

# Unmanned Satellites on Postage Stamps:

## 38. The Solar Maximum Mission

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This is the thirty-eighth in a series of articles about un-manned satellites on postage stamps. This article features the Solar Maximum Mission (SMM) satellite. SMM was rocket-launched on 14 February 1980. It was subsequently captured, repaired, and re-launched by Space Shuttle Challenger (STS-41C) in April 1984.

SMM, or Solar Max for short, was the first spacecraft designed for in-space servicing. It was 4 m in length and fit into a 2.3 m circular envelope, but with two flattened sides. In December 1980 a fuse failure affected the attitude control system, so that it could no longer point the spacecraft precisely toward the sun. SMM was originally planned to be the first Shuttle-retrieved satellite, but that mission ended up being a much more ambitious repair and redeployment mission for Space Shuttle mission 41C. Astronauts had to first stop the spacecraft's slow rotation (1/6 rpm) and then attach a grapple fixture to enable the satellite to be captured. The repairs included replacing the attitude control module and replacing a failed electronics box for the coronagraph/polarimeter.

SMM was originally intended to be captured and returned to Earth, and to be refurbished as the Extreme UV Explorer (EUVE) satellite. But those plans were canceled after the loss of Space Shuttle mission 51L (Challenger) in January 1986. SMM subsequently re-entered the Earth's atmosphere

in December 1989. It had completed more than 5 years of observations after being repaired. (Other Space Shuttle missions involving un-manned satellites will be covered in future articles in this series.)

SMM carried 7 instruments to monitor solar activity and solar flares over a wide range of UV, X-ray, and gamma-ray wavelengths. As the name implied, it was intended to monitor the sun during a period of maximum activity in the sunspot cycle.

SMM, with all the publicity around its historic-first repair by the Space Shuttle, is featured on a large number of postage stamps, most of which focus on the Shuttle-repair aspect. Interestingly, SMM has also appeared on two coins, one from the Bahamas and the other from Morocco. Those are two of an increasing but small number of un-manned satellites to appear on either banknotes or coins.

A checklist of postal items identified as showing the SMM satellite is available at <http://rammb.cira.colostate.edu/dev/hillger/smm.htm>. The authors would like to hear from anyone who knows of additional postal items that may have been missed. The online information will be updated whenever new details are provided. E-mail correspondence with the authors is welcomed. Don Hillger can be reached at [don.hillger@colostate.edu](mailto:don.hillger@colostate.edu) and Garry Toth at [gmt.varia@gmail.com](mailto:gmt.varia@gmail.com).



Angola 1110f (Mi1449) One of MS6 (1110 (a-f)) (Mi1444-1449) 1999 "S.M.S. 1980 Missão Solar Máxima" (but not "SMS", as in incorrect part of text)



Central African Republic 659 (Mi1038A) 1984 SMM (STS-41C/Challenger repair)



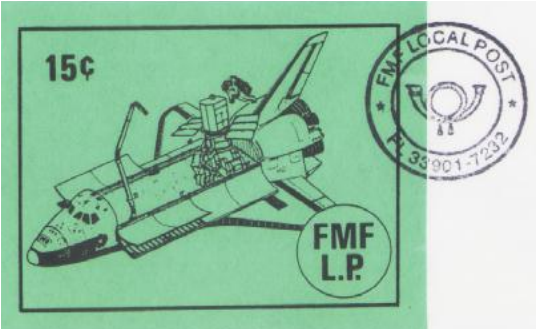
Gambia 2269b (Mi3705) One of MS6 (2269 (a-f)) (Mi3704-3709) 2000 "Solar Max" (SMM)



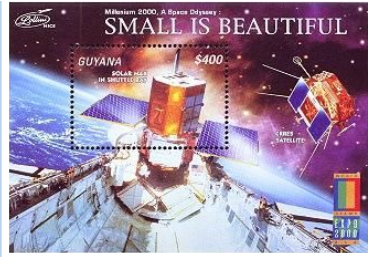
Central African Republic 761a (BL347A) In (right) margin of SS1 (761) 1985 SMM (STS-41C/Challenger repair)



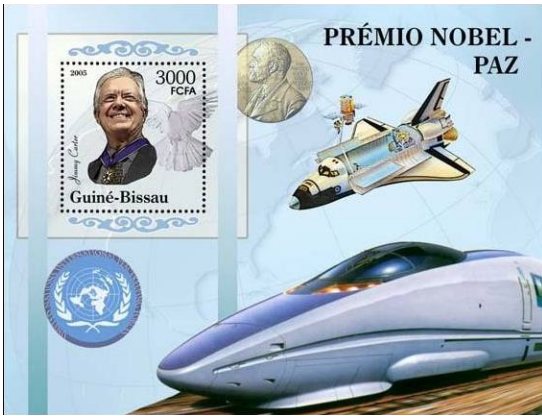
Egypt 1802 (Mi1534) 2001 SMM



Fort Myers FL (USA) Local Imperforate 1986 SMM  
(STS-41C/Challenger repair)



Guyana 3506 (BL674) On stamp of  
SS1 2000 "Solar Max" (SMM, STS-  
41C/Challenger repair)



Guinea-Bissau BL532 In (right) margin of SS1 2005  
SMM (STS-41C/Challenger repair)



Italy 2073 (Mi2427)  
1996 SMM



India (Tanapex) cancel on cover 1996 SMM