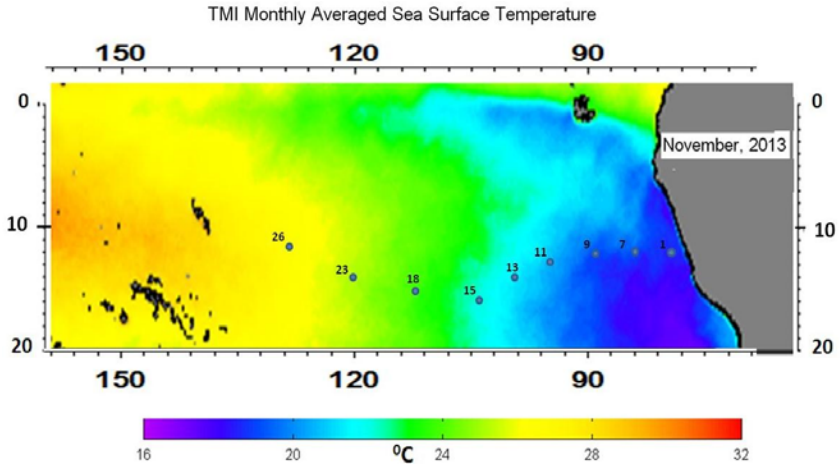
NSF OCE 1232794: GEOTRACES Peru-Tahiti section: Measurement of 7Be as a Tracer of Upper Ocean Processes.
Award Amount: $399,991
Award Time Period: 10/01/2012 – 09/30/2015

The mission of the International GEOTRACES Program (www.geotraces.org) is "to identify processes and quantify fluxes that control the distributions of key trace elements and isotopes (TEIs) in the ocean, and to establish the sensitivity of these distributions to changing environmental conditions." These chemical species play important roles in the ocean as nutrients, tracers of current and past oceanographic processes, and as contaminants from human activity. Their biogeochemical cycling has direct implications for research in such diverse areas as the carbon cycle, climate change, and ocean ecosystems.

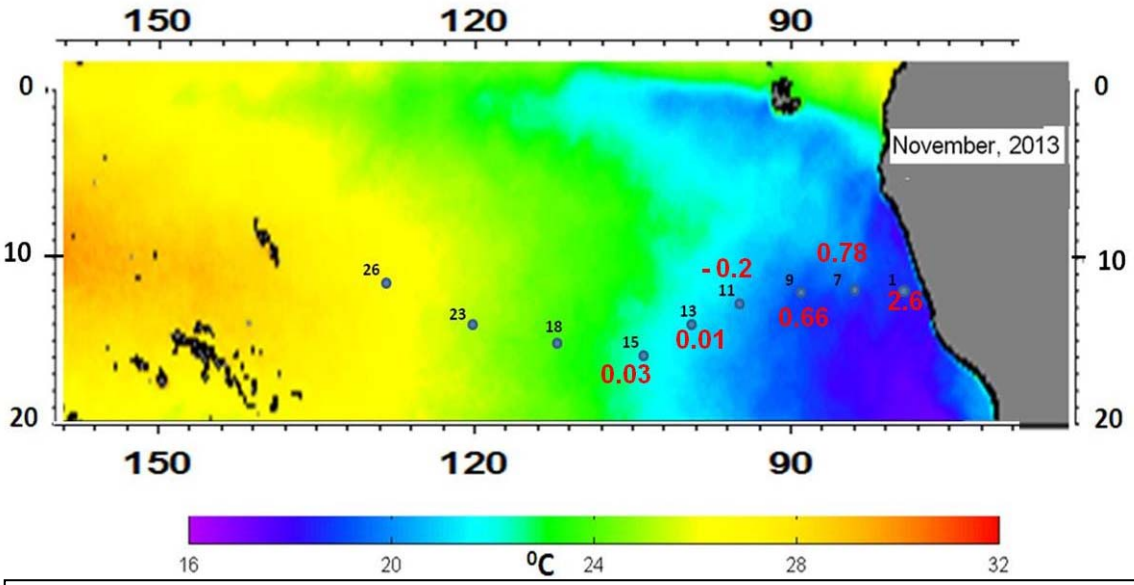
This project is funded to make measurements of the naturally occurring isotope ^{7}Be which will provide important biogeochemical rate information pertinent to the seawater constituents measured during the US GEOTRACES zonal transect in the eastern tropical South Pacific (ETSP) from Peru to Tahiti in 2013:

1) *Provide realistic estimates of the underlying transport processes influencing measured chemical distributions*.

2) *Improve methods for quantifying the atmospheric deposition of chemicals to the oceans*



Cruise station locations superimposed over a map of SST during the Peru-Tahiti leg.



Upwelling velocities (m/d, corrected for horizontal transport), derived from ^{7}Be, superimposed over SST.