

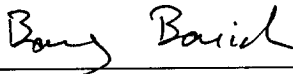
**Attachment Number 1 to the
Memorandum of Understanding (LIGO-M950073-00-M)
between the
Michigan Gravity Wave Group (MGWG) in the Department of Physics of the
University of Michigan
and the
Laser Interferometer Gravitational Wave Observatory (LIGO) Project
July 1, 1997**

This Attachment to the Memorandum of Understanding LIGO-L950073-00-M describes the activities of Keith Riles of the Michigan Gravity Wave Group (MGWG) as a Visitor to LIGO contributing to the data analysis effort both for the 40 m prototype interferometer and for the full LIGO detector. 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. Goal - The aim is to have Keith Riles 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 (see LIGO-970042-00-M) 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.
2. Management - The MGWG is headed by Richard Gustafson (who is already in residence at Caltech, working on the 40 m interferometer) and Keith Riles. The technical work described in this Attachment will be carried out by Keith Riles, possibly aided by Bob Ball, a U-M research scientist who works with Riles on non-LIGO projects and who serves as a local HP cluster manager.
3. Statement of Work and Deliverables - The work will be primarily carried out at Caltech. The following tasks are to be carried out:
 - a. Developing new physics algorithms for extracting GW signals from periodic/quasi-periodic low strength astrophysical sources and alternative methods for detecting transient inspiral chirp events from binary systems;

- b. Fully exploiting the power of parallel processing, which requires careful program design and may affect " lower level " physics algorithms.
4. Reporting - Technical progress will be reported to the cognizant LIGO task leader via e-mail weekly.
 5. Costs - Keith Riles will be on sabbatical leave during the period January 1, 1998 - June 30, 1998. He will continue to be paid by the University of Michigan while at Caltech. The University of Michigan will pay one half Riles' base salary and full benefits. LIGO will write a sub-contract with the University of Michigan to reimburse them for the other half. The LIGO Project will pay for Riles' living expenses and for his travel to and from Michigan to Caltech, with these funds coming from the LIGO Visitors Program.
 6. Intellectual Property Rights - The rights to intellectual property developed under this Attachment will be subject to the National Science Foundation Grant Polict as indicated in Section 750, Intangible Property.

Approved:



Barry Barish
LIGO Principal Investigator

4/28/97

Date



Ctirad Uher
Chair, Department of Physics

5/21/97

Date