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THE POST-APOLLO SPACE PROGRAM: DIRECTIONS FOR THE FUTURE

**SUMMARY OF
PRESIDENT'S SCIENCE ADVISORY COMMITTEE
REPORT
TO THE PRESIDENT'S SPACE TASK GROUP**

"THE NEXT DECADE IN SPACE"

SEPTEMBER 1969

SUMMARY OF PSAC REPORT
"THE NEXT DECADE IN SPACE"

GOALS AND RECOMMENDED PROGRAMS

The national program for the next decade in space should focus on utilizing space capabilities for the welfare, security, and enlightenment of all people.

We recommend the following program goals for the coming decade:

- Contribute to the economic strength and security of the Nation and provide beneficial services through an expanded program of earth-oriented research and applications of space science and technology.
- Explore the solar system, with emphasis on a phased program of lunar exploration, the search for extraterrestrial life and a diversified program of planetary exploration.
- Use the unique features of space platforms outside the earth to expand our knowledge of the universe and basic physical laws through space astronomy and space physics research.
- Develop new technology with three main objectives:
 - Expand capability for automated equipment controlled by man in a remote location for use both in space exploration and in potential civilian applications.
 - Reduce the cost of access to and operations in space, initially through cost reduction programs for expendable launch vehicles. Pursue savings in payload development costs, including those that could result from a new capability of providing for recovery, repair and reuse of satellites and a more benign launch environment.
 - Study, with a view to early development, a reusable space transportation system with an early goal of replacing all existing launch vehicles larger than Scout with a system permitting satellite recovery and orbital assembly and ultimately radical reduction in unit cost of space transportation.

- Strengthen the biomedical basis for possible long duration manned space flights of the future with a largely ground-based program of research leading to the conduct of a biomedical flight program in a Saturn V-launched Apollo Applications Program space station.
- Encourage international cooperative programs both in unmanned science and applications and in manned activities.

The program we recommend will keep open the option of manned planetary exploration in the 1980's, but without immediate commitment to this goal.

In the selection of the means for achieving a goal - whether with manned spacecraft, remotely controlled systems, or a combination of the two - maximum effectiveness within the given resources should determine the choice. Pending a radical reduction in cost of manned space operations, we conclude this criterion will almost always indicate use of automated systems for programs whose goal is primarily scientific knowledge or useful applications, as contrasted with the adventure of manned exploration.

After availability of the space transportation system, occasional manned attendance to remotely controlled systems such as orbiting telescopes will be much more attractive, as will satellite recovery.

Lunar exploration, as a fulfillment of the promise and the technology of Apollo, should be carried out in a sequence of carefully planned programs utilizing mixed manned and unmanned techniques.

Other recommended manned space flight activities in fulfillment of the above goals would be:

- A basic biomedical research program supplemented by a 12-18 month Apollo Applications flight program conducted when the preparations for the biomedical work are satisfactory. This program can provide much of the human factors information for which a more ambitious space station has been proposed. We recommend that if a second generation space station is required it be designed to utilize the Space Transportation System.
- Earth-orbital manned space flight activity with systems using the Space Transportation System.

These goals and programs to carry them out are discussed in detail in the PSAC report.

The recommended programs can be conducted with a budget which is approximately comparable in over-all size to the rate of spending during the past few years. It permits changes in the scale of effort in response to changes in scientific, economic, and political circumstances.

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