

様式 A-1
(FY2023)

2023年 7月 26日

サイエンス・ダイアログ 実施報告書

1. 学校名・実施責任者氏名: 愛知県立刈谷高等学校 石川梓
2. 講師氏名: Dr.Albert ESCRIVA MANAS
3. 講義補助者氏名: _____
4. 実施日時: 2023年 7月 21日 (金) 14:00 ~ 16:00
5. 参加生徒: 1年生 29人、 2年生 9人、 ___年生 ___人 (合計 38人)
備考: (例: 理数科の生徒)
6. 講義題目: 数値的研究で切り開く原始ブラックホール形成のフロンティア
7. 講義概要: 宇宙の歴史、そもそもブラックホールとは何か。その構造と形成について。
8. 講義形式:
対面 ・ オンライン (どちらか選択ください。)
 - 1) 講義時間 90 分 質疑応答時間 30 分
 - 2) 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)
プロジェクター使用による講義
 - 3) 事前学習
有 ・ 無 (どちらかに○をしてください。)
使用教材 (講義直前に関連語句の説明リストを配布しました。)
9. その他特筆すべき事項:

Form B-2
(FY2023)
Must be typed

Date (日付)
30/07/2023 (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): Albert Escrivà Mañas (ID No. P22328)

- Name and title of the accompanying person (講義補助者の職・氏名)

- Participating school (学校名): Kariya High School (Aichi prefecture)

- Date (実施日時): 21/07/2023 (Date/Month/Year: 日/月/年)

- Lecture title (講義題目):

Scientific journey into the cosmos and introduction into primordial black holes

- 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) 30 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))

projector

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

I divided the lecture into two parts: In the first part, I introduced very briefly the country where I was born (Spain) using some maps. I also introduced the city of Barcelona with some pictures, including some typical dishes. Later I started to talk about my first steps, going into high school, what I studied and my specialisation. I also introduced the university system in Spain as well as the subjects learned during bachelor and master studies. Before finishing this block, I gave my personal opinion about some tips for students for academic success in research, in particular: i) be confident in yourself, ii) be curious and iii) be patient.

In the second block, I started to introduce what is the Universe and the field of cosmology as a research field. I included in the presentation short divulgative movies from youtube. Moreover, I gave the students some basic idea of the evolution of the Universe and the constituents of it. Later I introduced the concept of spacetime and black holes. In particular, I focus on how black holes can be formed from the collapse of stars depending on their mass.

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※弊会記入欄

In the final part, I introduced the concept of dark matter, which represents approximately the 27% of the content of our Universe, and primordial black holes (black holes that could have originated in the very early Universe and could constitute the dark matter). Finally, I gave the students some basic knowledge about the perspectives of the detection of primordial black holes using gravitational wave astronomy, and I introduced my research focused on numerical simulations (using computers) of the formation of primordial black holes.

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

- Impressions and comments from the accompanying person (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。):

