

Chinese Manned Space Utility Project

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Since 1992, China has been carrying out a conspicuous manned space mission. A utility project has been defined and created during the same period. The Utility Project of the Chinese Manned Space Mission involves wide science areas, such as earth observation, life science, micro-gravity fluid physics and material science, astronomy, space environment, etc. In the earth observation area, it is focused on the changes of global environments and relevant exploration technologies. A Middle Revolution Image Spectrometer and a Multi-model Micro-wave Remote Sensor have been developed. The detectors for cirrostratus distribution, solar constant, earth emission budget, earth-atmosphere ultra-violet spectrum and flux have been manufactured and tested. All of above equipment was engaged in orbital experiments on-board the Shenzhou series spacecrafts. Space life science, biotechnologies and micro-gravity science were much concerned with the project. A series of experiments has been made both in ground laboratories and spacecraft capsules. The environmental effect in different biological bodies in space, protein crystallization, electrical cell-fusion, animal cells cultural, research on separation by using free-low electrophoresis, a liquid drop Marangoni migration experiment under micro-gravity as well as a set of crystal growth and metal processing was successfully operated in space. The Gamma-ray burst and high-energy emission from solar flares have been explored. A set of particle detectors and a mass spectrometer measured the environment parameters in spacecraft orbit. The experiments and their results on the Shenzhou series will be described briefly in this talk. The utility plan for next step of Chinese Manned Space Mission will also be introduced.