Earthquake Report: 2018.08.22
M 6.2 Blanco fz (& USGS Seismicity 1918-2018 M ≥ 6.0)

Total Intensity Anomaly (nT)
-200 -150 -100 -50 0 50 100 150 200

CIRES

Jason R. Patton
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USGS Google Earth

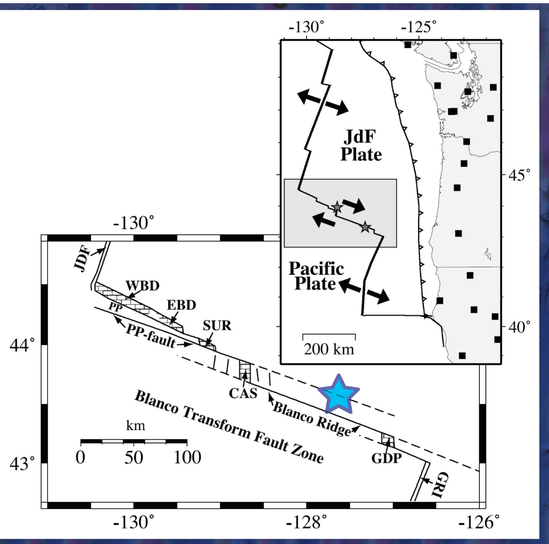
Depth to Slab (km)
0 50 100 150 200 250 300 350 400 450 500 550 600 650 700

Plate Boundaries
Divergent
Transform
Convergent
Other
Plate Motion
*Plate motion vectors relative to fixed North American plate coordinates

Normal Fault | Thrust Fault | Strike-Slip Fault
Top View
Side View
Side View

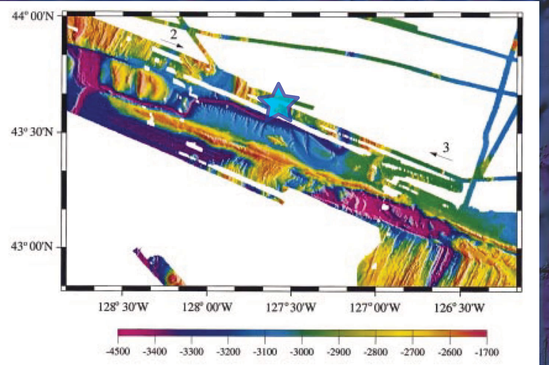
INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+
Shaking	Not felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme
Damage	None	None	None	Very slight	Light	Moderate	Moderate/ heavy	Heavy	Very heavy
Peak Acc	<0.17	0.17-1.4	1.4-3.9	3.9-9.2	9.2-18	18-34	34-65	65-124	>124
Peak Vel	<0.1	0.1- 1.1	1.1- 3.4	3.4- 8.1	8.1- 16	16 - 31	31 - 60	60-116	>116

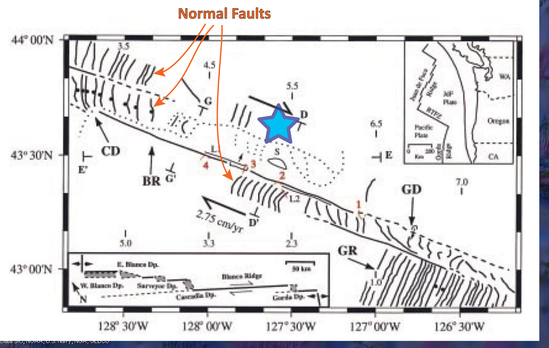
Peak Acc = Peak ground acceleration (g), Peak Vel = Peak ground velocity (cm/s)



Braunmiller and Nabelek, 2008

Dziak et al., 2001





Pacific plate
Juan de Fuca plate
Juan de Fuca Ridge
2018.08.22
M 6.2
North America plate
Cascadia subduction zone
2003.01.16
M 6.3
2000.06.02
M 6.2
generic mechanism
2008.01.10
M 6.3
2000.01.20
M 6.1
Blanco fracture zone
2012.04.11
M 6.0
1981.11.03
M 6.2
1994.10.27
M 6.3
1985.03.13
M 6.5
1993.09.21
M 6.0
1991.07.13
M 6.9
2005.06.15
M 7.2
Gorda Rise
Gorda plate
1992.04.25
M 7.1
generic mechanism
Mendocino fault
1994.09.01
M 7.0
Pacific plate
San Andreas fault
generic mechanism

Magnitude
8 7 6 5 4 3 2 1

Depth (km)
0 - 33
33 - 70
70 - 150
150 - 300
300 - 500
500 - 800

USGS Quaternary Fault and Fold Database
Historic
Holocene / Latest Pleistocene
Late Quaternary
Mid-Late Quaternary
Quaternary
USGS

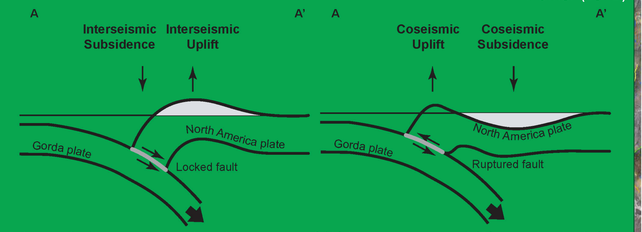
Cascadia subduction zone

Chaytor et al. (2004)
Nelson et al. (2004)

Plate configuration for the Cascadia subduction zone (CSZ). The Juan de Fuca and Gorda plates are subducting northeastwardly oblique beneath the North America plate at ~36 mm/yr in the Humboldt Bay region. Paleoseismic core sites (marine and terrestrial) are plotted as circles.

Vertical Motion: Coseismic vs. Interseismic

Plafker (1972)



Schematic diagrams showing the pattern of (A) inter-seismic and (B) co-seismic deformation associated witha subduction zone earthquake during an earthquake deformation cycle. Adapted from Plafker (1972) to reflect the spatial pattern of tectonic deformation during the earthquake cycle in Cascadia.