

ExoMars PanCam filters

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Credit: M. de la Nougerede, UCL/MSSL

This may look like a collection of colorful contact lenses, and in some respects there are some similarities: these are the filters through which the ExoMars rover—named Rosalind Franklin—will view Mars in visible and near infrared wavelengths.

They are pictured here in their individual transport cases, before they were installed in the filter wheels of the Panoramic Camera, PanCam, which comprises two wide-angle cameras and a [high-resolution camera](#). The wide-angle cameras are mounted at each end of the PanCam unit and form a stereo pair. Each [camera](#) has a filter wheel with 11 positions. Red, green and blue broadband imaging [filters](#) for colour stereo imaging are common to both left and right cameras; the remaining eight are different between left and right to provide the range of filters needed for geological and solar imaging. The geology filters have been specifically selected to identify water-rich minerals and clays on Mars.

PanCam also hosts a high-resolution color camera and, sitting on a mast 2 m above the Martian surface, will be fundamental in the day-to-day scientific operations of the rover, its images essential to assist with scientific decisions on

where to drive to next, and where to target its drill. The rover will be the first with the capability to drill 2 m below the surface to retrieve samples for analysis in its onboard laboratory, seeking signs of life past or present. Combined with observations with its spectrometers, close-up imager, sub-surface sounding radar and neutron detector, the ExoMars rover has a powerful payload to explore the surface and subsurface of Mars.

The filters of the wide-angle camera shown here were integrated into their filter wheels in 2018 and completed calibration testing on 11 May 2019. Just last week the entire PanCam instrument was shipped from University College London's Mullard Space Science Laboratory and delivered to Airbus, Stevenage, in the UK, where it will soon be built into the rover, giving Rosalind Franklin rover her science eyes.

More information: A.J. Coates et al. The PanCam Instrument for the ExoMars Rover, *Astrobiology* (2017). [DOI: 10.1089/ast.2016.1548](https://doi.org/10.1089/ast.2016.1548)

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