UN-MANNED SATELLITES ON POSTAGE STAMPS:
Part 11 - The ADEOS, MOS, & JERS Series

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This is the eleventh in a series of articles about un-manned satellites on postage stamps. This article features the low-earth polar-orbiting environmental-observing satellites in the **ADEOS**, **MOS**, and **JERS** series, operated by the National Space Development Agency of Japan (NASDA).

The **ADEOS** (Advanced Earth Observing Satellite) series will be discussed first. ADEOS is also called "Midori" or green. (Many Japanese satellites have secondary names in addition to the acronym form that Americans tend to prefer.) Two ADEOS have been launched, ADEOS-1 on 17 August 1996 and ADEOS-2 on 14 December 2002. These are the largest satellites Japan has ever developed.

ADEOS-1 carried several instruments that measured a wide range of the spectrum, from the ultraviolet to visible and near-infrared to microwave frequencies. The measurements from ADEOS-1 in particular were intended to monitor global environmental changes including atmospheric ozone and greenhouse gases that promote global warming. Unfortunately, ADEOS-1 suffered a premature failure after 10 months in orbit, resulting in the loss of data continuity for some types of measurements. ADEOS-2, launched several years later, contained a different instrument suite, without some of the instruments that were on board ADEOS-1, in particular the ozone and greenhouse gas measurements.

Two other Japanese environmental satellites preceded ADEOS. One of these was **MOS** (Marine Observation Satellite), also called "Momo" or peach blossom. MOS was Japan's first domestic earth resources satellite. Two MOS were launched, MOS-1a on 19 February 1987 and MOS-1b on 7 February 1990. Japan's second domestic remote sensing satellite was **JERS** (Japanese Environmental Remote Sensing) satellite, also called "Fuyo" or rose mallow. Only one JERS was launched, on 11 February 1992.

MOS was deployed to monitor atmospheric water vapor, ocean currents, sea surface temperatures, ice floe distribution, and ocean chlorophyll content, in addition to supporting land applications. JERS instrumentation included a Synthetic Aperture Radar (SAR) as well as an optical sensor package. SAR is an active sensor that transmits microwaves and observes in the reflected/scatter waves characteristics such as inequality or slope of the surface of the earth without being influenced by the weather day or night.

All three satellites have single large solar panels, but the body of the spacecraft and the other antennas differ markedly among the satellites. ADEOS contains a few medium-length antennas spread out at significant angles to each other, similar to some of the antennas on ERS discussed in the previous article in this series. MOS has no large antennas, but a slight bend in its single solar panel. JERS, in

addition to its large solar panel, has a very large antenna array for the SAR instrument. This antenna is much longer and narrower than the solar panel array.

ADEOS is featured on several postal items, all but one of which are designated as ADEOS-1 in the checklist because all of those items were issued in 1991 and 1992 before the launch of the first ADEOS. Only the stamp issued by Malaysia in 2001 depicts ADEOS-2.

MOS and JERS appear on fewer postal items. Maldives 1576 issued in 1991 specifically mentions the Momo-1 name in addition to the MOS-1 name. The stamp issued by Micronesia (295a) in 1998 could show either MOS-1a or 1b. JERS is only found on three variations of a single design issued by Niger in 1991.

A table and images of several postal items showing these satellites are presented both here and on the Website developed and maintained 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@ec.gc.ca.

Checklist of Postal Items Showing ADEOS, MOS, and JERS

Country	Catalog Number*	Type of Item **	Notes on Year	Content
ADEOS				
Japan	2134	Part of pair (2135a (2134-2135))	1992	ADEOS-1
Malagasy Republic	1050		1992	ADEOS-1
Malagasy Republic	1050A	SS1 (1050)	1992	ADEOS-1
Malagasy Republic	1050	Part of MS6 (1050a (1045-1050))	1992	ADEOS-1
Malaysia	849		2001	ADEOS-2
Sri Lanka	1005		1991	ADEOS-1
MOS				
Maldives	1576		1991	MOS-1a (Momo-1)
Micronesia	295a	Part of SS9 (295a-i)	1998	MOS-1a/1b
Somalia	Unknown	Deluxe sheet	1998	MOS-1a/1b
Somalia	Unknown	SS1	1998	MOS-1a/1b
Somalia	Unknown	Part of MS4	2002	MOS-1a/1b
Somalia	Unknown	Part of MS4, different	2002	MOS-1a/1b

Figure 1 Japan 2134


Figure 2 Malaysia 849

Country	Catalog Number*	Type of Item **	Year	Notes on Content
JERS				
Niger	Mi1142		1991	JERS
Niger	BL77	MS1 (Mi1142)	1991	JERS
Niger	Mi1142-3 +7MS3	Part of MS3 (Mi1142-1143+1147)	1991	JERS

**Scott* catalog number, unless indicated with Mi or BL for *Michel.*
**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. ❖

Figure 3 Maldives 1576

Figure 4 Micronesia 295a

Figure 5 Somalia (unknown)

A LETTER TO THE PRESIDENT

20 October 2003
Ray Cartier, President of the Space Unit

Dear Ray:

I received with great pleasure and surprise the Lester E. Winick Award 2003 and would like to express my sincere thanks to the Board of the Space Unit for bestowing me this special honour in recognition of my long-time leadership of the FIP Section for Astrophilately and world wide promotion of this special philatelic field.

I congratulate the Board members of the Space unit for their excellent work reflecting in the bimonthly Astrophile bulletin which I always read with great interest.

With best wishes and fond regards,
Beatrice Bachmann *(from Switzerland)* ❖