

What goes, and who

Ever since the Apollo program began, there has been a logjam of capable crews, scientific experiments and lunar sites from which to choose.

With the loss of Apollo 13, major decisions have been and will be made to recoup the loss and get the most out of the Apollos that remain.

Last week, Dr. Thomas Paine, National Aeronautics and Space Administration Administrator, announced that Apollo 14 would target for Fra Mauro, the Apollo 13 site, with the Apollo 14 crew, but not before Dec. 3.

This decision resulted from painful behind-the-scene deliberations (SN: 4/25, p. 407), not only on the immediate discovery and solution of the problem which cut Apollo 13 short, but reevaluation of the site, the experiments to fly and the crew for Apollo 14.

Site and experiment choices are based partially on what has been learned about the moon's origin and nature, and what is left to learn. Geophysicists concentrate on the moon's gross properties, for which a landing on a mare is thought best suited, geologists and geochemists, on the other hand, are eager to get to as many different terrains as possible, including highlands, rilles, craters and basins.

Both Apollo 11 and 12 explored the moon's maria. Geologists were eager for Apollo 13 to land in the highlands, which are believed to be much older and to hold some keys to the moon's history (SN: 4/4, p. 353). In addition,

Shepard with cart; new for Apollo 14.

NASA



the decision to go to Fra Mauro instead of Littrow, the mare site originally scheduled for 14, means one of the four or five tentative remaining sites—besides Littrow, no maria are among them—will have to be dropped.

Though some consideration was given to changing the Apollo 14 crew from previously announced team of Capt. Alan B. Shepard, Maj. Stuart A. Roosa, and Cmdr. Edgar D. Mitchell, the decision went against it. Last week, the original choice was confirmed.

Of the 73 men chosen to fly the Apollo series, 54 remain active astronauts. Of these, maybe 15 more will get a shot at the moon, if the opportunities are passed around.

Several years ago, 220 experiment proposals were submitted for Apollo missions, about 20 were picked to go on Apollos 12 through 15. The job of integrating these experiments into a package allowing for weight, volume, site and astronaut surface time, as well as power requirements, pretty well de-

termines which experiments will fly at what time.

The lost Alsep II on Apollo 13 contained two new instrumentation packages to measure heat flow and the charged lunar particle environment. The charged particle experiment is scheduled to go on Apollo 14, along with another new experiment, an active seismometer. Without a major reshuffle, the heat flow and the drill experiments will not fly again until Apollo 16.

Apollo 14 planners are hard put to satisfy both the scientists with experiments originally scheduled for the December flight and those who lost their projects in the abort of Apollo 13.

For those who lost, there is little consolation. But in terms of the overall return, it may not make much difference.

"We are so ignorant about the moon that any experiments we fly will return useful data," says Dr. Gene Simmons, chief scientists at the Manned Spacecraft Center.

SCIENCE POLICY

A new call for support

The lament of scientists over the decline in Federal support of science and the potential deterioration of the United States' research enterprise has virtually achieved the status of a refrain.

Another rendition may not have been what President Nixon expected when he named a Task Force on Science Policy—one of 17 task forces on vital national issues—to conduct a study and offer him guidelines. But it is what he got.

The report of the Presidential science policy task force, released this week, tactfully but forcefully reiterates the position of the scientific community on matters ranging from a strengthened National Science Foundation to technology assessment and the need for a strengthening of the behavioral and social sciences.

How realistic the goals are, in the present climate of budgetary confinement, is open to question. Dr. Hubert Heffner, deputy to Presidential Science Adviser Lee A. DuBridge, cites current budgetary difficulties and says it may or may not be possible to implement the recommendations.

The task group seems to have stuck close to ideal ends in laying out its plan. But its work will be measured against what will be called realistic. By that guideline the outlook for its proposals involving new commitments, such as its ratification of the suggestion (SN: 3/8/69, p. 231) that the Federal Government accept a continuing responsibility for a significant share of the total support of graduate education,

is not good. As Dr. Carl M. York of the White House's Office of Science and Technology said recently, the current problem is not an antipathy to science within the Nixon Administration, but a basic need to balance the budget.

Authors of the report have been told that the recommendation most likely to bear immediate fruit is for a new Government mechanism to assess and direct the development of technology (SN: 3/7, p. 240). That idea has substantial support from the Administration.

The report, prepared by 13 scientists headed by Dr. Ruben F. Mettler, president of TRW Inc., is on the agenda for the May 18 meeting of the President's Science Advisory Committee, a first step in White House review. At each stage, through to final review in the Bureau of the Budget, the exigencies of the real (fiscal) world will be brought more strongly to bear.

In suggesting that NSF become, as originally intended, the primary patron of basic research, the group suggests that it be funded at about 0.1 percent of the gross national product. This would nearly double its present \$500 million budget and allow it to sponsor a third of all federally supported basic and academic research, instead of the one-eighth and one-sixth, respectively, it now does. The task force also contends that the funding level for all basic research should be tied to the GNP, but it suggests no figure. Part of this, it says, should come from the Department of Defense money, despite a Congressional ban (SN: 12/13, p. 550).