CONFERENCE REPORT

12TH IAA SYMPOSIUM ON THE FUTURE OF SPACE EXPLORATION 9-11 JUNE 2025

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After a gap of more than 5 years, mostly due to the COVID pandemics, the 12th IAA Symposium on the Future of Space Exploration was held in Torino (Italy), on June 9-11, 2025.

The symposium, jointly organized by the International Academy of Astronautics and the Italian Association of Aeronautics and Astronautics, under the patronage of the Italian Space Agency and the Politecnico di Torino, took place at the Thales Alenia Space facility (first day) and at the Politecnico di Torino Architecture campus at the Valentino Castle (two following days).

This is the first time that this Symposium is organized by the Italian Association of Aeronautics and Astronautics (AIDAA) and the professionalism of the organization was evident in the selection of the logistics as well the number of participants.

The participants were in excess of 100 and this established a record with respect to the previous editions. The number of countries of the participants were 16, including Japan, US and many others, including representatives of the United Nations

As in the previous editions of the symposium, along with papers dealing with current technologies and short-term developments, also more speculative subjects dealing with long terms innovations – always remaining in the realm of realistic science and exploration space missions – were dealt with.

However, the selected symposium papers included mostly lunar exploration, as was expected owing to the commitments of many agencies and industries to return to the Moon in a reasonably short time. Topics related with propulsion, astrodynamics, attitude control, and instrumentation were presented along with others dealing with ethical, legal and economical questions related to space exploration.

Two round tables took place related respectively to the medium and long term of the Space Exploration:— one on *Sustainable Lunar Exploration and Utilization: Challenges and Opportunities* and one on *Deep space exploration*— took place together with the presentation of 10 keynote speeches and 40 papers.

The 13th Symposium, is planned to take place in 2027 in Turin.

