

## MAN'S ENVIRONMENT

The importance of the program stems in large part from the nature of our planet and of the universe about us, which establish the environment in which we live. The features of this environment, particularly those relating to the atmosphere, are caused or affected by the sun, and the events themselves are worldwide in nature. For these reasons better understanding and major advances in geophysics require coordinated, worldwide studies, especially since many of the disciplines are interrelated.

The worldwide nature of geophysical events is illustrated daily in weather. Storms forming off the east coast of Asia may cause a cold wave to surge over the United States a week later, which may in turn create a new storm in the mid-Atlantic and subsequent floods and snow avalanches in Europe. Solar flares, like those that occurred a few weeks ago, erupting from the sun and reaching out 100,000 miles away from its surface, create magnetic disturbances and result in radio communication failures. Such events exert a controlling influence on the daily lives and activities of all individuals and affect commerce and industry, the conduct of land, sea, and air travel and transportation, and the range and reliability of radio communication and navigation systems.

## UNITED STATES PROGRAM

The program of the United States has been planned by the Nation's leading geophysicists, gathered together by the National Academy of Sciences. This program includes projects in the 13 disciplines and areas of activity involved in the IGY: aurora and airglow, cosmic rays, geomagnetism, glaciology, gravity, the ionosphere, longitude and latitude determinations, meteorology, oceanography, seismology, solar activity, and rocket and satellite studies of the upper atmosphere. The United States program will include activity within the continental limits of the United States, Alaska, the Antarctic, the Equatorial Pacific, the waters of the Atlantic and Pacific, and various cooperative efforts with nations of the North and South Americas.

## WATER AND HEAT

The earth's water occurs largely in three forms: in the oceans, seas, lakes, and rivers; in frozen form in glaciers and snow and ice sheets; and in vapor form distributed through the atmosphere. There is a continuous process of interchange among these depositories of water, and this process is related to the heat budget of the earth and the circulation of the atmosphere. Simultaneous studies in oceanography, glaciology, and meteorology have as one of their primary objectives the study of these heat and water interrelationships which determine in large measure weather and, over a longer period of time, climate.

## METEOROLOGY

With every advance in civilization, knowledge of weather patterns has grown increasingly important. Man's mode of living, the shelter he constructs, the clothes he wears, his trade and commerce, and to a large degree the very food he eats are related to the weather. Reliable