

Seasonal Variations of the Zodiacal Light toward the Ecliptic Poles at the Infrared Wavelengths

Jeonghyun Pyo¹

¹*Korea Astronomy and Space Science Institute, Republic of Korea*

The zodiacal light (ZL), combination of the sunlight scattered by and the infrared light emitted by the interplanetary dust (IPD) particles, changes with time due to the asymmetric distribution of the particles with respect to the Earth's orbit. Especially, the variations of the ZL brightnesses toward the ecliptic poles are useful to probe the properties of the global distribution of the IPD because we can evade the effect of the small scale structures, such as the asteroidal dust bands. The ecliptic poles are frequently visited by the infrared (IR) space telescopes owing to their sun-synchronous orbits or for specific purposes. We collect and analyze the observations toward the ecliptic poles by COBE/DIRBE, AKARI, and MIRIS, covering the wavelengths from about 1 to 25 μm . The observations are not well described by a simple smooth cloud model and imply warping of the cloud's symmetry plane at least outside 1 AU from the Sun.