

2007 GSA Denver Annual Meeting (28–31 October 2007)

Paper No. 58-1

Presentation Time: 6:00 PM-8:00 PM

A NEW MAP OF THE ECHO CRATER AREA; CRATERS OF THE MOON NATIONAL MONUMENT AND PRESERVE, ID

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Craters of the Moon National Monument (COM), Idaho, constitutes the largest Pleistocene and Holocene basaltic lava field in the continental United States. COM features all morphologies associated with basaltic volcanism, including 60 distinct flows and 25 major cinder cones. One such major cone is Echo Crater, located 10 kilometers south of the COM visitor center. The Echo Crater area had been previously mapped at 1:24,000; the researchers present a more detailed (1:12,000) map of the region, available at home.nps.gov/crmo/naturescience/geologicformations.htm.

The new map presents two important reinterpretations. The first involves a shallow rectangular saddle at the SE edge of Crescent Butte, previously identified as Trench Mortar Flat (TMF) pahoehoe (2205 Ka), separating Crescent Butte from the Little Prairie flow. A 2 meter ridge along the SE edge of the saddle was previously identified as the Little Prairie-TMF contact. However, the heavy vegetation in the saddle, lack of TMF flow fronts, and lack of onlap or deflation features at the ridge led to the conclusion that the saddle region is Little Prairie flow and that the ridge is another flow front. A second reinterpretation involves a channelized trough near the Sentinel cone previously mapped as a lava channel. Field observation indicated that the channel's walls are spatter ramparts rather than lava levees, suggesting the trough is an elongated vent rather than a channel. Numerous new features were added to the map as geologic points of interest. These include spatter ramparts featuring well-preserved slump fault striations, detailed outlines of spatter blocks on the Echo Crater flank, and a new tree mold, now the deepest on record at COM (4.44 m).

The new map further refines our understanding of the volcanic history of the Echo Crater area and continues the ongoing inventory of the geologic resources of COM. Together with the accompanying list of points of interest, the new map also serves as a valuable educational tool for geologically inclined visitors.

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[General Information for this Meeting](#)

Session No. 58--Booth# 49

[Geologic Mapping: Innovations and Interoperability \(Posters\)](#)

Colorado Convention Center: Exhibit Hall E/F

6:00 PM-8:00 PM, Sunday, 28 October 2007

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