

## Summary for TO Tour on 07/12/2012

Forty high school and middle school students from China on an exchange program led by Caltech alumni Bruce Carter, PCC

Presentations and tours given by Junle Jiang, Adam Subhas, and Kirsten Siebach

**Junle Jiang:** This group of students visit from Shanghai, China in an earth sciences summer program. They are mainly students from middle schools and high schools, and a few of them are actually college students. I'm very pleased to meet with them and to introduce Seismo Lab/Tectonic Observatory to them and also hoped to share with them the following ideas (1) what it's like to be a Chinese graduate student as well as a scientist, doing research in the US; (2) what the current status of earthquake research is in California, with some comparison to our Chinese counterpart.

The outline for my presentation

- Introduction of myself, my job here, and unique appeals of earth sciences.
- Reviewing the basics of earthquake, with examples from Wenchuan, China 2008 earthquake and earthquakes in California on San Andreas Fault.
- Scientific research carried out here to simulate earthquake cycles (some work by my research group).
- Simulating "The Big One" Magnitude 7.8 earthquake, another scientific effort by Caltech/USGS scientist.
- Related important research problems
  - What are the realistic fault behaviors & ground shaking?
  - What are appropriate building codes & public policy?
  - How can we reduce loss?
    - earthquake early warning system (Caltech research).
    - public preparedness (SCEC Shake-out drill).

I talked in Mandarin while my presentation slides are prepared in English. I did bilingual explanation on important terms and concepts. Some students raised questions after the presentation, and yet the interaction with students was in general limited by the time constraint. Many students seem too quiet, but I understand that, after all, this is only their second day in the country. I hope I could've had more time to know their backgrounds and their thoughts and feedback.

The large age-span of the group makes it not easy to cater for everyone's need, especially for introducing scientific research (written in English) to students who're just new to both English and physics. I would go for more graphics/video the next time.

**Kirsten Siebach:** Mars Exploration (30 min talk to ~40 Chinese students)

I gave a 30 minute talk about Mars Exploration, based on the following questions: what is Mars like? How do rovers get to Mars? What do the rovers do on Mars? and What have we learned?. I gave a very similar talk to 6<sup>th</sup> graders on June 6<sup>th</sup> and described the

experience there, so I will focus more on what it was like to talk to a group of international students.

The Chinese students were very quiet, so it was harder to tell what they understood and how engaged they were in the discussion. I tried to ask them basic questions throughout the talk, and I think it worked better after the first few questions- they were more willing to answer the later ones. I tried to emphasize comparisons with movies or books or school projects to connect with them better, i.e. working in groups on projects, or naming the Phoenix mission for a bird like Dumbledores, or Ironman's jets for landing, or taking a whole school year to get to Mars. These comparisons work well with just about every group, and they were excited by the comparison with things they knew. I also used a lot of gesturing and acting out how the spacecraft works, pointing to pictures for reference, so I think that helped them understand better.

If I did it again I would include the MSL landing video because it doesn't have words and is easy to understand and maybe would have given them a break from English. I also would have maybe converted from miles to km and pounds to kg- I didn't think beforehand about what units they would understand better. Overall, I think it went well though and they laughed appropriately and got excited about some of the pictures, and I thought it was a cool opportunity to share the exciting things we're doing with Mars research with a group of international students.

**Adam Subhas:**