

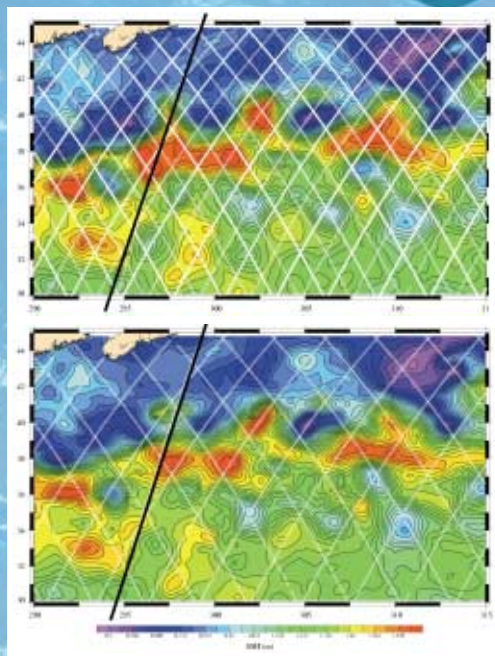
Flying Tandem

On September 15, 2002 Topex/Poseidon assumed a new orbit midway between its original ground tracks. The former Topex/Poseidon ground tracks are now overflowed by Jason-1. This tandem mission demonstrates the scientific capabilities of a constellation of optimized altimetric satellites.

An increase in understanding of the oceans requires that we observe and model it at high spatial and temporal resolutions. These types of high-resolution data are also needed for ecosystem modeling and for most operational oceanographic applications (e.g. marine safety, pollution monitoring, offshore industry, fisheries). The tandem Topex/Poseidon - Jason-1 mission was proposed with this idea in mind.

Top: Dynamic topography in the Gulf Stream region, on December 11, 2002, as seen by the Jason-1 and Topex/Poseidon tandem satellite configuration.

Bottom, same region by Jason-1 alone (ground tracks in white). Significant meanders and eddies that are missed by one satellite alone are well-defined by the satellites in tandem.



Comparison with the sea level observed along an ERS-2 track (black track in maps, right). The Jason-1 and Topex/Poseidon tandem mission is able to reproduce most of the signals observed by ERS-2, while the Jason-1 data alone missed several important Gulf Stream meanders (e.g. 39-40°N, with sea level height of about 40 cm).