N14a ALMA and Mopra Observations of WISE J180956.27−330500.2

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WISE J180956.27−330500.2 (hereafter WISE J1810) was discovered by us in the course of studying the *WISE* Preliminary Source Catalog (Gandhi et al. 2012, ApJ 751, L1; See 2012b-N19a). Its peculiar SED with a heavy attenuation at 3–4 μm, and the fact that the object was not observed by IRAS lead us to argue that WISE J1810 is a transient object that experienced an explosive mass ejection 15–20 years ago. The ejected matter formed a very thick circumstellar envelope, which has been expanding and cooling.

Since the discovery we have made intensive follow-up observations in various wavelengths to reveal nature of this peculiar object. In the previous ASJ meetings, we reported preliminary results of near-IR photometry by SIRIUS/IRSF and far-IR/sub-mm photometry by *Herschel* (2013a-N20a), as well as mid-IR photometry and spectroscopy by Subaru/COMICS (2014a-N04a). These data indicate that WISE J1810 posses an oxygen-rich, extreamly optically-thick circumstellar envelope.

We here report results of ALMA and Mopra observations of WISE J1810. ALMA observation was carried out in August 2014. We detect CO(3–2) and SiO(8–7) lines, which support the idea of a presence of an optically thick molecular envelope. Mopra observation was made in July 2014, resulted in non-detection of SiO(1–0, 2–1) and H_2O masers. We discuss structure of the circumstellar envelope with these new data.