

Opportunities for Space Exploration under the United Nations Access to Space for All Initiative



UNITED NATIONS OFFICE
FOR OUTER SPACE AFFAIRS



UNITED NATIONS
Office for Outer Space Affairs



Access to Space for All Initiative

*The goal of the **Access to Space 4 All Initiative** is to provide research and orbital opportunities for UN Member States to access space and to ensure that the benefits of space, in particular for sustainable development, are truly accessible to all*



UNITED NATIONS OFFICE
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Partnerships are a distinctive feature of the Initiative.

New contributions to the Initiative are possible and encouraged.



Access to Space for All Initiative

Hands-on Capacity from A-Z
Responsible & Sustainable Way

Provides cutting edge skills for
jobs and other opportunities

Fosters international cooperation

Social Impact: To your country,
region and young generations



Access to Space for All Initiative

What if there was no Access to Space for All?

FIRST MAURITIAN SATELLITE – OPENING NEW OPPORTUNITIES

JOURNEY TO SPACE ALTHOUGH NOT EASY BUT EXTREMELY REWARDING AND OFFERS HIGHLY PROMISING FUTURE

HyperGES “Watermeal, the Future Food Source for Space Exploration”



HyperGES and community impacts

- Expand space-related knowledge and awareness in Thailand
- Flagship program in astroculture, produce intensive research environment
- Team up with other organization. Stepping out of their comfort zone encouragement

Ellas construyen el satélite guatemalteco

Conozca a las siete estudiantes que participan en el proyecto del CubeSat.

BUENAS NOTICIAS #GuatemalaEspañol

Un emprendimiento guatemalteco de ingeniería electrónica, el cual se llama HyperGES, está preparando un satélite para llevar al espacio este mes.

“Es un proyecto muy interesante que involucra a siete estudiantes de ingeniería electrónica de la Universidad de Guatemala, que está a su vez en un convenio de colaboración con el Centro de Estudios Científicos y Control en Tezcué, Guatemala, para desarrollar el satélite.”

“Es importante que las personas estén involucradas en un proyecto de este tipo, porque eso les ayuda a desarrollar su capacidad y a estar preparados para el futuro. Además, es una oportunidad para que las mujeres estén involucradas en un proyecto de este tipo, que es un campo que tradicionalmente ha sido más masculino.”

LUCEA LABS, de 22 años, es el encargado de la fabricación del proyecto.

“No debemos envidiarle nada a los hombres”

“Este proyecto involucra que Guatemala, por su parte, desarrolle, esté dando todo de sí”, dice María, que es Comunicaciones y Control en Tezcué. “Como ingeniera, bióloga, porque debemos demostrar que somos una ingeniera, ya a ser un trabajo largo, con mucho al mismo tiempo, tendremos a otras mujeres participando”, agrega.

“No debemos envidiarle nada a los hombres”

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“Somos capaces de hacer un excelente trabajo”

“Yo sé que el proyecto lleva unas tres semanas. Hay mucho trabajo que hacer para que sea un proyecto exitoso”, dice María, que está en el equipo de Comunicaciones y Control en Tezcué. “Hay mucho trabajo que hacer para que sea un proyecto exitoso, pero eso es lo que queremos demostrar que somos capaces de hacer un excelente trabajo. Tenemos muchas cosas que hacer y eso me motiva a estar involucrada en un proyecto de este tipo que me permite desarrollarme como ingeniera”, agrega.

PROMERAS

“Hay que demostrar que las mujeres también pueden hacer un excelente trabajo”

Acta Astronautica
Volume 111, August 2020, Page 344-351

ESLIELUM: A student experiment to investigate the sloshing of magnetic liquids in microgravity

Á. Romero-Cabré¹, A. J. García-Sánchez¹, F. Garmes¹, I. Rovinol¹, C. Casó-Gómez¹, E. Castro-Hernández¹ and F. Maggi²

Free surface reconstruction of opaque liquids in microgravity. Part 1: design and on-ground testing

Á. Romero-Cabré¹, A. J. García-Sánchez¹, F. Garmes¹, I. Rovinol¹, C. Casó-Gómez¹, E. Castro-Hernández¹ and F. Maggi²

Free surface reconstruction of opaque liquids in microgravity. Part 2: results of drop tower campaign

Á. Romero-Cabré¹, F. Garmes¹, A. J. García-Sánchez¹, I. Rovinol¹, C. Casó-Gómez¹, E. Castro-Hernández¹ and F. Maggi²

Free and Forced Oscillations of Magnetic Liquids Under Low-Gravity Conditions

Alvaro Romero-Cabré, Gabriel Cano Gómez, Elena Castro-Hernández, Filippo Maggi

Check for updates

Author and Article Information

Appl. Mech. Res. 2020, 67(2): 321919 (9 pages)

Paper No. AMR-19-1481 | <https://doi.org/10.1115/1.4045820>

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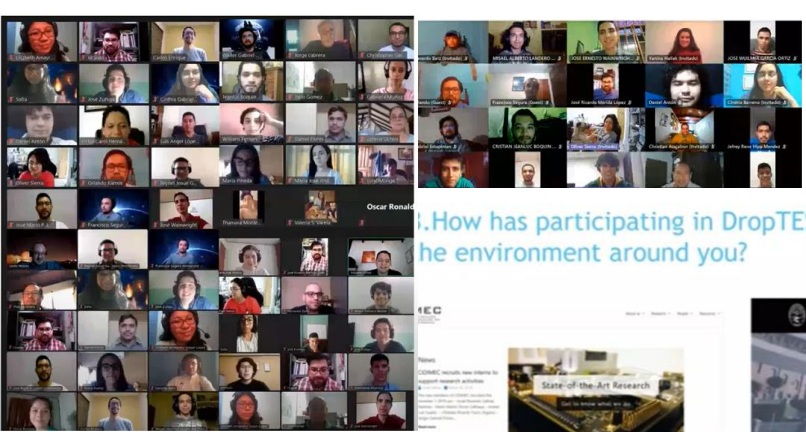
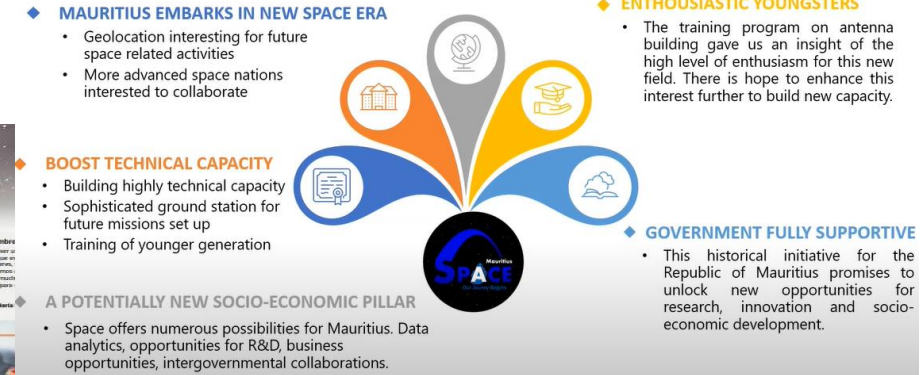
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1MO-19-02.7.05331

LATERAL SLOSHING OF MAGNETIC LIQUIDS IN MICROGRAVITY

Á. Romero-Cabré¹, A. J. García-Sánchez¹, I. Rovinol¹, F. Garmes¹, C. Casó-Gómez¹, E. Castro-Hernández¹, M. A. Hernández Gutiérrez¹, F. Maggi²



How has participating in DropTES changed the environment around you?

RESEARCH CENTER

MECHATRONICS DEPARTMENT

Know our work and impact

Research Areas | Last Publications

State-of-the-Art Research

Know our work and impact

3. How has participating in DropTES changed the environment around you? Cont'd (3)

In Feb. 2017 I was elected to be the President of the American University of Madaba (AUM) in Jordan. That month AUM started the Innovation project for its students and for high school students in Jordan at large.



Final results!! COSPAR 2021

ASYMMETRIC AND LATERAL FREE SURFACE OSCILLATIONS OF FERROFLUIDS IN MICROGRAVITY

Materials Science in Space (S)

Drop Tower Data (D2)

Consider for oral presentation.

Mr. Alvaro Romero-Cabré, alvaro.romero@iia.csic.es
University of Córdoba at Badajoz, Badajoz, Córdoba, United States
Antonio José García-Sánchez
Politecnico di Milano, Milan, Italy, aj.garcia.sanchez@polimi.it
Francisco Garmes
Politecnico di Milano, Milan, Italy, francisco.garmes@polimi.it
Filippo Maggi
Politecnico di Milano, Milan, Italy, filippo.maggi@polimi.it



Access to Space for All Initiative



Reach of Access to Space for All

8 OCTOBER 2020

Daily Press Briefing by the Office of the Spokesperson for the Secretary-General

**Space Week

And as you know, this is Space Week. So I want to flag that, tomorrow, the United Nations Office for Outer Space Affairs, based in Vienna, is organizing a webinar on KiboCUBE programme to mark the Space Week.

The KiboCUBE programme is a collaboration with the Japanese Aerospace Exploration Agency and gives developing countries the opportunity to deploy a satellite from the Japanese module of the International Space Station free of cost. Kenya and Guatemala have already deployed their first satellites into orbit through KiboCUBE, building their space technology skills and gaining access to data and imagery. In the webinar, past and current winners of KiboCUBE will discuss how the programme has helped them with access to space exploration. Other winners, such as Mauritius, Indonesia and Moldova, are set to deploy their satellites through KiboCUBE in the coming months and years.

“The Organization advanced a broad range of technology initiatives related to sustainable development. This included [...] the Access to Space for All initiative.”

Report of the UN Secretary-General



AccSpace4All Reach

~1,500,000 social media impressions so far in 2021



“Through its Access to Space for All initiative, UNOOSA bridges the space capabilities gap among countries, striving to make access to space assets and the benefits stemming from their use truly universal.”
UNOOSA Annual Report



Access to Space for All Initiative



Space is relevant to the SDGs!

The 2030 Agenda for Sustainable Development <https://sdgs.un.org/2030agenda>

To learn more about the SDGs go to <https://sdgs.un.org/goals>

UNOOSA SDGs page

<https://www.unoosa.org/oosa/en/ourwork/space4sdgs/index.html>



Access to Space for All Initiative



UNITED NATIONS
Office for Outer Space Affairs

Goals

4

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

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Target

4.4

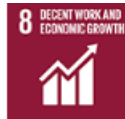
By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship

Goals

8

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

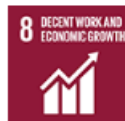
[← Prev](#) [Next →](#)



Target

8.2

Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors



Target

8.3

Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services

Goals

9

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

[← Prev](#) [Next →](#)



Target

9.1

Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all



Target

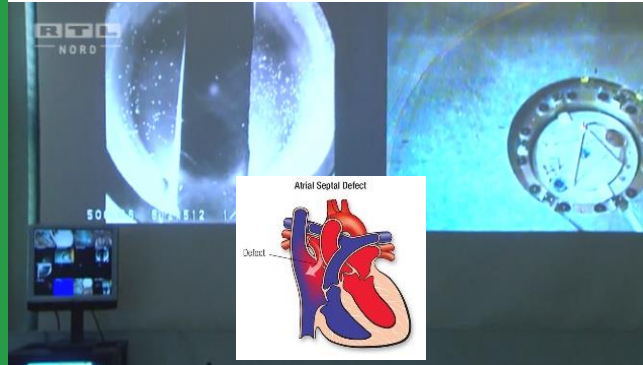
9.5

Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending

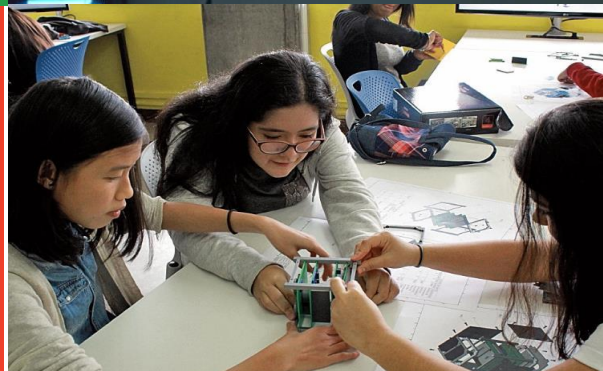


Access to Space for All Initiative

3 GOOD HEALTH AND WELL-BEING



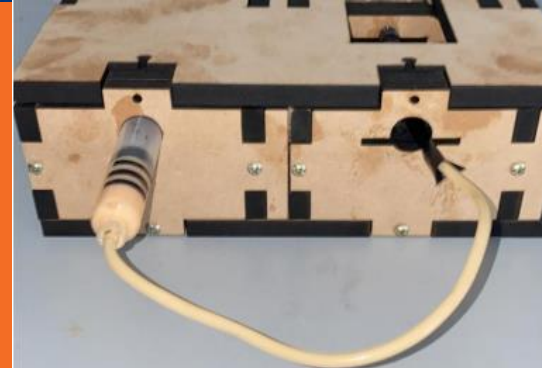
5 GENDER EQUALITY



6 CLEAN WATER AND SANITATION

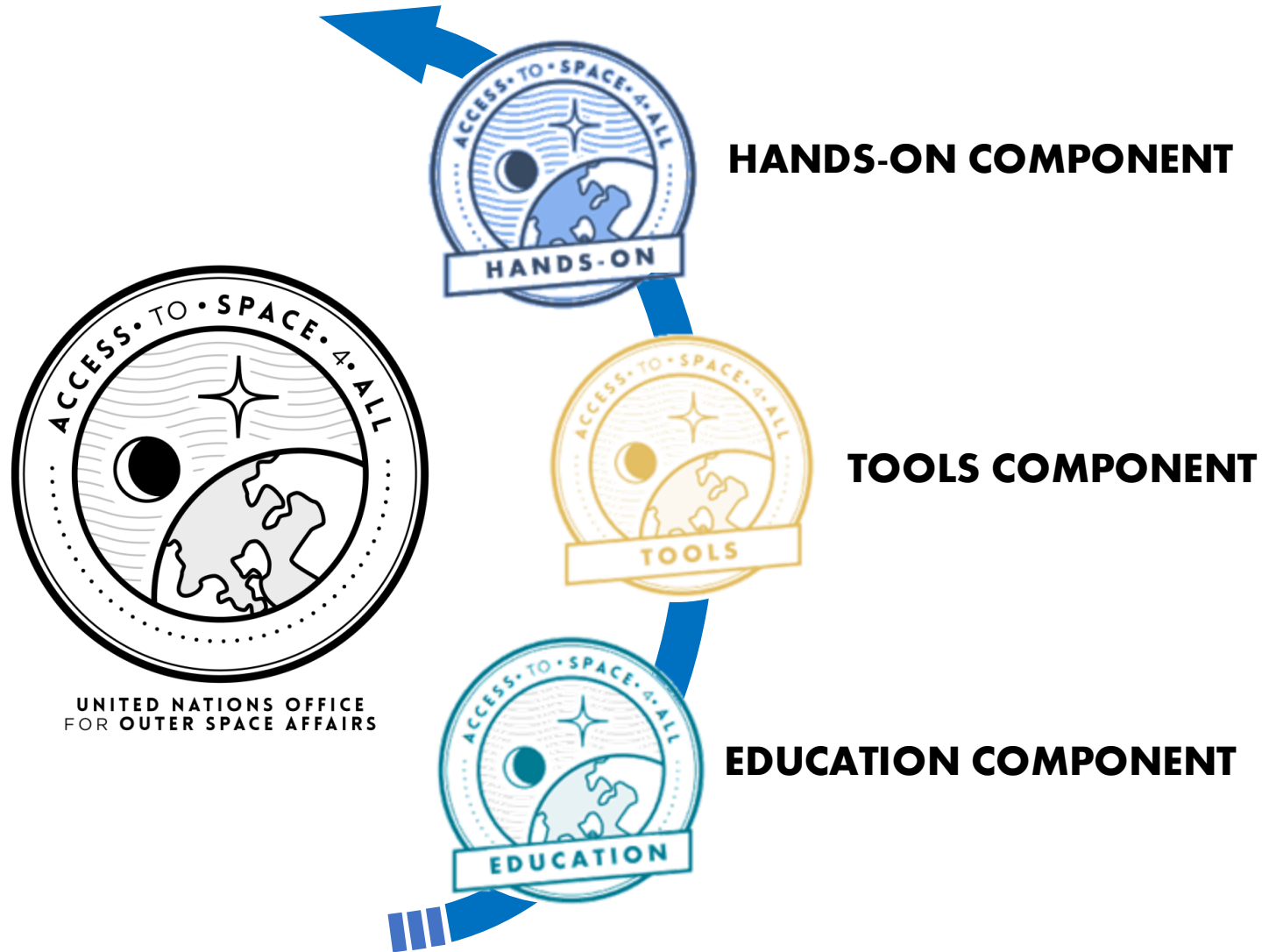


9 INDUSTRY, INNOVATION AND INFRASTRUCTURE





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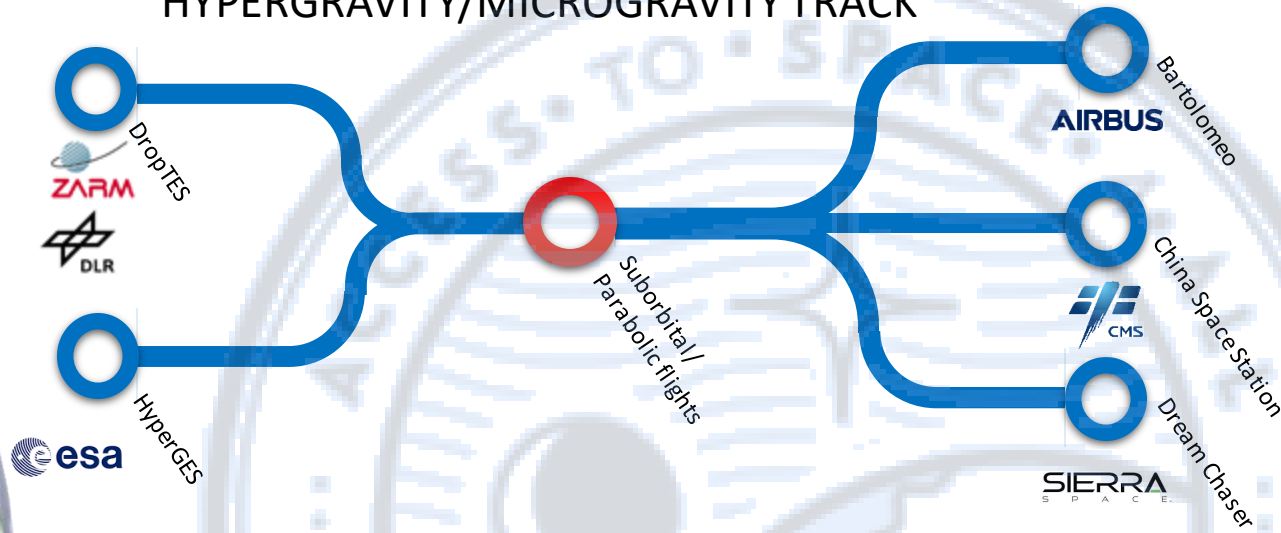




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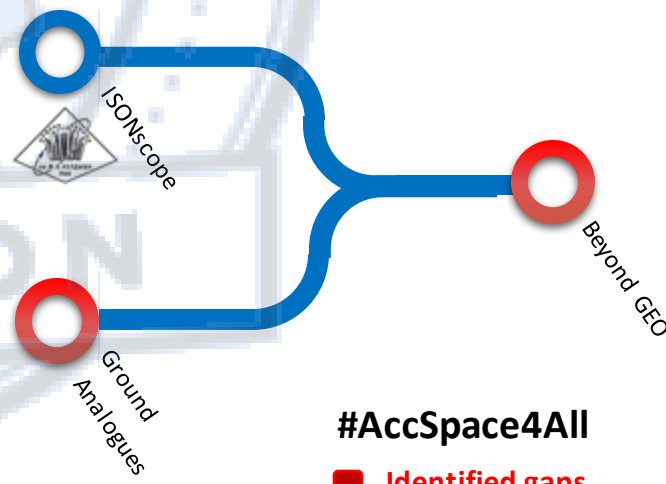
HYPERGRAVITY/MICROGRAVITY TRACK



SATELLITE DEVELOPMENT TRACK



EXPLORATION TRACK



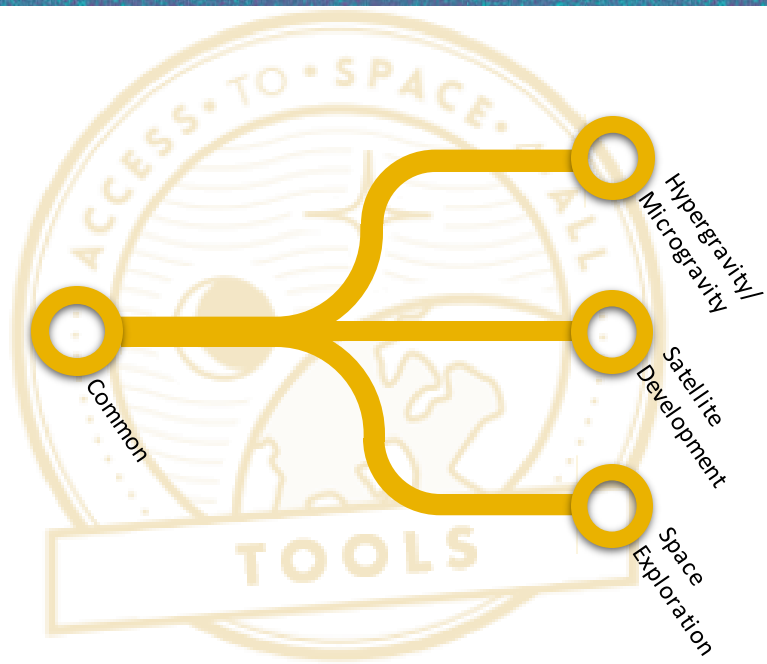
Opportunities are OPEN!
 KiboCUBE : 31 Dec 2021
 HyperGES: 28 Feb 2022

#AccSpace4All

Identified gaps



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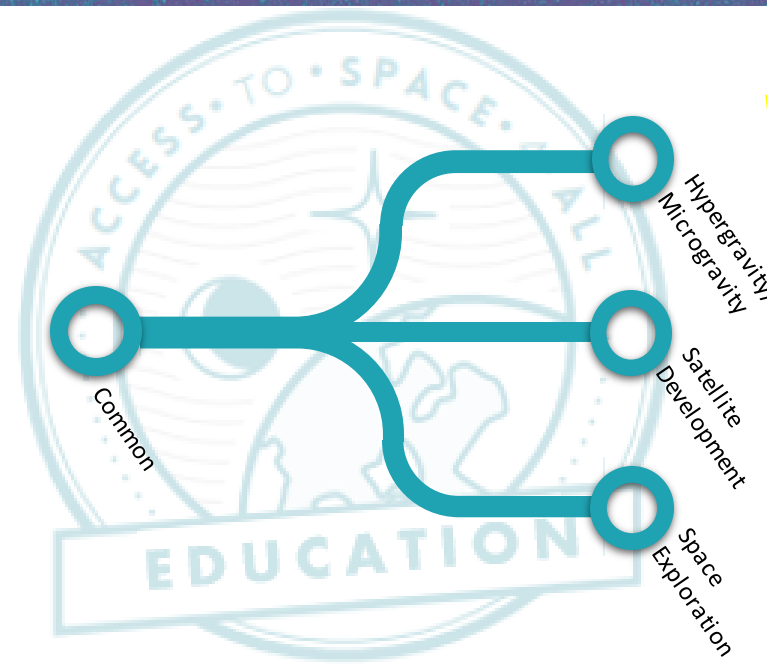


Design

Planning

Calculation/
Analyzation

Validation
/Testing



Webinars

Workshops
/Training

MOOCs

Teacher's
Guides

Curriculum

Fellowships

**Fellowship is
OPEN!**

Post-graduate
study on Nano
Satellite
Technology
(PNST)
: 10 Jan 2022



Exploration Track

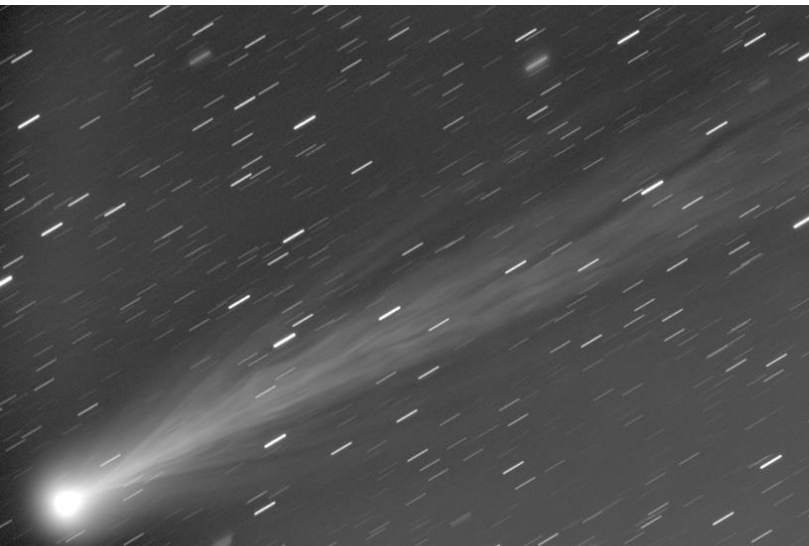


ISONscope

- Partner: KIAM RAS (Keldysh Institute of Applied Mathematics, Russian Academy of Sciences)
- Established: 2020
- Aims to provide a small wide field-of-view telescopes to educational or research institutions from developing countries.
- The cooperation is under the International Scientific Optical Network (ISON) and winning teams are expected to contribute to the observation campaigns of ISON.



Photo credit: L. Elenn, ISON-NMobservatory (H15)

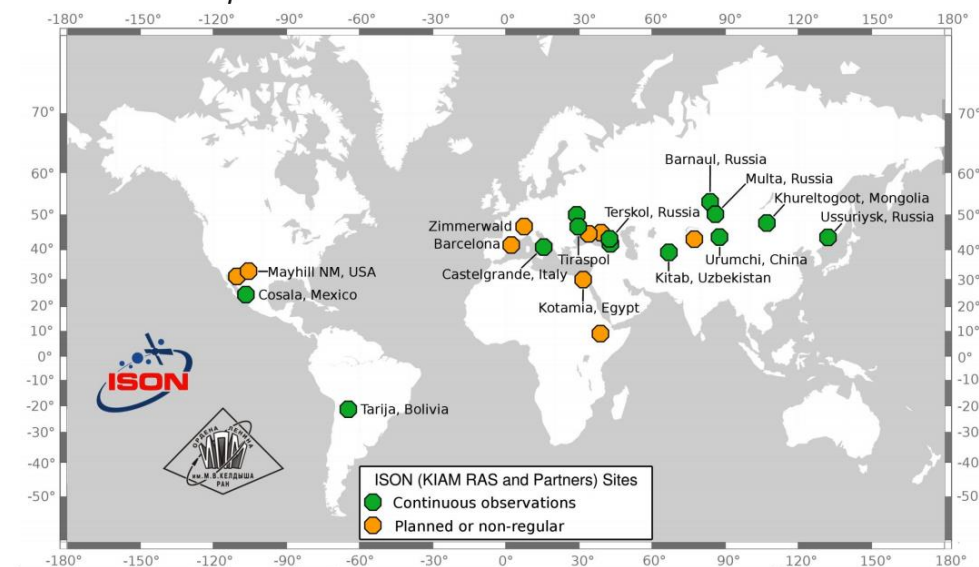


C/2012 S1 (ISON)

Photo credit: ISON



ISON/KIAM RAS OPTICAL TELESCOPE NETWORK





Access to Space for All Educational Content



“Tips for application” series of webinars

October – December 2020

- "How to Raise Awareness about Your Project“
 - "Space Law and Regulations"
 - "Experiences from Past Winners“
 - "Artificial Intelligence and Access to Space for All“
-
- Two sessions each webinar, reach out for different time zone
 - About 60 participants each webinar
 - Twitter “AccSpace4All” rank top in the Office

Available on OOSA’s website:

https://www.unoosa.org/oosa/en/ourwork/access2space4all/accspace4all_tips.html

4 QUALITY EDUCATION

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all



UNITED NATIONS
Office for Outer Space Affairs

Outer Space Treaty

Entry into force: 10 October 1967

- Exploration and use of outer space - province of all mankind (Article I)
- Principle of non-appropriation (Art. II)
- International law and UN Charter (Art. III)
- Prohibition of Weapons of mass destruction (Art. IV)
- **International responsibility for national activities in outer space (Art. VI)**
- **International liability for damage (Art. VII)**
- **Registration of space object (Art. VIII)**
- Cooperation and mutual assistance, due regard, harmful contamination, harmful interference (Art. IX)
- Information and notification (Art. XI)

Slide 6

JP AD NS A AV UI K AA AV



Access to Space for All Educational Content



Workshops

- UN/IAF Workshop

Curriculum

- Methodology
- Syllabus for Direction
- Baseline for Education

MOOCs

- A brand-new study platform.
- Everything integrated in one platform.
- Provide a better learning experience.

4 QUALITY EDUCATION

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all



Co-organized by:



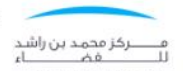
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INTERNATIONAL
ASTRONAUTICAL
FEDERATION



Hosted by:



28th Workshop on Space Technology for Socio-Economic Benefits:
"Space Exploration
- A source of inspiration, innovation and discovery"

22-24 October 2021
Dubai, United Arab Emirates
In conjunction with the 72nd IAC



Help us help you!
#AccSpace4All

For inquires:
UNOOSA Access to Space
unoosa-access-to-space@un.org

