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WEEKLY 26 October 2024

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## A sea of stars



**Michael O'Mara Books**

IN ITS short existence, the James Webb Space Telescope (JWST) has cast its eye over a cornucopia of celestial treats and transformed our understanding of the universe.

Space scientist Maggie Aderin-Pocock, presenter of *The Sky At Night*, highlights some of its best images in her new book *Webb's Universe: The space telescope images that reveal our cosmic history*, detailing the science behind each striking view and giving an insider's take on how JWST's technology was developed.

"The detail the telescope can get, the wonderful resolution it gets with its six-and-a-half-metre mirror, results in some glorious images," says Aderin-Pocock, who worked on the telescope.

The field of stars at top is part of Barnard's galaxy. This contains Barnard's star, one of Earth's closest neighbours, which was recently found to have its own planet. Even in crowded fields of stars, JWST can focus on small patches of the sky using a microshutter array, tiny flaps that can block out unwanted light, which would aid study of the star.

There are still many mysteries about star birth, but the answers lie in nebulae, like the Carina nebula (far left, bottom) – vast tracts of gas and dust that are stellar nurseries. "Looking with optical telescopes, not all visible light can pass through this dust and gas," says Aderin-Pocock. "When we look at it with an infrared telescope [like JWST], suddenly we see... details we haven't seen before."

The Cartwheel galaxy (near left, bottom) is the result of a smash up of two smaller galaxies. It may help us understand the fate of our galaxy, the Milky Way, in billions of years, when it will collide with the Andromeda galaxy. ■

**Alex Wilkins**