

(For JSPS Fellow)

Form B-5

Date (日付)

1/ 8/ 2011 (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): Giuseppe Lorusso (ID No. P 10201 )
- Participating school (学校名): Ibaraki prefectural Namiki High School
- Date (実施日時): 15/7/2011 (Date/Month/Year: 日/月/年)
- Lecture title (講演題目): (in English) The origin of the chemical elements in the universe  
(in Japanese)
- Lecture summary (講演概要): Please summary your lecture 200-500 words.

The lecture was divided in three parts. In the first part I presented the Italian landscape. This was done though several pictures and video-clips. I tried to focus this part of the lecture on the sites that are not usually known to Japanese tourists such as the Alps mountains, the country side of Tuscany, the beaches of the Sardina island and the south of Italy.

In the second part I summarised briefly the history of Italy. The focus was on few topical ages most relevant for Italy such as prehistory, pre-roman and roman, renaissance, war world II. This part ends with a very brief summary of the challenges that Italy faces today (e.g. economical and social).

The third part was the bulk of the lecture. Introducing the elemental chemical composition of the earth and of the universe set the stage for answering the question, that is part of my research activity in Japan, of what is the origin of these elements.

I used pictures and a Hubbel-space-telescope video-clip to illustrate the point that the large majority of the observable universe is made only by Hydrogen and Helium. With this visual image in mind I could discuss two features of the famous big-bang: a) the big-bang only produces very few kinds of light elements and b) the big-bang produces a very large amount of them.

After the big-bang, that explains the origin of the light elements, I introduced some basic notions of stars with the focus of energy generation as a consequence of nuclear-fusion reactions. Nuclear reactions explains not only the energy generation in starts (why they shine), but also the formation of heavy nuclei in its center. This part of the lecture ends with showing that the

stellar wind is responsible for the ejection in the universe of the elements generated in the star and the formation for example of planetary nebulas and supernova remnant, which are the origin of planets like ours.

- Language used (使用言語): English

- Lecture format (講演形式):

◆Lecture time (講演時間) 150 min (分), Q&A time (質疑応答時間) 20 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))

projector and audio system

◆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

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

PhD student, Kenta Yoshinaga

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

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- 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。):

I consider this activity is a good way to increase the international awareness of students and to encourage willingness to study English. In fact, some students tried to ask Dr. Lorusso about their questions in English after the lecture.

And, it was the first experience for me to translate the lecture to help with the understanding of the students. So the activity was also a great experience for me.