OPENING STATEMENT
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of the Subcommittee on Space

House Committee on Science, Space, and Technology
Subcommittee on Space
"NASA's Next Four Large Telescopes"
December 6, 2017

Good afternoon and welcome to our distinguished panel of witnesses. Thank you, Mr. Chairman, for holding this hearing on "*NASA's Next Four Large Telescopes*". Before the advent of space telescopes, astronomers were forced to peer through Earth's atmosphere in order to study the cosmos. While the atmosphere is crucial for the survival of life on Earth, it has long been an annoyance for astronomers. The atmosphere is turbulent and can block certain wavelengths of light from ever reaching the ground – making some astronomical objects and phenomena invisible to ground-based observers.

Starting with the launch of the Hubble Space Telescope in 1990, NASA's Great Observatories program greatly expanded our view of the cosmos. Hubble helped scientists pin down the age of the universe and showed us some of the most distant galaxies ever observed. The Compton Gamma Ray Observatory created the first-ever all-sky map of gamma-ray radiation. The Chandra X-ray Observatory revealed the first ever observations of a supernova remnant. Finally, the Spitzer Space Telescope gave us the first ever detection of light emitted by an exoplanet.

In August of this year, Hubble, Chandra, and Spitzer all provided observations of the neutron star merger detected via gravitational waves by LIGO. This marked the first time an astronomical object was studied using the combination of electromagnetic radiation and gravitational waves. We truly are in the era of multi-messenger astronomy.

NASA's Great Observatories revolutionized the way we view our place in the cosmos. Now, NASA is building on the successes of these telescopes with the Transiting Exoplanet Survey Satellite, the James Webb Space Telescope, and the Wide-Field Infrared Survey Telescope.

- Planned for launch in March 2018, TESS, a medium class mission, will build on the success of the Kepler mission to conduct the first all-sky survey of transiting exoplanets from space.

- JWST will follow Hubble as the next great space observatory, but with 100 times the sensitivity of Hubble. JWST's expected launch date of October 2018 was recently delayed as much as eight months.

- WFIRST will produce images that rival the detail of Hubble, but with a much larger field of view to advance the science of dark energy and exoplanets. Unlike TESS and JWST, WFIRST is at an early stage of development.

NASA is also reviewing four mission concept studies in preparation for the 2020 astronomy and astrophysics decadal survey that will recommend the next high-priority space telescope. We have representation from one of those candidate mission concepts here today and I hope to hear from NASA about the science potential of all four missions being studied in preparation for the decadal survey.

Clearly, the advantages of placing sophisticated observatories in space are plentiful. However, developing telescopes that can operate in space comes with technological and programmatic challenges. We are all eager to learn from JWST's challenges, and to discuss what actions will be needed to maintain the overall programmatic balance of NASA's astrophysics portfolio.

While NASA must continue to carry out complex, high-priority missions, it must also ensure that the small- and medium-scale missions are adequately supported along with the research that undergirds advances in astronomy. A balanced NASA astrophysics program is critical to maximizing the science return on investment. I hope to hear your thoughts on how NASA can best take lessons learned from past and current missions in order to benefit its future space telescopes in a balanced portfolio.

Well, we have a lot to talk about, and I look forward to hearing from our witnesses. Thank you and I yield back.