



# noaa week

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## New Solar Energy Data Program Begins

NOAA scientists have begun a new program aimed at making precise measurements of solar radiation, and recording how it varies with time, weather, and location.

The program will also provide a new instrument calibration facility, put solar energy data into a form scientists, architects, and engineers can apply to solving energy problems, and conduct research to determine how solar radiation is affected by its transmission through the atmosphere.

The effort, funded this year by the National Science Foundation, is part of a larger National Solar Energy Program, supported by the Science Foundation and the Energy Research and Development Administration. The Division of Solar Energy at ERDA will fund this program in the future.

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## IWY Luncheon Details Are Announced

Dorothy B. Ferebee, M.D., United Nations Association Chairperson for the D.C. area for IWY, retired Howard University Director of Health Services, will speak on the "Objectives of IWY-1975" at the NOAA luncheon-meeting on December 4, 1975, at the Bolling Air Force Base Officers' Club. Dr. Ferebee has served as Medical Consultant to the U.S. State Department since 1961, serving in Europe, the Middle East, Africa, South America and the islands of the Caribbean. She has received special honors and citations, including the first Distinguished Achievement Award from Simmons College, Boston, Mass. She is a member of numerous Boards of Directors including the American Health Association, National Board of YWCA, and Board of Trustees, Simmons College, Boston. She is also National President of the National Council of Negro Women.

Other speakers will be Evelyn Ay, Federal Women's Program Coordinator, Department of Commerce; Dr. Robert M. White, NOAA Administrator; Barbara Gainey, NOAA EEO Officer, and

## Weather Information Service Will Help States Cope With Natural Gas Shortages

### Alaska Is Awarded \$1,200,000 Coastal Zone Management Grant

Alaska, the nation's largest state, has been awarded by NOAA a \$1,200,000 grant to continue developing a program for coastal zone management and to study the onshore impacts of offshore oil and gas development.

The state's second-year effort is aimed at preserving coastal ecosystems while achieving wise coastal land use for housing, recreation, industry, transportation, mineral mining, agriculture, energy production, and other activities.

The grant will be administered in Alaska by the Division of Policy Development and Planning in Governor Jay S. Hammond's office.

Last year NOAA awarded the state an initial grant of \$600,000 for coastal zone management, and under provisions of the Coastal Zone Management Act of 1972, it may receive a third development grant from the Office of Coastal Zone Management.

In its application, Alaska said its second-year work program will shift from data collection to considering the role of citizens and state policy in developing the management program, as well as the legal aspects and the role of state government in aiding on-going planning efforts.

One-fourth of the grant will be used to study the onshore impacts of energy production on the Outer Continental Shelf. Since it contains an estimated 20 percent of the Nation's remaining undiscovered recoverable energy, the state is a major target for OCS development. Of 17 areas identified for OCS leasing by the Federal government, nine are off the Alaskan coast.

"In response to the threat of almost immediate development along portions of Alaska's

*(Continued on page 4)*

To help Governors cope with an expected natural-gas shortage this winter, the Environmental Data Service and the National Weather Service are teaming up to provide a new, weekly weather-information service to 48 state capitals.

The service will help states to determine where they stand in heating-fuel usage, and to project weather effects upon heating-fuel needs.

The 48 states (Alaska and Hawaii are excluded) will begin receiving the new service within the next few weeks and receive it each Wednesday throughout the heating season.

The information should help state energy advisers anticipate natural-gas requirements on a week-to-week basis and initiate conservation measures where necessary until warmer weather returns. The goal is to provide forecasts sufficiently in advance to make distribution adjustments possible with a minimum of hardship.

EDS will supply each state with a base graph showing the normal 30-year curve of accumulated cold weather in the state throughout the heating season, plus curves on either side showing extremes of cold or warm weather that have occurred an average of once every 10 years in that state. Each Wednesday, the NWS will provide observed and forecast weather information to

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**PARTICIPANTS IN THE MEETING OF THE 1975 LINE FORECASTERS TECHNICAL ADVISORY COMMITTEE**, held recently at National Weather Service Headquarters in Silver Spring, Md., were (from left) Robert Richey, National Meteorological Center; Curtis Barrett, Hydrology, Kansas City, Mo.; Skip Ely, Chairman, Southern Region, New Orleans, La.; David Olsen, Western Region, Boise, Idaho; Edmund Manning, Pacific Region, Honolulu, Hawaii; Harold Hess, Eastern Region, Washington, D.C.; Richard Koeneman, Central Region, Milwaukee, Wis.; Dr. George P. Cressman, NWS Director; Roger Bulkow, Alaska Region, Juneau, Alaska; and Maury Pautz, NWSH, LFTAC Coordinator.

## Observatory Dedicated In Samoa

A new observatory to keep an eye on atmospheric gases and particles that may affect the earth's climate was dedicated on November 27 in American Samoa. It is the fourth in a developing network of observatories around the world to measure atmospheric constituents that may occur in extremely low concentrations but are likely to have a significant influence on future

*(Continued on page 4)*

# personnel perspective

## Current Vacancies in NOAA

To insure that NOAA employees are aware of job possibilities throughout the agency, a list of current NOAA-wide vacancies is published below. Employees interested in any of the listed vacancies

should contact their servicing personnel office for information where to apply.

Announcement Number	Position Title	Grade	MLC	Location	Issue Date	Closing Date
251-76	Electronics Tech.	GS-10	NWS	Albany, N.Y.	11-18-75	12-3-75
252-76	Hydrologic Tech.	GS-9	NWS	Cleveland, Ohio	11-18-75	12-3-75
253-76	Supv. Fishery Biologist	GS-13	NMFS	Highlands, N.J.	11-18-75	12-3-75
255-76	Supv. Meteorologist	GS-15	NWS	Silver Spring, Md.	11-18-75	12-3-75
258-76	Production Manager	GS-13	NOS	Washington, D.C.	11-19-75	12-4-75
260-76	Hydrologist	GS-11	NWS	Boise, Idaho	11-21-75	12-6-75
259-76	Meteorological Tech.	GS-10	NWS	Newark, N.J.	11-21-75	12-6-75
261-76	Meteorological Tech.	GS-10	NWS	Denver, Colo.	11-21-75	12-6-75
262-76	Administrative Asst.	GS-7	ERL	Ann Arbor, Mich.	11-21-75	12-6-75
169-76	Computer Programmer	GS-9	HDQS	Rockville, Md.	11-24-75	12-9-75
237-76	Electronics Tech.	GS-10	NWS	Green Bay, Wis.	11-24-75	12-9-75
269-76	Supv. Photographer	GS-11	NOS	Rockville, Md.	11-24-75	12-9-75
273-76	Electronics Tech.	GS-9	NWS	Denver, Colo.	11-24-75	12-9-75
274-76	Supv. Electronics Tech.	GS-12	NWS	Anchorage, Alaska	11-24-75	12-9-75
275-76	Electronics Tech.	GS-12	NWS	Cheyenne, Wyo.	11-24-75	12-9-75
254-76	Physicist	GS-13	NOS	Rockville, Md.	11-18-75	12-10-75
257-76	Computer Systems Administrator	GS-13	HDQS	Suitland, Md.	11-18-75	12-10-75
263-76	Operations Research Analyst	GS-11	NWS	Silver Spring, Md.	11-21-75	12-13-75
264-76	Ecologist	GS-11	EDS	Washington, D.C.	11-21-75	12-13-75
265-76	Ecologist	GS-13	EDS	Washington, D.C.	11-21-75	12-13-75
266-76	Economist	GS-13	EDS	Washington, D.C.	11-21-75	12-13-75
271-76	Meteorologist	GS-13	ERL	Princeton, N.J.	11-24-75	12-16-75
272-76	Research Meteorologist	GS-13	NWS	Kansas City, Mo.	11-24-75	12-16-75
267-76	Director, Office of Programs and Budget	GS-17	HDQS	Rockville, Md.	11-24-75	12-16-75
141-76	Supv. Civil Engineer	GS-13	NOS	Detroit, Mich.	11-24-75	12-16-75
268-76	Realty Specialist	GS-12	HDQS	Rockville, Md.	11-24-75	12-16-75

## Policy on Annual Leave Forfeiture and Restoration

The 1973 changes in Federal regulations governing leave administration make it necessary for all employees to thoroughly understand the concept of leave forfeiture and subsequent restoration. Following is a discussion of NOAA's policies in this area which are binding on all NOAA employees.

The general policy for restoring annual leave is that the leave must have been forfeited because of the exigency of the service, administrative error, or illness. Forfeited leave may only be restored if it has been scheduled and approved for use on specific dates. In cases of administrative error, however, the scheduling of leave may not be a factor.

**Exigency of the Service.** This means that the scheduled leave, which was requested, approved and cancelled in writing, could not be used through no fault of the employee. The approved leave must have been cancelled because some unforeseen work situation arose which precluded leave usage. The decision to cancel the leave must have been made by two supervisory officials who are required to certify as to the nature of the exigency, its beginning and ending dates, and explain why the forfeited leave could not have been rescheduled. Acceptable reasons for restoration will include such things as natural disaster, sudden public attention to a particular program, specific projects that run past the established completion date, a need for an employee's unusual or critical skills, unforeseen public business occurring toward the end of the year such as jury duty, or a call to military duty to preserve public order, requests for restoration of forfeited leave must be submitted, through channels, to the appropriate personnel officer for review prior to approval. The Assistant Administrator for Administration approves these requests for employees serviced by the Headquarters personnel office and NASO; the Director, ERL; Regional Director, NWS and NMFS; Marine Center Directors; and Directors, NCC, approve these requests for employees under their jurisdiction.

**Illness.** When annual leave that was scheduled (or rescheduled) and approved is forfeited because of illness occurring or lasting so late in the leave year that the scheduled leave could not be used, it may be restored except when the absence on sick leave could have been foreseen (planned surgery, normal maternity); annual leave was not rescheduled during the leave year; or annual leave was not used because of work requirements arising from the use of sick leave. Requests for restoration of leave based on illness must be submitted through the immediate supervisor to the appropriate Division Chief, equivalent, or higher, for approval and submission to the appropriate personnel officer for review.

**Administrative Error.** If, by correcting an administrative error, an employee's adjusted leave balance exceeds his or her ceiling, the error must be explained in detail. Such errors may result from such things as an incorrect determination of previous service creditable for leave purposes; a mistake in the date of moving into a higher leave-earning category; failure to maintain a proper leave ceiling for an overseas employee; for a mistaken separation during reduction in force. Requests for restoration due to this type of forfeiture will be approved the same as for cases of illness.

**Disability Retirements.** If an employee who is on sick leave pending disability retirement which will become effective during the 1976 leave year has excess annual leave, it will be handled in one of two ways. If, prior to being placed on sick leave, the employee has requested, been granted, and was scheduled for excess annual leave, he or she may continue to use the sick leave and have the annual leave restored after forfeiture. If the employee has not requested, been granted, and scheduled for annual leave, he or she must be given the opportunity to use the excess annual leave in lieu of sick leave and then continue on sick leave. This, of course, extends the date of separation for disability. If the employee does not make this substitution, the excess annual leave will be forfeited and will not be restored.

**Availability of Restored Leave for Use.** Restored leave must be used within two years of restoration. Failure to use the leave within this period will result in permanent forfeiture. Restored annual leave is placed in a separate leave account and does not change an employee's normal leave ceiling.

**Frequency of Restoration.** It is not anticipated that approval for leave restoration will be made for the same employees in successive years. This is because of the difficulty of having to use restored annual leave along with regular accrued leave.

**Determination of Scheduled Leave.** Leave is determined to be scheduled for the purpose of leave restoration when it is approved for use on specific dates. "Plans" to use leave during a certain period, without mention of and approval of specific dates is not considered to be scheduled leave.

**How to Request Restoration.** Requests for restoration of annual leave must be made (after the leave is forfeited) on NOAA Form 55-8, "Request for Annual Leave Restoration," and submitted through channels to the appropriate personnel officer for review. Personnel Officers will submit approved requests to the NOAA Finance Division. Disapproved requests will be returned to the originator.

A DEPARTMENT OF COMMERCE BRONZE MEDAL has been presented to Lester P. Mallory (right), Fire Weather/Air Pollution/Avalanche Meteorologist "for outstanding service as a Fire

Weather Forecaster, and for exemplary leadership of the fire weather program in the Western Region" of the National Weather Service. The award was presented jointly by H. H. Bedke, NWS Western Region Director.



## Dr. H. Weickmann Is Honored By University of Clermont

Dr. Helmut K. Weickmann, Director of the Environmental Research Laboratories' Atmospheric Physics and Chemistry Laboratory, in Boulder, Colo., has been awarded a degree of honorary doctor by the University of Clermont in France. He was cited by the university as "...an eminent specialist in atmospheric physics, whose observations and work have allowed a better understanding of the phenomena of weather modification, and whose research has been especially significant at a time when humanity awaits much in this scientific domain."



Dr. Weickmann

University's 150th Anniversary Medal in honor of his work as the former president of the International Commission on Cloud Physics, a post he held for eight years. He was recognized for organizing international scientific conferences at which eastern and western scientists were brought up to date on one another's research.

A native of Munich, Germany, he came to the U.S. in 1949, and served as key physicist in the Atmospheric Physics Branch of what is now called the U.S. Army Electronics Command, at Fort Monmouth, N.J., until 1962, when he was made Branch Chief.

He studied at the University of Leipzig, received his Ph.D. from the University of Frankfurt, served as a physicist at a research laboratory of the German Air Force and later became Director of the German Weather Service Observatory Hohenpeissenberg.

He is a Fellow of the American Meteorological Society, and a member of the Royal Meteorological Society, Weather Modification Association, American Geophysical Union, and the Panel on Weather and Climate Modification of the National Academy of Sciences. He is an honorary member of the International Commission on Cloud Physics.

Dr. Weickmann, who has directed APCL since 1965, has authored more than 75 technical publications, and is noted particularly for his research on hail suppression, cloud nucleation, and cloud and precipitation physics.

His previous honors include receiving, in 1971, the Leningrad

awarding NOAA employees, and assistance to under-privileged children in the Washington, D.C. area.

## Employees Craft Show, Bake Sale Scheduled

The annual NOAA Employees Craft Show and Bake Sale will be held December 11, in Building 1, Washington Science Center, from 10 a.m. to 4 p.m. The event is sponsored jointly by the NOAA Employees Association and NOAA Voluntary Action, Incorporated.

Individuals wishing to exhibit or offer their craft work for sale are requested to contact Earl Laws at 496-8045 on or before December 9. Ten percent of the income from sale of craft items will go to support the Voluntary Action programs of NOVAC.

Those wishing to offer baked goods for sale should contact Margaret Barnes on 496-8481 before December 10. All proceeds from the bake sale go to NOVAC.

In past years this event has attracted many exhibitors with displays of handmade jewelry, Christmas decorations, wood-working, and metal sculpture. The profits from sales of items at the show have helped NOVAC in its program of emergency loans and day-care grants to de-

## Award Nomination Deadline Announced

The deadline for submission of nominations for the 1975 Elmer Newmann Award for Employee Management Relations is December 31, 1975. For details see memorandum dated November 4 from Deputy Assistant Administrator for Administration Robert L. Carnahan to POE Directors and Financial Management Centers.

## New Solar Energy Data Effort Is Part of National Solar Energy Program

(Continued from page 1)

Solar energy is emerging as an important alternative source of energy for human uses, according to Dr. Lester Machta, who heads the program. It has demonstrated potential for heating homes and offices, and, in some locations, is being harnessed to generate electricity, supplementing conventionally fueled powerplants.

But energy is not concentrated in solar radiation as it is in fossil fuel. To use this gift from the sun, some method must be developed to collect and store it. In

the engineering process, each "leak" in the collection procedure extends the amount of time or increases the size and cost of the system needed to garner a given amount of solar energy. Variations with time and location determine—and complicate—the energy-storage requirements.

Insolation—the amount of solar radiation reaching the earth's surface—is the key value in designing efficient, economical solar energy conversion systems. But this quantity, although measured regularly over the years, has not been available with the accuracies required for engineering purposes.

The new program, Dr. Machta, Director of the Environmental Research Laboratories Air Resources Laboratories, said, will measure insolation to accuracies of five percent.

A network of 35 pyranometers—instruments which precisely measure the intensity of solar radiation—will go into operation next year at selected National Weather Service facilities. Ten of the locations will also be instrumented to take additional special insolation measurements.

ERDA plans call for an expansion of the network over the next several years.

At the same time, specialists at the Environmental Data Service National Climatic Center in Asheville, N.C., will develop new formats for network radiation data, to provide maximum utility to solar energy engineers and scientists. These formats will combine solar radiation measurements and simultaneous weather information.

A new, expanded calibration facility has been established by the ARL in Boulder, Colo., to provide calibration and quality control for network instruments, and for a limited number of instruments from other sources.

Additionally, the existing body of insolation data will be studied to determine whether these measurements can provide a radiation "climatology" for the United States.

To do this, NOAA scientists will pick about a dozen NWS stations with reasonably continuous solar radiation records and apply newly developed computer programs to add measurements of past cloudiness and other factors. If this technique is successful, it will permit estimation of solar

radiation values wherever insolation and cloudiness measurements exist.

Research on atmospheric transmission of solar radiation is another major portion of the NOAA effort. This work by ERL's Wave Propagation Laboratory will attempt to improve the definition of meteorological effects on solar radiation, particularly those of cloud cover and aerosols (small airborne particles). It will also examine how solar radiation is changed by ozone, water vapor, carbon dioxide, clouds, natural aerosols, air pollutants, and other constituents. The researchers will use this information to improve existing models of the interactions between solar radiation and the atmosphere, to meet solar energy engineering needs, and provide a method of predicting insolation values.

Field work in atmospheric transmission research will include remote probing of the atmosphere with lidars (the laser equivalent of radar), radars, and acoustic sounders, and using laser and electron microscope techniques to determine the source, chemical composition, and meteorological role of aerosols.

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

## Samoa Observatory Is 4th in Climatic Monitoring Network *(Continued from page 1)*

climate. The network is part of the Environmental Research Laboratories' Geophysical Monitoring for Climatic Change (GMCC) program.

Measurements from Samoa and the other NOAA observatories in Antarctica, Hawaii, and Alaska, can be used to determine long-term changes in the concentrations of carbon dioxide, ozone, fluorocarbons, and carbon tetrachloride near the earth's surface and detect changes in the protective ozone layer of the stratosphere. The measurements could help answer the growing number of questions on climate. The program is managed by the Environmental Research Laboratories' Air Resources Laboratories.

Participants in the dedication ceremony, held at the newly completed observatory building on Cape Matatula, Tutuila Island, were the Honorable Earl Ruth, Governor of American Samoa; Joseph O. Fletcher, ERL Deputy Director; Dr. Kirby J. Hanson, Director of the GMCC program; and Dr. Ian Fletcher of the University of Rhode Island. Dr. Fletcher and other U.R.I. scientists, with the support of the National Science Foundation, will be working at the Samoa GMCC Observatory in an 18-month cooperative effort to measure marine aerosols.

The observatory is on land leased from Chief Iuli Togi, which required signing of a treaty in 1974.

At the observatory, a three-man team headed by Vernon T. Rumble will monitor aerosols (small, air-borne particles) of various sizes, chemical constituents

## Alaska CZM Grant

*(Continued from page 1)*

coast," the state expressed in its application, "coastal zone management was selected as the tool to coordinate internal efforts and to insure that the state would play a significant role in determining the intensity, location, and timing of petroleum-related development."

As part of its OCS work element, Alaska will provide direct planning assistance to local communities and regions targeted for OCS development; provide matching grants to localities for development planning studies; coordinate state plans with local governments to achieve an integrated response to OCS development; and supervise special studies on OCS issues relevant to coastal zone planning and management.

Robert W. Knecht, NOAA Assistant Administrator for Coastal Zone Management, said that "Alaska's second-year proposal represents a significant expansion in overall program design, and reflects the rapid evolution of the state's approach to coastal management issues."

of precipitation, and conventional weather elements of climate (temperature, humidity, precipitation, barometric pressure, surface winds), in addition to low-concentration gases that are thought to influence climate. The observers also will measure three man-made gases: carbon tetrachloride and fluorocarbons 11 and 12. (Studies are underway at a number of institutions to determine whether fluorocarbons, used as propellants in aerosol cans and in refrigeration, may affect the stratospheric ozone shield, which protects life on the earth's surface from potentially hazardous ultraviolet radiation.)

The NOAA global monitoring program began in 1970 when the newly formed GMCC program set out to establish a small, widely separated network of observatories equipped to precisely measure the selected key constituents at locations far from the centers of civilization.

Two observatories are older

## New Weather Information Service To Begin Soon

be compared with those curves.

In all instances the information provided by EDS and NWS will be weighted by population so that, for example, cold-weather reports from a large city, where heating needs will be great, will weigh more heavily in the statistics than equally cold weather in a sparsely populated region of the state.

To use the new service, state officials will have to become familiar with the "heating degree day" concept, in which a temperature of 65 degrees F. is agreed upon as the dividing line between when some amount of furnace heat ordinarily is required to provide a comfortable indoor temperature, and when it is not. When the average temperature for a given day (obtained by adding together the low and the high and dividing by two) is one degree below 65, that counts as one degree day. If the average is two degrees below 65, it is two degree days, and so on, down the thermometer scale. Successive daily totals of degree days are added together to produce the cumulative totals of degree days for a week, or a month or a season.

The degree-day concept assumes that the same amount of heating fuel is needed for any combination of cold and duration that add to the same number of heating degree days. For example, 10 days at 64 degrees, five days at 63 degrees, two days at 60 degrees, and one day at 55 degrees all equal 10 heating degree days. Presumably each combination would call for the same amount of heating fuel. Over the years, the analogy has been found close enough to be useful for estimating customers' heating fuel needs after a spell of cold weather.

than the program itself. These, at Mauna Loa, Hawaii, and at the South Pole, were established initially in the late 1950's for the International Geophysical Year by the National Science Foundation and what is now the National Weather Service. A third observatory at Point Barrow, the northern-most extremity of Alaska, was added to the network in 1973.

The NOAA scientists also analyze the data for changes and long-term trends in concentrations of those rare gases and aerosols that may modify solar radiation and radiation from earth, thereby altering climate. They have developed a numerical model that incorporates both sources and sinks for carbon dioxide and can be used for predicting future carbon dioxide concentrations. Carbon dioxide measurements from the four GMCC observatories are being used to verify the accuracy of the model.

Measurements recorded at the

observatories are sent to GMCC headquarters in Boulder, Colorado, where scientists process the data before archiving them at the World Data Center in Asheville, N.C. Administered by the Environmental Data Service's National Climatic Center, the data center provides for international data exchange.

So far, the four NOAA observatories are the only complete, operational baseline stations in the world making such measurements. But other nations are planning similar observatories leading towards a data collection program international in scope. These observatories will provide raw data that scientists around the world can combine with data on other climatic influences (such as the oceans) and climatic indicators (such as temperature and wind) to help understand the causes of climate. Such understanding will eventually serve as the basis for predictions of climate.

*(Continued from page 1)*

be based on a "marriage" of degree-day statistics with actual records of natural-gas use provided by industry.

By this means it is expected that the severity of the pending natural-gas shortage can be quantified much more precisely for those states, making possible better decisions for allocation. Under current plans residential use of natural gas will be the last to be affected, although home users of natural gas may be requested to cut back somewhat on their use so that nonresidential users such as factories and commercial buildings will not be cut off completely.

Once the pilot models have become operational, it is expected that other states will want to develop the same capability for translating degree-day data into quantified natural-gas demand. Dr. McQuigg and his colleagues will be prepared to tell each state energy team how to gather the necessary historical information and how to construct a mathematical model tailored to their natural-gas consumption and distribution system.

Each state's model will be different. Once produced, however, it will be a simple matter each week for the state to assess its position.

According to the Federal Energy Administration, the 21 states expected to experience some degree of natural-gas shortage this heating season are: Arizona, California, Delaware, Florida, Georgia, Indiana, Iowa, Kansas, Kentucky, Maryland/D.C., Missouri, Nevada, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia.



# **National Oceanic and Atmospheric Administration**

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