

Paris Declaration
“Towards a Space Climate Observatory”
One Planet Summit
Monday 11 December 2017

For 23 years, the annual Conference Of the Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC) has brought the international community together to combat climate change. In 2015, COP21 in Paris marked a major milestone, as the Paris Agreement signed by 195 countries and effective on 4 November 2016 set new targets for nations towards a common effort to keep global warming below 2°C with respect to pre-industrial levels and to adapt to climate change.

When it comes to coordinated actions, it is essential to share the same diagnosis worldwide on the causes, effects and evolution of climate change. In this respect, satellites are key elements of the Global Earth Observing System of Systems (GEOSS) being established by the Group on Earth Observation, as they provide observations that are global, uniform, sustained over years and regularly repeated over days, offering high resolution as well as broad-scale monitoring of our planet. Understanding our planet’s climate relies on measuring essential climate variables (ECVs) as defined by the Global Climate Observing System (GCOS), and more than half of these can only be observed by satellites.

Space agencies have taken several initiatives over the years to step up international cooperation in Earth observation. Created in 1984, the Committee on Earth Observation Satellites (CEOS) serves as a coordination body among space agencies in the field of Earth observation. In 2007, CEOS published its first “Response to the GCOS Implementation Plan” and has since 2013 joined forces with the Coordination Group for Meteorological Satellites (CGMS) to deliver regular, fully integrated reports on advances and plans towards a better global climate monitoring system. The most recent reports were presented to COP23 in November 2017.

The importance of climate change issues has also led space agencies to meet at the highest level on several key occasions to underline their commitment on this matter. Space agencies adopted the Mexico Declaration in 2015, which recognized the tremendous contribution of satellite observations to climate change studies and disaster management support, and expressed their determination to give satellites a bigger role informing political decisions at successive COPs. Following the Paris Agreement reached at COP21 in 2015, space agencies endorsed the New Delhi Declaration in 2016, stating that an inclusive global data set would help further global understanding and is a necessary step in establishing an international approach to estimating greenhouse gas emission changes for global use based on internationally accepted data. At COP22 in Marrakesh, space agencies stressed the impact of climate change on water resource management and the importance of past, current and future satellite observations in this domain.

As monitoring from space is in essence independent of boundaries and universally accessible, space is of particular relevance in raising global awareness of climate change issues. However, two challenges are clearly identified. First, as climate change is a long-term process, sustaining long time-series (at least 30 years) of high-quality data is absolutely vital. Second, the indirect nature of satellite measurements is still an obstacle to easy uptake by the wider community. In order to address these challenges, space agencies propose the creation of a Space Climate Observatory (SCO) based on systematic observations of ECVs, data validation and intercalibration, a strategic architecture for integration of space and in-situ data and models, and a free and open data policy.

In this respect, space agencies recognize the great impact of already mature systems, from weather satellites and sea level monitoring to land monitoring and the Copernicus programme among others. The development of Copernicus should further underscore its importance for monitoring global climate parameters. Space agencies will consider actions required for the implementation of the Space Climate Observatory (SCO), in accordance with the guiding principles expressed in the “Statement Reporting on Progress by the CEOS on coordinated response to UNFCCC Needs for Global Observations” (European Commission as CEOS Chair, COP23, SBSTA-47, 6-17 November 2017, Bonn, Germany). In particular, space agencies express their willingness to develop a closer relationship with the UN’s GCOS programme, and with this aim in mind more-systematic observations of ECVs will be sought. As high-quality time-series also require considerable effort on the ground for validation and intercalibration, space agencies will pursue sustainability of activities in this respect, with the help of in-situ data providers and the scientific community.

As far as the Paris Agreement is concerned, space agencies recognize that high-quality greenhouse gas measurements and systematic land, sea and ice change monitoring from space combined with ground-based measurements and models will be essential in supporting a monitoring and verification system and the transparency framework. Space agencies commit to work together to define a strategic architecture to achieve progress on this matter through CEOS. In order to improve user uptake, space agencies intend to promote a free and open data policy, as well as higher-level satellite data products that are directly usable by decision-makers. Space agencies will combine their efforts in capacity-building activities to increase the awareness of applications of satellite monitoring among downstream users.

The Space Climate Observatory (SCO) will constitute a strategic contribution to the Space 2030 Agenda defined under the UNISPACE+50 processes, which are being pursued under the leadership of the United Nations Office for Outer Space Affairs (UNOOSA), within the framework of the United Nations Committee On the Peaceful Uses of Outer Space (COPUOS). Further, the Space Climate Observatory (SCO) will represent an invaluable contribution to the Global Space Partnership, providing opportunities to humankind to address even more effectively the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals. Lastly, the Space Climate Observatory (SCO) is part of one of the most important goals of COPUOS, which aims at strengthening international cooperation towards ‘low-emission and resilient societies’.

In this regard, the Heads of Space Agencies take note of the invitation of UNOOSA to join its efforts in the abovementioned initiatives. Space agencies will contribute to the Space Climate Observatory (SCO) through their bilateral or multilateral activities and promote it in upcoming events such as the One Planet Summit, UNISPACE+50 and COPs.

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