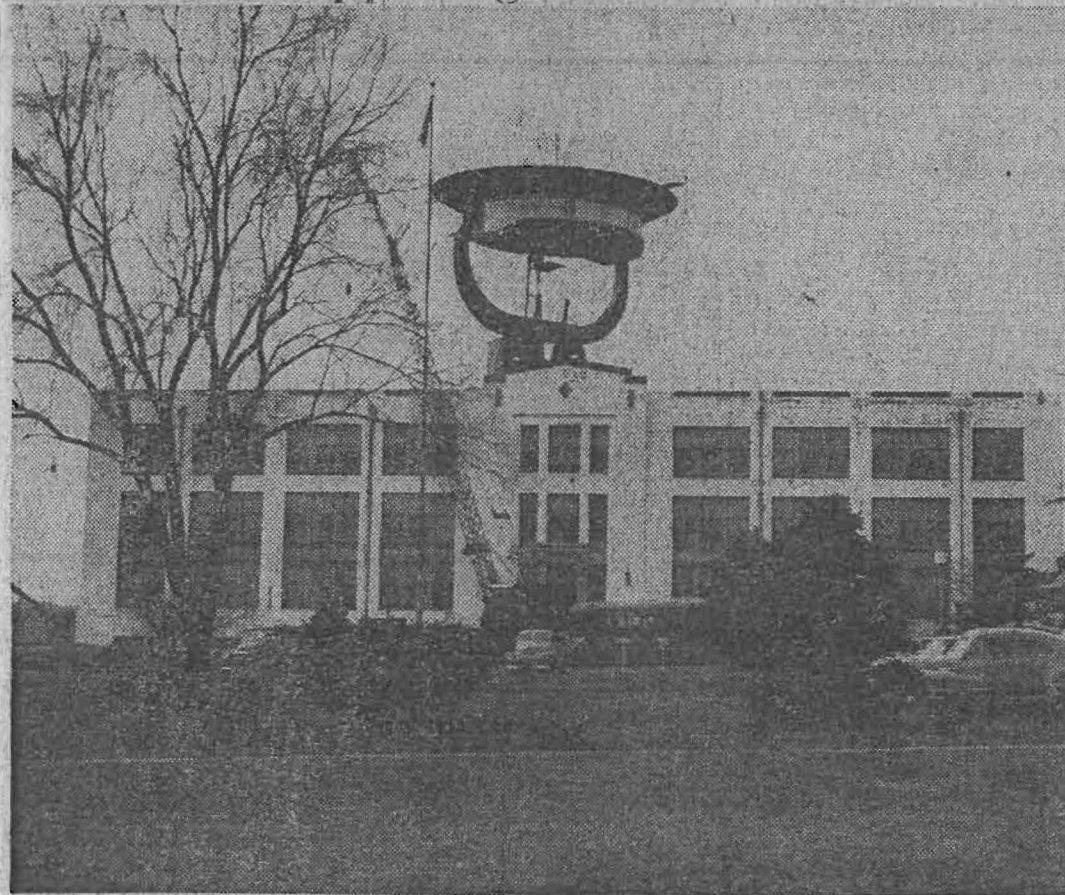
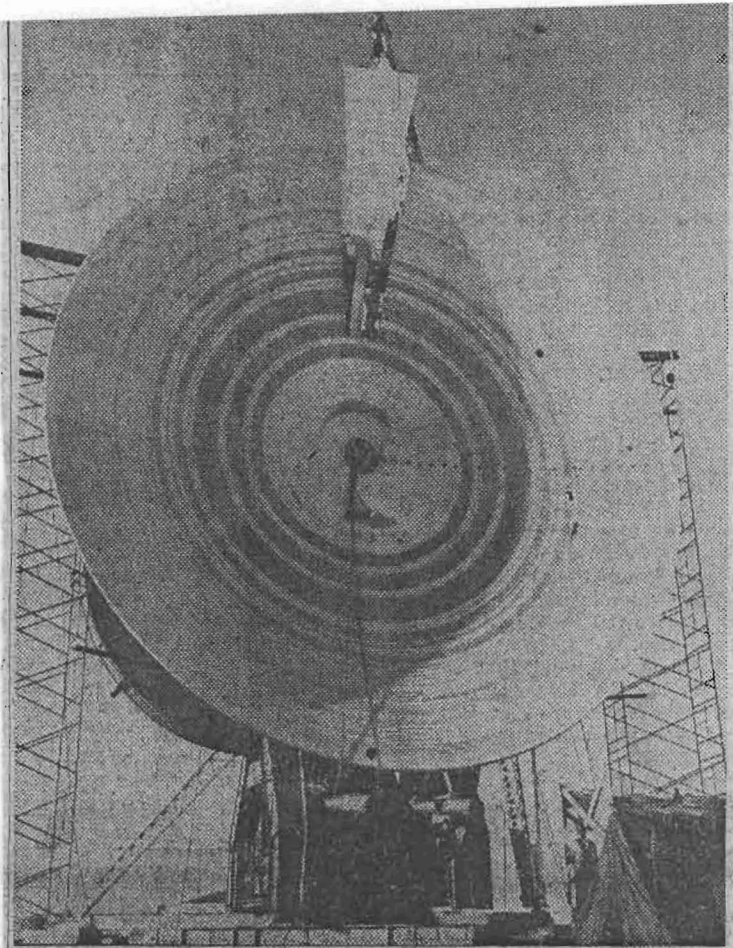


SUNDAY, FEBRUARY 18, 1951

Navy 'Ear' Will Enable Astronomers to Listen To What's Happening on the Sun and Moon



The Navy's new "ear" is designed to let astronomers hear what their telescopes miss on the sun, moon and stars



Workmen install the final section of 30 which make up the "ear"

The Navy is installing a 50-foot "ear" at its research laboratory in Bellevue, D. C., to let astronomers hear what they cannot see on the sun, moon and stars.

With the dish-like "radio telescope," mounted on the roof of a building, the Navy expects to find out much about the mysteries of heavenly bodies through the energy they radiate.

Navy scientists say they will receive radar beams they plan to bounce off the moon to study its

cision because it was machined to a tolerance of $1/32$ of an inch with a special boring mill at the Collins Radio Co., Cedar Rapids, Iowa.

The complete installation weighs some 75 tons. The 50-foot dish alone weighs 14 tons, and the Navy gun mount 27 tons.

Construction was begun in January, 1949, and the dish is now assembled.

Radio astronomy is the second "window" to interstellar space.

size, shape and composition.

They may also tune in any intelligence-directed signals from outer space—that is, "signals" beamed to this earth by any "beings" inhabiting other worlds.

Interstellar "Messages" Unlikely

Scientists in charge, however, stressed that the only radio emanations apparent in outer space are random outbursts of energy from natural phenomena. None of the flurry of reports in the 1920s of interstellar "messages" has ever been scientifically authenticated, they said.

The new 600-inch reflector is designed to catch any radiations of frequency wave lengths of three, 10 and 30 centimeters. Although energy waves from the sun (solar radiation) have been detected at these wave lengths, radiations from stars (galactic radiation) have not been detected at wave lengths shorter than 60 centimeters.

The 50-foot "ear" may enable them to pick up galactic radiations, Navy scientists believe. They also expect to be able to distinguish between different areas on the sun, and thus, for example, study sun spots and hydrogen "flares." Long-range weather forecasting and radio communication probably will be improved.

The new radio telescope is mounted on one of the Navy's familiar five-inch gun mounts. It can "track" the sun in its course across the sky.

Triumph of Precision

The "ear" or reflector itself, consists of 30 aluminum sections bolted together to form a solid paraboloid surface. Its construction represents a triumph of pre-

the first being the optical telescope through which astronomers have been studying the heavens for centuries. The optical telescope is limited to receiving energy emissions within the visible portion of the spectrum, a very small portion of the complete spectrum.

The classical telescope uses a large concave optical mirror; the radio telescope uses a large concave metal reflector and a radio receiving antenna.

Just as an astronomer uses an eyepiece, the radio astronomer "looks" at or detects radiations with an extremely sensitive radio receiver. These radiations are then amplified and recorded on a moving strip of paper for later study.

Radio astronomers, because their telescopes can penetrate matter (such as cosmic dust clouds) which block out visible light, have already reported detecting some 30 unknown heavenly bodies. Though unconfirmed by optical astronomy, the objects are believed to be stars located beyond the black clouds of the Milky Way.