

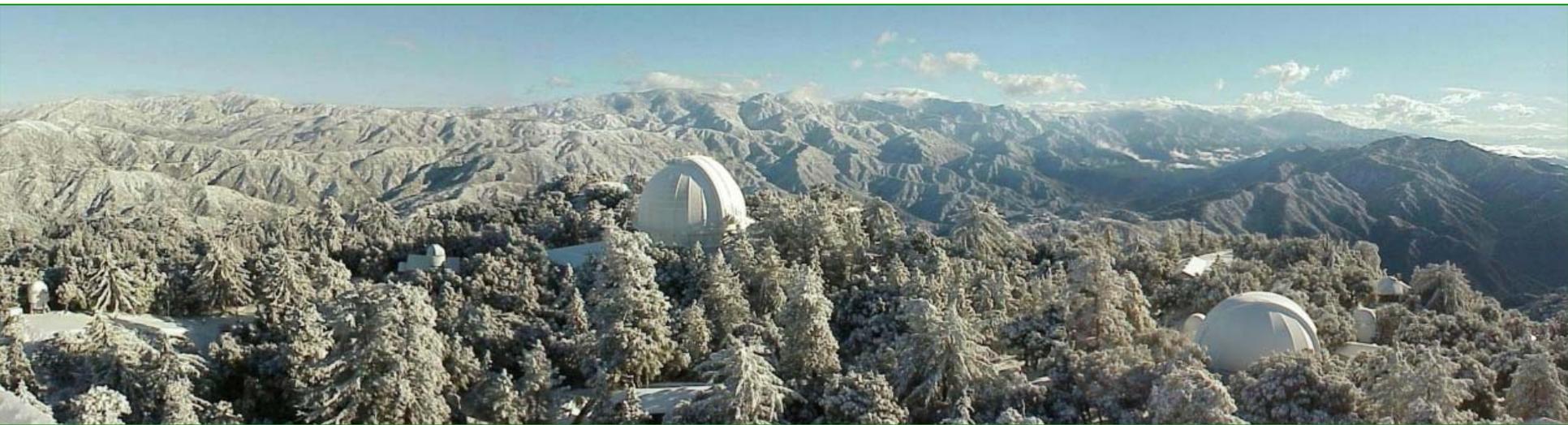
# Some Introductory Comments



*H.A. McAlister*

*March 16, 2009*

*CHARA Collaboration Year Five Science Review  
Nice, France*



# The Last Time We Gathered...

*At our 3<sup>rd</sup> "Annual" Meeting, New York, March 2007*



# CHARA Refereed Papers

## We had 10 at the time of the New York meeting

### Scientific and Technical Publications

**Refereed Journal Articles** - The following papers describing results from the CHARA Array since it became operational in 2005 have been published or are in press in refereed scientific journals and are available here. (These, and all subsequent documents, are in PDF format)

1. **First Results from the CHARA Array. I. An Interferometric and Spectroscopic Study of the Fast Rotator  $\alpha$  Leonis (Regulus)**, H.A. McAlister, T.A. ten Brummelaar, D.R. Gies, W. Huang, W.G. Bagnuolo, Jr., M.A. Shure, J. Sturmann, L. Sturmann, N.H. Turner, S.F. Taylor, D.H. Berger, E.K. Baines, E. Grundstrom, C. Ogden, S.T. Ridgway & G. van Belle, *The Astrophysical Journal*, **628**, 439-452, 2005.
2. **First Results from the CHARA Array. II. A Description of the Instrument**, T.A. ten Brummelaar, H.A. McAlister, S.T. Ridgway, W.G. Bagnuolo, Jr., N.H. Turner, L. Sturmann, N.H. Turner, S.F. Taylor, D.H. Berger, C.E. Ogden, R. Cadman, W.I. Hartkopf, C.H. Hopper & M.A. Shure, *The Astrophysical Journal*, **628**, 453-465, 2005.
3. **The Projection Factor of  $\delta$  Cephei: A Calibration of the Baade-Wesselink Method Using the CHARA Array**, A. Merand, P. Kervella, V. Coude du Foresto, S.T. Ridgway, J.P. Aufdenberg, T.A. ten Brummelaar, D.H. Berger, J. Sturmann, L. Sturmann, N.H. Turner & H.A. McAlister, *Astronomy and Astrophysics*, **438**, L9-L12, 2005.
4. **First Results from the CHARA Array. III. Oblateness, Rotational Velocity and Gravity Darkening of Alderamin**, G.T. van Belle, D.R. Ciardi, T.A. ten Brummelaar, H.A. McAlister, S.T. Ridgway, D.H. Berger, P.J. Goldfinger, J. Sturmann, L. Sturmann, N.H. Turner, A.F. Boden, R.R. Thompson & J. Coyne, *The Astrophysical Journal*, **637**, 494-505, 2006.
5. **First Results from the CHARA Array. IV. The Interferometric Radii of Low-Mass Stars**, D.H. Berger, D.R. Gies, H.A. McAlister, T.A. ten Brummelaar, T.J. Henry, J. Sturmann, L. Sturmann, N.H. Turner, S.T. Ridgway, J.P. Aufdenberg & A. Merand, *The Astrophysical Journal*, **644**, 475, 2006.
6. **First Results from the CHARA Array. V. Binary Star Astrometry: The Case of  $\zeta$  Persei**, W.G. Bagnuolo, Jr., S.F. Taylor, H.A. McAlister, T.A. ten Brummelaar, D.R. Gies, S.T. Ridgway, J. Sturmann, L. Sturmann, N.H. Turner & D.H. Berger, *The Astronomical Journal*, **131**, 2695, 2006.
7. **Circumstellar Material in the Vega Inner System Revealed by CHARA/FLUOR**, O. Absil, E. di Folco, A. Merand, J.-C. Augereau, V. Coude du Foresto, J.P. Aufdenberg, P. Kervella, S.T. Ridgway, D.H. Berger, T.A. ten Brummelaar, J. Sturmann, L. Sturmann, N.H. Turner & H.A. McAlister, *Astronomy and Astrophysics*, **452**, 237, 2006.
8. **First Results from the CHARA Array VII. Long-Baseline Interferometric Measurements of Vega Consistent with a Pole-On, Rapidly Rotating Star**, J.P. Aufdenberg, A. Merand, V. Coude du Foresto, O. Absil, E. di Folco, P. Kervella, S.T. Ridgway, D.H. Berger, T.A. ten Brummelaar, H.A. McAlister, J. Sturmann, L. Sturmann & N.H. Turner, *The Astrophysical Journal*, **645**, 664-675, 2006.
9. **Extended Envelopes Around Galactic Cepheids II. Polaris and  $\delta$  Cephei from Near-Infrared Interferometry with CHARA/FLUOR**, A. Merand, P. Kervella, V. Coude du Foresto, G. Perrin, S.T. Ridgway, J.P. Aufdenberg, T.A. ten Brummelaar, H.A. McAlister, L. Sturmann, J. Sturmann, N.H. Turner & D.H. Berger, *Astronomy and Astrophysics*, **453**, 155-162, 2006.
10. **CHARA Array K band Measurements of the Angular Dimensions of Be Star Disks**, D.R. Gies, W.G. Bagnuolo, E.K. Baines, T.A. ten Brummelaar, C.D. Farrington, P.J. Goldfinger, E.D. Grundstrom, W. Huang, H.A. McAlister, A. Merand, J. Sturmann, L. Sturmann, Y. Toubami, N.H. Turner, D.W. Wingert, D.H. Berger, M.V. McSwain, J.P. Aufdenberg, S.T. Ridgway, A.L. Cochran, D.F. Lester, N.C. Sterling, J.E. Bjorkman, K.S. Bjorkman & P. Koubsky, *The Astrophysical Journal*, **654**, 527-543, 2007.
11. **The Angular Diameter of  $\gamma$  Bootis**, D.R. Ciardi, G.T. van Belle, A.F. Boden, T.A. ten Brummelaar, H.A. McAlister, W.G. Bagnuolo, Jr., P.J. Goldfinger, J. Sturmann & L. Sturmann, N.H. Turner, D.H. Berger, R.R. Thompson, & S.T. Ridgway, *The Astrophysical Journal*, **659**, 1623-1628, 2007.
12. **Direct Measurement of the Radius and Density of the Transiting Exoplanet HD 189733B with the CHARA Array**, E.K. Baines, G.T. van Belle, T.A. ten Brummelaar, H.A. McAlister, M. Swain, N.H. Turner, L. Sturmann & J. Sturmann, *The Astrophysical Journal*, **661**, L195-L198, 2007.
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14. **Imaging the Surface of Altair**, J.D. Monnier, M. Zhao, E. Pedretti, N. Thureau, M. Ireland, P. Muirhead, J.-P. Berger, R. Millan-Gabet, G. Van Belle, T. ten Brummelaar, H. McAlister, S. Ridgway, N. Turner, L. Sturmann, J. Sturmann & D. Berger, *Science*, **317**, 342, 2007.
15. **A Near-Infrared Interferometric Survey of Debris Disk Stars I. Probing the Hot Dust Content Around  $\epsilon$  Eri and  $\tau$  Ceti with CHARA/FLUOR**, E. Di Folco, O. Absil, J.-C. Augereau, A. Merand, V. Coude du Foresto, F. Thevenin, D. Defrere, P. Kervella, T.A. ten Brummelaar, H.A. McAlister, S.T. Ridgway, J. Sturmann, L. Sturmann, & N.H. Turner, *Astronomy and Astrophysics*, **475**, 243, 2007.
16. **Strong Near-Infrared Emission Interior to the Dust Sublimation Radius of Young Stellar Objects MWC 275 and AB Aurigae**, A. Tannirkulam, J.D. Monnier, R. Millan-Gabet, T.J. Harries T.A. ten Brummelaar, H.A. McAlister, N. Turner, J. Sturmann & L. Sturmann, *The Astrophysical Journal*, **677**, L51-L54, 2008.
17. **CHARA Array Measurements of the Angular Diameters of Exoplanet Host Stars**, E.K. Baines, H.A. McAlister, T.A. ten Brummelaar, N.H. Turner, J. Sturmann, L. Sturmann, P.J. Goldfinger & S.T. Ridgway, *The Astrophysical Journal*, **680**, 728, 2008.
18. **The Search for Stellar Companions to Exoplanet Host Stars Using the CHARA Array**, E.K. Baines, H.A. McAlister, T.A. ten Brummelaar, N.H. Turner, J. Sturmann, L. Sturmann, L. Sturmann & S.T. Ridgway, *The Astrophysical Journal*, **682**, 577, 2008.
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20. **The Radii of the Nearby K5V and K7V stars 61 Cyg A & B - CHARA/FLUOR Interferometry and CESAM2k Modeling**, P. Kervella, A. Merand, B. Pichon F. Thevenin, U. Heiter, L. Bigot, T.A. ten Brummelaar, H.A. McAlister, S.T. Ridgway, N. Turner, J. Sturmann, L. Sturmann, P.J. Goldfinger & C. Farrington, *Astronomy and Astrophysics*, **488**, 667, 2008.
21. **A Near-Infrared Interferometric Survey of Debris Disc Stars. II. CHARA/FLUOR Observations of Six Early-Type Dwarfs**, O. Absil, E. Di Folco, A. Merand, J.-C. Augereau, V. Coude du Foresto, D. Defrere, P. Kervella, J.P. Aufdenberg, M. Desort, D. Ehrenreich, A.-M. Lagrange, G. Montagnier, J. Olofsson, T.A. ten Brummelaar, H.A. McAlister, J. Sturmann, L. Sturmann & N.H. Turner, *Astronomy and Astrophysics*, **487**, 1041, 2008.
22. **First Resolved Images of the Eclipsing and Interacting Binary Beta Lyrae**, M. Zhao, D. Gies, J.D. Monnier, N. Thureau, E. Pedretti, F. Baron, A. Merand, T. ten Brummelaar, H. McAlister, S.T. Ridgway, N. Turner, J. Sturmann, L. Sturmann, C. Farrington & P.J. Goldfinger, *Astrophysical Journal*, **684**, L95, 2008.
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24. **The Visual Orbit of the 1.1-day Spectroscopic Binary  $\sigma$  Coronae Borealis from Interferometry with the CHARA Array**, D. Raghavan, H.A. McAlister, G. Torres, D.W. Latham, B.D. Mason, T.S. Boyajian, E.K. Baines, S.T. Williams, T.A. ten Brummelaar, C.D. Farrington, S.T. Ridgway, L. Sturmann, J. Sturmann & N.H. Turner, *Astrophysical Journal*, **690**, 394, 2009.
25. **The Angular Sizes of Dwarf Stars and Subgiants - Non-linear Surface Brightness Relations in BVRC from Interferometry**, P. Kervella & P. Fouque, *Astronomy and Astrophysics*, **491**, 855, 2008.
26. **Angular Diameters of the Hyades Giants Measured with the CHARA Array**, T.S. Boyajian, H.A. McAlister, J.R. Cantrell, D.R. Gies, T.A. ten Brummelaar, C. Farrington, P.J. Goldfinger, L. Sturmann, N.H. Turner & S.T. Ridgway, *Astrophysical Journal*, **691**, 1243, 2009.
27. **Dust in the Inner Regions of Debris Disks Around A Stars**, R.L. Akeson, D.R. Ciardi, R. Millan-Gabet, E. Di Folco, J.D. Monnier, C.A. Beichman, O. Absil, J. Aufdenberg, H.A. McAlister, T.A. ten Brummelaar, J. Sturmann, L. Sturmann, & N.H. Turner, *Astrophysical Journal*, **691**, 1896, 2009.

# Refereed Papers – A Friendly Comparison

Project	Interval	# Papers	P/yr
IOTA	1995.1 – 2008.5	52	3.9
NPOI	1997.8 – 2006.3	21	2.5
PTI	1998.8 – 2006.0	39	5.4
CHARA	2005.5 – 2009.2	27	<b>7.3</b> <i>Should we be doing better?</i>

# Observing Schedule History

## *Dual Instrument Scheduling is Essential*

Period	# Prop.	Nights Requested	Nights Available	Ratio	Instruments
2004-1	13	158	157	1.01	CC-FL
2004-2	10	~70	112	0.63	CC-FL
2005-1	22	218	175	1.25	CC-FL-MI <sup>1</sup>
2005-2	12	85	83	1.02	CC-FL
2006-1	25	195	208	0.94	CC-FL-MI
2006-2	23	148	80	1.85	CC-FL-MI
2007-1 <sup>2</sup>	22	205	152	1.35	CC-FL-MI
2007-2	26	272	113	2.41	CC-FL-MI-VE <sup>1</sup>
2008-1	29	323	159	2.03	CC-FL-MI-VE-PA <sup>1</sup>
2008-2	32	252	105	2.40	CC-FL-MI-VE-PA
2009-1	47	246	153	1.61	CC-FL-MI-VE-PA-CL <sup>1</sup>

<sup>1</sup> Initial engineering or commissioning run

<sup>2</sup> Initiation of dual beam combiner scheduling

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*Here's to a productive 2009!*

