# No. 51545. United States of America and Japan

EXCHANGE OF NOTES CONSTITUTING AN AGREEMENT **BETWEEN** THE OF GOVERNMENT THE UNITED STATES **AMERICA** AND OF THE GOVERNMENT OF **JAPAN** CONCERNING COOPERATION ON THE FORMULATION **ACTIVITY** OF **GLOBAL** PRECIPITATION **MEASUREMENT** PROGRAM. (GPM) WASHINGTON, 10 JUNE 2005 [United Nations, Treaty Series, vol. 2965, I-51545.]

MEMORANDUM OF UNDERSTANDING BETWEEN THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION OF THE UNITED STATES OF AMERICA AND THE JAPAN AEROSPACE EXPLORATION AGENCY FOR COOPERATION ON THE FORMULATION ACTIVITY OF THE GLOBAL PRECIPITATION MEASUREMENT PROGRAM. WASHINGTON, 21 JUNE 2005, AND TOKYO, 27 JUNE 2005

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# Nº 51545. États-Unis d'Amérique et Japon

ÉCHANGE DE NOTES CONSTITUANT UN ACCORD ENTRE LE GOUVERNEMENT DES ÉTATS-UNIS D'AMÉRIQUE ET LE GOUVERNEMENT DU CONCERNANT LA COOPÉRATION DANS LE CADRE DES ACTIVITÉS DE FORMULATION DU PROGRAMME DE MESURE **DES PRÉCIPITATIONS** MONDIALES. WASHINGTON, 10 JUIN 2005 [Nations Unies, Recueil des Traités, vol. 2965, *I-51545*.]

MÉMORANDUM D'ACCORD **ENTRE** L'ADMINISTRATION NATIONALE DF. L'AÉRONAUTIQUE ET DE L'ESPACE DES ÉTATS-UNIS D'AMÉRIQUE ET L'AGENCE D'EXPLORATION AÉROSPATIALE DU JAPON CONCERNANT LA COOPÉRATION DANS LE CADRE DES ACTIVITÉS DE FORMULATION DU PROGRAMME DE MESURE DES PRÉCIPITATIONS MONDIALES. Washington, 21 juin 2005, et Tokyo, 27 JUIN 2005

Entrée en vigueur: 27 juin 2005 par signature, conformément à l'article XIV

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# MEMORANDUM OF UNDERSTANDING

#### BETWEEN

# THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION OF THE UNITED STATES OF AMERICA

AND

THE JAPAN AEROSPACE EXPLORATION AGENCY

FOR

COOPERATION ON THE FORMULATION ACTIVITY OF THE GLOBAL PRECIPITATION MEASUREMENT PROGRAM

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#### **PREAMBLE**

The National Aeronautics and Space Administration of the United States of America (NASA) and the Japan Aerospace Exploration Agency (JAXA) (hereinafter jointly referred to as the "Parties") having expressed their mutual interest in a Global Precipitation Measurement (GPM) program (hereinafter referred to as the "Program");

Desiring to pursue cooperation in the observation of precipitation and the water cycle from space for peaceful purposes; and

Pursuant to paragraph 1 of the agreement between the Government of the United States of America and the Government of Japan concerning the cooperation on the Formulation Activity of the Program, effected by the exchange of notes on June 10, 2005, (hereinafter referred to as the "Exchange of Notes");

Have agreed as follows:

#### I. PURPOSE

The purpose of this Memorandum of Understanding (MOU) is to establish the terms and conditions under which the Parties will cooperate in the Formulation Activity of the Program for peaceful purposes. This MOU does not constitute a commitment by either Party to proceed to full implementation, which is done after the Formulation Activity of the Program. A subsequent MOU for full implementation of the Program would be expected to be concluded between the Parties only after both Parties have each received authorization to proceed from their respective Governments.

#### II. DESCRIPTION OF THE GPM MISSION

The GPM mission, the main part of which is the Program, is intended to be a follow-on to the current Tropical Rainfall Measuring Mission (TRMM), and will expand its observations from the tropics and subtropics to the entire globe, improve observing frequency, produce a global precipitation map updated every 3 hours, and enhance measuring methods to identify rain and snow by using a dual-frequency precipitation radar (DPR). The data acquired by the GPM mission are expected to be beneficial for monitoring and predicting climatological and meteorological changes and for improving the accuracy of weather and precipitation forecasts. The GPM mission is expected to provide sufficient measurement sampling to provide high quality rainfall accumulation products needed by many disciplines, including hydrology, meteorology, oceanography and climate model validation.

It is expected that the GPM mission will include a core spacecraft carrying a DPR to be provided by JAXA, based on joint research with the National Institute of Information and Communications Technology (NICT) of Japan, and a multi-channel passive microwave radiometer (a GPM Microwave Imager (GMI)) to be provided by NASA. It is also expected that the GPM mission architecture will include an international constellation of satellites carrying passive microwave radiometers.

The GPM DPR, GMI, core spacecraft, and its launch, are expected to be provided through a partnership between NASA and JAXA. Other foreign partners may be invited to participate in the GPM mission. Foreign partners may offer hardware for the constellation satellites, ground validation sites, supporting instruments, data processing and distribution services, or supporting scientific research.

### III. MANAGEMENT AND PROGRAM COORDINATION

The Formulation Activity of the Program will be managed jointly by NASA and JAXA.

The principal points of contact for each Party in the performance of this MOU are designated below:

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# IV. RESPONSIBILITIES

## A. NASA shall use reasonable efforts to:

1. Develop jointly with JAXA the GPM mission concept and architecture;