

Interacting Galaxies Arp 147

Hubble Scores a “10” with These Oddball Galaxies

When it comes to snapping breathtaking images of celestial objects, the Hubble Space Telescope has earned many “perfect tens” from the public. In this Hubble image, the object itself appears to form the number 10. The image shows a pair of interacting galaxies called Arp 147.

The object on the left, or the “1,” is a disk galaxy that appears nearly edge-on to our line of sight. It is relatively undisturbed except for a smooth ring of starlight. The galaxy on the right, or the “0,” appears to have suffered the worst from this galactic encounter. Its pancake-shaped disk of material appears to have been shredded. What remains is a clumpy blue ring of intense star formation. The dusty reddish blob at the bottom of the blue ring is probably the galaxy’s original nucleus. The bright object at lower left is a foreground star in our Milky Way Galaxy.

Arp 147 is one of 338 oddball galaxies compiled by astronomer Halton Arp in a book called the Atlas of Peculiar Galaxies. Many of the images in the book, published in 1966, shows what happens when galaxies pass by each other too closely. The gravity of one galaxy tugs on another galaxy, stretching it and creating an irregular shape.

Most astronomers were astonished at the images of those galactic misfits. They had spotted a few distorted galaxies during their observations of the sky, but they did not realize there were so many of them.

Arp began taking the images for his book in the 1960s. He was fascinated with the oddly shaped galaxies in our galactic neighborhood that did not fit the mold of normal-looking galaxies. Many of the unusual shapes were the result of galaxies interacting with one another. At the time, interactions between galaxies were considered highly unlikely. Many astronomers thought that most galaxies consisted of orderly and symmetrical spirals and ellipticals.

Arp realized that astronomers had very little understanding of how galaxies change over time. He hoped that his catalogue of peculiar galaxies would provide insights into galaxy evolution.

Observations over the last few years have proven the importance of galactic interactions in forming galaxies and have shown that galaxies change over billions of years.

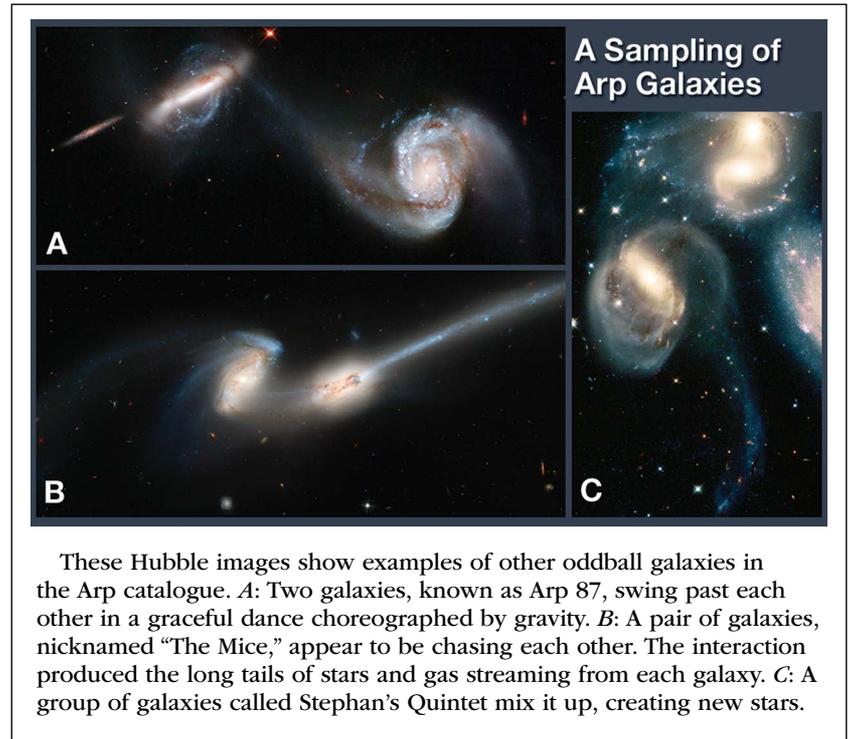
Credit for Hubble image: NASA, ESA, and M. Livio (STScI).

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These Hubble images show examples of other oddball galaxies in the Arp catalogue. *A:* Two galaxies, known as Arp 87, swing past each other in a graceful dance choreographed by gravity. *B:* A pair of galaxies, nicknamed “The Mice,” appear to be chasing each other. The interaction produced the long tails of stars and gas streaming from each galaxy. *C:* A group of galaxies called Stephan’s Quintet mix it up, creating new stars.

VOCABULARY

Arp catalogue: The catalogue, called the Atlas of Peculiar Galaxies, includes 338 odd-looking galaxies gathered by Dr. Halton C. Arp between 1961 and 1966.

Interacting galaxies: When two galaxies pass close enough to gravitationally disrupt each other’s shape. The interaction rips streamers of stars from the galaxies, fuels an explosion of star birth, and can ultimately result in both galaxies merging into one. *Note:* The stars in each galaxy are far apart and usually do not collide when galaxies merge.

You can get images and other information about the Hubble Space Telescope on the World Wide Web. Visit <https://hubblesite.org/> and follow the links.



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