

ESA Space Weather Working Team

(Draft) Minutes of meeting # 23

Date and time: 4 June 2008, 10:00-17:00

Location: Room Yb005, ESCAPE building, ESTEC

Agenda:

1. Introduction and welcome, agree agenda
2. SWWT status report
3. Action item review
4. News and summary of major progress following last meeting:
 - ESWW5
 - New COST action
 - FP7: SOTERIA, EURIPOS
 - SSA progress
 - WMO and Space Weather
 - SWENET Status
 - Space Weather Portal
 - ESWWP Status
 - Web Portal Coordination
 - Space Weather Journal
5. Topical Group presentations: EOEM, GIC, Atmos
6. Links with other entities
 - ISES, SEENoTC, ILWS
7. AOB
 - Report from US workshop on severe SpW events, Astronet, notes from ARC, Atmocube sw cubesat proposal, German SpW

1 Attendance

Those present were Mike Hapgood, Alexi Glover, Iwona Stanislawska, Susan McKenna-Lawlor, Sean Bruinsma, Norma Bock Crosby, Ronald van der Linden, Pablo Beltrami, Petra van Lommel, Alain Hilgers, Jean-Yves Prado and Paul Gille.

Apologies received from Norbert Jakowski, Daniel Heynderickx, Juha-Pekka Luntama, Mauro Messerotti, Bruno Zolesi, Stefaan Poedts, Thierry Dudok de Wit, Peter Beck, Bob Wimmer-Schweingruber, Werner Schmutz, Jan Lastovicka, Anna Belehaki, Frank Jansen, Erwin Flueckiger, Alan Thomson, Lars Eliasson and Michael Rycroft.

2 SWWT status

MH welcomed everyone to the meeting. He reported that he had agreed to serve as Chair for a further year, so his term of office will end in spring 2009. Candidates for the election of the next Chair should be identified at the SWWT meeting at ESWW5, so that the election can be run early in the new year

and the handover take place at the spring SWWT meeting in 2009. To do this there should be a call for nominations a couple of months before ESWW5.

It was suggested that we should have a Vice-Chair for SWWT, e.g. to act when the Chair is not available. AG reported that this had been done in the early days of SWWT but had fallen out of use in recent years and was not included in the current terms of reference. It would good to revive this post. This should be discussed at the next meeting and the terms of reference updated. One issue to consider is whether the Chair and Vice-Chair should have parallel terms of office. Or should we aim for a system where the incoming Chair first serves as Vice-Chair (e.g. similar to the EGU presidency)?

AI M23/1 MH/AG to circulate call for nominations for next Chair in September 2008

AI M23/2 MH/AG to include discussion of Vice-Chair position in agenda of next SWWT

AG noted that the SWWT pages had been updated on the ESA space weather server. She also noted that it would be useful to compare the SWWT membership list maintained by EtaMax with the mailing list maintained by MH – so we have an up-to-date view of the membership. PB noted that EtaMax get automatic notification of updates to the mailing list so incremental changes are tracked, but nonetheless it would be good to cross-check.

AI M23/3 MH/PB to compare membership and mailing lists

3 Review of key actions

M20/6 MH to draft resolution on SWENET following next SWWT Executive Group meeting. Keep open and review in light of plans for the ESA SSA programme.

M20/5 ED to draft resolution on virtual observatories. Open.

M20/3 ESA representatives to contact Steve Gabriel re. the Spacecraft Engineering training course run at ESA as a form of space weather outreach. Open. AG agreed to take this up before the next SWWT meeting.

M20/1 MH and AG to contact PB and email SDAs to assess who would be interested in a next phase joint technical meeting of SDA community. Closed. The meeting has taken place and generated an action plan. This is available as a list of upgrades on the SWENET home page on <http://www.esa-spaceweather.net/swenet/>. A summary has also been circulated via SWEN.

M19/7 MH - contact Juha-Pekka Luntama at FMI to see if their report to EUMETSAT can be made available to SWWT members - and also to ask if SWWT member should lobby STG members. Closed. The list of STG members is available on the SWWT mailing list site at: http://www.jiscmail.ac.uk/cgi-bin/filearea.cgi?LMGT1=SWWT&X=&Y=&a=get&f=/EUM_STG_members.doc

M19/5 TBD to explore how to set European user group for dissemination of ST data from SWARM. Open. MH/AG to discuss with Susanne Vennerstrøm at DMI. SB to discuss with Roger Haagsmans at ESTEC.

M19/4 MH to raise awareness of the need for mechanisms to move space weather models into operations. Close as this is an ongoing activity. SML noted that she had led a recent JGR paper where the HAFv.2 solar wind model had been successfully applied to predict shock arrivals at Venus, Earth and Mars (doi:10.1029/2007JA012577).

M18/11 Take advantage of IHY to start new long term monitoring such as the monitoring of solar radio flux, signature of CMEs, shocks, SEP, ... from a network of multi-frequency radio telescopes (SW radioscientists, January 2006 European IHY meeting). Closed as superseded by passage of time. But it would be interesting to know what has happened as a result of IHY.

AI M23/4 MH to trawl for news of new monitoring started as part of IHY (contact Barbara Thomson?)

M18/6 Propose contact with Meteo National Delegates. Open. Need first to identify the basis of such contacts.

M18/5 Send comments and recommendations to A. Glover and A. Hilgers about the use of the SWENET services, the SDAs which will emerge, etc. Closed. This is an ongoing activity as there is an open call for new ideas & services and should be worked into SWWT terms of reference at next update.

M18/4 Send to the SWWT members examples showing how to operate SWENET (P. Beltrami). Open. Etamax have developed a number of online tutorials geared towards helping new users access data and services more easily. These are available via the SWENET front page. PB has sent tutorial instructions to SWENET users, but will also send the link to SWWT.

4 News and summary of major progress

4.1 ESWW5

The meeting reviewed plans for the next space weather week in Brussels, e.g. examining the programme as shown in the web site (<http://sidc.oma.be/esww5/>). AG noted that the calls for splinter sessions and abstracts were now open with a deadline of 20th June. MH reported that Anna Belehaki had asked that the SWWT meeting consider if it was possible to find an organiser for a splinter session on biological effects. This had been proposed a possible session during discussions at ESWW4. It was suggested that a good splinter session at ESWW5 would allow us to assess whether this topic might be suitable for a plenary session at a later space weather week. NC agreed to pursue this under the auspices of the EOEM topical group – perhaps in collaboration with Michael Rycroft.

PG reported that it would be possible to have a Euro-information desk at ESWW5, where people from the Commission might attend and provide advice on future FP7 calls. He reported two good contacts with the EC people in respect of ESWW5 : one (Mrs Michaut, EC Communication, Luxemburg) for providing a Euro-information desk with general documentation and information on current FP7 calls ; the second one (DGRTD, M. Claessens, Brussels) for providing some scientific officer(s) able to give specific information on some subjects to be defined (like at ESWW3). In both cases, we have to specify now our requests: subjects, preferred period, kind of material support, etc.

In discussion, it was suggested that this idea might be extended to include representatives of other organisations such as COSPAR and URSI. It was agreed that a list of organisations would be drawn up by PG and PVL and these institutes contacted with a view to participating in the fair.

AI M23/16 PG & PVL draw up list of organisations to be invited to participate in the fair.

PG reported some comments by his Orleans' colleagues. Jurgen Watermans, as a co-convenor, would prefer that Wednesday agenda had the same timing as others (not shifted by half an hour).

JYP noted that ESWW5 would take place around the same time as the next ESA Ministerial Council (also in Brussels). Depending on the relative timing of ESWW5 and the MC, it could be appropriate to organise some activity related to space weather issues to be discussed by the MC. For example, if the MC is after ESWW5, the activity might focus on the space weather element of space situational awareness and promote lobbying in support of that element. AG noted that the first plenary session of ESWW5 would consider this issue and was conceived with this in mind. The organisers will seek to involve speakers from the US/SpW Prediction Centre, ISES and Russia.

AI M23/5 NC propose ESWW5 splinter session on biological effects

AI M23/6 RvdL/PG consider plans for Euro-info desk at ESWW5

AI M23/7 AH/MH consider if ESWW5 session 1 can encourage lobbying for ESA SSA

4.2 New COST action

The proposal for a new action is now in the final stages of approval. Once that is finished, it is expected the Management Committee will be established during the summer. It is proposed to have the kick-off meeting in Brussels just ahead of ESWW5 (Sunday & Monday morning before ESWW5 starts).

It was not clear what information can be circulated at this stage. MH will check with Anna Belehaki. It would be good to circulate a flyer fairly soon to encourage participation/attendance at the kick-off.

AI M23/8 MH to check status if information on the new COST activity

4.3 FP7 project news

4.3.1 SOTERIA

PG reported that the kick-off of SOTERIA had been delayed while various bureaucratic procedures were completed. He anticipated that the kick-off meeting would take place in September or October – and be separate from ESWW5. However, he stressed that the consortium and the EU see coordination with the ESWW meeting and broader space weather community as extremely important. A splinter meeting will take place during ESWW in order to introduce the project to the community. MH reported a message from Werner Schmutz (PMOD/WRC) that, as part of their activities for SOTERIA, his group would be nowcasting the chemical composition of the middle atmosphere (as soon as LYRA/PROBA2 and PREMOS/PICARD are operational). In discussion it was noted that data downlink from PICARD was expected to take several days while that from PROBA2 was expected to be quicker, perhaps a single day.

4.3.2 EURIPOS

MH reported that EURIPOS was an FP7 bid to fund development of infrastructure for ionospheric studies. The bid was led by Anna Belehaki and aims to build a system that can combine ionosonde & GPS measurements to give a much improved 3D view of ionosphere. The bid had been submitted into the February 2008 I3 call; it had received a mark of 13 (out of 15 maximum) and was overall ranked at 41st place in the list. The Programme Committee had met on 30 May and had decided to fund the first 38 proposals, so EURIPOS is 3rd in the reserve list. Anna was awaiting further feedback before proposing how to proceed. In discussion AH noted that this type of ionospheric work is relevant to current and future ESA programmes such as ARTES5 and SSA and thus might seek some support from those programmes. However, there may be constraints where EURIPOS participants come from countries (e.g. the UK) that do not participate in these optional ESA programmes.

4.3.3 EuroPlanet

PG asked what was the final outcome as regards planetary space weather activities in the new EuroPlanet proposal. He had the impression that these had been dropped because of constraints within the EuroPlanet consortium. MH had a different impression – that a number of space weather interests had been subsumed into the EuroPlanet modelling activity. He took an action to check what was the final outcome and report back.

AI M23/9 MH to check status of space weather activities in the new EuroPlanet proposal. (contact with Jean Liliensten?)

4.4 Space Situational Awareness

MH reported that ESA had formed the Board of Potential Participants for the proposed SSA programme. This is a formal mechanism through which ESA establishes new programmes – it is a committee comprising the ESA Executive and representatives of those countries who wish to consider participation and provides the forum through which programme details are worked out prior to submission to ESA Council. This group was chaired by a Spanish representative (María del Pilar Roman Fernandez), who has also attended several SWWT meetings including the 3rd October 2007 meeting on SSA organised by the SWWT, and had held a series of meetings to progress the proposal.

MH also reported that he had attended an SSA User Group meeting on 14 April in his role as Chair of SWWT. This is an informal group through which ESA can exchange information and ideas with many interested parties. ESA had outlined the proposed programme - where space weather was one of four domains within the programme – the others being near-Earth objects, tracking of space objects and imaging of space objects. The initial phase of the programme (3 years) would seek to federate assets, so the space weather element could naturally build on SWENET. As of the 14 April meeting, the proposed budget was 270 million Euros over ten years, with 30 million for space weather.

AH presented an update (see Annex 2) showing how plans and budget had been refined. He stressed that it was planned to include ground-based sensors in the space weather element and to divide SSA space weather centre into logically distinct elements, e.g. those concerned with spacecraft effects, with ionospheric effects and with GIC. SB commented that the relevant diagram did not include an element for the neutral atmosphere. AH agreed that this needed to be added.

4.5 Astronet

This was taken early in the agenda in response to questions from attendees. MH outlined the history of SWWT engagement in Astronet, which is an EU-funded network (ERANET) that aims to coordinate the development of European astronomy. It is therefore relevant to the science of space weather. The first stage of Astronet was to develop a Science Vision document. This was subject of a meeting in Poitiers in January 2007 and the SWWT had provided a variety input to this activity. The final version of the Science Vision contains several relevant concepts including advanced ground-based radars to study the ionosphere, new ground-based solar telescopes and missions to study the Sun in greater detail and to explore multi-scale plasma processes. The current Astronet activity is to develop a Roadmap that can turn the Vision into reality. This is the subject of the forthcoming Astronet symposium in Liverpool. MH will attend and give a talk on role of space weather, e.g. emphasising that the practical impacts of space weather can support the case for funding science projects that will advance our understanding of space weather.

4.6 World Meteorological Organisation

AH reported on the recent WMO report on space weather (see Annex 3). This suggested that WMO should take on a role in space weather and a resolution to that effect will be considered by the WMO Executive Council (EC) to be held in Geneva on 18 to 27 June 2008. A web search showed that the members of the Executive Council include heads of the meteorological services in France, Spain, Italy, Canada, Germany, UK, Poland and Finland (only a subset of all heads of meteorological services sit on the EC). In discussion it was agreed to ask SWWT members to contact their national meteorological services and find out what is their national view with respect to the WMO/EC resolution and see if there is a need to raise awareness of national space weather interests.

AI M23/10 AH to distribute briefing note on the WMO activity & encourage contacts with national reps
AI M23/11 All to contact national meteo service reps to find out their position on the WMO/EC resolution

MH noted that Mauro Messerotti & Henrik Lundstedt are organising a space weather session “Interrelationships between Earth and Space Meteorology” at the European Meteorological Society’s 2008 meeting in Amsterdam on 29 September – 3 October 2008 (see Annex 10). This follows a similar session organised by Mauro at the 2007 EMS meeting.

4.7 SWENET

PB gave a presentation on the status of SWENET (see Annex 4). He showed several examples of the tools now available to compare datasets and assess data quality. This stimulated a discussion on data sourcing within the SWENET services and the importance of data agreements.

PB also noted that the ESA space weather information pages are in the process of being brought up-to-date.

4.8 Space weather portal

NC gave a presentation on the European Space Weather Portal (<http://www.spaceweather.eu/>) – see Annex 5. She outlined the re-design of the portal using the open source Drupal content management system and showed examples of the new pages. In discussion SML suggested to compare the dictionary being developed by the portal team with that being developed by International Academy of Astronautics.

4.9 Web Portal Coordination

AG reported on discussions initiated earlier in the year on the subject of web portal coordination (see Annex 6). This is an activity with the aim to support coordination of activities such as ESA's SWENET and the Space Weather Portal developed as part of the COST 724. It had been subject of a preliminary meeting in Paris in March. There is a perceived need within the community to clarify the aims and scope of various webportals and resources under development. In the case of SWENET and ESWWP, while the names are similar, the content is in practice quite complimentary. SWENET focuses on user driven services and supporting data, while ESWWP is geared more towards the scientific community and the availability of scientific data and modelling resources.

AG presented a possible coordination scenario as illustration. It was noted that this coordination action is currently on hold pending start of the new COST action and decision on ESA's next steps in space weather at the end of the year. If this agreement goes ahead, the proposed approach is to adopt procedures similar to those used in the very successful coordination of the GEANT4 open source software. Coordination discussions should be scheduled as part of the splinter meeting agenda during ESWW5.

4.10 Space Weather Journal

MH reported that Anna Belehaki (with PG and Mauro Messerotti) had had discussions with Martin Rasmussen of Copernicus during the recent EGU meeting in Vienna. She transmitted some minutes of meeting, describing the philosophy, particularly the "2 stage publication process". She had just received a message from Martin concerning the total sponsorship requested for the first 3 years (see Annex 1). This amount was higher than expected: a part will be covered by EGU but we do not know yet how much. Anna has contacted COST (Carine Petit) who was very positive about support but to progress this some discussions must be initiated inside COST. There are also good possibilities to obtain sponsorship from EOARD.

The status of the papers from ESWW4 was discussed. About 12 authors had responded to the April call for papers. It was not yet clear how to proceed with these. We need to come to a decision on how to proceed.

AI M23/12 MH/AG to find an appropriate solution for ESWW4 papers with colleagues on the ESWW4 team as soon as possible.

As a new European Space Weather journal will not be ready in time for ESWW5, it was noted that a suitable journal needs to be identified in time for this year's proceedings. This will be taken up by the ESWW5 programme committee in the next months.

4.11 Topical groups

4.11.1 Education, Outreach and Emerging Markets

NC gave a presentation on the work of the EOEM group (see Annex 7). She reported on a range of activities including the Space Weather Bus tour of ten European countries organised by SWEETS. She also noted the need to develop links with the European Space Education Resource Office (ESERO) established by ESA – and with the national nodes that are being established by ESERO.

4.11.2 Ionospheric effects

MH reported on progress in appointing a new chair in succession to Lili Cander. Two candidates had been proposed during the TG meeting at ESWW4: Juha-Pekka Luntama from FMI and Jean-Jacques Valette from CLS. But he understood that Jean-Jacques did not wish to stand due to pressure of other commitments. He would confirm this and take action to approve the new chair.

AI M23/13 MH to take action to confirm and approve new Chair of Ionospheric TG

MH presented a short report from Juha-Pekka Luntama on the COST-296 management committee (see Annex 8). The 5th workshop of COST 296 will take place on 7-11 October 2008 at INGV, Rome. This will review all work performed since beginning of the action. The review papers from this workshop will form the COST 296 Final Report and will be published in a special issue of Annals of Geophysics. The Chair and Vice-Chair of the action have been to start to prepare a proposal for a following action.

MH also reported on the Ionospheric Scintillation Workshop hosted by the University of Nottingham (UK) in February 2008 and co-sponsored by COST296. The workshop was attended by 40 leading experts representing 17 countries. A key output of the workshop is to recognise that scintillation effects are still difficult to predict and mitigate and that many monitoring services exist or are planned at national levels. There is a need to understand & model data from such networks so that we can consider how to integrate to provide warning/mitigation information in timely & reliable manner. It is proposed to establish an 'Ionospheric Perturbation & Detection Monitoring' network in Europe. This would be the foundation of a research initiative to address issues above and potentially a service to meet expectations raised by the workshop. It is planned to pursue funding opportunities in Europe, in particular within FP7. The workshop summary and links to presentations are on line at http://www.nottingham.ac.uk/iessg/public/2008_iono_workshop/2008_iono_post_workshop.pdf.

This prompted some discussion on future FP7 calls. MH noted that he was aware of plans for a heliophysics data proposal, led by Bob Bentley, in the e-infrastructure call that closes in September.

AI M23/14 MH to circulate note on forthcoming FP7 opportunities

4.12 Spacecraft & Aircraft Environments

AH presented a short report (see Annex 9) on the work of this task group on behalf of Angélica Sicard-Piet, Chair of the TG. It was noted that this group has been fairly inactive over the past year but that a number of activities are gaining momentum in which it could play an important role. One of these include the SEENoTC (Space Environment and Effect Network of Technical Competences) where SWWT is a formal liaison. It was proposed that the TG could take a key role in identification of SEENoTC relevant issues in the field of Space Weather (see AG's presentation in attachment). MH & AG to contact current spokespersons to discuss possibly SEENoTC interface and to check whether they wish to continue chairing & vice-chairing the group.

AI M23/15 MH/AG contact AS & KR regarding topical group status and SEENoTC coordination.

5 AOB

The other agenda items were not covered due to lack of time. MH will circulate a report on the recent US workshop on severe Space Weather events. Presentations on recent activities in the GETG topical group (provided by A. Thomson) and on German space weather activities (provided by V. Bothmer) are included as Annexes 11 and 12. H. Lunstedt reported via email on the upcoming EMS session that

he is organising together with M. Messerotti and on new ideas for the fundamental research topical group. These will be explored over the next months and the website updated. AG will report on ILWS End Users Topical Group progress during the next meeting. Peter Beck reported via email that ARC (Austrian Research Centers) is very interested to participate any new COST action on Space weather, is offering a web application AVIDOS for flight route dose calculations to the public for free (www.radiation-seibersdorf.at/avidos) and is working on the national program SOLARDOS for calculation of doses due to solar events.

AI M23/17 AG – report on ILWS end users topical group progress at meeting #24

6 Date of next meeting

The next meeting will take during ESWW5 in Brussels. Mike Hapgood will liaise with the organisers.

V2, 13 June 2008

Annexes:

1. MH Powerpoint for meeting*
2. AH presentation on SSA
3. AH presentation on WMO*
4. PB presentation on SWENET
5. NC presentation on Space Weather Portal
6. AG presentation on Portal Coordination
7. NC presentation on EOEM TG
8. JPL presentation on COST 296 management committee*
9. AH presentation of Spacecraft & Aircraft effects TG
10. MM flyer on EMS 2008 space weather session*
11. AT presentation on GETG topical group*
12. VB presentation on German space weather activities
13. AG SEENoTC coordination

* indicates annex available on SWWT listserv file store as of 13 June. Others will be added as they become available.