CALIFORNIA INSTITUTE OF TECHNOLOGY

Laser Interferometer Gravitational Wave Observatory (LIGO) Project

To:	LIGO/Distribution
From:	B. Barish and G. Sanders
Phone/FAX:	Ext. 6684 and 2997
Refer to:	LIGO-L950722-00-M
Date:	September 14, 1995

BeB./GHS/am

Subject: Lasers

We have carefully considered possible laser strategies for LIGO and are persuaded that we should switch to 1.06 μm YAG lasers, and that this should be accomplished as quickly as possible. We believe the long term benefits to LIGO of making this switch now are considerable and are well aware of the shorter term impacts of this change. Success, therefore, depends on working together to quickly and effectively affect this change, to acquire and gain experience with YAG lasers and to research our R&D and detector programs to minimize the scheduling and other short-term impacts. To do this we must build a very strong YAG effort and we must aggressively and creatively work all the issues involved in the switch. To accomplish this, we have asked Stan Whitcomb (and he has agreed) to lead our effort on the YAG and we promise him our strong support. As soon as Stan can describe a plan for the effort the LIGO Change Control/Technical Board will be asked to formally review this change to the baseline.

This YAG decision has been made following a process that began with a presentation (at our request) by David Shoemaker at the May 1995 Science-Integration meeting. We followed that by tasking Shoemaker and Abromovici to do a more quantitative study resulting in a technical note. We invited all to participate in a discussion meeting on August 17, 1995. Following that meeting, we invited individual input and received many thoughtful replies.

There are many complex issues involved in this decision and judgement is involved in making the final decision. We have weighed heavily the long term objectives of finding the clearest path toward reaching and exceeding the initial design sensitivity of LIGO. Although others weighed different factors more heavily, we can report that there is a near consensus on whether we should make the switch.

With this decision behind us, it is crucial that now we all get behind it and work together to make it work. In a large group effort like LIGO it is essential that we bring out hard issues, carry out an open process to evaluate them, make carefully considered decisions, and then that we all get behind the decision and move on.

We thank everyone for their hard work, thoughful input, and in advance, for their support of this important LIGO decision.

BCB:dt
cc: Chronological File
Document Control Center

CALIFORNIA INSTITUTE OF TECHNOLOGY
LIGO Project. 102-33 East Bridge Laboratory, Pasadena, California 91125
818-395-2129, Fax 818-304-9834

LETTER OF TRANSMITTAL

REFER TO: L950722-00-M
TO: Tyler Jackson
Ralph M. Parsons Company
100 W. Walnut St.
Pasadena, CA 91124

DATE: 9/15/95	PROPOSAL #:PP150969
PROJECT NAME: LIGO-CONSTRUCTION	
RE: **Memo Released by LIGO Management Regarding Laser Strategies**	

Dear Tyler:

WE ARE SENDING YOU as checked below:

❑ U.S. Mail ❑ Overnight ❑ Courier

COPIES	DATED	DESCRIPTION
1	9/14/95	LIGO-L950722-00-M

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❑ For review and comment
❑ For your information

REMARKS:

Signed:
transmit. Fred Asiri

FAX COVER PAGE

CALIFORNIA INSTITUTE OF TECHNOLOGY

LIGO Project, 102-33 East Bridge Laboratory, Pasadena, California 91125
818-395-2129, Fax 818-304-9834

TO:	YOLANDE MIDDLETON
ORGANIZATION:	PARSONS-LIGO
FAX NUMBER:	440.2900
VOICE NUMBER:	
DATE:	9/15/95
TIME:	2:00 PM.

FROM:	LINDA TURNER
ORGANIZATION:	CIT-LIGO
FAX NUMBER:	
VOICE NUMBER:	
REFER TO:	
SUBJECT:	

NUMBER OF PAGES FAXED INCLUDING THIS COVER SHEET:	

Yolande - for handling.

Linda

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