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Searching for Light Axions from the High Arctic

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The Earth's ionosphere provides a natural laboratory for searching for resonant conversion of axions. When the peak plasma frequency in the ionosphere rises above the axion conversion frequency, a narrow spectral line will appear. ALBATROS is an array of low-frequency radio telescopes observing the sky at low frequencies (˜10 MHz and below) from Axel Heiberg Island in the Canadian High Arctic. The ALBATROS stations save baseband data through the polar winter, enabling searches for extremely narrow spectral lines, such as that from axions. We describe the ALBATROS axion search and progress in the data analysis.

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