

METEOROLOGY

Balloons to Spot Weather

Balloons will be floated around the world, sending back weather information from three levels of the atmosphere, in order to make more accurate weather predictions.

► ONE HUNDRED free-flying balloons will be used this fall for the first time to spot weather in the Southern Hemisphere.

The balloons will float around the world for at least 60 days, giving ground-based meteorologists a continuous picture of weather information from three levels of the atmosphere.

If the test is successful, as it is expected to be, then scientists hope to expand the balloon survey to the Northern Hemisphere. The aim is to get a worldwide picture of current weather, especially over areas from which no information is now available in order to make more accurate weather predictions for the following few days.

The balloons will be launched from Christchurch, New Zealand, in a cooperative program of the United States and New Zealand, Robert M. White, Chief of the U.S. Weather Bureau, revealed at a meeting at the National Academy of Sciences in Washington, D.C.

The transparent plastic balloons will be five feet in diameter at 20,000 feet, seven feet at 40,000 feet and 13 feet at 80,000 feet. They will circle the globe carrying their three-ounce payload at one of these three levels.

Meteorologists are quite sure the signal transmitted by radio from the constant-level balloons will help improve short-term forecasts. U.S. scientists are proposing a two-month worldwide experiment using as

many balloons as possible to find out whether they would make accurate long-term forecasts, for two weeks, a month or even longer.

Until such an experiment is made, meteorologists cannot be sure whether it is possible to predict long-range weather with any certainty. The problem is that weather may result from so many complicated and inter-related factors that it is basically not predictable for more than a few days in the future.

However, several mathematical models of atmospheric circulation calculated on large computers indicate that weather patterns can be predicted for two weeks, perhaps more. What is needed now is a global test of the theories in the actual atmosphere, Dr. Jule G. Charney of Massachusetts Institute of Technology, said. Dr. Charney is a member of the citizen's committee on meteorology of the International Cooperation Year, which met with members of the corresponding Government committee.

He is also drafting a report for the National Academy of Sciences on the feasibility of a global observation system.

The two-month test is a tangible goal that Dr. Charney hopes will be realized soon. The Southern Hemisphere experiment, under the direction of Dr. Vincent E. Lally of the National Center for Atmospheric Research in Boulder, Colo., will help determine the feasibility of the global test.

One argument it will settle is what happens to the balloons after they have drifted around the world many times. Will they cluster at certain spots, and, if so, at what spots? Likely places for the balloons to collect, such as along the jet stream, in high pressure areas and in low pressure regions, have been suggested. The answer should be known in six months.

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CARTOGRAPHY

First Geological Map Of World Due in 1968

► FOR THE FIRST time, a geological map of the world is being prepared to show rock formations not only of the continents, but also of the polar caps and the ocean basins.

In essence, this map will show more than a bird's or even a mole's eye view of the planet earth. It will show surface or outcropping formations of rock streams such as metamorphic, cambrian and precambrian rock, with stretches of granite, moraines, volcanoes and other geological data, explained Dr. William D. Johnston, Jr., staff geologist of the U.S. Geological Survey.

The new maps to be compiled in the World Atlas of 1968 will not look like conventional physical maps that show configurations of rivers and plains, and are divided into political areas.

The multi-colored geological atlas will show areas, lines and sections of rock formations stretching across national boundaries.

Putting the world geological map together is a long slow process. Geologists of all nations have been working individually and collectively in their own countries under the International Geological Congress's Commission for the Geological Map of the World.

During the 22nd Congress held at New Delhi, India, in December 1964, new geological maps of Europe, Asia, Australia, Africa, North America and South America were presented, reported Dr. Johnston in GW, the George Washington University Magazine, Spring 1965. Many specialized maps were presented, such as those showing the Indian Ocean.

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PHOTOGRAPHY

Reconnaissance Camera Covers 180 Degrees

► A NEW RECONNAISSANCE camera that takes 180-degree panorama photographs has been developed.

The advanced photographic system was designed for medium altitude reconnaissance missions. Named KA-59, it will furnish aerial photographs with horizon-to-horizon coverage at a maximum rate of one per second.

The camera contains rotary prism 12-inch focal length optics and image motion compensation for improved resolution. It was developed by the Fairchild Camera and Instrument Corp. in Syosset, N.Y.

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U.S. Geological Survey

GEOLOGICAL MAP—Dr. William D. Johnston Jr. studies a geological map of the Far East. A geological map of the world will be compiled in the World Atlas of 1968, showing rock formations of the continents, polar caps and the ocean basins.