The Super Huge Interferometric Telescope

A New Paradigm in Optical Interferometry

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Sponsored by Absolut Magnitude

Introduction

Inspired by the GI2T telescope (see Figure 1), we came up with the idea of an interferometer of silly looking telescopes.

Figure 1: ~~Giant Bong~~ GI2T Telescope, France

With 5800 Edmund Astroscan telescopes (see Figure 2), we can reach the equivalent collecting area of the 8.4-m Large Binocular Telescope with a synthetic aperture of >100m and the equivalent silliness of 2 John Cleese skits.

Figure 2: Edmund Astroscan telescope

Cost

5800 x $200 = $1.16 million for Astroscans
$0.34 million for infrastructure
= $1.5 million

Compare this with $80 million for the LBT or $100 million for Keck! [Figure 3]

Infrastructure costs are kept low using cheap off-the-shelf components and readily available low-cost turnkey adaptive optics using laser pointer guide stars (Figure 4).

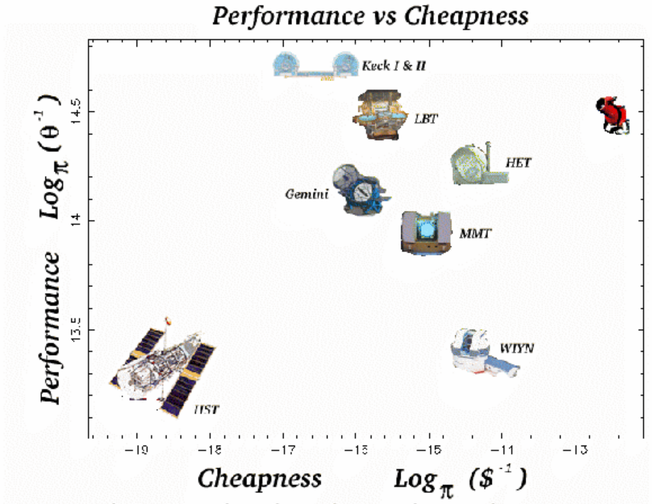

Figure 3: This simple plot shows how the Super Huge Interferometric Telescope occupies a unique area in cost-performance parameter space

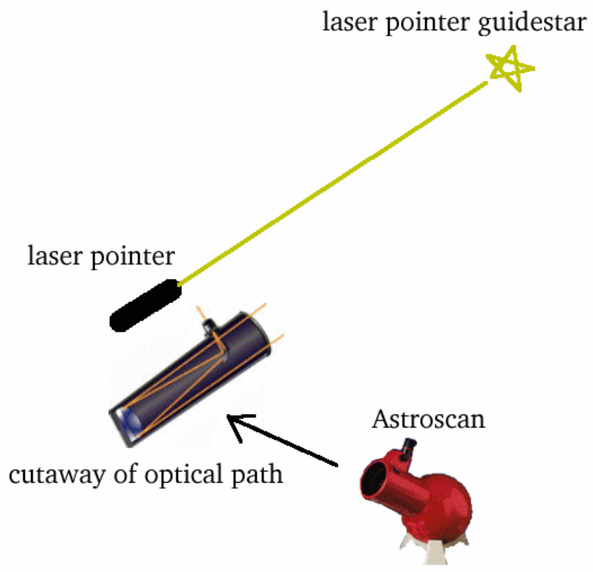

Figure 4: A schematic diagram of the Super Huge Interferometric Telescope System

Instrumentation

The portability of the array elements leads to flexible array configurations (see Figures 5-7) including the possibility of corporate tie-ins for outside funding (see Figure 8).

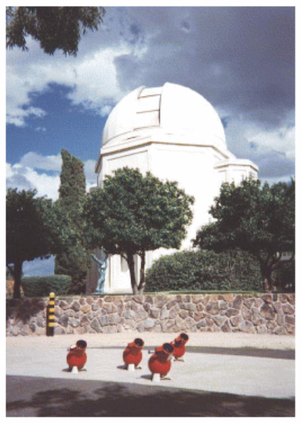

Figure 5: prototype array

Figure 6

Figure 7

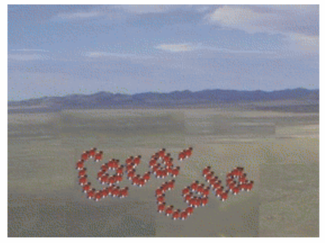

Figure 8

The Super Huge Interferometric Telescope is also the ideal platform for the SUb-arcsecond Camera for the Ks-BAnD (see Figure 9). The color of the Astroscan makes it ideal for infrared observations.

SUb-arcsecond Camera for the Ks-BAnD

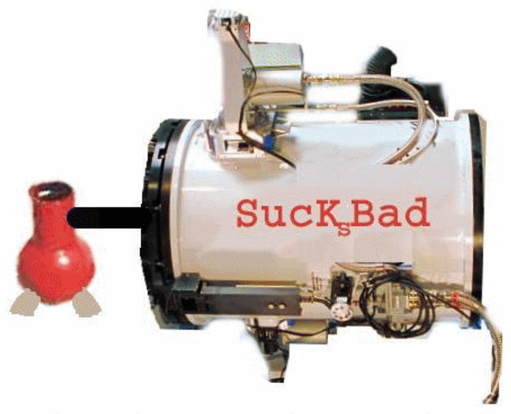

Figure 9: The SUb-arcsecond Camera for the Ks BAnD