Unmanned Satellites On Postage Stamps

21. The OSO Series

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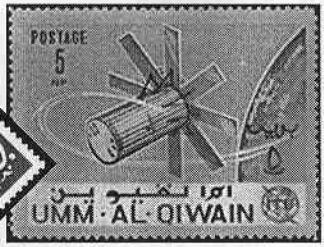
This is the twenty-first in a series of articles about un-manned satellites on postage stamps. This article features the **Orbiting Solar Observatory** *(OSO)-series satellites. Eight OSO satellites were successfully launched, starting with OSO-1 on 7 March 1962 and ending with* OSO-8 on 23 June 1975. There was one launch failure, that of OSO-C in 1965.

The OSO series was intended for studies of solar physics (from above the earth's atmosphere), and to map the celestial sphere for direction and intensity of ultra-violet (UV) light, X-rays and gamma radiation. OSO-1 was the first satellite to have specifically-pointed instruments and onboard tape recorders for data storage. Each OSO satellite was composed of two sections: a nearly semi-circular "sail" section with solar panels, and a 9-sided "wheel" section that spun like a gyroscope at 30 rpm to stabilize the satellite. Some instruments on the sail pointed at the sun at all times, while other instruments on the wheel scanned the sun every two seconds when the sun was in view. OSO orbits were near-circular, generally around 500 km high and with a 33° inclination to the equator.

OSO-1 through 7 were basically identical, with dimensions of about 1 m in diameter and 1 m in height, but with increasing mass as instruments were added or became more complex. An Advanced OSO (AOSO) was intended to continue the study of solar phenomena, but was cancelled and replaced by an improved OSO series, of which OSO-8 was the only one to be launched. AOSO was to be a radically different design with a cylindrical body and 8 solar panels attached to one end. However, OSO-8 reverted to a two-part design somewhat similar to the previous OSOs, but with a much larger solar panel and a cylindrical spinning body.

OSO-1/7 (some with specific numbers) and OSO-8 are identified on several postal items listed in the checklist below. Surprisingly, AOSO is also featured on a stamp issued by Umm Al Qiwain in 1966 (Michel 78) and overprinted in 1967 (Michel 89) with new currency values. This is an unusual case of a satellite being featured in a stamp design, but failing to be built and orbited.



Checklist of OSO-series Satellites Postal Items

Country	Catalog #*	Type of Item	Year	Notes
Antigua and Barbuda	702	In margin of SS1	1983	OSO-8
Barbuda	577	Margin of SS1, Antigua 702 ovrprntd	1983	OSO-8
Central Africa Republic	1175b	One of SS4 (1175a-d)	1997	OSO-1
Gambia	2269d	One of MS6 (2269a-f)	2000	OSO-1/7[1]
Gambia	2269d imp essay	One of MS6 (2269a-f) imperforate essay	2000	OSO-1/7[1]
Micronesia	344b	One of MS20 (344a-t)	1999	OSO-1
Panama	457B (Mi780)		1964	OSO-1
Paraguay	922 (Mi1522)		1966	OSO-1/7[1]
Paraguay	i922 (Mi1530)	Changed colors on imperforate	1966	OSO-1/7[1]
Paraguay	926) (Mi1526		1966	OSO-1/7[1]
Paraguay	i926 (Mi1534)	Changed colors on imperforate	1966	OSO-1/7[1]
Paraguay	926a (BL79)	SS1	1966	OSO-1/7[1]
Paraguay	i926a (BL80)	SS1 (changed colors on imperforate)	1966	OSO-1/7[1]
Satellite Beach Florida, USA	Local	set-C03 (blue)	1964	OSO-1/7[1]
Satellite Beach Florida, USA	Local	set-C03 (blue) overprinted in gold	1965	OSO-1/7[1]
Sharjah	48		1964	OSO-1/7[1]
Sharjah	48A	48 overprinted new currency	1967	OSO-1/7[1]
Tanzania	1323		1994	OSO-8
Togo	501		1964	OSO-1/7[1]
Togo	503		1964	OSO-1/7[1]
Togo	505a	Imperforate SS4 (502-505)	1964	OSO-1/7[1]
Umm Al Qiwain	Mi78		1966	AOSO[2]
Umm Al Qiwain	Mi89	Mi78 overprinted new currency	1967	AOSO[2]
Yemen Arab Republic	C90 C90 DS	Also imperforate deluxe sheet	1982	OSO-1/7[1]

**Scott catalog number, unless prefixed with Mi or BL for Michel; "i" prefix denotes imperforate version.*
SS# = souvenir sheet, MS# = miniature sheet # is number of stamps in sheet; numbers in parentheses are catalog numbers of the stamp(s).
1- OSO-1 through OSO-7 are all basically identical. 2 - The AOSO (Advanced OSO) program was canceled.

Readers are referred to the authors' website for images of OSO satellites, as well as launch covers and postal items featuring these satellites. A checklist is presented both here and on the Website, to accompany this series of articles, at: www.cira.colostate.edu/ramm/hillger/satellites.htm E-mail correspondence is welcome. Don Hillger can be reached at hillger@ cira.colostate.edu and Garry Toth at garry_toth@hotmail.com.