Committee on the Peaceful Uses of Outer Space

Sixty-fifth session - Vienna, 1-10 June 2022

Statement of Italy on item 15. Space exploration

Thank you, Mr. Chair.

Distinguished delegates,

Among the different fields of space activities, space exploration continues to represent an unmatchable source of inspiration and of scientific and technological progress. Italy continues to be one of the most active players in this field and among its most passionate supporters.

The Italian astronaut of the European Corps of astronaut, "Astrosamantha", as we like to call her in Italy, has left Earth together with other three American colleagues from NASA on 27 April, onboard the Dragon Crew capsule of SpaceX. This is her second time on the International Space Station. The previous one was between 2014 and 2015, when she established the women's record of 199 days in a single mission. It is needless to say that her presence in space, like that of all women astronauts so far, represents a source of inspiration for young generations of Italian, European and world women that we hope will push many of them to undertake STEM careers in their life.

In view of the technical presentation that Italy will make tomorrow afternoon on the Italian scientific research activity related to the new mission of Samantha Cristoforetti to the International Space Station (ISS), allow me to anticipate some information.

The new mission of Samantha Cristoforetti is called MINERVA and includes the following experiments selected by the Italian Space Agency: Prometeo, Ovospace, EVOO in Space, Acoustic Diagnostics, Light Ion Detector for ALTEA (LIDAL), NutrISS, Suture in Space and PASTA. Almost all of them address issues relating to the health of astronauts while they are in microgravity conditions.

Indeed, medical investigations on the ISS are of paramount importance in view of the next plans of exploring our planetary system. The harsh conditions of

deep space are yet to be coped with and the International Space Station represents the only possibility we have so far to make tests in space for periods of time that are considered safe for astronauts, which, by the way, are still short, compared with the time that will be needed to go e and stay on other planets.

Allow me to anticipate few information on the experiment of the MINERVA mission.

Prometeo is a new ASI experiment that aims at investigating how the antioxidant protection can reduce the oxidant stress, which represents one of the most dangerous effects of spaceflight on the human body. **Ovospace** is trying to determine the impact of microgravity on women reproductive apparatus, while **Evoo in space** is studying the impact of microgravity and of radiation conditions on the physio-chemical, nutritional and microbiological characteristics of the Italian extra-virgin olive oil, which is highly rich in antioxidants and anti-inflammatory properties.

As for the **Acoustic Diagnostics**, it is an Italian experiment that is already onboard the International Space Station and to which the astronauts Luca Parmitano, Andrew Morgan e Mathias Maurer have already contributed during their missions. The experiment seeks to evaluate whether astronauts on the ISS experience damages to their auditive apparatus.

The **Light Ion Detector for ALTEA** experiment is a particles detector which expands and enhances the characteristics of the Italian payload ALTEA for the study and characterization of the cosmic radiation onboard the International Space Station.

NutrISS, already performed by the astronauts Luca Parmitano and Mathias Maurer, aims at maintaining the ideal balance between fat and lean mass and avoid the increase of the fat mass due to the microgravity-induced inactivity.

Suture in space is investigating the behaviour of sutures and the process of the tissue reparation in microgravity conditions.

Finally, the last experiment, **PASTA**, addresses the processes of coalescence, aggregations and Ostwald ripening of drops and bubbles that govern the destabilization of emulsions and lather in space, in the absence of segregation processes.

For more details on these very interesting experiments, I warmly invite delegations to attend the technical presentation session, tomorrow afternoon.

Mr. Chair, Distinguished delegates, allow me to conclude by stressing the importance of the International space Station as the greatest example so far of pacific and mutual beneficial cooperation and coexistence in space. The medical investigation carried out onboard the ISS is proving to be fundamental for the improvement of the health of astronauts and, of course, its results are extremely valuable also for the medical investigation on Earth.

Thank you very much for your kind attention.