Labrador Sea

Overview

The Labrador Sea is located in the northwest Atlantic separating southwest Greenland and Labrador Canada (Figure 1). It is a deep-water sea with depths greater than 2000 meters and is influenced by the Labrador Current and the flow of sea ice out of the Davis Strait.

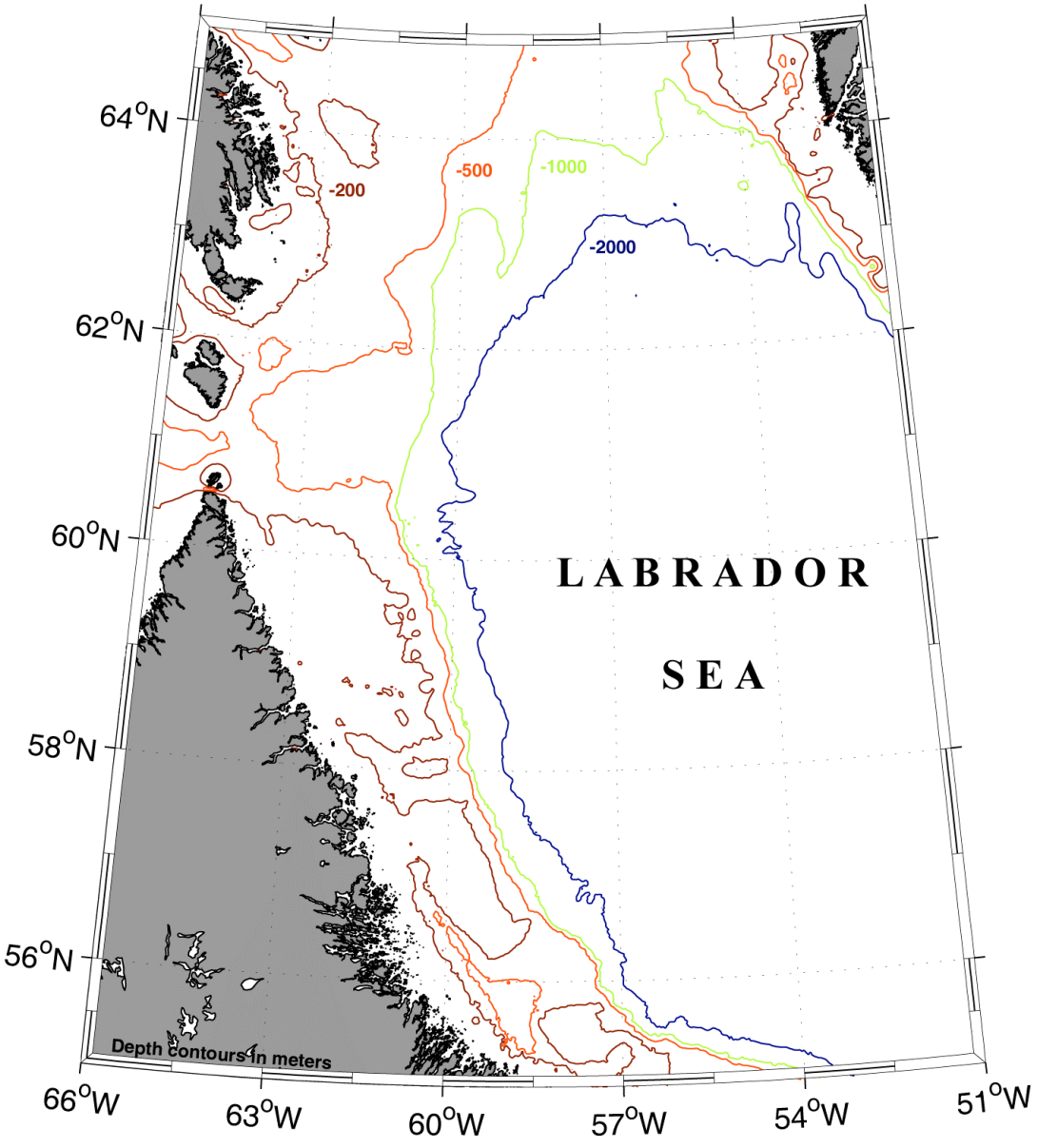


Figure 1. Bathymetry of the Labrador Sea [Smith and Sandwell, 1997].

Observations

There has been very little scientific research on internal waves in the Labrador Sea. Fu and Holt [1982] noted internal waves in SEASAT SAR imagery acquired approximately 150 km east of Hudson Strait (Figure 4). The waves were oriented roughly parallel to the local bathyemery (Figure 3).

Cummins and LeBlond [1984] reported on the presence of large amplitude interna1 waves observed with current meter and thermistor chain over the continental shelf off Baffin Island. The waves were observed to propagate away from the coast and to coincide with the local low water phase of the tide at the observation site. Table 1 shows the months of the year when internal wave observations have been made.

Table 1 - Months when internal waves have been observed in the Labrador Sea.
(Numbers indicate unique dates in that month when waves have been noted)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
					1		2				

References

Cummins, P.F., and P.H. LeBlond, 1984: Analysis of internal solitary waves observed in Davis Straight. *Atmos. Ocea*n, **22 (2**), 173-192.

Fu, L.L., and B. Holt, 1982, Seasat Views Oceans and Sea Ice with Synthetic Aperture Radar, JPL Publication 81-120

Smith, W. H. F., and D. T. Sandwell, Global seafloor topography from satellite altimetry and ship depth soundings, Science, v. 277, p. 1957-1962, 26 Sept., 1997.
http://topex.ucsd.edu/marine_topo/mar_topo.html

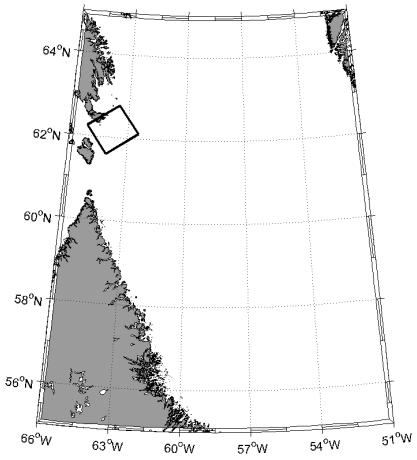
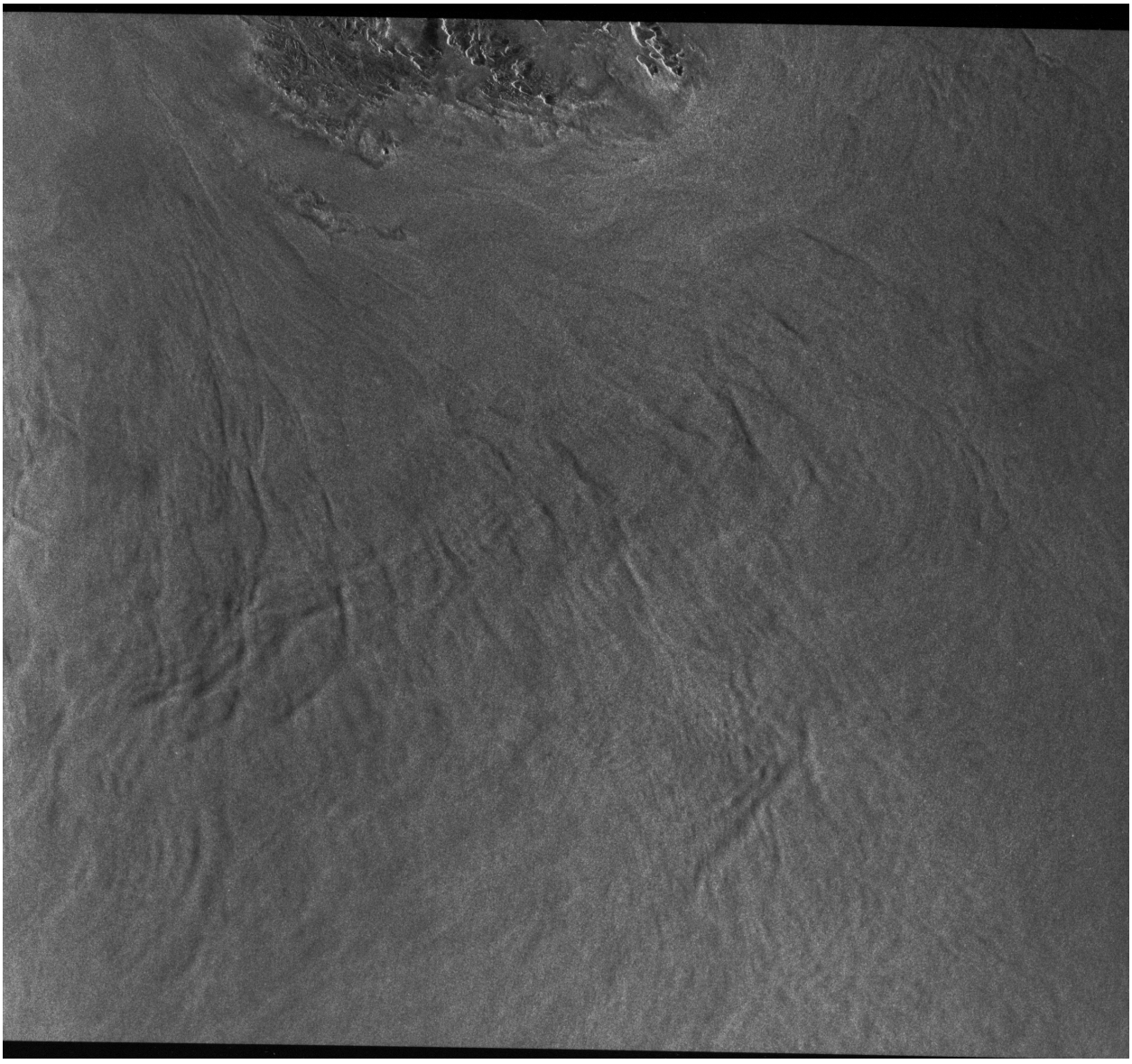


Figure 2. SEASAT (L-band, HH) SAR image of internal waves near Baffin Island acquired on 5 October 1978 at 1344 UTC (Rev 1438). Imaged area is 100 x 100 km. [Image courtesy of NASA JPL]



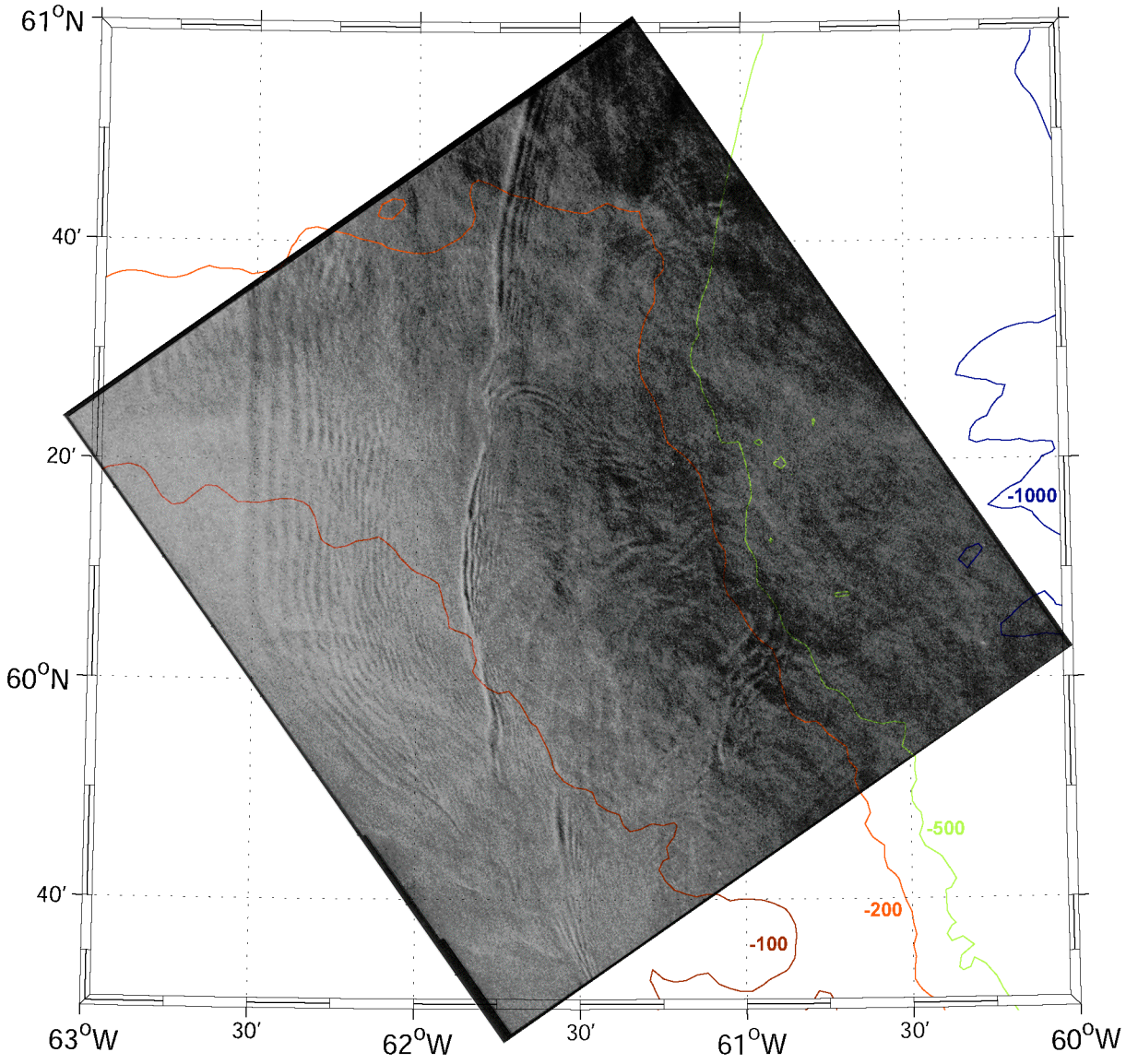


Figure 3. SEASAT (L-band, HH) SAR image from 2 October 1978 shown with the local bathymetry [Smith and Sandwell, 1997].

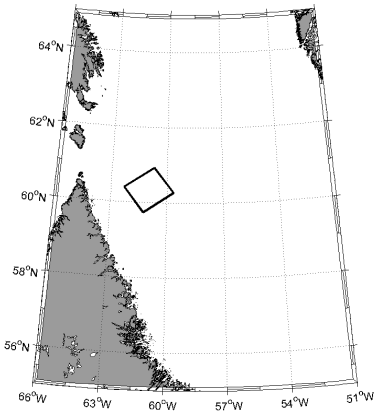
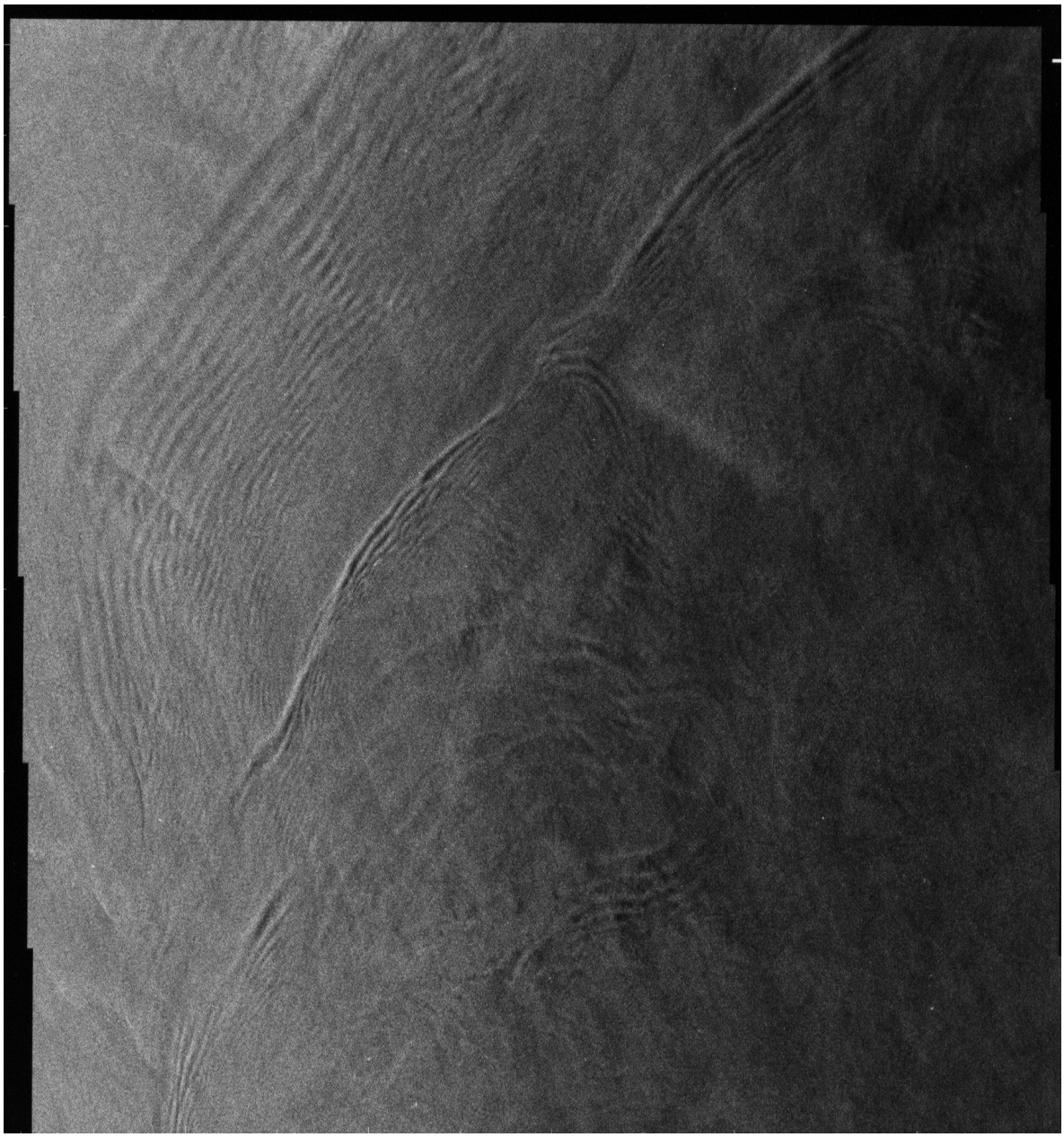
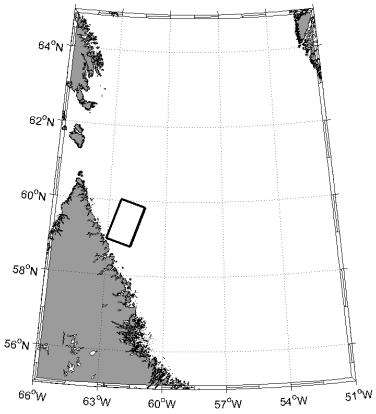
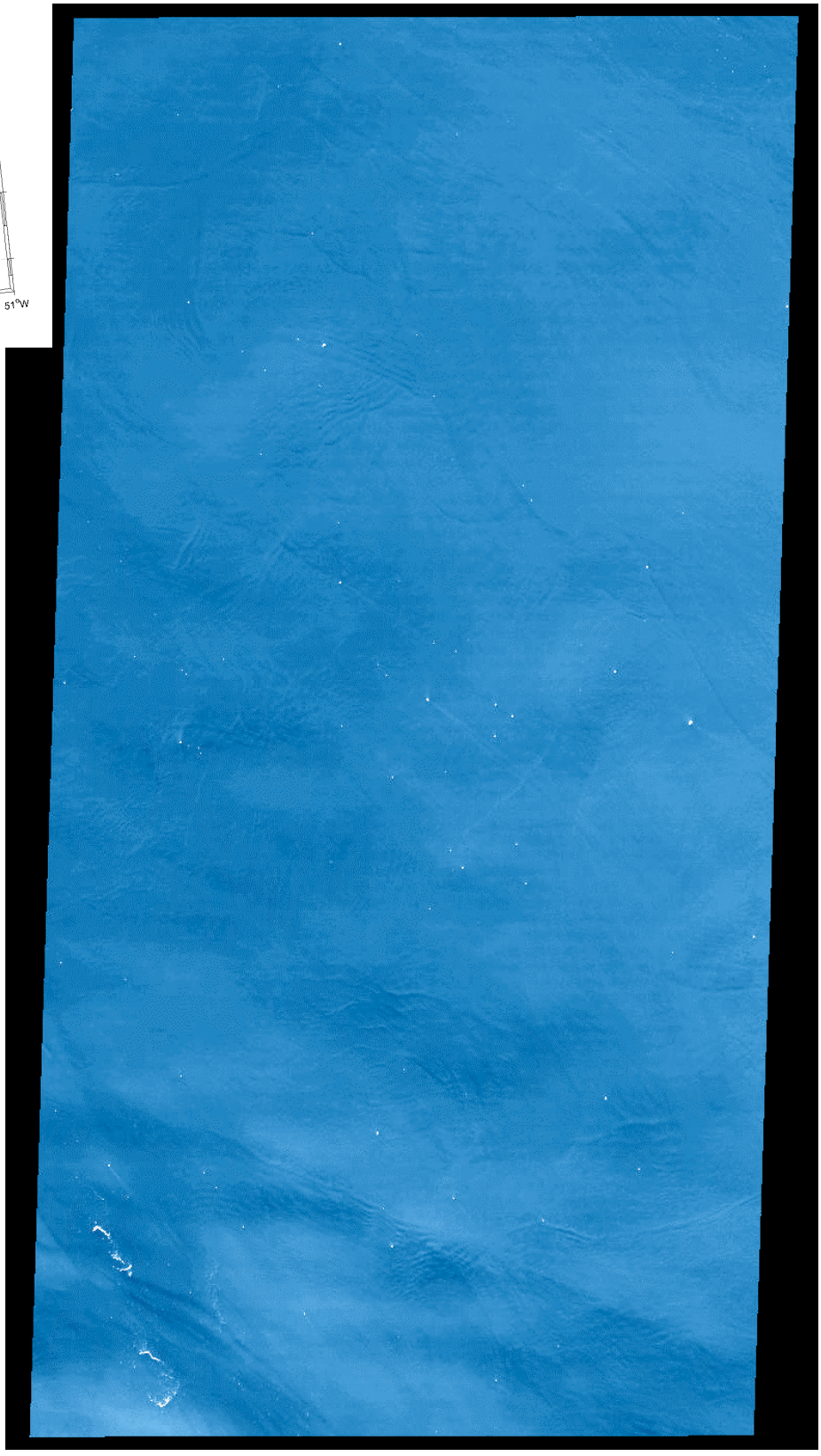


Figure 4. SEASAT (L-band, HH) SAR image of internal waves in the Labrador Sea acquired on 2 October 1978 at 1331 GMT (Rev 1395). The image is centered about 150 km east of Hudson Strait. Imaged area is 100 x 100 km. [After Fu and Holt 1982]







ASTER false-color VNIR image near the coast of Labrador acquired on 26 June 2001 at 1548 UTC. The image shows the weak signature of several internal wave groups. Imaged area is 60 km x 120 km.