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THE ANGULAR DIAMETER AND EFFECTIVE TEMPERATURE OF THE LITHIUM-RICH K GIANT HD 148293 FROM THE CHARA ARRAY

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ABSTRACT

We measured the angular diameter of the lithium-rich K giant star HD 148293 using Georgia State University's Center for High Angular Resolution Astronomy Array interferometer. We used our measurement to calculate the star's effective temperature, which allowed us to place it on an H-R diagram to compare it with other Li-rich giants. Its placement supports the evidence presented by Charbonnel & Balachandran that it is undergoing a brief stage in its evolution where Li is being created.

Key words: infrared: stars – stars: fundamental parameters – stars: individual (HD 148293) – techniques: interferometric

Table 3
HD 148293 Stellar Parameters

Parameter	Value	Reference
[Fe/H]	+0.08	Cayrel de Strobel et al. (1997)
V magnitude	5.25	Mermilliod (1997)
K magnitude	2.83 ± 0.11	Neugebauer & Leighton (1969)
A_V	0.04	Famaey et al. (2005)
BC	0.35 ± 0.10	Alonso et al. (1999)
F_{BOL} (10^{-8} erg s^{-1} cm^{-2})	28.9 ± 2.8	Calculated here
θ_{UD} (mas)	1.439 ± 0.059 (4%)	Measured here
θ_{LD} (mas)	1.480 ± 0.060 (4%)	Measured here
R_{linear} ($R_\odot$)	14.3 ± 0.6 (4%)	Measured here
T_{eff} (K)	4620 ± 100	Brown et al. (1989)
T_{eff} (K)	4460 ± 141 (3%)	Measured here