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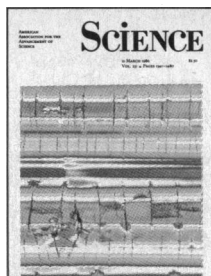
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COVER Optical micrograph of zoning in a natural (570 million years old) zircon single crystal from Sri Lanka, viewed in a petrographic thin section between crossed polars. The field of view is 0.8 millimeter in length. The order of interference colors correlates inversely with UO_2 and ThO_2 contents of the layers. The microfractures perpendicular to the layering are the result of stress caused by anisotropic expansion of the unfractured layers, which have accumulated the greatest alpha-decay damage. This single crystal has a range of alpha-decay dose which spans the transition from the crystalline to the metamict state. See page 1556. [B. C. Chakoumakos *et al.*, University of New Mexico, Albuquerque 87131]

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