

National Aeronautics & Space Adm.

1970

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Wednesday 11/18/70

NASA
MEETING
11/23/70
10:00

1:00

We have scheduled a meeting for Mr. Whitehead with Dr. Charyk and Mr. Acheson of Comsat to discuss the GAO report on the use of Cape Kennedy Facilities at 10:00 on Monday (11/23). (Steve is getting a copy of the report from GAO.)

Do you want anyone to sit in on the meeting?

Who knows anything about it?

Probably Steve

We have a copy —

copy given to Bruce Owen

Report filed in "Comsat" with note of meeting of 11/23/70.

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF TELECOMMUNICATIONS POLICY
WASHINGTON, D.C. 20504

Date: November 20, 1970

Subject: GAO Study of Comsat Launch Bills

To: Mr. Whitehead

The "Draft Report"* which GAO did at the request of Senator Gravel deals with the manner in which the Air Force charges NASA for Comsat launches. NASA passes these costs along to Comsat under various launch contracts. GAO did not investigate aspects of the NASA-Comsat relationship other than these Air Force charges.

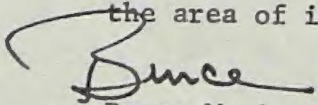
The GAO investigation revealed that Comsat has been undercharged about \$3 million for pre-F.Y.'69 flights of Intelsat I and II. However, GAO feels that these undercharges are not legally collectible from Comsat.

Similar undercharges of at least \$3.7 million were found for the first four flights of Intelsat III. GAO believes that these costs should be paid by Comsat, and that future launches should bear similar costs. If depreciation costs are added to the undercharges which GAO identifies, the underpayment during F.Y. 1969 may range up to \$4.5 million.

The principal basis for GAO's argument is that overhead expenses of the launch facilities were not apportioned correctly (or, in some cases, at all) to Comsat launches. The Air Force has not yet replied to this charge, and there is a possibility that a legitimate question about proper accounting procedure is present. There is, however, little doubt that some undercharge was made.

On the basis of our in-house analysis of Comsat's financial structure, it is unlikely that full payment by Comsat of the amounts involved now and in the future would significantly affect their overall cost and revenue requirement position. The order of magnitude of the impact would be between 2% and 5% of cost per circuit. This is well within the range of uncertainty of our estimates of costs.

The principal import of the issue would thus appear to be in the area of international politics.


Bruce M. Owen

* "Draft Report to the Congress...Review of Launch Charges for Launch Support Services Provided to the Communications Satellite Corporation..."
November, 1970.

DRAFT

FS-90

**DRAFT OF REPORT TO
THE CONGRESS OF THE UNITED STATES**

**REVIEW OF CHARGES FOR LAUNCH
SUPPORT SERVICES PROVIDED TO THE
COMMUNICATIONS SATELLITE CORPORATION**

**DEPARTMENT OF THE AIR FORCE
AND
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION**

NOTICE -- THIS DRAFT RESTRICTED TO OFFICIAL USE

This document is a *draft* of a proposed report of the General Accounting Office. It is subject to revision and is being made available solely to those having responsibilities concerning the subjects discussed for their review and comment to the General Accounting Office.

Recipients of this draft must not show or release its contents for purposes other than official review and comment under any circumstances. At all times it must be safeguarded to prevent premature publication or similar improper disclosure of the information contained therein.

**BY
THE COMPTROLLER GENERAL
OF THE UNITED STATES**

NOVEMBER 1970

DRAFT

EXECUTIVE OFFICE OF THE PRESIDENT

OFFICE OF TELECOMMUNICATIONS POLICY

WASHINGTON, D.C. 20504

OFFICE OF THE DIRECTOR

November 17, 1970

To: Tom Whitehead

From: George Mansur

We have also received a letter from Jim Beggs, DOT, on behalf of Secretary Volpe acknowledging receipt of our letters to Volpe. Beggs' letter designated Deputy Assistant Secretary Parker and FAA Associate Administrator Bakke to be the DOT point of contact with the working group and the letter also attached draft answers to our questions. His letter closes with the statement, "In the meantime, please do not hesitate to contact us for any further information you may require." I will acknowledge Beggs' letter.

November 18, 1970

Mr. George M. Low
Acting Administrator
National Aeronautics and Space
Administration
Washington, D. C. 20546

Dear Mr. Low:

Thank you for your letter of November 6, which transmitted the Memorandum of Understanding between the Department of Transportation and the National Aeronautics and Space Administration concerning aeronautical satellite programs. The Executive Office Working Group has had a very good response from both industry and Government agencies, and I would especially like to compliment NASA on its presentation.

As noted in my earlier letter to you, the Working Group expects to complete its preliminary work before the end of November and we shall keep you informed relative to the outcome. I am confident that our common objective is to provide the benefits of space technology to the aeronautical and maritime communities and that a mutually beneficial program will evolve from our collective efforts.

Sincerely,

Clay T. Whitehead

GMansur/tw
Subj File
Reading File
CTWhitehead ✓



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

WASHINGTON, D.C. 20546

NOV - 6 1970

OFFICE OF THE ADMINISTRATOR

Honorable Clay T. Whitehead
Director
Office of Telecommunications Policy
Executive Office of the President
Washington, D.C. 20504

Dear Dr. Whitehead:

A Memorandum of Understanding (MOU) executed between the Department of Transportation (DOT) and the National Aeronautics and Space Administration (NASA) on Satellite Systems for Aeronautical and Maritime Services is attached to this letter. The MOU, in my judgment, satisfies the early requirements for aviation communication improvements, demonstrates the L-band technology, establishes a preoperational system for communications and independent surveillance consistent with DOT/FAA requirements, and provides for international participation and cost sharing in a new space application. This MOU is our preferred way of meeting DOT and NASA objectives and the DOT/FAA requirements.

The most promising approach to the solution of projected aeronautical problems lies in the early application of satellite technology, initially using a VHF system to solve the communication problems and in parallel moving as rapidly as possible to L-band systems to solve the combined communication and surveillance requirements in the latter half of the 70's for both aeronautical and eventually for maritime use.

The rationale for this approach is as follows:

- A. The airlines and DOT/FAA have had experimental satellite communications experience at VHF beginning in 1966 with NASA Applications Technology Satellites (ATS) -1 and -3. Satellite-compatible VHF avionics have been developed and are available to solve the most immediate communication problems.
- B. Congestion in the VHF bands will ultimately lead to serious interference problems, whereas the aeronautical L-band region is relatively free of this difficulty. Because this is particularly true in Europe, there is strong opposition by European governments to any application of VHF in the Atlantic.
- C. The aeronautical L-band has a much greater bandwidth than VHF. In addition to providing the necessary communications capability for the increased air traffic requirements of the late 70's

and early 80's, this larger bandwidth can also accommodate shipping traffic.

- D. The accuracy required of independent surveillance compatible with future reduced lane and track separations anticipated for 1978-80 can be realized easily at L-band, but only with a network of calibration stations at VHF, yielding less reliability for substantial additional cost.
- E. The urgent need for additional communications services consisting of three voice channels in the Pacific beginning in 1973 could be met using existing satellite designs and VHF technology. This need has been expressed by the airlines and the FAA and supported by DOT and NASA.

Inclusion of some L-band capability in the Pacific in the 1973 time-scale will provide an opportunity for: (1) developing experience and confidence in L-band communications and surveillance at the earliest possible time necessary for further refinement of the characteristics of the preoperational system (there is, however, adequate definition of requirements and technology to proceed with the preoperational satellite design now); and (2) developing some of the operating procedures in surveillance and traffic control for use with preoperational and operational systems.

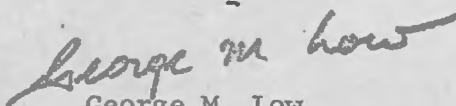
- F. In order to prepare for the anticipated operational requirement in the late 70's there is an urgent need to develop the necessary technology and to conduct systems experiments with L-band preoperational satellites. These satellites, incorporating this developed technology, must be available by about 1975 to provide experience appropriate to 1978-80 operational systems decisions.
- G. Early cooperative international participation in preoperational system experiments is desirable in order to:
 - (1) Establish a basis for the necessary international agreement in ICAO on characteristics of an operational system; and
 - (2) Achieve the benefit of cost sharing arrangements.

Use of the hybrid system in the Pacific shows an early commitment to L-band preoperational testing on the part of the United States. The cooperative international program will proceed concurrently with initiation of the hybrid system but toward a 1975 launch date, and will develop an L-band preoperational system consistent with DOT/FAA requirements.

The NASA support for a hybrid system in the Pacific is predicated on its integral relationship to the Atlantic preoperational systems experiment, since the hybrid mode is not otherwise required and would not be cost effective for the immediate communications requirement in the Pacific.

NASA, and, I am sure, DOT, will be pleased to work with you in formulating policy for satellite systems for aeronautical and future maritime services.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "George M. Low", with a stylized flourish at the end.

George M. Low
Acting Administrator

Attachment

MEMORANDUM OF UNDERSTANDING

Between

DOT AND NASA

Satellite Systems for Aeronautical and Maritime Services

An integrated DOT/FAA/NASA Program to develop improved communications and surveillance services for aeronautical and maritime use in the oceanic regions is hereby established.

The objectives of this program are:

1. To improve air-ground communications in oceanic areas.
2. To reduce aircraft separation standards in oceanic areas.
3. To provide digital communications capability for a wide range of services.
4. To provide for a foreseen requirement for independent surveillance for air traffic control in areas of high traffic density.
5. To provide for the currently evolving requirement for maritime communication, navigation and ship location.
6. To recognize the need for international cooperation in aeronautical satellite systems and take advantage of international interest and cost-sharing possibilities.

The need for improved communications and control for aircraft in the Pacific Region is immediate. The need in the Atlantic is

anticipated to be critical by 1975. The timetable for the maritime requirement is currently being developed. The most promising approach to the solution of these problems lies in the early application of satellites in conjunction with appropriate ground and user equipment.

To satisfy the above objectives and associated need dates, an integrated program has been developed by DOT/FAA/NASA. This program consists of two parts: (1) providing "hybrid" (VHF and L-band) satellite capability* in the Pacific, and (2) L-band satellite capability in the Atlantic.

The "hybrid" capability will be established over the Pacific in 1973 to provide:

1. The early communications services required.
2. Additional data on the relative performance of VHF and L-band under comparable conditions.
3. Early opportunity for DOT/FAA to develop and implement some of the operating procedures in aircraft communications and control for use in preoperational and operational systems, and to perform surveillance experiments.
4. Early opportunity for DOT/FAA and the airlines, both U. S. and international, to develop the avionics and ground equipment

*This could be provided by two satellites having both VHF and UHF equipment on the same platform or by four separate satellites, each carrying one of the two frequency band equipments.

required for use with L-band systems.

5. Experience and data for final design refinements to the preoperational system required by DOT/FAA.

In order to assure an adequate evaluation of such a system, it will be necessary, prior to the initiation of the program, to reach an agreement with the airlines regarding the extent of their participation and the number of aircraft which will be equipped with VHF and UHF capability.

The planned "hybrid" capabilities are:

	<u>VHF</u>	<u>L-band</u>
Channel Capacity	3 voice	1 voice, 1 surveillance
Effective Radiated Power	24 dbw/voice channel	38 dbw/voice channel
Coverage	Earth-disk, 1 db contour	8° circular, 3 db contour
Aircraft Antenna Gain	0 db	3 db
Link Reliability		99% nominal
Signal Quality		44 db-Hz worst case minimum
Life in Orbit		5 years
Launch Vehicle		Thor Delta

The hybrid satellite services will be funded by DOT/FAA with advice and assistance from NASA. NASA will be a cooperative experimenter with the hybrid. Maximum use will be made of ATS-5 and -F to support the testing where appropriate.

The L-band capability will provide over the Atlantic in about 1975 to:

1. Demonstrate effective L-band systems operation consistent with DOT/FAA needs.
2. Provide the additional communications capacity needed for the Atlantic region.
3. Provide additional systems experiments which are required prior to commitment to operational use of advanced technology.
4. Gain more extensive preoperational experience.

Advanced satellite technology will be used to meet the system objectives in a cooperative international program which will be developed by NASA and ESRO on behalf of the United States and Europe, respectively. For the United States, DOT/FAA will develop and provide avionics and air traffic control center equipment as part of its role in the program. DOT/FAA and European aviation authorities will participate in the program as cooperative experimenters.

The NASA/ESRO program will proceed concurrently with the initiation of the hybrid system, however directed toward a 1975 launch date, and will develop an L-band preoperational system consistent with DOT/FAA requirements noted below. This system will provide a significant increase in satellite capability over that intended for the earlier Pacific use. Two satellites are planned.

The capabilities of the L-band satellite will be maximized consistent with a Thor Delta launch vehicle and an early launch date.

The minimum target L-band satellite characteristics to be met in the NASA/ESRO program are:

Channel Capacity	4 voice channels plus surveillance
Coverage	Earth capability; coverage adaptable to traffic density needs
Aircraft Antenna Gain	3.5 db
Link Reliability	99% nominal
Signal Quality	45 db-Hz worst case minimum
Life in Orbit	5 years
Launch Vehicle	Thor Delta
Eclipse Capability	Surveillance only
Maximum Aircraft RF Power	500 watts maximum

In order for the operational system to provide the most economical service, it is highly desirable to increase the performance capabilities of the L-band satellites beyond the minimum target specifications listed, but remaining compatible with a Thor Delta launch vehicle and an early launch date. It appears that considerable performance improvement over the above minimum specifications can be accomplished by the application of high gain multiple-beam antenna technology, unfurlable solar arrays, and increased efficiency L-band transponders.

The system definition studies in the NASA/ESRO program will be directed to use the above technologies in maximizing the capabilities of the space segment unless design tradeoffs show them to be so technically or economically disadvantageous as to be unacceptable.

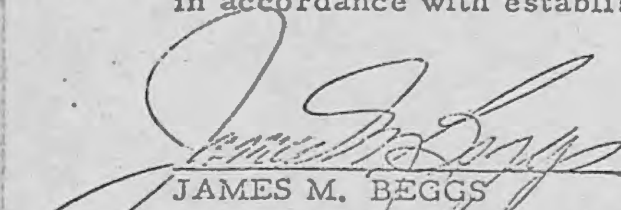
The preliminary cost-benefit analysis will be updated as traffic

projections are revised and as knowledge of user equipment cost is refined by L-band equipment development. This analysis will also be broadened to include potential additional benefits possible with extension of satellite services to shipping. This activity will be conducted by DOT/FAA with advice and assistance from NASA.

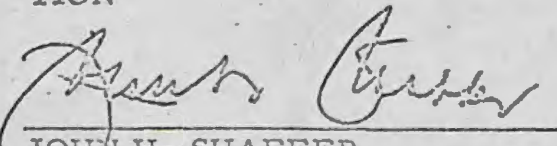
For the United States, the final specifications will be a joint DOT/FAA/NASA responsibility. NASA will proceed immediately to obtain agreement with ESRO on the above.

AGREEMENT

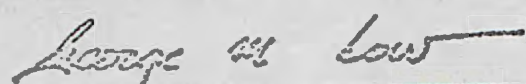
DOT/FAA and NASA agree that the integrated national program outlined herein is the preferred way to meet the objectives and requirements stated and is in the best interests of the United States. DOT/FAA and NASA agree to support this integrated plan according to detailed procedures which will be established consistent with the policies of both agencies. This plan is to be communicated to and coordinated with all appropriate national and international organizations in accordance with established U. S. policies and procedures.



JAMES M. BEGGS
UNDER SECRETARY,
DEPARTMENT OF TRANSPORTATION



JOHN H. SHAFFER,
ADMINISTRATOR, FEDERAL
AVIATION ADMINISTRATION



10-20-70
GEORGE LOW
ACTING ADMINISTRATOR, NATIONAL
AERONAUTICS AND SPACE ADMINISTRATION

Office of Telecommunications Policy
Route Slip

9 NOV 1970

To

~~Clay T. Whitehead~~

① ✓

~~George F. Mansur~~

② ✓

William Plummer

Wilfrid Dean

~~Steve Doyle~~

Walt Hinchman

Charles Joyce

William Lyons

Eva Daughtrey

Timmie White

Judy Morton (file)

REMARKS

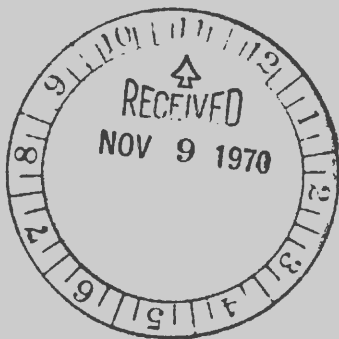
Do you want anyone else to see this?

NO

THE WHITE HOUSE
WASHINGTON

Date: 10/6/70

FOR Tom Whitehead
FROM Will Kriegsman
FYI.





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

NASA

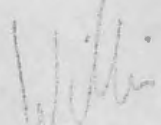
November 4, 1970

OFFICE OF THE ADMINISTRATOR

MEMORANDUM FOR: Mr. William E. Kriegsman
Executive Office of the President

Here is a copy, for your information, of a paper on the need and importance of a continuing program of manned space flight which we prepared in response to a personal request from Mr. George Shultz of OMB.

Copies have gone to Messrs. Weinberger, Rice, and David.


Willis H. Shapley
Associate Deputy Administrator

Enclosure

THE ROLE OF MANNED SPACE FLIGHT

This statement summarizes NASA's current thinking on the question of the need for and role of a continuing program of manned space flight. The reasons outlined below lead to the same conclusion reached by each responsible group that has studied this question from a broad technical and national point of view: Manned space flight is an essential part of a balanced space program and a necessary continuing activity of the United States.

The discussion will cover four main points:

- The role of manned space flight as a means for accomplishing objectives in space. This question is concerned with the relative capabilities and cost of manned, unmanned, and combined systems like the space shuttle--a manned system for placing unmanned satellites in orbit as well as for conducting manned missions.
- The importance of manned space flight to the United States as an end in itself. This question involves additional considerations such as the human values of manned exploration and the contributions of manned space flight to our national and international positions.
- The implications of a decision to discontinue U.S. manned space flight activities.
- The national posture on manned space flight contemplated in NASA's program for the 1970's.

Manned, Unmanned, and Combined Systems

Both manned and unmanned systems have made great contributions in the first twelve years of the space program. In the future a single combined system, the space shuttle, will provide the preferred means for economical accomplishment of both unmanned and manned missions.

Starting with small satellites with simple experiments, like Explorer I and Vanguard, unmanned systems have evolved into increasingly sophisticated and useful devices. Automated weather, communications, and scientific satellites have been most successful. Unmanned probes sent into deep space have sent back large amounts of information about other planets in the solar system. We have also learned a great deal about the moon from our unmanned Ranger, Surveyor, and Orbiter projects.

In the same period of time, our manned systems have also made major contributions to the exploration of space. In Project Mercury, we first learned about man's capabilities in space; in Gemini, man developed operational proficiency in space; and in Apollo, man first set foot on another body in space and, at the same time, gave us a clear demonstration that important results in science and in exploration can be achieved in manned space flight.

However, both manned and unmanned systems have been expensive. The basic reason is that each spacecraft and each launch vehicle has been used only once--it could not be reused. Also, all systems--manned and unmanned--have had to be designed and tested to extremely exacting standards; everything has had to work to avoid loss of the entire investment. Now, however, NASA's experience and research over the years with unmanned systems, manned systems,

and in aeronautics have come together in a new concept--the reusable manned space shuttle system--which will bring about a fundamental change in space operations and result in very substantial cost reductions, for both manned and unmanned missions.

The space shuttle combines into a single space transportation system the requirements for previous unmanned and manned systems. Unmanned satellites will be placed in orbit by the manned shuttle and later brought back from orbit by the shuttle for repair and reuse. Manned "sortie" missions in earth orbit of up to seven days can be conducted economically with the shuttle, with transportation costs no greater than unmanned missions. Larger space systems, such as those required for future lunar exploration or earth orbital space stations, can be delivered to orbit by the shuttle in modules for assembly and supply in space. The shuttle is not a "manned spacecraft"; it is a space transportation system.

Our detailed cost and use studies show that the cost of space shuttle missions will be less than our present unmanned missions. There are several reasons. The shuttle will be reusable, like an airplane, up to 100 times. Spacecraft and experiments will be cheaper because the size and weight constraints on payload design can be relaxed. The number of spacecraft and payloads to be procured will be reduced because the shuttle can bring them back from orbit for repair and reuse.

The space shuttle, therefore, will not only make the use of automated unmanned systems more efficient, but will also permit, without large extra cost, the use of manned operations when they offer important advantages.

Generally speaking, if a space mission can be defined in detail in advance, an automated system not requiring the presence of men can be

conceived that can do the job. But when the objectives cannot be fully defined in advance, as in the case of exploration, or when the required operations are exceedingly complex, as in the case of the operation and maintenance of a large space telescope, the presence in space of man with his unique intelligence and versatile physical capabilities can be an essential advantage.

Thus, while it is possible to conceive of complex unmanned systems which might do some of the operations performed on the moon by the Apollo astronauts, it is virtually impossible to conceive of practical systems that could accomplish many of the most important things, such as the discovery of unexpected features on the moon, the careful selection and documentation of lunar samples, and the reporting of conditions on the moon other than those measured directly by instruments selected in advance. Unmanned robot systems approaching the capabilities of the astronauts would also--through their complexity--tend to approach the manned systems in cost without ever equaling them in capability.

In earth orbital operations, many potential advantages can also be cited for manned systems--examples are the assembly, calibration, operation, and repair of complex scientific equipment; the recognition and prompt observation of transitory phenomenon; and the utilization of weightlessness in space for laboratory-type research in the physical and biological, and engineering sciences. However, a precise identification of the types of operations in earth orbit where man is essential, advantageous, not needed, or a hindrance, requires actual flight experience under conditions where

the crew can experiment over an extended period with a variety of scientific and other operations. A principal objective of the Skylab program is to provide this experience, while at the same time conducting major scientific and earth resources experiments.

Although there are some who question the worth of space stations at this time, there is also a body of scientific and engineering opinion today that a space station will be an important and extremely valuable next step in man's exploration and utilization of space. (In fact, today's support, by scientists, for the space station appears to be greater than their support for Apollo as little as two years ago!) With Skylab, we can extend our experience from two weeks to two months; we can test realistically man's contribution to science, applications, and engineering functions; and we can develop an understanding of our future options early enough to permit the rational, deliberate evolution of our programs.

At the same time, Skylab-borne experiments are of unique scientific and technical value in themselves. The Apollo Telescope Mount (ATM) will, because of its capability to use film, have data acquisition rates a million times higher than that of the automated Orbiting Solar Observatory; the ATM is therefore ideally suited for the very high resolution study of rapidly varying solar phenomena. The earth resources survey package will give us the first meaningful intercomparison of photographic, infrared, and microwave remote sensors to correlate with aircraft and ERTS experiments for determination of the next step in this exciting and relevant applications area. This package will also provide a spectral resolution far greater than the unmanned ERTS instruments.

In summary, Skylab is the next step in the manned exploration of space--an experimental manned space station with major tasks in astronomy and earth resources that will extend our knowledge of man's ability to live and work in space. And the development of the space shuttle will bring together what we now know as "unmanned" and "manned" missions into a single combined mode of operations. This combined mode will be a less costly and more effective space transportation system than both the unmanned and manned modes it will replace. It will permit manned missions in the future at a small fraction of the cost of present types of equipment. At the same time, its development can be fully justified on cost-effective bases for unmanned missions only, entirely apart from its use in future manned missions.

The Importance of Manned Space Flight to the United States

NASA's manned space flight program to date has been undertaken primarily to achieve and demonstrate United States leadership in science and technology. Apollo has also made significant contributions to lunar science and exploration and Skylab will carry many important experiments. But the intrinsic and potential values of manned space flight itself have been the driving considerations in the decisions to undertake and follow through with our manned space flight programs.

Because of the large costs involved, the question whether these values justify continuing our manned space flight activities has been repeatedly reexamined. All responsible groups which have considered this question,

including President Nixon's Space Task Group, the President's Science Advisory Committee, and Congressional committees have concluded that the nation should continue to support over the years a significant and useful program of manned space flight. The reasons are variously stated but come down to four principal points.

1. The demonstrated and potential utility of manned space flight in exploration, scientific research, and other space operations, as discussed above.

2. Acceptance of manned exploration of space as an important and continuing human goal in its own right, and agreement that the United States, as a great nation, should continue, over the years, to take a leading role in such exploration. As President Nixon's statement of March 7, 1970, put it:

"... From time immemorial, man has insisted on venturing into the unknown despite his inability to predict precisely the value of any given exploration. He has been willing to take risks, willing to be surprised, willing to adapt to new experiences. Man has come to feel that such quests are worthwhile in and of themselves--for they represent one way in which he expands his vision and expresses the human spirit. A great nation must always be an exploring nation if it wishes to remain great."

The general acceptance of manned exploration of space as a continuing goal has not implied and does not depend on a commitment to a specific future goal, like a manned mission to Mars. Present program plans include continued exploration of the moon with the remaining Apollo flights and exploration in earth orbit with Skylab, and envisage a future decision to resume exploration of the moon in the 1980's with a system using the NERVA engine. While both the Space Task Group report and the President's

statement mentioned manned flight to Mars as a future possibility, this is not a part of the program now planned. Under the program levels now projected by NASA for the rest of the 1970's, a decision to begin work on a manned mission to Mars could not be implemented until the 1980's or later.

3. Recognition of the unique contribution of manned space flight in projecting a positive image of the United States to the rest of the world. In the world situation as it can now be foreseen, manned space flight will continue to be the best and perhaps the only arena of worldwide interest where the United States can demonstrate at the same time technological strength, peaceful intentions, power without confrontation, and the openness of a free society. Even if the worldwide attention is less than the total preoccupation with Apollo 11 and 13, leadership groups all around the world will be watching the U.S. and the USSR closely. A continuing and progressive series of manned space flight accomplishments can continue to be an important factor in promoting a positive attitude toward the United States.

4. The possible future military potential of manned space flight. We cannot ignore the possibility that at some time in the near future the defense needs of the United States will require a manned space flight capability. Continuing an active and technologically advanced manned space flight program for exploration and other civilian purposes will ensure that we are prepared for such an eventuality.

Implications of Discontinuing Manned Space Flight

Termination of U.S. manned space flight activities by a conscious decision or by failure to provide adequate support to continue a balanced total program would mean--besides the loss of the benefits and advantages cited above--that for the indefinite future the Soviets would have manned operations in space as their exclusive domain.

There is no doubt that the USSR is pursuing manned space flight as a continuing major objective to which they are applying very substantial resources. The Soviets would undoubtedly exploit our withdrawal--contrasted with continuing highly visible progress on their part--as a major basis for humiliating the U.S. and the Free World system in the eyes of the world. Such a situation, in our view, is unacceptable to the United States, and is one which should not be permitted to come into being.

Posture on Manned Space Flight

Under present plans, U.S. manned space flight will be suspended after completion of the Skylab mission in 1973 until the first flights of the space shuttle system--suborbital test flights could start in 1975 and the first orbital flights in 1977. Termination of flights with Apollo hardware after four more Apollo lunar flights and Skylab has been forced by previous and current budget constraints. A decision, also for fiscal reasons, has been made to defer initiation of space station work beyond the study stage to a later time. The space shuttle system would be the only manned space flight program the United States would have under development for the future.

All considerations point to the central importance of carrying out Skylab and proceeding with the development of the space shuttle system.

In summary:

a. To forego Skylab would leave the United States without the data base for future manned mission decisions. It would have a powerful negative impact on astronomy and earth resources surveys. It would surrender to the USSR the option of having the first real space station in orbit. It would leave underdeveloped the desirable precedent of openly shared manned flight program scientific and technical results, a possibility currently underscored by the discussions in Moscow on the suggestion that the U.S. and USSR use common docking hardware in their orbital spacecraft.

b. The shuttle is clearly a necessary and worthwhile development for the long-term future of the space program--an economical and versatile launch system for both unmanned and manned missions. The shuttle is not a "manned spacecraft." It is a space transportation system.

c. Moving ahead now with the shuttle system is the best available way to end the post-Skylab hiatus in U.S. manned space flight; it does not require the establishment or acceptance of a new major mission goal in space.

d. It will provide a focus for halting the further erosion of U.S. aerospace capabilities which will otherwise occur.

e. It is essential for success in the effort NASA has undertaken, at the request of the President, to secure international participation in our future major space programs. The decision to defer the space station development leaves the shuttle as the only major focus of such cooperation. Without a clear U.S. decision to proceed with the space shuttle program, European interest in participation--now surprisingly strong--will evaporate.

f. The space shuttle will open up exciting new possibilities in the exploration of space; it will revolutionize our use of space in ways we cannot even imagine today. Because it will be cheaper to carry payloads into orbit, because it will be possible to bring them back, and because scientists, engineers and others who are not trained as astronauts will be able to fly in it, we will be able to do things in space that we would not even consider doing today.

SAME LETTER SENT TO:

Dr. Willis Shapley, Associate Deputy Admin., NASA
Mr. Richard Beam, Director, Office of Tel., DOT
Mr. Raymond A. Gilber, Deputy, NASC
Mr. David Solomon, Deputy Assistant to the Secy. of Defense (Telecommunications)
Ambassador Washburn, U.S. Delegation, INTERSAT Conf.

Comsat
nas

Mr. William K. Miller
Director
Office of Telecommunications
Department of State
Washington, D. C. 20520

26 OCT 1970


Dear Mr. Miller:

The Communications Satellite Act of 1962 requires that the President transmit a report to Congress in January of each year regarding significant developments and activities during the previous calendar year. The report includes an evaluation of those developments and accomplishments in terms of attaining the objectives of the Act, as well as recommendations for additional legislation or other Congressional action.

In order to afford the opportunity for careful preparation and review of the report, we are requesting that the Executive Departments and Agencies having responsibilities which may bear on commercial satellite communications submit their suggestions for material to be included in the report by November 20.

After submission of the information we contemplate preparing a draft report for comment by affected Departments and Agencies about December 10.

Sincerely,

JECOLE:dc
Mr. Doyle-2
Subj.
RE 

Stephen E. Doyle
Special Assistant to the Director

27 OCT 1970

Ch
pass

Mr. Dwight A. Ink
Assistant Director
Office of Management
and Budget
Executive Office of the President
Washington, D. C. 20503

Dear Mr. Ink:

With reference to your letter dated October 23rd to Mr. Whitehead concerning legislative changes to minimize requirements for annual reports, this Office concurs fully with the recommendations contained in the Space Council's memorandum to the Director of OMB dated June 30, 1970.

The Office of Telecommunications Policy believes it would be more efficient and fully consistent with the President's desires as set forth in his letter of May 25, 1970, to have the requirement for the President's report under the Comsat Act deleted and have added to the President's annual report on aeronautical and space activities a chapter dealing with OTP.

Sincerely,

Stephen E. Doyle
Special Assistant
to the Director

cc: Mr. Whitehead
Mr. Doyle

Mr. Cook

SDoyle:jm

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

OCT 23 1970

Honorable Clay T. Whitehead
Director, Office of
Telecommunications Policy
1800 G Street, N.W.
Washington, D. C. 20504

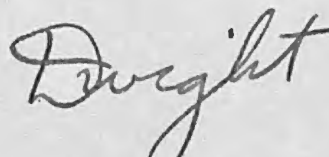
Dear Mr. Whitehead:

We have received the enclosed memorandum from the National Aeronautics and Space Council suggesting a possible saving by consolidation of reports.

The National Aeronautics and Space Administration has already commented (copy enclosed) favorably on this proposal as it relates to their reporting responsibilities.

As preparation of the reporting requirements in Section 404(a) of the Communications Satellite Act of 1962 were delegated to your Office under Section 9 of Executive Order 11536 of September 4, 1970, we would appreciate your comments on this suggestion for the possible consolidation of related reports.

Sincerely,



Dwight A. Ink
Assistant Director

Enclosures

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

OCT 23 1970

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Director, Office of
Telecommunications Policy
1800 G Street, N.W.
Washington, D. C. 20504

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Sincerely,

(Signed) Dwight

Dwight A. Ink
Assistant Director

Enclosures



EXECUTIVE OFFICE OF THE PRESIDENT
NATIONAL AERONAUTICS AND SPACE COUNCIL
WASHINGTON 20502

EXECUTIVE SECRETARY

June 30, 1970

MEMORANDUM FOR

Director, Bureau of the Budget

References: (1) President's letter, 25May1970
(2) BOB Circular No. A-44, Rev. 17Jun1970

Subject: Possible Saving by Consolidation of Reports

Although we estimate the saving to be no more than \$25,000 per year, relative efficiency might be served by consolidating related reports.

The National Aeronautics and Space Act of 1958, in Section 206, requires two reports. Paragraph (a) requires the semiannual report to Congress of NASA itself. Paragraph (b) requires the President to report to the Congress annually in January, "A comprehensive description of the programmed activities and the accomplishments of all agencies of the United States in the field of aeronautics and space activities during the preceding calendar year."

The Communications Satellite Act of 1962 requires, in Section 404(a), an annual report on activities and accomplishments under the Communications Satellite Act of 1962 by the President.

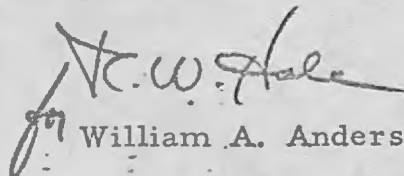
If it is considered advisable, the provision requiring a semiannual report by NASA to the Congress through the President might be revoked. The explanation is that NASA has a full opportunity to report its activities in the annual report of the President which has for some years given over an entire chapter to the activities of NASA alone.

The President's report on the activities and accomplishments under the Communications Satellite Act has been prepared in the past by the Office of Telecommunications Management, now the Office of Telecommunications Policy. Consideration might be given to

revoking the requirements for this report in the Communications Satellite Act and a chapter added to the President's annual report on aeronautics and space activities to provide adequate opportunity for the Director of Telecommunications Policy in that report. Thus, there would be one report by the President annually to cover all aeronautics and space activities.

The reorganization of the Executive Office of the President may make it necessary to consider carefully where the President's report on aeronautics and space activities, in the future, should be prepared and centered. Therefore, consideration of the above proposals should take place after the President's plan for reorganizing the Executive Office of the President has gone into effect.

It should be noted that the report for the Communications Satellite Act goes in the Congress to two different committees, not the Committee on Science and Astronautics. For this reason, the Director of Telecommunications Policy and the White House may decide that there are good reasons why this report should remain as it is, separate and different from those of aeronautics and space activities.


William A. Anders

Attachment

Reports to Congress by the President on Space and Aeronautics

cc: Mr. DeGennaro/NASA
Mr. J.R. O'Connell/OTP
Mr. Rhode/BOB

Reports to Congress by the President on space and aeronautics

NASA

"Semiannual Report to Congress"

National Aeronautics and Space Act of 1958 (PL 85-568, 72 Stat. 426--
Section 206(a).)

NASC

"Aeronautics and Space Report of the President, Transmitted to
the Congress"

National Aeronautics and Space Act of 1958 (PL 85-568, 72 Stat. 426--
Section 206(b).)

OTM (OTP)

"Annual Report on Activities and Accomplishments under the Communication
Satellite Act of 1962 -- Report by the President"

Communications Satellite Act of 1962 (PL 87-624, 76 Stat. 419--
Section 404(a).)



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

SEP 30 1970

REPLY TO
ATTN OF: D

Mr. Dwight A. Ink
Assistant Director for Executive Management
Office of Management and Budget
Washington, D.C. 20503

Dear Mr. Ink:

This is in response to your letter of August 3, 1970 in which you asked for NASA's comments on the suggestion from the National Aeronautics and Space Council that certain related reports dealing with space activities and accomplishments be consolidated.

We concur in the proposal to eliminate our semi-annual report to Congress and unless there is an objection, we will initiate the necessary action to have Section 206 of the National Aeronautics and Space Act of 1958 amended as part of our annual legislative review.

With regard to the President's report on activities and accomplishments under the Communications Satellite Act of 1962, we have no objection to the proposal to amend Section 404 of the Act.

We appreciate the opportunity to comment on these suggestions.

Sincerely,

A handwritten signature in cursive script, reading "Richard C. McGurdy", is written over the typed name.

Richard C. McGurdy
Associate Administrator for
Organization and Management

September 22, 1970

Dear Mr. Low:

We have followed with interest the development of NASA/FAA requirements for air traffic control utilizing satellite communication links. The Office of Telecommunications Policy shares your opinion that there is a great and largely undeveloped potential for satellite services for a broad class of users which, of course, includes civil and military aviation. In order to assure timely and useful development of satellite systems for these purposes, and to assure consistency with U.S. international policies and national security objectives, it is important to establish a definite statement of the Administration's policy in this area.

Since this is a responsibility of the new Office of Telecommunications Policy, we plan to begin immediately an Executive Office effort to formulate an Administration position concerning technical and institutional arrangements related to deployment of satellite communication and navigation systems. Although it is inappropriate for OTP to be part of the recently formed FAA/NASA group chaired by Mr. Bakke, we expect that group's conclusions will be an essential part of the broader effort by providing a definitive statement of FAA requirements and the rationale for proposed DOT and NASA programs.

I recognize the urgency of the ATC problem and its relation to fiscal planning and wish to assure you that our schedule will be compatible with OMB FY 72 budget reviews. Representatives of OST, DOS, NASC staff, and NSC will be involved in the Administration's policy review. George F. Mansur, who has been nominated to be Deputy Director of OTP, will be directing this activity. I would appreciate it if you could designate a NASA representative with whom Dr. Mansur can discuss NASA views.

We look forward to working with NASA in this activity and hope that our joint efforts will result in early deployment of a system(s) compatible with the needs of industry, FAA, and other Federal agencies.


Sincerely,

SIGNED

Clay T. Whitehead
Director

Honorable George M. Low
Acting Administrator
National Aeronautics and Space
Administration
Washington, D.C. 20546

cc: Clay T. Whitehead
Central Files
Col Olsson

GF Mansur/tw 

NASA

September 22, 1970

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We look forward to working with NAA in this activity and hope that our joint efforts will result in early deployment of a system(s) compatible with the needs of industry, FAA, and other Federal agencies.

Sincerely,

SIGNED

Clay T. Whitehead
Director

Honorable George M. Low
Acting Administrator
National Aeronautics and Space
Administration
Washington, D.C. 20546

cc: Clay T. Whitehead
Central Files
Col Olson

GR Mansur/tw

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

Office of the Administrator

July 28, 1970

Mr. Whitehead:

For your information, here is a note on Dr. Paine's meeting with Senator Gravel yesterday.

When you have a chance, I would like to talk to you about this.



Willis H. Shapley
Associate Deputy Administrator

Enclosure



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

OFFICE OF THE ADMINISTRATOR

July 28, 1970

MEMORANDUM FOR THE RECORD

SUBJECT: Senator Gravel's Meeting with Dr. Paine, July 27, 1970

Dr. Paine met with Senator Gravel at his request yesterday afternoon.

The Senator discussed his interest in the space program, his decision to move from the Interior to the Space Committee, and his special long-term interest in satellite communications for Alaska. His approach was low key, in contrast to that of his staff man (Mr. Hamel) at an earlier meeting with NASA staff. He was frank about his political interests in getting on the Space Committee from a seniority standpoint and was mildly critical of how fast the present State Administration in Alaska was moving on communications matters.

Dr. Paine and others from NASA discussed the present NASA program in general terms. Among other things we explained that the ATS F&G program was primarily a vehicle for technical experimentation and that its well publicized planned later use by the Government of India for experimental TV broadcasts to Indian villages was a secondary "spin-off" use. Dr. Paine told Senator Gravel that NASA was in the process of taking a new look at the various technical options for experimental and follow-on operational satellite communications for Alaska. He said the report could cover the options suggested by Senator Gravel's staff, e.g., possible Alaskan participation in the Canadian domestic system. Dr. Paine said the study should be completed in about three weeks and offered to make the results of this study available to Senator Gravel at that time. Senator Gravel checked his calendar and suggested that September 1 might be a better date for him and this was agreed to.

Dr. Paine pointed out that NASA could take the leadership on experimental aspects of communications satellites but that other agencies (e.g., Mr. Whitehead's new office and the FCC) were directly concerned in both experimental and operational aspects. He indicated that NASA would assemble the technical picture on various options and identify some of the problems concerned with each but that many of the key problems (frequencies, ownership, financing, etc.) were properly under the jurisdiction of other agencies. Dr. Paine stressed the fundamental necessity that the

Alaskans themselves define and assess their own needs and understand the economic and cost implications of any decisions they might make.

The fact that NASA had the obligation to and would continue to work with the State Administration in Alaska was mentioned. While nothing specific was said one way or another, we avoided the implication that the report NASA is preparing is exclusively for Senator Gravel. Our plan is to make it generally available, after internal review, to all interested parties after discussions with Mr. Whitehead and any others he may suggest.

(Signed) Willis H. Shapley

Willis H. Shapley
Associate Deputy Administrator

NASA

Monday 7/13/70

7:30 The Apollo 11 liftoff was July 16th -- moon landing, July 20th, 1969.

NASA

June 5, 1970

To: Central Files

From: Tom Whitehead's office

Attached are the files you pulled for us some time ago; we appreciated your digging them up for us.

Thanks very much.

Files re the NASA budget and meetings with the President.

*Only
partial
list*

March 30, 1970

Materials being returned to Central Files:

May 19, 1969 Memorandum for the Secretary of State
from the President re launch services for the proposed
Canadian domestic communications satellites on a bilateral
cost-reimbursed basis. (and other related materials)

Materials re Space budget --

9/11 memo to Haldeman from Dwight Chapin

8/7/69 memo to Haldeman from Stephen Bull attaching

8/7/69 memo to President fm. Robert Mayo, Director, BOB

8/8/69 Original memo to Pres. fm. Mayo -- Action Memo with note

8/9 "This was covered orally with the President"

9/25/69 Memo to Bryce Harlow fm. Toner re ICC reorg. plan and
NaSA authorization bill

2/4/69 Memo to DuBridge fm. Nixon re space

2/13/69 Memo for VP, Secy. Def., NASA, Science Adviser fm. Nixon re space

2/15/69 Memo to NASA fm. Nixon re NASA activities

2/24/69 Memo to Ehrlichman fm. Bud Wilkinson

Summary of Central Files
Presidential Documents on
NASA Program

Ellsworth memo *ASG NASA* *ASF*

- 1) Memos to DuBridge of February 4 and 6 on Burns recommendations (drafted by Burns)--asks for assessment by February 10 of Burns suggestions [no copy in files] that cost of "launching and boosting operations" can be significantly cut and that interagency committee (later STG) be convened on "scope and direction of Post Apollo Space Program."
- 2) Memo to Vice President, Laird, Paine, and DuBridge of February 13 on STG convening (drafted by DuBridge)--asks for a "coordinated program and budget proposal" with Vice President chairing effort, Science Advisor as staff officer and coordinator of staff studies, and consultation with other agencies, "the scientific, engineering, and industrial communities, . . . the Congress and the public."
- 3) Memo to Paine of February 15 (17?) on future space program (drafted by President)--thanks Paine for memo of Feb. 4 on urgency of deciding future program [no copy in files] and asks him to work through STG, with day-to-day contacts through DuBridge and Ellsworth, but to prepare statement on SU space threat and US opportunities for President and STG.
- 4) Memos relating to NASA FY 70 budget supplemental
 - a) Memo from Paine of Feb. 26 on opportunities in manned space flight--argues that last Administration "built in a period of low accomplishment" in the manned space program and that in the 69-70 period, perhaps "this summer," the Soviets would make a "major thrust" toward a "large-scale long-duration space station" and a booster of the Saturn V class "or larger." Urges an immediate "general directive to define the future goals of manned space flight," specifically "a permanent space station--a National Research Center in earth orbit," even before STG report and warns that without FY 70 budget supplements President would face "the foreclosure of your option to move ahead promptly with a strong manned space flight program if that should be your decision" in the FY 71 budget, calls for three FY 70 supplements: (1) additional Apollo scientific equipment so program can move at high flight rate, (2) space station money for detailed planning and long lead-time subsystems, and (3) Saturn V dollars that "will permit production to be resumed at a very low rate, before 'start up' costs

become excessive." The alternatives to item (3) are to have Saturn V's "launched on schedules stretched out to clearly uneconomical rates, rates which may be below the minimum for reliability and safety" and to put the United States into the "untenable position of having discontinued production of our largest space booster at a time when the Soviets are expected to unveil a booster of this class or larger." This money will not reduce the President's options: "This amendment will not preclude other future decisions on large launch vehicles that might be made next fall."

- b) Memo from Mayo of March 3 on NASA budget proposal--urges ~~no~~ Presidential endorsement of space objectives until after STG report and BOB review in total budget context and urges postponement of action on FY 70 NASA proposal until similar review.
 - c) Memo from Ellsworth of March 6 covering previous two memos--urges separating immediate issues of FY 70 request (implicitly including Saturn V dollars) from STG's "broader deliberations."
 - d) Memo to Paine of March 7 replying to Paine's Feb. 26 memo (drafted by Ellsworth)--implements Ellsworth and Mayo recommendations.
- 5) Letter to Borman of March 25 on Borman's foreign travels (drafted by President)--thanks Borman for March 6 letter (not in files?) and for "your suggestions for possible avenues to greater international cooperation in space in the future"--apparently Borman's idea that President ask ESRO to appoint two European scientist-astronauts.
- 6) May 21 personal memo to Paine from Alexander Butterfield, Deputy Assistant to President--thanks Paine on President's behalf for "straight-from-the-shoulder comments concerning, Senator Kennedy's 'dispirited vision' of America's destiny in space."
- 7) Items concerning STG report
- a) STG report--offers three "options" for next 10 years in space all of which are paced to hold open the possibility of Manned Mars expedition by 1986, all of which have simultaneous development of space shuttle and space station for 1976-7 operation, and all of which have

space budget increases to minimum of \$5B expenditures (1969 dollars) in FY 74. Rejects "maximum pace" option and "low level" option phasing down to \$3 to \$3-1/2B expenditures in FY 74 and \$2-1/2 to \$3B expenditures after FY 76--the ~~LATTER~~ rejected because United States would be "without a manned flight program after completion of Apollo and Apollo Applications."

- b) Letter from Vice President of September 15 on STG report--urges STG "Option II," with "manned exploration of the solar system . . . a basic theme of our space program." With respect to share station and shuttle, "the Department of State, supported by NASA, should be charged with bringing about increased international participation based upon sharing the cost as well as the benefits."
- c) Memo from May of September 25 on STG report (not included in files)--argues that STG report does not differentiate between manned and less costly unmanned opportunities, that all three options are very similar and may be underpriced, that a "forward-looking," continuing manned space program can be developed for \$3.5B(NOA) in FY 71 instead of \$3.95B minimum for STG options--partly by consecutive rather than simultaneous development of shuttle and space station. Recommends that President defer decision until he has total budget ~~PICTURE~~ in December and that program content as well as budget guidance be established in order to keep program under control.
- d) Memos from PSAC, Paine, and perhaps others on STG report (not included in files)



DEPARTMENT OF STATE

Washington, D.C. 20520

Return RGBrown
6332

Spence

MEMORANDUM

April 25, 1970

TO: IO - Samuel De Palma

THRU: IO - Ward P. Allen

FROM: UNP - ^{MM}Morris Rothenberg

SUBJECT: Testimony on Space Communications Developments
in the United Nations

Attached is proposed testimony for your appearance on satellite broadcasting April 28 at 2:00 p.m. before the House Foreign Affairs Subcommittee on National Security Policy and Scientific Developments. Your testimony is scheduled for the second of three days of hearings on foreign policy implications of satellite communications. Testifying with you on "U.S. Diplomacy and Satellite Communications" will be Abbott Washburn, U.S. Representative to the Intelsat Conference, and William Plummer, Acting Director of the Office of Telecommunications Policy. Thomas E. Nelson (E/TT/TD) and Donald W. Bowie (SCI/SAM) will accompany you to assist you in answers to technical questions.

Attachment: As stated.

IO/UNP: ^{RGB}RGBrown:avw

STATEMENT BY
THE HONORABLE SAMUEL DE PALMA
ASSISTANT SECRETARY OF STATE FOR INTERNATIONAL ORGANIZATION AFFAIRS
BEFORE THE
SUBCOMMITTEE ON NATIONAL SECURITY
POLICY AND SCIENTIFIC DEVELOPMENTS
OF THE
COMMITTEE ON FOREIGN AFFAIRS
HOUSE OF REPRESENTATIVES

April 28, 1970

Mr. Chairman:

I welcome the opportunity to appear for the second time before this Subcommittee. You have asked that I emphasize developments with international implications for satellite communications which have occurred since last May. I believe the Subcommittee will be interested to know that membership in INTELSAT, the global commercial communications satellite system, has increased to 75 since last May. The seven new member states are the Ivory Coast, Cameroon, Dominican Republic, Trinidad and Tobago, Congo (Kinshasa), Yugoslavia and Zambia. Needless to say, this represents very substantial international participation. It certainly indicates successful implementation of US policy in conformity with the Communications Satellite Act of 1962, which called for special efforts to bring the benefits of this new technology to all the countries of the world, especially the developing countries.

On the technical side, INTELSAT has satellites in service in the three main oceanic areas of the world. A large number of earth stations have been built to work within the INTELSAT system and more are being constructed throughout the world. I do not believe I need to go any further into this matter other than to note that this international undertaking, originally sponsored by

the United States, is surely accomplishing the purposes intended by Congress in 1962. It is without question the most successful and broadly beneficial international program to date which brings direct benefits to the world through the peaceful application of space technology. Mr. Washburn has given you the details on the current negotiations toward Definitive Arrangements for the future structure and operations of INTELSAT.

SPACE COMMUNICATIONS DEVELOPMENTS IN THE
UNITED NATIONS

Mr. Chairman, when I last had the opportunity to appear before this Subcommittee, in May of last year, I reported to you on progress made as of that date in the United Nations Working Group on Direct Broadcast Satellites. I submitted the Working Group's report on its first meeting, held in New York in February 1969, on the technical and economic feasibility of satellite television broadcasting for community reception and for individual reception. I also reported on the plans for a second meeting of that Working Group, scheduled in Geneva during July and August 1969, on the social, cultural, legal and other implications of satellite broadcasting. I would like, with your permission, to introduce for the record the report of the Working Group on its second meeting.

A third meeting of the Working Group, to carry further the work of the second meeting, is now planned for May 11-22, 1970, in New York. Before commenting on the next meeting, Mr. Chairman, I would like to review briefly the conclusions of the second meeting which I believe are of interest to this Committee.

First, the Working Group concluded that use of broadcast satellites for community television intended for purely domestic coverage, such as is contemplated in the Indian experiment, will allow national governments to adopt such regulations as they consider appropriate. The Working Group further concluded that for regional or global coverage into community receivers, a significant degree of control by individual governments would still be possible. When it considered the distant future, beyond 1985 (according to the time frame projected in its first report), the Working Group concluded that when direct broadcasting into unaugmented home receivers becomes possible, control by governments wishing to exercise it will be much more difficult.

Mr. Chairman, I mentioned in my testimony before this Subcommittee last year that the fundamental US policy in support of the free exchange of ideas and information is not shared by all nations. Our delegations to forums considering this subject are confronted by the fact that there is often no general support for a principle we consider basic. They are doing their best to

convince other delegations that it is in the interest of all peoples that the principle be defended and not abridged by unnecessary restrictions. Our delegations urge concentration on international cooperation, so that present and future benefits of satellite communication technology can be enjoyed as freely and universally as possible.

It was not surprising that some representatives in the Working Group seemed to be more concerned about preventing the potential abuses of satellite broadcasting than about promoting its potential benefits. ^{But} There was even some support among our Western allies for the Soviet position that satellite broadcasting should be permitted only when there is explicit consent from governments of countries where the broadcast could be received. Proposals by the representatives of such countries as France and Italy for international enforcement machinery which would regulate the program content of international satellite broadcasts were also disturbing. Nevertheless, the enthusiasm of the representatives of such countries as India and Brazil for the potential benefits of satellite broadcasting helped to keep a balance in the report of the Working Group.

The Working Group's report recognized the need for continuing international cooperation, and suggested that studies relating to satellite broadcasting be conducted by appropriate UN specialized agencies in consultation with the UN Committee on the Peaceful Uses of Outer Space.

The UN Educational Scientific and Cultural Organization (UNESCO) is also interested in certain aspects of space communication. UNESCO sponsored a meeting of 61 nations in December 1969 to discuss what international arrangements might be needed in using this new technology to increase cultural, scientific and educational exchanges; to ensure legal protection of satellite television transmissions against unauthorized uses; and to promote the consideration of educational, scientific and cultural requirements in the allocation of frequencies for satellite broadcasting. A great deal of attention was devoted to the potential of satellite broadcasting for educational television, especially in countries where there is an acute shortage of teachers, and to the need for an international convention to guard against pirating of one country's broadcasts for rebroadcast in another country.

The US Delegation at the UNESCO meeting reminded the participants that the first article of UNESCO's Constitution pledges the Organization to work 'through all the means of mass communication' and to 'recommend such international agreements

as may be necessary to promote the free flow of ideas by word and image'. However, there was little support for this point of view, and representatives of many other countries argued for some type of control, or internationally agreed regime, particularly over the content of educational programs which might originate outside the country for which they are intended. No decisions were reached but, like the UN Working Group at its second session, the UNESCO meeting concluded that the applications of satellite broadcasting technology should be developed in a context of international coöperation, and that further studies are required. We now have the final report of that meeting, Mr. Chairman, if the Subcommittee should wish it.

We are now preparing for the participation of our Delegation in the third session of the Working Group. Without going into great detail, Mr. Chairman, I can say that our fundamental position in the Working Group has three elements:

(1) The United States Government believes that further development of communication satellite technology offers potential benefits for the nations of the world, not only the developed but also the developing countries, as has been shown by the success of the international commercial system, INTELSAT;

(2) The United States Government has considered very carefully the technological timeframes within which broadcast satellite capabilities are emerging and we believe that the international community is well able to prepare, in a timely and effective manner, to put these new capabilities to good use; and

(3) The United States Government has encouraged and will continue to encourage the necessary study and analysis to arrive at reasonable solutions to the problems engendered by this new technology.

To put our position another way, Mr. Chairman, we are anxious to explore with other nations all the possibilities for use of this technology, while pursuing the cooperative programs of study which will allow us to sort out issues or problems and identify possible solutions to those problems.

INTERNATIONAL COOPERATION IN EXPERIMENTAL PROJECTS

Last year during the hearings before the Subcommittee, there was some discussion of a proposal of agreement with India for an experimental project to bring instructional television to some 5,000 Indian villages, using a NASA satellite. The agreement was signed last September, and I believe the NASA representative scheduled to appear on Thursday, intends to bring the Subcommittee up to date on developments in this and other areas since last year.

I do, however, wish to make clear that the Department of State strongly favors such cooperative efforts with other countries to develop experimental projects in the use of satellites for educational and instructional purposes. We believe that such projects can contribute significantly to a better understanding by all countries of the value and feasibility of these techniques and thus provide a basis for the development of additional national or regional operational programs, such as those currently under consideration within AID. I believe that Mr. Bernstein of AID, who will appear before the Subcommittee on Thursday, will be describing AID efforts in this regard.

WORLD ADMINISTRATIVE RADIO CONFERENCE
FOR SPACE TELECOMMUNICATIONS

In discussing the forthcoming 1971 World Administrative Radio Conference for Space Telecommunications it is useful to mention the role of the International Telecommunication Union (ITU), a specialized agency of the UN, which has a membership of 137 countries and territories. In a broad sense, its purpose is to facilitate international telecommunications in all its forms. Briefly, the purposes and objectives are:

1. To maintain and extend international cooperation for the improvement and rational use of telecommunications of all kinds;
2. To promote the development of technical facilities and their most efficient operation with a view to increasing their usefulness and making them generally available to the public;
3. To harmonize the activities of nations in the attainment of those common ends.

As to its specific role with respect to regulation of the radio frequency spectrum, the Union is charged with the responsibility of effecting the allocation of the radio frequency spectrum and the registration of radio frequency assignments in order to avoid harmful interference between radio stations of

different countries. It is also charged with the responsibility of improving the use made of the radio frequency spectrum. This function of the Union is accomplished through the medium of periodic administrative radio conferences, which review the Radio Regulations annexed to the ITU Convention, and through the work of two of its permanent organs, the International Frequency Registration Board (IFRB) and the International Radio Consultative Committee (CCIR). The IFRB accomplishes what its name implies and the CCIR is charged with studying technical and operating questions relating specifically to radio communications and issuing recommendations on them. I might add here that the U.S. has always considered this international collaborative undertaking as being of utmost importance and essential to the orderly use of the radio frequency spectrum. We actively participate in all phases of this work.

Now, as to events leading to the next ITU Space Conference -- at the Administrative Radio Conference held at Geneva in 1959, it was recommended that an Extraordinary Administrative Radio Conference be convened in 1963 to allocate frequency bands for space radiocommunication purposes. This recommendation was subsequently favorably acted on by the Administrative Council of the Union and the Extraordinary Conference was held in the

fall of 1963. That Conference was essential in light of the beginning of man's use of outer space and the consequent need for radio frequencies for those purposes. The Conference was successful in allocating frequencies for many types of services, including space research, radio astronomy, and the communications satellite service. It also established definitions for services, set emission standards and procedures for coordinating internationally the frequencies used for these purposes. All of these decisions were incorporated into the basic international Radio Regulations with necessary modifications to various existing provisions as required. Thus a base was established for an orderly and interference-free development of radiocommunications services using space techniques.

However, it was not possible at that time, due to the state of the technology, to foresee how long the allocations and regulations promulgated at the 1963 Space Conference would be adequate. Thus it was generally understood among the ITU members that a second space conference should be held in the early 1970s to carry on the work begun in 1963.

While the frequency arrangements and technical regulations have been generally sufficient to date, there was a movement

in 1968 on the part of several countries to convene the second space conference earlier than originally anticipated. The US, on the other hand, believing that we needed more experimentation, more experience and more knowledge before convening the second conference, held that the space conference should not be convened until 1972. This was not possible in light of other countries' desires and the Conference is now scheduled to convene in Geneva on June 6, 1971, to meet for a period of 6 or 7 weeks.

This decision which was made last May at the ITU Administrative Council meeting caused a speed-up in our preparations for the Conference to ensure as adequate preparation as possible. In this regard the Federal Communications Commission and the Office of Telecommunications Management, at the State Department's request in June 1968, had already commenced active preparation for the Conference. These preparations have been intense and, as an example, I might mention that the FCC has already issued its sixth Notice of Inquiry, the OTM and other Government agencies have been working jointly with the FCC on total US requirements. This preparatory work resulted in our being able to send last fall to all member countries of the ITU the US Preliminary Views in order to obtain their views

and support. In addition, there have been numerous bilateral and multilateral international meetings on these Preliminary Views, all leading toward final positions on our part. Moreover, the ITU's CCIR is also active in preparing technical bases for the Conference, and of course we participate actively in this international study group work, which involves both Government and industry representation.

The timetable for the immediate future is to further refine the US Preliminary Views, taking into account additional comments of the US Government and industry as well as views received from foreign countries, and then, later this summer, to establish an ad hoc Government/industry committee to complete the US proposals for formal presentation to the ITU by January 1, 1971. The timetable is short.

I now turn to the question, Mr. Chairman, of what in general terms we expect to achieve at the Conference, and specifically in light of your interest, what is being proposed with regard to satellite broadcasting.

I believe that it is correct to say that our first objective is to provide additional frequency allocations to accommodate projected use to about 1980 for such purposes as the communications satellite service; in other words, frequencies for the continued

development of commercial telecommunications satellite systems, both international and domestic; aeronautical and maritime services using space techniques; an earth resources program; space research, meteorology, radio astronomy, and similar programs. Our second objective is to obtain an allocation for satellite broadcasting purposes, as none is now provided. The best estimate we have as to when space television broadcasting directly to the home would be technically possible is not before 1985, and that assumes the expenditure of sizeable sums to develop the needed technology. On the other hand, there are other possible modes for utilizing communication satellites for TV broadcasting purposes that offer a more immediate prospect and we believe an approach along those lines will be accommodated at the Space Conference. This more modest and practical approach is to obtain an allocation to provide for the needs of a so-called community type broadcast service. This would permit the use of satellites to distribute TV or sound programs to receiving stations for simultaneous distribution via normal terrestrial broadcast stations or to community antennas for display on large screens or via wired systems. It is this latter possibility that particularly interests educators as they perceive this as a promising way

to provide educational TV in countries that have relatively poor, or lack completely, the terrestrial telecommunications systems necessary to distribute TV programs nationally. In order to accommodate such a service and to allow for evolutionary developments, the United States probably will join with many other countries in proposing that an allocation be provided in the 12 gigahertz area for that purpose. We believe that such an allocation is likely to be adopted.

In addition, the US has been considering the possibility of accommodating broadcasting satellites on a shared basis in the traditional VHF and UHF bands now widely used for terrestrial broadcasting. I might add that, to date, this latter idea has not received much support internationally due to the possible adverse technical effects that would be caused to existing broadcasting. I would not predict the outcome but would note that there are geographical areas in the world where there is little or no use made of the VHF and UHF bands. In any case, this is a matter that will have to be worked out in the coming months and at the Conference.

In summary, Mr. Chairman, we consider the forthcoming Space Telecommunications Conference as being of importance to the United States in order that appropriate new frequency

allocations and consequential changes in the Radio Regulations can be agreed internationally. This will permit further development of radiocommunications using space techniques for many practical purposes and will provide for the orderly and interference-free use of the radio frequency spectrum in conjunction with terrestrial operations. It will also permit us to continue to study and develop the use of satellites for broadcasting purposes, which may lead to such worthwhile goals as increasing availability of information to the peoples of the world, educational advances particularly for the developing countries, and a number of similar possibilities.

RELATIONSHIP OF STATE DEPARTMENT
WITH THE OFFICE OF TELECOMMUNICATIONS POLICY

The Department welcomes the establishment of this Office in the Executive Branch.

Under the Reorganization Plan, the relationship of this new Office to the State Department will be similar to the previous relationship between the Office of Telecommunications Management and the Department. Under a long-standing Executive Order, and presumably under a new one, the Director's role with respect to this Department is to assist and give policy advice to the Secretary of State in the discharge of his functions involving international telecommunication policies, positions, and negotiations. This the Director will do in consultation with the Federal Communications Commission. Moreover, the role of the Department of State in carrying out its foreign policy responsibilities, including those set forth in the Communications Satellite Act of 1962, remains unchanged.

For the reasons outlined below, we consider that the establishment of this new, higher level Office will have a favorable impact on our ability to handle international telecommunications problems and constitutes a significant step toward more effective policy formulation. Although we have enjoyed a harmonious relationship with the Office of Telecommunications Management, we have long recognized the need for a

stronger mechanism for developing and coordinating United States telecommunications policy. The new Office of Telecommunications Policy, under the Reorganization Plan, should meet this need.

The field of telecommunications is in the forefront of technological advance. The task of related policy formulation and implementation has increased in complexity with each major breakthrough. This is particularly true since the advent of communications via satellite. One result of the accelerating pace of technology has been a markedly expanded activity on the international scene by the Department of State, not only in the International Telecommunication Union and its permanent organs, but also in other UN forums.

To assure that our national interests are protected, and that wise and timely decisions are made for the long term, it is essential for our country, in its global leadership role, to give more attention to the study and evaluation of the economic, technical, financial and political implications of international telecommunications.

To keep pace with the foreign policy aspects of current international telecommunication developments, the Department of State requires a broader scope and more carefully studied advice than ever before. The establishment of the new Office should help meet this need.

NP 5A

4/22/70

To: Jeb Magruder

From: Tom Whitehead

FYI -- per our conversation

April 20, 1970

To: Herb Klein

From: Tom Whitehead

For various reasons, we are dissatisfied with the job Julian Scheer has been doing at NASA. Do you see any reason that we should not suggest to Tom Paine that he be replaced with someone who would be more disposed toward the Administration's interests?

cc: Mr. Kriegsman

CTWhitehead:ed



EXECUTIVE OFFICE OF THE PRESIDENT
NATIONAL AERONAUTICS AND SPACE COUNCIL
WASHINGTON 20502

NASA

April 21, 1970 EXECUTIVE SECRETARY

MEMORANDUM FOR

Peter M. Flanigan

Subject: Apollo 13 Investigation

Last week you expressed some concern about the Apollo 13 accident investigation board. The National Aeronautics and Space Administration has appointed a board of experts to be chaired by Dr. Cortright of the Langley Research Center. I have been designated as an observer and will keep you and other interested members of the White House staff informed of the progress.

The results of the Apollo 13 investigation will provide a point of departure for the NASC's periodic assessment of the character and pace of the space program. Besides providing planning coordination helpful to the Bureau of the Budget and the various agencies, this assessment should serve as an answer to those calling for a re-evaluation of our priorities in space.

My staff and I look forward to working with you and your people on matters of space and aeronautics.

William A. Anders

Copy to:
William E. Kriegsman
Clay T. Whitehead ←

Tuesday 4/21/70

NASA

12:20 Tom asked me to call the Press Office and tell them that there is a reference in the paper yesterday to the effect that Ron Zigler had said that NASA would soon has a major announcement about international cooperation in space.

Tom would like to know where that information came from. What was behind it?

John Addreus said they saw the same article and are trying to check into it; will be in touch.

NASA

April 20, 1970

To: Herb Klein

From: Tom Whitehead

For various reasons, we are dissatisfied with the job Julian Scheer has been doing at NASA. Do you see any reason that we should not suggest to Tom Paine that he be replaced with someone who would be more disposed toward the Administration's interests?

cc: Mr. Kriegsman

CTWhitehead:ed

out

[illegible]

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NASA

April 3, 1970

To: Will Krige

From: Tom Whitehead

I think your memo for Pete to send to the President is fine; however, I do suggest that one sentence be added regarding the cost escalation and its implications for the shuttle program.

I do think a more detailed letter from the President to Dr. Felt is in order however, and I suggest the attached draft.

Attachment

See
attached
for
signature

Wes

3/20/70

To: Bill Thomas

From: Tom Whitehead

Further follow-up.

Attachment

cc: Mr. Flanagan
Mr. Whitehead
Central Files

CTWhitehead:jm



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

WASHINGTON, D.C. 20546

March 18, 1970

OFFICE OF THE ADMINISTRATOR

MEMORANDUM FOR: Mr. Clay T. Whitehead
The White House

This is the outcome of the Wendell Wyatt and Harley Staggers astronaut requests referred to in your memorandum of March 6, which we had previously received directly.

An Apollo 13 astronaut to be selected will go to Portland, Oregon, as requested by Congressman Wyatt and Senator Hatfield, who have both been so notified. The acceptance and notifications were in process at the time of your call to me.

Chairman Staggers' request was also in work at the time of your call. We finally were able to meet his request for an astronaut who had been to the moon (Bill Anders), but this morning it turned out Mr. Staggers would much prefer to have Dr. von Braun. So Dr. von Braun will speak at Keyser, West Virginia, as requested.

A handwritten signature in blue ink, which appears to read "Willis H. Shapley", is positioned above the typed name.

Willis H. Shapley
Associate Deputy Administrator

NASA

2

Friday 3/13/70

6:20 Checked with Mr. Clare Farley at NASA re
request for astronauts at the Keyser, W. Va. and
Portland, Oregon, ceremonies.

(13) 21426

Bill Anders has accepted the request of Chairman Harley
Staggers and Staggers' office has been notified directly.
The date was changed to April 28.

Request of Wendell Wyatt for an astronaut in the June 13
Rose Parade at Portland, Oregon. One of the Apollo 13
crew is scheduled to do it; however, they have not yet
selected the particular one. Wyatt's office has been
notified.

Notified Harlow's office (Suzanne).

HOLD

Thursday

3/5/70

5:30

Mr. Harlow's Office called. They wanted to know the status of the call from Congressman Staggers re the appearances of the astronauts. We told them you were really tied up with a statement and would follow up on this in the morning.

*Called Suzanne in Harlow's
Office — she would like
to be informed when
we hear it has been
arranged.*

148LD

March 6, 1970

To: Bill Timmons

From: Tom Whitehead

NASA assures me these requests can be taken care of although it is highly unlikely that they will be able to supply an astronaut who has been to the moon; i. e., they will provide one of the astronauts who has not yet flown. I will let you know as soon as I can who they have lined up so you can pass the word on to Staggars and Wyatt.

Attachments

cc: Mr. Flanigan
Mr. Whitehead
Central Files
Mr. Harlow

CTWhitehead:ed

March 6, 1970

To: Willis Gayley

From: Tom Whitehead

These two particular requests for astronauts are ones we feel strongly we would like to have honored. Would you please take care of this and get back as soon as possible.

Attachments

cc: Mr. Flanigan
Mr. Harlow
Mr. Thompson
Central Files
Mr. Whitehead

CTWhitehead:ed

Thursday 3/5/70

1:50

Marge called. Mr. Flanigan would like you to call Julian Scheer, NASA, in reference to 2 requests for appearances of the astronauts which he would like to have honored.

(1) Chairman Harley Staggers would like one of the astronauts to speak at Keyser, West Virginia, at a function honoring a soldier killed in the service who received the Congressional Medal of Honor. Bryce Harlow asked if we could do something and then let Bill Timmons know the outcome.

(2) Congressman Wendell Wyatt would like one of the astronauts to be Grand Marshall at a Rose Parade in Portland, Oregon, on June 13th. This Rose Parade is almost comparable to the one at Pasadena, California.

Marge is sending over a memo on this.

Return w/ 

Scheer -- 13-35302

MEMORANDUM

THE WHITE HOUSE

WASHINGTON

March 3, 1970

*Tom should call him - Scherr
+ Wyatt's reg.*

TO: Peter Flanigan

FROM: Bryce Harlow *ek*

Chairman Harley Staggers pleads for an astronaut to speak at an April 27 function in Keyser, West Virginia, honoring a soldier who was killed in the service and received the Congressional Medal of Honor.

Staggers said that the astronaut could jet his way to Cumberland, Keyser being some twenty minutes away from there, and could be back very shortly thereafter. He tried through George Miller, Chairman of the House Space Committee, and failed. This is extremely important to Staggers, and he comes to us as a final appeal.

I recommend that we try to do this for Staggers. Not only is he Chairman of the House Interstate Committee, but he is also a great sentimentalist. If we came through on this, it would be a very valuable investment.

|| Can you, with your inestimable clout, pursue this with NASA -- then let Bill Timmons know the outcome so that he can tell the good Congressman?

cc: Bill Timmons

6/13 Rose Parade

Portland, Oregon

Grand Marshall

Astronaut

Request from

Wendell Wyatt.

NASA

March 13, 1978

To: Mr. Willis Shepley

From: Tom Whitehead

Could you please prepare a draft reply
of the attached letter from Ron G. Fay.

Attachment

*Refer to N4220 for
draft reply.*

TRW

8800.9-215

04 March 1970

Dr. Clay Thomas Whitehead
Staff Assistant
Executive Office
The White House
Washington, D. C.

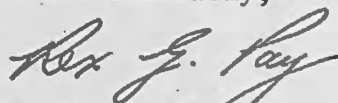
Dear Dr. Whitehead:

I enjoyed your discussion of domestic space communications policy at the IEEE Wincon Conference in Los Angeles. I hope that the relationship with international policy will be touched on in the President's message on the space program. You seemed to imply that this might be the case in referring to the timing of your speech.

My interest is in the possibility of using international space communications for foreign aid, as described in the enclosed paper. I believe the system has advantages for both the donor and the receiver of foreign aid and conforms to the broad outlines of the present administration's foreign aid policy. If you can comment on the proposal and indicate whether it is worth pursuing, I would be most grateful.

I realize that a great deal more analysis could be done on the system proposed. However, this looks like a clear case where Gresham's law of analysis will apply: the quantitative will tend to drive out the unquantifiable. And here the unquantifiable is of particular importance.

Yours sincerely,



Rex G. Pay, Manager
Development Planning

Science and Environmental Systems Operation

RGP:hec
Encl.

Project Delphi -- Technical Aid to the Developing
Nations by Consulting Services Satellite

Paper for the AIAA 3rd Communications Satellite Systems Conference
April 6-8, 1970
Los Angeles, California

Space Program

PRESIDENT NIXON'S delineation of this nation's space goals for this decade is both imaginative and realistic in terms of objectives and in terms of money.

Just as President Kennedy laid the foundation for our landings on the moon—landings which would have been accomplished after his normal two terms in office—so President Nixon is laying the foundation for spectacular achievements which are scheduled after his possible second term.

Such undertakings require long-range planning. That is why it is essential that the schedules be outlined now.

Having made our leap into space at this particular time, we are faced with a golden opportunity. Once every 175 years the planets Jupiter, Saturn, Uranus and Neptune are lined up in such a way that a single unmanned space vehicle from earth can visit each planet in turn while traveling a single arc. That unique time frame occurs during this decade.

President Nixon is seizing the opportunity and will make the most of it.

His plan calls for more moon landings, visits to the other planets of this solar system and, eventually, the manned exploration of Mars itself.

Most important of all objectives is the one aimed at developing nuclear power plants for space vehicles. This is the key to cutting the time of space journeys into a fraction of what they would be with ordinary rocket power. This is what is essential in getting a man on Mars or any other planet in the solar system.

It would not be surprising if, as we progress in our space endeavors, shortcuts heave into view which could alter or reduce the time required for reaching some objectives.

The President's definition of goals should revitalize our space effort. The uncertainty which has surrounded it for so many months could only have a deleterious effect upon it and upon those involved in it.

Now the uncertainty is gone. Mr. Nixon has spelled out what we shall do during the 1970s and has projected at least one effort for the 1980s.

All that remains now is for us to get on with it.

ATLANTA JOURNAL 3/10/70

MARKED COPY -- PLEASE HOLD

FOR IMMEDIATE RELEASE

March 7, 1970

OFFICE OF THE WHITE HOUSE PRESS SECRETARY

THE WHITE HOUSE
(Key Biscayne, Florida)

PRESS CONFERENCE

OF

DR. THOMAS O. PAINE
ADMINISTRATOR, NATIONAL AERONAUTICS AND
SPACE ADMINISTRATION

MR. WARREN: If everyone is ready, I think we can go ahead now.

You have the statement by the President.

Dr. Thomas O. Paine, the Administrator of NASA, is here with you this morning to discuss the President's decision and the President's statement. Dr. Paine has just returned from a trip to Canada, Australia and Tokyo, where he has been discussing the international aspects of the President's program for cooperation in the space venture that we are about to take.

If I could ask you to put down your telephones, we will go ahead.

Dr. Paine.

DR. PAINE: Good morning.

The President today announced a bold, diversified, very wide ranging program for the 1970's, a program which will carry substantial activity forward into the 1980's. The longest range program which the President has described is the "Grand Tour" of the outer planets with launches from Earth in 1977 and 1979, with the spacecraft reaching the planet Neptune as late as 1988. So the programs laid out by President Nixon will guide the development of our space program for more than a decade.

A strong effort in exploration, in science and in the practical application of space for the benefit of man here on Earth is laid out, with increasing emphasis on international cooperation.

The reduction of the cost of space activities and the increase in man's ability to travel back and forth to space and to work there effectively for long periods of time is contained in the space shuttle rocket plane proposal, and the long-life space station for the late 1970's.

The so-called space shuttle is a two-stage rocket plane which will be able to take off vertically from the

MORE

(OVER)

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Please hold. *Span*

surface of the Earth, and at an altitude of about 40 miles and a speed of 7,000 miles an hour, the upper stage will take off and carry men, equipment and supplies, about a 25-ton payload, on up into Earth orbit, with the first stage returning to Earth, landing horizontally like a jetliner, and the second stage, after performing its mission in space, which may last for a week or two weeks, will re-enter the atmosphere and also land horizontally ready for reuse.

The programs to explore the planets laid out in the President's statement will provide man with a close-hand look of every planet in the solar system. The continued exploration of the moon through the remaining Apollo flights is planned through 1974, after which men will utilize the new space transportation system envisioned in the space shuttle, space station and other new devices coming in in the late 1970's to produce a more reliable round trip capability to the moon for the late 1970's.

Great emphasis is put on the practical applications of space techniques, not only in communication satellites and weather satellites, but in new areas such as Earth resources satellites which will be able to survey a wide range of activities of economic interest from space, send the information back down to ground stations. This information will range from oceanography, hydrology, studies of pollution, studies of the fields, forests and fisheries of economic benefit here on Earth; areas such as the complete ability to survey the agricultural production, and the mineral resources of the Earth, the capability to manage all of these systems for more full and effective utilization by man.

Other new areas include the direct broadcast of radio and television from orbit, and the ability to begin to plan for the first North Atlantic air traffic control satellite for very substantial economic benefits in this heavily travelled air route.

Perhaps the most statesmanlike portion of this statement in my view is the increasing recognition of the international participation of other nations in both the exploration and the utilization of space which receives great emphasis in the President's statement.

As was mentioned, I personally have visited the space capitals of the world and discussed the opportunities in the future to join with the United States in more fully making this a broad activity of all mankind.

Although it is too early today to report any specific results, there certainly is a very substantial interest overseas in utilizing more fully the American program as a means of closing the technology gap on the part of other nations and, at the same time, allowing them to participate in both the exploration and the utilization of space in the decades to come.

I will be very happy to answer any questions you may have.

MORE

Q Dr. Paine, why haven't you set any target date for landing men on Mars?

DR. PAINE: It is too early at this time to judge the effectiveness of several of the new development projects which must be undertaken successfully in the 70's in order to plan the first mission to Mars. These include the space shuttle system, which will have to be fully operational; the space station activity, which will give us the base in Earth orbit from which we will set out from Mars, and will also prove out the life support systems necessary to support men in space for the two years required for a Mars mission.

And, thirdly, the effectiveness of our nuclear rocket system which is not scheduled for flight before the late 1970's and which must provide the propulsion for a Mars journey.

Q But didn't you present options some time ago, to start right away, or you could have a 1986 landing, or a third option of going beyond?

Q Would you outline the three options?

DR. PAINE: Three options were presented to the President in the Space Task Group recommendations. Number one was an all-out option in which the money side of it was not regarded as a limitation and we simply presented to the President how rapidly we could move ahead in space, providing an unlimited budget were made available to NASA.

It was really a technological capability option --

Q Would you explain those three?

DR. PAINE: Option one was the all-out effort, moving as fast as our technology would allow us to move. Option two as when we attempted to move as rapidly as we could, technologically, but being highly selective of our allocation of resources so that we could keep the NASA budget down within the range of the budgets for approximately the last decade or so, not moving ahead very rapidly in the budget area.

Option three was a similar option to option two but without the longer range objective of being sure in the development of our new capabilities in the 1970's that we were making it possible for man to plan for a mission to Mars in the 1980's or 1990's.

I would say that the recommendation which I personally made to the President, which I haven't talked about before this, but which I feel free now to state, was that I recommended option two, and the statement which the President made is essentially along the lines of option two.

MORE

(OVER)

It does recommend that in some time in the future but without a specific date, we do plan our capabilities in such a way that it will be possible for men to go to Mars.

Q Dr. Paine, in the option that the President took, as he has outlined in his statement, when will we attempt a man landing on Mars? Can you say?

DR. PAINE: There is no specific date outlined. This is a decision which we would not have to make in any case before about 1976.

The developments that we will be carrying on under the President's program will be such that it will be possible to contemplate a trip sometime in the 1980's. But the first specific hardware, the first program decision, would not have to be made for another six years.

Q Dr. Paine, I believe option two mentions the date of 1986. If this program goes ahead as you envision, is that still a possibility, 1986?

DR. PAINE: 1986 would be a possibility. There is another window in 1983 and another window in 1988. All of these would be possible, depending on decisions made farther downstream.

Q 1983 would still be possible even though that was the best that option one would have?

DR. PAINE: ⁽¹⁹⁸³⁾ It would be possible, providing we are successful in the development programs now underway and make all of the progress we expect to make. If there are any setbacks, 1986 would be more realistic. If we go at a somewhat more slower pace, 1988 would be the date. No specific date is envisioned here and, indeed, there is no commitment to starting the Mars program at any particular time contained in this message. It is merely a focusing kind of objective so that as we develop our capabilities in the 1970's we have our eye on such future missions so that when the future mission becomes feasible we don't have to start from scratch, but we have already done quite a bit of the development activity that will be required.

Q Dr. Paine, do you consider this to be an acceleration of the U. S. space effort or a deceleration?

DR. PAINE: Neither. I would say that this statement as it comes out is a continuation of the program pretty much as we have known it, with perhaps a little more fiscal restraints than we have had in the past in the great press of meeting our commitment for landing on the moon before the end of the 1960's. But I consider it a very bold and forward-looking, but at the same time a broad and physically prudent program.

MORE

Q How much money does it provide, roughly, in terms of billions of dollars a year?

DR. PAINE: This program, essentially, as it is presently laid out, would require funds at approximately the same range as present. There is a great deal of flexibility in this program. It will be possible in some years to go ahead more rapidly, if more dollars are available. In other years, we can cut back and slow down the program. There is a great deal of flexibility in this program.

Q Is this \$3.5 or \$4 billion a year?

Q What are the 1970 and 1971 budgets?

DR. PAINE: The '70 and '71 budgets are in the range of \$3.5 billion.

Q Is that the idea, to keep it \$3.5 billion throughout the '70's?

DR. PAINE: \$3.5, \$4, \$5, this general range. As I say, we have built a great deal of flexibility in this. This is not a commitment to any specific budget number. This is a commitment, rather, to the goals and objectives and the focusing technologies that the space program will have.

Q Dr. Paine, how much money is there in the '71 fiscal budget for the grand tour, the beginning of that?

DR. PAINE: There is no money in the '71 budget. That is an item which will first enter our budget in 1972.

Q How much will it be then; do you know?

DR. PAINE: It will be a relatively modest sum in '72 since the first launch isn't until 1977 and 1979.

Q What is a relatively modest amount in your jargon?

DR. PAINE: A relatively modest amount will be in the order of perhaps \$10 million.

Q Dr. Paine, you mentioned that there are also military aspects to this program. Could you tell us something about that, if that will be a space station to do the job that the manned orbiting laboratories were intended to do?

DR. PAINE: With respect to the military aspects, as you all know we really have two parallel space programs in the United States. The military carries on its own program and this is well covered in the Space Task Group report, the military portion of which was written by the Department of Defense. NASA, by law, carries out the civilian part of the American space program, although among the other areas of national activity we contribute to is the defense of our country.

Dr. Seamans and I have recently concluded an agreement

MORE

(OVER)

whereby we have set up a joint board to review the development of the space shuttle rocket plane program to insure that as this NASA development proceeds, and this is a generally unclassified, open program which we are inviting other nations to participate in with us, that it will meet the R&D advanced development requirements of the Air Force and the Department of Defense as well as NASA.

Q Is there any problem in maintaining your engineering team with this more restricted budget in order to do this job of landing men on Mars in 1986 or 1988?

DR. PAINE: The problem of maintaining the NASA team, the great spirit, the bold thrust forward that we have had in the 60's, under the budget of the 1970's, in my opinion, has been somewhat overestimated. We have an extremely enthusiastic group of people. Our turnover rate is lower than almost any other part of government or industry, for that matter, and the program which the President has laid out here, believe me, will challenge the team that went to the moon and give them an extremely, onerous and just the kind of problem that they like to tackle.

Q I am not talking about the spirit. I am talking about the fact that you don't have as much money. What happens to the contractors and the other engineering units that go out of business because their programs are turned off? Can you start them up again in time to do the job?

DR. PAINE: That is a major problem. What we are really faced with here in this change as President Nixon's space program replaces the old space program of the '60's is we are essentially taking a \$3.5 billion enterprise which has been going in one direction, a very single-minded purpose, and completely changing it around and moving in a new direction.

That is a tough job. It is not easy to do. One of the things that characterizes the aerospace activities in the United States is the ability to shift from one area to another. The flexibility is built in the way we structured NASA originally. As you perhaps know, more than 90 percent of the activities which NASA carries out is outside the government civil service area. It is carried out in industry and in universities. We are used to shifting this activity from one area to another. We are continuing to do that.

Yes, it is real tough; it causes a lot of people to have to go through some very difficult times. It requires a very high degree of management skill and judgment. But I am sure it can be successfully done, and, in fact, it is being successfully done.

Q Dr. Paine, what will be the total cost of the grand tour as you now estimate it?

DR. PAINE: I do not have any cost estimates yet on the grand tour. This is a program which so far is only a gleam in the eye of the advance planners.

Q Does that grand tour include man on Mars or is that just a visit to the outer planets?

DR. PAINE: As far as the grand tour is concerned, Mars is something you go by as you back out of the driveway. The first interest we have in the grand tour is some 500 million miles out in space as we swing past the planet Jupiter. The first mission launched will then proceed on out to the planets Uranus and swing by that and then will swing farther on out to the planet Neptune, reaching that about 1988.

One of the interesting things about this mission is the fact that with an 11 year period between the time our space craft leaves the planet Earth and reaches its final destination, the planet Neptune, to send back the television signals of the surface, we will have obviously had one of the longest times an electronic system has ever had to operate without human attention.

In order to carry this out, we will have to make some very substantial advances both in electronic equipment and in self-checking computers that will essentially be able to perform the function much as a man would do were he aboard this space craft.

The kind of computer we will have aboard this will be something like the computer HAL in the movie 2001. It will be a computer which continuously monitors all of the activities aboard the space craft, is fully capable of making repairs, alterations, modifications, over this period of more than a decade as this space craft moves out 3 billion miles into space.

I might also add that as it leaves the planet Neptune, the gravity of Neptune will fling this space craft outside the solar system. This will become the first man made object to be fully moved completely away from the influence of the sun.

Q Dr. Paine, with regard to the fifth objective, how can we hasten and expand the practical applications of space technology at the same time we are closing the Electronic Research Center?

DR. PAINE: The Electronic Research Center closing is certainly one of the budgetary items which was the most difficult for us. As you know, we have been discussing with every Cabinet officer, every agency in Washington, possible other uses for the Electronic Research Center. We have been working very closely in particular with Secretary Volpe in the Department of Transportation.

Although at the present time no final decision has been made on this, we may have something to announce in the near future.

Q Dr. Paine, the President's message mentions that the space budget for fiscal '70 is less than for last year. Can you tell us what those two figures are?

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DR. PAINE: Fiscal '71 represents a 12 percent decrease from the 1970 space budget. But I would like to point out that this 12 percent decrease does not represent a 12 percent cutback in many activities. We have increased our science budget; we have increased our aeronautics budget, and we have increased our practical applications budget.

Much of the reduction has come from the fact that our giant Saturn V moon rocket system has now been essentially procured, and the last of the 15 moon vehicles which we purchased will be delivered before the end of fiscal '70.

In the '71 period we are essentially in somewhat of a valley between the end of the Saturn V moon rocket procurement, before we are in the area of beginning to procure the new systems, the space shuttle, the grand tour, and the Mars landing.

Q What are the numbers?

DR. PAINE: I have here a statement which lists quite a few of these numbers. It has quite a bit of backup information in it. I would be very happy to make these available to you. You can go through this. It takes each one of the President's six major pronouncements and gives you an indication of the dollars involved, what we have been doing in that area, and what we will now be doing under the new Nixon program

Q Can you give us the figures for '70 and '71?

DR. PAINE: For 1971, the 12 percent reduction means that we are now before the Congress asking for \$3.333 billion. That is the total figure for the fiscal year 1971.

Q What was it last year?

DR. PAINE: Last year was \$3.78 billion.

Q What was the peak of spending in prior years?

DR. PAINE: The peak of spending in prior years was about a \$4.9 billion level.

Q What year was that, Doctor?

DR. PAINE: 1966. 1966 represented the peak both of bringing in the construction of the big Apollo system and also in building across the country the tremendous space facilities that had to be built as America began to move ahead and create the kind of space capability we have today. This is the construction of Cape Kennedy, the construction of the Manned Spacecraft Center at Houston, and so forth.

Q Dr. Paine, the statement mentions scientific knowledge as only the second of the objectives, and has what looks at first glance like a rather weak statement at one point that the space program will be "attentive to their suggestions", referring to the scientists.

To what degree do you think that this program will meet

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the disatisfactions that have been developed in the scientific community in the United States?

DR. PAINE: I think this program will go a long way toward satisfying the many different aspects of the space program, the many different supporters, including not only the scientists but the practical application engineers, the aeronautics people, the research and development people, and many other areas which are covered in various degrees in this.

It represents in our view the best possible balanced program within the resources which we feel is realistic to expect the United States to put into the space program.

I should hasten to add that everybody is not going to be happy. There will always be a certain amount of criticism, a fair amount of criticism, perhaps, and we welcome a lot of this kind of discussion.

I think it helps us to come up with a better program.

One of the advantages of running an open program like we run in NASA is that we can take advantage of a lot of the kind of criticism we get and improve the program as a result.

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Q Dr. Paine, could you give us sort of a rough chronology, starting with the year 1970 and going to 1989 as to what the highlights will be, not necessarily at year intervals?

DR. PAINE: I don't want to run through the entire thing because it would take too long. I can give you a few highlights. In 1971 and 1972, we will be sending two additional Apollo missions to the moon each time. Starting with Apollo 16 we will carry, for the the first time, a lunar Rover vehicle that will allow two astronauts to ride out some 20 to 25 miles and cover a great deal of additional area of scientific interest and bring back much better samples of the surface.

We will also be launching in 1972 the first of our Explorer spacecraft out to Juniper.

At the end of 1972, we will suspend Apollo operations to the moon for a year while we put into orbit our project Skylab which is an experimental space station contained within a third-stage Saturn rocket module. It will contain a major solar telescope experiment to be operated by the astronauts, and will be visited during the last quarter of 1972 and the first half of 1973 on three separate occasions by three-man astronaut crews.

We are going to attempt to keep astronauts in orbit in this space station for a period as long as 56 days, exploring the long-term effect of weightlessness on man and establishing man's ability to work for prolonged periods in space.

In 1973, we will launch a Mariner class spacecraft which will swing past the planet Venus, head on in toward the sun, and give us our first closeup view of the planet Mercury.

As we move on out into '75, '76, we will be having, in '76, if our progress remains on schedule, our first look at the surface of the planet Mars. We will be putting two orbiters around Mars in 1971. These will give us a map of 70 percent of the surface of Mars and we hope will give us the first look at the changing coloration of Mars as the spring goes up the planet, as the icecap disappears under the influence of the sunshine, and as a wave of darkening goes over the surface.

We don't know what this wave of darkening is due to, and in 1971 we hope to get some clues.

In 1976, we will actually land two spacecraft on the planet Mars, carrying life detection equipment in areas that were selected from the maps that were prepared in the 1971 encounter.

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In 1976, we also hope to have the first flights of our reusable space shuttle rocket plane, and shortly thereafter perhaps the first launch of our original space station module.

The space station will then be built up, year by year, with additional launchings which will be added to the original module so that over about a decade a long life, permanent base station will grow in Earth orbit as module after module is added.

We hope very much that other nations will wish to join with us, both in the operation of the reusable space shuttle rocket plane back and forth from the surface of Earth to the space station, and also in the operation of the space station which will have many different capabilities. It will be an extremely useful research station for men in space.

In 1977, we hope to launch the first of the "Grand Tour" activities to the outer planets; in 1979, the second "Grand Tour" mission.

In the period of about 1978 we hope to have the first launch of our nuclear propulsion rocket, which has been under test, ground test, at our Nevada test station now for several years, which is now ready to move toward a flight weight engine to prove this technology out in actual space flights.

That is some kind of an outline of major events for the future.

Q Dr. Paine, what are the prospects of getting the Soviets to cooperate with us on these space projects, particularly having Soviet astronauts on some of these missions?

DR. PAINE: We hope very much that the Soviets will indeed wish to increase the degree of cooperation that we have had in the past decade.

As you know, the past decade has been more marked by a spirit of competition than a spirit of cooperation. But there has been some cooperation and we believe that it is possible to increase this.

In this connection, I have sent to the leaders of the Soviet space program our space plans for the next decade as proposed in the Space Task Group, and we have invited their increasing cooperation with us as our programs for the future mature.

Q Dr. Paine, is this direction generally the same direction the Soviets are moving in, from what you know about their space program?

DR. PAINE: The Soviet spaced program is somewhat the program that Winston Churchill once described, the mystery wrapped in an enigma. The Soviets, as you know,

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do not have an open space program. They prefer to announce what they have done after they have done it and after they have seen that they have been successful. Therefore, it is very difficult for us to comment specifically on what their plans are.

We do know that they are continuing to move toward the moon. We do know that they have made very substantial statements about the desire for not only planetary exploration of the unmanned type, but also for Soviet cosmonauts to visit the planets.

We do know that they are extremely interested in putting into orbit a major space station at an early date.

We do know that they are proceeding with the construction of very large rocket capability, even larger, probably, than our Saturn V system.

So we see a great deal of activity in the Soviet Union, a great deal of interest in moving ahead with very spectacular projects. I think we will simply have to wait until these mature before we will really know specifically what they are going to do by what date.

Q What about the Soviet astronaut? Is that a possibility or probability?

DR. PAINE: I think that before we have Soviet cosmonauts flying with our astronauts in orbit we will very likely have people from other parts of the free world flying with us, particularly in the era of our space shuttle when it will be possible for men and women of many nationalities, people who are simply in good health -- they won't have to have the very elaborate astronaut or cosmonaut kind of training -- be able to fly as passengers to orbit and return in this period of the late 1970's.

In fact, we will even be able to take healthy newsmen, if we can find any in this period.

THE PRESS: Thank you very much.

END

(AT 11:45 A.M. EST)

MARCH 7, 1970

Office of the White House Press Secretary
(Key Biscayne, Florida)

THE WHITE HOUSE

STATEMENT BY THE PRESIDENT

Over the last decade, the principal goal of our nation's space program has been the Moon. By the end of that decade men from our planet had traveled to the Moon on four occasions and twice they had walked on its surface. With these unforgettable experience, we have gained a new perspective of ourselves and our world.

I believe these accomplishments should help us gain a new perspective of our space program as well. Having completed that long stride into the future which has been our objective for the past decade, we must now define new goals which make sense for the Seventies. We must build on the successes of the past, always reaching out for new achievements. But we must also recognize that many critical problems here on this planet make high priority demands on our attention and our resources. By no means should we allow our space program to stagnate. But -- with the entire future and the entire universe before us -- we should not try to do everything at once. Our approach to space must continue to be bold -- but it must also be balanced.

When this Administration came into office, there were no clear, comprehensive plans for our space program after the first Apollo landing. To help remedy this situation, I established in February of 1969 a Space Task Group, headed by the Vice President, to study possibilities for the future of that program. Their report was presented to me in September. After reviewing that report and considering our national priorities, I have reached a number of conclusions concerning the future pace and direction of the nation's space efforts. The budget recommendations which I have sent to the Congress for Fiscal Year 1971 are based on these conclusions.

Three General Purposes

In my judgment, three general purposes should guide our space program.

One purpose is exploration. From time immemorial, man has insisted on venturing into the unknown despite his inability to predict precisely the value of any given exploration. He has been willing to take risks, willing to be surprised, willing to adapt to new experiences. Man has come to feel that such quests are worthwhile in and of themselves -- for they represent one way in which he expands his vision and expresses the human spirit. A great nation must always be an exploring nation if it wishes to remain great.

A second purpose of our space program is scientific knowledge -- a greater systematic understanding about ourselves and our universe. With each of our space ventures, man's total information about nature has been dramatically expanded; the human race was able to learn more about the Moon and Mars in a few hours last summer than had been learned in all the centuries that had gone before. The people who perform this important work are not only those who walk in spacesuits while millions watch or those who launch powerful rockets in a burst of flame. Much of our scientific progress comes in laboratories and offices, where dedicated, inquiring men and women decipher new facts and add them to old ones in ways which reveal new truths. The abilities of these scientists constitute one of our most valuable national resources. I believe that our space program should help these people in their work and should be attentive to their suggestions.

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A third purpose of the United States space effort is that of practical application -- turning the lessons we learn in space to the early benefit of life on Earth. Examples of such lessons are manifold; they range from new medical insights to new methods of communication, from better weather forecasts to new management techniques and new ways of providing energy. But these lessons will not apply themselves; we must make a concerted effort to see that the results of our space research are used to the maximum advantage of the human community.

A Continuing Process

We must see our space effort, then, not only as an adventure of today but also as an investment in tomorrow. We did not go to the Moon merely for the sport of it. To be sure, those undertakings have provided an exciting adventure for all mankind and we are proud that it was our nation that met this challenge. But the most important thing about man's first footsteps on the Moon is what they promise for the future.

We must realize that space activities will be a part of our lives for the rest of time. We must think of them as part of a continuing process -- one which will go on day in and day out, year in and year out -- and not as a series of separate leaps, each requiring a massive concentration of energy and will and accomplished on a crash timetable. Our space program should not be planned in a rigid manner, decade by decade, but on a continuing flexible basis, one which takes into account our changing needs and our expanding knowledge.

We must also realize that space expenditures must take their proper place within a rigorous system of national priorities. What we do in space from here on in must become a normal and regular part of our national life and must therefore be planned in conjunction with all of the other undertakings which are also important to us. The space budget which I have sent to Congress for Fiscal Year 1971 is lower than the budget for Fiscal Year 1970, a condition which reflects the fiscal constraints under which we presently operate and the competing demands of other programs. I am confident, however, that the funding I have proposed will allow our space program to make steady and impressive progress.

Six Specific Objectives

With these general considerations in mind, I have concluded that our space program should work toward the following specific objectives:

1. We should continue to explore the Moon. Future Apollo manned lunar landings will be spaced so as to maximize our scientific return from each mission, always providing, of course, for the safety of those who undertake these ventures. Our decisions about manned and unmanned lunar voyages beyond the Apollo program will be based on the results of these missions.
2. We should move ahead with bold exploration of the planets and the universe. In the next few years, scientific satellites of many types will be launched into Earth orbit to bring us new information about the universe, the solar system, and even our own planet. During the next decade, we will also launch unmanned spacecraft to all the planets of our solar system, including an unmanned vehicle which will be sent to land on Mars and to investigate its surface. In the late 1970s, the "Grand Tour" missions will study the mysterious outer planets of the solar system -- Jupiter, Saturn, Uranus, Neptune, and Pluto. The positions of the planets at that time will give us a unique opportunity to launch missions which can visit several of them on a single flight of over three billion miles. Preparations for this program will begin in 1972.

There is one major but longer range goal we should keep in mind as we proceed with our exploration of the planets. As a part of this program we will eventually send men to explore the planet Mars.

3. We should work to reduce substantially the cost of space operations. Our present rocket technology will provide a reliable launch capability for some time. But as we build for the longer-range future, we must devise less costly and less complicated ways of transporting payloads into space. Such a capability -- designed so that it will be suitable for a wide range of scientific, defense and commercial uses -- can help us realize important economies in all aspects of our space program. We are currently examining in greater detail the feasibility of re-usable space shuttles as one way of achieving this objective.

4. We should seek to extend man's capability to live and work in space. The Experimental Space Station (XSS) -- a large orbiting workshop -- will be an important part of this effort. We are now building such a station -- using systems originally developed for the Apollo program -- and plan to begin using it for operational missions in the next few years. We expect that men will be working in space for months at a time during the coming decade.

We have much to learn about what man can and cannot do in space. On the basis of our experience with the XSS, we will decide when and how to develop longer-lived space stations. Flexible, long-lived space station modules could provide a multi-purpose space platform for the longer-range future and ultimately become a building block for manned interplanetary travel.

5. We should hasten and expand the practical applications of space technology. The development of earth resources satellites -- platforms which can help in such varied tasks as surveying crops, locating mineral deposits and measuring water resources -- will enable us to assess our environment and use our resources more effectively. We should continue to pursue other applications of space-related technology in a wide variety of fields, including meteorology, communications, navigation, air traffic control, education and national defense. The very act of reaching into space can help man improve the quality of life on Earth.

6. We should encourage greater international cooperation in space. In my address to the United Nations last September, I indicated that the United States will take positive, concrete steps "toward internationalizing man's epic venture into space -- an adventure that belongs not to one nation but to all mankind." I believe that both the adventures and the applications of space missions should be shared by all peoples. Our progress will be faster and our accomplishments will be greater if nations will join together in this effort, both in contributing the resources and in enjoying the benefits. Unmanned scientific payloads from other nations already make use of our space launch capability on a cost-shared basis; we look forward to the day when these arrangements can be extended to larger applications satellites and astronaut crews. The Administrator of NASA recently met with the space authorities of Western Europe, Canada, Japan and Australia in an effort to find ways in which we can cooperate more effectively in space.

* * *

It is important, I believe, that the space program of the United States meet these six objectives. A program which achieves these goals will be a balanced space program, one which will extend our capabilities and knowledge and one which will put our new learning to work for the immediate benefit of all people.

As we enter a new decade, we are conscious of the fact that man is also entering a new historic era. For the first time, he has reached beyond his planet; for the rest of time, we will think of ourselves as men from the planet Earth. It is my hope that as we go forward with our space program, we can plan and work in a way which makes us proud both of the planet from which we come and of our ability to travel beyond it.

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March 7, 1970

OFFICE OF THE WHITE HOUSE PRESS SECRETARY

THE WHITE HOUSE
(Key Biscayne, Florida)

PRESS CONFERENCE

OF

DR. THOMAS O. PAINE
ADMINISTRATOR, NATIONAL AERONAUTICS AND
SPACE ADMINISTRATION

MR. WARREN: If everyone is ready, I think we can go ahead now.

You have the statement by the President.

Dr. Thomas O. Paine, the Administrator of NASA, is here with you this morning to discuss the President's decision and the President's statement. Dr. Paine has just returned from a trip to Canada, Australia and Tokyo, where he has been discussing the international aspects of the President's program for cooperation in the space venture that we are about to take.

If I could ask you to put down your telephones, we will go ahead.

Dr. Paine.

DR. PAINE: Good morning.

The President today announced a bold, diversified, very wide ranging program for the 1970's, a program which will carry substantial activity forward into the 1980's. The longest range program which the President has described is the "Grand Tour" of the outer planets with launches from Earth in 1977 and 1979, with the spacecraft reaching the planet Neptune as late as 1988. So the programs laid out by President Nixon will guide the development of our space program for more than a decade.

A strong effort in exploration, in science and in the practical application of space for the benefit of man here on Earth is laid out, with increasing emphasis on international cooperation.

The reduction of the cost of space activities and the increase in man's ability to travel back and forth to space and to work there effectively for long periods of time is contained in the space shuttle rocket plane proposal, and the long-life space station for the late 1970's.

The so-called space shuttle is a two-stage rocket plane which will be able to take off vertically from the

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surface of the Earth, and at an altitude of about 40 miles and a speed of 7,000 miles an hour, the upper stage will take off and carry men, equipment and supplies, about a 25-ton payload, on up into Earth orbit, with the first stage returning to Earth, landing horizontally like a jetliner, and the second stage, after performing its mission in space, which may last for a week or two weeks, will re-enter the atmosphere and also land horizontally ready for reuse.

The programs to explore the planets laid out in the President's statement will provide man with a close-hand look of every planet in the solar system. The continued exploration of the moon through the remaining Apollo flights is planned through 1974, after which men will utilize the new space transportation system envisioned in the space shuttle, space station and other new devices coming in in the late 1970's to produce a more reliable round trip capability to the moon for the late 1970's.

Great emphasis is put on the practical applications of space techniques, not only in communication satellites and weather satellites, but in new areas such as Earth resources satellites which will be able to survey a wide range of activities of economic interest from space, send the information back down to ground stations. This information will range from oceanography, hydrology, studies of pollution, studies of the fields, forests and fisheries of economic benefit here on Earth; areas such as the complete ability to survey the agricultural production, and the mineral resources of the Earth, the capability to manage all of these systems for more full and effective utilization by man.

Other new areas include the direct broadcast of radio and television from orbit, and the ability to begin to plan for the first North Atlantic air traffic control satellite for very substantial economic benefits in this heavily travelled air route.

Perhaps the most statesmanlike portion of this statement in my view is the increasing recognition of the international participation of other nations in both the exploration and the utilization of space which receives great emphasis in the President's statement.

As was mentioned, I personally have visited the space capitals of the world and discussed the opportunities in the future to join with the United States in more fully making this a broad activity of all mankind.

Although it is too early today to report any specific results, there certainly is a very substantial interest overseas in utilizing more fully the American program as a means of closing the technology gap on the part of other nations and, at the same time, allowing them to participate in both the exploration and the utilization of space in the decades to come.

I will be very happy to answer any questions you may have.

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Q Dr. Paine, why haven't you set any target date for landing men on Mars?

DR. PAINE: It is too early at this time to judge the effectiveness of several of the new development projects which must be undertaken successfully in the 70's in order to plan the first mission to Mars. These include the space shuttle system, which will have to be fully operational; the space station activity, which will give us the base in Earth orbit from which we will set out from Mars, and will also prove out the life support systems necessary to support men in space for the two years required for a Mars mission.

And, thirdly, the effectiveness of our nuclear rocket system which is not scheduled for flight before the late 1970's and which must provide the propulsion for a Mars journey.

Q But didn't you present options some time ago, to start right away, or you could have a 1986 landing, or a third option of going beyond?

Q Would you outline the three options?

DR. PAINE: Three options were presented to the President in the Space Task Group recommendations. Number one was an all-out option in which the money side of it was not regarded as a limitation and we simply presented to the President how rapidly we could move ahead in space, providing an unlimited budget were made available to NASA.

It was really a technological capability option --

Q Would you explain those three?

DR. PAINE: Option one was the all-out effort, moving as fast as our technology would allow us to move. Option two as when we attempted to move as rapidly as we could, technologically, but being highly selective of our allocation of resources so that we could keep the NASA budget down within the range of the budgets for approximately the last decade or so, not moving ahead very rapidly in the budget area.

Option three was a similar option to option two but without the longer range objective of being sure in the development of our new capabilities in the 1970's that we were making it possible for man to plan for a mission to Mars in the 1980's or 1990's.

I would say that the recommendation which I personally made to the President, which I haven't talked about before this, but which I feel free now to state, was that I recommended option two, and the statement which the President made is essentially along the lines of option two.

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It does recommend that in some time in the future but without a specific date, we do plan our capabilities in such a way that it will be possible for men to go to Mars.

Q Dr. Paine, in the option that the President took, as he has outlined in his statement, when will we attempt a man landing on Mars? Can you say?

DR. PAINE: There is no specific date outlined. This is a decision which we would not have to make in any case before about 1976.

The developments that we will be carrying on under the President's program will be such that it will be possible to contemplate a trip sometime in the 1980's. But the first specific hardware, the first program decision, would not have to be made for another six years.

Q Dr. Paine, I believe option two mentions the date of 1986. If this program goes ahead as you envision, is that still a possibility, 1986?

DR. PAINE: 1986 would be a possibility. There is another window in 1983 and another window in 1988. All of these would be possible, depending on decisions made farther downstream.

Q 1983 would still be possible even though that was the best that option one would have?

DR. PAINE: It would be possible, providing we are successful in the development programs now underway and make all of the progress we expect to make. If there are any setbacks, 1986 would be more realistic. If we go at a somewhat more slower pace, 1988 would be the date. No specific date is envisioned here and, indeed, there is no commitment to starting the Mars program at any particular time contained in this message. It is merely a focusing kind of objective so that as we develop our capabilities in the 1970's we have our eye on such future missions so that when the future mission becomes feasible we don't have to start from scratch, but we have already done quite a bit of the development activity that will be required.

Q Dr. Paine, do you consider this to be an acceleration of the U. S. space effort or a deceleration?

DR. PAINE: Neither. I would say that this statement as it comes out is a continuation of the program pretty much as we have known it, with perhaps a little more fiscal restraints than we have had in the past in the great press of meeting our commitment for landing on the moon before the end of the 1960's. But I consider it a very bold and forward-looking, but at the same time a broad and physically prudent program.

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Q How much money does it provide, roughly, in terms of billions of dollars a year?

DR. PAINE: This program, essentially, as it is presently laid out, would require funds at approximately the same range as present. There is a great deal of flexibility in this program. It will be possible in some years to go ahead more rapidly, if more dollars are available. In other years, we can cut back and slow down the program. There is a great deal of flexibility in this program.

Q Is this \$3.5 or \$4 billion a year?

Q What are the 1970 and 1971 budgets?

DR. PAINE: The '70 and '71 budgets are in the range of \$3.5 billion.

Q Is that the idea, to keep it \$3.5 billion throughout the '70's?

DR. PAINE: \$3.5, \$4, \$5, this general range. As I say, we have built a great deal of flexibility in this. This is not a commitment to any specific budget number. This is a commitment, rather, to the goals and objectives and the focusing technologies that the space program will have.

Q Dr. Paine, how much money is there in the '71 fiscal budget for the grand tour, the beginning of that?

DR. PAINE: There is no money in the '71 budget. That is an item which will first enter our budget in 1972.

Q How much will it be then; do you know?

DR. PAINE: It will be a relatively modest sum in '72 since the first launch isn't until 1977 and 1979.

Q What is a relatively modest amount in your jargon?

DR. PAINE: A relatively modest amount will be in the order of perhaps \$10 million.

Q Dr. Paine, you mentioned that there are also military aspects to this program. Could you tell us something about that, if that will be a space station to do the job that the manned orbiting laboratories were intended to do?

DR. PAINE: With respect to the military aspects, as you all know we really have two parallel space programs in the United States. The military carries on its own program and this is well covered in the Space Task Group report, the military portion of which was written by the Department of Defense. NASA, by law, carries out the civilian part of the American space program, although among the other areas of national activity we contribute to is the defense of our country.

Dr. Seamans and I have recently concluded an agreement

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whereby we have set up a joint board to review the development of the space shuttle rocket plane program to insure that as this NASA development proceeds, and this is a generally unclassified, open program which we are inviting other nations to participate in with us, that it will meet the R&D advanced development requirements of the Air Force and the Department of Defense as well as NASA.

Q Is there any problem in maintaining your engineering team with this more restricted budget in order to do this job of landing men on Mars in 1986 or 1988?

DR. PAINE: The problem of maintaining the NASA team, the great spirit, the bold thrust forward that we have had in the 60's, under the budget of the 1970's, in my opinion, has been somewhat overestimated. We have an extremely enthusiastic group of people. Our turnover rate is lower than almost any other part of government or industry, for that matter, and the program which the President has laid out here, believe me, will challenge the team that went to the moon and give them an extremely, onerous and just the kind of problem that they like to tackle.

Q I am not talking about the spirit. I am talking about the fact that you don't have as much money. What happens to the contractors and the other engineering units that go out of business because their programs are turned off? Can you start them up again in time to do the job?

DR. PAINE: That is a major problem. What we are really faced with here in this change as President Nixon's space program replaces the old space program of the '60's is we are essentially taking a \$3.5 billion enterprise which has been going in one direction, a very single-minded purpose, and completely changing it around and moving in a new direction.

That is a tough job. It is not easy to do. One of the things that characterizes the aerospace activities in the United States is the ability to shift from one area to another. The flexibility is built in the way we structured NASA originally. As you perhaps know, more than 90 percent of the activities which NASA carries out is outside the government civil service area. It is carried out in industry and in universities. We are used to shifting this activity from one area to another. We are continuing to do that.

Yes, it is real tough; it causes a lot of people to have to go through some very difficult times. It requires a very high degree of management skill and judgment. But I am sure it can be successfully done, and, in fact, it is being successfully done.

Q Dr. Paine, what will be the total cost of the grand tour as you now estimate it?

DR. PAINE: I do not have any cost estimates yet on the grand tour. This is a program which so far is only a gleam in the eye of the advance planners.

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Q Does that grand tour include man on Mars or is that just a visit to the outer planets?

DR. PAINE: As far as the grand tour is concerned, Mars is something you go by as you back out of the driveway. The first interest we have in the grand tour is some 500 million miles out in space as we swing past the planet Jupiter. The first mission launched will then proceed on out to the planets Uranus and swing by that and then will swing farther on out to the planet Neptune, reaching that about 1988.

One of the interesting things about this mission is the fact that with an 11 year period between the time our space craft leaves the planet Earth and reaches its final destination, the planet Neptune, to send back the television signals of the surface, we will have obviously had one of the longest times an electronic system has ever had to operate without human attention.

In order to carry this out, we will have to make some very substantial advances both in electronic equipment and in self-checking computers that will essentially be able to perform the function much as a man would do were he aboard this space craft.

The kind of computer we will have aboard this will be something like the computer HAL in the movie 2001. It will be a computer which continuously monitors all of the activities aboard the space craft, is fully capable of making repairs, alterations, modifications, over this period of more than a decade as this space craft moves out 3 billion miles into space.

I might also add that as it leaves the planet Neptune, the gravity of Neptune will fling this space craft outside the solar system. This will become the first man made object to be fully moved completely away from the influence of the sun.

Q Dr. Paine, with regard to the fifth objective, how can we hasten and expand the practical applications of space technology at the same time we are closing the Electronic Research Center?

DR. PAINE: The Electronic Research Center closing is certainly one of the budgetary items which was the most difficult for us. As you know, we have been discussing with every Cabinet officer, every agency in Washington, possible other uses for the Electronic Research Center. We have been working very closely in particular with Secretary Volpe in the Department of Transportation.

Although at the present time no final decision has been made on this, we may have something to announce in the near future.

Q Dr. Paine, the President's message mentions that the space budget for fiscal '70 is less than for last year. Can you tell us what those two figures are?

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DR. PAINE: Fiscal '71 represents a 12 percent decrease from the 1970 space budget. But I would like to point out that this 12 percent decrease does not represent a 12 percent cutback in many activities. We have increased our science budget; we have increased our aeronautics budget, and we have increased our practical applications budget.

Much of the reduction has come from the fact that our giant Saturn V moon rocket system has now been essentially procured, and the last of the 15 moon vehicles which we purchased will be delivered before the end of fiscal '70.

In the '71 period we are essentially in somewhat of a valley between the end of the Saturn V moon rocket procurement, before we are in the area of beginning to procure the new systems, the space shuttle, the grand tour, and the Mars landing.

Q What are the numbers?

DR. PAINE: I have here a statement which lists quite a few of these numbers. It has quite a bit of backup information in it. I would be very happy to make these available to you. You can go through this. It takes each one of the President's six major pronouncements and gives you an indication of the dollars involved, what we have been doing in that area, and what we will now be doing under the new Nixon program.

Q Can you give us the figures for '70 and '71?

DR. PAINE: For 1971, the 12 percent reduction means that we are now before the Congress asking for \$3.333 billion. That is the total figure for the fiscal year 1971.

Q What was it last year?

DR. PAINE: Last year was \$3.78 billion.

Q What was the peak of spending in prior years?

DR. PAINE: The peak of spending in prior years was about a \$4.9 billion level.

Q What year was that, Doctor?

DR. PAINE: 1966. 1966 represented the peak both of bringing in the construction of the big Apollo system and also in building across the country the tremendous space facilities that had to be built as America began to move ahead and create the kind of space capability we have today. This is the construction of Cape Kennedy, the construction of the Manned Spacecraft Center at Houston, and so forth.

Q Dr. Paine, the statement mentions scientific knowledge as only the second of the objectives, and has what looks at first glance like a rather weak statement at one point that the space program will be "attentive to their suggestions", referring to the scientists.

To what degree do you think that this program will meet

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the dissatisfactions that have been developed in the scientific community in the United States?

DR. PAINE: I think this program will go a long way toward satisfying the many different aspects of the space program, the many different supporters, including not only the scientists but the practical application engineers, the aeronautics people, the research and development people, and many other areas which are covered in various degrees in this.

It represents in our view the best possible balanced program within the resources which we feel is realistic to expect the United States to put into the space program.

I should hasten to add that everybody is not going to be happy. There will always be a certain amount of criticism, a fair amount of criticism, perhaps, and we welcome a lot of this kind of discussion.

I think it helps us to come up with a better program.

One of the advantages of running an open program like we run in NASA is that we can take advantage of a lot of the kind of criticism we get and improve the program as a result.

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Q Dr. Paine, could you give us sort of a rough chronology, starting with the year 1970 and going to 1989 as to what the highlights will be, not necessarily at year intervals?

DR. PAINE: I don't want to run through the entire thing because it would take too long. I can give you a few highlights. In 1971 and 1972, we will be sending two additional Apollo missions to the moon each time. Starting with Apollo 16 we will carry, for the first time, a lunar Rover vehicle that will allow two astronauts to ride out some 20 to 25 miles and cover a great deal of additional area of scientific interest and bring back much better samples of the surface.

We will also be launching in 1972 the first of our Explorer spacecraft out to Juniper.

At the end of 1972, we will suspend Apollo operations to the moon for a year while we put into orbit our project Skylab which is an experimental space station contained within a third-stage Saturn rocket module. It will contain a major solar telescope experiment to be operated by the astronauts, and will be visited during the last quarter of 1972 and the first half of 1973 on three separate occasions by three-man astronaut crews.

We are going to attempt to keep astronauts in orbit in this space station for a period as long as 56 days, exploring the long-term effect of weightlessness on man and establishing man's ability to work for prolonged periods in space.

In 1973, we will launch a Mariner class spacecraft which will swing past the planet Venus, head on in toward the sun, and give us our first closeup view of the planet Mercury.

As we move on out into '75, '76, we will be having, in '76, if our progress remains on schedule, our first look at the surface of the planet Mars. We will be putting two orbiters around Mars in 1971. These will give us a map of 70 percent of the surface of Mars and we hope will give us the first look at the changing coloration of Mars as the spring goes up the planet, as the icecap disappears under the influence of the sunshine, and as a wave of darkening goes over the surface.

We don't know what this wave of darkening is due to, and in 1971 we hope to get some clues.

In 1976, we will actually land two spacecraft on the planet Mars, carrying life detection equipment in areas that were selected from the maps that were prepared in the 1971 encounter.

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In 1976, we also hope to have the first flights of our reusable space shuttle rocket plane, and shortly thereafter perhaps the first launch of our original space station module.

The space station will then be built up, year by year, with additional launchings which will be added to the original module so that over about a decade a long life, permanent base station will grow in Earth orbit as module after module is added.

We hope very much that other nations will wish to join with us, both in the operation of the reusable space shuttle rocket plane back and forth from the surface of Earth to the space station, and also in the operation of the space station which will have many different capabilities. It will be an extremely useful research station for men in space.

In 1977, we hope to launch the first of the "Grand Tour" activities to the outer planets; in 1979, the second "Grand Tour" mission.

In the period of about 1978 we hope to have the first launch of our nuclear propulsion rocket, which has been under test, ground test, at our Nevada test station now for several years, which is now ready to move toward a flight weight engine to prove this technology out in actual space flights.

That is some kind of an outline of major events for the future.

Q Dr. Paine, what are the prospects of getting the Soviets to cooperate with us on these space projects, particularly having Soviet astronauts on some of these missions?

DR. PAINE: We hope very much that the Soviets will indeed wish to increase the degree of cooperation that we have had in the past decade.

As you know, the past decade has been more marked by a spirit of competition than a spirit of cooperation. But there has been some cooperation and we believe that it is possible to increase this.

In this connection, I have sent to the leaders of the Soviet space program our space plans for the next decade as proposed in the Space Task Group, and we have invited their increasing cooperation with us as our programs for the future mature.

Q Dr. Paine, is this direction generally the same direction the Soviets are moving in, from what you know about their space program?

DR. PAINE: The Soviet spaced program is somewhat the program that Winston Churchill once described, the mystery wrapped in an enigma. The Soviets, as you know,

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do not have an open space program. They prefer to announce what they have done after they have done it and after they have seen that they have been successful. Therefore, it is very difficult for us to comment specifically on what their plans are.

We do know that they are continuing to move toward the moon. We do know that they have made very substantial statements about the desire for not only planetary exploration of the unmanned type, but also for Soviet cosmonauts to visit the planets.

We do know that they are extremely interested in putting into orbit a major space station at an early date.

We do know that they are proceeding with the construction of very large rocket capability, even larger, probably, than our Saturn V system.

So we see a great deal of activity in the Soviet Union, a great deal of interest in moving ahead with very spectacular projects. I think we will simply have to wait until these mature before we will really know specifically what they are going to do by what date.

Q What about the Soviet astronaut? Is that a possibility or probability?

DR. PAINE: I think that before we have Soviet cosmonauts flying with our astronauts in orbit we will very likely have people from other parts of the free world flying with us, particularly in the era of our space shuttle when it will be possible for men and women of many nationalities, people who are simply in good health -- they won't have to have the very elaborate astronaut or cosmonaut kind of training -- be able to fly as passengers to orbit and return in this period of the late 1970's.

In fact, we will even be able to take healthy newsmen, if we can find any in this period.

THE PRESS: Thank you very much.

END

(AT 11:45 A.M. EST)

MARCH 7, 1970

Office of the White House Press Secretary
(Key Biscayne, Florida)

THE WHITE HOUSE

STATEMENT BY THE PRESIDENT

Over the last decade, the principal goal of our nation's space program has been the Moon. By the end of that decade men from our planet had traveled to the Moon on four occasions and twice they had walked on its surface. With these unforgettable experience, we have gained a new perspective of ourselves and our world.

I believe these accomplishments should help us gain a new perspective of our space program as well. Having completed that long stride into the future which has been our objective for the past decade, we must now define new goals which make sense for the Seventies. We must build on the successes of the past, always reaching out for new achievements. But we must also recognize that many critical problems here on this planet make high priority demands on our attention and our resources. By no means should we allow our space program to stagnate. But -- with the entire future and the entire universe before us -- we should not try to do everything at once. Our approach to space must continue to be bold -- but it must also be balanced.

When this Administration came into office, there were no clear, comprehensive plans for our space program after the first Apollo landing. To help remedy this situation, I established in February of 1969 a Space Task Group, headed by the Vice President, to study possibilities for the future of that program. Their report was presented to me in September. After reviewing that report and considering our national priorities, I have reached a number of conclusions concerning the future pace and direction of the nation's space efforts. The budget recommendations which I have sent to the Congress for Fiscal Year 1971 are based on these conclusions.

Three General Purposes

In my judgment, three general purposes should guide our space program.

One purpose is exploration. From time immemorial, man has insisted on venturing into the unknown despite his inability to predict precisely the value of any given exploration. He has been willing to take risks, willing to be surprised, willing to adapt to new experiences. Man has come to feel that such quests are worthwhile in and of themselves -- for they represent one way in which he expands his vision and expresses the human spirit. A great nation must always be an exploring nation if it wishes to remain great.

A second purpose of our space program is scientific knowledge -- a greater systematic understanding about ourselves and our universe. With each of our space ventures, man's total information about nature has been dramatically expanded; the human race was able to learn more about the Moon and Mars in a few hours last summer than had been learned in all the centuries that had gone before. The people who perform this important work are not only those who walk in spacesuits while millions watch or those who launch powerful rockets in a burst of flame. Much of our scientific progress comes in laboratories and offices, where dedicated, inquiring men and women decipher new facts and add them to old ones in ways which reveal new truths. The abilities of these scientists constitute one of our most valuable national resources. I believe that our space program should help these people in their work and should be attentive to their suggestions.

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A third purpose of the United States space effort is that of practical application -- turning the lessons we learn in space to the early benefit of life on Earth. Examples of such lessons are manifold; they range from new medical insights to new methods of communication, from better weather forecasts to new management techniques and new ways of providing energy. But these lessons will not apply themselves; we must make a concerted effort to see that the results of our space research are used to the maximum advantage of the human community.

A Continuing Process

We must see our space effort, then, not only as an adventure of today but also as an investment in tomorrow. We did not go to the Moon merely for the sport of it. To be sure, those undertakings have provided an exciting adventure for all mankind and we are proud that it was our nation that met this challenge. But the most important thing about man's first footsteps on the Moon is what they promise for the future.

We must realize that space activities will be a part of our lives for the rest of time. We must think of them as part of a continuing process -- one which will go on day in and day out, year in and year out -- and not as a series of separate leaps, each requiring a massive concentration of energy and will and accomplished on a crash timetable. Our space program should not be planned in a rigid manner, decade by decade, but on a continuing flexible basis, one which takes into account our changing needs and our expanding knowledge.

We must also realize that space expenditures must take their proper place within a rigorous system of national priorities. What we do in space from here on in must become a normal and regular part of our national life and must therefore be planned in conjunction with all of the other undertakings which are also important to us. The space budget which I have sent to Congress for Fiscal Year 1971 is lower than the budget for Fiscal Year 1970, a condition which reflects the fiscal constraints under which we presently operate and the competing demands of other programs. I am confident, however, that the funding I have proposed will allow our space program to make steady and impressive progress.

Six Specific Objectives

With these general considerations in mind, I have concluded that our space program should work toward the following specific objectives:

1. We should continue to explore the Moon. Future Apollo manned lunar landings will be spaced so as to maximize our scientific return from each mission, always providing, of course, for the safety of those who undertake these ventures. Our decisions about manned and unmanned lunar voyages beyond the Apollo program will be based on the results of these missions.

2. We should move ahead with bold exploration of the planets and the universe. In the next few years, scientific satellites of many types will be launched into Earth orbit to bring us new information about the universe, the solar system, and even our own planet. During the next decade, we will also launch unmanned spacecraft to all the planets of our solar system, including an unmanned vehicle which will be sent to land on Mars and to investigate its surface. In the late 1970s, the "Grand Tour" missions will study the mysterious outer planets of the solar system -- Jupiter, Saturn, Uranus, Neptune, and Pluto. The positions of the planets at that time will give us a unique opportunity to launch missions which can visit several of them on a single flight of over three billion miles. Preparations for this program will begin in 1972.

There is one major but longer range goal we should keep in mind as we proceed with our exploration of the planets. As a part of this program we will eventually send men to explore the planet Mars.

3. We should work to reduce substantially the cost of space operations. Our present rocket technology will provide a reliable launch capability for some time. But as we build for the longer-range future, we must devise less costly and less complicated ways of transporting payloads into space. Such a capability -- designed so that it will be suitable for a wide range of scientific, defense and commercial uses -- can help us realize important economies in all aspects of our space program. We are currently examining in greater detail the feasibility of re-usable space shuttles as one way of achieving this objective.

4. We should seek to extend man's capability to live and work in space. The Experimental Space Station (XSS) -- a large orbiting workshop -- will be an important part of this effort. We are now building such a station -- using systems originally developed for the Apollo program -- and plan to begin using it for operational missions in the next few years. We expect that men will be working in space for months at a time during the coming decade.

We have much to learn about what man can and cannot do in space. On the basis of our experience with the XSS, we will decide when and how to develop longer-lived space stations. Flexible, long-lived space station modules could provide a multi-purpose space platform for the longer-range future and ultimately become a building block for manned interplanetary travel.

5. We should hasten and expand the practical applications of space technology. The development of earth resources satellites -- platforms which can help in such varied tasks as surveying crops, locating mineral deposits and measuring water resources -- will enable us to assess our environment and use our resources more effectively. We should continue to pursue other applications of space-related technology in a wide variety of fields, including meteorology, communications, navigation, air traffic control, education and national defense. The very act of reaching into space can help man improve the quality of life on Earth.

6. We should encourage greater international cooperation in space. In my address to the United Nations last September, I indicated that the United States will take positive, concrete steps "toward internationalizing man's epic venture into space -- an adventure that belongs not to one nation but to all mankind." I believe that both the adventures and the applications of space missions should be shared by all peoples. Our progress will be faster and our accomplishments will be greater if nations will join together in this effort, both in contributing the resources and in enjoying the benefits. Unmanned scientific payloads from other nations already make use of our space launch capability on a cost-shared basis; we look forward to the day when these arrangements can be extended to larger applications satellites and astronaut crews. The Administrator of NASA recently met with the space authorities of Western Europe, Canada, Japan and Australia in an effort to find ways in which we can cooperate more effectively in space.

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It is important, I believe, that the space program of the United States meet these six objectives. A program which achieves these goals will be a balanced space program, one which will extend our capabilities and knowledge and one which will put our new learning to work for the immediate benefit of all people.

As we enter a new decade, we are conscious of the fact that man is also entering a new historic era. For the first time, he has reached beyond his planet; for the rest of time, we will think of ourselves as men from the planet Earth. It is my hope that ~~as~~ we go forward with our space program, we can plan and work in a way which makes us proud both of the planet from which we come and of our ability to travel beyond it.

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MARCH 7, 1970

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* * *

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March 6, 1970

MEMORANDUM FOR MR. EHRLICHMAN

I have prepared the attached brief for the meeting of Dr. Paine with the President in case it is decided that Paine will meet with the President prior to his press briefing on the space statement.

I think it would be desirable for the President to meet with Paine for a short time. However, I would urge that this not be an occasion for Paine to attempt to talk the President into re-interpretations of the Message, since we are not yet ready to make any further commitments on NASA programs.

Peter M. Flanigan
Assistant to the President

Attachments

cc: Mr. Flanigan
Mr. Whitehead
Central Files
Mr. Kriegsman

C T Whitehead:ed

March 6, 1970

MEMORANDUM FOR

THE PRESIDENT

SUBJECT: Meeting with Dr. Thomas O. Paine
March 7, 1969

I. PURPOSE

To discuss your statement on the future of the space program prior to its release and Dr. Paine's press briefing.

II. BACKGROUND

This statement has been under discussion with NASA, OST, BOB, and the Vice President's office for the past three months. It is designed primarily to put space in perspective vis-a-vis our other priorities and to set forth a rationale for planning the future direction of the space program. The statement complements the specific program information presented in the FY 1971 budget submission. Many of NASA's suggestions have been incorporated, but not all.

III. POINTS OF DISCUSSION

There is no need for you to raise any of the following issues at this time. They are presented for your information in case Dr. Paine raises them.

- A. Dr. Paine may discuss his trips abroad to explore opportunities for more international cooperation in space. Both Mr. Flanigan and Mr. Kissinger's staffs have been working with NASA, and this area turns out to be more difficult than might be expected.

1. The first part of the text

The first part of the text is a short story about a man who is very rich and powerful. He is the owner of a large company and has many friends who are also rich and powerful. He is very proud of his wealth and power and likes to show them off to his friends.

The second part of the text is a short story about a man who is very poor and weak. He is the owner of a small company and has few friends who are also poor and weak. He is very proud of his wealth and power and likes to show them off to his friends.

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5. The fifth part of the text

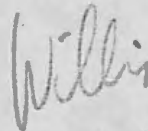
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON

March 6, 1970

TO: Mr. Tom Whitehead

FROM: Willis H. Shapley

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the phone at Dr. Paine's request.

A handwritten signature in cursive script, appearing to read "Willis".

Willis H. Shapley

NASA Changes on

p. 1, p. 5, p. 7, & on back. Wheelhead copy

(Huebner) JK

March 4, 1970

Proposed Statement on the Future Of
the U. S. Space Program

Over the last decade, the principal goal of our nation's space program has been the Moon. By the end of that decade men from our planet had traveled to the Moon on four occasions and twice they had walked on its surface. With these unforgettable experiences, we have gained a new perspective on ourselves and our world.

I believe these accomplishments should help us gain a new perspective on our space program as well. Having completed that long stride into the future which has been our objective for the past decade, we must now define new goals which make sense for the Seventies. We must build on the successes of the past, always reaching out for new achievements. But we must also recognize that many critical problems here on this planet make higher priority demands on our attention and our resources. By no means should we allow our space program to stagnate. But -- with the entire future and the entire universe before us -- we should not try to do everything at once. Our approach to space must continue to be bold -- but it must also be balanced.

When this Administration came into office, there were no clear, comprehensive plans for our space program after the first Apollo landing. To help remedy this situation, I established in February of 1969 a Space Task Group, headed by the Vice President, to study

possibilities for the future of that program. Their report was presented to me in September. After reviewing that report and considering our national priorities, I have reached a number of conclusions concerning the future pace and direction of the nation's space efforts. The budget recommendations which I have sent to the Congress for Fiscal Year 1971 are based on these conclusions.

Three General Purposes

In my judgment, three general purposes should guide our space program.

One purpose is exploration. From time immemorial, man has insisted on venturing into the unknown despite his inability to predict precisely the value of any given exploration. He has been willing to take risks, willing to be surprised, willing to adapt to new experiences. Man has come to feel that such quests are worthwhile in and of themselves -- for they represent one way in which he expands his vision and expresses the human spirit. A great nation must always be an exploring nation if it wishes to remain great.

A second purpose of our space program is scientific knowledge -- a greater systematic understanding about ourselves and our universe. With each of our space ventures, man's total information about nature has been dramatically expanded; the human race was able

to learn more about the Moon and Mars in a few hours last summer than had been learned in all the centuries that had gone before. The people who perform this important work are not only those who walk in spacesuits while millions watch or those who launch powerful rockets in a burst of flame. Much of our scientific progress comes in laboratories and offices, where dedicated, inquiring men and women decipher new facts and add them to old ones in ways which reveal new truths.

The abilities of these scientists constitute one of our most valuable national resources. I believe that our space program should help these people in their work and should be attentive to their suggestions.

A third purpose of the United States space effort is that of practical application -- turning the lessons we learn in space to the early benefit of life on Earth. Examples of such lessons are manifold; they range from new medical insights to new methods of communication, from better weather forecasts to new management techniques and new ways of providing energy. But these lessons will not apply themselves; we must make a concerted effort to see that the results of our space research are used to the maximum advantage of the human community:

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We must see our space effort, then, not only as an adventure

of today but also as an investment in tomorrow. We did not go to the Moon merely for the sport of it. To be sure, those undertakings have provided an exciting adventure for all mankind and we are proud that it was our nation that met this challenge. But the most important thing about man's first footsteps on the Moon is what they promise for the future.

We must realize that space activities will be a part of our lives for the rest of time. We must think of them as part of a continuing process -- one which will go on day in and day out, year in and year out -- and not as a series of separate leaps, each requiring a massive concentration of energy and will and accomplished on a crash timetable. Our space program should not be planned in a rigid manner, decade by decade, but on a continuing flexible basis, one which takes into account our changing needs and our expanding knowledge.

We must also realize that space expenditures must take their proper place within a rigorous system of national priorities. What we do in space from here on in must become a normal and regular part of our national life and must therefore be planned in conjunction with all of the other undertakings which are also important to us.

The space budget which I have sent to Congress for Fiscal Year 1971 is lower than the budget for Fiscal Year 1970, a condition which

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With these general considerations in mind, I have concluded that our space program should work toward the following specific objectives:

1. We should continue to explore the Moon. Future Apollo manned lunar landings will be spaced so as to maximize our scientific return from each mission, always providing, of course, for the safety of those who undertake these ventures. Our decisions about manned and unmanned lunar voyages beyond the Apollo program will be based on the results of these missions.
2. We should move ahead with bold exploration of the planets and the universe. In the next few years, scientific satellites of many types will be launched into Earth orbit to bring us new information about the universe, the solar system, and even our own planet. During the next decade, we will also launch unmanned spacecraft to all the planets of our solar system, including an unmanned vehicle which will be sent to land on Mars and to investigate its surface. In the late

1970s, the "Grand Tour" missions will study the mysterious outer planets of the solar system -- Jupiter, Saturn, Uranus, Neptune, and Pluto. The positions of the planets at that time will give us a unique opportunity to launch missions which can visit several of them on a single flight of over three billion miles. Preparations for this program will begin in 1972.

There is one ^{major but} longer range goal we should keep in mind as we proceed with our exploration of the planets. As a part of this program we ^{will} eventually send men to explore the planet Mars.

3. We should work to reduce substantially the cost of space operations. Our present rocket technology will provide a reliable launch capability for some time. But as we build for the longer-range future, we must devise less costly and less complicated ways of transporting payloads into space. Such a capability -- designed so that it will be suitable for a wide range of scientific, defense and commercial uses -- can help us realize important economies in all aspects of our space program. ^{clerical} [We are currently examining in greater detail the feasibility of re-usable space shuttles as one way of achieving this objective.]*

4. We should seek to extend man's capability to live and work in space. The Experimental Space Station (XSS) -- a large orbiting

* Replan with Project #1 attached

workshop -- will be an important part of this effort. We are now building such a station -- using systems originally developed for the Apollo program -- and plan to begin using it for operational missions in the next few years. We expect that men will be working in space for months at a time during the coming decade.

We have much to learn about what man can and cannot do in space. On the basis of our experience with the XSS, we will decide when and how to develop longer-lived space stations. Flexible, long-lived space station modules could provide a multi-purpose space platform for the longer-range future and ultimately become a building block for manned interplanetary travel.

5. We should hasten and expand the practical applications of space technology. The development of earth resources satellites --

platforms which can help in such varied tasks as surveying crops, locating mineral deposits and measuring water resources -- will enable us to assess our environment and use our resources more effectively.

We should continue to pursue other applications of space-related technology in a wide variety of fields, including meteorology, communications, navigation, air traffic control, education and national defense.

The very act of reaching into space can help man improve the quality of life on Earth.

6. We should encourage greater international cooperation in space. In my address to the United Nations last September, I indicated that the United States will take positive, concrete steps "toward internationalizing man's epic venture into space -- an adventure that belongs not to one nation but to all mankind." I believe that both the adventures and the applications of space missions should be shared by all peoples. Our progress will be faster and our accomplishments will be greater if nations will join together in this effort, both in contributing the resources and in enjoying the benefits. (insert attached) The Administrator of NASA recently met with the space authorities of Western Europe, Canada, Japan and Australia in an effort to find ways in which we can cooperate more effectively in space.

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As we enter a new decade, we are conscious of the fact that man is also entering a new historic era. For the first time, he has reached beyond his planet; for the rest of time, we will think of ourselves as

(* declassified)

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INSERT ON PAGE 8

Unmanned scientific payloads from other nations already
make use of our space launch capability on a cost-shared
basis; we look forward to the day when these arrangements can
be extended to larger applications ^{space projects} satellites and astronaut crews.

Insert 1 to replace last sentence of par. 3 on page 6

We are currently examining the design of a reusable space shuttle that could evolve into a new space capability. With this capability, we could fully exploit and use space for the benefit of all mankind and at the same time substantially reduce the cost of space operations.

(Wording adapted from Page 99 of the FY 71 Budget.)

NASA

March 6, 1970

MEMORANDUM FOR MR. EHRLICHMAN

I have prepared the attached brief for the meeting of Dr. Paine with the President in case it is decided that Paine will meet with the President prior to his press briefing on the space statement.

I think it would be desirable for the President to meet with Paine for a short time. However, I would urge that this not be an occasion for Paine to attempt to talk the President into re-interpretations of the Message, since we are not yet ready to make any further commitments on NASA programs.

Peter M. Flanigan
Assistant to the President

Attachments

cc: Mr. Flanigan
Mr. Whitehead
Central Files
Mr. Kriegsman

CTWhitehead:ed

March 6, 1970

MEMORANDUM FOR

THE PRESIDENT

SUBJECT: Meeting with Dr. Thomas O. Paine
March 7, 1969

I. PURPOSE

To discuss your statement on the future of the space program prior to its release and Dr. Paine's press briefing.

II. BACKGROUND

This statement has been under discussion with NASA, OST, BOB, and the Vice President's office for the past three months. It is designed primarily to put space in perspective vis-a-vis our other priorities and to set forth a rationale for planning the future direction of the space program. The statement complements the specific program information presented in the FY 1971 budget submission. Many of NASA's suggestions have been incorporated, but not all.

III. POINTS OF DISCUSSION

There is no need for you to raise any of the following issues at this time. They are presented for your information in case Dr. Paine raises them.

- A. Dr. Paine may discuss his trips abroad to explore opportunities for more international cooperation in space. Both Mr. Flanigan and Mr. Kissinger's staffs have been working with NASA, and this area turns out to be more difficult than might be expected.

RECOMMENDATION

That you encourage Dr. Faive to continue his efforts, but stress the need for a firm economic and technical foundation to be laid before too many expectations are raised publicly.

- B. He may also raise the extent of your commitment to the future development of the re-usable space shuttle. The development cost estimates for this program are very high and quite uncertain.

RECOMMENDATION

That you stress the need to consider a full range of options and make design and development decisions only after more technological and cost unknowns are resolved.

IV. POINTS YOU MAY WISH TO RAISE

The tone of the space statement is important. While it includes a number of specific program initiatives, the thrust is more explanatory of a rationale than a listing of major initiatives.

RECOMMENDATION

That you emphasize this point to Dr. Faive and suggest he address the rationale as well as program initiatives in his press briefing.

Peter M. Flanagan

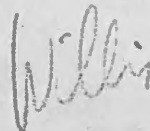
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NASA Change on
Whitehead
(Huebner) JK

March 4, 1970

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(Wording adapted from Page 99 of the FY 71 Budget.)

Spencer

11:35 Called for Bob Houdek -- he's in a press conference

11:40 Called Gen. Haig's office (Ext. 2235) was in a meeting with Kissinger - didn't know when he would be back
Suggested we call David White's office (Ext. 334 / 3440)
Normally Bill Watts would handle but he is on leave.
Carol Ferrar said Col. Behr would know; however, he's at the Pentagon and she can't reach him -- will not be back until 14 / 1:30 or 2:00.

11:40 Called Haig's office again -- he is now in a meeting with people; she will take a message that we need to know--

Specifically whether there is some definite plan that has been agreed upon by the President to include a foreign ~~astronaut~~ astronaut on one of our Apollo flights -- doubts it very much but he and Huebner are working on the Space Message and need to know for sure right away.

12:00 Diane in Haig's office asked Gen. Haig the question and he didn't know the answer but said Col. Behr should know.
She told them to find Col. Behr and have him call Tom.

If he hasn't called by 1 o'clock said to call her (Diane) 2235
back and they will see what they can do.

12:05 Col. Behr's office called back to say he won't be back until about 1:30 and she'll have him call.
She has no idea where he is, who he is meeting with or anything. I asked if she didn't have an idea who he usually talks with or goes to see and could she check those offices; she will try.

2:00 Col. Behr called.

Tom asked me to go get a copy of the memo Col. Behr referred to concerning the astronaut program.

Friday 3/6/70

Space

3:03 The pouch will be open until 5 o'clock to get things on the Courier plane; we can get it to the Situation Room when it is ready.

Friday

3/6/70

Space

2:20

John Brown's Office called. Steve Bull said you will have to do a briefing paper for the President who will be meeting with Dr. Paine some time tomorrow. This briefing paper has to go with the courier by 4:30.

Espace

March 6, 1970

To: Willis Shapley

From: Tom Whitehead

We still haven't received a copy of the final Message - but here's a copy of what we sent over, with changes.

Attachments

CTWhitehead:ed

Space

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON

March 6, 1970

TO: Mr. Tom Whitehead

FROM: Willis H. Shapley

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2. We should move ahead with bold exploration of the planets and the universe. In the next few years, scientific satellites of many types will be launched into Earth orbit to bring us new information about the universe, the solar system, and even our own planet. During the next decade, we will also launch unmanned spacecraft to all the planets of our solar system, including an unmanned vehicle which will be sent to land on Mars and to investigate its surface. In the late

1970s, the "Grand Tour" missions will study the mysterious outer planets of the solar system -- Jupiter, Saturn, Uranus, Neptune, and Pluto. The positions of the planets at that time will give us a unique opportunity to launch missions which can visit several of them on a single flight of over three billion miles. Preparations for this program will begin in 1972.

There is one ^{major but} longer range goal we should keep in mind as we proceed with our exploration of the planets. As a part of this program we ^{will} eventually send men to explore the planet Mars.

3. We should work to reduce substantially the cost of space operations. Our present rocket technology will provide a reliable launch capability for some time. But as we build for the longer-range future, we must devise less costly and less complicated ways of transporting payloads into space. Such a capability -- designed so that it will be suitable for a wide range of scientific, defense and commercial uses -- can help us realize important economies in all aspects of our space program. We are currently examining in greater detail the feasibility of re-usable space shuttles as one way of achieving this objective.

4. We should seek to extend man's capability to live and work in space. The Experimental Space Station (XSS) -- a large orbiting

workshop -- will be an important part of this effort. We are now building such a station -- using systems originally developed for the Apollo program -- and plan to begin using it for operational missions in the next few years. We expect that men will be working in space for months at a time during the coming decade.

We have much to learn about what man can and cannot do in space. On the basis of our experience with the XSS, we will decide when and how to develop longer-lived space stations. Flexible, long-lived space station modules could provide a multi-purpose space platform for the longer-range future and ultimately become a building block for manned interplanetary travel.

5. We should hasten and expand the practical applications of space technology. The development of earth resources satellites -- platforms which can help in such varied tasks as surveying crops, locating mineral deposits and measuring water resources -- will enable us to assess our environment and use our resources more effectively. We should continue to pursue other applications of space-related technology in a wide variety of fields, including meteorology, communications, navigation, air traffic control, education and national defense. The very act of reaching into space can help man improve the quality of life on Earth.

men from the planet Earth. It is my hope that as we go forward with our space program, we can plan and work in a way which makes us proud both of the planet from which we come and of our ability to travel beyond it.

#

INSERT ON PAGE 8

Unmanned scientific payloads from other nations already make use of our space launch capability on a cost-shared basis; we look forward to the day when these arrangements can be extended to larger applications satellites and astronaut crews.

Insert 1 to replace last sentence of par. 3 on page 6

We are currently examining the design of a reusable space shuttle that could evolve into a new space capability. With this capability, we could fully exploit and use space for the benefit of all mankind and at the same time substantially reduce the cost of space operations.

(Wording adapted from Page 99 of the FY 71 Budget.)

Space

Friday 3/6/70

3:00 Mr. Shapley said the changes are the same as the ones he gave you over the phone -- do you want them in writing?

Tom said "yes. "

Shapley's office will send them right over.

Space

Thursday 3/5/70

6:25 Mr. Shapley called again -- doesn't want to "bug" you, but would like to get one last reading on where we stand on the Message. Dr. Paine will be calling him from California this evening to find out if there is anything he needs to do.

Shapley will be in his office a little while -- takes about 20 minutes to get home and would appreciate your calling him there if you don't reach him at the office.

(13) 24715

337-1956

Spase

March 5, 1970

To: John Campbell
From: Tom Whitehead

Our changes are indicated on pages 1, 6,
and 8. The changes on pages 6 and 8 are
substantive and particularly important.

Attachments

cc: Mr. Whitehead
Central Files

CTWhitehead:ed

Unmanned scientific payloads from other nations already make use of our space launch capability on a cost-shared basis; we look forward to the day when these arrangements can be extended to larger applications satellites and astronaut crews.

Whitehead copy

(Huebner) JK

March 4, 1970

Proposed Statement on the Future Of
the U. S. Space Program

Over the last decade, the principal goal of our nation's space program has been the Moon. By the end of that decade men from our planet had traveled to the Moon on four occasions and twice they had walked on its surface. With these unforgettable experiences, we have gained a new perspective on ourselves and our world.

I believe these accomplishments should help us gain a new perspective on our space program as well. Having completed that long stride into the future which has been our objective for the past decade, we must now define new goals which make sense for the Seventies. We must build on the successes of the past, always reaching out for new achievements. But we must also recognize that many critical problems here on this planet make higher priority demands on our attention and our resources. By no means should we allow our space program to stagnate. But -- with the entire future and the entire universe before us -- we should not try to do everything at once. Our approach to space must continue to be bold -- but it must also be balanced.

When this Administration came into office, there were no clear, comprehensive plans for our space program after the first Apollo landing. To help remedy this situation, I established in February of 1969 a Space Task Group, headed by the Vice President, to study

possibilities for the future of that program. Their report was presented to me in September. After reviewing that report and considering our national priorities, I have reached a number of conclusions concerning the future pace and direction of the nation's space efforts. The budget recommendations which I have sent to the Congress for Fiscal Year 1971 are based on these conclusions.

Three General Purposes

In my judgment, three general purposes should guide our space program.

One purpose is exploration. From time immemorial, man has insisted on venturing into the unknown despite his inability to predict precisely the value of any given exploration. He has been willing to take risks, willing to be surprised, willing to adapt to new experiences. Man has come to feel that such quests are worthwhile in and of themselves -- for they represent one way in which he expands his vision and expresses the human spirit. A great nation must always be an exploring nation if it wishes to remain great.

A second purpose of our space program is scientific knowledge -- a greater systematic understanding about ourselves and our universe. With each of our space ventures, man's total information about nature has been dramatically expanded; the human race was able

to learn more about the Moon and Mars in a few hours last summer than had been learned in all the centuries that had gone before. The people who perform this important work are not only those who walk in spacesuits while millions watch or those who launch powerful rockets in a burst of flame. Much of our scientific progress comes in laboratories and offices, where dedicated, inquiring men and women decipher new facts and add them to old ones in ways which reveal new truths.

The abilities of these scientists constitute one of our most valuable national resources. I believe that our space program should help these people in their work and should be attentive to their suggestions.

A third purpose of the United States space effort is that of practical application -- turning the lessons we learn in space to the early benefit of life on Earth. Examples of such lessons are manifold; they range from new medical insights to new methods of communication, from better weather forecasts to new management techniques and new ways of providing energy. But these lessons will not apply themselves; we must make a concerted effort to see that the results of our space research are used to the maximum advantage of the human community:

A Continuing Process

We must see our space effort, then, not only as an adventure

of today but also as an investment in tomorrow. We did not go to the Moon merely for the sport of it. To be sure, those undertakings have provided an exciting adventure for all mankind and we are proud that it was our nation that met this challenge. But the most important thing about man's first footsteps on the Moon is what they promise for the future.

We must realize that space activities will be a part of our lives for the rest of time. We must think of them as part of a continuing process -- one which will go on day in and day out, year in and year out -- and not as a series of separate leaps, each requiring a massive concentration of energy and will and accomplished on a crash timetable. Our space program should not be planned in a rigid manner, decade by decade, but on a continuing flexible basis, one which takes into account our changing needs and our expanding knowledge.

We must also realize that space expenditures must take their proper place within a rigorous system of national priorities. What we do in space from here on in must become a normal and regular part of our national life and must therefore be planned in conjunction with all of the other undertakings which are also important to us.

The space budget which I have sent to Congress for Fiscal Year 1971 is lower than the budget for Fiscal Year 1970, a condition which

reflects the fiscal constraints under which we presently operate and the competing demands of other programs. I am confident, however, that the funding I have proposed will allow our space program to make steady and impressive progress.

Six Specific Objectives

With these general considerations in mind, I have concluded that our space program should work toward the following specific objectives:

1. We should continue to explore the Moon. Future Apollo manned lunar landings will be spaced so as to maximize our scientific return from each mission, always providing, of course, for the safety of those who undertake these ventures. Our decisions about manned and unmanned lunar voyages beyond the Apollo program will be based on the results of these missions.
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1970s, the "Grand Tour" missions will study the mysterious outer planets of the solar system -- Jupiter, Saturn, Uranus, Neptune, and Pluto. The positions of the planets at that time will give us a unique opportunity to launch missions which can visit several of them on a single flight of over three billion miles. Preparations for this program will begin in 1972.

There is one ^{major but} longer range goal we should keep in mind as we proceed with our exploration of the planets. As a part of this program we ^{will} ~~should~~ eventually send men to explore the planet Mars.

3. We should work to reduce substantially the cost of space operations. Our present rocket technology will provide a reliable launch capability for some time. But as we build for the longer-range future, we must devise less costly and less complicated ways of transporting payloads into space. Such a capability -- designed so that it will be suitable for a wide range of scientific, defense and commercial uses -- can help us realize important economies in all aspects of our space program. We are currently examining in greater detail the feasibility of re-usable space shuttles as one way of achieving this objective.

4. We should seek to extend man's capability to live and work in space. The Experimental Space Station (XSS) -- a large orbiting

workshop -- will be an important part of this effort. We are now building such a station -- using systems originally developed for the Apollo program -- and plan to begin using it for operational missions in the next few years. We expect that men will be working in space for months at a time during the coming decade.

We have much to learn about what man can and cannot do in space. On the basis of our experience with the XSS, we will decide when and how to develop longer-lived space stations. Flexible, long-lived space station modules could provide a multi-purpose space platform for the longer-range future and ultimately become a building block for manned interplanetary travel.

5. We should hasten and expand the practical applications of space technology. The development of earth resources satellites -- platforms which can help in such varied tasks as surveying crops, locating mineral deposits and measuring water resources -- will enable us to assess our environment and use our resources more effectively. We should continue to pursue other applications of space-related technology in a wide variety of fields, including meteorology, communications, navigation, air traffic control, education and national defense. The very act of reaching into space can help man improve the quality of life on Earth.

6. We should encourage greater international cooperation in space. In my address to the United Nations last September, I indicated that the United States will take positive, concrete steps "toward internationalizing man's epic venture into space -- an adventure that belongs not to one nation but to all mankind." I believe that both the adventures and the applications of space missions should be shared by all peoples. Our progress will be faster and our accomplishments will be greater if nations will join together in this effort, both in contributing the resources and in enjoying the benefits. insert attached The Administrator of NASA recently met with the space authorities of Western Europe, Canada, Japan and Australia in an effort to find ways in which we can cooperate more effectively in space.

* * *

It is important, I believe, that the space program of the United States meet these six objectives. A program which achieves these goals will be a balanced space program, one which will extend our capabilities and knowledge and one which will put our new learning to work for the immediate benefit of all people.

As we enter a new decade, we are conscious of the fact that man is also entering a new historic era. For the first time, he has reached beyond his planet; for the rest of time, we will think of ourselves as

men from the planet Earth. It is my hope that as we go forward with our space program, we can plan and work in a way which makes us proud both of the planet from which we come and of our ability to travel beyond it.

#

March 5, 1970

To: Marge

From: Tom

This was inserted in the paragraph
on international cooperation.

If Mr. Flanigan has any troubles,
blow the whistle fast!!!

Attachment

cc: Mr. Whitehead
Central Files

CTWhitehead:ed

Unmanned scientific payloads from other nations already make use of our space launch capability on a cost-shared basis; we look forward to the day when these arrangements can be extended to larger applications satellites and astronaut crews.

Space

Thursday 3/5/70

4:30 Mr. Whitehead asked us to call Shapley's office
and tell him it is highly unlikely that we will have anything
for them before tomorrow.

Space

Thursday 3/5/70

4:10 Judy called John Campbell's office and asked them to send us 6 copies of the Space Message when it's final.

Tom wants them to go to:

NASA
Space Council
Vice President
OST
TW
1 extra

Wednesday 3/4/70

Space

7:20 Mr. Keogh's secretary brought this copy of the space message to you.

Copies have gone to:

Cole
Campbell
Huebner
Harlow

Space

March 4, 1970

To: Mr. Flanigan

From: Tom Whitehead

Cy of draft of proposed
space statement.

NASA

March 6, 1970

To: Bill Timmons
From: Tom Whitehead

NASA assures me these requests can be taken care of although it is highly unlikely that they will be able to supply an astronaut who has been to the moon; i. e., they will provide one of the astronauts who has not yet flown. I will let you know as soon as I can who they have lined up so you can pass the word on to Stagers and Wyatt.

Attachments

cc: Mr. Flanigan
Mr. Whitehead
Central Files

Mr. Harlow
CTWhitehead:ed

NASA

March 6, 1970

To: Willis Shapley

From: Tom Whitehead

These two particular requests for astronauts are ones we feel strongly we would like to have honored. Would you please take care of this and get back as soon as possible.

Attachments

cc: Mr. Flanigan
Mr. Harlow
Mr. Timmons
Central Files
Mr. Whitehead

CTWhitehead:ed

Thursday 3/5/70


1:50

Marge called. Mr. Flanigan would like you to call Julian Scheer, NASA, in reference to 2 requests for appearances of the astronauts which he would like to have honored.

(1) Chairman Harley Staggers would like one of the astronauts to speak at Keyser, West Virginia, at a function honoring a soldier killed in the service who received the Congressional Medal of Honor. Bryce Harlow asked if we could do something and then let Bill Timmons know the outcome.

(2) Congressman Wendell Wyatt would like one of the astronauts to be Grand Marshall at a Rose Parade in Portland, Oregon, on June 13th. This Rose Parade is almost comparable to the one at Pasadena, California.

Marge is sending over a memo on this.

Returns w/ 

Scheer -- 13-35302

THE WHITE HOUSE
WASHINGTON

Judy.

The 2 matters
I told you about
on the phone.

Marge

6/13 Rose Parade

Portland, Oregon

Grand Marshall

Astronaut

Request from

Wendell Wyatt.

MEMORANDUM

THE WHITE HOUSE

WASHINGTON

March 3, 1970

*Tom
should
call Louis -
Scheer
+ Wyatt's my.*

TO: Peter Flanigan

FROM: Bryce Harlow ~~HT~~

Chairman Harley Staggers pleads for an astronaut to speak at an April 27 function in Keyser, West Virginia, honoring a soldier who was killed in the service and received the Congressional Medal of Honor.

Staggers said that the astronaut could jet his way to Cumberland, Keyser being some twenty minutes away from there, and could be back very shortly thereafter. He tried through George Miller, Chairman of the House Space Committee, and failed. This is extremely important to Staggers, and he comes to us as a final appeal.

I recommend that we try to do this for Staggers. Not only is he Chairman of the House Interstate Committee, but he is also a great sentimentalist. If we came through on this, it would be a very valuable investment.

|| Can you, with your inestimable clout, pursue this with NASA -- then let Bill Timmons know the outcome so that he can tell the good Congressman?

cc: Bill Timmons

(Huebner)

March 4, 1970

PROPOSED STATEMENT ON THE FUTURE OF
THE U. S. SPACE PROGRAM

Over the last decade, the principle goal of our nation's space program has been the Moon. By the end of that decade men from our planet had traveled to the Moon on four occasions and twice they had walked on its surface. With these unforgettable experiences, we have gained a new perspective on ourselves and our world.

I believe these accomplishments should help us gain a new perspective on our space program as well. Having completed that long stride into the future which has been our objective for the past decade, we must now define new goals which make sense for the Seventies. We must build on the successes of the past, always reaching out for new achievements. But we must also recognize that many critical problems ^{here} on this planet make higher priority demands on our attention and our resources. By no means should we allow our space program to stagnate. But -- with the entire future and the entire universe before us -- we should not try to do everything at once. ~~In short,~~ Our approach to space must continue to be bold -- but it also must be balanced.

When this Administration came into office, there were no clear, comprehensive plans for our space program after the first Apollo

landing. To help remedy this situation, I established in February of 1969 a Space Task Group, headed by the Vice President, to study possibilities for the future of that program. Their report was presented to me in September. After reviewing that report and considering our national priorities, I have reached a number of conclusions concerning the future pace and direction of the nation's space efforts. The budget recommendations which I have sent to the Congress for Fiscal Year 1971 are based on these conclusions.

Three General Purposes

In my judgment, three general purposes should guide our space program.

One purpose is exploration. From time immemorial, man has insisted on venturing into the unknown despite his inability to predict precisely the value of any given exploration. He has been willing to take risks, willing to be surprised, willing to adapt to new experiences. Man has come to feel that such quests are worthwhile in and of themselves - for they represent one way in which he expands his vision and expresses the human spirit. A great nation must always be an exploring nation if it wishes to remain great.

A second purpose of our space program is scientific knowledge -- a greater systematic understanding about ourselves and our universe. With each of our space ventures, man's total information about nature has been dramatically expanded; the human race was able to learn more about the Moon and Mars in a few hours last summer than had been learned in all the centuries that had gone before. The people who perform this important work are not only those who walk in spacesuits while millions watch or those who launch powerful rockets in a burst of flame. Much of our scientific progress comes in laboratories and offices, where dedicated, inquiring men and women decipher new facts and add them to old ones in ways which reveal new truths. The abilities of these scientists constitute one of our most valuable national resources. I believe that our space program should help these people in their work and should be attentive to their suggestions.

A third goal of the United States space effort is that of practical application -- turning the lessons we learn in space to the early benefit of life on Earth. Examples of such lessons are manifold; they range

from new medical insights to new methods of communication, from better weather forecasts to new management techniques and new ways of providing energy. But these lessons will not apply themselves; we must make a concerted effort to see that the results of our space research are used to the maximum advantage of the human community.

A Continuing Process

We must see our space effort, then, not only as an adventure of today but also as an investment in tomorrow. We did not go to the Moon merely for the sport of it. To be sure, those undertakings have provided an exciting adventure for all mankind and we are proud that it was our nation that met this challenge. But the most important thing about man's first footsteps on the Moon is what they promise for the future.

We must realize that space activities will be a part of our lives for the rest of time. We must think of ^{them} ~~it~~ as ^{part of} a continuing process -- one which will go on day in and day out, year in and year out -- and not as a series of separate leaps, each requiring a massive concentration of energy and will and accomplished on a crash time-table. Our space program should not be planned in a rigid manner, decade by decade, but on a continuing flexible basis, one which takes into account our changing needs and ^{our} expanding knowledge.

We must also realize that space expenditures must take their proper place within a rigorous system of national priorities. What we do in space from here on in must become a normal and regular part of our national life and must therefore be planned in conjunction with all of the other undertakings which are also important to us.

→ The space budget which I have sent to Congress for Fiscal Year 1971 is lower than the budget for Fiscal Year 1970, a condition which reflects the fiscal constraints under which we presently operate and the competing demands of other programs. I am confident, however, that the funding I have proposed will allow our space program to make steady and impressive progress.

Six Specific Objectives

With ~~all~~ these general considerations in mind, I have concluded that our space program should work toward the following specific objectives:

1. We should continue to explore the Moon. Future Apollo manned lunar landings will be spaced so as to maximize our scientific return from each mission, always providing, of course, for the safety of those who undertake these ventures. Our decisions about manned and unmanned

lunar voyages beyond the Apollo program will be based on the results of these missions.

2. We should move ahead with bold exploration of the planets and the universe. In the next few years, scientific satellites of many types will be launched into Earth orbit to bring us new information about the universe, the solar system, and even our own planet. During the next decade we will also launch unmanned spacecraft to all the planets of our solar system. Work is already underway on an unmanned spacecraft which will be sent to land on Mars and to investigate its surface. In the late 1970's, the "Grand Tour" missions will study the mysterious outer planets of the solar system -- Jupiter, Saturn, Uranus, Neptune, and Pluto. The positions of the planets at that time will give us a unique opportunity to launch missions which can visit several of them on a single "Grand Tour" flight of over three billion miles. Preparations for this program will begin in 1972.

There is one other goal we should keep in mind as we plan the future of space exploration. As a part of this program we should, I believe, eventually send men to explore the planet Mars.

3. We should work to reduce substantially the cost of space operations. Our present rocket technology will provide a reliable launch capability for

some time. But as we build for the longer-range future, we must devise less costly and less complicated ways of transporting payloads into space. Such a transport system -- designed so that it will be suitable for a wide range of scientific, defense and commercial uses -- can help us realize important economies in all aspects of our space program. We are currently examining in more detail the feasibility of re-usable space shuttles as one way of achieving this objective.

4. We should seek to extend man's capability to live and work in space. The Experimental Space Station (XSS) -- a large orbiting workshop -- will be an important part of this effort. We are presently building such a station -- using systems originally developed for the Apollo program -- and plan to begin using it for operational missions in the next few years. We expect that men will be working in space for months at a time during the coming decade.

We have much to learn about man's capability in space. On the basis of our experience with the XSS, we will decide when and how to develop longer-lived space stations. Flexible, long-lived space station modules could provide a multi-purpose space platform for the longer-range future and ultimately become a building block for manned interplanetary travel.

5. We should hasten and expand the practical applications of space technology. The development of earth resources satellites -- platforms which can help in such varied tasks as surveying crops, locating mineral deposits and measuring water resources -- will enable us to assess our environment and use our resources more effectively. We should continue to pursue other applications of space-related technology in a wide variety of fields, including meteorology, communications, navigation, air traffic control, education and national defense. The very act of reaching out to new planets can help man improve the quality of life on Earth.

6. We should encourage greater international cooperation in space. In my address to the United Nations in September, I indicated that the United States will take positive, concrete steps "toward internationalizing man's epic venture into space -- an adventure that belongs not to one nation but to all mankind." I believe that both the adventures and the applications of space missions should be shared by all peoples. Our progress will be faster and our accomplishments will be greater if nations will join together in this effort, both in contributing the resources and in enjoying the benefits. The Administrator of NASA has recently met with the space authorities of Western Europe, Canada, Japan, and Australia in an effort to find ways in which they -- and other nations -- can increase their participation in our space program.



It is important, I believe, that the space program of the United States meet these six objectives. A program which achieves these goals will be a balanced space program, one which will extend our capabilities and knowledge and one which will put our new learning to work for the immediate benefit of all people.

As we enter a new decade, we are conscious of the fact that man is also entering a new historic era. For the first time, he has reached beyond his planet; for the rest of time, we will think of ourselves as men from the planet Earth. It is my hope that as we go forward with our space program, we can plan and work in a way which makes us proud both of the planet from which we come and of our ability to travel beyond it.

#

(Huebner)

Space
revised 3/4
March 3, 1970

PROPOSED STATEMENT ON THE FUTURE OF
THE U.S. SPACE PROGRAM

It was less than fifteen months ago that men first saw the Earth as it appears from the Moon. Since that time, men from our planet have traveled to the Moon on four occasions and twice they have walked on its surface. With these unforgettable experiences, we have gained a new perspective on ourselves and our world.

I believe these accomplishments should help us gain a new perspective on our space program as well. Having completed that long stride into the future which has been our goal for the past decade, we must now define new goals which make sense for the Seventies.

When this Administration came into office, there were no clear, comprehensive plans for our space program after the first Apollo landing. To help remedy this situation, I established ⁱⁿ ~~last~~ ^{of 1969} February a Space Task Group, headed by the Vice President, to study possibilities for the future of that program. Their report was presented to me in September. After reviewing that report and considering our national priorities, I have reached a number of conclusions concerning the future pace and direction of the nation's space efforts. ~~Accordingly, I am today outlining a new long-range plan which I believe should guide this nation's space efforts.~~

~~in the decade of the Seventies and beyond.~~ The budget recommendations which I have sent to the Congress for Fiscal Year 1971 are based on these conclusions and are designed to support the first step in ~~this~~ ^{the} long-range program, *which I am today presenting.*

The plan which I am ~~presenting~~ ^{outlining} contains a number of new initiatives. One of its most important, features, ~~for example,~~ is the program which will send unmanned spacecraft on the longest space voyages ever undertaken -- the so-called "Grand Tour" missions which will explore the most distant planets in the late 1970s. Another significant feature of the plan is the new emphasis it places on broader international cooperation in space, including our invitation to other countries to nominate candidates for training as astronauts and for participation in future missions.

But even as we reach out for new achievements in space, we must also recognize that many critical problems on this planet make higher priority demands on our attention and our resources. By no means should we ever allow our space program to stagnate. But -- with the entire future and the entire universe before us -- there is no point in trying to do everything at once. Our approach to space, in short must continue to be bold -- but it must also be balanced.

• In my judgment, three general purposes should guide our space program in the years to come.

One is exploration. From time immemorial, man has insisted on venturing into the unknown despite his inability predict precisely the value of any given exploration. He has been willing to take risks, willing to be surprised, willing to adapt to new experiences. Man has come to feel that such quests are worthwhile in and of themselves -- for they represent one way in which he expands his vision and expresses the human spirit. A great nation must always be an exploring nation if it wishes to remain great.

A second and related purpose of our space program is scientific knowledge -- a greater systematic understanding about ourselves and our universe. With each of our space ventures, man's total information about nature has been dramatically expanded; the human race was able to learn more about the Moon and Mars in a few hours last summer than had been learned in all the centuries that had gone before. The people who perform this important work are not only those who walk in space suits while millions watch or those who launch powerful rockets in a burst of flame. Much of our scientific progress comes in laboratories and offices, where dedicated inquiring men and women decipher new facts and add them to old ones in ways which reveal new truths. The abilities of these scientists constitute one of our most valuable national resources. I believe that our space program should help these people in their work and should be attentive to their suggestions.

A third goal of the United States space effort is that of practical application -- turning the lessons we learn in space to the early benefit of life on Earth. Examples of such lessons are manifold; they range from new medical insights to the ability to send color television across the oceans, ~~and~~ from better weather forecasts to new management techniques and new ways of providing energy. But these lessons will not apply themselves; we must make a concerted effort to see that the results of our space research are used to the maximum advantage of the human community.

We must see our space effort, then, not only as an adventure of today but also as an investment in tomorrow. We did not go to the Moon merely for the sport of it. To be sure, those undertakings have provided an exciting adventure for all mankind and we are proud that it was our nation that met this challenge. But the most important thing about man's first footsteps on the Moon is what they promise for the future.

We must realize that work in space will be a part of our lives for the rest of time. We must think of it as a continuing process -- one which will go on day in and day out, year in and year out -- and not as a series of separate leaps, each requiring a massive concentration of energy and will and accomplished on a crash time-table. What we do in

space from here on in must become a normal and regular part of our national life and must therefore be planned in conjunction with all of the other undertakings which are also important to us. Space expenditures, in short, must take their proper place within a rigorous system of national priorities.

With these values in mind, I have concluded that our space program should meet the following specific objectives:

1. We should continue to explore the Moon. Future Apollo manned lunar landings will be spaced so as to maximize our scientific return from each mission, always providing, of course, for the safety of those who undertake these ventures. Because there is no atmosphere on the Moon, no winds or seas or storms or tides to disturb its physical properties, man can study there the history of a planet from its very beginnings. Understanding the Moon will help us better to understand the Earth. And we must ^{better} understand the Earth ~~better~~ ^{complex} if we are to solve its problems.

2. We should move ahead with bold explorations of the planets, building on our impressive successes with unmanned spacecraft. Work is (underway) already on an unmanned spacecraft which will be sent to land on the planet Mars and to investigate its surface. Scientific satellites of many types will be launched into Earth orbit ^{in the coming decade} to bring us new information about the Earth, the solar system, and the even more distant universe.

One of our most important goals in the ^{1970's} ~~coming decade~~ will be the "Grand Tour" missions by unmanned spacecraft to the mysterious outer planets of the solar system -- Jupiter, Saturn, Uranus, Neptune, and Pluto. In the late 1970s the positions of the planets will give us opportunities we will not have again for 179 years to launch missions which can visit several of these planets on a single "Grand Tour" flight. Each flight will travel over three billion miles and take as long as nine years to reach its most distant objective. ^{for this program} Preparations will begin in 1972.

3. We should work to reduce substantially the cost of space operations. Our present rocket technology will provide a reliable launch capability for some time. But as we build for the longer-range future, our first step should be the development of a re-usable space shuttle, a vehicle that would be launched like a rocket but would land like an airplane, and could therefore be launched again and again. Such a transport system would help us realize important economies in our space program. The space shuttle should be designed so that it will be suitable for a wide range of scientific, defense and commercial uses.

4. We should seek to extend man's capability to live and work in space. An Experimental Space Station which can serve as a large ^{presently} orbiting workshop is an important part of this effort. We are/building such a station -- now named "SKYLAB" -- using systems originally

developed for the Apollo program. We plan to begin using it for operational missions during the next few years. We expect that men will be working in space for months at a time during this decade.

Building on our experience with "SKYLAB" we should also begin, in this decade, to design and develop a longer-lived Space Station Module. Such a module would provide a multi-purpose space platform for the longer-range future and would ultimately become a building block for manned interplanetary travel. As a part of this program, I believe that we should eventually send men to explore the planet Mars.

5. We should hasten and expand the practical applications of space technology. The development of earth resources satellites -- platforms which can help in such varied tasks as surveying crops, locating mineral deposits and measuring water resources -- will enable us to assess our environment and use our resources more effectively. We should continue to pursue other applications of space-related technology in a wide variety of fields, including meteorology, communications, navigation, air traffic control, education and national defense. The very act of reaching out to new planets can help man improve the quality of life on Earth.

6. We should encourage greater international cooperation in space.

In my address to the United Nations in September, I indicated that the United States will take positive, concrete steps "toward internationalizing man's epic venture into space -- an adventure that belongs not to one nation but to all mankind." I believe that both the adventures and the applications of space missions should be shared by all peoples. In the long run, our progress will be faster and our accomplishments will be greater if nations will join together in this effort, both in contributing the resources and in enjoying the benefits.

At my request, the Administrator of NASA has met personally with the space authorities of Western Europe, Canada, Japan, and Australia in an effort to find ways in which they -- and other nations -- can increase their participation in our space program. The space shuttle and space station programs offer special opportunities for broader international involvement and we hope that many nations will join us in these efforts. As these programs progress, we will invite the participating nations to propose astronauts who will enter our training program and become candidates for participation in future space flights.

It is important, I believe, that the space program of the United States meet these six objectives. A program which achieves these goals

will be a balanced space program, one which will extend our capabilities and knowledge and one which will put our new learning to work for the immediate benefit of all people.

We must also recognize, however, that we are faced with serious fiscal constraints and that we cannot afford to continue to fund our national space effort on the same level as in the immediate past. The space budget I have sent to Congress for Fiscal Year 1971 is lower than the budget for Fiscal Year 1970, a condition which reflects the availability of resources, the demands of other programs and the importance we attach to the fight against inflation. I am confident, however, that the funding proposed in my budget message will allow our space program to make steady and impressive progress.

As we enter a new decade, we are conscious of the fact that man is also entering a new historic era. For the first time, he has reached beyond his planet; for the rest of time, we will think of ourselves as men from the planet Earth. It is my hope that as we go forward with our space program, we can plan and work in a way which makes us proud both of the planet from which we come and of our ability to travel beyond it.

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