Odessa Meteorite - Object of the Month

Carrie - a work experience student - talks about her choice of the Lapworth Museum of Geology Object of the Month.

Title: **Odessa meteorite - lapworth Museum of Geology - Object of the Month (http://www.birmingham.ac.uk/facilities/lapworth-museum/about/object-shotton-map.aspx)**

Duration: 2.20 mins

Speaker Names (if given): **S1** Carrie, work experience student

S1 My name's Carrie and I go to King Edward the Sixth High School of Girls just across the road from here and I was here for a week during the summer to do a week of work experience.During that I researched several objects to go as Object of the Month pieces.

This piece is a meteorite and it fell probably around 60,000 years ago during the pleistocene and it fell in Odessa in Texas, America. The actual material is, well, metal and it is much older than anything you'll find on Earth. It was probably created around the formation of the Solar System and you've all this material flying around in space and if it happens to pass through the Earth's orbit it can get attracted by the Earth's gravity. As it's attracted by the Earth's gravity, it starts falling through the atmosphere and as it falls through the atmosphere it burns up a bit, it gets broken up and any bits that land fall as meteorites on the Earth's surface, and this is what this did.

If you look at the impact craters around where these pieces were found there's around 1,200 meteorites that have been found there. The largest of which, as a chunk, was over 100 kg in weight. This piece is much less than that but it still shows many of the characteristics of a typical meteorite. It's mainly made of iron and around the edge you can see a fusion crust and that's from where as the metal fell through the atmosphere it got heated up by friction and starting almost burning up in effect and that's why you see these blackened edges around the edge.

If you look closely there's also a feature that you won't find on any rocks terrestrially on earth and this is called the Widmanstätten structure and it's a series of interlocking crystals of two different minerals made of iron and nickel and on this meteorite they are about 1.6mm in width, each of these individual structures. But you can't see this on Earth so we can only see this on meteorites and not all meteorites have it even.

There's also a nodule here this is , well it can be formed from lots of things, it's mainly graphite and it can be formed by as the meteorite or as the meteoroid, which is what they are called in space, as it was forming bits of material maybe got attracted by its strong gravitational field or by convection in the molten metal and you'd get different areas of different pieces of mineral.

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