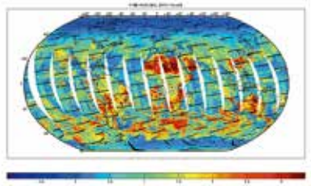
Research Group of New Generation Space-Borne Optical Payloads with High Accuracy for Atmospheric Exploration
Shanghai Institute of Technical Physics, Chinese Academy of Sciences

风云四号卫星干涉式大气垂直探测仪和扫描辐射成像仪
Geosynchronous Interferometric Infrared Sounder (GIIRS)and Advanced Geosynchronous Radiation Imager (AGRI) on-board FY-4 Satellite



ERM全谱段辐射图
Total Wave Radiance Image from Earth Radiation Measurement Unit

Aiming at the commanding heights of international remote sensing competition, this research group has been focused on the strategic requirements from the meteorological domain and atmospheric probing. By breaking through key technology of three-dimensional atmospheric optical sensing with high accuracy, they complete the design and fabrication of almost all space-borne main optical payloads for meteorological detection successfully. A technical system for developing optical payloads of meteorological satellites has been established. The group developed GIIRS, which is the first high spectral sounder ever flown in geostationary orbit, with the spectral resolution of 0.625cm-1. The rapid observing hyper-spectral atmospheric sounding technology with high accuracy fills the gap in three-dimension fine remote sensing. The international meteorological community is eager to use this new type of data GIIRS gained. This group has accomplished significant contributions in upgrading and updating national atmospheric probing technology, and exceeding the international level progressively. The technology will play an irreplaceable role on atmospheric frontier sciences.

Outstanding contributors of this research group

Ding Lei

As the team leader of the research group, he focused on system frame work research, and accomplished payloads including spectral imager, interferometric sounder, infrared radiometer. He leads the group making great breakthrough in the technology of meteorological sensors.

Hua Jianwen

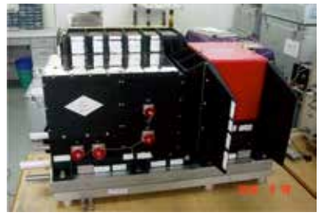
He broke through the critical technology of interferometer working in space, established the technical system on designing and fabrication of infrared interferometer. He applies the infrared hyper-spectral technology on meteorological satellites.

Yin Dekui

He developed the technology of polarization imaging with large field of view, and applied the technology on atmospheric probing. He made breakthrough of three-dimension probing for low orbit meteorological satellites.

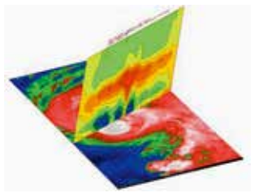
Major contributors

Ding Lei
Hua Jianwen
Yin Dekui
Wang Xianghua
Niu Xinhua
Wang Ganquan
Chai Jinguang
Hong Xiaoju
Dong Deping
Chen Yongping
Li Xiangyang
Wu Yinong
Yuan Jie
Han Changpei
Liu Yunmeng
Wang Nili
Yuan Honghui
Li Libing
Shen Xia
Qi Gongqi

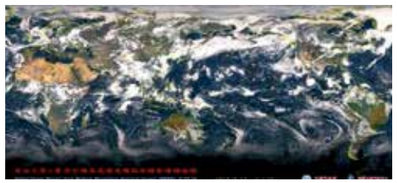


风云三号卫星红外分光计
InfraRed Atmospheri c Sounder (IRAS) on-board FY-3 satellite

风云三号卫星中分辨率光谱成像仪
MEdium Resolution Spectral Imager (MERSI) on-board FY-3 satellite



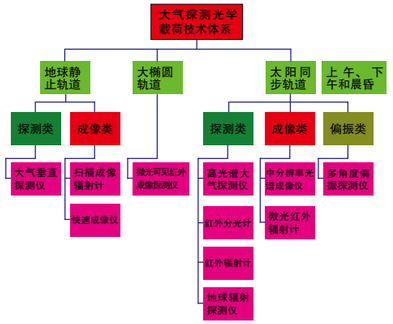
红外分光计获取的台风三维大气温度廓线
Three-dimensional Atmospheric temperature profile of Typhoon from IRAS



中分辨率光谱成像仪获取的全球影像镶嵌图
Global Image Mosaic from MERSI of FY-3 satellite

新一代星载高精度大气探测光学载荷技术研究集体
推荐单位：中国科学院上海技术物理研究所

研制究集体主要成员
Members of the Research Group



大气探测光学载荷技术体系
Technical system of space borne optical payloads for atmospheric sensing

丁　雷 Ding Lei

丁　雷

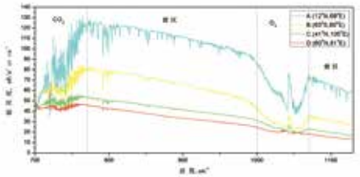
华建文　Hua Jianwen

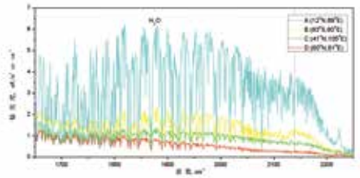
华建文

殷德奎　Yin Dekui

殷德奎

风四性能同类卫星比对
Comparison for the state of art geostationary meteorological satellites





大气垂直探测仪获取的大气光谱图
Atmospheric spectrum from GIIRS