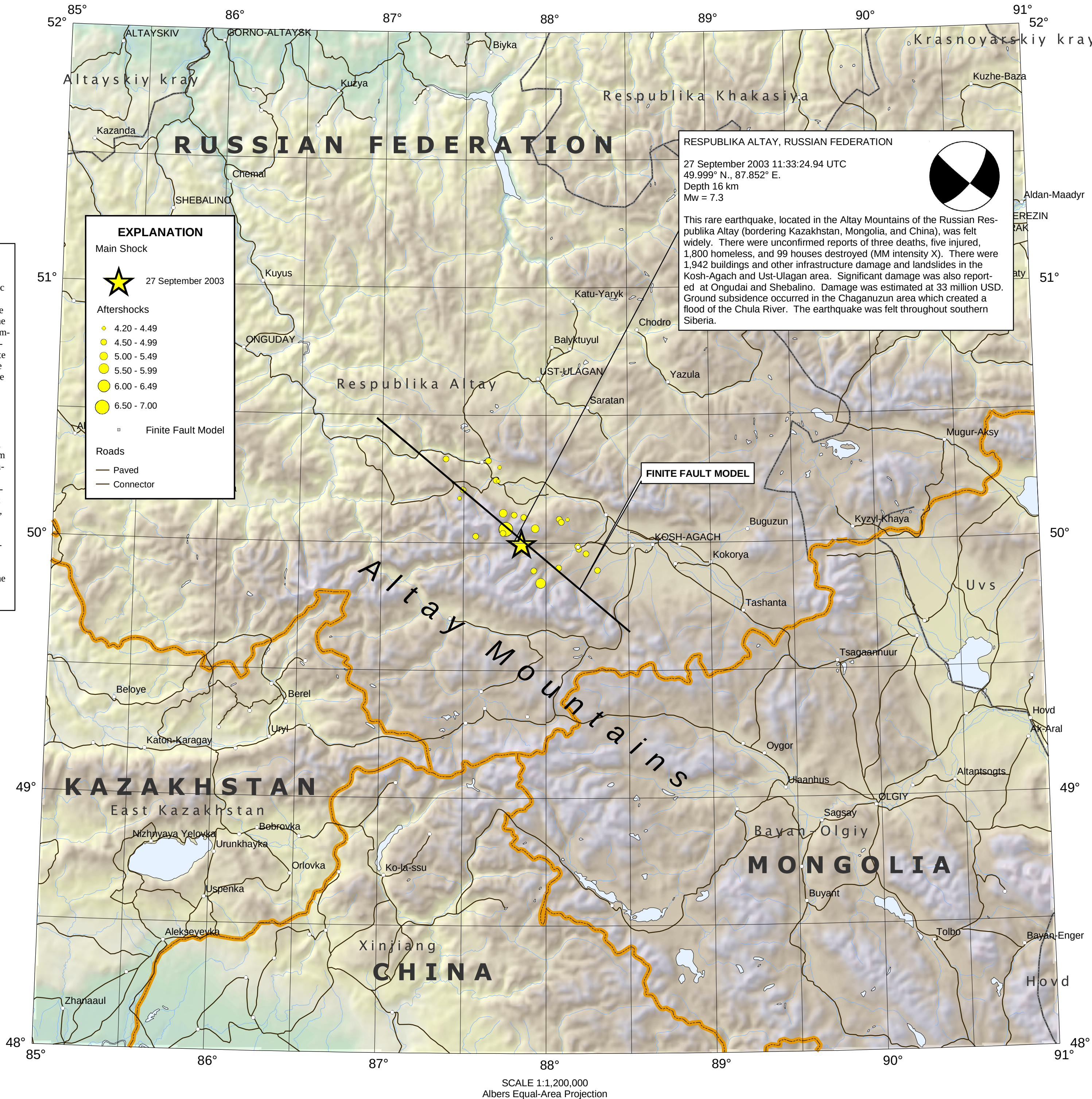
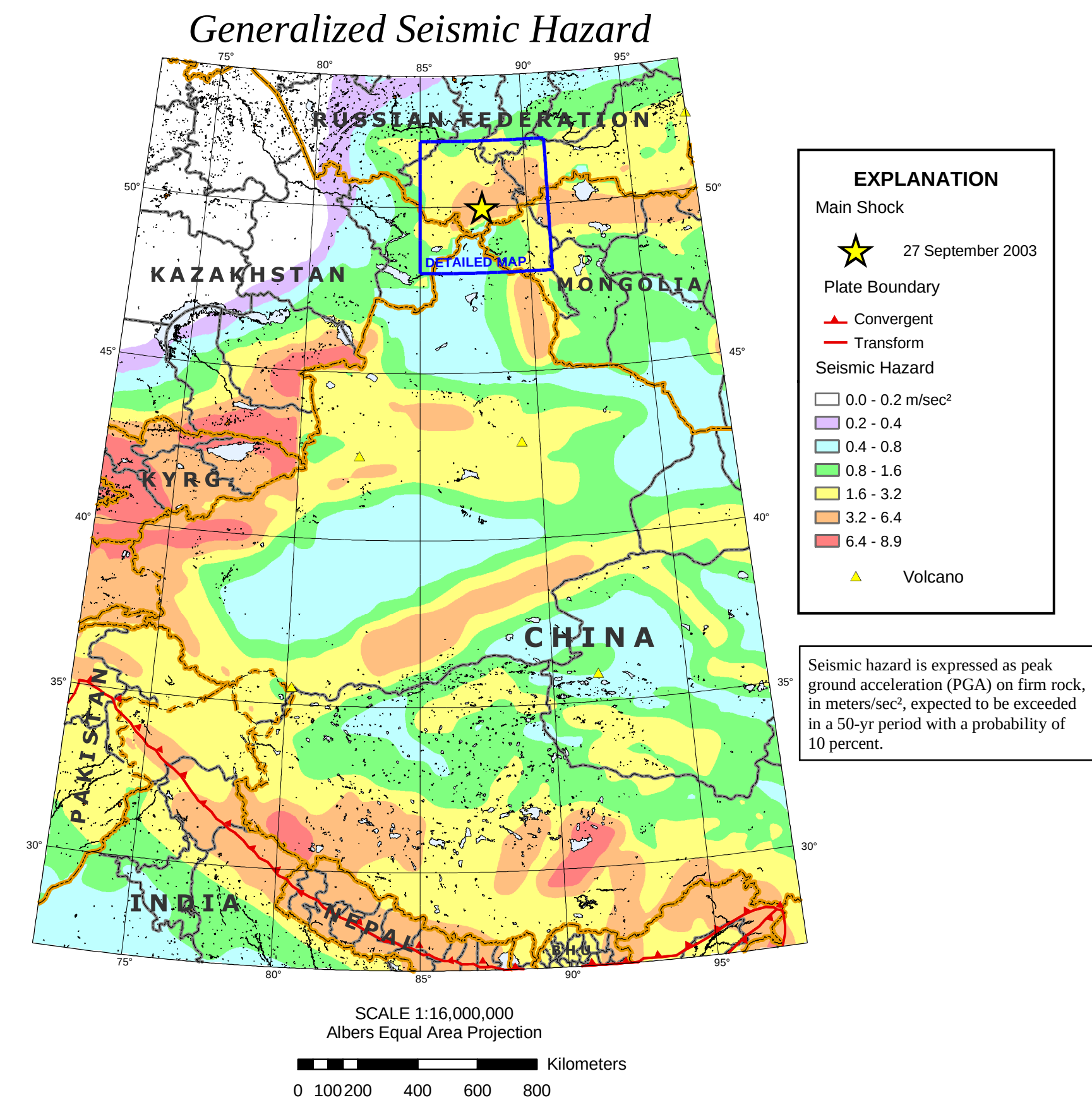
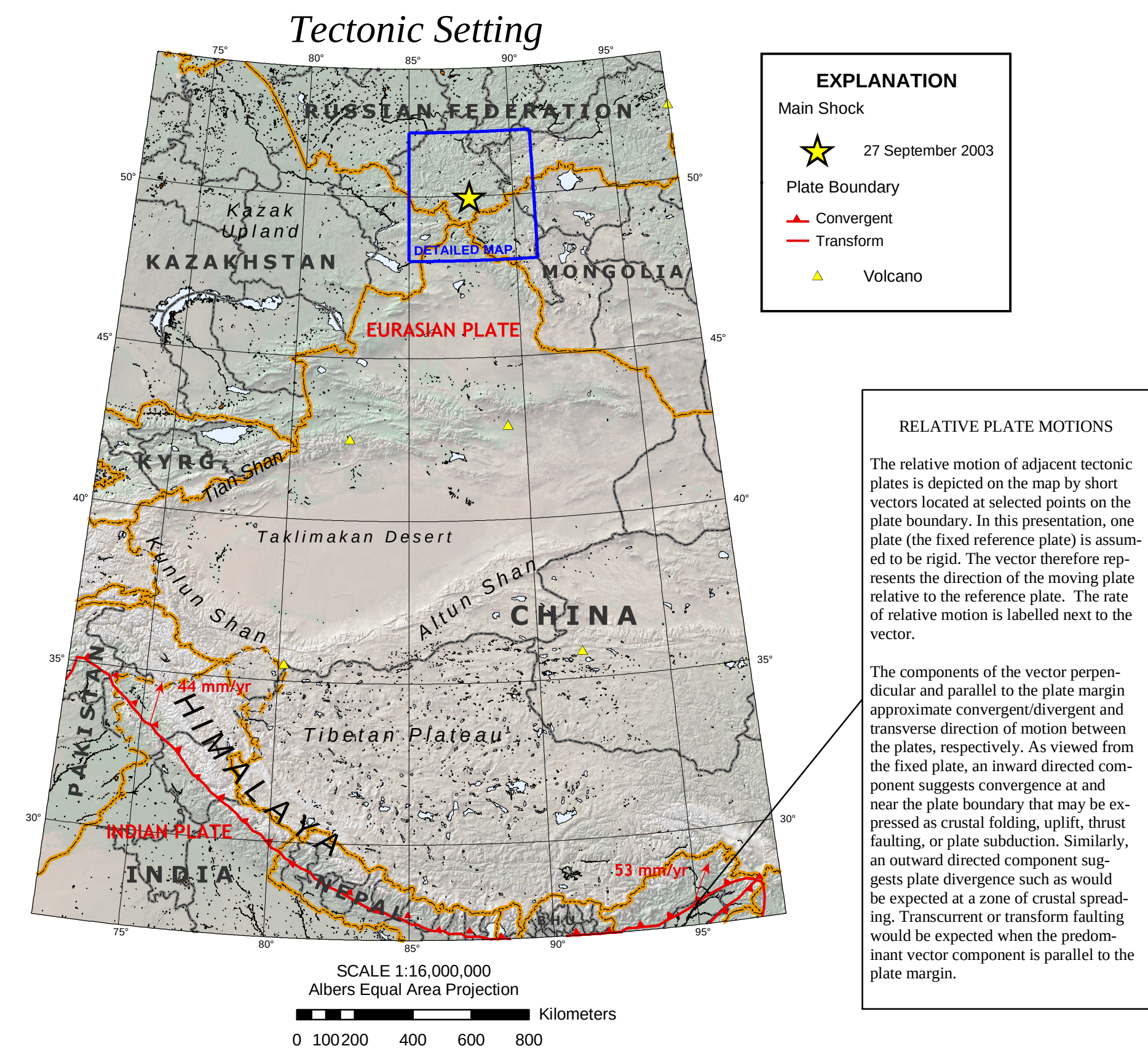


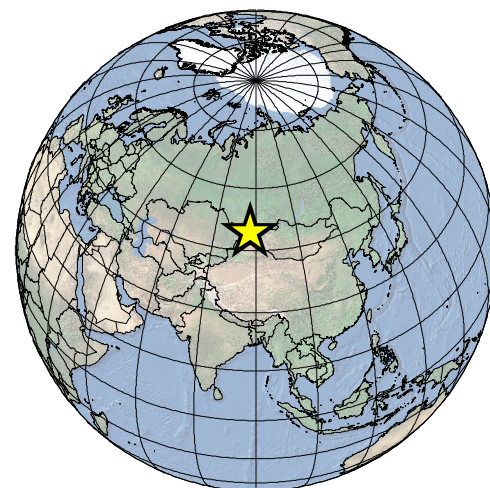
M7.3 Respublika Altay, Russian Federation Earthquake of 27 September 2003



DISCUSSION

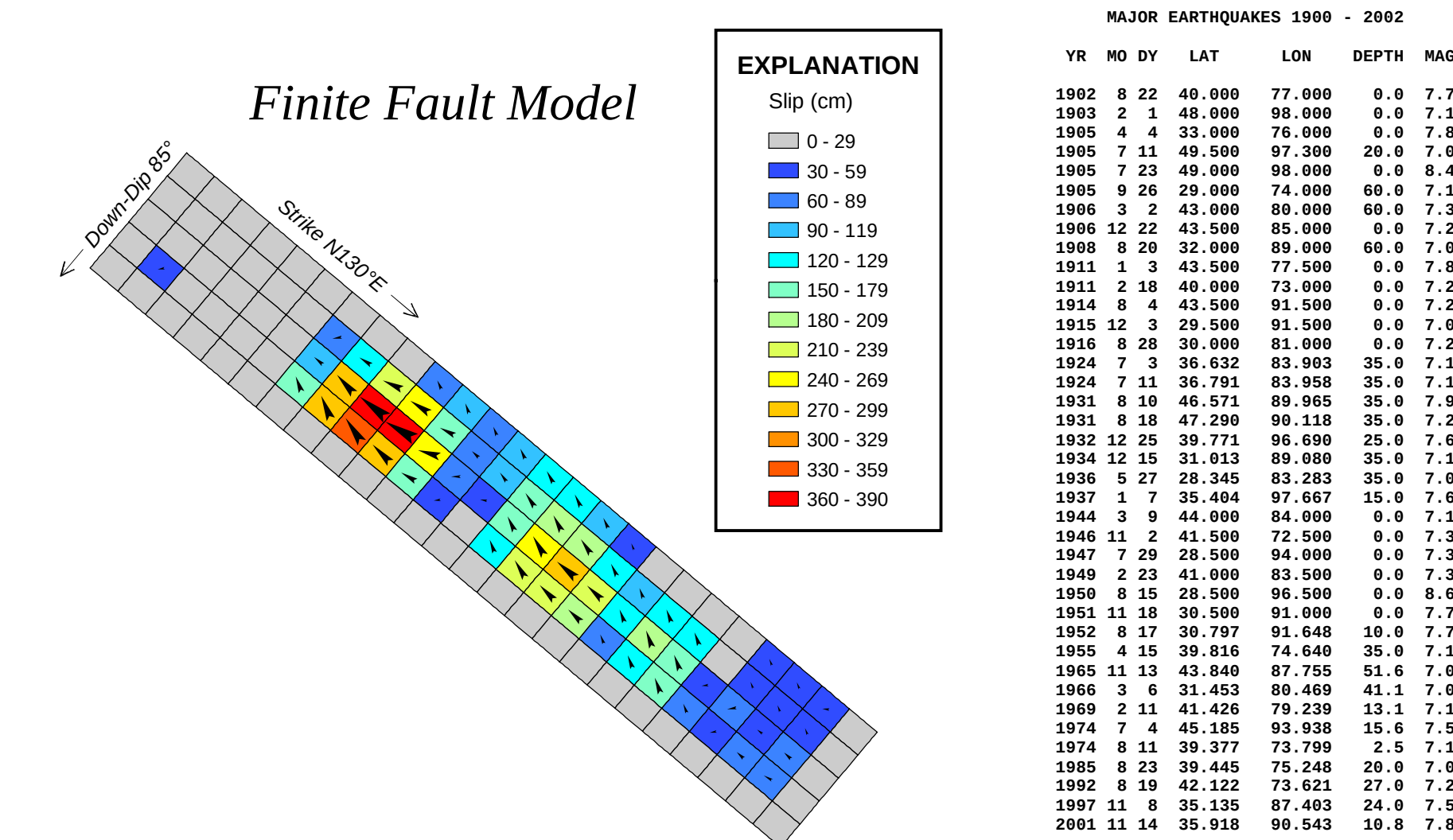
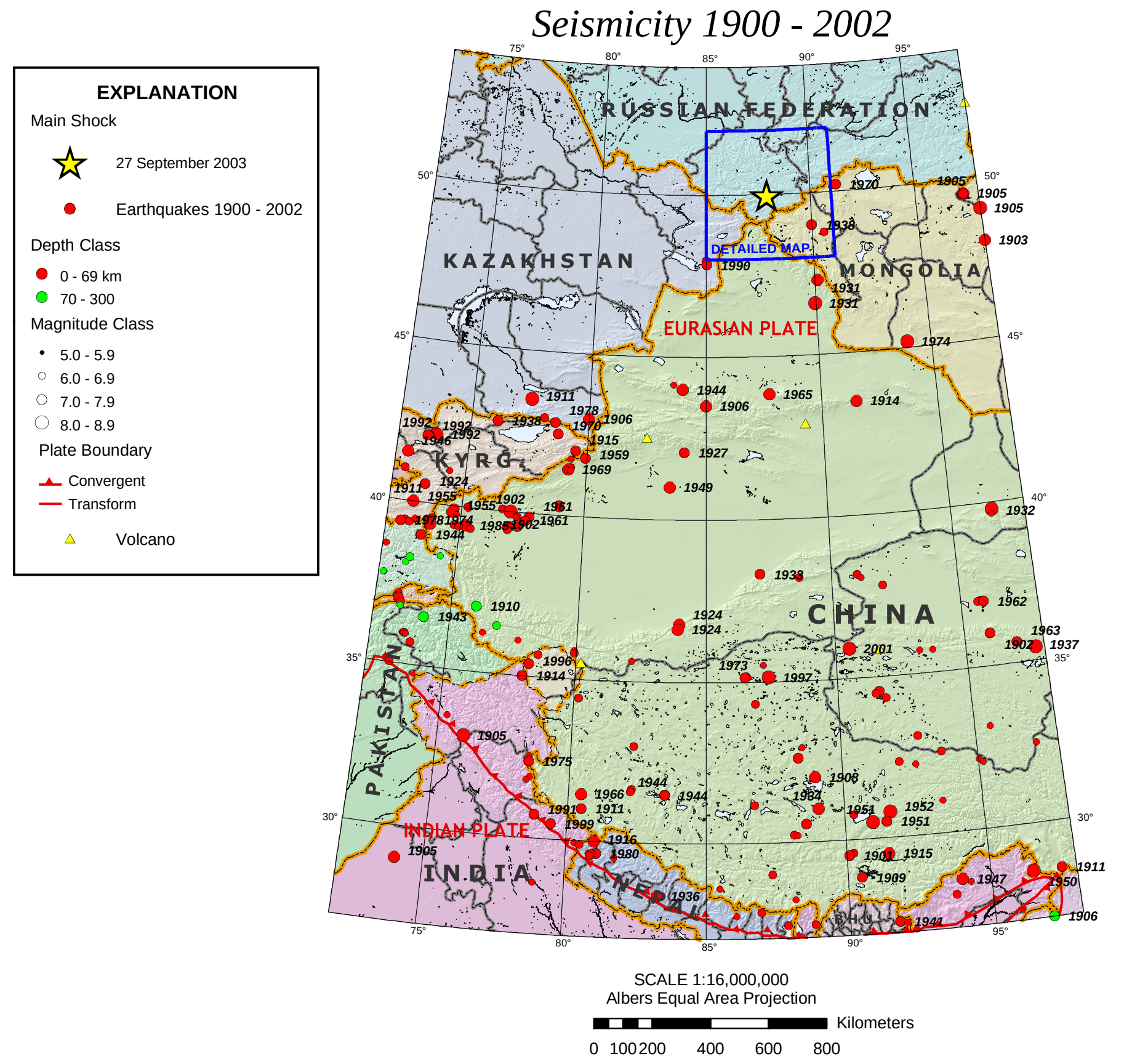
This earthquake resulted from stresses originating with the collision of the Indian plate against the Eurasian plate. The collision of the two major plates has generated the Himalayan mountains, far to the south of the epicenter of this earthquake, and produces deformation of the earth's crust over a broad region of central and eastern Asia. In the epicentral region of southern Russia, north-western China, eastern Kazakhstan, and western Mongolia, earthquakes of past decades have been caused by strike-slip faulting (as with this earthquake) and reverse faulting.

This earthquake is the largest in this region since an earthquake on December 20, 1761 that is thought to have had a magnitude of about 7.7.



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.



FINITE FAULT MODEL
(C. J. California Institute of Technology)

Distribution of the amplitude and direction of slip for subfault elements (small rectangles) of the fault rupture model are determined from the inversion of teleseismic body waveforms. Arrows indicate the amplitude and direction of slip (of the hanging wall with respect to the foot wall); the slip amount is also color-coded as shown. The view is from above, perpendicular to the fault plane.

The fact that the orientation of the finite fault plane may differ from the corresponding best double couple nodal plane depicted in the focal mechanism diagram on the main map reflects differing methods of analysis and data sets.

The strike of the fault rupture plane is N130°E and the dip is 85°. The dimensions of the subfault elements are 6 km in the strike direction and 5 km in the dip direction.

DATA SOURCES

EARTHQUAKES AND SEISMIC HAZARD
USGS, National Earthquake Information Center
NOAA, National Geophysical Data Center
IASPEI, Centennial Catalog (1900 - 1999)
Handbook of Seismology and Earthquake Engineering
Global Seismic Hazard Assessment Program

PLATE TECTONICS
Smithsonian Institution, Global Volcano Program

BASE MAP
NIMA and ESRI, Digital Chart of the World
USGS, EROS Data Center

Map prepared by U.S. Geological Survey
National Earthquake Information Center
7 October 2003
Map not approved for release by Director USGS