

# Herschel Space Observatory

## Exploring the Gould Belt

Stars form deep within massive clouds of dust and gas in interstellar space. The closest regions of star-formation to us form a band called the "Gould Belt", which runs across the entire sky and is almost aligned with the plane of our Galaxy. Their proximity presents an opportunity for us to explore star formation in unprecedented detail and at high resolution, using the SPIRE and PACS instruments on Herschel.

**The Polaris Flare**

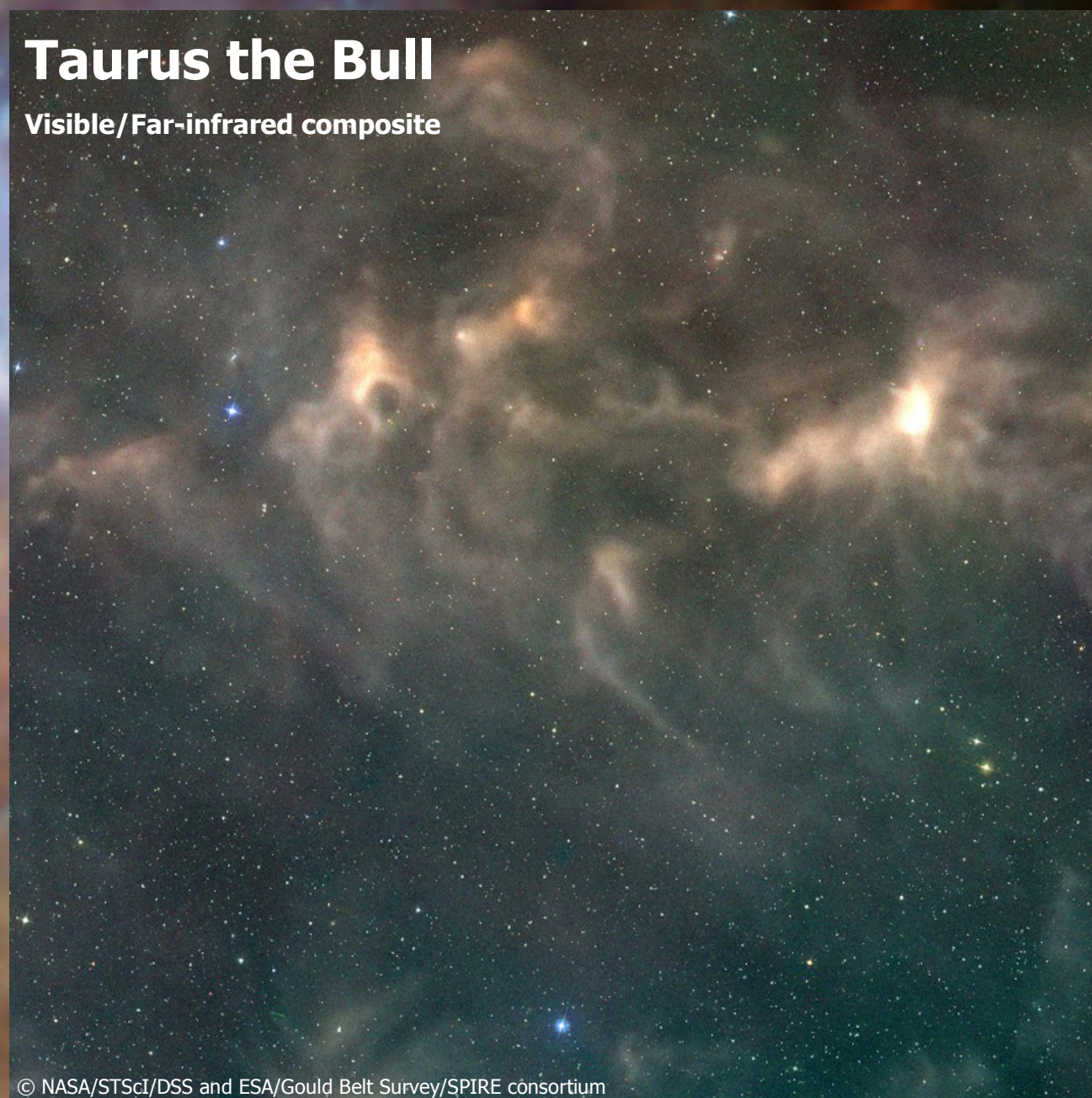


**Lupus the Wolf**



**Taurus the Bull**

Visible/Far-infrared composite



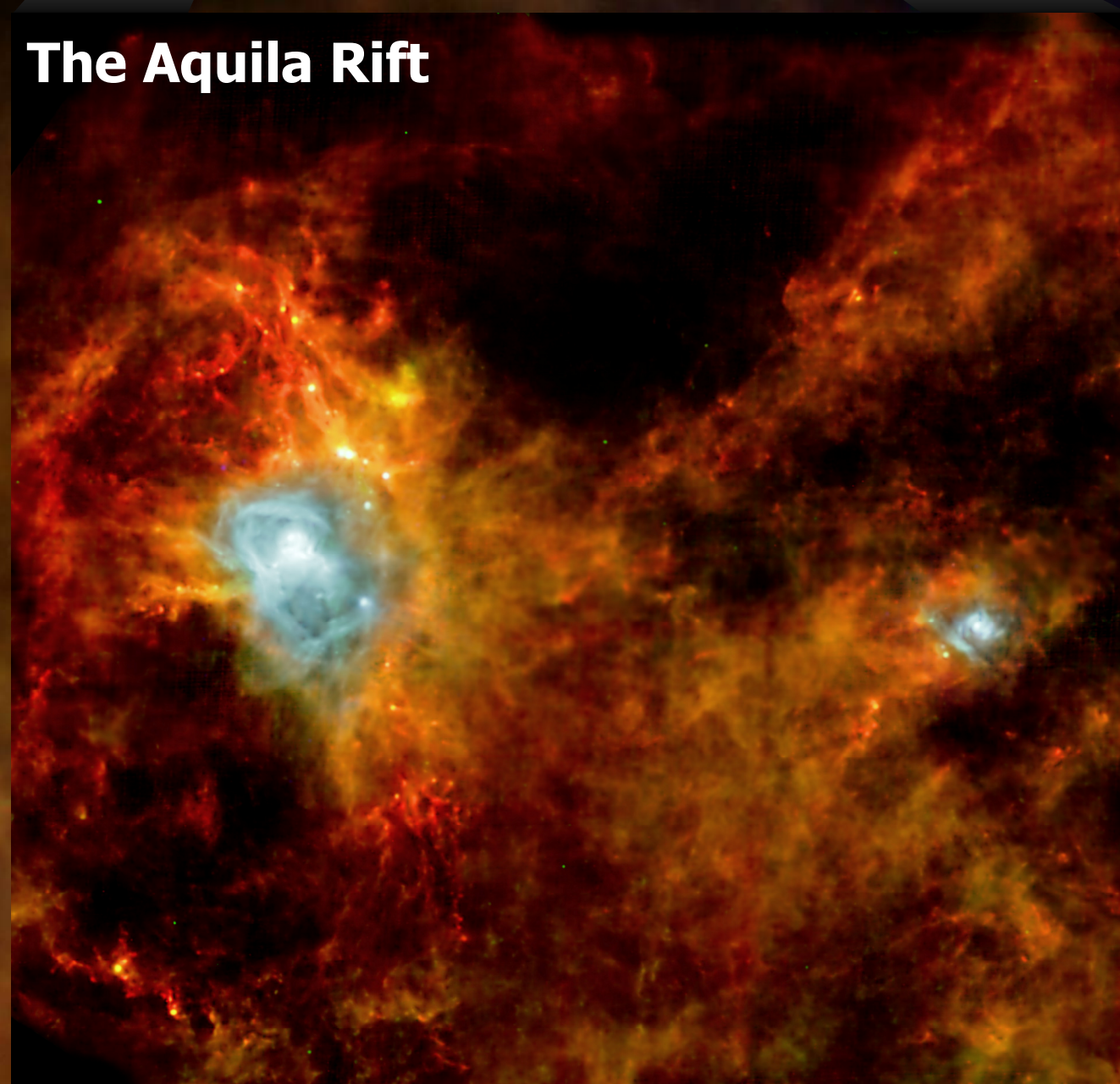
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The regions observed by Herschel show the dust laced through the Galaxy in a wide range of environments, shown on a map of the entire Galaxy (above right) as seen by a previous satellite, IRAS. Herschel has a wider wavelength range, and can see much colder dust than has been possible before.

Bluer, brighter regions are denser, and show dust being heated from within by stars which have already formed. The darker and redder regions show much colder dust, which is not yet forming stars.

The regions observed show a wide variation in dust temperature and density. Herschel astronomers have shown that stars form along filaments, and are identifying the conditions required for this to happen.

**The Aquila Rift**



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Galactic Plane

The dust in the Aquila Rift shows the greatest temperature range. Each small, bright blob is a cloud of gas and dust collapsing to form a star.