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JOHNSON SPACE CENTRE,

HOUSTON

Having survived a seven-yearround trip to asteroid Bennu, the contents of this capsule from the NASA spacecraft OSIRIS-REx, which returned to Earth in September, could rewrite history as we know it.

It carries the largest-ever sample of rocks and dust from an asteroid. Scientists managed to collect 70.3g of material from the capsule's exterior (beating the mission's goal of 60g) before the sampler inside had even been opened.

Initial analysis has revealed the 4.6-billion-year-old sample is rich in carbon and water-containing minerals. Pristine and unaltered, it could hold secrets to the beginnings of life, providing a tangible snapshot into the formation of the Solar System.

As well as tracing the origins of the organic molecules that allowed life to evolve on Earth, the sample may help prevent future asteroid collisions. Bennu itself has a 1-in-2,700 chance of colliding with Earth in the year 2182.

Samples from Bennu will be sent around the world for study, with around 70 per cent of the material being kept for future generations.

NASA/JPL

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