

Hidden Universe | Gallery Explorer

The Dragon and the Swan

Hidden behind a dark veil of dust in the constellation Sagittarius, a lurking dragon has been revealed by the infrared eye of NASA's Spitzer Space Telescope. The red dots along its dark filaments are baby stars forming at a furious rate.

The dark Dragon appears to fly away from M17, its brightly glowing neighbor known alternately as the Omega or Swan nebula. Oddly, astronomers have found that both the Dragon and the Swan are forming roughly the same numbers of stars. If so, why should they look so different from one another?

The answer may be that dragons, rather than ugly ducklings, grow up to become swans. While the Dragon is forming fairly large type B stars, only in the Swan do we find the very largest O stars. Their brilliant glare illuminates and disperses the dust, creating a nebula that is equally vivid in infrared and visible light.

The gas and dust clouds in this region appear to be passing through the Sagittarius spiral arm, a kind of gravitational traffic jam. Astronomers have long believed clouds will bunch up when they enter a spiral arm, triggering the gravitational collapse needed to form stars.

When the first generation of smaller stars form in the Dragon, they seem to further compress the nearby dust. This enables a second generation of even more massive O stars to form and light up the area, destroying the surrounding dust clouds.

Further downstream from the Swan, a cluster of O stars sits at the center of a blown-out bubble. This is likely the fading remains of an older nebula, now largely dispersed as it exits the other side of the spiral arm.

In this one picture, Spitzer has captured a snapshot of the evolution of a star-forming region. From Dragon, to Swan, to bubble, it heralds a new generation of Milky Way stars.