

METEOROLOGY

Sun Glint Helps Navy

The sun glint reflected from the ocean's surface and "seen" on satellite pictures helps Navy commanders forecast weather and make plans for the following day.

► SUN GLINT "seen" reflected on the ocean's surface by weather satellites has been found to help U.S. Navy commanders make their weather forecast for the day.

The sun glint seen on satellite pictures tells what the sea conditions are at any one area.

If the gleam is scattered over a large area, it means that surface waters are turbulent. If the surface glint is scattered over a small area, the surface water is smooth.

The sun glint clues may be compared with seeing the image of the moon on the surface of a pond.

If the water is smooth, the moon will be seen as one image. However, if a stone is thrown into the water, the reflection of the moon face is scattered into many small fragments, seen over a much larger area of water.

The importance of satellite information and other benefits and effects of the astronautics age on future Navy operations are

now being investigated at a five-week summer study in Santa Barbara, Calif.

Sea conditions are the most important kind of information needed by the Navy commander deciding if tomorrow will be a good day for refueling his aircraft carrier.

Other types of information generally needed include surface winds, low clouds over a target area and fogs. The Navy needs to know the ice conditions in arctic waters for missions in those areas. It needs data on tropical storms for its missions in tropical regions.

At the present time, the wealth of information needed is not met by the present Tiros experimental weather satellites. Hopefully, in a few years, with the Nimbus satellites in operation, each commander of the Navy fleet will be able to make his independent predictions from satellite information and general weather data distributed on a worldwide basis.

• Science News Letter, 82:19 July 14, 1962

MARINE BIOLOGY

Fishes Prefer Prefab Shelters to Junk

► FISHES would rather live in prefabricated concrete shelters than sunken junk tossed in coastal waters to create better fishing, a deep-sea poll reveals.

Even with an acute housing problem in the barren waters, many fish pass up wrecked streetcars, boats, cars and rock piles for specially designed marine housing.

Artificial reefs have been strung along the coasts of New Jersey, Delaware, North Carolina, Florida, Texas and California by marine biologists attempting to lure fish into these areas. These chains of junk make use of the fact that fish are naturally curious and find a food supply and shelter in sunken heaps.

Off the California coast, skin-diving biologists have "polled" the fish populations and found them most attracted to the more expensive shelters. These look like large inverted concrete boxes with circular windows for the fish to pass through.

Even so, the sea scientists are convinced that any artificial reef is better than no reef at all. Many fishes which are not normally in these previously barren shelf waters have been found in great numbers by the swimming poll-takers.

• Science News Letter, 82:19 July 14, 1962

PHYSICS

Famous Cyclotron Silent After 23 Years Service

► AN OLD CYCLOTRON—credited with a major role in fostering the Atomic Age—became silent at the University of California's Lawrence Radiation Laboratory.

Just 23 years ago the first target was bombarded in the late Ernest O. Lawrence's newest atom-smasher, the 60-inch, 220-ton cyclotron, the most powerful nuclear research machine of its day.

In the intervening years discoveries poured out of the cyclotron that helped shape the modern world and greatly increased man's knowledge.

Among the major discoveries have been: plutonium (element 94), fuel of nuclear weapons, and six other elements—85, 93, 96, 97, 98, and 101.

With the production of radioisotopes pioneering work in nuclear biology and medicine was undertaken. Treatment of polycythemia vera, chronic leukemias, and thyroid disease with radioisotopes was initiated.

The discovery of plutonium in 1941—by two Nobel Laureates, Glenn T. Seaborg, now chairman of the Atomic Energy Commission, and Edwin M. McMillan, now director of the laboratory, and the late Joseph Kennedy and A. C. Wahl—stimulated the development of the reactor at Chicago.

The 60-inch machine is now being dismantled and will be transferred to the University of California, Davis. The magnet will be remodeled with AEC funds, and in 1964 it will form the heart of a 72-inch spiral ridge cyclotron.

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CYCLOTRON RETIRED—The 60-inch cyclotron, now silent, is shown under construction at the University of California's Lawrence Radiation Laboratory, Berkeley. Left to right are key figures in the development and early use of the machine: Dr. Luis W. Alvarez, physicist, now a group leader in the Laboratory; Dr. W. D. Coolidge, General Electric scientist who was visiting at the time; William Brobeck, engineer, responsible for most of the design of the machine; Dr. Donald Cooksey, now associate director, emeritus; Dr. Edwin M. McMillan, now director of the Laboratory; and the late Dr. Ernest O. Lawrence, cyclotron inventor, Nobel Laureate and founder of the Laboratory.