

Neotectonics of North America

edited by **D.B. Slemmons, E.R. Engdahl, M.D. Zoback, D.B. Blackwell**, ISBN 0-8137-5306-6; The Geological Society of America, Inc., Boulder, Colorado, 1992; 508 pgs., \$65.00.

Review by Christopher G. Kendall

Attached to this volume are three map pockets which are: (1) the seismicity map of North America (4 sheets, price: \$25), (2) the stress map of North America (4 sheets, price: \$36), and (3) geothermal map of North America (4 sheets, price: \$37.50).

The text presented here consists of some 28 papers describing the seismicity, stress, and geothermal aspects of North America. The map for neotectonics has been postponed and the editors claim it is indefinitely delayed. The book is beautifully illustrated. Maps are clear and the references are timely.

Though the book is divided into 4 parts: (1) seismicity, (2) stress, (3) thermal aspects, and (4) neotectonics, most of the chapters (18 in all) deal with the seismotectonics or seismicity of the United States.

The papers describe the seismicity of North America beginning in the Aleutians and working down the West Coast to Central America. It also deals with the Central U.S. and the East Coast. All of these papers have cross-sections and maps showing locations of epicenters for most of the major earthquakes of these regions. These have been compiled from written records that have been kept in some cases as far back as to 1534. However, most of the information displayed in these papers was gathered from the 1900s to the present day.

The section on stress contains some 4 papers discussing tectonic stress in North America, Canada, Alaska, Mexico and Western Central America. The data sources for the stress data comes from earthquake focal mechanisms, stress induced well breakouts, in situ measurements at depth, and geological data such as volcanic alignment and fault slip events.

The thermal aspects papers contain discussions on heat flow patterns for North America, terrestrial heat flow in Canada, heat flow through the Canadian Cordillera, an overview of heat flow for the Southwestern U.S. and the Northern Chihuahua Mexico and the surface temperatures in the Northern plains. Finally, there is a paper on the neotectonics describing the Late Quaternary glacial isostatic recovery of North America, Greenland and Iceland from a neotectonic perspective.

This book brings together under one title the massive quantity of information on the seismicity, tectonics of the U.S., while particularly recognizing the effects of plate tectonics and movement. It is a text that should be extremely useful to the exploration geophysicists and academics, in that it identifies the zones of different types of crustal deformation and suggest mechanisms for this deformation.

The book should be a must for most libraries, academics and hydrocarbon exploration offices. It should find it's way on the shelves of those who have an interest in the seismicity of the North American continent. The papers read well and the whole volume has a very professional feel to it.