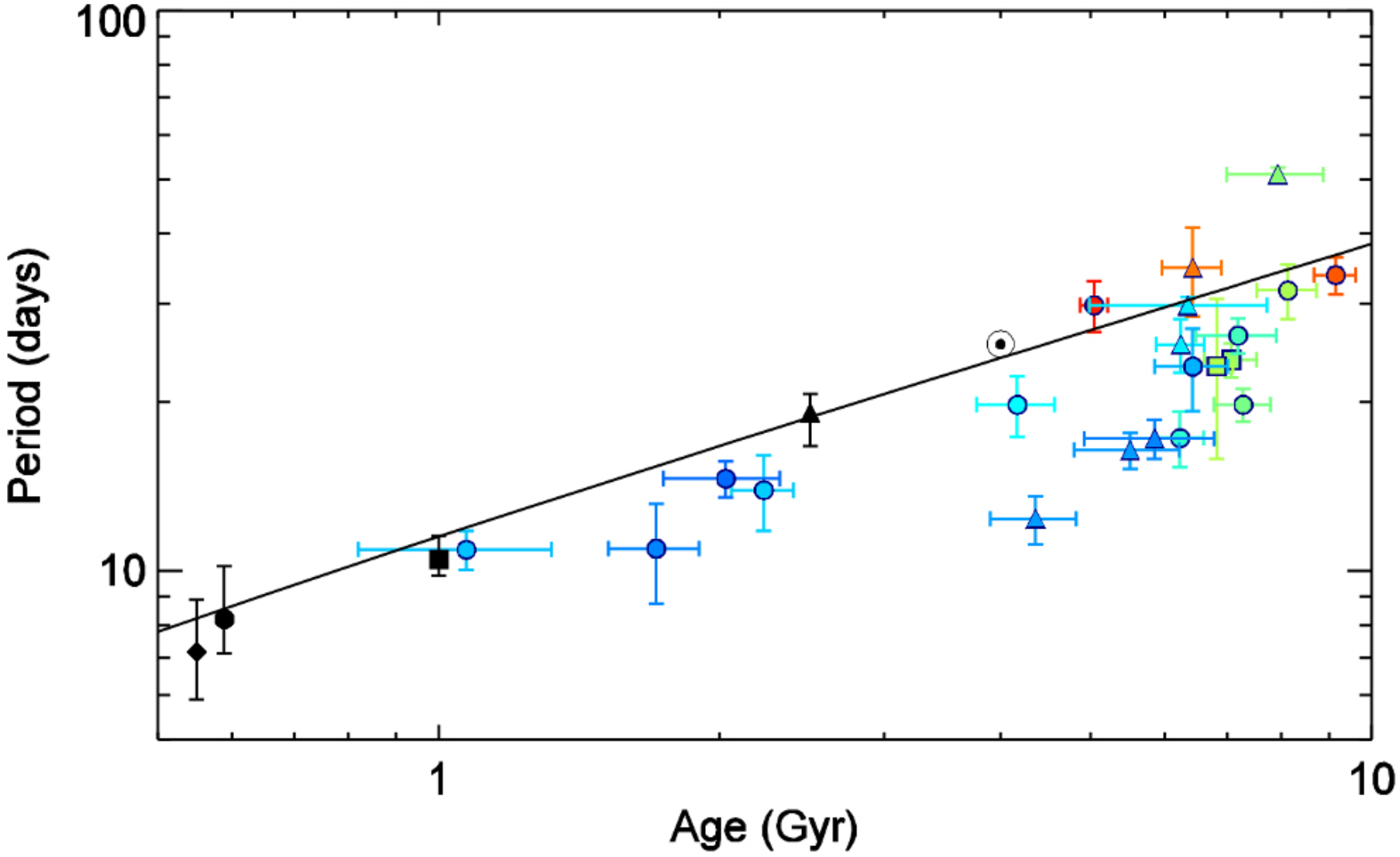
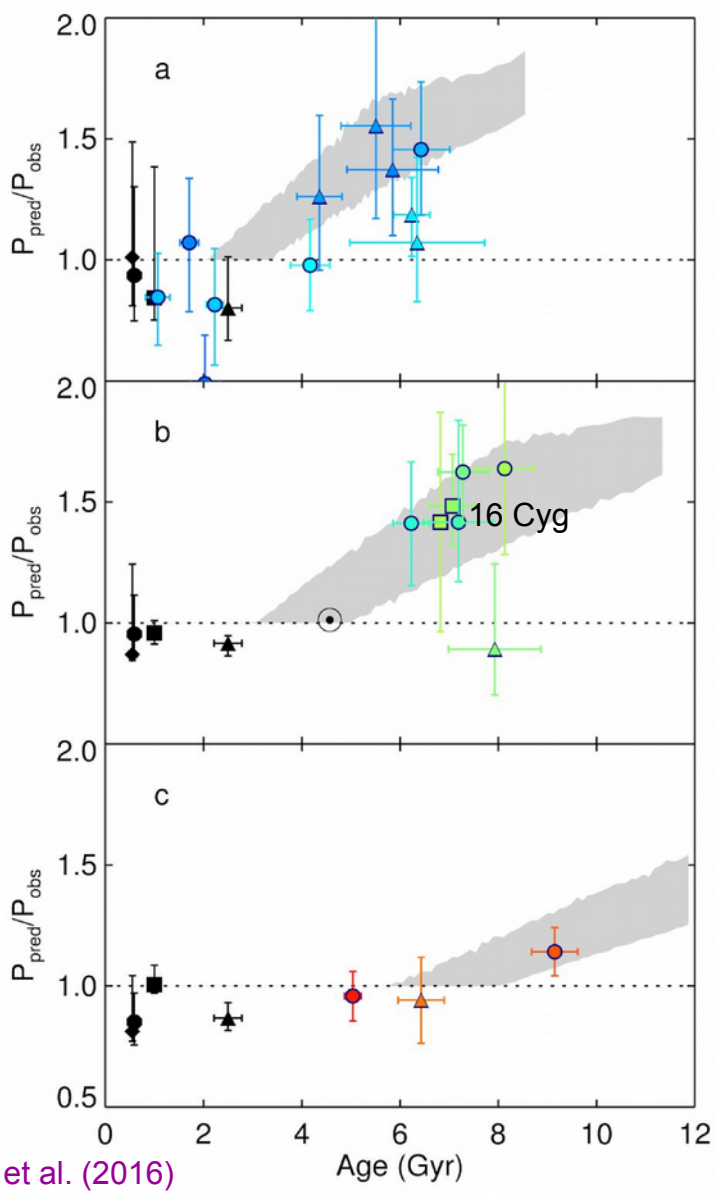
Rotational evolution



van Saders et al. (2016)

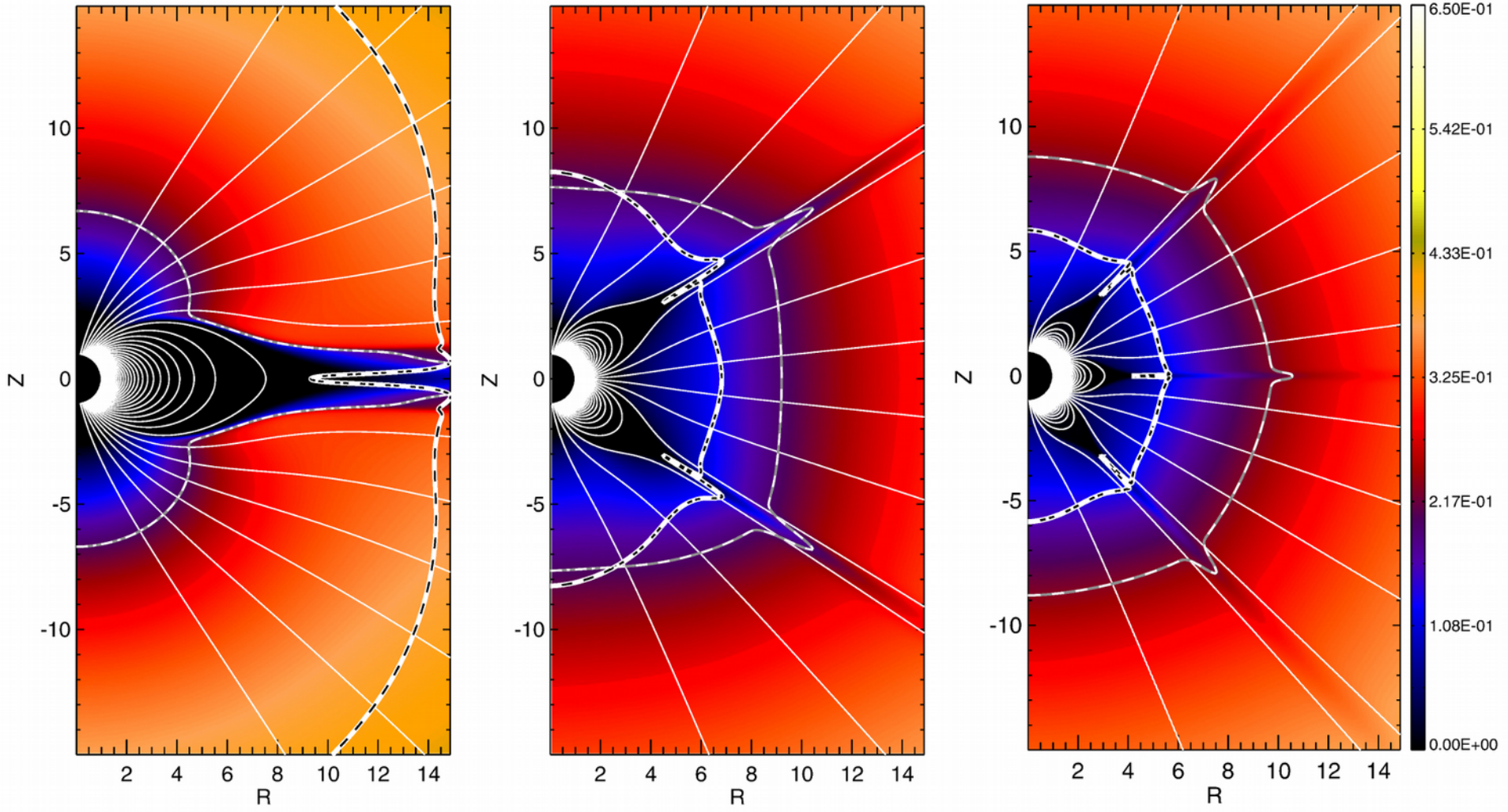
New view of gyrochronology



van Saders et al. (2016)

- Stars beyond middle-age rotate more quickly than gyrochronology predicts
- Effect seems to appear beyond a critical Rossby number (Ro ~ 2)
- Onset is earlier in F-type, near solar age in G-type, later in K-type stars

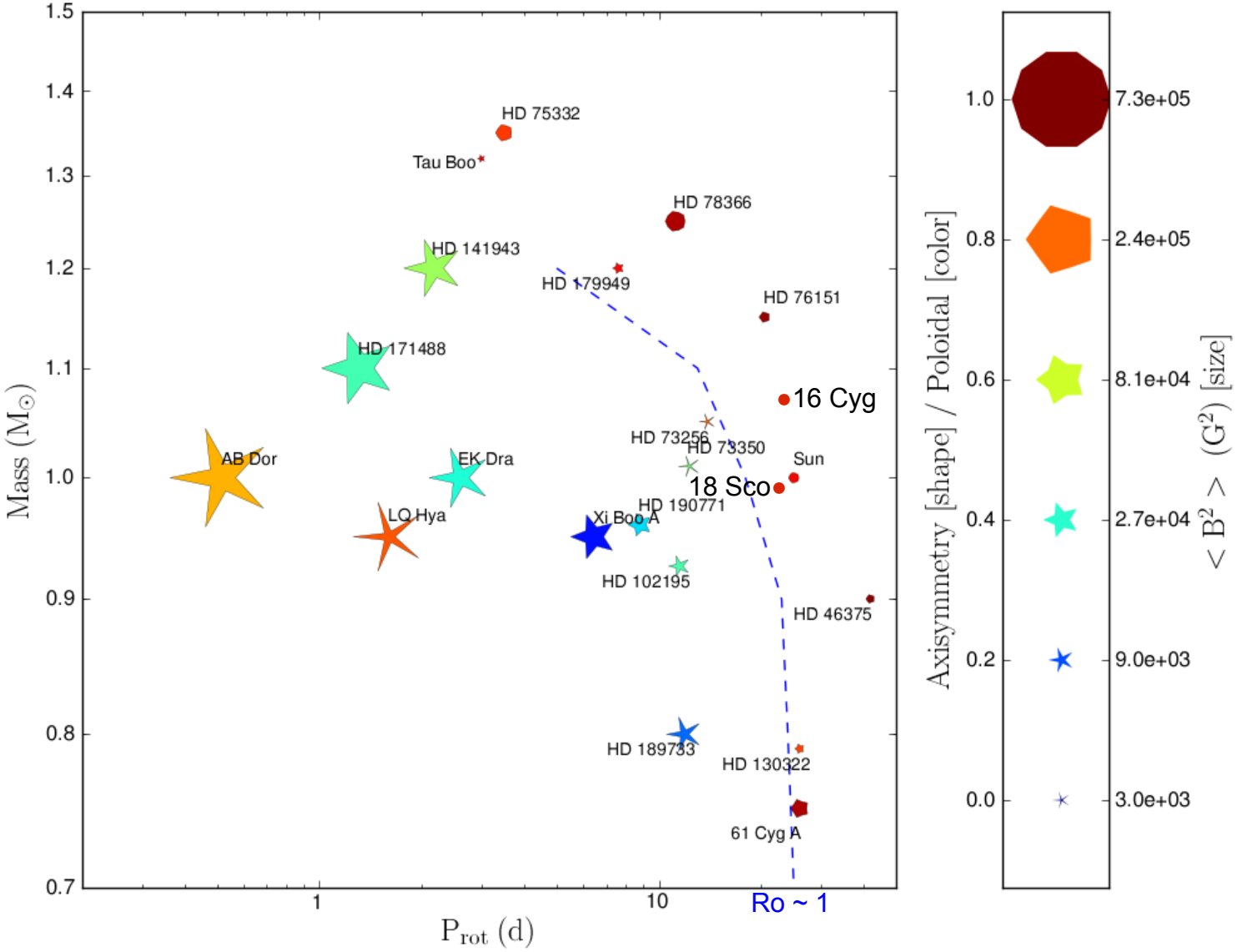
Spindown and magnetic topology



dipole quadrupole octupole

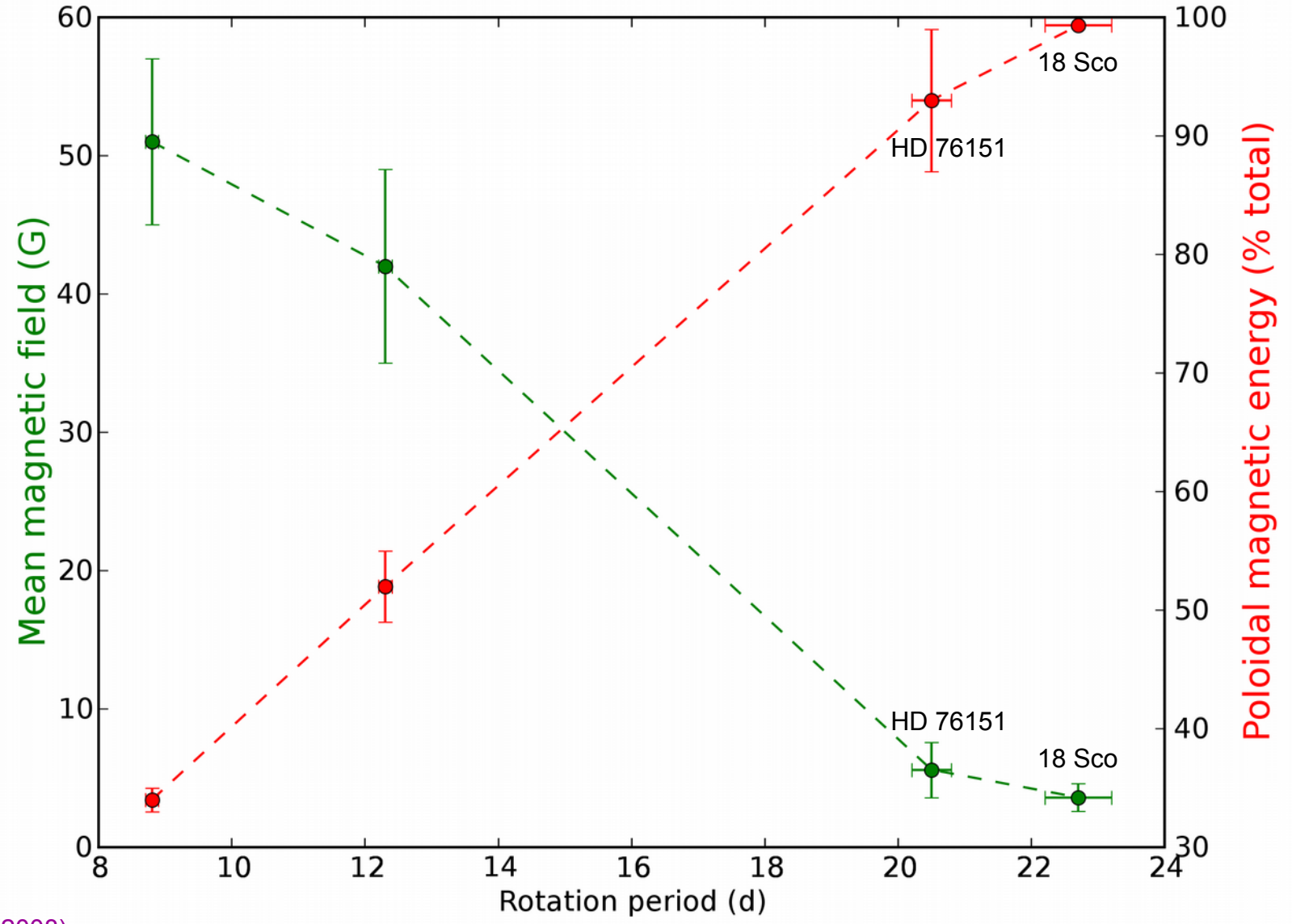
Reville et al. (2015)

Magnetic fields in sun-like stars



Fares et al. (2014)

Magnetic fields in sun-like stars

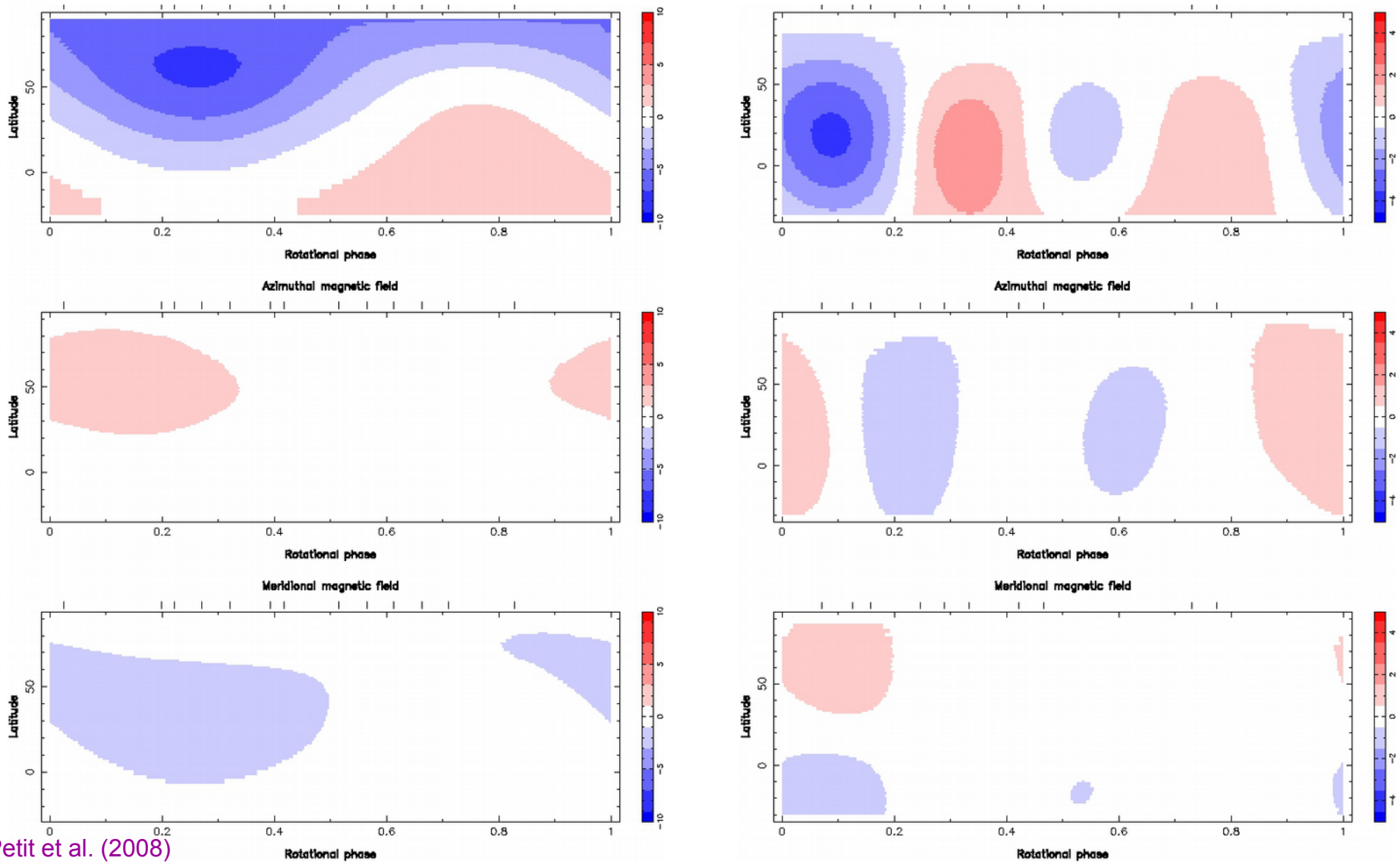


Petit et al. (2008)

18 Sco spectropolarimetry

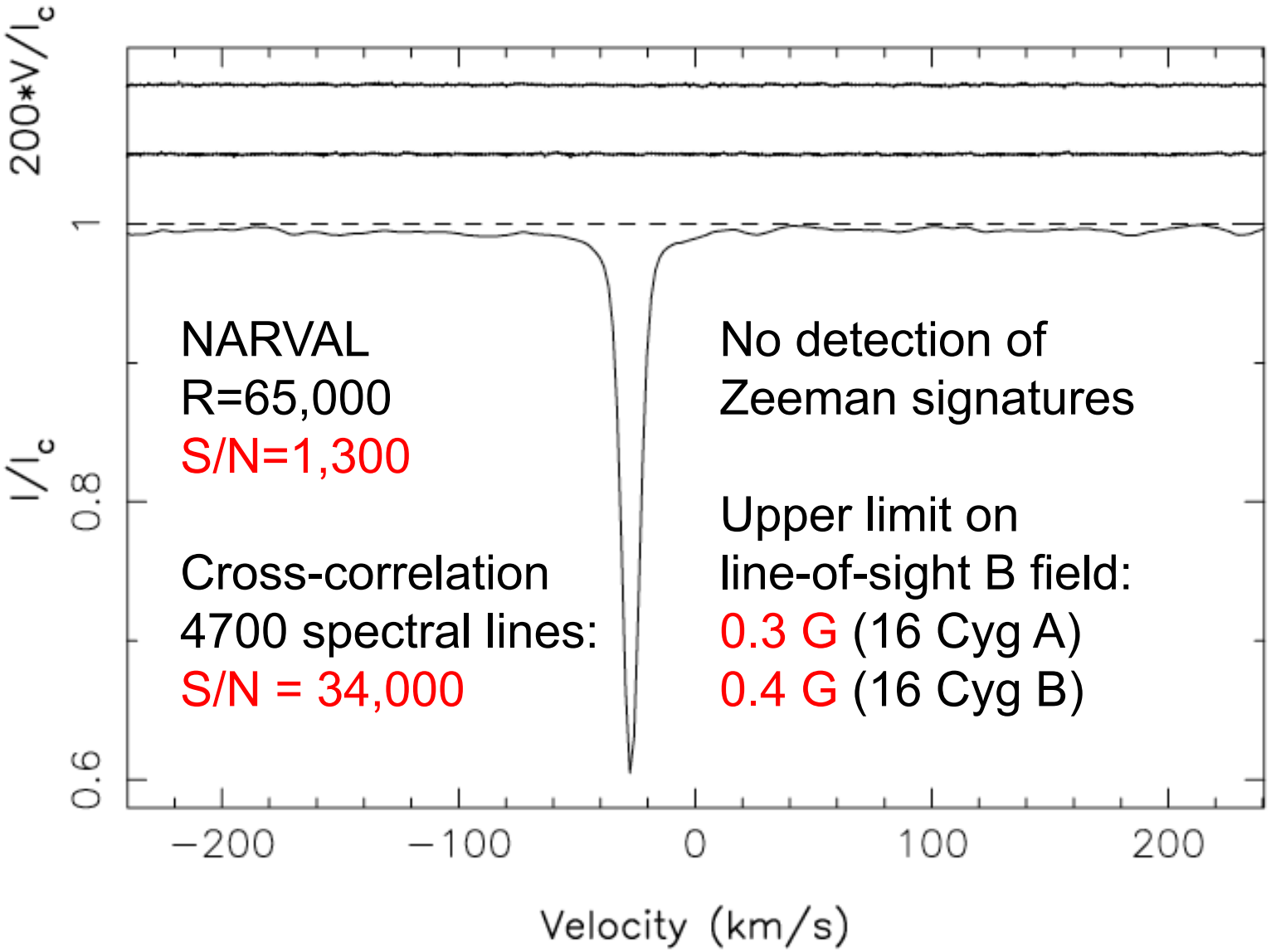
HD 76151 (P ~ 20d)

18 Sco (P ~ 23d)



Petit et al. (2008)

16 Cyg spectropolarimetry



NARVAL
R=65,000
S/N=1,300

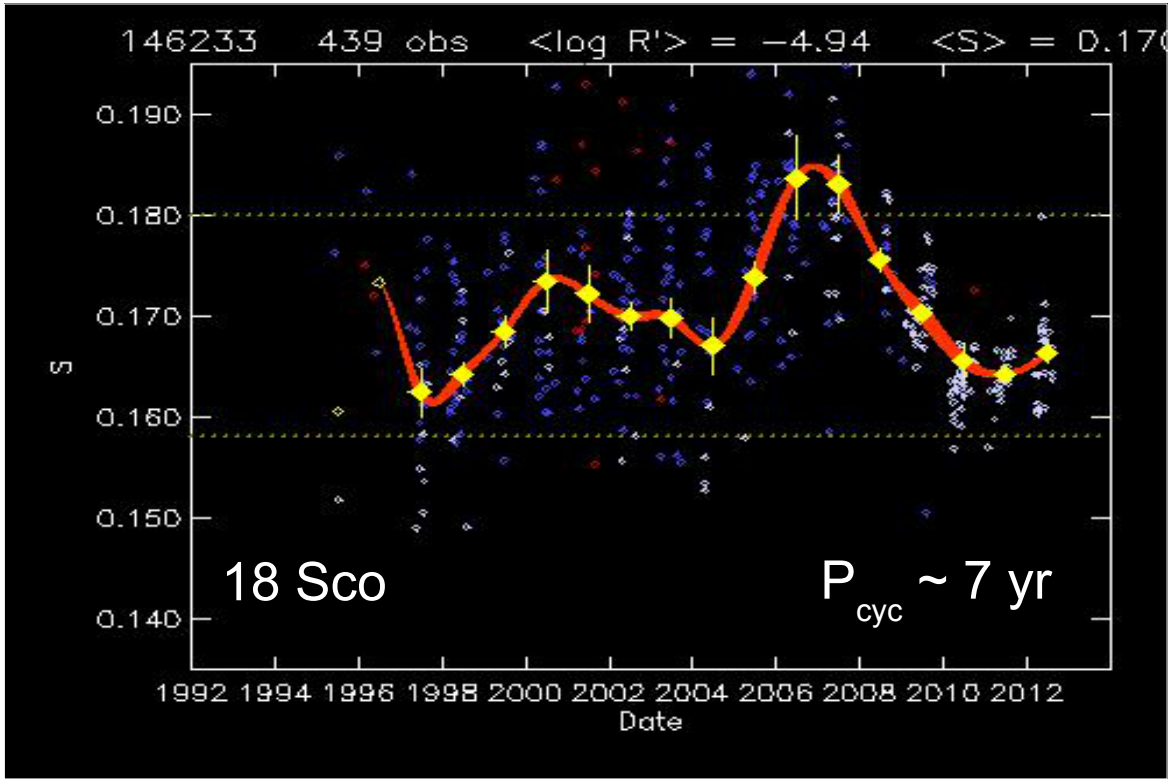
Cross-correlation
4700 spectral lines:
S/N = 34,000

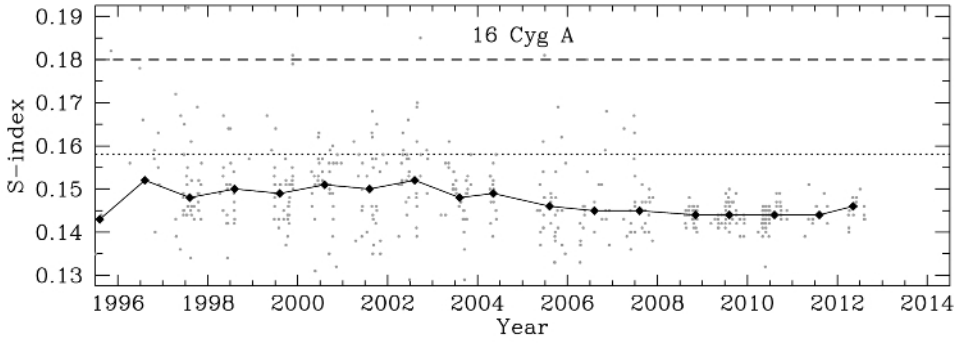
No detection of
Zeeman signatures

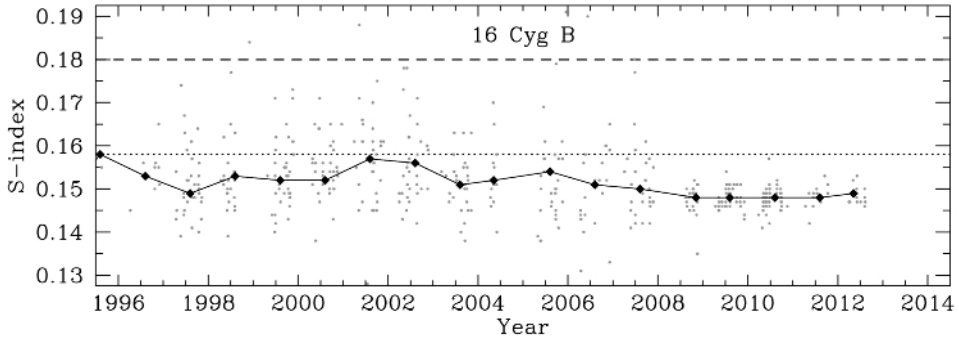
Upper limit on
line-of-sight B field:
0.3 G (16 Cyg A)
0.4 G (16 Cyg B)

P. Petit (priv. comm.)

18 Sco & 16 Cyg activity

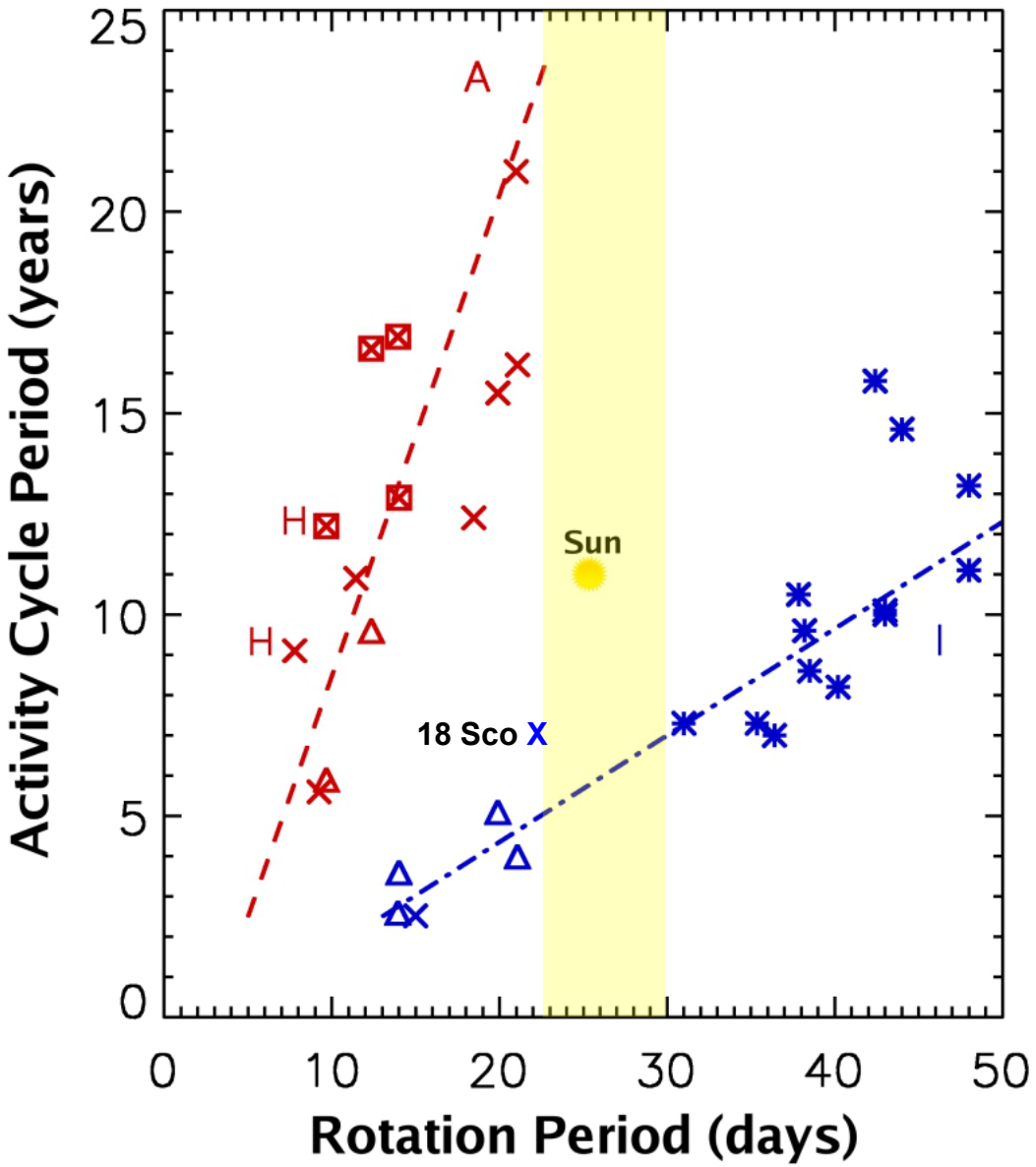






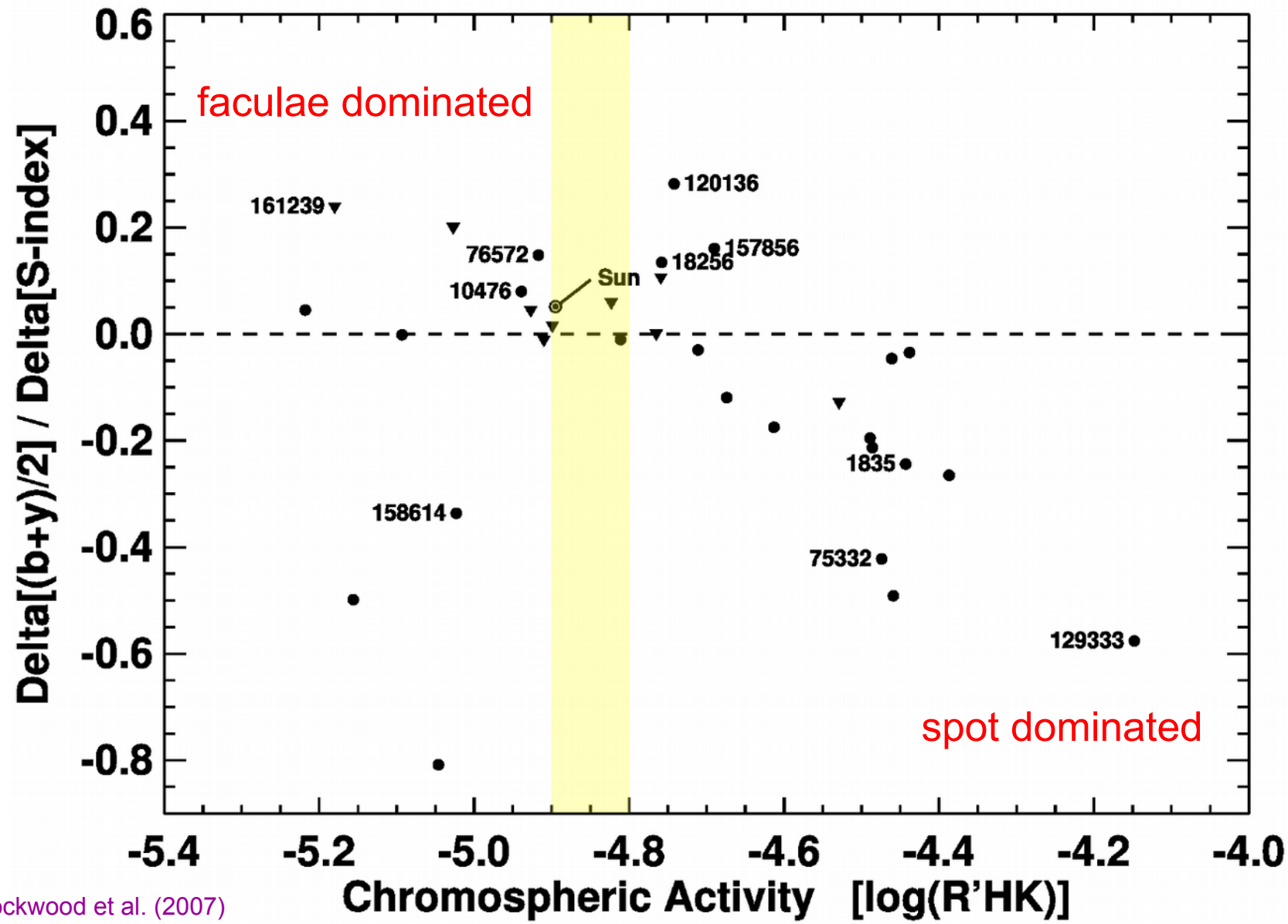
J. Hall (priv. comm.)

Clue #1: activity cycles



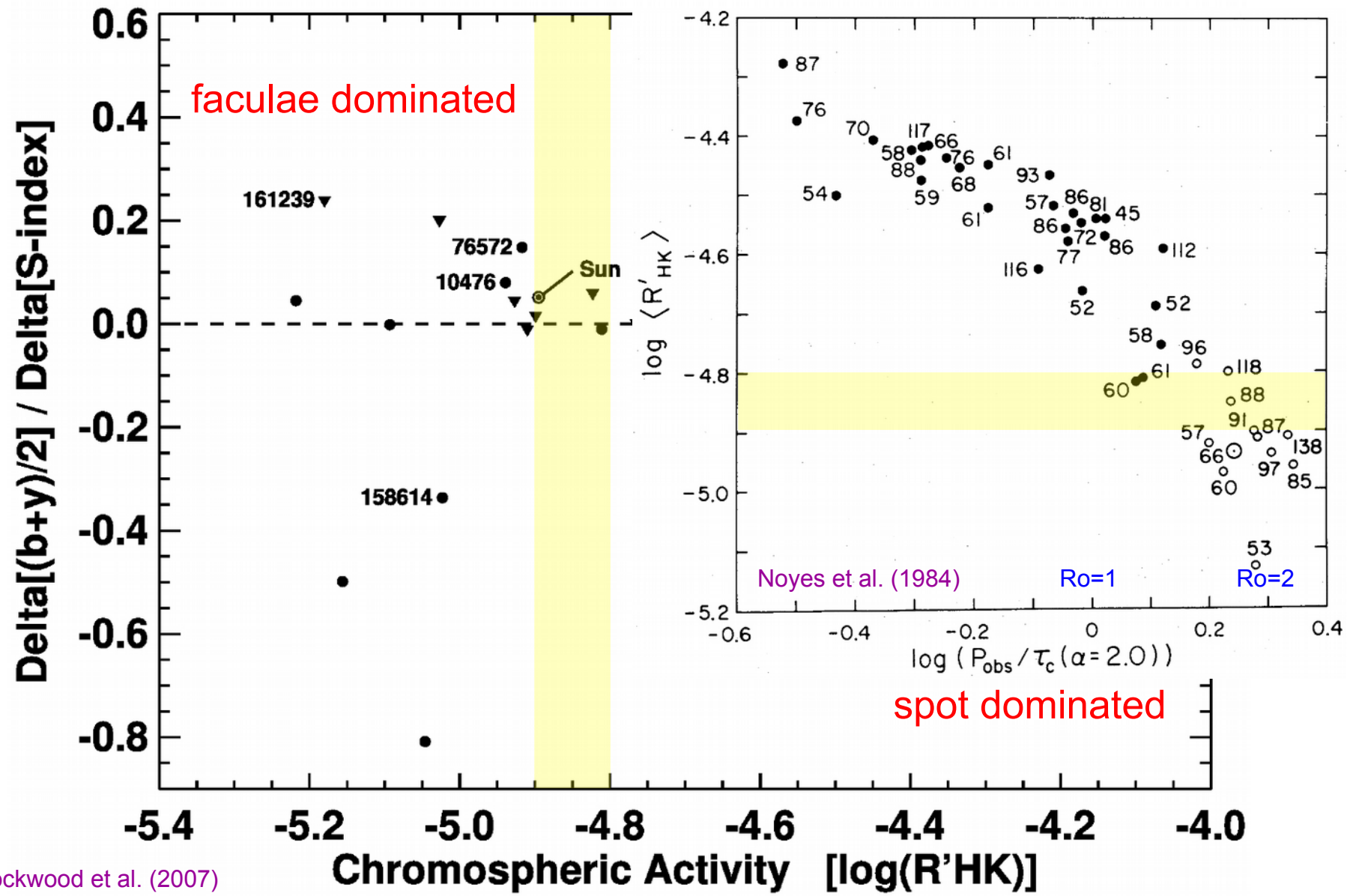
Böhm-Vitense (2007)

Clue #2: spots and faculae



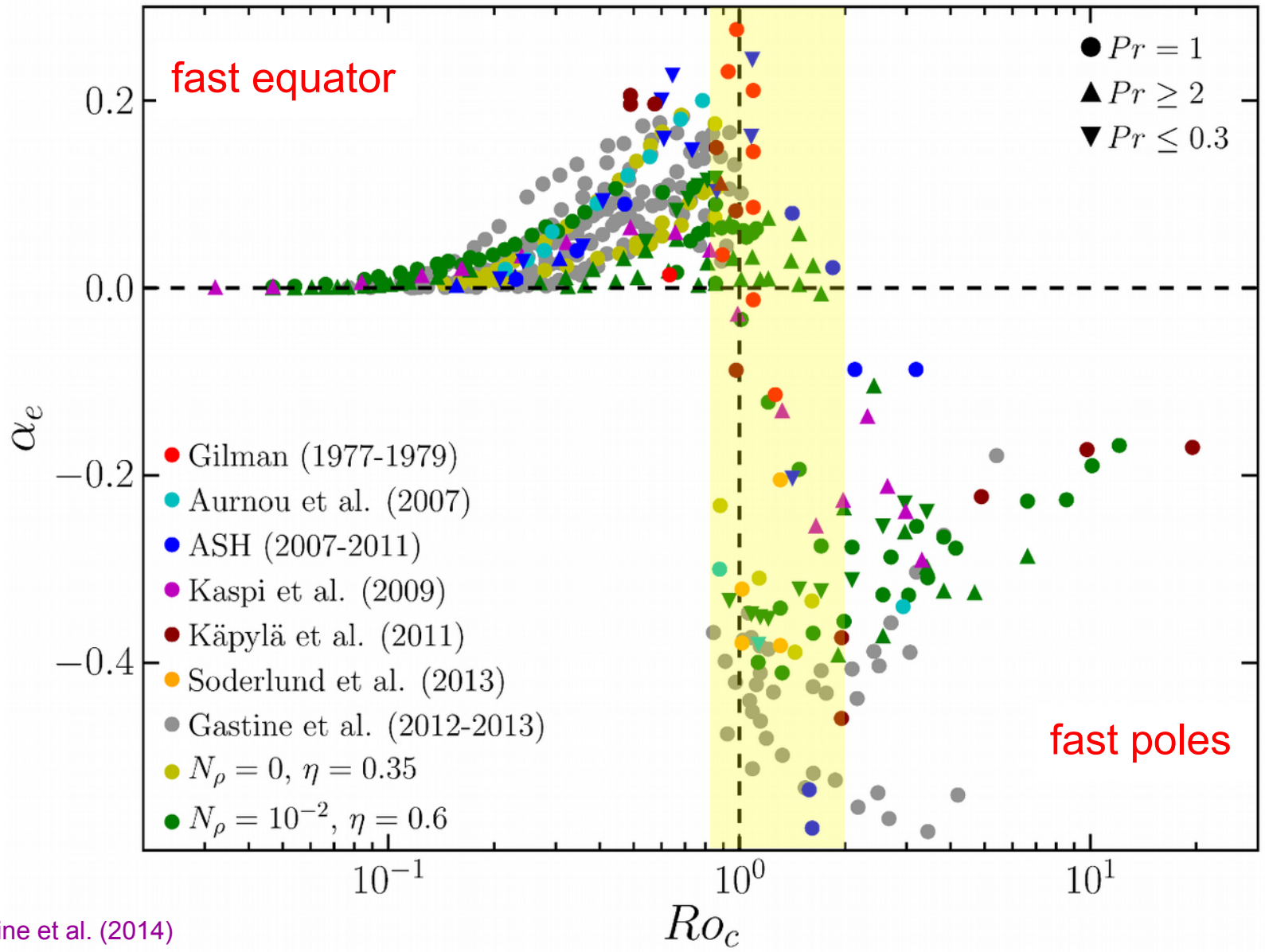
Lockwood et al. (2007)

Clue #2: spots and faculae



Lockwood et al. (2007)

Clue #3: differential rotation



Gastine et al. (2014)


I THINK YOU SHOULD BE MORE SPECIFIC HERE IN STEP TWO
THEN A MIRACLE OCCURS