

Title: The Monts-Dore-Sancy stratovolcano, Massif Central, France

Leaders: Etienne **Médard** (etienne.medard@uca.fr), with Andrew **Harris**, Guillaume **Boudoire**, Laurent **Arbaret**, Nicolas **Cluzel**, Lucia **Gurioli et al.**

Financially responsible person: Audrey **Chazal** (audrey.chazal@uca.fr)

Summary: The Monts Dore volcanic complex comprises two deeply eroded stratovolcanoes: Guéry, active 3.1–1.5 Ma and Sancy, active 1.1–0.2 Ma. Glacial and fluvial erosion of the edifices has exposed a remarkable sequence and variety of deposits. Proximally, these include thick silicic lava flows, domes, lava lakes, hydrothermal systems, dykes, phreatomagmatic deposits, and block-and-ash flows. Distally, there are superb case type examples of ignimbrite and debris avalanche deposits, extending out to 40 km from the source. We also can witness the interaction of lava flow and paleotopography in the opening phase of construction of the stratovolcano, where deposits can be seen in direct contact with the basement. Renewed activity produced the youngest volcanoes of the Western European volcanic province, including Lake Pavin (6700 years). The site is also one of the best cheese production centres of France: that of St. Nectaire (DOC). This will be also sampled, along with fine wine to match the food as selected by one of the best “cavists” in France.



The summit of the Monts Dore stratovolcano viewed from the North and up the glacier-cut valley of the Dore which exposes so much of the interior of the edifice. Below, left, the dyke of the “Verrou” exposed in the heart of the edifice. Below, middle, thick columnar-jointed lava flows at Laval: witnesses of the opening phase of activity. Below, right, structures within an ignimbrite exposed in a St. Nectaire cheese cellar.

When: Post-conference, 5–11 July 2025

Start and finish locality: Clermont Ferrand train / bus station, and/or Aulnat airport

- Day 0** Saturday 5: Arrival
 Arrival: Transfer to hotel, ice-breaker, introduction.
- Day 1** Sunday 6: Interior of the volcano: overview, silicic lava, glacial interactions and dykes
 Includes: Moderate hike (15 km) through the core of the volcano to observe the most recent activity of the stratovolcano (up to 200 ka), volcanic morphologies, and morphologies created by Holocene glaciations
- Day 2** Monday 7: Interior of the volcano: silicic pyroclastics and hydrothermal features
 Includes: Proximal facies of the ignimbritic eruptions, silicic domes, hydrothermal features, volcano-sedimentary deposits
- Day 3:** Tuesday 8: Medial area: initial lava flows, ignimbrites, interaction with topography
 Includes: The “Grande Nappe de Ponces” ignimbrite, lava flow piles in the paleovalleys and old maar deposits
- Day 4:** Wednesday 9: Distal deposits: tephrostratigraphy, paleontology, and collapses
 Includes: Visit of the distal deposits at Perrier (~15 km from the eruptive center), interlayered with fluvial sediments. Debris avalanche deposits and lahars produced by multiple collapses. Discussion of the associated paleontological deposits
- Day 5:** Thursday 10: Youngest monogenetic volcanoes in mainland France
 Includes: Deposits of the Montcineyre/Montchal/Pavin monogenetic volcanoes (6700 years BP), associated degassing and thermomineral waters, and hazards
 Goodbye party and dinner.
- Day 6:** Friday 11: Departure
 Departure: From Clermont-Ferrand train/bus station or Aulnat airport
 (at the participants expense)

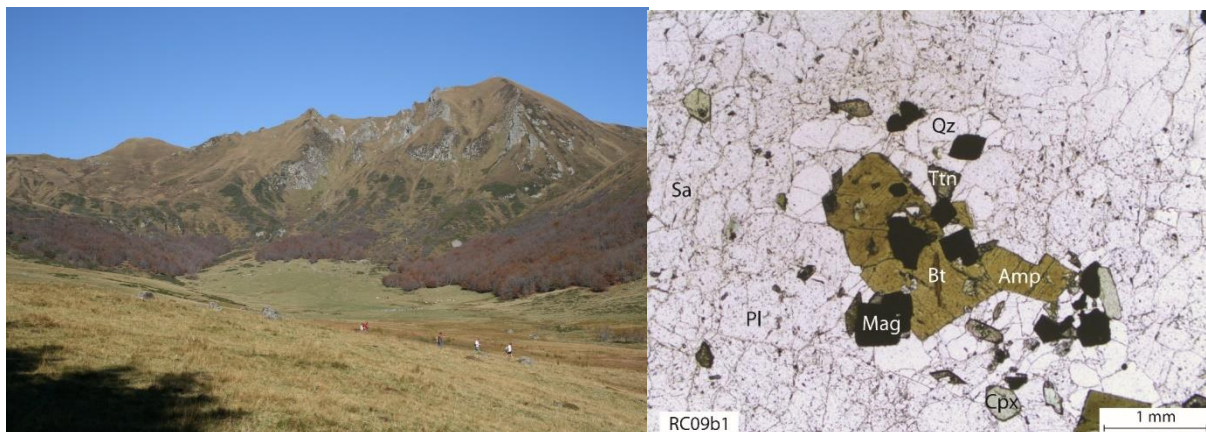
Level of fitness: Medium

Required equipment: Passport or ID-card (and/or visa) valid for travel to France.
 Hiking boots, wind and waterproof jackets, sun protection, daypack.

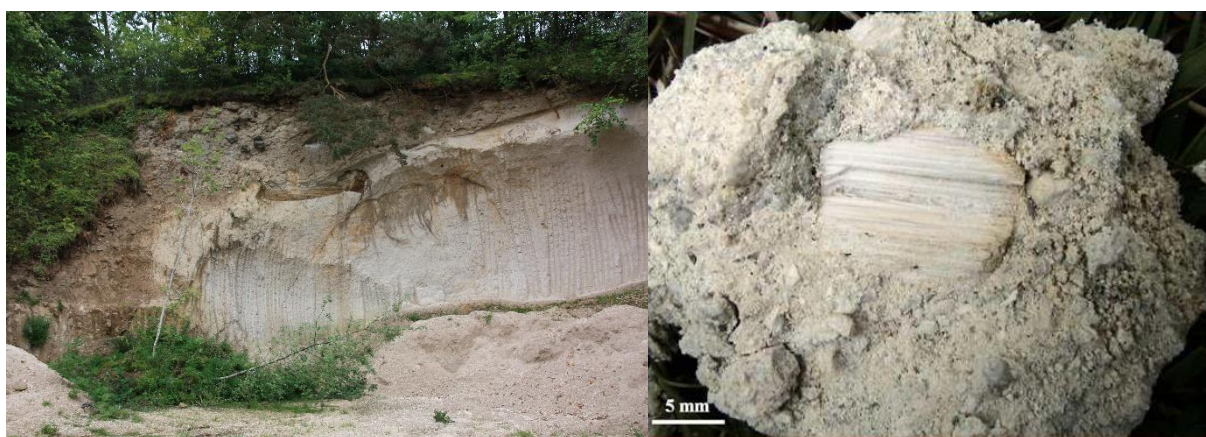
Accommodation type: Hostel-type accommodation still to be defined
 possibly Maison International at Clermont Ferrand or
 Archipel de Volcans, at St Genes Champanelle or ...
 Shared (twin) rooms with private bathroom (single room at extra cost)
 Breakfast included.

Number of participants: max 30

Cost: 400 €
 For transport from the hotel to field sites and entry fees,
 Accommodation with breakfast.
Travel to and from Clermont-Ferrand, and lunch / dinner not included



Day 1. Left: Puy de Sancy (1885 m) seen from one of the glacial valleys that surrounds the summit area. Right: youngest plutonic rock in mainland France at 278 ka, part of the last magma reservoir of the stratovolcano.



Day 2. Outcrop and hand sample of the main ignimbrite deposit – the “Grande Nappe de Ponces”.



Day 3. Basaltic lava flows from the effusive activity predating the main phases of the stratovolcano, including spheroidal weathering lowermost flow in contact with ologocene sands on the left, and a tree mold at the base of one of the upper flows on the right.



Day 4. *Alternance of fall deposits, lahar and debris avalanche deposits and streambed sediments in the distal deposits at Perrier.*



Day 5. *Lac Pavin, the youngest volcano in mainland France (a maar) erupted 6700 years ago.*