

Un-manned Satellites on Postage Stamps : 22

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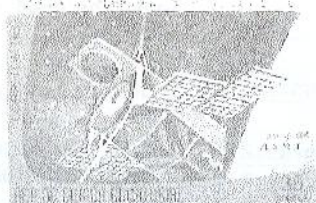
Orbiting Astronomical Observatory (OAO)

This is the twenty-second in a series of articles about un-manned satellites on postage stamps. This article features the **Orbiting Astronomical Observatory (OAO)** series satellites. Three OAO satellites were successfully launched, starting with OAO-1 on 8 April 1966, and ending with OAO-3 on 21 August 1972. There was one mission failure, that of OAO-B in 1970, when a shroud failed to separate from the spacecraft.

The OAO satellites were intended to make precision astronomical observations and to measure the absorption and emission characteristics of stars, planets, nebulae, and interplanetary and interstellar space at wavelengths ranging from the visible to gamma rays. A three-axis stabilization system allowed accurate pointing of the spacecraft after a star tracker acquired a guide star.

All the OAOs were of a similar design with an octahedral body and two large solar panels, one on each side of the spacecraft. However, the details of the individual spacecraft varied enough to make them distinguishable from each other to some degree. According to reference images, the following details, which are different among the OAOs, were used to classify the images seen on the postal items listed in the checklist that accompanies this article:

OAO-1 has an opening flap/lid with ears, and broad L-shaped solar panels.



N.B. erroneous caption on stamp referring to "Cosmos 894"

OAO-2 has an opening flap/lid with ears, and rectangular solar panels. In the checklist, several postal items were designated as OAO-2 based on their rectangular solar panels, despite the fact that they all show a rounded opening flap/lid without ears. This discrepancy may be due to the fact that OAO-2 was capable, with different instruments, of viewing out of both ends of the spacecraft. In some cases one end may be featured, and in other cases the opposite end is shown.

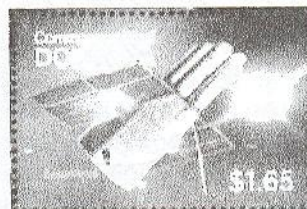


OAO-B has a smooth angled-off sun shroud, a smaller tube attached to the larger sun shroud, and rectangular solar panels.



OAO-B with smooth angled-off sun shroud

OAO-3 (also called **Copernicus**) has an angled-off sun shroud, that sun shroud has ridges (or what appear to be multiple smaller tubes), and rectangular solar panels.



Four images of OAO-3 Aka "Copernicus"



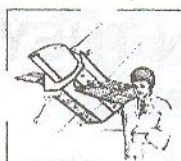
Besides OAO-3, the Copernicus name has been associated with two other satellites: the Russian scientific satellite Interkosmos-9 is also called **Kopernik-500**, and the German communications satellite DFS (Deutscher Fernmelde Satellit) is called **Kopernikus**. Neither of those is included in this article, and should not be confused with OAO-3.

All of the OAOs can be found on postage stamps, with OAO-3 / Copernicus most commonly featured.

A checklist of postal items showing OAO series satellites (<http://www.cira.colostate.edu/ramm/hillger/OAO.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 and Garry Toth at garry_toth@hotmail.com



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Orbiting Astronomical Observatory (OAO) series satellites

Below is a checklist of Orbiting Astronomical Observatory (OAO) series satellite postal items (stamps, souvenir sheets, aerogrammes, postal cards, etc.). Catalog numbers, years of issue, and notes on the satellites featured are given when available. For a complete list of satellites see the OAO-series table on the astronomical/telescope satellites page. If readers know of additional information or images, please contact the authors using the e-mail addresses at the bottom of this page.

Country	Catalog Number*	Type of Item**	Year of Issue	Notes on Content
Benin	502		1980	OAO-3 / Copernicus
Central Africa Republic	1174a	One of MS4 (1174a-d)	1997	OAO-3 / Copernicus
Chad	709a	One of MS6 (709a-f)	1997	OAO-B (not OAO-3 / Copernicus) ³
Chad	923		2001	OAO-3 / Copernicus
Chad	923a	SS1 (923)	2001	OAO-3 / Copernicus
Chad	923b	MS4 (4x 923)	2001	OAO-3 / Copernicus
Dominica	2237c	One of MS6 (2237a-f)	2000	OAO-3 / Copernicus
Equatorial Guinea	Mi1276		1978	OAO-1 (not Kosmos-894) ²
Gambia	799		1988	OAO-3 / Copernicus
Ghana	166a	In margin of imperforate MS4 (4x 166)	1964	OAO-2 ¹
Liberia	657		1973	OAO-3 / Copernicus
Maldive Islands	488	SS1	1974	OAO-3 / Copernicus
Mali	C301		1977	OAO-1
Poland	None	Cancel	1973	OAO-3 / Copernicus
Poland	1979	single + label	1973	OAO-3 / Copernicus
Poland	1979a	MS6 (6x 1979) + 2 labels	1973	OAO-3 / Copernicus
Poland	2248a	On selvedge of MS6 (6x 2248) + 2 labels	1977	OAO-3 / Copernicus
Poland	2366		1979	OAO-3 / Copernicus
Poland	2369a	MS5 (2365-2369) + label	1979	OAO-3 / Copernicus
Satellite Beach FL (U.S.)	Local	set-C10 (blue)	1964	OAO-1
Satellite Beach FL (U.S.)	Local	set-C10 (blue) overprinted in gold	1965	OAO-1
Sharjah	42		1964	OAO-2 ¹
Sharjah	42A	42 overprinted new currency	1967	OAO-2 ¹
Togo	500		1964	OAO-1
Togo	504		1964	OAO-1
Togo	505a	Imperforate MS4 (502-505)	1964	OAO-1
United Nations (Geneva)	46 fdc	Cachet on FDC	1975	OAO-3
United States	None	Cachet on OGO-5 launch cover	1968	OAO-2 ¹
United States	1488 fdc	Cachet on FDC	1973	OAO-B (not OAO-3 / Copernicus) ³
United States	None	Cancel on postal card	1973	OAO-3
Yemen Arab Republic	C86 C86 ds	Also imperforate deluxe sheet	1982	OAO-2 ¹

* Scott catalog number, unless prefixed with Mi or BL for *Michel*; "ds" prefix denotes deluxe sheet.

** FDC = first day cover; SS# = souvenir sheet, MS# = miniature sheet, where # = number of stamps in sheet, and the numbers in parentheses are the catalog numbers of the stamps in the sheet.

¹ These items are labeled as OAO-2 satellites based on the rectangular solar panels.

² OAO-1, not Kosmos-894 as indicated on this item.

³ OAO-B, not OAO-3 / Copernicus as indicated on these items.