

# SMART-1

*Sven Grahn*  
VP Engineering

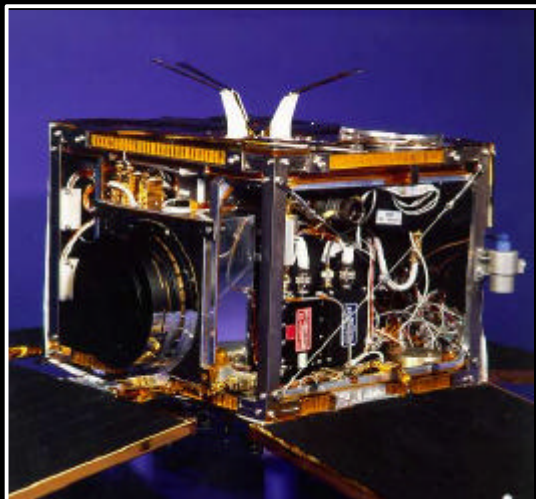
**Swedish Space  
Corporation**

SMART-1 Prime  
Contractor

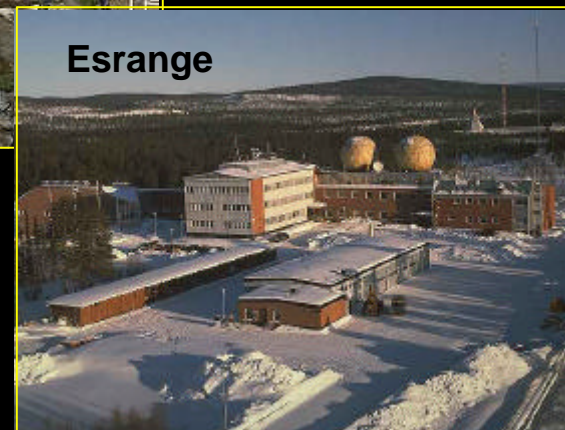


# What is SSC?

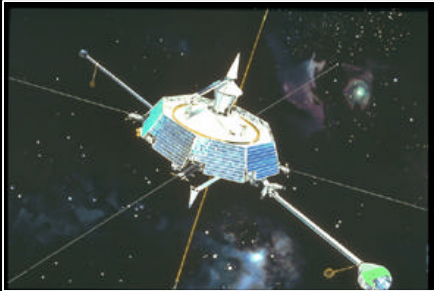
- **We design, launch and operate space systems**
- 280 employees
- Located in Stockholm and Kiruna (far north)
- Esrange launch site and ground station in Kiruna
- Half the staff at each site
- State-owned
- Formed in 1972, but has a 40-year history!



# Smart-1 developed at SSC's **Space Engineering Center** in Solna, near Stockholm



# "From apprenticeship to master satellite builder"



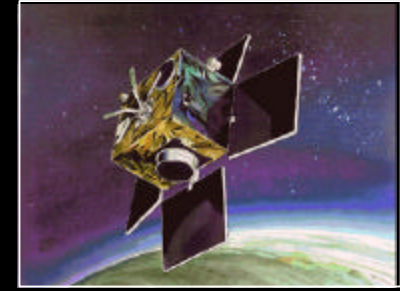
**Viking**

Plasma physics, mass **286** kg  
Launched 22 February, 1986 by Ariane



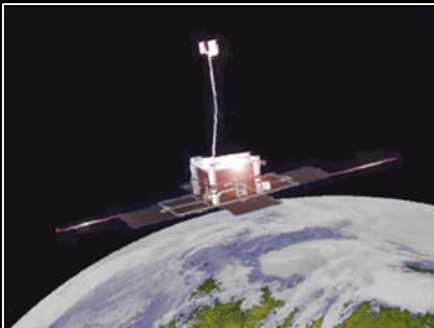
**Freja**

Plasma physics, mass **214** kg  
Launched 6 October 1992 by  
Long March 2-C from Jiuquan



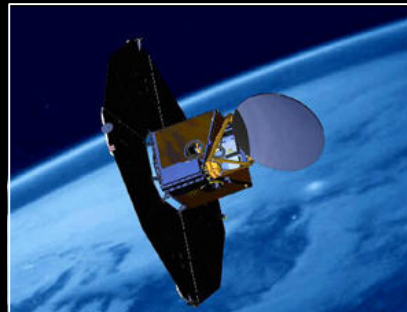
**Astrid 1**

Plasma physics, mass **27** kg  
Launched 24 January, 1995 by  
Kosmos-3M from Plesetsk



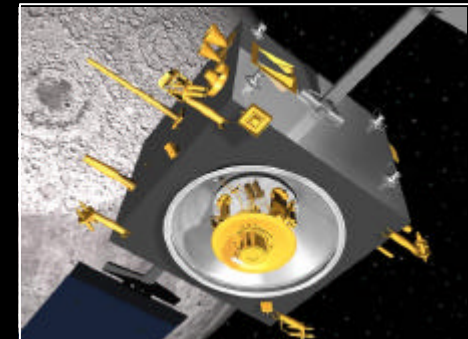
**Astrid 2**

Plasma physics, mass **30** kg  
Launched 10 December, 1998 by  
Kosmos-3M from Plesetsk



**Odin**

Astronomy and Aeronomy, mass **242** kg  
Launched 20 February 2001 by Start-1  
from Svobodny



**Smart-1**

Interplanetary technology and  
science, mass **350** kg  
Launch to the Moon in 2003 by  
Ariane-5 from Kourou

All except Viking developed by SSC, which we managed as the buyer - a role similar to that of ESA!





### Satellites by SSC 1992-2003

- Development time from  $\approx$  1 to 11 years
- Team size: 5-15-75 persons
- Size: 27 to 350 kg
- Cost: 1 MEuro to 40 MEuro
- Spin- and 3-axis stabilisation
- Single string & redundant with autonomous fault detection.

