

N19a **Dramatic infrared variability of WISE J180956.27–330500.2**

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WISE J180956.27–330500.2 (hereafter WISE J1810) was discovered in the course of studying the Source Catalog of the *WISE* Preliminary Data Release as a very red object with a peculiar infrared SED (Gandhi et al. 2012, ApJ 751, L1). *WISE* was the NASA’s infrared astronomical satellite that carried out an all-sky survey at 3.4, 4.6, 12, and 22  $\mu\text{m}$ . WISE J1810 is bright (7–10 Jy) at *2MASS K* and *WISE* 12 and 22  $\mu\text{m}$  while it is more than two orders of magnitude fainter at 3.4  $\mu\text{m}$ . Such a deep sink cannot be interpreted by either molecular or dust absorption. Further, the object was not detected by *IRAS*.

We find that the SED of WISE J1810 is almost identical (uniquely) with that of Sakurai’s object. Sakurai’s object is known to be a “born again star”, which took place a very-late thermal pulse while it was on the way to a white dwarf. From the similarity in the infrared aspects between two objects, we understand that WISE J1810 is 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.

From the color of the progenitor the optical wavelengths, we suspect that the star is of late-type, unlike Sakurai’s object. If this is the case, WISE J1810 is the first example of ongoing episodic mass loss after a thermal pulse in the AGB phase. The object will give a great impact to the study of AGB evolution.