

**Attachment Number 2 to the
Memorandum of Understanding (LIGO-M950073-00-M)
between the
Michigan Gravity Wave Group (MGWG) in the Department of Physics of the
University of Michigan
and the
Laser Interferometer Gravitational Wave Observatory (LIGO) Project
July 1, 1997**

This Attachment to the Memorandum of Understanding LIGO-L950073-00-M covers research involving use of the Caltech 40-meter prototype interferometer November 1994 test data set and the data-analysis package GRASP. Documentation on both the data and the GRASP package will be made available. The period of performance for the activities in this Attachment is from July 1, 1997 to June 30, 1998. This period may be modified by agreement to a revision of this Attachment.

1. This document is an agreement between Keith Riles and the LIGO project. The LIGO staff member Albert Lazzarini will serve as the internal LIGO collaborator and point of contact for the work described below.
2. Keith Riles plans to contribute to the LIGO data analysis effort, with the major part of his contribution expected during a sabbatical visit to Caltech in 1998 under the auspices of the LIGO Visitors Program. In preparation for this visit, Riles will become familiar with the GRASP software and the 40 m data, eventually contributing new algorithms and/or enhancing features of the package. Examples would be developing algorithms for detecting periodic low strength sources of gravitational radiation or developing alternative algorithms for detecting inspiral chirp events from binary systems. More general issues include optimum program structure to use with parallel processing computers and the handling of the massive data expected from the full LIGO detector.
3. The results of Keith Riles' study will be communicated to the LIGO project in a collegial and timely manner. Keith Riles is also expected to relay any new knowledge gleaned from the data stream that might affect or influence the ongoing analysis of this data and understanding of the instrument, as well as any errors, bugs or problems with the GRASP package and suggested corrections or changes to it.
4. Keith Riles agrees that the data and GRASP will not be used for any public purpose (talk, paper, preprint, etc.) without the express written consent of the LIGO project. This agreement is intended to a) ensure that those individuals who made significant contributions towards

obtaining and analyzing this data receive proper credit, and b) that the LIGO project has the opportunity to review and vet any conclusions reached. Keith Riles acknowledges that receipt of this software and data does not imply any future commitment on the part of LIGO to supply additional software or data.

5. Keith Riles agrees to accept responsibility for controlling access to the November 1994 test data set, and to GRASP. Access will be restricted to those individuals listed below; other individuals or organizations not covered by this agreement will not have access to these materials in any form. Keith Riles may request that individuals be added to (or removed from) this list in the future. Bob Ball, a U-M research scientist who works with Riles on non-LIGO projects and serves as local HP cluster manager, will be asked to install the official version of the GRASP package and any future releases. This will require his having access to the software and data.
6. It is expected that Keith Riles will contribute to the GRASP package useful code derived from their work. This should be contributed with sufficient documentation and examples (in the appropriate format) to permit independent use by others; LIGO will take responsibility to maintain the overall GRASP package.
7. Keith Riles will accept LIGO's eventual decisions regarding the distribution of and access to GRASP, and the materials that they contribute to it.

Approved:

Barry Barish

Barry Barish
LIGO Principal Investigator

C. Uher

Citrad Uher
Chair, Department of Physics

March 17, 1998

Date

3/24/98

Date

Albert Lazzarini

Albert Lazzarini
LIGO Staff

19 March 98.

Date