



## International Baron Marcel Nicolet Medal for space weather and space climate

rewards efforts to structure the space weather community at an international level. This year, the International Medal Committee decided to award

### Dr David Berghmans

David Berghmans was present at the foundation of space weather in Belgium and Europe. Space weather was boosted in the nineties with the joint ESA/NASA mission SOHO providing a wealth of opportunities for space weather research and space weather services. The Solar Physics Department of the Royal Observatory of Belgium (ROB) became a member of the EIT/SOHO consortium and contributed to the instrument development, calibration and in-flight control. David Berghmans and his colleagues initiated multi-instrument observing campaigns in which groups worldwide were involved, e.g. the Shutterless experiments. The ROB set up its first Satellite Data Centre, archiving all EIT observations, and providing an unprecedented archive for solar activity and its evolution.

At that time, David Berghmans became an active member of the Space Weather Working Team (SWWT), a European discussion forum that advises ESA in space weather strategy.

The next natural step was the creation of a Space Weather Centre. David Berghmans took this initiative and in 2000, the ROB obtained the status of Regional Warning Centre, one of the ISES (International Space Environment Service) nodes. David Berghmans coordinated the centre and also mainly executed the local implementation, management, structure set-up, etc. Through the ISES network, informal and formal contacts with worldwide space weather centres were possible and collaborations were set up, e.g. the American space weather division, SWPC. Simultaneously, the ESA Space Weather Operations Pilot Project, a ROB-lead initiative, investigated the sustainability of space weather in Europe. This project was the very start of a European movement initiated by ESA and executed by the ROB to strengthen the position of Europe on the space weather world map.

The science and instrumentation know-how together with ROB's growing expertise as space weather service centre, could be fully exploited by the PROBA2 mission. David Berghmans stood at the cradle of SWAP and LYRA, both EUV solar science experiments onboard PROBA2 relevant for Space Weather research and services. The PROBA2 mission was an excellent exercise in bringing together different research groups, universities, administrative structures, agencies, companies, e.g. IMEC. The PROBA2 Guest Investigator Program was introduced offering the opportunity to researchers worldwide to work on space weather and solar physics issues based on PROBA2/LYRA and SWAP data. This program is an exemplary effort to coordinate space research and make it as accessible as possible by lowering the financial, cultural and age-linked barriers.

David Berghmans was also one of the founding persons of the Solar-Terrestrial Centre of Excellence, a structure that coordinates the Sun-Space-Earth themes at the Belgian federal level. The STCE stimulates and secures the participations in national and international projects and missions and aims at providing information, education and services to groups and individuals with an interest or a potential benefit. The principle of cross-border activities and acting on the international level is a goal high up on the agenda of David Berghmans. The STCE is one of the driving forces behind the European Space Weather Week, THE annual European space weather event that offers a platform for all players of the space weather community at large to meet and to get organized: researchers, service and product developers, end users, companies involved in space technology, political entities. David Berghmans had always an active role when it comes to chairing sessions, being a panel member, etc.

David Berghmans participated himself or encouraged researchers to participate in projects like SOTERIA, European Space Weather Portal, CASSIS, ESPAS, ATMOP, SOLID, eHEROES, AFFECTS, COMESSEP, HELCATS, SWIFF, HELIOVIEWER, CHARM, Space Situational Awareness, SSA Space Weather Coordination Centre, Solar Orbiter, PROBA3, Solar Dynamics Observatory, Humain radio site, WDC for the sunspot index etc. a series of missions and projects that are essential in the different aspects of space weather and that strengthen the European and world wide space weather efforts. These projects range from product development in support of space weather services such as (short-term) forecasts, theoretical research (PhD, post-docs), instrument development, data acquisition, to communication and structure management.

David Berghmans always stimulated educational initiatives, e.g. Eclipse viewing in Belgium 1997, SOTERIA school 2010, eHEROES school 2013, PROBA2@school project, series of lectures at amateur astronomer groups, "A typical day for professor David" outreach website that shows how to observe and count sunspots.

David Berghmans embraces also the 'Open Source and Data'-policy. Data and science should be freely accessible for scientific and educational purposes. This idea has always been implemented in all projects and data producing activities in which he was involved, e.g. EIT Shutterless archive, CME catalogue based on the CACTus software, SOTERIA focusing on virtual observatories providing solar data and measurements, PROBA2 SWAP and LYRA data, etc. This open minded and non-protective attitude broadens the road for enhanced progress. The CACTus software, which was originally developed by David Berghmans, fostered subsequent developments in automatic detection algorithms (Solar Demon, SoFast, SPoCA).

David Berghmans' work had implications on the international level as it sets the path for collaborations between structures with different backgrounds: research institutes, space agencies, political entities and commercial entities. David Berghmans aims at creating the necessary structures and support offering people the opportunity to come to excellence and state-of-the-art results in research, space missions, instrument and product development and activities in support to space weather community building. David Berghmans was present when Space Weather was in its infancy and definitely helped it maturing.

David is well known and appreciated in the space weather and solar physics community and has brought many people together. He easily recognizes opportunities and works them out in the long-term, structural plans on the international level. David is appreciated for his original ideas and out-of-the-box-thinking. David has the talent to get easily acquainted with all sorts of space

weather topics, from a birds eye and a microscopic view, with the self-knowledge of his limitations poured with the necessary seriousness and humor.

For all these reasons, the Committee decided to award David Berghmans with the 2015 Baron Marcel Nicolet Space Weather and Space Climate medal.