Imaging the Starspots of \( \sigma \) Dra

Rachael Roettenbacher
University of Michigan

John Monnier, Xiao Che, Fabien Baron
Heidi Korhonen, Bob Harmon, and Greg Henry
Previous Spotted Star Work

II Pegasi

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Roettenbacher et al. 2011, 2013
Spotted Stars with CHARA

• Compare with contemporaneous Doppler imaging and Light-curve Inversion results
• High-resolution spectroscopy from VLT, NOT, STELLA robotic telescope
• Photometry from APT and SMARTS
• Four targets: ζ And, σ Gem, ε UMa, ο Dra
RS CVn

- Close binaries
- Active chromospheres
- Semi-periodic features in the light curve likely due to spots

Kővári et al. 2007
o Dra Prior Knowledge

- RS CVn with G9III primary
- Distance of 105 pc
- Orbital period 138.4 days (Massarotti et al. 2008)
- Photometric period of 54.6 days (Hall & Persinger 1986)
- Eccentricity = 0.114 +/- 0.014 (Massarotti et al. 2008)
- Primary T = 4470 +/- 26 K (Wu et al. 2011)
- Primary log g = 1.92 +/- 0.10 (Wu et al. 2011)
- Primary metallicity [Fe/H] = -0.48 +/- 0.07 (Wu et al. 2011)
- Primary R = 24.5 R☉ (Zielinski et al. 2012)
- vsini = 16 km/s (Glebocki et al. 2005)
- i = 63-90° (Glebocki & Stawikowski 1997)
o Dra Observations

• Span ~70 days in April-June 2012

• 7 nights at CHARA
• 100+ observations in B- and V-band at APT
• 13 high-resolution spectra at NOT
Mysteries of o Dra

• Why don’t we see stronger spot signatures in the interferometry data?
• Why don’t we see the companion?
• What is the rotational period of the primary?
• Are we seeing eclipses?
• Are there tidally-driven pulsations?