

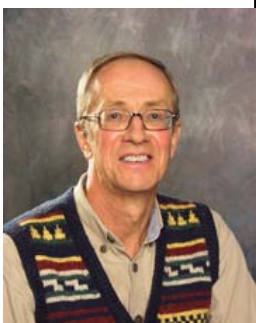


IAVCEI News 2011 No: 1-3

INTERNATIONAL ASSOCIATION OF VOLCANOLOGY AND CHEMISTRY OF THE EARTH'S INTERIOR

FROM THE PRESIDENT

Dear Colleagues,



*Ray Cas
President of the
IAVCEI*

It is a great honour to have been elected President of the International Association for Volcanology and Geochemistry of the Earth's Interior (IAVCEI) for 2011-2015, especially as the first Australian to be so honoured. I hope that I can serve IAVCEI as well as previous presidents.

First, on behalf of all IAVCEI members, I thank the outgoing President, Setsuya Nakada, the continuing Secretary-General, Joan Marti, and his Assistant Secretary, Adelina Geyer, for their tireless work

in keeping IAVCEI in a healthy state, but also in strengthening it in many ways, especially in simplifying the structure of IAVCEI's finances, in development of the IAVCEI website, and in keeping IAVCEI members informed about IAVCEI activities and news. In addition, thank you to the outgoing committee for their contribution to IAVCEI and to John Stix for his conscientious approach as Editor of Bulletin of Volcanology.

Thank you also to James White for agreeing to take on this very important role for IAVCEI. There are a number of new and exciting initiatives being developed with regards to the publication options for IAVCEI members that will be reported on as they develop.

Secondly, I want to introduce the new IAVCEI Executive Committee for 2011-2015:

- President, Ray Cas, Monash University, Australia
- Vice President, Steve Self, Open University, UK/USA
- Vice President, Hugo Delgado-Granados, UNAM, Mexico
- Secretary General, Joan Marti, CSIC Jaume Almera, Spain
- Immediate Past-President, Setsuya Nakada, University of Tokyo, Japan
- Greg Valentine, University at Buffalo, USA
- Patty Mothes, Polit cnica Nacional Casilla, Ecuador
- Horoshi Shinohara, Geological Survey of Japan
- K roly N meth, Massey University, New Zealand

- Editor of Bulletin of Volcanology: James White, Otago University, New Zealand
- Assistant Secretary for membership, and webmaster: Adelina Geyer Traver, CSIC Jaume Almera, Spain
- Editor of IAVCEI News: K roly N meth

I have been a member of IAVCEI since 1986. Membership of IAVCEI, particularly as a young scientist, provided me with an opportunity to undertake collaborative research projects all over the world, leading to some amazing experiences, and working with many fantastic research colleagues, who are now friends. I have been able to share those experiences and opportunities with my many research students. I hope that all young scientists interested in the various aspects of volcanology also seize such opportunities through membership of IAVCEI and participation in its wide range of activities. These experiences have provided me with many insights into the state of volcanological research and volcano monitoring in many countries.

IAVCEI however faces many challenges that we all need to be cognizant of and work together to overcome. There are also many exciting opportunities that IAVCEI can grasp to strengthen its role as the leading international learned society for the volcanological sciences.

Let me first discuss some of the challenges facing IAVCEI.

1. IAVCEI's relationship with IUGG and its importance to us all

IAVCEI is not an independent association. It was established in 1919, as a member association of the International Union of Geodesy and Geophysics (IUGG), which in turn is one of 30 scientific organizations affiliated with the International Council for Science (ICSU). IUGG is an umbrella organization for many different earth related scientific discipline associations. The IUGG name is somewhat outdated, because it now consists of eight different associations (IACS – Cryospheric or Ice Science; IAG – Geodesy; IAGA – Geomagnetism and Aeronomy; IAHS – Hydrology; IAMAS – Atmospheric and Climate Science; IAPSO – Oceanography; IASPEI – Seismology; IAVCEI – Volcanology and Geochemistry).

Many IAVCEI members will not even be aware of this diversity in IUGG. Some may even question why IAVCEI should be affiliated with a bigger organization, and why it shouldn't just be totally independent. There are several simple answers to this. First, being insular will inevitably limit the development of our scientific ideas. IUGG is clearly as diverse in its discipline scope as the AGU and EGU organisations, and offers the same, exciting, interdisciplinary and multidisciplinary scientific opportunities as these other organizations. However, IUGG conferences are actually better because they are not as big as AGU meetings. As a result you can meet people, you can more easily network, you can switch between symposia and even from those in one discipline to those in another, to experience some of the exciting science accessible through those other disciplines and associations. Those who attended the just completed IUGG General Assembly in Melbourne were able to experience not only outstanding volcanological science, but also in other disciplines, including symposia on the Japan and New Zealand earthquake crises, tsunamis, nuclear installations co-convened by our new vice-president Steve Self, as well as the eight IUGG Plenary Lectures (one presented by an eminent international scientist from each discipline area of IUGG).

Consider the disciplines represented by the eight associations of IUGG. Every one of them has relevance to some aspect of volcanology and provides opportunities for developing interdisciplinary research and broadening our perspectives on our own volcanological science. All IAVCEI members have a wonderful opportunity through IAVCEI's involvement in IUGG General Assemblies to strengthen our own science. I implore you all not to miss this opportunity, especially IAVCEI's young scientists, to attend future IUGG General Assemblies, the next one being in Prague in the Czech Republic in 2015.

There is also a more pragmatic reason why we as IAVCEI members should value our involvement in IUGG. IUGG receives funding through IUCU and the United Nations to oversee research in the earth sciences that are important to mankind and modern civilization. It has many scientific responsibilities as a result, but these also include presenting scientific opinions and policy statements on issues affecting society. Some of the funding that IUGG receives, is passed on to the eight member associations to support their scientific programs. IAVCEI spends its income on providing seed funding support for IAVCEI conferences, the activities of the IAVCEI Research Commissions and Working

Groups, including workshops, courses for young scientists, providing research grants, and providing support for young scientists and scientists from developing countries to attend all these various IAVCEI activities. There is a catch however. The amount of funding that IAVCEI receives is proportional to the number of IAVCEI affiliated delegates who attend IUGG General Assemblies. Without this financial support, IAVCEI would die. It is therefore very important that scientists involved in IAVCEI support IUGG General Assemblies and thereby help to make the IAVCEI scientific programs in IUGG GA's, successful conferences for IAVCEI.

IAVCEI must therefore strengthen its involvement in IUGG General Assemblies. It is therefore very important for IAVCEI that we all work together to make the IAVCEI Scientific Program at IUGG General Assemblies as strong and scientifically attractive as possible. And as I have said there are many scientific benefits in doing so in terms of the opportunities to experience science at the periphery of our mainstream research interests. The next IUGG General Assembly will be held in the stunningly beautiful city of Prague, in the Czech Republic in 2015. Please all put this date in your diaries now and please start thinking about the symposium theme that you would like to organize or be part of at IUGG2015 In Prague.

2. IAVCEI Membership issues

IAVCEI's current membership numbers are about 800. Yet almost 3,000 people have registered with Volcano Listserv, the email based volcanology news service started by Jon Fink and Arizona State University many years ago. Why aren't all of those 3000 people also members of IAVCEI? It can't be that the IAVCEI membership fee is crippling, because it is not. Perhaps IAVCEI and IAVCEI members have just not adequately communicated with the volcanological community what IAVCEI is, and the benefits of being members of an international research community. Any thoughts on this issue would be gratefully considered by the new IAVCEI Executive Committee.

To date, IAVCEI has offered membership at a fee related to one's income. However, IUGG has recently informed IAVCEI that according to IUGG Statutes, no association of IUGG can charge membership fees. IAVCEI is now in the process of making member contributions optional. That is, anyone can now join IAVCEI as a member and not pay a fee. As attractive as that sounds, it may also mean that members get nothing for nothing. The reason for this is that the income IAVCEI received in the past from its membership fees was about 50% of its total income when added to the annual contribution from IUGG, as explained above. If members who used to pay don't continue to make voluntary contributions as supporting members, then the research support programs provided by IAVCEI that I outlined above will have to be halved. There will therefore be very little funding available to support conferences, workshops, research and students and scientists from developing countries attending conferences. I therefore ask you all to continue to support IAVCEI financially to the ability that you are able by becoming a supporting (financial) member. We will develop guidelines for appropriate contributions soon. Secondly of course, as outlined above, you can support IAVCEI by attending IUGG General Assemblies.

3. The importance of young scientists in helping to develop the future of IAVCEI

The future health of IAVCEI lies in involving more and more young scientists (relatively recent postdoctoral researchers and young academics, postgraduate students) in the activities of IAVCEI. This means not only attracting them to come to IAVCEI conferences, but becoming involved in the activities and the running of commissions and working groups, and becoming co-convenors, together with more experienced researchers, of symposia at IAVCEI conferences. At the recent IUGG General Assembly, Joan Marti and I made a point of inviting and involving young scientists as co-convenors of many of the IAVCEI symposia. I will propose to the IAVCEI Executive to consider a recommendation to include a specific young scientist elected position on the next IAVCEI Executive Committee. I encourage every IAVCEI Commission and Working Group to include at least one young scientist on the management team. I would like to see every symposium at future IAVCEI conferences have at least one young scientist as a co-convenor. Most importantly, all experienced researchers and mentors of postgraduate and postdoctoral researchers should encourage them all to become members of the IAVCEI international volcanology research community. This is a task I ask you all to undertake. Now that it is potentially free, there is no reason for anyone not joining. However, for the financial reasons stated, I ask you to encourage them to also become supporting financial members, or for you to pay their nominal fees.

4. Our role as an international volcanological scientific community

In this increasingly environmentally and hazard conscious world, volcanologists have an increasingly important responsibility to inform government at all levels, and the general population of both the impacts and benefits of volcanism on Earth. We must, as a learned society, continue to raise awareness of the wide spectrum of hazards and societal impacts associated with volcanic events. The 2010 Eyjafjallajökull eruption in Iceland, and the recent Puyehue eruption in Chile have provided the volcanological community with the opportunity to prove that even relatively small events can have disastrous societal and economic impacts. IAVCEI can play an increased role in increasing awareness, promoting the importance of research, and assisting colleagues and countries to find increased support to improve monitoring capabilities and funding levels for research and training. IAVCEI can also continue to contribute in important and responsible ways to discussions on the impact of volcanic events on climate change and extinction events.

However, we must also emphasise the enormous benefits to society of volcanic systems. Living in a resource rich country in Australia, has given me many opportunities to work with the mining industry in developing a better understanding of the origins of many volcanic hosted natural resources such as diamonds, copper, lead, zinc, gold, silver, nickel, and platinum group metals. Geothermal energy from active volcanic systems offers enormous potential to further develop and utilize a major, renewable energy resource. Tourism in volcanic areas also provides enormous economic benefits to society. We must convince governments that the economic benefits that volcanism brings should be used in part to fund in a significant way research, monitoring and education about volcanic processes and impacts. There is a sound economic argument to be won on this point.

There is also an opportunity for IAVCEI to engage more with the natural resources and tourism industries, to ultimately encourage industry to support more research and education in volcanology. The IAVCEI scientific program at the IUGG2011 General Assembly included a symposium on kimberlite volcanology and another on the natural resources of volcanic systems, and I suggest that a new commission on this theme is long overdue. IAVCEI has an opportunity to become even more of a reference group for government and the media on important scientific and socio-economic issues related to volcanism, especially through the activities of its research Commissions and Working Groups. We should not be shy about this.

5. The important role of IAVCEI Research Commissions and Working Groups

IAVCEI has been very active as a vehicle for research and training. IAVCEI has not only nurtured research by facilitating research conferences and workshops, but has also provided research students and scientists from developing countries with support to participate in these activities and to learn from them.

The IAVCEI Commissions and Working groups have been the “*research shop-front*” for many of IAVCEI’s research activities. Very importantly, anyone within IAVCEI can join the Commissions and Working Groups, however, this is not widely known, and we need to promote this opportunity to all IAVCEI members, and especially young scientists.

A fundamental question I ask, however, is: are the Commissions and Working Groups functioning as effectively as they can, and is there anything that the IAVCEI executive can do to assist the Commissions to enhance their research activities and profile? Commissions and Working Groups must be active, otherwise they will be wound up. For example, it seems to me that the commissions are often not proactive in formulating the scientific program of symposia themes for IAVCEI General Assemblies, and surely they should be.

More IAVCEI Commission activities could also be held in developing countries as a vehicle for accessible training in those countries, for example, by holding research workshops in those countries, and then back to back, running 2 to 3 day short courses presented by research leaders? I believe that the role of Commissions and the way they work with IAVCEI at large to enhance research and training in volcanology needs to be reconsidered.

Finally, I invite all members to contact me, or any other members of the IAVCEI Executive Committee with comments and suggestions on any of the above issues, and also how IAVCEI can become a more effective organization on behalf of the international volcanological community.



Ray Cas,
President of IAVCEI,
Monash University, Australia.

GREETINGS FROM THE PAST PRESIDENT



Setsuya Nakada
Past President of the
IAVCEI

I could finish my term of IAVCEI presidency at the IUGG General Assembly in Melbourne. I would like to thank the member of the former executives, especially the Secretary General, Joan Marti.

During four years we tried to adjust the relationship of IAVCEI with IUGG. Modifications in new Statutes and By-laws are a sort of resolution of the adjustment. For example, the name of the paying membership is not used due to its

conflict with the ICSU-IUGG philosophy. Nomination and election ways for the IAVCEI executives were re-provided. The qualification and timing for the IAVCEI awards were revised. Naming and timing of general and scientific assemblages of IAVCEI was justified; the usage of "IAVCEI general assembly" in the Reykjavik in 2008 was incorrect.

To increase the income of IAVCEI from IUGG (allocation for four years), we tried to increase the number of IAVCEI attendees in the IUGG general assembly, Melbourne. That is, I with Joan and Ray Cas repeatedly recommended IAVCEI members to attend this meeting. As a result, the number of the IAVCEI attendees in the Melbourne meeting increased.

During my presidency, volcanic ash issued from erupting volcanoes in Kamchatka, Iceland and Chile gave strong impacts to air traffics in the world. IAVCEI and IUGG issued the resolution on this matter in April 2010, being supported by IAVCEI members of ICAO and WMO. This event was effective to let people realize that volcanic eruption becomes one of serious issues everywhere in the world.

Tsunami triggered M9.0 earthquake in Tohoku on March 11, 2011 shocked the whole world. A fragile face of modern cities against natural disaster has been exposed in this event. Clear becomes for society the importance to prepare for such less-frequent huge natural disaster including volcanic eruption. In other words, showing the presence of IAVCEI has become more important than before.

Past president, *Setsuya Nakada*
University of Tokyo

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**IUGG 2011 Melbourne - Report to IAVCEI
XXV-IUGG General Assembly, Melbourne, Australia, 28th June –
7th July 2011.**

The XXV General Assembly of the International Union of Geodesy and Geophysics was held in the Melbourne Convention Centre, in Central Melbourne, Victoria, Australia, between 28th June 2011 and 7th July 2011. The meeting was attended by around 3600 delegates from 91 countries. The Melbourne Convention Centre was centrally located on the banks of the Yarra River in downtown Melbourne. It had Meeting rooms capable of handling 32 concurrent sessions, plus 3 Plenary theatres.

The IAVCEI program consisted of 20 IAVCEI Symposia, 17 co-sponsored Symposia and 12 joint Symposia, with other IUGG affiliated associations. On three mornings through the duration of the Assembly, Union Plenary sessions comprised invited lectures by distinguished scientists from each of the member associations. These were held in the main conference hall, with a seating capacity for around 2000 and were well attended. The IAVCEI Plenary address was delivered by Professor Steve Self of the US Nuclear Regulatory Commission, and entitled: "Volcanism and Global Sustainability" in keeping with the IUGG General Assembly theme: "Earth on the Edge: Science for a sustainable Planet".

I was due to travel to Melbourne from Wellington, New Zealand on Sunday 26th June in order to attend business meetings of IUGG Council and affiliated Associations set for Monday 27th June, but flights from southern New Zealand to Sydney, Melbourne and Adelaide over the weekend of 25th, 26th June were cancelled due to activity on Puyehue-Cordon Volcano in southern Chile and the resulting dispersal of

tephra in the atmosphere across the southern hemisphere. Many delegates travelling to IUGG from Pacific Rim countries (e.g. Japan, China, USA, S. America) were similarly inconvenienced by this act of nature. So, in more ways than one, volcanism had an impact on the entire meeting. Interestingly, on the morning of the 5th July almost coincident with the time of Steve Self's IAVCEI Plenary, Melbourne experienced a rare M4.4 earthquake, that was followed by an aftershock sequence with magnitudes >3.0. This brought a rush of media to the meeting.



The full IAVCEI program opened on Friday 1st July with a Special Symposium, jointly convened with IASPEI, to Honor *Geoff Davies* and this lifetime contribution to the study of the internal structure of the deep Earth. The Symposium, entitled: "The Davies Mantle: Reconciling Geophysical and Geochemical Perspectives" reflected a truly interdisciplinary session with speakers from the world of geophysics and geochemistry. On each of the following days IAVCEI conducted a number of symposia, ranging from Volcanism and Mineral Deposits, to Palaeomagnetism, Remote Sensing of Volcanic Hazards, Arc Magmatism, Subaerial and Subaqueous lava flows, Eruption and Transport of Pyroclasts and Understanding Big Volcanic Systems. Formal poster sessions were scheduled for a dedicated period each afternoon, between 15.00 and 16.30, and poster presenters could upload short presentations on their poster to a live internet page, accessible to delegates. "Poster Socials", sponsored by the Australian Academy of Science, where wine, beer and finger food was provided, were held on Friday 1st and Monday 4th July.

The formal IAVCEI General Assembly took place on the evening of Monday 4th July 2011, between 18.00 and 20.00. Here, the new Executive of IAVCEI for the period 2011 – 2015 was announced with *Ray Cas* (President); *Joan Marti* (Secretary General). Other matters considered were the reports of the outgoing President (*S. Nakada*) and Secretary (*J. Marti*), the financial report (*J. Marti*), modifications to the Statutes and By-Laws and a warmly received address from the representatives of Kagoshima City, hosts for the 2013 Scientific Assembly of IAVCEI between 20th and 24th July 2013. Full details of the new executive can be found on the IAVCEI www page at <<http://www.iavcei.org/IAVCEI.htm>>. The IAVCEI Dinner was held at Rosati Restaurant on the evening of 6th July.

In summary, the IAVCEI program provided scientific diversity and quality presentations across a wide range of disciplines. The entire meeting was very well organized and the facilities were excellent, with very few breakdowns, failures or glitches. So well done to the local organising committee that included IAVCEI members *Ray Cas* (Chair), *Adrian Pittari* and *Joan Marti*.

John Gamble
University College, Cork, Ireland
Nationally Accredited Delegate for Ireland



REPORT OF THE XXV IUGG GENERAL ASSEMBLY FIELD TRIP VF01:

Factors that influence varying magmatic to phreatomagmatic eruption styles in intraplate continental basaltic volcanic provinces: the Newer Volcanics Province of south-eastern Australia

Leaders: R. Cas, T. Blaikie, J. Boyce, P. Hayman, S. Jordan, F. Piganis, G. Prata and J. van Otterloo

Participants: C. Annen, D. Baratoux, C. Borrero, C. Connor, L. Connor, E. Cranswick, M. Edwards, C. Frischknecht, A. Hintz, J. van den Hove, J. Kavanagh, B. Kjarsgaard, I. Laird, N. Lefebvre, K. Németh, J. Rausch, P.-S. Ross, C. Ryane, M. Tesaro, M. Ushioda, G. Valentine, M. Valentine, M. Willcock, J. Wissing

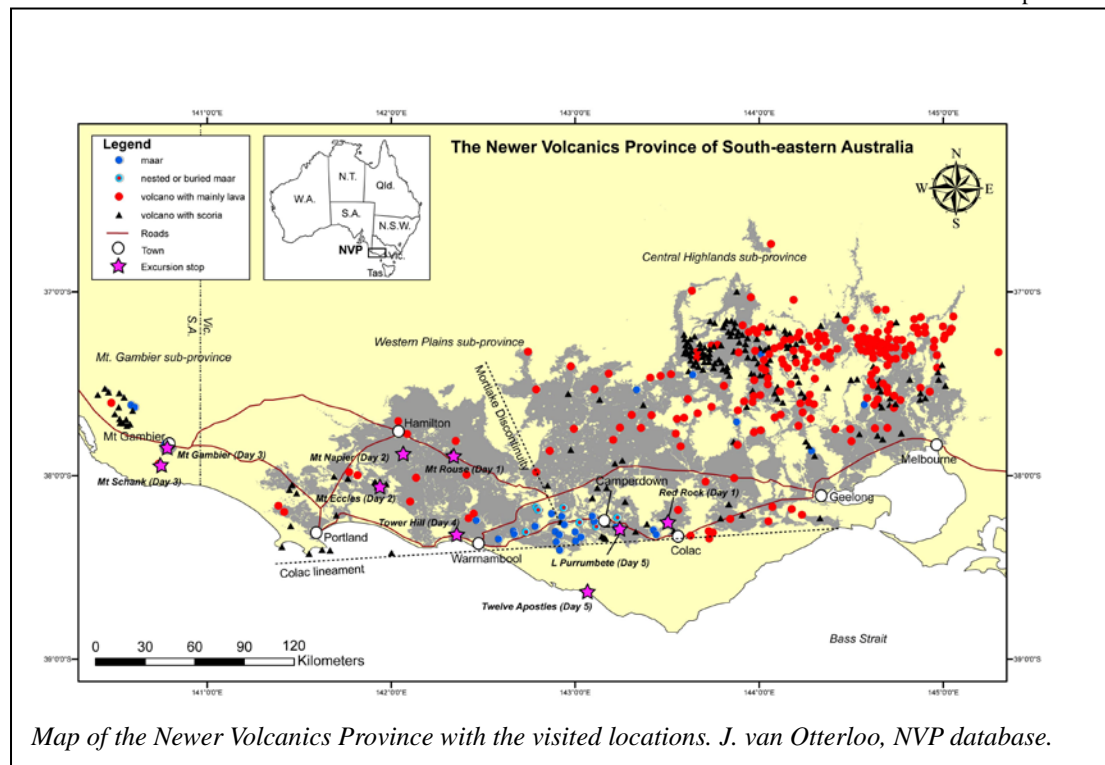
deposits, Pele’s hairs and tears, large and complex volcanic centres), good food (lunch at a winery, great dinners, Aussie-style BBQs) and plenty of socialising with even an ‘interpretative dance’ about one of the visited volcanoes.

Three main themes were discussed during the visit to the NVP:

- 1) The factors that influence varying eruption styles in intraplate continental basaltic volcanic provinces;
- 2) The triggers for the formation of and the volcanic episodes in these provinces;
- 3) The degree that monogenetic basaltic volcanoes and their eruption styles can be used as analogues for kimberlite volcanoes.

Overview of the Newer Volcanics Province

The Newer Volcanics Province (NVP) is the youngest (5 Ma – Recent) volcanic field of Australia with over 400 eruption points extending 400 km from Melbourne to Mt. Gambier. This province covers an area of ~27.000 km², but only has an erupted volume of ~1300 km³. The eruption centres occur as shield volcanoes, scoria and tuff cones, maars and tuff rings, and combinations of any of these edifices. It overlies the Palaeozoic basement of the Lachlan and Delamerian Orogens to the north and the sediments of the Otway Basin to the south. Many eruption points are aligned parallel to structures in the underlying basement. Despite its large area no age progression of eruption centres can be identified. Compositions of the basalts in this intraplate setting range from nephelinite to basaltic andesite and phonotephrite; some compositions are more dominant in one part of the province than others.



Map of the Newer Volcanics Province with the visited locations. J. van Otterloo, NVP database.

Different models for volcanism in this area have been proposed. Hotspots or hot lines, post-rift diapirism of asthenospheric and enriched lithospheric mantle material after the break-up of Gondwana 90 Ma, edge-driven convection related to the lithospheric thinning of the Australian at its continental margins, and transtensional decompression along compression induced re-activation of the pre-existing lithospheric structures.

Many volcanic centres in this field are very well preserved and are easily accessible. Great complexities in vent locations, eruption styles and magmatic compositions are found in several volcanic centres in the NVP, which makes this province a great exemplary monogenetic field for

In the last decade interest in monogenetic volcanic fields has grown significantly. As research progresses new complexities are being uncovered in these relatively small and ‘simple’ systems. Also with the increasing world population cities and towns expand to and are built in these volcanic provinces which brings along serious hazard implications (for example Auckland, New Zealand). A better understanding of monogenetic volcanic fields and the processes involved is important. This is the reason a special IAVCEI field trip was organised to the Newer Volcanics Province (NVP) of south-eastern Australia related to the XXV IUGG General Assembly held in Melbourne, Australia.

It turned out to be a trip with plenty of great geology (beautiful base surge

improving our understanding of these kinds of fields.

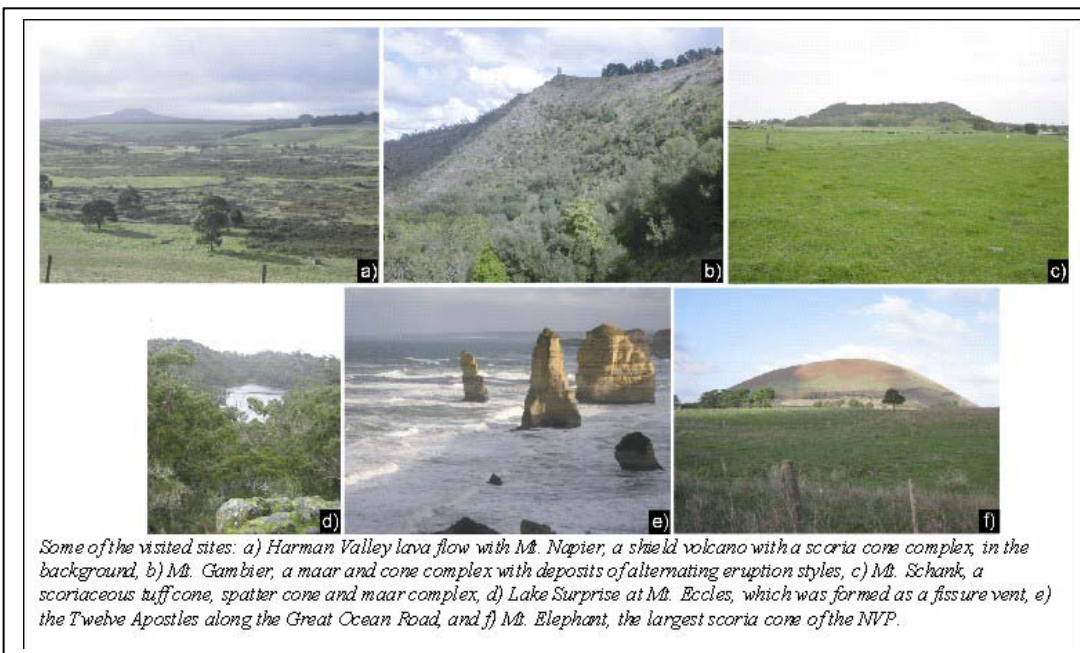
Locations visited and scientific questions

This five-day field excursion took us to nine different volcanic centres with each showing beautifully preserved structures related to a wide variety of volcanological processes. Most centres were volcanic complexes with indications of multiple vents (up to 40 at Red Rock) and multiple eruption styles; some centres were formed by the eruption of multiple magma batches (Red Rock, Mt. Gambier and Mt. Rouse). Two of the visited sites belong to the world’s largest maars: Tower Hill and

Lake Purumbete, both with a diameter of ~3 km. Lava channels and caves were also visited.

volcanoes?

Are the eruption styles of basaltic monogenetic volcanoes good analogues for the eruption styles of kimberlite volcanoes?



Some of the visited sites: a) Harman Valley lava flow with Mt. Napier, a shield volcano with a scoria cone complex, in the background, b) Mt. Gambier, a maar and cone complex with deposits of alternating eruption styles, c) Mt. Schank, a scoriaceous tuff cone, spatter cone and maar complex, d) Lake Surprise at Mt. Eccles, which was formed as a fissure vent, e) the Twelve Apostles along the Great Ocean Road, and f) Mt. Elephant, the largest scoria cone of the NVP.

Discussion and concluding remarks

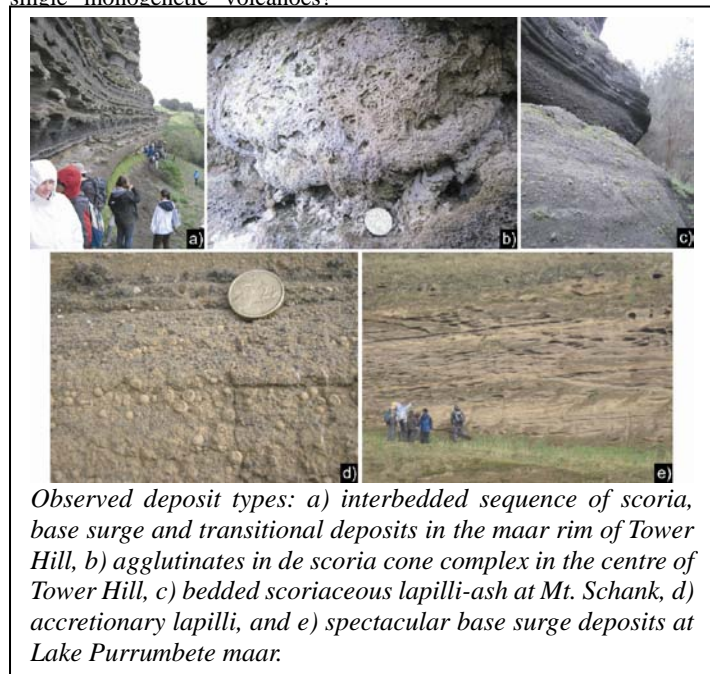
During this fieldtrip it was a valuable asset that the participants were from different backgrounds involved in different areas of volcanology. This induced further discussion from a wide range of topics related to volcanic fields whilst enjoying some of the local brew or wines. What is the role of dyke emplacement in vent distribution and morphology of single volcanic centres as well as monogenetic fields as a whole? How do lithospheric structures affect small-scale volcanism in a wider area? What is the effect of climate on the evolution of a volcanic field on the long term? What is actually a

proper term for the kind of volcanism seen on this trip, as most volcanoes show greater degrees of complexity than previously associated with the term 'monogenetic'?

Volcanology at different scales was discussed as is shown at Mt. Rouse where in an undulating pyroclastic layer Pele's hairs and tears of up to a few mm are found, but also the NVP's largest lava flows (up to 60 km long). Deposits related to alternating eruption styles fuelled discussions about heterogeneity in ascent rates, volatile contents and crystallinity versus dyke emplacement and aquifer dynamics.

Some of the scientific questions discussed in the field are:

What are the causes of changing eruption styles during the history of single "monogenetic" volcanoes?



Observed deposit types: a) interbedded sequence of scoria, base surge and transitional deposits in the maar rim of Tower Hill, b) agglutinates in the scoria cone complex in the centre of Tower Hill, c) bedded scoriaceous lapilli-ash at Mt. Schank, d) accretionary lapilli, and e) spectacular base surge deposits at Lake Purumbete maar.

How can we use geochemistry and petrogenetic studies to develop a better understanding of the origins of these provinces and their eruption behaviour (magma compositions, eruption volumes, frequency of eruptions, locations of eruption points)?

Are monogenetic basaltic volcanoes good analogues for kimberlite

There is a lot more to monogenetic fields and more research is needed to better understand these systems. This field trip really helped in stimulating this discussion and sharing ideas. It challenged all the participants to further research these systems, as there is a lot more to be learned. It is greatly encouraged to offer similar IAVCEI Commission supported fieldtrips in the future; it will definitely enhance discussion and understanding.

Jozua van Otterloo
Monash University, VIC Australia

IAVCEI AWARDS 2011

Award Nomination Committee* decided the 2011 winners of the following two awards. These two awards are presented every two years at IAVCEI general and scientific assemblies, though the Thorarinsson and Krafft medals are every four years in the scientific assembly.

George Walker Award: The award recognizes achievements of recent outstanding graduate in the fields of research encompassed by IAVCEI, or also a recent graduate whose achievements in volcanology involved operating in difficult circumstances.

Wager Medal: The medal is given to a single mid-career scientist who has made outstanding contributions to volcanology, particularly in the eight-year period prior to the award.

Regarding to the age limitations** of the George Walker Award and Wager Medal, the Award Nomination Committee recommended 7 and 15 years after Ph.D acquisition, respectively. The recommendation was approved by the EC members. The next nomination of four IAVCEI awards starts in 2012, and they are awarded at the scientific assembly in Kagoshima in 2013.

Professor Setsuya Nakada, President of IAVCEI, is pleased to announce that this year's **Wager Medal** has been awarded to **Dr. Amanda Clarke** in recognition of her outstanding contribution to physical volcanology through field observations and modelling. In addition, this year's **George Walker Award** has been given to **Dr. Joe Dufek** in recognition of his achievements as a recent outstanding graduate in multiple fields of volcanology including dynamics and petrology of magma system and physical volcanology.

** Committee members: C. Bacon, D. Dingwell, S. Nakada (chair), H. Rymer, C. Siebe*

*** There were age limits of 43 and 35 years old for these awards, respectively.*

2011 WAGER MEDAL CITATION FOR AMANDA CLARKE
IAVCEI GENERAL ASSEMBLY, IUGG MELBOURNE
July 2011

Dear Colleagues,

It is very much my honor to introduce an exceptionally deserving volcanologist for the **2011 Wager Medal -- Professor Amanda Clarke**.

Amanda's impressive career began at my Alma Mater, the University of Notre Dame, where she earned degrees in both Aerospace Engineering and Philosophy. Following a year of teaching math in a tough New York City neighborhood, and another as a Fulbright Scholar performing socio-economic studies in Albay Province, Philippines (near Mayon Volcano), Amanda signed on as my grad student at Penn State University. Together we recognized that her true calling might be found by inverting boundary conditions for the Navier-Stokes equations, thereby converting the aerospace rockets she had studied previously, into explosive volcanoes.

In her PhD investigations she was the first to tackle the highly unsteady conditions of time-dependent flow in modeling multiphase multiparticle pyroclastic mixtures. Previous work had almost exclusively involved the assumption of steady-state magma discharge, so her work, carried out with generous support from Augusto Neri at INGV Pisa, was fundamentally important and had great impact. This groundbreaking work was published in *Nature*, and has strongly influenced our current understanding of vulcanian eruptions.

Exploring the cross-linkages between fluid dynamic numerical and analog models, and field data, has been the hallmark of her work. This theme was continued with her residence at Bristol with Steve Sparks, as a Royal Society Postdoc Research Fellow, and thereafter as a faculty member at Arizona State University. The observational data she has collected, and samples which she analyzed, have been used to constrain numerical models of clast dispersion. She was able to link numerical models with measurable characteristics of eruption products, such as water content, porosity, and crystallinity, that provided quantitative tests of models. She developed an important approach to calculate pyroclastic current speeds and dynamic pressure from field data, providing constraints on modeling volcanic density currents. Her publication record spans topics as diverse as complex conduit transport physics, to geodetic measurements, to petrological characterization, to numerical analysis. Few of her peers have spanned such a range of topics and applications with the same visibility.

Amanda is already a world leader in utilizing computational and analog approaches to solving complex processes of fluid dynamics associated with explosive volcanism. She is an energetic leader in the IAVCEI community in terms of building collaborations and setting research directions. She is an incandescent spark brightening the collegial spirit of colleagues in her many collaborations.

The Wager Medal has had a noteworthy track record of identifying the

foremost talents in volcanology at a comparatively early stage in their careers. Amanda Clarke, an extraordinary young scientist of enormous breadth and ability, and a person of high character besides, is extremely deserving of this award. We can expect great things from her in the future. Please join me in offering to her our earnest congratulations.

Barry Voight
Penn State University

WAGER MEDAL RECIPIENT DR AMANDA CLARKE

I'd like to start by thanking the Awards and Nominating Committees, and Greg for reading Barry's citation – I consider it a big bonus that you were willing to do it, Greg.

Upon hearing of this award, I'd have to say I was pleasantly shocked, in part because I know it is such a great honor, looking at all the past winners, and in part because of the vast and diverse talent pool within my volcanological peer group, many of whom I greatly admire and are equally deserving of this award.



Amanda Clarke
IAVCEI
Wager Medalist 2011

I want to begin by reflecting upon my time at The Boeing Company back in 1992 when I was an intern on the new 777 project (which coincidentally was the aircraft I flew in to Melbourne). During that internship I learned about the hazards of volcanic ash to turbofan engines, from the manufacturing and pilot-training points of view. And although I do not actively conduct research on ash dispersal and aviation hazards, recent high-impact events at the interface between volcanic activity and the aviation industry have caused me to fondly remember that important crossroads in my career. Without that series of Boeing in-house lectures (prompted by the Redoubt-KLM incident), I may

never have become a volcanologist.

My changing interests from engineering to natural science ultimately led to the transformative opportunity to study the social aspects of volcanic hazards in the Philippines, under the auspices of The Fulbright Program. During that period, through the vast generosity and hospitality of the University of the Philippines and the Philippine Institute of Volcanology and Seismology (PHIVOLCS), especially Ernesto (Toti) Corpuz, I had the opportunity to observe and appreciate first-hand the impact of volcanic processes on the densely-populated emerging nations of Southeast Asia. And, because of that experience I met and ultimately studied under Barry Voight of Penn State University. It is in working with Barry that I'd like to believe I learned to be adventurous in my approach to science. And through my time at Penn State, I also acquired like-minded colleagues and friends - especially Dannie Hidayat, Christina Widiwijayanti, Sasha and Marina Belousov, and Supriyati Andrestuti.

And also because of Barry, I had the impossibly fortuitous opportunity to work on the eruption of the Soufrière Hills volcano on the island of Montserrat. That experience introduced me to a wide, international, and simply impressive community of volcanologists, from the Montserrat Volcano Observatory, the British Geological Survey, the University of Bristol, the Seismic Research Unit, and the US Geological Survey. The time I spent on Montserrat allowed me to observe active volcanic processes, study deposits and dome morphology, and appreciate the value of real-time monitoring, especially deformation studies, in understanding detailed volcanic processes and predicting when activity might suddenly become dangerous. I want to thank many scientists for

hours of stimulating discussions and debates -- Paul Cole, Maggie Mangan, Richie Robertson, Tim Druitt, Willy Aspinall, Glen Mattioli, Joan Latchman, Jenny Barclay, Costanza Bonadonna, Eliza Calder, Ricky Herd, Rob Watts, Angus Miller, Glenn Thompson, Marie Edmonds, Sue Loughlin, and Gill Jolly, to name only a few.

The data produced by the collective efforts on Montserrat led me to an ongoing collaboration with a couple of pioneers in modeling explosive volcanic processes, Augusto Neri and Gianni Macedonio from Pisa. This collaboration ultimately resulted in several studies comparing complex models of physical volcanic processes to a well-constrained natural system. It is with this approach in mind that I continue to collaborate with many researchers from Pisa. And I want to acknowledge the kind support of Director Neri, who maintains my role as an Associated Researcher at the INGV-Pisa, further facilitating these collaborations.

This integrated approach of comparing model results to field observations, led me to the Environmental Fluid Dynamics Laboratory at the University of Bristol, where I learned another method of understanding volcanoes -- studying the natural system via simplified, yet highly-constrained analogue experiments. My Royal Society-funded experience in the EFD lab taught me to think about the dynamics of volcanic systems in an entirely new way -- and it was particularly enlightening because of the wonderful faculty and students at Bristol, especially my host and advisor Steve Sparks and collaborator and ad-hoc mentor Jeremy Phillips.

These combined experiences allowed me to set up my own laboratories and research group at Arizona State University, where computational, experimental and field approaches allow me to continue along my research path and maintain valuable collaborations. I enjoy the iterative, and sometimes not-so-straightforward comparisons among well-constrained experimental data, difficult-to-measure natural systems, and quantitative model results, as a means of better understanding complex volcanic processes, both above and below the surface, as a means of perhaps one day improving the predictive capacity of computational approaches. Arizona State has allowed me the freedom and given me the resources to continue this work in my own way. I especially thank my students, post-docs, and colleagues Stan Williams, Jon Fink, Gordon Moore, David Bell, Kurt Roggensack, and Ron Greeley for their support and meaningful discussions.

It is here that I'd like to thank you the community for allowing me to continue in volcanology. I feel ridiculously lucky to work in such an exciting field, and I suspect most of you feel the same. It's really hard to believe -- we get to study complex natural systems which continually present us with interesting pure science questions as well as real-world, socially-relevant problems. Volcanology is special also because, by its very nature, it demands a multi-disciplinary approach, forcing scientists from very different backgrounds to work together -- an approach which is more recently being adopted by other fields because it creates value-added intangibles and often an end-result greater than the sum of the parts.

I finish with some thoughts culled from a couple of recent explosive volcanism workshops organized in Arizona and Clermont-Ferrand. We are entering a phase of volcanology in which we must learn to integrate, in creative ways, the various types of data and information available to us. We must also embrace and control technological innovation to push for improved real-time quantification and understanding of active volcanic processes. We now can de-mystify the natural world with modern field, lab and computational approaches, simplifying it in appropriate and useful ways. At the same time -- and here's the hardest part -- we must continue to communicate the importance of understanding volcanic systems to a broader scientific community, to the general public, and to all invested parties, and come together even more than we have in the past to identify new volcanological research directions that have impact beyond our immediate sub-disciplines.

Dr Amanda Clarke

In Melbourne

July 2011

2011 GEORGE WALKER AWARD CITATION FOR JOE DUFEK
IAVCEI GENERAL ASSEMBLY, IUGG MELBOURNE
July 2011

Joe Dufek has a rare combination of being able to identify good problems, develop numerical and theoretical approaches for solving problems, and integrate his models with observations. Where he truly stands out is the breadth of his research topics and approaches. He has published papers about pyroclastic flows, conduit processes, magma chamber evolution, and dynamics and magmatism in the lower crust. He has published work related to volcanic processes on Mars and Venus. He has written papers that use U-series methods to constrain melt transport rates, FTIR to measure water contents, several types of numerical models, laboratory experiments, and field data he collected in Kos.

Joe grew up in Wyoming, was an undergraduate at U Chicago where he was clearly inspired by Fred Anderson. He pursued graduate studies at the Univ WA, working with George Bergantz. He was then offered a faculty position at GA Tech, but was generous enough to spend a couple years at Berkeley before assuming his teaching responsibilities.

We obviously hope that recipients of the Walker award will go on to have successful careers and become visible and influential members of the volcanology community -- to follow in the footsteps left by George Walker. Dufek has what it takes.

In particular, his in-depth understanding of applied mechanics and his ability to solve computational problems will serve him and his future students well. At the same time he is a great observer in the field and integrates field work into his projects. Most importantly, Joe is curious about science, generous with his time, and a truly nice person. IAVCEI is honoured to recognize his contributions.

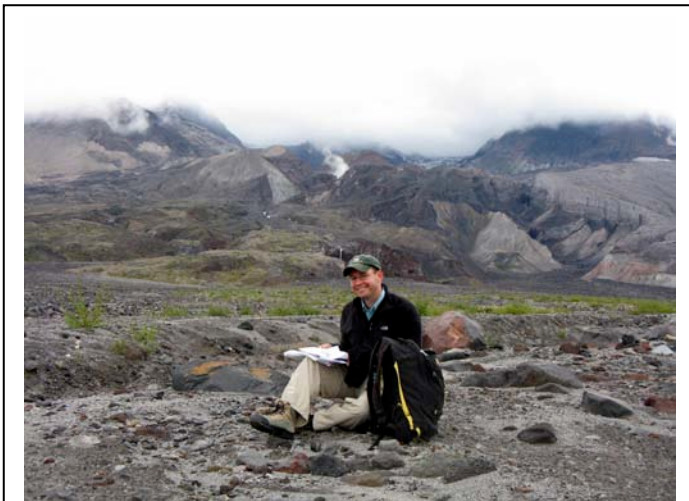
Michael Manga

UC Berkeley

GEORGE WALKER AWARD RECIPIENT DR JOE DUFEK

Thank you Michael, and the George Walker Award committee. I feel particularly fortunate to receive an award that honors the numerous contributions of George Walker to our field. I was not fortunate enough to meet George Walker in person, but his work has been particularly influential on my research and in particular on a couple items of recent work, pyroclastic density currents encounter the sea, and in the generation of ash during phreatomagmatic eruptions. I suspect many in this room have been similarly influenced by George Walker's work.

I have had the chance to interact with many excellent scientists over the last decade, and I really owe them a debt of gratitude for providing me with numerous opportunities. Fred Anderson at the University of Chicago first introduced me to volcanology, and was incredibly generous with his time. He also made a point of introducing me, as an undergraduate, to many visiting scientists, something that I greatly appreciated.



Joe Dufek
IAVCEI George Walker Award winner 2011

During graduate school at the University of Washington, George Bergantz taught me a great deal about science, multiphase flow and the rock record. While in Seattle, Mark Ghiorso, Olivier Bachmann, Ron Merrill, Kari Cooper, Stu McCallum, Bruce Nelson and Chris Newhall all were very influential to me, as were my excellent graduate cohort.

I had the great luck to join the Miller postdoctoral program at Berkeley following graduate school, and my continuing collaboration with Michael Manga has been very fulfilling. The Miller Institute introduced me to a great cohort of individuals, and is truly a fantastic program. Berkeley also introduced me to several amazing young scientists, two of whom, Chris Huber and Leif Karlstrom, have become close collaborators.

Over the last years I have had the opportunity to collaborate with many people who have taught me much including Guil Gualda, Mark Ghiorso, Mark Jellinek, Bill Leeman, Dennis Geist, Karen Harpp and Brittany Brand among others. My colleagues at Georgia Tech have been absolutely supportive, and the students who have worked with me have greatly influenced my thinking.

Mostly, I want to thank my parents and brother for their support, and my wife, Carol Paty for all of her support.

Dr Joe Dufek
In Melbourne
July 2011

Bulletin of Volcanology: ***Editor's report August 2011***

In mid-2010 I was appointed executive editor for the Bulletin of Volcanology following John Stix, and the editorial office has shifted from Canada to New Zealand. John's editorial associate Jim Clarke 'retired' with John, and our new editorial associate is Linda White.

The time since July 2010 has been extremely busy, with John putting the finishing touches on one Special Issue and three other Special Issues coming through for final approval, two of which are now available in print. The last of these four Specials should be published by the end of 2011.

Arrivals of new papers have been increasing. Excluding Special Issue articles, there were 94 manuscripts submitted in 2009-2010, and 130 in

2010-2011, a year on year increase of ~40%. Of those 130 manuscripts submitted to the journal 84 are currently with reviewers or associate editors, 7 were rejected at submission, 16 rejected in review, and 23 are online or accepted being processed. We show only 10 papers still in the system from before July 2010. Eight book reviews are online, with more in process.

With the increase in submissions, the Bulletin is publishing more pages. Of the 10 issues in 2011, 4 are special issues and Springer has added pages to regular issues to reduce the impact of these Specials. For 2012 we will publish 10 regular issues maintaining the increased pages per issue.

At the start of 2013 it is intended that the Bulletin will move to a sequential publication model, in which final document information is provided when it first goes online. Once this occurs BV citations will be by DOI number rather than the current practice of issue volume and pages.

Later this year, the journal will go fully online with the Editorial Manager manuscript-handling system, the same one used by other Springer journals, Elsevier, GSA Bulletin, and many other journals. Our editorial associate has been working with Springer on setting this up for some months now, with the aim of closely mimicking the journal's current editorial workflow. Some issues remain, but should be solved or worked around in the next month or two, in time to have the journal online before AGU in December.

At the "real persons" end of the editorial system, with my involvement and encouragement the IAVCEI Executive Committee has recently appointed some new members to the editorial board. Karoly Nemeth has taken over from Grant Heiken the acquisition of books to review and subsequent arrangement and evaluation of book reviews, and his quick success in this role means we can now expect the Bulletin to carry book reviews in each issue. Check the "online now" publications to see reviews already completed, which include very useful reviews of books published in languages other than English. New additions to the group of Associate Editors are Michael Manga, who brings his special blend of quantitative approaches to many aspects of volcanology, and Steve Self, whose deep background and endless energy will be put to work in soliciting and handling review articles. Most recently, Thor Thordarson has agreed to join us, and will be adding his range of talents and an Icelandic touch to the board. Clive Oppenheimer also joins the board with his broad expertise including atmospheric, archeologic and societal aspects of volcanism. I am gratified that these excellent, productive volcanologists have agreed to join the editorial board, which is "responsible for maintaining high standards of content and presentation of the Bulletin of Volcanology" as stipulated in the IAVCEI by-laws.

Finally, it is a pleasure to announce that Springer has made available for the coming year of 2012 new online-only subscription rates for IAVCEI members at 40 € (print version 80 €). I know that a greatly increased number of institutions now have online access to the journal through multi-institution subscription packages, but these reduced IAVCEI rates also bring the journal within easy reach of those working outside of institutions, or at institutions with restricted budgets.

In closing, I'd like to say that it's a pleasure to see the stream of fine volcanological science coming into the journal, and your Bulletin team looks forward to serving the volcanology community as your publication needs evolve.

Best regards,

James White
Executive Editor, Bulletin of Volcanology

Workshop on Submarine and emergent volcanic arcs and associated volcano-sedimentary basins: facies models, petrology and volcano-tectonics

2-7 May, 2011, Cabo de Gata, Spain
<http://www.ija.csic.es/cabodegata>

An international workshop partially promoted by the Commission on Volcanogenic Sediments was held in the Cabo de Gata region in southern Spain on subaqueous volcanism. Top expert researchers and students attended on the meeting and shared their view on various aspects of subaqueous volcanism from the architecture and processes of active and ancient submarine to emergent volcanic arcs and associated volcano-sedimentary basins.



Carles Soriano and Guido Giordano present their idea of the origin of volcanic successions along the coast of Cabo de Gata.

The workshop was organized by *Carles Soriano* (Institut Jaume Almera CSIC, Espanya), *Nancy Riggs* (Northern Arizona University, USA) and *Guido Giordano* (Universit  di Roma Tre, Italia) with a supporting scientific committee of *Ray Cas*, (Monash University, Australia), *Sandro Conticelli* (Universit  degli Studi di Firenze, Italia) and *Massimo Mattei* (Universit  di Roma Tre, Italia). The meeting organizers were able to assemble an excellent scientific program for top experts from worldwide to discuss the current state of our understanding of subaqueous volcanism from deep to shallow water environment from marine to lacustrine settings. The location, Cabo de Gata has provided an excellent field to initiate great field discussions on pitfalls and knowledge gaps that helped top each participants to rethink and refocus research targets in the near future. The workshop was a scientific delight a rare opportunity for expert to spend few days in a very well exposed Miocene volcanic region and clash ideas over the nature of subaqueous volcanism. Workshops like this are key knowledge exchange places and organizing similar events partially supported by relevant IAVCEI Commissions are highly encouraged in the future.



Coast of Cabo de Gata in Andalusia, Spain.

The workshop was arranged to provide extensive field visit to a relatively less known but superbly exposed volcanic region. The field visit served great opportunity to share expertise and views of the origin of rock textures associated with any form of subaqueous volcanism. The "in situ" discussions over the origin of the visited field sites were very effective way to learn and share knowledge.

Cabo de Gata area (Almeria, SE Spain) is a region where Miocene volcanic arc rocks exposed in extensive coastal section including sections across virtually undeformed and continuous submarine to subaerial volcanic and volcano-sedimentary rock successions. This workshop was held in the Cabo de Gata Region of Andalusia, near the city of Almeria. This workshop was arranged as an "invitation only" field-based meeting of experts from across the globe to discuss the current stage of our understanding of volcanic processes and their results in subaqueous environment. The workshop has provided opportunity for round table discussions and more importantly field presentations from a less known volcanic area nearby. The Cabo de Gata area is a superbly exposed Miocene volcanic arc related to the internal zone of the Betic-Rif orogen. Large sections across virtually undeformed and continuous submarine to subaerial volcanic and volcano-sedimentary rock successions provided a perfect opportunity to compare the rock record associated with shallow subaqueous to near-sealevel subaerial volcanism. The visited sites were located mostly in completely exposed coastal sections of rock successions representing eruptive styles from explosive to effusive and rock compositions from basaltic andesite to rhyolite. The reconstructed volcanoes were dominantly domes, both subaqueous and subaerial. This workshop was an excellent opportunity for researchers to share our current understanding of subaqueous volcanism.



Superb outcrops in coastal section at Cabo de Gata.

Károly Németh

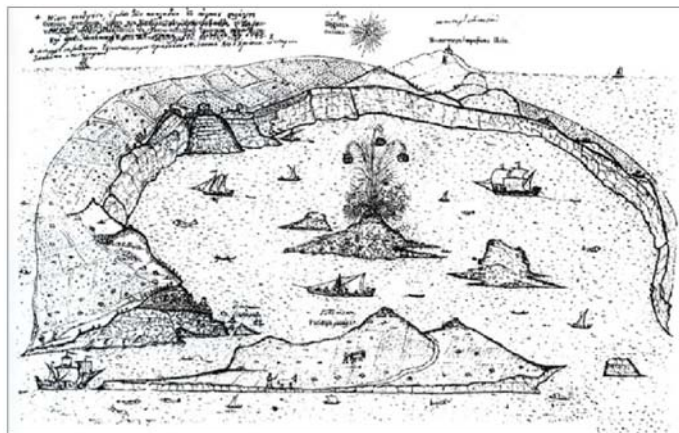
Volcanic Risk Solutions, Massey University, Palmerston North, New Zealand

Conference Report – State of the Arc (SOTA), 19-26 September 2010, Santorini (Thera), Greece

A group of 75 scientists including 15 students and post-docs came together in Greece in September 2010 to discuss the frontiers in subduction zone research. The meeting commenced on Syros with discussion of metamorphism in subduction zones led by *Horst Marschall* and *John Schumacher* accompanied by a field trip to classic blue schist and eclogite outcrops. An interesting opening question was whether the fine detail and complexity we consider in the field is important given the scale of the subduction process. For example, it may be that the mixing process in subduction mélanges may actually help explain the similarity between subduction zone magmas given they really should be more diverse if the mélanges we map are to go by.

The sessions surrounding the Syros portion, in this heavily discussion oriented meeting, reminded the participants of the physical complexity of the subduction system, in particular the slab surface (normally drawn as a simple line in our schematic diagrams!). We explored the diversity of materials entering the subduction zone, exemplified by rocks now preserved in exhumed mélanges such as the section earlier observed in the field on the island. Metasomatism within mélanges has clearly resulted in element redistribution, and with minerals such as titanite being stabilised and growing to sizes of up to 8 cm, which is significant because TiO_2 is major component and traditionally not viewed as mobile. Theoretical and experimental work discussed demonstrated that melange rocks can host considerable amounts of water, although we found a key question that remains is whether these rocks ever attain the P-T conditions necessary to release it. This is important as the breakdown and release of 'fluids' for metamorphic minerals is more temperature dependent than pressure sensitive and may well take place over a comparatively short temperature interval. In exploring the likely fate of subducted components, we discussed the role of numerical models and their usefulness in describing entrainment into at least the cold nose of the wedge, if not the zone of partial melting. Theoretical flow trajectories would suggest that new experimental work, including dynamic experiments run while reducing

pressure and increasing temperature, are urgently required to explore mineral stability relationships along proposed flow paths. The ongoing controversy of fluids versus melts and how we defined them was an issue that carried on throughout the entire conference. Discussion leader *Horst Marschall* promoted his view that hybrid rocks behave very differently (both physically and chemically from individual rock types so perhaps we need to reconsider the constitution of subduction components.



Santorini by Russian Monk Barksij, 1745 (from: <http://www.santorini.com/maps/>).

Download geological map of Santorini:
 Geological Map of Santorini [SANMAP]
 GSL Miscellaneous Titles
 Compiled by T. H. Druitt and M. A. Davies
 Publication Date: 11 March 2004
<http://mem.lyellcollection.org/content/19/1/NP.2.full.pdf>

After moving the group to Santorini, day four concentrated on the geophysical and geodynamic constraints on arc magmatism. The session began with a keynote talk by *Peter van Keken*, who focused on the dehydration processes in subducting slabs. Shallow fluid release results in a serpentinized cold corner, or nose, of the mantle wedge. The cold nose extends down to about 60-80 km depth and is characterized by low seismic attenuation and the rare occurrence of large earthquakes within the adjacent slab before full coupling of slab and mantle wedge is achieved. When slab and wedge are coupled, slab surface temperatures range from about 600°C at > 60 km depth up to about 1000°C beneath the back-arc, suggesting that partial melting of some subducted lithologies should be common. Individual slab dehydration histories are extremely variable and depend on slab age, dip, and convergence rate. However, large thermal gradients within the slab are thought to result in quasi-continuous volatile release, despite distinct mineral dehydration pressures and temperatures. Subducted sediments and altered MORB dehydrate early, while the gabbroic and serpentinitic layers of the slab release their volatiles much later and may carry some water into the deeper mantle. Porous flow of volatiles is initially parallel to the slab surface, suggesting that deep dehydration reaction may affect the water budget of the shallower parts of the subducting slab.

The second keynote talk by *Taras Gerya* focused on flow modelling of the mantle wedge, including mobile subducted components such as subducted mélanges. Nearly all water released from the slab should be hosted by serpentine and chlorite and dragged down to ~ 150 km depth, depending on slab

temperatures. The decomposition of these phases then results in partial melting of the mantle. In these models, at slow convergence rates (e.g. 2 cm yr⁻¹), buoyancy-driven thermo-chemical plumes may develop at the boundary between slab and wedge and ascent through the wedge. This is a result of decreasing plastic strength of the involved lithologies with increasing pore fluid and/or melt pressures. Both “unmixed plumes” of hydrated peridotite and “mixed plumes” of hydrated, partially molten, and quenched mantle, and partial melts of subducted components such as sediments and MORB, were addressed. Modelled plume ascent rates may reach up to 1 m yr⁻¹, and decompression melting within these plumes may contribute significantly to the melt production in subduction zones. Models predict distinct pulses in melt productivity lasting about 2 Myr on average, comparable to the life cycles of individual volcanoes. Model-inspired experimental work suggests that partial melting of subduction mélanges are granitic in composition, providing the possibility of sublithospheric felsic magmatism that may be the source of some crustal batholiths in volcanic arcs. However, the bulk of the produced melt is formed by partial melting of peridotitic lithologies and will hence be of mafic composition. The talk concluded with an attempt to link variable arc characteristics (e.g. presence of back-arc basins, rate of underplating) to variations in the degree of fluid- and melt-related weakening of lithologies in different subduction zones.

The afternoon discussion was moderated by *Mike Sandiford* and significant controversy remained about observational (geophysical and geochemical / isotopic) evidence of wedge heterogeneities and their scale. The reliability of recent geothermometric work that suggests wedge temperatures maybe greater than 1400°C, and the presence of and geochemical evidence for along-strike flow within the mantle wedge in some subduction zones were also topics of debate. This indicates the necessity of more realistic 3D geodynamic modelling and of closer collaboration between modelers, geochemists, geophysicists and experimental petrologists in future attempts to better characterize the processes operating in specific geodynamic settings.



Spectacular pyroclastic succession in the caldera wall of Santorini. Photo: Bob Stewart (Massey University)

Day five, focused on observational and experimental constraints on heat and mass balance in arc magmas and was launched with two excellent examples of the contrasting methodologies employed to tackle arc systems experimentally. First, *Craig*

Manning outlined the behaviour of idealised (so called “simple”) systems containing only a limited number of components with a view to investigating solute loads and the physical behaviour of fluids and melts; and *Carl Spandler* who summarised the state of play of complex, multi component systems based around experiments using real bulk compositions such as sedimentary, basaltic and ultramafic rocks. Vigorous discussion was generated regarding both physical and chemical processes. Most notably, the role of polymerisation in the physical properties of melts and fluids, the importance of halogens (particularly Cl) and the redox state of ionic species, particularly in regard to their physical behaviour in solution structures. The discussion included the nature of the wet solidus for a range of bulk compositions (and in light of the recently published conflicting experimentally determined peridotite wet solidus) and one recurring theme was the role (or lack thereof) of phengite in mass balance considerations in magmatism. Finally, the role of allanite in Ce partitioning as a potential controlling phase with implications for geothermometry was addressed.

Open session discussion developed these themes and explored several more; the redox state of the wedge and arc and back arc magmas was viewed through the behaviour of S, Fe and V, and this theme was developed in many of the posters as well. Links between redox state and stable isotopes were also suggested, and the challenges involved in seeing through the effects of crustal processes to obtain truly robust estimates mantle melt signatures and ultimate sources of different magma types, such as adakites. Finally, any mass balance considerations for arcs requires a mechanism to move the products of melting within the system and discussion regarding the rock mechanics and rheology behind extraction in the source took place.

One innovation for the day involved convening a panel of six experts for an open floor session and early career researchers were encouraged to raise scientific issues regarding arc processes and issues. Key concerns for graduate students involved the role of xenoliths (both crustal and mantle), validity of fluid inclusions and volatile data, redox state of the wedge and the importance of near surface processes on erupted products.

The final day of discussion centred on volatiles and time-scales of degassing and differentiation. *Tim Elliott* provided an overview of the lessons learned from trace elements in arc magmas on the time scales of transport. The principle approaches included U-series disequilibria, kinetics of grain growth and diffusion in phenocrysts. A particularly interesting suggestion was that time scales of magma transport from slab to volcano can be very fast with transport from slab to surface within 1 kyr based on U-series disequilibria. The presentation and discussion highlighted the importance of accessory phases (such as rutile, monazite, and allanite) on trace element signatures since they are retained in the residue to high slab temperature and are directly linked to slab dehydration. This indicates that experimental work on the stability of accessory phases during melting is quite important. The research groups of *Jon Blundy* and *Joerg Hermann* provided a number of discussions and posters on this topic. In the following discussion *Georg Zellmer* with energetic audience participation provided an interesting if inconclusive discussion of the residence times of magmas in the crust. These are inferred to range from less than 1000 years from diffusion profiles to around 100,000 years from the observed U-Th equilibrium. *Joerg Hermann* provided field evidence from an upper mantle section in New Caledonia that highlighted the possible mechanics of rapid melt transport

through dunite channels.

Katie Kelley provided an overview of the role of volatiles and redox conditions in arc magmas, with a particular focus on how volatiles are transported from the slab at the trench to the arc. Based on experimental work by *Rajdeep Dasgupta* and others it is expected that carbon dioxide is recycled to the deep interior. In the discussion *Colin MacPherson* highlighted the lack of a carbon dioxide signature from the slab in Marianas. *Jon Blundy* provided experimental evidence to argue that we will never be able to see the full amount of carbon dioxide come back up into the arc. The recycling story is entirely different for water, which is predicted to be recycled from the slab to the arc to a very high degree. An intriguing observation is the relatively high water contents (up to 5-6 wt%) in most arcs, even in those that occur over hot subduction zones such as Cascadia. This is unexpected due to the predicted shallow dehydration of the slab. A comprehensive study of Marianas volcanoes demonstrates the correlation between water content of the mantle source and the degree of melting and confirms the expectation that back arc magmas equilibrate at shallower levels than those below the arc.

The meeting concluded with discussion of developing statistical techniques for volcanic hazard mitigation and a days field trip around Santorini caldera, lead by *Tim Druitt*. Although there has been much progress in the four years since the last SOTA meeting in Chile, particularly in the fields of experimental petrology and geodynamics, there remains much to do and report on in future SOTA meetings. The organizers would like to thank the National Science Foundation and IAVCEI for financial support.

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Future developments in modelling and monitoring of volcanic ash clouds

Outcomes from the first IAVCEI-WMO workshop on Ash Dispersal Forecast and Civil Aviation
Geneva, Switzerland, 18-20 October 2010

The April-May 2010 Eyjafjallajökull eruption brought to light the harmful effects of volcanic ash on civil aviation and the importance of robust ash forecasting based on the combination of Numerical Weather Prediction (NWP), Volcanic Ash Transport and Dispersal Models (VATDM), and data acquisition. The "Ash Dispersal Forecast and Civil Aviation" workshop has produced a consensual document describing the characteristics and range of application of different VATDM, identifying the needs of the modeling community, investigating new data-acquisition strategies and discussing how to improve communication between the volcanological community and operational agencies. The workshop was held at the World Meteorological Organization (WMO) Geneva headquarters under the sponsorship of the Faculty of Sciences of the University of Geneva, IAVCEI, and Canton of Geneva, and organized by scientists from the University of Geneva (Switzerland), the Barcelona Supercomputing Center (Spain), the Aeronautical Meteorology

Division of the WMO, and the British Geological Survey (UK). Fifty-two volcanologists, meteorologists, atmospheric dispersion modelers, and space and ground-based monitoring specialists from 12 different countries were gathered (attendance by invitation only), including representatives from 6 Volcanic Ash Advisory Centers (VAACs) and related institutions.

A model benchmark exercise (based on the Hekla 2000 eruption) was carried out before the workshop. The definition of the benchmark included erupted mass, plume height, tephra total grain size distribution, particle size-dependent densities, and meteorological datasets (ECMWF ERA-40 and NCEP/NCAR reanalysis-1). Model outputs were specified as concentration contour maps at different flight levels and time instants, vertical concentration profiles at a given point, and tephra ground load maps. The benchmark exercise was performed by 12 VATDM (ASH3D, ATHAM, FALL3D, FLEXPART, HYSPLIT, JMA, MLDP0, MOCAGE, NAME, PUFF, TEPHRA2, and VOL-CALPUFF). This includes the vast majority of VATDM existing worldwide and all models currently operative at VAACs. A test case of such extent had never been done before. In addition, two detailed tables have been compiled to define application conditions and outputs of both VATDM and selected data-acquisition techniques associated with ash detection (namely AIRS, ASTER, AVHRR, GOES-11, GOES-12,13,14,15, Grimm EDM 107, Grimm Sky OPC, IASI, IMO-radar, Infrasonic Array, IR-SO2, LIDAR, MISR, MODIS, MTSAT, OMI, PLUDIX, SEVIRI, Thermal Camera, UV Camera, VOLDORAD).

After three days of dedicated talks, break-out sessions, and extensive plenary discussions (focusing on dispersal modeling, data acquisition, and decision making during volcanic crises), suggestions were made for future model improvements including some specific sedimentation processes (e.g., particle aggregation) and a better definition of the source term (i.e., plume dynamics). In addition, new improved strategies of ash forecasting should be designed to account for uncertainties associated with input parameters, volcanic activity scenarios and model variability (e.g., ensemble forecasting). Robust dispersal forecasting also needs to be accompanied by multidisciplinary data acquisition at different time and space scale that can be used for both data assimilation and model validation (this should include direct measurements both in the cloud and on the ground). Monitoring priorities should address the characterization of the source term (Ht, MER, erupted mass, grain-size distribution) and the far field. Outcomes can be found at the workshop website: www.unige.ch/hazards/Workshop.html including:

Bonadonna, C, Folch, A, Loughlin, S, Puempel, H (2011), "Ash Dispersal Forecast and Civil Aviation Workshop - Model Benchmark Document," <https://vhub.org/resources/505>

Bonadonna, C, Folch, A, Loughlin, S, Puempel, H (2011), "Ash Dispersal Forecast and Civil Aviation Workshop - Consensual Document," <https://vhub.org/resources/503>

Costanza Bonadonna

Earth and Environmental Sciences Section, University of Geneva, Switzerland

Arnau Folch,

Barcelona Supercomputing Center-Centro Nacional de Supercomputación, Spain

Susan Loughlin

British Geological Survey, Edinburgh, U.K

Herbert Puempel

World Meteorological Organization, Geneva, Switzerland

The XVIII. Congress of INQUA (International Union for Quaternary Research) Bern (Switzerland), 21-27 July, 2011

The INQUA (International Union for Quaternary Research) held the 18th congress in Bern (Switzerland) between 21 and 27 July, 2011 (<http://www.inqua2011.ch/>). Bern is one of the beautiful cities of Switzerland with a medieval historic old town, which has been recognised by UNESCO as a Cultural World Heritage Site. In the background the peaks of the Alps can be nicely seen in good weather condition with the famous triple peaks of Eiger, Mönch and Jungfrau. This is an ideal place to gather geoscientists, no doubt it is!



Bern, the host city of the XVIII INQUA Congress in 2011.

About 2200 participants with a number of about 3500 presentations in 110 sessions - it was indeed a significant meeting of geoscientists. The Quaternary is undoubtedly a very important period, when high-frequency environmental changes were readily detected and studies devoted to this issue get great attention, since their results have implications to the present climatic changes. Tephrochronology provides a solid geochronological framework for constraining the timescale of various climatic events, correlating ice core, marine and terrestrial sequences and it is getting to be an increasingly useful tool in archaeological studies. Therefore, tephra studies were integrated parts of the INQUA congress and their results could get an interest from the IAVCEI community. Furthermore, it is also an unavoidable field in the evaluation of volcanic risk, since it provides important data for eruption frequencies.

Tephrochronology was the primary focus of a whole-day session organized by INTAV (the International Focus Group on Tephrochronology and Volcanism; <http://www.env.auckland.ac.nz/uoaintav/>), a part of the Stratigraphy and Chronology Commission of INQUA. The session was convened by David Lowe (New Zealand), Siwan Davies (UK), Felix Riede (Denmark) and Rupert Housley (UK). In addition, several contributions from this field was involved in the INTIMATE (INTEgrating Ice core, MARine and TERrestrial global records 60,000 to 8,000 years ago) session, since tephra records play a key-role in correlating sequences of various environments and in synchronizing climate events. The total number of tephra-related contributions in these two sessions was

52, although there were many more in the other sessions.

The contributions of tephrochronological studies in this congress (to read the abstracts link <http://www.inqua2011.ch/?a=programme&subnavi=sessions&id=36>) clearly highlighted the revolutionary changes in this field. So far, dating and correlation of Late Quaternary palaeoenvironmental records were based on visible tephra layers. The introduction of the new methodology to reveal volcanic material in non-visible ash layers (crypto- or microtephras) has extended the applicability of these studies and increased their importance in further palaeoenvironmental researches. Even finding a few glass shards can help to extend the distribution area of a given eruption, recognizing so far unknown volcanic events and to correlate better different stratigraphic sections. John Lowe (UK) summarized the potential of cryptotephra studies in the framework of the RESET initiative (<http://c14.arch.ox.ac.uk/reset>). It is difficult to emphasize all impacts of these new tephra studies presented in this congress, and the following highlights are certainly a subjective selection. Peter Abbott (UK) and his co-workers demonstrated the value of cryptotephra studies in the correlation of ice-core and marine sections within the MIS 4-6 climatic period in Northern Atlantic region. Although this area has been thoroughly studied and has a detailed tephrochronological data base, the authors could add a number of new (crypto)tephra horizons to this framework. Based on the combined major (EMPA) and trace element (LA-ICP-MS) geochemical analyses of the glass shards most of these distal volcanic materials were connected to eruptions of the Öraefajökull and Grimsvötn volcanoes in Iceland. Another outstanding demonstration of the applicability of the cryptotephra studies was given by Sean Pyne-O'Donnell (Norway) and his co-workers. They have revealed a dozen of cryptotephra layers in a continuous 8700-year profile of the Nordan's Pond Bog in Newfoundland located 2500 km from the closest active volcano. Based on the distinct compositional groups of the glass shards they could correlate these volcanic materials with volcanic eruptions occurred in Alaska and Cascades (including the 7627 cal yr B.P. Mazama and the 1481 AD Mt. St. Helens eruptions) more than 5000 km distance. Christine Lane (UK) and her co-workers investigated a rock-shelter sequence in northern Libya, where an unrivalled record of modern human occupation has been detected. Four discrete layers containing various amounts of glass shards were recognized in this long Palaeolithic sedimentary sequence. They were correlated with the 18 ka Etna eruption, the 39 ka Campanian ignimbrite eruption, another Campanian eruption at 68 ka and one presumably from the Aegean area. This finding has certainly an important contribution to the correlation of this site with other environmental and archaeological archives from across the Eastern Mediterranean region. After various case studies, Nicholas Pearce (UK) gave a deep insight into the laser-ablation ICP-MS application in the analysis of trace element composition of glass shards and emphasized the great progresses in this field. In the poster session, many presentations provided data for new (crypto)tephra occurrences extending sometimes the known ash dispersal of certain volcanic eruptions. Among these, Aleksandra Zawalna-Geer (New Zealand) and her co-workers show an impressive summary of cryptotephra records in a maar lake sedimentary section of the Auckland Volcanic Field, New Zealand. Based on these new data the calculated eruption frequency impacting this region could be modified from about 1/750 year (based on visible tephra layers) to about 1/400 (based on cryptotephra records, as well).



Siwan Davies (UK) the past-president (left) and David Lowe (New Zealand) the new president (right) of the International Focus Group on Tephrochronology and Volcanism (INTAV).

Following the oral and poster presentations of the tephrochronology session, new executive officers of INTAV were elected. Siwan Davies (UK) handed over the baton to Professor David Lowe from University of Auckland, who will serve as the new president with the vice-president, Takehiko Suzuki from Japan, and the new secretary, Vicky Smith from UK. Vicky will manage also the INTAV website for the next couple of years. INTAV has a strong influence in the coordination of tephra (and cryptotephra) studies and integrates collaborators working in this field. The activity of INTAV should certainly get attention from the IAVCEI community.

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**CONFERENCE ON REMOTE SENSING,
NATURAL HAZARDS AND ENVIRONMENTAL
CHANGE
28 - 29 July 2011, National University of Singapore,
Singapore**

Conference entitled as “Remote sensing, natural hazards and environmental change” was held at the National University of Singapore on the 28th – 29th of July 2011. This conference is organized by Centre of Remote Imaging, Sensing and Processing (CRISP), National University of Singapore and Laboratoire et Volcans (LMV), Université Blaise Pascal as well as by the International Association of Geomorphologists (IAG). The main focus of this scientific meeting was to better understand our environment and the related hazards by using remote sensing and Geographical Information System (GIS). Large proportion of presentations was dealt with both small-volume, monogenetic and large-volume, polygenetic volcanism in various aspects. Volcanoes and volcanic field such as Mayon in the Philippines, Semeru or Merapi both in Indonesia or Auckland volcanic field in New Zealand have been investigated to reveal geologic, tectonic settings of volcanic edifices, volcanic gas emissions and mapping results and possible results of past and future eruptions,

respectively. Remotely sensed images, deformation data or even just pure elevations point-based data such as LiDAR or new TanDEM-X elevation models are continuously spreading among the geoscientist and contribute us to measure more precisely and in more real-time processes act on the flank of volcanoes. The increasing accessibility and usage of these datasets hold the key to solve main issues on nature, behavior and processes of volcanoes both in small and large scale.



Participants of the Remote Sensing, Natural Hazards and Environmental Change conference: 28 - 29 July 2011, National University of Singapore, Singapore

Gábor Kereszturi
Volcanic Risk Solutions, Massey University, Palmerston North,
New Zealand

**SPECIAL VOLUMES for IAVCEI member
interest**

You can see the table of content of the following recently published special volumes via the publisher websites (<http://www.sciencedirect.com/science/journal/03770273>) or you can request a copy of the published papers via PubVolc (<http://www.pubvolc.net/>)

Published

Németh, K., Haller M.J., Siebe, C. (Eds) 2011. From Maars to Scoria Cones: the Enigma of Monogenetic Volcanic Fields. Journal of Volcanology and Geothermal Research, Volume 201, Issues 1-4, Pages 1-412 (15 April 2011)

In press (due by the end of year 2011)

Cas RAF, Russell JK, Sparks RSJ (Eds), 2011. Advances in Kimberlite Volcanology and Geology. Bulletin of Volcanology

Thouret, J.-C., Németh, K. (Eds), 2011. Special Issue on Volcano Geomorphology – Landforms, Processes and hazards. Geomorphology

CALL FOR BOOK REVIEW ITEMS

Bulletin of Volcanology publishes high quality and informative book review articles. If you come across any interesting newly published books (also if it is published in languages other than English!) that could be an interesting read for IAVCEI members, please contact the BV Book Review Editor, Károly Németh (k.nemeth@massey.ac.nz) for potential arrangement to prepare a short article about the book for the Journal.

Wiley-Blackwell offers a 20% discount on books reviewed for Bulletin of Volcanology for IAVCEI members. As such a Promotional Code will be provided that members can use to order the reviewed item from Wiley-Blackwell's website.

IAVCEI COMMISSIONS' NEWS

During the new Executive Committee meeting of IAVCEI in July 2011 at the IUGG congress some important decision has been made in respect to manage the IAVCEI Commissions. IAVCEI Commissions are the "engine" of IAVCEI, and play vital role to link experts and channel research efforts on specific subjects. It has also been pointed out that the current number of IAVCEI Commissions are in misbalance in comparison to their activity. The new Executive Committee of IAVCEI has decided to cancel those IAVCEI Commissions which has not submitted their report by the IUGG Conference this year, and has not shown any visibility of their activity. The updated and current remaining list of commissions are as listed in bold in the following table.

Name	IAVCEI or inter-association	Leaders (since)	Website
Volcano-Ice interactions	IAVCEI IACCS	Christian Huggel 2011 Hugh Tuffen 2011 Tracy Gregg 2011	http://volcanoes.dickinson.edu/VIWG updated
Electromagnetic Studies of Earthquakes and Volcanoes	IAVCEI AGA IASPEI	Jacques Zlotnicki, 2007 Malcolm Johnston Toshiyasu Nagao	http://www.emsev-iugg.org/emsev/
Collapse Calderas Commission	IAVCEI	Valerio Acocella 2010 Adelina Geyer 2008	http://www-csi.csi.csi.gov/bCCC.htm
LIPs Commission	IAVCEI	Richard Ernst 2003 Ian Campbell 2003	http://www.largeigneousprovinces.org/
Volcano Seismology	IAVCEI IASPEI	Jurgen Neuberg 2003 Hiroyuki Kamagai 2003	http://volc_seis_commission.leeds.ac.uk/
Monogenetic Volcanism	IAVCEI	Károly Németh 2009 Ian Smith 2009 Adrian Pittari 2009	https://vhub.org/groups/iaivcei_cmv
Chemistry of Volcanic Gases	IAVCEI	Yuri Taran 2003	http://vulcanologia.uda.cl/index_archivos/cvvg_main.htm
Volcanogenic Sediments	IAVCEI	Gert Lube 2011 Richard Brown 2011	http://www.otago.ac.nz/geology/research/volcanology/IAVCEI/ it will be hosted in Vhub as a "group" from 2011
Cities and Volcanoes	IAVCEI	David Johnston 2001 Graham Leonard 2003	http://cav.volcano.info/
Explosive Volcanism	IAVCEI	Lucia Gurioli 2008 Amanda Clarke 2008	http://staff.aist.go.jp/s-takarada/CEV/ out of date since 2009
Statistics in Volcanology	IAVCEI	Mark Bebbington 2011	http://www.cas.usf.edu/it does not work

World Volcano Observatories	IAVCEI	Susanna Falsaperla 2011 Gill Jolly 2011 Peter Webley 2011	http://www.wovo.org/
International Volcanic Health Hazard Network	IAVCEI	Claire Howard 2003	http://www.ivhnn.org
Volcanic Lakes	IAVCEI	Dimitri Rouwet	http://www.ulb.ac.be/sciences/cvl/index.html
Tephra Hazard Modelling	IAVCEI	Arnau Folch 2011 Raffaello Cioni 2011	http://dbstr.ct.ingv.it/iaivcei/
Arc Magmatism (State of the Arc)	IAVCEI	Simon Turner ? John Gamble 2003	http://www.iaivcei-arcs.org.uk/out of date
Remote Sensing	IAVCEI		
Volcanism and the Earth Atmosphere	IAVCEI		
Mitigation of Volcanic Disasters	IAVCEI		
Granites	IAVCEI		
Physics and Chemistry of Earth Materials	IAVCEI IASPEI		
Tsunamis	IAVCEI IASPO IASPEI		
International Heat Flow	IAVCEI IASPO IASPEI		
Volcanic Eruption Database (CEV)	IAVCEI		
Working Group on Volcano Acoustics	IAVCEI		

Table: The Commissions listed in bold are those provided report to their past 4 years activity to IAVCEI and have a strategic plan for future activities (e.g. workshops, conference organizations, field trips, database management etc.). The yellow highlighted Commissions have not provided information on their past activity, and it is unknown what their future plan is and therefore IAVCEI suspended these commissions as active commissions of IAVCEI.

New IAVCEI Commissions can be established by submitting a commission application form to the IAVCEI Secretary General, who then will discuss and initiate a vote among the IAVCEI Executive Committee members. It has been uniformly agreed, that IAVCEI Commissions in the future MUST be active groups of experts taking leading roles to arrange and participate in the program design of future IUGG General Assembly IAVCEI sessions. So, please contact respective IAVCEI Commission leaders to offer ideas of scientific sessions what certain IAVCEI Commissions can support and scientifically backed up. The IAVCEI Executive Committee recommends, that an IAVCEI Commission MUST offer at least one scientific session and/or field trip related to an IUGG General Assembly IAVCEI conference, and ideally one independent activity per year such as scientific workshops, thematic small conferences, lecture series, outreach programs etc. it has also been recommended, that IAVCEI Commissions need to show their proactive role in suggesting and arranging thematic books, Journal issues or conference proceedings. The IAVCEI Executive Committee encourage IAVCEI Commission leaders to search ideas and discuss those directly with IAVCEI leaders and members. IAVCEI Commissions also encouraged searching outreach opportunities to the public and society.

NEW e-Journal: Statistics in Volcanology

The Commission on Statistics in Volcanology (COSIV) will be launching a new publication in 2012 entitled and dedicated to... guess what? Statistics in Volcanology. The COSIV was established in 2007 to promote advancement in the statistical analysis of volcanological data, especially with regard to improved forecasts of volcanic activity and its potential effects. Statistics in Volcanology will be launched in 2012 as the open-access, peer-reviewed journal of the COSIV. The aim of Statistics in Volcanology is to provide a forum for volcanologists and statisticians to share experience and expertise related to development and application of innovative analytical methods. Through this forum, we hope to better our understanding of volcanic events and processes, to the benefit of all people who live with active volcanoes.

Statistics in Volcanology is dedicated to improving best practices in the analysis of all types of data related to volcanoes and volcanic processes. Review articles published in the journal will summarize major developments in the field, written especially to make these developments more readily accessible to the volcanological community. Research articles will describe new statistical methods and their application in volcanology, case studies, and related topics. The Editors particularly encourage short contributions, which we refer to as "How-to" articles, that succinctly describe a specific procedure, method, or technique used in the analysis of volcanological data. Each How-to article might include a brief overview to give volcanological context, a procedure (which would be the bulk of the article and might often include step by step instructions and/or pseudocode), a worked example, and a discussion of potential pitfalls. The idea is that a graduate student or scientist might pick up the article and use the procedure to quickly analyze their own data. Submission of supplementary data sets, computer code, and related materials will also be encouraged.

The journal will be completely open access. This means that authors will retain copyright to their work, publication will be at no cost to authors, and articles that complete the peer review process will be immediately and freely available to anyone as a pdf through the journal website. All articles will undergo a peer-review process and, upon completion of this process, will be assigned a unique doi number. Because the journal will be hosted by the Berkeley Electronic Press and the University of South Florida Libraries, long term archiving is assured. Berkeley Electronic Press also works with Google Scholar to rapidly index articles in web search engines. All this means that Statistics in Volcanology can help the community use the best possible statistical methods in the most timely way.

Founding editors of the journal include COSIV members Mark Bebbington, Roberto Carniel, Chuck Connor, Laura Connor and Warner Marzocchi. In the coming months we plan to expand our editorial board, encourage submissions, and finalize the journal website. Watch for additional developments and please consider submitting your appropriate and excellent research to Statistics in Volcanology in 2012!

Chuck Connor
University of South Florida

VHUB (Collaborative volcano research and risk mitigation) Group for IAVCEI CMV (<http://vhub.org/>)

We are happy to announce that the 'IAVCEI Commission on Monogenetic Volcanism' has established a Group under the VHub (Collaborative volcano research and risk mitigation) server (<http://vhub.org/>) in order to better facilitate online collaboration and communication.

"The main goal of the new IAVCEI commission, Commission on Monogenetic Volcanism (CMV) is to provide a forum for researchers to define and understand the phenomenon of small volume magmatic systems and their surface expression as volcanic fields. The CMV's aim is to take a leading role in facilitating and coordinating and focusing research and research outputs regarding monogenetic volcanism. We will also assist research community in the development and refinement of a set of 'standards' as well as working towards a unified, collaborative model of monogenetic volcanism."

We invite you to join to the IAVCEI CMV and participate in the development of the IAVCEI CMV group site by;

1. Actively taking part in group discussions.
2. Publishing blogs related to monogenetic volcanism (e.g. musings, fieldwork, conferences, fieldtrips or workshops you have attended).
3. Informing other members about relevant activities and events pertaining to monogenetic volcanism.
4. Sharing data in the form of depositing publications, maps, reference materials, conference information you think the community would be happy to see.

You can join to the IAVCEI Commission on Monogenetic Volcanism Group via the following link:

https://vhub.org/groups/iavcei_cmv

If you intend to provide and share data or resources with the community, you must first be a VHub member. Click the "Register" button in the upper right-hand corner, fill out the required information, and follow the link sent to the email address you provide to confirm membership. Once you are a member, select the "Resources" tab on the left side of the screen under the IAVCEI CMV group's homepage, then follow the easy step-by-step process. You can choose three levels of security of your uploaded items depending on how broadly you wish to have your item visible by others. To maintain the work, discussion and data sharing for 'Members' of the Commission on Monogenetic Volcanism Group, please choose the medium level of security. We also recommend that you tag your uploaded items using 'IAVCEI Commission on Monogenetic Volcanism' in addition to any other relevant tags for easier and faster identification of the material related to IAVCEI CMV.

To get started...we invite you to share your views on monogenetic volcanism in the "What does 'monogenetic' mean to you?" discussion topic. We especially encourage our young researchers and student members to participate in what we hope will be a great learning and networking experience.

Amanda Hintz (arl6@buffalo.edu) and *Károly Németh* (K.Nemeth@massey.ac.nz)

Vhub Group Managers for the IAVCEI Commission on Monogenetic Volcanism

FUTURE EVENTS for IAVCEI member's interest

2011 GSA Annual Meeting & Exposition

(Minneapolis, Minnesota USA) - 9-12 October 2011
Web: <http://www.geosociety.org/meetings/2011/>

10th International Kimberlite Conference

6-11 February, 2012, Bangalore, India
Web: <http://www.10ikcbangalore.com/>

Seventh Gulf Seismic Forum Seismology and Earthquake Engineering in the Arabian Gulf Region

Session sponsored by the IAVCEI Commission on Monogenetic Volcanism: "Volcanism and seismicity in monogenetic lava fields"

January 22-25, 2012, Saudi Geological Survey, Jeddah, KSA
www.sgs.org.sa; <http://7gsf.info/>

IAVCEI – IAS 4th International Maar Conference: a multidisciplinary congress on monogenetic volcanism

Sponsored by the IAVCEI Commission on Monogenetic Volcanism and Volcanogenic Sediments

20 – 24 February 2012, Auckland, New Zealand
Web: <http://www.4imc.org.nz>

1st International Congress on management and awareness in protected volcanic landscapes

21 – 25 May 2012, Olot, Spain
E-mail: info@volcandpark1.com

Geomorphic Processes and Geoarchaeology: From Landscape Archaeology to Archaeotourism (Moscow-Smolensk, Russia) - 27-31 August, 2012

<http://geomorphology.ru/images/upload/newsfond156/180.pdf>

29th IAS Meeting of Sedimentology (Schladming, Austria) - 10-13 September 2012

Web: <http://www.sedimentologists.org/ims-2012>

4th International Workshop on Collapse Calderas (Vulsini, Italy) - 23 – 29 September 2012

E-mail: acocella@uniroma3.it, ageyertraver@gmail.com
Website: <http://www.gvb-csic.es/CCC.htm>

2012 GSA Annual Meeting & Exposition:

Investing in the Future (Charlotte, NC) - 4–7 November 2012
Web: <http://www.geosociety.org/meetings/2012/>

Cities on Volcanoes 7 (Colima, Mexico) - 18-23 November 2012

E-mail: cov7@citiesonvolcanoes7.com
Website: <http://www.citiesonvolcanoes7.com>

IAVCEI General Assembly - 2013: Forecasting Volcanic Activity (Kagoshima, Japan)

E-mail: iguchi@svo.dpri.kyoto-u.ac.jp
Web: <http://www.iavcei2013.com/>

IUGG 2015 General Assembly, Prague, Czech Republic. Suggestions for IAVCEI symposia scientific themes are invited. Ideas from IAVCEI Commissions are especially welcomed. Please send your ideas to any of the IAVCEI Executive Committee members and/or Commission leaders.

ANNOUNCEMENT Fourth International Maar Conference: a multidisciplinary congress on monogenetic volcanism: Auckland (New Zealand), 20-24 February 2012 - www.4imc.org.nz

IAVCEI Commission on Monogenetic Volcanism and Commission on Volcanogenic Sediments supported meeting



Maars and their 'wet' equivalents scoria (cinder) cones are small-volume volcanoes that are the most common volcanic landforms on Earth. They commonly form groups or clusters, or have structurally-controlled alignments. In recent years, volcanological research on maars and scoria cones and their associated volcanism has enjoyed a noteworthy renaissance. After the First International Maar Conference, which took place in Germany in 2000, a second meeting was held in Hungary in 2004 and a third in Argentina in 2009. We now invite you to participate in the upcoming Fourth International Maar Conference (4IMC) in Auckland, New Zealand in 2012. The Fourth International Maar Conference will not only focus on maars; we call researchers to also share their results on any aspects of monogenetic volcanism.

Monogenetic volcanoes, which commonly occur in volcanic fields, are receiving increasing attention within the research community, including volcanologists, sedimentologists, paleontologists, paleoclimatologists and ore mineral researchers among many. Because of the relative simplicity of small-volume monogenetic volcanoes (compared to polygenetic volcanoes, for example), they provide important insights into magma generation and collection at depth, magma ascent dynamics, controls on eruption styles and the potential relationships between these processes. In addition to their value for basic research, monogenetic volcanoes and their host volcanic fields are an important focus of hazard and risk assessments for many urban areas and critical facilities around the world, such as the host city of the 4IMC, Auckland, in New Zealand. Auckland, the largest city of New Zealand, developed over about 50 small-volume monogenetic volcanoes. The field is still active, having its latest, and most voluminous, eruption less than 600 years ago. On the basis of the great variety of research offered by monogenetic volcanoes, 4IMC promises to be a major multidisciplinary platform for volcanologists, sedimentologists, paleontologists and paleoclimatologists, amongst others, and will link members of International Association of Sedimentologists and IAVCEI. The 4th International Maar Conference: A multidisciplinary congress on monogenetic volcanism invites contributions related to the full range of processes associated with monogenetic volcanoes and their hazards. Contributions that integrate and build links between these areas are especially welcome.

1. Magmatic system – melt generation and focus in the mantle, triggers for magma rise, ascent rate modelling, physical and petrological constraints on magma rise, volcanic field magmatic evolution, volcano-tectonic interpretation.

2. Shallow subsurface processes – including: diatreme formation, shallow-level ponding and plumbing systems for field volcanoes, interactions with country rock with variable

aquifer/rock strength and structural properties.

3. Eruptive mechanisms and processes – phreatomagmatic and magmatic fragmentation and vesiculation, pyroclastic/epiclastic transport mechanisms and sedimentation, lava flow, scoria, cinder, spatter, tuff and tephra cone formation

4. Environmental – paleoclimate and paleoenvironmental records, maar-lake sedimentology, biology, isotopic, volcanic landforms, erosion/geomorphic history

5. Hazards and Society – hazard assessment, spatio-temporal development of volcanic fields, volcanic process and engineering impacts, event forecasting models, economic impact evaluations, emergency planning, volcanic risk models, and engineering and societal mitigation options, social and cultural understandings of volcanism, education, outreach, geo-preservation

The conference will include keynote lectures by experts in each of these theme areas. The conference will publish the submitted 2-page extended abstracts in a volume with an ISBN number that will be part of the series of Geoscience Society of New Zealand Miscellaneous Publications. In addition, 4IMC plans to publish a special volume on maar and monogenetic volcanism in a high quality, peer reviewed international journal, as was the case after the 2IMC [Journal of Volcanology and Geothermal Research Volume 159, Issues 1-3, Pages 1-312 (1 January 2007) Maar-diatreme volcanism and associated processes. Edited by Ulrike Martin, Károly Németh, Volker Lorenz and James D.L. White and Zeitschrift fur Deutschen Gesellschaft fur Geowissenschaftler 2006, 157(6) – Proceedings of the 2nd International Maar Conference: Symposium 5: Geophysics of maars and diatremes and Symposium 7: Maar crater lake limnology and maar crater sediments: Edited by Kurt Goth and Peter Suhr] and after the 3IMC [Journal of Volcanology and Geothermal Research 2011 Volume 201, Issues 1-4, Pages 1-412 (15 April 2011) From maars to scoria cones: the enigma of monogenetic volcanic fields. Edited by Károly Németh, Miguel Haller and Claus Siebe]

The conference will take place between 20th (Monday) and 24th (Friday) February 2012, with 4 full days of keynote lectures, themed sessions and poster sessions. An intra-congress field trip to the Auckland Volcanic Field (included in registration) is scheduled on 22nd (Wednesday) February 2012. This will involve a boat trip around the well-preserved tuff ring of Motokorea Island and the youngest shield volcano with scoria cones, Rangitoto [see e.g. Journal of Volcanology and Geothermal Research 2011: 201(1-4): 126-142]. The participants will have time to explore Rangitoto Island, which also hosts the largest Pohutukawa tree (*Metrosideros excelsa*) forest in New Zealand developed after the formation of the island. The Icebreaker on the 19th (Sunday) February 2012 evening and the Conference Dinner scheduled for 23rd (Thursday) February 2012 will be social highlights of the meeting.

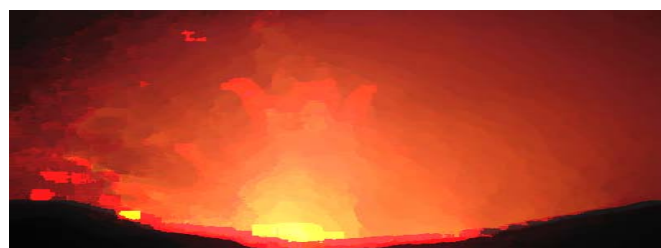
For a more hands-on look at monogenetic volcanic fields, two 3 days (2 nights) field trips are offered before and after the conference program. A pre-congress field trip will take the participants to the South Auckland [see e.g. New Zealand Journal of Geology and Geophysics 1994: 37(2): 143-153; Journal of Petrology 2005: 46(3): 473-503] and Auckland volcanic fields to see superb exposures of crater rim deposits, well-preserved maar basins, sites where significant climatic archive cores were recovered from maar basins, scoria cones and lava fields [see e.g. New Zealand Journal of Geology and Geophysics 2002: 45(4): 467-479, Palaeogeography Palaeoclimatology Palaeoecology

2003: 201(3-4): 235-247, Journal of Quaternary Science 2007: 22(5): 517-534, Geomorphologie 2009/3: 175-186, New Zealand Journal of Geology and Geophysics 2010: 53(1): 31-42]. In addition this field trip will be an excellent opportunity to see the importance of volcanological and sedimentological research to understand the potential volcanic hazard a still active monogenetic volcanic field such as the AVF can pose [see e.g. Journal of Volcanology and Geothermal Research 2006: 153(3-4): 370-386, Geological Society of America Bulletin 2008: 121(11-12): 1666-1677, Bulletin of Volcanology 2011: 73(1): 55-72]. A post-conference fieldtrip will take the participants to the South Island of New Zealand to volcanic fields that are older (Oligocene, Miocene) and therefore more eroded. While in the pre-conference field trip the participants will see well-preserved original volcanic landforms of young (Pliocene to Holocene) monogenetic volcanoes, the post-congress field trip will provide a good opportunity to see what is beneath a monogenetic volcano. The Waipiata Volcanic Field in Otago [see e.g. Journal of Volcanology and Geothermal Research 2003: 124(1-2): 1-21; New Zealand Journal of Geology and Geophysics 2008: 51(3): 195-218] is a Miocene eroded monogenetic volcanic field where proximal pyroclastic facies (e.g. diatremes) of phreatomagmatic volcanoes are preserved. The post-congress trip will also take the participants to perfectly exposed coastal section of Surtseyan volcanoes and their associated shallow marine successions in East Otago [see e.g. Bulletin of Volcanology 1989: 51(4): 281-298.] and in the Otago peninsula [see e.g. Special Publications of the IAS 2001: 31: 245-259., Neues Jahrbuch fur Geologie und Palaontologie – Abhandlungen 2002: 225(3) 373-400]. Each of these field trips will offer plenty of time to discuss sedimentary processes associated with monogenetic volcanism in world-class sites.

During 4IMC, the Jim Luhr Award will be given on the basis of nominations prior to the conference to a person who has significantly contributed to our understanding of monogenetic volcanism in the period between the 3IMC (2009) and the 4IMC (2012).

The 4IMC will offer reduced registration to early registrants, IAVCEI and IAS members and students. It is the intention of the Local Organising Committee (LOC) to maximize the presence of PhD research students and presenters from developing countries during the 4IMC.

Károly Németh and Ian E.M. Smith
Chairs of the 4IMC



Next Issue of the **IAVCEI News** will be published on **15th December 2011**. Articles, notes, news or any items relevant to the IAVCEI community must be submitted by **1st December 2011** to be published in the next Issue.

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