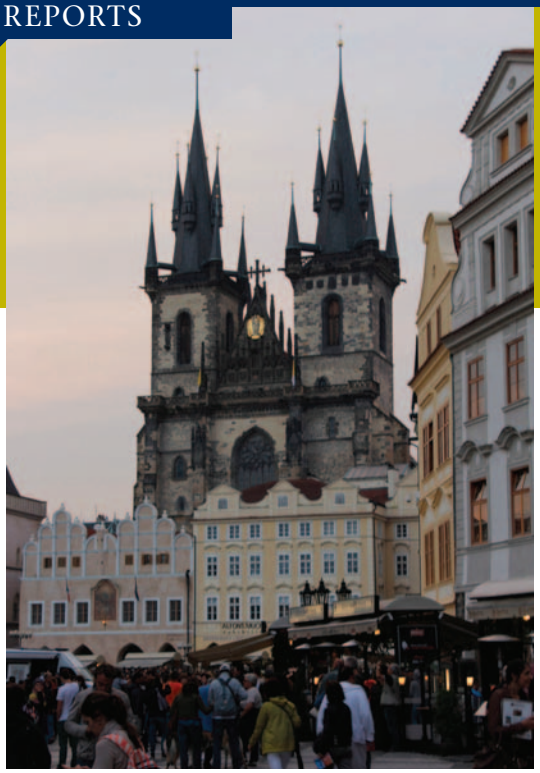
# GOLDSCHMIDT 2011 CONFERENCE REPORT



Old Town Square, Prague. Photo courtesy of Teresa Roncal-Herrero

**The 2011 Goldschmidt meeting was held in the beautiful city of Prague, Czech Republic. This conference, held alternatively in North America and Europe, is sponsored in Europe by the European Association of Geochemistry (EAG). The Prague meeting set a new record: with a total of 3711 abstracts submitted and 3312 registered delegates (30% students), this was the biggest Goldschmidt conference to date. Delegates came mostly from the USA (600), Germany (437), the United Kingdom (280), France (233), Japan (153), China (144), Switzerland (121), Australia (119), Canada (97) and the Czech Republic (96). A total of 1970 oral presentations were given, and 1741 posters were displayed. And a total of 20,000 glasses of the famous Czech beer were drunk during four evening poster sessions!**

## ORGANIZING THE CONFERENCE

The European Goldschmidt conferences are now organized directly by the EAG, as the increasing size of the meeting made it hard to find local institutes or local consortia willing to take on this responsability. The EAG searched for a site that would be both attractive and able to provide an infrastructure suitable for 20 or so parallel sessions and 3000 plus delegates and at a reasonable cost. Paul Beattie, CEO of Cambridge Publications, the conference organization company, investigated possibilities in Europe with representatives of the EAG. Prague's downtown Congress Center, built in 1989 during the communist era mostly to host meetings with brother communist states (in fact it was used only once for this purpose before the fall of the Berlin wall), met the meeting specifications in terms of space and number of rooms. Prague is an exceptionally attractive city, boasting an outstanding historical center, reasonably priced accommodation, and numerous downtown restaurants and bars.

The principal convenors were the Organizing Committee chairman, Bernard Marty, EAG's past president, Eric Oelkers, EAG's current president, Bernard Bourdon, the local convenor, Martin Novák (from the Czech Geological Survey), and the chairman of the 2009 Goldschmidt meeting, Chris Ballentine. The administration of the conference was run by Cambridge Publications, which also had a place on the Organizing Committee (Paul Beattie), with help from the EAG Council.

A science committee composed of Bernie Wood, Sue Trumbore, and the convenors defined 22 science themes and identified scientists worldwide to handle these themes. Special effort, not always successful, was made to have two chairpersons of different genders and from different continents for each theme. The theme chairs then identified 4 to 7 sessions in their themes and selected scientists to convene these sessions. In total, 135 sessions were defined by fall 2010, and then a call for sessions was opened to the geochemical community, which resulted in about 100 more proposals. Of these, about half were retained, the others being merged with already-defined sessions or, more rarely, rejected. We ended up with 182 sessions that were advertised at the end of 2010.

Because of the large number of abstracts received (3711), it was decided that there would be no morning and afternoon breaks and that sessions would be run on all five days with no free half day in the middle of the meeting. The rationale was to privilege science, with an approximately 50:50 distribution between orals and posters.

During the final steps of organization, the earthquake–tsunami disaster struck northern Japan, claiming the lives of more than 20,000 people. The tsunami also resulted in the Fukushima Daiichi nuclear accident, which contaminated areas around the power plants with radionuclides. Evaluating and mitigating the consequences of this event were clearly in the realm of our competence, so we proposed to the Geochemical Society of Japan (GSJ), through its president, Mitsuru Ebihara, that we organize a special session on the mechanisms of the accident and on its local- to global-scale aftermaths. The GSJ responded enthusiastically, and a day-long session was thus organized in parallel with the regular sessions.

## THE CONFERENCE

After a well-attended icebreaker on Sunday afternoon, the conference was opened on Monday, August 15, 2011, by EAG president Bernard Bourdon and a plenary talk by Sam Musaka, the Geochemical Society's president. Each morning began with a plenary talk, featuring distinguished speakers Marc Hirschmann, Edouard Bard, Franck Selsis, and Victoria Orphan. These talks were followed by oral presentations in 18 parallel sessions. The new medalists of the Geochemical Society (GS) and EAG were introduced between the plenary talks and the beginning of the sessions, and the awardees gave their '"medal" scientific talks in the relevant sessions. On each day (apart from Friday) poster sessions were held from 5 to 7 pm, with plenty of snacks and drinks to sustain the discussions along the crowded rows.

Poster session

Four field trips before or after the conference explored the environmental and cultural heritage of the Czech Republic and attracted over 100 delegates.

The special Fukushima session was attended by 150 to 300 people. Presentations included the seismic context, the causes of the accident, the local and global dispersion of short-lived isotopes, and future prospects for the damaged nuclear power plant. At the end of the session, GSJ president Mitsuru Ebihara presented a statement requesting more transparency in the treatment of information and more involvement of the geochemical community. This statement was endorsed by the presidents of the GS and the EAG and can be found on the EAG website.

# GOLDSCHMIDT 2011 CONFERENCE REPORT

Banquet at the Municipal House. Photo courtesy of Teresa Roncal-Herrero

Social events held during the week included classical music concerts in three of Prague's most beautiful churches, a dinner at the Brevnov Abbey, and a free rock/blues concert in the Forum Hall of the Congress Center given by CRPG-based Double Scotch band (with Bernard Marty on guitar). The banquet, attended by 1029 guests, was held in the magnificent Municipal House, in the heart of Prague. Due to its sumptuous Art Nouveau style, the building has been the scene of several blockbuster movies, including *Mission Impossible* and *La Vie en Rose*.

A well-attended ice-breaker party. Photo courtesy of Teresa Roncal-Herrero


Double Scotch performing at the Goldschmidt concert

## A FEW SCIENCE HIGHLIGHTS

Great science was naturally the focus of the conference. Dating precisely the birth of the Solar System, a long-standing controversial issue, seems to have gained maturity: both the short-lived (e.g. $^{26}$Al–$^{26}$Mg) and long-lived chronometers are now consistent once other nuclear effects are taken into account. The debate about a chondritic, or not, Earth continues, fuelled by new meteorite data used to explore the origin of matter that made the Earth. The Late Veneer hypothesis has gained traction, with independent lines of evidence emerging for post–Giant Impact accretion to Earth of possibly oxidized planetesimals. Furthermore, evidence is accumulating that this late accretion delivered significant volatiles to Earth. Geochemical evidence seems to support a warm (>30 °C) early Earth, even if physical modeling of different ancient atmospheres does not. Although geodynamical and petrologic models for the early Earth support the view that the first crust was mafic (or ultramafic) in composition, this crust appears to have been essentially destroyed by Eoarchean time (>3.6 Ga). Tungsten isotope anomalies are now found in 3.8 Ga old terrestrial rocks, which puts important constraints on the early evolution of Earth. Direct ion probe evidence for "fast" (600 My) recycling of seawater in the source areas of mantle plumes was presented.

A tribute to George R. Tilton (1923–2010), who pioneered U–Pb dating of the Earth's rocks and minerals, included a collection of presentations in the fields of the age and chemical evolution of Earth, the Moon and meteorites; mantle dynamics in rifting and intraplate settings; terrestrial Pb isotope evolution; and novel U–Pb applications in geochronology.

Presentations on mineral deposits concerned their geochemistry; the links between mineral deposits and the evolution of the oceans, atmosphere, biosphere, and lithosphere; metal distribution in melts and fluids; and state-of-the-art analytical techniques for dating mineral deposits. The GEOTRACES sessions considered several new isotope techniques for studying marine biogeochemical cycles—in particular, the presence of anthropogenic $^{236}$U in the ocean was reported for the first time. It was also noted that the physical concepts for understanding the occurrence of noble gases in terrestrial waters might help to constrain the dynamics of radon in the ocean.

Many presentations were also given in the vibrant and developing fields of molecular environmental geochemistry and geobiology. For example, talks about "the ash that closed Europe's airspace..." highlighted how only a detailed understanding of the processes governing the interaction of mineral surfaces and fluids can lead to reliable predictions of air-traffic safety. Various talks also highlighted the links between careful experiments on the nucleation, growth, and dissolution of mineral phases and atomistic modeling, and showed how these links are crucial for our understanding of macroscopic and even global-scale (bio) geochemical processes.

## NOW AND THEN

Several issues could be improved upon at future conferences. For example, there were technical problems with Wi-Fi and the audiovisual equipment at the beginning of the conference, and some rooms were overcrowded during some of the most popular talks. However, despite these glitches, it was generally agreed that the conference was a great success, both scientifically and socially. The success of the conference reflects a scientific discipline that is thriving and of increasing importance to society, because geochemistry encompasses data, techniques, and skills important for confronting some of the major issues the world faces today. These include climate change, the disposal of nuclear waste, the management of the Earth's water resources and the discovery of new mineral resources.

Plans are progressing well for the next two Goldschmidt conferences, Montréal in June 2012, and Florence in August 2013. These will be exciting meetings and will continue the tradition of effective conferences serving the geochemical community.

**Bernard Marty**, with **Bernard Bourdon**, **Martin Novák**, **Chris Ballentine**, and **Paul Beattie**