Coffee, food packets reach ISS scientists

SpaceX’s manned Dragon cargo ship arrived at the International Space Station, carrying a load of food and supplies for the astronauts living in orbit.

Its contents include an espresso machine, ready-made food packets and a host of science experiments to study changes in vision, muscle and bones that astronauts experience while in zero gravity.

SpaceX launched the cargo ship on Tuesday from Cape Canaveral, Florida, on its sixth official mission under a USD 1.6 billion contract with NASA for a dozen trips to supply the orbiting space station.

The Dragon made history in 2012, when it became the first commercial cargo ship to reach the space station. Previously, only government-built spaceships from Europe, Japan and Russia were able to make that journey.

Boeing is also working on a spaceship to ferry astronauts to space, called the CST-100, which is scheduled for its first manned flight in 2017. Until then, the world’s astronauts must rely on Russia’s Soyuz capsules for transport to the research outpost.

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MESSENGER to crash into Mercury

After more than four years of orbiting Mercury, NASA’s MESSENGER spacecraft will crash into the solar system’s innermost planet in two weeks when it runs out of propellant. The US space agency has said the date of impact is likely to be April 30.

The spacecraft will impact Mercury at more than 391 kilometres per second on the side of the planet facing away from Earth. Due to the expected location, engineers will be unable to view in real time the exact location of the impact.

This week, mission operators in mission control at the Johns Hopkins University Applied Physics Laboratory (APL) in Laurel, Maryland, completed the fourth in a series of orbit correction manoeuvres designed to delay the spacecraft’s impact on the surface of Mercury.

The last manoeuvre is scheduled for April 24. “Following this last manoeuvre, we will finally declare the spacecraft out of propellant as this manoeuvre will deplete nearly all of our remaining helium gas,” said Daniel O’Shaughnessy, mission systems engineer at APL. “At that point, the spacecraft will no longer be capable of fighting the downward push of the sun’s gravity.”

The MESSENGER spacecraft around Mercury, he said. Although Mercury is one of Earth’s nearest planetary neighbours, little was known about the planet prior to the MESSENGER mission.

While spacecraft operations will end, we are celebrating MESSENGER as more than a successful mission. It’s the beginning of a longer journey to analyse the data that reveals all the scientific mysteries of Mercury,” said John Grunsfeld, associate administrator for the Science Mission Directorate at NASA Headquarters in Washington.

The spacecraft travelled more than six-and-a-half years before it was inserted into orbit around Mercury on March 18, 2011.

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Moon formed 4.47 billion years ago: Study

The moon is likely to have been created about 4.47 billion years ago, according to a new study of meteorites that provides clues to the giant collision which formed Earth and the lunar body. A giant impact between a large protoplanet and the proto-Earth formed the Moon.

By modelling the evolution of giant impact debris over time and fitting the results to ancient impact heat signatures in stony meteorites, the team was able to infer the Moon formed about 4.47 billion years ago, in agreement with many previous estimates.

The most ancient solar system materials found in meteorites are about one hundred million years older than this age.

The impact signatures provide insights into the last stages of planet formation in the inner solar system.