

K/T BOUNDARY IN CUBA: IMPACT DEBRIS AND SHOCKED QUARTZ FROM THE MONCADA SECTION, PINAR DE RIO PROVINCE

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The ~180-km diameter Chicxulub impact structure in Yucatan is the site of the large impact that occurred at the Cretaceous/Tertiary (K/T) boundary. Proximal wave deposits, tsunami deposits, and turbidity current/debris-flow sediments have been reported in the Gulf of Mexico/Caribbean region and in Central America. In western Cuba, the top of the Cretaceous is marked by widespread, thick carbonate megabreccias deposited in deepwater basins. These units can be dated as latest Maastrichtian based on the presence of the nannofossils *Micula murus* and *N. frequens* and the planktonic forams *Abathomphalus mayaroensis* and *Plummerita hantkeninoides* (which is confined to the last 170,000 years of the Cretaceous), along with reworked earlier Cretaceous nannofossils (the so-called K/T cocktail). The unit at the K/T boundary in the adjacent Los Organos Belt, which represented a landward basin, is an ~2-meter thick graded calcarenite overlain by a thin reddish fallout layer, exposed in the Moncada section. Study of thin sections and washed samples of the calcarenites has provided evidence of quartz grains with planar deformation features indicative of impact shock, and clay pellets that may be altered glass microspherules. The K/T deposits in western Cuba apparently represent catastrophic deposition caused by latest Cretaceous destruction and collapse of carbonate margins. The latest Cretaceous age of the units, plus the presence of altered glass and shocked mineral grains in the Moncada section, supports the interpretation that this event occurred at the K/T boundary and was triggered by the Chicxulub impact.