

CGMS-XXVII  
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**REPORT ON THE STATUS OF FUTURE GEOSTATIONARY METEOROLOGICAL  
SATELLITE SYSTEM**

This paper provides a summary of the future plans for  
GOES Satellites.

## REPORT ON THE STATUS OF FUTURE GEOSTATIONARY METEOROLOGICAL SATELLITE SYSTEM

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### 1 -Introduction

In the current constellation, GOES-8 (launched April 13, 1994) continues to provide data at GOES-EAST beyond its five year expected life. GOES-9 (launched May 23, 1995) was replaced as the operational GOES-WEST satellite by GOES-10 (launched April 25, 1997) when GOES-9's momentum wheels showed signs consistent with lubrication starvation seen on other vehicles which failed shortly thereafter. GOES-9 is a limited life on-orbit spare. When GOES-L is launched it will become a full-capability on-orbit spare to be activated when needed.

### 2 -GOES L and M Development

GOES-L was delivered to Cape Canaveral in December, 1998 for a planned Spring 1999 launch, but will be launched no earlier than November, 1999. On May 4, 1999, a Delta-III rocket experienced a failure of its second stage engine RL-10B-2 engine. Two RL-10A-4 engines, which are very similar, are used for the Centaur stage of the GOES-L launch vehicle. A flight constraint was placed on the GOES-L engines pending results of the failure investigation. The failure mechanism is thought to be a rupture of a structure surrounding the thrust chamber. When the GOES-L rocket no longer has the flight constraint then GOES-L can be launched.

GOES-M is being manufactured and has special accommodations for a Solar X-ray Imager (SXI). GOES-M is scheduled to be available for launch in October 2001, with a planned in the 2002 time frame. The SXI instrument will stare at the Sun continuously and provide images in up to eight X-ray energy bands. Other instrumentation is similar to that on GOES-10. However, one important change is in the Imager channels. One channel at 12.0 micrometers will be replaced with one at 13.3 micrometers in order to better establish the height of winds for tropical storm predictions and for more accurate cloud optical properties. In addition, the horizontal resolution of the 6.7 micrometer water vapor channel will be improved from 8 km to 4 km.

### 3 -GOES N, O, P, and Q

The GOES N-Q program is in the design stage with the Critical Design Review (CDR) scheduled for September 1999. The first set on Imager and Sounder instruments is scheduled for delivery in early 2000. The completed GOES-N spacecraft is scheduled to be available for launch in October 2001 and GOES-O in April 2003.

Plans are to continue on with the present five channel Imagers and filter wheel Sounders on GOES-N, O, and P. Horizontal resolution of these Imagers will be improved to 4 km in all IR channels, including the 13.3 micrometer channel. Beginning with GOES-Q, the first of an eight to ten channel Advanced Baseline Imager (ABI) and an interferometer-type Advanced Baseline

Sounder (ABS) will be flown. At least four sets of ABI/ABS instruments are anticipated.