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**High Resolution Synchrotron XRF Analyses of
Presolar Graphite Spheres from the Orgueil
Meteorite.**

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XRF and XRD measurements on three graphite
grains (2 low-density grains and 1 high-density grain
[1]) from Orgueil separates were performed at two
beamlines at ESRF (ID13; 13keV, spotsize 200nm)
and DESY (P06; 15keV, spotsize 100nm). This new
approach allows for the first time the analysis of the
chemical and structural composition of presolar
onion type graphite spheres, *in-situ*.

ID13: The low-density grain (~11µm) shows a large
number of correlated Ti- and V-rich hotspots. From
rotation experiments it was possible to reconstruct a
3-dimensional view that revealed that these hotspots
represent an internal structure. At least three zones
can be distinguished.

P06: The high-density grain (~10µm) shows
hotspots mainly of Fe and Cr obviously located at
the surface. The second low-density grain (~7µm)
shows also a small number Ti and V hotspots
(~100nm) which appear to be located close to the
center of the graphite.

+ [1] Jadhav et al. 2006 New Astron. Rev., 50, 7-8, 591.

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