

# Astronomy Day in Schools History to Date

25 March 2022

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Co-chair of sub WG of Astronomy Day in Schools (ADiS)  
Commission C1, Division C, IAU

The project encouraged astronomers, scientists and communicators to visit schools in their respective communities to conduct sky observations and practical astronomy activities with students.



# Astronomy Day in Schools

10 – 17 November 2019



Over 500 events, over 110 000 students, 210 schools, in 70 countries

# Steering Committee

**Paulo Bretones**, IAU Commission C1 President, Brazil (Chair)

**Lina Canas**, IAU Office of Astronomy Outreach Coordinator, Portugal

**Rosa Doran**, NUCLIO – Núcleo Interactivo de Astronomia, Portugal

**Bethany Downer**, Leiden University, Canada

**Urban Eriksson**, Lund University, Sweden

**Edward Gomez**, Las Cumbres Observatory, United Kingdom

**Carmen Pantoja**, University of Puerto Rico, United States of America

**Jorge Rivero Gonzalez**, Leiden University, Spain

**Rosa Maria Ros**, IAU Commission C1 WG Network for Astronomy School Education (NASE) Chair, Spain

**Boonrucksar Soonthornthum**, Southeast Asia Astronomy Network, Thailand

<https://iau-dc-c1.org/eclipse-2020/>

The banner features a dark background with a map of South America, specifically highlighting Argentina. A large, bright sun is partially obscured by a dark, circular shadow representing the Moon, creating a total solar eclipse effect. The text 'TOTAL SOLAR ECLIPSE' is prominently displayed in large, white, bold letters. Below it, the date '14 DECEMBER, 2020' is written in pink. Further down, it says 'Visible from parts of South America. Live streaming to your school and home'. At the bottom, there are three red buttons labeled 'View Map', 'Events', and 'Live Broadcasts'. The top of the banner includes the IAU logo and the text 'ASTRONOMY EDUCATION AND DEVELOPMENT Division C - C1 Commission'. A navigation menu with links like 'Home', 'About', 'Register', 'Events', 'Resources', 'Safety', and 'Contact us' is also visible.

IAU ASTRONOMY EDUCATION AND DEVELOPMENT Division C - C1 Commission

Home About Register Events Resources Safety Contact us

Argentina

# TOTAL SOLAR ECLIPSE

14 DECEMBER, 2020

Visible from parts of South America.  
Live streaming to your school and home

View Map Events Live Broadcasts

More resources below

Paulo suggested that the project be continued, thank you!  
Saeed designed the new website, thank you!



This initiative is run by the IAU Working Group: **Astronomy Education Research and Methods (AE R&M, Commission C1: Astronomy Education and Development)**

**Paulo S. Bretones**

IAU Commission C1 President

**Akihiko Tomita**

Sub-WG Astronomy Education Research and Methods  
The Teachers and Educators Training (TET) Chair

## Steering Committee

**Paulo Bretones**, IAU Commission C1 President, Brazil (Chair)

**Akihiko Tomita**, Wakayama University, Japan (Co-Chair)

**Rosa Doran**, NUCLIO – Núcleo Interactivo de Astronomia, Portugal

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**Boonrucksar Soonthornthum**, Southeast Asia Astronomy Network, Thailand

## About

To celebrate the Total Solar Eclipse of **December 14, 2020**, we have prepared this website to provide you with resources to engage your community. This event presents a special opportunity for students to learn more about the science of eclipses.

When possible, we will advertise the link(s) of the live streaming(s) even in these times with remote teaching in many schools in the world. For the countries where the eclipse will be visible as total (Chile, Argentina) or partial (Ecuador, Peru, Bolivia, Uruguay, Paraguay and Brazil) it is important to take care about Eye Safety and Solar Filters.

Any amateur or professional astronomer, scientist or teacher is invited to participate.

We would like to enthusiastically continue the **Astronomy Day in Schools** and hope you enjoy!

Officially **register** your event activity here.

Original ADiS of IAU100: Mercury transit  
Recontinued ADiS: Total solar eclipse at Argentina and Chile



<https://adis.narit.or.th/>

Website hosted by NARIT  
Managed by Sze-leung, thank you!



**ASTRONOMY EDUCATION  
AND DEVELOPMENT**  
Division C - C1 Commission

**ASTRONOMY DAY IN SCHOOLS**

# MARCH EQUINOX

CHECK THE RESOURCES BELOW



Reopened ADiS, especially quarterly events on equinoxes and solstices



### What is Astronomy Day in Schools?

"Astronomy Day in Schools" was started as an [IAU100 Global Project](#) with the vision of mobilising the astronomical community to organise activities in schools and it has been organized two times. We are calling out again to the world to organize activities together especially in conjunction with the vernal and autumnal equinoxes and the summer and winter solstice.

### Why solstices and equinoxes?

Equinoxes and solstices are not only has astronomical significance around the world, they are also important phenomena in the history of science, and are connected to cultural events in various regions, making them suitable subjects for educational practice that combines science, history, culture, and STEAM education. The coming edition will be held during December solstices (winter solstices for northern hemisphere and summer solstices for southern hemisphere).

### Who are the organizer?

We are the International Astronomical Union (IAU) Commission C1 on Education and Development. The IAU is the international astronomical organisation that brings together more than 12 000 active professional astronomers from more than 100 countries worldwide. Founded in 1919, the IAU is the world's largest professional body for astronomers.

### Working Group

Akihiko Tomita, Wakayama University, Japan (Chair)

Paulo Bretones, IAU Commission C1 Advisor, Brazil (Co-chair)

Julie Bolduc-Duval, Dunlap Institute for Astronomy & Astrophysics, Canada

Rosa Doran, NUCLIO - Núcleo Interactivo de Astronomia, Portugal

Urban Eriksson, Lund University, Sweden

Rica Sirbaugh French, NCCN MiraCosta College, USA

Edward Gomez, Las Cumbres Observatory, United Kingdom

Carmen Pantoja, University of Puerto Rico, United States of America

Rosa Maria Ros, IAU Commission C1 WG Network for Astronomy School Education (NASE) Chair, Spain

Boonrucksar Soonthornthum, Southeast Asia Astronomy Network, Thailand

### Members of the ADiS2021 task force

Paulo Bretones, IAU CC1 advisor

Boonrucksar Soonthornthum, NARIT, IAU CC1 President

Sze-leung Cheung, NARIT

Saeed Salimpour, OAE

Hasan Baghbani, ITAU/SINA

Mahdi Rokni, ITAU/SINA

Akihiko Tomita, Wakayama Univ

54 activities registered so far

From 10 countries

Romania 40! (thanks to NAEC, Ana Naghi)

Puerto Rico 5

Iran 2 Tunisia 1 United States 1 Columbia 1

Chile 1 Russia 1 India 1 Japan 1

September equinox 2021 51

Solar eclipse in December 2021 in Antarctica 1

December solstice 2021 1





By a primary school teacher, Datcu Adela Carmen, in Romania  
1 class of 29 students, 8-9 years old  
Lecture, Workshop, Experiment of "The Sky"  
45 minutes, after school activity  
On 23 September 2021



By a middle school teacher, Geana Carmen Luminita, in Romania  
15 students, 12-14 years old  
Drawing of "September Equinox"  
60 minutes, after school activity  
On 26 September 2021





# Measurement of latitude of the site using the gnomon, September equinox in 2021

Students and teachers in Puerto Rico and Chile collaborated to repeat Eratosthenes experiment, reported by Carmen Pantoja



Students in Chile



Students in Puerto Rico



In Japan, Hiroshi Kishimoto



The trajectory of shadow of the vertical gnomon is straight on the equinox day.



The quarterly online exchange meetings  
on occasion of the equinoxes and solstices,  
where students around the world introduce  
their school studies, daily life and culture  
in their respective countries,  
kindly arranged by  
Iranian Teachers Astronomy Union (ITAU) and  
Students' International Network of Astronomy (SINA) in Iran



1st  
19 March 2021  
March equinox  
“Nowruz”



Romania  
Bulgaria  
Iran  
Japan

**Nowrooz, Iranian Spring Equinox Celebration for New Year  
with teachers and students around the world**

2nd  
21 June 2021  
June solstice  
"Tirgan"



The poster features a central arrangement of flags representing various countries: Japan, Iran, Bulgaria, Romania, Malaysia, Brazil, Italy, Spain, Qatar, and Thailand. Below the flags, a list of topics is provided, followed by the event date and time, contact information, and logos for IAU, NASE, and SIMA.

**Summer SOLSTICE FESTIVAL**

Flags: Japan, Iran, Bulgaria, Romania, Malaysia, Brazil, Italy, Spain, Qatar, Thailand

Topics:

- Summer Solstice; the link between cultures
- Introduction to the ancient festival of Tirgan
- Introduction to summer solstice
- How do different countries celebrate Summer Solstice
- Teachers, the uniting points of countries and nations

Date: 21 June 2021      Time: 12:30 UTC

ITAU.info@yahoo.com      www.skylian.org

IAU      nase      ITAU SIMA

Romania  
Bulgaria  
Malaysia  
Brazil  
Italy  
Spain  
Qatar  
Iran  
Japan

Message of NASE  
C1 president in Thailand



## Japan

High school students introduced school events including school sports day.

## Qatar

A student introduced an astronomy contest for high school students. This was an exercise in which the students tried to determine the radius of the earth by measuring the sun's highest altitude at noon. This story showed that even though they are from different countries and speak different languages and cultures, the students are studying the same human culture on the earth.



## Iran

A famous architect who designed the park with the traditional sundial which shows the date of the year introduced the park.

## Bulgaria

Students introduced traditional festivals and songs during the summer solstice, along with traditional costumes.



**Brazil** is a big country, mainly in the southern hemisphere and across the equator. In the southern part of the country, when we say summer solstice in Japan, it is the cold season. The talk was a reminder that the June solstice does not necessarily mean the beginning of the summer season for the entire planet.



3rd  
24 September 2021  
September equinox  
"Mehrigan"

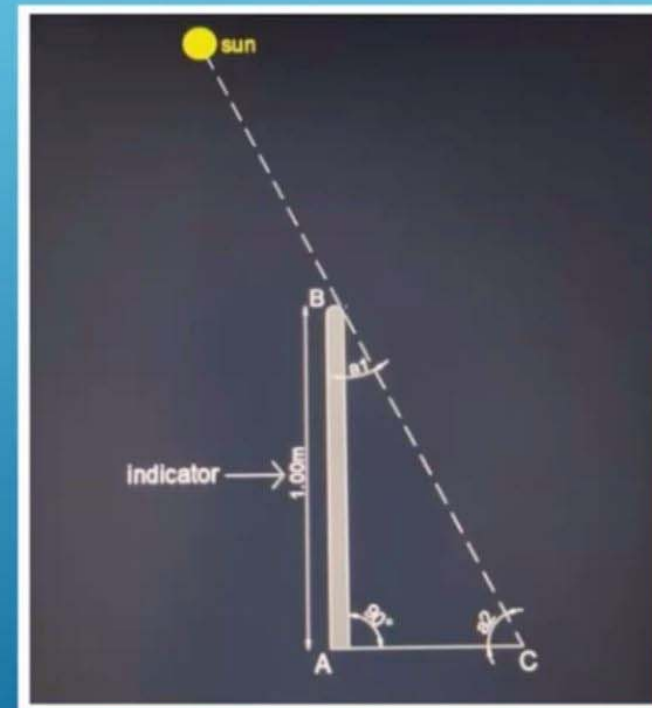


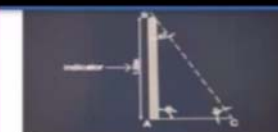
Iran  
Japan



Find your latitude using the gnomon  
Based on NASE activity  
(Thank you, NASE course)

اداره گیری زاویه





زاویه سمت نوک شاخص زاویه  $a1$  و زاویه روی سطح زمین ( $a2$ ) را نیز اندازه گیری نمایید

5- علامت گذاری و اندازه گیری طول سایه را هر 10 دقیقه تا زمانی ادامه دهید که مشاهده میکنید، طول سایه شروع کرد به بلند شدن.

6- مهمترین طول و زمان سایه، مربوط به چه زمانی است؟؟؟ زمانی که کوتاه ترین طول سایه را داشته

باشیم، که زمان 12:00 و طول کوتاه ترین سایه در شهر آبیخش 29 سانتی متر است.

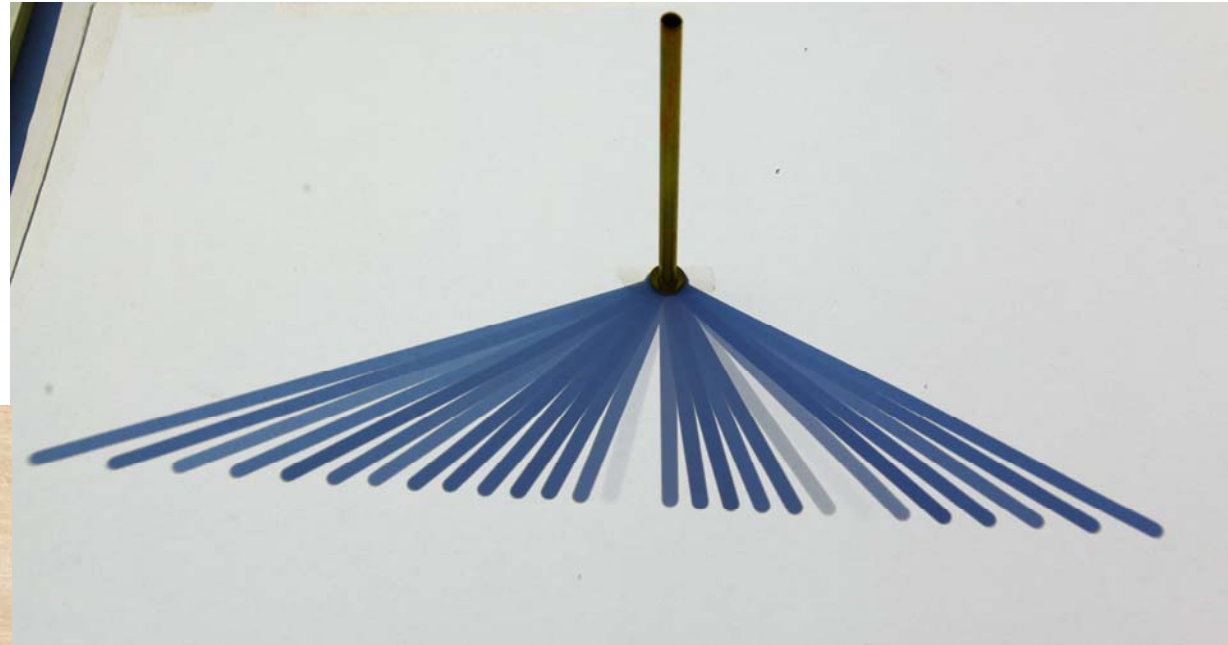
7- لحظه ظهر خورشیدی، با ظهر واقعی! چه زمانی است؟ که کوتاه ترین طول سایه را برای شاخص داشته باشیم. ساعت 12:00

8- مشاهدات و داده های خود را در جدول زیر ثبت نمایید:

اندازه گیری عرض جغرافیایی			
رها پیریایی			
شهر محل انجام آزمایش: آبیخش ( ایران)		اندازه شاخص (به سانتی متر): 50 cm	
زمان: 11:00	طول سایه: 33cm	زاویه b: 33	زاویه c: 57
زمان: 11:10	طول سایه: 32cm	زاویه b: 32	زاویه c: 58
زمان: 11:20	طول سایه: 31cm	زاویه b: 31	زاویه c: 59
زمان: 11:30	طول سایه: 30cm	زاویه b: 30	زاویه c: 60
زمان: 11:40	طول سایه: 29.8cm	زاویه b: 30	زاویه c: 60
زمان: 11:50	طول سایه: 29.6cm	زاویه b: 29.5	زاویه c: 60.5
زمان: 12:00	طول سایه: 29cm	زاویه b: 29	زاویه c: 61
زمان کوتاه ترین سایه (ظهر خورشیدی): 12:00		اندازه کوتاه ترین سایه: 29cm	
زاویه b کوتاه ترین طول سایه: 29 درجه		زاویه c کوتاه ترین طول سایه: 61 درجه	
نسبت بین اندازه شاخص به کوتاه ترین طول سایه: 59/29 _ 59 بر روی 29			



The shadow trajectory of a vertical gnomon is linear on equinox days.



By an elementary school teacher

By a senior high school teacher



# 4th 21 December 2021 December solstice "Yalda"

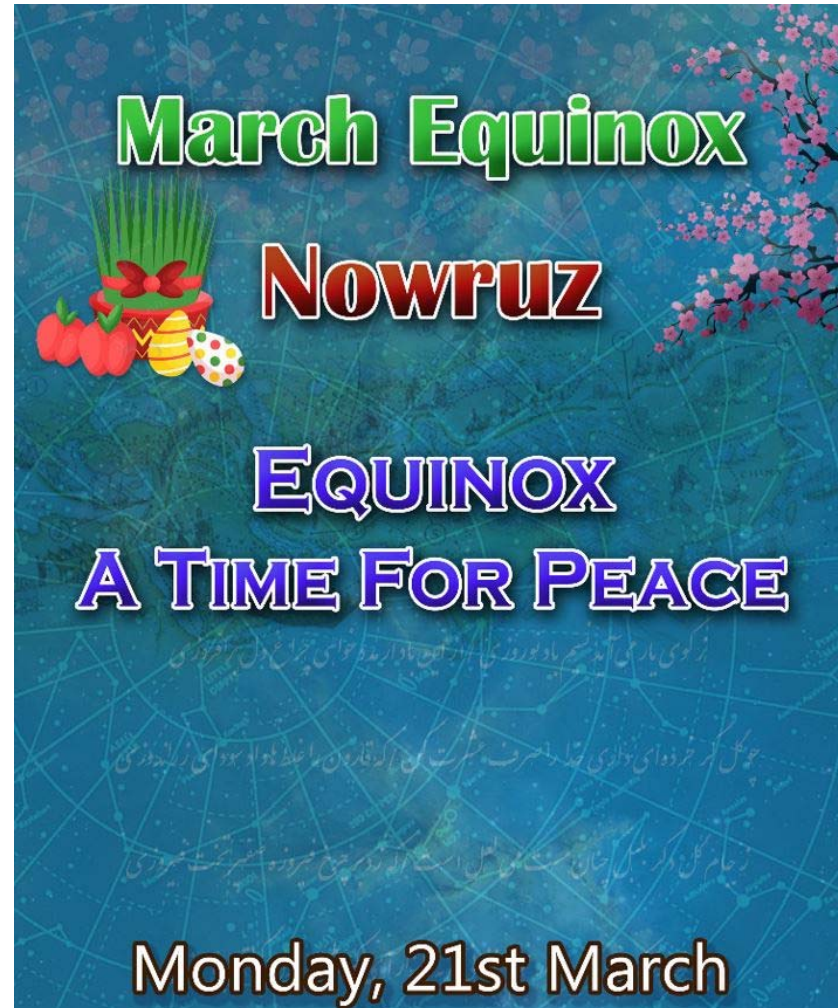
Iran  
Malaysia  
Japan  
India  
Bulgaria  
Romania  
Spain  
Italy  
Tanzania  
  
Brazil  
Mexico  
Thailand

	Rahimeh Foroughi, Asghar Kabiri
	Nurul Syahirah
	Akihiko Tomita, Kazuya Ayani
	Arvind Pranjpye
	Ivo Jokin, Tzetzta Hristova, Nikola Karavasilev, Diana Yardanova
	Corina Toma, Paunescu Luliana
	Rosa Maria Ros, Amparo Castro Pinos
	Barbara Callerani
	Noorali Jiwaji
	Carlos Moreno
	Paulo Sergio Bretones, Marcelo De Souza
	Anaeli Pacheco Blanco
	Boonrucksar Soonthornthum





5th  
21 March 2022  
March equinox  
"Nowruz"





Rosa Ros



Boonrucksar Soonthornthum

Kazuya Ayani



Carmen Pantoja



Mahdi Rokni

**Thank you  
for the discussion**

Hossein Khezri

Paulo Bretones

Ali Reza Doosti\*



Akihiko Tomita



Hasan Baghbani

\* Manager of  
astronomy  
teachers in  
Fars Province,  
Iran



# Explanation of offerings at Nowruz



By Hasan and Paulo

# Introduction of Nowruz festival







Ichiooka Elementary School, Sennan City, Osaka



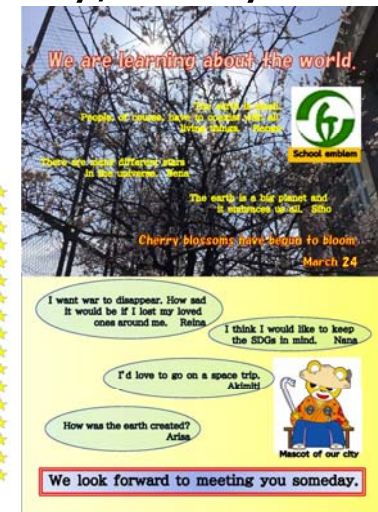
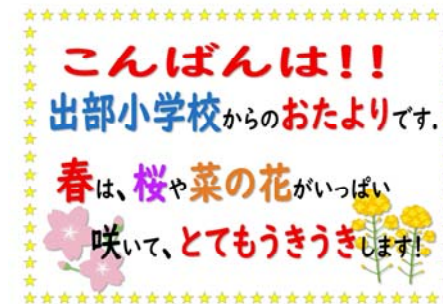
Izue Elementary School, Ibara City, Okayama



Bisei Junior High School, Ibara City, Okayama

# Greeting card from Elementary School students

(see next slide)




こんばんは！！  
出部小学校からのおたよりです。

Greeting card from  
Izue Elementary  
School students

Message:

In spring, we are  
very excited with  
cherry blossoms  
and rape blossoms  
in full bloom.

春は、桜や菜の花がいっぱい  
咲いて、とてもうきうきします！





**We are learning about the world.**

The earth is small.  
People, of course, have to coexist with all  
living things. Renge



School emblem

There are many different stars  
in the universe. Sena

The earth is a big planet and  
it embraces us all. Siho

**Cherry blossoms have begun to bloom.**

**March 24**

I want war to disappear. How sad  
it would be if I lost my loved  
ones around me. Reina

I think I would like to keep  
the SDGs in mind. Nana

I'd love to go on a space trip.  
Akimitti

How was the earth created?  
Arisa



Mascot of our city

**We look forward to meeting you someday.**

Greeting card from  
Ichiooka Elementary  
School students



# Discussion

Equinoxes and Solstices are gateways for teachers, even though they are not astronomy-oriented, to enter the world of astronomy and science, because the occasions are related to culture, history, art, daily life, and network of our community, as well as astronomy.

Equinoxes and Solstices are experienced simultaneously throughout the world at the same time astronomically, and the lifestyles and cultures related to it are extremely diverse.

It has become clear to us that simply asking people to register their records of practice to the website is not enough to enrich the repositories. On the other hand, we have found that materials with photos are effective.

We have also found that online communication events such as Nowruz meeting today are still a great vehicle for international interactions and collaborations.

For example, collecting short video messages and reports of educational practices with photos would be an original and unique way to do this. We can collect them on the website and at the same time we can have the regular quarterly on-line communication meeting based on them.

# Acknowledgements

The NAEC network has been very helpful in publicizing our events. We would like to thank the NAEC members for encouraging us. I would like to respect the OAE for building such a network and connecting the world.

I would like to express my greatest thank you and respect to Mahdi and Hasan and all the colleagues in Iran for always seeking to connect the world through astronomy education and to pass this on to their students, with faith and smile, despite the difficult situation in the country.

I would like to thank and respect Rosa and Beatriz and all those involved with NASE for the cultural and educational foundation they have created around the world for many years that has made our events possible so quickly.



I am very grateful to Saeed and now Sze-leung for their help in running and managing the website, and I am very grateful to NARIT as its kindly hosting the website.

Paulo is always encouraging us, and I have always felt relieved and grateful for the presence of all the sub WG members.

As I mentioned earlier, our original goal of connecting countries has become even more necessary now that the world is facing more and more uncertainties.

A new Silk Road, connecting the entire globe, is needed now more than ever.

## Member of the ADiS sub WG (alphabetical order of family name)

Kazuya Ayani, Bisei Astronomical Observatory, Japan

Hasan Baghbani, Iranian Teachers' Astronomy Union, Iran

Julie Bolduc-Duval, University of Toronto, Canada

Paulo Sergio Bretones, Universidade Federal de São Carlos, Brazil (co-chair)

Sze-leung Cheung, National Astronomical Research Institute of Thailand, Thailand

Parham Eisvandi Dehnoei, Iranian Teachers' Astronomy Union, Iran

Rosa Doran, NUCLIO, Núcleo Interactivo de Astronomia, Portugal

Urban Eriksson, Lund University, Sweden

Rahimeh Foroughi, Iranian Teachers' Astronomy Union, Iran

Rica Sirbaugh French, MiraCosta College & Center for Astronomy Education, United States

Edward Leocadio Gomez, Las Cumbres Observatory, United Kingdom

Maryam Hadizadeh, Iranian Teachers' Astronomy Union, Iran

Robert Paul Hollow, CSIRO, Australia

Hosseini Khezri, Iranian Teachers' Astronomy Union, Iran

Carmen Aleida Pantoja, University of Puerto Rico-Rio Piedras, Puerto Rico

Maryam Papari, Iranian Teachers' Astronomy Union, Iran

Mahdi Rokni, Students' International Network for Astronomy, Iran

Rosa M. Ros, Universitat Politècnica de Catalunya, Spain

Saeed Salimpour, OAE, Germany

Boonrucksar Soonthornthum, National Astronomical Research Institute of Thailand, Thailand

Akihiko Tomita, Wakayama University, Japan (co-chair)