

THE PLAN OF THE SECOND PHASE OF MERIDIAN PROJECT

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The Meridian Space Weather Monitoring Project(Meridian Project) is the ground-based network program to monitor solar-terrestrial space environment. The first phase of meridian project has been begun to construct by Chinese government in Jan. 2008 and will be finished in Dec. 2010, which consists of a chain of 15 ground-based observatories with multiple instruments including magnetometers, ionosondes, HF and VHF radar, Lidar, IPS monitors, sounding rockets etc. These stations are mainly located at the neighborhood of 120°E meridian.

The second phase of meridian project has been proposed. Its main object is to construct one three-dimensional solar-terrestrial space environment monitor system based on the space-ground network. For the space monitoring part, one satellite will be launched, whose orbital altitude is about 450km and the orbital inclination is 90 degrees (polar orbit). We suggest the scientific payloads should include the Langmuir probe, GPS occultation receiver, multiple wavelength gas glow radiation detector, magnet field detector, electrical field detector and so on. For the ground-based monitoring part, 15 stations have been built in the first phase of meridian project, where 10 stations are located along 120°E and 4 stations are along 30°N. So, in the second phase, the monitoring stations will be expanded to 100°E and 40°N. The added stations will be located in Kashi, Ge'ermu, Jiayuguan, Yinchuan, Huhehaote, Jinghai, Shenyang, Yushu, Chayu, Xichang and so on. Finally, One “#” shape ground-based monitoring system will be achieved.

After the second phase of meridian project is done, it is built one three-dimensional monitoring network with high density covering ground stations and synchronous observation between ground station and spatial satellite, and it will play a greater role in monitoring solar-terrestrial space environment.

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Meridian Project, plan

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