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Neutron and photon activation and ion beam techniques in geochemical characterization of moldavites and other impact glasses

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The study presents results of geochemical characterization of a large collection of tektites and other impact glasses. Impact glasses are produced through large meteoritic impacts by melting of surface materials. Tektites are impact glasses ejected from the impact site to distant strewn fields. The collection included namely moldavites from the major parts of the Central European tektite strewn field, and irghizites - impact glasses from the Zhamanshin crater in Kazakhstan. Several samples of Australasian tektites and Libyan Desert glass were available as well. The characterization has been based on determination of about fifty elements using various modes of instrumental neutron activation analysis, supplemented by instrumental photon activation analysis, prompt gamma activation analysis, PIGE and PIXE. Geochemical data are presented and discussed in view of parent materials and processes involved in formation of various tektites and impact glasses.

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