

The RV Variability of Yellow Giants

A.M. Larson¹, A.W. Irwin¹, S.L.S. Yang¹, C. Goodenough¹
G.A.H. Walker², D.A. Bohlender², A.R. Walker²

¹University of Victoria, Canada, ²University of British Columbia, Canada

Abstract

The hydrogen fluoride (HF) absorption cell technique has been used at the Canada-France-Hawaii Telescope for over a decade to monitor the radial velocity variability of nearby, solar-type stars in a search for substellar companions. As a complement to this program, we have also been monitoring a select group of G and K subgiants, giants and supergiants, which have all proved variable. We present here a brief summary of our analysis.

Results

In Walker *et al* (1989) we reported on five K giants and one K supergiant included in the HF PRV program at the CFHT. With the addition of 6 more years of observations, we have been able to determine significant, long-term ($f_{period} < 0.01$, $P > 100$ days) periods in 5 of those stars plus an additional K giant, δ Sgr. Table I lists the best long-period sinusoidal solutions. Because of the limited sampling over short time spans, we are not able to rule out the possibility that these long periods are aliases of shorter periods. A program is currently underway at the Dominion Astrophysical Observatory to obtain better time coverage (Yang *et al*, this conference).

Table I. Best Long-Term Periodic Solutions (> 100 days)

Star	MK type ^a	γ (m/s)		K (m/s)		Epoch (days)		Period (days)	
		value	σ	value	σ	value	σ	value	σ
β Gem	K0 IIIb	-13.8	3.2	40.7	4.5	7148.4	9.2	583.5	4.7
α Boo	K1.5 III	To be covered in a separate paper							
δ Sgr	K2.5 IIIa	-6.3	15.0	93.2	18.0	7623.0	12.0	376.3	1.7
α Tau	K5 III	23.9	6.4	99.4	7.9	7614.0	2.2	123.1	0.2
α Hya	K3 II-III	-57.9	15.0	146.1	20.0	6752.6	16.0	794.8	13.0
ϵ Peg	K2 Ib	Multi-periodic							

^a Garrison, R.F. 1992, Observer's Handbook of the Royal Astronomical Society of Canada

References:

- Walker, G.A.H., Yang, S., Campbell, B., Irwin, A.W., 1989, ApJ, 343, L21
Yang, S., Larson, A.M., Irwin, A.W., Goodenough, C., Walker, G.A.H., Walker, A.R., Bohlender, D. 1992, these Proceedings