



“First Fringe” Program Plan

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1. UPDATE

The Array’s first fringes were obtained 23 November 1999! (The program plan previously a part of this Technical Report is thus outdated and has been removed.)

2. SUMMARY

The W. M. Keck Foundation’s \$1.5 million gift for a sixth telescope stipulated that funds would be made available immediately after the successful demonstration that the Array can function as an interferometer. We have always regarded the first detection of interference fringes as an important milestone, and the Keck challenge gave this goal a significant new meaning. To achieve financial savings through multiple purchases of items common to all telescopes, we have ordered the mount and optics for the sixth telescope as well as its enclosure.

To focus our efforts on a fast track to first fringe, a revised program plan was prepared this fall. This plan identifies tasks along the critical path to first fringe and defers all non-essential tasks as subsequent activities. This does not mean that only first fringe tasks will be completed, however. For example, while we intend to use the S1 and S2 telescopes for first fringe, we will assemble and install the enclosures and domes for all six telescopes in one operation. Similarly, five Optical Path Length Equalizer carts are now installed, and the control software is being debugged and interfaced to the master control system. First fringe will be accomplished using a streamlined K-band beam combiner (as described in *Technical Report No. 82*), and we will defer expanding the prototype visible light beam combiner to the full scale system. In some cases, throughput of mechanical fabrication through our machine shop is requiring us to interrupt production cycles so that we will not have, for example, six copies of all mirror mount types in hand until after first fringe.

The challenge from the Keck Foundation is reasonable and even exhilarating. The program plan presented on the following pages is based upon a first fringe date of 1 June 1999. At the time of this writing, the construction schedule and telescope delivery schedule have both slipped from the dates in the plan. We now expect to be able to install the first pair of

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telescopes in early February. Other tasks within our immediate control are ongoing, and we have not delayed the first fringe target date of 1 June. A final program plan to see the project to completion has been drafted but will not be released until after first fringe in order to keep the new plan as up-to-date and meaningful as possible. The program plan originally attached to this Technical Report 83 is now outdated and is no longer attached.