

Nº 2

Monday, July 6



PHYSICS IN ACTION

IPOH HAS OFFICIALLY BEGUN



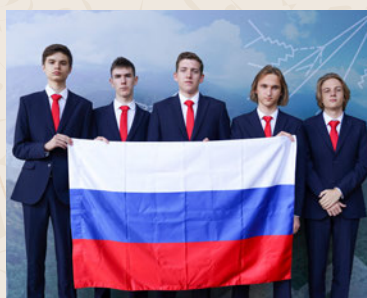
Host City: Bucaramanga, Santander, Colombia.

GOOD MORNING!

The sun rises over the Andes Mountains, and with it comes a day of direct contact with the material world. Today's agenda is highly technical: we begin early with strict entry to the laboratories, the inspection of the instruments, and the start of the five continuous hours of the IPhO 2026 Experimental Exam. Upon receiving this bulletin, your minds should be attuned to a level of absolute concentration. Tackling an experimental challenge demands patience, rigorous control of variables, and the analytical skills to interpret what the readings tell us in real time. We know that the leaders will be more anxious than their students, but stay calm; that's what they trained the best for.

You are in Santander, a region of Colombia where the terrain constantly defies gravity; likewise, your manual and logical skills will challenge the uncertainties of the measurements today. Trust in your months of laboratory training, take a deep breath, and take control of your workbenches. The physical world awaits your measurements today!

IPhO 2026 Team – Colombia



THIS IS HOW THE INAUGURATION WAS EXPERIENCED

The Opening Ceremony of IPhO 2026 was also a moment to recognize the institutional and international support behind the 56th International Physics Olympiad. Among the special guests were representatives of the Government of Santander, leaders from Universidad Antonio Nariño, including Dr. Mary Falk de Losada, and the President of the IPhO, Prof. Rajdeep Singh Rawat.

On behalf of the Governor of Santander, a regional representative addressed the delegations with words of encouragement

for the competition and reaffirmed that Bucaramanga is prepared to welcome participants from around the world. The message highlighted the city's readiness, hospitality, and commitment to hosting an event of global scientific importance.

Prof. Rajdeep Singh Rawat, President of the IPhO, then delivered a speech that connected Colombia's scientific legacy with the future of the young participants gathered at Neomundo. He reflected on the trajectory of physics in Colombia and some of its most relevant scientific figures, while also inviting students to imagine the many paths ahead of them as physicists, entrepreneurs, teachers, engineers, and future contributors to major scientific challenges.

EVENT SCHEDULE

DAY - 2

JULY 6TH: EXPERIMENTAL EXAMINATION



STUDENTS

- 07:00 - 08:00:** Breakfast
- 08:00 - 09:00:** Transfer to Neomundo Convention Center
- 09:00 - 14:00:** Experimental Exam
- 14:00 - 15:00:** Return to hotels
- 15:00 - 16:00:** Lunch
- 16:00 - 20:00:** Free time
- 20:00 - 22:00:** Dinner
- 22:00 - 23:00:** Free time

LEADERS

- 08:00 - 09:00:** Breakfast
- 09:00 - 12:00:** Visit to Chicamocha Canyon
- 12:00 - 14:00:** Lunch at Hotel Terra
- 14:00 - 18:00:** Cultural visit to Barichara
- 18:00 - 20:00:** Transfer to dinner venue
- 20:00 - 22:00:** Dinner at Chiflas Restaurant
- 22:00 - 23:00:** Return to hotel

OBSERVERS

- 08:00 - 09:00:** Breakfast
- 09:30 - 12:00:** Visit to Chicamocha Canyon
- 12:00 - 14:00:** Lunch at Terra Hotel
- 14:00 - 18:00:** Cultural visit to Barichara
- 18:00 - 20:00:** Transfer to dinner
- 20:00 - 22:00:** Dinner at Chiflas Restaurant
- 22:00 - 23:00:** Return to hotel



MARTA LOSADA

Associate Vice Chancellor for Global Research and Senior Vice Provost for Research ; Professor of Physics; Global Network Professor of Physics

Affiliation: NYU Abu Dhabi

Education: BSc Physics, Universidad Nacional de Colombia; MSc, Physics, Universidad Nacional de Colombia; PhD, Physics, Rutgers University; Postdoctoral Fellow, CERN Theory Division

Conferencia: July 10 9:00 A.m a 9:45 Am

Marta Losada Falk is a world-class theoretical physicist and academic leader, renowned for her impact on high-energy physics and the transformation of higher education. Holding a PhD from Rutgers University, her scientific career is highlighted by her research on Higgs boson phenomenology and supersymmetry, as well as a historic milestone: leading Colombia's integration into the ATLAS experiment at CERN. During her distinguished tenure at Universidad Antonio Nariño, where she served as both Dean and President, she spearheaded elite research initiatives and the internationalization of the Colombian

scientific system. Her international prestige and strategic management expertise led to her current appointment as Dean of Science at New York University Abu Dhabi (NYUAD), where she oversees ambitious scientific projects within a global environment of excellence. A tireless advocate for equity in STEM fields, Losada Falk continues to serve as an essential bridge between Latin American science and the global scientific community, consolidating a legacy of academic rigor, transnational cooperation, and institutional leadership that inspires new generations of researchers worldwide.

IPHO 2026 ACADEMIC COMMITTEE

Eduardo Zalamea Godoy

Involved with the IPhO since 1992, I was a physics professor at the National University of Colombia, earning the "Exceptional Teacher" and "Best Professor" awards. My greatest life satisfaction has been preparing physics Olympiad students for over 30 years and greeting former participants in many different parts of the world.

Fernando Vega

A master's degree holder and director of the Colombian Physics Olympiad, he has led international delegations for nearly 40 years. The author of several books on Olympiad problems, he was the main driving force behind the first Ibero-American Physics Olympiad, helping to strengthen science education for young people in the country and the region.

Gustavo Cipagauta

Physicist, Master's degree in Physics, and Ph.D. candidate in Mathematics at the National University of Colombia. He has been a university professor at Javeriana University and the Military University. Since 2007, he has served as a coach for the Colombian Science and Physics Olympiads and as co-leader of the national teams at IJSO, IPhO, and OIbF.

Cristian Goez Therán

Mathematician, Physicist, and Master in Meteorology, professor at Universidad Antonio Nariño (UAN), and director of the Colombian Astronomy Olympiads. He is an author and specialist in space weather, astrometeorology, and astrotourism, with an outstanding track record in scientific outreach and project management.

Miguel Árbelaez

A physics student and researcher at the National University and CRAFT (Brazil), he was named one of the “70 Leaders for the Future” by Forbes Colombia. A standout at international science olympiads (IPhO and EuPhO), he has received awards in structural biology and is the youngest speaker at the LAFMAT seminar.

Juan Sebastián Valbuena-Bermúdez

A Colombian theoretical physicist and postdoctoral researcher at IFAE (Barcelona). A recipient of the Juan de la Cierva Fellowship and the LMU-Munich Doctoral Award, he conducts research on the cosmology of the early universe, dark matter, and topological defects, having completed his Ph.D. under the guidance of renowned physicist Gia Dvali.

David Berenstein

David Berenstein is a Colombian theoretical physicist and professor at the University of California at Santa Barbara. He got his PhD from the University of Texas, Austin in 1998. He works on quantum field theory, string theory and mathematical physics.



Science in the Andes: The Pioneering Physics and Astronomy of Francisco José de Caldas by Cristian Goez Therán - Director of the Colombian Astronomy Olympiad - Colombian Olympiads Office

Astronomy in Colombia was not born as a contemplative exercise, but as a frontier physics: a mathematical struggle to master a wild territory through the light of the stars. At the epicenter of this epic quest stands Francisco José de Caldas (1768–1816), a self-made scientist who transformed colonial isolation into a creative advantage, becoming the pioneer of astronomy and experimental physics on the continent.

In 1805, Caldas assumed the directorship of the Astronomical Observatory of Santafé, the first institutional observatory built in Spanish America. There, astronomy and physics merged under his gaze. He understood that the Andean atmosphere distorted starlight, which led him to study the physical laws of refraction and atmospheric pressure. Lacking European tools, Caldas invented the hypsometer, discovering that the physics of boiling water could be used to calculate the altitude of mountains. His nights were spent measuring the transit of stars and the satellites of Jupiter, not out of mysticism, but to establish the real coordinates of a nation that was just awakening. His execution by firing squad in 1816 silenced the scientist, but left behind an immutable truth: a country's sovereignty begins with the scientific conquest of its own skies.



TESTIMONY

"I can honestly say that the Physics Olympiads changed my life. From my very first day at university, I knew I wanted to study Physics. However, my parents were concerned about my future career prospects, so we reached a compromise: I would first study Engineering and then pursue Physics as a double major.

That is exactly what I did. I enrolled in Electronic Engineering because it was the only engineering program that included four physics courses. After completing my engineering degree, I began my double major in Physics, and that was when I truly felt I had found my place. I was finally surrounded by people who shared my curiosity and sense of wonder about the natural world.

Later, I earned a Master's degree in Physics at Universidad de los Andes with a graduate assistantship.

My next goal was to pursue a Ph.D. in Physics Education. I was determined to teach physics in a way that was exciting, engaging, and highly experimental. I had never forgotten the beautiful experiments we carried out during the Olympiads, while at university we had very few opportunities to experience that kind of hands-on learning.

For the past 18 years, I have been teaching Physics within the International Baccalaureate programme. I currently serve as the Principal Examiner for the Spanish-language Middle Years Programme (MYP) Physics examination, I was part of the team that developed the exams for two years, and I was awarded a scholarship to attend CERN's Physics Teachers Programme.

Today, I dedicate my life to teaching Physics, and it is the source of my daily joy."

— **Ph.D. Sonia Castro, Former Physics Olympiad Participant**

TESTIMONY OF THE PRESIDENT OF IPHO

"Science is not only about what happens in equations and instruments, but it also begins with careful attention in looking at the heavens, and recognizing patterns and asking the world why the world is order to be this"

"To our student participants, you have already accomplished something remarkable by being over here. [...] But whatever path you take, the most important thing you carry is not only your knowledge, but the way how you see your things. Physics teaches patience, it teaches honesty, it teaches humility before nature, and confidence before difficulties."



DID YOU KNOW...?

July 6, 1854 – Georg Simon Ohm Passes Away

On July 6, 1854, Georg Simon Ohm, the German physicist who formulated Ohm's Law, passed away. His work established the relationship between voltage, current, and resistance, laying the foundation for the study of electric circuits and for modern electrical engineering and electronics.

Today, the SI unit of electrical resistance is named the ohm (Ω) in honor of his outstanding contribution to science.

NOBEL PRIZES IN PHYSICS

- **EINSTEIN (Albert Einstein)** – Nobel Prize in Physics in 1921 (for the photoelectric effect).
- **BOHR (Niels Bohr)** – Nobel Prize in Physics in 1922 (for atomic structure).
- **FEYNMAN (Richard Feynman)** – Nobel Prize in Physics in 1965 (for quantum electrodynamics).
- **PLANCK (Max Planck)** – Nobel Prize in Physics in 1918 (for the discovery of quanta of energy).
- **CURIE (Marie Curie)** – Nobel Prize in Physics in 1903 (for radioactivity). Note: She also won the Nobel Prize in Chemistry in 1911, but her Physics prize is fully credited.
- **SCHRODINGER (Erwin Schrödinger)** – Nobel Prize in Physics in 1933 (for the wave equation).
- **HEISENBERG (Werner Heisenberg)** – Nobel Prize in Physics in 1932 (for the development of quantum mechanics).
- **FERMI (Enrico Fermi)** – Nobel Prize in Physics in 1938 (for neutron-induced nuclear reactions).
- **LANDAU (Lev Landau)** – Nobel Prize in Physics in 1962 (for his theories of condensed matter, especially liquid helium).
- **CHADWICK (James Chadwick)** – Nobel Prize in Physics in 1935 (for the discovery of the neutron).
- **HIGGS (Peter Higgs)** – Nobel Prize in Physics in 2013 (for the Higgs boson mechanism).
- **ROENTGEN (Wilhelm Röntgen)** – Nobel Prize in Physics in 1901 (the first Nobel Prize in Physics in history, for X-rays).
- **PAULI (Wolfgang Pauli)** – Nobel Prize in Physics in 1945 (for the exclusion principle).
- **GEIM (Andre Geim)** – Nobel Prize in Physics in 2010 (for his pioneering experiments with graphene).

WORD SEARCH PUZZLE

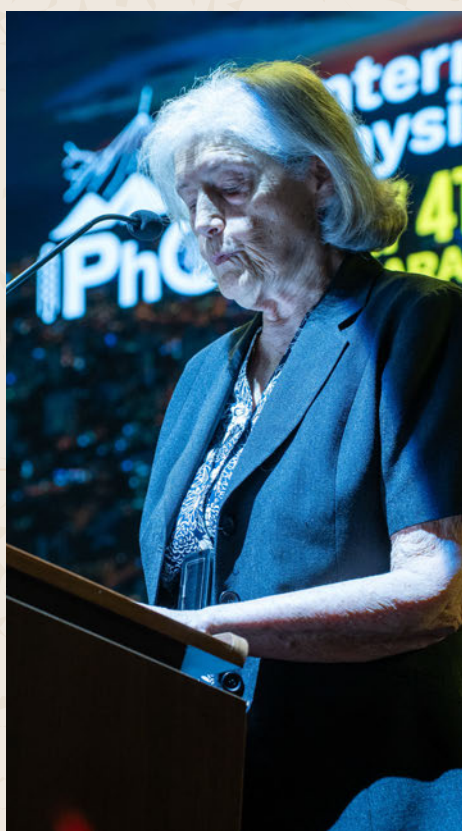
The words can be hidden horizontally, vertically, or diagonally.

EINSTEIN
BOHR
FEYNMAN
PLANCK
CURIE
SCHRODINGER
HEISENBERG
FERMI
LANDAU
CHADWICK
ROENTGEN
PAULI
GEIM

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

IPhO Opening Ceremony



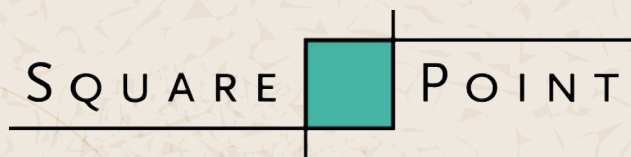
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Chancellor Mary Falk de Losada

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