

# Malaspina Glacier - Yakutat Bay, Alaska

## Overview

Internal waves were observed in the Gulf of Alaska near the edge of the Malaspina Glacier on August 15, 1975 [Elachi and Apel 1976]. Figure 1 is an L-band SAR image of the area collected by the NASA CV-990 research aircraft. The figure shows two sets of internal wave packets inside the 50-meter isobath and a single wave front inside the 100m isobath. The center packet contains 4 waves with monotonically decreasing wavelengths of 500, 250, 175, 120 m respectively. Interpacket separation is approximately 2 km and the packets are aligned with the local bathymetry.

During the summer, melt water from the glacier creates a layer of fresh water over the denser salt water. This provides the stratification necessary for internal wave formation. The image region lies approximately 5 km inshore of a 300-m deep submarine canyon geography also favorable for the generation of internal waves.

## References

Elachi, C. and J.R. Apel, 1976, Internal Wave Observations Made with an Airborne Synthetic Aperture Radar. *Geophys. Res. Lett.*, 3, 647-650.

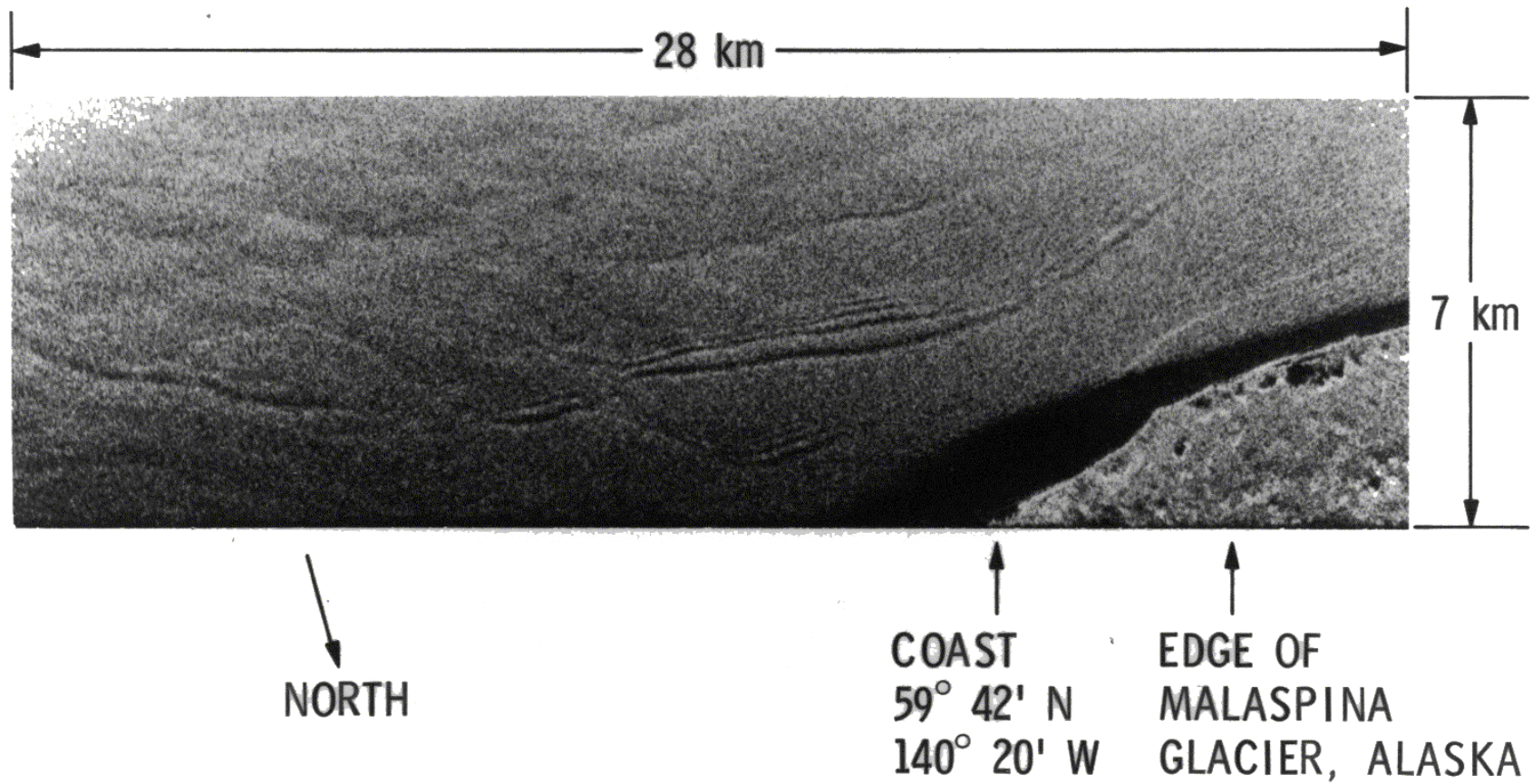


Figure 1. L-Band SAR image of internal waves off the coast of Alaska collected with a JPL -L-Band SAR on the NASA CV-990 aircraft. Image was acquired August 15, 1975. (Elachi and Apel 1976)

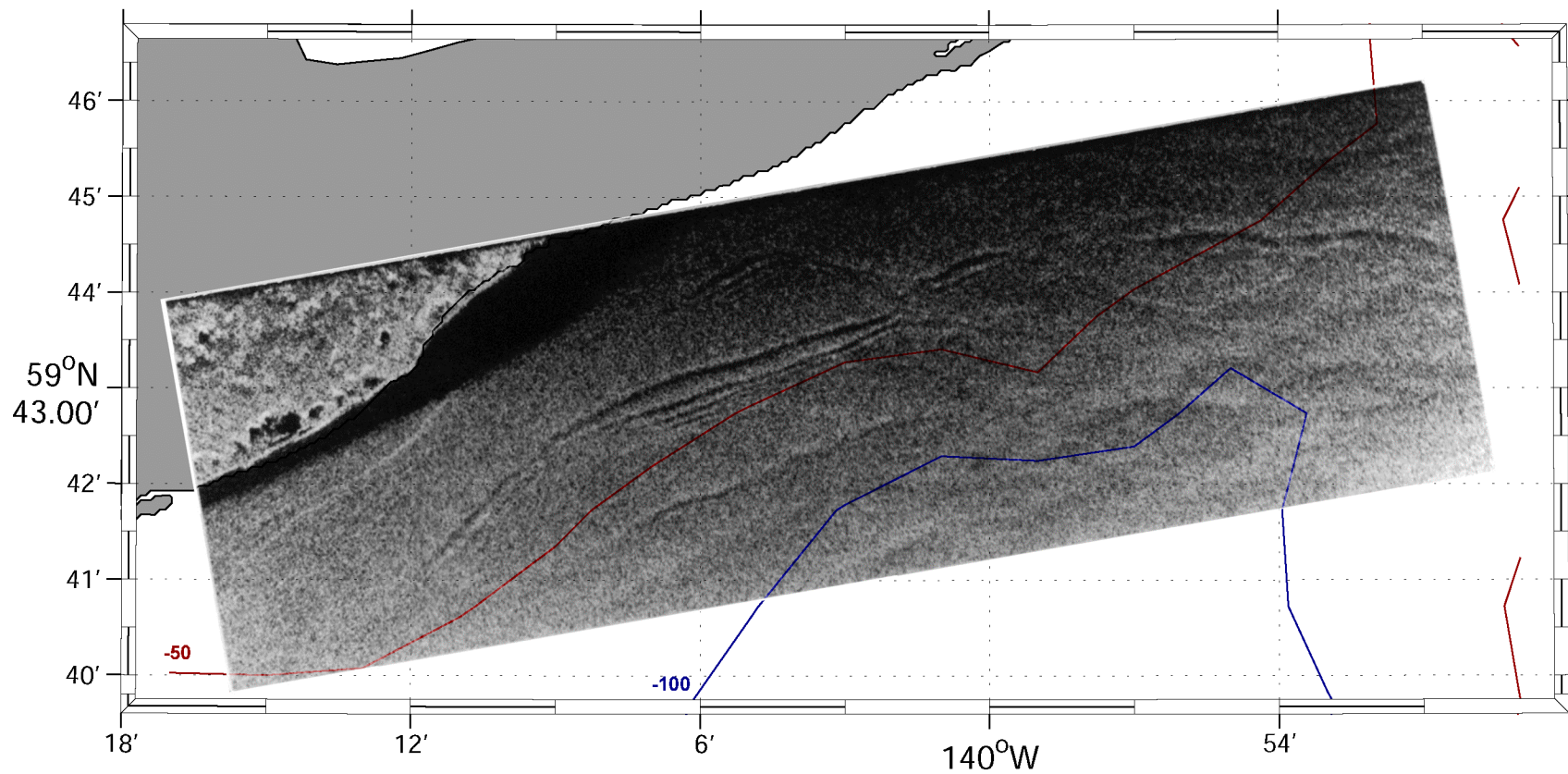


Figure 2. CV-990 SAR image shown with local bathymetry (derived from Smith and Sandwell version 8.2).

**THIS PAGE INTENTIONALLY LEFT BLANK**