Cathodoluminescence Studies of Shocked Ordinary Chondrites

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Cathodoluminescence images of heavy shocked ordinary chondrite; Dar al Gani (L6, S6) and weakly shocked ordinary chondrite; Ashmore (H4, S3) were measured. Dar al Gani (L6, S6) shows blue and yellow CL. Ashmore (H4, S3) shows blue CL only. Cathodoluminescence spectra of both ordinary chondrite were also studied. Blue areas of Ashmore have shows a high CL peak of 450 nm tailing toward long wavelength. On the other hand, blue CL areas of Dar al Gani have two broad peaks of 450 nm and 600 nm. However the peak of 450nm is higher than that of 600 nm, and the former peak intensity is overall lower than that of Ashmore. Yellow CL areas of Dar al Gani have also two peaks of 450 nm and 600 nm. But the peak intensity of 450 nm is relatively lower than that of 600 nm.

These results imply that shock makes the CL peak of 450nm in plagioclase decrease largely whether it makes that of 600 nm decrease weakly. Then shock makes plagioclase show weak yellowish CL.