

FY-1D METEOROLOGICAL SATELLITE IS IN OPERATION

Summary and purpose of paper

FY-1D launched in May 2002 is in operation now. This paper provides information on FY-1D satellite.

FY-1D Meteorological Satellite in Operation

Launch

The polar orbiting meteorological satellite FY-1D was launched at 9:50 (Beijing Time-BT) on May 15, 2002 from TAIYUAN Satellite Launch Center. At 10:35 (BT), the Urumuqi Meteorological Satellite Ground Station received the first image from FY-1D.

After in-the-orbit check, FY-1D became fully operational.

Transmission Mode

As the successive satellite in FY-1 series, FY-1D is similar with FY-1C in terms of transmission.

FY-1D transmits CHRPT to world users. FY-1D also transmits GDPT and LDPT, which are received only by NSMC (Ref: CGMS-XXX- PRC-WP-02).

CHRPT Transmission Parameters

Carrier frequency (MHz):	1700.40
Data bit rate:	1.3308Mbps (Phase modulated split phase)

Major Orbital Parameters

The major orbital parameters of FY-1D are shown in Table. 1.

Table 1. Major Orbital Parameters of FY-1D

Orbit altitude	866 km
Inclination	98.80 ⁰
Eccentricity	Less than 0.005
Orbit period	102.3 minutes
Descending node	8:45 am

Primary Instrument

The Multi-channel Visible and IR Scan Radiometer (MVISR) is the primary sensor of FY- 1D, the characteristics of which are given in Table 2.

Table 2. Wavelengths of the channels and primary use of MVISR

Channel	Wavelength (μm)	Primary Use
1	0.58-0.68	Daytime cloud, ice and snow, vegetation
2	0.84-0.89	Daytime cloud, vegetation, water vapor
3	3.55-3.95	Heat source, night cloud
4	10.3 -11.3	SST, day/night cloud
5	11.5-12.5	SST, day/night cloud
6	1.58-1.64	Soil moisture, ice/snow distinguishing
7	0.43-0.48	Ocean color
8	0.48-0.53	Ocean color
9	0.53-0.58	Ocean color
10	0.90-0.965	Water vapor

Calibration accuracy

Visible/near IR channels:	5-10% albedo
IR channels:	$\pm 1\text{K}(270\text{K})$
IR calibration range:	200-320K
A-D output:	0-1023 count