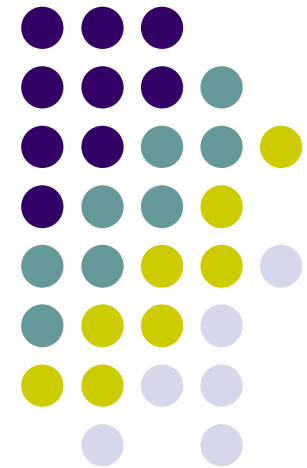


Radiation Calibration Activity of Optical Remote Sensors in SITP

WGCV-21, Beijing China
15~17 Oct. 2003



The main Space-bore imaging Sensors Done or being Done by SITP



Sensor	Satellite	Bands	Resolution	Orbit type
SRM	FY-1 serials	3,5,10	3km to 1.1km	Polar-orbit
SRM	FY-2 serials	From 3 to 5	1.1km and 5km	geo- stationary
CMODIS	SZ-3	34	1km	inclination- orbit
COCTS	HY-1	10	1.1km	Quasi- solar-sync
SRM CMRISR	FY-3	10 20	1.1km 1km 250m	Polar-orbit

The laboratories and company of SITP



Units type	Function in Sensors
Lab. 1	Filter maker
Lab. 2	Detector maker
Lab. 3	Cooler maker (Radiant and Sterling)
Lab. 4	Sensor designer and constructor
Factory 1	Mechanical manufacture
Factory 2	Optical manufacture
Company	Blackbody maker

Plans of Meteorological satellites in these years



- The second FY-2B satellite will be launched next year
- The second-generation polar-orbit meteorological satellite FY-3 will be launched in 2006.
- The second-generation geo-stationary meteorological satellite FY-4 is under studying now.



Lab. Buildings Condition

- The New Optical-electronic Lab. Building is finished now in SITP.
- The FY-3 Infrared Radiation Calibration Building now is under constructing in Shanghai Institute of Satellite Engineering.

Calibration Laboratories plans



- Visible and Near IR range Radiation Calibrating lab.
- Sensors' Spectral Response Detecting Lab.
- Sensors' Characteristics Detecting Lab.
- Infrared range Radiation Calibrating lab.
- Optical alignment lab.
- Now these laboratories are not in good condition due to less of financial support



Orbit Parameters of FY-3

Satellite orbit	Solar synchronous near circle
orbit height:	836.4km
Inclination:	98.728°
Period	101.496 minutes
Off circle rate	Near 0
Launch windows:	Descending and ascending local time: 10:00~10:20 or 14:00~14:20
Satellite life	Above 2 years



Payloads in FY-3

- 8 kinds of payload total
- 5 kinds of them are optical remote sensors
- 3 payloads have TIR bands, and all using radiant cooler to cool

Four payloads now are being done by SITP



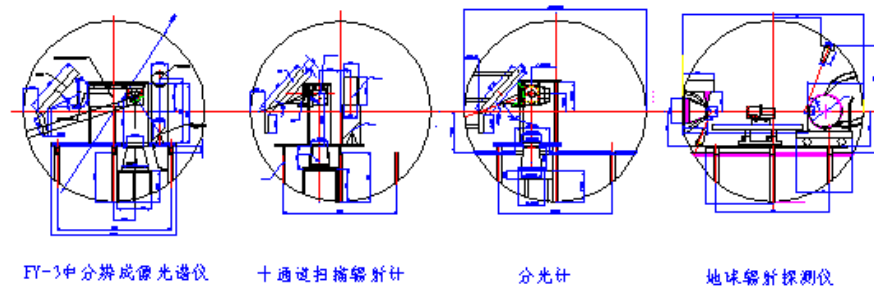
- Moderate Resolution Imaging Scanning Radiometer
- Infrared Filter Radiometer
- ERB
- Ten Channels Scanning Radiometer



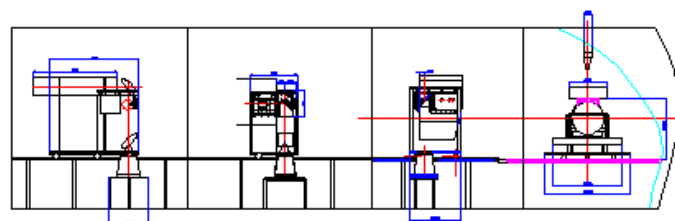
Radiation calibration TIR bands

- Using kinds of blackbodies in a vacuum container with a diameter of 2.5X6 m, which is being made now.
- Using blackbody in orbit calibration

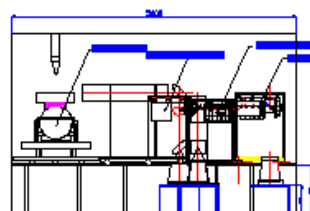
IR bands Calibration of FY-3 in vacuum pipe condition



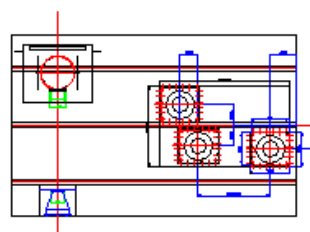
各载荷定标布局 (从罐口看)



各载荷定标布局 (从罐侧壁看)



罐内布局 (侧视图)



罐内布局 (俯视图)

Hopes



- Obtain helps in constructing calibration Labs from another colleagues.
- Enhance Cooperation with remote sensors' workshops all over the world.



Goals

- To produce sensors with high performances, which can be used as payloads in meteorological and marine satellites
- To raise ability in weather forecast and in environment and natural disasters monitoring
- To make contribution to the monitoring of global environment and its changing



Thank you!