

# Through 'The Big Ear' Atop Goth Hill Comes The Song of a Vanished Star in Outer Space

By THOMAS VAN DUSEN, of The Journal Staff.

"The more thou searchest, the more thou shalt marvel", are words carved in stone over the National Research Council's Sussex street portals.

And at the NRC's Goth Hill laboratories on the Metcalfe road today all the sonic marvels of stellar space were being brought 30 times closer than ever before.

For NRC's sky-scanning radio-astronomers there was a new star-finder, a vast, open-air radiotelescope which will supplement by sound man's endless visual probing of the unknown which lies beyond the earth's atmosphere.

Not only will the scientists be able to see the stars, with the new telescope—expected to be finished by Fall—they'll be able to hear them.

Along with the Big Eye, Ottawa will now have the Big Ear.

Hearing the stars is nothing new.

NRC scientists have been "listening in" to galaxial wavelengths since 1947 at Goth Hill. But the best they could get with the old reflector telescopes was a gain of 700. With the new out-of-doors "ear", the gain will be boosted to 20,000 times that of the original impulse.

That means that the old stellar whisper will become a shout.

What will the scientists find? They don't know yet. Might be almost anything.

So far they do know that certain "stars" emit radio waves.

Actually, in most cases, the word star is a misnomer.

The waves, scientists believe, come from some sort of concentration of energy not distinguishable visually.

One theory holds that the radio waves are emitted by great masses of gas floating invisibly in the outer atmosphere. The gases, as the scientists put it, are "low in optical output", but high in their output of radio waves.

A telescope, no matter how large, with a human observer, would never spot the gases. But the radiotelescope picks up the wave emissions right away.

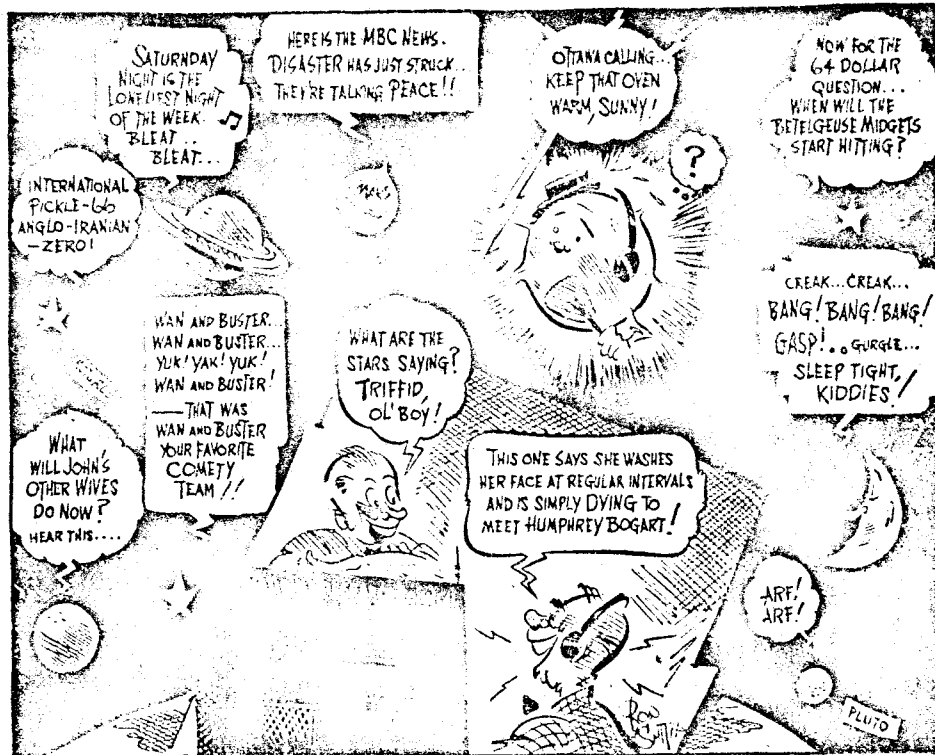
The Goth Hill radio receiver will help locate the source of the "cosmic noises" that have been plaguing science for years.

It also will be used to plot the characteristics and habits of the mysterious interstellar bodies from which the emissions come.

One theory holds that the sources are not gases at all, but "dark" stars—stars which have burned out and no longer give light and thus are invisible against the black background of the outerspace curtain.

With man on the very threshold of interstellar travel, the answer to that question could be important.

The presence of undetectable bodies in outer space could have a vital bearing on the course of



By RON SMITH of The Journal Staff.

moving objects whether guided missiles or passenger carrying rocket ships.

The radio stars so far located occur in certain well-defined "patches" in the sky.

There is one known exception to the generally-held proposition that the sources of the radio waves are not ordinary astronomical phenomena.

The curious exception is a source recently located at the identical spot where Chinese astronomers in 1054 had recorded a nova.

A nova is a star which for some reason or other rapidly begins to lose energy, blazing with a blinding intensity, and finally burning itself out.

Radio waves from the more

than 900 years old nova still are being picked up. But that was the only known case where the emissions could be linked to any recorded phenomenon of the skies.

The new NRC radiotelescope basically is a long trough, just like your rain trough. The trough picks up the radio waves from outer space and guides them along to a receiver which measures the angle at which they struck the trough and the intensity of the wave.

The heart of the apparatus is, of course, the receiver. The trough is just a long metal box which acts as an aerial, just as any other metal box would do. Actually, scientists say, the outerspace emanations are being

picked up every second by any piece of metal.

They deny the suggestion that the noises from the stars might have any connection with any intelligent agency. Experiments have convinced them the noises are just a natural phenomenon.

One thing scientists have learned is that the emissions from the sun pick up and decrease in line with the 11-year sunspot cycle. When the sunspots—magnetic storms on the sun's surface—are at their height, the radio waves pick up in intensity. When the sunspots subside, as they do every 11 years, the radio waves die down.

Radio noises from the sun, if anyone is interested, sound like the tattoo of rain on a tin roof.

Alan Bridle

The result of one newspaper review about 1950 in Ottawa Journal.

I noticed that my name is not mentioned. Probably reflects MRC policy at that time - not that I am particularly anxious to see my name appear in print. Will be looking forward to our next visit

Arthur E Covington