



# Neorocks4kids

## ONCE UPON A TIME....

No, don't worry this is not a fairy tale about princesses and evil stepmothers and dragons...!!  
Let's start again...

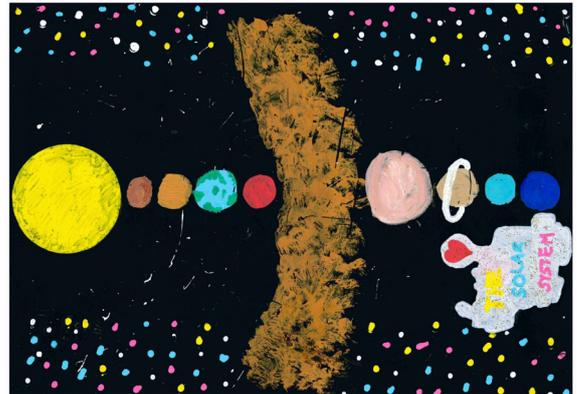
Once upon a time, nearly 5 BILLION years ago, there was a big bang and the solar system was created: the planets, the stars, the sun...but also those small, rocky bodies that fly about in the sky.

These are the asteroids. Bits of stone and even metal left over from the formation of the planets or produced by catastrophic collisions between celestial bodies. They orbit around the sun, just like our planet Earth. Most travel in the asteroid belt, between the planets of Jupiter (the biggest planet in the solar system) and Mars (the Red planet).

BUT, some of them can cross the orbits of the planets. The buttered surface of the Moon tells us that asteroids keep on raining near Earth after planet formation. They likely brought some of the elements that we find on our planet, including precious metals like gold!

So, Asteroids had already been up there for a long,

long time, but they were too small to be seen with the naked eye. Then, a couple of hundred years ago a clever Astronomer (a scientist who studies the universe: planets, stars, galaxies, black holes...) finally managed to spot one using a very powerful telescope. His name was Giuseppe Piazzi and he had the honour of naming this asteroid. He called



it CERES, after the Roman goddess worshipped in Sicily, Italy, where he made his discovery.

What happened next? Well, astronomers kept on looking at the sky, using more and more advanced technologies. They found and named





many more asteroids. We now know of around 1 million asteroids and there are many more out there. Giuseppe Piazzi used the "Ramsden Circle" to spot CERES. This telescope was very advanced for its time, but still much smaller than what we have now. Today, our astronomers use HUGE optical telescopes, up to 100 times as wide as Piazzi's. These amazing telescopes help them to see asteroids in the sky, to study them and take pictures of them. We can characterise them: find out about their size, their shape, the way they move and where they are heading.

This is part of Planetary Defence, which means protecting Earth from asteroid impact. Asteroids seem tiny, because they are so far away, but they can be larger than a whole building or even a town! That means if they manage to fall through the atmosphere and impact the Earth's surface (with the smallest of them becoming "meteorites"), they could cause a LOT of damage. The asteroids most likely to do this are Near Earth Objects (NEOs), because they come closer to our planet than the other ones.

I guess we could call these NEOs the baddies in our story...and the astronomers are like the heroes, working their magic to keep us safe. Only, they

don't use magic. They use science, technology and international cooperation... Telescopes all over the world are watching the sky. They are tracking asteroids, sharing information and characterising them very quickly. Like in all the best fairy tales, the key to defeating the baddy is to work together. So...we can't say yet that we all live happily, ever after...but we can say that we don't need to be up at night worrying about the asteroids under our bed! Sleep well, mini-Neorockers!

*Drawings courtesy of CRISP University of Perugia and ASI Italian Space Agency "Disegniamo l'Universo"*  
<https://crisp.unipg.it/universo/>

