

RADIO ASTRONOMY

Seek Noisy Radio Stars

Giant radio telescope, 160 feet long and 12 feet wide, being built as "ears" for astronomers to record hissing signals of radio stars.

► A SEARCH for radio stars, those peculiar stars whose cosmic hisses can be picked up on earth, will soon begin at Ohio State University, Columbus, Ohio. A radio telescope 160 feet long and 12 feet across is being constructed to record their noisy signals.

The telescope, to be one of the largest in existence and the only one of its particular design, is being built under the direction of Prof. John D. Kraus. The instrument will use spirally wound antennas which Prof. Kraus invented. It will operate on the ultra-high frequency of 250 megacycles.

The completed instrument will consist of an array of 48 helical beam antennas arranged in eight units and mounted on a long, movable steel cradle. The new radio telescope will be put into operation in March, just as soon as two units are completed. As the antenna size is increased through the addition of units, it will reach farther out into space and do a better job of separating radio waves that come from stars located close together in the sky.

Radio telescopes are an astronomer's "ears" just as optical telescopes are his "eyes." Radio telescopes have to be larger than optical telescopes, the largest of which is not quite 17 feet across, because radio waves are so much longer in wavelength than visible light.

While the new radio telescope searches for stars and clusters of stars that broadcast cosmic static to the earth, the university's optical telescopes will be turned on the same area of the heavens and the work of the two types of telescopes coordinated. To date over a hundred stars are known to be hissing at the solar system, but astronomers still are not sure just what they look like. Some day the stars responsible for this "frying" sound may be located exactly through this and similar surveys.

Only one other American university, Cornell, today is active in the field of radio astronomy. Cornell has two installations, one at Ithaca, N. Y., and the other at Sacramento Peak, N. Mex. Here particularly interesting research is being conducted on the sun.

The Naval Research Laboratory in Washington, D. C., boasts of one of the world's most versatile radio telescopes. Its basket-shaped instrument is 50 feet across. The instrument was designed to pick up super high frequency signals of 1,000 megacycles. The National Bureau of Standards, with

its instruments at Sterling, Va., was one of the first groups to enter the field of radio astronomy.

In all there are only several dozen radio telescopes in the world. Besides the United States, they are to be found in England, Australia, France, Canada and the Netherlands. The world's largest, over 200 feet across, belongs to the University of Manchester in England. A few, on the other hand, are so small they are easily portable.

Science News Letter, March 1, 1952

TECHNOLOGY

Roll and Slice Method Cuts Jet Engine Cost

► MORE THAN half of the 2,000 tiny compressor blades that are at the "heart" of the jet airplane engine in the Boeing B-47 Stratojet can now be made by a new, much cheaper process, the General Electric Company reported in Lynn, Mass.

Previously all of the blades and the bases in which they are fixed have had to be hammered from a single piece of stain-

less steel. Each of the blades resembles an airplane wing, and its air foil shape must be exact. Using the new process, the blades are rolled in long strips, contoured to the proper air foil shape, and cut to the desired length during assembly.

The tiny blades are used in the compressor, the device which forces air in great quantities to the combustion chambers of jet engines. It consists of a rotor and a stator, both of which have hundreds of blades. As the rotor turns, air is forced through the rotor and stator blades and compressed as it travels to the rear toward the combustion chambers. The fabricated blades can be used only for the stationary blades. The rotary blades will continue to be forged because of the high centrifugal stresses involved.

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INVENTION

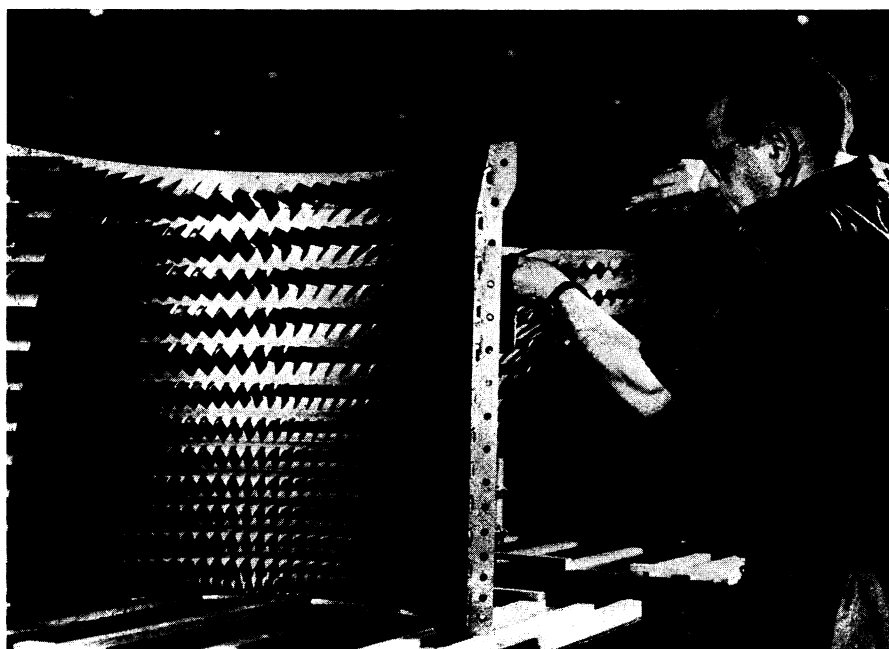
Metal Pony Invented For Rides on Papa's Knee

► "HERE WE go riding to Banbury Cross."

That old nursery rhyme, sung while "riding" children on a parent's knee, will take on much more realism as the result of an invention which has received a patent.

It is a knee pony. The inventor is Kenneth E. Sickelbower, Russell, Kans., who received patent number 2,585,279. The pony is made of a sheet material that is flexible. The material is cut, creased and folded to represent the pony—and then it is ready for perching on the parent's knee.

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STATOR BLADES—This is the compressor stator of a General Electric J-47 jet engine. Use of fabricated stator blades, and each stator has hundreds of blades, will eliminate a potential bottleneck in jet airplane production.