CURRENT STATUS OF FY-1C

Summary and purpose of paper

FY-1C was launched on May 10, 1999. It has been operating for 16 months. This paper describes the status of the satellite, the data of CHRPT and GDPT and the products from FY-1C.

CURRENT STATUS OF FY-1C

FY-1C, the third Chinese polar orbiting meteorological satellite was successfully launched on May 10 1999. The satellite has been in good condition since it was launched. The satellite passed the on-orbit test and checkout period perfectly. Now it is operating well. So far, the CHRPT (High Resolution Picture Transmission of FY-1C) and GDPT (Global Delayed Picture Transmission) data have been received and provided to users day and night for over 16 months. The data processing system in China has produced many products for research and applications in meteorology & hydrology, climate analysis, agriculture production and environmental monitoring. CHRPT data transmission is open to all users worldwide. It is China's consistent policy and commitment to the extensive utilization of FY-1 satellite data for the benefit of international community.

1. Data from FY-1C

The Multi-channel Visible and IR Scan Radiometer (MVISR) is the major sensor of FY-1C. There are 10 channels including 4 visible channels, 3 near IR channels, 1 short wave IR channel and 2 long wave IR channels. The wavelengths of the channels and primary usage are shown in Table 1.

Table 1
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	103.-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

The on board data storage capacity of FY-1C is increased to 300 minutes (compared with the 60 minutes of FY-1A/B). It means that besides the real time CHRPT data received within the acquisition areas of three ground stations in Beijing, Guangzhou and Urumuqi, it is possible to receive global coverage data of four selected channels (channels 1,2,4,5) with reduced resolution. This data is defined as Global Delayed Picture Transmission (GDPT). The resolution of GDPT data is about 4 km along each scan line.

2. Data processing and the products from FY-1C

With years of investigation, analysis and applications with TIROS-N, FY-1A and 1B satellite data processing system, NSMC set up a new satellite data receiving and processing system

before FY-1C satellite was launched. It is an upgrade of the old system. The whole system is equipped with new receiving facilities, communication computers, VSAT system, HP and SGI work stations and many kinds of peripherals. It is a large complicated system used to receive, transmit and process FY-1C satellite data, and it is capable of receiving and processing data of NOAA polar-orbiting meteorological satellites. This system is designed to operate automatically for satellite data receiving, processing, products generating, distributing and archiving.

To meet the demand of users in meteorology, hydrology, climate research, agriculture and environment monitoring, FY-1C system has developed many kinds of products. Some examples are given below.

Figure 1 is an example of image mosaic from FY-1C in polar stereo-graphic projection over North Hemisphere.

Figure 2 is an example of three channels color image.

Figure 3 is an example of global vegetation index.

Figure 4 is the contour of OLR.

Figure 5 is an example of global SST.

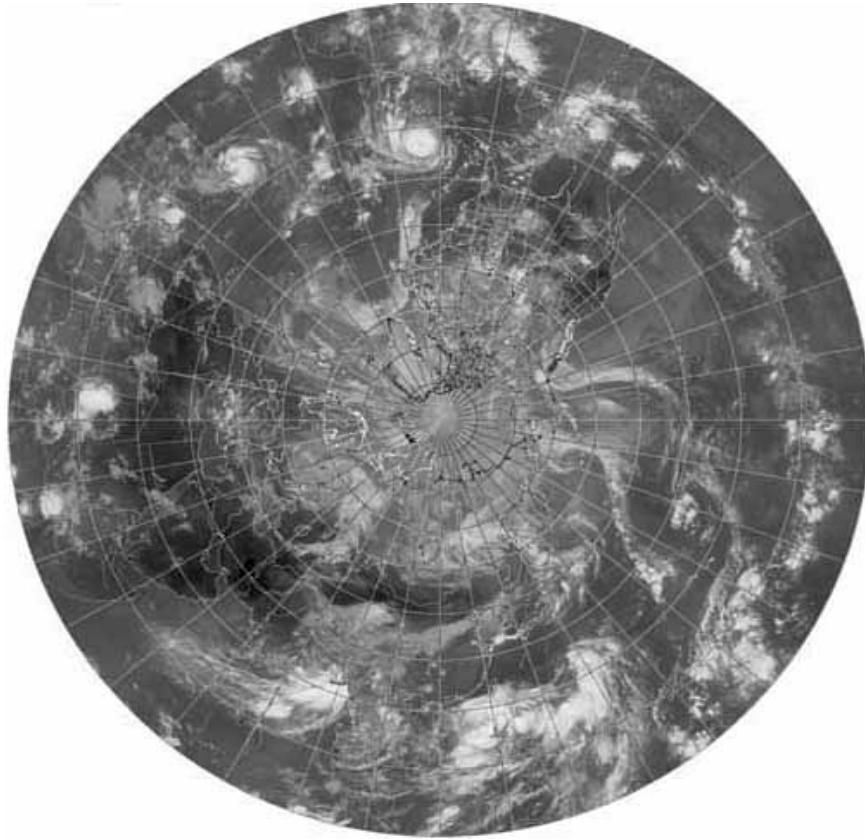Figure 6 is an example of snow cover by channel 1 and channel 6 data.

Figure 1 - Image mosaic of North Hemisphere from FY-1C
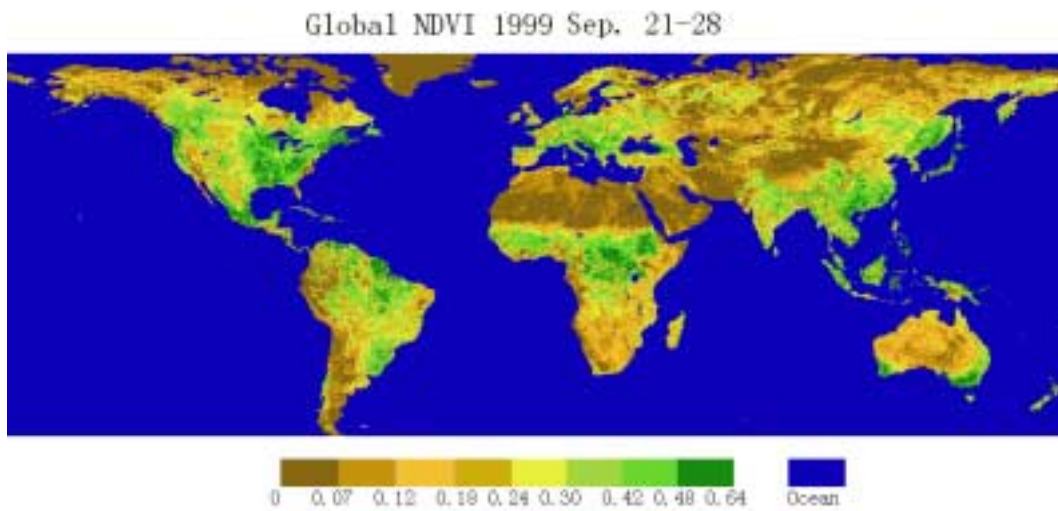
Figure 2. Example of three channel color image

Figure 3. Example of vegetation index in August 1999

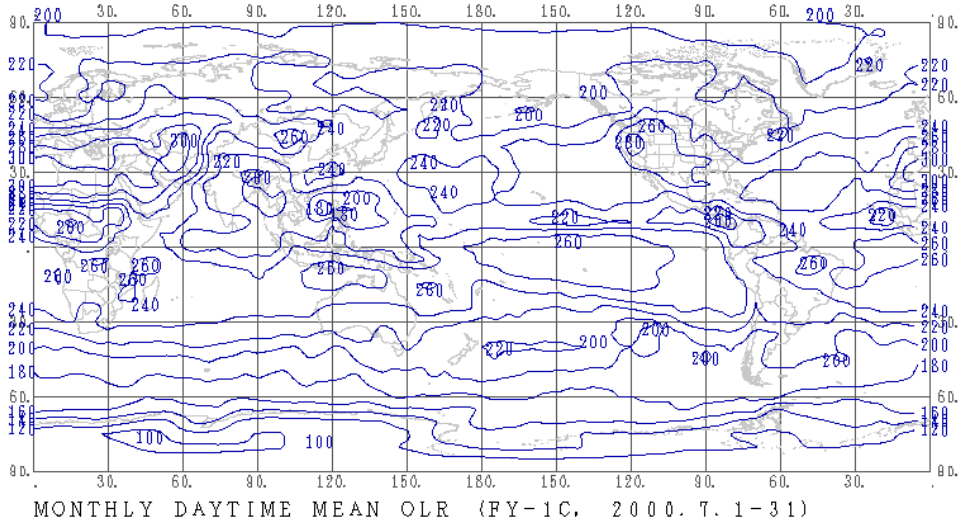MONTHLY DAYTIME MEAN OLR (FY-1C, 2000.7.1-31)

Figure 4. Example of global OLR.
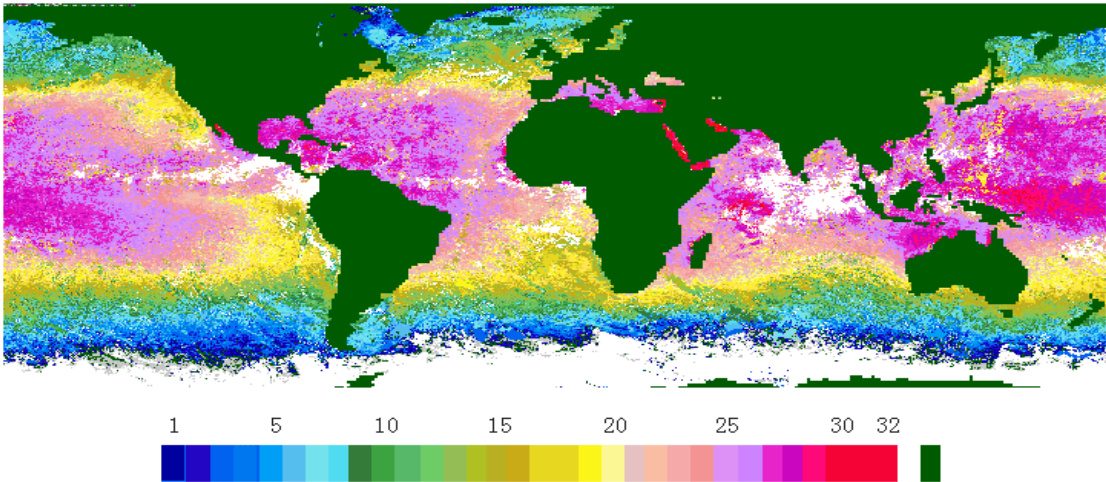
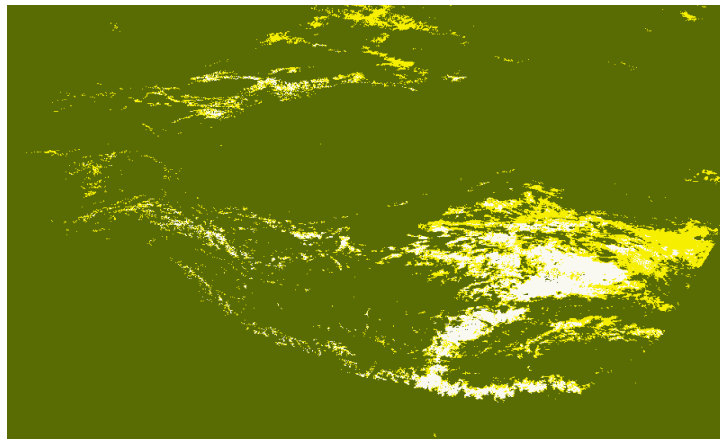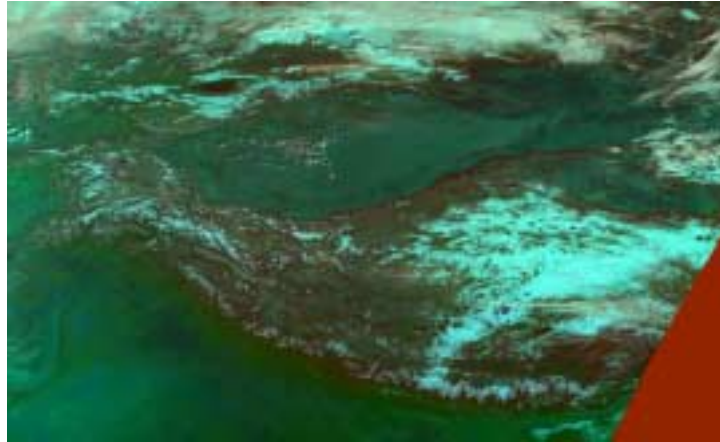风云一号 (FY-1C) 全球 SST

1999.9(21-30)

Figure 5. Example of global SST

Figure 6. Example of snow cover over Tibet