

# Zodiacal dust bands observed in far-infrared with AKARI

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The zodiacal emission is the thermal emission from the interplanetary dust and the dominant diffuse radiation in the mid- to far-infrared wavelength region. Although the zodiacal dust cloud has a relatively smooth distribution, from the results of the Infrared Astronomical Satellite (IRAS) observations, it was found that there are many small-scale structures in the zodiacal emission distribution, such as dust band pairs at the ecliptic latitudes of  $\pm 1.4^\circ$  and  $\pm 10^\circ$ . It is suggested that recent disruption events among multikilometer bodies in the main asteroid belt within the last several million years are major supply sources of the dust particles in the dust bands, and they produce a edge-brightened toroidal distributions of dust. In the previous studies, the structure of the dust band is mainly discussed with the IRAS and DIRBE data at  $25 \mu\text{m}$ , because the band structure, in particular the  $\pm 10^\circ$  dust band, is faint in the far-infrared wavelength region. The Japanese infrared satellite AKARI conducted a far-infrared all-sky survey, which covered 97% of the whole sky in four photometric bands with band central wavelengths of 65, 90, 140, and  $160 \mu\text{m}$ . AKARI clearly detects the zodiacal dust bands structure at 65 and  $90 \mu\text{m}$  bands. The AKARI observational data during more than one year has advantages over the 10-month IRAS and COBE/DIRBE data in studying the structure of the zodiacal dust bands. We will show the dust bands structure observed in far-infrared with AKARI and discuss the origin and the physical properties of the zodiacal dust.