

Patrick Allard (IPGP) - Activity Report

ERI Project Professor stay, April 7- July 8, 2013

As my 3-month stay in ERI as a Project Professor is coming to its end, I'd like to express again my gratitude to the Institute, its Director, and Minoru Takeo-san - my host scientist - for their kind welcome and support. During this stay, I strongly enjoyed working with the team of the Volcanological Center, as well as interacting with ERI's researchers from other teams and being involved into the Institute's life (seminars, discussions, welcome parties, etc.) since about the onset of the new academic year. Reciprocally, I hope that my scientific contribution to ERI's activities and projects in Volcanology could have been useful and appreciated. Below I provide a brief report of my activities.

My scientific contribution has been focused on how to reinforce the connections between volcanic gas (composition, flux) survey and geophysical survey onto Japanese volcanoes, in the framework of both ERI's plans and collaborations with other Japanese Institutes (in particular, the Geological Survey of Japan and Geochemical Research Center of Tokyo University). On that topics, I interacted with different colleagues of the Volcanological Center and I gave *several seminars*:

- April 15, 14h30-16h00: general seminar at ERI, entitled "What volcanic gases tell us about magma supply, degassing and eruptions, and how to correlate with geophysical signals?"
- April 26 (13h30-16h00) and May 8 (13h30-16h00): two internal team seminars on magma/volcano degassing processes and their measurement.
- June 27 (10h30-16h30) and July 3 (13h30-16h30): contribution to widened scientific discussions within M. Takeo's research project on measurements at active craters; I made two presentations on (i) the remote sensing of volcanic degassing during eruptions and (ii) the survey of diffuse magmatic degassing through volcanic soils prior to eruptions (and earthquakes).

On those topics, I also gave a talk on June 17 at GSJ in Tsukuba, as invited by Prof. H. Shinohara and after having visited their labs.

In the same time, I had the chance to go in the field and contribute to volcanic gas measurements on *two volcanoes*:

- Asama (May 14-15): MultiGAS station control and plume measurements at the crater (with H. Shinohara and R. Kazahaya from GSJ), CO₂ soil prospection (with T. Mori from GCRC,) plus ERI volcano observatory team.
- Miyakejima (May 27-29): MultiGAS station control and gas plume measurements at the crater (with H. Shinohara and R. Kazahaya, GSJ), plus four ERI geophysicists.

On June 2-3, I also visited the Shimabara volcano Observatory (Kyushu University), the surroundings of Unzen volcano (which I had seen erupting in Nov. 1992), and I was invited to participate into the official ceremony for the Memorial Day of the June 1991 catastrophe.

My other activities have included:

- Participation in two days (May 20-21) of the JpGU Assembly (Makahari Messe)
- Participation, as a foreign expert, to the Evaluation Committee of the 2006-2013 activities of the Geochemical Research Center (GCRC) of Tokyo University (visit to GCRC labs and staff on June 13, report evaluation on June 17-19)
- Visit (June 14) to Kobe's cinema Museum (together with M. Ishihara, ERI) in order to vision then try to recover and digitalize for ERI the single Japanese copy of the documentary on volcanoes called "Meetings with the Devil", made by Dr. H. Tazieff (1959). This movie includes rare and spectacular images of inside crater explosions at Sakurajima. On the same day, visit also to the 1995 Kobe active fault system.

- Conference (June 27, 16h45-18h00) on “L’Aquila catastrophe and the responsibility of experts in case of volcanic unrest and earthquakes” at the Department of Juridical and Social Sciences of Ochanomizu University.

Tokyo, July 4th 2013

Patrick Allard

A handwritten signature in black ink, appearing to read 'P. Allard', written in a cursive style with a horizontal line underneath.