

LSC Six-Month Progress Report

LIGO-M02042-00-M

Organization California State University Dominguez Hills Elementary Particles and Relativity Group

Report Date August 15, 2001

Attachment A - LIGO I

Participation

Imperfect Optics Simulations for the upgraded 40m IFO (August 15 2000-February 15, 2001)

A dual recycling (DR) version of the FFT program modified to run under the MPI architecture on the CACR V-Class HP cluster. Some bugs and programming errors were fixed to obtain a working version of MPI DR FFT. This program generated reasonable results for imperfect optics for the 40m. First results on Advanced LIGO were also obtained with MPI DR FFT; although these calculations were not yet tested against analytical predictions for Advanced LIGO performance. We presented our Advanced LIGO FFT results in a talk at the March 2001 LSC meeting and also spoke and participated, by phone conference, in an optical modeling meeting in April 2001 at MIT. We set up an FFT link at <http://www.phys.ufl.edu/LIGO/LIGO/STAIC.html>, which contains links to some of our optical simulation results as does <http://www.csudh.edu/neutrino/ligo>.

Efforts on the 40m hardware including STACIS and PEM

Core optics for the 40m were not received during this time period. We did discuss the STACIS active vibration system testing, supervised Katie Mack (a CalTech and former CSUDH student) to participate in PEM module installation, STACIS tests, and in other 40m hardware related tasks, and came by Caltech on occasion to monitor progress and to help with 40m hardware tasks.

Efforts for the burst source group including supernova searches and neutrino correlations

We contributed to burst source meetings and discussed various possibilities for isolating supernova triggers and for obtaining environmental veto for supernova triggers. We worked out a rough plan on how some neutrino measurements might be correlated with possible burst source candidate triggers and discussed this at the August 2001 LSC meeting.