

ON THE FRINGE

OFIR - 2007

Angular diameters for solar type stars

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Scientific Motivation

- Check Temperature scale derived from the IRFM.
- Precise stellar radius required to improve stellar interior models.

(To get 4% accuracy in Mass need 3% in Radius)

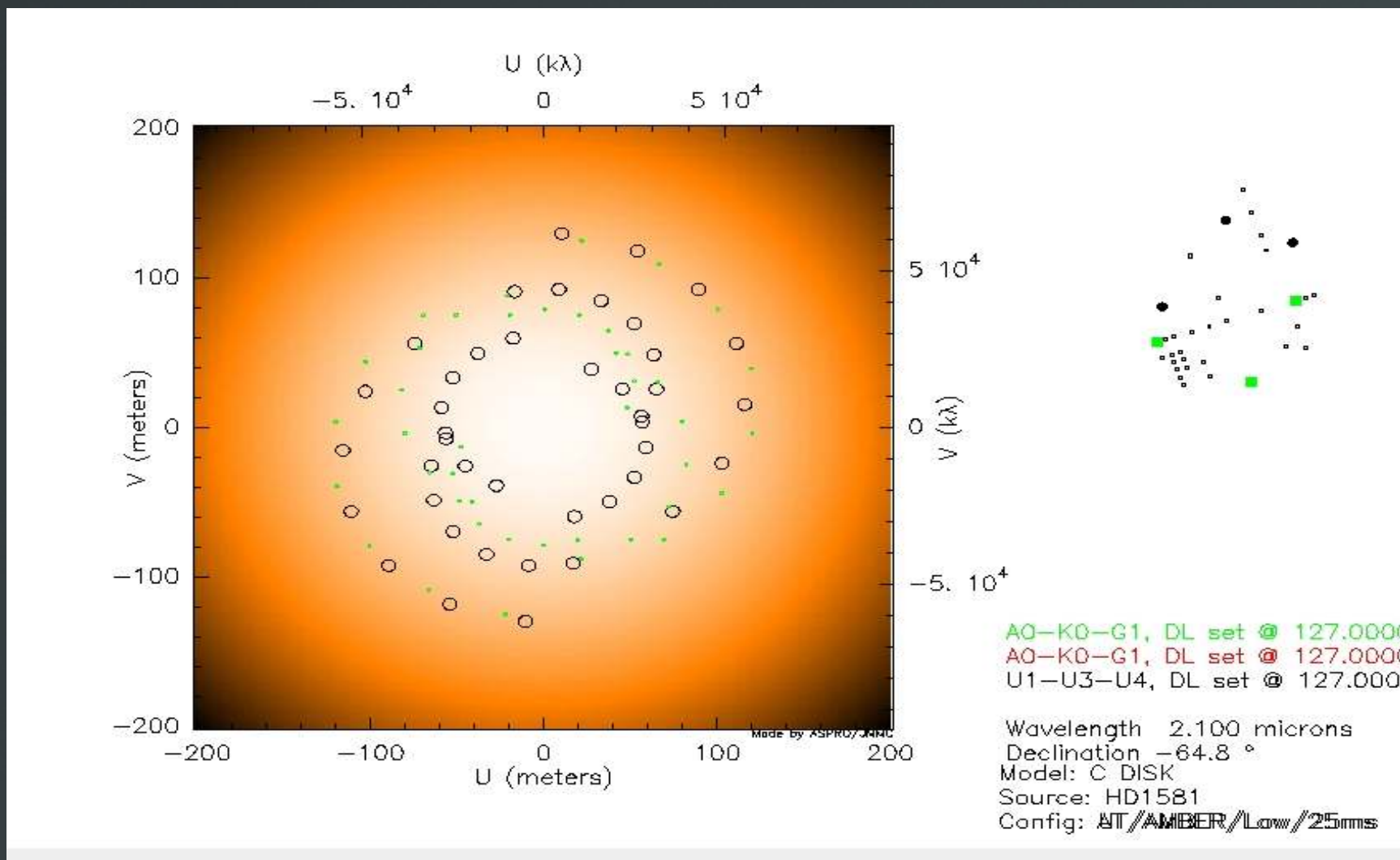
Primary Targets

Target	Teff ($\pm 70\text{K}$)	K	θ (marcseg) (IFRM)
HD1581	5946	2.8	1.15
HD146233	5779	4.1	0.69
HD102365	5624	3.5	0.96
HD115617	5552	3.0	1.07
HD192310	5083	3.5	0.86

Observational Procedure

Need a big baseline to better sample the visibility curve.
Using U1-U3-U4 and A0-K0-G1 with AMBER.

U-V Model: Circular Disk, 1.15 mas



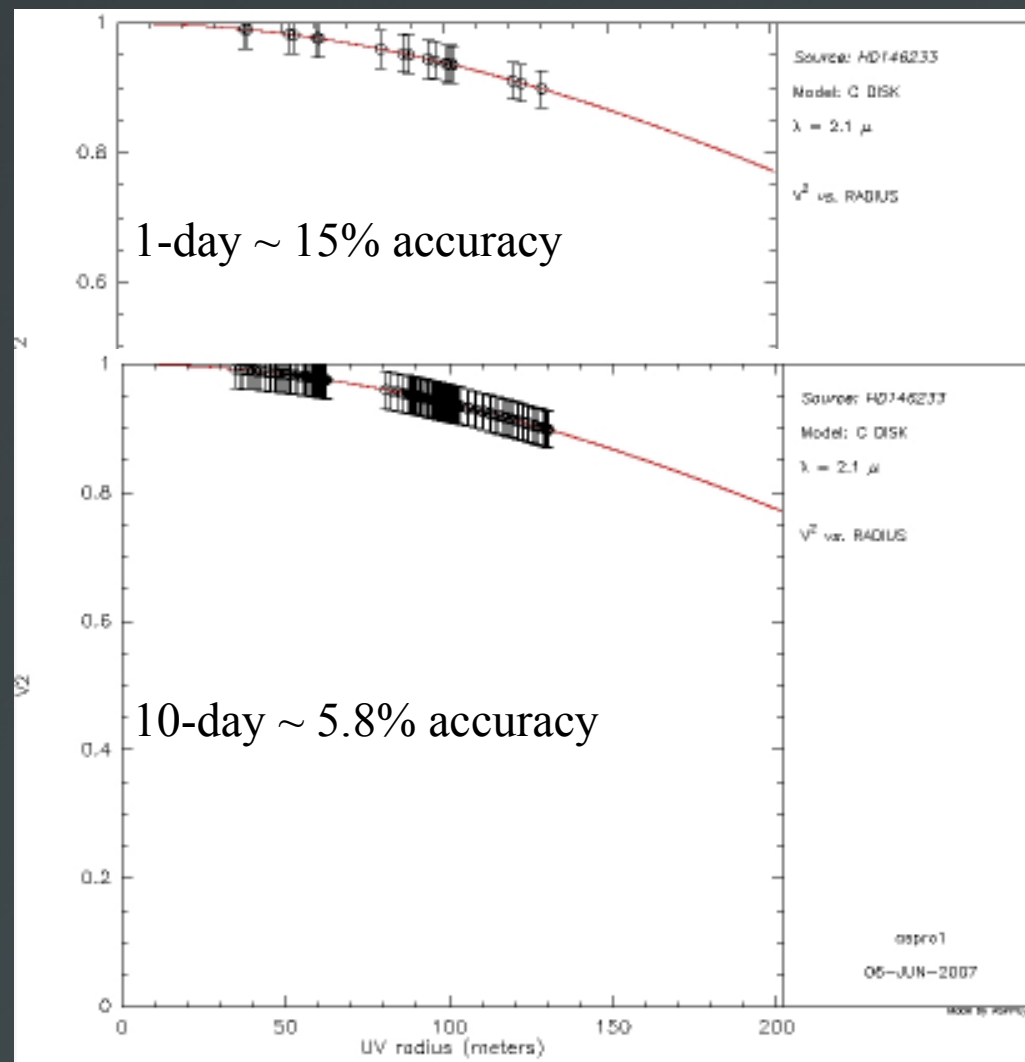
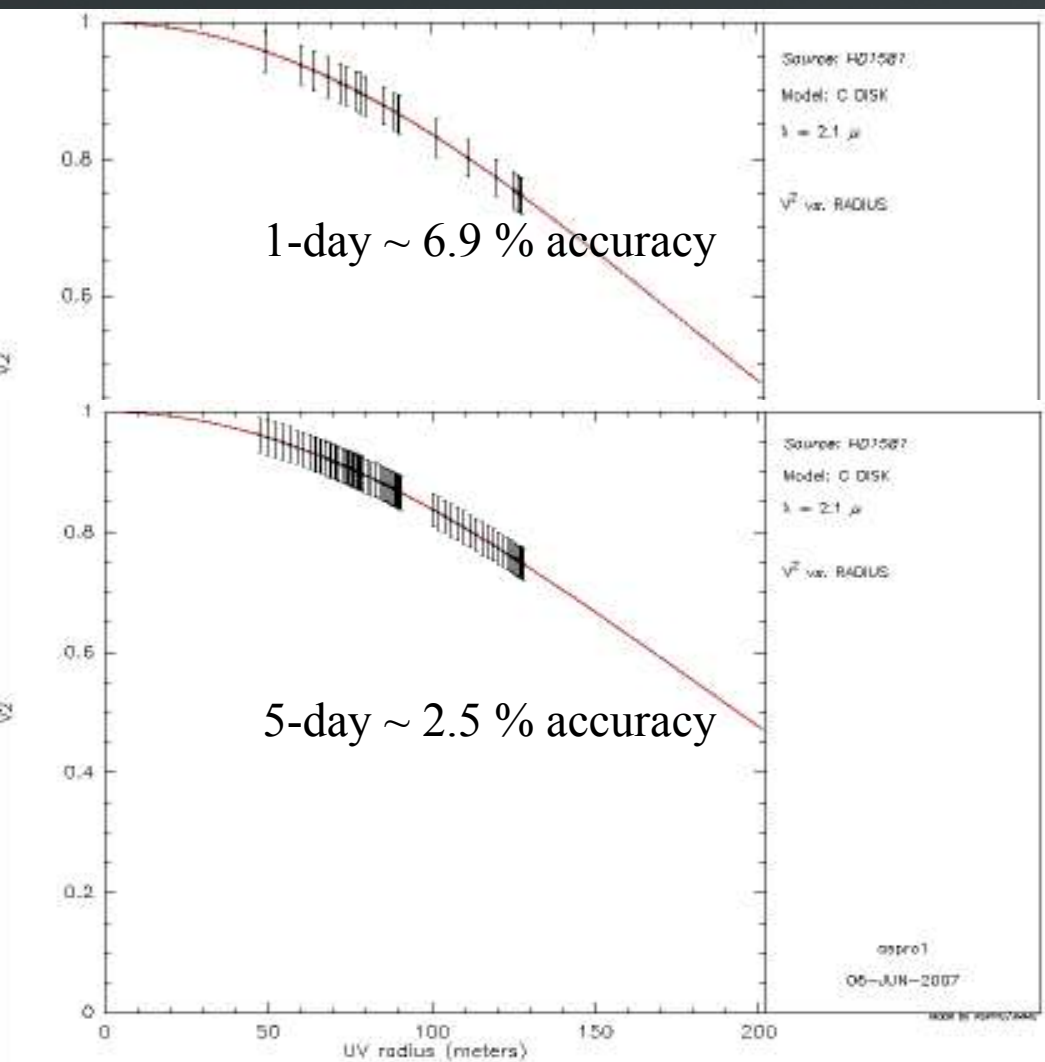
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Observational Procedure

HD115617 For a Circular Disk, 1.07 mas
A0-K0-G1

HD146233 For a Circular Disk, 0.69 mas
UT1-UT3-UT4

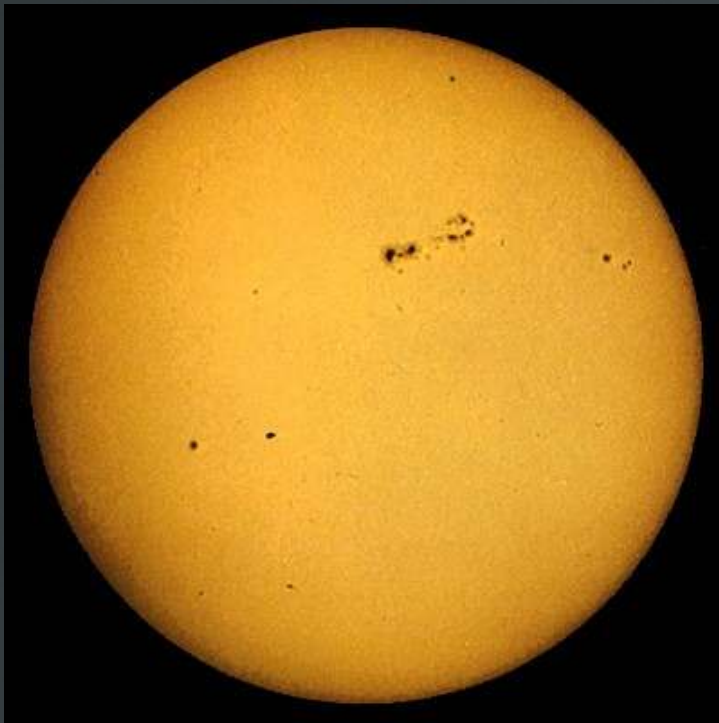


Time Requested

Target	Configuration	N° Nights Asked	θ (marcseg)(IFRM)	Accuracy
HD1581	A0-K0-G1	5	1.15	2.5%
HD146233	U1-U3-U4	10	0.69	5.8%
HD102365	A0-K0-G1	5	0.96	3.1%
HD115617	A0-K0-G1	5	1.07	2.8%
HD192310	A0-K0-G1	5	0.86	3.5%

Data Analysis

Limb Darkening Model to fit Interferometric data.



$$I(\mu) = I(1)(1 - a(1 - \mu) - b(1 - \mu)^2) \quad (2)$$

(Claret, A.; A&A 2000)

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FIM FINITO THE END

There is a nice bottle of Porto wine reserved for each night given for our program.