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Moving and Sorting Chondrules by Photophoresis.

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At the (outward moving) inner edge of protoplanetary disks chondrules are subject to photophoresis and can be sorted due to photophoretic properties. In numerical simulations we calculate the exact photophoretic strength on chondrules for varying light flux, accommodation coefficients, thermal conductivities and temperatures for spherical particles.

Known approximations can strongly deviate but we constructed analytic equations, accurate to about 2%. Based on tomography, the influence of detailed shape and internal structure and composition is calculated. In addition dust mantled homogeneous spheres are considered. We find that dust mantled chondrules can be size sorted due to photophoresis.

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