

## W 49 B

### Observation plan

Two observations covering the entire SNR of  $4 \times 3$  arcmin<sup>2</sup> with an overlap at the center, with a 100 ks effective exposure for each. The observations are not time critical and do not have roll-angle constraints. The open position of the filter wheel is chosen for Resolve and normal window/clocking mode for Xtend.

### Immediate objectives

- [1] Measure the electron temperature and Fe and Ca ionization temperatures (charge-state distributions) to determine the physical parameters characterizing the recombining plasma, such as the recombination timescale and initial ionization temperatures.
- [2] Measure the Fe ion temperature and its ratio to the electron temperature to constrain the cooling mechanism that produced the recombining plasma.
- [3] Measure the elemental abundances and mass ratios of the Fe-peak elements in the ejecta, such as Ti, Cr, Mn, Fe, and Ni, to identify the progenitor.
- [4] Detect and study odd-Z elements with lower atomic numbers in the ejecta, such as Al, Na, and P, to probe the initial metallicity of the progenitor.