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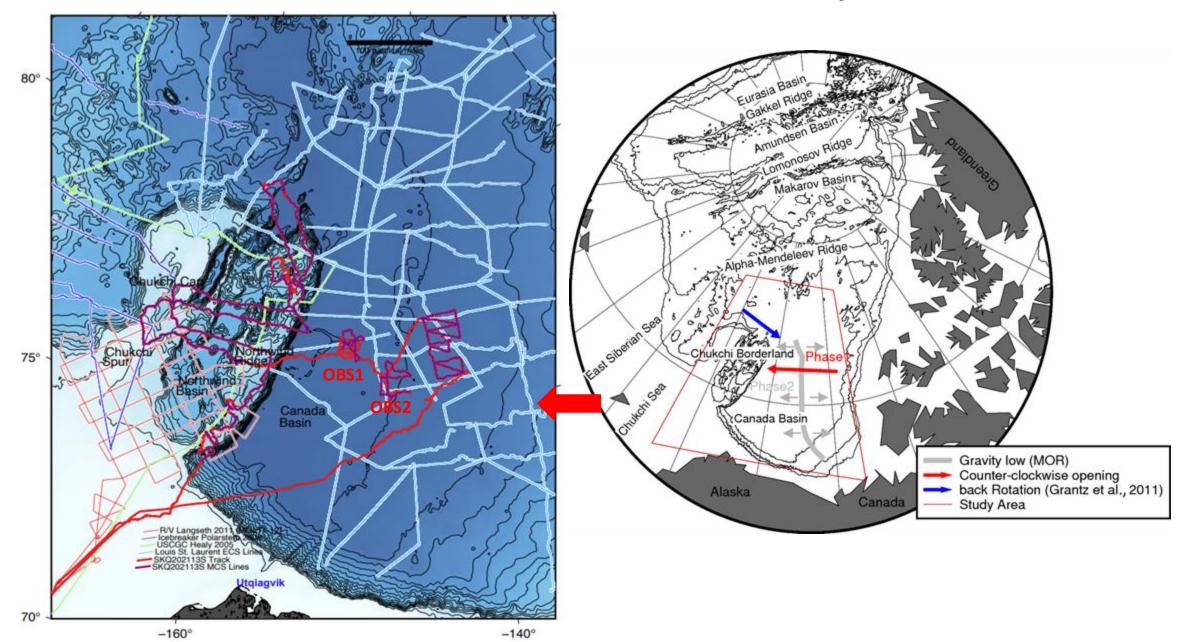


AGU 2024 | Poster <u>T51D-3180</u>

Seismic Evidence of the Fossil Spreading Ridge Characteristic in the Canada Basin, Arctic Ocean Friday, 13 December 2024 08:30 - 12:20

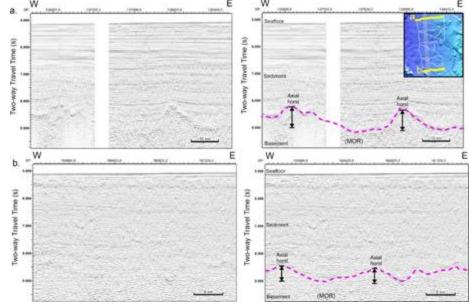


Seismic Reflection Survey



Seismic profile SKQ line 12 Interpreted section of the seismic profile revealing acoustic basement, major faults, seismic sequenced. SKQ12 South 21000.0 22000.0 23000.0 24000.0 25000.0 26000.0 27000.0 26000.0 30000.0 31000.0 32000.0 33000.0 34000.0 \$6000.0 36000.0 37000.0 38000.0 Northwind Ridge Turning 'b' Chukchi Plateau Turning 'c' Northwind Basin Northwind Basin Turning 'a' SKQ12 - Processed multiple elimination South North - West East - South SP: 0.000 21000.0 22000.0 23000.0 24000.0 25000.0 26000.0 27000.0 28000.0 29000.0 30000.0 31000.0 32000.0 33000.0 34000.0 36000.0 36000.0 37000.0 38000.0 39000.0 Northwind Ridge S 1.000 4.000 5.000 50 km 6.000 - Basement a. NOT Velocity (km/s) b. Sikuliaq 2021 - OBS Array 2 - Line P3 Oceanic Crust (km/s) Water layer 2 layer 3 Depth (km) 8.0 Moho -young-slow -old-slow Distance (km) - Sikuliaq P3 (south) - Sikuliag P3 (north) Velocity model line P3 from forwardleft side: average velocity models for oceanic crust

Seismic profile across fossil spreading ridge in the Canada Basin from west to east shows geometry of axial fossil ridge. (a) Line SKQ43. (b) Line SKQ59.



Basement surface map (two-way travel time) based on all MCS data available across Canada Basin shows a linear feature of fossil ridge from south to north

modelling of travel times using ray-tracing

(Christensen et al. 2019) compared to line P3; right side: velocity models obtained from sonobuoys in the oceanic domain of Canada Basin (Chian et al. 2016)



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