

Abstracts of Papers

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**The Castle Rocks Chaos: A Gigantic Eocene
Landslide-Debris Flow within the Absaroka
Volcanic Sequence, Northwestern Wyoming**

The Castle Rocks chaos is a new subdivision of the
Wiggins Formation within the Absaroka Volcanic

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Supergroup. The chaos consists of large homogeneous blocks and highly contorted masses of hornblende andesite breccia in an unsorted heterogeneous matrix of boulder- to clay-size volcanoclastic material. The unit has been mapped throughout a 900 km² area and involves 292 km³ of material.

The unit contains features characteristic of both landslides and debris flows. The large andesite blocks show striated basal detachment surfaces and extensive deformation beneath the blocks. The texture and composition of the matrix, sedimentary structures in the matrix and lack of deformation in rocks beneath the matrix suggest movement as a viscous debris flow.

The deposit is interpreted as a combined landslide and debris flow that occurred during the late middle Eocene. The event began as a gigantic landslide on the southeastern flank of a major volcanic center in the upper Wood River area. It broke into many large resistant blocks and incorporated poorly lithified volcanoclastic sediments into the moving mass. The secondarily incorporated matrix engulfed the sliding blocks and the unit began to move as a viscous debris flow. The matrix helped move, and possibly raft, large andesite blocks (up to 75,000,000 m³ in volume) more than 32 km from the source area. Long distance transport of the material was facilitated by the development of dynamic transient high pore-fluid pressures. The unit was emplaced upon a major Eocene erosion surface, locally filling more than 800 m of paleotopography.