

## Un-manned Satellites on Postage Stamps : 23

By Guest Contributors Don Hillger and Garry Toth

### Alouette and International Satellite for Ionospheric Studies (ISIS)



This is the twenty-third in a series of articles about un-manned satellites on postage stamps. This article features two Canadian satellite series: **Alouette** and **International Satellite for Ionospheric Studies (ISIS)**. Two Alouettes were launched, in 1962 and 1965. Three ISIS were launched: ISIS-X, ISIS-1, and ISIS-2 in 1965, 1969, and 1971 respectively. A fourth in the ISIS series, ISIS-C, was canceled and never built.

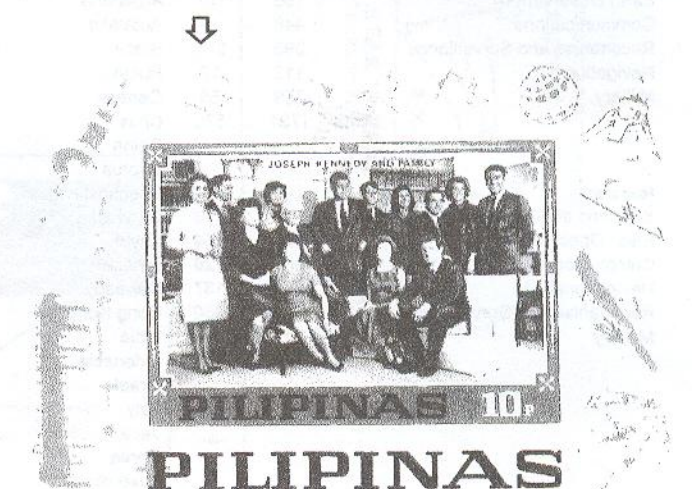
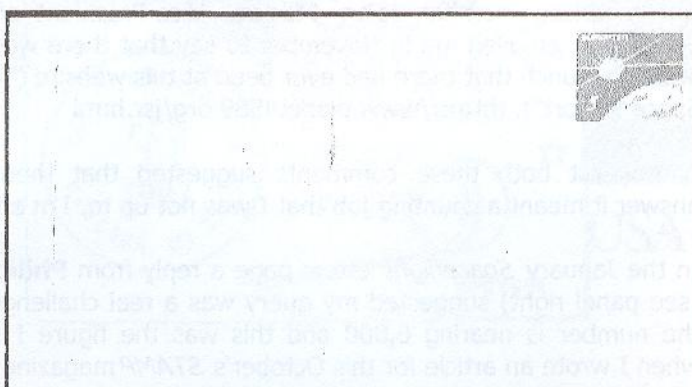
**Alouette-1 and 2** were small ionospheric observatories with various detectors and experiments, to study the effects of the ionosphere on communications. The bodies of these two spacecraft were similar, polyhedron in shape, about 1 m in diameter, but a bit flattened at the poles. The spacecraft were spin-stabilized at a slow rotation rate. Among the several antennas were two dipole antennas, one pair up to 73 m long. The satellites had highly-inclined (80°) near-polar orbits: nearly circular at approximately 1000 km for Alouette-1, and elliptical (500 km perigee and 3000 km apogee) for Alouette-2.

**ISIS-1 and 2** were also ionospheric observatories with numerous instruments, continuing the research successfully begun by the two Alouettes regarding the influence of solar activity on the ionosphere which directly affects communications. The spacecraft bodies were all similar, polyhedron in shape, but a bit larger and less flattened than the Alouettes. Long dipole antennas like those on the Alouettes were used on ISIS as well. The satellites had highly-inclined (88°) near-polar orbits: elliptical (600 km perigee and 1500 km apogee) for ISIS-1, and nearly-circular at 1400 km for ISIS-2.

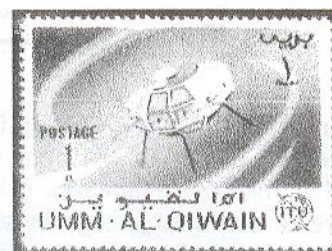
The earliest ISIS, **ISIS-X**, is better known as **Explorer-31**. ISIS-X was launched in 1965 in conjunction with Alouette-2. Several instruments on board made direct measurements of selected ionospheric parameters. The spacecraft was an octagonal prism about 0.7 m in diameter, launched into an elliptical orbit (500 km perigee and 3000 km apogee). The Explorer-series satellites were covered in the sixteenth article in this series.

Alouette has been featured on postal items from many countries besides Canada, but ISIS appears on only one stamp issued by Canada in 2000 (Scott 1831c).

A checklist of postal items showing Alouette-series and ISIS-series satellites (<http://www.cira.colostate.edu/ramm/hillger/Alouette.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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Below is a checklist of **Alouette and International Satellite for Ionospheric Studies (ISIS)** series postal items (stamps, souvenir sheets, aerogrammes, postal cards, etc.). Catalog numbers, years of issue, and notes on the satellites featured are given when available. If readers know of additional information or images, please contact the authors using the e-mail addresses at the bottom of this page.

For **Alouette** launch information and covers see the **Alouette-series** table on the scientific/research satellites page.

For **ISIS** launch information and covers see the **ISIS-series** table on the scientific/research satellites page.

Country	Catalog Number*	Type of Item**	Year of Issue	Notes on Content
<b>Alouette (Canada)</b>				
Canada	445		1966	Alouette-2
Canada	445 fdc	Cachet on FDC	1966	Alouette-2
Canada	445 sc	Souvenir Card	1966	Alouette-2
Canada	1831c	One of MS4 (1831a-d)	2000	Alouette (in red)
Nicaragua	1153		1982	Alouette
Nigeria	143a	In margin of MS12 (12x 143)	1963	Alouette
Nigeria	144a	In margin of MS12 (12x 144)	1963	Alouette
Philippines	BL2	SS1	1968	Alouette
Philippines	BL2 (o/p)	SS1 (BL2) overprinted "SNV"	1968?	Alouette
Poland	1471		1966	Alouette
Satellite Beach FL (U.S.)	Local	Set-C1 (blue)	1964	Alouette
Satellite Beach FL (U.S.)	Local	Set-C1 (blue) overprinted in gold	1965	Alouette
Sierra Leone	1069g	One of MS9 (1069a-i)	1989	Alouette-1 (by 1962 date)
Umm Al Qiwain	Mi83		1966	Alouette
Umm Al Qiwain	BL5A BL5B	MS2 (Mi83-84)	1966	Alouette
Umm Al Qiwain	Mi94	Mi83 overprinted new currency	1967	Alouette
	BL6A	MS2 (Mi94-95), BL5		
Umm Al Qiwain	BL6B	overprinted new currency	1967	Alouette
Yugoslavia	1045		1971	Alouette
<b>ISIS (Canada)</b>				
Canada	1831c	One of MS4 (1831a-d)	2000	ISIS (in orange)

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

\*\*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.