

The Azores

Overview

The Azores is a group of nine islands located in the North Atlantic along the eastern side of the mid-Atlantic Ridge (between approximately 37° and 40° N. latitude and 24° and 32° W. longitude). The islands are volcanic in origin and are scattered over an area of approximately 1,000 sq. km about 1200 km west of Portugal (Figure 1).

Figure 2 is a Seasat image collected on 4 August 1978 [Fu and Holt, 1982]. The Seasat observations show a complex distribution of internal wave packets around the archipelago. This complex distribution has been observed around other volcanic island (e.g. the Galapagos) and results from the number of internal wave sources that exist. The area in the lower right hand corner (east-southeast of Terceira) has a prodigious number of wave packets propagating primarily to the north. As second source exists west of Terceira whose waves can be seen propagating to the north-northeast. Interpacket separations are approximately 37 km, giving an implied propagation speed of around 0.8 m/s.

Figure 3 shows the Seasat image overlaid with the bathymetry. The bathymetry is less than 200 meters depth in a number of locations; any or all of which could help produce the areas internal waves. Sources for the waves are most likely a number of scattered seamounts in the area.

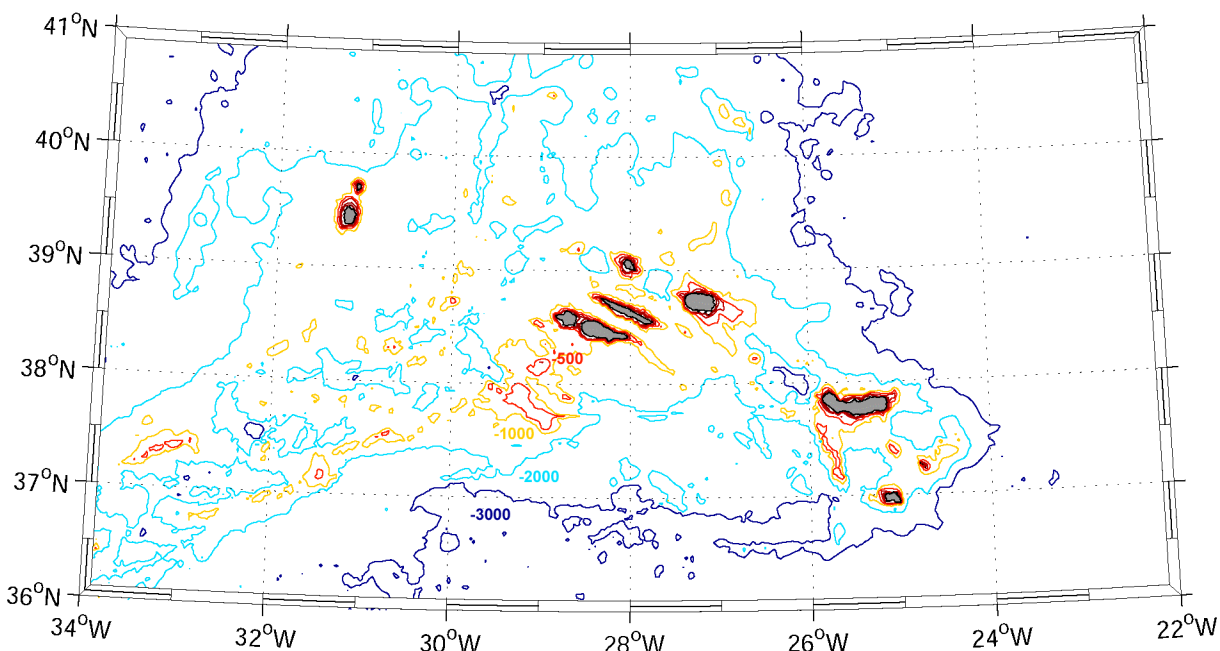


Figure 1. Bathymetry map of the Azores. (Derived from Smith and Sandwell version 8.2)



Figure 2. Seasat L-Band SAR image of internal waves northeast of Terceira in the Azores. Image was acquired August 4, 1978, at 21:42 GMT (Rev 556). Image dimension 100 x 270 km. Image courtesy NASA JPL. [From Fu and Holt 1982]

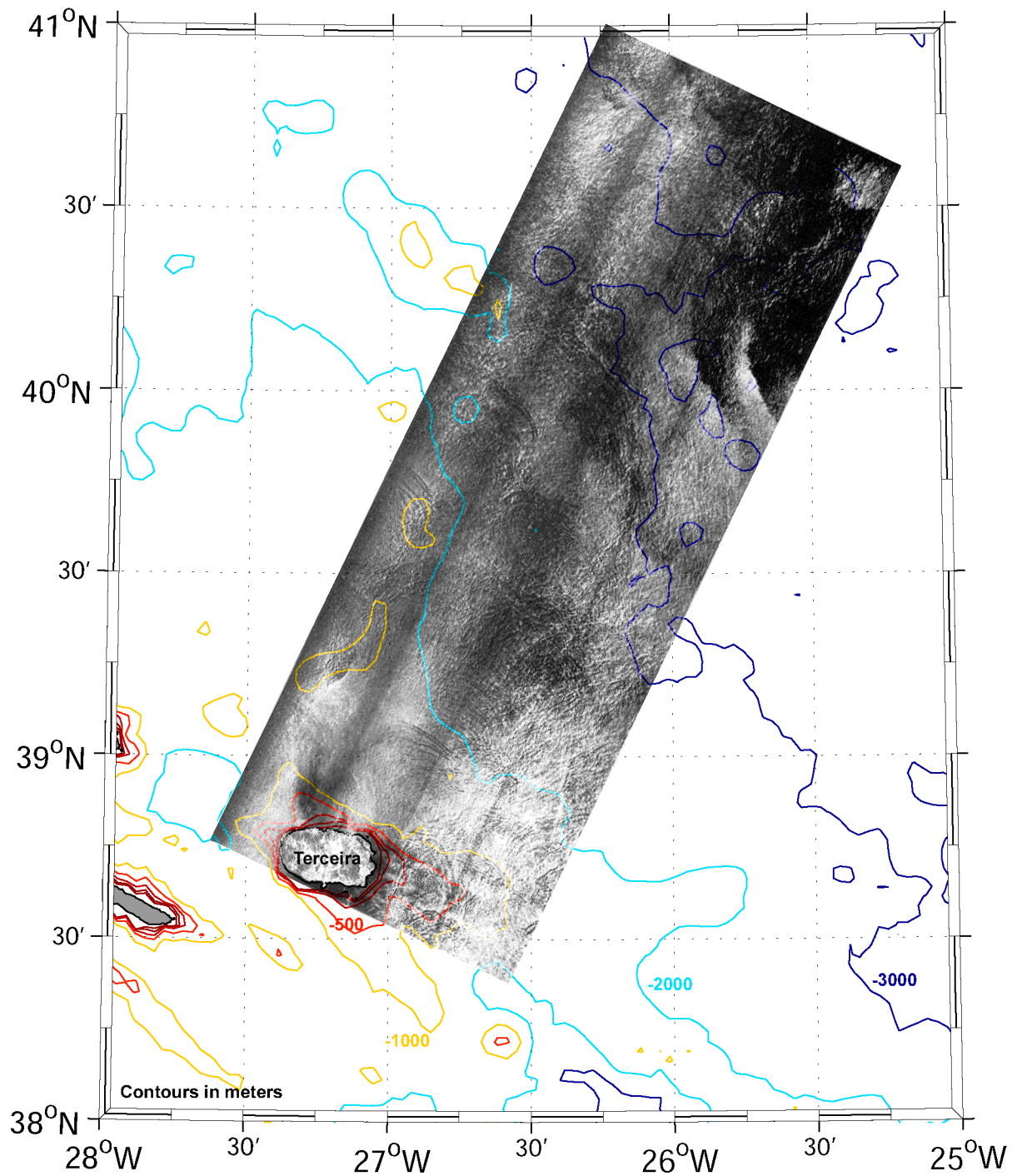


Figure 3. Seasat image overlaid on bathymetry map (Derived from Smith and Sandwell version 8.2)

References

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

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