

ACTIONS TOWARD THE LEONID METEOR STORMS

The purpose of this document is to present the operations carried out in November 1998 to protect the GMS from the Leonid Meteor Storms and their results. The planned activities in 1999 are also described.

Actions toward the Leonid Meteor Storms

1. Activities held in 1998

The Leonid Meteor Storms were predicted to be very intensive in the middle of November 1998. The Japan Meteorological Agency (JMA) and the National Space Development Agency (NASDA) performed a special monitoring of the satellites in the period.

As the GMS-5 and 4 are spin-stabilized satellites, the advantage of maneuvering the satellite to minimize the surface of projection toward the Leonid Meteor Storms was small, and no maneuvers were carried out. JMA and NASDA carefully monitored the telemetry and the images during the storms. NASDA collected the accelerometer data continuously to monitor the attitude nutation of the GMS-5 and 4. Monitoring activities in the period are shown in Figure 1.

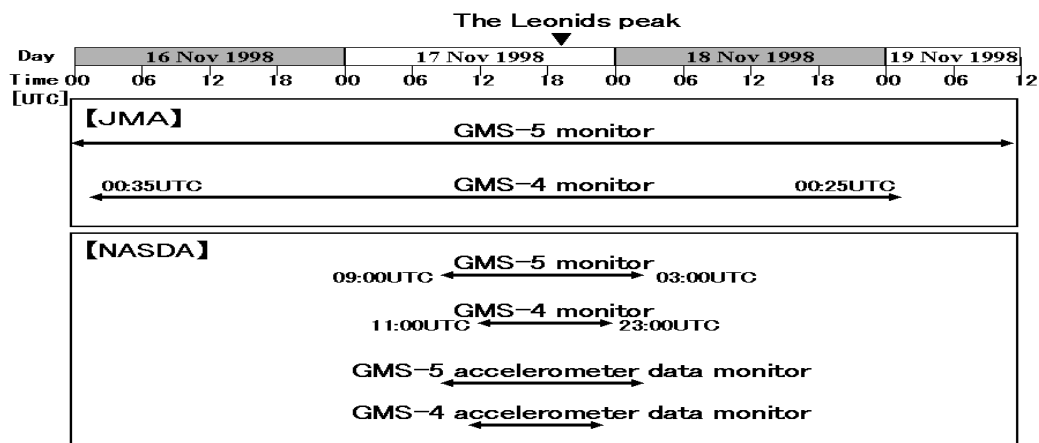


Fig 1: Monitoring Activities of GMS-5,4

2. The results of monitoring

In the period, no status errors, no acceleration, or no telemetry alarms were detected. It is concluded that the storms did not cause any damage to the GMS-5 and 4.

3. Operational plan toward the Leonid Meteor Storms in 1999.

It is predicted that the Leonid Meteor Storms will be very intensive in the middle of November 1999, again. JMA and NASDA will carry out similar monitoring of the GMS-5 and 4 as performed in 1998. As MTSAT is a three-axis stabilized geostationary satellite, it is planned to orient the plane of the solar array parallel to the direction of meteors during the peak activity period to minimize the probability of direct impact.