Since 1992 findings of possible tektite glasses have been reported from Tikal region, Guatemala, and later from Belize, here most likely in situ. Therefore the existence of a Central American tektite strewn field was proposed [12]. Ages of between 780 and 820 ± 40 kyrs have been determined for Belize glasses [3-5].

The radiometric age constraints are indistinguishable from the ages of the Austrailte-Indochinite tektite strewn field (~770 ka). However, additional investigations on Belize glasses reported different geochemical signatures in comparison to the Austrailte-Indochinite tektites [6-10]. Fantasma structures in Nicaragua was proposed as a possible impact crater [11]. The KT-B impact is therefore hypothesized as a double impact.

Several years ago we have started to develop an extended database on the Raman Spectroscopy signature of natural glasses. This is necessary as the magnetic signature of natural glasses was never investigated systematically, and in parallel we decided to significantly extend our existing database on Raman Spectroscopy characteristics.

The focus of our investigations is a first step towards the clear requirement of an extended database based on a selected set of parameters of natural glasses: magnetic signature of natural glasses was never investigated systematically, and in parallel we decided to significantly extend our existing database on Raman Spectroscopy characteristics.

The most important result of our investigations was the clear requirement of an extended database based on a selected set of parameters of natural glasses: magnetic signature of natural glasses was never investigated systematically, and in parallel we decided to significantly extend our existing database on Raman Spectroscopy characteristics.

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The following types of natural glasses are included in our project which will significantly extend existing databases. Earlier studies are mainly focused on tektites, with only a few impactites/volcanics [15-17]:

1. Tektite glasses
2. Impactite glasses
3. Fulgurite glasses
4. Frictionite / hyalomylonite glasses
5. Volcanic glasses
6. Seismo - tectonic glasses

A comparison of the magnetic susceptibility (MS) values of Belize glasses with MS of tektite, impactite, volcanic glasses seems to place the Belize glasses more to impactites. Also a volcanic origin of the source material cannot be excluded.

Table 2a-f: MS database of natural glasses, all data are new and original. Each reported sample represents a number of (sub-)samples and measurements each. MS (in 10^-9 m^3/kg) is the mean/average value of a number of (sub-)samples and measurements each. MS error is +/- 0.05.

References

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