

Un-manned Satellites on Postage Stamps

30 – The D-Series Satellites

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*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-2 / 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 around 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.

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. It is not clear why there wasn't a D-1B satellite in this series.

D-2A (Tournesol and Polaire) were scientific satellites designed to detect hydrogen in the 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 was intended to complement Tournesol using a more-inclined polar orbit, but unfortunately it 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.

SIGNE-3 (Solar Interplanetary Gamma-Neutron Experiment) was a French D-2

satellite placed into orbit by the Soviet Union under a cooperative agreement. One of the two experiments aboard was for gamma-ray astronomy and the other was for solar monitoring in two UV bands. **D-2B** was the last D-series spacecraft. It was preceded by two D-5 satellites (described in the next paragraph). One can speculate that two satellites that might have been called SIGNE-1 and SIGNE-2 were planned, but no indication of them was found in the historical record.

D-5A / Castor and D-5B / Pollux 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. Also, note that some sources interchange the Castor and Pollux names for the A and B satellites.)

As a final comment on the D-series spacecraft, it is not clear why there were no D-3 or D-4 satellites, given that the D-1, D-2 and D-5 series did exist.

Many postal items show either the D-1 satellite or the D-2 and SIGNE-3 satellites. Most of the items showing D-1 have a common design except for different country names and denominations. Only three stamps show the D-5 satellites: D-5A on a souvenir sheet from the Upper Volta (Scott C184), and D-5B on two stamps from French Southern and Antarctic Territories (Scott C49 and C52). 

A checklist of postal items showing D-series satellites is on page 136 and also at <http://www.cira.colostate.edu/ramm/hillger/D-series.htm>, a website developed by the authors for un-manned satellites at <http://www.cira.colostate.edu/ramm/hillger/satellites.htm>
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D-Series Satellites on Postage Stamps



Checklist of French D-Series Satellite Postal Stamps, Souvenir Sheets and Mini-sheets

Country	Catalog No.	Type of Item	Issued	Notes
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)	Common Design	1966	D-1
Congo (Republic)	C37 (Mi93)		1966	D-1
Congo (People's Repub.)	643 (Mi871)		1982	D-1 (last stage attached)
Cuba	2584 (Mi2733)		1983	D-1
Cuba	3019 (Mi3175)		1988	D-2 / SIGNE-3
Dominica	2238d (Mi2899)	One of MS6 (2238a-f)	2000	Diademe / D-1C/D
Ecuador	756 (Mi1283)	Only on selvedge in black	1966	D-1
Ecuador	756A (Mi1284)	On stamp and on selvedge in black	1966	D-1
Ecuador	756B (Mi1285)	On stamp and on selvedge in red	1966	D-1
Ecuador	756c (BL29)	MS3 (756-756B)	1966	D-1
Ecuador	i756c (BL30)	MS3 (756-756B), changed colors	1966	D-1
Ecuador	757 (Mi1292)		1967	D-1
Ecuador	757A (Mi1293)		1967	D-1
Ecuador	757B (Mi1294)	Only on selvedge in black	1967	D-1
France	1148 (Mi1539)	Common Design	1966	D-1
France	None	Cinderella: CNEP 2000 Stamp Show	2000	D-2 / SIGNE-3
French Polynesia	C42 (Mi54)	Common Design	1966	D-1
French South. Antarctica	C11 (Mi35)	Common Design	1966	D-1
French South. Antarctica	C49 (Mi144)		1980	D-2 / SIGNE-3, D-5B
French South. Antarctica	C49 ds	Deluxe sheet	1980	D-2 / SIGNE-3, D-5B
French South. Antarctica	C52 (Mi120)		1980	D-2 / SIGNE-3, D-5B
Ghana	307a (BL26)	On lower-right margin 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	337 (Mi708)	Also MS10 (10x 337 + 5 labels)	1979	D-1 (last stage attached)
Manama	Mi90A/Mi90B		1968	D-1
Manama	Mi1213	1 of strip of 5 (Mi1210-1214)	1972	D-1
Mauritania	C52 (Mi277)		1966	D-1
Mozambique	New issue	SS1	2007	D-2B / Aura*
Mozambique	New issue	SS1 Imperforate	2007	D-2B / Aura*
New Caledonia	C46 (Mi421)	Common Design	1966	D-1
Nicaragua	1155 (Mi2264)		1982	D-2 / SIGNE-3
Niger	C61 (Mi127)		1966	D-1
Panama	474E (Mi954)		1966	D-1
Panama	474g (BL63)	SS1	1966	D-1
Panama	i474g (BL64)	SS1, changed colors on imperforate	1966	D-1
Panama	C365a (Mi1137)	One of MS6 (C365(a-f)) + on 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)	1 of pair (2484a (2483-2484))	1974	D-2 / SIGNE-3
Romania	2484b	5 of MS10 (5x 2483-2484)	1974	D-2 / SIGNE-3
Russia (USSR)	5061 (Mi5192)	From MS8 (5061a (8x 5061))	1982	D-2 / SIGNE-3
St. Pierre and Miquelon	C32 (Mi415)	Common Design	1966	D-1
Senegal	C46 (Mi335)		1966	D-1
Somali Coast	C49 (Mi381)	Common Design	1966	D-1
Tartari Republic	Local	Cuba 3019 o/p on 4x Russia 5724	199?	D-2 / SIGNE-3
Tartari Republic	Local	Cuba 3019 o/p on 4x Russia 5728	199?	D-2 / SIGNE-3
Tartari Republic	Local	Cuba 3019 o/p on 4x Russia 5984	199?	D-2 / SIGNE-3
Tartari Republic	Local	Cuba 3019 o/p on 4x Russia 6067	199?	D-2 / SIGNE-3
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)	On upper-left margin of SS1	1974	D-5A
Wallis and Futuna Islands	C24 (Mi211)	CDT	1966	D-1
Yugoslavia	1045 (Mi1409)		1971	D-1

*French D-series satellite (D-2B/Aura), not to be confused with the similarly named U.S. EOS-Aura from 2004.

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

SS# = souvenir sheet, MS# = miniature sheet, where # = stamps in sheet, and numbers in parentheses are the catalog numbers of the stamps.