
[EJ] Eveningポスター発表 | セッション記号 P (宇宙惑星科学) | P-PS 惑星科学

[P-PS06] 太陽系物質進化

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原始太陽系星雲における物質形成から原始惑星への集積、天体内部や表面での諸過程を隕石や他の惑星物質に対する研究と実験的研究の両面から議論する。初期太陽系の情報を保存する始原的物質（コンドライト隕石や惑星間塵、サンプルリターン試料）に関しては、それらの鉱物・有機物・水・希ガス・微量元素分析を通して明らかになった知見を総合理解することを目指す。分析手法開発研究（化学、理論、物性）や学生の萌芽的研究を歓迎し、将来の太陽系、惑星系形成研究の新たな開拓につなげたい。さらに分化隕石やコンドライト母天体における水質変成・熱変成作用、火成活動、コア・マントル・地殻形成、並びに天体衝突といった現象に加えて、母天体の内部構造や構成物質などについても議論する。実験的手法による惑星物質の組成、相平衡や構造に関する知見なども取り上げ、隕石とあわせて天体における諸過程を議論する。

[PPS06-P13] テクタイト中での隕石成分の探索

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キーワード：テクタイト、白金族元素

Tektites were formed by hypervelocity impact events and collected from the four strewn fields (Australasian, North American, Central Europe and Ivory Coast). The source craters for three of the four strewn fields have identified; the Chesapeake Bay crater for the North American strewn field, the Bosumtwi crater for the Ivory Coast strewn field and the Ries Crater for the Central European strewn field. Detection of meteoritic component and identification of the type of impactor were attempted based on platinum group element (PGE) abundances, and Os and Cr isotopic compositions of tektites and impactite materials from the corresponding crater. Except for the Bosumtwi crater, the nature of impactor remains ambiguous. In this study, we determined PGE abundances of tektites collected from three strewn fields (Australasian, North American and Ivory Coast) in order to detect meteoritic component and identify the type of impactor.

One Ivory Coast tektite, one bediasite, eighteen Australasian tektites (two australites, one phillipinite and fifteen indochinites) were analyzed by INAA and ICP-MS. Powder tektite samples were irradiated two times with different irradiation periods at Kyoto University Research Reactor Institute. Around 5 g of each powder sample was taken for the determination of PGE abundances by using NiS fire-assay combined with isotope dilution and ICP-MS. The ICP-MS measurement was performed using an instrument, iCAP Qc, equipped with a collision cell.

Iridium abundances of Ivory Coast tektite, one bediasite, eighteen Australasian tektites are comparable to or lower than those of upper continental crust (UCC), impactites and target materials. Although these tektites have similar Cl-normalized PGE abundances to each other, these Cl-normalized PGE abundance patterns are different from those of UCC, impactites and target materials. Ruthenium/Ir and Rh/Ir ratios of these tektites are higher than those of UCC, impactites and target materials. Platinum and Pd are depleted compared with Rh in these tektites. Cl-normalized PGE abundances patterns of these tektites could be explained by the incorporation of IC or IIIAB iron meteorites as impactor. Mixing of iron meteorite, and UCC or target materials could not explain Pt and Pd abundances in tektites. This is probably due to the fractionation of PGE during the impact process. Thus, possible explanation of non-chondritic PGE abundance patterns of tektites from these three strewn fields are 1) incorporation of iron meteorites as impactor or 2) fractionation of PGE during impact processes.