Opening Statement of Ranking Member Frank Lucas at Event Horizon Telescope: The Black Hole Seen Round the World

May 16, 2019

Opening Statement

Thank you, Chairwoman Johnson, for holding this hearing and thank you to all our witnesses for coming to discuss this incredible discovery.

After Einstein predicted the existence of black holes, scientists have been able to observe their effects and refine theories on how they affect our universe.

But this is the first time we've been able to see a black hole directly, and it marks a huge milestone in our understanding of the universe.

We have this first-ever image of a black hole thanks to a pioneering collaboration between observatories around the world. To detect an image of a black hole we needed a telescope as big as our entire planet. Not surprisingly, building that was out of the question.

But every challenge presents an opportunity.

Scientist funded by the National Science Foundation joined forces with astronomers and data scientists around the world to coordinate their observations—in effect, making a global telescope.

This is a great example of how NSF's approach to basic research is driving scientific progress.

As Dr. Córdova told this Committee just last week, NSF's 10 Big Ideas are about enabling research that crosses scientific disciplines to make big discoveries.

NSF's coordinated and interdisciplinary approach has already produced two groundbreaking discoveries in its "Window on the Universe"—first the detection of gravitational waves by LIGO and now this image of a black hole.

I want to put these achievements in perspective. When Einstein predicted the existence of gravitational waves, he also questioned whether these ripples in space-time could ever be observed on Earth.

The signals would be so small, traveling over such an enormous distance, that he doubted whether we would ever be able to create instruments sensitive enough to detect them.

But 100 years later, technology funded by NSF, developed over decades, made it possible for us to confirm this fundamental prediction.

That matters not only because it helps us understand the universe in which we live, but also because it has contributed to the creation of other technologies that directly affect scientific progress—including semiconductors that make our cellphones and computers more powerful.

NSF's investments in ground-based astronomy have also given birth to technologies used in everything from airport security to Lasik eye surgery.

But the scientists these projects have produced may be the greatest return on our investment. Hundreds of graduate students worked on this discovery, and their careers will be informed by this experience. And thousands of young students who watched this announcement may be inspired to pursue careers in STEM. These are whole generations of new discoverers that will contribute to scientific knowledge and American progress.

We don't yet know all the ways in which the Event Horizon Telescope will broaden our knowledge of the universe or our technological development here on Earth. But it's certain that this image is just the beginning of what's to come.

I'm looking forward to hearing more about this from our witnesses—what this discovery teaches us about our universe, what lessons we can take away about how to better coordinate basic research in the U.S., and what's next for this project.

Thank you for being here, and I yield back the balance of my time.

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