

Spectroscopic observation of SiO₂ dissociation affecting synthesis of organic Molecules during impact

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On the primitive Earth, several natural phenomena supplied precursors of organic molecules. Among them, the impacts of planetesimals are considered as one of the major sources. because of its intensity in the aspects of time and space.

Some authors have done indirect observations of vapor plume analyses and made it clear that molecular Oxygen induced by the thermal dissociation of SiO₂ play an important role in the synthesis of precursors of organic molecules.

Recently, Our team has done impact experiments using both two stage light gas gun and laser pulse irradiation and the direct observation of the induced vapor plume with the spectrometer. We also approach the SiO₂ dissociation in the expanding vapor plume by calculating the thermodynamics of the plume.

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