

P124a Discovery of two infrared objects with strong ice absorption in the AKARI slit-less spectroscopic survey

Takashi Onaka (Meisei University, University of Tokyo), Tomoyuki Kimura (University of Tokyo, East JR Co.), Itsuki Sakon (University of Tokyo), Takashi Shimonishi (Niigata University)

We discover two intriguing infrared objects that show deep absorption features of H₂O, CO₂, and CO ices in the *AKARI*/Infrared Camera (IRC) slit-less spectroscopic survey of the Galactic plane. Both objects are located neither in known star-forming regions nor in known dense clouds. For one of the objects, Object 1, we successfully extract a spectrum from 2.5 to 13 μm , which also shows several absorption features in 5–13 μm , including deep silicate absorption at 10 μm . For the other object, Object 2, only a spectrum from 3.1 to 5 μm is reliably extracted due to the presence of nearby overlapping objects and faint nebulosity. Both objects show warm (> 100 K) CO gas absorption in addition to the ice absorption features, suggesting that they are embedded young stellar objects (YSOs). On the other hand, both objects have spectral energy distributions (SEDs) that peak at around 5 μm and decrease towards longer wavelengths. These characteristics of the SEDs and the presence of deep absorption features can be better explained in terms of background stars behind dense clouds. While the observed SEDs may be explained if the absorbing ice species are located only in clumpy concentrations on the line-of-sight in the edge-on disk surrounding a YSO, their true nature remains uncertain based on the currently available data. In either case, it will make significant implications on our understanding of the distribution of star-formation activities or of low-temperature dense materials in our Galaxy.