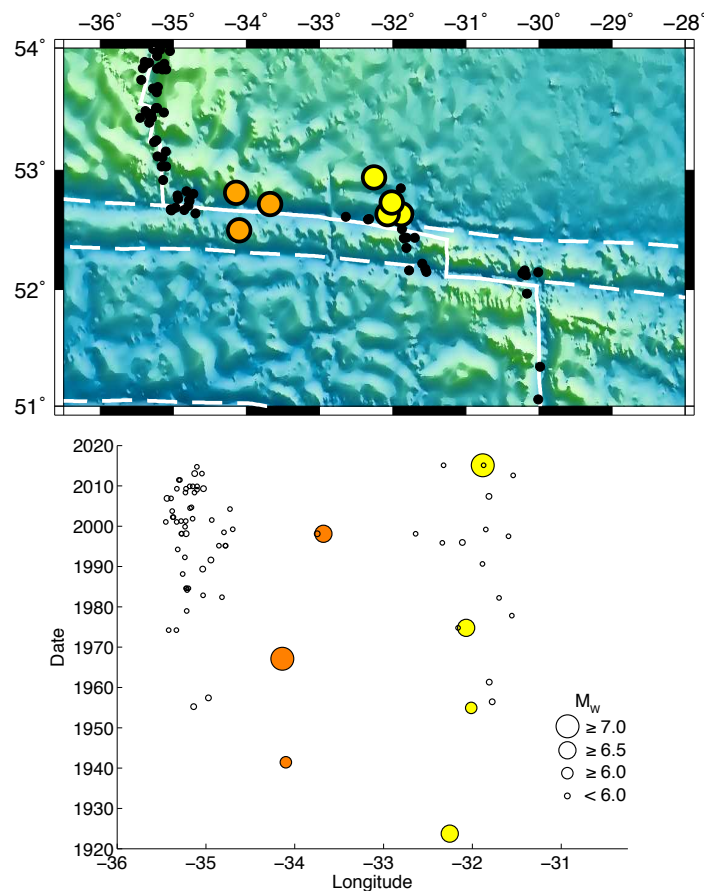


Characteristics of oceanic strike-slip earthquakes along the Charlie-Gibbs transform  
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On 13 February 2015 a  $M_W$  7.1 strike-slip earthquake occurred on the Charlie-Gibbs transform in the north Atlantic. It is the first major Mid-Atlantic earthquake since the 1994  $M_W$  7.0 Romanche transform fault earthquake over 20 years ago. The 2015 earthquake is the seventh  $M \geq 6.25$  earthquake to occur on the northern transform of the Charlie-Gibbs spanning a seismic record of nearly a century (See figure). The most recent of these earthquakes was the 1998  $M_W$  6.7 with an NEIC hypocenter  $\sim 120$  km to the west of the 2015 earthquake. We model the 1998 and 2015 earthquakes to determine depth and along-strike slip, then compare these to thermal models that are expected to define the seismogenic area of this fault. We also consider our results in the context of high resolution but temporary ocean bottom seismometer studies along the faster slipping Blanco and Gofar faults. Using observations from a range of tectonic settings is important to determine what controls initiation and propagation of seismic rupture along strike-slip faults, in the oceans as well as along continental faults like the San Andreas.



**Earthquakes along the northern transform of the Charlie-Gibbs fracture zone.** Longitudes are from the NEIC catalog and Kanamori and Stewart (1976). Filled in circles correspond to earthquakes in the quasi-periodic sequences.