

Pleistocene time in the geological timescale.⁹ One submarine slide in particular, the South Kona Landslide off the south-west coast of the island of Hawaii, revealed giant landslide blocks that slid into the deep ocean.¹⁰ Numerous blocks of basalt lava became detached from near the shoreline of the island and slid rapidly up to 80 km oceanward. The last 40 kilometres crossed over the relatively flat bottom beyond the base of the island slope! Nine blocks exceed 5 km in greatest dimension and stick up hundreds of metres above the ocean bottom. The largest block stands 700 m high and is 11.5 km by 7.5 km in area! Other large blocks have been documented in other deep-ocean areas off the Hawaiian Ridge. The blocks in these landslides are larger and slid farther than the Heart Mountain detachment.

Scott Rugg presents an excellent model for rapid detachment faulting during the catastrophic later stages of the Genesis Flood.¹¹ Within the Flood model, it seems reasonable that giant earthquakes from mountain uplift and the rapid volcanism of the Absaroka Volcanics shook the carbonates loose and caused them to catastrophically slide with other volcanic debris downhill into the western Big Horn

Basin. A catastrophic submarine slide, instead of a subaerial slide, similar to the South Kona Landslide, would more easily account for the long-runout of the Heart Mountain detachment. The fact that the Absaroka Mountains are well-bedded, up to 3,000 m thick, and aerially extensive suggests that the Heart Mountain detachment occurred underwater and that the Big Horn Basin was a deep trough at the time. The volcanic debris associated with the Heart Mountain detachment has recently been suggested to be a *huge debris slide*.¹² If this is shown to be correct, it adds credence to the catastrophic detachment theory. It will also be one of the few giant pre-Pleistocene landslides.¹³

REFERENCES

1. Hauge, T. A., 1993. The Heart Mountain detachment, northwestern Wyoming: 100 years of controversy. *In: Geology of Wyoming*, A. W. Snoke, J. R. Steidtmann and S. M. Roberts (eds), Geological Survey of Wyoming Memoir No. 5, p. 531.
2. Hauge, Ref. 1, pp. 531-571.
3. Pierce, W. G., 1979. Clastic dikes of Heart Mountain Fault Breccia, northwestern Wyoming, and their significance. *U.S. Geological Survey Professional Paper* 1133, US Government Printing Office, Washington, D.C.
4. Nelson, W. H., 1991. Kinematic model of a continuous Heart Mountain allochthon: discussion and reply—discussion. *Geological Society of America Bulletin*, 103:718-719.
5. Pierce, W. G., Nelson, W. H., Tokarski, A. K. and Piekarska, E., 1991. Heart Mountain, Wyoming, detachment lineations: are they in microbreccia or in volcanic tuff? *Geological Society of America Bulletin*, 103:1133-1145.
6. Hauge, Ref. 1, pp. 531-571.
7. Hauge, T. A., 1991. Kinematic model of a continuous Heart Mountain allochthon: discussion and reply — reply. *Geological Society of America Bulletin*, 103:719-722.
8. Hauge, Ref. 1, p. 532.
9. Oard, M. J., 1995. Where are all the pre-Pleistocene giant landslide deposits? *CEN Tech. J.*, 9(1):69-70.
10. Moore, J. G., Bryan, W. B., Beeson, M. H. and Normark, W. R., 1995. Giant blocks in the South Kona Landslide, Hawaii. *Geology*, 23:125-128.
11. Rugg, S. R., 1990. Detachment faults in the southwestern United States — evidence for a short and catastrophic Tertiary Period. *In: Proceedings of the Second International Conference on Creationism*, R. E. Walsh and C. L. Brooks (eds), Creation Science Fellowship, Pittsburgh, Pennsylvania, Vol. 2, pp. 217-229.
12. Malone, D. H., 1995. Very large debris-avalanche deposit within the Eocene volcanic succession of the northeastern Absaroka Range, Wyoming. *Geology*, 23:661-664.
13. Oard, Ref. 9.

M.J.O.

QUOTABLE QUOTE: Christianity and Science

'But some will object, "If we allowed appealing to God anytime we don't understand something, then science itself would be impossible, for science proceeds on the assumption of natural causality." This argument is a red herring. It is true that science is not compatible with just any form of theism, particularly a theism that holds to a capricious god who intervenes so often that the contrast between primary and secondary causality is unintelligible. But Christian theism holds that secondary causality is God's usual mode and primary causality is infrequent, comparatively speaking. That is why Christianity, far from hindering the development of science, actually provided the womb for its birth and development.'

Moreland, J. P., 1989. **Christianity and the Nature of Science: A Philosophical Investigation**, Baker Book House Company, Grand Rapids, Michigan, p. 226.