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Carbonaceous chondrite - Object of the Month

Celine, a work experience student from King Edward School for Girls in Edgbaston, describes her choice of Lapworth Museum Object of the Month.

Title: **Carbonaceous chondrite - Lapworth Museum - Object of the Month (/facilities/lapworth-museum/about/object-rutile-quartz.aspx)** (follow link for video)

Duration: 2.01 mins

Hi, I'm Celine Shaw from King Edward's in Edgbaston and I'm here for a week on work experience. I've chosen this Allende meteorite, a small, fragment, for the Object of the Month. It was the largest carbonaceous chondrite ever found on Earth, roughly the size of a car, and it was spotted, a giant fireball, falling over the Mexican state of Chihuahua on the 8th of February 1969.

As it exploded it into scattered into thousands of fusion-crusted individuals. As you can see there's the fusion crust here, it's got like a glossy finish and this would have formed because as the fireball was falling it was falling at great speeds, say about 10 miles per second and this would have produced a lot of heat and melted the exterior.

As it exploded it was dispersed over quite a large area and there was an extensive search for all the pieces. It was actually described as the most studied meteorite in all of history.

It was important for research purposes because of its rarity as it accounts for less than 5% of all the chondrites on Earth. And also inside there's lots of calcium-rich inclusions which are among the oldest objects in the Solar System. Unlike other chondrites it doesn't include any iron or nickel so it's unusual from that aspect.

This chondrite would have formed in the Solar System a few million years ago and it would have been formed by the accumulation of dust and grit particles all clumping together and, as you can see, in the internal structure – as it's been cut and polished it's more visible – there's some dark chondrules and also some white-coloured calcium and magnesium rich inclusions. Also there's some smaller, millimetre-sized, chondrules which are only found in meteorites and not in Earth rocks.

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