

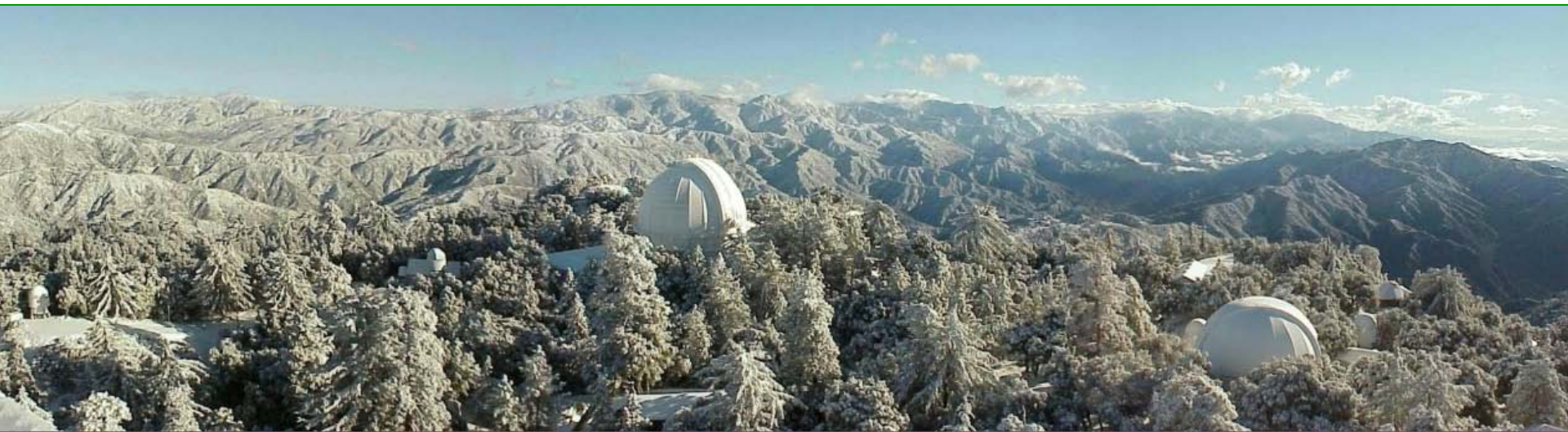
The CHARA Array as a ReSTAR Asset



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Atlanta, Georgia*



But first, Interferometry and Astro2010

- Ground-based OIR Program Prioritization Panel recommended:
 - An interferometry operations & development program at $\sim \$3\text{M yr}^{-1}$
 - Support should focus on:
 - “advancing interferometry technology”
 - “making interferometry more accessible to mainstream astronomers”
 - This program would “set the stage for a facility-level interferometer in a decade hence.”
 - Recommended a URO-like competitive program for OIR interferometry for:
 - partial operations support in return for public access
 - community resources to develop new public users
 - interferometry technology development
 - decade support level at $\sim \$27\text{M}$
 - The PPP cited numerous interferometry ties to Science Frontier Panel questions
- **But**, interferometry is virtually ignored in main report.

What is ReSTAR?

- **Renewing Small Telescopes for Astronomical Research**
- Following 2000 Decadal Review, NOAO was charged with advancement of the “System” – “the ensemble of all astronomical facilities and capabilities to which U.S. astronomers have access, whether public or private.”
- “Small” means apertures ≤ 5 meters
- ReSTAR is a 10-yr, 3-phase program that started in FY2009-11
 - Phase 1 provided instrument upgrades at the KPNO 4-m & 1/16 access to the Palomar 5-m
- Phase 2 draft solicitation was released in mid-2010 with a meeting for interested persons in Tucson on 15 Dec. McAlister & ten Brummelaar attended on behalf of CHARA.

Interferometry and ReSTAR

- **ReSTAR 24 Aug 2010 Phase 2 draft solicitation calls for**
 - **Studies of optical interferometry**
 - **Scientific justification**
 - **Plans for community access to existing facilities**
 - **Ideas about development of future facilities**
- **CHARA's experience shows that interferometry is well beyond the study phase**
 - **The user demand and breadth of science is there**
 - **User-friendly data reduction pipeline to yield V^2 , diameters, binary parameters in place**
 - **CHARA's external users have been pleased with their experience**
- **Interferometry is "shovel ready" for expanded community access via ReSTAR**

CHARA's Community Access Experiment

- CHARA has now offered 2 years of community access
 - 2010 AB: 13 proposals requesting 17.1 nights from the 7.4 allocated => subscription rate = 2.31
 - 2011 AB: 20 proposals requesting 24.5 nights from the 5.0 allocated => subscription rate = 4.90
- There was very little overlap between proposed science and that now underway by the CHARA Collaboration, demonstrating the broad applicability of interferometry
- We consider this experiment to be highly successful

The CHARA ReSTAR Proposal

- The Phase 2 draft solicitation was subsequently amended:
We recognize that both optical interferometry and adaptive optics are mature enough technologies and techniques that we welcome proposals that would construct, enhance, or provide access to such capabilities.
- We thus prepared and submitted a proposal prior to the 1 Feb 2011 deadline
- The proposal linked CHARA to the ReSTAR Science Areas of
 - Exoplanet studies
 - Star formation & YSOs
 - Stellar astrophysics
 - Time domain science

Proposal Terms

- **CHARA will provide 30 nights per year to the community**
 - **Represents about 11% of available time**
 - **Will be allocated through NOAO TAC process**
- **In return, CHARA request funds for staff enhancement**
 - **Presently 9 mountain staff support the Array**
 - *4 are state funded and 5 are grant funded*
 - **Additional staff will enhance performance, reliability, and efficiency**
 - **Additional requested staff (FTE):**
 - *ReSTAR Support Scientist (1.0)*
 - *BCL Assistant (0.4)*
 - *Engineering Assistant (0.6)*
 - *Array Operator (1.0)*
 - *Electronics Tech (0.3)*
 - *Assistant Site Manager (0.7)*
 - *Machinist (0.5)*
 - **Funds for equipment upgrades:**
 - *PoP automation*
 - *Tip/Tilt automation*
 - *TCS Upgrades*

Proposal Terms

- **3-yr proposal budget:**
 - **Salaries & Wages** \$668 K
 - **Benefits** 207
 - **Supplies & Equipment** 210
 - **Indirect Costs** 492
 - **Total Amount Requested** \$1,597 K

- **NOAO will notify selected partners in time for an October 2011 submission to NSF for FY 2012 funding**

