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## ASTRONAUTICS

# Space Agency Needed

A National Space Establishment, with an appropriation of ten billion dollars to be spent within the next ten years, could give the United States the lead in the space race.

► TO LEAD in the race for space, the United States should set up a National Space Establishment soon, and give it ten billion dollars to spend in the next ten years.

With such a vigorous national effort, the U. S. could hit the moon by rocket in one year, put a manned earth satellite into orbit in five, 27 of the country's top rocket and satellite experts agree. They are members of the independent Rocket and Satellite Research Panel.

(Watson Davis, director of SCIENCE SERVICE, in his science forecast for 1958 said: "A rocket may reach the moon in 1958, not a man-carrying space vehicle but a more modest missile.")

The panel's proposal was submitted through the chairman, Dr. James A. Van Allen of the State University of Iowa. It cites ten goals that could be achieved with such a unified program:

1. An intensified program of scientific soundings with high-altitude rockets, immediately.
2. An intensified program of scientific and technical developments with small instrumented satellites of the earth, immediately.
3. Impact on the moon with non-survival of apparatus, by 1959.
4. Placing an instrumented satellite in an orbit about the moon, by 1960.
5. Impact on the moon with survival of scientific instruments, by 1960.
6. Returnable, manned satellites in flight around the earth, by 1962.
7. Manned circumnavigation of the moon with return to the earth, by 1965.
8. Manned permanent satellite, by 1965.
9. Manned expedition to the moon by one or two men, by 1968.
10. Manned expedition to the moon by a sizable party of men, by 1971.

Main points of the proposal have been discussed with Dr. James R. Killian, chairman of President Eisenhower's Scientific Advisory Committee, Dr. Van Allen said.

The panel concluded the program should be run by an independent agency so that its work can be "freely directed toward broad cultural, scientific and commercial objectives.

"Such objectives far transcend the short term, though vitally important, military rocket missions of the Department of Defense."

However, the panel said, if creation of the recommended independent agency would require "an intolerable delay," then the program could be guided by the Secretary of Defense, but not within the jurisdiction of any of the military services.

Calling the exploration and eventual habitation of outer space "the finest

examples of the 'Endless Frontier,'" the panel said the program would yield a "rich and continuing harvest of important practical applications as the work proceeds."

Among the returns that can already be foreseen, the proposal cited more reliable short-term and long-range weather forecasts, with all the agricultural and commercial advantages that these imply; rapid, long-range radio communications of great capacity and reliability; aids to navigation and to long-range surveying; television relays; new medical and biological knowledge, etc."

Science News Letter, January 11, 1958

## METEOROLOGY

### Change in the Weather Foreseen by Bureau

► THERE will be a change in the weather. That is the aim of studies the Weather Bureau is starting this year, Dr. F. W. Reichelderfer, Bureau chief, told SCIENCE SERVICE. One plan is to see if there is some way tornadoes can be destroyed before they become full-fledged.

The tornado-modification program is under the Bureau's newly created office of experimental meteorology, headed by Dr. Ferguson Hall. It will also include a search for methods of changing the paths of tornadoes.

These studies, and many others concerning basic studies of the weather, will be coordinated with an expanded program of meteorological research expected when and if the House of Representatives passes the Senate-approved bill, S-86. This bill would place responsibility for all weather modification research with the National Science Foundation.

Its passage was urged by President Eisenhower's Advisory Committee on Weather Control, which completed its four-year existence on Dec. 31, 1957. The committee also recommended that the Government put more money and more effort into meteorological research, sponsoring "talented men as well as their specific projects."

The fields that should be pursued vigorously, the committee said, include the effects of solar disturbances on weather, factors controlling global atmospheric circulation, the birth and movement of large-scale storm systems, cloud motions, rain and snow formation, electricity's role in weather processes, natural sources of condensation and ice-forming nuclei, and methods of weather modification.

Science News Letter, January 11, 1958

A silicon-germanium *diode*, used in guided missiles, is no larger than a match tip.