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MAP SHEET SERIES**

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**Geologic Map of the North Lake Tahoe – Donner Pass Region,
Northern Sierra Nevada, California**

by:

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This new map of the Lake Tahoe-Donner Pass region covers the north part of the Tahoe-Truckee graben. The map represents the work of the authors with contributions from 136 students and graduate teaching assistants at the University of California, Santa Barbara over a number of years. The basement rocks in the Donner Pass region, on the west side of the graben, consist of late Paleozoic metasedimentary rocks and Mesozoic metavolcanic rocks intruded by Cretaceous granite, in contrast to the eastern side in Nevada where basement is Cretaceous granite. Tertiary and Quaternary andesitic and basaltic lava flows and andesitic volcanoclastic rocks erupted in four main periods covering the basement rocks. Seven Oligocene rhyolitic ignimbrite flow units and abundant Miocene and Pliocene andesitic flows and volcanoclastic rocks fill an Eocene paleovalley in the basement near the summit of Donner Pass. Quaternary valley glaciers and streams carved the west shoulder of the graben and deposited till, drift, and alluvium in the graben. Several major fault zones are in the graben including the Brockway Fault, the West Tahoe-Dollar Point Fault, the Carnelian and Agate Bay faults, and the Polaris Fault. The faults are right-oblique normal faults, with local strike-separations from ¼ to ½ kilometer, and all are considered to be active. The Tahoe-Sierra Frontal Fault Zone bounds the west side of the graben and vertically separates the Pliocene debris avalanche of Mt. Disney about 500 m, thus yielding a maximum age of fault displacement of about 4 Ma. Evidence for younger displacement across any of the zone's discrete faults is scanty and not compelling.

This report is available as a printed map at 1:48,000 scale with an accompanying 45 page pamphlet.

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