New Folder Name Parsons Helps Study Black Holes to Gain Understanding of Matter Energy in Universe

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:	Noel Wolfe
ORGANIZATION:	Parsons
FAX NUMBER:	(818) 440-2650
VOICE NUMBER:	(818) 440-2539
DATE:	May 2, 1995 2pm

FROM:	Betty Behnke
ORGANIZATION:	LIGO Project
FAX NUMBER:	(818) 304-9834
VOICE NUMBER:	(818) 395-2130
REFER TO:	LIGO-~~P950003~~-00 T950150-00-D
SUBJECT:	Corporate Relations Department Approval Form

NUMBER OF PAGES FAXED INCLUDING THIS COVER SHEET:	3

NOTE:

Noel,

Stan Whitcomb has rewritten the first three paragraphs and e-mailed them to me from out of town. (They are a quote attributable to him.) Gary Sanders had no comments and has initialed the approval form.

Please let us know if you need Stan's signature on the approval form. He is due back in the office tomorrow.

Betty

cc:
Public Affairs
Chronological File
Document Control Center

Parsons Helps Study 'Black Holes' To Gain Understanding of Matter, Energy In Universe

"The Laser Interferometer Gravitational-wave Observatory (LIGO) will enable physicists and astronomers to measure gravitational waves emitted by exotic phenomena in the universe, such as black holes, which cannot be detected directly by optical or radio telescopes, " explained Stan Whitcomb, a scientist with LIGO at the California Institute of Technology."

A black hole is an object so dense that even light cannot escape from it," he said. "Astronomers have found evidence of black holes from the light and x-rays emitted by matter near the black hole, but gravitational waves are unique because they come from the black hole itself."

"LIGO will be a tool to understand gravity," Whitcomb said. "It will help us gain a better understanding of how matter and energy interact through gravitational forces. Gravitational waves may even tell us something about the origin of the universe, since some of the waves we will detect could date back to the Big Bang."

SEW/bb

5/2/95

LIGO-P950003-C

THE PARSONS CORPORATION
Corporate Relations Department
Phone: (818) 440-2539
FAX: (818) 440-2650

TO: Stan Whitcomb **FROM: Noel Wolfe**

DATE: April 28, 1995 **SUBJECT: Approval**

Please make any corrections you deem necessary to this article, sign off on it, pass it on to Gary Sanders, have him make any necessary corrections, then FAX it back to me at the above number. Please respond by 5/2/95.

Your expediency on this matter is appreciated.

Thank you for your time and input.

* (Five pages are being transmitted, including this cover sheet.)

PARSONS CORPORATE RELATIONS DEPARTMENT

APPROVAL FORM

This form is designed to ensure that all Corporate Relations material receives thorough review by the appropriate person(s) before it is released.

Date of Request: April 6, 1995 **Date Required:** ASAP

Company: Ralph M. Parsons Co. **Document:** Press Release

Title: Parsons Helps Study 'Black Holes' to Gain Understanding of Matter, Energy in Universe

Comments:

Client Approval: _____ Yes _____ Pending _____ Not Required

Client Representative:

Project/Division/Company Approvals: (Please Initial and Date)

Name/Initial: Tyler Jackson/PM TJ Date: 4/26/95

Name/Initial: CP Craig Pearson /FAD Date: 4/26/95

Name/Initial: William Hall WH Date: 4/26/95

Name/Initial: Stan Whitcomb SEW Date: 5/2/95

Name/Initial: Gary Sanders GHS Date: GHS

Corporate Approvals: (Please Initial)

S. Cole/G. Stone: SC P.G. Woosley (intl.): ------

C.A. Bower: In Europe/unavailable R.E. Wildermuth: RC

Please return to: Noel Wolfe, EA-167. Phone: (818) 440-2539 FAX: (818) 440-2650.

FOR IMMEDIATE RELEASE

Parsons Helps Study 'Black Holes' To Gain Understanding of Matter, Energy In Universe

PASADENA, CA. (release date) - Laser Interferometer Gravitational-Wave Observatory (LIGO) will enable astronomers to measure gravitational waves emitted by black holes in the universe, which are not detectable by current optical or radio telescope technology, to determine "how gravity behaves," explained Stan Whitcomb, a member of the professional staff with LIGO at the California Institute of Technology.

"LIGO is a tool to understand gravity," he said. "We will gain a better understanding of matter, energy and the universe. These gravitational waves may tell us some things about the origins of the universe. Some of the gravitational waves may date back to the 'Big Bang.'

"A black hole is so dense that light cannot escape from it," said Whitcomb. "This makes them very difficult to study; however, they do emit gravitational waves."

LIGO, currently under design by The Ralph M. Parsons Co., is the first phase of a worldwide gravitational-wave

(more)

detector network and is a joint project of Cal Tech and Massachusetts Institute of Technology. Sponsorship of the project is provided by the National Science Foundation (NSF), the largest ever directly sponsored by the NSF, said Jackson.

Parsons was selected in November 1994 to provide facility design and construction management services for two sites that are separated by 2,000 miles, a plus for this project, said Jackson. In addition, the locations, Hanford, Wash. and Livingston, La., were chosen based on their low ambient background noise and vibration levels . Overall completion of both facilities is slated for January 1999.

"This is an exciting team approach that combines Parsons' capabilities in design and system integration management and Cal Tech's leading technology," said Jackson. "We're working with critical technologies for vibration isolation and clean environments."

LIGO will correlate data from interferometers at each site to identify gravitational waves, their sources, and origins in space. This data then will be shared with other facilities from around the world: Pisa, Italy; Hanover, Germany; Tokyo, Japan; and Perth, Australia.

The U.S. site designs call for two intersecting laser beam tube systems, each four kilometers long. These L-shaped vacuum systems will house the laser interferometer detectors which are sensitive to gravitational waves from astrophysical sources.

The Parsons Corp. is one of the world's largest, full-service engineering and construction organizations. Parsons is a recognized leader in high-tech scientific and test facilities as well as ground transportation, petroleum and chemical, environmental, aviation, power, and pulp & paper industries, infrastructure, government, industrial and community development projects.

# # #

FOR MORE INFORMATION, CONTACT:

Noel Wolfe
Office: (818) 440-2539
Home: (310) 372-7636

Kevin Kelley
Office: (818) 440-2463
Home: (909) 593-5289

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