The Radio Supernova in the Ultra-Low Metallicity Galaxy SBS0335-052

Abstract:
We have detected a supernova in the extreme low metallicity galaxy SBS0335-052. The source appeared in 7mm observations in August of 2005 with a flux density of ~0.4 mJy, but was not previously detected in observations at any other wavelength. We verified the radio supernova (RSN) with "Target of Opportunity" observations in late June and early July of 2006, making this the first known example of a SN exploding in an extremely metal poor galaxy. Thus, we have an golden opportunity to study the best analog to a high-redshift RSN to date. The recent ToO observations indicate that this RSN appears to be similar in some respects to previously studied RSNe. However, the RSN in SBS0335-052 also differs radically from other known RSNe; despite being strongly detected at 6cm in recent ToO observations, it is astonishingly undetected at 3.6cm in observations taken within three weeks of the 6cm observations. Our primary goals are (1) confirm the apparently unique relative flux density at 3.6cm and 6cm, (2) to measure for the first time the light curve of an extremely low-metallicity SN, and how it changes with frequency, and (3) assess the importance of density in SN evolution.

Authors:

<table>
<thead>
<tr>
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<th>Email</th>
<th>Status</th>
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</thead>
<tbody>
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Related proposals:
AJ328

Observing type(s):
Continuum, Monitoring
## Resources:

<table>
<thead>
<tr>
<th>Resource name</th>
<th>Tele. Conf.</th>
<th>Frontend &amp; Backend</th>
<th>Set up</th>
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<td>VLA B</td>
<td>X Band 3.6 cm 8080 - 8750 MHz VLA Correlator - Single Channel Continuum</td>
<td>Bandwidth: 50 MHz</td>
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<td>Rest frequencies: 8435.1,8485.1 MHz</td>
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<tr>
<td>C-band, B-array</td>
<td>VLA B</td>
<td>C Band 6 cm 4500 - 5000 MHz VLA Correlator - Single Channel Continuum</td>
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<th>Source name</th>
<th>RA</th>
<th>DEC</th>
<th>System</th>
<th>RA range</th>
<th>DEC range</th>
<th>Velocity/z</th>
<th>Group name</th>
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<tbody>
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<td>-05:02:38</td>
<td>J2000</td>
<td>00:00:00.0</td>
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<th>Elevation Minimum</th>
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**Session Constraints:**

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**Session Source/Resource Pairs:**

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