

THE NEW CENTRAL AMERICAN TEKTITE STREWN FIELD. H. Povenmire¹, R.S. Harris², and J.H. Cornec³. ¹ Florida Institute of Technology, 215 Osage Drive, Indian Harbour Beach, FL 32937 katiehall@yahoo.com ² Georgia State University, 3815 Weeping Willow Lane, Loganville, GA 30052 rsarris@gsu.edu ³1867 S. Marion St, Denver, CO 80210 jcornec09@gmail.com

Introduction: In 1994, Hildebrand et al. (1) published an abstract in the Lunar and Planetary Science Conference about apparent tektites found in the ruins of Tikal, Guatemala. This was a mystery for several reasons. Out of 13 tektites reportedly found, about 10 had disappeared. The remaining three did not show the classical splash form shapes like tear drops and dumbbells. They were not found in situ. Two tektites from western Belize had a reported age of 820,000 years B.P. (2). This is slightly older but very close to the accepted age of the Australasian tektites which is approximately 785,000 years B.P. There was also no known crater or any other tektites found indicating a strewn field.

The follow up work was published in a major article with electron microprobe results and ⁴⁰Ar/³⁹Ar age confirmation (3). There was no known crater association. Supporting the tektite theory was the low SiO₂ content of 62% which separated them as a new group from the Australasian tektites with approximately 73%. They also had an extremely low H₂O content of approximately 80 ppm which separated them from terrestrial obsidians.

In 2006, V. Leo Kowald described a possible impact crater, Pantasma in northern Nicaragua which could possibly be the source crater (4). This is in the Jinotega District which is about 65 km NNE of Managua. In 2009, an expedition led by a group called Astronic which translates to "Nicaraguan Scientific Association of Astronomers and Astrophysicists" declared the Pantasma Crater to be a confirmed impact crater. It is more than 14 km in diameter (9 miles) and within the interest zone for a parent crater. This area is underlain by Tertiary volcanics (5). It is approximately 540 km from the suspected center of the Belize tektite area. It appears to be a complex crater with a subtle central uplift, slightly raised rim with a floor to rim depth of approximately 400 m and in a good state of preservation. There is also evidence of a topographically elevated crater rim. The moat around the central uplift has likely filled in due to the rain forest environment. The central uplift has also probably eroded down from its original height. Even though the crater is in a remote area, there are several dirt roads which cross the crater. Pantasma has some characteristics of both Lake Bosumtwi and the Ries Kessel. They are both fairly small, have produced tektites, are relatively recent and in good condition.

About 40 tektites have been recovered from western Belize near the villages of Bullet Tree Falls, Santa Familia and Billy White within about 55 km ESE of Tikal. Geologist Andre Cho along with his relatives has probably found a dozen tektites in farmer's fields located about 2 km NW of the village of Santa Familia. Geologist Dough Milham has just reported finding what appears to be a small layered tektite 3km southwest of San Ignacio town. Two small specimens were obtained and it was decided to redo all the previous analytical work as a blind study to add confirmation to the previous studies. Specimens were obtained and submitted to R.S. Harris of Georgia State University for electron microprobe analysis and ⁴⁰Ar/³⁹Ar dating. Preliminary analysis indicates they are essentially identical to the Tikal specimens.

SiO ₂	62.49	CaO	4.47
TiO ₂	0.98	MnO	0.17
Al ₂ O ₃	17.58	K ₂ O	1.74
MgO	1.76	Na ₂ O	3.37
FeO	6.45	Total wt %	99.01

This limited amount of evidence implies that the strewn field would likely cover Belize, Honduras, Guatemala, Nicaragua and possibly parts of southern Mexico. One report by field hunters indicated that a tektite can be found in several hours of hunting under favorable conditions in western Belize.

References: [1] Hildebrand, A. (1994) XXIV LPSC, p. 657. [2] Izett, G. and Meeker, G. (1995) GSA Abstract with programs p. 207. [3] Essene et al. (1987) EOS v.68 no.16 p.207 [4] Hildebrand, A. (2000) Magnetic Measurements of Glass from Tikal, Guatemala: Possible Tektites Journal of Geophysical Research B: Solid Earth 105 (8) Aug. 10, 2000 p. 18, 921-18, 925. [5] French, C. and Schenk, C. (2004) USGS-OFR 47-470-K