Contact
Pierre-Yves Clausse
Communication
Institut de physique
du globe de Paris
+ 33 (0)6 51 67 84 83
clausse@ipgp.fr

Press release

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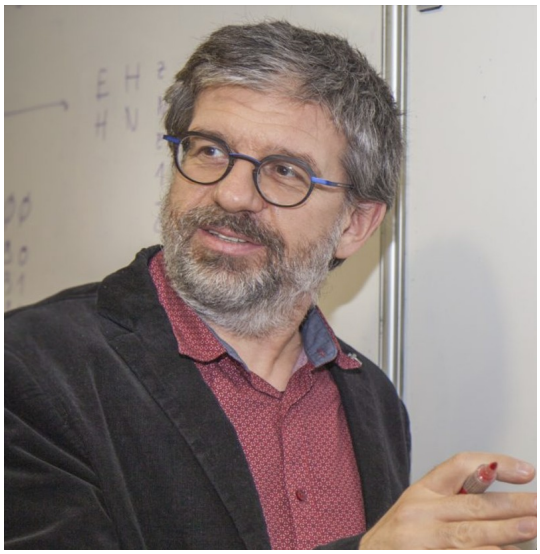
Three ERC advanced grants awarded to the IPGP: new advances in cosmochemistry and planetary sciences

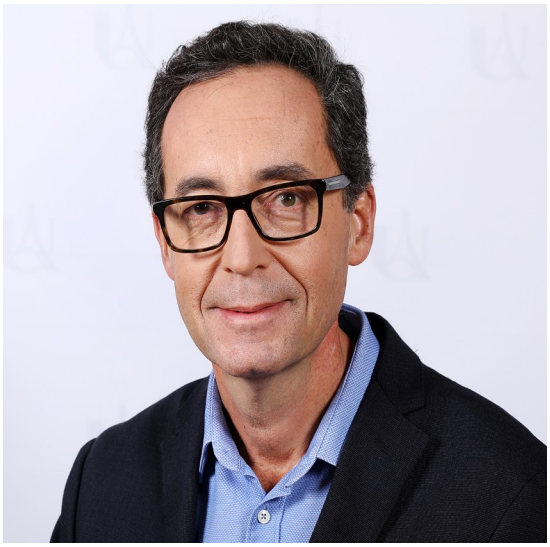
The Institut de physique du globe de Paris (IPGP) has just been awarded three advanced grants from the European Research Council (ERC) for projects led by Philippe Lognonné, Razvan Caracas, and Marc Chaussidon. These projects aim to deepen our understanding of the Moon's interior, Earth's early atmosphere, and the first solids formed in the solar system. The awarding of these prestigious grants highlights the quality and innovation of the research conducted by our teams.

Exploring the Moon through seismology and meteorite impacts

Philippe Lognonné, professor at Université Paris Cité, is leading the project *LISTEN FLASH*, in collaboration with Marco Delbo (Lagrange laboratory, CNRS, OCA) and an international team (France, USA, China, Japan, UK, Switzerland, Australia). After his work on Mars and the InSight mission, he now turns to the Moon. The project's goal is to detect the light flashes produced by meteorite impacts on the Moon's near side, using at least three telescopes deployed around the globe. These optical observations will be coupled with data from seismometers soon to be deployed on the Moon, including those from NASA's Farside Seismic Suite and Artemis-3 missions, as well as China's Chang'e-7 mission. This multi-messenger approach will shed new light on impact processes and the Moon's crustal structure, opening up fresh perspectives on our natural satellite.l.



Reconstructing Earth's primitive atmosphere
Razvan Caracas, CNRS senior researcher, is leading the *DAWN* project in collaboration with M. Turbet and F. Forget from the dynamic meteorology laboratory (Sorbonne Université) and L. Schaeffer from Stanford University. The project focuses on the Hadean era — the first 500 million years of Earth's history. By combining atomic-scale simulations with artificial intelligence, the team aims to reconstruct interactions between magma, the atmosphere, and interplanetary space. This research may provide crucial insights into the formation of Earth's early atmosphere and the conditions that enabled life to emerge on our planet.



Uncovering the origin of the first solids in the solar system
Marc Chaussidon, director of the IPGP and CNRS senior researcher, is leading the *DUST* project to investigate the physical and chemical processes that produced the first solids in the protosolar nebula. Through plasma experiments and cutting-edge analytical techniques, his team studies the reactions behind oxygen isotope fractionations that are independent of mass — features commonly observed in meteorites. These isotopic signatures serve as a thread that may help reconstruct the chain of reactions leading from nebular gas to the dust grains that eventually formed the first planets in our solar system.