

## Wild West in Space

The World Space Forum in Bonn is discussing common rules for the utilisation of outer space. The problems are of a highly terrestrial nature

By Martin Wein

Bonn. 'Outer space. Infinite expanses.' Not at all! Anyone whose image of space is still characterised by the science fiction series Star Trek would be wide-eyed when looking out of a window of the International Space Station ISS. Out in orbit around the Earth, traffic chaos is now similar to that at Bertha-von-Suttner-Platz. In addition to the USA and Russia, more and more countries are launching satellites into orbit. Companies such as SpaceX, with its Starlink network based on more than 19,000 small satellites, are pushing into a new market with their own projects. They all leave behind tonnes of debris without ever cleaning up. According to estimates by the European Space Agency (ESA), there are 36,500 pieces of debris over ten centimetres in size in Earth orbit alone, threatening to collide with other objects.

If German astronaut Gerhard Thiele has his way, this overcrowding is just the beginning. He believes that reusable rockets will make trips into space much cheaper in the future. Huge solar power stations could open their wings in orbit in the next decade and possibly supply the earth directly with energy via microwave radiation. Pioneers are ready to take action on the dark side of the moon without direct radio contact with Earth and thus unnoticed by any control. And even the first person to set foot on Mars has already been born, according to Thiele's expectations, 'I just don't know his passport yet.'

Everyone is currently doing what they want in space. Since Wednesday, the World Space Forum has been bringing together experts and political decision-makers from international, national and local institutions, private companies, universities and non-governmental organisations on the UN campus in Bonn to discuss the peaceful and sustainable use of space. A pact for the future is to be adopted at the three-day conference. The conference is being organised by the United Nations Office for Outer Space Affairs (Unoosa) together with Germany, the United Arab Emirates and Peru.

'We need clear rules for the many different players in space,' advocates Adam Bower from the University of St Andrews in Scotland at a preliminary round at the invitation of the NRW Academy of International Affairs. Bower, who is currently visiting Bonn as a Fellow of the Academy, specialises in regulating the security and military use of outer space. He believes that political regulations are possible even in the face of intense international tensions with Russia, China and the Middle East.

Former ESA astronaut Gerhard Thiele agrees with Bower. At no time has scientific co-operation on the International Space Station (ISS) been smoother than at present. There is no sign of Russia withdrawing from the station, even if the State Duma has decided to do so in 2022. 'I think Vladimir Putin knows very well that that would not be a good idea,' Thiele surmises.

Chelsea Haramia is less confident. 'As is so often the case, there is a wide gap between the public claim and its realisation,' says the US professor, who is working on the philosophical ethics of space utilisation and is currently also a Fellow in Bonn. On Earth, there needs to be a global discussion about who is allowed to use space and how.

This demand already has a practical background. Solar farms in space, which could utilise solar energy unhindered by clouds and the atmosphere, would on the other hand change the night sky as artificial, bright objects. They could violate the traditional navigation systems of indigenous societies and the right to a dark night sky, says Bower. 'This would probably also put an end to astronomical research from Earth,' fears Benjamin Winkel from the Max Planck Institute for Radio Astronomy in Bonn. He is already busy tracking the orbits of artificial objects in orbit so that they do not interfere with scientific calculations. An ill-considered exploration of Mars, for example, could also thwart the search for extraterrestrial life through introduced creatures and thus jeopardise scientific knowledge, warns Haramia.

Another line of conflict is already emerging. The commercial utilisation of space no longer has anything to do with science fiction. It is a reality. As a result, states are becoming increasingly dependent on companies. Ukraine is cited as an example in the discussion, which would not have been able to maintain its communications during the Russian war of aggression without Starlink.

Starlink, however, belongs to the controversial right-wing populist US billionaire Elon Musk. And he is known to be pursuing his very own political agenda.

What does UNOOSA do?

The United Nations Office for Outer Space Affairs (UNOOSA) was founded in 1992 as an independent entity and is based in Vienna. Branch offices are located in Bonn and Beijing. The office maintains an online register of all objects launched into space for liability issues. It also provides administrative support for the work of the UN Committee on the Peaceful Uses of Outer Space. The UN Conference on Disarmament, on the other hand, deals with issues relating to the military use of outer space. wmr