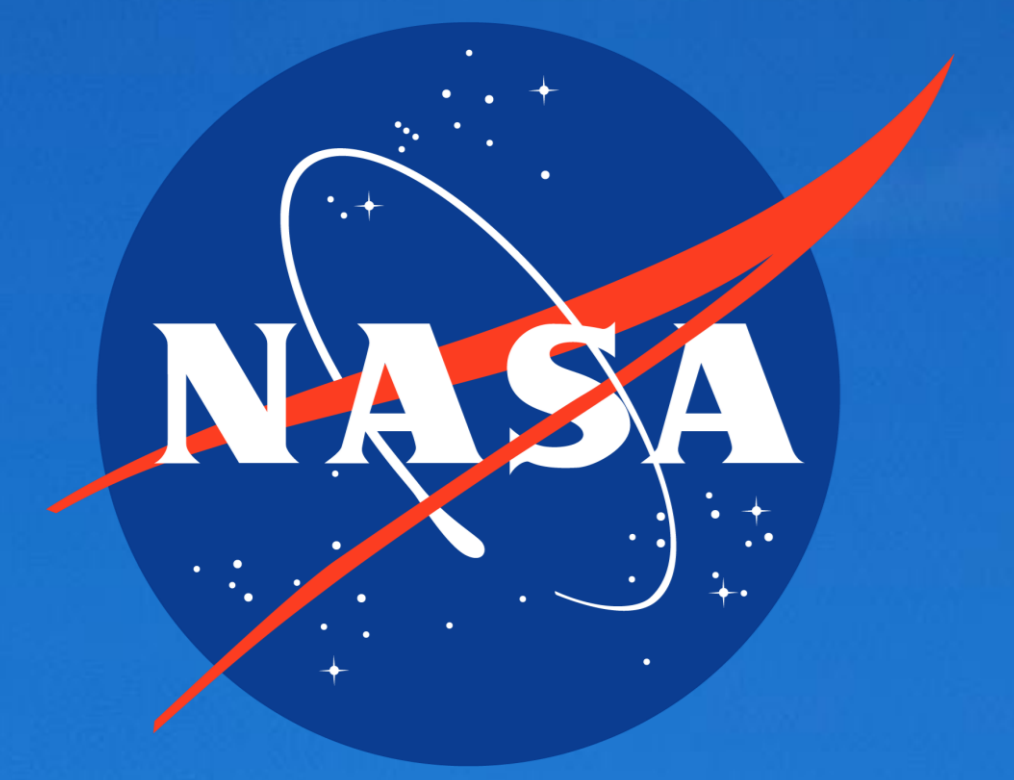




# Pingo STARR 2023: Tales from Tuk



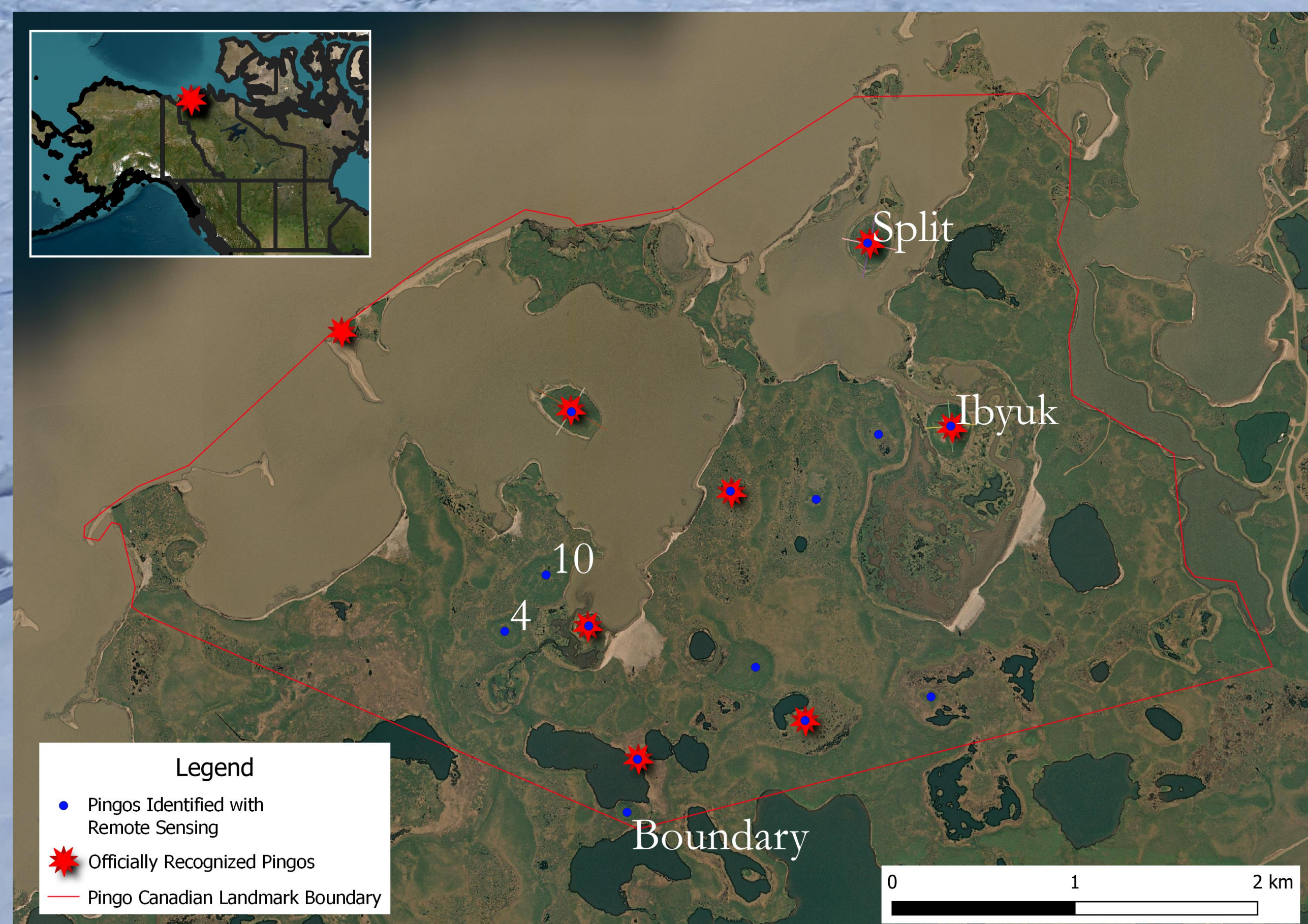
Austin Routt<sup>1,2</sup>, Kynan Hughson<sup>1</sup>, Britney Schmidt<sup>3</sup>, Andrew Mullen<sup>3</sup>, Alexia Kubas<sup>3</sup>, Matthew Siegfried<sup>4</sup>, John Bradford<sup>4</sup>, Venezia Follingstad<sup>4</sup>, Andrei Swidinsky<sup>5</sup>, Hannah Sizemore<sup>6</sup>

## Introduction

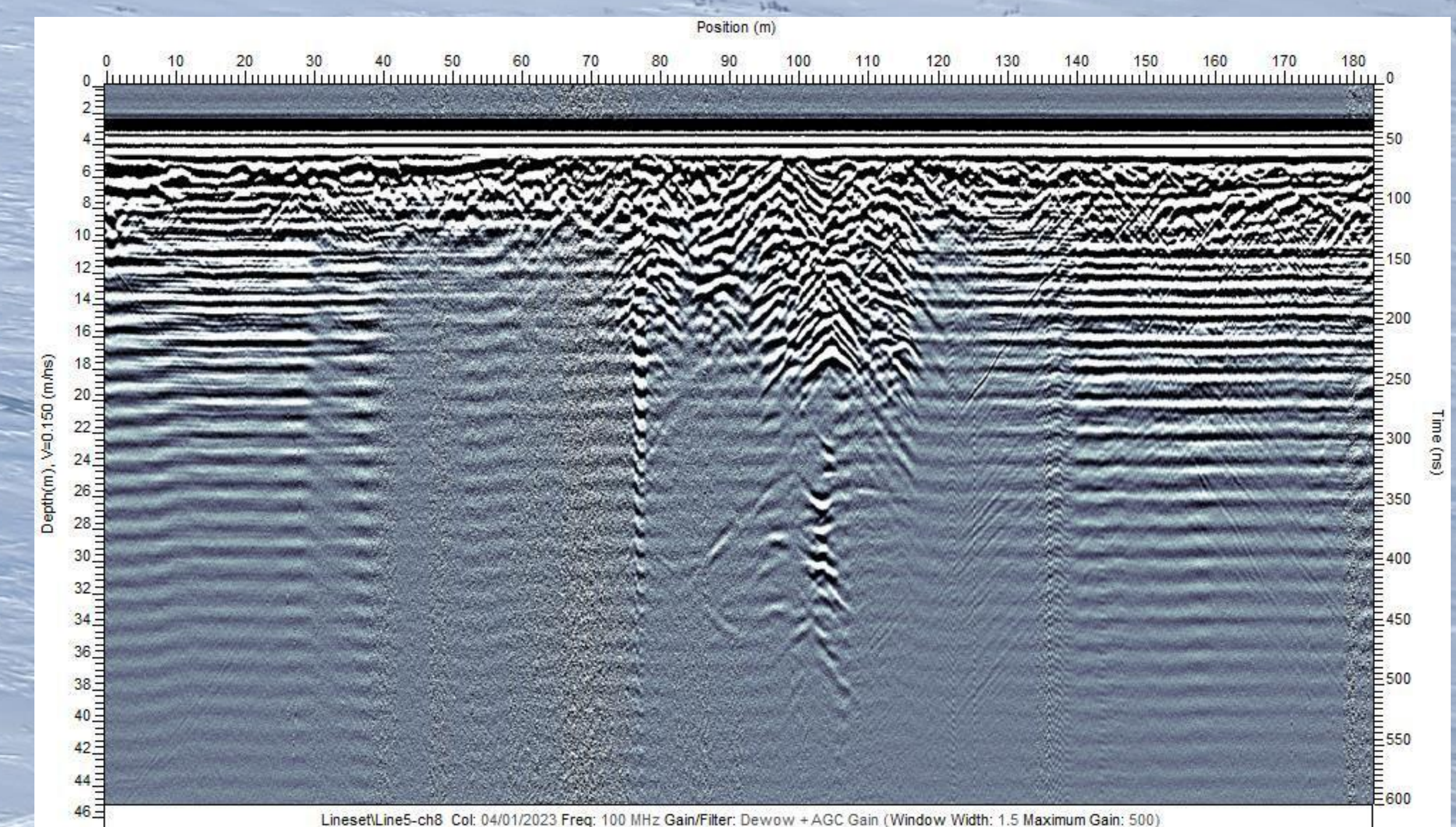
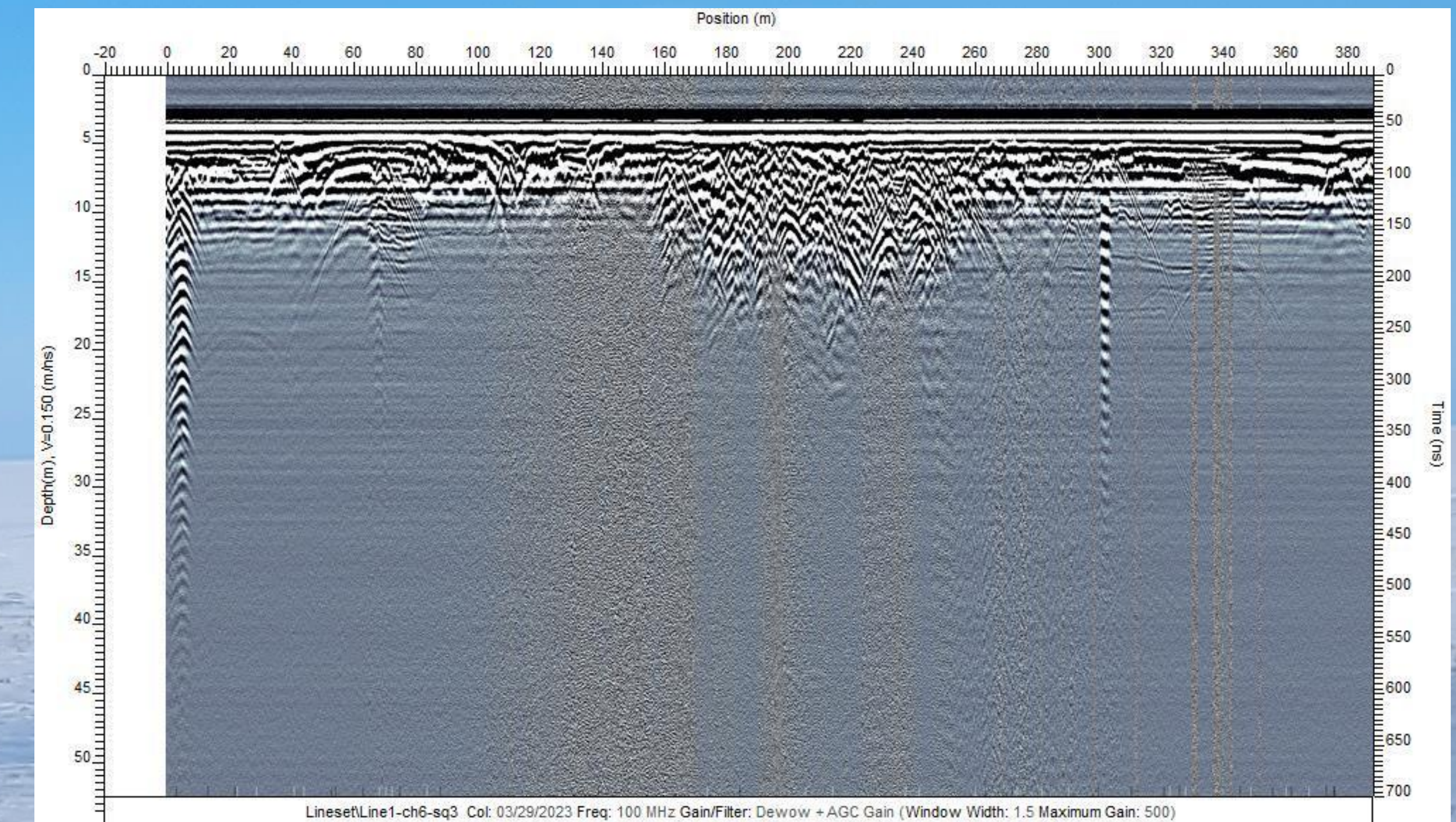
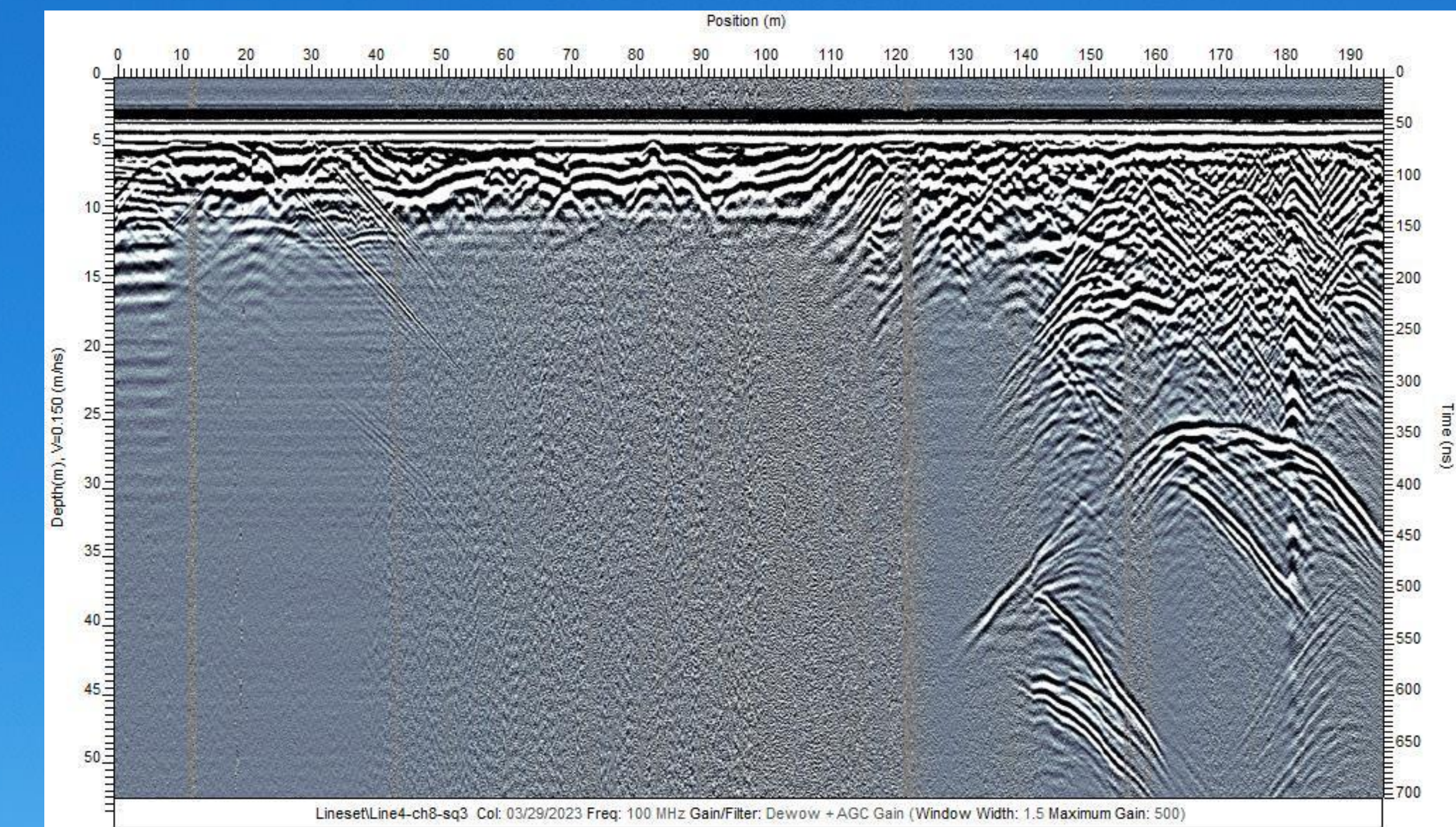
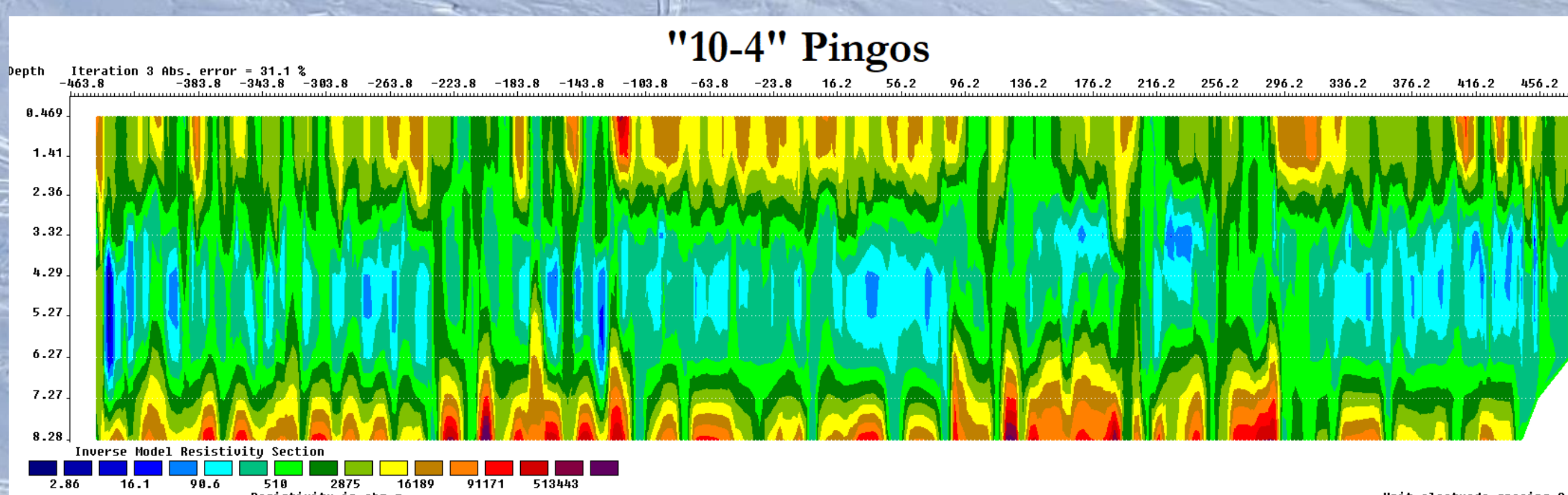
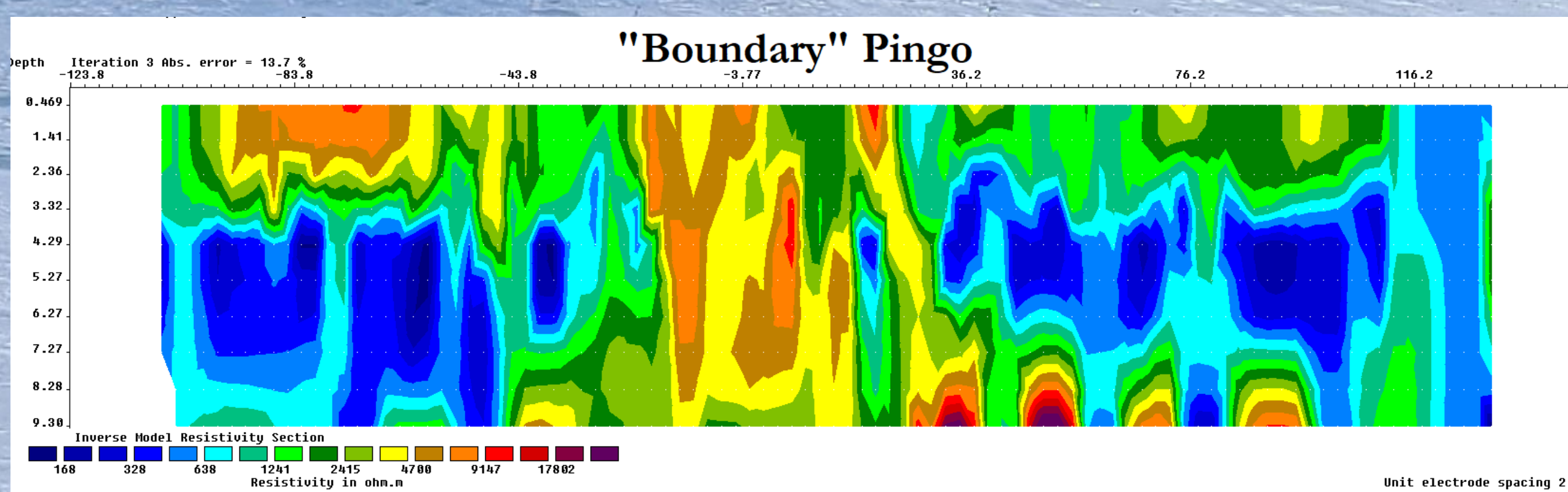
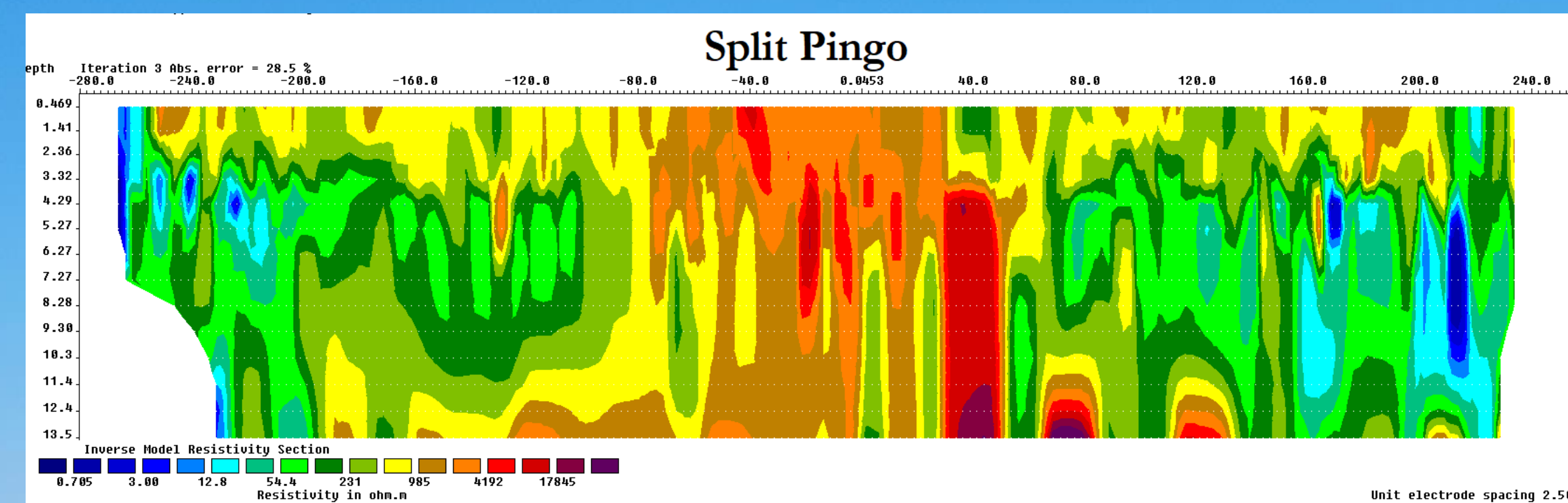
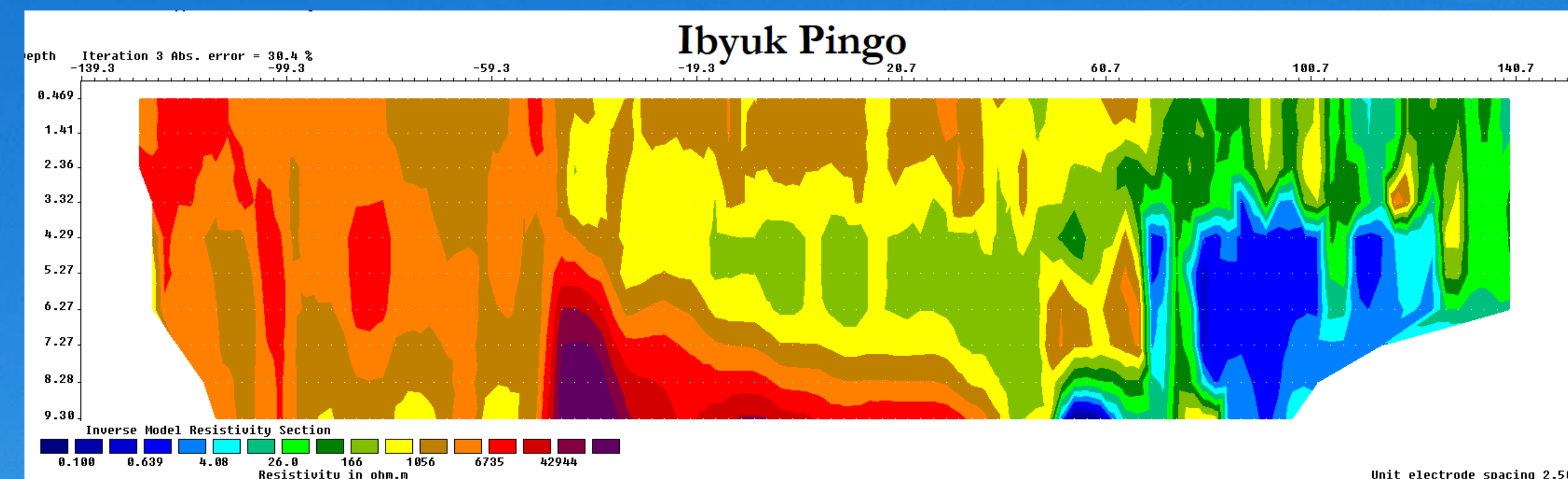
Pingos are unique Arctic landforms, canonically described as ice-cored hills which form either hydrostatically or hydraulically. Evidence now suggests that pingos may also exist on Mars and the dwarf planet, Ceres, making pingos potentially significant future hydrological resources for the exploration of Mars. To better understand the internal structure of pingos, Pingo STARR employs a suite of geophysical techniques including ground-penetrating radar (GPR), capacitively coupled resistivity (CCR), and transient electromagnetics (TEM). In April 2023, the Pingo STARR team used these tools on several pingos in Pingo Canadian Landmark, an area southwest of the hamlet of Tuktoyaktuk on the coast of the Beaufort Sea in the Canadian Arctic.

## CCR and GPR

The CCR technique is an A/C counterpart to traditional DC resistivity surveying. We performed CCR surveys on several pingos in the landmark which reveal complex resistivity structures. We also performed GPR surveys on several Pingos in the landmark using a multi-offset configuration.



## Initial Data



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1. University of Alaska Anchorage, 2. University of Alaska Fairbanks, 3. Cornell University, 4. Colorado School of Mines, 5. University of Toronto, 6. Planetary Science Institute

