

# New Scientist

WEEKLY January 30 - February 5, 2021

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NGC 3256: ESA/HUBBLE, NASA; NGC 1614 & NGC 3690: NASA, ESA, HUBBLE HERITAGE TEAM (STSC/AURA) - ESA/HUBBLE COLLABORATION & A. EVANS (UNIVERSITY OF VIRGINIA, CHARLOTTEVILLE/NRAO/STONY BROOK UNIVERSITY); NGC 4194, NGC 6052 & NGC 34: ESA/HUBBLE & NASA; A. ADAMO ET AL.

# Galactic growth



Agency NASA/ESA Hubble  
Space Telescope

THESE rare and entrancing sights each shows an epic cosmic event: the merging of galaxies.

Taken by the Hubble Space Telescope, the six images capture what happens as galaxies collide and merge. As a result, clusters of stars form within them that can be millions of times the mass of the sun. Galaxy merging is thought to be one of the main driving forces of cosmic evolution.

These are unusual images since collisions, which drastically alter the appearance and composition of galaxies, are rare. The changes accelerate the birth of new stars during the merger as molecular clouds fall to the centre of each galaxy, where they collide with other molecular clouds, causing them to condense into new stars.

The exceptional resolution of the Hubble telescope can capture such changes, and home in on some of the features in the star clusters, such as ones that look like knots (actually, these are numerous compact young star clusters).

The Hubble imaging Probe of Extreme Environments and Clusters (HiPEEC) survey investigated these mergers and found that merged galaxies are among the most efficient environments to form star clusters. The largest clusters are created towards the end of the merger process.

Clockwise from top left, the images show six galaxy mergers: NGC 3256, NGC 1614, NGC 4194, NGC 34, NGC 6052 and NGC 3690.

Hubble, a joint venture between NASA and the European Space Agency, has been in low orbit around Earth for over 30 years, and may well continue operating for at least another decade. ■

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