A Consideration of HALO Type Orbit Designation and Maintaining for KUAFU-A and WSO/UV Missions

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In the new era of deep space exploration, more and more explorations at special places or points in solar system are carried out and planned. There are five equilibrium points in the Sun-Earth system and the orbits around these points have good dynamic attribute. Due to this reason, The areas vicinity equilibrium points have many advantages for space exploration. In recent 20 years, the NASA and ESA have successfully launched several spacecrafts orbiting the Sun-Earth collinear equilibrium points. Following the developing steps of space and deep space exploration in China, Chinese scientists and engineers are considering and suggesting two equilibrium points' explorations. One is named "KUAFU-A" mission whose craft will orbit L1 point and the scientific target is studying the evolution of space weather of solar-terrestrial area. The other is "WSO/UV" mission whose craft will orbit L2 point and the scientific target is studying the structure and evolution of galaxies. This report is mainly about HALO type orbit designation and maintaining for these two missions. Following points are included:

1, Briefly reviewing the explorations at the equilibrium points launched by NASA and ESA;

2, Simply introducing the exploration "KUAFU-A" and "WSO/UV";

3, Discussing the designation and maintaining of HALO type orbits in some detail for "KUAFU-A" and "WSO/UV".