



COMMITTEE ON
SCIENCE, SPACE, & TECHNOLOGY
Lamar Smith, Chairman

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Statement of Research and Technology Subcommittee Chairwoman Barbara Comstock (R-Va.)

Astronomy, Astrophysics, and Astrobiology

Chairwoman Comstock: Since 2000, 7 of the 8 people to receive Nobel Prizes for astrophysics work have been American scientists. The United States leads in science—we have had tremendous achievements in astrophysics and astrobiology research.

Taxpayer-funded grants from the National Science Foundation fund much of this groundbreaking research. In Fiscal Year 2016, NSF will spend over \$246 million to support the astronomical sciences.

That money goes toward an incredible variety of projects - from funding facilities like the Green Bank Telescope in West Virginia, to small research grants given to faculty and students at universities around the country.

It has been a productive year for federally funded astrophysics research.

The biggest achievement was the detection of gravitational waves at the LIGO Observatory, this past September – proving part of Einstein’s Theory of Relativity. Just a couple of weeks ago, LIGO announced a second discovery.

This amazing project was able to detect ripples in space-time caused by a collision of black holes 1.3 billion light years away from fields in Washington and Louisiana. LIGO and its predecessors have been funded by NSF for over 30 years, and its top scientists will almost certainly receive a Nobel Prize.

Some of NSF’s most interesting astronomy projects are still in the works. The Large Synoptic Survey Telescope, or LSST, will produce an incredibly detailed picture of the full night sky every three nights for a decade. It will make its findings available to the public as it goes, resulting in the world’s largest public data set.

The Daniel K. Inouye Solar Telescope is another important upcoming project. Scheduled to start operating in 2018 in Hawaii, it will produce the most detailed images of the Sun ever by a ground-based device.

NSF-funded astronomy programs are among the largest sources of international collaboration for American scientists. In particular, the Gemini Observatory and the

Atacama Large Millimeter Array are multinational projects each involve at least five nations and would not be possible for any of them to accomplish individually.

Still, NSF's astronomy program faces questions going forward. The Arecibo Observatory, long one of the premier sites it funds in Puerto Rico, is nearing the end of its life cycle. NSF needs to decide what it will do with the facility, which many in the scientific community believe can still contribute to furthering scientific discoveries and providing education opportunities.

It is in our nation's best interest to continue our commitment to researching the fundamental nature of the universe. Breakthroughs like the detection of gravitational waves inspire the next generation of scientists.

For the American economy to be successful in the 21st Century, we need to have a skilled labor force that understands innovation and emerging technologies.

I look forward to hearing from our panel of accomplished witnesses this morning, one of whom directs all astronomical science projects at NSF.

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