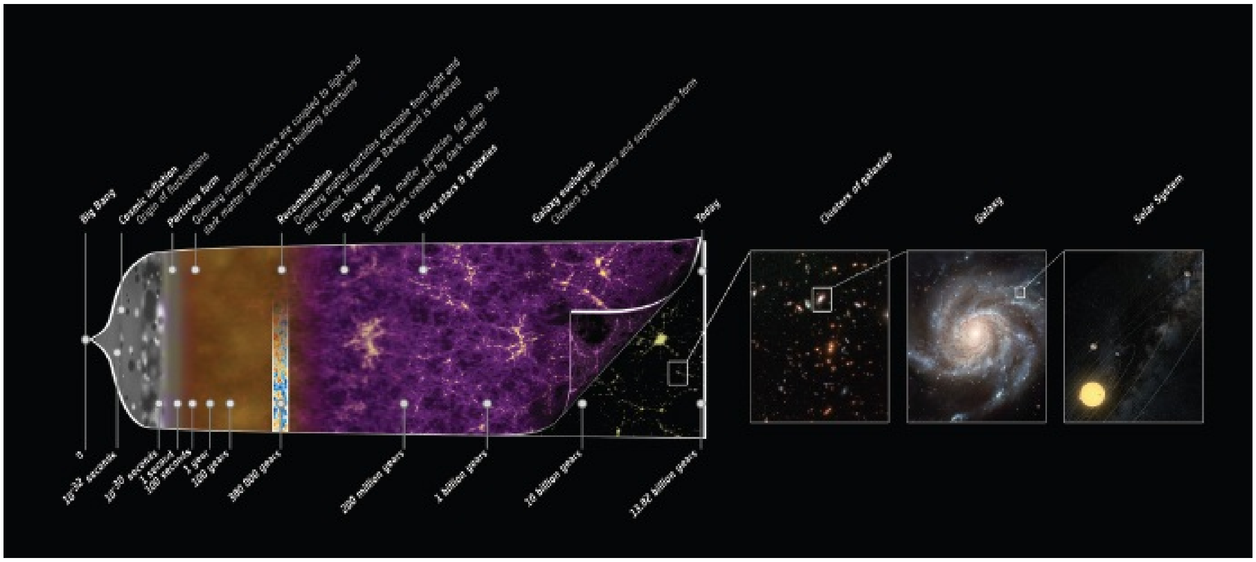
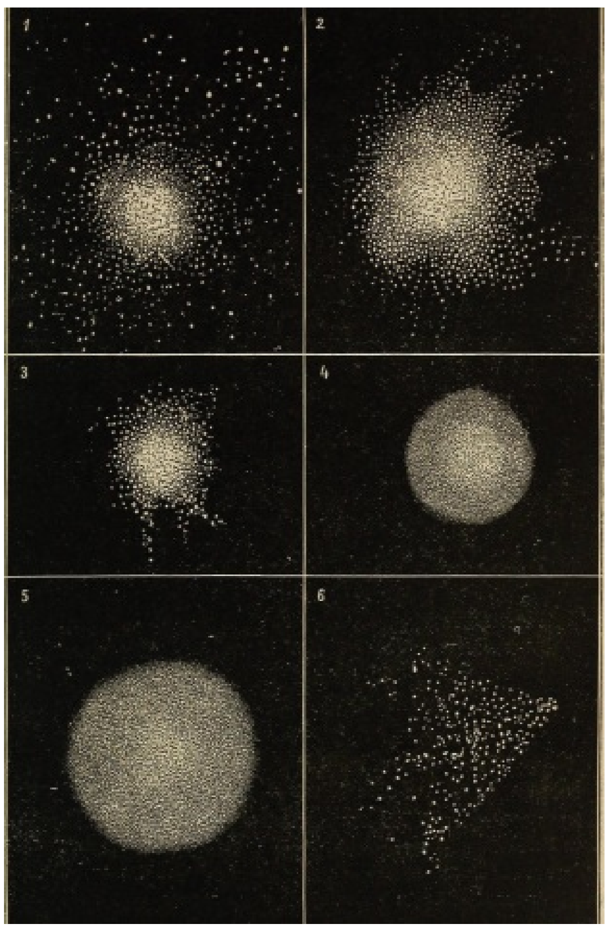
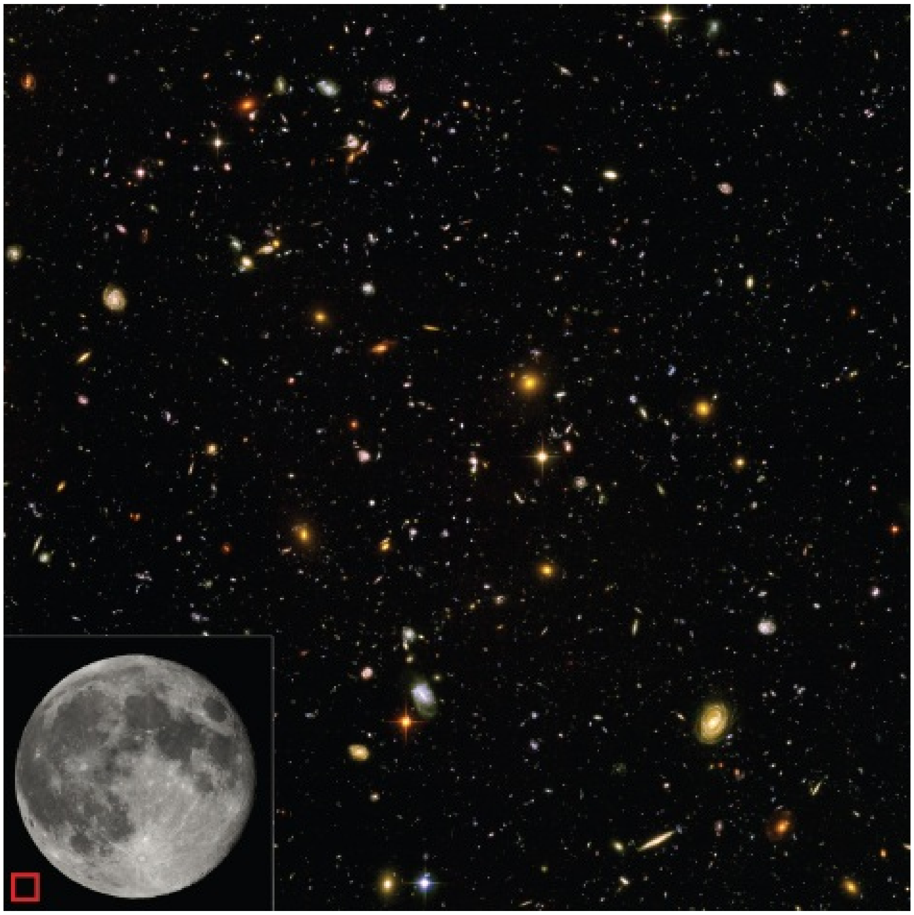


A peek of what's to come in the universe, even though we're just getting started. The scale is chosen to give each major transformational epoch its rightful due. *Image courtesy of NASA / JPL / Planck Collaboration*

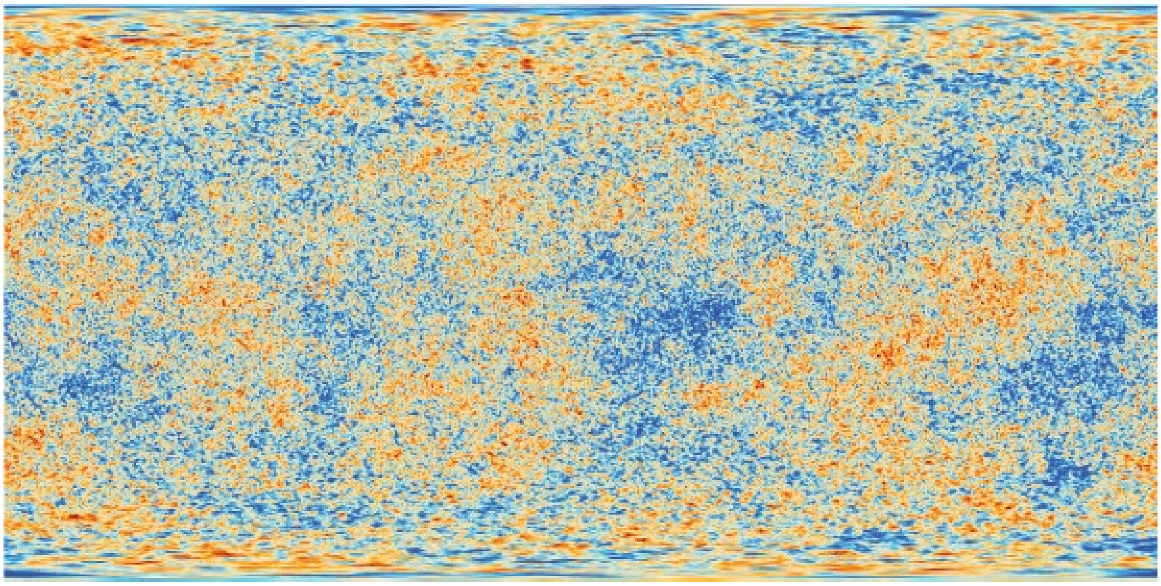


In the 1800s, Sir Norman Lockyer sketches a bunch of fuzzy things in the sky, some quaintly called "nebulae."

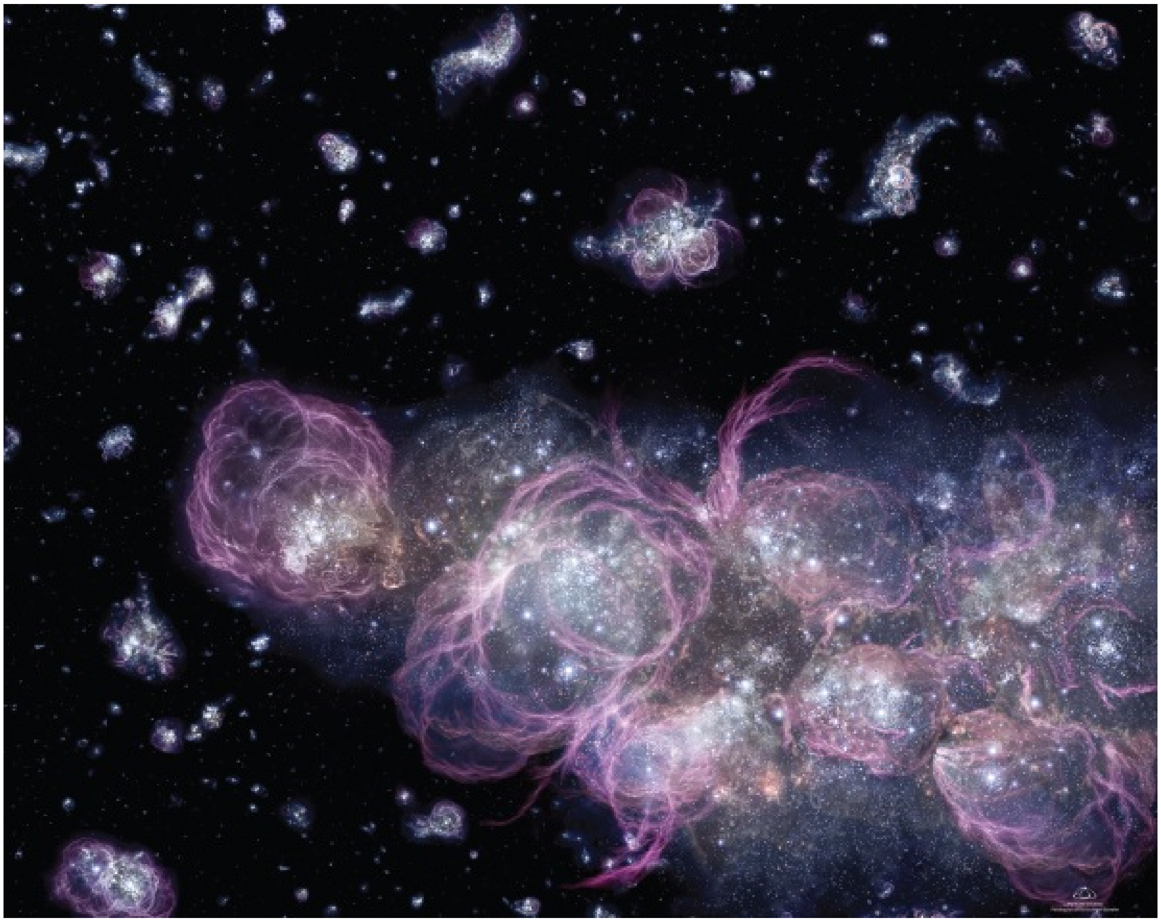
We used to think that the Andromeda Galaxy was just a "nebula." Whoops. *Image courtesy of NASA / JPL-Caltech*.



It turns out that there are hundreds of billions of these "nebulae." Oh, boy. *Images courtesy of NASA / ESA*.

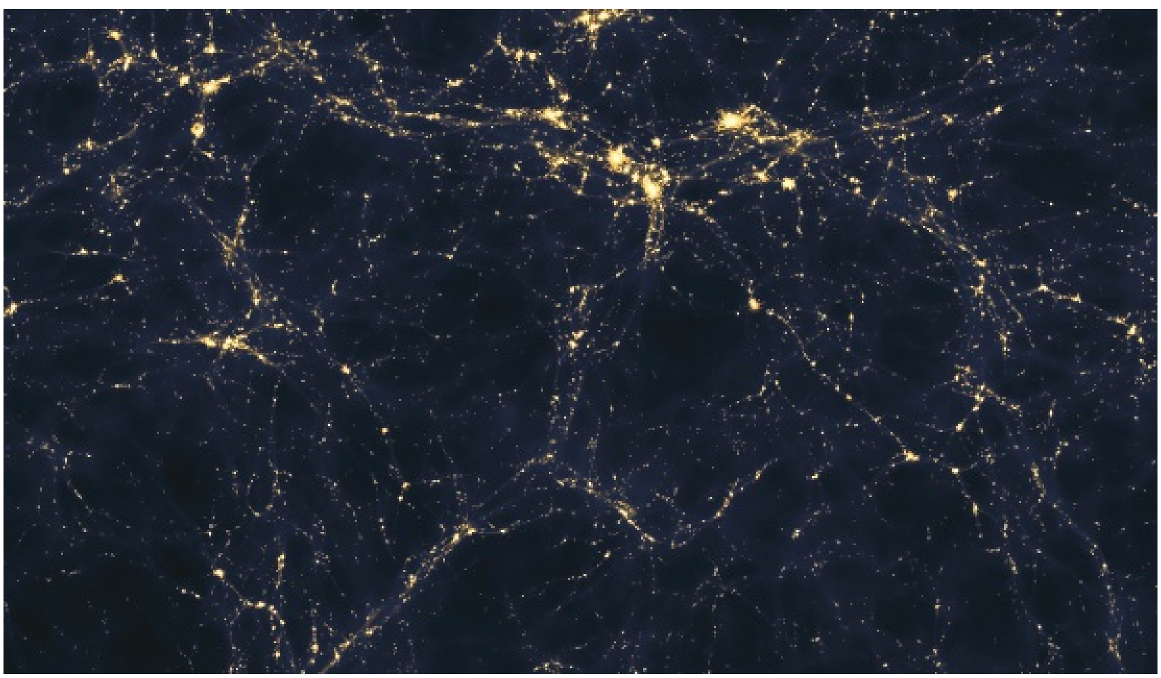


The baby picture of the universe as revealed by the Planck satellite mission. These are incredibly tiny differences in microwave temperature—less than one part in 10,000 variations away from the average, which are directly related to density differences way back then. The small blips are the seeds that will one day grow up to become galaxies; the large blotches are caused by sound waves crashing around the infant cosmos. The image is distorted at the top and bottom because it's representing the entire sky (a sphere) as a rectangle, just like how on a map Greenland and Antarctica look way bigger than they actually are. *Image courtesy of ESA / Planck Collaboration*.

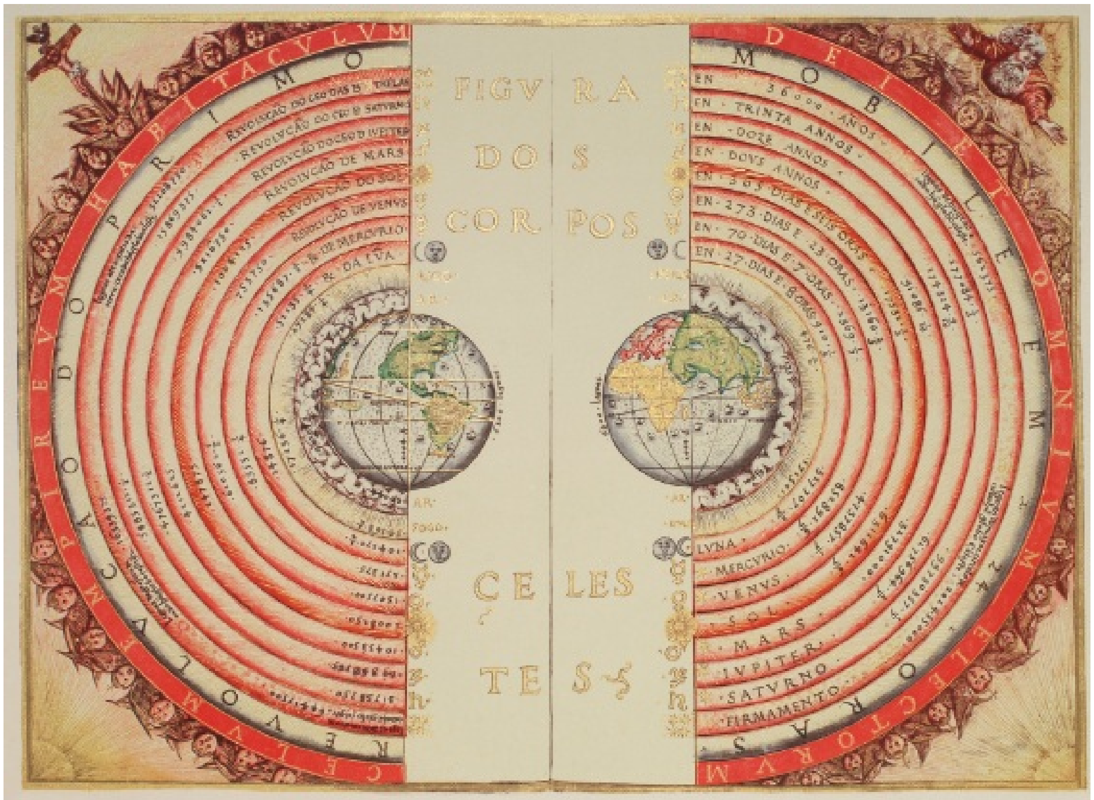


When two galaxies collide: a hot mess. *Image courtesy of NASA*.

The (in)famous Bullet Cluster viewed in the many ways necessary to reveal the lurking dark matter. In this image, the relatively tiny galaxies are embedded in the much larger clusters, which are caught in the act of a titanic collision. The hot gas of the clusters is tangled near the center, while most of the mass—including dark matter—has sailed through itself. *Image courtesy of NASA / CXC / CfA / STScI / ESO WFI / Magellan / University of Arizona*.

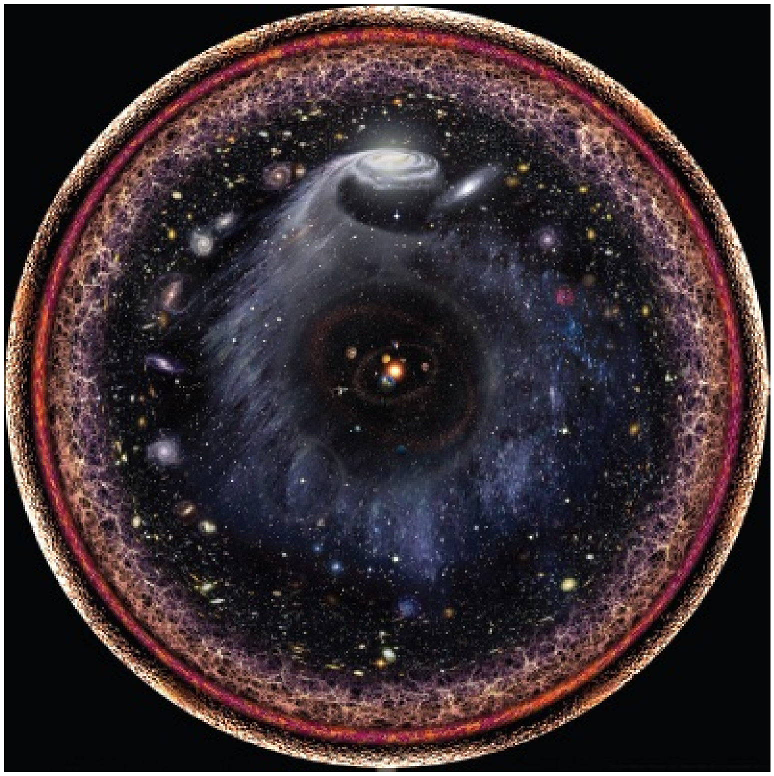


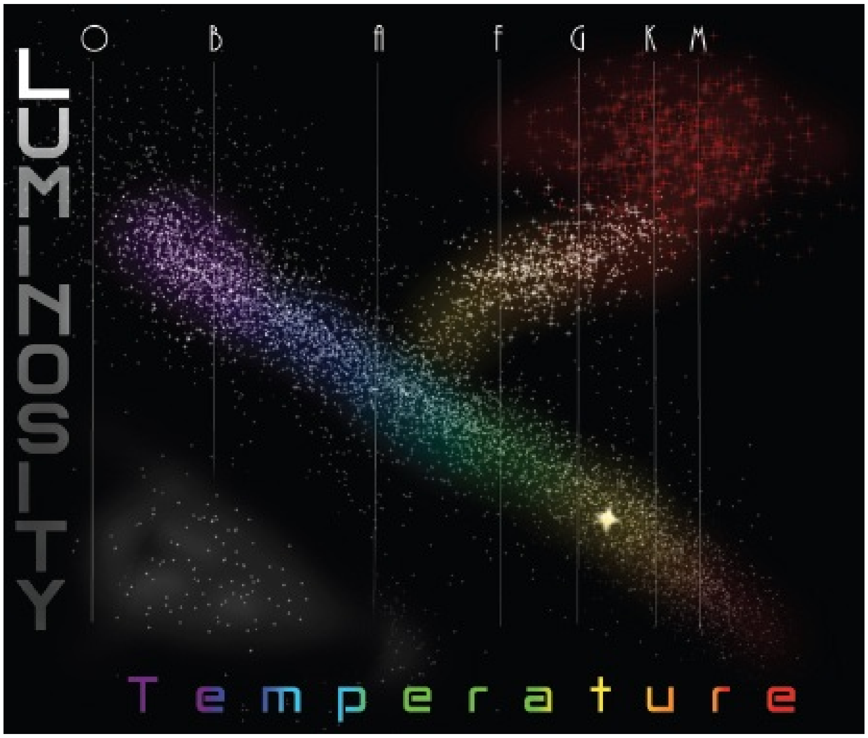
While immense for us humans, this is but a small slice of the vast cosmic web. It is taken from a computer simulation of the universe soon after it began coalescing into the large-scale structure that we know and love today. We can see in this 50-million-light-year section the dense and tangled system of clusters and filaments embedded among the open maws of the voids. *Image courtesy of Wikimedia Creative Commons; author: Andrew Pontzen and Fabio Governato; licensed under CC BY 2.0.*



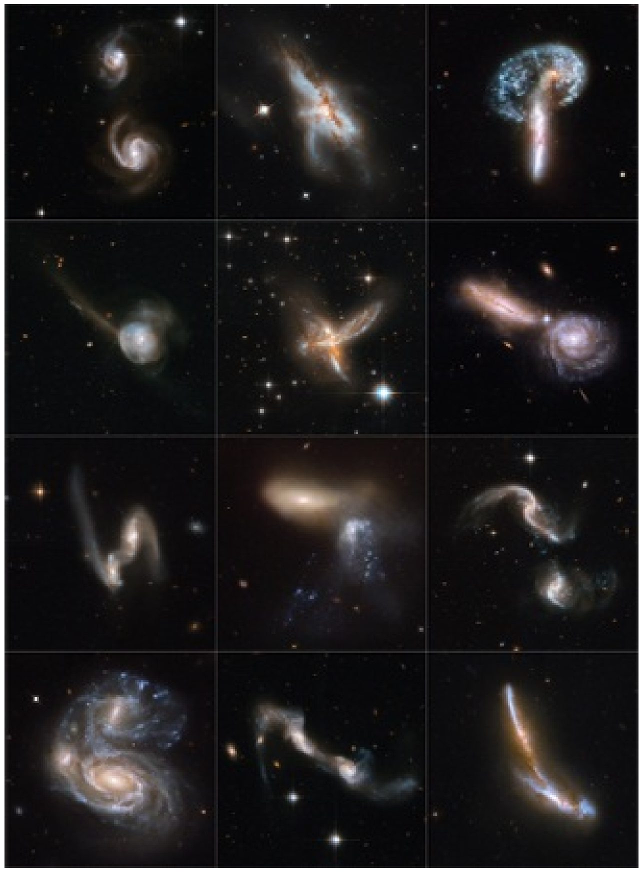
We've learned a lot in the past few centuries, I swear it. The top image is an illustration of the old-school geocentric model of the universe, drawn by Bartolomeu Velho in 1568, just on the eve of the coming cosmological revolution. The bottom is a creative interpretation of our modern view, where, due to the finite speed of light, different observers see themselves at the “center” of “their” universe, with greater distances revealing a younger cosmos. As in the timeline shown earlier, the scale is chosen to highlight various scales…. I'm guessing old Bartolomeu had a similar plan. *Image courtesy of Wikimedia Creative Commons; author: Pablo Carlos Budassi; licensed under CC BY-SA 3.0.*

A type Ia supernova expends more energy than its entire host galaxy. Briefly, but it counts. *Image courtesy of NASA / ESA.*





An example of a so-called H-R Diagram, which neatly sorts stars according to their temperature and their luminosity. How wonderful: a pattern emerges in nature, unlocking a clue to stellar lives. *Image courtesy of Wikimedia Creative Commons; author: Jessica Repp; licensed under CC BY-SA 4.0.*



It turns out that galaxies have all sorts of weird and wonderful shapes, and they can even violently collide. What is nature trying to tell us? *Image courtesy of NASA, ESA, the Hubble Heritage [STScI / AURA]-ESA / Hubble Collaboration, and A. Evans [University of Virginia, Charlottesville / NRAO / Stony Brook University].*