

Hidden Universe Gallery Explorer

Many Views of the Milky Way

In May of 2009, the European Space Agency launched the Herschel Space Observatory, a new eye on the infrared universe. Its 3.5-meter mirror is the largest ever put into space and reveals the far infrared sky with unprecedented clarity.

This early Herschel observation shows a patch of sky in the constellation Crux. Warm Milky Way dust at a wavelength of 70 microns glows blue, while cooler dust at 160 microns is red.

Pushing to the longest infrared wavelengths, we now see from 250 to 500 microns. The orangeish filaments trace the very coldest dust in our galaxy, only tens of degrees above absolute zero.

These two images combine to make a spectacular ensemble spanning Herschel's full infrared range.

NASA's Spitzer Space Telescope provides a strikingly different view of the same region. At much shorter wavelengths from 3.6 to 24 microns we see stars and the hot dust around stellar nurseries.

Herschel and Spitzer work well together to provide complementary views of the universe. Note how the densest dust clouds appear dark and opaque to Spitzer but show up as red filaments to Herschel

The combined Spitzer/Herschel image reveals the full range of cosmic dust temperatures, from the cold and red to the hot and blue. Together these two observatories give us the most complete view to date of the infrared universe.