（For JSPS Fellow）

Form B-5

Date（日付）
01/10/2012 （Date/Month/Year:日/月/年）

Activity Report -Science Dialogue Program-
（サイエンス・ダイアログ事業 実施報告書）

- Fellow's name（講師氏名）: Daniel Dieter FRIEDRICH （ID No. P11324 ）

- Participating school（学校名）: Junior high and Senior high school at Komaba, the University of Tsukuba

- Date （実施日時）: 29/09/2012 （Date/Month/Year:日/月/年）

- Lecture title（講演題目）: （in English）Gravitational Waves: Listening to the Universe

（in Japanese） 重力波: 宇宙を聞く

- Lecture summary（講演概要）: Please summary your lecture 200-500 words.

The lecture started with an introduction of the speaker and a broad overview of his home country. The second part covered the direct detection of gravitational waves (GWs) using a network of large-scale laser interferometer, which will open up a new kind of astronomy. This part included a brief explanation about the origin of GWs and their effect on free masses. Afterwards the principle of laser interferometer was introduced, which was supported by an experimental demonstration of a Michelson interferometer. Based on the experience with the experiment, namely an interferometer is very sensitive to disturbances (touching, air fluctuations, ...), it was shown how the actual detectors are designed to achive the required sensitivity to detect gravitational waves. This was exemplarily outlined on the example of the gravitational wave detector KAGRA, which is currently built in Japan, and with an outlook to the japanese space project DECIGO. Finally, on the example of an research project conducted by the speaker, the way from the first idea to the publication of the research results was sketched in order to show the different aspects of working as a scientist.

- Language used（使用言語）: English

- Lecture format（講演形式）:

◆Lecture time（講演時間） 75 min（分）, Q&A time（質疑応答時間） 15 min（分）

◆Lecture style（ex.: used projector, conducted experiments）

（講演方法（例:プロジェクター使用による講演、実験・実習の有無など））

Power point presentation and experimental demonstration of a 'Michelson

interferometer’

◆Interpretation（ex.: assistance by accompanied person, provided Japanese explanation by yourself）（通訳（例：同行者によるサポート、講師本人による日本語説明））

Assistance by accompanied person during Q&A session

◆Name and title of accompanied person（同行者 職・氏名）

Prof. S. Kawamura

◆Other note worthy information（その他特筆すべき事項）:

For preparing the experiment I had support from my colleague Dr. K. Agatsuma, namely for setting up the experiment at the school two days before the lecture.

- Impressions and opinions from accompanied person（同行者の方から、本事業に対する意見・感想等がありましたら、お願いいたします。）

英語でサイエンス。素晴らしい企画だと思います。今回は特に筑駒の超優秀な生徒さん達が対象で、その理解力とやる気満々な姿勢には感激しました。中高生にサイエンスの楽しさと英語でのコミュニケーションの重要性を伝えるために、ぜひとも続けてもらいたいプログラムです。