

METEOROLOGY

New Clues to Hurricanes

➤ A NEW WEATHER PROJECT this year is using particular types of cloud formations to indicate the birth of a violent hurricane.

By inspecting thousands of pictures of the lower North Atlantic Ocean to be taken by satellites this summer, weather scientists will pinpoint telltale cloud formations that may indicate the beginning of a hurricane.

Certain cloud patterns indicate cyclonic circulations or wind eddies at high altitudes in the atmosphere. These may later develop downward to the earth's surface to become a hurricane.

As soon as the particular cloud formation is spotted on the satellite photographs, U.S. Weather Bureau research planes move into the area and gather information concerning these monster storms.

The new research program, called Project Cold Low, was started by the Weather Bureau this hurricane season, which began officially June 15 and will extend through Nov. 15. The project is called Cold Low because the temperatures in the high level atmosphere where the clouds are formed are low.

The Weather Bureau is also adding two new automatic floating buoys soon to be placed in the Gulf of Mexico. These two buoys will supplement the U.S. Navy ocean buoy that for several years has been successfully recording and sending important weather data to shore.

In addition, satellites Tiros VII and VIII are scanning the area for indications of hurricanes. Another satellite, Tiros IX, is scheduled to be sent aloft in the last quarter of the year, but may be too late for the hurricane season.

The National Aeronautics and Space Administration soon will launch another research satellite, called Nimbus, which will feed weather information to the hurricane watchers.

From these satellites, a camera system, called Automatic Picture Transmission, will transmit pictures to five surface posts—San Juan, Miami, New Orleans, Washington and New York.

The hurricane network system also includes reconnaissance planes of the U.S. Navy and Air Force, which scout the vast areas where hurricanes breed. In addition to these planes, the Weather Bureau maintains four research aircraft mounted with cameras and other equipment for measuring wind, temperatures, humidity and other weather data.

Ships at sea continually report weather conditions, as do commercial airlines flying over the hurricane areas. Land-based radar receiving stations are spread out along the 3,000 miles between Texas and Maine, each with a range of more than 200 miles.

Hurricane plans this year do not call for seeding the storm clouds with silver iodide crystals, the Weather Bureau said.

First used in 1961 on Hurricane Esther in an effort to lessen the violence of the storm, the seeding experiment converted many cubic miles of water cloud to ice. This year, weather scientists are carefully studying data of the 1961 experiment for possible repetition in 1965.

The names of the 1964 hurricanes are Abby, Brenda, Cleo, Dora, Ethel, Florence, Glayds, Hilda, Isbell, Janet, Katy, Lila, Molly, Nita, Odette, Paula, Roxie, Stella, Trudy, Vesta and Winny.

• Science News Letter, 85:404 June 27, 1964

METEOROLOGY

Foretell Future Weather

➤ HOW MUCH RAIN has fallen, how fast does the wind blow, how cool is the soil, how much moisture comes from the leaves of plants, how much rain water runs off the land?

Take millions of answers to questions like these, feed them into a computing system, and out comes a weather forecast for farmers.

Farmers can increase their profits by 40% with this new weather program, developed by International Minerals & Chemical Corporation, Skokie, Ill.

The computerized system accurately pre-determines the effect of weather on crops by keeping continuous records of such factors as current soil temperatures, moisture and rainfall in each area.

With these records, the weather system completes a number of other mathematical exercises and weighs current data against a history of soil conditions since 1960, explained Gordon O. Pehrson, vice-president of planning for the corporation.

On a county-by-county basis throughout the eastern two-thirds of the United States, favorable planting, growing and harvesting conditions can be foretold, he said. Efforts have been concentrated on the eastern part of the country because weather problems are not so severe as on the West Coast, and also the major fertilizer market lies in the eastern area at this time.

Based on original research by the U.S. Department of Agriculture, the Weather Bureau, state universities and land grant colleges, the program has been tested for more than six months with 30,000 farmers working with ten fertilizer manufacturers. This summer the program will be expanded, Mr. Pehrson said.

The weather data will be extremely useful to farmers and fertilizer manufacturers in many ways, such as knowing how to plan for a wet or dry season, what kind of fertilizer to use, and how many people to hire during the rush seasons.

• Science News Letter, 85:404 June 27, 1964

Questions

AGRICULTURE—What metal repels aphids? p. 409.

ASTRONOMY—From what locations will the next partial eclipse of the sun be visible? p. 406.

CHEMISTRY—How will the new chemical theory help in space technology? p. 403.

MEDICINE—What new substance that may help in the control of polio has been isolated? p. 405.

METEOROLOGY—What new weather program has been developed for farmers? p. 404.

PUBLIC HEALTH—What is the composition of the "purple heart" drug? p. 402.

SCIENCE NEWS LETTER

VOL. 85 JUNE 27, 1964 NO. 26

Edited by WATSON DAVIS

The Weekly Summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N.W., Washington, D. C. 20036. NORTH 7-2255. Cable Address: SCIENSERV.

Subscription rates: 1 yr., \$5.50; 2 yrs., \$10.00; 3 yrs., \$14.50; ten or more copies in one package to one address, 7½ cents per copy per week; single copy, 15 cents, more than six months old, 25 cents. No charge for foreign postage. Change of address: Three weeks notice is required. Please state exactly how magazine is addressed. Include postal zone number.

Copyright © 1964 by Science Service, Inc. Reproduction of any portion of SCIENCE NEWS LETTER is strictly prohibited. Newspapers, magazines and other publications are invited to avail themselves of the numerous syndicated services issued by Science Service. Science Service also produces and distributes THINGS of science (monthly), produces and publishes books, and conducts the National Science Youth Program.

Printed in U.S.A. Second class postage paid at Washington, D. C. Established in mimeograph form March 13, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Reader's Guide to Periodical Literature, Abridged Guide, and the Engineering Index. Member of Audit Bureau of Circulation.



SCIENCE SERVICE

The Institution for the Popularization of Science organized 1921 as a non-profit corporation.

Board of Trustees—Nominated by the American Association for the Advancement of Science: Athelstan F. Spilhaus, University of Minnesota; Wallace R. Brode, Washington, D. C. (Treasurer); Bowen C. Dees, National Science Foundation. Nominated by the National Academy of Sciences: Henry Allen Moe, The Clark Foundation; Harlow Shapley, Harvard College Observatory; Detlev W. Bronk, Rockefeller Institute. Nominated by the National Research Council: Leonard Carmichael, National Geographic Society (President); Benjamin H. Willier, Johns Hopkins University; Eric A. Walker, Pennsylvania State University. Nominated by the Journalistic Profession: O. W. Riegel, Washington and Lee University; Gordon B. Fister, Allentown (Pa.) Call-Chronicle; Ralph B. Curry, Flint Journal. Nominated by the Scripps Estate: Edward J. Meeman, Memphis Press-Scimitar; Ludwell Denny, Scripps-Howard Newspapers; Edward W. Scripps II, Edward W. Scripps Trust (Vice President and Chairman of the Executive Committee).

Staff—Director: Watson Davis. Assistant Director: Dorothy Schriver. Writers: Ann Ewing, Faye Marley, Barbara Tuffy, Judith Viorst, Walter Wingo, Ruby Yoshioka. Science Youth Division: Joseph H. Kraus. Photography: Fremont Davis. Production: Marcia Nelson. Syndicate Sales: Forrest L. Snakenberg. Librarian: Margit Friedrich. Interlingua Division in New York: Alexander Gode, 80 E. 11th St., Gramercy 3-5410. Advertising Manager: Fred A. Moulton, Metropolitan 8-2562, Washington, D. C.