

INTERPETATION OF F-CORONA RADIAL VELOCITY FIELD

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ABSTRACT

The radial velocities of F-corona for total eclipse July 31, 1981 obtained at elongations $(3-7) R_{\odot}$ are interpreted assuming prograde motion in circular Keplerian orbits of circumsolar dust. In computations isotropic plus diffraction scattering functions are used. In supposition of silicate grains the best coincidence with observations is received for grains with radii about $0.4 \mu\text{m}$ with the presence of dust free zone (d.f.z.) around the Sun to heliocentric distances $(6.5-14) R_{\odot}$ and high grain concentration at the edge of this dust free region.

The presence of negative radial component of radial velocities can be explained by falling of the matter into the Sun under influence of Poynting-Robertson effect of solar wind for porous grains with radii less than $0.4 \mu\text{m}$. The effect of radiation drag for these small grains is essentially less. Using grains with radii less than $0.4 \mu\text{m}$ the sizes of which decrease as approaching to the Sun one may explain the inner F-corona brightness.