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SPACE & COSMOS

Andromeda and the Milky Way: A Merger of Galactic Proportions

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OUT THERE

The Andromeda nebula, which rarely feels the pull of the social media orbit, had a moment in the spotlight on Wednesday. Astronomers operating NASA's Swift satellite spied what looked like a giant burst of radiation from Andromeda, the nearest big galaxy to our own Milky Way, about 2.5 million light-years from here. They tentatively diagnosed it as the collision of two neutron stars, the dense remnants of dead stars. Such collisions are among the most violent known conflagrations in the universe, but they rarely occur so close to our own neck of the cosmic woods.

It turned out to be a false alarm, but for a few hours the Twitterverse was riveted on Andromeda. Which is not a bad thing. The Andromeda galaxy, known in astronomical parlance as M31, holds a special place in our own future.

The Milky Way and Andromeda are the dominant members of a small family of galaxies known as the Local Group. Whereas the universe is expanding and galaxies are generally getting farther and farther away from one another with time, the galaxies in the Local Group are bound together by family ties in the form of their mutual gravity. Our relatives aren't going anywhere.

And there is the problem. Andromeda and the Milky Way are actually heading toward each other in the do-si-do that constitutes life in a galaxy cluster. Recent

measurements with the Hubble Space Telescope have confirmed that they will hit head on in about two billion years. Since galaxies, like atoms, are mostly empty space, they will pass through each other like ghosts, but gravity will disrupt the stars and strew them across space in gigantic spectacular streamers. Eventually they will merge into a single giant galaxy.

The bad news is that we will be dead. Earth will have been boiled and sterilized eons earlier as the sun brightens. The good news is that the collision will be a fiesta of new stars forming as that disruptive gravity collapses and then condenses clouds of gas and dust. New worlds, another chance. Maybe.

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