Shocks in the NLR of AGN

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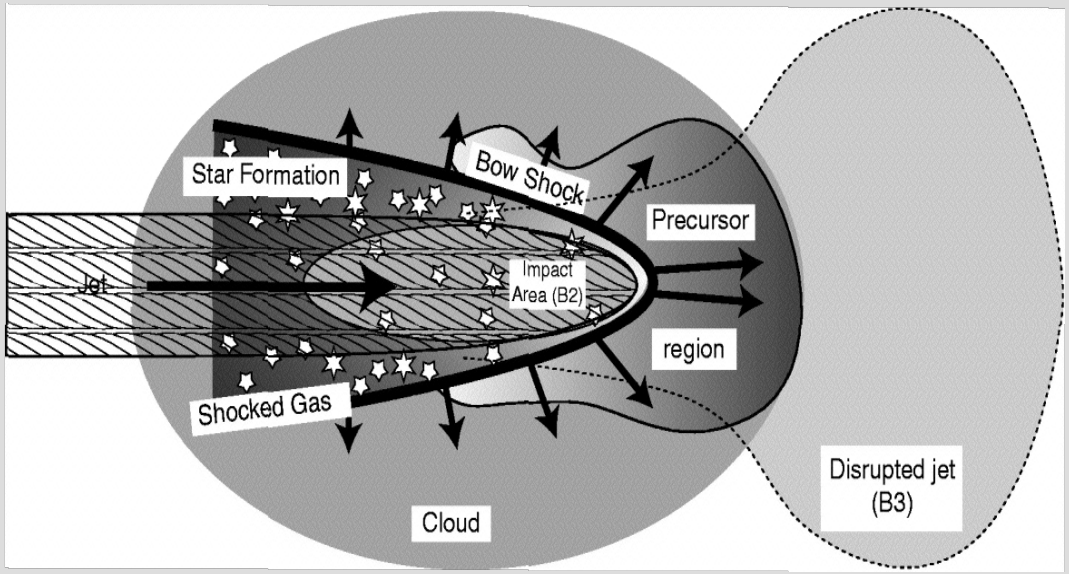
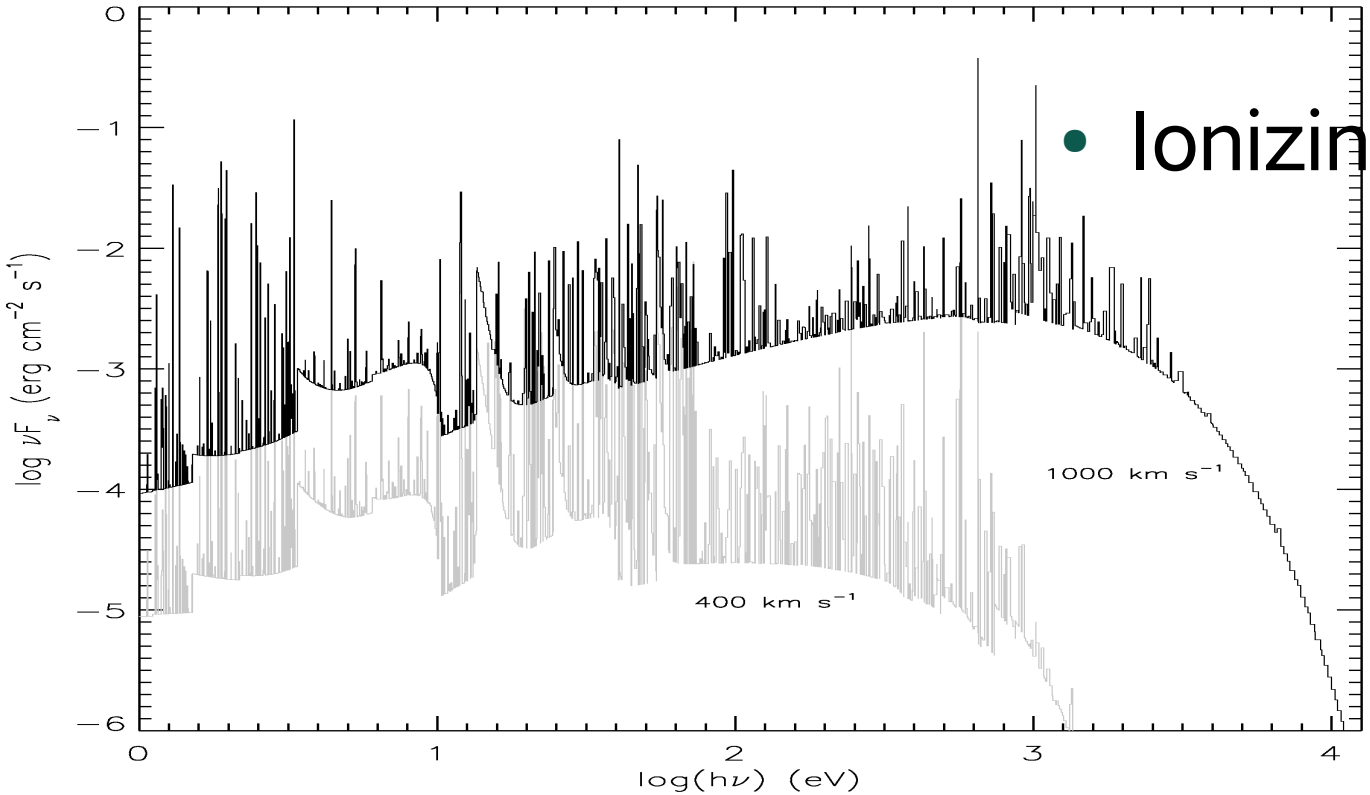
Shocks in NLRs of AGN

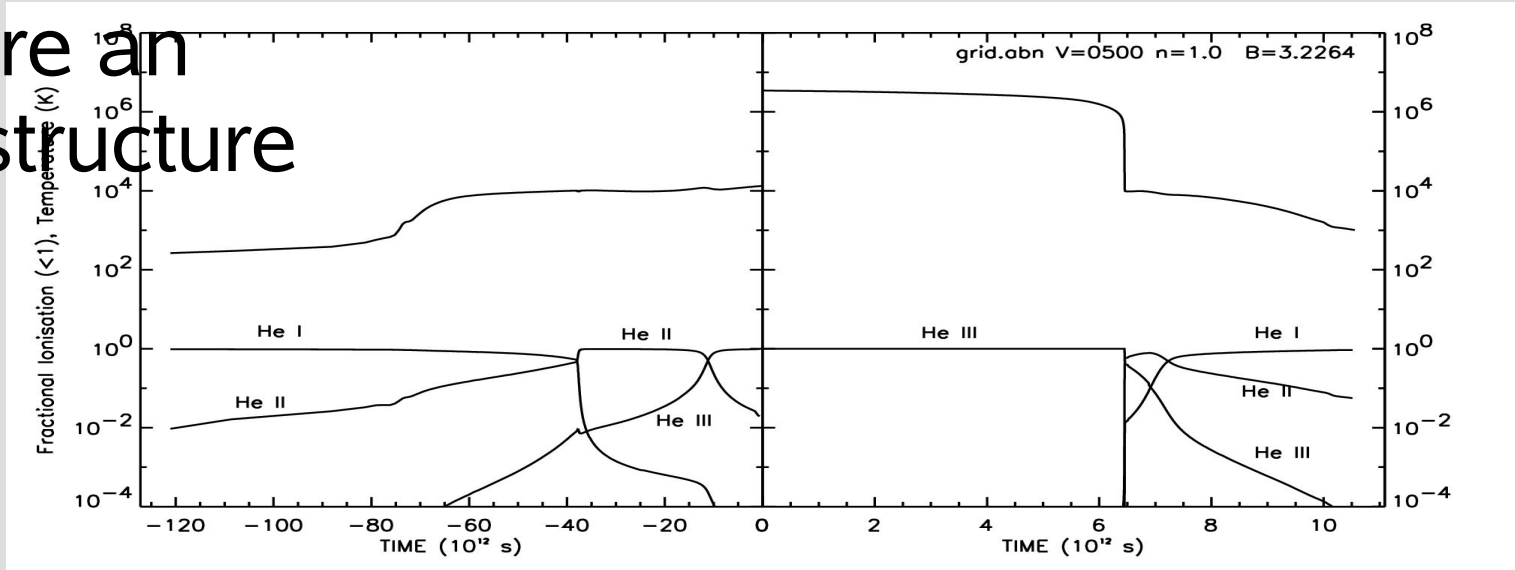
- Driven by jets and outflows
- V_{shock} > 170 km/s → Radiative
- Important for understanding emission line spectra and overall energetics



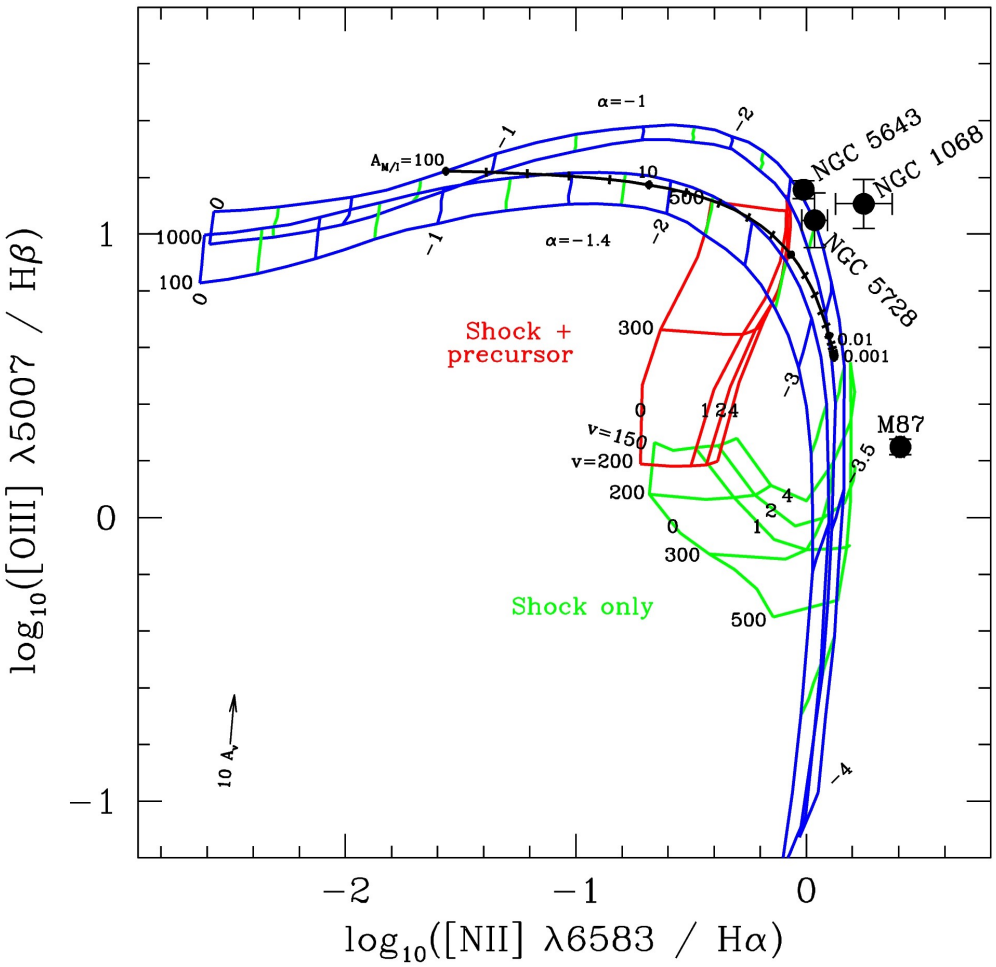
- Ionizing spectra



- Temperature an ionization structure



Line Ratio Diagnostics

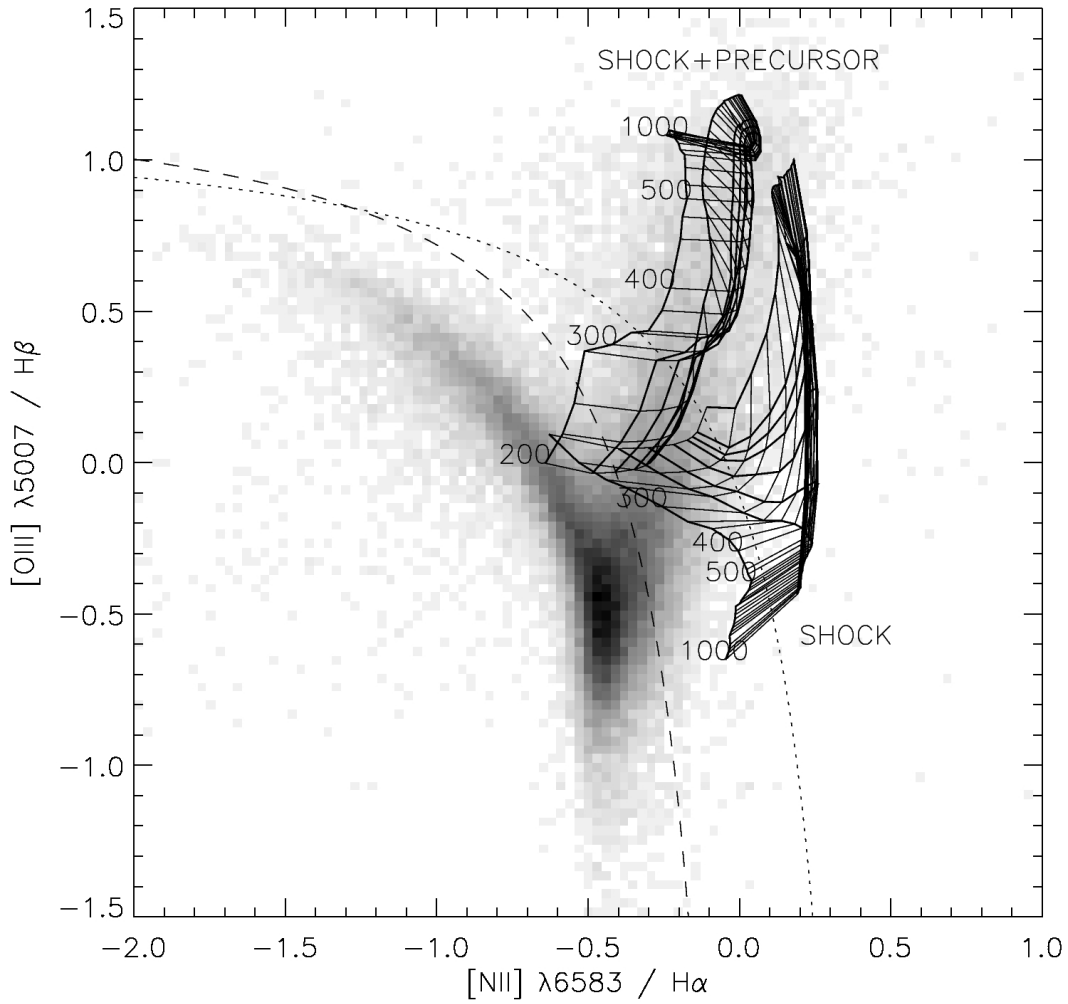


- Many observations near the the high V end of Dopita & Sutherland grid

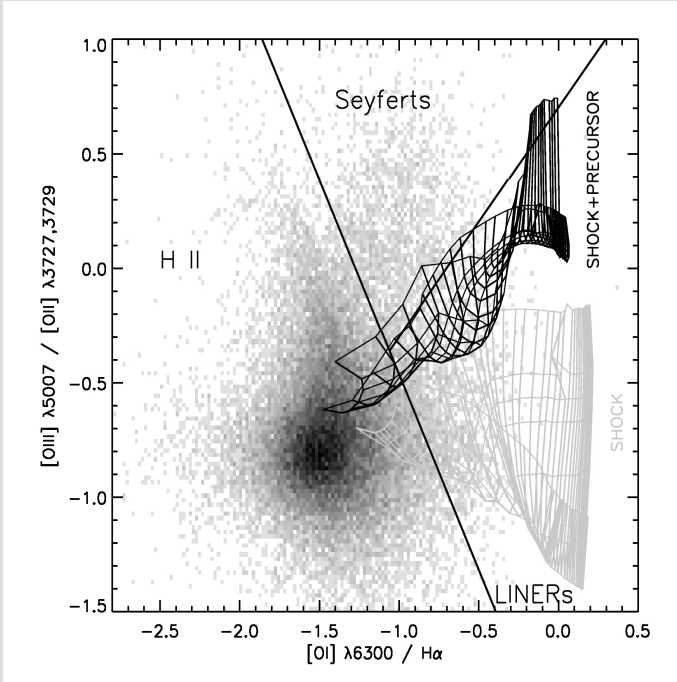
New MAPPINGS III models

- Updated from Dopita & Sutherland 96
- Wide parameter space grid:
  - Velocities: 100 – 1000 km/s
  - Magnetic parameters $B/n^{1/2}$ 0-10
  - Densities 0.001 – 1000 cm^{-3}
  - Abundances: 5 different sets
- Updated atomic data, better convergence, full line list, DS96 quirks fixed

Line Ratio Diagnostics



- beyond the DS96 500 km/s limit important for many observed objects



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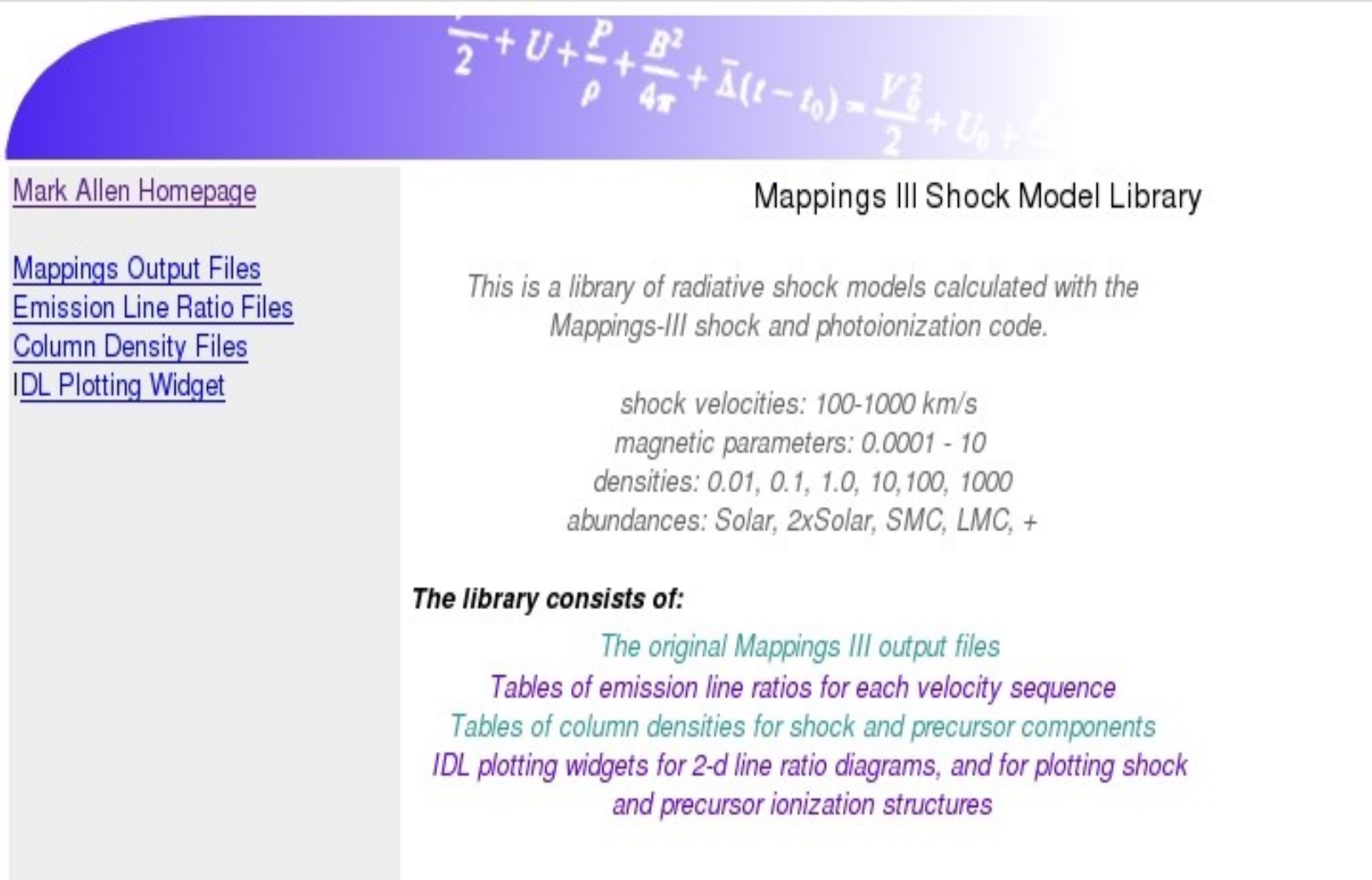
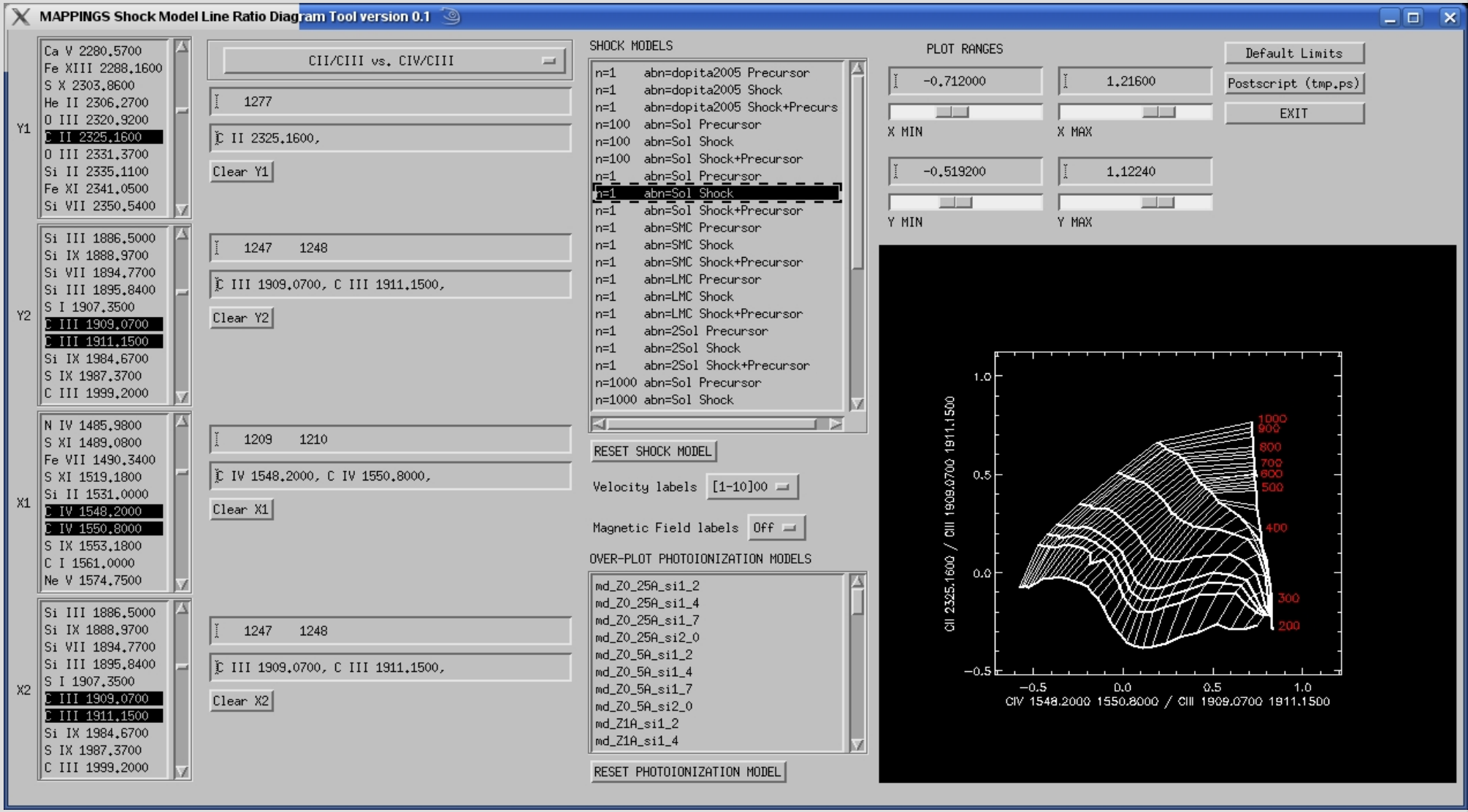


Any model any set of line ratios



- Comparison with Dopita & Sutherland 1996