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GEMSTONES AND MINERALS: FROM NATURE TO THE LABORATORY DEBUTS SUCCESSFULLY AT COMPLUTENSE UNIVERSITY OF MADRID

The Faculty of Geological Sciences at the Complutense University of Madrid (UCM) has successfully completed the first edition of the course “Gemstones and Minerals: From Nature to the Laboratory,” a specialized training program focused on gemmology and mineral identification.

The program introduced participants to the fundamentals of gemmology through a combination of theoretical lectures and hands-on laboratory sessions. Topics included the physical and optical properties of gemstones, inclusions, mineral identification techniques, treatments, and synthetic gems, as well as the geological origin and formation of gem materials.

One of the main strengths of the course was its practical approach. Participants worked directly with gemmological instruments and the gemmological collection of the Crystallography and Mineralogy Department, which includes more than 800 specimens, learning how to identify and characterize gemstones using professional methodologies commonly employed in gemmological and mineralogical studies (FIG. 1).



FIGURE 1 **LEFT:** cracked and dyed quartz marketed as an imitation ruby. The artificial coloration penetrates the fracture network generated in the quartz, producing an intense red appearance that mimics natural corundum. **RIGHT:** natural emerald showing characteristic internal inclusions commonly referred to as a *jardin*, one of the most distinctive features used in the identification of natural emeralds.

The course brought together participants from diverse backgrounds, including university students, geology enthusiasts, collectors, and professionals interested in gemmology and mineral sciences. The high level of engagement throughout the sessions, together with the very positive feedback received from attendees, highlighted the growing public interest in mineralogy and gemstones beyond the academic environment.

Given the success of this first edition, a new edition of the course will be offered during the next academic year, continuing to promote outreach and specialized training in gemmology and mineral sciences.

Nuria Sánchez-Pastor

Course Director

Complutense University of Madrid (UCM)

YOUNG CRYSTAL GROWERS GATHER AT COMPLUTENSE UNIVERSITY FOR THE XI EDITION OF CRYSTALLIZATION IN SCHOOL

On May 8th, the Faculty of Geological Sciences at the Complutense University of Madrid (UCM) hosted the final of the XI Edition of the *Crystallization in School* Contest in the Madrid region, an educational



FIGURE 2 Group photograph of the Final held at the Faculty of Geological Sciences (UCM). The photograph includes the organizers, jury members, invited speaker, and academic authorities attending the event. The student volunteers who collaborated in the organization of the competition are in the front row wearing blue vests. PHOTO: ROBERTO BLANCO ZAMORA (RBZ AUDIOVISUAL).

outreach initiative that introduces secondary and high school students to crystallography, chemistry, and geology through hands-on experimental science.

The contest, jointly organized by UCM and UAM, began in September 2025 with the participation of 55 secondary schools from Madrid and neighbouring provinces, including Guadalajara and Toledo. After several months of experimental work carried out in classrooms and laboratories, 36 finalist teams were selected to present their crystal-growth projects, scientific posters, and laboratory notebooks during the final event held at UCM (FIG. 2).

Throughout the day, students presented and defended their projects before panels composed of university professors and researchers from different scientific disciplines. The high scientific quality and creativity of the projects made the evaluation process particularly challenging, leading the jury to award not only first, second, and third prizes, but also two honorary mentions.

The winning schools were (FIG. 3):

FIRST PRIZE: IES Antonio Machado – “Fragments of Emotion”

SECOND PRIZE: IES Calderón de la Barca – “Vitruviana”

THIRD PRIZE: Colegio Miramadrid – “Luminescent Crystals”

HONORABLE MENTION: IES Cardenal Cisneros – “Crystallizing ADP”

HONORABLE MENTION: Colegio Educare Torretilano – “Between Crystals and Wines”



FIGURE 3 Scientific posters and crystal-growth experiments presented by the award-winning teams during the final of the XI Edition of the *Crystallization in School* Contest. PHOTO: ROBERTO BLANCO ZAMORA (RBZ AUDIOVISUAL).

The event also featured an invited lecture by IGME-CSIC geologist Raúl Pérez López entitled “*Star Wars: Shooting a Laser at an Active Volcano*,” which attracted great interest among both students and teachers.

One of the most remarkable aspects of this edition was the enthusiastic participation of undergraduate and graduate student volunteers from UCM and UAM, who contributed to the organization and development of the final event. The contest was coordinated by Sol López, Victoria López-Acevedo, Carlos Pérez, and Nuria Sánchez (UCM), together with Paloma Martínez, Josefina Perles, Isidoro Poveda, and Mario Ramírez (UAM).

Over the years, *Crystallization in School* has become one of the most successful educational outreach activities in the Madrid region, combining science, creativity, and experimental learning to foster interest in science careers among pre-university students. Beyond teaching the fundamentals of crystallography and crystal growth, the contest promotes teamwork, scientific communication, and critical thinking skills.

Nuria Sánchez-Pastor

SEM MEMBERS TAKE PART IN CLAY 2027 IN MADRID, SPAIN, 20–26 JUNE

In the field of mineralogy in Spain, and particularly in clay science, there has always been a close relationship between the Spanish Mineralogical Society (SEM) and the Spanish Clay Society (SEA). This connection is reflected in the fact that joint meetings are typically held every four years, as many SEM members are also members of SEA. It is also worth noting that the current president of AIPEA is a highly respected member of SEM.

The organization for the CLAY 2027 Conference in Madrid and the launch of the Call for Sessions are now live. The conference website is now available at <https://clay.aipea.org/>. It already provides key preliminary information about the conference. Visitors can consult the main features of the venue, located at the Campus of Excellence of the Universidad Autónoma de Madrid (UAM) and the Consejo Superior de Investigaciones Científicas (CSIC).

We hope that the conference will contribute to advancing clay science and to strengthening our commitment to the sustainability of the planet. The regulatory role of the clays we study, stemming from their natural intelligence, is key to conceiving and building a viable future with the well-being of all living beings on Earth in mind.

For any questions regarding CLAY 2027, please contact: tecsec.clay@aipea.org.

THE PRIMAL WONDER OF MINERALOGY: WHY A CHILD'S FACE LIGHTS UP BEHIND A CRYSTAL

For nearly two decades, MACLA magazine, published by the Spanish Mineralogical Society (SEM), has demonstrated that Earth sciences do not belong only in laboratories. Through its pages, a fundamental space for scientific dissemination has been consolidated, transforming academic rigor into an accessible language that connects geology with education, art, and our own cultural identity.

The analysis of its trajectory reveals a constant evolution in strategies to bring this heritage closer to the general public. History and science coexist within its pages, as demonstrated by Juan Manuel García-Ruiz (MacLA 27, 2023) in his lecture on *The power of crystals: their origin and impact on our culture*, where he analyzes the deep human fascination with crystalline structures. This pedagogical vocation of Dr. García Ruiz connects with the deepest roots of our evolution.

From the SEM, we highlight a groundbreaking study that bridges the gap between mineralogy, evolutionary biology, and psychology. Led by García-Ruiz (SEM member and crystallographer at the Donostia International Physics Center) and published in *Frontiers in Psychology*, the research reveals that our obsession with crystals is an ancient trait we share with our closest living relatives: chimpanzees (<https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2026.1633599/full>).

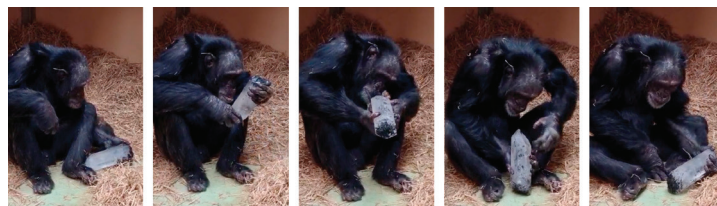


FIGURE 4 A chimpanzee examining a quartz crystal ('The Monolith') from different perspectives, looking through it to evaluate its transparency and geometric faces.

The study, conducted at the Rainfer Fundación Chimpatía primate rescue facility, yielded remarkable behavioral insights, being mentioned at Smithsonian Magazine and the New York Times (links below). When presented with a large quartz crystal—dubbed “The Monolith” by researchers—and a plain sandstone block, the primates overwhelmingly focused on the crystal. An alpha female named Manuela claimed it for her troop, while an older male named Yvan spent over 15 minutes inspecting the stone (FIG. 4). Another chimp, Sandy, demonstrated an amazing ability to sort quartz, calcite, and pyrite out of ordinary pebble piles using her mouth.

“We now know that we’ve had crystals in our minds for at least six million years,” explains García-Ruiz. This suggests that the attraction to regular Euclidean shapes, luster, and transparency transcends human history and dates back to our last common ancestor.

For those of us at the SEM who have spent decades teaching mineralogy to children, these findings resonate on a deeply personal level. There is an indescribable, rewarding magic in watching a child’s face light up when they hold a crystal for the first time. This study scientifically confirms what we witness in classrooms every day: our attraction to minerals is not just academic; it is an innate, primal wonder.

Mineralogy education is a uniquely powerful tool. It transforms this evolutionary fascination into a gateway for scientific literacy, teaching children to look at the world with curiosity and analytical rigor. By understanding how minerals form, young minds connect with Earth’s history in a tangible way. Through its educational programs, the SEM remains dedicated to supporting this ancient biological spark, turning a six-million-year-old instinct into the scientific discoveries of tomorrow.

Related publications:

- <https://www.nytimes.com/2026/03/04/science/chimpanzees-crystals.html>
- <https://www.smithsonianmag.com/smart-news/chimps-seem-to-love-crystals-their-attraction-might-help-explain-humans-obsession-with-the-shimmering-stones-180988303/>
- <https://dailyneuron.com/why-we-like-crystals-ape-ancestors/>
- <https://www.youtube.com/watch?v=lyuNX2i5tZU>

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