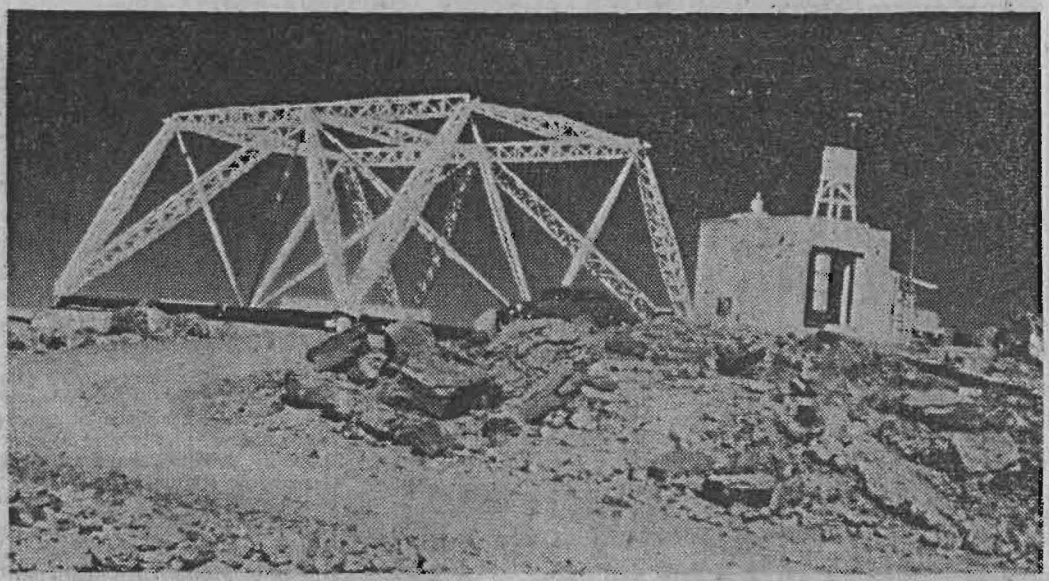
HONOLULU STAR-BULLETIN, SATURDAY, OCTOBER 18, 1952

Charting Cosmic Static Atop Haleakala



TOOLS TO WORK WITH—Framework of wood and metal serves Mr. Reber as a collector of cosmic static. Designed by the scientist himself, this collector is 30 feet high and revolves on a track 82 feet across. Beside it stands a cinderblock building that houses Mr. Reber's electronic equipment, also self-designed.—Hawaiian Commercial & Sugar Co. Photo.

Research May Open Fresh Concepts Of Outer Space

By JOHN RAMSEY

Earth is being bombarded—not by Martians, but by cosmic static.

Grote Reber, Illinois expert on those invisible impulses from the Milky Way, has picked the Kolekole section of Maui's 10,032 foot Haleakala from which to determine exactly where the invisible rays come from.

Backed by New York's Research Corp., manufacturers with a bent for spending on worthwhile research, Mr. Reber should have the "bugs" out of his electronic equipment in two months.

That done, he hopes to start "sleuthing" and getting results.

VETERAN RESEARCHER

Mr. Reber is slight, quick to laughter, and youthful—a man who nevertheless has devoted years to the most painstaking scientific research.

As early as 1937, he built a parabolic reflector, which is the basis of radar transmission.

As for cosmic static, he began his investigations as a hobby and became a foremost authority on the subject.

Cosmic static is actually cosmic rays. Mr. Reber calls it static to distinguish it from the particles that have long been wrongly called cosmic rays.

BEHAVES LIKE DYNAMO

Whatever creates cosmic static must behave somewhat like a dynamo, he says, converting energy of motion of celestial objects into electromagnetic energy.

Cosmic static will never jam your radio nor scramble a televised football game, says Mr. Reber.

Why bother with it, you ask?

"Because if we can narrow down a source of cosmic static, say to an area 1/25th the size of the moon, we may be able to connect that static up with unusual bodies in the heavens," says Mr. Reber.

This would amount to a sizable scientific advance that could lead to new concepts of the universe.

Linking Mr. Reber's discoveries with celestial objects will require consultation with his friends at California's observatories at Mt. Wilson and on Palomar, where the world turns its largest eye—the 200 inch Hale Telescope—on the heavens.

Cosmic static reaching the earth today from its most remote sources is older than man. Its existence was discovered in 1931.

Today's news about cosmic static is Mr. Reber's method of pinpointing its sources — and "pinpoint" is no outrageous term when you consider the vastnesses of its main general sources, the Milky Way's constellations.

You can't spot the celestial dust cloud, or whatever, that generates cosmic static if you have only a direct "wave front" of the rays reaching your receiver, an instrument that operates somewhat like a radio.

WAVE BOUNCES BACK

You need a second wave front

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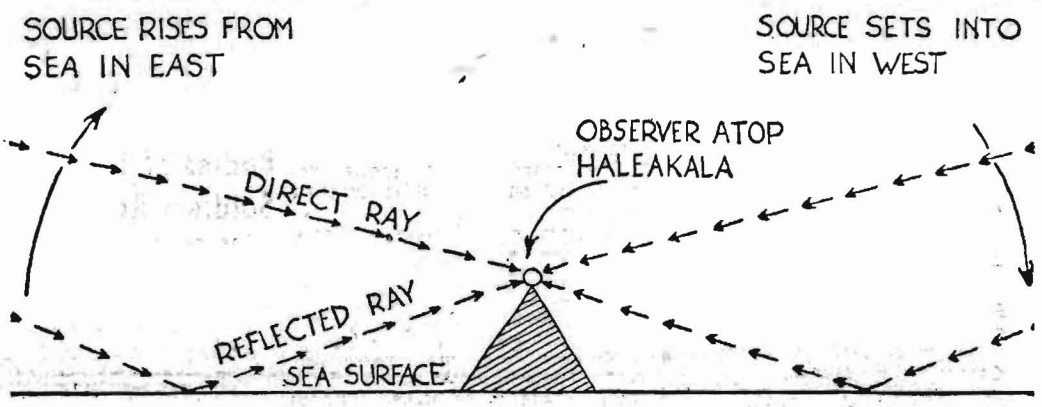

HOW IT WORKS—This diagram shows why a giant reflector like the ocean's surface is indispensable to Mr. Reber's search for more specific sources of cosmic static. Stemming from a large general source, static in both direct waves and waves reflected by the ocean reaches his electronic equipment atop Haleakala. The reflected wave is longer than the direct one. By measuring electronic impulses received from the two wave fronts of unequal length as their general source traverses the sky from east to west, Mr. Reber expects to narrow down the areas from which the static springs. Two independent sets of data are obtained at the rising and the setting of the source.

GROTE REBER

Cosmic Static

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that's made longer than the first by being reflected and bounced back up to the receiver from a spot considerably lower than the receiver.

By timing and measuring the electronic impulses from these two wave fronts as the constellation from which they spring moves across the sky, Mr. Reber expects to trace cosmic static to some pretty well localized sources.

Though the mechanics are complicated, the principle is somewhat like following the narrowing limits of a flashlight's beam from the large circle of light it makes to the tiny bulb it springs from.

Before coming here, Mr. Reber had studied and written about cosmic static for a dozen years on the basis of his observations at Wheaton, Ill., near Chicago.

GIANT REFLECTOR NEEDED

But to narrow down the static's sources, he needed a gigantic reflector to produce that all-important second wave front. Lake Michigan wouldn't do.

He also needed money for research that obviously must be done outside the Midwest.

Last year he convinced Research Corp. of his project's worth and obtained a grant in the form of continuing support for as long as it's needed.

Now he could move to the "mirror" he needed for that second wave front: The ocean with its huge reflecting surface.

FEW PLACES IDEAL

You can count on your fingers the number of spots in the world that have mountains high enough and close enough to the ocean to suit Mr. Reber's purposes.

"I chose Hawaii," he says, "because I wanted to keep my work under the Stars and Stripes."

He installed his apparatus on the Maui height instead of on the Big Island's higher Mauna Loa or Mauna Kea because of Haleakala's accessibility by road. He commutes from Wailuku to the mountaintop.

Nine months and the help of several assistants were required to set up Mr. Reber's self-designed cosmic static collector, a huge "eye" of metal and wood built to follow Sagittarius, Cygnus and other constellations of the Milky Way across the sky.

REVOLVES ON TRACK

This collector is 30 feet high. It revolves on a track 82 feet in diameter.

Its wires connect to electronic equipment, also of Mr. Reber's design and making, inside a cinderblock building left over from Signal Corps operations of World War II days. A generator in an adjacent shed supplies electricity.

The protected pheasants of Haleakala still roam that peak with as much unconcern as they ever exhibited.

But if something new under the sun comes out of the House of the Sun a few months from now, don't be surprised.

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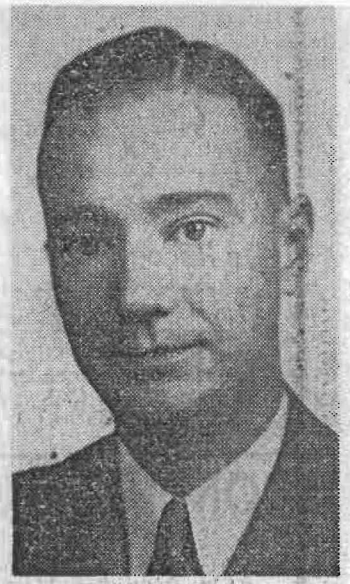

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