From the first few years of the Mount Washington observations he was able to illustrate their value to the Weather Bureau as aids in forecasting storms and cold waves. This, subsequently, led to the Bureau's support of the observational program. Liquid water content and icing rate of clouds were first routinely observed on the mountain. This work, always heartily endorsed by Dr. Brooks, led to many experiments in cloud physics and to the collecting of valuable data for the aircraft and tower industry, the latter having developed with the need for tall television and microwave towers.

Dr. Brooks's chief scientific studies have been on weather and climate. In his studies of the relations between ocean weather and synoptic meteorology, the difficulties and inaccuracies of meteorological measurements at sea became apparent. Studies of instrumentation and recommendations concerning the methods of observation followed.

At Blue Hill he prepared, jointly with A. J. Connor, basic climatic maps of North America which are still considered the best available for the area.

In the 1930's he set up a network of special weather stations over New England for the study of eclipse meteorology. His findings show the detailed changes in the weather which occur during an eclipse.

Under his direction the American chronometric radiosonde was developed at Blue Hill and, for a time, used routinely by the U.S. Weather Bureau and other countries. He studied the deficiencies of precipitation gages, designed and put into use new windshields which provide better "catch" during windy storms of rain or snow. His interpretation of clouds in terms of stability and general pattern of the atmosphere is well known among meteorologists. During World War II he taught new Weather Bureau and Civil Aeronautics Authority observers methods of cloud observation.

His knowledge of clouds, instruments, and methods of observation led the International Meteorological Organization, which later became the World Meteorological Organization, to utilize his experience in these matters in the late 1940's and early 1950's. He served this organization as a member of the committee which prepared the *International Cloud Atlas*. In 1953 he participated in the meetings of the Commission on Instruments and Methods of Observation of the World Meteorological Organization.

Although he was above all an observer, he heartily endorsed theoretical work in cloud physics and weather radar at Blue Hill.

In New England, Dr. Brooks has probably done more for the U.S. Weather Bureau than any other single person. He helped obtain a district forecast office in Boston, when previously the forecasts emanated from Washington. He was a strong advocate of hurricane research which could be applied to New England as well as to other areas, and he was constantly in touch with his senators and congressmen, emphasizing the needs of the Bureau. For nine years he and other staff members of the observatory studied snowstorms affecting the Boston area. This work helped to improve the forecasting of snowstorms for this area.

He was a fellow of the Royal Meteorological Society of Great Britain, a member of many scientific organizations in the United States, and, at one time, president of the Association of American Geographers. He served with the U.S. Quartermaster Corps, the Office of Scientific Research and Development, and the National Research Council.

His book, *Why the Weather*, published in 1921 and revised and enlarged in 1935, has served to inspire many to become meteorologists.

After the founding of the Lowell Broadcasting Council and of its radio station, WGBH–FM, whose transmitter is located on Blue Hill, he gave weekly talks on current events, both local and international, in the ever-expanding field of meteorology.

The most important phase of his career revolved around his unique personality. He worked and played at meteorology almost continuously, yet during all of this activity, Dr. Brooks showed a warm sympathy for all men, and he gave his time and energy unstintingly, day or night, to all who sought his advice—regardless of their academic degrees or lack of them.

JOHN H. CONOVER
Blue Hill Meteorological Observatory, Harvard University

News of Science

President's Message on Space Agency

President Eisenhower has proposed the creation of a National Aeronautics and Space Agency. He described the new agency on 3 April in a special message to Congress.

". . . An imaginative and well-conceived space program must be given high priority and a sound organization provided to carry it out. Such a program and the organization which I recommend should contribute to (1) the expansion of human knowledge of outer space and the use of space technology for scientific inquiry; (2) the improvement of the usefulness and efficiency of aircraft; (3) the development of vehicles capable of carrying instruments, equipment, and living organisms into space; (4) the preservation of the role of the United States as a leader in aeronautical and space science and technology; (5) the making available of discoveries of military value to agencies directly concerned with national security; (6) the promotion of cooperation with other nations in space science and technology, and (7) assuring the most effective utilization of the scientific and engineering resources of the United States and the avoidance of duplication of facilities and equipment."

Civilian control. "I recommend that aeronautical and space science activities sponsored by the United States be conducted under the direction of a civilian agency, except for those projects primarily associated with military requirements. I have reached this conclusion because space exploration holds promise of

adding importantly to our knowledge of the earth, the solar system and the universe, and because it is of great importance to have the fullest cooperation of the scientific community at home and abroad in moving forward in the fields of space science and technology. Moreover, a civilian setting for the administration of space function will emphasize the concern of our nation that outer space be devoted to peaceful and scientific purposes."

NACA to be absorbed. "I am, therefore, recommending that the responsibility for administering the civilian space science and exploration program be lodged in a new National Aeronautics and Space Agency, into which the National Advisory Committee for Aeronautics would be absorbed. Hence, in addition to directing the nation's civilian space program, the new agency would continue to perform the important aeronautical research functions presently carried on by the National Advisory Committee for Aeronautics. The new agency would be headed by a director appointed by the President and with the advice and consent of the Senate."

Space board proposed. "In order to assist the President and the director of the National Aeronautics and Space Agency, I recommend that a National Aeronautics and Space Board, appointed by the President, be created. Several of the members of the board should be from the Government agencies with the most direct interest in aeronautics, space, science, and space technology. To assure that military factors are considered by the board, at least one member should be appointed from the Department of Defense. Members appointed from outside the Government should be eminent in science, engineering, technology, education or public affairs and be selected solely because they have established records of distinguished achievements."

Agency's authority; salaries. "The National Aeronautics and Space Agency should be given that authority which it will need to administer successfully the new programs under conditions that cannot now be fully foreseen.

"In order that the agency may attract and retain the services of scientists and technicians which it must have to carry out its responsibilities with full effectiveness, it should have the authority, subject to regulations prescribed by the President, to fix the compensation of its employees at rates reasonably competitive with those paid by other employers for comparable work without regard to the provisions of existing classification laws.

"The agency should have the power to conduct research projects in its own facilities or by contract with other qualified organizations. It will thus be free to enlist the skills and resources required for the space program wherever they may be found, and to do so under the arrangements most satisfactory to all concerned."

Cooperation with military. "Provisions should also be made for continuing and further enhancing the close and effective cooperation with the military departments which has characterized the work of the National Advisory Committee for Aeronautics. Under such cooperative arrangements it is expected that the National Aeronautics and Space Agency will perform research required in the furtherance of strictly military aeronautics and space objectives, just as the National Advisory Committee for Aeronautics now carries on important research work for the military services in aerodynamics, propulsion, materials and other fields important to the development of military aircraft and missiles."

NACA's present research. "The National Advisory Committee for Aeronautics is already engaged in research directly related to flight outside the earth's atmosphere and has research facilities adapted to work in space science. Upon the enactment of legislation carrying out my recommendations, all of the resources of the National Advisory Committee for Aeronautics would immediately come under the direction of the new agency."

Programs to be transferred. "The Department of Defense and its contractors, as well as other agencies, have active programs which should be considered for administration by the National Aeronautics and Space Agency. I recommend that this fact be taken into account and provision made for the transfer to the agency of such functions, activities, and facilities of other departments and agencies as may be found to be appropriate for administration by the new agency, subject to the concurrence of the heads of the affected agencies and with the approval of the President.

"The Director of the Bureau of the Budget is transmitting to the Congress draft legislation to establish the National Aeronautics and Space Agency and to authorize research into the problems of flight within and outside the earth's atmosphere. I urge that the Congress give prompt consideration to the draft legislation and that it be enacted at the earliest possible date."

ARPA interim program. "Pending enactment of legislation, it is essential that necessary work relating to space programs be continued without loss of momentum. For this reason I have approved, as part of an interim program of space terminology and exploration, the launching of a number of unmanned space vehicles under the direction of the Advanced Research Projects Agency of the Department of Defense. The projects which I have approved include both scientific earth satellites and programs to explore space. In taking this interim action, I directed the Department of Defense to coordinate these projects with the National Advisory Committee for Aeronautics, the National Science Foundation, and the National Academy of Sciences. I also indicate that when a civilian space agency is created, these projects would be reviewed to determine which should continue under the direction of the Department of Defense and which should be placed under the new agency.

"It is also important that measures be taken to assure the prompt and orderly implementation of the proposed aeronautics and space legislation when enacted. . . ."

Military space research. "It is contemplated that the Department of Defense will continue to be responsible for space activities peculiar to or primarily associated with military weapons systems or military operations. Responsibility for other programs is to be assumed by the new agency. In this connection, I commend to the attention of the Congress the comments of my Science Advisory Committee, in its statement of March 26, 1958, on the military applications of space technology" [*Science* **127**, 803 (11 Apr. 1958)].

NACA to prepare recommendations. "I am also asking the National Advisory Committee for Aeronautics to begin immediate preparation of such detailed plans as may be required to prepare for the assumption by the National Aeronautics and Space Agency of the responsibilities contemplated for it. Those plans are to set forth the specific new space programs to be initiated and are to describe the international organization, management structure, staff, facilities, and funds which will be required. The National Advisory Committee for Aeronautics is to discuss with the National Science Foundation and the National Academy of Sciences the matter of participation by the scientific community in determining the scientific objectives of our space programs. The best scientific judgment available should be utilized. Matters related to dissemination of the data collected should also be considered.

"I have also instructed the National Advisory Committee for Aeronautics to assume the responsibility for preparing and presenting to the appropriate committees of the Congress a full explanation of the proposed legislation and its objectives.

"The vigorous program contemplated will depend not only on adequate legislative authority but also on adequate financial support. I shall shortly submit to the Congress an amendment to the fiscal year 1959 budget to provide funds that will be needed by the new agency in its first year of operation."