Geochemical News #130 - January 2007

In This Issue

From the GS President (#130)

Susan L. Brantley

At the Melbourne Goldschmidt Conference, the GS teamed with Kerstin Lehnert and the group from EarthChem← as well as William McDonough to foster a Town Hall meeting to discuss issues of data storage and sharing for geochemistry. This Town Hall meeting, as well as efforts by the GERM group and many others have led the GS to establish an ad hoc committee to discuss questions relevant to data and databases for geochemists. The ad hoc committee (Vince Salters, chair, Liane Benning, Jim Kubicki, Jerome Gaillardet, Bernard Marty) will be reporting to the GS Board at the Cologne Goldschmidt meeting. Given this ongoing discussion, I thought it would be useful here to summarize the data policy of the GS and the data policy of the Earth Sciences Division of the U.S. National Science Foundation.

The data policy of Geochimica et Cosmochimica Acta is briefly stated:
Geochimica requests authors to publish all data (not previously published) which is referenced or otherwise used in a paper. This specifically includes data that might otherwise be displayed only graphically or referred to in summary form. If a dataset is extensive and would require excessive space to tabulate it may be presented in electronic annexes only. For data representing chemical or isotopic analysis of natural materials authors are also requested to provide specially-formatted computer-readable files for posting as electronic annexes, whether or not the data are also tabulated in the print version of the paper.

The US National Science Foundation Earth Sciences (EAR) Division states that,
Preservation of all data, samples, physical collections and other supporting materials needed for long-term earth science research and education is required of all EAR-supported researchers....Data should be made openly available as soon as possible, but no later than two years after the data were collected.

I have asked the ad hoc committee to address the following questions:
What issues should the Geochem Society be aware of concerning data, data storage, and data publication? What policy should be set by the Geochem Society concerning data storage and publication? Should this be a general policy, or just a policy for Geochimica Cosmochimica? Should the GS be doing anything proactively to promote data storage for geochemistry? How should the GS interact with funding agencies or with other societies to promote wide access to, ease of use, and longevity of geochemical data?

I am sure it would be of interest to the ad hoc committee if other geochemists worldwide would similarly research and share what the data policies are for their funding agencies. Please join me in thanking our ad hoc committee considering these questions on data policy, and by all means, write them if you have important thoughts of interest.

Susan L. Brantley, President of the Geochemical Society
Earth and Environmental Sciences Institute
Pennsylvania State University
University Park, PA 16802
brantley@eesi.psu.edu

Editor's Corner (#130)

Welcome to the new format for *The Geochemical News*. A year ago GN moved from its traditional print media format, which was physically mailed to Geochemical Society members, to an all-electronic format of downloadable PDF files. Compared with the print version, the PDF version of GN had the advantages of full color and no printing cost, but it had some disadvantages as well.

One major disadvantage of a PDF newsletter is that people are simply not used to receiving magazines or newspapers as PDF files. Another problem with the PDF format is that there is no particular reason why such an electronic document should be formatted using a traditional 8.5'' x 11" (or A4) page size, which one must scroll through clumsily in both vertical and horizontal directions. Another concern is that visually rich PDF files of 20+ pages can be very large in terms of memory, making the download of such media inconvenient at best, and impractical at worst... especially if one's internet connection is unreliable or of low bandwidth.

It is for these reasons that we have abandoned the downloadable-PDF format and embraced the much more flexible and adaptive environment of the Web. The specific design of the new GN website is really a work in progress. Our immediate plan for the next few months is to completely redesign the Geochemical Society website and integrate what is now GN into the front news page of the GS site. So it's very likely what you see now will not be what you see when you next see it.

So stay tuned, keep reading, and please send us your ideas. At this moment the editors of GN are working with the GS Board to develop fresh ideas for the next incarnation of the GS website. We'd like to build a site that will service the needs of the membership, but to do that well we need to hear from you. What do you want from your Society? What features would be most useful, most informative, and would bring you back to this site again and again?

It's worth repeating that we're always looking for new content, and with this new format we have much more freedom to publish articles that include color images, longer text, and even multimedia files such as movies and audio. We depend - as we always have - on the

contributions of the Geochemical Society members for our articles, interviews, announcements, meeting reports, and job postings. Keep them coming.

Cheers,

Johnson R. Haas & Carla Koretsky, Editors

Reflections on Geochemistry Downunder

The 16th Annual V. M. Goldschmidt Conference, Melbourne, Australia

The 16th Annual V.M. Goldschmidt Conference, Geochemistry Downunder, was held between August 27th - September 1st 2006 in the Melbourne Convention Centre, Australia. Societies who supported the conference included the Geochemical Society, the European Association of Geochemists, the Geological Society of Australia and the Geochemical Society of Japan. In addition, the conference was generously supported by 18 sponsors and exhibitors, with Nu Instruments as the principle sponsor. Underwriting was provided by the conference organisers, Tour Hosts, and Macquarie University.

The conference received 1515 abstracts and had 1341 registrants, including delegates from 37 countries, the largest demographic (326) being Australia, followed closely by the U.S.A. (284), the U.K. (117), Japan (104), Germany (77), China (63), France (59) and Canada (54). Attendees were greeted with a complimentary bottle of Coopers Pale Ale and a cooler bag, containing bottle opener (courtesy of Melbourne University), selected as the conference satchel so that it would have future utility!

The conference organisers were Simon Turner (Macquarie University), Hugh O'Neill and Greg Yaxley (Australian National University), Janet Hergt (University of Melbourne) and John Foden (University of Adelaide). From the outset, we wished to achieve a number of objectives, based on observations and feedback from previous Goldschmidt Conferences. In particular, we wanted to host the meeting in a state-of-the-art venue and under a single roof to keep delegates together and networking. To this end, morning coffee, lunches (Monday - sourdough sandwiches; Tuesday - baked potatoes with chilli con carne, cheese and sour cream; Wednesday - Baguettes with assorted fillings; Thursday - grilled gourmet sausages in crusty roll with onions, cheese and sauces; Friday - Frittata) and afternoon drinks (wine, beer and juice) were provided daily in the main exhibition hall amongst the posters and exhibiters booths.

In order to provide a focus for each day, plenary talks were held each day immediately after lunch. All posters (320 in total) were exhibited for the duration of the meeting and given specific presentation times scheduled between 4.30 and 5.30 during which time beverages were served. The conference program was designed as a pocket book for easy use and the conference abstracts were proved on a CD which included a delegate list and history of V.M.

Goldschmidt. The abstract were also published as a special issue of Geochemica et Cosmochimica Acta.

The conference was organised into 11 themes, to which more than 90% of the abstracts were submitted; an additional 16 general sessions catered for geochemical topics not specifically covered under the themes. Each theme was divided up into between five and nine sessions. The oral program consisted of 12 parallel sessions. Because the conference was held in a single venue, participants could move between these sessions easily. Many sessions included one or more keynote speakers, who had been invited to give a talk occupying a double time slot.

Social events included the conference dinner and tours around Melbourne, to watch penguins at Philip Island and to the wine growing regions of the Yarra Valley. Pre- and post-conference field trips included the Great Barrier Reef, western Victoria, Proterozoic mineralization and metamorphism at Broken Hill and the Pilbara region of Western Australia.

At an early stage in planning it was recognised that a field trip program might be an added incentive for overseas registrants to make the trip to Australia for the Melbourne Goldschmidt meeting. Accordingly we put together a program of trips that highlighted a selection from the many iconic geological features of Australia and its near environs. Of the initial eight proposed trips four received the necessary support from registrants and were very successfully run with ~110 participants in all.

The pre-conference excursions were:

The Great Barrier Reef: A record of Holocene environmental change, organized and lead by Andrew Christian and Malcolm McCulloch (23 - 27 August).

A geological tour of Western Victoria, organised and led by Jon Woodhead and Janet Hergt (22-26 August). Amongst other features, this excursion highlighted extensive Cenozoic basalts and their mantle xenoliths.

The post-conference excursions were

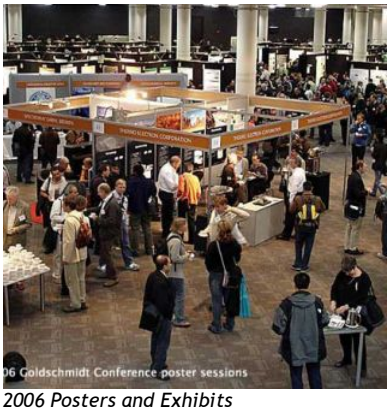
Proterozoic mineralisation and metamorphism at Broken Hill., organised and led by Professor Ian Plimer (2-6 September)

The Pilbara Region of Western Australia: Early Archaean environments and evidence for early life. Organised and led by Dr. Martin Van Krankendonk and Dr. John Lindsay (2-9 September).

The Organising Committee recognises that the success of the tour program was almost entirely due to the efforts of the individual trip organisers cited above and passes on their thanks for their efforts.

Feedback from delegates has been overwhelmingly positive and many seemed reluctant to leave at the end of the final day of the meeting. The Goldschmidt conferences are clearly ‘the' annual event in the geochemical calendar. See you next year in Cologne!

Simon Turner, Janet Hergt, Hugh O'Neill and John Foden

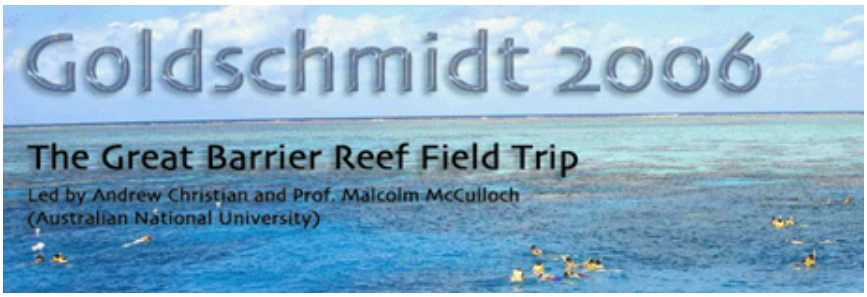


2006 Posters and Exhibits


Simon Turner holding the Program CD


Delegate registration bags

Great Barrier Reef



In the days leading up to the 16th Annual Goldschmidt Conference, 26 people were in for a surprise beyond belief as I don't think they knew what they were going to expect. Twenty six delegates from around the world converged at Cairns in far North Queensland Australia with Prof. Malcolm McCulloch and Drew Christian for a three day glimpse of the spectacular World Heritage listed Great Barrier Reef. With a focus of showing the delegates the type of coral research we are involved in at the Research School of Earth Sciences at the Australian National University, it wasn't hard to show our welcomed visitors what we are trying to achieve in our research efforts. The distinct interface between human encroachment and the natural wonders of such reef environemtns provides historical records of environmental conditions.

The Great Barrier Reef is the only living organic collective visible from Earth's orbit and lies off the east coast of Australia. It is the world's largest coral reef ecosystem and was declared a World Heritage area in 1981. The reef is scattered with beautiful islands and idyllic coral cays and covers more than 300,000 square kilometers. The Great Barrier Reef system consists of more than 3000 reefs which range in size from 1 hectare to over 10,000 hectares in area. The current living reef structure is believed to have begun growing on an older platform about 18,000 years ago, but the oldest datable coral on the reef now is a species of Porites often known as ‘Brain Coral' which is about 1,000 years old (it grows about 1 centimeter per year). The present, living reef structure is aged at approximately 6,000 to 8,000 years old.

The first day consisted of a boat trip from the port of Cairns to an inshore reef (Green Island) and then to an outer reef (Norman Reef) approximately 40km offshore. The brief stop over at Green Island enabled delegates to experience the diverse nature of an inshore reef that is often affected by flood plumes which enter the sea south of the Island. The diversity of coral species is somewhat limited at inshore reefs as many coral assemblages are quite sensitive to changed environmental conditions such as water turbidity, increased sediment and nutrient discharges. The group managed to peruse the islands magnificent rainforest walkways and see Green Turtles who abundantly inhabit this reef environment. At mid-day, we arrived at Norman Reef pontoon where we could partake in a number of activities provided. Delegates had the choice of SCUBA diving, snorkeling, helicopter flights over the reef, semi-submersible glass bottom boat rides for viewing the reef without getting wet and guided snorkeling eco-tours of the reef to explain the different marine life co-existence relationships. Most delegates could not believe

such a fantastic wonderland existed and were extremely appreciative of why this area needs to be monitored and protected.

The following day we ventured up to the Atherton Tablelands to see the remnants of a volcanic landscape including cinder cones and crater lakes. Volcanic activity has been intermittent on the tableland for the past 3 million years, with the most modern eruptions being perhaps as recent as 10,000 years ago. The fertility of the soils in this area provides an exceptional foundation for agriculture such as sugarcane, banana and coffee produce. The group traveled up to Kuranda via the cable-cars with a birds-eye view of the spectacular world heritage rainforest. Some cultural shopping and wandering of the area gave the delegates an appreciation of Australian aboriginal culture. Our trip back to Cairns was on a the Kuranda Scenic Railway Train winding its way down the escarpment giving us a fantastic view of the port of Cairns and its surrounding highlands, waterfalls and catchment area.

The third day we ‘bussed it' to Port Douglas approximately one hour north of Cairns to our awaiting Quicksilver Wave-piercing Catamaran to take us to an outer reef called Agincourt Reef. Here the delegates experienced similar attractions to the first day however the pristine-nature of this reef was exceptional and fantastic weather enabled all to enjoy the reef in ideal conditions. Numerous marine life such as fish, soft and hard corals, sea cucumbers, sting rays, giant clams, resident Giant Wrasse and many Nemo's were vividly on display for the worlds enjoyment.

On top of this, delegates were treated to great "aussie" cuisine such as kangaroo, barramundi, crocodile, the iconic BBQ and many of our local beverages. The trip leaders would like to thank all the participating delegates for their enthusiasm and cooperation and we hope they can revisit more of the great wonders Australia has to offer in the near future.

Drew Christian
Tour Organiser

Western Victoria

In the days prior to the Goldschmidt Conference a group of twenty six conference delegates from nine countries participated in a four day journey to explore some of the geological

highlights of western Victoria-a broad area extending west from Melbourne for over 400kms close to the border with South Australia.

Geologically speaking the western districts of Victoria form the southernmost part of the Lachlan Fold Belt and are well known for their rich goldmines, tektite strewnfields and for the extensive province of Cenozoic basaltic volcanism returning a varied suite of mantle xenoliths to the Earth's surface.

The trip commenced in Melbourne and headed out along the Great Ocean Road, a magnificent stretch of open road running several hundred kilometres west and bordering the wild Southern Ocean. On the way we visited some of the remnant Gondwana rainforest at Maits Rest and inspected the spectacular ‘twelve apostles', a series of impressive sea stacks which dominate this part of the so-called ‘shipwreck coast'. With the backdrop of a wonderful sunset against the apostles, participants were then treated to a close up encounter with a pod of Southern Right whales on their annual migration.

The next day concentrated on volcanic activity, visiting the famous Lake Bullenmerri maar structure, the volcanic cinder cone of Mt. Noorat, lava tubes at Byaduk, and hunting for mantle xenoliths at Mortlake down inside Mt Shadwell volcano (in a quarry!).

The third day took us inside the Tower Hill maar structure. Along the way we saw emus, koalas and kangaroos....this was rapidly becoming a ‘wildlife tour of western Victoria'! We then headed north to examine aboriginal rock art in the Grampians National Park and, to finish the day, we enjoyed a magnificent dinner at the Royal Mail hotel in Dunkeld at the foot of the Grampians ranges.

Granites and gold were the themes for the next day. Initially, we inspected the unusual sodium rich granites of the Victoria Valley complex. This was a unique time to visit an area which had been devastated by bushfires covering over 130,000 hectares 6 months previously. However, it is a testament to the resilience of the Australian bush that most of the native trees were displaying a flush of new growth, providing an eerie contrast against their blackened limbs. Heading out of the Grampians from Halls Gap we made for the Victorian goldfields.

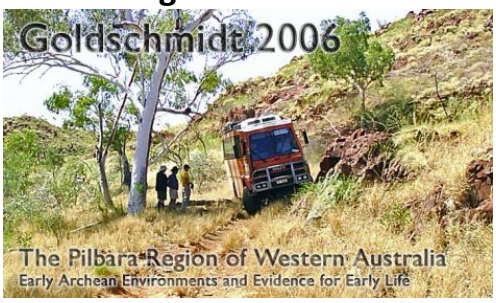
Gold was first discovered in Victoria in the 1850's and the ensuing gold rush fuelled the rapid development of the city of Melbourne which quickly became the nations largest city, and also led to the establishment of the Geological Survey of Victoria. The next 60 years saw production of ~ 80 million ounces of gold and, today, total Victorian gold production represents some 2% of all gold mined in the world.

After a visit to the working Wonga Mine (and a local winery!) we finished off the day in Bendigo with a memorable dinner deep underground in the workings of the Central Deborah mine after a brief tour and some hands on experience with several generations of drill rigs.

Returning to Melbourne the next day we were all feeling relaxed, refreshed and ready for the conference to begin...

Jon Woodhead, Janet Hergt, Roland Maas, Trip Leaders

Pilbara Region of Western Australia



Sixteen geological enthusiasts from around the world used the opportunity provided by the 16th Annual Goldschmidt Conference to view the evidence for Earth's oldest life in 3.5 billion year old rocks of the Archaean Pilbara Craton in Western Australia. The week-long trip focussed on the geological evidence for, and geological environments of, early life in the ancient nucleus of the craton, and also visited key stops that elucidated the tectonic history of the craton, including the younger accretionary history of the West Pilbara Superterrane. The general consensus was that there is very good evidence for early life on Earth and that it occupied a diversity of geological environments by 3.4 Ga, including hotsprings in submarine to subaerial volcanic caderas, and shallow marine platforms.

Participants came from all walks of geological life, including field geologists, igneous and isotope geochemists, sedimentology and chert experts, micro-analytical specialists, and students. The camaraderie of the group was exceptional and evenings were spent in long discussions on geology, life, astrobiology, and everything in between. The fieldtrip was conducted on a bright orange, 25-seater tour bus that was expertly driven by Bob Hollis of WesternXposure, who also cooked for us all, fixed flat tyres, helped build stone bridges, and provided unfailingly good cheer throughout the trip.

Cultural highlights included camping out under the stars, a cooling swim in Marble Bar Pool after a hot morning walk, viewing Aboriginal petroglyphs, a dinner of barbequed kangaroo steaks, an unexpected thunderstorm, and a dip in the Indian Ocean.
A digital copy of the fieldtrip guidebook can be obtained by contacting Martin J. Van Kranendonk.

Martin J. Van Kranendonk (Geological Survey of Western Australia) and John Lindsay (NASA), Trip Leaders

A Preview of Goldschmidt 2007: Cologne, Germany

The 17th annual V.M. Goldschmidt Conference will take place August 19 - 24, 2007 on the premises of the University of Cologne in Germany. The local organizing committee (LOC) invites you to come and discover the unique blend of geology and culture that Cologne has to offer. In spite of the location of the conference at the heart of Europe, the organizing committee has striven to keep costs low (310 € for members and 200 € for studens) so that students and younger scientists are attracted to this major crossroad of transport, culture and, we hope, geochemistry.

Important Dates

Abstract submission will be open at the conference web site on February 1, 2007, and the deadline for submission of abstracts is April 19, 2007. Early registration and booking of field trips will open at the same time on February 1, 2007. The field trip to Santorini and Crete will close at the beginning of March in order to locate inexpensive flights.

Venue

Cologne is Germany's fourth largest city. Founded by the Romans nearly two thousand years ago, this city on the Rhine River has been since the middle ages one of the largest and most important in northwestern Europe. Its splendid medieval cathedral, completed in the nineteenth century, was briefly the world's tallest building. The city's Aerial view of Colognehistoric core or Altstadt includes in addition twelve important Romanesque churches and a plethora of major art museums. Cologne is also the center of Germany's thriving contemporary art scene. The park lining the river provides an ideal place to take a stroll, sample the fine local beer (Kölsch), and watch the boats on what remains one of the world's busiest rivers.

The conference will take place on the premises of Cologne University. Located just to the west of the old city (20 minute walk), the university opens onto the substantial park system that rings the city. Neighboring the campus as well are a lively student district and one of Europe's principal museums of East Asian art. The central lecture hall cluster and additional lecture halls in the main building of the University of Cologne will be the venue for all talks while posters will be presented in the upper part of the university dining hall, a modern building 200 meters to the east of the main building. A total area of 1200 square meters will be available for posters. Numerous hotels and pensions of various price categories are within walking distance. The

banks of the Rhine and the cathedral can be reached within ten minutes by frequent tram service.

Cologne is the principal departure point for tourists wishing to drive, take the train, or cruise along the scenic Rhine River valley directly to the south of the city. The stretch of the river from Cologne to Heidelberg is one of Europe's most famous tourist attractions. The valley of the Mosel, a tributary of the Rhine, is equally beautiful, and leads to Trier, whose Roman buildings are the best preserved in northern Europe. Both rivers are lined with vineyards producing some of Germany's most celebrated wines. This scenic stretch is also the site of volcanism related to rifting, and attractions such as voluminous silicic volcanics of the Siebengebirge and the famous Eifel basalts with their mantle xenoliths are within easy reach of the city, crisscrossed by hiking and bike paths. The river Rhine itself is of course the object of one of the most remarkable and successful geochemical clean up stories, while weathering of the blocks of Siebengebirge volcanics that make up the cathedral document palpably the interaction of civilization with natural objects.

Excellent public transportation connects the university neighborhood to the rest of the city. The main train station is one of the hubs of international train travel in Europe, with frequent service to Paris, Brussels, Amsterdam, and Frankfurt. It is also connected by train through the Chunnel to London. The Cologne-Bonn airport is small but has several international connections, including flights of the low cost Ryan Airlines and German Wings. High-speed train service links the city directly with major airports at Dusseldorf (30 minutes) and Frankfurt (1 hour).

Food, drinks and the evening scene

This cosmopolitan city known for its carnival celebrations is also a center of German television and news media with a lively music and theater scene for all tastes. The city is the home of the Kölner Philharmonic, there are numerous jazz groups that perform in the local pubs, and discotheques dot the well-frequented ring roads. Take in a concert during your visit to the city, stop by at one of the numerous local pubs to relish the unique local beer or taste the wine from the neighboring regions. The city offers a wide choice of cuisines in restaurants of all categories, including local specialties. You may want to discover what a Rheinischer Sauerbraten is during your visit.

Program

The conference will begin late afternoon on Sunday with registration and an icebreaker in the mensa building. Scientific sessions will start at 8:30 in the morning on each of the following days. A plenary lecture each day will track the origin and evolution of the Earth, commencing from its dusty beginning on Monday and concluding with the appearance of life on the fifth day. Late mornings and early afternoons will be devoted to symposia in some 14 lecture halls. Poster sessions will be held in the later afternoon of Monday, Tuesday and Thursday. An area of 1200 square meters on the second floor of the mensa building will be reserved for posters, with beer from Cologne (Kölsch) on hand to facilitate the free flow of thoughts. Wednesday afternoon will be free for visiting the city and for small excursions in the surrounding area, e.g. a visit to Bonn

or the Neanderthal Museum near Düsseldorf. . In the evening the conference dinner will be served in the Gürzenich, the traditional ballroom and reception hall of the City Council (dating from 1444) which was restored after the war and redeveloped in 1996-98 to become a stylish congress and special events centre. Award ceremonies of the sponsoring societies will be held before the dinner. The two Crawfoord Prize winners in Earth sciences from 1986, C. J. Allègre and G. J. Wasserburg promised to come to the meeting and address the audience. The conference will end Friday afternoon with a farewell party. Details of the program are available from the conference website.

Map of conference site

A Cologne campus map (216K PDF) shows the location of the main building of the university with the aula for plenary lectures, the Lecture Hall Building with four large lecture halls and several smaller conference rooms. The WISO building comprises four large lecture halls: Several smaller rooms for lectures are located between the WISO lecture halls and the main building.

Accommodation

Cologne has more than 230 hotels with a capacity of some 17,000 beds. Koeln Tourismus will help you with making reservation. They have prepared a special form for reservation← that may be e-mailed or sent by fax.

Travel

Detailed information on how to reach Cologne is given on the conference home page. If you arrive by car there is a large free parking area on Universitätsstrasse, five minutes away from the Conference Center. All participants will receive a weekly ticket for the public transportation system in Cologne, which makes it very easy to get around.

Social Events

As mentioned above the conference banquet will be held in the Gürzenich in the old city, reputed to be the oldest party hall (ca. 570 years) in Europe. It is a main hub of the famous Carnival celebrations but has also played host to more serious gatherings such as that of the G8 summit.

Field Trips

A number of one and two day field trips are planned:

- A one day trip to the 13ka Laacher See Volcano and the Quaternary East Eifel Volcanic Field.
- A one day trip to the West Eifel Volcanic Field.
- A one day volcanic hike in the Tertiary Siebengebirge explosive subaqueous eruptions, syn-volcanic intrusions and medieval castles.
- A three day trip to the impact structure at Nördlinger Ries, S. Germany.
- A five day trip to a crustal cross-section - Ivrea Zone/North Italy.
- A ten day trip to Santorini and Crete (Greece)- Quaternary arc volcanism and Tertiary high P/T metamorphism in the South Aegean.

Details of the excursions will be posted on the conference website.

S. Chakraborty, H. Palme