
* ISWI Newsletter - Vol. 17 No. 010 15 October 2025 *

* Editor: George Maeda, georgemaeda3[at]gmail.com

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Dear ISWI Newsletter Subscriber:

Please be reminded that this newsletter has two versions:

- [1] Email version -- this gets distributed via email directly to you but does not have the attachments.
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To view the Web version, go to this web page:

<https://iswi-secretariat.org/>

and click on "NEWSLETTERS".

If you have space-weather-related news or announcements, please send them to me and I will distribute your material through the ISWI NEWSLETTER.

Cordially,
George Maeda
Editor of the ISWI Newsletter, since 2009.

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Speaker: Dr. Mateja Dumbovic - "*Challenges in understanding the evolution of CMEs from corona to heliosphere*"

[01]-----

TOPIC: An outreach activity for a Sudanese School located in the Kingdom of Saudi Arabia, by Dr Magdi Elfadil Yousif Suliman

1. Introduction: Since 2014, significant efforts have been made to collectively integrate the aims towards upgrading space science in our country, Sudan. Where the installation of a space science data provision tool was achieved. The device was a magnetometer that belonged to Kyushu University; it was one of the magnetometers in a chain installed worldwide, and included other African countries, not just Sudan.

The device was installed in 2008 within the premises of the Southern Campus of the Sudan University of Science and Technology. Therefore, the need has arisen to enhance human capacity building in the field of space science, to ensure continuity of data fluency from the station in the country, and also to inspire more nationals to be involved in the field of space science. It happened in synchrony with the existence of the magnetometer that other institutes within the country also have started pursuing activities related to space science, e.g., the Institute of Space Research and Aerospace (ISRA), the Africa City of Technology, and the University of Khartoum, whose major activities were targeting producing and launching cube satellites for either educational purposes or meteorological applications. Some of these activities have been reported formerly in the ISWI Newsletter.

See the rest of this article in this PDF:
Outreach Dorat Alahsa Scchool_2025.pdf

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[02]-----

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NASA to Launch Mission to Map the Bubble Around Our Solar System

A NASA mission, IMAP, and two more spacecraft are heading to space atop a single SpaceX rocket.

By Kenneth Chang, THE NEW YORK TIMES.
Sept. 24, 2025

A SpaceX rocket launched on Wednesday morning carrying two spacecraft for NASA and one for the National Oceanic and Atmospheric Administration.

The two NASA missions are the *Interstellar Mapping and Acceleration Probe*, or IMAP, and the *Carruthers*

Geocorona Observatory. The NOAA mission is known as the *Space Weather Follow On-Lagrange 1*, or SWFO-L1.

The missions will all study the solar wind — a stream of charged particles from the sun — and its effects on Earth and interstellar space. The flow of electrical charge creates the heliosphere, a giant magnetic bubble that surrounds the solar system and protects us from powerful and dangerous cosmic rays that crisscross the universe.

Full article:

<https://www.nytimes.com/2025/09/24/science/imap-nasa-spacex-launch.html?searchResultPosition=1>

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To view the above link, you need to subscribe to THE NEW YORK TIMES.

Here is the PDF of that article in case you are not a NYT subscriber:

NYT; NASA IMAP.pdf

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[03]-----

TOPIC:

Researcher Position (3 years) with e-Callisto SOLAR-Az Project (Azores)

FROM: Bussons Gordo Javier

DATE: 25 Sept 2025

Dear ISWI colleagues,

Find attached the research position call at RAEGE-Az.
Please feel free to distribute to potential candidates
and to your network.

With regards,
Valente + Javier + Christian.

See:
Postdoctoral_Position_SOLAR-Az_v3.pdf

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[04]-----

Recording of

"ISWI Webinar 26, 24 September 2025, 15:00-16:00 Vienna time"

is now available

FROM: Patrick Gindler, UNOOSA

DATE: 26 Sept 2025

Dear ISWI participants,

On behalf of the ISWI Steering Committee, we are pleased to inform you that the recording of the twenty-sixth webinar on the International Space Weather Initiative, Dr. Mateja Dumbovic - *Challenges in understanding the evolution of CMEs from corona to heliosphere*, 24 September 2025, is now available in the archive of the ISWI Secretariat: <https://cdaw.gsfc.nasa.gov/webinars/ISWI/>

Best regards,

Patrick

***** [End of this issue of the ISWI Newsletter]*****

Continuation of endeavors towards a prosperous future for space science in Sudan

Magdi Elfadil Yousif Suliman

magdielfadil@gmail.com

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1. Introduction

Since 2014, significant efforts have been made to collectively integrate the aims towards upgrading space science in our country, Sudan. Where the installation of a space science data provision tool was achieved. The device was a magnetometer that belonged to Kyushu University; it was one of the magnetometers in a chain installed worldwide, and included other African countries, not just Sudan. The device was installed in 2008 within the premises of the Southern Campus of the Sudan University of Science and Technology. Therefore, the need has arisen to enhance human capacity building in the field of space science, to ensure continuity of data fluency from the station in the country, and also to inspire more nationals to be involved in the field of space science. It happened in synchrony with the existence of the magnetometer that other institutes within the country also have started pursuing activities related to space science, e.g., the Institute of Space Research and Aerospace (**ISRA**), the Africa City of Technology, and the University of Khartoum, whose major activities were targeting producing and launching cube satellites for either educational purposes or meteorological applications. Some of these activities have been reported formerly in the **ISWI** newsletter.

2. An outreach activity outside home country, Sudan

However, since 2013, various events that occurred countrywide have led to public instability in the country, resulting in the recent conflict, which led people to flee their homes and reside in neighboring foreign countries. This has led to an increase in the Sudanese people residing in neighboring countries. Right now, here in **KSA** some schools have been dedicated to the Sudanese curriculum, and the **KSA** administration has agreed to launch. And as a continuation of the capacity-building activity in space science, an outreach activity was planned. And though many challenges were faced, it was successfully achieved. The activity targeted one of the intermediate schools for the Sudanese curriculum, the **Durat Alahsa School, Sudanese Curriculum Section**. The activity was an initiative that took advantage of the occurrence of the total lunar eclipse that took place on **7th of September, 2025**, which was observed in the **KSA**. The activity included a lecture that described the lunar eclipse phenomenon to students.

An outreach activity for a Sudanese School located in KSA

They shared their thoughts regarding information about the phenomenon and showed great interest in the topic. The day was full of enthusiasm. Photos followed here.

3. Some photos of the outreach activity



An outreach activity for a Sudanese School located in KSA



An outreach activity for a Sudanese School located in KSA



Note by the Editor of the ISWI Newsletter:
"KSA" = Kingdom of Saudi Arabia

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NASA to Launch Mission to Map the Bubble Around Our Solar System

A NASA mission, IMAP, and two more spacecraft are heading to space atop a single SpaceX rocket.



Listen to this article · 6:19 min [Learn more](#)

Three New Missions Launch to Track Space Weather



By **Kenneth Chang**

Sept. 24, 2025 Updated 6:51 a.m. ET

A SpaceX rocket scheduled to launch Wednesday morning will be a three-fer, carrying two spacecraft for NASA and one for the National Oceanic and Atmospheric Administration.

The two NASA missions are the Interstellar Mapping and Acceleration Probe, or IMAP, and the Carruthers Geocorona Observatory. The NOAA mission is known as the Space Weather Follow On-Lagrange 1, or SWFO-L1.

The missions will help answer scientific mysteries about the heliosphere, a giant magnetic bubble that surrounds the solar system, and provide crucial warnings when the sun belches a fusillade of high-energy particles at Earth. Such solar storms can disable satellites in orbit and crash electrical power networks on the ground.

When is the launch, and how can I watch it?

The SpaceX Falcon 9 rocket is scheduled to launch at 7:30 a.m. Eastern time on Wednesday from NASA's Kennedy Space Center in Florida. NASA coverage of the launch will begin at 6:40 a.m., which you can watch in the video player above.

Forecasts give a 90 percent chance of favorable weather. Launch directors said that everything was on track with the rocket and spacecraft for an on-time liftoff.



NASA's Interstellar Mapping and Acceleration Probe, along with two spacecraft, during encapsulation inside a SpaceX Falcon 9 rocket at the Kennedy Space Center in

Why are three spacecraft sharing one rocket?

Think of a rocket as a delivery van. In this case, the primary mission, IMAP, did not take up all of the available payload space, and SWFO-L1 was also headed to the region, the sun-Earth Lagrange 1 point. Thus, it made sense to put both on the same rocket.

It appeared that there would still be some leftover space, so NASA made an “announcement of opportunity” for scientists to propose a small, low-cost mission that could join the ride. The winning proposal was the Carruthers Geocorona Observatory.

“Having them fly together as one provides such an immense value for our American taxpayer,” Joe Westlake, director of the heliophysics division at NASA, said Sunday during a news conference.

IMAP’s cost, which includes \$109 million for the launch, is \$782 million. Carruthers will cost \$97 million, and SWFO-L1 will cost \$692 million.

What will IMAP do?

Ten instruments on IMAP will measure various aspects of the solar wind, the particles streaming from the sun outward through the solar system. They will also study the magnetic bubble of the heliosphere, which is generated by the solar wind.

That protective bubble deflects much of the high-energy radiation from outside the solar system. That’s especially important for galactic cosmic rays that would otherwise bombard the planets.

Without the protection of the heliosphere, life might not have arisen on Earth.

“Understanding that shielding, why it works, how it works, how much it can vary over time is obviously very important for human exploration beyond the near-Earth environment,” said David McComas, a professor of astrophysics at Princeton University who serves as the principal investigator for IMAP, including places like Mars.

One process that IMAP will study is when positively charged protons in the solar wind occasionally pick up an electron as they reach the outer part of the heliosphere. That changes them into electrically neutral hydrogen atoms, which can then fall back toward the inner solar system a few years later, where they can be detected by IMAP.

Such events are highly improbable — Dr. McComas calls it a 10 billion-mile hole in one — but there are so many solar wind particles that the rate will be high enough for IMAP to measure.

IMAP will also detect neutral particles entering the heliosphere from outside the solar system.

What will SWFO-L1 do?

In some respects, SWFO-L1 is a replacement for Deep Space Climate Observatory, or DSCVR, which was launched in 2015 to serve as an early warning system for solar storms.

NOAA is currently relying on two older NASA spacecraft, the Advanced Composition Explorer, or ACE, which launched in 1997, and the Solar and Heliospheric Observatory, or SOHO, which launched in 1995, for its data on solar wind and the explosions on the sun that create solar systems.

SWFO-L1 includes more modern versions of the ACE and SOHO instruments.

What will the Carruthers Geocorona Observatory do?

The observatory was originally named GLIDE, short for Global Lyman-alpha Imager of the Dynamic Exosphere. It will study the exosphere, a faint layer of Earth's atmosphere that extends at least halfway to the orbit of the moon.

The first time that scientists had a similar view of the entire exosphere was during the Apollo 16 mission in 1972 when astronauts deployed an ultraviolet camera designed by George Carruthers, one of the few Black scientists then at NASA.

The camera captured a faint ultraviolet glow of hydrogen atoms around Earth. When sunlight hits hydrogen atoms, it often pushes electrons into a high-energy state. When the electrons fall back into their lowest-energy state, the hydrogen atoms emit a specific wavelength of ultraviolet light known as the Lyman-alpha line.

Dr. Carruthers called that glow the geocorona.

After Dr. Carruthers died in 2020, Paul Hertz, then the director of NASA's astrophysics program, who had, early in his career, worked with Dr. Carruthers, saw a connection between the Apollo 16 images and what GLIDE would study.

In 2022, NASA renamed GLIDE after Dr. Carruthers.

What is Lagrange 1, and why are all three spacecraft going there?

Lagrange 1 is a region where the gravitational forces of the sun and Earth are in equilibrium.

That vantage point, close to a million miles away, is ideal for the spacecrafts' missions to make observations of the sun, the solar wind and Earth's exosphere.

The balancing of gravity between the Earth and sun means that it takes little fuel to keep the spacecraft in that region.

Kenneth Chang, a science reporter at The Times, covers NASA and the solar system, and research closer to Earth.

Researcher Position – SOLAR-Az Project

Project Overview

The SOLAR-Az project aims to establish a cutting-edge solar activity monitoring infrastructure in the Azores Archipelago, integrating it into the global e-CALLISTO network. The project will deploy new-generation spectrometers and antennas to fill the observational gap over the North Atlantic, enhancing global space weather forecasting. It is supported by the RIS3 Azores strategy and funded under the FRCT Scientific Employment Stimulus Program (contract ACORES2030-FEDER-01909900).

Host Institution

Associação RAEGE Açores – Rede Atlântica de Estações Geodinâmicas e Espaciais (RAEGE-Az)
São Pedro, Santa Maria Island, Azores, Portugal.

Position Summary

We are seeking a highly motivated Researcher in Solar Radio Physics and Space Weather. The successful candidate will contribute to the development, testing, and operation of solar monitoring stations, real-time data pipelines, and AI-based analysis tools. The position involves collaboration with national and international partners and includes responsibilities in scientific research, outreach, and training. Some minor travel will be needed between islands and internationally.

Main Responsibilities

- Contribute to the installation, calibration, and validation of radio monitoring equipment.
- Develop and test real-time data pipelines and deep learning algorithms for Solar Radio Burst (SRB) detection and classification.
- Lead scientific analysis of SRB data and contribute to peer-reviewed publications.
- Collaborate with project and external partner institutions (e.g., TRISOLARIS, AIR Centre, FHNW, UAH).
- Support outreach and training activities, including mentoring students and hosting workshops.
- Assist with technical deliverables and project reporting.

Required Qualifications

- PhD in Astrophysics, Radio Astronomy, Space Physics, or a related field.
- Experience with solar radio observations, space weather, or signal processing.
- Strong programming skills in Python, (SSW-)IDL or similar languages.
- English Proficiency (C1), Portuguese will be valued.
- Ability to work both independently and collaboratively in interdisciplinary teams.

Desirable Skills

- Experience with e-CALLISTO instruments or Software-Defined Radios (SDRs).
- Familiarity with machine learning for astrophysical data analysis.
- Knowledge of solar radio data pipelines and event classification.
- Interest in science communication and regional capacity building.

Contract Details

- Duration: 36 Months
- Expected start: As soon as possible in the current year of 2025
- Remuneration: According to level 33 of “Tabela remuneratória única da administração pública”.
- Workplace: RAEGE-Az, Santa Maria Island, Portugal

Application Process

Candidates must submit the following documents:

- Curriculum Vitae (CV) with complete publication list
- Motivation Letter
- Two reference letters
- Copy of PhD certificate

Application

Applications should be submitted via email to rh@a-raege-az.pt, with the subject line: “SOLAR-Az Pos-Doc” and include all required documentation.

This position remains open until it is filled.

End of this ISWI Newsletter