

## SUPERNOVA REMNANTS WITH RADIO JETS

M.J. Kesteven, J.L. Caswell, R.S. Roger, D.K. Milne,  
R.F. Haynes and K.J. Wellington  
Division of Radiophysics, CSIRO  
PO Box 76, Epping, NSW 2121  
Australia

Two examples are given of probable radio jet/supernova remnant association, G332.4+0.1 and G315.8-0.0. In both cases the jet length is larger than the radius of the remnant's shell; the jet diameter is barely resolved, and is substantially less than the observed shell thickness. The jet luminosity is 5-10% that of the shell. The G332.4+0.1 jet terminates in an extended plume whose luminosity is ~50% that of the shell.

Observations were made at the Molonglo Observatory Synthesis Telescope, at a frequency of 843 MHz and a synthesized beam of  $44'' \times 44'' / \sin(\text{declination})$ .

There are two problem areas:

1. What produces such well-collimated jets? The initial opening angle is less than  $10^\circ$ .
2. The plume of G332. Its lateral extent is comparable to the shell, which implies high velocities in the region where the jet ostensibly has slowed down. Or does it mean that the jet precedes the supernova outburst and remains visible for several thousand years after its source is extinguished?

