

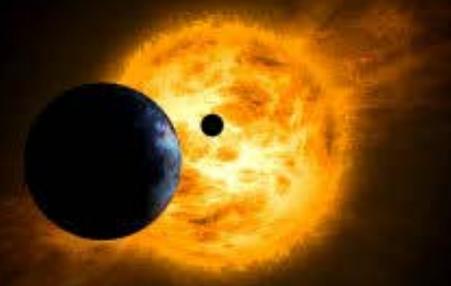
# QUO VADIS, EUROPEAN SPACE WEATHER COMMUNITY?

Jean Lilensten, Mateja Dumbović, Luca Spogli, Anna Belehaki, Ronald Van der Linden, Stefaan Poedts, Teresa Barata, Mario M. Bisi, Gaë'l Cessateur, Erwin De Donder, Antonio Guerrero, Emilia Kilpua, Marianna B. Korsos, Rui F. Pinto, Manuela Temmer, Ioanna Tsagouri, Jaroslav Urbář, and Francesca Zuccarello

ONLINE EVENT

Quo vadis European Space Weather  
Community

17 March 2021



# Presentation of the group and working method

Anna Belehaki

on behalf of the *Quo Vadis* group

ONLINE EVENT

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Discussions about the future of the European Space Weather started within the course of the two European Commission COST Actions on Space Weather:

**COST Action 741** (2004 – 2007), led by Jean Lilensten

**COST Action ES0803** (2008 – 2011), led by Anna Belehaki

In 2011 the board of the COST Action ES0803 took the initiative to establish the **Journal of Space Weather and Space Climate** with support from the COST Office, the STCE/ROB in Belgium and the wider scientific community who agreed to act as Editors and Advisors.

In parallel there was a huge **progress in space weather science and operations** mainly through funding from the European Commission, the European Space Agency and the National Authorities.

The **European Space Weather Weeks** became the key annual event for space weather in Europe but also globally. The **Space Weather medals** with the auspices of the scientific Academies of Norway, Belgium and Russia, became soon a great distinction for the winners.

All these activities are designed, organized and implemented by a **core group** of researchers who started as young scientists and now after almost 20 years became senior...



Today many young and brilliant scientists brought up new skills in our field.

Things evolve fast: senior and younger colleagues formed a **wider group** to pave the way towards a sustainable space weather organization scheme in Europe.

- Jean Lilensten, IPAG, CNRS, France
- Mateja Dumbovic, Hvar Observatory, University of Zagreb, Croatia
- Luca Spogli, INGV, Italy
- Anna Belehaki, NOA, Greece
- Ronald Van der Linden, STEC, ROB, Belgium
- Stefaan Poedts, KULeuven, Belgium and UMCS, Poland
- Teresa Barata, University of Coimbra, Portugal
- Mario M. Bisi, STFC, RAL, UK
- Gael Cessateur, BIRA-IASB, Belgium
- Erwin De Donder, BIRA-IASB, Belgium
- Antonio Guerrero, UAH, Spain
- Emilia Kilpua, University of Helsinki, Finland
- Marianna B. Korsos, Eotvos Lorand University, Hungary, and Aberystwyth University UK
- Rui F. Pinto, CEA Saclay and IRAP France
- Manuela Temmer, University of Graz, Austria
- Ioanna Tzagouri, NOA Greece
- Jaroslav Urbar, IAP Czech Republic and INGV Italy
- Francesca Zuccarello, Universita di Catania, Italy

We look forward to support and contributions from more volunteers, following the meeting today!

JSWSC

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# Past organisation of space weather initiatives in Europe

Ronald van der Linden

on behalf of the *Quo Vadis* group

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Community

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**From millions of years ago until a few thousand years ago ....**

Space weather was there, but nobody noticed (well, nobody...?)



## From a few thousand years ago to a few hundred years ago ...

Space weather was seen by man, experienced by man, sometimes suffered by man, but nobody really understood  
Human activities began to be affected



**From a few hundred years ago to a handful (or two) of decades ago ....**

Space weather was seen by man, experienced by man, suffered by man, **and ideas began to emerge that it was linked to solar perturbations**  
Human technology began to be impacted



## From a handful (or two) of decades ago to a few decades ago ....

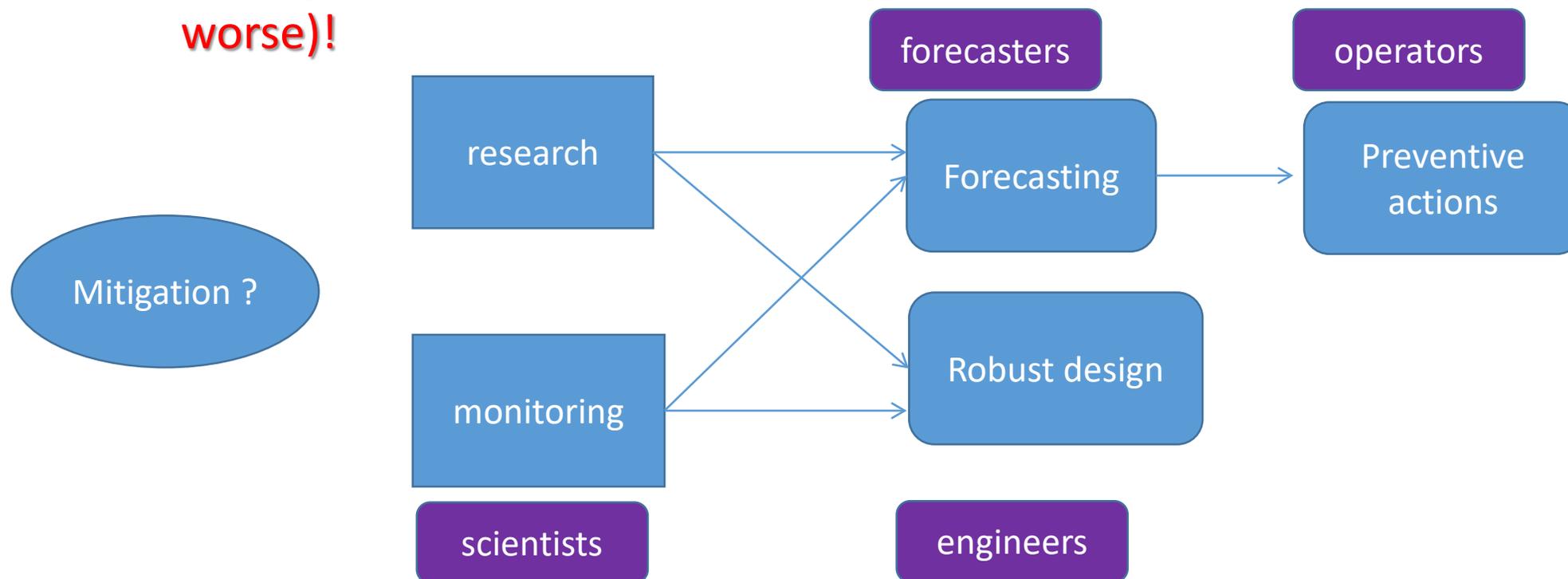
Space weather was seen by man, experienced by man, suffered by man, known to man, **and man began to realise that it was important to monitor it and to study it**  
The impact on human technology began to cause significant costs and losses

- Study the solar-terrestrial relationship scientifically (IGY!)
  - Starting SW services (initially mainly data exchange):
    - International World Days Service (1959)
    - +
    - URSI Central Committee of URSIgrams (1928)
    - =
    - International URSIgram and World Days Service (IUWDS) (1962)
- [Later became ISES (1996)]



## From a few decades ago to a few decades ago ....

Space weather was seen by man, experienced by man, suffered by man, known to man, and man began to realise that it was important to monitor it, to study it, **to forecast it and to take mitigating measures, because if we don't, we not only risk damage that would cause very high cost, we risk total disruption of our society (or worse)!**



## The Space Weather Community in Europe

- Was prominently present in IGY 1957-58
- Has several Regional Warning Centres within ISES (currently 10 / 20)
- Performed 2 large ESA SW studies in the nineties (Alcatel & Astrium)
- Executed ESA's Space Weather Applications Pilot Project (2004)
- Created the European Space Weather Week from 2004 onwards
- Built a true community through several COST actions from 2003 onwards
- Created the (European) Journal for Space Weather and Space Climate
- Is building up a network of SW services through the ESA SSA since 2009
- Created the Space Weather Medals
- ...

**BUT DO WE EXIST AS A COMMUNITY????**



# What are the new challenges that Space Weather is facing?

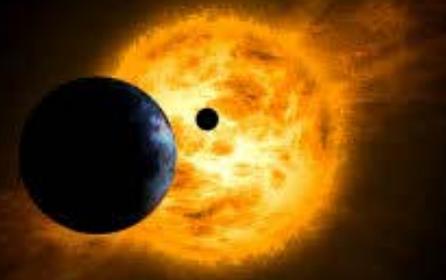
Mateja Dumbovic

on behalf of the *Quo Vadis* group

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## NEW CHALLENGES:

What questions do we want to get answered in the upcoming year(s)?

### SPECIFIC TO THE DISCIPLINE:

#### Who represents SW community?

(SWWT, JSWSC, ESWW PC..?)

How are they elected?

#### Who is SW community?

(academia, industry..?)

#### What connects SW community?

(ESWW, JSWSC..?)

(what about EGU, EPS..?)

#### What is 'the domain' of SW community?

(drive SW development, policy making,  
sustainable use of space..?)

### RELATED TO SCIENCE IN GENERAL:

How can we, as a community, take action regarding:

#### Climate change

(reducing carbon footprint..?)

#### Pandemic(s)

(virtual meetings, online tools..?)

#### National politics

(cooperation without borders..?)

#### Education

(SW schools, programs..?)

#### Communication

(optimal use of 'new' communication channels..?)



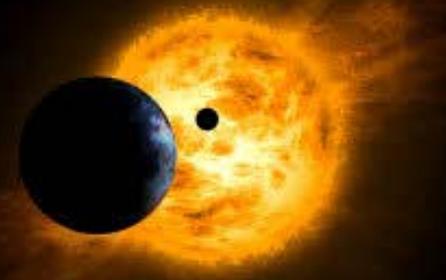
# QUO VADIS, EUROPEAN SPACE WEATHER COMMUNITY?

Jean Lilensten,  
on behalf of the *Quo Vadis* group

ONLINE EVENT

Quo vadis European Space Weather  
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17 March 2021



**We consider that the status quo and inaction is simply not an option and would likely doom the European Space Weather community to lose its independence and its ability to influence the future of the discipline in a suitable way.**



# We propose to create a federating structure

- To help the European Space Weather community to maintain its efforts
- To sustain the discipline as a research one
- To sustain and develop the successful efforts made so far.
- To exchange our practice
- To become stronger in international discussions and negotiations.
- To help consolidating national Space Weather communities in European countries (and beyond)
- To help in their discussions and negotiations at a national level by disseminating best practices.



## This structure

- should be independent from any funding agency and / or decision maker and /or individual country
- would have the authority to set its own internal rules and to make propositions to external parties.
- would be able to protect and sustain the efforts made up to now and set new practices respecting the environment
- would request a clear set of rules, a board that represents the community at large, and a frequent renewal of this board,
- Would request a budget to sustain its activities.



This structure would be the natural ground pertaining to activities such as :

- Editorial activities
- Organisation of the European Space Weather Week
- Awarding medals
- Education and outreach
- Communication



# What are the options?

## 1) An entirely new scientific association.

- The most natural legal form for a new scientific association is the international not-for-profit association (INPA), similar to EGU or EPS.
- INPA is a not-for-profit association (NPA) with a substantial presence in multiple countries.



# What are the options?

## 1) An entirely new scientific association.

- NPA/INPA has its own legal personality and, consequently, its own assets and liabilities.
- It has a legal capacity to do things in its own name, for example employ staff, deliver services, enter into commercial contracts, and leases in its own name.
- The economic activities are permitted; however, any profits derived from economic activities must be attributed to the development of the non-commercial activities



# What are the options?

## 1) An entirely new scientific association.

- Many INPA are registered in Brussels, because it is the seat of EU, much of EU's administration is located here, and in comparison with some other countries it is relatively simple and cheap to register an INPA in Belgium.
- In Belgium the INPA is termed "association internationale sans but lucratif" (AISBL)
- best practices.



# What are the options?

## 1) An entirely new scientific association.

- AISBL is made up of two bodies: the general assembly and the administrative body
- Naturally, the members of the Space Weather community would form a general assembly and thus control the statutes and by-laws of the AISBL, as well as the administrative body, which could manage the budget and perhaps other resources



# What are the options?

## 2) Joining an existing scientific association.

- Contacted : EGU and EPS
- EGU statutes do not allow such a construct and membership of the Union is restricted to individuals.
- EPS statutes do and EPS is keen to offer it (two mails and an invitation to their last council)
- IEEE was considered but not studied



# What are the options?

## 2) Joining EPS

- The EPS is an INPA
- Includes 42 National Physical Societies in Europe
- It is a federation of National Physical Societies.



# What are the options?

## 2) Joining EPS

Its main activities are

- to support meetings
- to help in organising scientific journals (already strong links with EDPS)
- to award prizes and fellowships
- to support diversity and inclusion in physics, especially the young scientists.



# What are the options?

## 2) Joining EPS

EPS has a clear hierarchical structure

- An Executive Committee (elected by the Council), which establishes priorities, reviews and develops budgets, and pilots EPS activities.
- A Council which reviews the activities of the Society, approves the annual accounts, and discusses priorities for the future.



# What are the options?

## 2) Joining EPS

- The scientific activities of EPS are organised through Divisions, Groups, and Sections. Divisions, Groups, and Sections (D/G/S) are all autonomous, with statutes, by-laws and a clear hierarchical structure.
- The Space Weather scientific community is already present under EPS, mainly in the scope of the European Solar Physics Division, which includes various Space Weather themes and promotes related research in its meetings and activities.



# What are the options?

## 2) Joining EPS

EPS proposes that the Space Weather community can organise itself either

- as a stand alone Division (concerned with a specific field of physics e.g. High Energy Physics)
- or a stand alone Group (concerned with interdisciplinary aspects of physics, e.g. Computational Physics)
- or as a section of the EPS Solar Physics Division.



# What are the options?

## 2) Joining EPS

- the Space Weather community would have a specific account in the EPS accounting system reserved to finance its activities, newsletters, student grants and prizes.
- Funds going in and out of the account would require the approval of the proposed Space Weather and Space Climate D/G/S,
- the funds could not be used by the EPS without this approval.



# What are the options?

## 2) Joining EPS

- the Space Weather community would have a specific account in the EPS accounting system reserved to finance its activities, newsletters, student grants and prizes.
- Funds going in and out of the account would require the approval of the proposed Space Weather and Space Climate D/G/S,
- the funds could not be used by the EPS without this approval.



# An attempt to benchmark

Stefaan Poedts

on behalf of the *Quo Vadis* group

ONLINE EVENT

Quo vadis European Space Weather  
Community

17 March 2021



## Intro:

- we provided ***two possible ways to follow*** as concrete proposals of federating structure
- ***status quo and inaction is simply not an option***
- two options are: ***to create our own INPA*** or ***to join EPS*** through a Division, a Group, or a Section

we now discuss the pros and cons of these two options...



# 1. New International not-for-profit association (cf. EGU, EPS,...):

- Belgian AISBL = best choice because Brussels is the seat of the EU

## PROs:

- **Full control over budget and initiatives** (medals, ESWW, JSWSC)
- **Sustainability is ensured** and **significance** level (i.e., prestige) **of the medals is kept** (if not increased), which can lead to more benefit from the help of other institutions that will not see Space Weather and Space Climate as part of another society.
- **Funding can come directly from Europe.**
- **Uniqueness of ESWW** and its completely-inclusive nature can also be **maintained**.
- *STCE is willing to set up this IASBL if that would be the preferred choice*

## CONs:

- The **complexity to establish it**: a proper legal entity form needs to be found, where to register it, need of legal assistance, need of budget and coordination between legal aspects, and community needs/wishes.
- Since this would be a new organisation it **would have to build its own worldwide visibility and outreach** (educational as well as to the public) and thus **may at the beginning have relatively low negotiating power**.



## 2. Part of EPS:

- three options exist: a Division (interdisciplinary), a Group (focused on a specific topic), or a Section
- If EPS, a specific Division should be created to welcome all the scientists from the different Space Weather fields (solar, plasma, magnetosphere, ionosphere, thermosphere). *Expanding later on into an independent INPA remains possible*

### PROs:

- creating an interdisciplinary Division within EPS is ***simple***.
- Since EPS is old and well known, it ***would immediately give a worldwide platform***
- ***strong kick to further develop our initiatives*** (medals, education, outreach, etc. . . )
- ***stronger in the future possible negotiations***
- full control over some initiatives (ESWW and the medals)

### CONs:

- ***limited control over decisions***, and
- ***a risk of loss of significance of ESWW, JSWSC, and the medals*** constitute some points of vigilance.
- The community would have ***only partial control of the budget***.
- ***EPS is not equally known nor equally respected*** by all European countries.



**Table 1.** Comparison of the control the Space Weather and Space Climate Community might have over its resources in the scope of EPS and INPA (TBD = to be decided)

	<b>budget</b>	<b>ESWW</b>	<b>medals</b>	<b>JSWSC</b>	<b>Worldwide visibility</b>	<b>negotiating Power</b>	<b>outreach</b>	<b>future expansion</b>
<b>EPS</b>	partial	full	partial	partial	Immediate	high	broad	into INPA
<b>INPA</b>	full	Full	Full	Full	to build	TBD	TBD	size growth



**Table 2. Weighting criteria to compare EPS and INPA** (TBD = to be assessed in due course).

<b>Weighting criteria</b>	<b>EPS</b>	<b>INPA</b>
<i>Independence</i>	<b>Medium.</b> if joining the Plasma Division or the Solar Physics Division, higher with a specific Interdisciplinary Group.	<b>High.</b> SW community keeps full control of its initiatives. SW will not be seen as part of another society.
<i>Capacity to increase visibility</i>	<b>High.</b> EPS is a well-established organisation (since 1986). Through the EPS newsletter, we have the capacity to reach a large community.*	<b>Low.</b> This is at the beginning, but it can increase fast.
<i>Easiness of establishment</i>	<b>High.</b>	<b>TBD.</b> Note that STCE (and undoubtedly others too) is willing to engage in case this should this solution would be chosen.
<i>Timing to set up</i>	<b>Short.</b> It should be relatively short, even if further details from EPS are needed.	<b>TBD.</b>
<i>Representativeness</i>	<b>Low.</b> It may be low if people not coming from physics (e.g. industry etc. . . ) are unhappy with EPS.	<b>High.</b> High and customizable (industry in or not).
<i>Political weight</i>	<b>High.</b> EPS is a big and somewhat recognised non-profit organisation.	<b>TBD.</b> It must be built up, but will be high in the future.
<i>Sustainability of JSWSC</i>	<b>Medium to High.</b> High negotiating power with the publisher. EPS has its letters journal is EPL and other publications, which include Europhysics News and the European Journal of Physics. We assume that EPS will be a strong advocate of our interest.	<b>TBD.</b>
<i>Sustainability of the medals</i>	<b>Medium to High.</b> EPS has its prizes and SW medals can be part of them.	<b>High.</b> The medals are currently well recognised and have impact/scholarship well beyond that of Europe.
<i>Educational sponsorship</i>	<b>High.</b> EPS-sponsored education activities include, e.g., workshops for physics teachers.	<b>High.</b> Our community already invests a lot in SW education.
<i>Costs</i>	Annual fee 25 EUR per person.	Annual fee TBD (will depend on the business model chosen) ≈150 EUR of administrative costs (one-time).



# Organisation of the future discussion

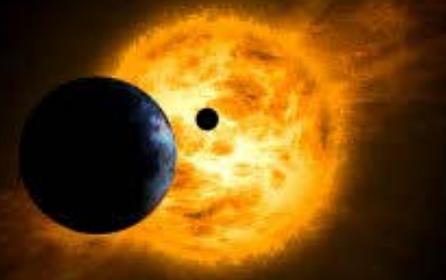
Luca Spogli,  
on behalf of the *Quo Vadis* group

[quovadis@space-weather.eu](mailto:quovadis@space-weather.eu)

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# *Ad interim* board

- The mandate of the authors of the *Quo Vadis* paper is considered as ended
- Outcome of today meeting: favoring the setting up of an *ad interim* board
- No decisional power
- Work until the final board is elected in ESWW 2021
- Main task: to organise and execute community's vote on setting up representative body either:
  - as a part of existing organisation (EPS)
  - setting up its own organisation (INPA)
  - additional solution (to be investigated)



## Terms of reference

- Organize the discussion in Europe by involving the largest number of participants from the diverse SW communities: research, technology, forecasters, industry, military, etc.
- Organize the discussion in Europe until June by different means:
  - Slack, Web site, mailing lists
- Develop and maintain a dedicated website
- Update and improve the list of *pros* and *cons* (weighting criteria) between EPS and INPA already available in the paper or possible additional solutions
- Organize the final decision (vote) by June 30<sup>th</sup> at latest.

**Table 2.** Weighting criteria to compare EPS and INPA (TBD = to be assessed in due course).

Weighting criteria	EPS	INPA
<i>Independence</i>	<b>Medium.</b> if joining the Plasma Division or the Solar Physics Division, higher with a specific Interdisciplinary Group.	<b>High.</b> SW community keeps full control of its initiatives. SW will not be seen as part of another society.
<i>Capacity to increase visibility</i>	<b>High.</b> EPS is a well-established organisation (since 1986). Through the EPS newsletter, we have the capacity to reach a large community.*	<b>Low.</b> This is at the beginning but it can increase fast.
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<i>Costs</i>	Annual fee 25 EUR per person.	Annual fee TBD (will depend on the business model chosen) ≈150 EUR of administrative costs (one-time).

*From April, 2021 to June 30th, 2021*

## Terms of reference

- Organize the transition from the *ad interim* Board to the final Board
- Write a preliminary set of references for the organization endorsed by the voting
- Write a set of references for the composition of the final Board.
- Present all the final ideas of avenues to proceed during either a Topical Discussion Meeting or the SWWT session during the ESWW 2021
- Open voting for the final Board during this session.

*From July, 2021 to the ESWW 2021*



## Setting up the *ad interim* board

- The *ad interim* board will be limited to 30 volunteers (maximum) from at least 15 countries
- Only colleagues who are working (who has) for European institutions (including private companies) can be part of it
- The call for volunteers opens on 17<sup>th</sup> March 2021 at 12:00UT.
- To volunteer for this *ad interim* Board, interested colleagues are required to send an email to [quovadis@space-weather.eu](mailto:quovadis@space-weather.eu) by 12:00 UT, 30th March 2021.



# Deadlines

- March 30th: The interim board is set
- June 30th: the decision on INTA vs EPS (or other structure) is made
- October 29th: the preliminary set of references for the organization is set
- ESWW 2021: Election of the final board



# Discussion is now open!

Chair: Mario Bisi

on behalf of the *Quo Vadis* group

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