

China Launches Polar Orbiting Satellite



A Chinese CZ-4C Chang Zheng-4C launch vehicle - carrying the Feng Yun-3A satellite - has lifted off from the Taiyuan Satellite Launch Center located in the Shanxi province. The first satellite of the second generation of polar orbiting meteorological satellites will operate in a 836 km sun-synchronous orbit with an inclination of 98.7 degrees, covering the planet twice a day.

The satellite was developed by the Shanghai Academy of Space Flight Technology (SAST) and is a three-axis stabilised vehicle measuring 4.4 x 2 x 2 meters, with a launch mass of 2200 kg. With a operational life of three years, Feng Yun-3A is equipped with a solar panel mounted on one side of the satellite main body, making for a total length of approximately 10 meters in orbit.

To achieve its mission, Feng Yun-3A is carrying a variety of scientific instruments, including the Visible and InfraRed Radiometer (VIRR) - a 10 channel radiometer that will make operational observations.

Also included on the bird is the Moderate Resolution Visible and Infrared Imager (MODI) - which will image the Earth in high resolution and near true colour imagery during the day, and high resolution thermal Infra Red image during the night.

The Microwave Radiation Imager (MWRI) - which will measure thermal microwave emissions from land and ocean surfaces, along with the ability to take measurements of various forms of waters in the atmosphere, clouds and surfaces using six frequency points with dual polarizations.

The Infrared Atmospheric Sounder (IRAS) will be used to measure aerosols, stratospheric temperatures, carbon dioxide contents and cirrus.

The Microwave atmospheric Temperature Sounder (MWTS) is capable of 'temperature sounding' in cloudy regions, along with the Microwave atmospheric Humidity Sounder (MWS) - which will be utilised for humidity sounding in cloudy regions.

The Total Ozone Mapper and Ozone Profiler (TOM/OP), which is based on two instruments that will study the ozone in the Earth's atmosphere, along with the Earth Radiation Budget Unit (ERBU) - which is similar to the ERBE used on NOAA satellites, and includes a separate solar constant monitoring instrument.

The Space Environment Monitoring Unit (SEMU) will be used for space environment monitoring, with improved accuracy and measuring capacity for high-energy particles. The data will be transmitted to Earth using two X-band transmitters and an L-band transmitter.

The Feng Yun-3A is the first R&D satellite with Feng Yun-3B expected to join it 2009/2010. The operational Feng Yun-3 system will be eventually composed of six satellites.

The launch of Feng Yun-3A is the second for China in 2008 - a year that should see the launch of the Shenzhou-7, crewed by three Yuangyuans. One of the crewmembers will carry out the first extravehicular activity (EVA) of the ambitious Chinese space program.

Launch of Shenzhou-7 is scheduled to take place between the 12th and 14th of October.

The next Chinese launch will likely take place on June 6, when a CZ-3B Chang Zheng-3B rocket will orbit the ZX-9 ZhongXing-9 (ChinaSat-9) telecommunications satellite, from the Xixiang Satellite Launch Centre.