Dust in the Galactic Supernova Remnant W44  
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1. Abstract: Supernovae were formerly thought to be major dust destroyers but recent studies suggest that dust formation occurs in the ejecta (Gall et al. 2014, Matsuura et al. 2015). Hence, supernovae could account for the dust enrichment of the Interstellar Medium (ISM) of galaxies. Herschel Space Observatory’s data of the galactic remnant W44 were used to study the dust enclosed within it along with its interaction with the surrounding ISM. Initial results are presented here.

2. Introduction
Supernovae have been the subject of recent astronomy studies because they are considered to be the site of dust formation. Observations of supernovae and supernova remnants such as the Crab Nebula and SN1987A, have shown that there can be dust in the filaments (Gomez et al. 2012) and also at the centre of the ejecta (Matsuura et al. 2015).

4. Herschel Space Observatory’s observations
The remnant has been observed with the Herschel space observatory as part of the Galactic Plane Survey, Hi-Gal (Molinari et al. 2016). It covers 70 μm, 160 μm (PACS) and 250 μm, 350 μm and 500 μm (SPIRE). The remnant is clearly detected at 70 μm but then it gets progressively worse at longer wavelengths. Figures 1-3 show Herschel images of the remnant. The units are MJy/sr.

5. Ratio maps
In order to detect any temperature variations in the remnant, ratio maps were plotted using the Herschel PACS and SPIRE images of the remnant. Figures 4 and 5 demonstrate filamentary structures associated with the SNR which tends to have higher temperature than the surrounding ISM.

6. References.
Su et al. 2013, Kinematic Distances of SNRs W44 and 3C 391, Supernova Environmental Impacts, Proceedings IAU Symposium No. 296