

Cosmic radio waves mimic chirping of 'alien birds' (Update)

December 4 2012, by Marcia Dunn

Twin spacecraft have captured the clearest sounds yet from Earth's radiation belts—and they mimic the chirping of birds.

NASA's Van Allen Probes have been exploring the hostile radiation belts surrounding Earth for just three months. But already, they've collected measurements of high-energy particles and radio waves in unprecedented detail.

Scientists said Tuesday these waves can provide an energy boost to radiation belt particles, somewhat like ocean waves can propel a surfer on Earth. What's more, these so-called chorus waves operate in the same frequency as human hearing so they can be heard.

University of Iowa physicist Craig Kletzing played a recording of these high-pitched radio waves at the American Geophysical Union fall meeting in San Francisco.

"Not only do you hear the chirps—the alien birds as my wife calls them—but you hear that sort of cricket-like thing in the background. That was something we couldn't resolve before because we couldn't listen to those very soft things on top of the bright ones. So this is really a fantastic new measurement," Kletzing told reporters.

While the chorus has been audible even before the Space Age—ham radio operators could sometimes hear it in decades past—the clarity of these measurements is "really quite striking," Kletzing said.

Observations continue in tandem with other instruments on the two satellites.

Initial findings show the outer radiation belt to be much more dynamic and rapidly changing than anticipated, said the University of Colorado's Daniel Baker, principal investigator for the electron proton telescope on each probe.

The Van Allen Probes—formerly known as the Radiation Belt Storm Probes—were launched from Cape Canaveral on Aug. 30. They were named after the late University of Iowa astrophysicist James Van Allen, who discovered, a half-century ago, the radiation belts that bear his name.

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Online:

Recording of waves: tinyurl.com/b2az6ex

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