Ground scientific verification test for Moderate Resolution Imaging Camera of China’s First Mars Mission

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China’s first Mars exploration mission (HX-1) is expected to launch in 2020 with an orbiter and a rover, to conduct a global and comprehensive exploration of Mars, and to carry out regional patrolling on the Mars surface. The orbiter will be equipped with a Moderate Resolution Imaging Camera (MoRIC) to produce a global map of the Mars and study the topography of the Mars surface. The MoRIC is a color camera, works at visible spectrum, the image resolution of the camera is 100m@400km, and the FOV is 64°.

The purpose of the Ground scientific verification test for MoRIC is to evaluate its ability to obtain high quality image data of the Mars surface. In the test, we made a simulation of the on-orbit detection process of MoRIC and obtained different kinds of test data, which was used to evaluate the data processing method and analyze the quality of data. The test results show that the data processing method of the MoRIC is correct; the image quality, the color correction effect and compression quality of the MoRIC data meet the requirements of the verification test.