

UNMANNED SATELLITES ON POSTAGE STAMPS: 43. The Freja, Viking, and other Scandinavian Satellites

by Don Hillger (SU-5200) and Garry Toth

This is the forty-third in a series of articles about un-manned satellites on postage stamps. In this article we cover scientific satellites from Scandinavia: **Freja**, **Viking**, and several other satellites from Sweden, as well as the **Oersted** satellite from Denmark. These satellites will be discussed below in chronological order by launch date.

Viking was Sweden's first national satellite, launched along with the first French remote sensing satellite (SPOT-1) from French Guiana on 22 February 1986. (The SPOT series was featured in the ninth article in this series.) Sweden's Viking was a polar-orbiting research satellite for exploration of magnetospheric phenomena and auroral imaging. Viking had a flattened octagonal shape, 0.5 m high and 1.8 m in diameter, with several long probes, some up to 80 m from tip to tip. Sweden's Viking is found on postal items from Sweden and Guyana. Launch covers are also available on the authors' website (link provided at the end of this article). The Swedish Viking name should not be confused with two much-earlier US Viking planetary missions, both of which were launched in 1975.

The **Freja** satellite, a follow-on to the Viking mission, was launched 6 October 1992 into a highly-elliptical orbit, a joint effort of Sweden and other countries but launched in China. Like Viking, it was a scientific

satellite designed to conduct auroral studies. Freja's large disk is a unique satellite shape. It has been depicted on postal items from Sweden only, but no launch covers have been located by the authors.

The **Astrid** microsattellites, two of them, were launched along with other Russian payloads in 1995 and 1998, respectfully. The satellites were designed to take high-resolution electric and magnetic field measurements in the auroral region, electron and ion measurements, and do UV auroral imaging. No non-launch-cover postal items are known to show Astrid, nor have any launch covers for Astrid been located by the authors.

Denmark's **Oersted** (**Ørsted**) satellite was launched from Vandenberg AFB on 23 February 1999 into a near sun-synchronous elliptical polar orbit at a 96-degree inclination. It is named after the Danish physicist Hans Christian Ørsted (1771-1851). As a scientific satellite, it measured the geomagnetic field and charged particles of the upper atmosphere. The satellite had an extendable 8-m boom designed to point away from the center of the Earth. Oersted was found by the authors on only two postal items, a stamp issued by Denmark in 1999 and the cachet of a FDC from Chad from 2008. A launch cover has been found for Oersted.

Sweden's **Munin** student-built nanosatellite was launched 21 November 2000 from Vandenberg AFB. Like most of Sweden's earlier satellites, Munin was designed for auroral studies and imaging. No non-launch-cover postal items are known to show Munin, however a Munin launch cover has been located by the authors.

Odin, Sweden's next satellite was launched 20 February 2001. Odin had both astronomy and aeronomy missions. For astronomy it studied the physics and chemistry of interstellar medium for clues to star formation. For aeronomy it measured various trace species in the stratosphere and mesosphere. Guinea Republic issued postal items showing Odin in 2008. The authors have found no launch covers for Odin.

Finally, the two-part **PRISMA (Prototype Research Instruments and Space Mission technology**

Advancement) satellite was launched 15 June 2010 on a Russian Dnepr rocket. The Main spacecraft can maneuver to meet the Target craft. The objective is to carry out flight demonstration of new guidance, navigation and control, and sensor technologies for future rendezvous and formation flying missions. Postal items for PRISMA were issued by Comoro Islands in 1992. Two launch covers are also available online.

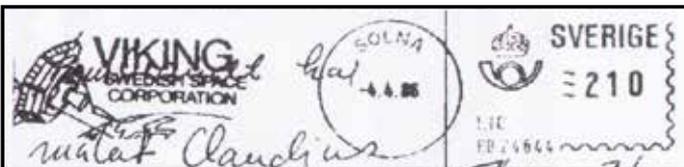
A checklist of postal items showing these Scandinavian satellites (<http://rammb.cira.colostate.edu/dev/hillger/freja.htm>) is available on the Website developed by the authors for the unmanned satellites featured in this series of articles (<http://rammb.cira.colostate.edu/dev/hillger/satellites.htm>). E-mail correspondence is welcome. Don Hillger can be reached at don.hillger@colostate.edu and Garry Toth at gmt.varia@gmail.com.



*Viking on Guyana
(Scott 3504d Michel 6967) 2000*



*Viking on Sweden
(Scott 1514, Michel1305) 1984*



*Viking on Sweden
meter 1986*



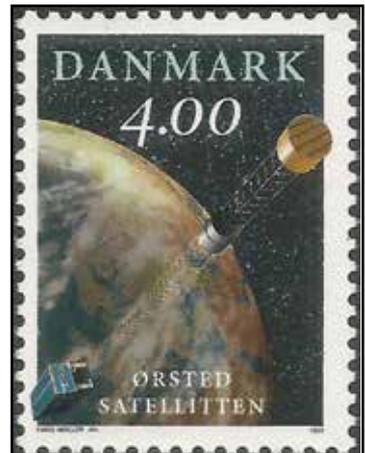
Freja on Sweden
(Scott 1892, Michel 1664) 1991



Odin on Guinea Republic
(Scott unlisted, Michel 5840) 2008



PRISMA in center-left margin of Comoro Islands
(Scott 795b, Michel BL378) 1992



Ørsted on Denmark
(Scott 1143, Michel 1203) 1999

