(0.)	(0.)	(0.)	(12.0)	(-0-)	(12.0)	(-0-)	(12.0)	(+1.9)	(13.9)
MARINER MERCURY 1973	0.	0.	0.	3.0	-0-	3.0	-0-	3.0	-0-	3.0
PLANETARY EXPLORERS(A-E)	0.	0.	0.	8.0	-0-	8.0	-0-	8.0	-0-	8.0
MERCURY 73/CENTAUR	0.	0.	0.	1.0	-0-	1.0	-0-	1.0	-0-	1.0
PLAN EXPL Centaur	0.	0.	0.	0.	-0-	-0-	-0-	-0-	+1.9	1.9

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FY 1970 BUDGET SUBMISSION TO BOB

	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 △	FY 1970 BOB Tent. Allow.	FY 1970 △	FY 1970 NASA Reclama	FY 1970 △	FY 1970 Final Allow.
ASTRONOMY	(0.)	(92.9)	(90.1)	(97.1)	(-19.9)	(77.2)	(+9.0)	(86.2)	(-9.8)	(76.4)
OSSA	(0.)	(92.9)	(90.1)	(97.1)	(-19.9)	(77.2)	(+9.0)	(86.2)	(-9.8)	(76.4)
ONGOING 1969	(0.)	(92.9)	(90.1)	(72.2)	(-0-)	(72.2)	(-0-)	(72.2)	(-1.0)	(71.2)
P+A SRT/ADV. STUDIES	0.	10.0	9.3	9.3	-0-	9.3	-0-	9.3	+.9	10.2
P+A DATA ANALYSIS	0.	0.1	0.3	0.3	-0-	.3	-0-	.3	-0-	.3
OSO A-H	0.	11.3	12.0	10.9	-0-	10.9	-0-	10.9	-.1	10.8
OAO A-C	0.	44.6	36.9	29.5	-0-	29.5	-0-	29.5	-.9	28.6
RAE A-B	0.	2.7	1.6	0.9	-0-	.9	-0-	.9	-.3	.6
SAS A-B	0.	2.8	5.4	6.3	-0-	6.3	-0-	6.3	-0-	6.3
SOUNDING ROCKETS	0.	9.5	9.6	9.5	-0-	9.5	-0-	9.5	-.6	8.9
LAUNCH VEHICLES	(0.)	(11.7)	(15.0)	(5.5)	(-0-)	(5.5)	(-0-)	(5.5)	(-0-)	(5.5)
OSO/DELTA	0.	1.1	0.7	2.1	-0-	2.1	-0-	2.1	-0-	2.1
OAO/CENTAUR	0.	7.9	12.9	2.1	-0-	2.1	-0-	2.1	-0-	2.1
OAO/ATLAS-AGENA	0.	-0-	-0-	0.	-0-	-0-	-0-	-0-	-0-	-0-
RAE/DELTA	0.	2.7	1.3	0.3	-0-	.3	-0-	.3	-0-	.3
SAS/SCOUT	0.	0.	0.1	1.0	-0-	1.0	-0-	1.0	-0-	1.0
EXTENSIONS 1970	(0.)	(0.)	(0.)	(24.9)	(-19.9)	(5.0)	(+9.0)	(14.0)	(-8.8)	(5.2)
P+A DATA ANALYSIS	0.	0.	0.	0.3	-.3	-0-	-0-	-0-	-0-	-0-
OSO I-K	0.	0.	0.	5.2	-1.2	4.0	-0-	4.0	-0-	4.0
OAO D	0.	0.	0.	15.0	-15.0	-0-	+9.0	9.0	-9.0	-0-
SAS C-D	0.	0.	0.	2.4	-1.4	1.0	-0-	1.0	+.2	1.2
OSO I-K/DELTA	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
OAO D/CENTAUR	0.	0.	0.	2.0	-2.0	-0-	-0-	-0-	-0-	-0-
SAS C-D/SCOUT	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-

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FY 1970 BUDGET SUBMISSION TO BOB

	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 △	BOB Tent. Allow.	△	NASA Reclama	△	Final Allow.
SPACE PHYSICS	(0.)	(71.6)	(59.6)	(74.7)	(-8.8)	(65.9)	(-0-)	(65.9)	(-4.3)	(61.6)
OSSA	(0.)	(71.6)	(59.6)	(74.7)	(-8.8)	(65.9)	(-0-)	(65.9)	(-4.3)	(61.6)
ONGOING 1969	(0.)	(71.6)	(59.6)	(64.1)	(-0-)	(64.1)	(-0-)	(64.1)	(-5.2)	(58.9)
PIONEER A-E	0.	6.0	4.0	3.8	-0-	3.8	-0-	3.8	-1.1	2.7
P+A SRT/ADV. STUDIES	0.	12.9	10.7	10.8	-0-	10.8	-0-	10.8	+.9	11.7
P+A DATA ANALYSIS	0.	2.8	3.1	3.2	-0-	3.2	-0-	3.2	-.3	2.9
OGO A-F	0.	20.0	13.2	7.3	-0-	7.3	-0-	7.3	-.5	6.8
ATMOSPHERE EXPLORERS A-B	0.	0.4	-0-	0.	-0-	-0-	-0-	-0-	-0-	-0-
SSS A-B	0.	1.6	2.0	4.5	-0-	4.5	-0-	4.5	-.1	4.4
OWL A-B	0.	0.9	.6	1.2	-0-	1.2	-0-	1.2	-1.2	-0-
IMP A-J	0.	5.6	7.1	6.8	-0-	6.8	-0-	6.8	-.5	6.3
SUNBLAZER A-E	0.	0.	.5	2.9	-0-	2.9	-0-	2.9	-.9	2.0
AD/I A-C	0.	1.3	.7	0.7	-0-	.7	-0-	.7	-0-	.7
ESRO I + II	0.	0.1	-0-	0.	-0-	-0-	-0-	-0-	-0-	-0-
ISIS X, I, A-C	0.	1.4	1.4	1.7	-0-	1.7	-0-	1.7	-.1	1.6
GERMAN I	0.	0.3	.1	0.3	-0-	.3	-0-	.3	-.1	.2
SOUNDING ROCKETS	0.	10.5	10.5	10.5	-0-	10.5	-0-	10.5	-.8	9.7
SAN MARCO	0.	0.5	.1	0.2	-0-	.2	-0-	.2	-.1	.1
LAUNCH VEHICLES	(0.)	(7.3	(5.6)	(10.2)	(-0-)	(10.2)	(-0-)	(10.2)	(-.3)	(9.9)
PIONEER/DELTA	0.	2.5	1.5	0.	-0-	-0-	-0-	-0-	-0-	-0-
NRL EXPLORER/SCOUT	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
OGO/THOR/AGENA	0.	0.9	0.2	0.	-0-	-0-	-0-	-0-	-0-	-0-
CRL EXPLORER SCOUT	0.	0.	0.5	0.6	-0-	.6	-0-	.6	+.9	1.5
SSS/SCOUT	0.	0.	0.	1.1	-0-	1.1	-0-	1.1	-0-	1.1
OWL/SCOUT	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
IMP/DELTA	0.	1.0	1.1	3.1	-0-	3.1	-0-	3.1	-0-	3.1
SUNBLAZER/SCOUT	0.	0.	0.	0.6	-0-	.6	-0-	.6	-.6	-0-
AD/1 SCOUT	0.	1.1	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
ISIS/DELTA	0.	1.0	1.6	2.6	-0-	2.6	-0-	2.6	-0-	2.6
ISIS X/THOR-AGENA	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
GERMAN/SCOUT	0.	0.	.6	2.2	-0-	2.2	-0-	2.2	-.6	1.6
SAN MARCO/SCOUT	0.	0.8	0.1	0.	-0-	-0-	-0-	-0-	-0-	-0-
EXTENSIONS 1970	(0.)	(0.)	(0.)	(7.3)	(-6.3)	(1.0)	(-0-)	(1.0)	(+1.0)	(2.0)
P+A DATA ANALYSIS	0.	0.	0.	1.7	-1.7	-0-	-0-	-0-	-0-	-0-
ATMOSPHERE EXPLORERS C-D	0.	0.	0.	3.0	-3.0	-0-	-0-	-0-	+1.0	1.0

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FY 1970 BUDGET SUBMISSION TO BOB

	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970					
					△	BOB Tent. Allow.	△	NASA Reclama	△	Final Allow.
SSS C-D	0.	0.	0.	1.1	-.1	1.0	-0-	1.0	-0-	1.0
IMP K	0.	0.	0.	1.5	-1.5	-0-	-0-	-0-	-0-	-0-
ATMOS C-D/DELTA	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
SSS C-D/SCOUT	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
IMP K/DELTA	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
NEW STARTS 1970	(0.)	(0.)	(0.)	(3.3)	(-2.5)	(.8)	(-0-)	(.8)	(-.2)	(.6)
GERMAN SOLAR PROBE	0.	0.	0.	0.8	-0-	.8	-0-	.8	-.5	.3
RELATIVITY EXP PHASE B	0.	0.	0.	2.0	-2.0	-0-	-0-	-0-	-0-	-0-
INTERNATIONAL CO-OP A-B	0.	0.	0.	0.5	-.5	-0-	-0-	-0-	+.3	.3
GER SOL PR/CENTAUR	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
INT L CO-OP/SCOUT	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-

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FY 1970 BUDGET SUBMISSION TO BOB

	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 △	FY 1970 BOB Tent. Allow.	FY 1970 △	FY 1970 NASA Reclama	FY 1970 △	FY 1970 Final Allow.
Space Biology	(0.)	(37.5)	(30.0)	(44.5)	(-3.0)	(41.5)	(-0-)	(41.5)	(-13.5)	(28.0)
OSSA	(0.)	(37.5)	(30.0)	(44.5)	(-3.0)	(41.5)	(-0-)	(41.5)	(-13.5)	(28.0)
ONGOING 1969	(0.)	(37.5)	(30.0)	(41.5)	(-0-)	(41.5)	(-0-)	(41.5)	(-13.5)	(28.0)
BIOSCIENCE SRT	0.	6.5	6.9	6.9	-0-	6.9	-0-	6.9	+1.5	8.4
BIOSATELLITE (A-F)	0.	30.0	21.5	31.2	-0-	31.2	-0-	31.2	-13.2	18.0
LAUNCH VEHICLES	(0.)	(1.0)	(1.6)	(3.4)	(-0-)	(3.4)	(-0-)	(3.4)	(-1.8)	(1.6)
BIOSATELLITE/DELTA	0.	1.0	1.6	3.4	-0-	3.4	-0-	3.4	-1.8	1.6
NEW STARTS 1970	(0.)	(0.)	(0.)	(3.0)	(-3.0)	(-0-)	(-0-)	(-0-)	(-0-)	(-0-)
BIO EXPLORER/PION PH B	0.	0.	0.	2.0	-2.0	-0-	-0-	-0-	-0-	-0-
IMPR BIOSATELLITE PH B	0.	0.	0.	1.0	-1.0	-0-	-0-	-0-	-0-	-0-

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FY 1970 BUDGET SUBMISSION TO BOB

	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 △	BOB Tent. Allow.	△	NASA Reclama	△	Final Allow.
Space Applications	(0.)	(110.3)	(105.0)	(173.7)	((-49.5)	(124.2)	(+30.7)	(154.9)	(-6.3)	(148.6)
OSSA	(0.)	(110.3)	(105.0)	(173.7)	((-49.5)	(124.2)	(+30.7)	(154.9)	(-6.3)	(148.6)
ONGOING 1969	(0.)	(110.3)	(105.0)	(132.2)	((-16.8)	(115.4)	(+10.3)	(125.7)	(-1.4)	(124.3)
APPLIC SRT/ADV STUDIES	0.	19.3	19.6	19.6	-0-	19.6	-0-	19.6	+.1	19.7
TIROS/TOS IMPROVEMENTS	0.	9.1	5.8	3.7	-0-	3.7	-0-	3.7	-0-	3.7
NIMBUS A-F	0.	33.7	31.8	36.0	-6.5	29.5	-0-	29.5	-.3	29.2
METEOROLOGICAL SOUNDINGS	0.	3.0	3.0	3.0	-0-	3.0	-0-	3.0	-0-	3.0
ATS A-G	0.	25.6	24.7	45.2	-10.3	34.9	+10.3	45.2	-2.0	43.2
GEOS	0.	3.4	2.4	1.7	-0-	1.7	-0-	1.7	-0-	1.7
COOP APPLIC SAT	0.	0.1	0.1	0.1	-0-	.1	-0-	.1	-0-	.1
EARTH RESOURCES SURVEY	(0.)	(5.3)	(11.2)	(11.0)	((-0-)	(11.0)	(-0-)	(11.0)	-0-	(11.0)
AIRCRAFT PROGRAM	0.	5.3	9.2	11.0	-0-	11.0	-0-	11.0	-0-	11.0
ERTS STUDY	0.	0.	2.0	0.	-0-	-0-	-0-	-0-	-0-	-0-
LAUNCH VEHICLES	(0.)	(10.8)	(6.4)	(11.9)	((-0-)	(11.9)	(-0-)	(11.9)	(+.9)	(12.8)
TIROS/DELTA	0.	1.1	1.1	0.	-0-	-0-	-0-	-0-	-0-	-0-
NIMBUS/THOR/AGENA	0.	2.2	4.7	2.6	-0-	2.6	-0-	2.6	-0-	2.6
NIMBUS E-F/DELTA	0.	0.	0.	2.3	-0-	2.3	-0-	2.3	-0-	2.3
ATS/CENTAUR	0.	6.5	0.6	0.	-0-	-0-	-0-	-0-	-0-	-0-
ATS/TITAN III	0.	0.	0.	5.9	-0-	5.9	-0-	5.9	-0-	5.9
GEOS/DELTA	0.	1.0	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
CAS/SCOUT	0.	0.	0.	1.1	-0-	1.1	-0-	1.1	+.9	2.0
EXTENSIONS 1970	(0.)	(0.)	(0.)	(16.1)	((-10.9)	(5.2)	(+1.3)	(6.5)	(-0-)	(6.5)
APPLIC SRT/ADV STUDIES	0.	0.	0.	7.3	-4.6	2.7	-0-	2.7	-0-	2.7
TIROS N-PHASE B	0.	0.	0.	1.5	-0-	1.5	-0-	1.5	-0-	1.5
ATS-ADV APPL FLT EXPER	0.	0.	0.	1.0	-0-	1.0	-0-	1.0	-0-	1.0
ATS H+J PHASE B	0.	0.	0.	5.0	-5.0	-0-	-0-	-0-	-0-	-0-
GEOS C	0.	0.	0.	1.3	-1.3	-0-	+1.3	1.3	-0-	1.3
GEOS C/DELTA	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
NEW STARTS 1970	(0.)	(0.)	(0.)	(25.4)	((-21.8)	(3.6)	(+19.1)	(22.7)	(-5.0)	(17.7)
ERTS A+B	0.	0.	0.	14.1	-14.1	-0-	+14.1	14.1	-0-	14.1
ERTS (LOM) A+B	0.	0.	0.	5.0	-5.0	-0-	+5.0	5.0	-5.0	-0-
SYNCHRON MET SAT A	0.	0.	0.	1.3	+2.3	3.6	-0-	3.6	-0-	3.6
WORLD WEATHER WATCH PH B	0.	0.	0.	2.0	-2.0	-0-	-0-	-0-	-0-	-0-

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IN MILLIONS OF DOLLARS

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FY 1970 BUDGET SUBMISSION TO BOB

	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 △	BOB Tent. Allow.	△	NASA Reclama	△	Final Allow.
DATA RELAY SAT SYS PH B	0.	0.	0.	3.0	-0-	-0-	-0-	-0-	-0-	-0-
ERTS/DELTA	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
ERTS (LOM)/SCOUT	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
SMS A/DELTA	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-

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FY 1970 BUDGET SUBMISSION TO BOB

	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 △	FY 1970 BOB Tent. Allow.	FY 1970 △	FY 1970 NASA Reclama	FY 1970 △	FY 1970 Final Allow.
SPACE TECHNOLOGY	(0.)	(237.7)	(193.7)	(203.5)	(-36.5)	(167.0)	(+27.5)	(194.5)	(-4.1)	(190.4)
OART	(0.)	(233.6)	(190.3)	(202.2)	(-36.5)	(165.7)	(+27.5)	(193.2)	(-3.5)	(189.7)
ONGOING 1969	(0.)	(233.6)	(190.3)	(146.8)	(-0-)	(146.8)	(-0-)	(146.8)	(+.6)	(147.4)
SPACE PWR + ELEC PROP	(0.)	(43.7)	(42.2)	(32.9)	(-0-)	(32.9)	(-0-)	(32.9)	(+.1)	(33.0)
SRT	0.	34.9	34.4	32.4	-0-	32.4	-0-	32.4	-0-	32.4
STEP FDG SP PWR + EP SRT	0.	0.	3.3	0.	-0-	-0-	-0-	-0-	+.1	.1
SNAP-8	0.	7.5	5.0	0.	-0-	-0-	-0-	-0-	-0-	-0-
SERT	0.	1.3	1.5	0.5	-0-	.5	-0-	.5	-0-	.5
NUCLEAR ROCKETS	(0.)	(54.0)	(32.0)	(9.0)	(-0-)	(9.0)	(-0-)	(9.0)	(-0-)	(9.0)
SRT	0.	12.5	6.0	8.0	-0-	8.0	-0-	8.0	-0-	8.0
NRDS	0.	4.0	2.7	1.0	-0-	1.0	-0-	1.0	-0-	1.0
NERVA TECHNOLOGY	0.	23.0	15.7	0.	-0-	-0-	-0-	-0-	-0-	-0-
NERVA DEVELOPMENT	0.	14.5	7.6	0.	-0-	-0-	-0-	-0-	-0-	-0-
SPACE VEHICLE SYSTEMS	(0.)	(34.1)	(31.7)	(27.6)	(-0-)	(27.6)	(-0-)	(27.6)	(-.7)	(26.9)
SRT	0.	29.4	27.1	24.0	-0-	24.0	-0-	24.0	-.8	23.2
STEP FDG SP VEH SYS SRT	0.	0.	1.0	0.	-0-	-0-	-0-	-0-	+.1	.1
SMALL FLIGHT PROJECTS	0.	1.3	1.6	1.6	-0-	1.6	-0-	1.6	-0-	1.6
SCOUT REENTRY	0.	2.2	0.8	0.8	-0-	.8	-0-	.8	-0-	.8
LIFTING BODY	0.	1.2	1.2	1.2	-0-	1.2	-0-	1.2	-0-	1.2
ELECTRONIC SYSTEMS	(0.)	(30.3)	(23.7)	(20.7)	(-0-)	(20.7)	(-0-)	(20.7)	(+.7)	(21.4)
SRT	0.	29.8	20.2	20.7	-0-	20.7	-0-	20.7	-0-	20.7
STEP FDG ELECTR SYS SRT	0.	0.	3.0	0.	-0-	-0-	-0-	-0-	+.7	.7
RAM	0.	0.5	0.5	0.	-0-	-0-	-0-	-0-	-0-	-0-
HUMAN FACTORS SYSTEMS	(0.)	(17.3)	(16.7)	(16.7)	(-0-)	(16.7)	(-0-)	(16.7)	(+.4)	(17.1)
SRT	0.	15.7	14.9	14.9	-0-	14.9	-0-	14.9	-0-	14.9
SMALL FLIGHT PROJECTS	0.	0.9	1.0	1.6	-0-	1.6	-0-	1.6	-0-	1.6
ORBITING FROG OTOLITH	0.	0.7	0.8	0.2	-0-	.2	-0-	.2	-0-	.2
Step Funding									+.4	.4
CHEMICAL PROPULSION	(0.)	(37.0)	(28.9)	(26.5)	(-0-)	(26.5)	(-0-)	(26.5)	(-1.4)	(25.1)
CHEM PROPUL SRT	0.	17.6	15.4	15.0	-0-	15.0	-0-	15.0	-1.0	14.0
STEP FDG CHEM PROPUL SRT	0.	0.	2.0	0.	-0-	-0-	-0-	-0-	-0-	-0-
LARGE SOLID MOTOR	0.	3.5	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-

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	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 △	FY 1970 BOB Tent. Allow.	FY 1970 △	FY 1970 NASA Reclama	FY 1970 △	FY 1970 Final Allow.
CHEM RKT EXP ENGRG	0.	15.9	11.5	11.5	-0-	11.5	-0-	11.5	-.4	11.1
BASIC RESEARCH	(0.)	(17.2)	(15.1)	(13.4)	(-0-)	(13.4)	(-0-)	(13.4)	(+1.5)	(14.9)
SRT	0.	17.2	13.4	13.4	-0-	13.4	-0-	13.4	-0-	13.4
STEP FOG BASIC RES SRT.	0.	0.	1.7	.0	-0-	-0-	-0-	-0-	1.5	1.5
EXTENSIONS 1970	(0.)	(0.)	(0.)	(15.6)	(-0-)	(15.6)	(-0-)	(15.6)	(-3.9)	(11.7)
SPACE PWR + ELEC PROP	(0.)	(0.)	(0.)	(8.1)	(-0-)	(8.1)	(-0-)	(8.1)	(-1.2)	(6.9)
SRT	0.	0.	0.	3.1	-0-	3.1	-0-	3.1	(-1.2)	(1.9)
SNAP-8	0.	0.	0.	5.0	-0-	5.0	-0-	5.0	-0-	5.0
SPACE VEHICLE SYSTEMS	(0.)	(0.)	(0.)	(0.)	(-0-)	(-0-)	(-0-)	(-0-)	(-0-)	(-0-)
SCOUT REENTRY	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
ELECTRONIC SYSTEMS	(0.)	(0.)	(0.)	(2.2)	(-0-)	(2.2)	(-0-)	(2.2)	(-.9)	(1.3)
SRT	0.	0.	0.	2.2	-0-	2.2	-0-	2.2	(-.9)	(1.3)
HUMAN FACTORS SYSTEMS	(0.)	(0.)	(0.)	(4.5)	(-0-)	(4.5)	(-0-)	(4.5)	(-1.0)	(3.5)
SRT	0.	0.	0.	4.0	-0-	4.0	-0-	4.0	-.8	3.2
SMALL FLIGHT PROJECTS	0.	0.	0.	0.4	-0-	.4	-0-	.4	-.2	.2
ORBITING FROG OTOLITH	0.	0.	0.	0.1	-0-	.1	-0-	.1	-0-	.1
CHEMICAL PROPULSION	(0.)	(0.)	(0.)	(0.1)	(-0-)	(.1)	(-0-)	(.1)	(-.1)	(-0-)
CHEM RKT EXP ENGRG	0.	0.	0.	0.1	-0-	.1	-0-	.1	-.1	-0-
BASIC RESEARCH	(0.)	(0.)	(0.)	(0.7)	(-0-)	(.7)	(-0-)	(.7)	(-.7)	(-0-)
SRT	0.	0.	0.	0.7	-0-	.7	-0-	.7	-.7	-0-
NEW STARTS 1970	(0.)	(0.)	(0.)	(39.8)	(-36.5)	(3.3)	(+27.5)	(30.8)	(-.2)	(30.6)
NUCLEAR ROCKETS	(0.)	(0.)	(0.)	(27.5)	(-27.5)	(-0-)	(+27.5)	(27.5)	(-0-)	(27.5)
NRDS	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
NERVA DEVELOPMENT	0.	0.	0.	27.5	-27.5	-0-	+27.5	27.5	-0-	27.5
AEROSPACE SAFETY RESCH.	(0.)	(0.)	(0.)	(2.0)	(-0-)	(2.0)	(-0-)	(2.0)	(-2.0)	(-0-)
AEROSPACE SAFETY RESCH	0.	0.	0.	2.0	-0-	2.0	-0-	2.0	-2.0	-0-
SPACE VEHICLE SYSTEMS	(0.)	(0.)	(0.)	(1.3)	(-0-)	(1.3)	(-0-)	(1.3)	(+1.8)	(3.1)
METEOROID BUMPER	0.	0.	0.	0.4	-0-	.4	-0-	.4	-0-	.4
Aerospace Safety Research									+1.8	1.8

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FY 1970 BUDGET SUBMISSION TO BOB

	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 △	FY 1970 BOB Tent. Allow.	FY 1970 △	FY 1970 NASA Reclama	FY 1970 △	FY 1970 Final Allow.
RADIO TELESCOPE TECH EXP	0.	0.	0.	0.4	-0-	.4	-0-	.4	-0-	.4
INTERPLANET METEOR PROBE	0.	0.	0.	0.5	-0-	.5	-0-	.5	-0-	.5
CHEMICAL PROPULSION	(0.)	(0.)	(0.)	(9.0)	(-9.0)	(-0-)	(-0-)	(-0-)	(-0-)	(-0-)
LOW COST BOOSTER CH PROP	0.	0.	0.	9.0	-9.0	-0-	-0-	-0-	-0-	-0-
OSSA	(0.)	(4.1)	(3.3)	(1.3)	(-0-)	(1.3)	(-0-)	(1.3)	(-.6)	(.7)
ONGOING 1969	(0.)	(4.1)	(3.3)	(1.3)	(-0-)	(1.3)	(-0-)	(1.3)	(-.6)	(.7)
LAUNCH VEHICLES	(0.)	(4.1)	(3.3)	(1.3)	(-0-)	(1.3)	(-0-)	(1.3)	(-.6)	(.7)
SERT/THOR/AGENA	0.	2.2	0.8	0.2	-0-	.2	-0-	.2	-0-	.2
REENTRY/SCOUT	0.	1.1	1.2	0.	-0-	-0-	-0-	-0-	+.5	.5
RAM/SCOUT	0.	0.8	.3	1.1	-0-	1.1	-0-	1.1	-1.1	-0-
OFO/SCOUT	0.	0.	1.1	0.	-0-	-0-	-0-	-0-	-0-	-0-

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FY 1970, BUDGET SUBMISSION TO BOB

	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 △	BOB Tent. Allow.	△	NASA Reclama	△	Final Allow.
AIRCRAFT TECHNOLOGY	(0.)	(81.4)	(94.9)	(125.3)	(-30.7)	(94.6)	(+30.7)	(125.3)	(-24.6)	(100.7)
OART	(0.)	(81.4)	(94.9)	(125.3)	(-30.7)	(94.6)	(+30.7)	(125.3)	(-24.6)	(100.7)
ONGOING 1969	(0.)	(81.4)	(94.9)	(94.6)	(-0-)	(94.6)	(-0-)	(94.6)	(+.1)	(94.7)
ELECTRONIC SYSTEMS SRT	(0.)	(7.8)	(11.1)	(11.1)	(-0-)	(11.1)	(-0-)	(11.1)	(-0-)	(11.1)
ELECTRONIC SYSTEMS SRT	0.	7.8	11.1	11.1	-0-	11.1	-0-	11.1	-0-	11.1
AERONAUTICAL VEHICLES	(0.)	(66.8)	(74.9)	(74.6)	(-0-)	(74.6)	(-0-)	(74.6)	(+.1)	(74.7)
ART	0.	12.8	16.9	15.8	-0-	15.8	-0-	15.8	+1.8	17.6
OTHER TECHNOLOGY(SUPER)	0.	14.1	16.9	17.8	-0-	17.8	-0-	17.8	+3.3	21.1
XB-70(SUPER)	0.	10.0	5.0	0.	-0-	-0-	-0-	-0-	-0-	-0-
V/STOL	0.	7.0	8.7	8.9	-0-	8.9	-0-	8.9	+2.3	11.2
OTHER TECHNOLOGY(HYPER)	0.	4.1	4.3	3.2	-0-	3.2	-0-	3.2	+2.8	6.0
X-15(HYPER)	0.	3.4	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
HYPER RES ENGINE(HYPER)	0.	7.0	5.5	2.0	-0-	2.0	-0-	2.0	-0-	2.0
GENERAL AVIATION	0.	0.5	0.5	0.5	-0-	.5	-0-	.5	-0-	.5
OTHER TECHNOLOGY(SUBS)	0.	2.0	2.6	2.6	-0-	2.6	-0-	2.6	-.2	2.4
AIRCRAFT NOISE(SUBS)	0.	4.2	7.0	3.8	-0-	3.8	-0-	3.8	-0-	3.8
QUIET ENGINE(SUBS)	0.	1.7	7.5	20.0	-0-	20.0	-0-	20.0	-10.0	10.0
Step Funding (Super)									+.1	1.0
HUMAN FACTOR SYSTEMS SRT	(0.)	(2.5)	(3.0)	(3.0)	(-0-)	(3.0)	(-0-)	(3.0)	(-0-)	(3.0)
HUMAN FACTOR SYSTEMS SRT	0.	2.5	3.0	3.0	-0-	3.0	-0-	3.0	-0-	3.0
BASIC RESEARCH SRT	(0.)	(4.3)	(5.9)	(5.9)	(-0-)	(5.9)	(-0-)	(5.9)	(-0-)	(5.9)
BASIC RESEARCH SRT	0.	4.3	5.9	5.9	-0-	5.9	-0-	5.9	-0-	5.9
EXTENSIONS 1970	(0.)	(0.)	(0.)	(26.7)	(-26.7)	(-0-)	(+26.7)	(26.7)	(-20.7)	(6.0)
ELECTRONIC SYSTEMS SRT	(0.)	(0.)	(0.)	(0.2)	(-.2)	(-0-)	(+.2)	(.2)	(+1.0)	(1.2)
ELECTRONIC SYSTEMS SRT	0.	0.	0.	0.2	-.2	-0-	+.2	.2	+1.0	1.2
AERONAUTICAL VEHICLES	(0.)	(0.)	(0.)	(25.9)	(-25.9)	(-0-)	(+25.9)	(25.9)	(-21.7)	(4.2)
ART	0.	0.	0.	7.2	-7.2	-0-	+7.2	7.2	-3.0	4.2
OTHER TECHNOLOGY(SUPER)	0.	0.	0.	3.5	-3.5	-0-	+3.5	3.5	-3.5	-0-
V/STOL	0.	0.	0.	8.1	-8.1	-0-	+8.1	8.1	-8.1	-0-
OTHER TECHNOLOGY(HYPER)	0.	0.	0.	3.0	-3.0	-0-	+3.0	3.0	-3.0	-0-
GENERAL AVIATION	0.	0.	0.	1.1	-1.1	-0-	+1.1	1.1	-1.1	-0-

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FY 1970 BUDGET SUBMISSION TO BOB

	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 △	BOB Tent. Allow.	△	NASA Reclama	△	Final Allow.
OTHER TECHNOLOGY(SUBS)	0.	0.	0.	3.0	-3.0	-0-	+3.0	3.0	-3.0	-0-
BASIC RESEARCH SRT	(0.)	(0.)	(0.)	(0.6)	(-.6)	(-0-)	(+.6)	(.6)	(-0-)	(.6)
BASIC RESEARCH SRT	0.	0.	0.	0.6	-.6	-0-	+.6	.6	-0-	.6
NEW STARTS 1970	(0.)	(0.)	(0.)	(4.0)	(-4.0)	(-0-)	(+4.0)	(4.0)	(-4.0)	(-0-)
ELECTRONIC SYSTEMS SRT	(0.)	(0.)	(0.)	(4.0)	(-4.0)	(-0-)	(+4.0)	(4.0)	(-4.0)	(-0-)
AIR TRAFFIC CONTROL SYS	0.	0.	0.	4.0	-4.0	-0-	+4.0	4.0	-4.0	-0-

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FY 1970 BUDGET SUBMISSION TO BOB

	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 △	BOB Tent. Allow.	△	NASA Reclama	△	Final Allow.
SUPPORTING ACTIVITIES	(0.)	(372.7)	(346.2)	(430.6)	(-59.5)	(371.1)	(+52.5)	(423.6)	(-37.2)	(386.4)
OTU	(0.)	(4.0)	(3.8)	(5.0)	(-0-)	(5.0)	(-0-)	(5.0)	(-0-)	(5.0)
ONGOING 1969	(0.)	(4.0)	(3.8)	(4.0)	(-0-)	(4.0)	(-0-)	(4.0)	(-0-)	(4.0)
OFF. OF TECH UTIL.	0.	4.0	3.8	4.0	-0-	4.0	-0-	4.0	-0-	4.0
EXTENSIONS 1970	(0.)	(0.)	(0.)	(1.0)	(-0-)	(1.0)	(-0-)	(1.0)	(-0-)	(1.0)
OFF. OF TECH UTIL.	0.	0.	0.	1.0	-0-	1.0	-0-	1.0	-0-	1.0
OUA	(0.)	(10.0)	(9.0)	(39.0)	(-30.0)	(9.0)	(+24.0)	(33.0)	(-24.0)	(9.0)
ONGOING 1969	(0.)	(10.0)	(9.0)	(9.0)	(-0-)	(9.0)	(-0-)	(9.0)	(-0-)	(9.0)
OFF OF UNIV AFFAIRS	0.	10.0	9.0	9.0	-0-	9.0	-0-	9.0	-0-	9.0
EXTENSIONS 1970	(0.)	(0.)	(0.)	(30.0)	(-30.0)	(-0-)	(+24.0)	(24.0)	(-24.0)	(-0-)
OFF OF UNIV AFFAIRS	0.	0.	0.	15.0	-15.0	-0-	+9.0	9.0	-9.0	-0-
STEP FUNDING	0.	0.	0.	15.0	-15.0	-0-	+15.0	15.0	-15.0	-0-
OTDA	(0.)	(275.9)	(279.7)	(310.3)	(-12.1)	(298.2)	(+11.1)	(309.3)	(-11.3)	(298.0)
ONGOING 1969	(0.)	(275.9)	(279.7)	(298.2)	(-0-)	(298.2)	(-0-)	(298.2)	(-1.2)	(297.0)
OTDA SRT	0.	12.8	11.5	11.5	-0-	11.5	-0-	11.5	-0-	11.5
OTDA NETWORK OPERATIONS	0.	211.5	227.0	242.0	-0-	242.0	-0-	242.0	-2.6	239.4 a/
OTDA EQUIP. + COMPONENTS	0.	51.6	41.2	44.7	-0-	44.7	-0-	44.7	+1.4	46.1 a/
EXTENSIONS 1970	(0.)	(0.)	(0.)	(1.9)	(-1.9)	(-0-)	(+.9)	(.9)	(-.9)	a/
OTDA NETWORK OPERATIONS	0.	0.	0.	0.6	-.6	-0-	+.4	.4	-.4	a/
OTDA EQUIP. + COMPONENTS	0.	0.	0.	1.3	-1.3	-0-	+.5	.5	-.5	a/
NEW STARTS 1970	(0.)	(0.)	(0.)	(10.2)	(-10.2)	(-0-)	(+10.2)	(10.2)	(-9.2)	(1.0)
DRSS-OTDA PHASE B	0.	0.	0.	1.0	-1.0	-0-	+1.0	1.0	-0-	1.0
OTDA NETWORK OPERATIONS	0.	0.	0.	2.0	-2.0	-0-	+2.0	2.0	-2.0	a/
OTDA EQUIP. + COMPONENTS	0.	0.	0.	7.2	-7.2	-0-	+7.2	7.2	-7.2	a/
OSSA	(0.)	(82.8)	(53.6)	(76.3)	(-17.4)	(58.9)	(+17.4)	(76.3)	(-1.9)	(74.4)
ONGOING 1969	(0.)	(82.8)	(53.6)	(76.3)	(-17.4)	(58.9)	(+17.4)	(76.3)	(-1.9)	(74.4)
BASE SPT + PRODUCT IMP.	(0.)	(78.4)	(49.6)	(70.4)	(-15.5)	(54.9)	(+15.5)	(70.4)	(-0-)	(70.4)

a/Distribution to new starts and extensions being developed.

REPORT 5 [illegible]/68 RUN

DEC 9 1968

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
FY 1970 BUDGET ESTIMATES
RESEARCH AND DEVELOPMENT
BY PROGRAM CATEGORY
IN MILLIONS OF DOLLARS

FY 1970 BUDGET SUBMISSION TO BOB

	FISCAL 1967 AND PRIOR	1968 PAST YEAR	1969 CURRENT YEAR	1970 BUDGET YEAR	FY 1970 Δ	FY 1970 BOB Tent. Allow.	FY 1970 Δ	FY 1970 NASA Reclama	FY 1970 Δ	FY 1970 Final Allow.
TITAN/CENT INTEGRATION	0.	0.	1.5	15.5	-15.5	-0-	+15.5	15.5	-0-	15.5
SCOUT	0.	6.4	8.7	8.0	-0-	8.0	-0-	8.0	-0-	8.0
CENTAUR	0.	47.6	18.2	20.7	-0-	20.7	-0-	20.7	-0-	20.7
DELTA	0.	22.3	15.2	21.7	-0-	21.7	-0-	21.7	-0-	21.7
AGENA	0.	2.7	6.1	4.5	-0-	4.5	-0-	4.5	-0-	4.5
TITAN 111 C	0.	0.	0.	0.	-0-	-0-	-0-	-0-	-0-	-0-
L/V SRT/ADV. STUDIES	0.	4.4	4.0	4.0	-0-	4.0	-0-	4.0	-0-	4.0
CENTAUR PROOF FLIGHT	0.	0.	0.	1.9	-1.9	-0-	+1.9	1.9	-1.9	-0-

NOT FOR RELEASE

SUMMARY PROGRAM AND FINANCIAL DATA

DECEMBER 23, 1968

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

National Aeronautics and Space Administration

SUMMARY PROGRAM AND FINANCIAL DATA
STRUCTURE OF NASA APPROPRIATIONS

NASA's programs are financed out of three appropriations, Research and Development (R&D), Construction of Facilities (CoF), and Research and Program Management (R&PM).

Research and Development

This appropriation provides for the contractual effort of research, development, operations, services, and other attendant expenses of a project related nature, required for research and development activities of the agency. The R&D appropriation is a no year account (i.e., funds are available to NASA without time limit until they are expended). Project costs are normally budgeted and funded in annual increments. 100% of these funds are contracted out to industry, universities and non-profit institutions.

Construction of Facilities

This appropriation provides for contractual services for the design, construction and modification of facilities, the purchase of land and equipment related to construction and modification; and advance design of facilities planned for future authorization. CoF funds are available without time limit until expended.

Research and Program Management

The Research and Program Management appropriation provides funds for necessary expenses of research in Government laboratories, management of programs and other activities of the National Aeronautics and Space Administration which are not identified with specific projects. These costs include operation of test ranges, maintenance and repair of facilities, utility services, and purchase, lease and maintenance of general purpose computers. R&PM is an "annual" appropriation, which means that any funds not obligated under this account by the end of the fiscal year lapse back to the Treasury and are no longer available to NASA.

National Aeronautics and Space Administration

SUMMARY BUDGET HISTORY - FISCAL YEARS 1959 THROUGH 1969
(In Millions)

Fiscal Year	Budget Request	Authorization	Appropriation[a]
1959 DoD Transfer	$146.6	$146.6	$146.6
1959	235.0	259.2	184.3
1959 Supplemental	45.0	---	38.5[b]
1960	508.3	490.3	485.1
1961	964.6	970.0	964.0
1962	1,940.3	1,855.3	1,825.3
1963	3,787.3	3,744.1	3,674.1
1964	5,712.0	5,350.8	5,100.0
1964 Supplemental	141.0	---	72.5[c]
1965	5,304.0	5,227.5	5,177.5[c]
1966	5,260.0	5,190.4	5,175.0
1967	5,012.0	5,000.4	4,968.0
Subtotal	29,056.1	28,234.6	27,810.9
1968	5,100.0	4,865.8	4,588.9
1969	4,370.4	4,013.1	3,995.3 (3,877.8)[d]
Total	$38,526.5	$37,113.5	$36,395.1

a/ Amounts are appropriations enacted for NASA, except for the amount transferred from DoD.
b/ Included in the 1960 appropriation act and designated as additional amounts for 1959.
c/ 1964 supplemental request of $141,000,000 submitted with 1964 budget. Amount of $72,494,000 included therefore in 1965 appropriation.
d/ FY 1969 Operating Plan.

National Aeronautics and Space Administration

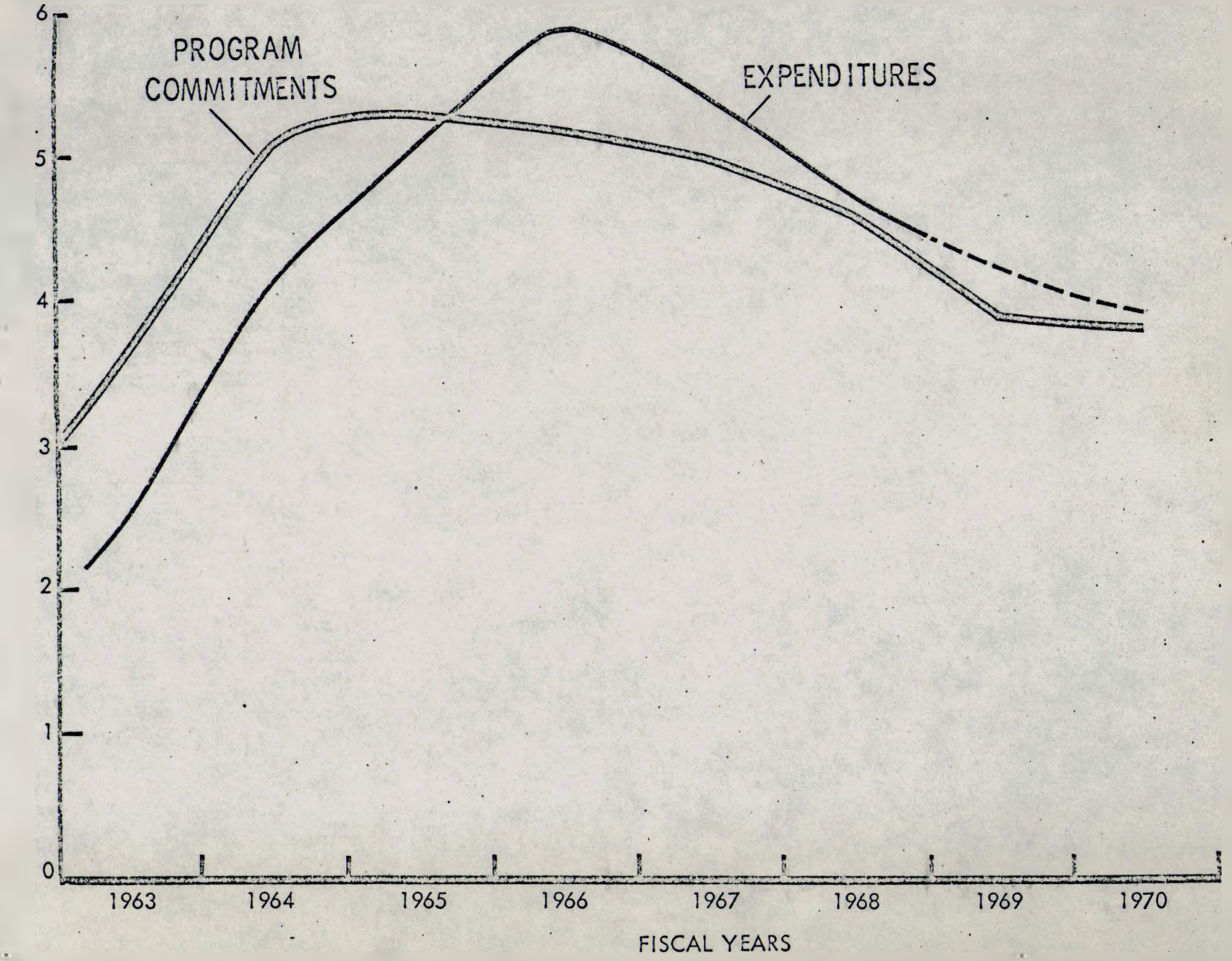
EXPENDITURES - FISCAL YEARS 1959 THROUGH 1969
(In Millions)

Fiscal Year	Expenditures [a]
1959	$145.5
1960	401.0
1961	744.3
1962	1,257.0
1963	2,552.4
1964	4,171.0
1965	5,092.9
1966	5,932.9
1967	5,425.7
1968	4,723.7
1969	4,249.7 Est.
Total	$34,696.1

a/ Amount expended each year is against all fiscal years funded.

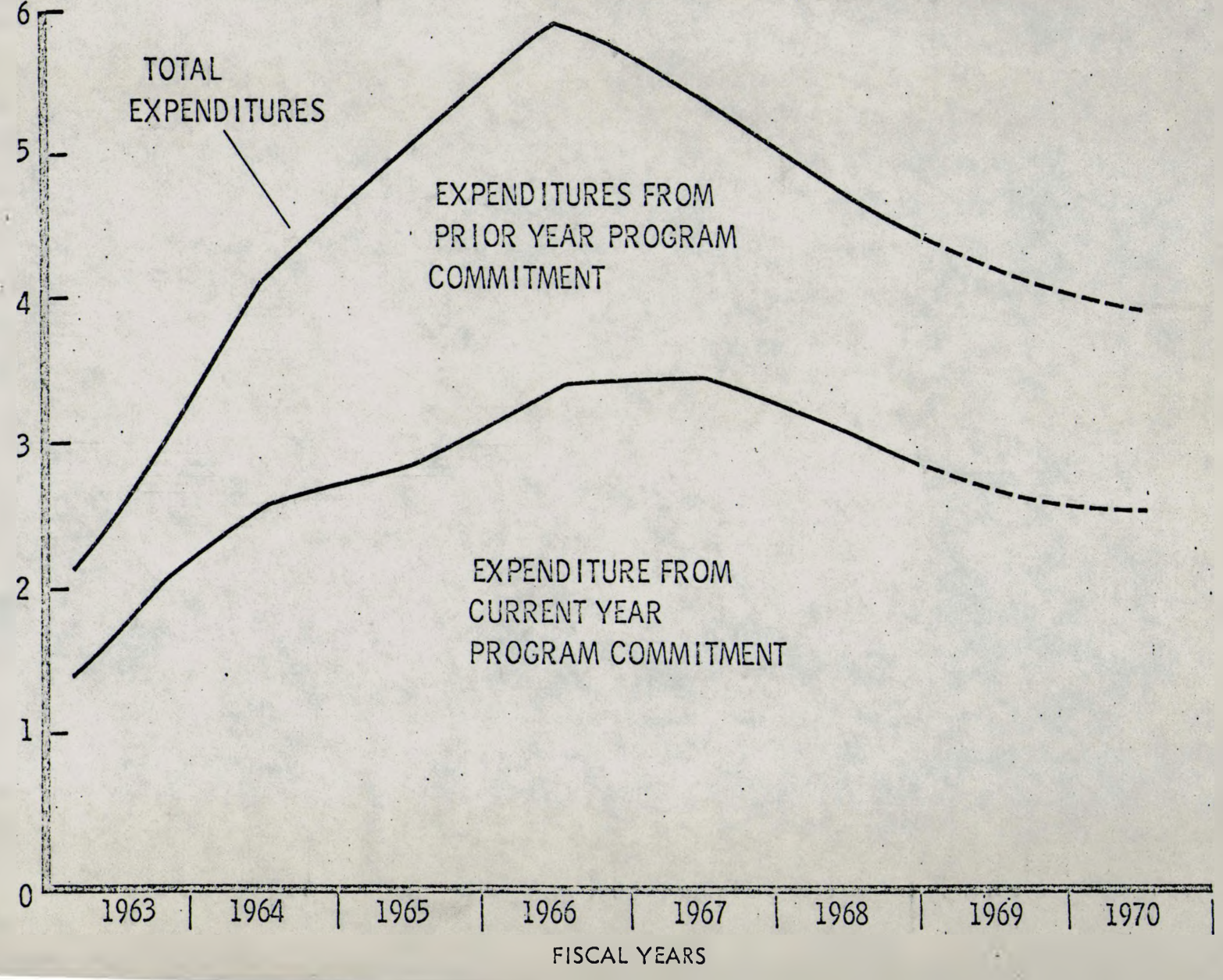
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

SUMMARY PROGRAM & FINANCIAL DATA



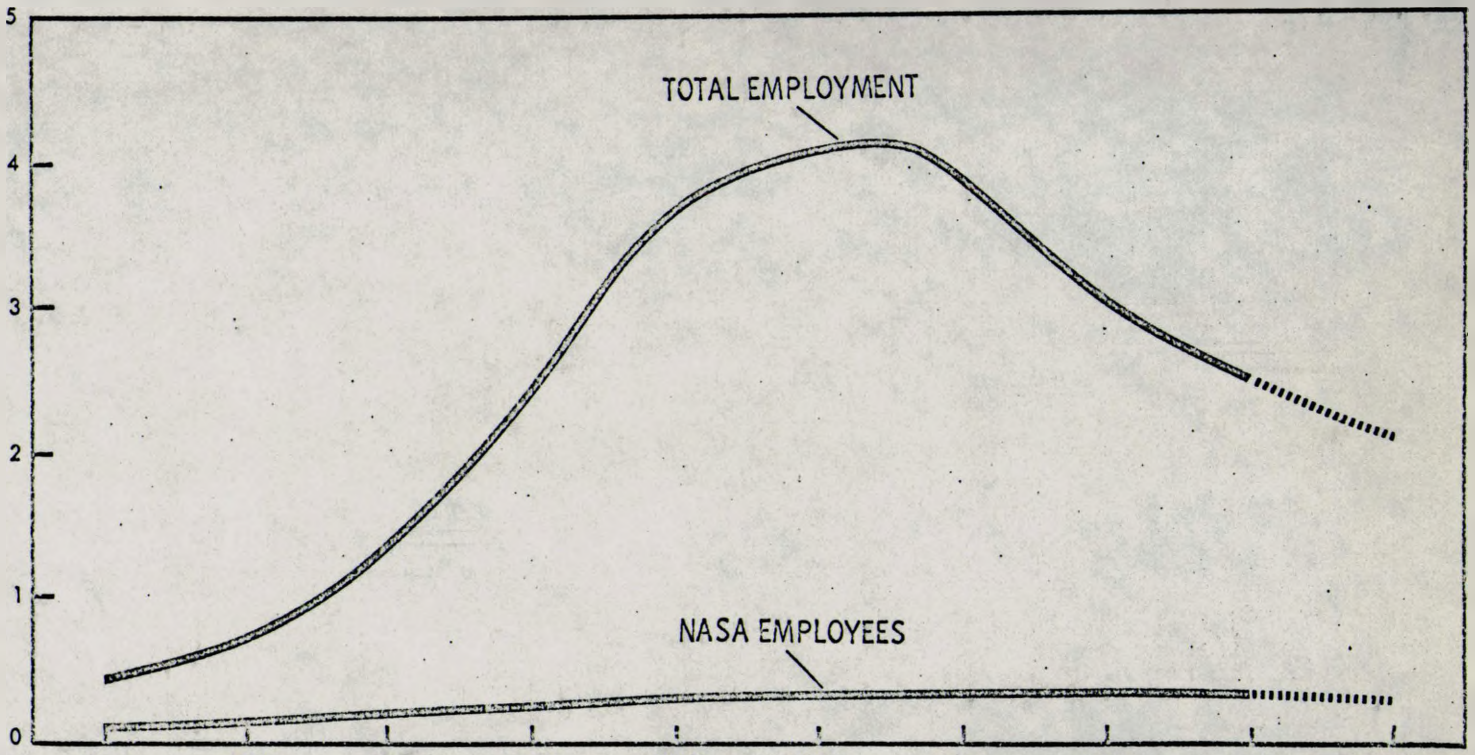
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

SUMMARY PROGRAM AND FINANCIAL DATA



TOTAL EMPLOYMENT ON NASA PROGRAMS

IN HUNDRED OF THOUSANDS



	JUNE 1960	JUNE 1961	JUNE 1962	JUNE 1963	JUNE 1964	JUNE 1965	JUNE 1966	JUNE 1967	JUNE 1968	JUNE 1969
TOTAL EMPLOYMENT	46,700	75,000	139,200	248,300	379,600	411,000	396,000	309,100	270,000	215,000
CONTRACTOR EMPLOYEES	36,500	57,500	115,500	218,400	347,100	376,700	360,000	273,200	235,400	181,600
NASA EMPLOYEES 1/	10,200	17,500	23,700	29,900	32,500	34,300	36,000	35,900	34,600	33,400

1/ REFLECTS END-YEAR TOTAL EMPLOYMENT (ie PERMANENT AND OTHER)

NASA B69-123
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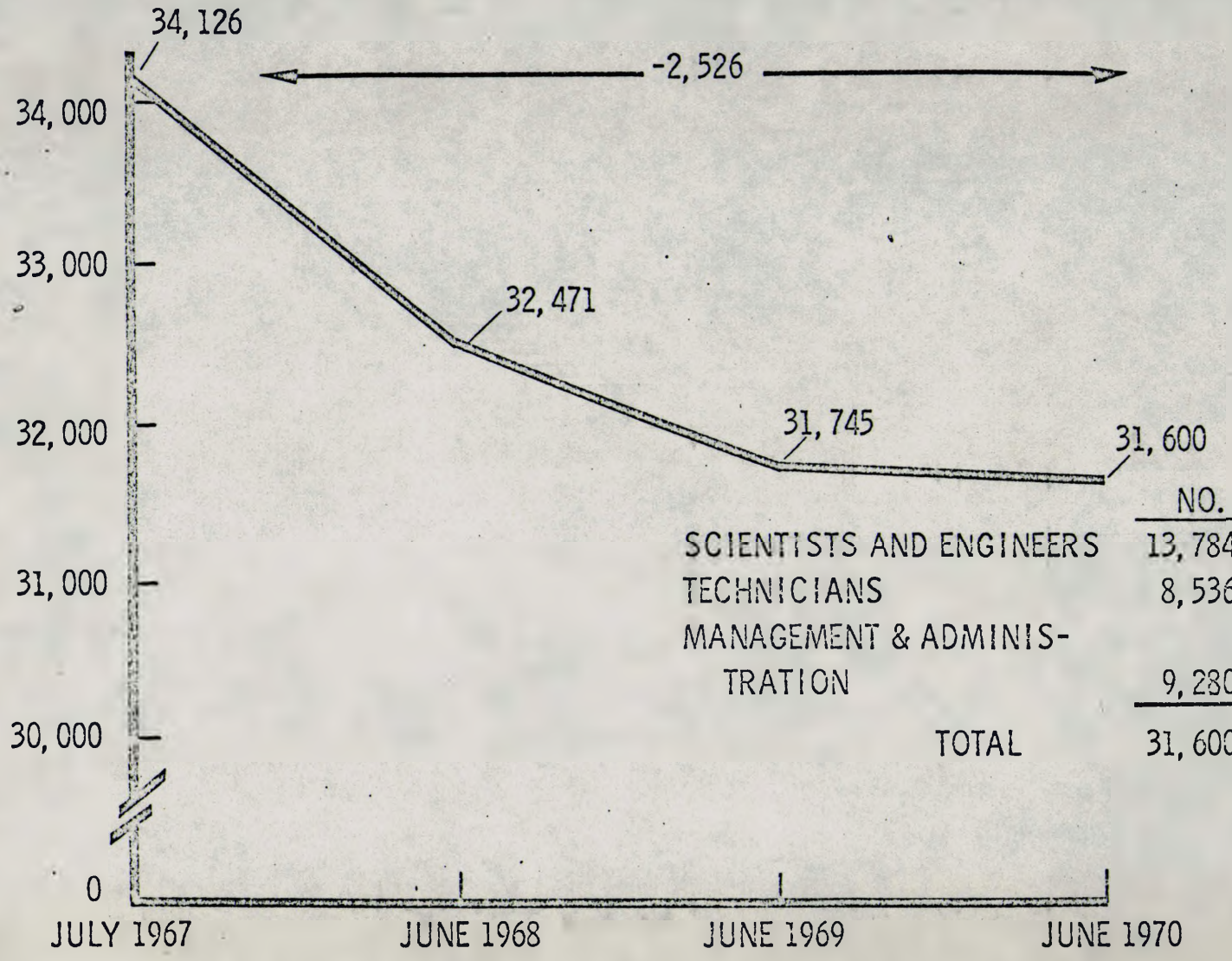
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

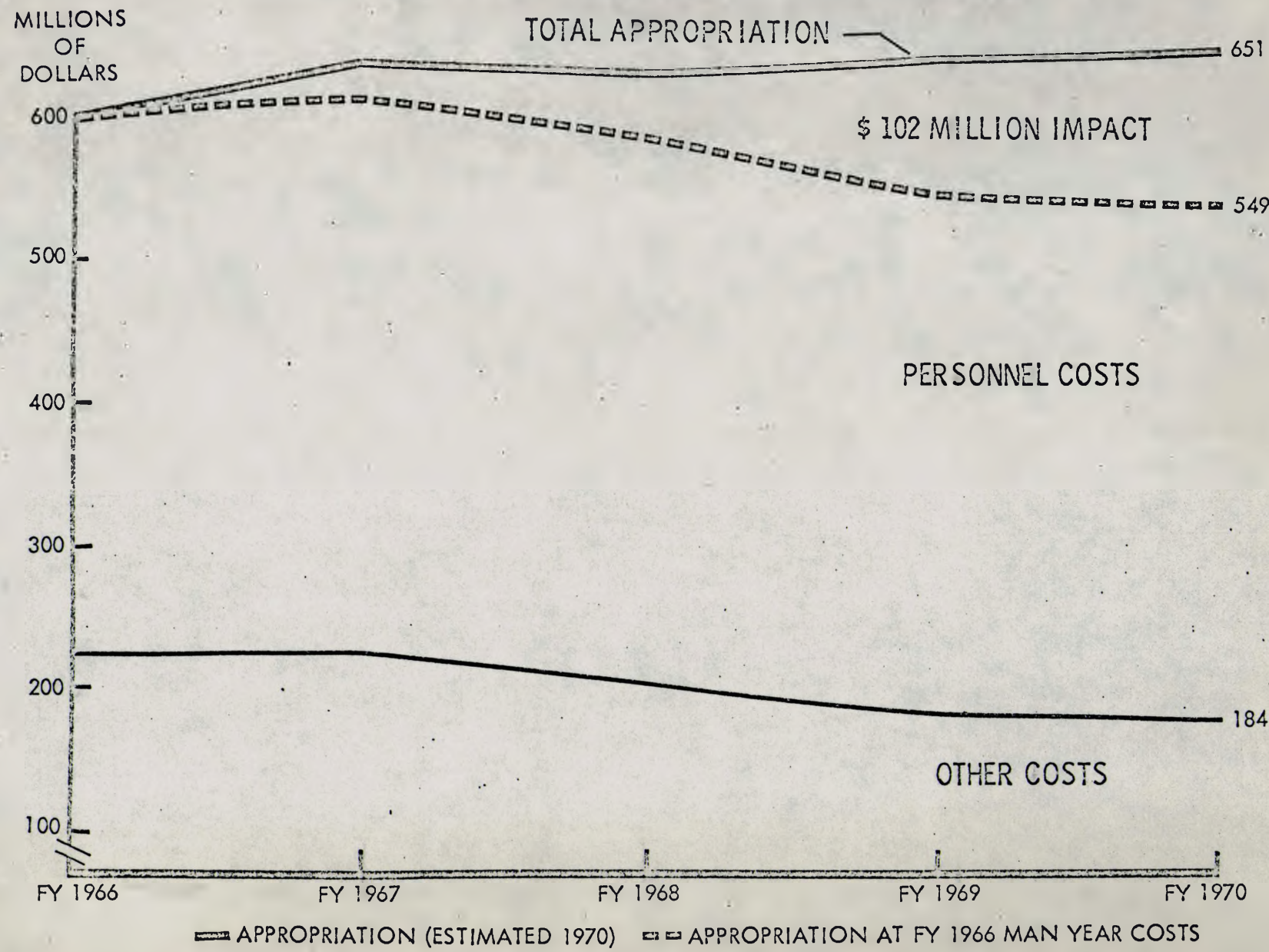
END OF YEAR PERMANENT POSITION



	NO.	PCT.
SCIENTISTS AND ENGINEERS	13,784	43.6
TECHNICIANS	8,536	27.0
MANAGEMENT & ADMINISTRATION	9,280	29.4
TOTAL	31,600	100.0

NATIONAL AERONAUTICS & SPACE ADMINISTRATION

IMPACT OF GOVERNMENT WIDE SALARY INCREASES ON THE "RESEARCH & PROGRAM MANAGEMENT" APPROPRIATION LEVELS



INSTALLATION SUMMARY
(Dollars in Thousands)

INSTALLATION	PRINCIPAL EFFORT	6/30/68 1/ PLANT VALUE	TOTAL VOLUME OF BUSINESS-FY 69	PERMANENT CIVIL SERVICE POSITIONS (END OF YEAR) FY 1968	FY 1969	FY 1970
Headquarters	Plans and provides executive direction and program support.	$ 10,210	$ 234,726	2,154	2,152	2,132
Kennedy Space Center	Launch Apollo and large unmanned spacecraft.	1,050,510	495,418	2,917	2,921	2,881
Manned Spacecraft Center	Apollo and Apollo Application missions.	420,873	1,184,436	4,604	4,383	4,303
Marshall Space Flight Center	Develop Saturn vehicles and Apollo Applications spacecraft.	945,573	785,373	6,440	5,981	5,851
Subtotal, Manned Space Flight		$2,416,961	$2,465,227	13,961	13,285	13,035
Ames Research Center	Biosatellites, V/STOL, aeronautics and human factors research.	226,711	87,283	2,083	1,974	1,956
Electronics Research Center	Research in electronics.	20,157	41,385	794	844	900
Flight Research Center	X-15, lifting body; aeronautics and space vehicle research.	42,819	28,745	566	539	534
Langley Research Center	Aeronautics, space vehicles research, basic research.	358,608	140,612	4,037	3,835	3,849
Lewis Research Center	Aeronautics, Centaur and Agena vehicles, and chemical and nuclear propulsion research.	385,733	186,850	4,452	4,235	4,195
Space Nuclear Propulsion Office	NERVA nuclear propulsion development.	49,852	32,259	108	100	99
Subtotal, Advanced Research and Technology		$1,083,880	$ 517,134	12,040	11,577	11,533
Goddard Space Flight Center	Application Satellites, Meteorological Satellites, Astronomical Observatories, Explorer Satellites, Delta vehicle and manned and unmanned tracking networks.	614,860	492,263	3,822	4,243	4,412
Jet Propulsion Laboratory	Mariner-Mars, deep space tracking network, lunar and deep space exploration and research.	182,975	150,763	(4,160)*	(3,794)*	(3,875)*
Wallops Station	Launch and track small experimental payloads.	103,388	17,407	494	488	488
Subtotal, Space Science and Applications		$ 901,223	$ 660,433	4,316	4,731	4,900
Grand Total		$4,412,274	$3,877,520	32,471	31,745	31,600

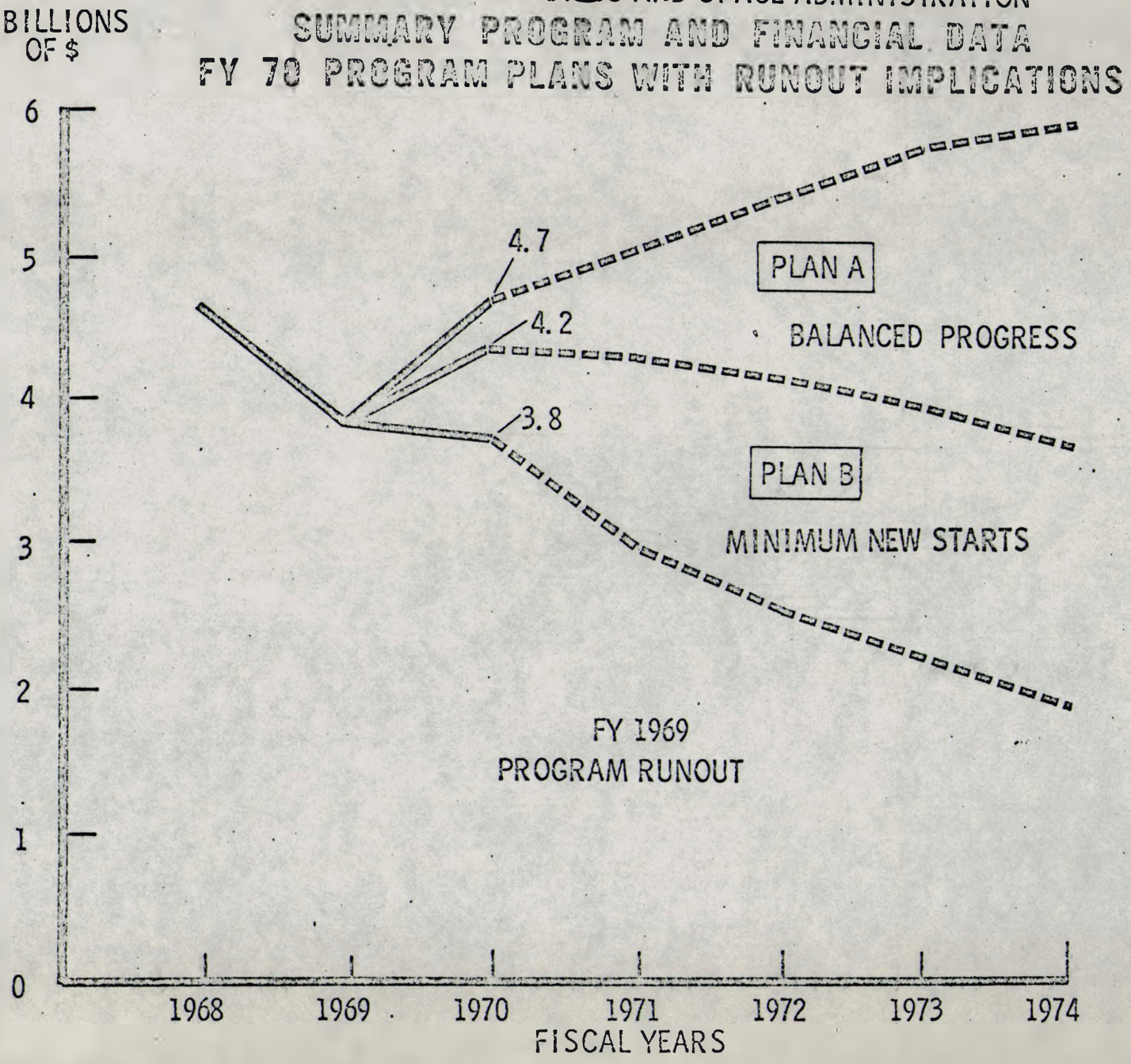
* Not included in totals

1/ Acquisition Value - Not Replacement Value

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

SUMMARY PROGRAM AND FINANCIAL DATA

FY 70 PROGRAM PLANS WITH RUNOUT IMPLICATIONS



National Aeronautics and Space Administration

SUMMARY PROGRAM AND FINANCIAL DATA
COMPARISON OF "A" BUDGET PLAN WITH FY 1970
BUDGET ALLOWANCE
(In Millions)

	"A" Budget Plan	Δ	Budget Allowance
Research and Development			
Apollo	1,675	-24	1,651
Post Apollo Programs	761	-404	357
Scientific Investigations in Space	540	-131	409
Space Applications	217	-68	149
Space Technology	255	-65	190
Aircraft Technology	137	-36	101
Supporting Activities	357	-45	312
Total, Research and Development	3,942	-773	3,169
Construction of Facilities	83	-25	58
Research and Program Management	672	-21	651
Total, NASA	4,697	-819	3,878

National Aeronautics and Space Administration

SUMMARY PROGRAM AND FINANCIAL DATA

MAJOR DECISION POSTPONEMENTS

Space Station

Lunar Exploration

Saturn V Production

OAO-D

Planetary Projects and Mission Studies

Aeronautics

Sustaining University Program

National Aeronautics and Space Administration

SUMMARY PROGRAM AND FINANCIAL DATA
COMPARISON OF FY 1970 BUDGET ALLOWANCE
WITH MINIMUM BUDGET LEVEL ("B" PLAN)
(in Millions)

	Budget Allowance	△	Minimum Budget Level
Research and Development			
Apollo	1,651	+24	1,675
Post Apollo Programs	357	+84	441
Scientific Investigations in Space	409	+27	436
Space Applications	149	+8	157
Space Technology	190	+8	198
Aircraft Technology	101	+24	125
Supporting Activities	312	+18	330
Total, Research and Development	3,169	+193	3,362
Construction of Facilities	58	+3	61
Research and Program Management	651	---	651
Total, NASA	3,878	+196	4,074

National Aeronautics and Space Administration

SUMMARY PROGRAM AND FINANCIAL DATA

MAJOR DECISIONS NEEDED

Space Station

Lunar Exploration

Saturn V Production

Planetary Projects and Mission Studies

National Aeronautics and Space Administration

SUMMARY PROGRAM AND FINANCIAL DATA
(In Millions)

	FY 1968	FY 1969	FY 1970
Research and Development			
Apollo	2,556	2,025	1,651
Post Apollo Programs	253	153	357
Scientific Investigations in Space	438	330	409
Space Applications	110	105	149
Space Technology	238	194	190
Aircraft Technology	81	95	101
Supporting Activities	291	292	312
Total, Research and Development	3,967	3,194	3,169
Construction of Facilities	33	36	58
Research and Program Management	639	648	651
Total, NASA	4,639	3,878	3,878

NATIONAL AERONAUTICS SPACE ADMINISTRATION

APOLLO AND POST APOLLO MANNED FLIGHT

PROGRAM

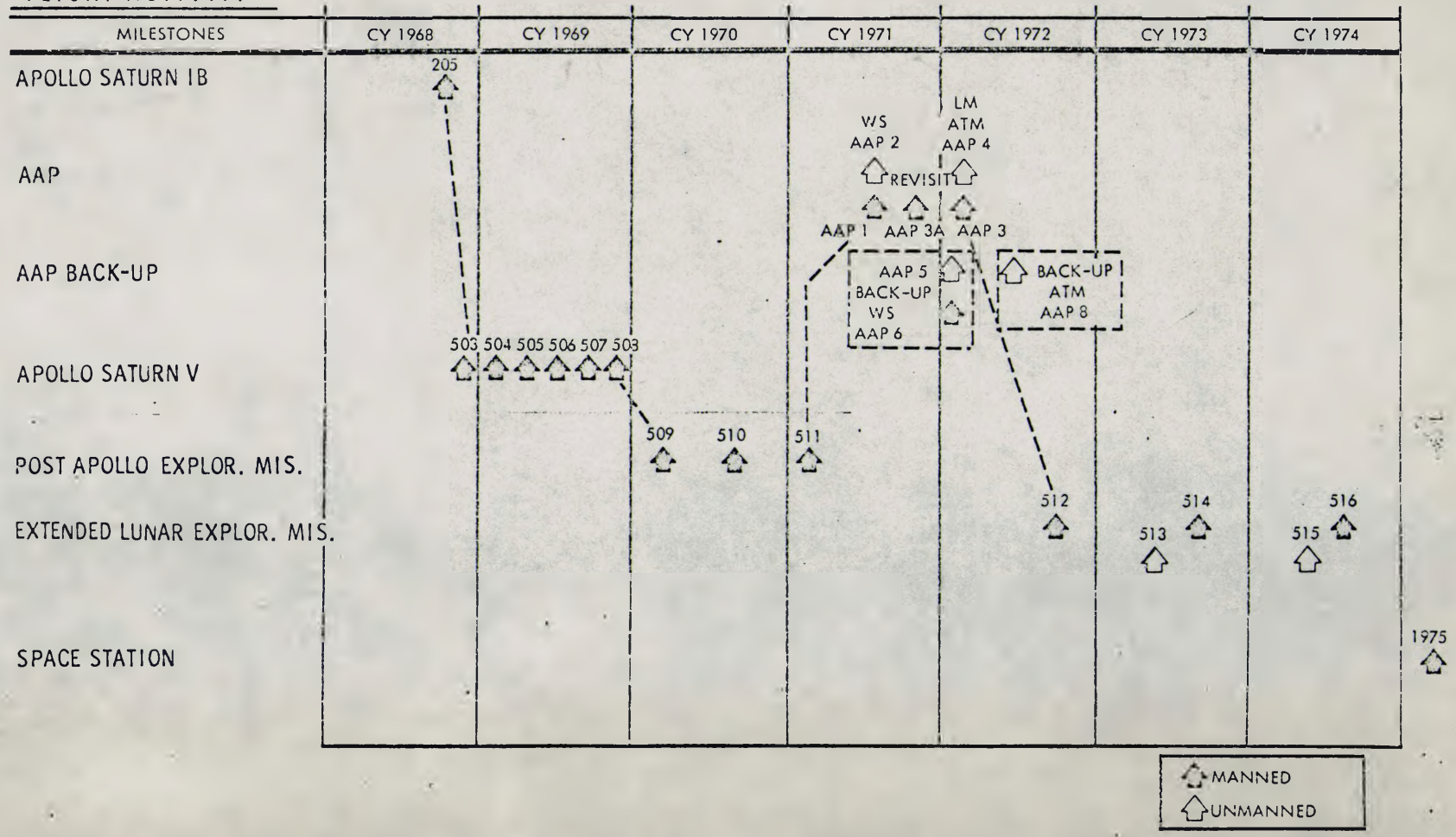
APOLLO

INCLUDES MAINLINE APOLLO PROGRAM AND MODEST INITIAL INVESTMENT FOR SCIENTIFIC EXPLORATION OF THE MOON AFTER THE FIRST MANNED LUNAR LANDING.

POST APOLLO PROGRAMS

INCLUDES SATURN I WORKSHOP AND REVISIT MISSION AND ATM SOLAR ASTRONOMY MISSION. ALSO INCLUDES DESIGN STUDIES AND SYSTEM, EXPERIMENT AND COMPONENT INVESTIGATIONS FOR A MULTI-PURPOSE LONG-DURATION SPACE STATION.

FLIGHT ACTIVITY



National Aeronautics and Space Administration

SCIENTIFIC INVESTIGATIONS IN SPACE

Physics and Astronomy

Includes program of ground based research, sounding rocket probes, orbital flights and deep space flights to increase our knowledge of the physical phenomena of the universe.

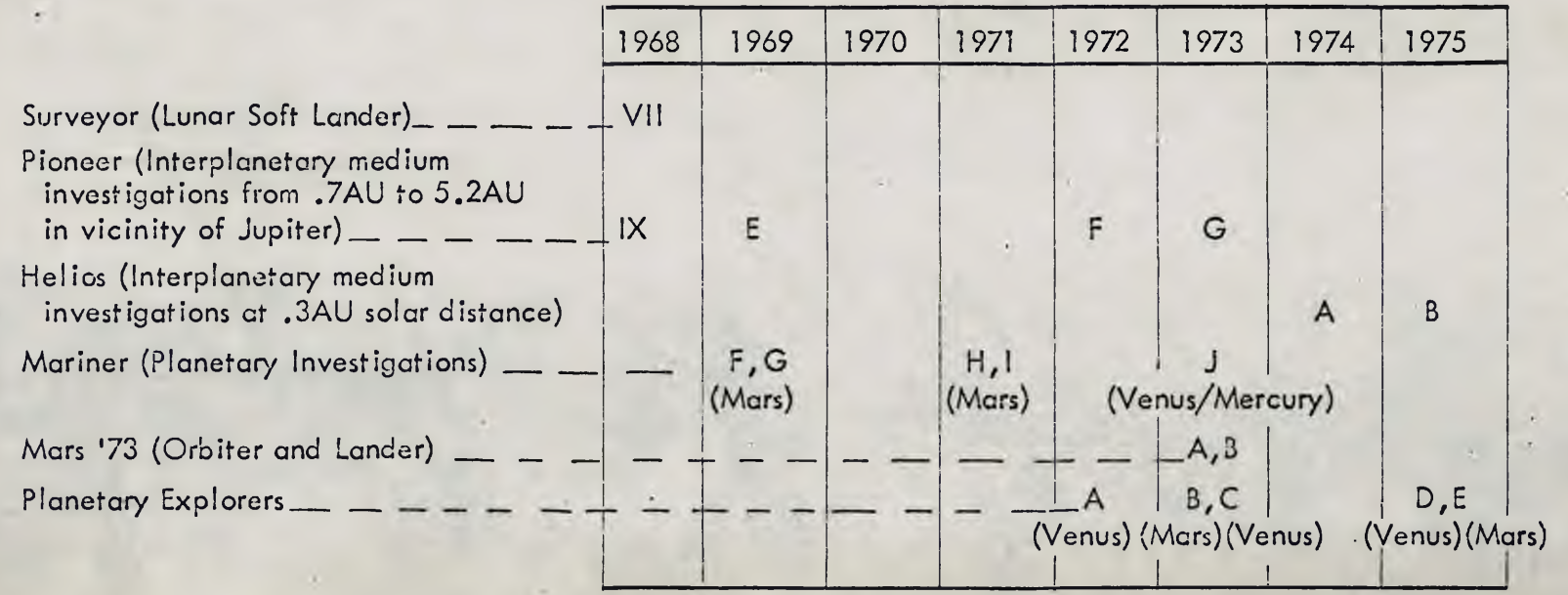
	1968	1969	1970	1971	1972	1973	1974	1975
Orbiting Solar Observatory		F/G		H		I	J	K
Orbiting Astronomical Observatory	A2	B		C				
Orbiting Geophysical Observatory	E	F						
Physics Explorers (Specifically designed small spacecraft for physical investigations)	2	3	7	5	5	4		
Astronomy Explorers (Specifically designed small spacecraft for astronomical investigations)	1		2	1		1	1	
Sounding Rockets (Suborbital investigations of physical phenomena and sensor development tests)	124	120	120	120	120	120	120	120

National Aeronautics and Space Administration

SCIENTIFIC INVESTIGATIONS IN SPACE

Lunar and Planetary Exploration

Includes unmanned spacecraft designed for exploration of the interplanetary medium and of the moon, Mars, Venus, Mercury, Jupiter, and the asteroid belt using fly-by, planetary orbit, and planetary lander modes of investigation.



National Aeronautics and Space Administration

SPACE APPLICATIONS

Includes development of spacecraft, components and systems for meteorological, technological, earth resources, geodetic, communication and navigation investigations aimed at eventual operational systems.

	1968	1969	1970	1971	1972	1973	1974
Tiros (R&D for operational meteorological satellite)		M					
Nimbus (Advanced meteorology sensor testing)	B	B2	D		E	F	
Synchronous Meteorological Satellite (Operational prototype)				A			
Cooperative Applications Satellite (Meteorological data gathering from balloon carried sensors)			A				
Meteorological Sounding Rockets	72	72	72	72	72	72	72
Applications Technology Satellite (Synchronous multi-purpose component test)	D	E			F		G
Geodetic Satellite	B		C				
Earth Resources Technology Satellite				A	B		

National Aeronautics and Space Administration

SCIENTIFIC INVESTIGATIONS IN SPACE

Bioscience

Includes investigations of the effects of space on biological organisms and of the origin, nature and distribution of life in the universe. The former investigations are conducted on Biosatellite spacecraft and with experiments included on manned missions; the latter with experiments included on manned flights and on planetary missions.

	1968	1969	1970	1971	1972	1973	1974
Biosatellite		D	F				

National Aeronautics and Space Administration

SCIENTIFIC INVESTIGATIONS IN SPACE

Launch Vehicle Development and Support

Includes launch vehicle procurement activities for unmanned flights which are not specifically chargeable to spacecraft missions, together with range support, launch operations, and maintenance engineering necessary to sustain and improve the performance of existing vehicles. FY 1970 activity includes the integration of the Centaur stage with the Titan III D Vehicle for use on planetary and other large unmanned missions.

National Aeronautics and Space Administration

SPACE TECHNOLOGY

Includes research for space vehicle systems, operations, and associated equipment; vehicle structures; auxiliary power; propulsion; life support technology; and electronic systems for control data acquisition, and communications. Includes development of the NERVA I nuclear rocket engine for high energy, high payload applications.

National Aeronautics and Space Administration

AIRCRAFT TECHNOLOGY

Advanced Research - Advance the state of the art in aerodynamics, propulsion, loads and structures, materials, avionics, human factors, flight dynamics, and operational environment.

Supporting Technology - Conduct research of particular importance to General Aviation. Resolve problems which have prevented full military and civil exploitation of VSTOL Aircraft (terminal operation, cruise flight efficiency, more efficient tilt-rotor and jet-flap rotor aircraft, propeller and jet STOL aircraft technology development, fan-in-wing VTOL aircraft). Subsonic Aircraft effort is directed toward improving safety, utility and efficiency, and reducing noise (Aircraft Noise Alleviation program and the Quiet Engine Project). The major effort in Supersonic Aircraft is to advance propulsion system technology and propulsion system airframe integration technology, including problems associated with the SST. Hypersonic Aircraft effort is directed toward establishing whether the theoretical advantages of flight in the hypersonic regime have practical application.

National Aeronautics and Space Administration

SUPPORTING ACTIVITIES

Tracking and Data Acquisition - Includes the operation of and equipment for the world-wide tracking and data acquisition networks, comprising twenty-six stations in fourteen countries.

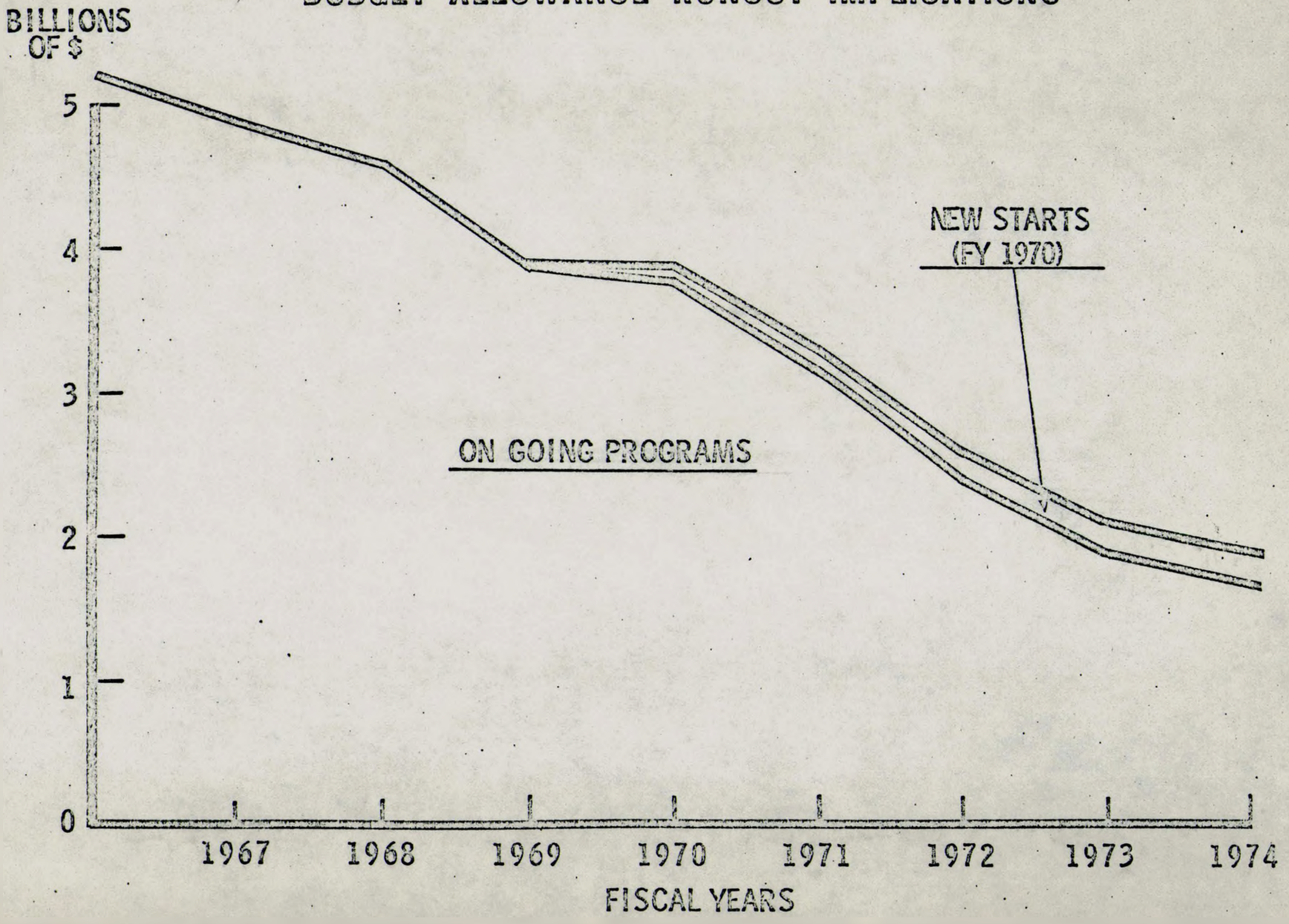
Sustaining University Program - Includes training grants awarded for graduate studies in specialized engineering and other fields, and multi-disciplinary research grants to universities.

Technology Utilization - Provides for the accelerated transfer into the economy of new advances in technology generated by NASA and NASA contractors.

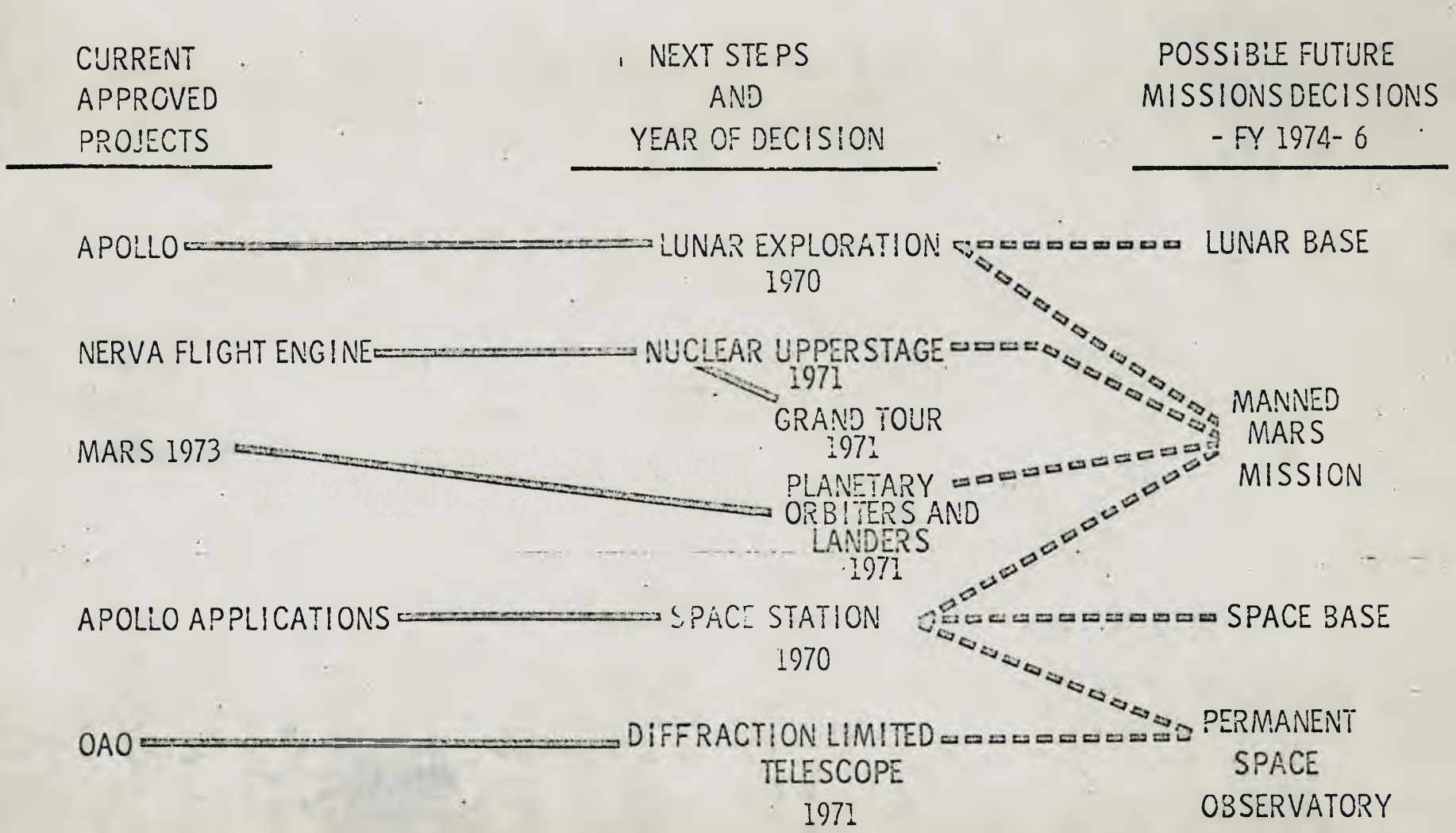
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

SUMMARY PROGRAM AND FINANCIAL DATA

BUDGET ALLOWANCE RUNOUT IMPLICATIONS

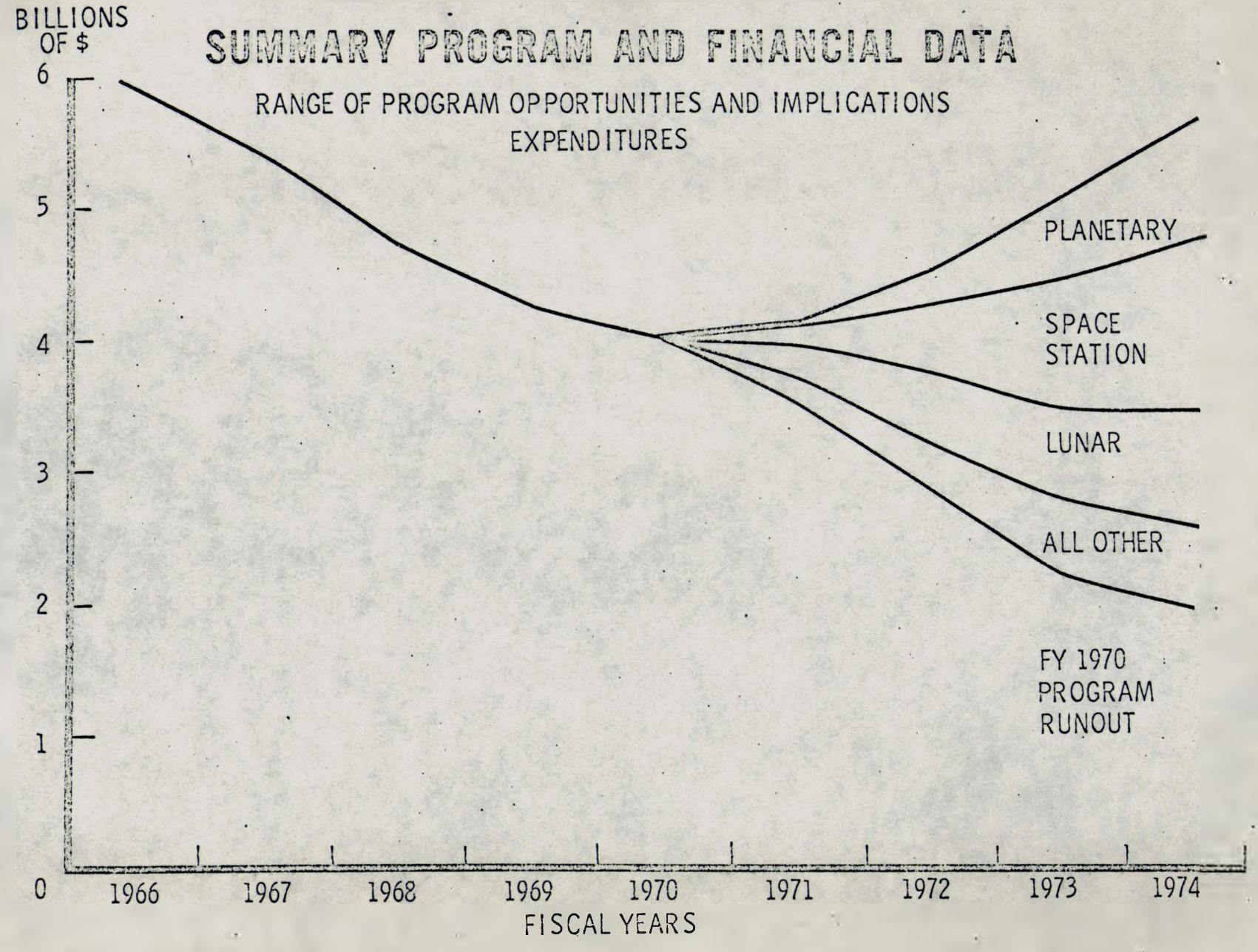


MAJOR SPACE PROJECTS



NATIONAL AREONAUTICS AND SPACE ADMINISTRATION

SUMMARY PROGRAM AND FINANCIAL DATA



National Aeronautics and Space Administration

NASA/DOD SPACE BUDGET VS GROSS NATIONAL PRODUCT
(Dollars in Billions)

Fiscal Year	Space Budget NASA	DOD	Total	GNP	Percent Of GNP
1959	$.2	$.5	$.7	$469.1	0.15
1960	.5	.5	1.0	495.2	0.20
1961	.9	.8	1.7	506.5	0.29
1962	1.8	1.3	3.1	542.1	0.57
1963	3.6	1.6	5.2	573.4	0.89
1964	5.0	1.6	6.6	612.2	1.08
1965	5.1	1.6	6.7	653.5	1.03
1966	5.1	1.7	6.8	718.7	0.93
1967	4.8	1.7	6.5	763.1	0.85
1968	4.5	1.9	6.4	861.0	0.74

National Aeronautics and Space Administration

SUMMARY PROGRAM AND FINANCIAL DATA
RESEARCH AND DEVELOPMENT
PROGRAM OFFICE PERCENTAGE OF PROGRAM PLAN BY FISCAL YEAR
(As of 12-31-68)

Office	1959/1963	1964	1965	1966	1967	1968	1969	1970
Manned Space Flight	52.9	68.4	69.2	70.8	72.3	70.9	68.3	63.5
Space Science and Applications	33.9	18.8	17.1	17.6	14.7	14.2	14.0	17.9
Advanced Research and Technology	8.4	8.0	7.8	6.4	6.5	7.9	8.9	9.2
Tracking and Data Acquisition	4.8	4.8	5.9	5.2	6.5	7.0	8.8	9.4
Total, Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Amount	4,791	3,978	4,285	4,490	4,176	3,967	3,194	3,169

A-4

NEWS

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON, D.C. 20546

TELS. WO 2-4155
WO 3-6925

FOR RELEASE: Upon release of
President's Budget Message
Noon EST Wednesday January 15, 1969

BUDGET BRIEFING TRANSCRIPT ATTACHED

Background Material

NASA FY 1970 Budget Briefing

HOLD FOR RELEASE AT 12:00 Noon EST Wednesday Jan. 15, 1969

NOTE: This statement relates to the Fiscal Year 1970 Budget and is subject to the same conditions. There should be no premature release of this statement nor should any of its contents be paraphrased or alluded to in earlier stories. There is a total embargo on the Budget until 12 o'clock Noon, Jan. 15, 1969, which includes any and all references to any material in the Budget or the Budget Appendix, or supporting statements.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

BUDGET PLAN SUMMARY

Budget Plan (Amounts for Actions Programmed):	(In thousands of dollars) FY 1968	FY 1969	FY 1970
Research and development.....	3,966,952	3,193,559	3,168,900
Construction of facilities.....	33,505	35,700	58,200
Research and program management a/.....	639,293	648,261	650,900
TOTAL - BUDGET PLAN.....	4,639,750	3,877,520	3,878,000
TOTAL - EXPENDITURES.....	4,723,673	4,249,700	3,950,000

FINANCING

New Obligational Authority			
Research and development.....	3,911,550	3,311,032	3,051,427
Construction of facilities.....	37,800	35,700	58,200
Research and program management a/.....	639,423	648,261	650,900
TOTAL - NOA.....	4,588,773	3,994,993	3,760,527
Application of Funds Withheld Under Public Law 90-364 Revenue and Expenditure Control Act of 1968.....			117,473
TOTAL - FINANCING.....			3,878,000

a/ Formerly titled "Administrative Operations."

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND DEVELOPMENT PROGRAMS

BUDGET PLAN

	(In thousands of dollars) FY 1968	FY 1969	FY 1970
MANNED SPACE FLIGHT	2,809,230	2,177,500	2,007,700
Apollo	2,556,030	2,025,000	1,651,100
Space flight operations	253,200	150,000	354,100
Advanced missions	---	2,500	2,500
SPACE SCIENCE AND APPLICATIONS	552,850	438,416	558,800
Physics and astronomy	139,500	125,116	119,600
Lunar and planetary exploration	147,500	81,800	146,800
Bioscience	41,800	32,700	32,400
Space applications	99,500	98,600	135,800
Launch vehicle procurement	124,550	100,200	124,200
ADVANCED RESEARCH AND TECHNOLOGY	315,022	285,171	290,400
Basic research	21,465	21,000	21,400
Space vehicle systems	34,100	31,700	30,000
Electronics systems	38,057	34,771	35,000
Human factor systems	19,828	19,700	23,600
Space power and electric propulsion systems	43,735	42,200	39,900
Nuclear rockets	54,000	32,000	36,500
Chemical propulsion	37,037	28,900	25,100
Aeronautical vehicles	66,800	74,900	78,900
TRACKING AND DATA ACQUISITION	275,850	279,672	298,000
UNIVERSITY AFFAIRS	10,000	9,000	9,000
Sustaining university program	10,000	9,000	9,000
TECHNOLOGY UTILIZATION	4,000	3,800	5,000
TOTAL	3,966,952	3,193,559	3,168,900

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

MANNED SPACE FLIGHT

BUDGET PLAN

	(In thousands of dollars) FY 1968	FY 1969	FY 1970
APOLLO	2,556,030	2,025,000	1,651,100
Spacecraft	1,034,700	902,800	653,800
Saturn V	853,965	534,453	496,700
Operations	545,765	546,400	489,600
Lunar exploration	---	---	11,000
Saturn IB	101,100	41,347	---
Engine development	20,500	---	---
SPACE FLIGHT OPERATIONS	253,200	150,000	354,100
Apollo applications	253,200	150,000	308,800
Space station	---	---	9,000
Operations	---	---	36,300
ADVANCED MISSIONS	---	2,500	2,500
Advanced mission studies	---	2,500	2,500
TOTAL MANNED SPACE FLIGHT	2,809,230	2,177,500	2,007,700

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

SPACE SCIENCE AND APPLICATIONS

BUDGET PLAN

	(In thousands of dollars) FY 1968	FY 1969	FY 1970
PHYSICS AND ASTRONOMY	139,500	125,116	119,600
Supporting research and technology/advanced studies	22,904	19,900	19,600
Solar observatories	11,332	12,000	14,800
Astronomical observatories	44,768	36,900	28,600
Geophysical observatories	20,064	13,200	6,800
Explorers	17,532	19,616	26,000
Sounding rockets	20,000	20,100	20,100
Data analysis	2,900	3,400	3,700
LUNAR AND PLANETARY EXPLORATION	147,500	81,800	146,800
Supporting research and technology/advanced studies	19,800	20,600	24,600
Data analysis	600	2,600	2,700
Pioneer	6,000	5,000	18,200
Mariner-Mars 1969	62,850	27,200	4,900
Mariner-Mars 1971	---	18,300	45,400
Viking	---	8,100	40,000
Mariner-Mercury 1973	---	---	3,000
Planetary explorers	---	---	8,000
Advanced planetary mission technology	12,000	---	---
Surveyor	33,000	---	---
Lunar orbiter	9,500	---	---
Mariner-Venus 1967	3,400	---	---
Voyager	350	---	---
BIOSCIENCE	41,800	32,700	32,400
Supporting research and technology	10,122	9,900	11,400
Planetary quarantine	1,678	1,300	3,000
Biosatellites	30,000	21,500	18,000

SPACE SCIENCE AND APPLICATIONS (Cont'd)

	FY 1968	FY 1969	FY 1970
SPACE APPLICATIONS.....	99,500	98,600	135,800
Supporting research and technology/advanced studies.....	19,300	19,600	22,400
TIROS/TOS improvements.....	9,100	5,800	5,200
Nimbus.....	33,700	31,800	29,200
Meteorological soundings.....	3,000	3,000	3,000
Cooperative applications satellite.....	100	100	100
Applications technology satellites.....	25,600	24,700	44,200
Geodetic satellites.....	3,400	2,400	3,000
Earth resources survey:	5,300	11,200	25,100
Aircraft program.....	(5,300)	(9,200)	(11,000)
Earth resources technology satellites.....	---	(2,000)	(14,100)
Synchronous meteorological satellites.....	---	---	3,600
LAUNCH VEHICLE PROCUREMENT.....	124,550	100,200	124,200
Supporting research and technology/advanced studies.....	4,350	4,000	4,000
Scout.....	10,200	12,600	15,700
Delta.....	33,696	24,000	33,700
Agena.....	7,999	11,900	7,300
Centaur.....	68,305	47,700	57,600
Titan III C.....	---	---	5,900
TOTAL SPACE SCIENCE AND APPLICATIONS.....	552,850	438,416	558,800

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

ADVANCED RESEARCH AND TECHNOLOGY

BUDGET PLAN

	(In thousands of dollars) FY 1968	FY 1969	FY 1970
BASIC RESEARCH (Supporting research and technology).....	21.465	21.000	21.400
SPACE VEHICLE SYSTEMS.....	34.100	31.700	30.000
Space vehicle aero-thermodynamics...	11,815	9,605	8,545
Space vehicle structures.....	9,779	9,771	8,980
Space environmental protection and control.....	10,754	10,550	9,105
Space vehicle design criteria.....	1,752	1,774	1,570
Aerospace safety research.....	---	---	1,800
ELECTRONICS SYSTEMS.....	38.057	34.771	35.000
Supporting research and technology..	37,557	34,271	35,000
Radio attenuation measurements.....	500	500	---
HUMAN FACTOR SYSTEMS.....	19.828	19.700	23.600
Supporting research and technology...	18,228	17,910	21,600
Biotechnology flight projects.....	1,600	1,790	2,000
SPACE POWER AND ELECTRIC PROPULSION SYSTEMS.....	43.735	42.200	39.900
Supporting research and technology..	34,885	35,700	34,400
Space electric rocket test (SERT)...	1,350	1,500	500
SNAP-8 development.....	7,500	5,000	5,000
NUCLEAR ROCKETS.....	54,000	32.000	36.500
Supporting research and technology..	12,500	6,000	8,000
NERVA.....	37,500	22,200	27,500
Nuclear rocket development station operations.....	4,000	3,800	1,000

ADVANCED RESEARCH AND TECHNOLOGY (Cont'd)

	(In thousands of dollars) FY 1968	FY 1969	FY 1970
CHEMICAL PROPULSION.....	37,037	28,900	25,100
Supporting research and technology..	17,587	17,400	14,000
Chemical rocket exp. engine.....	15,950	11,500	11,100
Large solid motor project.....	3,500	---	---
AERONAUTICAL VEHICLES.....	66,800	74,900	78,900
Advanced research.....	12,800	16,891	21,785
General aviation aircraft technology	450	535	500
V/STOL aircraft technology.....	7,057	8,740	11,250
Subsonic aircraft technology.....	7,905	17,046	16,190
Supersonic aircraft technology.....	24,050	21,893	20,900
Hypersonic aircraft technology.....	14,538	9,795	8,275
TOTAL ADVANCED RESEARCH AND TECHNOLOGY.....	315,022	285,171	290,400

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TRACKING AND DATA ACQUISITION

BUDGET PLAN

	(In thousands of dollars) FY 1968	FY 1969	FY 1970
TRACKING AND DATA ACQUISITION.....	275.850	279.672	298.000
Operations.....	211,483	226,950	239,400
Equipment.....	51,567	41,222	46,100
Supporting research and technology.....	12,800	11,500	12,500

SUSTAINING UNIVERSITY PROGRAM

SUSTAINING UNIVERSITY PROGRAM.....	10,000	9,000	9,000

TECHNOLOGY UTILIZATION

TECHNOLOGY UTILIZATION.....	4,000	3,800	5,000

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

CONSTRUCTION OF FACILITIES

BUDGET PLAN

INSTALLATIONS	(In thousands of dollars) FY 1968	FY 1969	FY 1970
MANNED SPACE FLIGHT.....	23.630	10,747	14.250
John F. Kennedy Space Center, NASA.....	21,632	9,014	12,500
Manned Spacecraft Center.....	750	1,333	1,750
Marshall Space Flight Center.....	823	---	---
Michoud Assembly Facility.....	425	400	---
SPACE SCIENCE AND APPLICATIONS.....	3.235	275	1.170
Goddard Space Flight Center.....	565	---	670
Jet Propulsion Laboratory.....	1,930	---	---
Wallops Station.....	740	275	500
ADVANCED RESEARCH AND TECHNOLOGY.....	5.285	386	12.855
Ames Research Center.....	3,170	386	---
Electronics Research Center.....	---	---	8,088
Langley Research Center.....	---	---	4,767
Lewis Research Center.....	2,115	---	---
VARIOUS LOCATIONS.....	---	23,292	26.425
FACILITY PLANNING AND DESIGN.....	1.355	1.000	3,500
TOTAL.....	33.505	35.700	58.200

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

FISCAL YEAR 1970 CONSTRUCTION OF FACILITIES PROGRAM

BUDGET PLAN

PROJECTS BY INSTALLATION	(In thousands of dollars) FY 1970
JOHN F. KENNEDY SPACE CENTER, NASA	12,500
Launch complexes 34 and 37	8,000
Manned spacecraft facilities modifications	1,000
Utility installations	3,300
High pressure gas maintenance operations facility	200
MANNED SPACECRAFT CENTER	1,750
Mission control center power generation facility	1,750
GODDARD SPACE FLIGHT CENTER	670
Fire protection and prevention modifications	670
WALLOPS STATION	500
Flight information control and analysis laboratory	500
ELECTRONICS RESEARCH CENTER	8,088
Computer/instrumentation research laboratory	6,962
Center support facilities III	1,126
LANGLEY RESEARCH CENTER	4,767
Aircraft noise reduction laboratory	4,767
VARIOUS LOCATIONS	26,425
Modification and rehabilitations at various locations	9,000
Space launch complex 2 modifications	425
Deep space antenna (210-foot) facilities	17,000
FACILITY PLANNING AND DESIGN	3,500
TOTAL	58,200

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND PROGRAM MANAGEMENT

BUDGET PLAN

INSTITUTIONAL DIRECTOR AND INSTALLATION	(In thousands of dollars) FY 1968	FY 1969	FY 1970
MANNED SPACE FLIGHT.....	315,098	312,028	307,450
John F. Kennedy Space Center, NASA.....	93,131	97,669	97,501
Manned Spacecraft Center.....	95,737	97,998	97,748
Marshall Space Flight Center.....	126,230	116,361	112,201
SPACE SCIENCE AND APPLICATIONS	77,073	82,510	88,053
Goddard Space Flight Center.....	68,305	73,490	79,024
Wallops Station.....	8,768	9,020	9,029
ADVANCED RESEARCH AND TECHNOLOGY...	189,059	193,924	195,600
Ames Research Center.....	33,781	34,036	34,050
Electronics Research Center.....	15,352	17,237	18,566
Flight Research Center.....	9,469	9,680	9,615
Langley Research Center.....	62,213	62,947	63,308
Lewis Research Center.....	66,222	67,845	68,061
Space Nuclear Propulsion Office..	2,022	2,179	2,000
NASA HEADQUARTERS.....	58,063	59,799	59,797
TOTAL.....	639,293	648,261	650,900

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

RESEARCH AND PROGRAM MANAGEMENT

TOTAL NUMBER OF PERMANENT POSITIONS

END OF YEAR

INSTITUTIONAL DIRECTOR AND INSTALLATION	FY 1968	FY 1969	FY 1970
MANNED SPACE FLIGHT.....	13,961	13,285	13,035
John F. Kennedy Space Center, NASA.....	2,917	2,921	2,881
Manned Spacecraft Center.....	4,604	4,383	4,303
Marshall Space Flight Center.....	6,440	5,981	5,851
SPACE SCIENCE AND APPLICATIONS.....	4,316	4,731	4,900
Goddard Space Flight Center.....	3,822	4,243	4,412
Wallops Station.....	494	488	488
ADVANCED RESEARCH AND TECHNOLOGY	12,040	11,577	11,533
Ames Research Center.....	2,083	1,974	1,956
Electronics Research Center.....	794	844	900
Flight Research Center.....	566	539	534
Langley Research Center.....	4,037	3,885	3,849
Lewis Research Center.....	4,452	4,235	4,195
Space Nuclear Propulsion Office...	108	100	99
NASA HEADQUARTERS	2,154	2,152	2,132
TOTAL.....	32,471	31,745	31,600

NEWS

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WASHINGTON, D.C. 20546

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FOR RELEASE: 4:30 p.m. EST
January 14, 1969
NOT FOR RELEASE UNTIL
THE PRESIDENT'S BUDGET
MESSAGE PRESENTED TO
CONGRESS 12:00 NOON
WEDNESDAY, JAN. 15, 1969

Participants

General Statement: Dr. Thomas O. Paine, Acting Administrator.

Review: William E. Lilly, Asst. Admin. for Administration.

Harold B. Finger, Assoc. Admin. for Organization/Management.

Dr. George E. Mueller, Assoc. Admin. for Manned Space Flight.

Dr. John E. Naugle, Assoc. Admin. for Space Science/Applications

James M. Beggs, Assoc. Admin. for Adv. Research & Technology.

Gerald M. Truszynski, Assoc. Admin. for Tracking/Data Acquisition.

Dr. Richard L. Lesher, Asst. Admin. for Technology Utilization.

Francis Smith, Asst. Admin. for University Affairs.

Milton Klein, Mgr., AEC-NASA Space Nuclear Propulsion Office.

Moderator: Julian Scheer, Asst. Admin. for Public Affairs.

SCHEER: Gentlemen, this is our annual briefing for the budget, FY 1970, of course, with hold for release until the President's budget message at noon tomorrow.

The format today will be an opening statement by Dr. Paine, NASA's Acting Administrator, a quick review of the figures you have in front of you by Bill Lilly, and then questions from the floor with all the program managers available here to answer questions as long as you desire.

Dr. Paine.

PAINE: I would like to open the meeting today with a short statement on the NASA FY 1970 budget.

President Johnson's FY 1970 budget is being presented against a backdrop of unprecedented achievements by NASA.

In the month of December NASA carried out the flawless Apollo 8 mission, in which men for the first time flew a quarter of a million miles into space to orbit the moon, while the whole world watched on TV by communications satellites. This gave a clear demonstration of the nation's developing total space flight capabilities.

NASA also launched in December its Orbiting Astronomical Observatory, the most complex unmanned satellite ever flown. OAO-II is opening up a whole new era for the science of astronomy as it explores the depth of the universe from outside the earth's atmosphere.

December also saw reimbursable launches of two working satellites -- a TIROS Operational Weather Satellite, TOS-F, and INTELSAT-III-B -- reminders that in the fields of meteorology and communications the Weather Bureau and the ComSat Corporation are routinely using satellites in their regular business.

Another reimbursable NASA launch in December was HEOS-A, the Highly Elliptical Orbiting Satellite for the European Space Research Organization -- which aptly exemplified American cooperation with other nations in the peaceful exploration of space.

It is against this record of achievement in these five successful launches in December that NASA moved into the next decade with President Johnson's FY 1970 budget.

Our FY 1970 budget estimates have been developed to maintain an austere but balanced NASA aeronautics and space program aimed at major program goals of high national priority. These goals for the next decade can be summarized briefly together with the provision that is made for each in President Johnson's FY 1970 budget:

1. Further development of practical space applications and increased understanding of the effects on earth of the space environment: The FY 1970 budget provides for continuing advances in space applications, including initiation of an experimental earth resources technology satellite. It also provides, at a somewhat reduced rate, for continuation of space sciences research on the space environment.

2. Follow-up first Apollo landing with a sound program of manned lunar exploration: The budget provides the funds required in FY 1970 to achieve a manned lunar landing and to conduct additional Apollo-type missions to the moon using hardware procured for the Apollo program. Limited provision is made for studies -- not for development -- of equipment required to achieve the longer lunar stay-times and mobility needed for future exploration of the moon.

3. Proceed with the orderly development and experimental operation of orbital space stations using advanced technology: The FY 1970 budget provides for proceeding with the Saturn I Workshop and Apollo Telescope missions as previously approved and now under way. It does not provide for work, other than studies and advanced technology, directed to a future Space Station.

4. Continue the exploration of deep space -- of the planets with unmanned probes, and of the stars from orbital observatories outside the atmosphere: The FY 1970 budget provides for proceeding with the previously approved Viking Project to land instruments on Mars in 1973, for initiating in FY 1970 a 1973 Mariner fly-by of Venus and Mercury, for a family of small planetary Explorers for orbiting Mars and Venus, for proceeding with previously approved Pioneer spacecraft to make preliminary observations of Jupiter, and for continuing current work on unmanned orbiting astronomical observatories.

5. Maintain the momentum of U.S. technological advance in aerospace disciplines: Advanced aerospace technology work will continue at approximately current levels. The NERVA project for development of a flight weight nuclear engine will be undertaken.

6. Develop the full potential of U.S. civil and military aeronautics: Work on aeronautics will continue at about current levels. Aircraft noise reduction will continue to receive emphasis, with provision made for constructing a special laboratory for research into the problems of jet noise.

In my opinion, the three most significant aspects of President Johnson's FY 1970 budget for NASA are:

1. If approved by Congress, the budget would halt a four-year downward trend in the NASA budget. Taking into account funds withheld in FY 1969 that will be available in FY 1970, the program level for FY 1970 will be $3.878 billion the same level as in the NASA FY 1969 operating plan.

2. The budget is austere, and does not make full use of the aerospace capabilities that the nation has developed in government, in industry, and in universities. However, the budget permits a balanced program of useful work in critical areas.

3. As a matter of policy, the budget leaves the major new program decisions, especially in the manned space flight area, for the next Administration. Early decisions are required on manned lunar exploration, on future space station development, and, after further studies are completed, on an unmanned expedition in 1977 or 1979 to the outer planets (Jupiter, Saturn, Uranus, and Neptune).

In summary, I would characterize President Johnson's FY 1970 budget for NASA as a "holding budget" that provides for progress, but defers critical program and funding decisions to the new Administration.

SCHEER: Before Bill Lilly goes through his work, I would like to point out that the Office of Public Affairs

will be asking for about $430 for a sound system during FY 1970 so we can hear what's going on in this auditorium.

Bill.

LILLY: All right. Before starting on the 1970, I thought I'd just quickly show the 1969.

May I have the first chart, please.

I think most of you are familiar with this -- our request of $4.370 billion, in which we were authorized slightly over $4 billion, and finally appropriated $3.995 billion.

Now, with the passage of the revenue and expenditure control act during that same period, the Bureau of the Budget withheld from apportionment $117.5 million and put it in reserve, with a small transfer to GSA for some leased space out at Goddard on the Glendale Road.

So we had an operating budget, as Dr. Paine mentioned, of $3,877.5 million.

Next chart, please.

Now, in summary -- and this just summarizes what you have got in front of you -- in the three appropriations, research and development, construction of facilities, and research and program management, a total budget plan of $3.878 billion.

You can see on the expenditures, although we have leveled off on the obligations plan, our expenditures will come down again in fiscal year 1970 from an estimate of $4.250 billion down to $3.950 billion.

I might mention that the one appropriation, research and program management, is a new title for what we called administrative operations in prior years. It is no change in content. We told Congress last year that we would change the title to be more descriptive of the work performed there.

Since it does pay for all of our people in NASA, the scientists and engineers, this represents about 70 per cent of our budget in that particular appropriation and funds their efforts in the research and program management that are conducted in those centers.

Next chart, please.

Now, in terms of the financing of that plan, just to look at the 1969 column, the appropriation for that year was $3.995 billion in 1969, and the withheld shown on the bottom, $117.5 million, to our operating plan of $3,877.5 million.

Now, in fiscal year 1970 we will be asking for new obligational authority of $3.760 billion, and with the application of the $117 million withheld this year it will give us a program plan or a budget of $3.878 billion at the same level as we had this year.

Next chart.

Now, just quickly, just what the trend has been since the creation of NASA. I think most of you are familiar with these. The numbers on the right that you can see have been our obligation authority appropriated by Congress and our request, the last item, and what the expenditures have been.

As Dr. Paine mentioned, this year if you look at the obligation authority, it does stop the downward trend which has been occurring since 1966.

You can see what the expenditures were, where we peaked in fiscal year 1966 at $5.9 billion, and this year it will be a $4.250 billion, and in 1970 down to $3.95 billion.

The curve over there just demonstrates the application of the authority and how the expenditures lag it. And also the leveling off on the obligational authority on that chart.

Now, I don't think that I will go into any more of the charts that you have unless there are some specific questions, and really you have got them in front of you, and you have had time to look at them, so at this point I will stop.

SCHEER: Questions?

QUESTION: I would like to ask Bill Klein exactly what the NERVA program will be able to do with the requested funds -- to what extent engine development really can be initiated -- in view of the fact that to do the same thing they asked for $60 million at the beginning of last year and only $36.5 million this year.

KLEIN: The budget in fiscal year 1970, the funding provided for NERVA in there, is essentially completely for the development of the flight-rated engine.

There are two factors that lead to the fact that the funding here is lower than it was in the request a year ago.

First, because of the reductions that were made in the course of the fiscal 1969 budgeting processes, there has been less progress made in the development of the engine, less resources, less effort in it, so we are at an earlier stage than we expected to be.

Secondly, there were reductions that reduced the program itself.

For example, the work in the testing of reactors and engines is coming to a temporary hiatus, so that there are reductions in test activities. There is a different mix of activities than we would have had, had we progressed on the program that was talked about a year ago.

Does that --

QUESTION: But you will initiate engine development?

KLEIN: This does provide for proceeding with engine development.

SCHEER: Bill?

QUESTION: Yes. I wonder if somebody could give us some idea of the level of flight operations in fiscal 1970, both manned and major unmanned flights.

NAUGLE: George Mueller says that I should say that there are five manned flights. And then I'll talk briefly to the major unmanned flights.

We will be launching what we call Nimbus B-II -- this is a replacement for Nimbus -- early in 1969, in April.

We have scheduled the second launch of OAO in 1969, and it will be late in 1969.

We have the final Orbiting Geophysical Observatory.

These are the major launches that are scheduled.

And we have an ATS-D scheduled in August.

Those are the major launches. There will be a number of Explorers along with that.

QUESTION: George, can you give us some details about what these five manned flights-- And I'm specifically talking about the period that begins next July 1.

MUELLER: Yes. Our basic program calls for continuing the Apollo flights to the moon until we carry out the manned lunar landing. And we have provided in this basic program for five manned flights per year as well as per fiscal year through the calendar year 1970.

The basic program plan to which we are working includes flights in 1970.

Of course, if we do carry out the manned lunar landing on an earlier mission, then we will have reached that major objective.

At the present time we are planning and we're going to request approval for a follow-on flight to the first manned lunar landing which will for the first time emplace the Apollo lunar experiment support package.

And our present planning would call for continuing the lunar landings on somewhere between three and four-month intervals until we have emplaced at least three of these ALSEP packages to provide for some seismic information of basic geophysical interest concerning the moon, plus samples from a variety of points on the surface.

QUESTION: Well, to recapitulate then, if you managed to make your landing on Apollo 11, then you would use Apollo 12 for your first ALSEP, and then Apollos 13, 14 and 15 would go along, and these would all be in fiscal 1970?

MUELLER: No, I would-- Well, they might be, but I think that they would run over into early fiscal 1971.

QUESTION: Well, your first answer was that there would be five manned flights in fiscal 1970?

MUELLER: Yes.

QUESTION: That's what I was asking about -- the number of manned flights in fiscal 1970.

MUELLER: That's what we are presently scheduled, and that's what we would want to carry forward, either four or five.

SCHEER: Maybe you want to talk in calendar years, because fiscal 1970 doesn't start until July. What Bill is saying is after Apollo 9, 10 and 11, how do you run out the rest of the flights?

QUESTION: No, what Bill was saying was what Bill just said. What are you going to do between the 1st of July and the 30th of the following June?

MUELLER: I say --

QUESTION: You have got five shots.

MUELLER: There are presently scheduled five shots. We may only fly four of them if we are successful in the manned lunar landing.

QUESTION: That five includes 11 or --

MUELLER: That includes 11.

QUESTION: Does that include anything called AAP now?

MUELLER: AAP does not begin until 1971 or late in 1971, so that there is no-- Calendar year 1971.

QUESTION: Could you give us a timetable for AAP, George, based on fiscal year 1970 budget, the amount you might fly and when the Space Station might --

MUELLER: The Space Station-- Our Workshop is scheduled for late 1971, the ATM for early 1972. And that is as close as I can run it at this moment. But that funding is in the budget.

QUESTION: One each?

MUELLER: One each, with backups, but no plan to fly them.

QUESTION: Does the $11 million listed for lunar exploration in here overlap any of the shots you have just talked about? Or is that for new equipment?

MUELLER: That is for modifications to the basic Apollo equipment to extend its stay-time on the lunar surface. That is, these are beyond the normal product improvements. These are the new things that we would want to do.

They don't represent, however, a lunar exploration program. They represent MODs for the basic Apollo equipment we have now bought.

There are not funds in here for anything other than studies concerning a follow-on lunar exploration equipment.

QUESTION: Will the three ALSEPS be in three different spots on the moon?

MUELLER: Yes.

QUESTION: You don't see an extended stay-time in any of these five flights you are talking about now?

MUELLER: No.

QUESTION: Since you have just said that you are not requesting any money in this budget for a follow-up program, and in the event that the new Administration does not ask, if no one asks, that such funds be put into the fiscal year 1970 program, so if there is no money in 1970, how long would you estimate it would take to get such a program going if the first funds were not made available until the 1971, fiscal 1971, budget? When would we be likely to see activity on the moon in the follow-on program?

MUELLER: Most of the programs that we would envisage, if they involve major new hardware, have about a three-year development time as the shortest time.

Now, in particular, extending the stay-time of the lunar module represents a modification to the basic lunar module and could be brought in somewhat earlier, but we really are talking about, for any real lunar exploration program, something like three years from the time you put money into it.

QUESTION: If this budget stands as you have requested it, we can expect after the fifth Apollo flight, the last of the five flights that you talked about, approximately a three-year hiatus of operations, manned operations, on the moon?

MUELLER: If there are no-- If we are not able to find funds to develop new equipment or if you make the decision not to continue to fly the present Apollo configuration. You know, you could fly more of the same Apollo flights to the lunar surface.

QUESTION: To follow that up, George, how long would it take you to reactivate the assembly line at New Orleans to start building some more Saturn 5's and to start building some more hardware of the same type, assuming that you are not going to make big modifications?

MUELLER: The Saturn 5 lead time is three and a half years. Now, of course, it is not shut down yet, but --

QUESTION: But you are not producing beyond Saturn 515, are you?

MUELLER: That is correct. And we are terminating the procurement of materials, which is the beginning of this three and a half-year time.

QUESTION: So if you use up all your Saturn 5's in fiscal 1970, is Carl Abraham correct that you would have now another three-year hiatus? It would be 1973 before you would be landing any more men on the moon?

MUELLER: Well, Bill, the Apollo numbering system has an inconsistency, so we have through 515 in Saturn 5's, but that involves going through Apollo 18, I believe, if you just go in sequence.

So there are three more beyond those five that are available. And depending on whether we fly four or five in 1970, fiscal 1970, fiscal 1970, you will have them somewhere between three and four in fiscal 1971 available for more flights.

And so it won't be a three and a half-year hiatus, but if we don't start we won't --

QUESTION: Or you could reduce your rate.

MUELLER: Sure.

QUESTION: Dr. Paine in his opening statement said that the fiscal 1970 budget provided for the initiation of an EROS experimental earth resources satellite. However, in the budget on page 5 I noticed that under the earth resources survey these figures are in parentheses and not included in the total monies available for space application.

SCHEER: I think you add those figures upward, don't you, John?

NAUGLE: Yes, you add those figures up. There's $14 million in the Space Applications budget for the earth resources technology satellites. That simply means you don't add those onto the figure of $25 million.

The $11 million and the $14.1 million add to the $25.1 million. That does include the earth resources technology satellite.

I would like to correct one serious omission I made when I listed the principal launches, and that is that we will be launching two Mariners, fly-by missions, early in 1969.

QUESTION: While you're up there --

SCHEER: Wait a minute. Let's wait for the mike if we can so everybody can hear.

QUESTION: On the manned flights planned in fiscal 1970, Dr. Mueller, what is the length of time, the longest length of time, you expect astronauts to stay on the lunar surface?

SCHEER: George?

Do you want to repeat the question?

MUELLER: Sorry.

QUESTION: What is the longest length of time you expect astronauts to stay on the lunar surface in these missions planned in FY 1970 to deposit these packages?

MUELLER: The maximum stay-time with the present lunar module is somewhere around 48 hours.

QUESTION: Nothing beyond that? Getting back to Carl Abraham's question, there's nothing beyond that 48 hours? No other capability is what I'm saying?

MUELLER: Let me say that that is our present estimate of the capability of the equipment we have.

Now, the constraint that we have, the basic constraint we have on stay-time on the lunar surface, is the super-critical helium storage bottles, and that will determine really how long we can operate on the lunar surface with this present mode.

We aren't quite sure nor are you able to test this on the ground. We believe that we will have some margin beyond the 48 hours in this super-critical helium storage. We will not, however, know that until after we have actually carried out the first lunar landing. So that really is the constraint.

QUESTION: I have a budget question. On page 1 of the breakdown you gave us, the third column under financing, it refers to $3.760 billion, which as I understand is the amount of money you will be asking Congress for. And you add to that $117 million which was subtracted from last year's budget. Am I correct so far?

LILLY: That's correct.

QUESTION: Right. Now, the total then comes out to approximately $3.8 billion compared to $3.9 billion in fiscal 1969. I am unable to square that with the statement on page 18 of this so-called little budget book which says down towards the bottom that among the reductions or decreases in the current budget will be $235 million, a $235 million decrease for NASA.

I'm sure it's clear to some, but not to me.

LILLY: All right. What they are referring to there is what they call the budget plan, the amount of money that you are allowed to obligate. They are mixing-- Well, I take that back. What they are talking about is the new obligational authority.

If you take the $3.995 billion --

QUESTION: Yes, in column 2?

LILLY: Column 2. -- subtract the $3.760 billion, that is a reduction of $235 million of requested obligational authority.

Now, in terms of the plan, the application of those funds, they are being phased to where we spend $3.878 in both years.

QUESTION: You don't mean "spend."

LILLY: Obligate.

QUESTION: So again referring to the item on page 18, you simply ignore the $117 million --

LILLY: Yes.

QUESTION: -- and you come out even?

LILLY: In terms of his request to Congress, that's correct.

SCHEER: Tom?

QUESTION: Dr. Paine, I wonder if you would address yourself to one question. If you had more money, in view of the unprecedented success of Apollo 8, et cetera -- the program seems to be going very well -- what besides the Space Station would be in this budget that we don't see there?

PAINE: Well, this is a very austere budget throughout, Tom. If we had the additional money, we would move on ahead far more rapidly into the Space Station.

And I should mention too that subsumed in that is the low-cost logistic shuttle for the Space Station.

When we talk Space Station, we mean the total system. Because it doesn't make much sense to have a Space Station if it costs too much to get up and back, and it doesn't make much sense to have a low-cost logistic shuttle if you don't have a place to go.

So these two are two very important programs which we lump under the Space Station system.

In addition to that, we would move ahead more rapidly in the lunar exploration area that George mentioned.

In addition to that, we would be getting started now on the so-called grand tour, the lineup of the planets in the 1977 to 1979 period.

These are some major areas.

Now, if we could get an additional increment of funds beyond that, we would certainly on a very high priority allocate more money to the aeronautics area both for the general aeronautics research area and also in the proof of concept area, which we feel is very badly starved in this austere budget, although we have put all we feel we can afford in there.

I believe these are some examples from the different areas of things that we would want to increase.

QUESTION: Under the Space Science and Applications, there are four line items I wanted to question. One is planetary Explorers, applications technology satellites, synchronous meteorological satellites, and earth resources. I was wondering what specifically are the spacecraft there being requested.

For example, would it be ATS-H and J? Is that part of that request? Which satellites or spacecraft actually are requested?

NAUGLE: Well, in the applications technology satellites we are requesting funds here for applications technology satellites F and G.

In the case of the planetary Explorers, these would be for small spin-stabilized satellites to orbit Mars and Venus. They would be similar to the A-IMP which we anchored around the moon.

In the case of the earth resources technology satellites, we are in the process of design studies now to select spacecraft and systems contractor for that, so I can't say, you know, that that would be an OGO or a TIROS class or anything like that.

We are looking at a number of systems to see which one we will actually choose.

QUESTION: I wonder if somebody could talk a bit about how far you expect this $11 million to get you on the Space Station studies and just exactly what kind of station you are looking at and what time period.

MUELLER: The $11 million includes both the Space Station itself-- And here we would hope to go through a Phase B study of the Space Station. And we include in that and will include in that also the space shuttle studies, and again we would hope that at the end of the period of time we have gone through a Phase B study on the space shuttle.

That means then that we would have completed our conceptual design by the end of this period and be in a position to move forward with the final design of the Space Station itself in Phase C, leading approximately a year later to a commitment to hardware, Phase D.

SCHEER: Bill?

QUESTION: For Dr. Paine. Taking into account the fact that you have only possibly seven, eight or nine years until you have to launch for the grand tour, and if you miss this opportunity you are something like 150 years before you can try it again, when will you actually have to make a go/no go decision on grand tour hardware? And what is that grand tour hardware likely to look like?

PAINE: It probably would be better if John Naugle were to answer that, Bill.

NAUGLE: There are several things that come in to answering your question. For one thing, we need information about the meteoroid belt that lies outside the orbit of Mars. We also need data about the environment of Jupiter.

As you know, Jupiter has a magnetosphere, high radiation levels.

Our thoughts or plans for that would be to use the Pioneer F and G mission which will fly in 1972 to give us that information.

I would say that we ought to begin to make some decisions on this in fiscal year 1971 -- I think is about the latest. Possibly fiscal year 1972. But it's in that time period that we need to be making some decisions on it.

QUESTION: And the other part of that question was: What sort of payload are you thinking of for this?

NAUGLE: At the present time we are looking at really a spectrum of payloads. You can take about, oh, a 1,600-lb. spacecraft and send it on that grand tour with a Titan III-D Centaur and a kick stage. That is sort of at the small side of the spacecraft launch vehicle that you would be using.

On the other hand, you could use a Saturn 5 with a nuclear stage and send a much heavier spacecraft on that mission.

So we are looking at both of those. And very clearly that's a major type of decision which the new Administration has to take up.

QUESTION: I'd like to follow up on this very point. If the Administration, new Administration, decides to go ahead with the grand tour and wants the bigger payload that requires the nuclear stage, does this present budget provide the kind of time schedule to have a flight-ready nuclear stage ready for the grand tour window?

NAUGLE: I think that I would defer to Klein.

SCHEER: Milt?

KLEIN: The present budget on NERVA is not specifically aimed at that kind of a mission at that time frame. Clearly, the efforts that we are embarked on on NERVA would lead to a flight qualified engine in the late 1970's, which is in the same ballpark as the time for this opportunity.

But I cannot say that this is specifically aimed at it or that we could meet it with this present budget.

QUESTION: Let me ask the question in a different way. If the decision were made in the next few months to have a grand tour mission with the heavy payload, would you recommend a supplemental for the NERVA program in FY 1970?

KLEIN: I suspect that to be sure that we could have a system that would meet a 1977 mission that some further work in the nuclear propulsion area would be necessary.

QUESTION: Under the space applications, what is your cooperative applications satellite where you have that $100 million?

NAUGLE: That is a cooperative satellite with France. It's a satellite in which you launch balloons into the atmosphere, and then you track these balloons with a satellite and recover data from it.

We call it the international applications satellite in last year's budget. We just changed the name of it. It's not a new project.

QUESTION: What's the target date for getting this synchronous meteorological satellite up?

NAUGLE: If it's authorized and approved by Congress, then we would look to late 1971 type of launch for it I believe is the schedule.

QUESTION: Would would be the runout cost on that satellite?

NAUGLE: Well, as I indicated earlier, we still are studying the type of spacecraft that we will use, and what we decide would of course affect the runout costs.

Now, we're thinking, oh, in the $40 to $50 million category for a two-launch project there.

QUESTION: What is your target date on the earth resources satellite to get it up?

NAUGLE: 1971 was the date.

QUESTION: On page 6 you have an item entitled "Aerospace Safety Research" which did not appear in either FY '68 or '69. Is this by any chance a rescue capability type study or design? And if not, what is it?

BEGGS: This was mentioned earlier. This was to establish an aerospace safety institute at the Lewis Center. The intent here is to build up a data base of safety information that we can use throughout NASA and also do a certain amount of research on safety problems that occur from time to time.

QUESTION: Will somebody give us just a little more detail than we have here on Mariner-Mercury 1973? Is this the swing-by past Venus? And what will be the characteristics of this probe?

NAUGLE: Yes, that is the fly-by where you use a single spacecraft to fly by Venus and then go on to Mercury, and it would be a Mariner class mission.

We haven't defined experimental payload yet, but I am quite sure that it would carry imaging devices on it so that we would get pictures of both Venus and Mercury as well as-- It would be really a continuation of the Mariner fly-by phase of planetary exploration for Venus and Mercury.

QUESTION: While you are up, John-- Give him the cost, and then I have one other.

QUESTION: What are the runout costs on Mariner-Mercury?

LILLY: $87 million.

QUESTION: And the other thing, on the grand tour, what would be the effective duration of that mission? About 20 years?

NAUGLE: No. I'm glad you started at that end, because the effective duration is about ten years. That is from the time of launch until the time you get out to Neptune. About ten years.

QUESTION: Do you have any cost ideas on that? Of course, it would depend-- What's the minimum cost?

NAUGLE: I'm not really prepared to give a minimum cost on that. It would vary over almost an order of magnitude I think depending upon which class of spacecraft launch vehicle you used and so on. We haven't studied it in detail to where I could give you a good --

QUESTION: I mean what kind of an order of magnitude? From ten to the eighth to ten to the ninth? Or ten to the ninth to ten to the tenth?

NAUGLE: I could say that you probably could do the Titan III-D Centaur class for under a billion dollars.

QUESTION: Then the other might be almost $10 billion to do?

NAUGLE: Well, no, I didn't say that.

QUESTION: You were the one that brought up orders of magnitude.

NAUGLE: Yes. Well, I'm not prepared to say how much that would cost.

QUESTION: Would somebody on page 3 of the budget as we have it break down the principal subdivisions for the $308 million for Apollo Applications?

MUELLER: Well, let me take a crack at it. You asked what the $308 million consisted of?

QUESTION: Yes, the principal divisions.

MUELLER: The principal parts are the workshop, the telescope, and the support to the Saturn 1. And there are about equal amounts.

LILLY: Your basic breakdown on it is in your total space vehicles, which includes your mods and so forth to your spacecraft and vehicles, which is $138 million, and the payloads and experiments that go with it are $170 million.

QUESTION: I didn't hear that.

MUELLER: $138 million for the space vehicle and $170 million for the experiments and the things -- the integration of it.

QUESTION: How does the $170 million break down between the telescope mount and the workshop?

MUELLER: Again roughly equally.

QUESTION: On page 7 of this budget under Aeronautical Vehicles, at last year's budget as I recall, the impression that I received was that this would be a very aeronautical-heavy fiscal year, that aeronautics was the coming thing and NASA was going to start aeronautics more than it had been in the past.

Now I see that according to this table the funding for hypersonic, supersonic, subsonic and general aviation are all down, and the only things that are up are V-STOL and advanced research.

I wonder if Mr. Beggs could discuss that a little bit and also break down advanced research in some detail.

SCHEER: Jim.

BEGGS: As Dr. Paine mentioned, there is a continuation of emphasis in one area in aeronautics, and that's in the noise area. We do intend to do that. There is, as you can see, an increase in the aeronautical vehicle budget of about $4 million.

The areas that we are attacking are the ones that would appear to us to require the most emphasis, and that is in the V-STOL area where there is very obvious need for some continued and some quick development in the V-STOL type of aircraft, where the market is obvious and the need for an entry into that field is very clear and where other nations are moving forward vigorously.

In the other areas we are attempting to continue the thrust that we have had in the past years, but they are not increasing.

As Dr. Paine said, it is an austere budget, and this was tailored to try to meet the problems that we see in the aeronautics field and to attack the one problem that we feel is very current and urgent.

The advanced research deals with the same things it has in past years, such as materials, technology, advanced studies of fluid dynamics effects in the supersonic area, and studies of some of the high-temperature kind of application for higher thrust engines.

QUESTION: Is most of this $5 million increase in one particular area?

BEGGS: Excuse me. Would you --

QUESTION: Is most of the increase from $17 million to about $22 million in one particular area under advanced research between fiscal 1969 and fiscal 1970?

BEGGS: No, it is spread pretty broadly throughout the disciplines.

QUESTION: Are there any plans for manned flights to the planets? Or have these been abandoned or left to the next Administration?

SCHEER: George?

MUELLER: Well, of course, there have been studies made of what would be required to carry out manned planetary expeditions. There are many studies made over several years now. There are no plans included in this budget for manned planetary exploration.

There are funds in the study area to update those studies that were made some now year or two years and three years ago.

SCHEER: Ev?

QUESTION: What accounts for the 20 per cent or so increase in human factors on page 6?

BEGGS: Many of the problems that we are expecting to encounter as we move into the area of the Space Station that George Mueller spoke of earlier are involved in the man-machine interface and the problem of long-duration life support in space.

And so a big part of that increase will go into research in that area, expanded research in that area.

There are also substantial increases in looking to the problem of noise, the way it is perceived by humans, the most objectionable parts of the noise spectrum to the human being, and how you measure this noise so that it relates to the human being.

There is also the problem, the continuing problem that has been with us for many years, and we intend to expand our work in the area of the man-machine relationship and the workload, pilot workload, in the aircraft field, which is becoming more and more important as the aircraft come into higher speed regimes and become more complex.

QUESTION: Three cost questions. Why do ATS-F and G-- Why is the program double in price? What would be the costs, total runout costs, on the EROS satellite, and what would be the cost of those planetary Explorers, the small IMP types that will be used to orbit Mars and Venus?

NAUGLE: The increase in cost of the applications technolcgy satellites is primarily associated with the fact that we are starting the heavy developmental work in FY 1970. We deferred some of the funding from FY 1969, and that's what that is primarily associated with.

And we gave the cost of the earth resources --

QUESTION: Not the total cost.

NAUGLE: $46 million including the launch vehicle.

QUESTION: $46 million?

NAUGLE: Yes.

QUESTION: What about the IMP types that will orbit Mars and Venus, the small Explorers?

NAUGLE: What is the runout on that? Do you have that?

For a five-shot series, including the launch vehicle, which would be the Delta, it's $133 million.

QUESTION: Delta is for EROS?

NAUGLE: We haven't selected the launch vehicle yet, although I'm quite sure it will be a Delta.

QUESTION: John, just one more. What is the difference between the two new ATS satellites and what we have seen so far in that series?

NAUGLE: Well, the major change, the major new experiment that we are adding to ATS-F and G, is this large antenna. We are putting on about a 30-foot antenna for communications experiments.

QUESTION: What happens to ATS-H and J?

NAUGLE: We have study work under way on those, and we plan the applications technology satellite as a continuing program. That's a kind of continuing platform in the geostationary orbit, just as Nimbus is a kind of continuing platform in the low-altitude polar orbit.

QUESTION: I wonder if somebody could rectify the figures on page 2 of your program with the figures on page 90 in the small blue budget book. They deal with the same subjects, but these figures are quite different.

LILLY: Reconcile them with what? With the small blue budget book?

QUESTION: The figures for space research and technology are quite different from yours on page 2.

LILLY: Okay. The numbers that you have on page 2 are the research and development costs. And these are by our budget line items.

Now, what this table on page 90 of the budget book, of the President's budget, does is it takes not only the R&D but also the construction of facilities and the research and program management appropriations, combines them, and places them by categories such as you see there -- manned space flight, space science, space application, et cetera.

I could give you the breakout, you know, to reconcile them back and forth, but it would be a lot of detail right now.

QUESTION: For John Naugle again, does the $3 million reduction for biosatellites reflect trimming of the two 21-day flights and are there any other unmanned biosatellite flights planned in the future besides the two primate missions?

NAUGLE: We did terminate the two 21-day biosatellite missions, and we have no other specific biosatellite missions in the FY 1970 budget.

Now, we will be looking at a number of other ways-- We are going to back off and really reexamine the objectives of the bioscience program and see what makes sense. We will be looking at possibly additional recoverable biosatellites. We'll be looking at sort of a bio Explorer in which you put experiments that you don't have to recover.

And then we will be looking to see how you can use the Space Station for bioscience research.

QUESTION: I have a two-point question, the first one for Milt Klein. What is the approximate present contractor level for NERVA in Aerojet, and will this budget reduce, increase, or maintain it at that level?

KLEIN: The Aerojet contractor personnel level will be down around, as I recall, something less than 600 at the end of this fiscal year. I don't remember the exact number, but it's something less than 600 as I recall.

This budget level will permit the retention of essentially that level with possibly some slight increase from that level.

QUESTION: Okay. The second question I had was on large solids. For the second year in a row there is no budget item there, but I gather you have got some left-over funds, and I would like somebody to explain how much money is left over and whether this too falls in the category of decisions that the new Administration will have to make.

BEGGS: There is about a million dollars in the budget for continuing the technology in the large solids. This is the same kind of work we have done for the past several years.

In addition, there is a $3.5 million item of carryover funds. So this means that the total level is about the same as it has been in the technology program, but there is no intent nor is there a program to go ahead with the fabrication of another large solid and fire it either in Florida or Georgia or any place else.

QUESTION: Well, as you exhaust these carryover funds, then, the time is fast approaching where decision has to be made?

BEGGS: Yes.

QUESTION: Under space applications again, it was just mentioned that there was some money in there for studies for ATS-H and J. I was wondering if there is any other seed money in that space applications request for, for example, advanced Nimbus satellites or any specific satellites that are in there as studies.

NAUGLE: Well, I think you have noticed that there is money in here for a synchronous meteorlogical satellite. Now, that is a new start in FY 1970.

We are looking at a number of other applications projects. There is a World Weather Watch program that is coming up. We have considered the possibility of using a small Scout-sized applications satellite in the Earth Resources program.

We will undoubtedly be looking at or we have consideration under way of, say, the next step in the operational satellite -- that is, what comes after TIROS M and that series of operational satellites.

But a great share of our R&D work will be conducted in the applications technology satellite and using it as a test bed and using the Nimbus series as a test bed.

QUESTION: How many satellites are in the EROS program? Is it one, two or three?

NAUGLE: Two.

SCHEER: Thank you.

(Whereupon, at 5:30 p.m., the press conference was concluded.)