SPACE awareness

SPACE SCOOP

WIADOMOŚCI ZE WSZECHŚWIATA

Cosmic Forecast: Dark Clouds Will Give Way to Sunshine

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Hold you hand up in front of your face. Would you say the space between your eyes and your hand is empty? It looks empty, but of course it isn't. We know that the air around us is filled with invisible particles – most importantly, the oxygen we breathe to stay alive.

Now, imagine doing the same thing while floating in space. In that situation, it's very likely that the area between your eyes and your hand would indeed be totally empty.

This is because much of space is what we call a 'vacuum'. This means it's completely empty, without a single particle of gas or speck of dust. (To remember the term, imagine that someone used a vacuum to suck away all the material in space!)

However, while much of the Universe is a vacuum, there are patches which aren't. These are places where cosmic gas and dust that floats between the stars in a galaxy. We call this the Interstellar Medium (shortened to 'ISM').

The ISM is seriously empty. If you had one teaspoon of ISM and one teaspoon of Earth's atmosphere, the second teaspoon would contain 100 trillion times more particles (that 100 million million!)

But ISM material clumps together over time forming larger, heavier blobs of gas and dust until they make a big cloud in space, like the one in this photograph.

The cloud blotting out the background stars in the picture is a type of cosmic cloud called a Dark Nebula. Like all other cosmic clouds (nebulae) it is made up of gas and dust. Unlike other nebulae, which are often seen glowing ghostly blue or vivid pink, a dark nebula is thick enough to block out all starlight from behind or inside it.

Like the Sun peeking through a gap in the gloomy rain clouds we see above earth, starlight will eventually shine through this cloud. Deep inside this cloud, pockets of material are forming into new stars that will one day burst into radiant life!

COOL FACT!

Astronomers can't agree exactly how many stars might eventually shine within this cloud. Two studies claim the cloud could create 250 sun-sized stars. Another study states it could create 1600!