

Hubble views a glistening red nebula Westerhout 5

October 2 2023, by Claire Andreoli



Credit: NASA's Hubble Space Telescope, ESA/Hubble, R. Sahai

Just in time for the fall foliage season, this image from the NASA/ESA Hubble Space Telescope features a glistening scene in red. It reveals a small region of the nebula Westerhout 5, which lies about 7,000 light-years from Earth. Suffused with bright red light, this luminous image hosts a variety of interesting features, including a free-floating Evaporating Gaseous Globule (frEGG).

The frEGG in this image is the small tadpole-shaped dark region in the upper center-left. This buoyant-looking bubble is lumbered with two names—[KAG2008] globule 13 and J025838.6+604259.

FrEGGs are a particular class of Evaporating Gaseous Globules (EGGs). Both frEGGs and EGGs are denser regions of gas that photoevaporate less easily than the less dense gas surrounding them. Photoevaporation occurs when gas is ionized and dispersed away by an intense source of radiation—typically young, hot stars releasing vast amounts of ultraviolet (UV) light. EGGs were identified fairly recently, most notably at the tips of the iconic Pillars of Creation captured by Hubble in 1995.

FrEGGs were classified even more recently and are distinguished from EGGs because they are detached and have a distinct 'head-tail' shape. FrEGGs and EGGs are of particular interest because their density makes it more difficult for intense UV radiation, found in regions rich in [young stars](#), to penetrate them. Their relative opacity means that the gas within them is protected from ionization and photoevaporation. Astronomers think this is important for the formation of protostars, and that many FrEGGs and EGGs play host to the birth of new stars.

The frEGG in this image is a dark spot in the sea of red light. The red

color is a type of light emission known as H-alpha emission. H-alpha occurs when a very energetic electron within a hydrogen atom loses a set amount of its energy, releasing this distinctive red light as it becomes less energetic.

Provided by European Space Agency (ESA)

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