

ESMN in Memoriam (1998 – 2006)

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Abstract. The EC-FP5 *European Solar Magnetism Network* (ESMN) was terminated during this conference. Together with its FP4 predecessor, the *European Solar Magnetometry Network* (ESMN), it funded 22 postdoc and 9 graduate-student appointments at nine solar physics groups in Western Europe, it enhanced Europe-wide collaboration in solar physics, and it contributed to the integration of East-European groups in West-European enterprises. Its unfortunate demise results from lack of further fortune in the FP6 lottery. The FP6-funded Utrecht-Stockholm-Oslo graduate school in solar physics represents offspring, the FP6 Solaire network is a partial replacement, and the EAST undertaking and pledge to build an EST is a most worthy FP7 stake. The EC's policy shifts from postdoc to predoc funding and from requiring (too) small to requiring (too) large consortia are criticized.

1. ESMN Start

The ESMN mission was “to integrate the development and usage of the European solar telescopes on the Canary Islands with space observation and data interpretation and theoretical analysis”. In both proposals nice pictures of (not from) solar telescopes sold the message “exploit these investments”. Both proposals adhered to, in what I regard as EC-speak writing contest plus political lottery rather than meritocratic peer-review selection (Rutten 2001):

“Parent birds preferentially feed those fledglings that open beaks widest, scream loudest, have the brightest throat marks, shake wings most frantic — because their own parental genes are biologically coded for long-term survival. Any money-dispensing authority in the EC is politically coded to support those endeavors that promise most advertisable successes, feathers in their cap. In this feeding dance the EC calls the steps; we have to shake and scream and paint our throats the way they like it. Hard-coded facts of life that lead to hard questions. In parlance: how to strategize priorities, facilitate empowerment, implement visioning? In plainer language: who does what where to maximize our take?”

The size and constitution of the ESMN were dictated by the EC program constraints. In FP4 and FP5 these required that a network proposed to divide a limited amount (about 1.5 million Euro) during four years over a maximum number of groups from a maximum number of EC nations including “less favored regions”, and do so in the form of postdoc salaries and interpartner travel. No money for computers or other hardware. The ESMN-2 partners were:

- Sterrekundig Instituut Utrecht
- IAC, La Laguna
- OAA, Florence
- Institute of Theoretical Astrophysics, Oslo
- Institute for Solar Physics, Stockholm
- Astrophysikalisches Institut Potsdam
- Observatoire de Paris, Meudon
- ESA Solar and Solar-Terrestrial Missions Division, Noordwijk
- Astronomical Institute, Ondřejov
- Astronomical Institute, Tatranská Lomnica
- Department of Astronomy, Eötvös University, Budapest,

whereas the ESMN-1 consisted of only the West-European groups above, with the OAC at Naples instead of the OAA at Florence.

These ESMN groups together represent a sizable part of groundbased European solar physics but obviously incompletely. Glaring absentees were the Kiepenheuer Institute and the Göttingen, Zürich, Toulouse (Pic du Midi), Sicilian and Greek solar physics groups within the original EC, and other Eastern-European groups than the three ESMN-2 ones. A network tying groundbased European solar physics together should have about two dozen partner groups.

In addition, there is no clear distinction between groundbased and space-based solar physics; the ESMN was strongly oriented to the Canary Island telescopes but also a large user of SOHO and TRACE. Adding space-oriented groups (Lindau, Orsay, Culham, Ukkel, etc.) would bring the group total to about thirty. Complete solar physics coverage would then add theory-oriented groups (St Andrews and other UK groups, Leuven, etc) as well. Thus, the “European solar physics research area” encompasses roughly 40 groups.

2. ESMN Feats

The ESMN-1 hired as “Fellows”: Pit Sütterlin, Olaf Dittmann, Cristina Gabelieri, Laura Merenda, Klaus Pushmann, Regina Aznar Cuadrado, Carla Gil, Jack Ireland (twice), Etienne Vogt, Colin Rosenthal, Bertil Dorch, Boris Gudiksen, Karin Muglach, Marcelo Lopez Fuentes, Kostas Tziotziou, Eoghan O’Shea, and Axel Settele.

In the second round, the ESMN-2 fellows were Kostas Tziotziou (again), Arek Berlicki (twice), Moncef Derouich, Laura Merenda (again), Katja Janssen, Andrés Asensio Ramos, Luc Rouppe van der Voort, Kai Langhans, Monica Sánchez Cuberes, Peter Gömöry, Jaroslav Dudík, and Stéphane Régnier.

The ESMN produced over 350 ESMN-acknowledging papers, met all over the world in some official and many more non-official meetings, was involved in many dozens of multi-telescope observing campaigns, and ran or participated in six schools (the photograph in Fig. 1 is from the last one). Of course, many of these activities would also have taken place without an ESMN, but it is fair to claim that the ESMN funding indeed contributed to the intensification of solar-physics collaborations across Europe.



Figure 1. The ESMN at Tatranská Lomnica in November 2004. The attire, custom-designed by Kostas Tziotziou and Frans Snik, is inspected by schoolmasters Aleš Kučera (leftmost) and myself (rightmost). Jacques Beckers is rightfully at the center: he proposed and orchestrated the final session in which all students were split into four observatories, directed by Katja Janssen, Kai Langhans, Monica Sánchez Cuberes, and Andrés Asensio Ramos (for example the KAI = Kai's Astronomical Institute). They got the task to compete for EC funding with detailed plans for the future. Mats Carlsson and Bernhard Fleck were the stern EC evaluators and complained conformally about over-optimistic budgets and gender aspects. I was the EC but behaved non-conformally by funding all four because their plans were so good. Photograph: Jaroslav Ambróz.

3. ESMN End

Unfortunately, our ESMN-3 proposal did not make it through the EC's last-call FP6 network selection. Fortunately, our friendly-competitor Solaire did. To some extent this is a descendant of the earlier PLATON network which targeted MHD theory more than observation and overlapped partially with ESMN-1 (we ran a joint school at Dwingeloo). Five ESMN partners are now Solaire partners.

Can we try again? No, since FP7 targets much larger research consortia, at the size where these become only bureaucratically existing rather than as true research collaboration. As noted above, our "research area" is about 40 teams, each characteristically made up by 2-6 tenured researchers located at or near a university, a national research institution, or ESA. Ours is a relatively small field but the ESMN covered only about a quarter of it; the same holds for Solaire. Now, in FP7, the EC desires research conglomerates covering complete disciplines via national institutions (ASTRONET). Our research area was too large for FP4 through FP6 but is too small as an FP7 entity. The EC prefers that all the fish it should hatch or catch is of a single measure.

The fish that we should catch from the EC is funding for EAST to build the EST, better sooner than later. However, sweeping this sweepstake is not easy. The question is again: *who does what where to maximize our take?*

A direct descendant spawned by the ESMN is USO-SP, the "Utrecht-Stockholm-Oslo collaboration in Solar Physics" which was formally established

by these three ESMN groups and then cornered an FP6 EST grant for graduate student training, the “USO graduate school in solar physics” coordinated by Dan Kiselman. It funds only predoc training, no postdocs.

FP7 caps this post-to-predoc trend with its “Initial Training Networks”, much more like FP6 EST than FP6 RTN networks. The obvious political choice for “the younger the better” in migrating the next generation into non-nationalistic Europeans is easily made by Brussels bureaucrats, but they forget that recruiting abroad with promise of quality as principal criterion is much harder for fresh graduates. Europe should adopt the practices through which the better US graduate schools select and attract the best PhD students: centralized GRE or comprehensive physics examinations and in-depth interviews. The US does not only spend more on higher education but also migrates the best students, including from Asia, to the best universities. In Europe only the most famous UK universities have similar attractivity and apply similar weeding. Across much of Europe, the quality of high-school math and physics deteriorates to the American level, requiring remedial teaching at universities. The EU’s quest for a knowledge economy needs much better mechanisms than what FP7 offers now.

4. ESMN Epitaph

So was it worth it? The claim has been made that the best to come out of the ESMN was Boris Gudiksen’s thesis. For me, the motivation to start the ESMN was that I desperately needed outside success to enhance my local standing in battling for DOT survival, fighting imminent DOT bankruptcy right after its inauguration by Crown Prince Willem Alexander (1997). It worked, but in addition the ESMN enabled me to bring Pit Sütterlin into the DOT team. Pit not only brought his version of the Göttingen speckle code but then used it to turn the DOT from open-principle demonstrator into a prolific producer of tomographic solar movies in which seeing no longer kills the viewing. Without exception, all observations in the DOT database at <http://dotdb.phys.uu.nl/DOT> have been taken by him. Thus, the DOT became a productive telescope thanks to the ESMN¹. *Yes, it was worth it.*

Acknowledgments. The ESMN was funded by the EC in contracts ERBFM-RXCT980190 and HPRN-CT-2002-00313. I am grateful to my ESMN partners for making the ESMN a productive undertaking (excepting some re yearly reporting). Pieter Thijssen has been an invaluable source of advice next to his efficient and expert ESMN administratorship. It was a pleasure to work with Stephen Davies as EC program officer. Horst Balthasar suggested to conclude the ESMN during this conference.

References

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¹DOT bankruptcy is imminent again, see Hammerschlag et al. on p. 573 ff in these proceedings.