

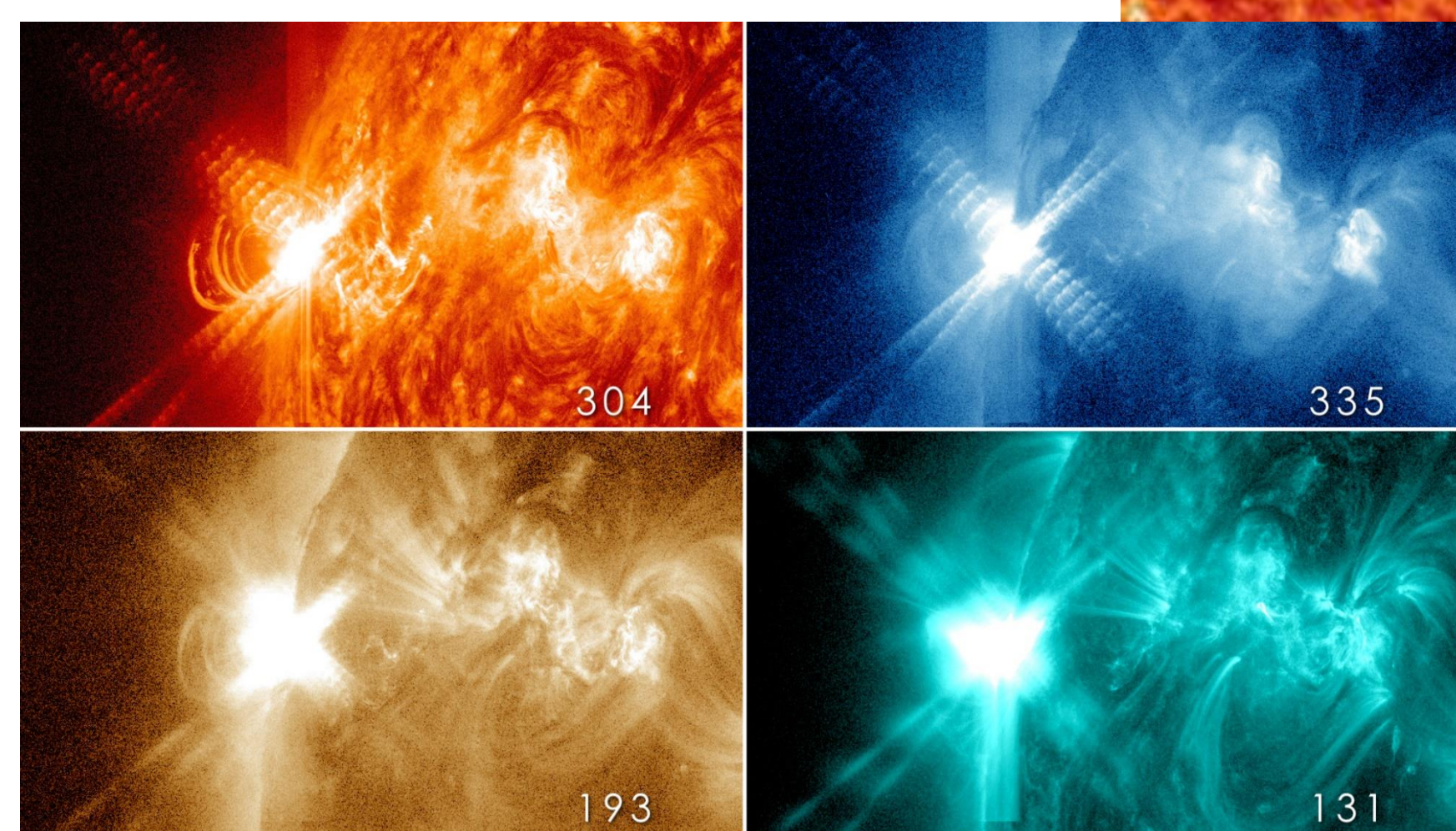
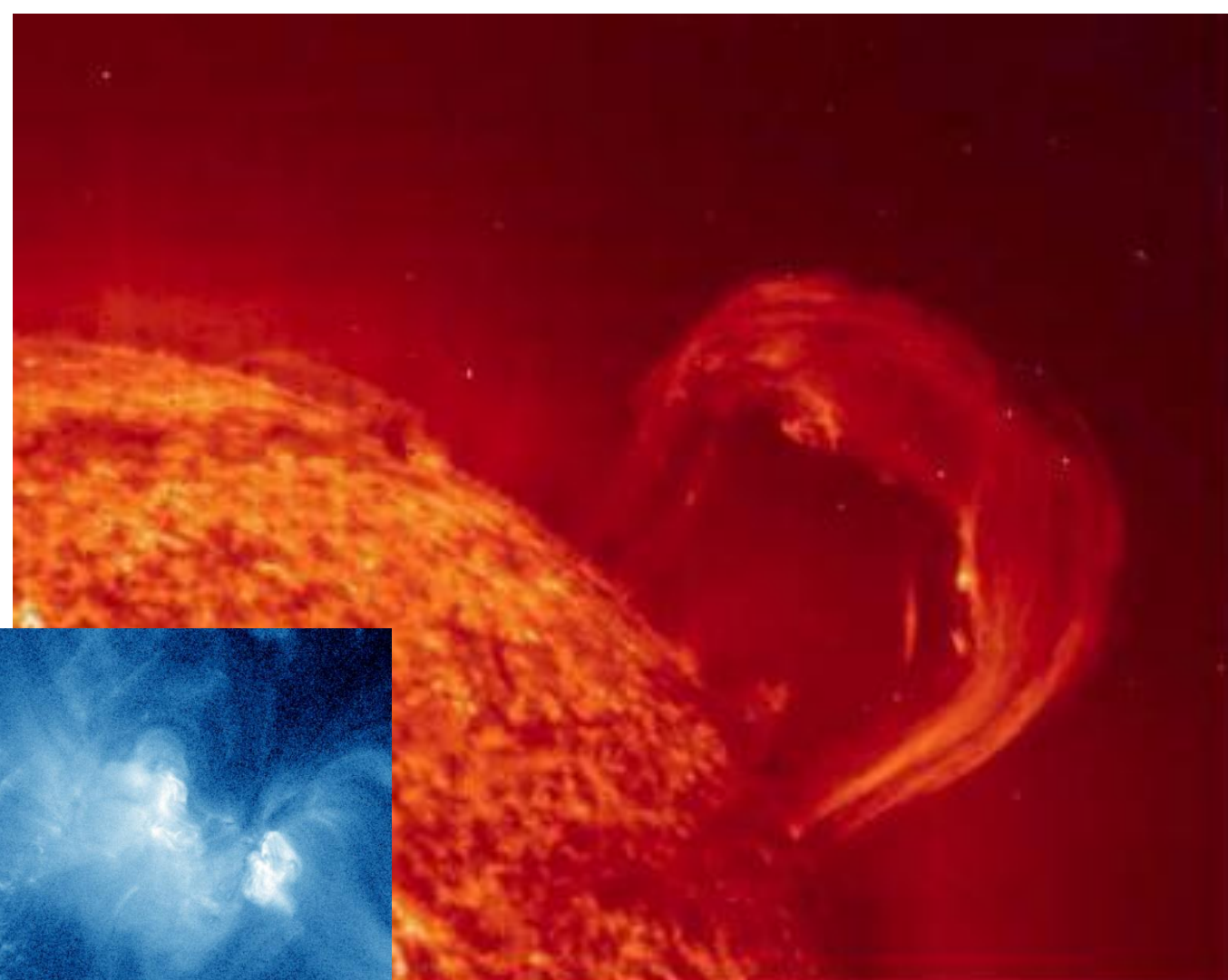
Cosmic Rays



1. What are the Cosmic Rays?

Cosmic rays are microscopic particles from outer space. They are produced by the **Sun** and the **stars**, by exploding stars, black holes within the Milky Way and the **distant galaxies**. They may travel millions and millions of years across their mother galaxies, confined by the magnetic fields.

Coronal Mass Ejection:
Expulsion of solar matter
and magnetic fields into
space



Solar flare (X-ray emissions) observed at different wavelengths

2. Composition

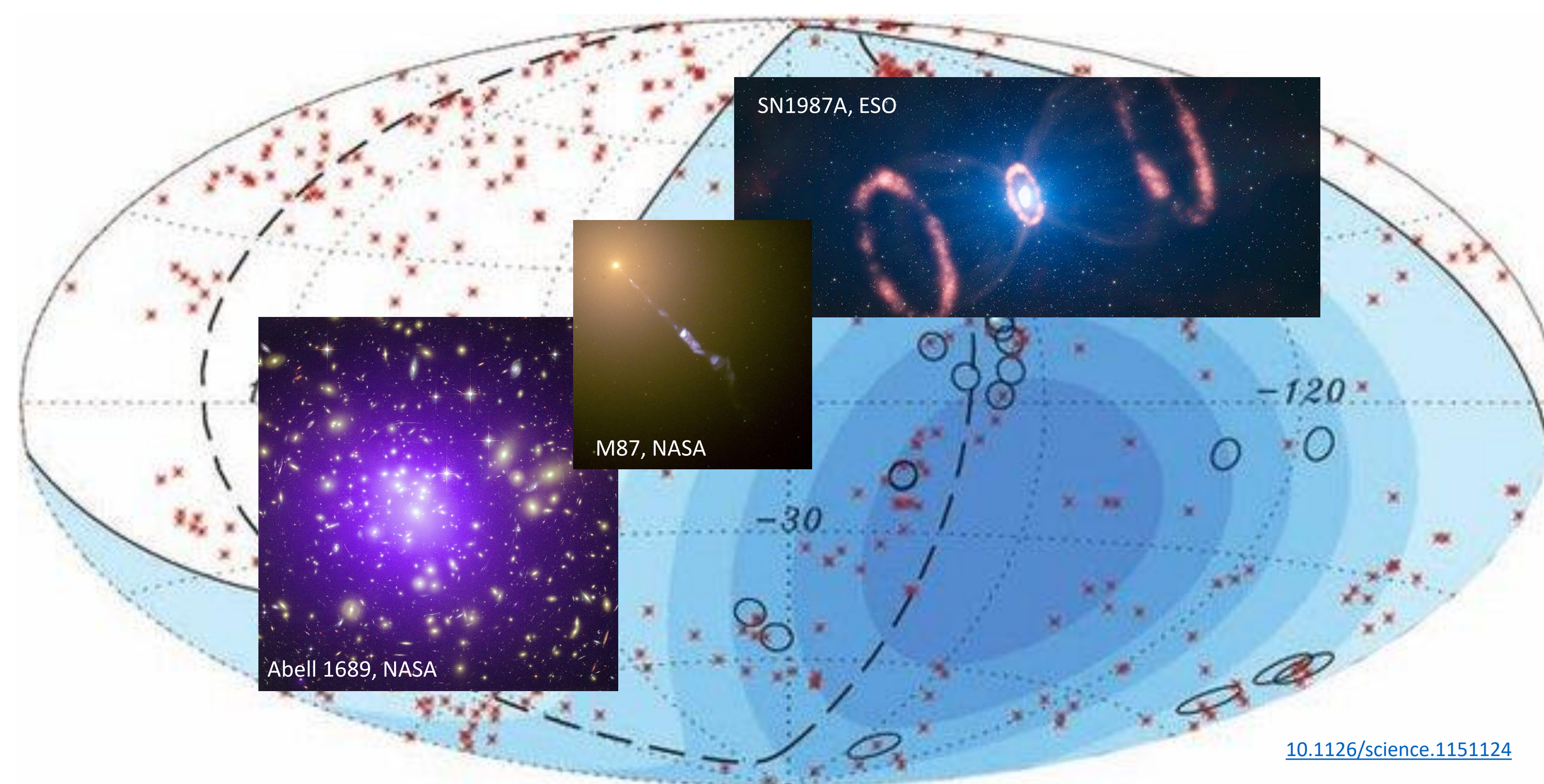
90 % Hydrogen nuclei (protons)

9 % Helium nuclei (α -particles)

1 % electrons

trace nuclei of all stable elements (up to Uranium) at quantities varying with the energy

Very small fraction stable antimatter particles (positron and antiproton)



The Sun-Earth connection

