

Form B-2
(FY2022)
Must be typed

Date (日付)
27/06/2022 (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): Marc Eisenmann (ID No. P20803))

- Name and title of the lecture assistant (講義補助者の職・氏名)
Tatrsuki Washimi (鷺見 貴生), Project Assistance Professor (特任助教)

- Participating school (学校名): Numazu Higashi Hlgh-School

- Date (実施日時): 17/06/2022 (Date/Month/Year: 日/月/年)

- Lecture title (講義題目): KAGRA : A new window to observe the Universe

- Lecture format (講義形式):

Onsite ・ Online (Please choose one.) (対面 ・ オンライン (どちらか選択ください。))

Lecture time (講義時間) 90 min (分), Q&A time (質疑応答時間) 20 min (分)

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

(講義方法 (例: プロジェクター使用による講義、実験・実習の有無など))

Used projector and conducted 2 experiments

- Lecture summary (講義概要): Please summarize your lecture within 200-500 words.

More than a billion years ago, in a galaxy far far away...

Two black holes rotating around each other for several billion years are getting closer.

In a fraction of a second, they collide with each other emitting a so large amount of energy – about 50 times more than the whole visible Universe – that space-time vibrates. These vibrations or gravitational waves propagate throughout the Universe carrying with them black holes secrets.

On September 14 2015, these gravitational waves reached Earth. After this long journey, the effect of these gravitational waves is so weak that the planet Earth's diameter was only changed by less than a thousandth of the size of an atom.

Luckily, after more than 40 years of development, the two LIGO gravitational waves observatories in the US were operational and sensitive enough to observe these gravitational waves. It marked the birth of gravitational wave astronomy as a new way to observe the Universe.

Since then, the Italian observatory Virgo joined them and they detected together more than 90 gravitational waves signals. From December this year, the Japanese gravitational observatory KAGRA, located in Gifu prefecture, will also join this international collaboration of about 1500

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researchers to observe more and more gravitational waves.

In the same manner that astronomy revolutionized our understanding of the Universe, gravitational wave astronomy still has many surprises in store for us.

□ Other noteworthy information (その他特筆すべき事項):

- Impressions and comments from the lecture assistant (講義補助者の方から、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。):

講義が夕方だったため、行きは十分余裕がありましたが、帰りが少々慌ただしくなりました。後泊できれば、より余裕を持って質疑応答や生徒さん・教員の方々と交流できるのではと思います。