UN-MANNED: SATELLITES ON POSTAGE STAMPS: THE METEOSAT SERIES

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This is the sixth in a series of articles about un-manned satellites on postage stamps. This article features the satellites in the European Meteosat (meteorological satellite) series. Meteosat-1 was launched on 22 November 1977 and the series continued through Meteosat-7 launched 2 September 1997. There have been no launch failures in the Meteosat series, but the satellites have had varying operational lifetimes.

The Meteosat series was originally developed and operated by the European Space Agency (ESA). In 1986 the responsibility for operation of Meteosat was transferred to EUMETSAT (European Meteorological Satellite organization). Following the first three Meteosats, Meteosat-4 through 6 were part of the Meteosat Operational Program (MOP-1 through 3). Meteosat-7 was in the Meteosat Transition Program (MTP), followed by a new series called Meteosat Second Generation (MSG), the first of which was launched on 28 Aug. 2002. At least two more MSG satellites will be launched in the next few years. All Meteosats were launched into geosychronous orbits at the required 35,800 km (23,300 mi.) altitude where they remain stationary with respect to the Earth.

The primary Meteosat sub-satellite point is 0° longitude over the equator to view most of Europe and Africa. Other operational satellites are placed both west and east of that point to provide additional coverage of the Earth. The complete series, with launch dates, is presented on the our website: **http://www.cira.colostate.edu/ramm/hillger/satellites.htm.**

A table of all postal items known to show the Meteosat series accompanies this article is also available on the website. The website includes images of most of the stamps in the table, and images of several postal items showing Meteosats are also included in this article. Meteosats have a fundamentally different design than the current U.S

GOES series geostationary weather satellites, which are three-axis stabilized. Meteosats are cylindrical spin-stabilized spacecraft, with cameras that view the Earth during only a small fraction of each spin. Images of the Earth are constructed from successive scan lines as the camera steps to the next line with each spin. First-generation Meteosat instrumentation included a 3-spectral-band imager that collected full-disk images of the Earth every half-hour. Visible images were available at 2.5 km resolution, while infrared and water vapor images were at 5 km resolution. With the MSG series the imager now has 12 spectral bands in the visible and infrared. High-resolution visible imagery is now available at 1 km spatial resolution, while the resolution of the infrared and water vapor imagery is 3 km at the sub-satellite point. Full-disk infrared images of the Earth can be obtained every 15 minutes. With this advance in instrumentation, MSG will remain ahead of the U.S. in geostationary weather satellite imagery until the next GOES series is launched in 2012. The development of this series of satellites is currently taking place.

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Checklist of Postal Items Showing Meteosat

Country	Cat. No.*	Type**	Year	Notes***
Austria	1857		2001	Meteosat
Bulgaria	3612		1991	Meteosat
Cen. African Rep.	C234		1980	Meteosat
Cen. African Rep.	BL95	S/S (C234)	1980	Meteosat
Cen. African Rep.	535		1982	Meteosat
Cen. African Rep.	Bl203	S/S-1 (535)	1982	Meteosat
Cen. African Rep.	1171c	Part S/S-4 ((1171a-d)	1997	Meteosat-1
Chad	708d	Part S/S-6 (708-a-f)	1997	Meteosat
Ciskei	193		1992	Meteosat
Comoro Islands	387		1978	Meteosat

Comoro Islands	BL185	S/S-1 (387)	1978	Meteosat
Comoro Islands	392 BL183	S/S-1 (392)	1978	Meteosat
Comoro Islands	768		1991	Meteosat full-disk image[1]
Comoro Islands	BL350	S/S-1 (768)	1991	Meteosat full-disk image[1]
Congo Peoples Rep.	961		1992	Meteosat-5/MOP-2
Congo Peoples Rep.	BL-89	S/S-1 (961)	1992	Meteosat-5/MOP-2
Cyprus	960		2000	Meteosat
France	1903		1983	Meteosat
Germany (East)	2850		1990	Meteosat full-disk image[1]
Great Britain - Jersey	561		1991	Meteosat
Ivory Coast	955		1994	Meteosat full-disk image[1]
Korea (North)	Mil527	Part S/S-7+label	1976	Early-concept Meteosat
Korea (North)	MiA1527	Part S/S-7+label, Mil527 overprint	1977	Early-concept Meteosat
Liechtenstein	956		1991	Meteosat
Mali	847a	Part S/S-4 (847a-d)	1996	Meteosat-5/MOP-2
Mali	847b	Part S/S-4 (847a-d)	1996	Meteosat-5/MOP-2
Morocco	464		1980	Meteosat
Mozambique	946		1985	Meteosat
Niger	393		1977	Early-concept Meteosat
Niger	Unknown	Part S/S-6 (?-?)	2000?	Meteosat
Slovenia	425	MS9 (9X425) + Meteosat label	2000	Meteosat
Swaziland	423		1983	Meteosat full-disk image[1]
Turkey	2331		1985	Meteosat

*_Scott_ number, unless indicated with Mi or BL for _Michel_

**S/S# = souvenir sheet, MS# = miniature sheet, # = number of stamps in sheet; numbers in parentheses are the _Scott_ numbers of the stamps in the sheet.

***MOP = Meteosat Operational Program (MOP-1 to 3 = Meteosat-4 to Meteosat-6)

[1]On these stamps the Meteosat images are color-coded using false colors. The satellites do not provide true color images.

We will continue this series on un-manned satellites on postage stamps in future issues.