CHARA STRATEGIC PLAN

Douglas Gies & Theo ten Brummelaar
GSU/CHARA

Bienvenue à Nice

- March 16 – 18, 2009

Merci!

- Thanks to the **Local Organizing Committee:**
- Jean-Michel Clausse (OCA)
- Isabelle Lapassat (OCA)
- Anthony Meilland (OCA)
- Denis Mourard (OCA)
- Nicolas Nardetto (OCA)
- Sophie Rousset (OCA)
- Alain Spang (OCA)
- Isabelle Tallon-Bosc (CRAL) -chair-



Transition & Future

- Center for High Angular Resolution Array
  => CHARA

Le transition et l'avenir

- Centre de haute résolution angulaire de l'astronomie
  => CHRAA

Legacy of Hal McAlister

- Founded GSU Center for High Angular Resolution Astronomy in 1984 with goal to build a world-class instrument: the CHARA Array.
- Scientific observations since 2005.
- Funded by NSF since 1978; $20M external support to GSU.
- 600 research publications.
- 35 PhD students.
- Bright future ahead!

Hard act to follow!

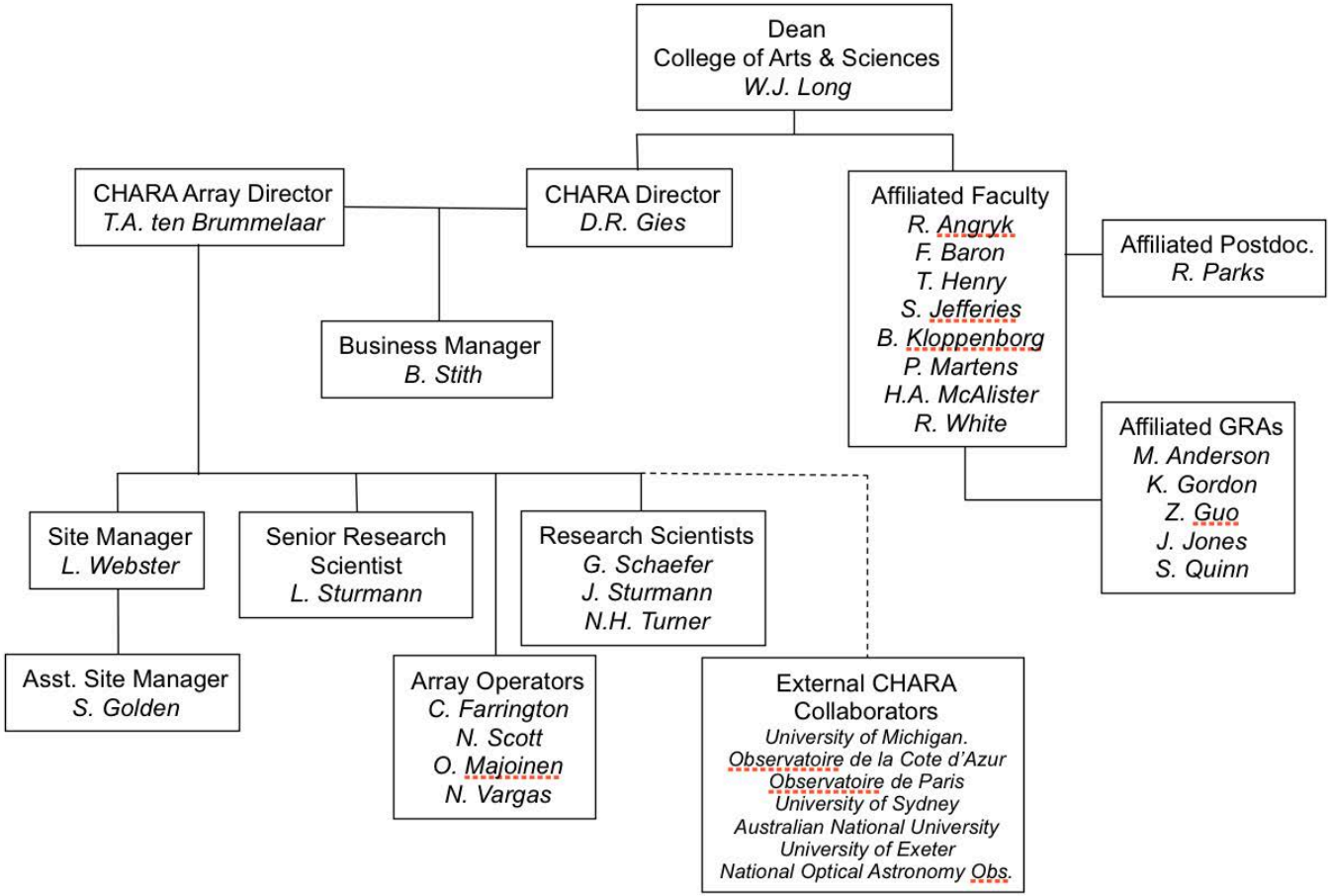
Reception for Hal: October 29

Transition: Aug. 28, 2015 -Visit by GSU College of Arts and Sciences Leaders

COAS Request for Strategic Plan

- 10 year plan for GSU administration
  (Gies, ten Brummelaar, Ridgway, McAlister, ...)
- Organization
- Scientific Goals
- New Initiatives
- Funding Opportunities
- www.astro.gsu.edu/~gies/sp16.pdf

Center for High Angular Resolution Astronomy (CHARA) Organizational Chart



Update: Nic Scott has moved to NASA Ames – many thanks!
[search underway for new array operator]

CHARA Advisory Council

Name	Institution	Country
Fabien Baron	GSU	USA
Vincent Coude du Foresto	Observatoire de Paris	France
Michael Ireland	Australian National University	Australia
Stefan Kraus	University of Exeter	UK
Hal McAlister	GSU	USA
John Monnier	University of Michigan	USA
Denis Mourard	Observatoire de la Cote d'Azur	France
Stephen Ridgway	National Optical Astronomy Obs.	USA
Peter Tuthill	University of Sydney	Australia
Russel White	GSU	USA

Scientific Goals

- Measure the angular sizes of stars of all kinds and at all evolutionary stages in order to determine their fundamental properties and understand their life stories. [ESA Gaia]
- Determine the properties of planets and their host stars that will be discovered through planetary transit light dips. [NASA TESS, ESA CHEOPS, PLATO]
- Record the orbital motions of binary stars to measure stellar masses and probe how a nearby companion can alter stellar evolutionary outcomes.

Scientific Goals

- Improve our understanding the Sun's activity by observing starspots and magnetic cycles on other stars.
- Map out the gas structures surrounding newborn and ancient stars to learn how stars and planets form and recycle their material back into space.
- Advance and test the new technologies that will be required to build future interferometers such as the planned *Planet Formation Imager*.
- Train the next generation of scientists who will become the leaders with the expertise to undertake future interferometry projects in space and on the ground.

Current & New Initiatives

- Adaptive Optics on each of the telescopes of the Array. Promises substantial improvements in precision, opening new science opportunities. This program is already underway through NSF funding of $2.7M. [Theo's talk and this meeting]
- Engage scientists at other universities.
  Expand the NOAO program to 50 – 70 nights per year through additional staffing through NSF Mid-Scale Innovations Program (**MSIP**). Wider access will increase collaborations, CHARA visibililty, support for future funding proposals. [Theo's talk]

Current & New Initiatives

- Add two new telescopes to the CHARA Array.
  The huge success of the current operation gives us confidence that we can add outlying telescopes with separations that would effectively double the power of the Array to discern small objects.
  => I need your thoughts/opinions about where these might be located at Mount Wilson.
- Expand our community outreach program.
  Update the CHARA Exhibit Hall at MWO, and develop student-training opportunities for work at CHARA to enable experiential learning.



Staffing Needs: MSIP

- **Visitor Support Scientist**
- **Data Scientist**
- **Machinist/Technician**
- **Assistant to Site Manager**
- **Third CHARA Array Operator**

CHARA & Astroinformatics

- Vibrant group of solar astronomers now at GSU:
  Rafal Angryk (Computer Sciences)
  Piet Martens (Physics & Astronomy)
  Stuart Jefferies (Physics & Astronomy)
- Exploring the Solar-Stellar Connection with CHARA programs (White, Baron, Gies)
- Won GSU Next Generation Faculty award:
  Junior faculty in P&A (dynamo, interiors)
  CHARA Postdoctoral Fellowship (2017)

New Funding Models

- Currently NSF and GSU COAS
- Partnership opportunities
- Block time purchases
- Foundation and donor support

- Good will at GSU:
  $30,000 from VP-Research (Weyhenmeyer)
  for new HVAC system at OPLE/BCL

Bright Future for CHARA

- Adaptive optics
- New telescopes
- New instruments (FRIEND, MIRCx, MYSTIC)
- New community access
- New web site (Baron)
- *The best is yet to come!*
  Le meilleur est a venir!