

ASTRONOMY

New Radio Telescope

Aluminum paraboloidal instrument will be used to listen in on radio signals from the sun, moon, and stars. Will aid in predicting radio blackouts or good reception.

► A NEW "radio telescope" 50 feet across has just been installed on top of one of the Naval Research Laboratory buildings in Washington. It is the most versatile instrument of its kind developed to date.

Shaped like a salad bowl, this aluminum reflector will be used to study radio signals from the sun, moon and stars. It is expected to help radio forecasters predict more accurately when broadcasts will be blocked out or when shortwave radio signals will come through clearly.

The reflector consists of 30 pie-shaped sections, all of solid aluminum machined to a tolerance of better than 1/32 of an inch. It is the uniform smoothness of the aluminum surface that makes the telescope so versatile.

The paraboloidal instrument can be used to trap radio signals from a fraction of an inch in wavelength up to several feet. It will pin-point the source of stellar noises down to seven or eight minutes of arc, the highest accuracy obtained to date with a single beam.

This concave, high-resolution reflector will pick up noises outside our atmosphere at wavelengths of three, ten and thirty centimeters. Experts at the Naval Research Laboratory will use it to study the composition of the sun's atmosphere; times and nature

of radio emissions from the sun, moon and stars; cause and nature of solar flares.

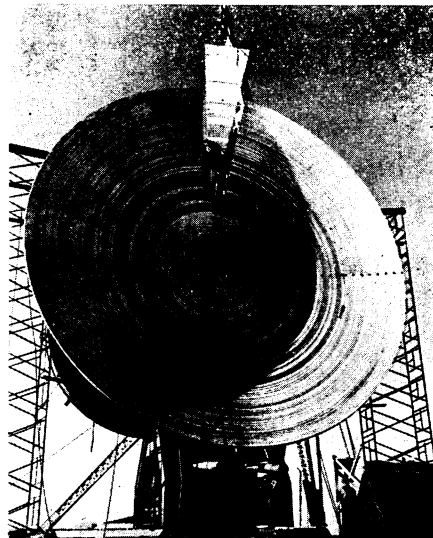
The 50-foot aluminum disk weighs about 14 tons. It is held in place by a supporting ring 35 feet in diameter mounted on a big yoke fastened to one of the Navy's five-inch gun mounts. At the focus of this reflector is a horn to collect the energy. These together make up the antenna system.

The reflector can move vertically from the zenith to five degrees below the horizon, scanning the entire sky. Horizontally it can be rotated a full circle. It can automatically track the sun in its path across the sky, or follow the stars as they move across the heavens.

This radio telescope is not the world's largest as a 200-foot stationary reflector in Manchester, England, is used to study cosmic noises at low frequencies only. But it is by far the most versatile reflector yet built.

Radio telescopes have to be larger than optical telescopes, the largest of which is 200 inches across, because the wavelengths of radio waves are so much longer than those of visible light. Just as an astronomer uses an eyepiece, the radio astronomer uses an extremely sensitive radio receiver to "look at" the sun or stars.

Science News Letter, March 3, 1951



RADIO TELESCOPE — *Workmen are lowering into place the last section of the 600-inch instrument with which Naval Research Laboratory scientists will study radio "signals" from the sun, moon, and stars.*

though it could check the growth of one kind of bacteriophage, it showed little activity against bacteria and fungi and no activity against influenza in mice or MM virus in the test tube.

Science News Letter, March 3, 1951

MEDICINE

Antibiotic Kills Amebas

Fumagillin, which looked almost like a dud when it was first discovered, may be valuable remedy against amebic dysentery.

► A NEW mold chemical that looked almost like a dud when first discovered may turn out to be a valuable remedy for amebic dysentery, or amebiasis as doctors call the disease.

The new antibiotic is called both Fumagillin and H-3. It is an extremely powerful killer of amebas, the germs that cause amebic dysentery, Drs. Max C. McCowen, Maurice E. Callender and John F. Lawlis, Jr., found in trials at the Lilly Research Laboratories in Indianapolis.

Diluted to one part in over 131 million, H-3 is still capable of checking amebas that are mixed with bacteria from the intestinal tract. The activity of H-3 is considered to

be direct on the amebas, since the bacteria did not affect their growth.

Four doses of crystalline H-3 when given over two days were enough to wipe out amebic dysentery germs from rats, the Lilly researchers found.

H-3 is the first mold drug or ameba killer that has shown such effectiveness in the laboratories, the researchers declare (SCIENCE, Feb. 23).

"H-3 should possibly be one of the best direct-acting amebicides (ameba killers)," they state.

H-3 comes from an *Aspergillus* organism. It was isolated by Drs. F. R. Hanson and E. Eble of the Upjohn Company. Al-

ASTRONOMY

Comet Expected Back After Seven Years

► FAINT Comet Arend-Rigaux, the second comet discovered this year, will again visit the vicinity of the earth about seven years from now. It follows a closed, elliptical path around the sun and thus is a periodic comet.

Comet 1951 B was closest to the sun last Dec. 17, calculate Joseph Brady and Nevin Sherman. Their figures have been reported by Dr. Leland E. Cunningham of the University of California, America's outstanding authority on the orbits of comets, to Harvard Observatory, astronomical clearing house in the western hemisphere.

The comet is fading rapidly and will probably be of thirteenth magnitude the middle of March as contrasted with eleventh magnitude when discovered early in February. By this time it will have moved from the constellation of Gemini, the twins into Cancer, the crab.

The elements of the comet are similar to those of periodic Comet Taylor, but this comet is not scheduled to be visible in 1951.

Science News Letter, March 3, 1951