

## Stellar metallicity and gravitational scattering of planetesimals by a protoplanet

# Shigeru Ida[1], Junko Kominami[2]

[1] Dept. of Earth and Planetary Sci., Tokyo Inst. of Tech., [2] Earth and Planetary Sci., T.I.Tech.

<http://www.geo.titech.ac.jp/nakazawalab/ida/ida.html>

Observations of extrasolar planets show that semimajor axes and masses of the extrasolar planets are correlated with metallicity of their host stars. The metallicity can be affected by accretion of planetesimals onto a host star, because contamination of metal by planetesimal scattering is concentrated in convective envelope with only 0.01 percent of the total stellar mass. On the other hand, the contamination can be shielded by gravitational scattering of a giant planet. We performed orbital calculations of the scattering by giant planets with various semimajor axes and masses to evaluate the shielding effects.

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The contamination can be shielded by gravitational scattering of a giant planet. We performed orbital calculations of the scattering by giant planets with various semimajor axes and masses to evaluate the shielding effects and compare with observational data.