Unveiling the Nucleosynthetic Layers of Cassiopeia A with Spitzer
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**KEY FINDING:**
IRAC images of Cassiopeia A, supported by IRS spectra, indicate that in each direction, different explosive burning layers are currently encountering the reverse shock, reflecting the explosion asymmetries. The respective nucleosynthesis products in different directions are seen in IR, visible and X-ray lines and newly formed dust.

**OBSERVATIONS / RESULTS**
We present Spitzer IRAC images of the supernova remnant Cassiopeia A, supplemented by IRS mapping data. Where different IRAC channels dominate we find different patterns of line emission and different types of dust.

- **Propagation of the Reverse Shock into Expanding Ejecta**

- **Detection of "once-shocked" (pre-reverse-shock) ejecta.**

- **Integrated line images and Doppler images of [ArII] (red) and [SiII] (green) bands.**

- **Shock heated (~10FK) Circumstellar Dust plus weak synchrotron**

- **Dust and gas from shocked O- and Si-burning ejecta**

- **Dust and gas primarily from shocked C-burning ejecta**

**Two Possible Manifestations of This One Spectral Classification**

- Flat-top spectrum: Fitted Peak Spectrum
- Featureless spectrum: Fitted "Featureless" Spectrum

**IRAC Images**
Images from the four IRAC bands, next to characteristic spectra of where each of the bands is dominant. Channels 2 and 3 as shown here have had a scaled version of Channel 1 subtracted, to remove synchrotron radiation contributions.