

Nº 3

Tuesday, July 7



PHYSICS IN ACTION

THROUGH THE EYES OF PHYSICS

Host City: Bucaramanga, Santander, Colombia.

GOOD MORNING

explorers of Physics and

THE NATURAL WORLD!

As you open this morning's bulletin, the international community of **IPhO 2026** embarks on two missions that demand precision and perfect coordination. While you, the students, prepare early to board the buses bound for the historic gems of Santander—such as **Barichara** and **Girón**—your **Team Leaders** will spend the day in intensive closed-door academic sessions.

For the students, today your laboratory is the real world and the grandeur of the natural landscape. Today's itinerary invites you to enjoy guided walking tours and outdoor activities, making it the perfect opportunity to witness physics at work in everyday life. As you explore the cobblestone streets, admire the colonial architecture, and discover the breathtaking scenery of Santander, remember that every bridge, every building, every stone, and every landscape tells a story shaped by the laws of physics over time.

Enjoy the tropical sunshine, the fresh Andean air, and Colombia's warm hospitality with curious and open minds. Remember that the ability to observe your surroundings through an analytical lens—and to appreciate the tireless work your teachers are carrying out in parallel—is one of the true foundations upon which the global scientific community is built.

We wish success to both groups as you continue this remarkable day of exploration, discovery, and preparation.

IPhO 2026 Team – Colombia



EVENT SCHEDULE

DAY - 3

JULY 7TH: EXPERIMENTAL EXAMINATION



STUDENTS

07:00 - 09:00: Breakfast

09:00 - 10:00: Transfer to Mesa de los Santos

10:00 - 13:00: Visit to Panachi (Chicamocha National Park)

13:00 - 14:00: Lunch at Casa de Campo Club Campestre sponsored by Squarepoint

14:00 - 18:30: Recreational activities at Casa de Campo

18:30 - 19:30: Transfer to assigned hotels

19:30 - 21:00: Dinner

21:00 - 23:00: Free time

LEADERS

07:00 - 09:00: Breakfast

09:00 - 12:00: Discussion Session

12:00 - 14:00: Lunch

14:00 - 16:00: Discussion Session

16:00 - 16:30: Coffee Break

16:30 - 19:00: Discussion Session

19:00 - 21:00: Dinner

21:00 - 23:00: Discussion Session

OBSERVERS

07:00 - 08:00: Breakfast

08:30 - 09:00: Transfer to Holiday Inn Hotel

09:00 - 12:00: Discussion Session

13:00 - 14:00: Lunch

14:00 - 16:00: Discussion Session

16:30: Coffee Break

18:30 - 19:00: Discussion Session

19:30 - 21:00: Dinner

21:00 - 23:00: Discussion Session

23:30: Transfer to Dann Carlton Hotel

EXPERIMENTAL STUDENT TEST

The main challenge has begun. All the effort from months of training, committed guides and late night working for the markers made this possible. From early in the morning, the delegations were ready for their first trial. While the teams were being organized to enter, Neomundo's environment was filled with tension and nervousness but a lot of excitement and union between cultures as well. They shared some words for future participants: "it is scary but go for it".



CHICAMOCHA AND BARICHARA CHRONICLE: LEADERS AND OBSERVERS

Simultaneously, the teachers and other visitors had the opportunity to explore Colombia, specifically one of Santander's most iconic routes with a visit to the Chicamocha Canyon, Chicamocha National Park (Panachi) and the famous town of Barichara. This journey offered a different kind of experience allowing them to enjoy a landscape shaped by time, gravity, geology and the interaction between nature and human history.

At the Chicamocha Canyon and Panachi, visitors encountered the scale and beauty from The Andes Mountains and its fellow, the Sogamoso River. Later, in Barichara, the route continued through cobblestone streets and colonial architecture in a town full of charm and history. Walking through its streets, they encountered a place where history, craftsmanship, architecture, and local identity remain connected. And that's how

they were able to appreciate one of the towns that inspired the Disney movie: Encanto.

The excursion gave participants a chance to see another side of Colombia and for a few hours, the IPhO community exchanged laboratories and physics for mountains, culture and enjoyment.



FORMER IPHO OLYMPIANS



PhD. Fritz A Campo

PhD. Fritz A Campo is a physicist, mechanical engineer, and PhD expert in space structures and advanced materials. He worked at General Electric, where he designed world-record-scale wind turbine components, and later at SpaceX, where he was responsible for the structural integrity and reusability of the Dragon spacecraft components used by NASA astronauts.

"The Physics Olympiads were my first path toward structured knowledge. My curiosity had always been driven by trying to understand how things worked: how objects move, how capacitors charge, and even how satellites accelerate when passing near Jupiter or the Moon. That last idea became the problem I enjoyed most at the International Physics Olympiad in Padua, Italy.

After the Olympiads, I studied Mechanical Engineering and Physics at Universidad de los Andes, where I also completed my Master's degree and helped build the faculty's first Spark Plasma Sintering reactor. That path led me into composite materials, structural modeling, and fractals, the topic of my PhD, where I worked on simulations capable of representing billions of particles. From there, I moved into the design, manufacturing, and testing of some of the largest wind turbine blades in the world.

Later, at SpaceX, I worked on Dragon capsule components, including the thermal protection system, evaluating and improving parts of the spacecraft that carried astronauts to and from space. Now, my work focuses on technologies for the next generation of space science: supercomputers designed to operate under radiation, a 1000-megapixel camera installed on the International Space Station, and future telescopes such as Lazuli, aimed at studying black holes, gravitational waves, and the limits of what we can understand about the universe."

PhD. Alejandro Gómez

"I participated in the Physics Olympiads from 1996 to 1999, including the National Physics Olympiads, where I earned medals at the Pan-American Physics Olympiads and represented Colombia at the International Physics Olympiad in Padua, Italy.

Beyond the wonderful memories I have from those years, the Olympiads opened many doors for me and played a crucial role in my personal and professional development.

Taking part in the Olympiads gave me an intuitive understanding of physical principles, something that continues to guide me in my work as an engineer to this day. I went on to study Mechanical Engineering and later earned a Ph.D. specializing in Aerodynamics and Aeroelasticity.

Today, I serve as Chief Engineer of the Aerodynamics Department at Siemens Gamesa in Denmark, a company that designs and manufactures both onshore and offshore wind turbines.

The strong theoretical foundation in physics that has been essential throughout my career was built during my years in the Olympiad program, thanks to the outstanding teachers and mentors of the Colombian Physics Olympiads."

— **Ph.D. Alejandro Gómez, Former Physics Olympiad Participant**





The Pierre Auger Observatory: Listening to the Universe's Most Energetic Messengers NICOLAS LEAL AMIGA - Auger Muons and Infill for the Ground Array PIERRE AUGER OBSERVATORY

Conference: july 10 11:00 Am a 11:45 Am

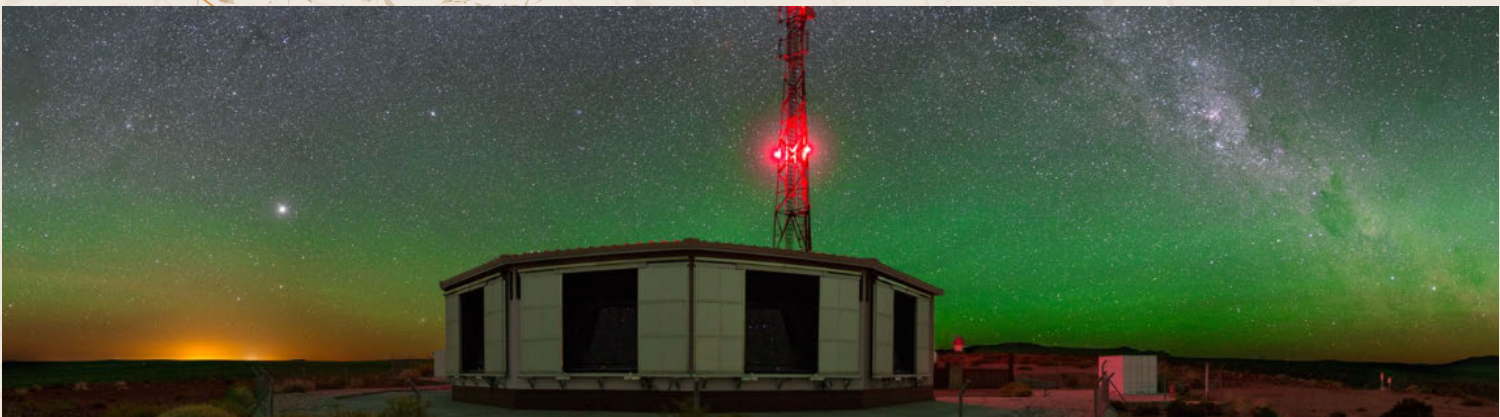
He currently serves as the Site Manager of the Observatory in Malargüe, Mendoza, leading the infrastructure and technical operations of this world-class international experiment.

In the academic and educational fields, he teaches at the Faculty of Exact and Natural Sciences. Furthermore, he is committed to global scientific outreach, actively coordinating and participating in the Pierre Auger International Masterclasses in partnership with the International Particle Physics Outreach Group (IPPOG), bringing frontier physics closer to students worldwide.

Graduated as an Electromechanical Engineer in 2014 from the Universidad Tecnológica Nacional (UTN), Eng. Nicolás Leal has a distinguished career in engineering applied to high-energy astroparticle physics. As a long-standing collaborator of the Pierre Auger Project, he has been the lead responsible for the design, construction, assembly, installation, and operation of the underground muon detectors (UMD), a critical technological component for studying the most energetic cosmic rays in the universe.

The Pierre Auger Observatory: Listening to the Universe's Most Energetic Messengers:

The Pierre Auger Observatory is the world's largest cosmic-ray detector, spanning 3,000 km² in Argentina. Operated by a global collaboration of 18 countries, it has spent over 20 years measuring nature's highest-energy particles to address three central questions: what accelerates them, where do they come from, and what are they? Auger focuses on fundamental physics, tracking these extreme particles and atmospheric electrical events. This talk introduces the observatory's hybrid technology, key scientific milestones, and the multi-messenger era, offering an invitation to the next generation of physicists at IPHO 2026.



DID YOU KNOW...?

July 7, 1887 – The Michelson–Morley Experiment Begins

On July 7, 1887, one of the most influential experiments in the history of physics began. On that day, physicists **Albert A. Michelson** and **Edward W. Morley** started the measurements for their famous interferometer experiment, designed to detect the existence of the hypothetical **luminiferous ether**, which was then believed to be the medium through which light propagated.

HAPPY BIRTHDAY

July 7

• **Mohammed Al-Mamari**
Oman – Student

• **Victoria Samantha Troncoso Torrico**
Bolivia – Student



WORD SEARCH PUZZLE

The words can be hidden horizontally, vertically, or diagonally.

GAYLUSSAC
THERMODYNAMICS
GASES
METROLOGY
UNCERTAINTY
CALIBRATION
PRESSURE
VOLUME
TEMPERATURE
MANOMETER
SENSOR
REGRESSION

N	C	Q	Y	V	O	L	U	M	E	I	F	L	W
Q	C	A	S	S	U	L	Y	A	G	Y	V	X	E
H	P	X	N	O	I	T	A	R	B	I	L	A	C
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U	E	P	R	E	S	S	U	R	E	A	Z	D	H
B	X	Y	T	N	I	A	T	R	E	C	N	U	X
U	M	A	N	O	M	E	T	E	R	P	E	B	X
F	O	O	L	Y	G	O	L	O	R	T	E	M	E
B	H	S	N	O	I	S	S	E	R	G	E	R	B
R	S	E	S	A	G	S	Q	U	Q	M	B	R	P
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S	I	I	A	U	R	O	S	N	E	S	V	K	A

PHOTO GALLERY

Olympiads and tourism, in Santander



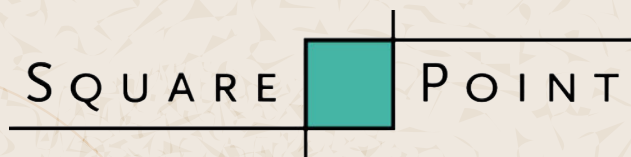
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