

**Statement by David Turner, U.S. Representative to the 64<sup>th</sup> Session of the  
UN Committee on the Peaceful Uses of Outer Space, on Agenda Item 11,  
“Space and Climate Change”  
September 1, 2021**

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Thank you, Mr. Chair and distinguished delegates. Since the late 19th century, the Earth’s average surface level temperature has risen more than one degree Celsius, 1.8 degrees Fahrenheit. Sea level has risen by about 12 inches since 1900, and continues to rise approximately three millimeters per year. Over the past 20 years, NASA has focused on fundamental observations and modeling to understand the impact of these changes to our climate and to our lives. And, we are now at an inflection point. Changing temperatures are impacting agriculture, transportation, ecosystems, and human health. In the United States, severe weather in the form of droughts, wildfires, and hurricanes is causing record-breaking economic damage. Climate challenges are already having a direct impact on communities around the world, and were identified by the World Economic Forum as among the greatest risks to global well-being. In the years ahead, the widespread and localized impact of the changing climate will drive increasing demand for data, analysis, and tools to support science-informed decisions that will help us continue to thrive on our changing planet.

Today, NASA is flying 23 observing systems in space, including six on the International Space Station. These systems are measuring greenhouse gases in the atmosphere, quantifying the rates of sea level rise and glacial ice melt, watching for the conditions that can lead to wildfires and their cascading effects, and monitoring soil moisture and crop stress, just to name a few of the things we do. We are even making measurements that can tell us whether underground aquifers – so critical in times of drought – are being replenished or are depleting. The NASA and USGS Landsat mission in particular has, and continues to provide researchers nearly 50 years of global land measurements to better understand the impacts of wildfires, droughts and floods at a scale where many are managing their land resources. Landsat 9, which is scheduled to launch next month, continues our commitment to enhance and extend the global time series record and to provide near real time observations to the global community.

As we look forward to the coming decades, NASA is working to design a new set of Earth-focused missions, called the Earth System Observatory (ESO), to provide key information to guide efforts related to climate change, disaster mitigation, fighting forest fires, and improving real-time agricultural processes. The NASA-

Indian Space Research Organisation Synthetic Aperture Radar mission will serve as the pathfinder mission for the ESO.

NASA is launching the Surface Water and Ocean Topography (SWOT) mission later next year. A partnership with France, with contributions from Canada and the United Kingdom, SWOT will provide the first global survey of Earth's surface water, including detailed observations of the ocean's surface topography, and measurements of how water bodies are changing over time.

NASA appreciates the value of free, open and accessible data and science to more rapidly advance knowledge of our complex Earth and provide decisionmakers with information critical to our future on our changing planet. Recently, NASA and the European Space Agency joined forces to lead and support a global response to climate change. The partnership is focused on improved understanding of the Earth System, climate change, and the application of that knowledge, as well as collaborating on an open science principles that promote open sharing of data, information, and knowledge.

Mr. Chair, we also work with our domestic and international partners to deliver information critical to rapid turnaround emergency response. SERVIR, a joint NASA and USAID initiative in place since 2005, works in partnership with leading regional organizations worldwide to help over 50 countries in Asia, Africa, and the Americas use information provided by Earth observing satellites and geospatial technologies to support sustainable, climate-resilient decision-making.

The unique vantage point of sustained, trusted, space-based observations provides critical information to advance our understanding of Earth systems, addressing the multitude of components that interact to shape our present and future environment.

By the middle of the next decade, it is estimated that another billion people will be living on our planet, putting more pressure on our Earth's systems. NASA is moving with urgency and focus, and in concert with our partners, to meet the challenge of a changing climate. Climate change demands science equal to the challenge it presents, and NASA will provide the space-based data needed to understand, mitigate, and adapt to our changing planet.