

Cosmic Catastrophe in the Gulf of Carpentaria

Cristina Subt^{1,2} and Dallas Abbott²

¹University of Texas at El Paso

²Lamont Doherty Earth Observatory of Columbia University, Palisades, NY

Accounts from a distant past have recorded stories of a global climate cooling event that lasted 18 months beginning in March of 536 AD (Stothers, 1984). Debate has ensued for decades about whether this event was due to a volcanic eruption, or an extraterrestrial impact. Now at last we may be close to finding an answer. Two crater candidates in the Gulf of Carpentaria (Kanmare and Tabban) may have been the sites of a comet impact at the time of the climate cooling event. The impactor was ~600 m in diameter, producing enough dust to have caused a major cooling event (Rigby, 2004). To find out if these craters were indeed the sites of an impact, samples were taken from the nearest good cores and sieved into four size fractions (>250, >125, >63, and >38 μ m). Potential impact grains were then picked from core MD972131 (MD31) and analyzed for their chemical composition and physical features. The grains picked displayed a wide range of evidence that supports our hypothesis of an impact, such as impact spherules, shocked minerals, vesicular quartz, and shock morphology of different kinds, as well as marine microfossils found within spherule factories, which lead us to conclude that the latter material is not from the impactor but rather from the impact site. Future research will include extensive thin section and microprobe work.

Stothers, R. B. "Mystery Cloud of AD536." *Letters to Nature* 26th ser. 307 (1984): 344-45. Print.

Rigby, Emma, Melissa Symonds, and Derek Ward-Thompson. "A Comet Impact in AD 536." *A&G* 45 (2004): 1.23-.26. Print.