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openSPACE for Everyone

The Space Research Centre of the Polish Academy of Sciences has created an open-access repository of most of the vast amount of data that has been collected in its almost 50 years of activity. “Free and open access to knowledge is the cornerstone of all progress, the driving force of change. That’s why we decided to open up access to the results of our research, including engineering data for the numerous scientific instruments we have designed and produced at the Space Research Centre of the Polish Academy of Sciences for international space missions. On the openSPACE platform, we have deposited almost everything we have been working on for the 47 years of the Centre’s existence. We hope that in this digitized form, it will serve future generations of scientists and engineers,” says Piotr Orleński, ME, PhD, DSc – Director of the Space Research Centre of the Polish Academy of Sciences.

The openSPACE project was initiated in May 2020 as part of the Digital Poland Operational Programme for 2014–2020. The work lasted over three years, involving the digitization of a vast portion of the collections. These included nearly four thousand pages of gravimetric and clinometric data collected by devices belonging to the PAS Space Research Centre, located in the underground chambers of Książ Castle. Additionally, the platform includes Earth satellite observations, PhD and DSc (habilitation) theses of the employees of the PAS Space Research Centre, patents, as well as schematic designs for Polish scientific space hardware, including those of Poland’s first scientific satellites BRITE – Lem and Heweliusz.

The openSPACE platform also provides laser observations of artificial satellites conducted at the Astrodynamical Observatory of the PAS Space Research Centre in Borówiec, near Poznań.

“Our laser observations involve measuring the time a laser beam sent towards a tracked object takes to return back. Currently, we are constantly tracking over 100 objects ranging from low Earth orbit (LEO) to medium Earth orbit (MEO),” explains Paweł Lejba, PhD, who leads the Astrodynamical Observatory of the PAS Space Research Centre.

The repository also contains measurements taken using the unique equipment maintained by the Centre’s Time and Frequency Laboratory.

“We have four atomic clocks, including two cesium standards and two hydrogen masers. We also possess the most accurate clock in Poland and one of the most accurate in the world, namely the cesium fountain,” explains Jerzy Nawrocki, PhD, who leads the Time and Frequency Laboratory of the PAS Space Research Centre.

All this data has been deposited on the openSPACE platform at the following address: data.cbkpan.pl. The datasets are openly available to everyone, regardless of whether they intend to use them for scientific work or for their own commercial purposes. Downloading data does not require the creation of a user account. Each dataset posted on the platform is associated with licenses indicating how it should be used. The project “openSPACE: Repository of High-Value Open Earth and Space Observation Data” is co-financed by the European Regional Development Fund under the Digital Poland Operational Programme for 2014–2020. ■

950,000 pages of data from 47 years of uninterrupted activity of the PAS Space Research Centre have been deposited in the openSPACE repository of high-value open Earth and space observation data. The data can be freely downloaded, to be used for any purpose

