

The Murchison Meteorite



On Sunday, 28th September 1969, at approximately 10.58am, a rare type of stony meteor fell, showering over the township of Murchison and surprisingly causing only minor damage.

The meteor was moving in a north-westerly direction before impact and exploded over Murchison, with hundreds of fragments falling over an area approximately 11 kms long and 3 kms wide. Although few people witnessed the fall, most Murchison residents heard it, with the noise likened to thunder or a sonic boom. From Kialla West, it was seen as a bright orange ball with a silvery rim and a dull orange tail, leaving a blue smoke trail lasting for several minutes. The trail was seen from as far away as Mildura in north-west Victoria.

When the meteorite, (so called after it lands), was first collected, many people commented that it smelt like methylated spirits. This is due to pyridine, one of the many organic compounds found in the meteorite.

The Murchison meteorite is one of the rarest types known and one of the most extensively studied meteorites. It is classified as a CM2 (Type 2) carbonaceous chondrite meteorite, being rich in organic compounds and in the top one per cent of all known meteorites.

The Murchison is estimated to be more than 4.6 billion years old and formed in the early history of the Solar System. However, lead author of a paper published on 14th January 2020, Dr Philipp Heck, Cosmochemist from Chicago Field Museum, revealed **the age of stardust extracted from the Murchison meteorite as being 7 billion years old, and so the meteorite consists of material that is the oldest-known solid object on earth.**

One of the fascinating features of the Murchison is presence of amino acids, the building blocks of DNA, the genetic code in living cells. Some scientists believe they represent primitive life forms. Scientific study has also identified the presence of sugar, salt and water. This treasure trove for science keeps revealing surprises which provide insight into how our galaxy developed over time. Dr Heck said the scientific world is very grateful Murchison residents gave so many fragments to universities and museums around the world, allowing studies to be conducted to enrich scientific knowledge about our universe. **In April 2022, a study conducted in Japan, identified the final two of the five chemicals required to form DNA.**

Visit the Heritage Centre, 4 Stevenson Street, Murchison, to see samples of the meteorite and to find out more.

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