



noaa week

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Two New Forecast Services For Travelers Announced

On May 22, the National Weather Service will inaugurate two new forecast services for travelers--one covering 30 U.S. cities and one covering 15 Canadian cities.

The goal of the two new services is to provide in simple, convenient format, weather forecasts for persons traveling to distant cities -- a need made obvious by countless telephone requests to local weather offices for such information.

The NWS believes that -- by making this information available via its teletype-writer circuits to newspapers, radio and television -- valuable new information can be provided routinely and efficiently to the public.

Scheduled to coincide with deadlines for evening and morning newspapers in the populous eastern time zone, the forecasts will be issued twice daily -- at about 7:30 a.m. and 7:30 p.m. E.D.T. The U.S. forecasts will be the same as those presented in a much more lengthy transmission -- the Selected Cities Weather Summary for 90 U.S. cities -- issued about 9:30 a.m. and 9:30 p.m. E.D.T. The Selected Cities Summary also contains observed temperatures and precipitation for the previous 24-hour period. This summary will be continued in its present form.

This is the first time Canadian weather information has been made available to U.S. citizens in this format. It is expected to be of special value to Canada-bound vacationers.

President Nixon Names Three To Marine Mammal Commission

President Nixon has announced the appointment of three persons as members of the Marine Mammal Commission. They are:

Victor B. Scheffer, of Bellevue, Wash.; retired biologist with the United States Fish and Wildlife Service, and author of several books on marine mammals, for three years. He will be Chairman.

A. Starker Leopold, of Berkeley, Calif.; Professor of Zoology, University of California at Berkeley, for two years.

John Ryther, of Falmouth, Mass.; Chairman, Department of Biology, Woods Hole Oceanographic Institution, Falmouth, Mass., for one year.

The purposes of the Marine Mammal Commission are: to undertake a review and study of activities of the U.S. pursuant to existing laws and international conventions relating to marine mammals; to conduct a continuing review of the condition of stocks of marine mammals, of methods for their protection and conservation, of humane means of taking marine mammals, of research programs to be conducted, and of all applications for permits for scientific research; recommend to the Secretary of the Interior revisions, as appropriate, of the Endangered Species List with regard to marine mammals; recommend to the Secretary of State appropriate policies regarding existing or proposed international arrangements for the protection and conservation of marine mammals; and to undertake other

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Four of Nine Commerce EEO Awards Are Presented to NOAA Employees



(From left) Dr. Robert M. White, NOAA Administrator, with Mrs. Hiland, Mrs. Boston, Mr. Snellman, and Mr. Richter.

Four NOAA employees were among nine in the Commerce Department honored recently for their outstanding work in developing equal employment opportunities for minorities and women. They were: Gregory Richter, Meteorologist in the National Weather Service Office of Meteorological Operations; Leonard W. Snellman, Chief of the Scientific Services Division at the NWS Western Region Headquarters in Salt Lake City, Utah; Mrs. Evelyn Boston, Meteorological Technician in the Systems Development Office at NWS Headquarters; and Mrs. Catherine Hiland, Mathematician at the NWS National Meteorological Center in Suitland, Md.

Secretary of Commerce Frederick B. Dent, who presented the certificates, praised "this select group of employees who, because of their personal involvement, have contributed substantially to the betterment

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U.S., France Announce Expansion Of Cooperative Ocean Programs



(From left) David H. Wallace, NOAA's Associate Administrator for Marine Resources; Dr. Harris B. Stewart, Director of the Atlantic Oceanographic and Meteorological Laboratories; and Andre Brin, CNEXO Director of Programs.

The United States and France have agreed to increase significantly their cooperative programs in the oceans. Collaborative efforts in such vital areas as a joint exploration of the Mid-Atlantic Ridge, pollution abatement, aquaculture, man-in-the-sea, data buoy technology, and instrumentation will be accelerated.

Dr. Robert M. White, NOAA Administrator, and Yves LaPrairie, Director-General of France's National Center for Exploitation of the Oceans, announced the plans at the end of a three-day meeting of the U.S.-French Cooperative Program in Oceanography, held last week at the Environmental Research Laboratories' Atlantic Oceanographic and Meteorological Laboratories in Miami, Fla. The program was initiated by the two nations in 1970.

Terminating the sessions a major step forward in nation-to-nation scientific cooperation, the two men issued a joint statement declaring, "Only by approaches such as this can the nations of the world hope to solve the complex, urgent problems of the ocean environment--such basic issues as satisfying increasing needs for food from the sea, development of other marine resources, and, above all, protection and wise use of the seas for future generations."

U.S. Forest Service/NWS Cooperation Prevents Avalanche Disasters in Colorado

The U. S. Forest Service's Avalanche Research Team in Fort Collins, Colo., reported approximately 150 avalanches during the past week in Colorado. No injuries or deaths were reported, due in part to the timely dissemination of the avalanche bulletins by the Denver Weather Service Forecast Office. Travel on highways, through passes where potential danger from avalanches could and did occur, was restricted after bulletins were issued.

An avalanche reporting network was established in 1968 for the 11 western states, including Alaska, which feed weather information into the Forest Service's Avalanche Prediction System. The Forest Service makes use of the fire-weather agreement and works directly with the NWS fire-weather personnel to disseminate these forecasts.

ERL Scientists Measure Ozone, Water Vapor in Stratosphere

Thunderstorms apparently inject large quantities of water vapor, and possibly large quantities of ozone, into the stratosphere, report atmospheric scientists with the Environmental Research Laboratories' Atmospheric Physics and Chemistry Laboratory.

Dr. Peter M. Kuhn says that although his results are still preliminary, they may indicate that any water vapor changes in the stratosphere caused by man's activities would be insignificant in comparison to the thunderstorm-induced changes. But he emphasizes that more work, for which planning is now underway, must be done before this is a certainty. The NOAA work was funded by the Department of Transportation and the Office of Naval Research.

Dr. Kuhn studied several thunderstorms in late summer 1972, in which instrumented WB-57F aircraft, manned by crews from the 58th Weather Reconnaissance Squadron, were used. Operations were conducted from Kirtland Air Force Base in Albuquerque, N. Mex.

Other NOAA scientists involved in the work were Dr. Alexis Shlanta, Dr. Earl W. Barrett, Lois A. Stearns, and Charles H. Johnson.

The findings of the experiments will be published in the Journal of Atmospheric Research.

Record Number of Tornadoes in United States Reported During First Four Months of 1973

Severe weather continues to batter the United States. Last week, 91 tornadoes were reported to the National Weather Service's National Severe Storms Forecast Center at Kansas City. They hit in the states of Alabama, Arkansas, Colorado, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Minnesota, North Dakota, Ohio, Oklahoma, South Carolina, and Texas.

The most devastating tornado occurred in Ohio on Thursday afternoon, May 10. A tornado at Willard, Ohio, caused three deaths, injured 100, and caused extensive damage in the community of 5,500 persons. Excellent forecasts by NSSFC and timely warnings by the Weather Service Forecast Office in Cleveland were credited with keeping the toll of dead and injured down.

The death toll in the Nation from these violent storms so far this year is reported to be about 40--already exceeding last year's record low number of 27.

The NSSFC reported a record number of tornadoes for the first four months of 1973. Preliminary figures from the Environmental Data Service's National Climatic Center and the NSSFC show that 362 tornadoes touched down in the U. S. from January through April. The previous high was set in 1957 when 276 of the storms were reported for the same four-month period.

The estimated April total of 240 tornadoes also set a record. The previous April high was 216--also set in 1957.

Dr. Joseph Smagorinsky Receives Buys Ballot Medal for 1973

Dr. Joseph Smagorinsky, Director of the Environmental Research Laboratories' Princeton, N.J.-based Geophysical Fluid Dynamics Laboratory, recently received the Buys Ballot Medal of the Royal Netherlands Academy of Arts and Sciences for his contributions as "the meteorologist who, according to the relevant rule, has done most for the science of meteorology in the past ten years."

The medal, presented at the Netherlands Embassy in Washington, D.C., is awarded at ten-year intervals.

Dr. Smagorinsky received a Commerce Gold Medal and the Meisinger Award of the American Meteorological Society in 1967.

He joined the Weather Service in 1948 and has been with the Commerce Department since, except for the three years he was with the Institute for Advanced Study in Princeton (1950-1953). In 1954, he became Chief of the Computation Section of the Joint Numerical Weather Prediction Unit, and in 1955, was named to head the newly established General Circulation Research Laboratory, which later became the GFDL.

He received his B.S., M.S., and Ph.D. from New York University.

NOAA Weather Wire Subscribers Total 1,933

The National Weather Service Communications Division has reported that the number of subscribers to the NOAA Weather Wire Service at the end of January 1973 totaled 1,933. Of these, 1,134 were mass news disseminators; private industry accounted for 360; 261 were other Federal and state agencies; and 178 were in NOAA installations. These circuits embrace either partially or wholly 27 of the 48 contiguous states and the District of Columbia.

The NWWS is a system of 75 - 100-word per minute teletypewriter circuits that was designed for the specific purpose of saving lives and property by the rapid and timely delivery of severe weather warnings to the people through radio, TV, and newspapers.

NMFS Scientists Design and Build Sonic Tags for Manatee Research Project

Three sonic tags were designed and built by the staff of the National Marine Fisheries Service's Northwest Fisheries Center for scientists of the Manatee Research Project in Crystal River, Fla., for use in studying the behavior and migration patterns of manatee. Gerald E. Monan, Fisheries Research Biologist, assisted MRP scientists in the use of the sonic tracking equipment. Tests have indicated that the range of the tag is more than adequate for tracking the species.

Secretaries Dent, Morton, Butz Will Address Ocean Conference

Secretary of Agriculture Earl L. Butz will give the keynote address, entitled "Our National Ocean Goals," at the conference on "The Oceans and National Economic Development" in Seattle, Wash., July 17-19. Secretary of the Interior Rogers Morton, and Secretary of Commerce Frederick B. Dent will head the list of other Federal Government officials who will participate in the three-day meeting sponsored by NOAA.

Some of the Nation's foremost educators in the marine sciences also will participate in the conference, which is aimed at planning the future of the Nation's oceanographic effort during the balance of the 20th century.

Among them will be Dr. Athelstan F. Spilhaus, the "dean" of American oceanography; Dr. John Craven, Dean of Marine Programs at the University of Hawaii; Dr. Niels Rorholm, Coordinator of Sea Grant Programs, University of Rhode Island; Dr. Thomas A. Fulham, President of Suffolk University, Boston, Mass.; and Dr. Edward Wenk of the University of Washington, formerly Executive Secretary of the National Council on Marine Resources and Engineering Development.

Other Government officials slated to participate include Dr. Robert M. White, NOAA Administrator; Dr. Betsy Ancker-Johnson, Assistant Secretary of Commerce for Science and Technology; Robert J. Blackwell, Assistant Secretary of Commerce for Maritime Affairs; Assistant Secretary of the Interior Nathaniel P. Reed; Marvin Pitkin, the Assistant Administrator for Research and Development of the Maritime Administration; Ray Arnett, California Director of Fish and Game; Rear Admiral W. M. Benkert, Chief of the Office of Marine Environment and Systems, U. S. Coast Guard; and Rear Admiral J. J. McClelland, Commander, 13th Coast Guard District (Seattle).

The participants will serve both as speakers and panelists, and will be joined by a wide variety of industrial, scientific, technical and conservation interests.

Savings Bond Drive Continues Through May



Shown at a rally of NOAA keymen in the D.C. area for the 1973 Take-Stock-in-America Campaign are (from left) Vice Admiral William W. Behrens, Jr., USN, NOAA's Vice Chairman; Noel N. Bride, of the Department of the Treasury, Assistant Director of Sales, Federal; and Joseph A. Lola, Vice Chairman for the Department of Commerce. The Bond Drive runs through the month of May.

Retirement

This fourth retirement article will deal with the various benefits retirees enjoy. These range from survivor benefits to income tax advantages. They all involve, directly or indirectly, real money benefits. The obvious benefits are those intrinsic to the retirement system; namely, an annuity based on length of service and high three-year average, the various options under which a Federal employee with as little as five years' service can retire, and the general benefits of depositing and re-depositing fund monies to increase annuities. These benefits have been treated at some length in earlier articles.

Employees covered by the Civil Service Retirement System may not elect whether or not they will have deductions made. Retirement deductions totalling seven percent of an employee's income are automatically made. However, an employee who is separated or transferred to a position not under the retirement system may receive a refund of the lump-sum credit providing:

- 1) The separation or transfer occurs and application for refund is filed with the Civil Service Commission at least 31 days before the commencing date of any annuity for which the employee may be eligible, and
- 2) The employee is not currently employed in a position subject to civil service retirement deductions or will not be so employed within 31 days from the date of the separation on which the claim for refund is based.

The receipt of the lump-sum credit voids all annuity rights unless and until the employee is later reemployed in a position subject to the retirement system. The service covered by the refund cannot be credited for annuity computation purposes until redeposit is made. Any employee who is separated from the service may leave the lump-sum credit in the fund, thus avoiding the necessity of a redeposit to receive credit for the service if the employee returns to Government employment.

So long as a Federal employee is in a position covered by the retirement system, the deductions made are based on the total, gross, taxable income. Hence, all monies paid to the retirement fund by employees have already been taxed. Thus, when an employee retires, the initial annuity checks issued (equalling the actual amount of money the employee deposited in the fund) are not considered income for tax purposes, and are, therefore, not taxed. Once the amount paid in the form of annuity

checks equals the amount deposited by the employee into the fund, the annuity is taxable.

Death benefits are of two kinds; survivor annuity and lump-sum payment. Survivor annuities may be payable upon the death of an employee to the surviving spouse and children. A lump-sum benefit may be payable upon the death of an employee if there is no surviving spouse or child entitled to survivor annuity or, if a survivor annuity is payable, after the right of the last person entitled to it has terminated.

To qualify the surviving spouse or children or both for a survivor annuity, an employee must have completed at least eighteen months' civilian service and must have died while employed in a position subject to the retirement system. To qualify for a survivor annuity, the surviving spouse must have been married to the employee for at least two years immediately preceding the employee's death, or be the parent of a child born of the marriage with the employee. To qualify for a survivor annuity, the child (including a legally adopted one) of an employee must be under age eighteen and unmarried. Stepchildren, illegitimate children, children over eighteen incapable of self-support and students aged eighteen to twenty-two may be entitled to survivor annuities. The Civil Service Commission adjudicates all such cases.

Survivor annuity to a surviving spouse is 55 percent of the deceased employee's basic annuity. Computation of annuities was dealt with in the April 20, 1973, issue of Personnel Perspective. If the employee's civilian service totals at least eighteen months but less than three years, the survivor annuity is computed on the average pay over the total civilian service. A minimum annuity is guaranteed to a surviving spouse amounting to 55 percent of the smaller of:

- 1) 40 percent of the deceased employee's high three-year average pay or
- 2) The regular annuity obtained after increasing the deceased employee's service by the period of time between the date of death and the date age 60 would have been reached.

When the deceased employee is survived by children, as well as a spouse, the yearly survivor annuity payable to each child is whichever of the following amounts is the least:

- 1) 60 percent of the employee's high three-year average pay divided by the number of eligible children.
- 2) \$2,700 divided by the number of eligible children.

PERSONNEL PERSPECTIVE

3) \$900.

When there is no surviving spouse, the yearly survivor annuity payable to each child is whichever of the following amounts is the least:

- 1) 75 percent of the employee's high three-year average pay divided by the number of eligible children.
- 2) \$3,240 divided by the number of eligible children.
- 3) \$1,080.

The above dollar amounts do not reflect cost-of-living increases. The following table shows the change in the annuity benefits payable to surviving children due to cost-of-living increases granted since October 20, 1969.

Effective date	Percent increases	Amount paid if:			
		Wife or Husband survives		No Wife or Husband survives	
		\$2,700	\$900	\$3,240	\$1,080
11-1-69	5.0	2,835	945	3,402	1,134
8-1-70	5.6	2,994	998	3,593	1,198
6-1-71	4.5	3,129	1,043	3,755	1,252
7-1-72	4.8	3,279	1,093	3,935	1,312

A lump-sum death benefit is payable immediately upon an employee's death if the employee:

- 1) Has less than eighteen months' civilian service or
- 2) Leaves no surviving spouse or children entitled to a survivor annuity. Under these conditions the benefit will consist of the employee's lump-sum credit.

An employee may designate a beneficiary. If a survivor annuity is not elected and no beneficiary is designated, lump-sum benefit is payable to the surviving spouse, any children, the parents, or the executor or administrator of the estate, in that order.

Administrative Trainee Program Announces Openings

Opportunities for NOAA employees to apply for places in the Administrative Trainee Program are now open and will remain open through June 30, 1973. Due to budget and personnel constraints, the number of trainees selected in Fiscal Year 1974 will be somewhat limited. It is anticipated that the NOAA employees selected to enter the program in Group IX will begin training early in January, 1974. All trainees undergo a year of intensive training and development in one or two administrative fields of their choosing. Upon completing the program, trainees are considered for promotion and permanently assigned to professional administrative positions either in Washington or in the field. Employees in NOAA field offices as well as Washington area employees are encouraged to apply.

NOAA employees who wish to be considered for the Administrative Trainee Program must be in grades GS-4 through GS-9, or equivalent, and be able to qualify for entering an administrative field at their current grade or a grade higher at the conclusion of their training period. More detailed information on eligibility requirements is contained in an Administrative Trainee brochure scheduled for NOAA-wide distribution early in June. Employees interested in applying for

this program should send an up-to-date Personal Qualifications Statement (SF-171), an Employee Appraisal (NOAA Form 52-6), and a memo indicating the particular administrative field in which they are most interested in terms of a future career to: Personnel Division, NOAA, 6001 Executive Boulevard, Rockville, Maryland 20852, ATTN: AD422. Employees who previously applied for the program and were not selected may reapply by sending in an Employee Appraisal and a continuation sheet for the SF-171 which will bring the Personal Qualifications Statement up to date. For further information, call Mr. Frank Christhif (301) 496-8093.

Personnel Perspective Thanks You

In the March 9 issue of Personnel Perspective, we solicited employee comments and criticisms regarding this publication. We are pleased to report that the unanimous opinion of the readers who wrote to us is that Personnel Perspective is a success. The prevailing comment was that it is the best source of personnel information employees have.

Personnel Perspective celebrated its first anniversary on April 14. With this vote of confidence, we will try to continue as an informative, timely periodical serving NOAA's workforce.

Nightglow Continuum May Result From Several Chemical Reactions

Analysis of the nightglow continuum, a faint light that suffuses the night sky, has given two Environmental Research Laboratories scientists better definition of the complex chemistry of the earth's upper atmosphere.

Scientists had earlier believed the atmospheric portion of the nightglow continuum came primarily from a single reaction between nitric oxide and atomic oxygen. Now Edward Marovich of ERL's Aeronomy Laboratory and Dr. Michael Gadsden, now of Aberdeen University of Scotland, report that their analyses of the nightglow indicate that several chemical reactions may produce the atmospheric continuum (or "airglow").

The two say their analysis indicates that recombination of oxygen atoms into molecular oxygen in the thermosphere, or reactions between ozone and nitrogen oxides in the stratosphere, probably are involved--in addition to the nitric oxide-atomic oxygen reaction. They stress, however, that more data, primarily as to the vertical levels in the atmosphere in which spectral components of the airglow are produced, are needed for a more complete analysis.

"Our main findings," says Marovich, "were that the airglow remains constant during any given night, that there is a winter maximum for this component, and that the spectral distribution of the atmospheric component remains fairly constant at all times.

"However, there is some variability in the atmospheric component at the red end of the spectrum which had not been noted by earlier researchers." This variability in the red wavelengths, as well as a great general increase of light in the infrared, is what led Gadsden and Marovich to suspect there may be more than one chemical reaction involved.

EEO Awards (Continued from page 1)

of the Equal Employment Opportunity program of the Department."

Mr. Richter was cited for giving "far beyond the time and effort expected of him as Chairman of the EEO Committee of the NWS and representative on the NOAA EEO Committee" and for being uniquely "instrumental in fostering the principles of EEO in such a manner as to increase acceptance and application of the EEO program throughout the NWS headquarters."

Using special effort and initiative, Mr. Snellman sought out individuals who could be assisted toward a full realization of EEO objectives. His many accomplishments included tutoring several young Black men in mathematics to the point where they were able to pass qualifying examinations to become apprentices in the building trades.

Mrs. Boston and Mrs. Hiland received their awards for their activities as Equal Employment Opportunity counselors. They are credited with having contributed significantly to building employees' confidence in the EEO program, and with contributing "significantly to the total EEO program in the agency."

Fisheries Service Publishes Gulf Estuarine Inventory, Study

A comprehensive description of the natural and manmade features of the Gulf Coast of Florida has been published by the National Marine Fisheries Service in cooperation with the Gulf States Marine Fisheries Commission. Member states are Alabama, Florida, Louisiana, Mississippi, and Texas.

Authored by NMFS employees J. Kneeland McNulty, William N. Lindall, Jr., and James E. Sykes, the 126-page document contains newly developed tables and maps depicting the dimensions, submerged vegetation, tidal marshes, mangrove swamps, commercial oyster beds, leased oyster rearing areas, sources of pollution, drained tidal marshes, and filled areas of Florida's west coast estuaries. Published and unpublished information on temperature, salinity, geology, artificial reefs, stream discharge, human population, commercial fishing, and economic development is presented in new form.

The study is part of the Cooperative Gulf of Mexico Estuarine Inventory initiated by the Gulf States Marine Fisheries Commission through its Estuarine Technical Coordinating Committee because of the accelerated competition the states were experiencing between fisheries and wildlife on the one hand and industrial and municipal growth on the other.

NOAA Technical Report NMFS CIRC-368, Cooperative Gulf of Mexico Estuarine Inventory and Study, Florida: Phase 1, Area Description, is available for \$1.25 per copy from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Little Named Coast Guard Liaison to NOS

Lieutenant Commander Harvey R. Little, United States Coast Guard, has been assigned to the National Ocean Survey's Marine Chart Division to provide liaison service between the two agencies. Lt. Commander Little will primarily assist in coordinating communications and solving problems originating from data furnished by the Coast Guard for publication on NOS nautical charts. He is also available to other NOS offices in their dealings with the Coast Guard.

McCoy Elected To Chair NOS/EEO Committee

Samuel E. McCoy, an Oceanographer in the National Ocean Survey's Office of Marine Surveys and Maps, was recently elected chairman of the NOS Equal Employment Opportunity Committee. One of his first duties was to continue planning for an NOS/EEO Awareness Day, which is scheduled for May 30. The planning had begun under the leadership of the past chairman, Ernest Kyle.



Mr. McCoy

Governor Wallace Proclaims May Mobile Home Tie-Down Month

At the request of the National Weather Service, Governor George Wallace of Alabama has proclaimed the month of May - Mobile Home Tie-Down Month. Tie-Down Month is a campaign to promote and encourage mobile home owners to anchor their residences to reduce or prevent damage from windstorms.



Principal Assistant Ben F. Barker, Jr., (left) and Meteorologist in Charge John T. Moseley (right) of the Weather Service Office in Montgomery, Ala., watch as Governor Wallace signs the proclamation.

Americans Are Eating More Fish, NMFS 1972 Statistics Indicate

In 1972, the per capita consumption of fishery products in the U.S. was 12.2 pounds per person, according to preliminary data from the National Marine Fisheries Service. In 1971, the per capita consumption was 11.4 pounds.

The 1972 consumption figure ties the record U.S. figure set forty-five years ago, in 1927. It shows that the American housewife was buying more fish for her family months before meat prices became headline news early in 1973.

NMFS reports that additional supplies of fish were available, at least in part, because of a 24 percent increase in imports of fresh and frozen fillets, steaks, and fish blocks, and a 40 percent increase in the U.S. production of canned tuna.

NMFS began keeping per capita consumption statistics in 1909.

Geodetic Survey in Florida Completed

A seven-month, \$224,000 geodetic survey of Pinellas County, Fla., has been completed by a 20-man National Geodetic Survey field party, in cooperation with the county. The field party, headed by Lieutenant Commander John D. Stachelhaus, determined over 60 geographic positions of latitude and longitude spaced at uniform intervals throughout the area. Included in the survey were the communities of St. Petersburg, Clearwater, Bayview, Dunedin, Tarpon Springs, and Pinellas Park.

Immense Energy Was Released By Solar Flares, Scientists Say

The series of great solar flares of early August 1972 released incomparably greater amounts of energy than all our earthquakes and storms, passed unfelt and unseen by most humans--and yet influenced our earthly environment in both subtle and powerful ways, according to NOAA scientists.

Recent reports by the Environmental Research Laboratories' Space Environment Laboratory and the Environmental Data Service indicate:

--Had an Apollo mission been in progress, the steps required to minimize exposure of the astronauts to dangerous levels of solar radiation would have impaired the mission's success.

--For a three-hour period on August 6, supersonic transport passengers would have been exposed to estimated radiation dose rates of 10 to 100 millirems per hour.

--Peak X-ray emissions of the August flares reached an unprecedented level in the history of solar observations.

--Vivid auroral displays were seen at latitudes as low as that of New York City. These "Northern Lights" were seen as bright and sometimes rapidly moving rays and bands in the sky over northwestern Europe and northeastern Canada and the United States.

--Ham radio operators were sometimes able to reach distant fellow hams on the other side of the world. On the other hand, high-frequency defense communications faded out due to ionospheric absorption.

The latest NOAA volume on the flares is "August 1972 Solar Activity and Related Geophysical Effects," prepared by John A. McKinnon, a solar forecaster with the Space Environment Services Center.

In November 1972, the National Geophysical and Solar-Terrestrial Data Center of the Environmental Data Service released a preliminary compilation of the voluminous data on the flares and their effects on the earth's outer atmosphere, authored by J. Virginia Lincoln and Hope I. Leighton. Another, more comprehensive report is being prepared by the data center to be available in time for a major symposium on the subject, to be held in Kyoto, Japan, in September, when some 150 scientific papers from 23 nations will be presented.

Marine Mammal Commission (Continued from page 1)

studies and make other recommendations it deems necessary to further the protection and conservation of marine mammals.

The Commission was established by the Marine Mammal Protection Act of 1972. Following the completion of the staggered terms of the initial appointees, members of the Commission will serve three-year terms. The President appoints members from a list submitted to him by the Chairman of the Council on Environmental Quality, the Secretary of the Smithsonian Institution, the Director of the National Science Foundation and the Chairman of the National Academy of Sciences.

recipe of the week



RAINY DAY FISH BAKE

- 6 pan-dressed whiting or other small fish, fresh or frozen
- 1 teaspoon salt
- Dash pepper
- 1 cup chopped parsley
- 1/4 cup butter or margarine, softened
- 1 egg, beaten
- 1/4 cup milk
- 1 teaspoon salt
- 3/4 cup toasted dry bread crumbs
- 1/2 cup grated Swiss cheese
- 3 tablespoons melted fat or oil

Thaw frozen fish. Clean, wash, and dry fish. Sprinkle inside with salt and pepper. Add parsley to butter and mix thoroughly. Spread inside of each fish with approximately 1 tablespoon parsley butter. Combine egg, milk and salt. Combine crumbs and cheese. Dip fish in egg mixture and roll in crumb mixture. Place on a well-greased cooky sheet, 12 by 15 inches. Sprinkle remaining crumb mixture over top of fish. Bake in an extremely hot oven, 500° F., for 10 to 15 minutes or until fish flake easily when tested with a fork. Serves 6.

New LSC Water Levels Book Available

The Lake Survey Center has available the latest in its series of water levels books, "Great Lakes Water Levels - 1971." It may be purchased for \$2.50 through the LSC office in Detroit.

The 125-page book includes a map and a geographical index showing the station number and location of the over 50 permanent gages in the LSC's network. It contains tabular records of daily and monthly average levels for each gage in the network for the calendar year, as well as a separate table showing the highest and lowest daily average for the month. A frequency distribution table of daily average levels shows the number of times each month the recorded levels were above a specific elevation.

Salinity-Temperature-Depth Data For BOMEX Now Available From EDS

All Barbados Oceanographic and Meteorological Experiment salinity-temperature-depth data are now available to the scientific community from the Environmental Data Service's National Climatic Center as time-series tapes, depth-sorted tapes, or microfilms with plots. The EDS Center for Experiment Design and Data Analysis began processing of the massive array of BOMEX data from 1,650 soundings by five ships over a three-month period in October 1970. The data were carefully reduced and edited to produce 53 clean time-series tapes which were placed in the BOMEX Archive in August 1972. To increase the usability of the data and to provide a convenient synopsis of each sounding, salinity and temperature data were sorted by depth into decibar intervals using 1,000 point arrays for each sounding. Sigma-t, the abbreviated measure of density, was derived from salinity and temperature, and all three parameters were recorded on three tapes, plotted on four microfilms, and placed in the archive in April 1973. For additional information, contact: NCC, Federal Building, Asheville, N.C. 28801, attention BOMEX Archive. (FTS-704-254-0249, ask for BOMEX Archive.)

Sea Grant Lists Marine Sciences Curricula

An updated version of University Curricula in the Marine Sciences and Related Fields for the 1973-74 and 1974-75 academic years is now available through the Office of Sea Grant. Published under the aegis of the Interagency Committee on Marine Science and Engineering, the book contains 165 pages listing U.S. and Canadian institutions offering courses in the marine sciences. Entries for each institution include a description of its facilities, including research labs and vessels, the degree programs in the marine field, the marine courses offered and the credit given, a list of faculty members involved with the degree programs, and the name of a contact person for further information. Copies (based on the limited supply) are available from the Director, National Sea Grant Program, NOAA, Rockville, Md. 20852.

Wire Service Photofax Transmitters at NESS Speed Distribution of Daily Weather Photo

The weather satellite photograph of the United States that is used by TV meteorologists and many newspapers across the country is now being distributed directly from the National Environmental Satellite Service. Both the United Press International and the Associated Press have installed a photofax transmitter at NESS for distributing "Today's Cloud Cover" photos to their subscribers more quickly and reliably.

Items to be considered for publication in NOAA WEEK should be submitted to:
Office of Public Affairs, NOAA, Room 221, Bldg. 5, Rockville, Md. 20852. Phone (301) 496-8243

National Oceanic and Atmospheric Administration

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