

**Attachment Number 1 to the  
Memorandum of Understanding (LIGO-M970123-00-M)**

**between**

**VIRGO**

**and the**

**Laser Interferometer Gravitational Wave Observatory (LIGO) Project**

**November 1, 1997**

This Attachment to the Memorandum of Understanding between VIRGO and the LIGO Project (VIR-PLA-DIR-1000-45, and LIGO-M970123-00-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 November 1, 1997 to October 31, 1998. This period may be modified by agreement to a revision of this Attachment.

1. This document is an agreement between VIRGO and the LIGO project. The LIGO staff member Albert Lazzarini and Adalberto Giazotto, as Deputy Project Leader of VIRGO, will serve as points of contact for the work described below.
2. VIRGO will participate in the Data Translation Group, and will use the 40-meter test data set to help test and validate the frame library and the program which translates old format data to the frame format.
3. The results of this study will be communicated to the LIGO project in a collegial and timely manner. VIRGO 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. VIRGO 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 these data receive proper credit, and b) that the LIGO project has the opportunity to review and vet any conclusions reached. VIRGO 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. VIRGO agrees to accept responsibility for controlling access to the November 1994 test data set, and to GRASP. Access will be restricted to the VIRGO staff members listed below under the responsibility of their group leader; other individuals or organizations not covered by this

Attachment will not have access to these materials in any form. VIRGO may request that individuals be added to (or removed from) this list in the future. Access is currently restricted to:

- a. Benoit Mours (Annecy), data formatting ( No activity related to GRASP);
  - b. Leopoldo Milano (Naples), development of algorithms for noise identification;
  - c. Andrea Vicere (Pisa), noise statistics and whitening techniques;
  - d. Jean Yves Vinet (Orsay), to study noise statistics;
  - e. Michele Punturo, to get training with the data format;
  - f. Patrice Hello (Orsay), noise studies and filter design.
6. VIRGO may wish to 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. VIRGO 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

19 Feb 98

Date

Albert Lazzarini

Albert Lazzarini  
LIGO Staff

25 Feb 98

Date

Alain Brillet

Alain Brillet  
VIRGO Project Leader

13 Mars 1998

Date

Adalberto Giazotto

Adalberto Giazotto  
VIRGO Deputy Project Leader

11/3/98

Date