



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

For Immediate Release
September 29, 2015

Media Contact: Laura Crist
(202) 225-6371

Statement of Chairman Lamar Smith (R-Texas)
“Astrobiology and the Search for Life in the Universe”

Chairman Smith: Edwin Hubble once said: “Equipped with his five senses, man explores the universe around him and calls the adventure Science.” There are few greater adventures than the search for life beyond Earth.

When the Hubble Space Telescope was launched in 1990, planets around other stars had not yet been discovered. The only planets we knew were those that orbited our Sun.

Since 1995, however, when the first extrasolar planet was detected, the rate of discovery of new exoplanets and external solar systems has been truly remarkable.

Today, with the Kepler Telescope, we have found nearly 2000 confirmed planets that orbit around other stars in our galaxy. Of these, 306 lie within the habitable zone of the stars they orbit—where water could exist—and 14 are almost the size of Earth.

Whether life exists beyond Earth, and if so, how humans can detect it, is a critical question. If definitive evidence of life is found, it may be the most significant scientific discovery in human history.

The search for life in the Universe is a priority of NASA and the U.S. scientific community. Seeking habitable planets is one of the three scientific objectives of the 2010 National Research Council decadal survey on astronomy and astrophysics.

The United States pioneered the field of astrobiology and continues to lead the world in this type of research. Since the space program began, NASA has explored the cosmos for life beyond Earth and has conducted scientific research that investigates this possibility.

NASA’s astrobiology program continues these scientific endeavors to improve our understanding of biological, planetary, and cosmic phenomena. Just yesterday, NASA announced that it identified flowing briny water on Mars.

This past April, NASA’s Chief Scientist, Dr. Ellen Stofan, made global headlines with her prediction that “we are going to have strong indications of life beyond Earth in the next decade and definitive evidence within the next 20 to 30 years.” I am glad Dr. Stofan has joined us today.

Within our solar system, the question of whether life exists or existed on Mars continues to capture the public imagination.

In the past year, NASA’s Curiosity Rover made several major scientific discoveries relevant to the search for life on Mars.

Curiosity measured a spike in levels of the organic chemical methane in the local atmosphere of its research site. It also detected other organic molecules in drill samples from a mudstone that once sat at the bottom of a lake.

And Jupiter's moon, Europa, shows strong evidence of an ocean of liquid water beneath its surface, which could host conditions favorable to some form of life.

NASA selected nine science instruments for a future mission to Europa. Two of them are from the Southwest Research Institute in San Antonio and one from the University of Texas in Austin.

These instruments will help scientists investigate the chemical makeup of Europa's potentially habitable environment.

Last July, astronomers, with the help of the Kepler Space Telescope, confirmed the discovery of Kepler 452-b, the first near-Earth-size planet in the "habitable zone" around a sun-like star. This discovery marks another milestone in the journey to find another "Earth."

The Transiting Exoplanet Survey Satellite, which will launch in 2017, and the James Webb Space Telescope, which will begin in 2018, will help scientists discover more planets with potential biosignatures in their atmospheres—such as evidence of oxygen and methane gas.

Around the world a relatively small number of astronomers monitor radio and optical emissions throughout the universe. They try to filter out the cosmic noise and interference of satellites and spacecraft to find anomalies that could represent life.

The search for life beyond Earth also inspires a new generation of explorers. It motivates students to study math, science, engineering, and computer science.

Just a few months ago, astronomers confirmed that Tom Wagg, a 15 year old student, discovered exoplanet WASP-142b, which orbits a star approximately 1,000 light years away in the constellation Hydra.

It is in our human nature to seek out the unknown and to discover the universe around us. The stars compel us to look upward and lead us from this world to another. Many Americans often gaze into the beauty of the night sky in awe, some may wonder if there is life beyond our pale blue dot.

I thank our witnesses and look forward to hearing their testimony and particularly about recent developments in the field of astrobiology and the search for life.

###