Research and Construction Lunar Stereoscopic Visualization System Based on Chang'E Data

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With lunar exploration activities carried by Chang'E-1, Chang'E-2 and Chang'E-3 lunar probe, a large amount of lunar data has been obtained, including topographical and image data covering the whole moon, as well as the panoramic image data of the spot close to the landing point of Chang'E-3. In this paper, we constructed immersive virtual moon system based on acquired lunar exploration data by using advanced stereoscopic visualization technology, which will help scholars to carry out research on lunar topography, assist the further exploration of lunar science, and implement the facilitation of lunar science outreach to the public. In this paper, we focus on the building of lunar stereoscopic visualization system with the combination of software and hardware by using binocular stereoscopic display technology, real-time rendering algorithm for massive terrain data, and building virtual scene technology based on panorama, to achieve an immersive virtual tour of the whole moon and local moonscape of Chang'E-3 landing point.