

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
TO BOLDLY GO - SPACE STATION EDUCATION AND OUTREACH (5)

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AN ORDINARY CAMERA IN AN EXTRAORDINARY LOCATION: OUTREACH WITH THE MARS
WEBCAM

Abstract

The European Space Agency's Mars Express mission was launched in 2003 and was Europe's first mission to Mars. On-board was a small camera designed to provide 'visual telemetry' of the separation of the Beagle-2 lander. After achieving its goal it was shut down while the primary science mission of Mars Express got underway. In 2007 this camera was reactivated by the flight control team of Mars Express for the purpose of providing public education and outreach – turning it into the 'Mars Webcam'.

The camera is a small 640x480 pixel colour CMOS camera with a wide angle 30°x40° field of view. This makes it very similar in almost every way to the average PC webcam. The major difference is that this webcam is not in an average location but in orbit around Mars. On a strict basis of non-interference with the primary science activities, the camera is turned on to provide beautiful and interesting wide-angle views of the planet below.

A highly automated process ensures that the observations are scheduled on the spacecraft and then uploaded to the internet as rapidly as possible. There is no intermediate stage, so that visitors to the Mars Webcam blog serve as 'citizen scientists'. Full raw datasets along with processing instructions are provided along with a comment mechanism on the blog. Members of the public are encouraged to use this either in a personal or educational context and work with the images. We then take their excellent work and showcase it back on the blog. We even apply techniques developed by them to improve the data and webcam experience for others.

The accessibility and simplicity of the images also makes the data ideal for educational use, especially as educational projects can then be showcased on the site as inspiration for others. The oft-neglected target audience of space enthusiasts is also important as this allows them to be a key part of an interplanetary instrument.

This paper will cover the history of the project and the technical background behind using the camera and linking the results to an accessible blog format. It will also cover the outreach successes of the project, some of the contributions from the Mars Webcam community, opportunities to use and work with the Mars Webcam and plans for future uses of the camera.