

NASA and Dutch space sector celebrate cooperation in the Earth's ecosystem research

This afternoon NASA and the Dutch space sector celebrated their cooperation in the Earth's ecosystem research at the 70th International Astronautical Congress (IAC) in Washington DC this afternoon. SRON Netherlands Institute for Space Research and Airbus Defence and Space Netherlands, supported by TNO, together develop the aerosol instrument SPEXone that will fly on NASA's PACE satellite, which will be launched in 2022.



From left to right: Kees Buijsrogge (directeur TNO Space), Maarten Schippers (CEO Airbus Defence and Space Netherlands), André Haspels (NL ambassadeur in de VS), Michael Wise (algemeen en wetenschappelijk directeur SRON), Sandra Cauffman (NASA Headquarters), George Morrow (directeur NASA Goddard Space Flight Center), Andre Dress (PACE Project Manager, NASA), André Kuipers (astronaut), Harm van de Wetering (directeur NSO), Jeremy Werdell (onderzoeker, NASA). Credit: NASA Goddard/Taylor Mickal.

With the ceremony at the IAC SRON director Michael Wise and Sandra Cauffman, acting director of the Earth Sciences Division of NASA Head Quarters, celebrated the agreement that will lead to the integration of the Dutch aerosol instrument SPEXone onto the PACE (Plankton, Aerosol, Cloud and ocean Ecosystem) observatory. PACE will study the various factors that affect the Earth's ecosystem and atmosphere and will harbor two other scientific instruments besides SPEXone: main instrument OCI (Ocean Color Instrument) and cloud polarimeter HARP-2 (Hyper-Angular Rainbow Polarimeter).



Michael Wise (SRON) and Sandra Cauffman (NASA).

Impact of aerosols on climate to be unraveled

Aerosols are small dust particles in the air such as soot, ash and desert dust in our atmosphere. They have a major influence on air pollution and climate change, but their precise role is insufficiently known. For example, most aerosols reflect light and have a cooling effect on the Earth, but they can also have a warming effect due to the absorption of sunlight.

SPEXone determines the polarization that aerosols cause while reflecting sunlight, which makes it possible to measure their properties (like size, composition, shape and their capability to absorb or reflect sunlight). In order to determine the relevant aerosol properties, it is necessary to measure the polarization very accurately. This is made possible by a new measuring technology, which is based on the polarization modulation concept that maps the linear polarization state onto the intensity spectrum. This allows us to measure both intensity and polarization simultaneously as a continuous function of wavelength.

About SPEXone

SPEXone is being developed by a Dutch consortium consisting of SRON Netherlands Institute for Space Research and Airbus Defence and Space Netherlands, supported by opto-mechanical expertise from TNO. SRON and Airbus DS NL are responsible for the design, manufacture and test of the instrument. The scientific lead is in the hands of SRON. SPEXone is a public-private initiative, funded by the Netherlands Space Office (NSO), the Netherlands Organization of Scientific Research (NWO), SRON and Airbus DS NL.