

MARS MISSION

Less than a national goal

Men will land on the red planet, but not in the next decade

Apollo 11 made it under the wire with only six months to spare in fulfilling President John F. Kennedy's desire of putting a man on the moon by the end of the decade. It almost certainly would not have done so, except for its lofty status of "national goal"—which implied that it was a popular-level movement and therefore deserving of full-speed-ahead treatment in space planning and budgeting, regardless of the cost.

Now President Nixon has in his hands three flight plans for the future of the U.S. in space, differing primarily in how strongly the country is committed to another, even loftier goal: Mars.

The commitment to a Mars landing seems certain. The question is: How soon?

The flight plans are options presented to the President by the highest-level study group he could devise, the first such panel ever assembled from within the Government to advise a President on both civilian and military space programs in detail.

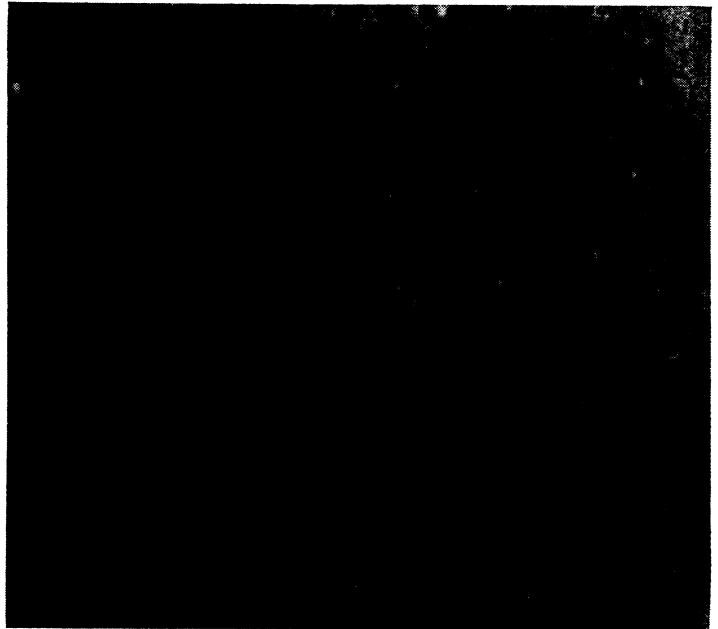
Formed in February under Vice President Agnew, who also heads the National Aeronautics and Space Council, the group includes Dr. Thomas O. Paine, Administrator of the National Aeronautics and Space Administration, Secretary of the Air Force Robert C. Seamans (former Deputy Administrator of NASA), and Dr. Lee A. DuBridge, the President's science adviser.

The panel's report concentrates on the 1970's, recommending a balanced program of unmanned planetary exploration, earth applications satellites and further manned studies of the moon.

Much of the interest in the '70's, however, and in the report's three differently paced options, is in the degree to which the coming decade will be used to prepare for sending man to Mars.

President Nixon is unlikely to make

Terrain like none on earth or moon is the destination; the pace is the question mark.



NASA

an instant, all-stops-out national goal of the manned Mars mission—"I'd be surprised, amazed and shocked if that were recommended to the Congress," says a Senate space committee official.

Even the fastest-paced plan put forward by the Space Task Group would not require NASA to commit itself before 1976 to a landing as early as 1983, and the slower, less costly options would put the event off until the 1990's or even past the turn of the century.

However, at least the first option would require commitment to the new technology that would be necessary for such a project. An important item is the nuclear rocket engine, vital for long-life flights with heavy spacecraft but which so far has received less than unanimous support in its on-again-off-again history (SN: 3/22, p. 283). The nuclear rocket, probably used as the third or fourth stage of a Saturn 5, would be needed to make a Mars flight feasible in less than two years with the large crews that have been discussed—possibly as many as a dozen men.

Another important milestone would be a large, earth-orbiting space station, both for training in long exposure to weightlessness and as a laboratory to develop the necessary life-support equipment. The Task Group's first choice option, in fact, reportedly puts a 1975 deadline on getting such a station aloft, to hold 12 men, which means that a shuttle vehicle to supply it would have to be ready even sooner.

Even without the Mars landing, these three steps—the nuclear rocket, space station and shuttle—will cost from \$4 billion to \$6 billion says NASA.

The Task Group rejected both of the current extreme positions in its recommendations, an Apollo-style national goal and the complete abandonment of all manned space flights after Apollo. The latter position had been supported, to varying degrees, by some scientists seeking to have space funds spent on less expensive, unmanned research probes.

The three options of the report, while containing basically the same elements, do vary enough in pace that the required annual funding levels would be significantly different, probably ranging from above to below NASA's planned fiscal 1971 budget request of about \$3.6 billion.

The panel stressed that one important feature of the 1970's in space ought to be practical payoffs on earth. All three options, therefore, include emphasis on satellites for weather forecasting, communications, natural-resources surveys and navigation. The report also recommends unmanned planetary exploration, particularly the elaborate Grand Tour mission to visit most or all of the outer planets—Jupiter, Saturn, Uranus, Neptune and Pluto—with a single space probe (SN: 8/9, p. 111), taking advantage of a fortuitous lineup of planets that will not occur again for as much as 180 years.

The focus of interest, however, is Mars, and which choice President Nixon will make and pass on to Congress. His acceptance of the report this week is significant in itself. Asked whether that meant a commitment to land a man on Mars, Presidential press secretary Ronald L. Ziegler said, "Yes, I think so." ◊

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