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1. Hot News

- Last month an active region north of the solar equator has produced several flares and coronal mass ejections with space weather effects impacting geospace on the days around January 20. Several press releases were claiming the region did produce the strongest space weather storm since October 2003. The AFFECTS project has received a high visibility through the Media in association with these solar storms.
- NASA's Solar Probe Plus Mission proceeds into Phase B.
- The final AFFECTS website is now online. The URL is: www.affects-fp7.eu. Additionally, a project wiki has been installed and can be edited by all project partners.

2. News from the European Commission

Volker Bothmer has been invited to present an overview of the AFFECTS project at the EUSpace event on February 28-29 in Brussels (<http://www.b2match.eu/spaceeu/>). He is further working on an AFFECTS summary for the new edition of the EU book "Let's embrace space" and on a summary report on the EC JRC Space Weather Dialogue Meeting held at Brussels, November 25-26, 2011. The report, to be published in the International Space Weather Journal, published by Lou Lanzerotti, was provided by Elisabeth Krausmann of JRC.

3. Status of Deliverables

Until December 31st the following deliverables were due and have been completed timely:

D1.1: Definition of internal document templates (Lead: UGOE, co-lead: DLR)

D1.2: Kick-off meeting documentation (Lead: UGOE, co-lead: DLR)

D1.3: Provision of online wiki-interface (Lead: UGOE, co-lead: DLR)

D1.4: Report on formation of Steering Committee, Advisory Board and URIT (Lead: UGOE, co-lead: DLR)



- D2.1: Provision of a dedicated web-interface for EUV data (Lead: ROB, co-lead: FHG)
D2.4: Online provision of L1 solar wind, geomagnetic indices data base (Lead: UoT, co-lead: DLR)
D2.5: Provision of a web-interface for AE activity monitor and local indices database (Lead: UoT, co-lead: DLR)
D2.6: Online provision of GNSS based ionospheric data base (Lead: DLR, co-lead: UoT)
D3.2: Provision of layout for an early warning system for GNSS users (Lead: DLR, co-lead: SRI NASU-NSAU)
D5.1: System architecture document (Lead: DLR)

4. Status of Work Packages

4.1 WP1: Management

In WP1 a final website layout has been completed. Furthermore, the project wiki (Deliverable 1.3) has been set up providing an interface for the input of all project partners. The wiki is linked to the project website. To edit the wiki all AFFECTS partners can log-in to the website and follow the corresponding link to the wiki. Project templates and PR material are provided through website as well. All project partners have received access information. The organisation of the General Meeting is progressing.

4.2 WP2: Data, Calibration, Maintenance and Instrumentation

Now 12 months into AFFECTS, Work Package 2 is comfortably on schedule with its obligations. So far the L1 solar wind data and global geomagnetic index data (deliverable 2.4), the Ae index web interface together with local geomagnetic indices (deliverable 2.5), GNSS combined with ground-based ionospheric data (deliverable 2.6) and the dedicated web interface for solar EUV data (deliverable 2.1) are all available, primarily via DLR's AFFECTS user interface to the SWACI database (<http://swaciweb.dlr.de/affects/>, cf. Fig. 1). These four deliverables have had deadlines within these first 10 months of the project; the remaining deliverables have longer time perspectives, ranging from 24 to 36 months.

Data flow from instruments in the field or in space has been generally reliable. However, one minor instrument failure demonstrated the need to have fall-back instruments available and this lesson has resulted in improved robustness in the provision of ground-based data – again one of WP2's responsibilities for the entire duration of the project.

Any users who have not already done so are encouraged to log on to the dedicated AFFECTS website at SWACI and explore the geomagnetic and ionospheric data available together with links to external web pages relevant to the project.

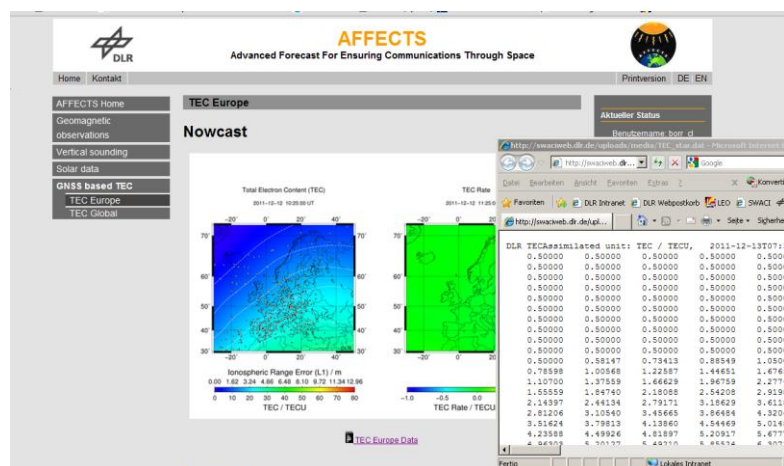


Fig. 1: AFFECTS portal on the SWACI website



4.3 WP3: Early Warning System

A layout for an early warning directed specifically to GNSS users has been designed by DLR. Provision is made for translating alerts provided to the needs of GNSS users and is under revision.

4.4 WP4: Forecasting Tools and Modelling

A draft for the TEC forecast processing module has been established at DLR. ACE data are supposed to be used for the prediction of solar wind driven TEC perturbations. Currently, ACE data are analysed and prepared in order to execute correlation studies with TEC.

4.5 WP5: Forecast System Ionosphere, User Interfaces

The objective of WP5 is to develop an ionospheric forecast system matching the needs of the users and implementing the objectives of the AFFECTS proposal. The system architecture document for the Forecast System Ionosphere (deliverable 5.1) has been completed in December. For the establishment of a fundamental system layout including an appropriate description of the user interfaces, DLR worked together with all partners of WP5.

4.6 WP6: Data and Product Dissemination, Product Sustainability

Not applicable, because the WP does not start before September 2012.

5. Featured Beneficiary

In each newsletter we will introduce one beneficiary, starting with the coordinator, the Georg-August-University Göttingen, and followed by ROB, SRI NASU-NSAU, FHG, UoT, DLR and ASTRIUM ST. The National Oceanic and Atmospheric Administration (NOAA in Boulder, USA) and the Planetarium Hamburg (Germany) as external collaborators will also have the opportunity to present themselves. This issue's featured beneficiary is the Royal Observatory of Belgium.

Solar Influences Data analysis Center, at the Royal Observatory of Belgium

The “Royal Observatory of Belgium” was created in 1826, 4 years before the creation of Belgium itself, by King Willem I of the United Netherlands (= present Belgium + The Netherlands). The observatory was first located close to the center of Brussels and was moved in 1891 to its current position in Uccle, in the Southern suburbs of Brussels.

Since 1940, a systematic and standardized solar observing program was started in collaboration with the Zürich Observatory. The “Uccle Solar Equatorial Table” (USET, Fig. 1) was put in place in 1953 in a renewed dome. In recent years, the USET has been equipped with modern CCD cameras (<http://sidc.be/uset/>).

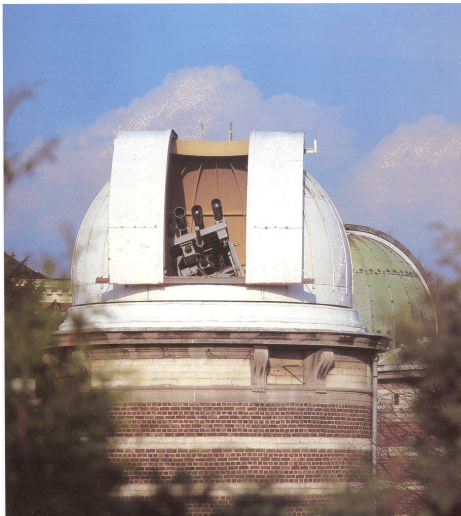


Fig. 1. The outside of the Uccle Solar dome today showing the equatorial table carrying 3 telescopes.

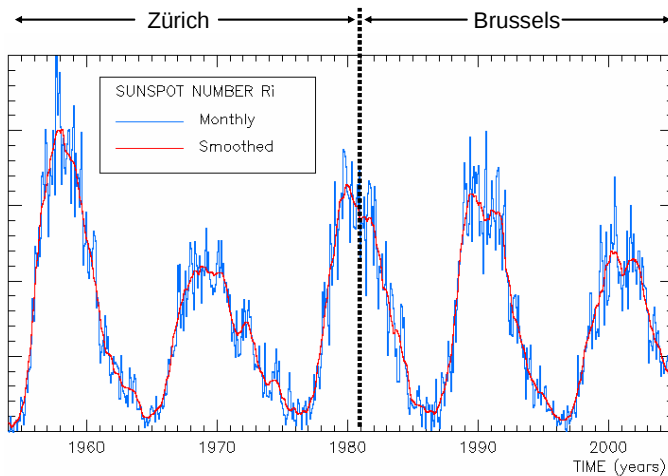


Fig. 2: The last 2.5 cycles of Zürich, and the first 2.5 cycles of Brussels, showing continuity and coherency around the transition.

In the early 1970's, the Zürich Observatory could no longer sustain the production of the Zürich sunspot number and the responsibility was transferred to the Royal Observatory of Belgium. The “Sunspot Index Data Center” was created at ROB as a World Data center (see Fig. 2).

Since 1990, the ROB participated in the *Extreme Ultraviolet Imaging Telescope* (EIT) onboard the ESA/NASA mission SOHO. The fact that the Royal Observatory of Belgium was involved in EIT, which turned out to be an excellent space weather monitor, has paved the way for the SIDC to grow in subsequent years from the World Data Center for the sunspot index to a full space weather monitoring center. In January 2000, the SIDC makes a giant leap forward by taking over the responsibility of *Regional Warning Center* (RWC, see ISES) for Western Europe from the Observatory of Paris (Meudon). An overview of the SIDC space weather services can be found here: http://sidc.be/registration/registration_main.php

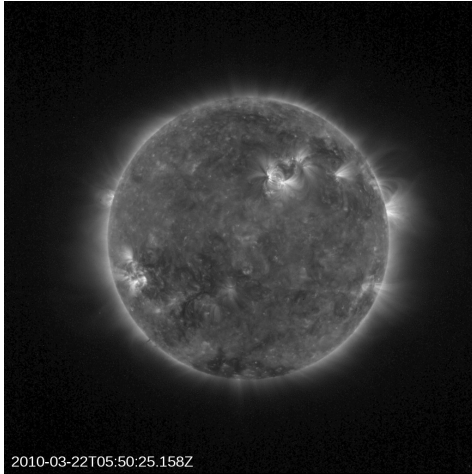


Fig. 3: PROBA2/SWAP latest image proving in near-real time information on space weather activity.

Also to reflect the extended activities, the full name of the SIDC was changed to “*Solar Influences Data analysis Center*”, thus keeping the same acronym. In recent years, the SIDC has thus grown into a large research group for observational solar physics as well as a center for space weather services. The group harbours about 30 researchers and support staff. The ROB/SIDC is involved as co-investigators of most modern solar physics space missions (SOHO, STEREO, SDO). ROB/SIDC is also the Principal Investigator institute for the solar instruments on PROBA2, named SWAP and LYRA. (<http://proba2.sidc.be>).



6. Press & Media

- Press Release: *Göttingen Astrophysicists develop European Space Weather Early Warning System*, Link: <http://www.uni-goettingen.de/en/press-release-goettingen-astrophysicists-develop-european-space-weather-early-warning-system-11052011/215809.html>
- The latest version of the AFFECTS video trailer is available at the following link: <http://www.astro.physik.uni-goettingen.de/~bothmer/AFFECTS/>.

7. Collaborations

Collaborations with other EU projects, such as HELIO and COMESEP are progressing.

8. Announcements and Upcoming Events

- Aleksei Parnowski plans to present an AFFECTS overview talk at the conference “Plasma processes in the Solar System” to be held in Moscow on *February 6-10, 2012*. The conference website <http://www.plasma2012.cosmos.ru/> is available only in Russian. The conference is organized by the Space Research Institute of Russian Academy of Sciences (IKI).
- *February 6-9*: Helio Workshop “Heliophysics Integrated Observatory Coordinated Data Analysis Workshop”, Orsay, France. More information: http://www.helio-vo.eu/helio-cdaw/HELIO_CDAW-3.html
- **February 20-22: 1st AFFECTS General Meeting, Brussels, Belgium.** The invitation and a draft agenda are available via the project website www.affects-fp7.eu
- *February 28-29*: SpaceEU, Brussels, Belgium
- *March 6-9*: eHEROES Kick-off Meeting, Rome, Italy
- *March 27-30*: UK-German Astronomy Meeting, Manchester, UK
- *April 22-27*: EGU General Assembly, in Vienna, Austria
- *June 5-7*: 5th Gossamer ESA/DLR Solar Sail Working Group Meeting and Workshop, ESTEC, Noordwijk, Netherlands
- *June 17-22*: Solar Wind 13, Big Island, Hawaii, USA
- *July 14-22*: 39th COSPAR Scientific Assembly in Mysore, India
- Specific meetings of potential interest:
 - *April 30 - May 4*: 26th NSO Workshop “Solar Origins of Space Weather and Space Climate: Connecting the Interior to the Corona”, in Sunspot, NM
 - *May 21-23*: Coronal Magnetism – Connecting Models to Data and the Corona to the Earth, in Boulder, CO, USA
 - *May 31 - June 7*: Heliophysics Summer School, in Boulder, CO
 - *June 4-9*: 1st European School on “Fundamental Processes in Space Weather: A Challenge in Numerical Modeling”, in Spineto, Italy
 - *July 1-6*: European Week of Astronomy and Space Science, in Rome, Italy.
 - * The Sun: New tools and ideas in observational Solar Astrophysics
 - * From solar physics to astrophysics: the Sun as Rosetta stone for understanding astrophysical processes