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**Hillsdale College Physics Student First Author in Top Science Journal**

*Shane Smith's work on the search for intelligent life will appear in international science journal*

Hillsdale, Mich. — Looking through the data contained in radio waves from the cosmos, Hillsdale College physics major Shane Smith, '22, found something truly remarkable. He found an unusual signal in data from Australia's CSIRO Parkes Telescope (also known as Murrinyang). The unnatural-looking signal warranted more attention. Smith wouldn't speculate but instead delved deeper into his research. His findings will be published in Nature Astronomy this month. While not a sign of extraterrestrial life, Smith's discovery and analysis highlight the effectiveness and precision of astronomy today.

This is the first time any Hillsdale College student has published in Nature Astronomy, an international, monthly science journal that is among the most prestigious astronomy journals in the world. The research paper is titled, "A radio technosignature search towards Proxima Centauri resulting in a signal of interest." Breakthrough Listen, privately funded by entrepreneur Yuri Milner, is an astronomical science program searching for technosignatures — signs of technology that may have been developed by extraterrestrial intelligence.

Smith's research follows his previous work in 2020 during his summer research project at University of California, Berkeley. His research looked at a possible signal, named BLC1, emanating from Proxima Centauri, the nearest star to our Sun. A hypothetical signal due to extraterrestrial intelligence would be faint and difficult to distinguish from human-generated radio emission. The team has refined its ability to eliminate such spurious signals, but there was one that the software didn't eliminate, termed BLC1 (learn more at [seti.berkeley.edu/blc1](https://seti.berkeley.edu/blc1)).

"Shane's findings are really important," said [Timothy Dolch](#), associate professor of physics at Hillsdale College. "The candidate signal BLC1 in this paper is not due to extraterrestrial intelligence, but the way that Shane worked with the Breakthrough Listen collaboration's software pipeline and was able to approach this data is astounding."

The Nature Astronomy paper supports the interpretation that Smith's previous 2020 findings — which others had initially speculated to be of extraterrestrial origin — are, in fact, from a form of human-generated radio interference. These findings remain important, said Dolch.

“This shows the continually improving efficacy of the software that astronomers are using to explore the possibility of extraterrestrial life. That such a rare, human-generated signal can remain uncut from the data and subsequently identified is an important finding,” said Dolch. “If and when a signal from intelligent life is detected in the future, we’ll be much more confident that the signal is real.”

Smith is the first author on the Nature Astronomy paper and worked with a team of 17 others, including his supervisor Dr. Danny Price from the International Centre for Radio Astronomy Research, Curtin University, Australia (find more information about the journal [here](#); Smith’s previous research can be found [here](#)).

Smith’s student research prior to working with Breakthrough Listen included work on Hillsdale College’s Low-Frequency All-Sky Monitor, an on-campus radio telescope. This equipment afforded Smith experiences with programming, data analysis, and radio telescope hardware that made him a successful candidate for the position. Other coursework included computational physics, including Python programming. Smith also worked with Dolch on the search for pulsars within data from the former Arecibo Observatory. This was in support of the North American Nanohertz Observatory for Gravitational Waves.

Smith also completed a Research Experience for Undergraduates program at the University of Tennessee at Chattanooga during the summer of 2021.

Find photos [here](#).

### **About Hillsdale College**

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