SOFIA airborne observatory begins 2015 science campaign

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NASA's Stratospheric Observatory for Infrared Astronomy (SOFIA) is seen performing ground tests prior to its first science flight of 2015. The year's first mission was flown on the night of Jan. 13/14, with the German Receiver for Astronomy at Terahertz Frequencies (GREAT) spectrometer on board. Credit: NASA/USRA/Greg Perryman

The Stratospheric Observatory for Infrared Astronomy, or SOFIA, Program began its third season of science flights on Jan. 13, 2015. SOFIA is NASA's next generation flying observatory and is fitted with a

2.5-meter (100-inch) diameter telescope that studies the universe at infrared wavelengths.

"Last night's flight used the German Receiver for Astronomy at Terahertz Frequencies (GREAT) spectrometer to study the chemical composition and motions of gas in a star-forming region, a young star, and a supernova remnant," said Pamela Marcum, NASA's SOFIA project scientist. "Observing at infrared wavelengths enables us to see through interstellar dust to record the spectral signatures of molecules in these regions. From this we can study the abundances of molecules and their formation process."

Water vapor in the Earth's atmosphere absorbs infrared radiation, preventing a large section of the infrared spectrum from reaching ground-based observatories. SOFIA is a heavily modified Boeing 747 Special Performance jetliner that flies at altitudes between 39,000 to 45,000 feet (12 to 14 km), above more than 99 percent of Earth's atmospheric water vapor giving astronomers the ability to study celestial objects at wavelengths that cannot be seen from ground-based observatories.

"The flights in January will conclude SOFIA's second annual observing series, known as Cycle 2, and the observatory will begin the Cycle 3 programs in March," said Erick Young, SOFIA's observatory director and a member of the Universities Space Research Association (USRA) team that operates the SOFIA Science Center at NASA Ames Research Center at Moffett Field, California. "Plans for Cycle 3 include 70 flights with more than 400 hours of science observations. The observations will span a broad range of astronomical topics including the interstellar medium, star formation, stars, bodies in our solar system, and extrasolar planets."

The observatory is expected to make a deployment to the Southern Hemisphere in June 2015, with science flights based out of

Christchurch, New Zealand. There scientists will have the opportunity to observe areas of interest such as the Galactic Center and other parts of the Milky Way that are not visible from the Northern Hemisphere.

Provided by NASA

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