

Galaxy Collisions

What happens when galaxies collide? Astronomers believe that nearly every galaxy that exists today was formed or shaped by a close encounter or collision with another galaxy some time in its past. When galaxies interact they spiral in towards each other, tearing each other apart before finally coalescing to form a single massive galaxy. This 'merger' can take billions of years, too long for us to observe the process from start to finish. Instead, astronomers use snap-shots of different colliding galaxies at various stages of the merging process to piece together what happens.

The galaxies shown below are all at different stages of colliding and merging. The images are from NASA's Spitzer Space Telescope, where the light from old stars shows up as blue and green, but the light from young stars appears red. This allows astronomers to not only study how these violent collisions change the structure of the galaxies, but also reveals that the merging process can trigger the formation of new stars. While the collision process may at first appear to be destructive these images show that these mergers can actually bring new life and new stars to the galaxy.

