N20a Dust shell around WISE J180956.27−330500.2

山村一誠,Poshak Gandhi, 瀧田怜 (ISAS/JAXA),Djazia Ladjal, 植田稔也 (デンバー大), 松永典之 (東京大), 泉浦秀行 (国立天文台岡山),Pedro Garcia-Lario (ESAC/ESA)

WISE J180956.27−330500.2 (hereafter WISE J1810) is an object with a peculiar infrared SED discovered by us in the course of studying the *WISE* Preliminary Source Catalog (Gandhi et al. 2012, ApJ 751, L1; Yamamura et al. ASJ meeting 2012b N19a). The object is bright (7–10 Jy) at *2MASS K* and *WISE* 12 and 22 μm while it is more than two orders of magnitude fainter at 3.4 μm. The SED of WISE J1810 can be understood as a transient object owing an expanding dust envelope that was formed recently by an ejection of enormous amount of dust. The bright near-IR fluxes in the 2MASS photometry in 1998 are due to hot dust ($\sim$ 1300 K) close by the star, and the very red WISE SED observed in 2010 indicates that the dust shell has cooled down to 320 K. We estimate that the mass ejection took place in 1996 Oct.–1998 July. We further suspect that the star is ongoing an episodic mass loss after a thermal pulse in the AGB phase.

In order to investigate the nature of WISE J1810, we proposed a DDT observation with *Herschel*/PACS and SPIRE to measure the fluxes at wavelengths between 70 and 500 μm. The observation was carried out in October 2012, resulting a set of far-IR fluxes that constrains the dust shells around the star. We also observed WISE J1810 in J, H, K bands with the IRTF. We will report the results of dust shell modeling with these data and discuss the nature of the episodic mass-loss phenomenon in this star.