ASTRONAUTICS

"COSPAR" in Operation

Scientific studies of space will soon be aided by the establishment of an international committee to guide research and planned projects.

➤ AN INTERNATIONAL committee on space research (COSPAR) to plan scientific studies made with rockets, satellites, and space, lunar and planetary probes is now functioning.

The Eighth General Assembly of the International Council of Scientific Unions (ICSU), the first to be held in the Western Hemisphere, approved the recommendation of its Executive Board in setting up COSPAR.

The 15 members of COSPAR will include the nations that have launched satellites, the United States and Russia, and Great Britain which is expected to attempt hurling a satellite spaceward shortly. There will also be delegates selected from the nations where satellite observing stations are located. Eight members are expected to represent the interested international scientific unions, such as the International Astronomical Union.

COSPAR has until Dec. 31, 1959, to coordinate space research and recommend future steps. It will cooperate with the United Nations in problems of regulation and control of space affecting scientific activities. It will have no authority to make political decisions.

One of COSPAR's first actions is expected to be the establishment of a code of conditions for landing objects on the moon or planets to keep damage at a minimum from the scientific point of view.

Dr. Lloyd V. Berkner, president of ICSU and also president of Associated Universities, Inc., New York, and Sir Harold Spencer Jones, ICSU secretary-general and Great Britain's former astronomer royal, outlined the expected activities of COSPAR at a news conference at the National Academy of Sciences. One of COSPAR's activities, not part of the International Geophysical Year program also sponsored by ICSU, will enable scientists of countries without satellites to place their experiments in satellites of launching nations.

No offers of such international cooperation have yet been made by the United States or Russia, but Dr. Berkner said he anticipated they would make payload space available.

The ICSU General Assembly is also expected to approve the establishment of a special committee on oceanic research (SCOR) and a special committee on Antarctic research (SCAR). Each will continue present international cooperation in these fields after the end of the International Geophysical Year on Dec. 31.

One important SCOR project will be an intensive study of the Indian Ocean during 1962-63 by more than 20 ships representing at least that number of countries. The Indian Ocean was selected for a variety of reasons, Dr. Berkner said, one being that it is the simplest one in which to study the effect of winds on currents. The energy transferred from the wind to the ocean can be measured more easily there than anywhere else on earth, scientists have concluded.

SCOR will cooperate closely with the special committee on Antarctic research in this study, since the Indian Ocean touches only one other, the Antarctic.

Science News Letter, October 11, 1958

PHYSICS

Find New Superconductors

Superconductors containing uranium alloyed with metals have been found that may provide material for new electrical and electronic devices.

➤ FOUR superconductors containing uranium, the fuel of nuclear reactors, have been discovered by scientists at the Westinghouse Research Laboratories, Pittsburgh.

Superconductors are so called because they have the remarkable property of allowing an electric current, once started, to flow seemingly forever in undiminished strength. Superconductivity, discovered by K. Onnes in 1911, has been studied intensively but is still not wholly understood. It occurs only at temperatures near absolute zero, 459.7 degrees below zero Fahrenheit, as far as is known.

The new superconductors were found by Drs. B. S. Chandrasekhar and J. K. Hulm during research on the electrical resistance of uranium alloys at temperatures near absolute zero. Two of them are the first superconductors yet known to contain manganese and iron, two elements previously considered "death" to superconductors.

If superconductivity could be made to occur at reasonably high temperatures, Dr. Hulm predicted that electrical and electronic devices not now even visualized would become available, and the practices and products of these industries would be revolutionized.

The Westinghouse scientists measured at very low temperatures the electrical resistance of uranium-molybdenum and uranium-niobium alloys.

Contrary to all known alloys, these had an electrical resistance that became progressively larger as the temperature was decreased down to about two degrees above absolute zero, when they became superconductors. Dr. Hulm said the superconductivity was also surprising in view of the rise in electrical resistance preceding it.

To probe more deeply into the superconducting behavior of uranium alloys, the Westinghouse scientists then studied a group of "intermetallic compounds," formed when uranium is combined with such metals as aluminum, manganese, iron, cobalt and nickel. It was from these studies that the new superconductors were discovered.

Science News Letter, October 11, 1958

METEOROLOGY

Balloon-Borne Radio In Hurricane Succeeds

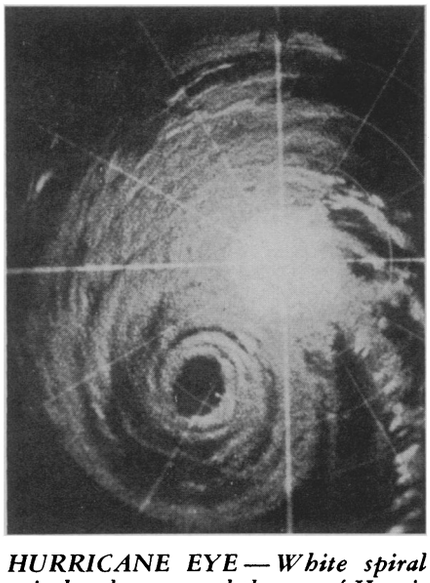
See Front Cover

➤ A BALLOON-borne high frequency radio transmitter is definitely feasible as a way of automatically tracking hurricanes, the U. S. Weather Bureau reported.

Signals from the second balloon dropped into Hurricane Helene have been successfully received and tracked by aircraft. (See SNL, Oct. 4, p. 211.)

The photograph on the cover of this week's SCIENCE NEWS LETTER shows the balloon carrying a radio transmitter or the hurricane beacon, in flight.

Science News Letter, October 11, 1958



HURRICANE EYE — White spiral rain bands surround the eye of Hurricane Helene when it was located (Sept. 27) about 75 miles southwest of Cape Hatteras and about 15 miles southeast of Cape Lookout, N. C. The eye, as shown in this "remarkable radarscope photograph," was 25 miles in diameter. North is at the top of the photograph.