

Image: Hubble snaps speedy star jets

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Credit: ESA/Hubble & NASA, B. Nisini

This striking image features a relatively rare celestial phenomenon known as a Herbig-Haro object. This particular object, named HH111, was imaged by the NASA/ESA Hubble Space Telescope's Wide Field Camera 3 (WFC3).



These spectacular objects develop under very specific circumstances. Newly formed stars are often very active, and in some cases they expel very narrow jets of rapidly moving ionized gas – gas that is so hot that its molecules and atoms have lost their electrons, making the gas highly charged. The streams of ionized gas then collide with the clouds of gas and dust surrounding newly formed stars at speeds of hundreds of miles per second. It is these energetic collisions that create Herbig-Haro objects such as HH111.

WFC3 takes images at optical, ultraviolet, and infrared wavelengths, which means that it observes objects at a <u>wavelength range</u> similar to the range that human eyes are sensitive to (optical, or visible) and a range of wavelengths that are slightly too short (ultraviolet) or too long (infrared) to be detected by <u>human eyes</u>. Herbig-Haro objects actually release a lot of light at <u>optical wavelengths</u>, but they are difficult to observe because their surrounding dust and gas absorb much of the visible light. Therefore, the WFC3's ability to observe at <u>infrared wavelengths</u> – where observations are not as affected by gas and dust – is crucial to observing Herbo-Haro objects successfully.

Provided by NASA's Goddard Space Flight Center

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