

Beyond visible light

Contributed by Arnaud Marsollier
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Composite image of M82 /credit: NASA/CXC/JHU/ESA/STScI/Aura/HHT/JPL-Caltech/Univ. of Arizona.

Until the end of the 18th century, the real world was limited to what our eyes could see of it. William Herschel then opened a new way, bringing to the fore a first wavelength, invisible to the human eye: the infrared. Ultraviolet, X-rays, radio waves followed later, revealing unsuspected images of the sky.

M82 by Space Telescope Hubble/ credit : NASA/ESA/HHT

Observed from twelve million light years, M82 appears in visible light as an irregular spiral galaxy. Space satellites Spitzer and Chandra reveal a much different image. In infrared, M82 is the most luminous galaxy in the sky, bathing in a cloud of cold gas and dust (here in red). X-rays also revealed a tremendous ejection of matter, at temperatures of several million degrees, coming from the galactic centre (in blue). A stellar outburst was produced by a skimming with galaxy M81 one hundred million years ago. This celestial encounter provoked the birth of numerous massive stars, which then evolved into supernovae. Important quantities of young stellar matter are ejected from the galaxy at millions of kilometres per hour.