

Un-manned Satellites on Postage Stamps : 30

By Guest Contributors Don Hillger and Garry Toth

The D-Series

Portions of this article and accompanying table were revised following its publication in *Astrophile*, based on feedback received from Gert Meinel.

This is the thirtieth in a series of articles about un-manned satellites on postage stamps. This article features the French **D-series** satellites. Seven D-series satellites were successfully launched, starting with D-1A on 18 February 1966, and ending with D-2B / SIGNE-3 on 17 June 1977. Two of the D-series satellites failed.

The first of the D-series, **D-1A / Diapason**, was a small satellite designed to make geodetic measurements using the Doppler delay of radio signals. The spacecraft body was a flat cylinder 20 cm high by 50 cm in diameter, with four solar panels, each attached to the body of the cylinder by two thin arms, like crabs attached by their pincers. Four antennas extended outward from one end of the cylindrical body. This general design was used for the rest of the D-1 and D-2 series, including D-1B which was cancelled as obsolete and unnecessary due to the extremely successful D-1A mission.

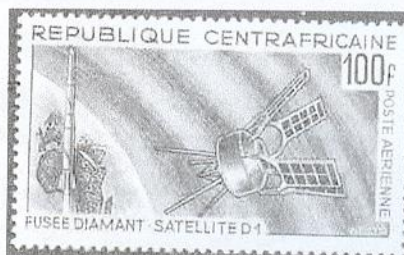
D-1C / Diademe-1 and D-1D / Diademe-2 were experimental geodetic missions as well, with dual-frequency Doppler transmitters and a retro-reflector array for laser telemetry.

D-2A (Tournesol and Polaire) were scientific satellites designed to detect hydrogen and measure solar ultraviolet radiation in outer space. They were larger versions of the D-1 series with cylindrical bodies 80 cm high by 70 cm in diameter. The solar panels extended 130 cm from the spacecraft axis. Polaire, intended to complement Tournesol using a more-inclined polar orbit, unfortunately failed to reach orbit.

D-2B / Aura carried both EUV (Extreme Ultra-Violet) experiments for solar and atmospheric investigations and UV experiments for stellar, zodiacal, and sky background observations. The Aura name for D-2B should not be confused with EOS-Aura which is one of the three U.S. Earth Observing System (EOS) satellites.

The **D-3 and D-4** names in this series either evolved into other spacecraft or were canceled outright.

D-5A / Pollux and D-5B / Castor were a pair of piggyback satellites. D-5A was a polyhedron with 26 faces, each containing a laser reflector. It had a diameter of 80 cm and was designed to study upper



atmospheric density variations, gravity field perturbations and micrometeoroid impacts. D-5B was a polyhedron with 14 faces, for testing of hydrazine propulsion systems. Eight of the faces were covered with solar cells.

SIGNE-3 (Solar Interplanetary Gamma-Neutron Experiment) was a D-2B type satellite placed into orbit by the Soviet Union under a cooperative agreement with France. One of the two experiments aboard was for gamma-ray astronomy and the other was for solar monitoring in two UV bands. SIGNE-3 was the last of the D-series spacecraft. Predecessors SIGNE-1 and SIGNE-2, instead of being independent spacecraft, were payloads on the Soviet Prognoz-2 and (possibly) Prognoz-6 spacecraft, respectively.

Many postal items show either the D-1 satellite or the D-2 and SIGNE-3 satellites. Most of the items showing D-1 were issued as a common design by different countries with varying denominations. Only three stamps show the D-5 satellites: D-5A on two stamps from French Southern and Antarctic Territories (*Scott* C49 and C52), and D-5B on a souvenir sheet from Upper Volta (*Scott* C184).

A checklist of postal items showing D-series satellites (<http://www.cira.colostate.edu/ramm/hillger/D-series.htm>) is available on the Un-manned Satellite Philately website developed by the authors (<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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D-series satellites

Country	Catalog Number*	Type of Item**	Year of Issue	Notes on Content
D-series				
Ajman	Mi260		1968	D-1
Central Africa Republic	C41 (Mi119)		1966	D-1
Central Africa Republic	597 (Mi954)		1983	D-1
Comoro Islands	C17 (Mi74)	CDT	1966	D-1
Congo (Republic)	C37 (Mi93)		1966	D-1
Congo (People's Republic)	643 (Mi871)		1982	D-1 (with last stage attached)
Cuba	2584 (Mi2733)		1983	D-1
Cuba	3019 (Mi3175)		1988	D-2B / SIGNE-3
Dominica	2238d (Mi2899)	One of MS6 (2238 (a-f))	2000	Diademe / D-1C/D
Ecuador	756 (Mi1283)	Only on (upper) selvedge in black	1966	D-1
Ecuador	756A (Mi1284)	On stamp and on (right) selvedge in black	1966	D-1
Ecuador	756B (Mi1285)	On stamp and on (upper) selvedge in red	1966	D-1
Ecuador	756c (BL29)	MS3 (756-756B), changed colors on imperforate	1966	D-1
Ecuador	757 (Mi1292)			
Ecuador	757A (Mi1293)	Only on (left) selvedge in black	1967	D-1
Ecuador	757B (Mi1294)			
France	1148 (Mi1539)	CDT		
France	1148 fdc1	Stamp and cachet on FDC	1966	D-1
France	1148 fdc2	Stamp and cachet (different) on FDC		
France	1835 fdc (Mi2335 fdc)	Cachet on FDC	1982	D-2B / SIGNE-3
France	None	Cinderella: CNEP 2000 Stamp Show	2000	D-2B / SIGNE-3
France	None	Cachet on Arabsat-4AR launch cover	2008	D-1
French Polynesia	C42 (Mi54)	CDT	1966	D-1
French Southern and Antarctic Territories	C11 (Mi35)	CDT	1966	D-1
French Southern and Antarctic Territories	C49 (Mi144)		1980	D-2B / SIGNE-3, D-5A / Pollux
French Southern and Antarctic Territories	C49 ds	Deluxe sheet		
French Southern and Antarctic Territories	C52 (Mi120)		1980	D-2B / SIGNE-3, D-5A / Pollux
French Southern and Antarctic Territories	C52 fdc	Stamp and cachet on FDC		
Ghana	307a (BL26)	fo (lower-right) margin of imperforate MS3 (305-307)	1967	D-1
Maldiv Islands	247 (Mi252)		1968	D-1
Maldiv Islands	252 (Mi257)		1968	D-1
Mali	C44 (Mi143)		1967	D-1
Mali	137 (Mi708)	Also MS10 (10x 337 + 5 labels)	1979	D-1 (with last stage attached)
Manama	Mi90A Mi90B		1968	D-1
Manama	Mi1213	One of strip of 5 (Mi1210-1214) from MS5 or MS50	1972	D-1
Mauritania	C32 (Mi277)		1966	D-1
Mozambique	Unknown (new issue) Unknown (imperf.)	SS1, also imperforate SS1		
Mozambique	Unknown fdc (new issue) Unknown fdc (imperf.)	SS1 and cachet on FDC, also imperforate FDC	2007	D-2B / Aura ¹
New Caledonia	C46 (Mi421)	CDT	1966	D-1
Nicaragua	1145 (Mi2264)		1982	D-2B / SIGNE-3
Niger	C61 (Mi127)		1966	D-1



Panama	474i (Mi954)		1966	D-1
Panama	474g (BL63) 474g (BL64)	SS1, changed colors on imperforate	1966	D-1
Panama	C365a (Mi1137)	One of MS6 (C365 (a-f)) and on (left and upper) selvedge	1969	D-1
Paraguay	C348 (BL194)	SS1	1972	D-2A
Philippines	BL2	SS1	1968	D-1
Philippines	BL2 (o/p)	SS1, BL2 overprinted "SNV"	1968	D-1
Ras Al Khaima	Mi319A		1969	D-1
Romania	2484 (Mi3190)	One of pair (2484a (2483-2484)), or five of MS10 (2484b (5x (2483-2484)))	1974	D-2B / SIGNE-3
Russia (USSR)	5061 (Mi5192)	From MS8 (5061a (8x 5061))	1982	D-2B / SIGNE-3
St. Pierre and Miquelon	C12 (Mi415)	CDT	1966	D-1
Senegal	C46 (Mi335)		1966	D-1
Somali Coast	C49 (Mi381)	CDT	1966	D-1
Tartari Republic	Local (500 value)	Cuba 3019 overprinted on 4x		
Tartari Republic	Local (1000 value)	Russia 5724		
Tartari Republic	Local (500 value)	Cuba 3019 overprinted on 4x		
Tartari Republic	Local (1000 value)	Russia 5728		
Tartari Republic	Local (500 value)	Cuba 3019 overprinted on 4x	1992	D-2B / SIGNE-3
Tartari Republic	Local (1000 value)	Russia 5984		
Tartari Republic	Local (500 value)	Cuba 3019 overprinted on 4x		
Tartari Republic	Local (1000 value)	Russia 6067		
Togo	596 (Mi562)		1967	D-1
Togo	598 (Mi564)		1967	D-1
Turkey	2503 (Mi2922)		1991	D-2A
Upper Volta	C38 (Mi216)		1967	D-1C
Upper Volta	C39 (Mi217)		1967	D-1D
Upper Volta	C69 (Mi268)	C39 overprinted in red	1969	D-1D
Upper Volta	C184 (BL23)	In (upper-left) margin of SS1	1974	D-5B / Castor
Wallis and Futuna Islands	C24 (Mi211)	CDT	1966	D-1
Yugoslavia	1045 (Mi1409)		1971	D-1

* Scott catalog number, unless prefixed with Mi or BL for *Milich*; "i" prefix denotes imperforate version.

** CDT = common design type; FDC = first day cover; SS# = souvenir sheet, MS# = miniature sheet.

<http://www.eira.colostate.edu/ramm/hillger/D-series.htm>

18/05/2005

