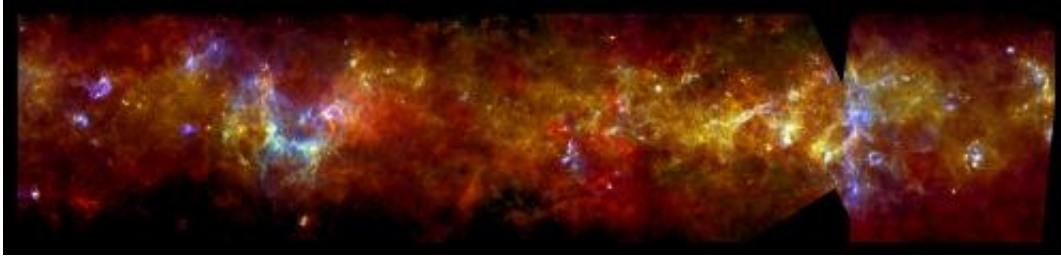


# Image: Glowing jewels in the galactic plane

April 29 2014

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Credit: ESA/PACS & SPIRE Consortium, S. Molinari, Hi-GAL Project

The majority of the stars in our Galaxy, the Milky Way, reside in a single huge disc, known as the Galactic Plane, spanning 100 000 light-years across. The Sun also resides in this crowded stellar hub, lying roughly halfway between its centre and its outer edges.

This disc is filled with a diffuse mixture of gas and [dust](#) – the [interstellar medium](#) – that pervades space, filling the large gaps found between stars. Occasionally, these clouds of gas and dust cool, becoming denser and denser until they spark star formation, giving rise to new generations of stars.

This image is part of Hi-GAL, a survey of the Galactic Plane completed with ESA's Herschel Space Observatory. Peering at the sky in infrared light, Herschel could detect the glow of dust particles dispersed between stars. This minor – but crucial – component of the interstellar medium allows astronomers to investigate how stars are born in the Milky Way,

and how they affect their environment as they age.

Nestled in the Milky Way's disc are pockets of gas and dust that have been heated by nearby newborn stars, causing them to glow brightly like cosmic gems. Through their higher temperatures, these regions glow at shorter infrared wavelengths and are depicted in violet and green, while the colder material in the surroundings – only a few tens of degrees above absolute zero – appears redder.

Laced amongst the stars is an intricate network of filaments sprinkled with tiny white spots: these are denser clumps of gas and dust that will likely evolve and give birth to new stars.

The image combines observations from the PACS and SPIRE instruments on Herschel. It spans about  $12^\circ$  on the longer side, corresponding to some 24 times the diameter of the full Moon. This is 1/30th of the entire Galactic Plane survey.

Provided by European Space Agency

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