

NOAA Report



July 30, 1990

COMING UP

Equatorial Pacific Ocean Climate Studies (EPOCS) Advisory Committee Proposal Review Meeting in Seattle, Wash., Aug. 7-9.

Pacific Sea Grant College Program and National Marine Education Association Joint Meeting in Hilo, Hawaii, Aug. 9-13.

NOAA/U.S. Geological Survey Committee on Hydrology Meeting in Silver Spring, Md., Aug. 14.

National Weather Service Soil Conservation Service Technical Group Meeting in Salt Lake City, Utah, Aug. 14-15.

Tillman Named to Fisheries Post:--Dr. Michael F. Tillman has been named the Deputy Assistant Administrator for Fisheries.

With 35 years of experience as a biologist, Tillman will direct daily operations of NOAA's National Marine Fisheries Service (NMFS) in Silver Spring, Md. He is the first scientist in the position with an extensive background in fisheries research. He succeeds James Douglas, Director of the agency's Office of Trade and Industry Service.

Since July 1988, Dr. Tillman has been NOAA's chief scientist for fisheries, overseeing the field-based research and science programs undertaken by 18 Fisheries Service facilities.

Earlier, Dr. Tillman was chief of the agency's Conservation Science Division, providing guidance for scientific and technical aspects of NOAA's programs on marine mammals, endangered species and habitat conservation.

From 1983 to 1987, Dr. Tillman was detailed from NOAA to the International Union for Conservation of Natural and Natural Resources in England where he directed the Conservation Monitoring Center.

Tillman joined the Fisheries Service as a research biologist in Seattle in 1972, becoming Director of NOAA's National Marine Mammal Laboratory from 1979 to 1983. He is the author or co-author of 39 papers and articles on whale populations.

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Dr. Tillman is also an affiliate professor at the University of Washington's College of Ocean and Fishery Sciences. He graduated cum laude with a Bachelor of Science in Fisheries from the university in 1965 and received his Master's and Ph.D degrees there in 1968 and 1972, respectively.

Air Force Funds X-Ray Telescope on NOAA Satellite--
Geomagnetic storms, causing electrical blackouts and radiation damage, will be easier and cheaper to forecast, from the "piggybacking" of a solar X-ray sensor on a next-generation weather satellite, set for launch in the late 1990s.

The project is a joint activity of the National Oceanic and Atmospheric Administration (NOAA) and the U.S. Air Force.

"The Solar X-ray Imager will do for solar forecasting what remote sensing satellites have done for prediction of life-threatening weather," said Thomas N. Pyke, Jr., head of the National Environmental Satellite, Data and Information Service (NESDIS), an arm of NOAA. "Moreover, it's a cost-effective approach. 'Piggybacking' new sensors on existing multi-purpose spacecraft allows the project to be completed at a fraction of the cost of a single purpose mission."

The agreement between NOAA and the Air Force to install the sensor aboard a NOAA weather satellite was signed in 1987 but remained unfunded until recently. "In these times of severely constrained budgets, the Solar X-ray Imager is an excellent example of cooperative effort between agencies," said Martin C. Faga, Assistant Secretary of the Air Force for Space. "It allows us to satisfy important mutual requirements in a cost-effective manner."

The Solar X-ray Imager (SXI), which will be mounted on NOAA's Geostationary Operational Environmental Satellite (GOES), will take X-ray and extreme ultraviolet pictures of the sun and send them once per minute to earth. From its geostationary orbit 22,300 miles above the earth, SXI will allow forecasters to see where solar flares, which cause geomagnetic storms, are occurring on the sun. The forecasters can then determine when the storms will strike earth days later. Right now, solar flares are monitored by limited satellite sensors and a global network of ground-based optical and radio telescopes. But because solar X-rays cannot be seen through earth's atmosphere, ground-based telescopes are of limited value, and are further restricted by daylight and clouds. The satellite X-ray sensor, set above the atmosphere, will provide much more useful information to forecasters.

Images from the SXI will improve operations at the Joint NOAA-USAF Space Environmental Service Center in Boulder, Colo., and at the USAF Space Forecast Center in Colorado Springs, Colo. Forecasters there will be able to provide more accurate three-day

predictions of geomagnetic storms with at least a 20-minute alert of solar eruptions about to bombard earth.

Such eruptions cause geomagnetic storms, which can wreak havoc with daily life. For example:

A major geomagnetic storm in March 1989 caused a power blackout across Quebec, and damaged electric power distribution equipment across the U.S. The aurora borealis, multi-colored natural lights normally seen only near the Arctic Circle, was visible as far south as Florida.

Solar flares can produce dense showers of radiation. During a radiation shower in September 1989, passengers aboard seven Concorde supersonic flights in the North Atlantic were exposed to significantly increased radiation. Such showers are also responsible for about 70 percent of all satellite power outages.

High levels of solar radiation from solar flares are of great concern to manned earth-orbiting spacecraft, and could be lethal to humans outside the craft, or on the moon or Mars. Recent American and Soviet manned missions have required close monitoring of radiation levels. Improved advance warning of such radiation could conceivably save the lives of future astronauts by reducing or ending their time outside the spacecraft or limiting the length of their mission.

Joint Education Program:--NOAA and the Mariners' Museum of Newport News, Va., have developed a joint education program, "Chesapeake Bay: A Way of Life," aimed at fifth grade students. The first day of the two-day program is spent at the museum. On the second day, the students visit the Atlantic Marine Center and tour the NOAA ship *Peirce*. They also learn ancient and modern navigational skills and ride the NOAA ship *Laidly*. Sixty students are participating in the program.

GOES Goes East:--NOAA's only Geostationary Operational Environmental Satellite (GOES-7) arrived at its summertime hurricane-watching position of 98 degrees West on July 26 to allow hurricane forecasters to view 690 miles further east into the tropical Atlantic Ocean. The satellite will remain at this location through hurricane season until it begins drifting west to 108 degrees West in late October. NOAA has allowed the satellite to drift very slowly to conserve fuel and prolong its usefulness.

Humpback Whales Entangled in Nets:--Three humpback whales have come close to the New England shore or been entangled in nets there during the month of July, and the NMFS's Northeast Regional Office has been coordinating efforts to monitor and resolve the incidents.

On July 3, a humpback whale was found feeding inside a stop seine in a cove off Orr's Island, Maine. The 25-foot whale comes and goes from the cove, apparently attracted by the large number of menhaden there. Also, two humpbacks have become entangled in gillnet gear on Stellwagen Bank, off the Massachusetts coast. One whale, named Quixote, was seen entangled in netting on July 9, but was not found the next day. Another humpback, named Mallard, was discovered on July 16 and then disentangled.

Zebra Attack New York:--The New York Sea Grant/Marine Extension Program is stepping up the battle against zebra mussels in New York's Great Lakes waters. A grant of \$99,400 from the Empire State Electric Energy Research Corporation, a utility organization, will help the Sea Grant Extension establish the New York Zebra Mussel Clearinghouse, which will collect and disseminate information about the pesky bivalve. The Clearinghouse will work closely with other state and federal zebra mussel programs expected to be established throughout the Great Lakes in the near future. The zebra mussel, named because of its distinctive stripes, breeds rapidly and adheres to the insides of utility outlet pipes, eventually clogging them.

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