

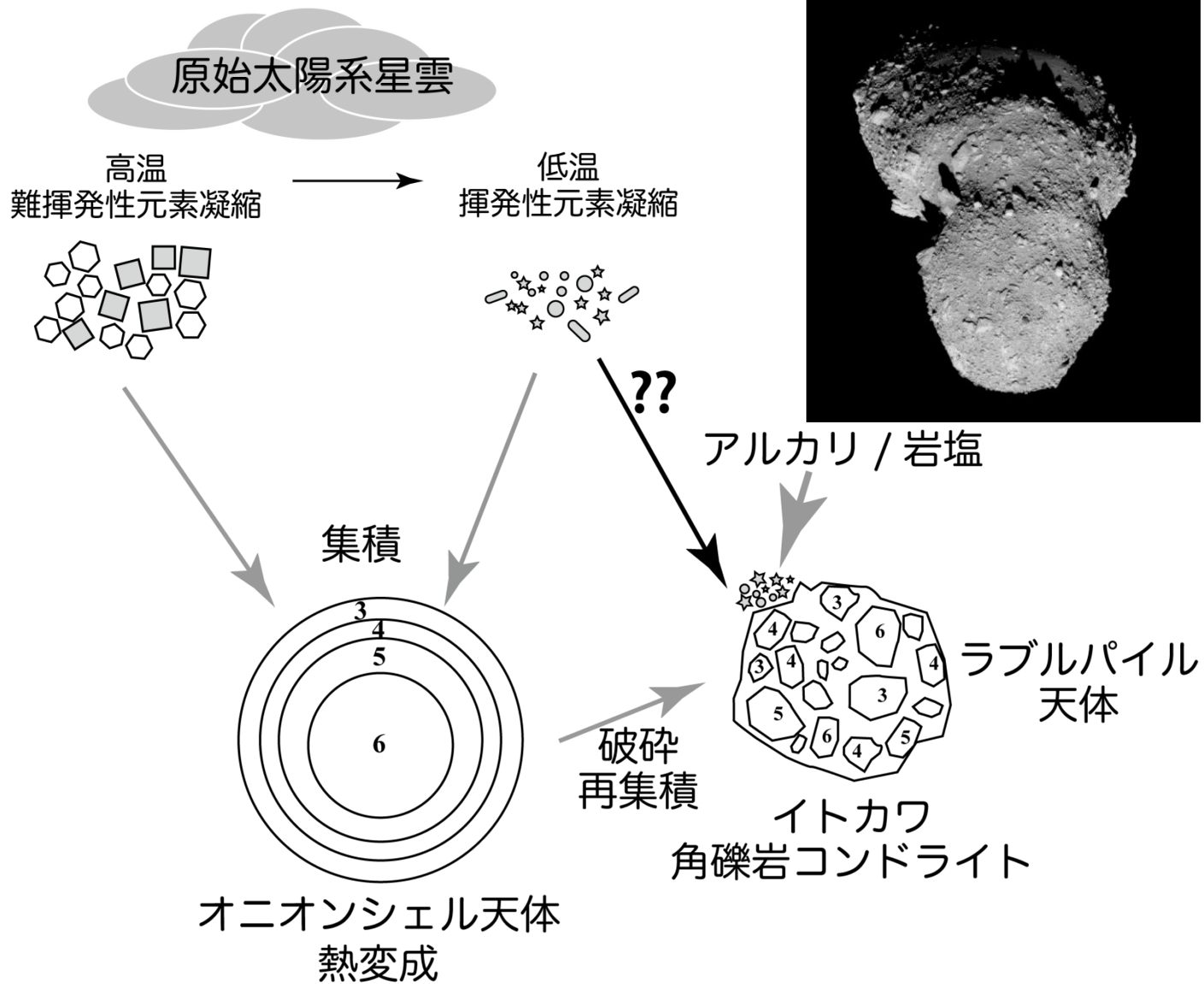
イメージングプレートを用いた 惑星物質の非破壊特性評価

極地研・三澤 啓司

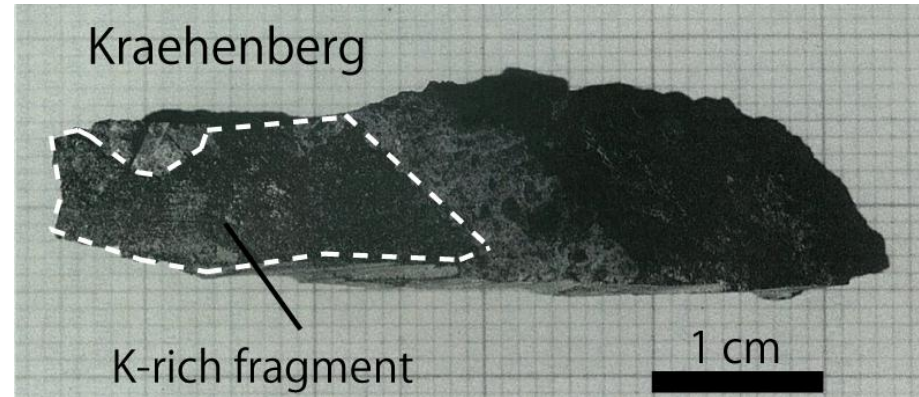
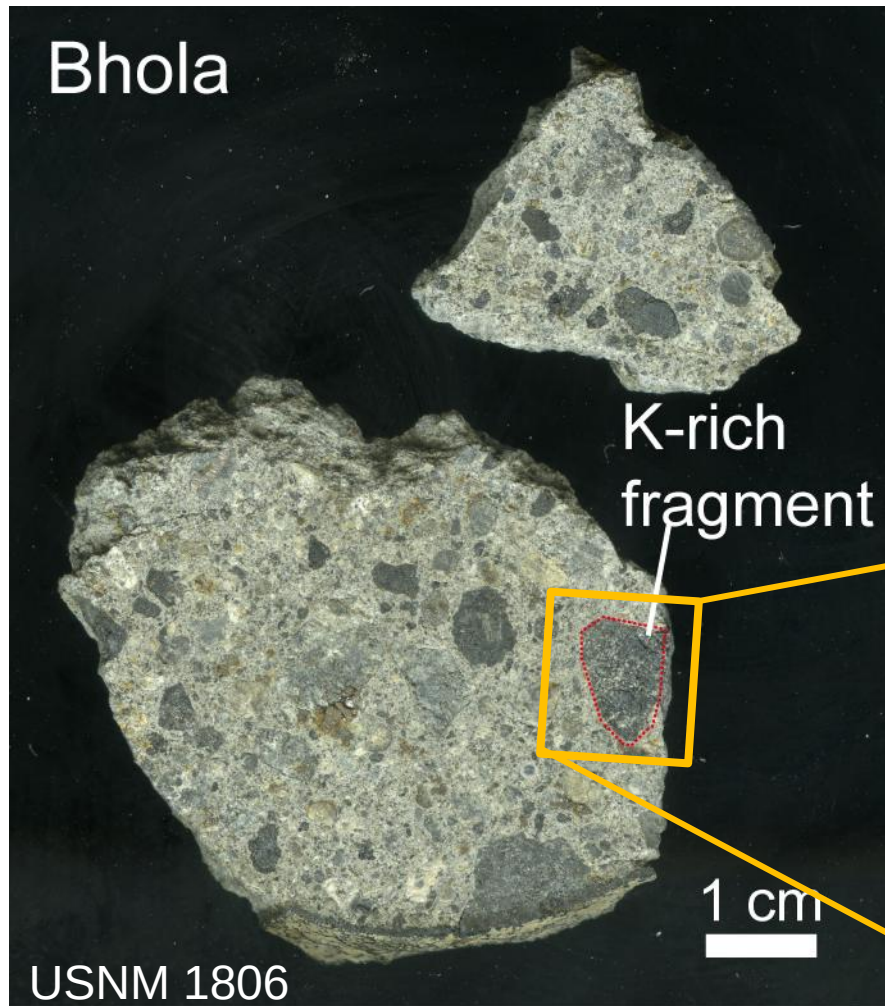
科博・横山 立憲

慈恵会医大・箕輪 はるか

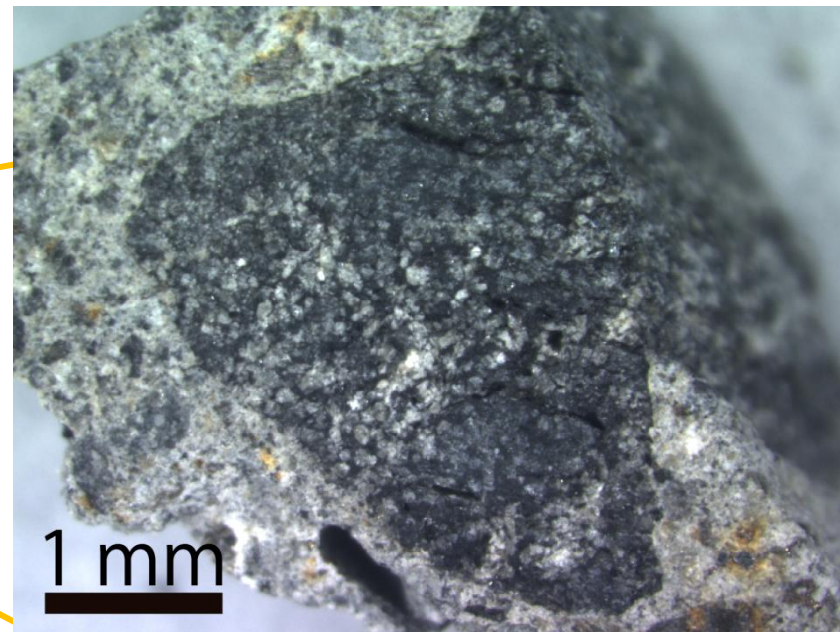
岡山大・岡野 修



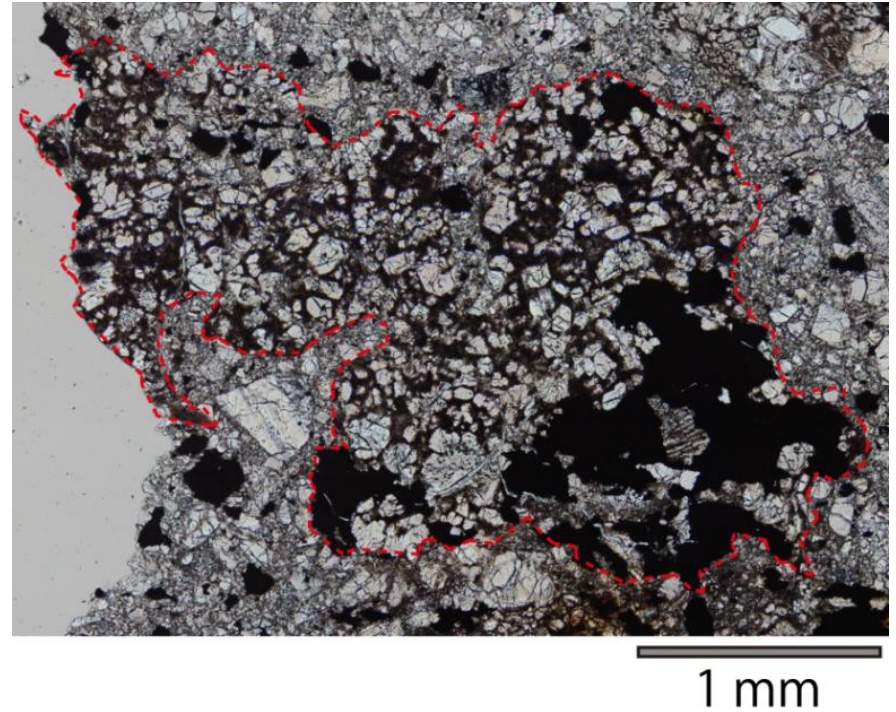
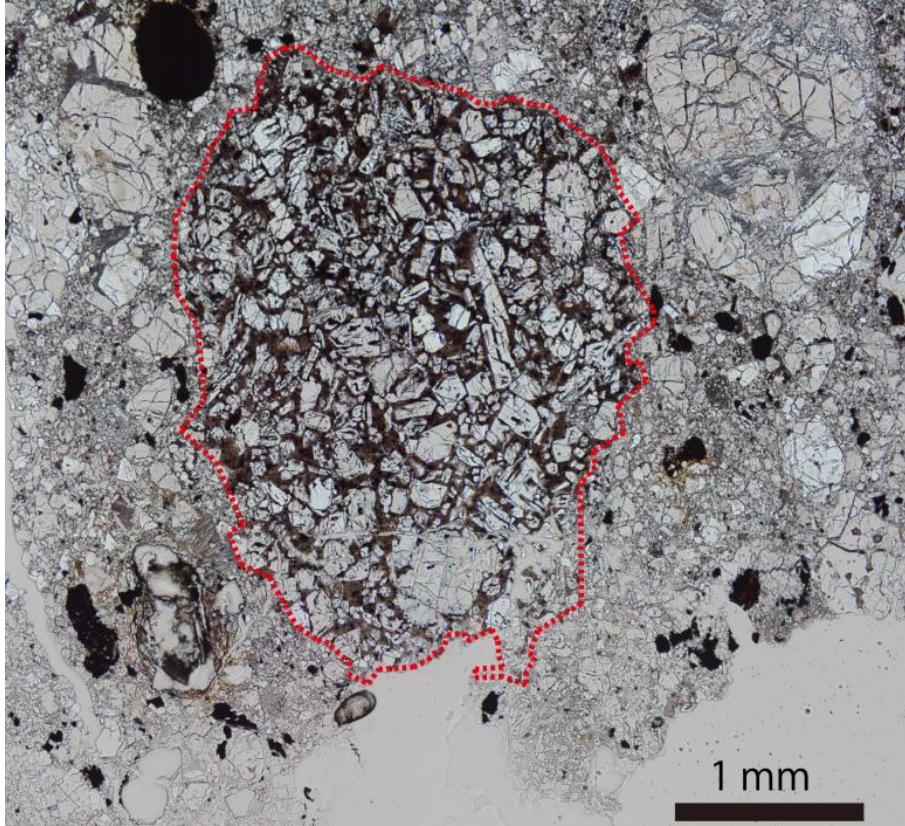
Alkali-rich fragments in LL-chondritic breccias



Fredriksson and Wlotzka (1979)



Yamato-74442 LL chondrite



角礫岩コンドライト隕石中の岩塩 (Halite = NaCl & Sylvite = KCl) Zag & Monahans (1998) meteorites

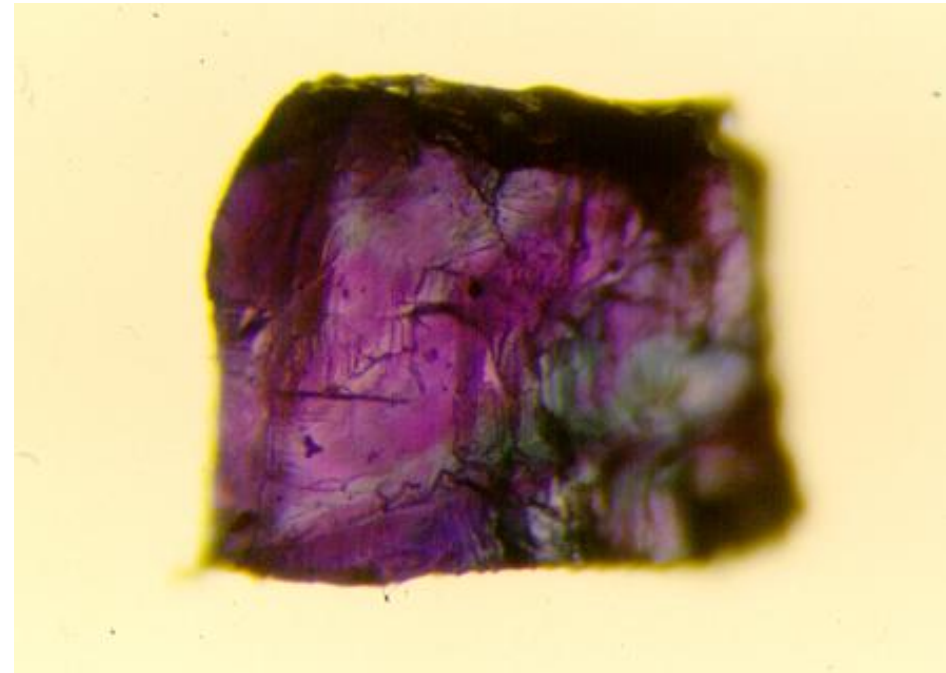
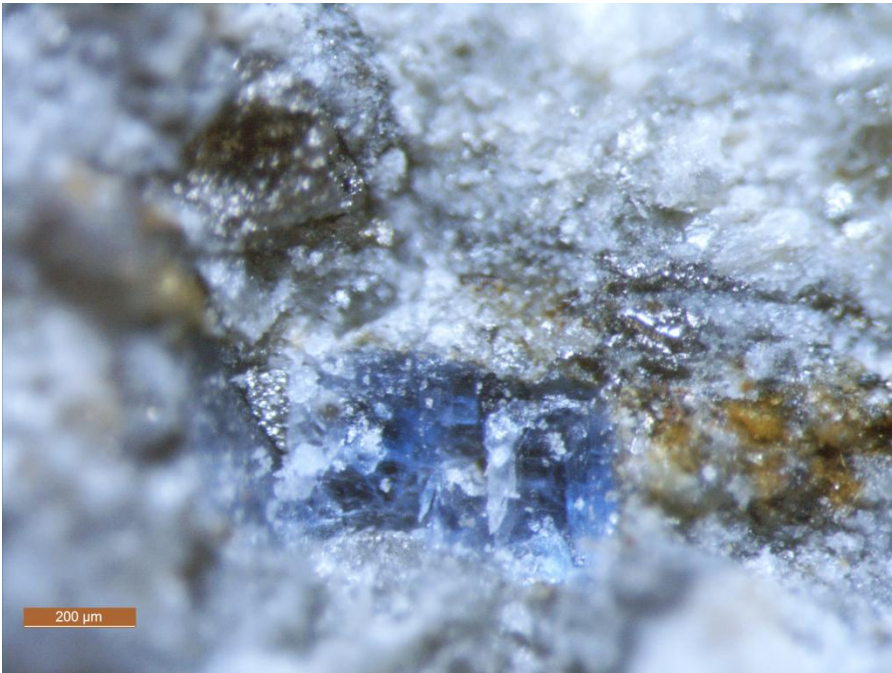
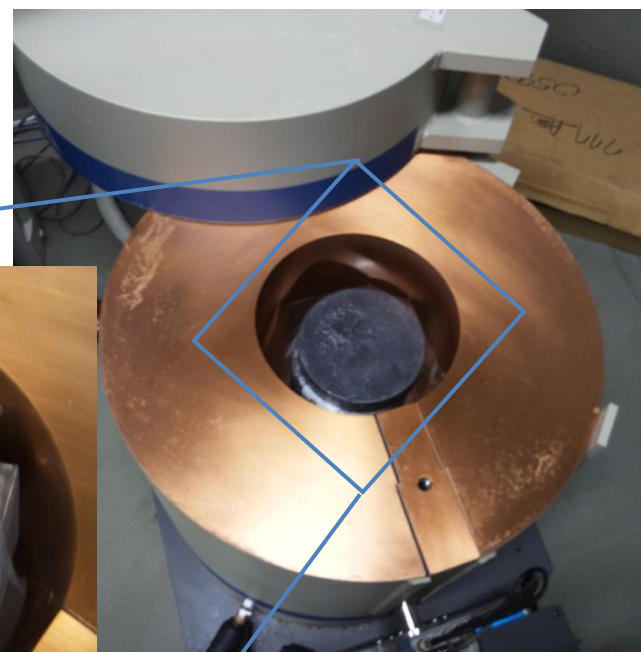
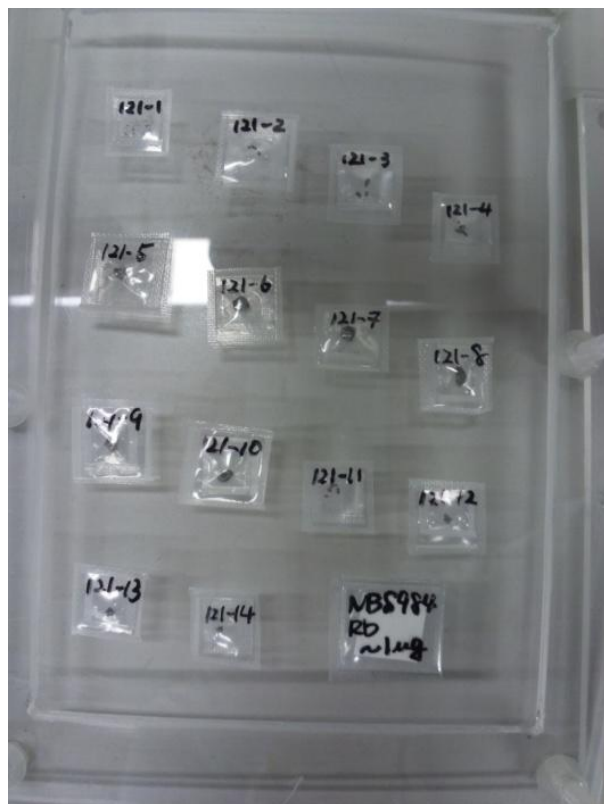
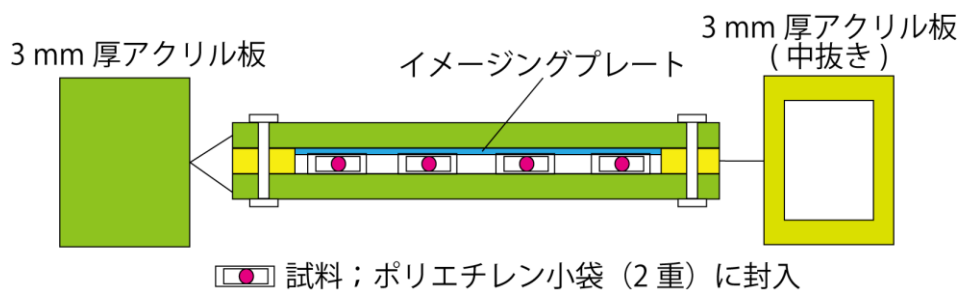


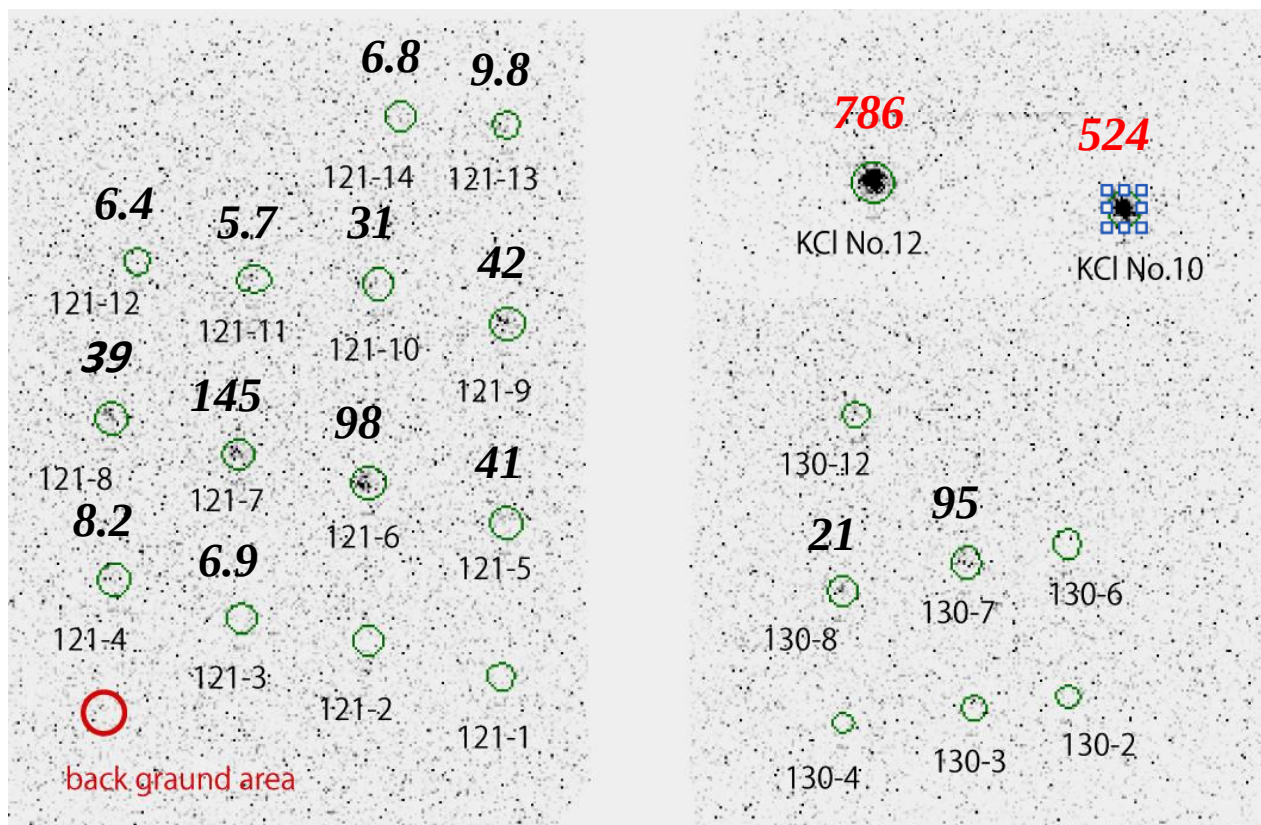
Photo courtesy Michael E. Zolensky

Experiments



高純度Ge半導体ガンマ線検出器

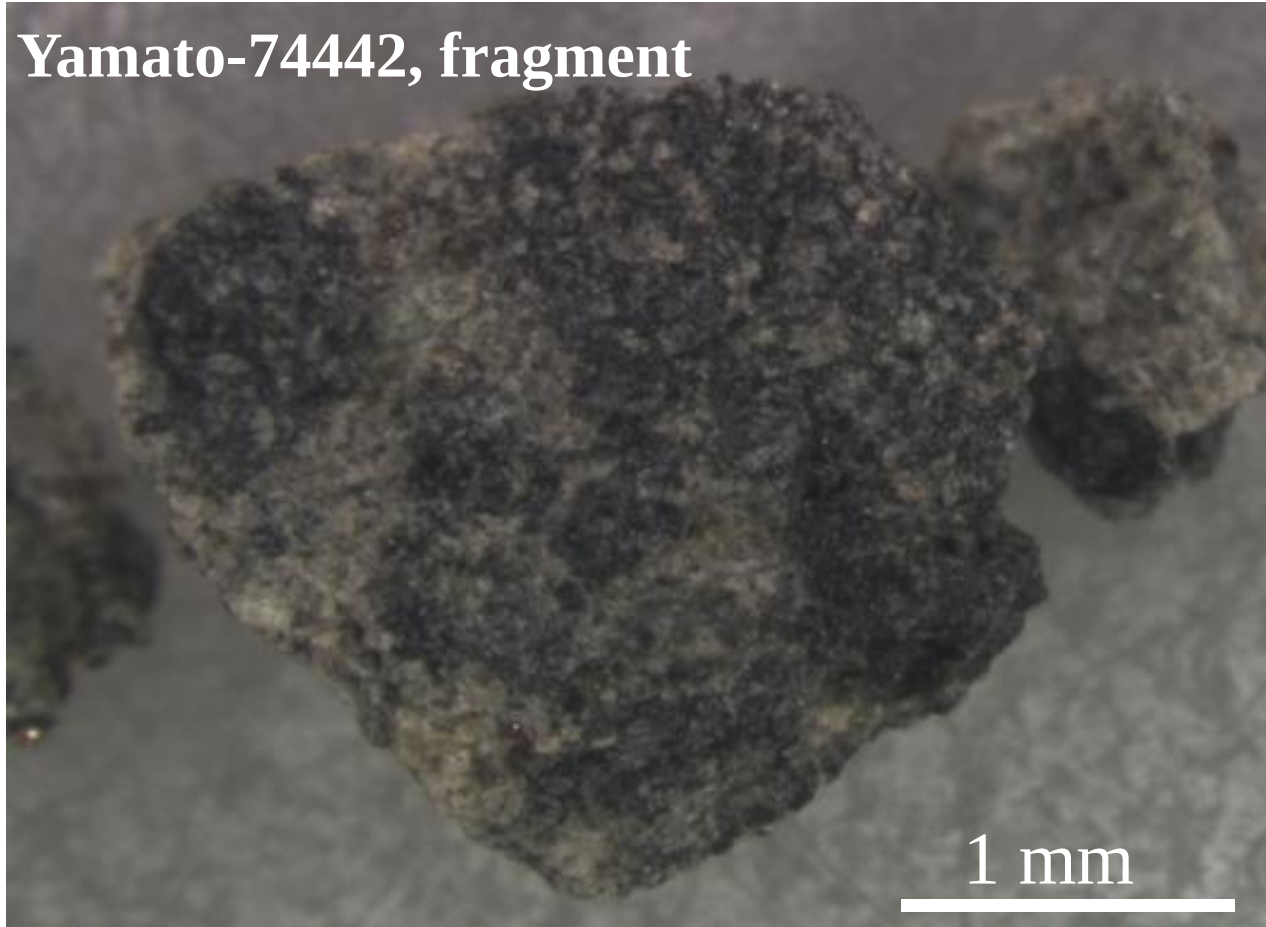
IP exposure at ICRR (50 days)



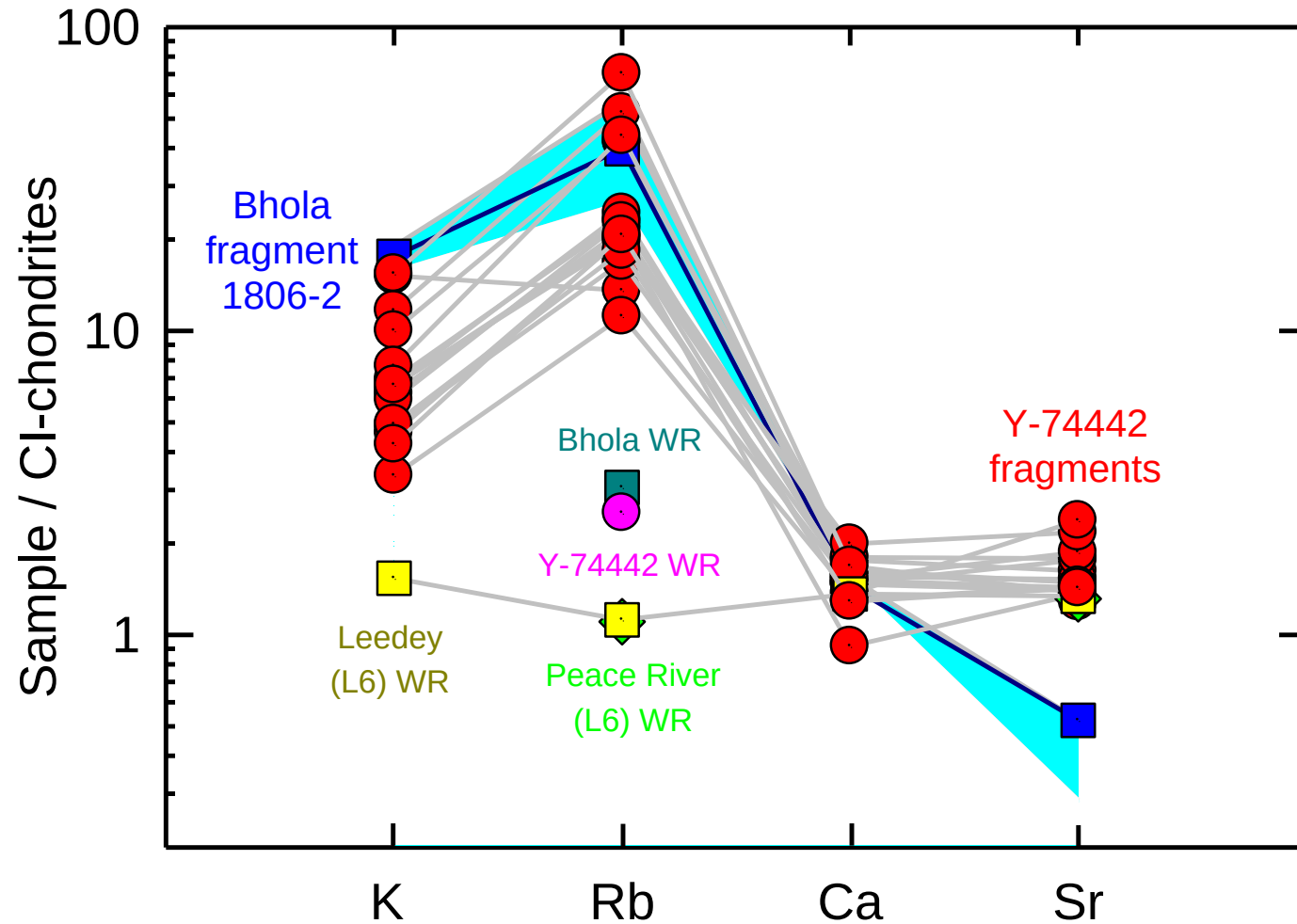
*Total amount of K in μg
(determined by ID-TIMS)*

$10 \mu\text{g K} \rightarrow 3 \times 10^{-4} \text{ Bq}$

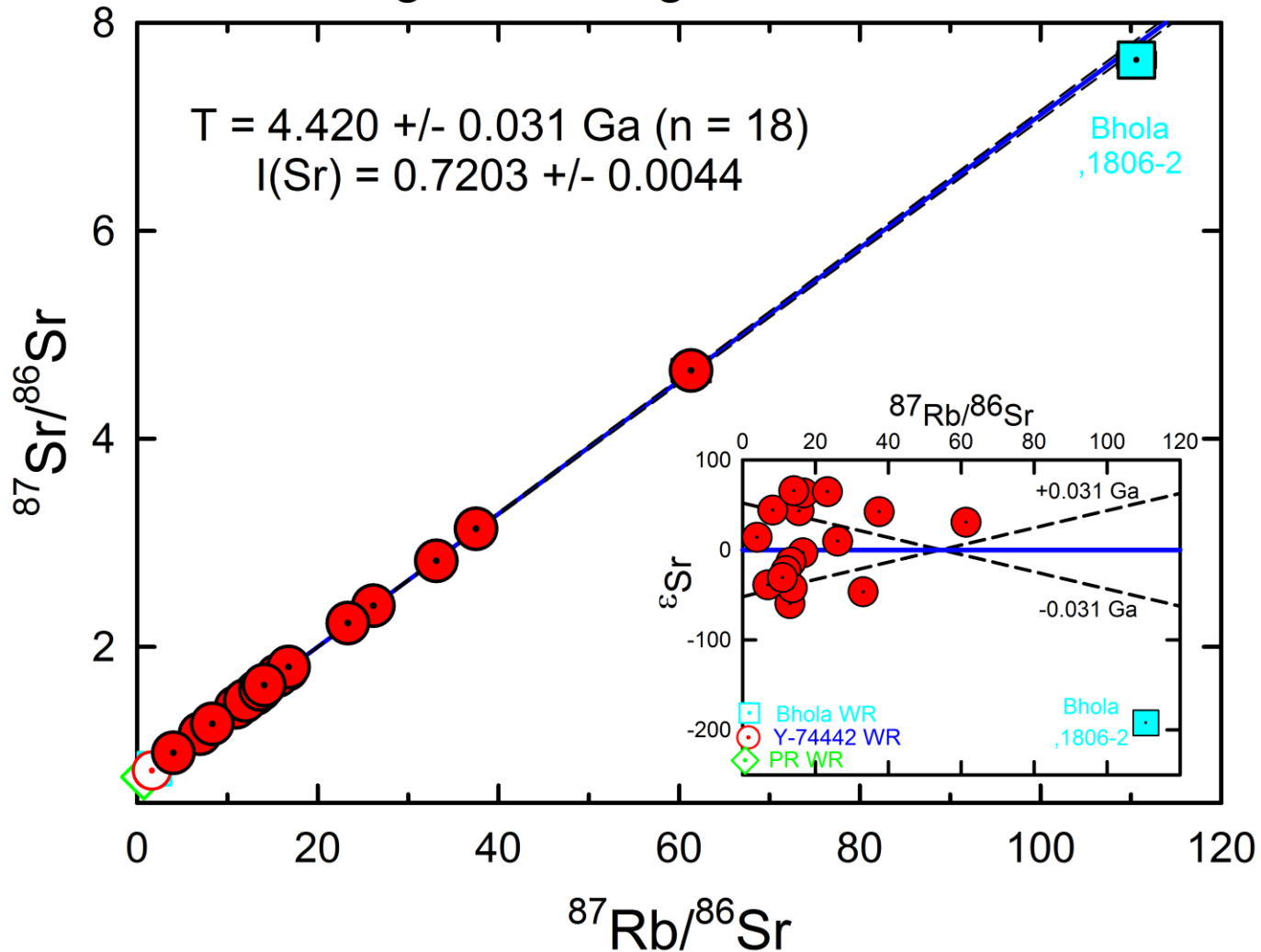
Yamato-74442, fragment

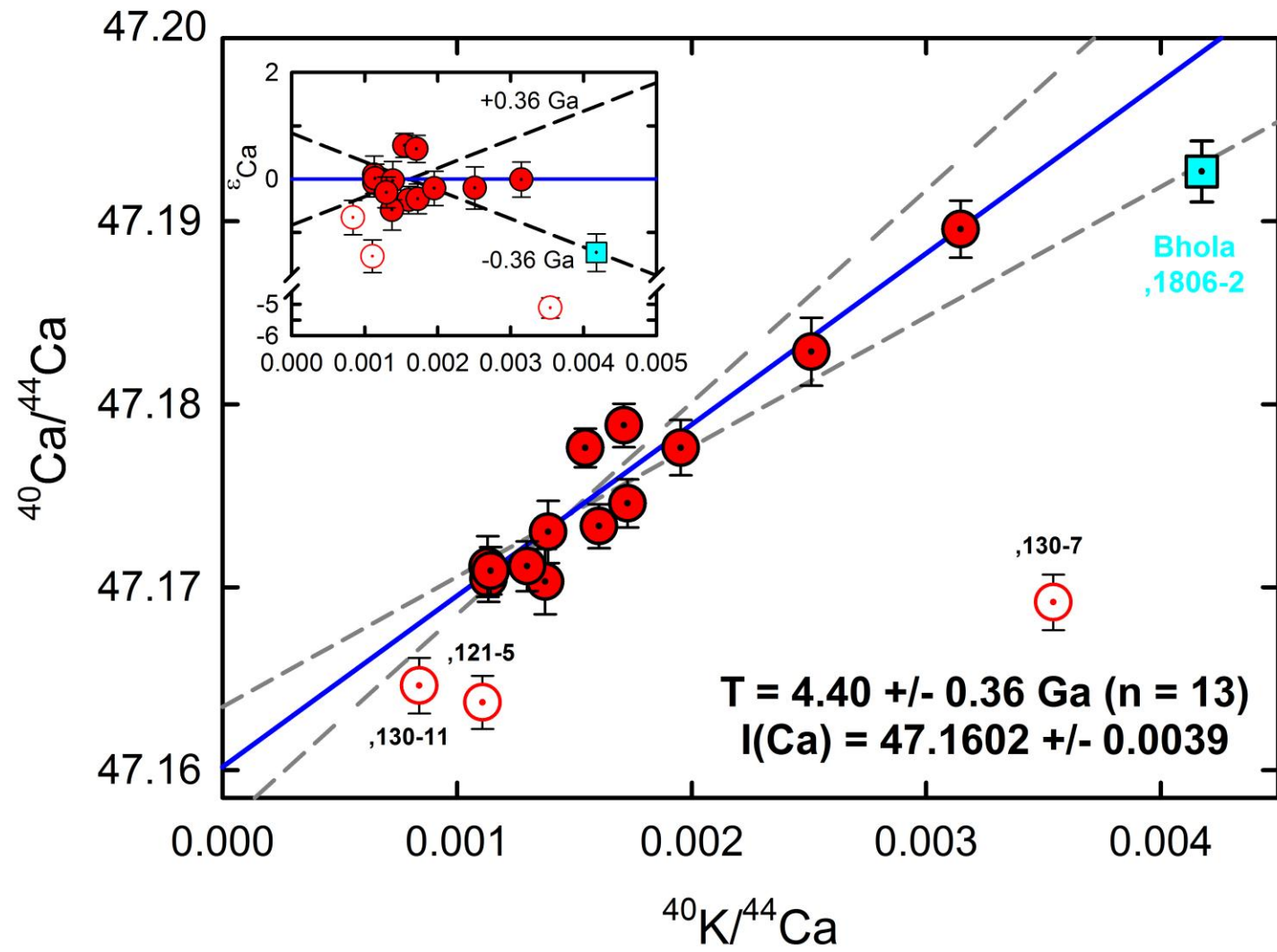


同位体希釈質量分析による定量結果



Alkali-rich igneous fragments: Yamato-74442







原始太陽系星雲

$$^{135}\text{Cs}: T_{1/2} = 2.3 \times 10^6 \text{ y}$$

低温
揮発性元素凝縮

^{135}Cs - ^{135}Ba 時計
--> アルカリ凝縮・分別はいつ?

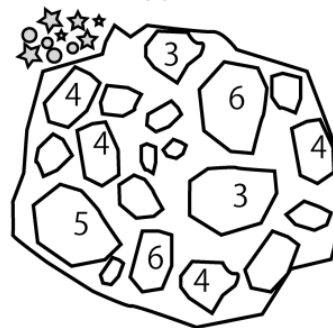


Na, K, Rb, Cs, REE 存在度
--> 材料物質は?
--> どのようにして母天体へ?

アルカリ / 岩塩

アルカリ岩片形成
--> 44.2 億年前

Sm, Gd 同位体組成
--> 天体表層での分別?



Halite (NaCl)

