

## **MTSAT-1R Observation and Dissemination Schedule**

This paper reports on the observation and the dissemination schedule for SDUS/MDUS of MTSAT-1R, which JMA will start its operation in the spring of 2004.

## MTSAT-1R Observation and Dissemination Schedule

JMA plans to start ~~the operations~~ of MTSAT-1R, the successor of the GMS-5, in the spring of 2004. ~~The meteorological functions~~ of MTSAT-1R will be improved in comparison with ~~that those~~ of GMS-5, ~~namely, MTSAT-1R has~~ an additional infrared channel with wavelength 3.7 $\mu$ m (IR4) will be onboard, and the quantization level of image data ~~is to~~will be ~~improved~~enhanced.

~~Draft~~ A draft version of MTSAT-1R observation schedule and dissemination schedule for Small-scale Data Utilization Station (SDUS) and Medium-scale Data Utilization Station (MDUS) are shown in Figure 1. ~~This schedule will be valid until March 2005.~~

In March 2005, Weather Facsimile (WEFAX) service for SDUS will be terminated, and at the same time High Rate ~~information~~ Information Transmission (HRIT) for MDUS will be introduced. The draft schedules shown in Figure.1 are valid until the change in March 2005. The dissemination schedules for these services are under preparation and will be duly announced to the users when determined.

### 1. OBSERVATION SCHEDULE

MTSAT-1R daily observation is basically comprised of hourly ~~Full~~ full-Disk ~~disk~~ observations (FD) and ~~subsequent supplemental Northern~~ northern-Hemisphere ~~hemisphere~~ observations (NH). ~~Three successive half-disk images of NH and Southern Hemisphere observation (SH) are also observed every~~ Every 6 hours (00, 06, 12, 18 UTC)~~ly~~, two northern-hemisphere observations and two southern-hemisphere observations are performed before and after the full-disc observation respectively to obtain three successive 15 minute-interval half-disk images used to ~~in order to~~ derive satellite wind motion vectors, i.e. 2 NH + 1 FD + 2 SH. ~~A draft version of observation schedule is shown in Figure 1.~~

### 2. DISSEMINATION SCHEDULE FOR SDUS

The Low Rate Information Transmission (LRIT) is employed as a new digital data dissemination service ~~measure of MTSAT-1R for SDUS and will be introduced when MTSAT-1R is in operation in the spring of 2004.~~ The data dissemination by LRIT will start in the spring of 2004 concurrently with other services of MTSAT-1R. ~~Until March 2005, both LRIT and~~ The current dissemination service of WEFAX ~~are~~ will be continued available in the same frequency band and time-sharing with LRIT until March 2005 taking account of users' smooth transition to the LRIT reception. The parts indicated by "SDUS" in the Figure 1 shows the ~~according to a time sharing dissemination schedule to allow SDUS users to prepare their receiving facilities.~~ A draft version of dissemination schedule for SDUS is

~~shown in Figure 1 of LRIT and WEFAX until March 2005.~~

·LRIT

The planned contents of LRIT dissemination ~~will be limited to MTSAT-1R images only.~~ There will be the full earth's disk of normalized geostationary projection and three different areas of polar-stereographic projection, i.e. a) East Asia, b) the northeast of Japan and c) the southwest of Japan. Figure 2 shows the area in of each image.

The document ~~on of~~ "JMA LRIT ~~mission-Mission specific-Specific implementation-Implementation~~" is available on the following JMA web page.

[http://mscweb.kishou.go.jp/general/future\\_plan/LRIT.pdf](http://mscweb.kishou.go.jp/general/future_plan/LRIT.pdf)

·WEFAX

Although WEFAX service will be continued ~~when MTSAT-1R is in~~ the operation of MTSAT-1R, its dissemination time will be about 10 minutes later than the present one due to the ~~time-time~~-sharing dissemination with LRIT. This service will be terminated in March 2005. It contains four-sectorized ~~the earth's full-disk~~ earth -images and polar-stereographic projection images over the Far East area including Japan. The area of each image is shown in Figure 3.

### 3. DISSEMINATION SCHEDULE FOR MDUS

The current Stretched-VISSR (S-VISSR) dissemination will be replaced with the High Resolution Imager Data (HiRID) dissemination for MDUS ~~when MTSAT-1R is in operation~~ in the spring of 2004 concurrently with the start operation of MTSAT-1R. All full disk images and northern/southern hemisphere images will be disseminated in the HiRID dissemination. The parts indicated by "MDUS" in the Figure 1 shows the A-draft ~~version of its~~ dissemination schedule ~~is also shown in Figure 1 of HiRID.~~

High Rate information Transmission (HRIT) dissemination will be introduced in addition to HiRID in March 2005 with time-sharing method. Dissemination schedule after the introduction of HRIT service is under preparation and will be duly announced when determined.

·HiRID

~~HiRID is new data format for MDUS.~~ The dissemination data format of HiRID is designed to have upper compatibility with S-VISSR in order to reduce the impact for ~~the receiving system of~~ MDUS users. The new infrared channel image data (IR4, 10bits)- and the lower 2 bits of the other infrared channels are added to the end of ~~HiRID-S-VISSR~~ format. By Appropriate modifying-modifications to the hardware and software ~~appropriately, will allow the~~ users ~~will be able to~~ utilize the additional IR4 channel data and more precise infrared data with the ~~level resolution of 10-bit~~ quantizations. The document on MTSAT HiRID technical information can be downloaded from the following JMA web page.

[http://mscweb.kishou.go.jp/general/future\\_plan/MTSAT\\_HiRID\\_Technical\\_Information.pdf](http://mscweb.kishou.go.jp/general/future_plan/MTSAT_HiRID_Technical_Information.pdf)

·HRIT

HRIT will be introduced in order to disseminate image data at original resolution and at original quantization level to MDUS. -

The document ~~on~~ of “JMA HRIT ~~mission~~ Mission specific ~~Specific implementation~~ Implementation” is available on the following JMA web page.

[http://mscweb.kishou.go.jp/general/future\\_plan/HRIT\\_1.pdf](http://mscweb.kishou.go.jp/general/future_plan/HRIT_1.pdf)

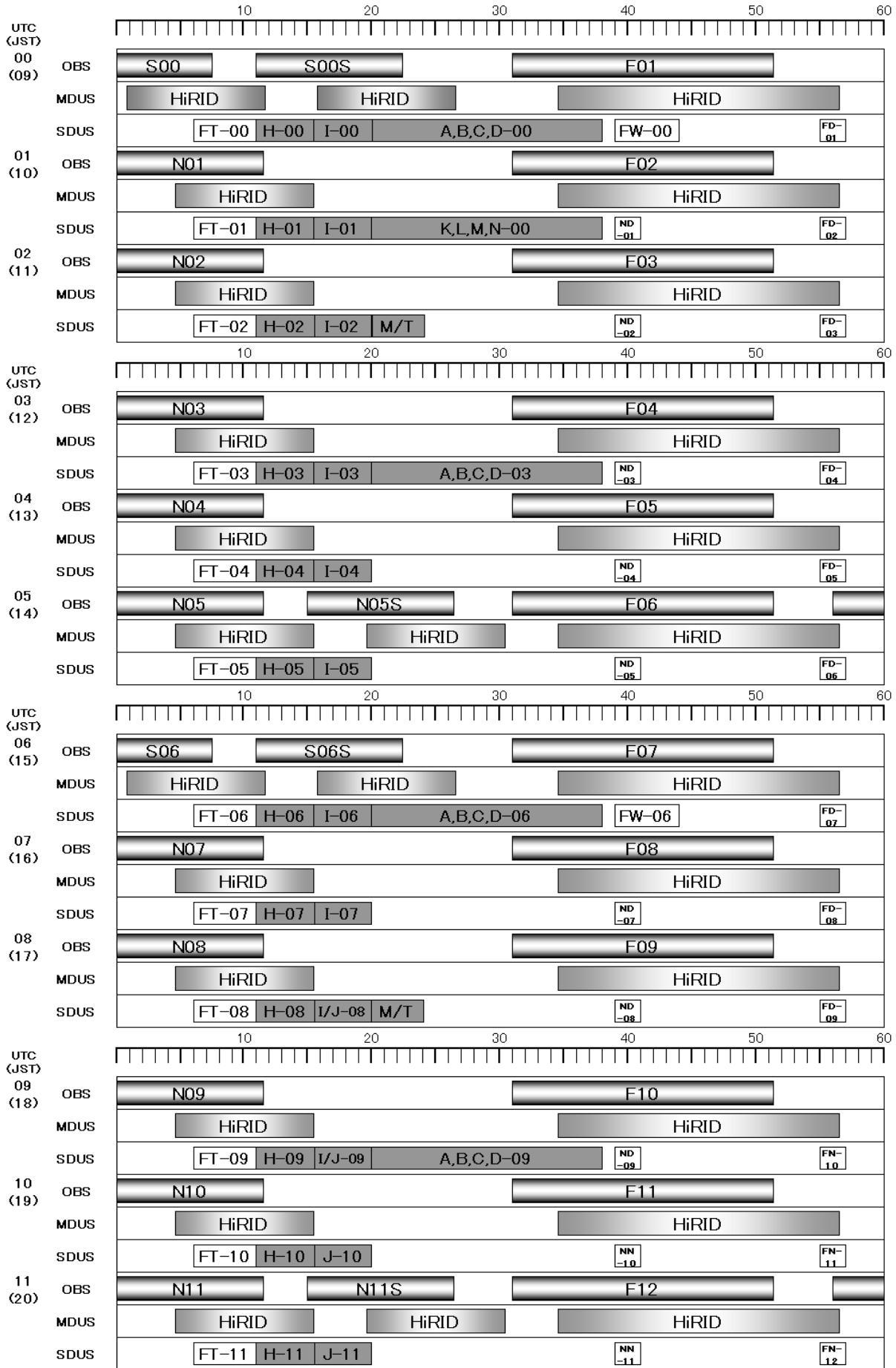


Figure 1-1 MTSAT-1R Observation and Dissemination Schedule for 2004 (Draft)

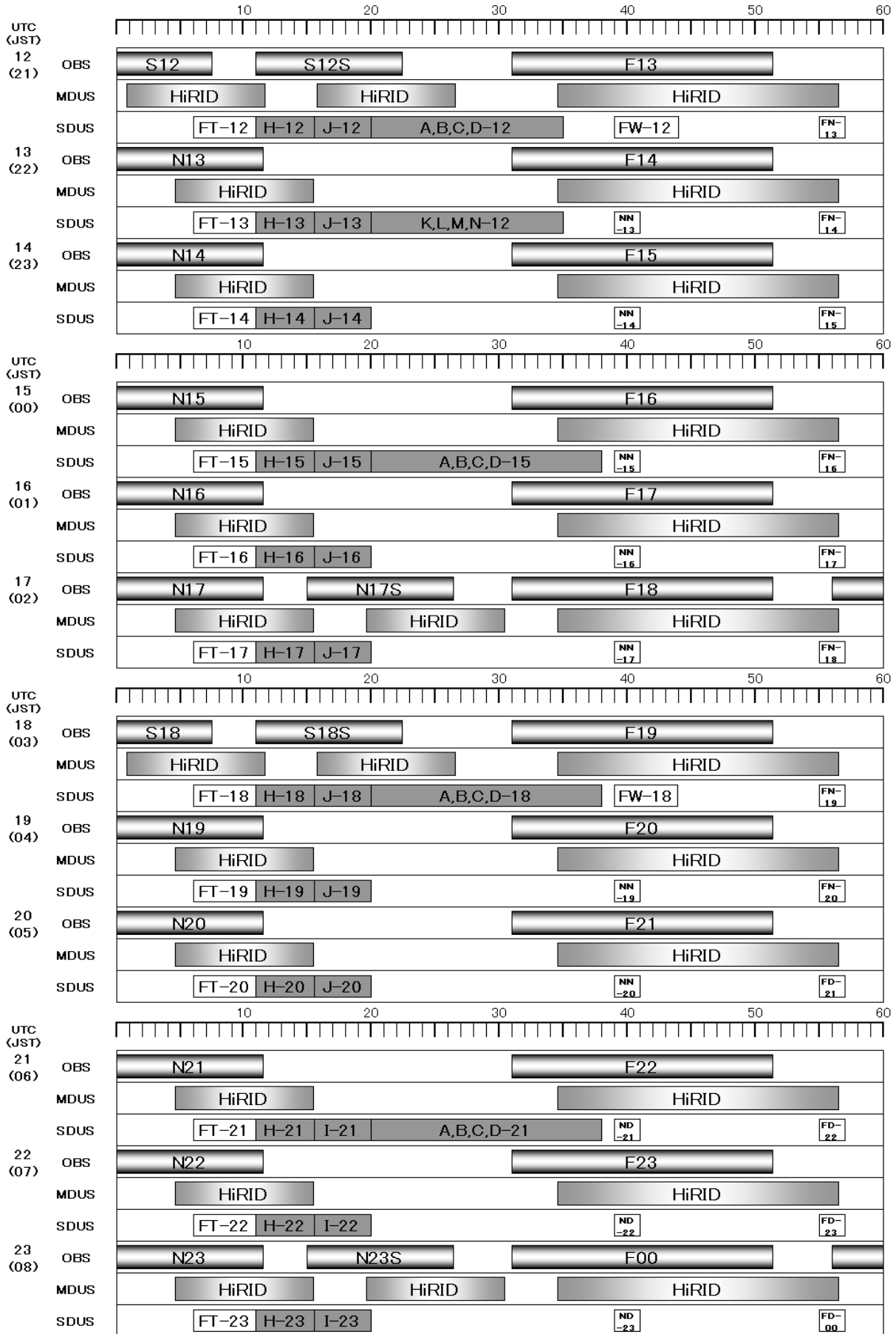


Figure 1-2 MTSAT-1R Observation and Dissemination Schedule for 2004 (Draft)  
 (Explanation of acronyms in the schedule is shown in Appendix)

**Explanation of Acronyms in MTSAT-1R Observation and Dissemination Schedule**

## 1) Imager observation

F : Full Disk observation

N : North Hemisphere observation

S : South Hemisphere observation

NhhS : North Hemisphere secondary observation at hh UTC

ShhS : South Hemisphere secondary observation at hh UTC

## 2) WEFAX dissemination

4-sectorized full disk images

□A, B, C, D : Infrared images (IR1)

□K, L, M, N : Water vapor images (IR3)

Polar-stereographic projection

I : Visible images (VIS)

H : Infrared images (IR1)

J : Enhanced Infrared images (ENHANCED IR1)

M/T : MANAM/TEST pattern

## 3) LRIT dissemination

FT : Full Disk images of thermal infrared channel (IR1)

FW : Full Disk images of water vapor channel (IR3)

FD : Polar-stereographic projection derived from daytime Full Disk images  
(AT+AW+AV+NV+SV)FN : Polar-stereographic projection derived from nighttime Full Disk images  
(AT+AL+AW)ND : Polar-stereographic projection derived from daytime North Hemisphere images  
(AT+AV+NV+SV)NN : Polar-stereographic projection derived from nighttime North Hemisphere images  
(AT+AL)

□AT : East-Asia area of thermal infrared channel (IR1)

AW : East-Asia area of water vapor channel (IR3)

AL : East-Asia area of low-level cloud channel (IR4)

AV : East-Asia area of visible channel (VIS)

NV : Northeast-Japan area of visible channel (VIS)

SV : Southwest-Japan area of visible channel (VIS)

## 4) HiRID dissemination

F : Full Disk observation

N : North Hemisphere observation

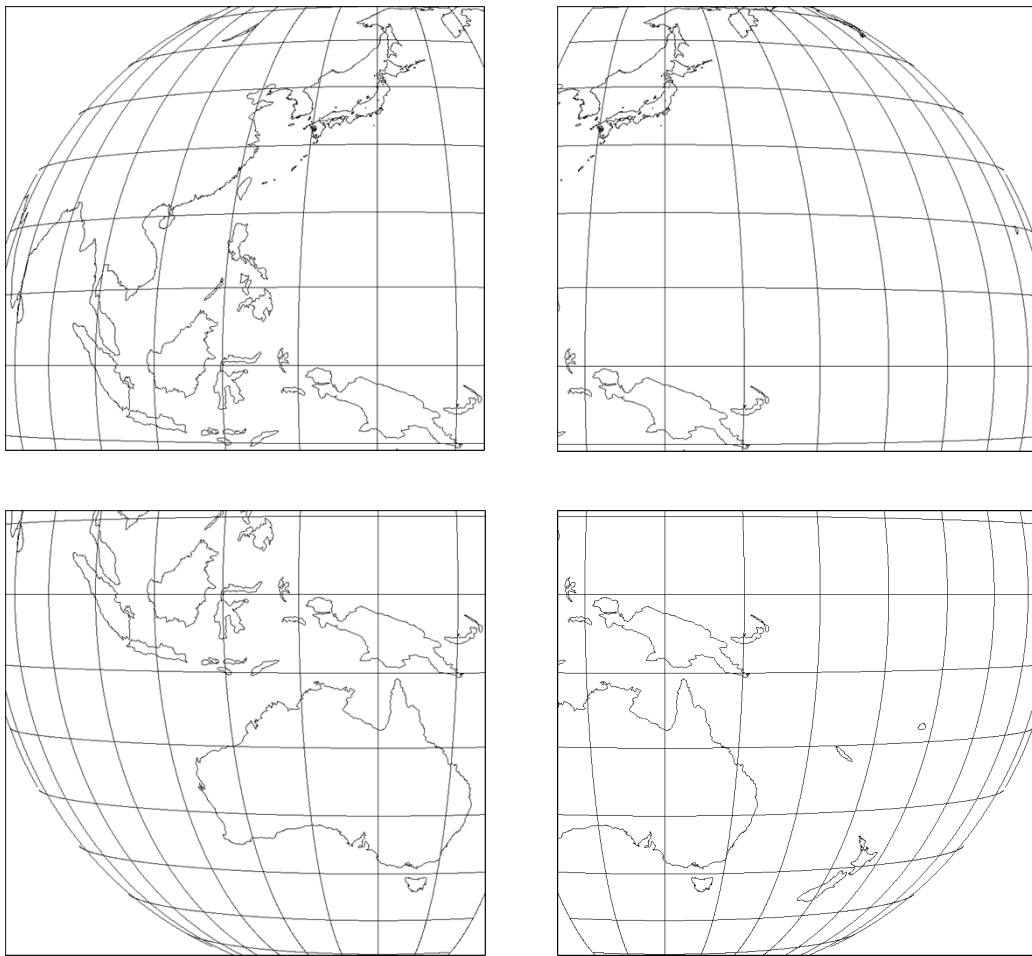
S : South Hemisphere observation

NhhS : North Hemisphere secondary observation at hh UTC

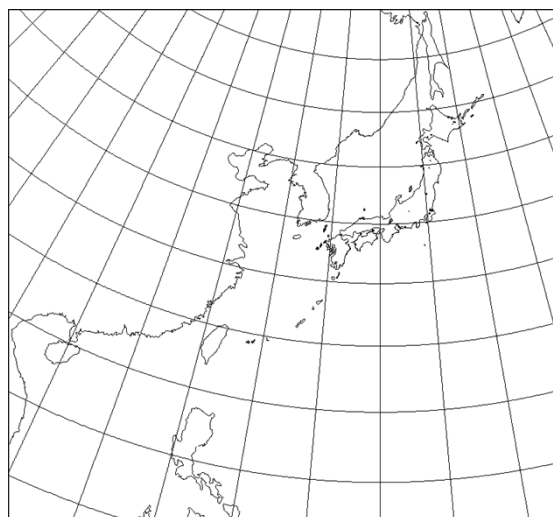
ShhS : South Hemisphere secondary observation at hh UTC







a) four-sectorized the earth's full disk



b) the Far East area including Japan

Figure 3. Same as Figure 2 in a) four-sectorized the earth's full disk images and b) polar-stereographic projection images over the Far East area including Japan in WEFAX.