



**ISWI Steering Committee Annual Meeting Minutes  
2021 February 19; 10:00AM GMT  
Online Meeting via Zoom**

Minutes Submitted by Patricia Doherty, ISWI Meeting Coordinator

Dr. Nat Gopalswamy (ISWI Steering Committee Chair) called the meeting to order at 10AM GMT. An unprecedented number of 54 participants were in attendance including 16 steering committee members, achieving the necessary quorum for the meeting.

Dr. Gopalswamy presented the agenda as follows:

1. Introduction & Report (Chair)
2. Secretariat Update (Pat Doherty, Katya Georgieva, Mitko Danov, George Maeda)
3. Steering Committee Update (Chair - Welcome Prof Ichimoto, James Spann) – included in #1
4. AI/Machine Learning for Space Weather (Lika Guhathakurta)
5. SCOSTEP/PRESTO Report (Kazuo Shiokawa)
6. ISWI National Coordinators (Christine Amory, National Coordinators)
7. ISWI Instruments Update (Shing Fung and Instrument PIs)
8. ISWI/India Workshop Status (Tarun Pant, Pat Doherty and Sharafat Gadimova)
9. ISWI School 2021 Online (Teresa Barata)
10. Data Subcommittee Report (Shing Fung)
11. ISWI/NASA Report (Jim Spann)
12. ISWI – UNOOSA Collaboration (Sharafat Gadimova)
13. Expert Committee on Space Weather – Summary of Activities (Ian Mann)
14. VarSITI Report (Katya Georgieva)
15. Any other business

Note that the full presentations made during the meeting can be accessed on the UNOOSA website: <http://www.unoosa.org/oosa/en/ourwork/icg/activities/2021/iswi-sc2021.html>

**# 1. Introduction & Report- Nat Gopalswamy**

Nat discussed updates on the Sun and Geosphere Special Issue that was based on the ICTP/ISWI Workshop in 2019 has published 10 papers. They can be viewed on the following link: [http://newserver.stil.bas.bg/SUNGEO/sun\\_geo\\_contNEW.html](http://newserver.stil.bas.bg/SUNGEO/sun_geo_contNEW.html)

ISWI sponsored the 2020 COSPAR Capacity Building Workshop in Kodaikanal in January 2020. The workshop was attended by 34 students from 5 countries. Papers are in preparation for submission to the Solar Physics journal.

A view of the COSPAR ISWAT (International Space Weather Action Teams) was presented. There are opportunities to participate. ISWI is represented in the COSPAR panel on space weather. More information is available at <https://www.iswat-cospar.org/>

## **# 2. Secretariat update – Pat Doherty, Katya Giorgieva, George Maeda**

Pat Doherty, ISWI workshop coordinator, discussed that as a result of the worldwide effects of the corona virus, most ISWI plans for 2020 have been delayed. This includes the planned ISWI/India Workshop that was to be held in November 2020 at ISRO, Trivandrum, India. This India meeting may be rescheduled as a virtual event in 2021. Pat also spoke about plans for an Iberian Space Science Summer School to be led by Dr. Teresa Barata, Institute of Astrophysics and Space Science in Portugal. Dr. Tarun Pant and Dr. Teresa Barata will make presentations later in the program.

Katya Giorgieva gave an update on the ISWI Website on behalf of Mitko Danov. The website is up to date with the latest information available. New in 2020 are the pages related to the ISWI Open Data Policy. The website also archives all issues of the ISWI Newsletter together with the program and full presentations of the 2020 ISWI Steering Committee Meeting.

George Maeda provided an update on the ISWI Newsletter. He displayed how to obtain the archive for the Newsletter and suggested that the committee encourage people to subscribe to the Newsletter. The first issue of the Newsletter was dated November 12, 2009. Since then, it has been published about once a month on a continuous basis. As of Feb 14, 2021, there were 578 subscribers. With the ever-growing interest in space weather, George asked the participants to subscribe to the Newsletter and to share the information to relevant colleagues.

To subscribe, send a blank message to: [ISWInewsletter-on@mail-list.com](mailto:ISWInewsletter-on@mail-list.com)

To unsubscribe, send a blank message to: [ISWInewsletter-off@mail-list.com](mailto:ISWInewsletter-off@mail-list.com)

George also requested more material for the Newsletter. The material can include anything related to space weather – event announcements, job openings, scholarship opportunities, award announcements, and so on. Finally, George announced his impending retirement from Kyushu University. Upon his retirement he will move to the US and has offered to continue to support the ISWI Newsletter.

## **#3. Steering Committee update – Nat Gopalswamy**

Nat welcomed Kiyoshi Ichimoto (replacing K. Shibata) and James Spann (NASA/HQ) as members of the ISWI Steering committee.

## **#4. AI/Machine Learning for Space Weather - Lika Guhathakurta**

Lika gave an interesting presentation on AI/Machine Learning for Space Weather Science and Prediction. The key point of the presentation was to raise awareness that artificial intelligence and high performance computers are opening the way to take a fresh look at ways in which solar events, such as flares and CMEs, might have a subtle but measurable effect on terrestrial systems, including weather patterns and seismic activity.

## **#5. SCOSTEP/PRESTO Report – Kazuo Shiokawa**

Kazuo presented a report on SCOSTEP and its new 5-year Scientific Program PRESTO (PREdictability of the variable Solar-Terrestrial cOupling) which will run from 2020-2024. PRESTO's mission is to identify predictability of the variable solar-terrestrial coupling performance metrics through modeling, measurements and data analysis to strengthen the

communication between scientists and users. The presentation described the development of PRESTO together with the Pillars that support it. It also included links to opportunities for engagement in the program and for funding opportunities for campaigns and meetings and the new opportunity for database development. The chairs of PRESTO are: Ramon Lopez (Chair), Jie Zhang and Eugene Rozanov (co-chairs).

Detailed documentation for PRESTO can be found online: <https://scostep.org/PRESTO/>

#### **#6. ISWI National Coordinators – Updates – Christine Amory**

As this meeting was held virtually, Pat Doherty and Christine Amory worked to invite all of the national coordinators to participate and to give a short presentation on the ISWI relevant activities in their countries. This gave us a chance to hear from most of these new participants for the first time.

Christine Amory introduced the participating coordinators as follows:

Algeria, Naima Zaourar  
Argentina LAMP, Sergio Dasso  
Argentina TSWC, Maria Graciela Molina  
Azerbaijan, Elchin Babayev  
Bulgaria. Simeon Asenovski  
Croatia, Dragan Rosa  
Italy, Y. Migoya Orue, V. Romano  
Kazakhstan, Olga Kryakunova  
Nepal, Krishna Prasad Bhandari, Narayan Chapagain  
Slovakia, Ivan Dorotovic  
Tunisia, Hassen Ghalila  
Rwanda, Jean Uwamahoro  
Girgea Scientific Network, Christine Amory

In addition to the presentations listed, many more national coordinators participated in the meeting. The discussion following the various presentations demonstrated the excitement of having the national coordinators participate virtually. It is likely that future steering committee meeting will have virtual access for participation.

**Action item:** Christine and Pat to assemble an updated list of national coordinators and provide them to Mitko Danov for inclusion in the website.

#### **#7. ISWI Instrument Updates – Shing Fung**

Shing led the presentations on instrument updates. Prior to the meeting, Shing provided the instrument leads with a template for them to complete on the status of the various instrument networks. The following includes just a few highlights of the presentations:

- e-CALLISTO: Christian Monstein  
The e-CALLISTO network is still growing with new instruments and upgrades. Plans for 2021 include new installations in Egypt and South Africa – if COVID 19 allows.

Finally, Callisto is no longer an ETH activity. Christian Monstein has retired but all Callisto related activities will be continued by Christian as a private citizen – even without formal funding.

- **SCINDA: Keith Groves**  
SCINDA has just received funding to support SCINDA by investing in new sensors, more robust infrastructure and more reliable installations.  
New sensors to be deployed to South America, Africa and Asia.

Additional presentations on GIFDS, OMTIs, RION, SCINDA, AFINSA, CHAIN, GMDN, and MAGDAS was also presented – in some cases by the PI attending the meeting or by a template that Shing designed for the instrument providers.

#### **#8. ISWI/India Workshop Status - Tarun Pant, Pat Doherty and Sharafat Gadimova**

Due to travel restrictions imposed by COVID-19, the ISWI/India workshop originally scheduled for November 2-6, 2020 in Kerala did not occur. Tarun Pant joined the steering meeting to report that the new director of SPL, Dr. Rajeev has agreed to support a virtual meeting in the July to September 2021 timeframe.

Sharafat Gadimova confirmed that if the meeting will be held in 2021, it must be planned as a virtual meeting. If we wish to delay to 2022, an on-site meeting may be possible. Nat suggested that a virtual meeting be considered with a 2.5 day plan. Dr. Pant will work with SPL to determine the next steps.

#### **#9. Iberian Space Science Summer School – Teresa Barata**

Teresa reported on plans to host the Iberian Space Science Summer School in 2021 in a virtual mode. The dates are not yet determined but a July time frame is being considered. Teresa presented some of the main topics to be addressed during the workshop together with the target audience for the summer school. ISWI and SCOSTEP will support this summer school that will be hosted by the University of Coimbra and the University of Alcala. ISWI offered to support the zoom infrastructure for the school.

Kazuo Shiokawa confirmed SCOSTEP support for this workshop and added that he **wdsq nmf** will suggest lecturers to include the climate issues. Kazuo also joined the Scientific Organizing Committee for this summer school.

#### **#10. DATA Subcommittee Report – Shing Fung**

Shing provided an update on the ISWI Open Data Policy. The policy is to facilitate unrestricted flow of ISWI data across geo-political and organizational boundaries. 19 instruments are adhering to the policy but there are still 4 missing (AMMA, CIDR, RENOIR and SCINDA).

ISWI is now a SPASE Metadata Registry registered naming authority – meaning that all registered ISWI instrument data products will be attributed to ISWI at the highest level. An advantage to ISWI is that data becomes more discoverable by the broader user community.

Finally, this presentation promoted collaboration and coordination with:

- SCOSTEP/PRESTO as ISWI and SCOSTEP share similar goals in science, international coordination, collaboration and capacity building.
- The International Heliophysics Environment Alliance (IHDEA - established in December 2019). Through its international collaboration and coordination, the IHDEA can help promote and distribute ISWI instrument data.

- COSPAR/ISWAT – COSPAR’s scientific assembly held virtually in Australia in August hosted the COSPAR-20-PSW.4: Space Weather Information Architecture and Its Roles in Enhancing Data Access and Utilization. All agreed that ISWI can certainly benefit by collaborating with COSPAR on these activities.

#### **#11. ISWI/NASA Report – Jim Spann**

Jim provided an overview of NASA Space Weather R&D. This presentation detailed the NASA Space Weather Strategy plan to establish a preeminent space weather capability that supports robotic and human space exploration and meets national, international, and societal needs by advancing measurement and analysis techniques, and by expanding knowledge and understanding for transitioning into improved operational space weather forecasts and nowcasts. NASA is currently in the process of developing an implementation plan supporting this strategy plan.

Jim also discussed the details of the PROSWIFT act together with international collaborations that are already underway with ESA and the Canadian Space Agency. He also presented a look at the NASA Artemis program with the plan to return astronauts to the moon by 2024.

Jim’s presentation concluded that NASA is poised to carryout and support unique opportunities to study the Sun and its effects throughout the Heliosphere in partnership with the solar and space physics community around the globe.

#### **# 12. ISWI – UNOOSA Collaboration – Sharafat Gadimova**

Shafa (co-chair of the ISWI group) demonstrated continued commitment from UNOOSA and the ICG to the interests of ISWI. This commitment includes ICG supported programs on GNSS and Space Weather. Workshops currently planned include:

- Applications of GNSS - planned for Mongolia in October 2021 with a session on Space Weather and GNSS.
- The ISWI/India workshop that was delayed from 2020 to 2021 in Kerala, India  
Workshop on GNSS and Space Weather, CRASTE-LF, Rabat, Morocco in collaboration with Boston College and the ICTP.
- Shafa also announced the 15th meeting of the ICG that will take place in Vienna on 27 September – 1 October 2021.

#### **#13. Expert Committee on Space Weather – Ian Mann**

Ian provided an update from the Space Weather Expert Group. Ian is the rapporteur for this group and reports to the UN COPUOS under a permanent agenda item approved in 2015 in Vienna. This provides the opportunity to define activities of the Space Weather Expert Group to meet the needs of the international community for 2018-2030.

Ian first reviewed the mandate, focus and actions of the Space Weather Expert Group. The most recent activities included surveys on space weather related activities and interests of the member states and international organizations. Clear results from these surveys revealed an interest to improve international collaboration and coordination to achieve the most effective and efficient actions to mitigate adverse impacts from space weather.

Discussion ensued on how ISWI can contribute. Remarks included the benefits of ISWI data sharing and international outreach.

#### **14. VarSITI Report – Katya Georgieva**

Katya made a presentation on VarSITI (Variability of the Sun and its Terrestrial Impacts) – SCOSTEP’s scientific program that ran from 2014-2018. VarSITI held its closing symposium on June 10-14, 2019 in Sofia, Bulgaria. It was attended by 98 participants from 24 countries. VarSITI was quite a success – even though it operated under extreme solar minimum conditions. Presentations from the closing symposium are available online:

<http://newserver.stil.bas.bg/VarSITI2019/>

Katya also discussed the special issue of the VarSITI completion symposium in the Journal of Atmosphere and Solar-Terrestrial Physics (JASTP). Twenty articles have been accepted thus far. The deadline was February 28, 2020. There is also a special issue of PEPS (Progress in Earth and Planetary Science) that includes review papers on the whole VarSITI program.

#### **#15. Other Business - Kazuo Shiokawa**

Kazuo announced that SCOSTEP/PRESTO has just released an announcement of opportunity for database developments relevant to PRESTO. The value of the grants is \$5000. The databases will be made publicly accessible and are relevant to ISWI interests.

#### **Wrap Up:**

Nat Gopalswamy thanked all of the presenters. He was particularly impressed with the number of participants and the eager presentations and active discussion by so many national coordinators. ISWI steering committee meetings are normally held in-person coincident with the STSC meetings held in Vienna each year. With the success of this virtual meeting, ISWI will plan to include a hybrid element in future meetings. Nat apologized for missing presentations from NOAA (Elsayed Talaat), ISES (Terry Onsager) and ISWAT (Mamoru Ichii). With a virtual meeting, it was difficult to find a time where everyone could participate from many time zones. He thanked all for waking up early and staying up late.

Lika Guhathakurta commented that this was a fabulous gathering with a significant number of participants demonstrating the importance of ISWI and space weather as a global issue. She asked how we can create a global platform with resources to advance global space weather research. Jim Spann stated that few agencies invest in Space Weather and that greater success can be achieved if those agencies agree to some forum for international Space Weather funding coordination. One opportunity is the SCOSTEP/PRESTO database development opportunity.

Many other participants expressed their appreciation to participate in the meeting.

Finally, Nat announced the passing of Dr. Kumar Chitre of Mumbai, India in January 2021. Dr. Chitre’s scientific research focused on solar physics, astrophysics and gravitational lensing. He performed extensive research on the Sun's magnetic activity cycle, the [solar dynamo theory](#), and the role of neutrinos in the solar atmosphere.

Nat also announced that the national coordinator for Zambia, Nchimunya Mwinga, recently passed away due to complications from COVID-19. Mr. Mwinga was an active participant and a local host for the IHY Africa 2009 Workshop held in Zambia in 2009. Dr. Patrick Sibanda has offered to support ISWI as the national coordinator in the future.

Shafa also thanked everyone for their participation and noted that the full presentations made during the meeting can be accessed on the UNOOSA website: <http://www.unoosa.org/oosa/en/ourwork/icg/activities/2021/iswi-sc2021.html>

## Participants:

| Surname           | Given Name     |
|-------------------|----------------|
| alenazi           | moqbil salem   |
| Americo Gonzalez  | J.             |
| amory-mazaudier   | christine      |
| Asenovski         | Simeon         |
| Babayev           | Elchin         |
| Baki              | Paul           |
| Banyś             | Daniela        |
| Barata            | Teresa         |
| Bhandari          | Krishna Prasad |
| Dasso             | Sergio         |
| Doherty           | Patricia       |
| Dominic Bennett   | Clint          |
| Dorotovic         | Ivan           |
| DOUMBIA           | VAFI           |
| Fung              | Shing F.       |
| Gadimova          | Sharafat       |
| Galkin            | Ivan           |
| GAYE              | Idrissa        |
| Georgieva         | Katya          |
| Ghalila           | Hassen         |
| Gindler           | Patrick        |
| Gopalswamy        | Natchimuthuk   |
| Groves            | Keith M        |
| Guhathakurta      | Madhulika      |
| Herdiwijaya       | Dhani          |
| Ishii             | Mamoru         |
| Jakowski          | Norbert        |
| Kasten            | Alexander      |
| Kryakunova        | Olga           |
| maeda             | George         |
| Mahrous           | Ayman          |
| Mann              | Ian            |
| Migoya-Orue       | Yenca          |
| Molina            | Graciela       |
| Monstein          | Christian      |
| Mora-Paex         | Hector         |
| Naima             | Zaourar        |
| Nigussie          | Melessew       |
| Pant              | Tarun          |
| PIRGULIYEV        | Mahir          |
| Rabiu             | Babatunde      |
| Romano            | Vincenzo       |
| rosa              | dragan         |
| SHIOKAWA          | Kazuo          |
| Sibanda           | Patrick        |
| Spann             | James F.       |
| Talaat            | Elsayed        |
| Tancredi          | Gonzalo        |
| Tato Loua         | Rene           |
| Temmer            | Manuela        |
| Tortuero Consuelo | Cid            |
| UWAMAHORO         | Jean           |
| Valladares        | Cesar          |
| Yoshikwa          | Akimasa        |

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