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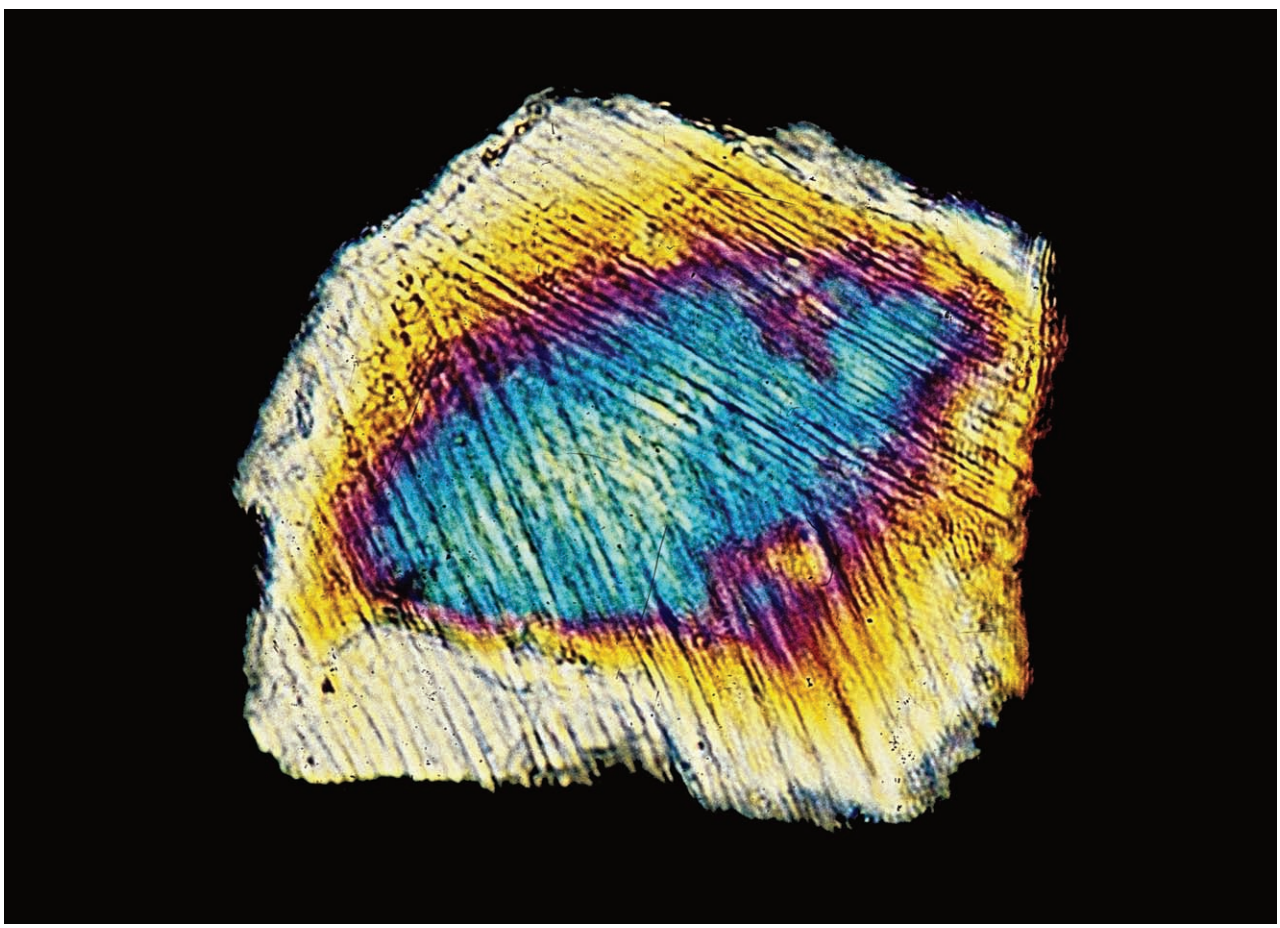
Prepared in cooperation with the
Hampton Roads Planning District Commission,
Virginia Department of Environmental Quality, and
National Aeronautics and Space Administration Langley Research Center

Studies of the Chesapeake Bay Impact Structure—The USGS-NASA Langley Corehole, Hampton, Virginia, and Related Coreholes and Geophysical Surveys



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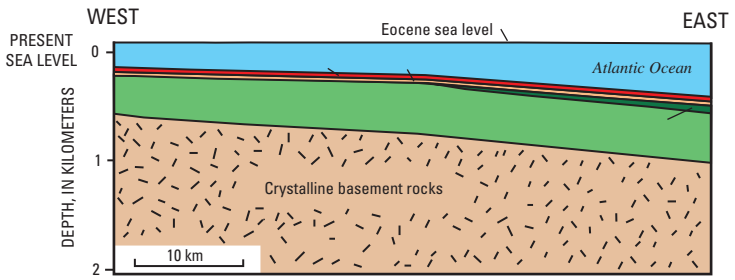
U.S. Department of the Interior
U.S. Geological Survey

Core samples of the Exmore beds from the USGS-NASA Langley corehole from depths of 266.3 to 262.8 meters (873.53 to 862.15 feet). A variety of sediment and rock clasts are suspended in a matrix of muddy quartz-glauconite sand. The Exmore beds are interpreted as debris-flow deposits produced by ocean resurge into the crater. See chapter C of this volume, figure C10*A*. Photograph by David S. Powars, U.S. Geological Survey.

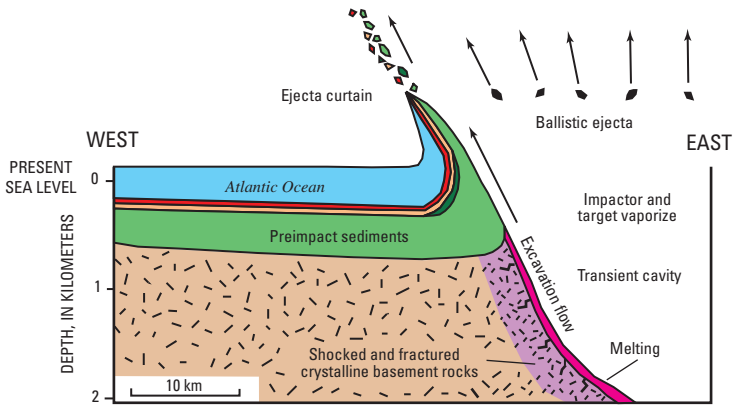
Front cover. This quartz grain from the matrix of the Exmore beds in the USGS-NASA Langley core contains two sets of shock-induced planar deformation features, providing unequivocal evidence for the impact of an asteroid or comet nucleus near the mouth of the present Chesapeake Bay. The grain is 0.13 millimeter (0.005 inch) in diameter and is from a depth of 250.1 meters (820.6 feet); it is also shown in chapter E of this volume (figure E2*E*). Photomicrograph (cross-polarized light) by Glen A. Izett (College of William and Mary and Emeritus, U.S. Geological Survey).

Back cover. Conceptual model for sequential stages in the formation of the Chesapeake Bay impact crater as presented in chapter A of this volume. Schematic cross sections show the western half of the crater along a west-to-east profile. From figureA7, which has the complete caption and discussion.

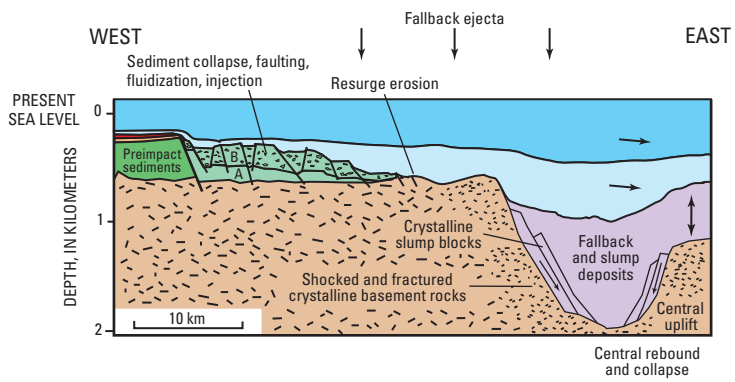
***A.* Preimpact target**



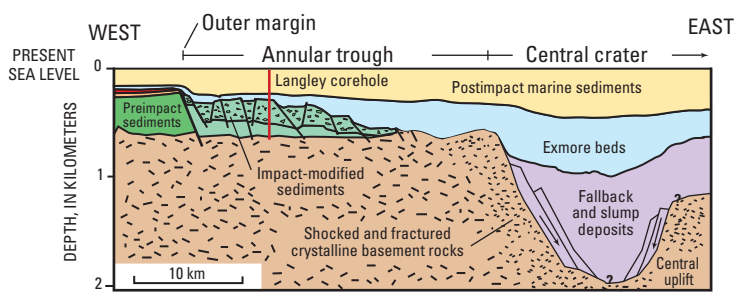
***B.* Contact compression followed by excavation**



***C.* Crater modification (collapse, slump blocks, and water resurge)**



***D.* Postimpact burial**



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