

THE GALACTIC SOURCES G5.4-1.2 AND G5.27-0.90

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Long after a supernova event, the stellar core (neutron star) may continue to excite an extended remnant of ejecta surrounding it, as in the case of the Crab nebula. In contrast, the more common shell supernova remnants (SNRs) appear unaffected by any embedded neutron star.

Recently, Becker & Helfand (1985, *Nature* 313, 115; hereafter BH85) postulated a new variety of nebula (which they stress is not an SNR but claim nonetheless is the product of a parent stellar-remnant/binary-system) to account for the radio source G5.3-1.0. The source had hitherto been regarded as an SNR, and we suggest that this earlier, more prosaic interpretation is adequate, albeit with some novel aspects.

We used the MOST* to obtain a new map of the region at 843 MHz with beamsize 42"x110" arc. Our map shows not only the strong arc of emission noted by BH85 at RA 17^h58^m30^s but also a similar though weaker arc to the east at RA 18^h00^m30^s. We suggest that these two arcs are simply the limb-brightened periphery of a roughly circular shell SNR with diameter ~35' arc. We designate it G5.4-1.2, corresponding to the galactic coordinates of its centre. The eastern arc was missed by BH85 because it lay outside the small field of view of their VLA map. Our interpretation of the two arcs as a single shell SNR is borne out by earlier low-resolution maps (e.g. Haynes et al. 1978, *Aust. J. Phys. Astrophys. Suppl.* No. 45, 1) showing a disk of emission which, although fainter to the east, does exhibit a well-defined eastern boundary.

Just outside the shell lies the source G5.27-0.90, which is quite compact (size ~70" to half-intensity). We find that it has a flat spectrum but believe it is unlikely to be thermal since there is no catalogued IRAS counterpart and we detected no radio recombination line. We suggest it is non-thermal, resembling the Crab nebula, and excited by the short-period pulsar PSR 1758-24 at $\ell=5^{\circ}27$, $b=-0^{\circ}96\pm 0^{\circ}1$ (Manchester et al. 1985, *MNRAS* 212, 975). The compact source G5.27-0.90 shows a weak tail towards the shell remnant G5.4-1.2. This may indicate ejection from the shell remnant like the proposed ejection of Cir X-1 from the shell SNR G321.9-0.3 (Clark et al. 1975, *Nature* 254, 675).

*Molonglo Observatory Synthesis Telescope, operated by the Physics Dept. of the University of Sydney (Mills 1981, *Proc. Astron. Soc. Aust.* 4, 156).