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BUTSURI

ISSUE 3

Tuesday, July 11th

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Opening Ceremony of the 53rd International Physics Olympiad



The 53rd International Physics Olympiad (IPhO2023) opened with a bang! This is the first time in four years that the Games have been held face-to-face since IPhO2019 in Israel. Under a clear blue sky but intense heat, the 80 teams, as well as the Oly team of individuals, one guest team, and two observer countries, eagerly awaited the beginning of the opening ceremony. The opening ceremony began with a greeting by Prof. KOBAYASHI Makoto, Chair of the Organizing Committee of IPhO2023. After expressing a welcome to the face-to-face meeting and his gratitude for the support of the Japanese side, he emphasized the importance of science and technology in our daily life and encouraged the participants to know that advances in physics not only describe science but also have the potential to transform our perception of nature. Ms. NAGAOKA Keiko, Minister of Education, Culture, Sports, Science, and Technology gave a congratulatory address by mentioning that physics is the foundation for opening up new possibilities to address many of the problems facing our time and expressed her hope that contestants will use their skills to help lead a better world. The contestants then went up on the stage by country, holding their national flags and waving their hands to express their respective emotions and the joy of participating in the event. Finally, Prof. RAWAT Rajdeep Singh, President of the IPhO Secretariat, after welcoming all those involved in the opening ceremony for the first face-to-face meeting in four years, mentioned the deep relationship between science and cultures such as the Zen garden in the host country, Japan. He also sent us a message that the IPhO would be a useful opportunity for competition and the exchange of ideas and interaction with diverse people from various regions. The opening ceremony was followed by a Japanese drumming performance by International Christian University students and a karate performance by Sophia University students. The fascinating aspects of Japanese culture, such as the dynamic nature of stillness and movement, greatly impressed the participants. All in all, the opening ceremony was a great success.

Comments from Participants

Japan: IWASHITA Koki

I will do my best for IPhO2023. Though I am a little bit nervous, I would like to enjoy it and welcome everyone who have come to Japan. I have prepared well by solving problems that the committee members and professors provided to us and by studying hard also at home. I want to make friends with participants from different countries through international exchange.



Taiwan: CHANG Ya-Cheng

I have been to Japan when I was really really young. I am not really nervous today but I think I'll be a little bit more nervous tomorrow because the exam is coming close. My main purpose here is just to have fun and meet a lot of people who love physics. I hope I'm going to gain a lot of experience. All of us have prepared a lot for the competition.



Briefing on calculators to be used for examination



Board meeting

Making "Watoji" notebook



"Watoji" work done!



Indonesia: NAJA Muh. Zaidan

The opening ceremony was cool. It was interesting to learn about Japanese culture. I didn't know much before, but now I know about drum performance and karate. It was really cool. I liked it. I like Japanese culture, such as Pokemon, anime, drumming, and karate. I think it is a cool culture. Today, I'm going to the Pokemon Center, and I'm excited. I'm nervous about taking the exam tomorrow, but I have already prepared for a long time.



Norway: HE Zejia

I enjoyed the opening ceremony very much, especially the traditional performance I have never seen before. I also liked the occasion that a lot of contestants went up to the stage and had a chance to get to know each other. Since it is so hot outside today, we are not going out, but in the next few days, we definitely will. I don't know much about Japanese culture and hope to learn more this week.



Suriname: PURPERHART Nyuk-Shi

The opening ceremony was really fun. It was really energetic and nice. I really liked the drum performance, which was very very passionate. It looked fun when they were really hitting the drum. I had never seen that. The karate was also really good. It was really nice how you could see how strong the movements were. They made a lot of intimidating noises. Though I'm a little nervous about taking the exam tomorrow, I will try my best.



Qatar: AL-NAJJAR Khalid

The opening ceremony performance was great. I liked the second drum performance the most because it was the most fun and energetic. It has both music and dance aspects. It is very humid, but Qatar is also as humid as Japan all year.



Belgium: BARANI Kristina

The opening ceremony was very punctual. The speeches were very well written. The drum and karate performances were also very well executed. I really like the second drum dance. I did not know much about the drum, but the sound was very loud and coordinated. About tomorrow's competition, I hope the line for the breakfast will not be too long, so I will get to the test room on time. Also, I hope the experiment problems are not too challenging. We cross our fingers that everything will go well.



Serbia: TODOROVIĆ Sava

The opening ceremony was very well-organized, and actually it was the best-organized ceremony that I have ever been to. I really liked the performances, especially the acoustic drums. I think it shows the real Japanese culture. It was so nice. I feel excited to take the experiment exam tomorrow and I am wondering how well I will perform. I am so excited to see Tokyo. For me, it is the main part of this competition.



Cultural and Scientific Experience Events Today!

4 pm to 7 pm

Cultural Experience Corner
at International Exchange Bldg. 1F

Today's Japanese cultural events include the following:



Aikidō (Japanese Martial Art)
at 5th Gymnasium



Sadō (Japanese Tea Ceremony)
at Oka Tei



Shodō (Japanese style calligraphy)
at the Lounge area
near the International Conference Hall



Making of your own “**watoji**”
notebooks
at the Reception Hall



Japanese traditional games
at the Reception Hall.

“watoji” notebooks in traditional Japanese style will be memorial souvenirs!

Science and Technology Experience Corner
at International Conference Room

The Science and Technology Experience Corner offers opportunities for hands-on experience with cutting-edge technologies and/or amusing games based on scientific principles.

Do NOT miss the Corner!

Semiconductor Manufacturing
Technology Experience Corner



Tokyo Electron Limited

See physical
phenomena for yourself!



Nikon Corporation

Material analysis experience
using portable and
desktop analyzers



Rigaku Corporation

Hands-on vacuum
experiment show



ULVAC, Inc.

Brighten your summer
with curiosity!



CASIO COMPUTER
CO., LTD.

Integrated Gas System
Competition



Fujikin Incorporated

Experience the world
created by young talents
of various nationalities
and specialties

Masason Foundation

Masason Foundation

NGK SCIENCE SITE



NGK Insulators, Ltd.

Analyze the caffeine
content of
commercial beverages!



SHIMADZU CORPORATION

Symbols of Tokyo

If you ask what the symbol of Tokyo is, most people will probably say the Tokyo Skytree. Completed in 2012, the Tokyo Skytree is a 634-meter-high skyscraper radio tower located near Sensoji Temple in Asakusa. The Skytree has two observation decks, one 350 meters high and the other 450 meters high, offering panoramic views of the city of Tokyo and surrounding mountains including Mt. Fuji. We also recommend a visit to the shopping mall, restaurants, and entertainment facilities in the Tokyo Skytree.



Another symbol of Tokyo is the orange-colored Tokyo Tower, similar to the Eiffel Tower in Paris. Completed in 1958, the 333-meter-high radio tower was the tallest structure in Japan at the time.

Among famous shrines and temples in Tokyo, one should visit the Meiji Jingu Shrine established in 1920 to commemorate the virtue of Emperor Meiji and Empress Shoken who took the initiative to make a foundation of modernized Japan. Surrounded by a large forest, Meiji Jingu is a quiet place away from the hustle and bustle of the city, where visitors can enjoy the natural and mystical atmosphere.



Road approaching to Meiji shrine

Excursion for Leaders and Observers

Toyosu Course

- Meiji Shrine
 - Tokyo round Trip by Bus
- Lunch
- National Science Museum

Asakusa Course

- Tokyo National Museum
- Lunch
- National Science Museum



Series "Pioneers of Modern Physics in Japan"

Hantaro Nagaoka (1865–1950)

Have you ever heard about the Saturn model of the atom? In the early 1900s, it was known that an atom seems to be a collection of positively charged and negatively charged particles. As a model to explain this, Hantaro Nagaoka, a professor of physics at the University of Tokyo, proposed in 1903 a Saturn-type atomic model with a positively charged nucleus in the center and negatively charged electrons orbiting around it in rings. The paper was published in the journal *Philosophical Magazine* (Phil. Mag.) in 1904. The paper was based on elaborate calculations inspired by Maxwell's work on the stability of Saturn's rings. Two months earlier, in the same magazine, British physicist J. J. Thomson, a prominent physicist at the time, proposed the plum pudding model: the atom was a sphere of uniform positive charge with negatively charged electrons scattered through it like plums in a pudding. In Nagaoka's model, an atom is assumed to have a heavy, highly charged nucleus at its center and thousands to tens of thousands of electrons revolving around it, which gives the atom a certain degree of stability. However, there was concern that the electrons would eventually emit electromagnetic waves, lose energy, and merge with the nucleus. For this reason, the number of citations of Nagaoka's paper was less than 1/10th of that of Thomson's paper. However, in 1911, Ernest Rutherford conducted an α -particle scattering experiment and presented an atomic model based on the experimental results. This model was similar to Nagaoka's Saturn model, in which electrons were revolving around the nucleus at the center. As is well known, the electrons revolving around the nucleus were explained by quantum mechanics through Bohr's atomic model published by Niels Bohr in 1913. Nagaoka's model did not ultimately survive, but it was a pioneering and original proposal at that time. Nagaoka was active not only in atomic models but also in magnetostriction and tsunami research. From 1893 to 1899, he studied in Germany under Ludwig Boltzmann. He then continued his research as a professor at the University of Tokyo and was involved in the establishment of the Institute of Physical and Chemical Research (RIKEN). He also became the first president of Osaka University. In 1937, he was awarded Japan's first Order of Culture.

SCHEDULE

TODAY

Tuesday, July 11th



Students

7:15-8:00	Breakfast	NYC
8:30	Meet at the Exam Room	NYC
9:00-14:00	Exam (Experiment)	NYC
14:30-15:30	Lunch (light meal)	NYC
16:00-19:00	Cultural/Scientific Experience Events	NYC
18:00-19:00	Dinner	NYC

Leaders&Observers

7:00-8:00	Breakfast	NSH
9:00-15:00	Half-day Tokyo Excursion	
18:00-19:30	Dinner	NSH

TOMORROW

Wednesday, July 12th



Students

7:15-8:00	Breakfast	NYC
9:00-16:00	Half-day Tokyo Excursion	
16:00-19:00	Cultral/Scientific Experience Events	NYC
18:00-19:00	Dinner	NYC

Leaders&Observers

7:00-8:00	Breakfast	NSH
9:00-12:00	Board Meeting	NSH
12:30-14:00	Lunch	NSH
14:00-18:00	Board Meeting	NSH
18:00-19:30	Dinner	NSH
19:30-23:00	Board Meeting	NSH

NYC: National Olympics Memorial Youth Center
NSH: Nippon Seinenkan Hotel



The Physical Society of Japan



Japan Society of Applied Physics



The Physics Education Society of Japan



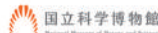
The Biophysical Society of Japan



Japan Science and Technology Agency (JST)



National Institution for Youth Education (NIYE)



National Museum of Nature and Science



Japan Arts Council



Tokyo National Museum



The University of Tokyo



Tokyo University of Science



Tokyo City University



Tokyo University of Foreign Studies



International Christian University



Sophia University



INTERNATIONAL PHYSICS OLYMPIAD 2023 TOKYO JAPAN



<https://ipho2023.jp/en/>



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