

The Solar Terrestrial Center of Excellence

Belgian know-how of a comprehensive space weather service

The Belgian government has approved and funded the creation of a *Solar-Terrestrial Centre of Excellence (STCE)* in which the existing activities and expertise of 3 Belgian federal institutes will be re-grouped in a tight network. The existing expertise concerning physics all the way from the sun to earth and valuable collaboration and strengthening of scientific research, will make the difference on international level.



A view of the three institutes: the Royal Observatory of Belgium, the Royal Meteorological Institute of Belgium and the Belgian Institute of Space Aeronomy

The Solar-Terrestrial Center of Excellence, STCE is a scientific project which aims at the creation of an international expert center and the valorization of Solar and Solar-Terrestrial research and services. The STCE clusters the know-how of 3 Belgian Federal institutes, the Royal Observatory of Belgium, the Royal Meteorological Institute of Belgium (RMIB) and the Belgian Institute of Space Aeronomy (BISA), all three located in the southern green outskirts of Brussels. Top-class scientists, technicians and IT-people were or will be attracted and hired.

The scientific research performed in all three institutes is done independently but at the same time in a highly complementary way. This joint expert center brings together the contributing solar-terrestrial activities. The Belgian federal government funds the STCE at a significant level allowing to further extend solar-terrestrial basic research as well as the development of space weather services. The funding authorities put significant emphasis on economic return of such services. More Belgian and non-Belgian partners will be welcomed in a later phase.

The STCE offers Belgium an unheard-of opportunity and visibility on international level in the fields of solar physics, atmospheric physics and space weather.

Concept

- An integration of the existing Belgian research groups in one overarching structure: the STCE, not a new institute.
- Stabilization and consolidation of the existing know-how scattered over different existing institutes
- Explicit support for visiting fellows & communication
- Long term funding

The STCE will build upon **existing experience** present in the 3 institutes related to Solar-Terrestrial physics. These include among others:

- SPENVIS, the Space Environment Information System (BISA), <http://www.spenvis.oma.be>
- The World Data Center for the Sunspot Index (ROB/SIDC), <http://www.sidc.be>
- Principal Investigator of the telescope VIRGO-DIARAD onboard of the international satellite SOHO (RMI), <http://remotesensing.oma.be/solarconstant/virgo/virgo.html>
- Lead of the PICARD, i.e. French microsatellite, mission center (BIRA), <http://www.busoc.be/picard/en.htm>
- SOVAP instrument for solar constant measurements onboard of PICARD (RMI)
- SOVIM-DIARAD instrument for solar constant measurements for the International Space Station (RMI)
- Dourbes geomagnetic station (RMI)
- Regional Warning Center for ISES concerning space weather services (ROB/SIDC), <http://www.sidc.be>
- Co-Investigator of SWENET (BISA), <http://esa-spaceweather.net/swenet/index.html>
- Investigation of the ionosphere by the Ionosonde (RMI)
- Principal Investigator of the innovating telescopes SWAP & LYRA onboard of the European micro-satellite PROBA2 (ROB/SIDC), <http://lyra.oma.be> and <http://swap.oma.be>

The STCE will operate in a strong collaborative spirit within the international environment: we expect strong benefits from joint work within the networks created by ESA (SWWT, SWENET), EU (COST, FP7) and others (ISSI, ...)

The Royal Observatory of Belgium is the leading partner in this new scientific project that will start soon (autumn 2007).

Contact:

Royal Observatory of Belgium
Ringlaan - 3 - Avenue Circulaire
B-1180 Brussels

R. Van der Linden
+0032(0)2/373 0249
Ronald.VanderLinden@oma.be