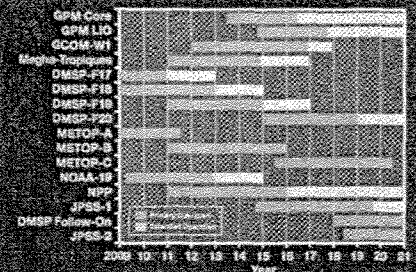
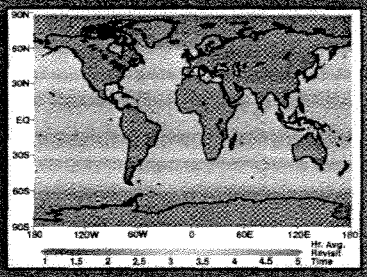
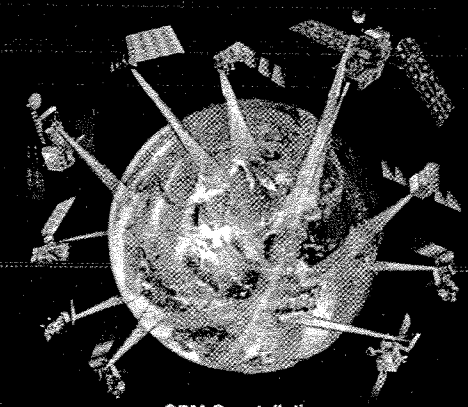
GPM
Global Precipitation Measurement

Launch Schedule



GPM Constellation Sampling & Coverage





GPM Constellation

GPM (2015): <3 hours revisit time over 91% of globe

GPM Mission Capabilities

- Advanced radar/radiometer system on the Core Observatory to unify and refine precipitation measurements from constellation radiometers
- Global coverage with mean sampling intervals of 2-4 hours
- Next-generation (inter-calibrated) global precipitation products
- Near real-time data for immediate societal applications

Mission Science Objectives

- Advance precipitation measurement capability from space
- Improve knowledge of precipitation systems, water cycle variability, and fresh water availability
- Enhance climate modeling and prediction
- Advance weather prediction and 4-D climate reanalysis
- Improve hydrometeorological modeling and prediction

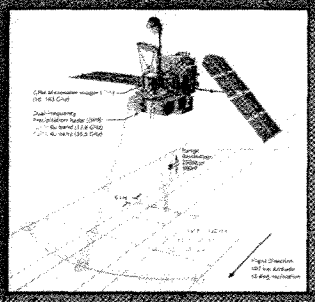
GPM Observatory Geometry

Combined Radar-Radiometer Cloud Database

- DPR and GMI together provide greater constraints on possible solutions to improve retrieval accuracy
- Improved a-priori cloud database for constellation radiometer retrievals

GPM Microwave Imager (GMI) 10-183 GHz

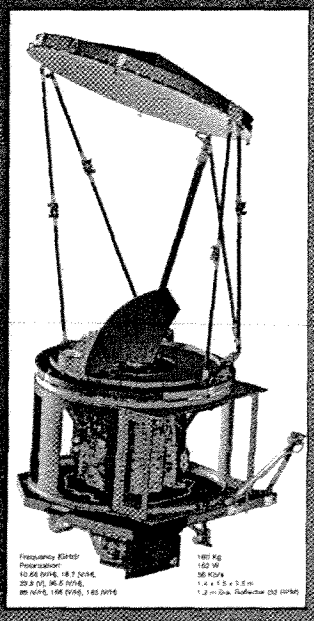
- Passive microwave radiometer with hot and cold calibration
- 4-point calibration to serve as a radiometer reference for constellation radiometers
- High spatial resolution
- Improved measurement sensitivity to light rain
- Improved signals of solid precipitation over land (especially over snow-covered surfaces)



Dual Precipitation Radar (DPR) Ku-Ka band

- Ku-PR similar to TRMM; KaPR added for GPM
- Provides three-dimensional measurements of cloud structure, precipitation particle size distribution (PSD) and precipitation intensity and distribution
- Increased sensitivity (~11 dBZ) for light rain and snow detection

GPM Microwave Imager (GMI)



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43" x 90"