

# Un-manned Satellites on Postage Stamps : 21

By Guest Contributors Don Hillger and Garry Toth

## The OSO Series

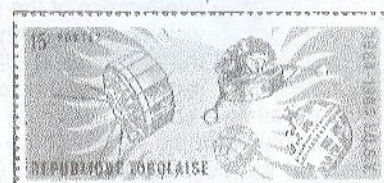
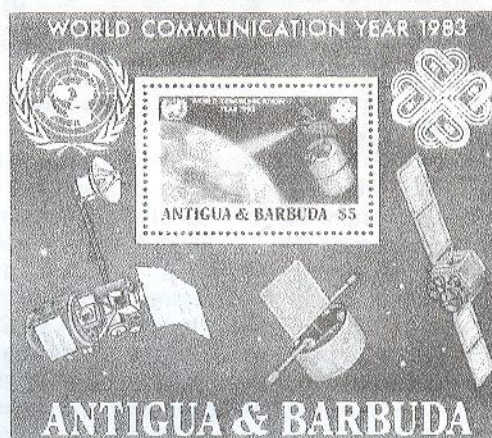
This is the twenty-first in a series of articles about un-manned satellites on postage stamps. This article features the **Orbiting Solar Observatory (OSO)**-series satellites. Eight OSO satellites were successfully launched, starting with OSO-1 on 7 March 1962 and ending with OSO-8 on 23 June 1975. 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 in altitude 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. Surprisingly, AOSO is also featured on a stamp issued by Umm Al Qiwain in 1966 (Michel 78 shown below right) 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.

A checklist of postal items showing OSO-series satellites (<http://www.cira.colostate.edu/ramm/hillger/OSO.htm>) is available on the Website developed by the authors for the un-manned satellites featured in this series of articles (<http://www.cira.colostate.edu/ramm/hillger/satellites.htm>). E-mail correspondence is welcome. Don Hillger can be reached at [hillger@cira.colostate.edu](mailto:hillger@cira.colostate.edu) and Garry Toth at [garry\\_toth@hotmail.com](mailto:garry_toth@hotmail.com).

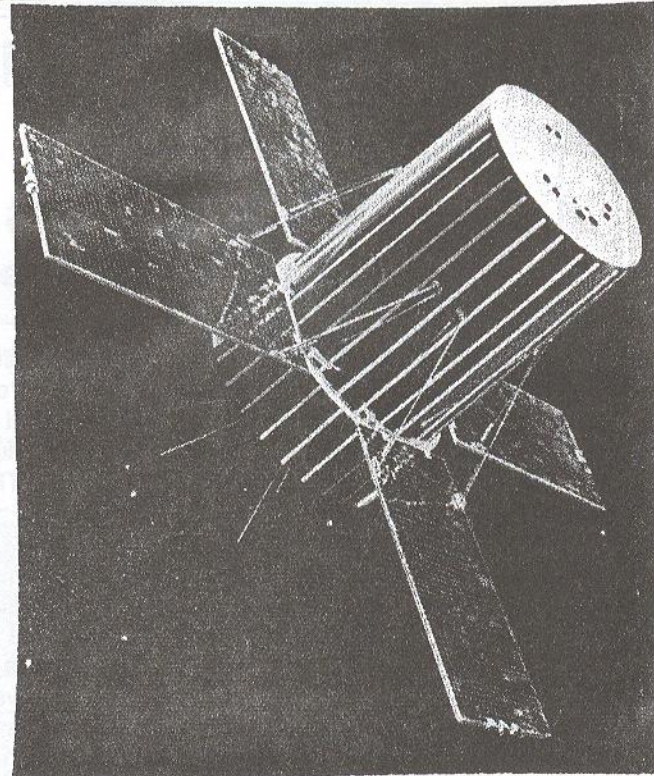


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## Orbiting Solar Observatory (OSO) series satellites

Country	Catalog Number*	Type of Item**	Year of Issue	Notes on Content
Antigua and Barbuda	<u>702</u>	In margin of SS1	1983	OSO-8
Barbuda	<u>577</u>	In margin of SS1, Antigua 702 overprinted	1983	OSO-8
Central Africa Republic	<u>1175b</u>	One of MS4 ( <u>1175a-d</u> )	1997	OSO-1
Gambia	<u>2269d</u>	One of MS6 ( <u>2269a-f</u> )	2000	OSO-1/7 <sup>1</sup>
Gambia	<u>2269d imp essay</u>	One of MS6 ( <u>2269a-f imperforate essay</u> )	2000	OSO-1/7 <sup>1</sup>
Micronesia	<u>344b</u>	One of MS20 ( <u>344a-t</u> )	1999	OSO-1
Panama	<u>457B (Mi780)</u>		1964	OSO-1
Paraguay	<u>922 (Mi1522)</u> <u>i922 (Mi1530)</u>	Changed colors on imperforate	1966	OSO-1/7 <sup>1</sup>
Paraguay	<u>926 (Mi1526)</u> <u>i926 (Mi1534)</u>	Changed colors on imperforate	1966	OSO-1/7 <sup>1</sup>
Paraguay	<u>926a (BL79)</u> <u>i926a (BL80)</u>	SS1 (changed colors on imperforate)	1966	OSO-1/7 <sup>1</sup>
Satellite Beach FL (U.S.)	<u>Local</u>	set-C03 (blue)	1964	OSO-1/7 <sup>1</sup>
Satellite Beach FL (U.S.)	<u>Local</u>	set-C03 (blue) overprinted in gold	1965	OSO-1/7 <sup>1</sup>
Sharjah	<u>48</u>		1964	OSO-1/7 <sup>1</sup>
Sharjah	<u>48A</u>	48 overprinted new currency	1967	OSO-1/7 <sup>1</sup>
Tanzania	<u>1323</u>		1994	OSO-8
Togo	<u>501</u>		1964	OSO-1/7 <sup>1</sup>
Togo	<u>503</u>		1964	OSO-1/7 <sup>1</sup>
Togo	<u>505a</u>	Imperforate MS4 (502-505)	1964	OSO-1/7 <sup>1</sup>
Umm Al Qiwain	<u>Mi78</u>		1966	AOSO <sup>2</sup>
Umm Al Qiwain	<u>Mi89</u>	Mi78 overprinted new currency	1967	AOSO <sup>2</sup>



OSO satellite illustrated from *The Observer's Spaceflight Directory* by Reg Turnill (Warne 1978)



*Orbiting Observatories*

**OSO-2**  
ORBITING  
ASTRONOMICAL  
OBSERVATORY

launched into orbit carrying eleven telescopes to give man his first clear look at the stars.

CAPE KENNEDY, FLORIDA  
December 7, 1968