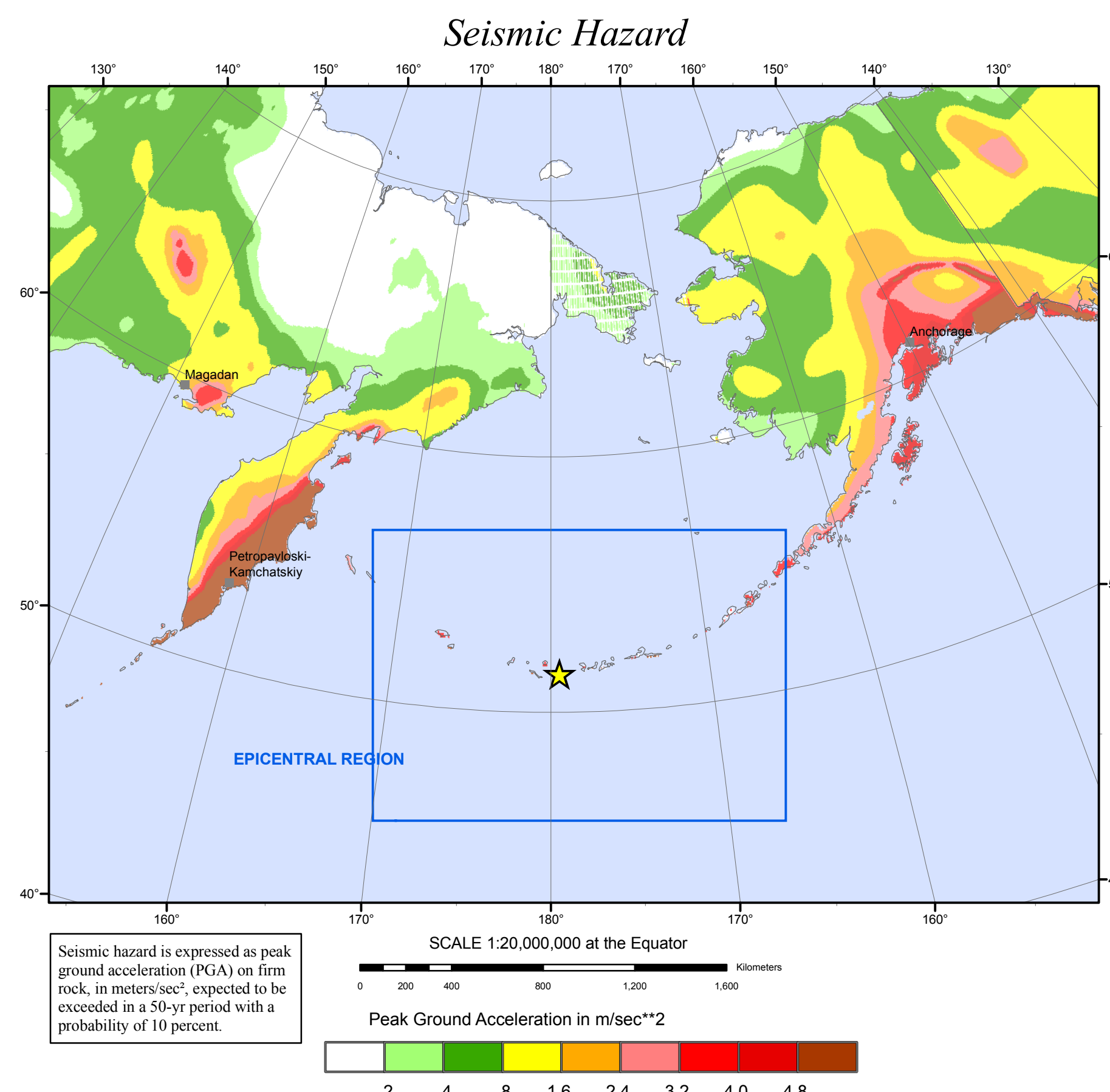
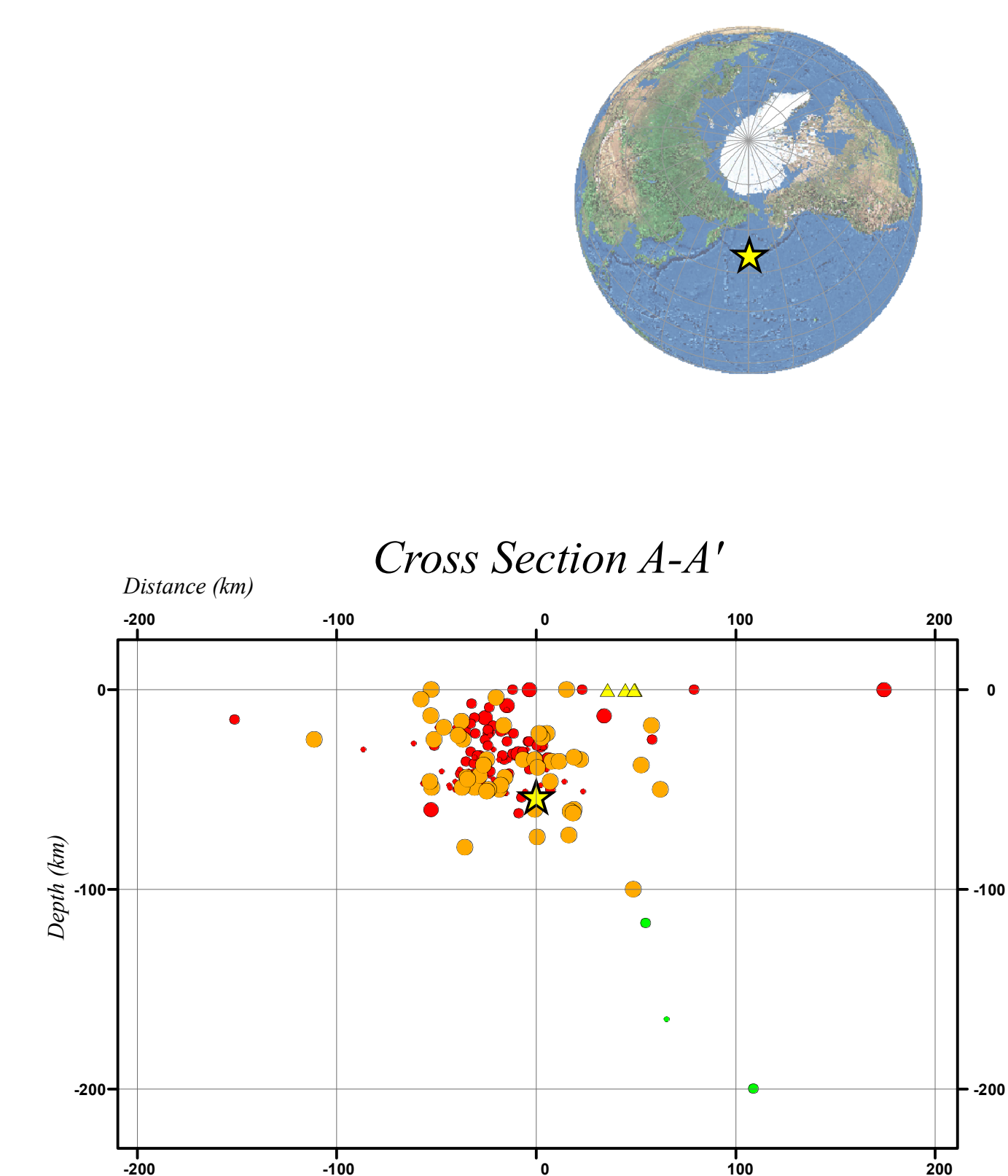
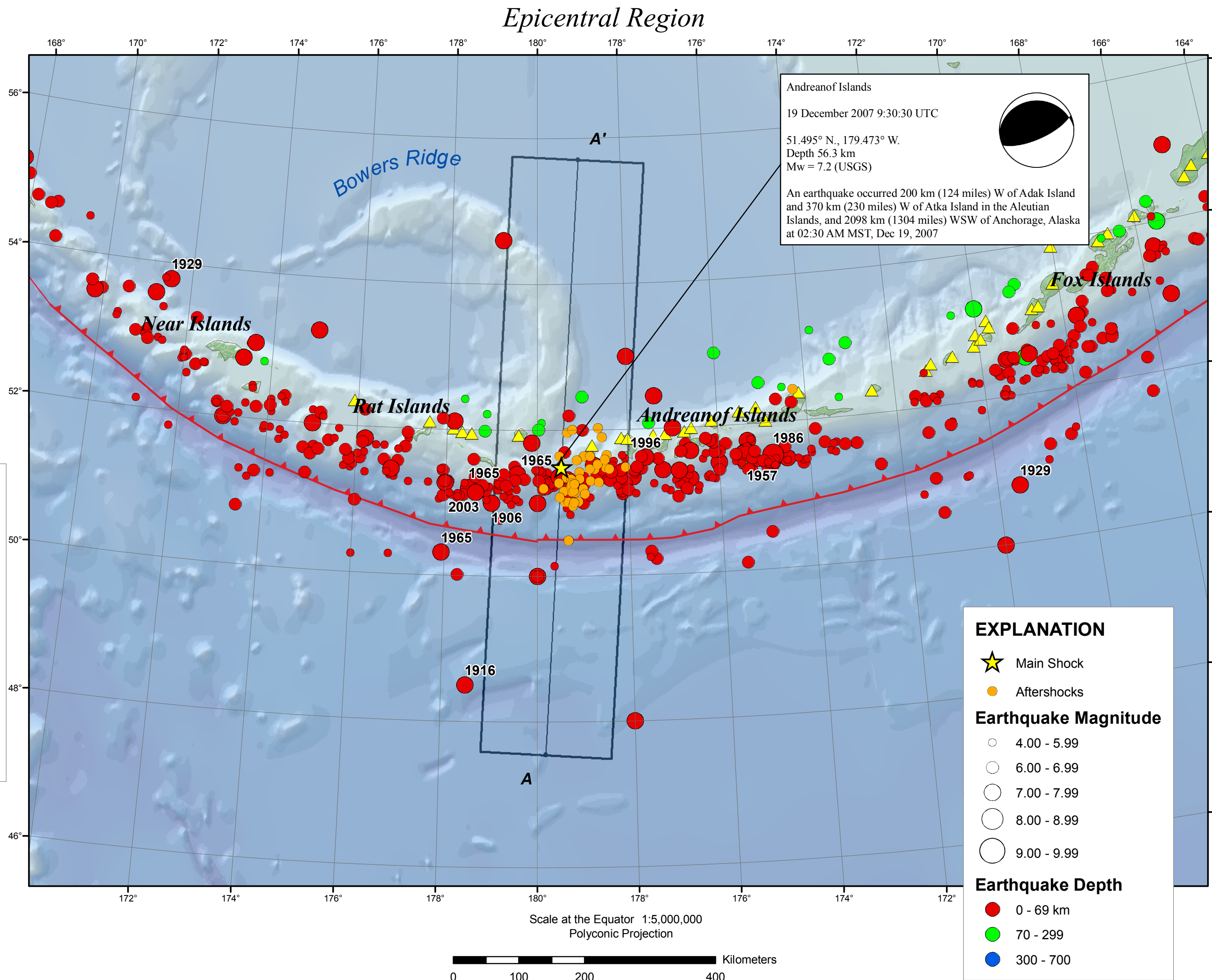
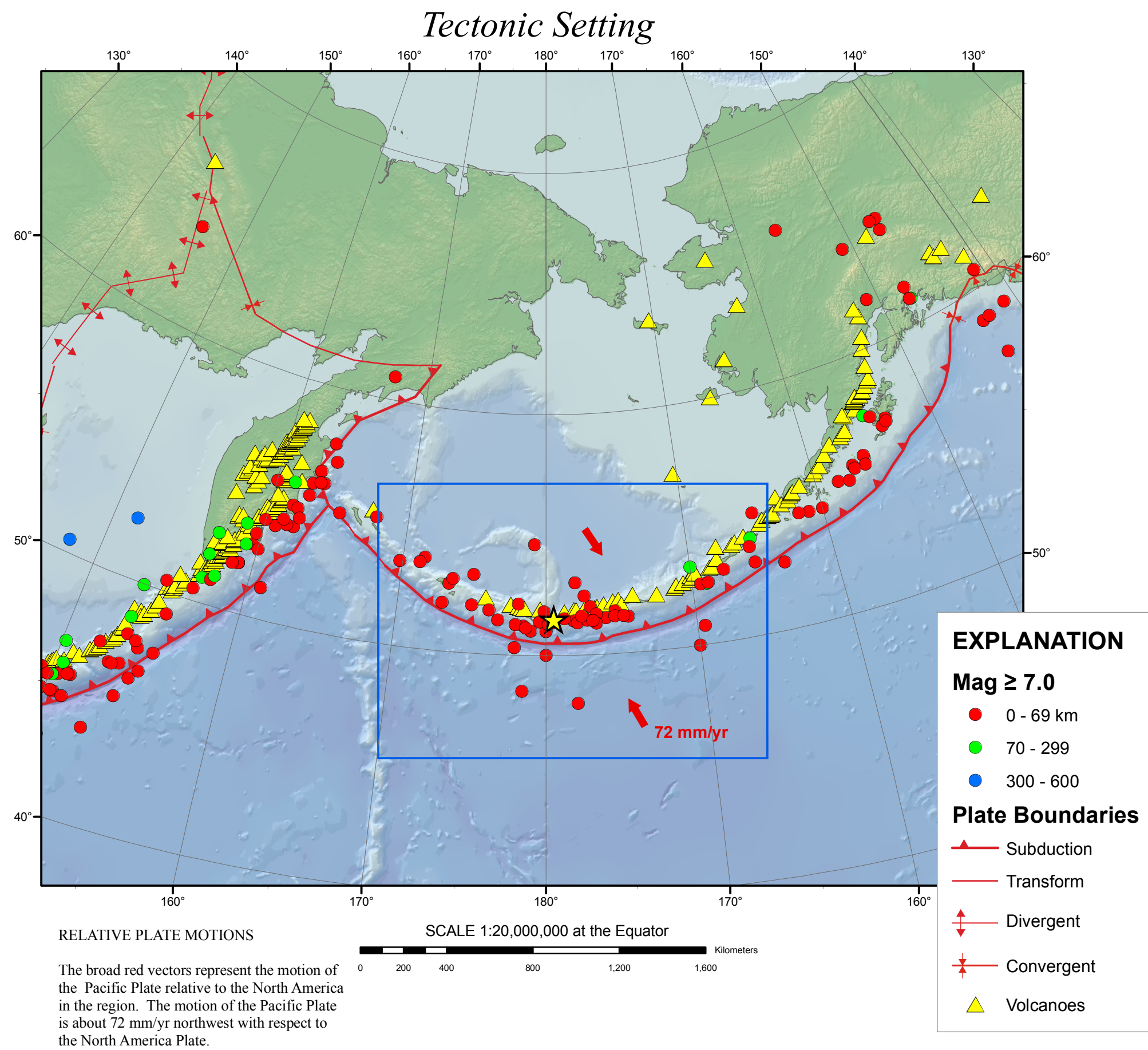


M7.2 Andreanof (Aleutian Islands), Alaska Earthquakes of 19 December 2007



DISCUSSION

The Aleutian Islands earthquake of December 19, 2007, occurred on the boundary between the North America plate and the Pacific plate. In this region, the Pacific plate moves to the northwest with respect to the North American plate with a velocity of about 72 mm/y. The Pacific plate subducts beneath the North American plate at the Aleutian trench. The earthquake occurred as thrust-faulting on the interface between the plates.

The earthquake of December 19, 2007, ruptured a segment of the Pacific/North America plate boundary that is spatially situated between the segments of the plate boundary that ruptured in the great Aleutian Island earthquakes of March 9, 1957 (magnitude 8.6) and February 4, 1965 (magnitude 8.7). Great earthquakes also occurred in the central Aleutian arc on May 7, 1986 (magnitude 8.7, about 300 km distant from the site of the 2007 earthquake) and June 10, 1996 (magnitude 7.9, about 150 km distant from the site of the 2007 earthquake).

Significant Earthquakes Mag ≥ 7.5

Year	Mon	Day	Time	Lat	Long	Dep	Mag
1906	08	17	0010	51.000	179.000	0	7.8
1916	02	06	2151	48.500	178.500	0	7.7
1929	03	07	0134	50.786	-169.524	25	7.8
1929	12	17	1058	53.783	171.512	35	7.7
1957	03	09	1422	51.556	-175.392	30	9.1
1965	02	04	0501	51.209	178.499	30.1	7.5
1965	02	04	0840	51.397	179.560	8.2	7.8
1965	03	30	0227	50.314	177.935	20	7.7
1986	05	07	2247	51.557	-174.813	28.2	8.0
1996	06	10	0403	51.613	-177.615	28	7.9
2003	11	17	0643	51.146	178.650	33	7.8

DISCLAIMER

Base map data, such as place names and political boundaries, are the best available but may not be current or may contain inaccuracies and therefore should not be regarded as having official significance.

DATA SOURCES

EARTHQUAKES AND SEISMIC HAZARD
USGS, National Earthquake Information Center
NOAA, National Geophysical Data Center
IASPEI, Centennial Catalog (1900 - 1999) and extensions (Engdahl and Villaseñor, 2002)
HDF (unpublished earthquake catalog) (Engdahl, 2003)
PLATE TECTONICS AND FAULT MODEL
PB2002 (Bird, 2003)
BASE MAP
NIMA and ESRI, Digital Chart of the World
USGS, EROS Data Center
NOAA GEBCO and GLOBE Elevation Models

REFERENCES

Bird, P., 2003. An updated digital model of plate boundaries: *Geochem. Geophys. Geosyst.*, v. 4, no. 3, pp. 1027-80.
Engdahl, E.R. and Villaseñor, A., 2002. *Global Seismicity: 1900 - 1999*, chap. 41 of Lee, W.H.K., and others, eds., *International Earthquake and Engineering Seismology*, Part A: New York, N.Y., Elsevier Academic Press, 932 p.
Engdahl, E.R., Van der Hilst, R.D., and Buland, R.P., 1998. Global teleseismic earthquake relocation with improved travel times and procedures for depth determination. *Bull. Seism. Soc. Amer.*, v. 88, p. 722-743.

