U.S. DEPARTMENT OF COMMERCE / National Oceanic and Atmospheric Administration

noaa week

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NOAA Participating in Apollo-Soyuz Mission

Summertime is lightning time, the National Weather Service reminded the public last week, stating that the combination of increased outdoor activity and the higher frequency of thunderstorms in summer inevitably results in a rise in the number of lightning-caused injuries and deaths across the nation.

The NWS urges people to familiarize themselves with

NOAA's Lightning Safety Rules

1. Stay indoors. Don't venture outside unless absolutely necessary.
2. Stay away from open doors and windows, fireplaces, radiators, stoves, metal pipes, sinks, and plug-in electrical appliances.
3. Don't use plug-in electrical equipment like hair dryers, electric tooth brushes, or electric razors.
4. Don't use the telephone. Lightning may strike telephone lines outside.
5. Don't take laundry off the clothesline.
6. Don't work on fences, telephone or power lines, pipelines, or structural steel fabrication.
7. Don't use metal objects like fishing rods and golf clubs. Golfers wearing cleated shoes are particularly good lightning rods.
8. Don't handle flammable materials in open containers.
9. Stop tractor work. Tractors and other implements in metallic contact with the ground are often struck by lightning.
10. Get out of the water and off small boats.
11. Stay in your automobile if you are traveling. Automobiles offer excellent lightning protection.
12. Seek shelter in buildings. If no buildings are available your best protection is a cave, ditch, canyon, or under head-high clumps of trees in open forest glades.
13. When there is no shelter avoid the highest object in the area. If only isolated trees are nearby your best protection is to crouch in the open keeping twice as far away from isolated trees as the trees are high.
14. Avoid hill tops, open spaces, wire fences, metal clothes lines, exposed sheds, and any electrically conductive elevated objects.
15. When you feel the electrical charge—if your hair stands on end or your skin tingles—lightning may be about to strike you. Drop to the ground immediately.

Lightning First Aid

Persons struck by lightning receive a severe electrical shock and may be burned, but they carry no electrical charge and can be handled safely. A person apparently killed by lightning can often be revived by prompt mouth-to-mouth resuscitation, cardiac massage, and prolonged artificial respiration. In a group struck by lightning, the apparently dead should be treated first. Those who show vital signs will probably recover spontaneously although burns and other injuries may require treatment. Recovery from lightning strikes is usually complete except for possible impairment or loss of sight or hearing.

Sensors Monitor Atmospheric Changes Near Powerplants

The billion-watt powerplants beginning operations on the Nation's coal-rich—and largely undeveloped—high western plains may affect local weather and climate. But to what extent is not understood.

An observing team from the Environmental Research Laboratories and a parade of sensor-packed trailers have begun monitoring the air around these giant powerplants to see what meteorological changes are produced by what types of effluent.

They will sample aerosols—tiny solid particles suspended in the air—and gases before and after energy production begins, and probe these samples microscopically to determine the chemistry and meteorological significance of individual particles. They will also develop three-dimensional views of particle distribution in the atmosphere around the powerplant sites.

The tools of the trade are powerful lidars (the laser equivalent of radar), sun-sensors, acous-

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NOAA personnel are participating in the Apollo-Soyuz Test Project, launched this week from the National Aeronautics and Space Administration's Kennedy Space Center in Florida.

Dr. Robert M. White, NOAA Administrator, and Dr. John W. Townsend, Jr., Associate Administrator, were among the U.S. officials who, along with Soviet Ambassador Anatoliy F. Dobrynin and his wife, watched the Soyuz launch on television at the State Department in Washington, D.C., and then flew to Cape Canaveral to see the Apollo liftoff.

On the day prior to launch, a briefing on weather prospects and on an Environmental Research Laboratories project designed to measure the electrical field and possible effects of lightning in the vicinity of the launch pad during the launch phase was held at Cape Canaveral for news media covering the flight. Speakers included Kenneth M. Nagler, Chief of the National Weather Service Space Operations Support Division, and Jesse R. Gulick, Meteorologist in Charge of the Kennedy Space Center Section of the Division's Spaceflight Meteorology Group (SMG), who provided weather forecasts; and Dr. Wilmot N. Hess, ERL Director; Dr. Heinz W. Kasemir, Project Leader in ERL's Atmos-

(Continued on page 4)

Sea Grant Researchers Develop Breakwaters from Discarded Tires

Sea Grant engineers at the University of Rhode Island have found a novel use for the discarded tires now accumulating at a rate estimated to exceed 200 million per year in the United States.

A team headed by Tadeusz Kowalski, URI associate professor of ocean engineering, has developed a method of assembling scrap tires to form moored, floating breakwaters for protecting small boat marinas and shorelines vulnerable to erosion. "The scrap-tire rafts are not only inexpensive in comparison with conventional fixed breakwaters," he says, "but they also are highly effective and ecologically sound."

The breakwater development effort, which began two years ago, has been funded by the Goodyear Tire and Rubber Company and the Office of Sea Grant.

The team has designed, built, and tested three types of scrap-

(Continued on page 2)

NOAA Grants Awarded for Fisheries Studies

NOAA has awarded a half million dollars in research grants to the Atlantic, Pacific, and Gulf States Marine Fisheries Commissions.

The funds will be used to develop a program for the rehabilitation of the fisheries of the U.S. by providing for the needs of recreational and commercial fishermen, while using sound conservation practices designed to protect America's valuable marine resources.

The grants—$200,000 to the Gulf States Marine Fisheries Commission, $175,000 to the Atlantic States Marine Fisheries Commission, and $125,000 to the Pacific Marine Fisheries Commission—were awarded under Congressional Resolution 11, introduced by Senator James O. Eastland of Mississippi, and Public Law 93-433.

notes about people

William E. Eggert has been selected by the National Weather Service as Chief of the Data Systems Division and Deputy Associate Director for Technical Services.

Mr. Eggert

For the past ten years he has been Director of the NWS Test and Evaluation Laboratory and Chief of the Test and Evaluation Division at the Sterling Research and Development Center, Va.

The previous five years he was with the Federal Aviation Administration, first as Chief of the Weather Research Branch at the National Aviation Facilities Experimental Center in Atlantic City, N.J., and later as Aviation Weather Support Member of the System Design Team, in Washington, D.C.

He served earlier with the Weather Service, in the Severe Local Storms Research Unit, and as Assistant and Chief of the Newark Approach Visibility Project.

Mr. Eggert received his B.S. and M.S. in meteorology from Pennsylvania State University and, on Fulbright Scholarships, did graduate work on Observations of Atmospheric Polarization at the University of Melbourne, Australia.

Capt. Robert W. Franklin has succeeded Cdr. Donald J. Florwick as Executive Officer of the NOAA Ship Researcher, and upon completion of the field season, about mid-December, will assume command of the ship. A member of the commissioned corps since 1957, he also served as the Researcher's Executive Officer in 1970-71. He next was Chief of the National Ocean Survey's Anchorage, Alaska, Field Office, and has just finished an assignment as Officer in Charge of the NOS' Southeast Marine Support Facility in Miami, Fla. (Formerly officially the Miami Ship and Ocean Engineering Facility, it was generally referred to as the Miami Ships Base.)

Capt. Franklin

Manning the National Marine Fisheries Service displays at the recent "Sportfishing '75" in Ocean City, Md., when this photo was taken, were (from left) Fishery Biologists Steven Turner, Robert Dixon, and Richard B. Stone, who is pointing out locations of bottom-fish along the Carolina coast.

(See More Notes About People on Page 4.)

calendar of events

Cancelled

September 3-4-5
San Francisco

Symposium on Modeling Techniques - Waterways, Harbors, and Coastal Engine (MODELING '75). Sponsored by Amer Society of Engineers, the Canadian Department of Public Works, the National Science Foundation, and the Office of Sea Grant. Will be preceded by one-day short course on modeling, directed by Professor Young Kim, Civil Engineering Dept., California State University, Los Angeles, Calif. (MODELING '75, Civil Engineering Dept., Clemson University, Clemson, S.C. 29631. 803-656-3000.)

September 10-12
Seattle, Wash.

The Third Biennial Workshop on Fisheries Research: Petroleum Hydrocarbons in the Marine Environment. Sponsored by NOAA, Marine Fisheries Service, Environmental Conservation Division (EC), Seattle. (Dr. William T. Roubal, Chairman, NMFS, NOAA, NWFC, EC Division, 2725 Montlake Blvd. E., Seattle, Wash., 98112. (206) 442-7737.)

September 10-13
Las Vegas, Nev.

105th Annual Meeting of American Fisheries Society. AFS will meet during week with International Association of Game, Fish, and Conservation Commissioners. (Glen Griffith, Nevada Department of Fish and Game, Box 10678, Reno, Nev. 89510. 702-784-6214).

September 14-19
Las Vegas, Nev.

The Third Joint Conference on Sensing of Environmental Pollutants originally scheduled for November 10-13 and the International Symposium on Environmental Monitoring originally scheduled for September 14-19 have been combined into the International Conference on Environmental Sensing and Assessment to take place in Las Vegas, Nevada. Co-sponsors include the World Health Organization (WHO), Institute of Electrical and Electronic Engineers (IEEE), American Chemical Society, American Institute of Aeronautics and Astronautics, American Meteorological Society, Environmental Protection Agency, Instrument Society of America, National Aeronautics and Space Administration, NOAA, and the Department of Transportation. Technical sessions will be structured by air, land, water, biology, and exposure monitoring; discussions will focus on critical interdisciplinary problem areas such as climate change, energy, health and sources and pathways of marine pollutio (Dr. C. E. Jensen, EM, NOAA, Room 825, WSC-5, Rockville, M 20852. 301-496-8646.)

September 21-25
Washington, D.C.

International Symposium on Computer Assisted Cartography sponsored by American Congress on Surveying and Mapping, in cooperation with U.S. Bureau of Census, (Dorothy Bomberger, Symposium Secretariat, U.S. Bureau of the Census, Washington, D.C. 20233. 301-763-7094).

September 25-27
Madison, Wisc.

First Annual Meeting, Midwestern Region, American Geophysical Union. (Cynthia Beadling. AGU, 1909 K St., N.W., Washington, D.C. 20006. 202-331-0370).

October 2-4
Newport Beach, Calif.

National Conference on Marine Recreation, sponsored by NOAA in cooperation with the University of Southern California Sea Grant Institutional Program. (See item on page 1, of July 11, 1975, issue of NOAA Week.) (Susan H. Anderson, Conference Coordinator, Sea Grant Institutional Program, University of Southern California, 4676 Admiralty Way # 1102, Marina Del Rey, Calif. 90291. 213-822-1648.)

Sea Grant Researchers Develop Breakwaters From Discarded Tires

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tire breakwaters. "The third design," Mr. Kowalski says, "is the simplest and the best."

In this version, 18 tires standing on edge are strapped firmly together with stainless steel cable in a roughly diamond-shaped pattern, forming single units to be assembled into larger breakwaters. Each unit, essentially a small floating raft, can be tied together on shore in about 10 minutes. The units are then pushed into the water, where they are strapped together and moored to the bottom. The diamond-shaped rafts can be arrayed in a variety of configurations, depending on the requirements of the site, and the entire breakwater can be moved to meet changing seasonal or other conditions.

The resulting breakwater, Mr. Kowalski says, can be as large as 500 feet long and 22 feet wide, a structure that would diminish a three-foot wave to less than a foot.

Because the tires are set vertically, air is captured in their crowns and only several inches of their tops float above the water surface. The low-lying breakwaters should be well marked to avoid being hit by boaters, Mr. Kowalski points out, but the tires' resilience minimizes the possibility of damage to boats if collisions should occur.

The present breakwater design is effective only for waves less than four feet high. Mr. Kowalski and his group hope to develop a larger floating breakwater for use in the open ocean. "Such a breakwater might be effective for protecting coastal construction sites, oil drill rigs, and oilspill cleanup operations in heavy seas," he says.

noaa week

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Catherine S. Cawley, Editor
Warren W. Buck, Jr., Art Director

noaa in the news

NOAA has recently issued press releases announcing that:

—The 17-man National Geodetic Survey field party headed by John R. Shea has begun a four-month geodetic survey in a 7,500-square-mile area of West Virginia, Maryland, and Pennsylvania, with one line extending north and south from Thomas, W. Va., and the other east and west from Fairmont, W. Va.

—The NOAA Ship Ferrel, commanded by Lt. Cdr. C. Dale North, Jr., is scheduled to made a four-and-a-half-month tide and current survey of Portsmouth Harbor and the Great Bay area of New Hampshire. The survey is being coordinated with the University of New Hampshire, which is interested in obtaining a general understanding of the physical dynamics of the Great Bay-Portsmouth Harbor Estuary to aid the state in coastal zone management.

—NOAA's wire drag ships, the Rude and Heck, are searching for 13 reported wrecks in shipping lanes and harbor approaches off the Texas coast in the Sabine Pass to Calcasieu Pass area, and will perform similar surveys in the Sabine Pass to Galveston, Tex., area before they return in September to their home port of Norfolk, Va.

—The fifth in a series of special purpose charts showing the location of oil lease block areas in the Gulf of Mexico has been published. It covers the area from the north Cuban shore to Tampa Bay, including the Key West area, in Florida.

—The NOAA Ship Townsend Cromwell, which is commanded by Lt. Cdr. Merritt N. Walter, and which recently was reactivated after a two-year period of deactivation, has returned to Hawaii to resume fisheries research in Hawaiian and other mid-Pacific waters.

New Equipment, Helicopters Used in Alaskan Survey

The National Geodetic Survey is using newly developed equipment and helicopters to conduct geodetic surveys in the rugged and remote Illiamna Lake and Bethel areas in Alaska for the Interior Department's Bureau of Land Management.

The surveys, which will establish horizontal control stations for cadastral measurements required for determining property lines under the Alaska Native Claims Settlement Act and the Alaska State Selection Program, are slated to be completed by September 30.

To conduct the surveys, Ivan L. Crabbe's 12-man field party is measuring the distance between various points with an instrument known as the Tellurometer which utilizes radio microwaves to transmit measurement data between two remote points.

Due to the rough terrain and the lack of roads over which heavy equipment can be transported by trucks, as is normally done in more accessible areas, a comparatively light tubular pole tower was developed by NGS scientists in Corbin, Va. The 40-foot portable pole mast is used to elevate the detachable dish antenna of the Tellurometer to provide a clear line of sight between similar masts and 20-foot portable tubular steel towers eight to thirty miles distant.

Several helicopters are being used to transport the men, their supplies and their equipment.

Lunnie Curry, Physical Science Technician with the Environmental Data Service's National Oceanographic Data Center, shows coworker Henry Cdum the Bronze Medal she just received from EDS Director, Thomas S. Austin (right). The medal was presented to Miss Curry upon her retirement for 33 years of extremely competent service and providing a model of integrity and reliability for fellow employees.

Atmospheric Changes Being Monitored

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tic sounders, and an instrument-packed trailer familiarly called the "Sniffer," now applied to powerplant studies for the first time.

Funded by the Environmental Protection Agency (EPA), the study is being carried out by ERL's Atmospheric Physics and Chemistry Laboratory (APCL) and Wave Propagation Laboratory (WPL) in Boulder, Colo.

The observers will visit key powerplant sites in the Rocky Mountain area at selected intervals over the next several years, monitoring effluents with a level of detail that has not been available to such studies before.

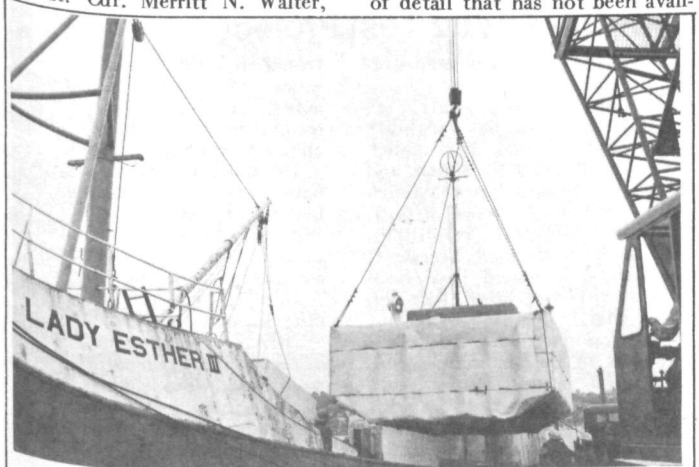
The first part of the powerplant study, funded by EPA's National Ecological Research Laboratory in Corvallis, Oreg., takes the sensors and their crews to the rolling grasslands of southeastern Montana, near Colstrip, where a large powerplant will begin operation in October, fed by coal strip-mined from rich deposits nearby. Expected to begin as a 350-Megawatt operation, the Colstrip plant will eventually produce 1.4 billion watts of electrical power.

Measurements will be taken at the Colstrip site during the growing season in May and again near harvest time in August-September. The teams will return to the same site next year after power production has begun, to take samples which will tell environmental scientists how the powerplant has changed the air, weather, and short-term climate around Colstrip.

The WPL effort, led by Dr. Vernon E. Derr, will use a recently developed optical radar, or lidar, to measure aerosol distribution vertically in the atmosphere, and to determine the horizontal distribution of the tiny particles.

An acoustic sounder, which senses thermal differences at various levels above the surface, will monitor the area's inversion level. A full sky radiometer (total sun) and a pyrheliometer (direct sun) will determine the amount of solar energy available at the surface near Colstrip and whether that quantity is changed as powerplant operations begin.

The Sniffer unit will be used at Colstrip as a point calibration system for the area-wide measurements made by the lidar and other instrumentation. According to Dr. Rudolph Pueschel, the APCL scientist who directs the Sniffer operations, new methods developed by his laboratory permit unusually close analysis of atmospheric particulates around powerplant sites. The technique uses equipment in the Sniffer to collect airborne particles and gases. A laser-based analyzer measures constituents in aerosol samples. Other aerosol samples are taken back to Boulder to be examined by a scanning electron microscope and to have their chemical composition determined by associated X-ray analyzing equipment.



A 20,000 gallon, 12-ton insulated holding tank was installed recently in the herring carrier vessel Lady Esther III, as part of a joint Industry-National Marine Fisheries Service project being carried out through the New England Fisheries Development Program.

The holding tank has a capacity of 100,000 to 125,000 pounds of herring held in an ice-seawater mixture. If successful, herring could be held for approximately 24 hours with no loss in quality, enabling catches to be brought from more distant fishing grounds, such as Georges Bank and the Bay of Fundy. The present holding time of five-six hours in the summer months restricts fishing to the more inshore grounds. Sea trials are scheduled to begin this summer.

best fish buys

According to the NMFS National Fishery Education Center in Chicago, the best fish buys for the next week or so are likely to be fresh bluefish and canned tuna along the Northeast Seaboard; gray sea trout and croaker in the Middle Atlantic States, including the D.C. area; fresh mullet and blue crab in the Southeast and along the Gulf Coast; dressed whitefish and fresh catfish in the Midwest; fresh snapper fillets and snow crab sections in the Northwest; and fresh sablefish and snow crab sections in the Southwest.

notes about people

Capt. Roger F. Lanier has been elected to a one-year term as President of the Executive Committee of the National Association of Commissioned Officers, which promotes the interests of members of the NOAA Corps.

Capt. Lanier

Others chosen for the Committee are Capt. Robert C. Munson; Capt. C. William Hayes, Editor of the NOAA Corps Bulletin; Cdr. Richard H. Allbritton; Lt. Cdr. John K. Callahan, Secretary; and Lt. William T. Turnbull, Treasurer. Lt. Cdr. Roy K. Matsushigo was selected as an alternate, as was Lt. Fred J. Jones, who will become Treasurer in August.

The Association, a professional and social organization dedicated to improving the professional standing of the NOAA Corps and making possible more social contacts, has chapters in Seattle, Wash.; Norfolk, Va.; Kings Point, N.Y.; and Rockville, Md.

Dr. Frederick J. Smith, a member of the Oregon State University Sea Grant marine advisory program since 1968 and the Nation's first extension marine economist, has been appointed to the staff of the National Sea Grant Program.

Dr. Smith

During his one-year appointment, he will advise the National Sea Grant Program, primarily on marine economics research, work with the staff on Sea Grant's National Marine Advisory Service, and provide liaison among state Sea Grant programs and economics research activities within other Federal agencies.

He is a graduate of Cornell University, received his master's degree from Oklahoma State University, and his Ph.D. from North Carolina State University.

Marvin H. Hofer is the new National Weather Service Port Meteorological Officer at San Francisco, Calif. He replaced Paul A. Arnerich, who has retired after more than 37 years of Federal service. Mr. Hofer joined the NWS after serving with the Navy in World War II, and sailed on weather ships in the Pacific for six years. After assignment to shore station duty he returned to sea duty frequently for new programs and special projects, such as BOMEX.

Mr. Hofer

Lt. Cdr. William R. Daniels is the NOAA Ship Mt Mitchell's new Operations Officer. He served aboard the ship as a junior officer in his first assignment after joining the NOAA corps in 1969. Most recently, he was Executive Officer aboard the Whiting.

Lt. Cdr. Daniels

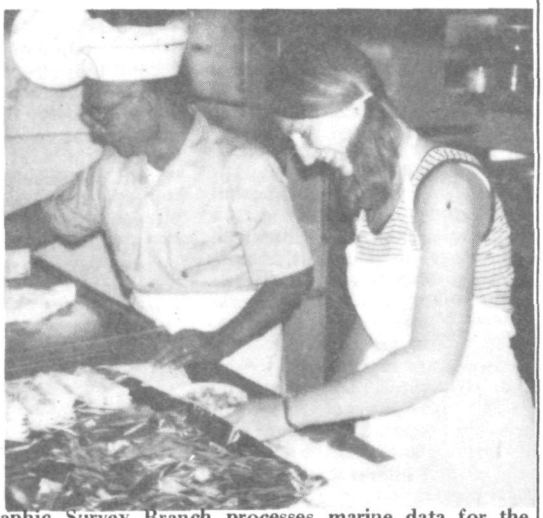
Joyce Toyne, Deputy Chief of the NOAA Field Finance Office in Kansas City, Mo., for the past three years, was selected as "Woman of the Year" by the New Horizon Chapter of the American Business Women's Association. Her selection was based on her chapter activities and accomplishments and responsibilities in her position.

Ms. Toyne

Nebraska Tax Changes

Employees who are subject to state tax withholdings for the State of Nebraska may notice a minor change in their state tax for salary checks dated on or after July 30, 1975.

In the galley of the NCAA Ship Mt Mitchell, Joe Salanga shows Karin Malycke, a survey reviewer with the National Ocean Survey's Hydrographic Survey Branch in Rockville, Md., some of the finer points in making egg rolls. Miss Malycke recently spent two weeks aboard the ship off Cape May, N.J., viewing the ship's data gathering operations as part of a continuing in-the-field training program for shoreside cartographers.



The Hydrographic Survey Branch processes marine data for the Marine Chart Division.

NOAA Personnel Are Participating in the Apollo-Soyuz Test Project

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pheric Physics and Chemistry Laboratory; and Merlin C. Williams, Acting Director of ERL's Weather Modification Program, who discussed the lightning study. One aspect of the study was development of a method of attempting to suppress hazardous electrical activity, using a still-experimental chaff seeding technique. The speakers were introduced by L. Erick Kanter, NOAA's Deputy Director of Public Affairs.

The SMG has provided primary weather forecasting support—for pre-launch, launch, inflight, and recovery phases—for every manned spaceflight since 1960.

Alan N. Sanderson, Chief of the SMG, is stationed at the SMG Section at Johnson Space Center, Tex., where Richard K. Siler is Meteorologist in Charge, and Richard A. Brintzenhofe is MIC of the SMG Washington Section at the National Meteorological Center.

Prior to a launch, the SMG issues a variety of forecasts specifically tailored to activities on the launch pad, especially those which would be affected by lightning, strong winds, or heavy rains. Then, five days before launch, a special forecast is prepared which predicts what the weather prospects are for the launch and at possible emergency landing sites in the North Atlantic immediately thereafter.

Global forecasts for use throughout the mission are provided to NASA in scheduled forecasts and briefings several times daily, with frequent updates, and include forecasts for recovery areas and possible emergency spashdown points, and of cloud forecasts for use in scheduling earth-viewing experiments.

Data from NOAA and NASA weather satellites is used extensively by the SMG.

Oliver A. Gorden, Meteorologist from the Washington Section, has been sent to the NWS Forecast Office in Honolulu to assist the SMG in predicting weather in the Pacific area during the mission.

In the lightning study, six aircraft—one with the capability of seeding—entered the launch area an hour prior to launch, and from 30 minutes before launch until five minutes before lift-off, observed electrical conditions. Had it been deemed necessary, thunderclouds would have been seeded with metallized, hair-thin nylon chaff.

Dr. Kasemir, who led APCL scientists in the lightning study, monitored atmospheric conditions from the space center's weather central, and, along with Dr. James D. McFadden, Chief of the Research Facilities Center's Flight Operations Group, guided aircraft to potential lightning-producing areas.

Support arrangements for the aircraft were coordinated with the Air Force by the Office of Environmental Monitoring and Prediction.

The decision to have the lightning suppression method available was made based on recently reported promising results obtained by ERL scientists in a series of summer experiments aimed at determining whether seeding reduces a thunderstorm's ability to produce lightning.

Dr. Kasemir and his associates have worked on developing techniques of lightning suppression and on obtaining an improved understanding of atmospheric electricity generally since the Apollo 12 was struck by lightning during lift-off in 1969.

NOAA scientists participating in the Earth Observations Experiment are, from ERL's Atlantic Oceanographic and Meteorological Laboratories in Miami, Dr. John R. Apel, Director of the Ocean Remote Sensing Laboratory; Dr. Robert S. Dietz, a Marine Geologist in the Marine Geology and Geophysics Laboratory; and Dr. George A. Maul, an Oceanographer in the Physical Oceanography Laboratory; and from the National Environmental Satellite Service, John W. Sherman III, Chief of the Spacecraft/Oceanography Group.

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