

**COSMIC RAYS**

Cosmic rays are high-energy particles impinging in large numbers upon the earth and coming from interstellar space or the sun. Although all of these particles have high energies, there are variations in their energy content. Because the earth's magnetic field deflects these particles, only those with the highest energies penetrate the midlatitudes. Moreover, many of the low-energy particles are absorbed in the earth's atmosphere, and observations of cosmic rays are generally of "secondaries" created by "primaries" bombarding atmospheric atoms. The satellite will permit direct studies of primary cosmic rays above the masking atmosphere.

**INTERNATIONAL PLANNING**

Scientists of many nations began to consider the IGY as early as 1950. To effect international coordination of the technical effort, the International Council of Scientific Unions established a special committee in 1952, called the Comité Spécial de l'Année Géophysique Internationale (CSAGI). The CSAGI called upon the nations of the world to establish national committees to plan and direct their countries' effort. The criteria and nature of the IGY endeavor were established at a series of meetings, beginning in 1953, of delegates from the various national committees. Emphasis was placed on those measurements and observations which required simultaneous study all over the world and on epochal measurements which would reveal long-range trends and changes in man's physical environment.

Within this framework, each nation planned its own program.

**ORGANIZATION OF UNITED STATES PROGRAM**

In the United States, the National Academy of Sciences is the adhering body to the International Council of Scientific Unions. The Academy established the United States National Committee for the International Geophysical Year, under the chairmanship of Dr. Joseph Kaplan, to plan and direct the United States effort. This Committee, with its special regional committees and technical panels (see appendix), gathered the Nation's leading scientists in geophysics to develop and execute this major research undertaking.

The National Academy of Sciences turned to the National Science Foundation for Government assistance, and funds were requested from Congress through the National Science Foundation, which is the agency primarily responsible for federally supported basic research. Congress appropriated \$2 million for the purchase of long lead-time equipment in 1955 and \$12 million dollars were appropriated in 1956. Congress is currently considering an added appropriation request of \$28 million, the bulk of which is for the earth-satellite program. The NSF is responsible for administering Federal funds for the United States program for the International Geophysical Year.

**ANTARCTIC ACTIVITIES**

Although the IGY formally begins in July 1957, climatic and environmental conditions in the Antarctic called for an early start in this region by the 11 participating nations. In the winter of 1954-55,