12331 - Massive Star CSI: Has The Progenitor of SN2008S Vanished?

Cycle: 18, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

0 Total Orbits Used

ABSTRACT

SN2008S in NGC6946 is the prototype of a new class of optical transients. Its luminosity was low for a Type II supernova, and the progenitor star was identified as a completely dust obscured log (L/Lsun)=4.5, T=440K massive star (~10 Msun) in archival Spitzer data. It is uncertain whether this is a new class of lowluminosity supernova (e.g. an electron capture supernova) or a new class of massive star outburst. The transient has now faded to the point where the source is again invisible in the optical. NearIR detections are consistent with a somewhat hotter source, T~1200K, somewhat brighter than the progenitor and still fading at ~3 mag/year. Using two epochs of IRAC observations to constrain the midIR emission, and two epochs of HST Hband

observations to constrain emission from cool stars, we will solve this mystery by either identifying and characterizing the surviving progenitor or ruling out its survival.