Dear colleagues,

this Newsletter 2021–3 updates you on the life of our Association, while the advances in anti-Covid vaccination worldwide, although too unequally distributed, have raised more optimism about a possible control of the Covid-19 pandemic and a gradual return to ‘normal’ life.

**IAVCEI meetings**

- **COV11 (June 12–17, 2022)**  
  IAVCEI leaders, the Greek LOC and POC, and COV leaders just decided to re-activate the preparation of the 11th Conference of Cities on Volcanoes in Crete in June 2022. We expect, and do hope, that well improved sanitary conditions at that time will permit in-person attendance of most of you. Just note that physical attendance of COV11 will likely be restricted to fully vaccinated people and/or those affected by Covid less than 6 months before. This is the current government rule in Greece. However, as previously announced, we’ll warrant a virtual access to the Conference to those unable to attend physically.

- **Scientific Assembly in Rotorua, New Zealand (January 30 to February 3, 2023)**  
  IAVCEI leaders will soon exchange with the NZ POC and LOC in order to fix the plans for our SA. A good news is that the NZ government recently announced that it would abandon its former politics of ‘zero-Covid’ case and border closure, which may favor the reactivation of traveling facilities to New Zealand.

- **28th IUGG General Assembly and IAVCEI GA in Berlin, July 11–20, 2023**  
  On September 15–16 Roberto Sulpizio and myself participated to the IUGG Executive Meeting, during which the agenda, financial issues and technical aspects of the organization of the 28th IUGG GA were discussed. We had a virtual visit of the Conference Centre in Berlin (Messe – City Cube) and first discussions about the requirements of Session Rooms. Two main decisions were acted: i) multidisciplinary (Inter-Associations) Sessions will be strongly promoted in order to limit the number of too specific sessions from each of the eight Associations and hence limit the overall IUGG GA’s duration (a long-lived request from many); and ii) the 2023 Assembly will be hybrid but with a strong promotion of physical attendance. I use this opportunity to remind you that the 4-yr financial support of IUGG to each of its 8 Associations, among which the IAVCEI, is rated to the number of members of each Association attending the IUGG Assembly! Hence, we encourage a maximal participation of IAVCEI members to IUGG-2023. During this event the IAVCEI will also hold its own General Assembly, deliver several of its scientific Awards, and introduce its next elected Executive Committee.

Thereafter, you will find the name of IAVCEI representatives among the appointed members to the Union Committees for the 28th IUGG General Assembly.

Further information is available at: https://www.iugg2023berlin.org/

**IAVCEI Website**  
Our website continues to be upgraded, in particular thanks to help of our new Communication Team led by E. Nicotra. As regards our new e-Volcano Platform, managed by Jessica Kandlbauer, 8 video presentations were submitted until now and 4 are in review!

**IAVCEI series of webinars on ongoing or/and recent eruptions**  
Our next IAVCEI webinar will happen on October 26 (noon-2 pm CET) and be dedicated to the 2021 eruption of NYIRAGONGO volcano (RD Congo). Presentations will involve the Goma Volcano Observatory and some of its foreign collaborators, and will be followed by a session of Questions & Answers. We invite you to register and participate as many as possible.

**Final evaluation of IAVCEI Commission activity reports**  
The overall evaluation of the past 2-yr activity of our IAVCEI Commissions (see Newsletter 2021–2) is now completed. Required information has finally been received from a few Commissions that were late. Based on these information, the Executive Committee will communicate its decisions and recommendations to the leaders of those Commissions.
Survey to worldwide Volcano Observatories about rejuvenating the WOVO

As detailed in our previous Newsletter, rejuvenating the WOVO (World Organization of Volcano Observatories) is one key objective during our mandate. In that perspective, a Survey has been prepared to check the willing, expectations and recommendations of Volcano Observatories worldwide, be they or not current WOVO members.

On the 1st of September this survey was sent to all Volcano Observatories and/or Institutions in charge of monitoring volcanoes in the world. The text of the Survey is displayed thereafter in annex. At the time of writing, highly positive and constructive answers were already received from 10 Observatories/Institutions. We are awaiting for answers from other ones. Once all collected, the results will be discussed by the think tank dedicated to this project and will serve to delineate our main guidelines to rejuvenate the WOVO. The final proposal will have to be approved by the Executive Committee before being communicated to all members.

I’d like to conclude this column by a few words about the Cumbre Vieja eruption that started on September 19 and is still ongoing in La Palma island of the Canary archipelago, Spain. This event, heralded by several weeks of intense seismicity and ground deformation, further illustrates the difficult situations faced by volcanologists and civil defense authorities when eruptions outbreak in densely inhabited volcanic islands. Both emitted lava flows and tephra deposits progressively damaged a wide area (destruction of over 1800 housings and of crop plantations), forcing the evacuation of around 7000 people. The continuing eruptive activity, coupled with some M>4 earthquakes occurring from as deep as 30–40 km to 10–15 km beneath La Palma island, hardly allows to anticipate how long this event may last.

By early October I had the chance to stay on site for a few days. There I could appreciate the sustained efforts of our Spanish colleagues in closely monitoring/studying the eruption and those of the civil defense task force (PEVOLCA) in mitigating the associated risks. In name of the IAVCEI let me express them all our strong support!

Keep safe and stay tuned.

Patrick Allard
October 15, 2021
IUGG – Appointed Committees for the 28th IUGG General Assembly

The IUGG President appointed members to several Union Committees for the 28th IUGG General Assembly (Berlin, Germany, July 11–20, 2023) responsible for (i) the selection of candidates to be included in the election of the IUGG Bureau and Finance Committee Members 2023–2027 (Nominating Committee); (ii) for the comparison of the sites proposed for the IUGG General Assembly 2027 (Site Comparison Committee); (iii) for the resolutions of the IUGG General Assembly 2023 (Resolution Committee); as well as three award committees: (iv) the Gold Medal Committee; (v) the Fellow Selection Committee; and (vi) the Early Career Scientist Award Committee.

The membership of the committees is listed below, with IAVCEI representatives outlined.

Nominating Committee
- Harsh Gupta (India, IASPEI), Chair
- Anny Cazenave (France, IAG)
- Hugo Delgado Granados (Mexico, IAVCEI)
- Alberto Montanari (Italy, IAHS)

Resolution Committee
- Michael G. Sideris (Canada, IAG), Chair
- Atalay Ayele (Ethiopia, IASPEI)
- Athena Coustenis (France, IAMAS)
- Masahito Nosé (Japan, IAGA)
- Denise Smythe-Wright (UK, IAPSO)

Site Comparison Committee
- Fiona Darbyshire (Canada, IASPEI), Chair
- Isabelle Ansorge (South Africa, IAPSO)
- Kosuke Heki (Japan, IAG)
- Andrew Mackintosh (Australia, IAHS)
- Stefania Sparnocchia (Italy, IAPSO)
- Eduard Petrovsky (Czech Republic, IUGG, ex-officio)

Gold Medal Committee
- Tom Beer (Australia, IAMAS), Chair
- Zuheir Altamimi (France, IAG)
- Günter Blöschl (Austria, IAHS)
- Kumiko Goto-Azuma (Japan, IACS)
- Emma Hill (Singapore, IASPEI)
- Catherine Johnson (Canada, IAGA)
- Jan Marie Lindsay (New Zealand, IAVCEI)
- Hans van Haren (Netherlands, IAPSO)
- Alexander Rudloff (Germany, IUGG, ex-officio)

Fellow Selection Committee
- Andrew Yau (Canada, IAGA), Chair
- Agatha de Boer (Sweden, IAPSO)
- Georg Kaser (Austria, IACS)
- Allison Kealy (Australia, IAG)
- Barbara Romanowicz (USA/France, IASPEI)
- Dan Rosbjerg (Denmark, IAGS)
- Mary Scholes (South Africa, IAMAS)
- Roberto Sulpizio (Italy, IAVCEI)
- Steve McNutt (USA, IUGG, ex-officio)

Early Career Scientist Award Committee
- Katrin Schröder (Italy, IAPSO), Chair
- Keith Alverson (Japan, IAMAS)
- Marie Dumont (France, IACS)
- Julia Eychenne (France, IAVCEI)
- Michelle Grobbelaar (South Africa, IASPEI)
- Paola Passalacqua (USA, IAHS)
- Prasanta Patro (India, IAGA)
- Peiliang Xu (Japan/China, IAG)
- Thorsten Wagener (Germany, IUGG, ex-officio)

Thank you to IAVCEI representatives for their involvement!
ANNOUNCEMENT

SECOND INTERNATIONAL CONFERENCE ON ERUPTIONES VOLCÁNICAS: APORTES DE LA INVESTIGACIÓN Y MONITOREO PARA LA GESTIÓN DEL RIESGO VOLCÁNICO

November 17–19, 2021

Organized by the Instituto Geofísico del Perú and supported by the IAVCEI

Programme
17/11, SESSION 1: MONITOREO VOLCÁNICO Y PRONÓSTICO
18/11, SESSION 2: INVESTIGACIONES CIENTÍFICAS EN VULCANOLOGÍA
19/11, SESSION 3: GESTIÓN DEL RIESGO VOLCÁNICO

Contacts
Jorge Andrés Concha Calle (prensa.concha@igp.gob.pe)
Marco Antonio Rivera Porras (mrivera@igp.gob.pe)
Fifth Edition (2021) of the International Volcanology Field Course in Colombia (South America).

Research Group of Stratigraphy and Volcanology – GIEV Cumanday, Universidad de Caldas.

The Fifth Edition of the International Volcanology Field Course in Colombia (South America) took place in July, 2021. The course was hosted by the Research Group of Stratigraphy and Volcanology (GIEV) from the Universidad de Caldas (Colombia). Hugo Murcia leads the course, with the collaboration of Alvaro Botero from the Universidad de Caldas. The course hosted 19 people as follows: 14 participants, three invited scientists, one person as part of the technical committee and the coordinator. In addition, six invited speakers supported the virtual theoretical session.

The participants came from two different countries this year (Colombia and Costa Rica), and five different institutions, namely: 1. Universidad de Caldas; 2. Universidad Nacional de Colombia sede Medellín; 3. Universidad EAFIT; 4. GMAS, 5. Universidad de Costa Rica.

Diluted lahar deposits from the Pliocene.

The instructors at the Cerro Machín volcano. From left to right: John Jairo Sánchez, Laura Sánchez, Hugo Murcia, Susana Osorio, Alvaro Botero.
The invited scientists were: 1. Laura Sánchez-Torres (Universidad de Caldas); 2. Susana Osorio (Servicio Geológico Colombiano); 3. John Jairo Sánchez (Universidad Nacional de Colombia sede Medellín). The invited speakers who supported the virtual theoretical session were: 1. Dayana Schonwalder (Universidad de Caldas, Colombia); 2. Laura Becerril (Universidad de O’Higgins, Chile); 3. Johana Gómez (Universidad Nacional Autónoma de México, México); 4. José Luis Macías (Universidad Nacional Autónoma de México, México); 5. Marcelo Arnosio (Universidad de Salta, Argentina); and 6. Michael Ort (Northern Arizona University, USA).

The course spanned two sessions: A two-day session of virtual talks between 24th and 25th of July, and a six-day field trip between 26th and 31st of July. The field trip took place at the San Diego – Cerro Machín Volcanic Province (~180 km) were several volcanoes and deposits were visited. During the talks, the following themes were addressed: 1) Rheological properties of magmas; 2) Magma chambers; 3) Fragmentation mechanisms; 4) Eruption types; 5) Type of volcanoes (polygenetic and monogenetic); 6) Calderas; 7) Lava flows; 8) Columnar disjunction; 9) Methods for studying volcaniclastic deposits; 10) Pyroclastic fall deposits; 11) Pyroclastic density currents; 12) Debris avalanches; 13) Lahars; 14) Volcanic hazard; 15) Volcanism in Colombia; 16) Study case: Quilotoa volcano; 17) Study case: Campanian ignimbrite – 39.8 ka.

During the field trip, we visited volcanic and volcaniclastic deposits associated with the following volcanoes: Cerro Bravo, Nevado del Ruiz (including the 1985 lahar deposits), Nevado del Tolima, Guacharacos, El Tabor, Cerro Machín and Paramillo de Santa Dilm.
Rosa. We also visited volcanoclastic products from the Pliocene Mesa Formation. Thus, the course met the requirements for a general understanding of both polygenetic and monogenetic volcanism.

The course will putatively be offered every year with the intention of hosting 30 participants: 10 undergraduate students, 10 postgraduate students, 10 professionals plus 4–5 invited speakers. The fifth edition participants were: Mariana Vergara Herrera, Santiago Duque Muñoz, Valentina Pizarro Gil, Juan Felipe Nova Guinchin, Jeferson López Bonilla, Gina Lizeth Bolanos Cabrera, Stefania Zapata Villa, Johner Stiven Botero Vallejo, Natalia Paniagua, Lina Marcela Marín Ramírez, Laura González Ospina, Andres Bastidas, Alejandro Arias, Juan David Álvarez.

We hope to see you in Manizales next year!!!

Hugo Murcia
hugo.murcia@ucaldas.edu.co

Participants of the course during the last day.
WOVO

IAVCEI survey about the rejuvenation of WOVO

The IAVCEI wishes to rejuvenate the architecture and functioning of the World Organization of Volcano Observatories (WOVO) in order to reinforce its role and efficiency for the benefit of volcano observatories and the volcanological community. For building this project, we submit you a brief survey aimed at knowing the expectations, priorities and proposals of Volcano Observatories worldwide, be they or not current WOVO members.

BACKGROUND AND MOTIVATIONS

The WOVO was created in 1981 as an international Organization of and for Volcano Observatories (VOs), under the IAVCEI umbrella, with the following aims:

a. To stimulate communication and cooperation between Observatories and Institutions directly involved in volcano monitoring.
b. To develop and maintain volcano monitoring reference materials, including a Directory of member Observatories, their monitoring networks and staff.
c. Upon request, to help a member Observatory to find temporary scientific reinforcement.
d. Refer governments, international organizations, and others seeking assistance in volcano monitoring to the appropriate member Observatories.

Over the past four decades the WOVO has grown as an IAVCEI Commission whose members are VOs and Institutions that are engaged in volcano surveillance and are responsible for warning authorities and the public about hazardous volcanic unrest. After the Eyjafjallajökull eruption in 2010, the WOVO membership was additionally opened to the 9 VAACs (Volcanic Ash Advisory Centers) which coordinate and disseminate information on volcanic ash clouds that may endanger air traffic. Over these four decades the successive WOVO leaders have tried their best to reach the above listed objectives, but their efforts have been hampered by intrinsic limitations, such as a purely volunteer-based management of the Organization, the lack of an operational responsible and of dedicated funding, a shading of WOVO among the numerous other Commissions of IAVCEI, and, as a consequence, a declining reactivity or interest of many Observatory members. This was reflected, for instance, in the lack of regular update of the member Directory (aim ‘b’).

Hence, time has come to renew the WOVO in order to make it a more professional and proactive international network for the benefit of Volcano Observatories and the global volcanological community. This goes beyond simply reorganizing its leadership. The WOVO actually needs a new architecture and functioning mode in order to fulfill its objectives and to better fit with up-to-date requirements of global volcanic surveillance, communication, training and international interactions devoted to the mitigation of volcanic disasters. On that basis, we envision that the rejuvenated WOVO becomes an active interface between the IAVCEI, Volcano Observatories, and the international Organizations (UNISDR, ICAO, Space Agencies, etc.) concerned with the regional or global effects of volcanic activity. In particular, the renewed WOVO could become the adequate framework to discuss with ICAO the guidelines and protocols regarding volcanic ash and aviation safety, to apply for funding supports to volcanic surveillance from global Agencies (the World Bank, United Nations, UNESCO, etc.), or to exert a pressure on governments that miss to provide a sustained support to their Observatories.

Rejuvenating the WOVO is one key objective of the current IAVCEI Executive Committee. A think tank composed of experimented volcanologists has started minding on a roadmap and recommendations. A first agreed main step is to make an inventory of the expectations, priorities and proposals of worldwide Volcano Observatories, be they or not current members of the WOVO. This is the aim of the following survey.
SURVEY

The IAVCEI is very much looking forward to rejuvenate the WOVO based on your thoughts and answers to the following series of questions. Some questions can be answered by Yes or No, while others require an extended answer.

Please address your answers to: secretary@iavceivolcano.org, with copy to the IAVCEI President (pallard@ipgp.fr) and the current WOVO leaders (Gill Jolly: g.jolly@gns.cri.nz, and J. Armando Saballos: j.a.saballos@gmail.com)

Many thanks in advance for your input.

*Your affiliation (Observatory / Institution)
  ■■ Your name
  ■■ Name of observatory/institution
  ■■ Type (government agency, university, other)
  ■■ Director or/and scientific responsible
  ■■ Address and country
  ■■ E-mail
  ■■ Webpage

*Is your institution officially mandated to respond to volcanic crises?

*Is your Institution currently a member of WOVO? If Not, would it apply to join the renewed WOVO under the IAVCEI’s umbrella? For visualizing the current (non-updated) WOVO member list, please connect to the IAVCEI website then, under the heading ‘Commissions’, see the link https://wovo.iavceivolcano.org

*What main values/benefits would you like to see from a rejuvenated WOVO? Please detail your response and list your top 3 priorities in terms of activities/services/products.

*In turn, what key contributions could your Observatory/Institution provide to the renewed WOVO in order to make it thrive? e.g., data streaming, local commitment of staff time to advance WOVO projects, secondment of staff to WOVO secretariat, contribution to renewing the WOVO webpage, an annual membership fee, other funding..?

*Which are the best ways for you to interact with the WOVO council and be informed of WOVO’s activities (e.g., email, digital team collaboration tool, video meetings, secondment of one or more from your staff to a WOVO project, etc..)?

*Planning a different organizational structure for WOVO, we will appreciate to know your opinion on the following ideas and how would you see your Observatory/Institution best represented.

The following moves are on the table:
  ■■ Changing the IAVCEI status of WOVO from a Commission (as it has existed until now) to a Network
  ■■ Making WOVO managed and coordinated by an elected, 4-yr rotating council composed of multidisciplinary representatives of VOs from the different regions of the world, with ONE clear leader sustained by IAVCEI and disposing of the minimal financial means needed to run the network’s activities
  ■■ Reinforcing WOVO with the products and recommendations from VOBP (Volcano Observatory Best Practice) workshops (Pallister et al., 2019), which represent an ideal venue for the personnel of VOs to discuss common issues and define shared practices for daily operations at the observatories
  ■■ Closely connecting the WOVO to regional volcanological Associations (e.g. ALVO, the Latin American Association of Volcanology; ACV, the Asian Consortium of Volcanology), as well as regional/international Research Infrastructures (e.g. UNAVCO, the University NAVSTAR Consortium for global GPS/GNSS data; EPOS, the European Plate Observing System; see references below)
**Interaction between volcanologists and the aviation community**

A renewed WOVO could serve as the umbrella organization under which consistent guidance could be developed for Volcano Observatories to fulfill their responsibility to ICAO in providing information on volcanic unrest and eruptive activity to their regional Volcanic Ash Advisory Centre (VAAC) and air traffic control centers. In addition, the WOVO could help provide support to VOs from VAACs and state meteorological agencies (i.e. satellite, radar, wind data) through collaboration with the World Meteorological Organization (WMO). Finally, WOVO could provide overarching justification for funding (such as cost recovery) the VOs in their service to provide information to aviation authorities (in particular as regards the release of VONAs).

*Is your Institution officially mandated by ICAO (International Civil Aviation Organization), through the contracting state, to provide information regarding volcanic activity and to support the operational procedures contained in the “Handbook on the International Airways Volcano Watch (IAVW)”?*

*Will you be interested in the international support provided by a renewed WOVO?*

*Is there any other current or upcoming initiative that you would add?*

---

**WOVOdat**

Created in relation with WOVO, **WOVOdat is a comprehensive global database on volcanic unrest**, open to all, aimed at understanding pre-eruptive processes and improving eruption forecasts. You can access it through the IAVCEI website then the WOVO webpage, at https://www.wovodat.org. Since 2009 it has been hosted and developed at the Earth Observatory of Singapore (see ref. below). Several Volcano Observatories regularly share their observational/monitoring data into WOVOdat and, reciprocally, benefit from regular access to databases in WOVOdat.

Moreover, WOVOdat now includes **GVMID**, the Global Volcano Monitoring Infrastructure Database, that is aimed at documenting and improving the capabilities in monitoring volcanoes from the ground and space (https://wovodat.org/gvmid/home.php). GVMID provides a snapshot and baseline view of the techniques and instrumentation that are in place at various volcanoes, which can be used by volcano observatories as reference to setup new monitoring system or improving networks at a specific volcano. These data will allow identification of what monitoring gaps exist, which can be then targeted by remote sensing infrastructure and future instrumentation deployments.

*As a current or new member of WOVO, would your Observatory be interested in benefiting from and sharing information/data with WOVOdat and GVMID?*

---

**Assistance in case of major volcanic emergency**

Temporary reinforcement, upon request, of a volcano observatory in case of major volcanic emergency is one of the initial aims of the WOVO. To get an idea, we would appreciate to know your preference in case your local Observatory would face a major volcanic emergency and would need a help from foreign colleagues: would you prefer to call a) just one or a few individuals you already know, b) a national team from any one country (e.g. VDAP), or c) an international team organized by IAVCEI/WOVO?

Also, within the WOVO framework or, at least, with the WOVO support, would your Observatory/Institute be interested in the possibility of planned anticipated access to facilities (e.g. analytical platforms, satellite image processing, machine learning services, etc.) that may not be available locally and could be needed during volcano emergency?

*If you agree to support the efforts of IAVCEI for the WOVO renewal, will you be interested in participating/contributing to an online IAVCEI/WOVO meeting dedicated to this project within the next 6 months?*

---

*Other questions or comments about WOVO you would like to share with us?
References

**WOVOdat**
- President column 2021-3 final revised.docx http://www.sciencedirect.com/science/article/pii/S0377027317302718
- Contribution to the special issue "When data helps policy to address systemic risk" of the DPM journal as part of the UN Global Assessment Report on Disaster Risk Reduction (GAR19)

**VOBP**

**UNAVCO**
The UNAVCO Data Center handles data management tasks for GPS/GNSS data and products from thousands of globally distributed permanent stations and ten thousand globally distributed campaign sites (https://www.unavco.org). Real-time GPS/GNSS Data is available after first requesting an account by emailing rtgps@navco.org. See the Streaming GNSS Data Policy on real-time streaming data.

**EPOS**
EPOS, the European Plate Observing System, is a long-term plan to facilitate integrated use of data, data products, and facilities from distributed research infrastructures for solid Earth science in Europe (https://www.epos-eu.org). It will bring together Earth scientists, national research infrastructures, ICT (Information & Communication Technology) experts, decision makers, and public to develop new concepts and tools for accurate, durable, and sustainable answers to societal questions concerning geo-hazards and those geodynamic phenomena (including geo-resources) relevant to the environment and human welfare.

(sent to Volcano Observatories worldwide on the 1st of September 2021)