

Statement by the European Organisation for Astronomical Research in the Southern Hemisphere (ESO) to the 61st Session of the United Nations Committee on the Peaceful Uses of Outer Space

Madam Chair, Excellencies, Distinguished Delegates,

It is a great honour to deliver this statement on behalf of the European Organisation for Astronomical Research in the Southern Hemisphere, known as ESO.

We would like to offer our warmest congratulations to you, Madame Chair, on your election as Chairwoman. We are confident that the work of the Committee will benefit from your experience and leadership. We would like also to congratulate Ms Di Pippo and the OOSA staff for the very successful UNISPACE programme.

We strongly support the efforts to frame the future course of space exploration in the context of the sustainable development goals and we wholeheartedly support the Space 2030 agenda. We also welcome the increased focus offered by the UNISPACE events on improving diversity and the role of women in the space sciences.

Madame Chair,

Today, I would like to talk briefly about the role of astronomical science in this endeavour. As humanity takes its first tentative steps from the comfortable boundary of Earth's atmosphere, it is paramount that the global vision for space exploration remains founded in its peaceful scientific origins – to understand our surroundings. Building from thousands of years of observations of the heavens, scholars around the world developed the first physical explanations underlying the movement of planetary objects and stars, thus laying the foundations for exploration of space.

The modern era of astronomy and space science is now culminating with the exploration of worlds outside our own Solar system. In the near future, ground and space observatories will be built that allow direct imaging of these worlds, and detailed

analysis of their atmospheres – which could yield the answer to the ultimate question – are we alone in the Universe? Astronomy has played—and continues to play—a foundational role in driving humankind's passion for space exploration, and should be recognised as critical to developing a scientifically-aware, enlightened and inspired society.

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In a technical sense, astronomical observatories support many critical functions of space exploration and space science, from monitoring orbital debris and near-earth objects, to precision tracking satellites. Furthermore, the development of sensitive astronomical instruments for satellite- and ground-based observatories relies on common technologies in optics, detectors, and cryogenics, and draws from the same pool of technical and scientific expertise. Astronomy is often the reason why many people begin the study of science, and is generally a driver for student uptake to scientific, engineering and technological studies, and then careers, across the world.

Therefore, we must recognise that astronomical sciences often act as a gateway or stepping stone to develop a capability in space. In terms of capacity building, astronomical observations using ground-based facilities or archive data are often the only way in which many nations experience space exploration. We are proud to work with our colleagues in European Space Agency on addressing in a complementary way big science questions about the understanding of the Universe, on the technology overlaps between ground and space, and both with ESA and the International Astronomical Union, on public outreach programmes to ensure that amazing scientific results are shared to the world.

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From its origins in the 1950's, ESO is now a treaty-based intergovernmental organisation of 15—and soon to be 16—European Member States, with a long-term goal to expand to other partners around the world. By coordinating and pooling resources, resting on a sound governance model, and cementing an excellent and mutually beneficial relationship with our host state, Chile, this peaceful collaboration between governments has resulted in the world's most productive astronomical

observatory – a Billion-Euro scale technological marvel. Only last month, ESO's Very Large Telescope, was capturing unprecedented images of stars travelling at 3% of the speed of light around the supermassive black hole in the centre of our galaxy in order to test our understanding of gravity.

The culmination of decades of technological and scientific development, has now allowed ESO to begin construction of the Extremely Large Telescope, a 39 m diameter telescope that will revolutionise the science of astronomy when it achieves first light in the middle of the next decade. One of the key science goals of this telescope is to analyse the characteristics of planets outside our solar system. Let me close by saying that astronomical science has now reached a stage where, maybe, in the not-too-distant future, we will be discussing at this very committee the discovery of life on a planet other than our own, and what that means for humanity.

Madame Chair, Distinguished Delegates, thank you for your kind attention.