
* ISWI Newsletter - Vol. 17 No. 002

15 Feb 2025 *

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

* Archive of back issues: ISWI Website <https://iswi-secretariat.org/>

* Send subscription request to: iswisupport@bc.edu

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.
- [2] Web version -- this is the full version with attachments.

To view the Web version, go to this web page:

<https://iswi-secretariat.org/>
and click on "NEWSLETTERS".

The annual meeting of the ISWI Steering Committee occurred in Vienna on 7 February 2025. The first two items of this newsletter (Feb 2025) are meeting reports from Dr Nat Gopalswamy, the Executive Director of ISWI:

- [01] 2025 ISWI SC Annual Meeting Update
- [02] 2025 ISWI SC Annual Meeting Minutes

As always, I seek material for this newsletter. Please send in space-weather-related items to me, such as:

- event announcements
- post-doc fellowships
- scholarship news
- event reports
- and so on.

Please keep any attachment to under 2 MB.

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

CONTENTS OF THIS ISSUE:

- [01] 2025 ISWI SC Annual Meeting Update
- [02] 2025 ISWI SC Annual Meeting Minutes
- [03] New host of ISWI webinar recordings
- [04] Call for papers URSI AP-RASC 2025, 17-22 August. Sydney
. -- Session G03 "Ionospheric Space Weather and

. Impacts on Technological Systems"

[05] There was a ISWI webinar about AGATA on 29 Jan 2025

[06] Invitation to the 5th International Annual Conference on
. Planetary Aeronomy, Magnetism and Space Weather (Ethiopia)

[07] From Christian Monstein the latest Callisto newsletter

[08] Event in Tokyo:
. Hanayama Space Culture Foundation Lecture
. "Solar Flares and Space Weather Forecast"
. Date: Friday, February 28, 2025

[09] 9th International Conference on Space Science and Communication
. (IconSpace 2025) :“Space Science & Technology for a Resilient Future”;
. 23-25 September 2025 in Melaka, Malaysia.

[01]-----

2025 ISWI SC Annual Meeting Update

Please see this attachment:
ISWI_SC_2025_update (Final Agenda).pdf
001

[02]-----

2025 ISWI SC Annual Meeting Minutes

Please see this attachment:
ISWI_SC_2025_Minutes.pdf
002

[03]-----

New host of ISWI webinar recordings:
The recordings are no longer archived at UNOOSA.
Instead, they have been moved to here:

<https://cdaw.gsfc.nasa.gov/webinars/ISWI/>

Currently archived are these recordings:

=====

- 01 An Overview of the International Space Weather Initiative
Nat Gopalswamy 2022/04/27
- 02 A Magneto-Inductive Magnetometer System for Boom-less Satellites,
Global Magnetometer Networks and Backyard Citizen-Science Space Weather Monitors

- Mark Moldwin 2022/05/25
- 03 Large Solar Energetic Particle Events Pertti Mäkelä 2022/06/29
- 04 Magnetic Storm Intensity and Space Weather; PRESTO Program
Ramon E. Lopez 2022/07/27
- 05 Dynamical evolution of Interplanetary Coronal Mass Ejections:
consequences on geo-space and on galactic cosmic
Sergio Dasso 2022/09/28
- 06 Origins of space weather phenomena at the Sun: additional constraints
from multi-spacecraft observations and the Solar Orbiter mission
Miho Janvier 2022/10/25
- 07 Sun-Earth connections and Space Weather
Christine Amory-Mazaudier 2022/11/30
- 08 Realistic Ionosphere (RION): data fusion of GIRO and GNSS nRT capabilities
Ivan Galkin 2023/01/25
- 09 Ground-based multi-point network from subauroral to equatorial latitudes
by the Optical Mesosphere Thermosphere Imagers (OMTIs) and the PWING Project
Kazuo Shiokawa 2023/02/22
- 10 Understanding Space Weather - an interdisciplinary field of research
Manuela Temmer 2023/03/29
- 11 Small Scale Ionospheric Irregularities (and their effects on radio wave propagation)
Keith M. Groves 2023/04/26
- 12 Solar Flares and Space Weather, Lucia Kleint 2023/06/28
- 13 NASA's Geospace Dynamics Constellation: Exploring our Connected Atmosphere
Doug Rowland 2023/09/27
- 14 Considerations on the morphology of coronal mass ejections
Hebe Cremades 2023/10/25
- 15 In-situ and ground-based studies of plasma irregularities in the polar ionosphere
Wojciech Miloch 2024/01/31
- 16 Observation of waves in the ionosphere and thermosphere
Jaroslav Chum 2024/03/27
- 17 Space Weather Predictability Ioannis A. Daglis 2024/04/24
- 18 Space weather activities in Africa: Infrastructure, capacity building,
current research efforts and opportunities
Babatunde Rabi 2024/06/26
- 19 Exploring the Middle Corona (the Second Coronal Transition Region)
Matthew West 2024/09/25
- 20 Is there a relationship between solar wind Alfvénic turbulence and
magnetospheric dynamics? What Solar Orbiter observations can help with?
Raffaella D'Amicis 2024/10/30
- 21 Rare and dangerous extreme solar eruptive events: A new phenomenon
Ilya Usoskin 2024/11/27
- 22 The importance of the polar regions to understand the magnetosphere-atmosphere
coupling: the AGATA initiative Lucilla Alfonsi 2025/01/29

[04]-----

Call for papers URSI AP-RASC 2025, 17-22 August. Sydney
-- Session G03 "Ionospheric Space Weather and
Impacts on Technological Systems"

FROM: Vincenzo Romano

DATE: 27 Jan 2025
TO: ISWI members

Dear Colleagues:

We kindly invite you to submit a paper to the session G03 "Ionospheric Space Weather and Impacts on Technological Systems" at upcoming URSI AP-RASC 2025 conference (<https://ap-rasc.com/home.php>) which will be held in Sydney, Australia, from 17 to 22 August 2025.

Please note that URSI makes available a generous and exciting program for students and young scientists with prizes and awards.

IMPORTANT INFO AND USEFUL LINK

paper submission <https://ap-rasc.com/papersubmission.php> - deadline February 20 2025
student paper competition <https://ap-rasc.com/student-paper-competition.php>
young scientists award <https://ap-rasc.com/youngscientistaward.php>

The session description follows, we hope you will join us in Sydney!

Best regards,
Iwona Stanislawska (SRC-PAS, Poland)
Anthea Coster (MIT, US)
Kichang Yoon (RRA, South Korea)
Vincenzo Romano (INGV, Italy)

SESSION

G03 Ionospheric Space Weather and Impacts on Technological Systems

DESCRIPTION

This session will focus on ionospheric and space weather events that potentially have impacts on society and infrastructures. Studies on the impact of space weather on various aspects of everyday life including technological systems, telecommunications and satellite navigation are of special interest of this session. Currently offered services based on the latest scientific knowledge should meet social and economic expectations. This necessitates prompt and agile research and development of our understanding of the solar-terrestrial system and the subsequent impacts of space weather events. The session will also cover all areas of space weather research including modelling, forecasting and/or mitigation of ionospheric, magnetospheric, and heliophysical phenomena due to space weather events. Particular focus is on radio wave systems, techniques, and impacts.

INGV
Istituto Nazionale di Geofisica e Vulcanologia
Vincenzo Romano, PhD

[05]-----

Please see this attachment:
Webinar about AGATA -- title and abstract.pdf

003

[06]-----

RE: Invitation to the 5th International Annual Conference on
Planetary Aeronomy, Magnetism and Space Weather
FROM: Yekoye Asmare
DATE: 6 Jan 2025.

Dear Colleagues,

I hope this email finds you well. We are pleased to announce that the Space and Planetary Science (SPS) research division at the Space Science and Geospatial Institute (SSGI) will be hosting the 5th International Conference under the newly branded theme, "Planetary Aeronomy, Magnetism, and Space Weather Annual Conference (PAMSAC)." PAMSAC 2025 aims to unite researchers, engineers, and leading scientists to share insights and updates on the latest developments in space, planetary, and atmospheric sciences. By assessing the current status and impact of research and applications in these fields, the conference will facilitate knowledge exchange, encourage partnerships, and tackle the challenges and advancements shaping our understanding of the fields. PAMSAC 2025 will be held in a hybrid format (both in-person and virtual) during June 17-19, 2025, in Addis Ababa, Ethiopia.

For detailed information about the conference and how to submit your abstracts, please visit the following link:

<http://ssgi.gov.et/invitation-to-international-annual-conference/> .

Please feel free to share this information with your colleagues who are actively engaged in the thematic areas described.

We look forward to welcoming you to PAMSAC 2025.

Best regards,
Yekoye Asmare Tariku
On behalf of the Organizing Committee

[07]-----

FROM: Christian Monstein
DATE: 25 Jan 2025
TO: Members of Callisto

Dear user

Attached is the latest Callisto newsletter with a report from the new station Visnjan in Croatia as well as a bar-chart about all bursts detected in 2025.

Enjoy

Attachment:

status_101V01.pdf

004

[08]-----

Hanayama Space Culture Foundation Lecture
"Solar Flares and Space Weather Forecast"

Date: Friday, February 28, 2025

Location: X-NIHONBASHI BASE (Nihonbashi IT Building)

Organized by: Kazan Space Culture Foundation

URL: <https://www.crossu.org/event/250228ib/>

[webpage is in Japanese]

Description: A science cafe where you can learn about space weather forecasting while enjoying light snacks and drinks and having free Q&A sessions.

[09]-----

Welcome to IconSpace 2025 from the organizers:

We are pleased to announce that the 9th International Conference on Space Science and Communication (IconSpace 2025) with the theme "Space Science & Technology for a Resilient Future", will be held on 23-25 September 2025 in Melaka, Malaysia.

Website: <https://www.ukm.my/iconspace/>

Please also see the attached flyer:

CALL FOR PAPERS, ICONSPACE 2025.pdf

005

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

2025

ISWI SC Annual Meeting



Update

Dear ISWI colleague,

We had a productive ISWI Steering Committee (SC) meeting at the Vienne International Center along the sidelines of the UNCOPUOS' Science and Technology Subcommittee's (STSC's) 62nd session. STSC also had deliberations on the Space Weather Agenda. Many member states mentioned their participation in ISWI activities (science, instrument deployment, capacity building and outreach).

The Final Agenda adapted at the SC meeting is as follows:

- 1. Introduction & Report (Nat Gopalswamy, Chair) 9:00**
- 2. Secretariat Update (Nat Gopalswamy, Kathleen Kraemer, George Maeda, Graciela Molina) 9:10**
- 3. Steering Committee Update (Nat Gopalswamy) 9:25**
- 4. Reports from ISWI Regional & National Coordinators: Asia (C. Amory, R. Marshall) 9:35**
- 5. SCOSTEP/PRESTO/COURSE (Kazuo Shiokawa) 10:35**
- Break 10:50 – 11:00**
- 6. UNOOSA Report (Sharafat Gadimova) 11:00**
- 7. UN/Germany ISWI Workshop report (Daniela Banyś) 11:20**
- 8. Reports from ISWI Regional & National Coordinators: Europe & Africa (C. Amory, B. Rabi) 11:40**
- 9. COSPAR Space Weather Roadmap and ISWAT activities (Masha Kuznetsova) 12:45**
- Lunch break 13:00 – 14:00**
- 10. ISWI/Nepal School report (Nishu Karna) 14:00**
- 11. Discussion 2025/2026 ISWI schools (Kazakhstan, India) 14:10**
- 12. Reports from ISWI Regional & National Coordinators: Americas (C. Amory, D. Banyś) 14:20**
- 13. ISWI Instruments Update (Shing Fung and Instrument PIs) 15:20**
- 14. Reports from ISWI Regional & National Coordinators: Americas (C. Amory, J. A. Gonzalez-Esparza) 15:50**
- Break 16:20 – 16:30**
- 15. Data Subcommittee report: Shing Fung 16:30**
- 16. Discussion on IHY+25 17:00**
- 17. Any other business 17:30**

It was wonderful to see more than half of the national coordinators participating in person or online. The SC meeting turned out to be an important forum for exchange of information on space weather and make plans for the upcoming year. The following are the key decisions made.

- The school proposal from India (Drs Gurubaran and Tulasiram) has been unanimously accepted. The tentative dates are in January 2026.

- A new school request was made by Kazakhstan to hold a school in Almaty in 2025. Shafa and I met with the Kazakhstan's permanent mission to the UN and explained the responsibility of the host country, especially financial support. Kazakhstan's point of contact will be identified soon to continue the discussion.
- SCOSTEP would like to be a partner in the above two schools.
- N. Jakowski, Aki Yoshikawa, and Elsayed Talaat retired from the steering committee. ISWI thanks these SC members for their tremendous service over many years. ISWI also welcomes Shuji Abe, who has been inducted to represent the MAGDAS community.
- In 2026, the SC meeting will take place over two days to allow more time for presentations by national coordinators and discussion.
- There was enthusiastic response from the participants on the idea of IHY+25. A Committee will be soon formed to charter the course of action.

A separate document containing the SC 2025 meeting minutes compiled by Yenca Migoya-Orue is provided to the community.

Best Wishes

Nat Gopalswamy



Group Photo 2025 Feb 7



ISWI dinner at Donaubeisl, Vienna

2025

ISWI SC Annual Meeting

Minutes



Meeting Details: 7 February 2025 9:00 – 18:00 CET
Conference Room M5 (M-building), Vienna International Centre (VIC)

Meeting mode: In-person and online

The ISWI Executive Director and Steering Committee chair, Nat Gopalswamy (NG) welcomed in-person and online attendees and presented the meeting annotated Agenda.

The meeting began with a moment of silence to honor the passing of Giovanni Lapenta (KU Leuven), national coordinator of Belgium, who passed away on 28 May 2024.

Agenda Items

1. Introduction and Report (NG). NG presented a summary of 2024 ISWI activities: workshops, school, missions (Parker Probe) and representation (ICMP, COSPAR). The attendance of national coordinators for the current meeting is ~40.
2. Secretariat Update (NG, Kathleen Kramer (KK), George Maeda (GM), Graciela Molina (GrM)). NG presented the updates regarding the website (KK), the newsletter (GM) and the webinar series (GrM) prepared by the corresponding Secretariat members: mailing lists were migrated to BC server, some of them seem unused and need update. Subscribers to the ISWI newsletter are currently 727, GM reminded to send news related to SWx before day 15th of each month. ISWI webinars are archived since October 2024 in <https://cdaw.gsfc.nasa.gov/webinars/ISWI/>
3. Steering Committee Update (NG). N. Jakowski was replaced by Daniela Baniś (DB), A. Yokishawa by Shuji Abe, ES Talaat retired. There is a need to involve NOAA/NASA members.
4. Reports from ISWI Regional & National Coordinators: Asia (C. Amory (CA) and R. Marshall (RM)). CA presented the National Coordinators Update: Pakistan (Nadia Imtiaz); Austria (Christian Möstl); Belgium (Erwin De Donder); Mexico (Luis Xavier González Méndez). New countries were added to the network: Costa Rica (Carolina Salas Matamoros) and Chad (Ali Mahamat Nour). RM invited the Asian national coordinators in presence or online and presented the updates of the countries in the following order:
 - South Korea, Kyung Suk, KS (in person)
 - China, Bingxian Luo (in person)
 - India, Nandita Srivastava (online)
 - Pakistan, Nadia Imtiaz (online)
 - Kazakhstan, Olga Kryakunova (online)

- Vietnam, (RM on behalf of Le Huy Minh)
- Indonesia, (RM on behalf of Dhani Herdiwijaya)
- Australia, RM (online)
- Nepal, RM on behalf of Narayan Chapagain
- Thailand, Sittiporn Channumsin (online)

There were two additional presentations made by:

- Septi Perwitasari, who reported about the Space Weather Capacity Building in the Asia-Oceania Space Weather Alliance (AOSWA) and NICT.
 - M. Ishii reported on WMO-ISES-COSPAR Coordination Team (WICCT).
5. SCOSTEP/PRESTO Report (Kazuo Shiokawa, KS): KS reported on PRESTO activities, seminars, newsletter, capacity building SCOSTEP events, visiting scholar programme and comic books (he invited to translate to other languages).
 6. UNOOSA Report (Sharafat Gadimova, SG): SG mentioned about UNOOSA/ICG training courses on GNSS and low cost receivers organized in collaboration with ICTP, BC and Tokyo University. There is interest on open source software and good sources of data and instruments related to those subjects. Next UN/ISWI workshop will take place this year in Nigeria.
 7. UN/Germany Workshop on ISWI 2024 Report (DB): DB presented a report on the UN/Germany ISWI workshop organized by UNOOSA, supported by DLR and co-sponsored by ICG. The NASA's Living with a Star program covered the publication cost of the Proceedings: 33 were accepted for publication. DB urged authors in the future to prepare the proceedings manuscripts strictly adhering to the publisher template.
 8. Reports from ISWI Regional & National Coordinators: Africa (B. Rabiou, BR). BR coordinated and provided updates on behalf of national coordinators of the following countries:
 - Ethiopia, BR on behalf of Melesew Nigussie
 - Morocco, Aziza Bounhir
 - Uganda, BR on behalf of Patrick Mungufeni
 - Tunisia, Ammar (online)
 - Egypt, BR on behalf of A. Mahrous
 - Ivory Coast, Frank Grodji
 - Chad, BR on behalf of Mahamat Nour
 - Kenya, BR on behalf of P. Baki and J. Olwendo
 - Guinea, BR on behalf of R. Loua
 - Senegal, BR on behalf of Idrissa
 - Nigeria, BR (online)
 - South Africa, BR on behalf of J. Bosco Habarulema
 - Rwanda, BR on behalf of J. Uwamahoro

BR was invited to elaborate more about the next UN/Nigeria Workshop on ISWI 2025 that will take place from 6 to 10 October, 2025 in Abuja. The proposed subtitle of the workshop is "Space Weather during a moderate solar cycle 25". There will be organized field trips in Abuja.

At 12.30 all the attendants (in person and online) were invited to take a group picture.

9. COSPAR Space Weather Roadmap and ISWAT activities (Masha Kuznetsova, MK). MK reviewed the objectives, organization, status and way forward of the International SW Action Teams. There will be an ISWAT Working meeting on 10-14 February in Cape Canaveral, Florida, USA. NG invited to those that want to attend the meeting in person to send an email to MK.

Lunch break at 12:48

10. ISWI/Nepal School Report (Nishu Karna)

11. Discussion on 2025/2026 ISWI Schools (NG). NG shared the proposals received for 2025/2026 ISWI schools: a proposal from Kazakhstan was recently received for a school in 2025. More details about the planning of the school (dates, estimated number of students, location, accommodation) will be discussed with local organizer soon. NG invited to involve neighboring countries to avoid long distance travels and to everybody in the community available to give a lecture, accommodation will be provided.

For the year 2026, India made a proposal, accommodation for faculty and students is already well defined.

12. Reports from ISWI Regional & National Coordinators: Europe (DB). DB coordinated and provided updates on behalf of some national coordinators of the following countries:

- Slovakia, Ivan Dorotovic (online)
- Romania, DB on behalf of Diana Besliu-Ionescu
- Austria, C. Möstl (online)
- Hungary, DB on behalf of J. Murakötzy
- France, Frederic Pitout (online)
- Norway, Kjellmar Oksavik (in person)
- Finland, DB on behalf of I. Honkonen
- Bulgaria, Simeon Asenovski (online)
- Italy, Yenca Migoya-Oru  (in person)
- Germany, DB (in person)
- Serbia, Nikola Veselinovic (online)

13. ISWI Instruments Update: Shing Fung (SF) and Instruments PI's. SF coordinated the updates of the following instruments PI's in ISWI:

- e-CALLISTO, Manuel Prieto (UAH, Spain) in presence
- CHAIN, SF on behalf of S. UeNo
- GMDN, SF on behalf of C. Kato
- MAGDAS, A. Yoshikawa, online
- OMTIs, KS, in presence
- RION, Ivan Galkin, online
- SEVAN, SF on behalf of A. Chilingaryan
- GIFDS, DB in presence

14. Reports from ISWI Regional & National Coordinators: Americas (Clelio De Nardin, CD on behalf of J. A. Gonzalez-Esparza). CD coordinated the updates and presented on behalf of some national coordinators of the following countries:

- Argentina, GrM (online)
- Brazil, CD in presence
- Costa Rica, CD on behalf of C. Salas Matamoros

- México, CD on behalf of Luis Xavier González-Méndez
- Perú, CD on behalf of Walter Guevara Day
- USA, Alphonse Sterling, in presence
Keith Groves (KG) shared on the chat meeting a link to the NASA SW Centers of excellence, <https://science.nasa.gov/space-weather-centers-of-excellence/>
CD reported on IMCP 2024 workshop held in Sao Paulo, Brazil and announced the next COLAGE organized by ALAGE from 14 – 18 September, 2026 in Arequipa, Perú.
CA introduced F. Pitout (FP) who presented updates about IMCP – EAP (Europe, Africa, Pacific) project and extend invitation to be involved.

15. Data Subcommittee Report (SF). SF provided updates regarding changes in the members of the Subcommittee: GM and C. Monstein retired, Y. Migoya-Orué (YM) and K. Giorgis (KGs) are new members. SF reminded the importance of promoting the two important ISWI resources: data and researchers: a form to gather publications made with ISWI instruments and data was prepared by KGs and will be circulated among the community. A new version of ISWI data policy has been released last year. SF reminded that some instruments PI's are still not responding about the data policy compliancy (AMMA, CIDR, RENOIR). CA mentioned that AMMA is a legacy instrument and some RENOIR stations are active in Morocco. SG asked about where the data are stored. SF noted that without a centralized storage system, instrument data is stored independently. SF highlighted the importance to have data migrated to SPASE metadata in order to be FAIR (findable, accessible, interoperable and reusable).
16. Discussion on IHY+25 (NG). It is expected to celebrate IHY 25 in 2032. NG welcomed ideas and suggested to create a committee involving junior and mid-career members. KO proposed to involve also senior members for coordination and mentoring. SG indicated the chance to organize some activity (workshop, symposia) in 2027 to celebrate 20 years. YM suggested to publish special issues in scientific journals to highlight the latest research and findings related to the IHY. GrM, CA and KS emphasized the importance of data curation for studies and Machine Learning models. KO, DB, GrM and YM volunteered to be involved in a potential committee to organize IHY 25 and others were mentioned: Alisson Dal Lago and Ronke. NG invited all the community to keep this in mind and take the opportunity and the next 5 years to promote science through this event including modern points of view.
17. AOB. There was a discussion about doing the meeting in 1.5/2 days next time. Some members would like to have more time to share updates. DB asked for an easier way to share the presentations before the meeting. SF asked for comments about the form suggested for Data Subcommittee. CA believed it is a good idea to give visibility to achieved results of the community. GrM asked information about data and SPASE and it was clarified by SF. It was reminded that presentations and minutes will be available for the ISWI members.

NG thanked all participants and adjourned the meeting at 17.50.

Minutes taken by Y. Migoya-Orué.



Dr. Lucilla Alfonsi

INGV

The importance of the polar regions to understand the magnetosphere-atmosphere coupling: the AGATA initiative

AGATA (Antarctic Geospace and ATmosphere research) is a new Scientific Research Programme (SRP) approved by SCAR (Scientific Committee on Antarctic Research) in 2024 after more than 10 years from the previous initiative on similar topics. AGATA started on 1 January 2025 and will be officially kicked off on late March 2025 (www.scar.org/science/agata/home/).

The SRP aims to gather the scientific communities working on polar regions to answering the outstanding scientific questions within atmospheric and space physics over polar regions:

- How are different atmospheric layers coupled in the polar regions?
- How does the upper polar atmosphere respond to increased geomagnetic activity, including energy transfer from space?
- How does the whole polar atmosphere impact short- and long-term climate variations?

As the central role of the polar regions in understanding the coupling between the magnetosphere and the neutral and the ionized atmosphere, answering these questions will not only have implications on the understanding of processes in the polar atmosphere, but it will also greatly improve our understanding of the global atmospheric dynamics, thus contributing to the development of large-scale whole atmosphere and climate models.

The webinar aims to open the discussion within the ISWI community to adopt best practices for collaboration and fruitful development also in view of the next IPY (2032-2033) opportunities.



ISWI Members:

003

This webinar was presented on 29 Jan 2025 online. I saw about 33 participants. You can view the recording at the ISWI Webinar archives: <https://cdaw.gsfc.nasa.gov/webinars/ISWI/>

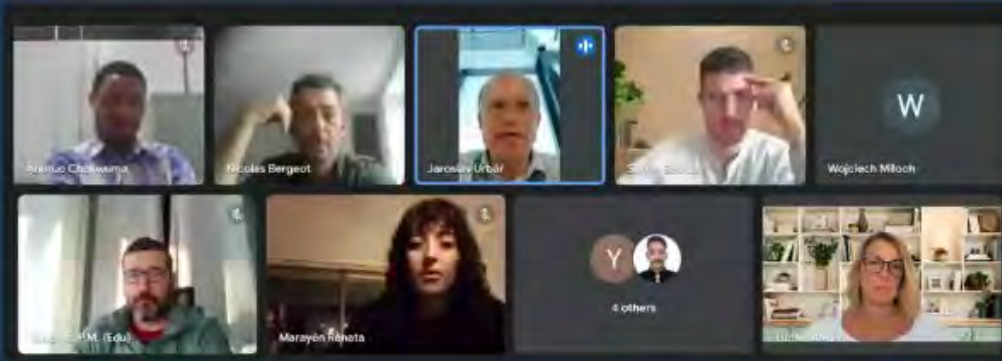
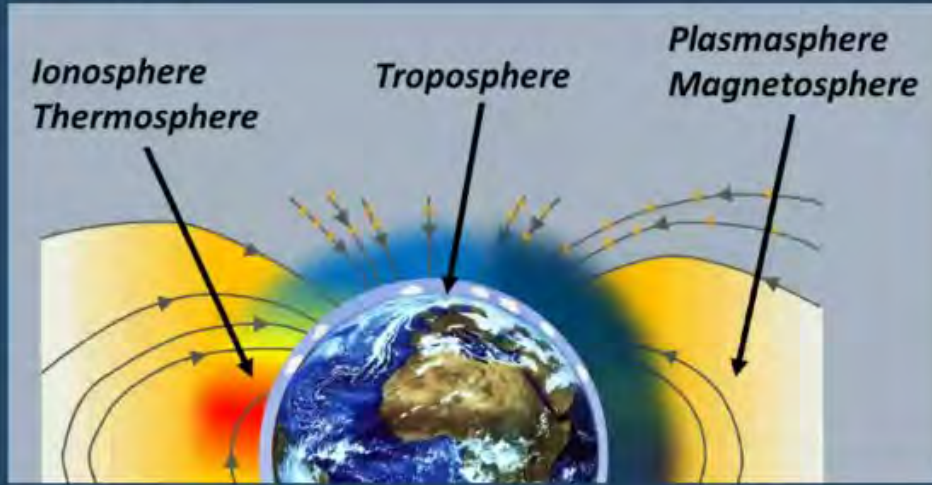
George Maeda
Boston, 29 Jan 2025.

Title: *The importance of the polar regions to understand the magnetosphere-atmosphere coupling: the AGATA initiative*

Speaker: **Dr. Lucilla Alfonsi**
Istituto Nazionale di Geofisica e Vulcanologia (INGV)

Sample screenshot on the next page.

OBJECTIVES



AGATA gathers communities that investigate the polar weather, atmosphere, and geospace to study the coupling between different atmospheric layers and the impact of solar-terrestrial interactions for the conditions in the atmosphere (both lower and upper atmosphere).

This opens for innovating science encompassing different atmospheric layers and near-Earth space.

AGATA:

- *Focus on the polar regions (Antarctica and Arctic)*
- *Strengthens the collaboration between atmospheric scientists and space physics community*
- *Facilitates sharing of data, algorithms and models, access to research infrastructure*
- *Develops and strengthens the collaboration between the research communities that manage and exploit ground-based and in-situ observations*

icate new generation of scientists.

**SAMPLE
SCREEN
SHOT**





CALLISTO status report/newsletter #101

After 18 years of visual inspection of thousands of FIT-files every day I had to stop this very time consuming task due to severe health issues, triggered by this exhausting activity.

From January 2025 onwards burst detection and reporting is performed by the Spanish group from university of Alcalá, based of AI/ML processes running periodically on a LINUX system.

Access to burst lists still here: https://soleil.i4ds.ch/solarradio/data/BurstLists/2010-yyyy_Monstein/

For more information about automatic burst-detection, see:

Bussons Gordo, J., Fernández Ruiz, M., Prieto Mateo, M. *et al.* Automatic Burst Detection in Solar Radio Spectrograms Using Deep Learning: deARCE Method. *Sol Phys* **298**, 82 (2023).

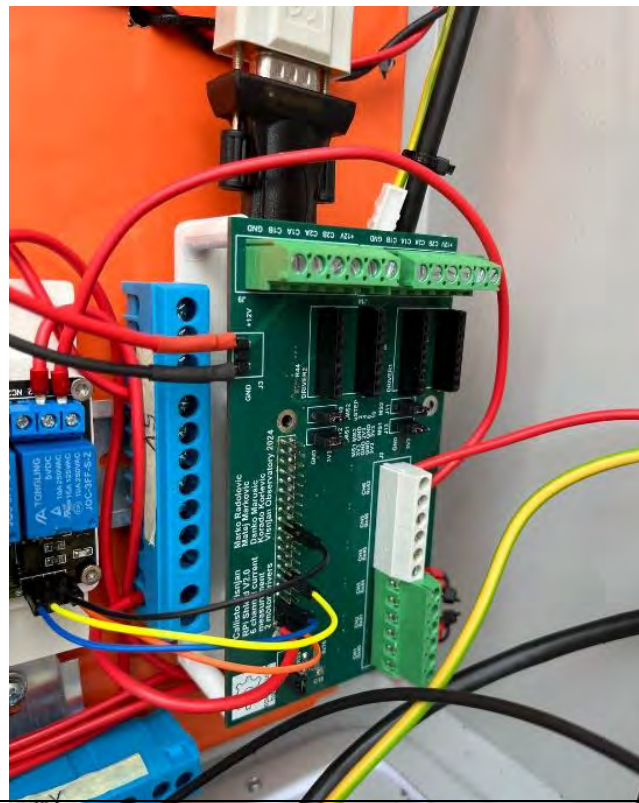
<https://doi.org/10.1007/s11207-023-02171-0>

Callisto Visnjan, Croatia

Hardware description of Callisto station at Visnjan Observatory

Marko Radolović, Matej Marković et al.

Due to frequent system malfunctions in 2023-2024, we decided to redesign our system. From Aug 23 until June 24, time was spent debugging our faulty system. Without a VNA, any assumption that was



made about a possible faulty component was meaningless. After many hours spent debugging, the conclusion is that we spent a year with a faulty LNA. Therefore, we acquired a LNA from 9A4QV – LNA4ALL, as well as a Nano VNA.

Soon after installing the new LNA, we had our first „big burst“. See FIT from 20240830@1215UTC.

In order to have an autonomous system, we need to have real-time current and temperature monitoring. Our system runs off of a single Raspberry Pi 3B+. A shield for the Pi was made. The shield consists of six INA219 current measurement channels and a BME280 sensor, which measures temperature, relative humidity and air pressure.

The additional female headers will be used to hold two TMC2209 stepper motor drivers, for the RA and DEC axis, respectively.

Figure 1: Raspberry Pi shield



The current and temperature sensors use the I2C bus. TMC2209 enables the use of the UART bus, as well as GPIO pin driving. As of Jan 25, the drivers haven't been tested yet.

Inside of the electronics enclosure, we currently use a 40 W heater, made out of car light bulbs, to heat up the air when there is possible condensation. The heater is activated via a relay. Sometimes, the Callisto serial communication glitches, after which Callisto needs to be restarted. That is done with a relay which is normally closed. A 5s disengagement of the contacts is enough to fully restart the device. RPi shield gerbers, as well as all the software used can be found at github.com/mradolovic/callisto. For any additional information, please contact Marko Radolović at [marko.radolovic\[at\]fer.hr](mailto:marko.radolovic@fer.hr).

Due to strong RFI from local FM stations, as well as the GSM network, we must use a FM notch filter (<https://lna4all.blogspot.com/2015/10/diy-fm-trap-or-88-108-mhz-band-stop.html>) and a low pass filter (MiniCircuits SXLP-4+).

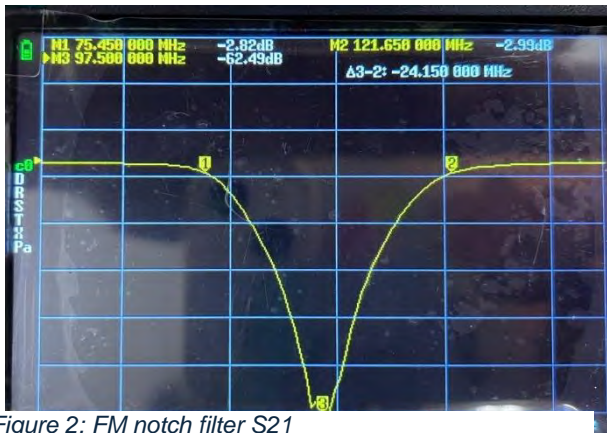


Figure 2: FM notch filter S21

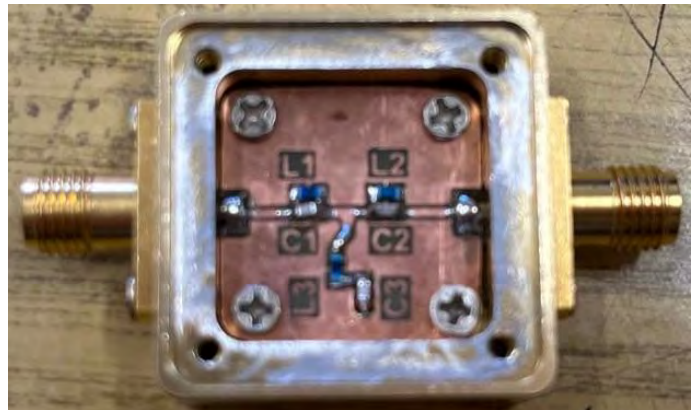


Figure 3: FM notch filter

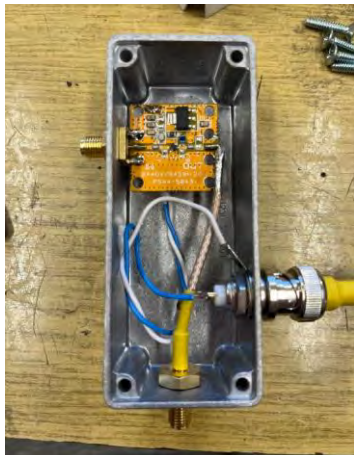


Figure 4: LNA in enclosure



Figure 5: Complete electronics in enclosure

The FM notch filter has a bandwidth of 24MHz, from 75MHz to 121MHz. It's a DIY version using 0603 components and an aluminum box from AliExpress. Beware if using this box! The sellers claim that it has a conductive coating, but it is anodised. Remove the coating with a grinder before assembling the circuit.

We couldn't find an appropriate milled enclosure for the LNA, so we used a die-cast box. Connection with a short piece of coax

isn't ideal, but it shouldn't cause reflections under 1GHz.

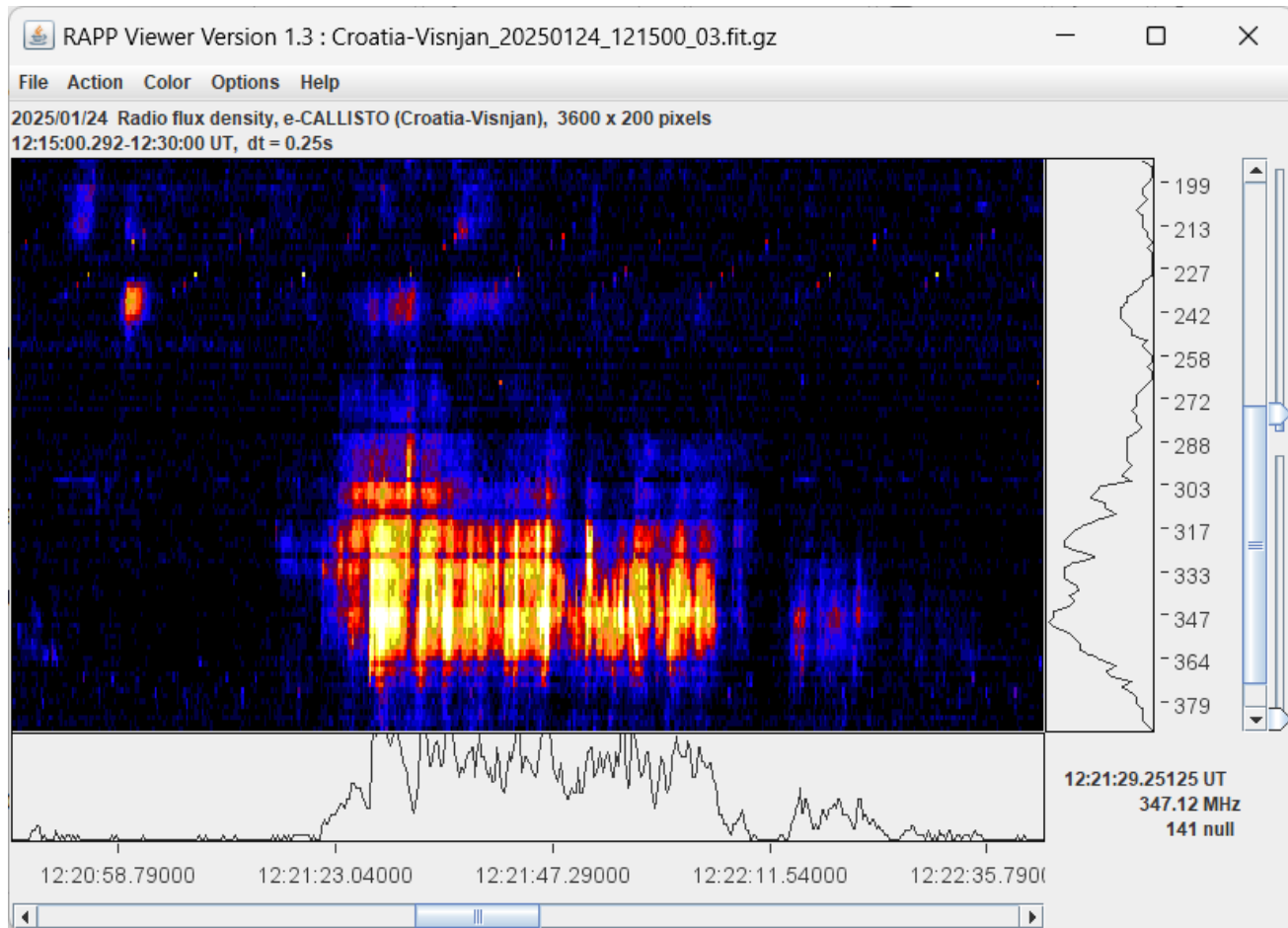


Fig. 6: Recent observation, a group of type III solar radio bursts.



e-Callisto burst statistics whole year 2025

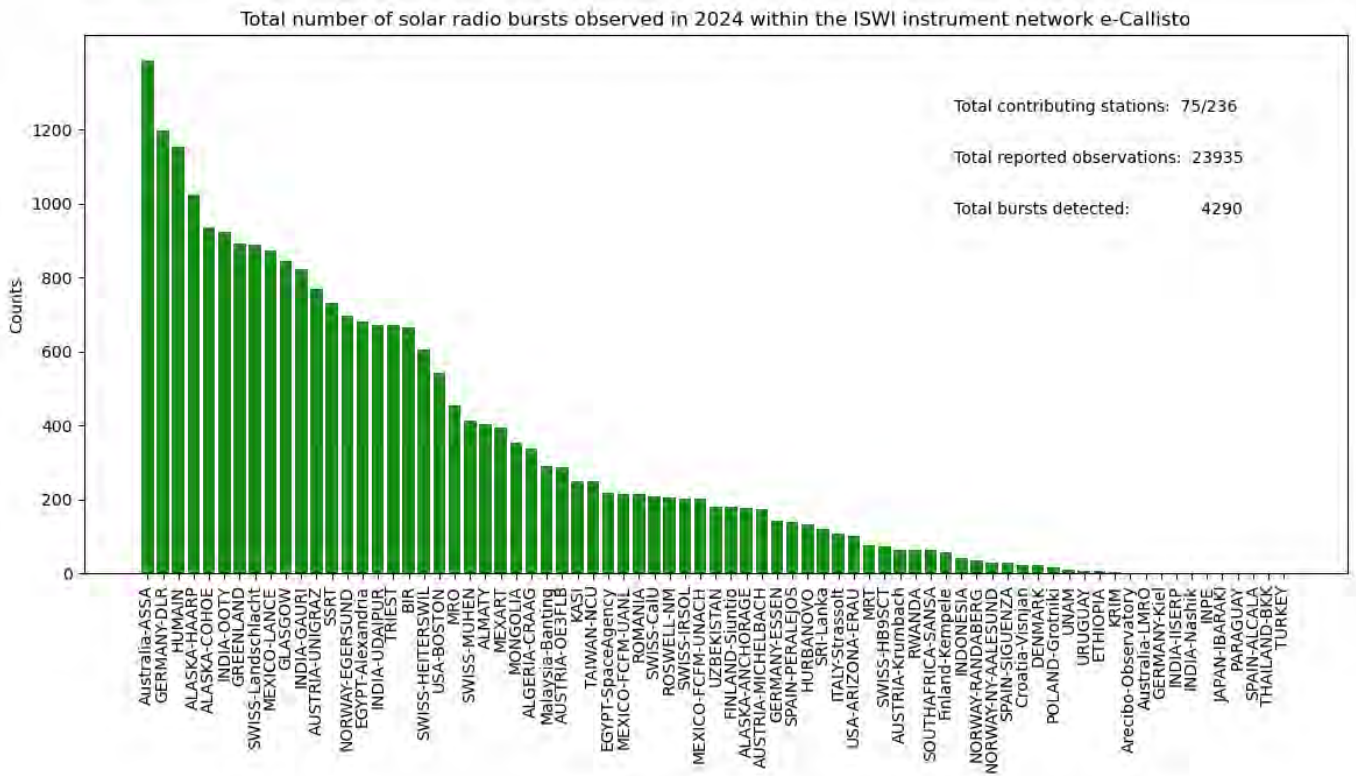


Fig. 6: Compilation of all visually detected bursts from all Callisto-stations which provide data to the e-Callisto network. There are clear ‘winners’ of the 2025-‘competition’, Australia-ASSA. Last 4 burst-plots are always available here: <https://e-callisto.org/Data/data.html>



CESRA NEWS

<https://heliowiki.smce.nasa.gov/wiki/index.php/SolarNuggets>

CESRA nuggets:

Observations of coronal holes with the Siberian Radio Heliograph
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A Possible Indication of the Insufficiency of Simplistic Homogeneous Models for Estimating Magnetic Fields of CMEs using Gyrosynchrotron Emission

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by A. O. Benz et al.

<https://www.astro.gla.ac.uk/users/eduard/cesra/?p=3915>

Flare Accelerated Electron Transport in Type III Solar Radio Bursts: large-scale transport and super-diffusive beam expansion

by E. P. Kontar et al.

<https://www.astro.gla.ac.uk/users/eduard/cesra/?p=3930>

AOB



- If you have some stuff to present to the Callisto community, please let me know
- CALLISTO or Callisto denotes to the spectrometer itself while e-Callisto denotes to the worldwide network.
- General information and data access here: <https://e-callisto.org/>
- e-Callisto data are hosted at University of Applied Sciences, Institute for Data Science FHNW in Brugg/Windisch, Switzerland. Additionally, data are available at ESA site here: ESA Space Weather Portal (<https://swe.ssa.esa.int/>).
- From now on Bussons Gordo Javier javier.bussons@uah.es from Alcalá is the new Co-PI and will support my activities related to CALLISTO instrument and e-Callisto network.
- In case you (as the responsible person for operating and maintenance of Callisto) are leaving the institute or, if you are retiring, please send me name and email address of the successor.



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