

Status of ESA programs contributing to precipitation estimates

CGMS is informed about ESA's programs with a potential contribution to precipitation estimates.

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1.- INTRODUCTION

The 'ESA Living Planet Programme' describes the plans of the European Space Agency (ESA) for a strategy for Earth Observation in the new millennium. It marks an era for European Earth Observation based on smaller more focused missions and a programme that is user driven, covering the whole spectrum of interests ranging from scientific and research-driven Earth Explorer missions through to application-driven Earth Watch missions. Within this programme the various types of missions considered include research and demonstration missions. Earth Watch type missions refer to missions which will finally be taken over by an operational organisation. Meteosat Second Generation (MSG) and Metop are examples of that kind. Earth Explorer type missions either address Earth Observation research topics or demonstrate a new technique scientifically as well as technically. Two types of Earth Explorer missions can be distinguished, namely 'opportunity' and 'core' missions. Opportunity missions are smaller mission which are implemented in relatively short time, i.e. launch within 2.5 years after the end of Phase B, lead by a Lead Investigator. Core missions are larger and ESA lead.

More information about the Living Planet Programme can be found at reference [1]

2.- EUROPEAN CONTRIBUTION TO GPM (EGPM)

The European contribution to GPM (EGPM) mission would be an integral part of the global precipitation measuring (GPM) mission. The goal of the GPM mission is to provide precipitation rate on ground accurately and frequently from space with global coverage. The mission focuses on light rain and solid precipitation. The GPM objectives aim at measuring precipitation on a global basis with sufficient quality, Earth coverage, and sampling to improve prediction of the Earth's climate, weather, and specific components of the global water cycle. This will be accomplished by making substantive improvements with respect to the present-day observations in global precipitation observations, specifically improvements in measurement accuracy and precision, sampling frequency, spatial coverage, and spatial resolution. The EGPM mission goal is to provide precipitation rate on ground accurately and regularly from space with globally with special emphasis on Europe and Canada.

EGPM is a mission consisting of a single satellite in a sun-synchronous low Earth orbit, which carries a scanning, thirteen channel precipitation microwave radiometer at frequencies between 18.7 and 150 GHz and a precipitation radar at 35 GHz to provide global rainfall observations. EGPM would be an element of the Global Precipitation Measurement (GPM) mission, a joint NASA-NASDA mission proposal, which would comprise a 'core' satellite, carrying a two-frequency precipitation radar and a multi-channel precipitation radiometer, and a number of smaller satellites with only a precipitation radiometer on each. EGPM will be placed on a descending sun-synchronous orbit with 14:30 LST. The EGPM satellite will be placed in an orbit of 510 to 520 km altitude for a mission duration of 3 years.

The launch of EGPM spacecraft will be decided once it has been selected.

More information about EGPM can be found at reference [4] and at reference [5] about GPM.

3.- REFERENCES

- [1] <http://www.esa.int/livingplanet>
- [4] <http://www.esa.int/export/esaLP/egpm.html>
- [5] <http://gpm.gsfc.nasa.gov>