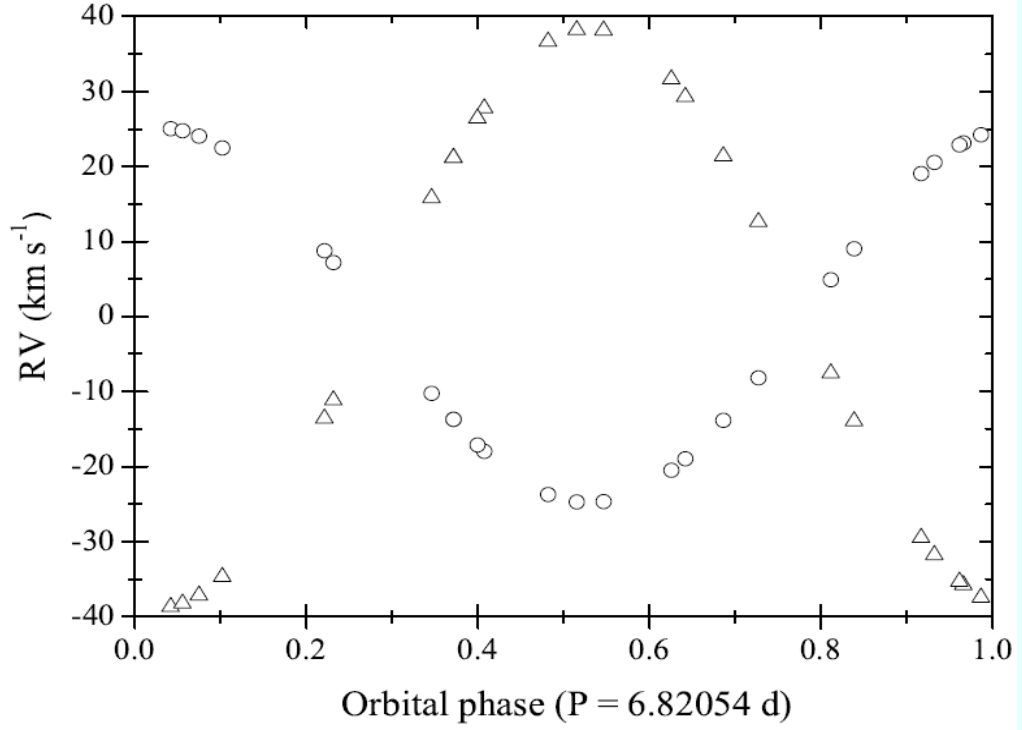
BinaMIcS: the magnetic field of the hot spectroscopic binary HD5550

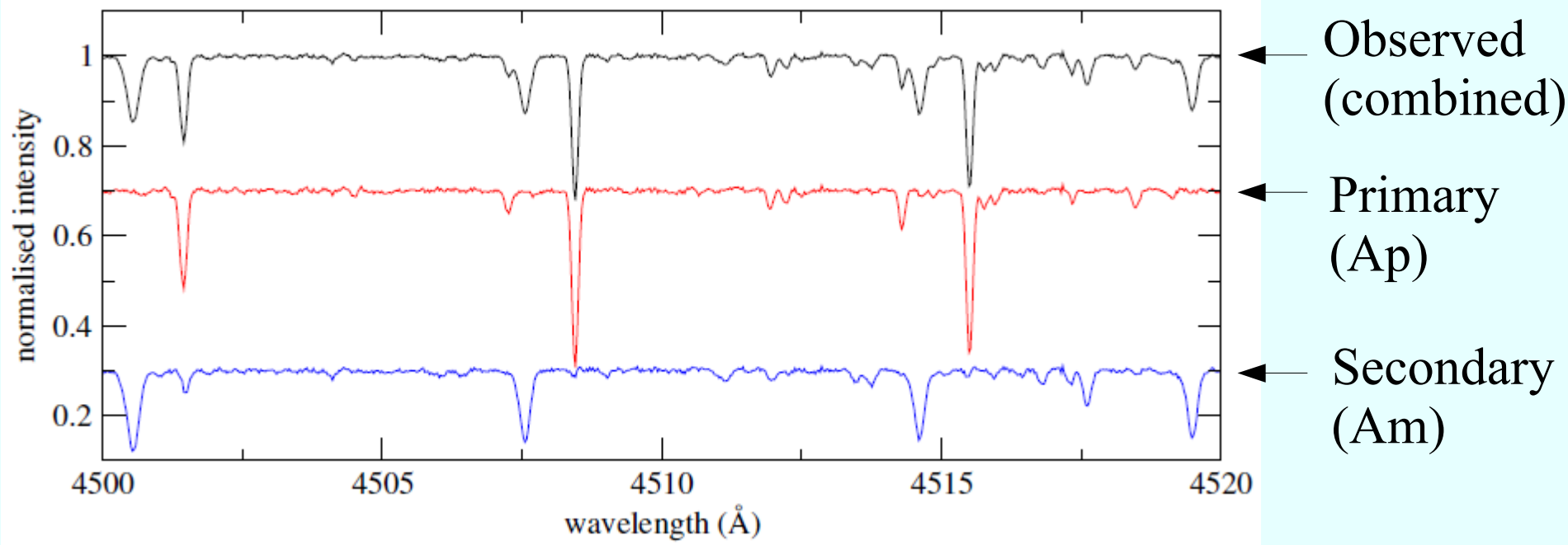
C. Neiner (LESIA), E. Alecian (IPAG+LESIA)
and the BinaMIcS collaboration

- 25 high-resolution spectropolarimetric observations of HD5550 obtained with Narval at TBL were used to measure the possible magnetic field of both A-type components of the spectroscopic binary HD5550.

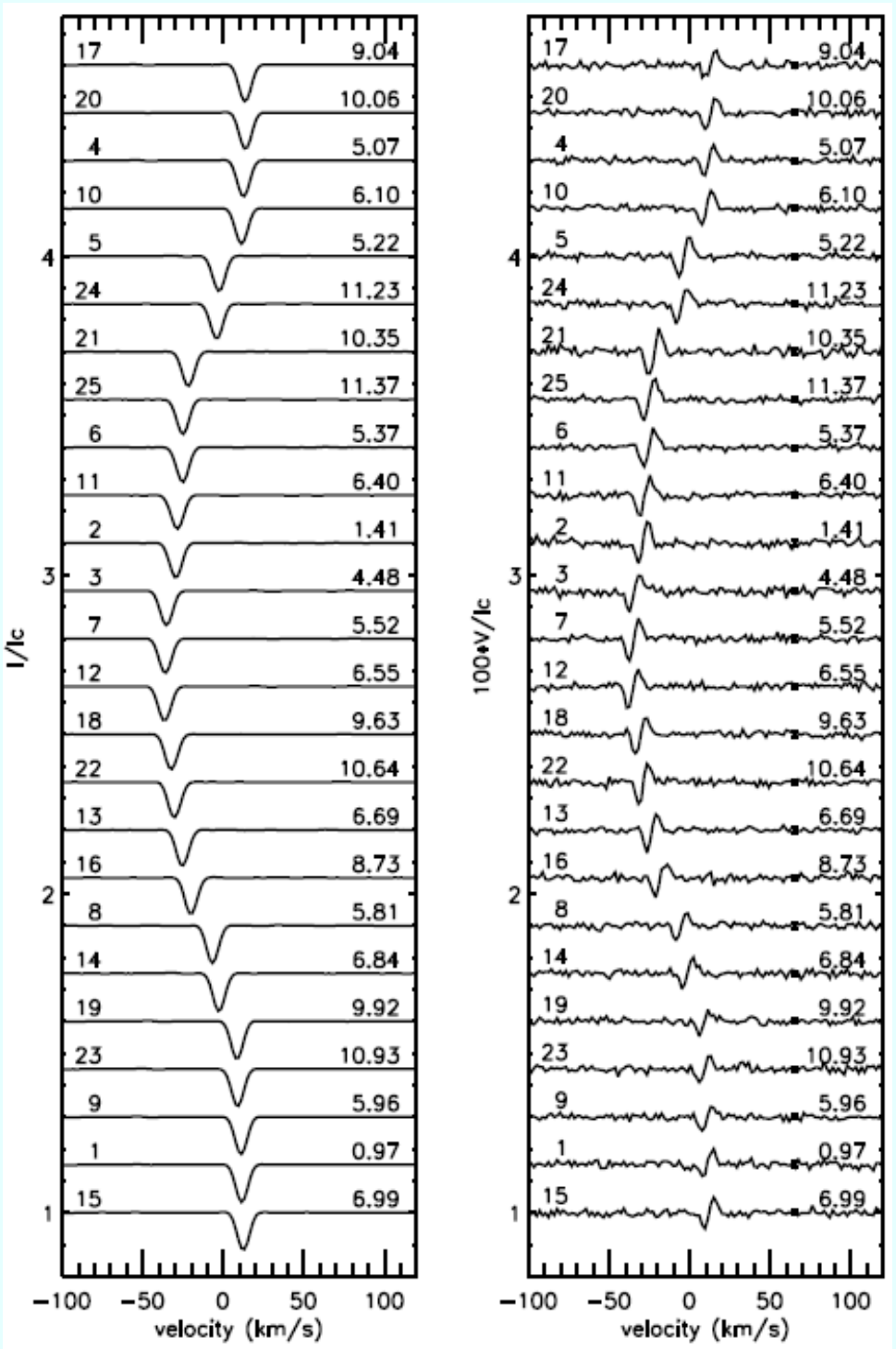
- We first disentangled the spectra and found an orbit with a period P_{orb} = 6.82054 d and almost circularised with an eccentricity e=0.005.



- We then used Zeeman and Atlas9 LTE models on the disentangled spectra to derive the stellar parameters of both components: the primary is an Ap star and the secondary is an Am star.



- We applied the LSD technique to produce averaged Stokes I and V spectra and we measured the magnetic field in both stars.



- Only the primary (Ap) star is found to be magnetic.
- A dipole model of its Zeeman signatures shows that the polar field strength is only B_{pol} = 65 G, with an inclination i=32° and an obliquity β=156°.
- The rotation period of the primary is P_{rot} ~ 6.84 d, compatible with P_{orb} = 6.82 d → the system is synchronised.
- An upper limit on the undetected field of the secondary is set at $B_{pol} \leq 40$ G.

→ Results will be published in Alecian, Tkachenko, Neiner et al., in prep.