Sweden's Space Endeavors

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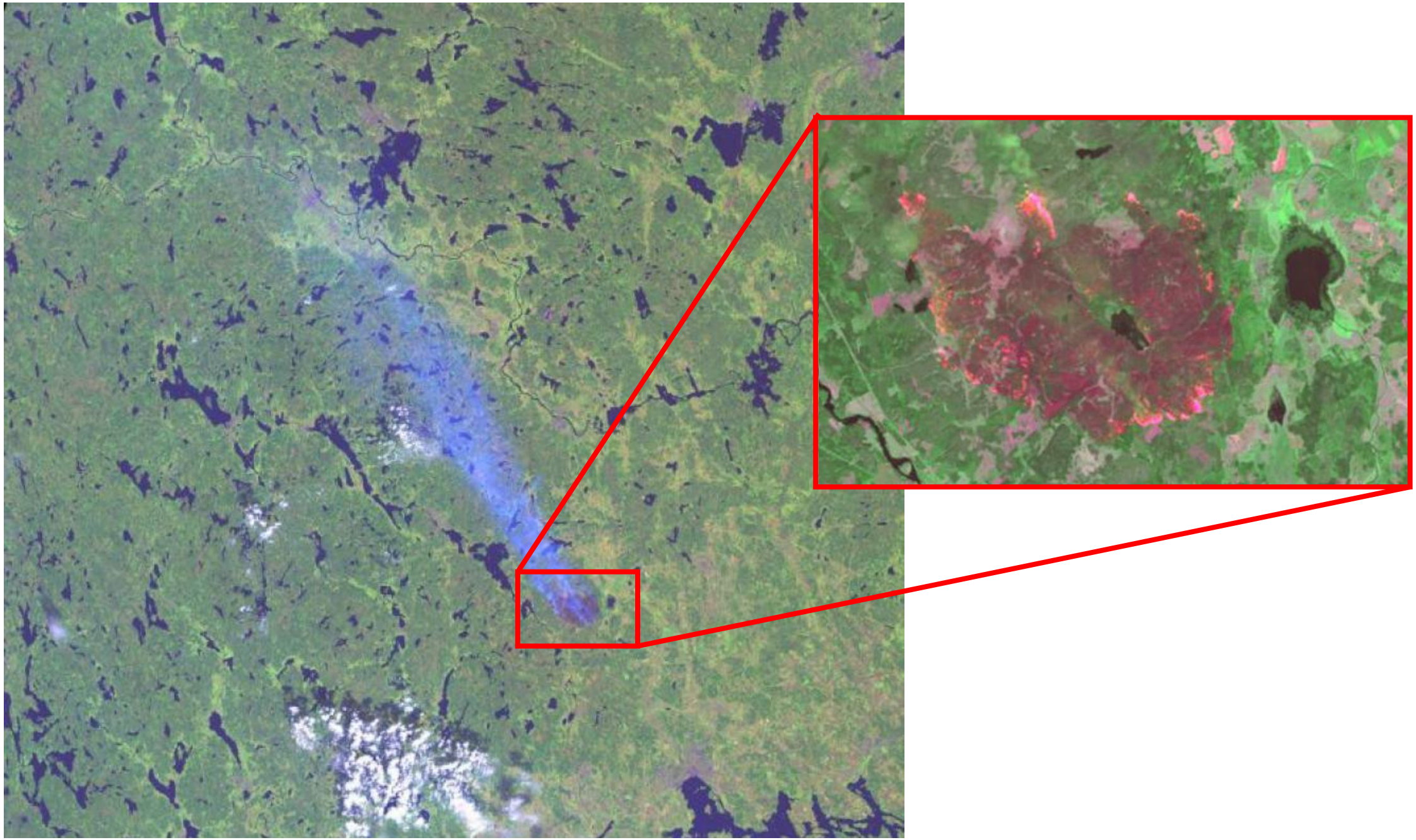
Swedish National Space Agency

Agenda

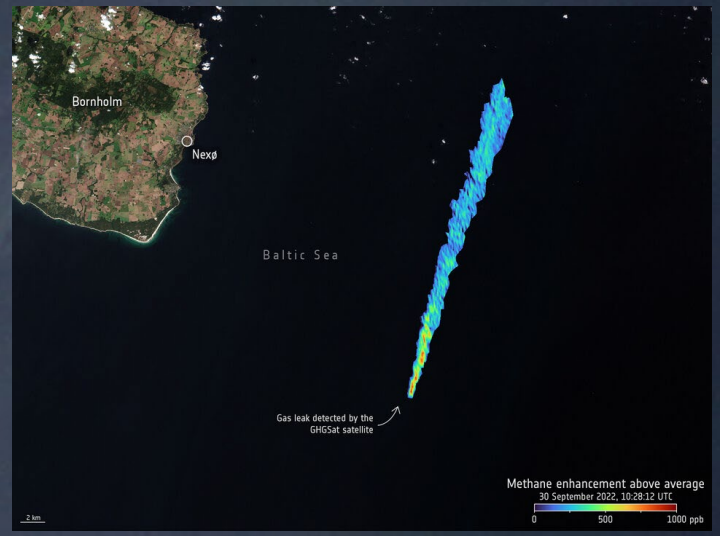
- Strategic importance of Space
- Sweden’s Space Legacy
- Future Space Endeavors

Foto: SSC

Space Services for the benefit of Society



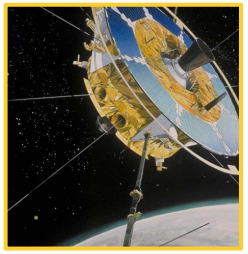
Landsat 8 NASA/USGS Bearbetning Metria.


Bornholm
Nexø
Baltic Sea
Gas leak detected by the GHGSat satellite
Methane enhancement above average
30 September 2022, 10:28:12 UTC
0
500
1000 ppb
2 km

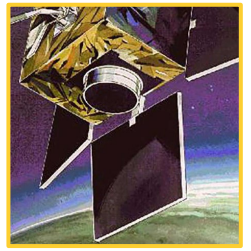
Long history of space activities in Sweden

- Swedish Institute of Space Physics, 1957.
- First launches of sounding rockets in 1960s.
- First Swedish satellite, Viking, launched in 1986.
- Odin satellite, launched in 2001, still operational and collects important atmospheric data.

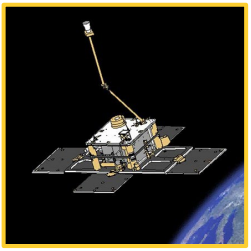
Viking
1986



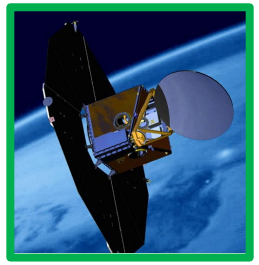
Freja
1992



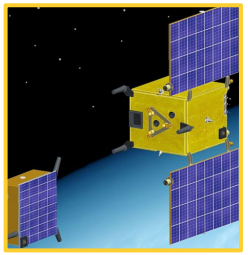
Astrid 1
1995



Astrid 2
1998



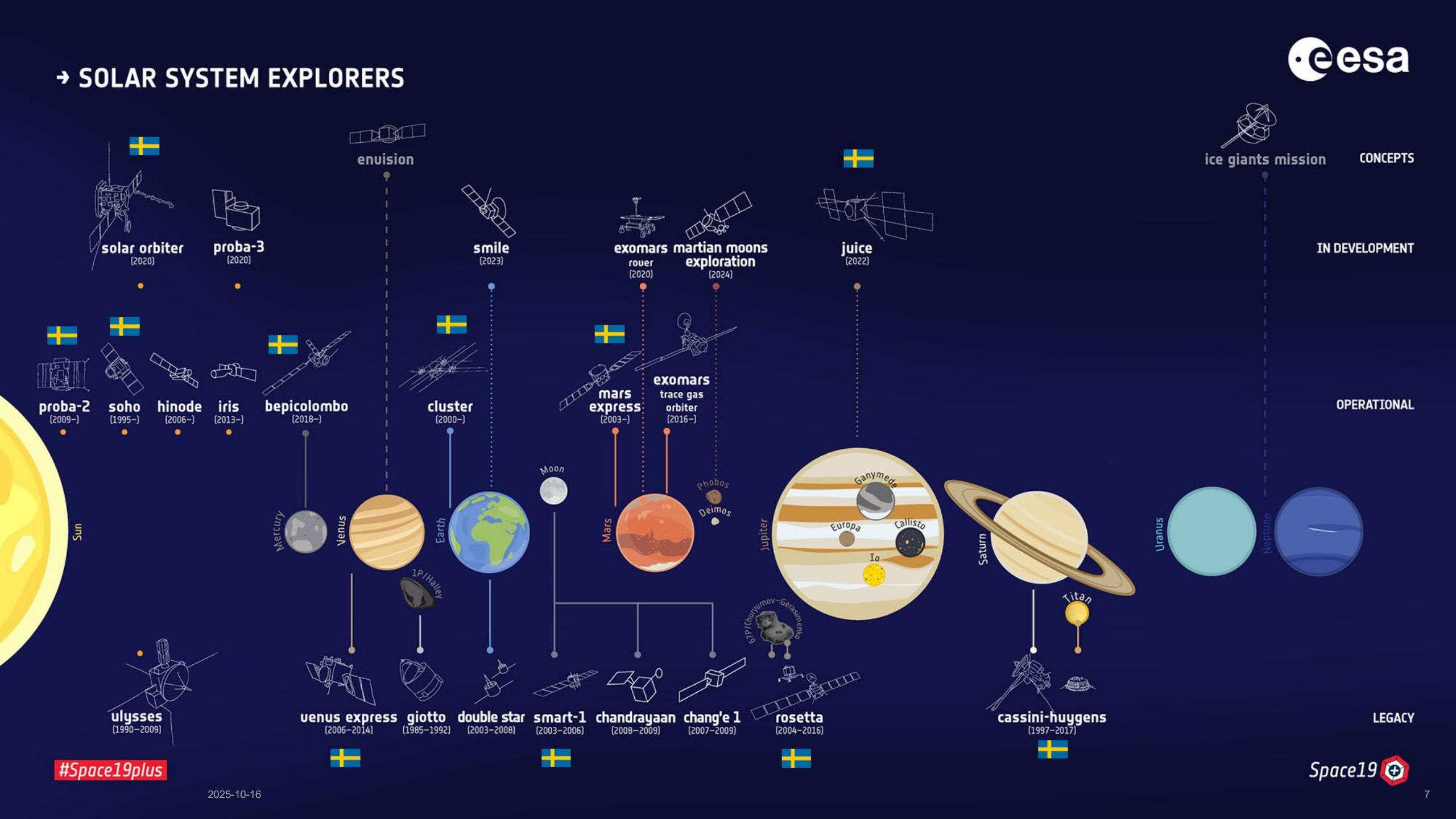
Odin
2001



Prisma
2010

Mats
2022

→ SOLAR SYSTEM EXPLORERS



#Space19plus

Space19

ESA – European Space Agency

- Intergovernmental organization: coordinates and conducts space research and technology development.
- Founded in 1975, headquarters in Paris, France.
- ESA's mission includes the development of satellites and launch vehicles such as Ariane 6 and Vega.
- Number of member states: 23.
- Employees: Approximately 2,500 people.
- Budget: Around €7.68 billion (2025). Sweden's contribution: approx. 1.9%. Guaranteed geo-return.
- Two main funding programs: Mandatory and Optional
- Launch site: Centre Spatial Guyanais in Kourou, French Guiana.
- Every third year: ESA Council at Ministerial level: decide the budget size and programs.

Esrange – Strategic Resource of Sweden

- 1964
- State owned through SSC
- Strategic location:
  - High Latitude
    - TTC
    - Launch operations – polar satellites
  - Sparsely populated
  - Easy land recovery
  - Limited air traffic
  - Possibility to close off large areas of air space
- Science/education experiments
- Technology development

Photo credit: Kristine Dannenberg

Strong Space Industry

- Sweden has a very capable space industry in relation to its size.
- Key technologies:
  - On Board Computers – Beyond Gravity, ÅAC Clyde Space
  - Turbines and nozzles for launchers – GKN Aerospace
  - Satellite platforms – OHB Sweden, ÅAC Clyde Space
  - Microprocessors – Frontgrade Gaisler
  - Structures and adapters – Beyond Gravity
  - Propulsion systems – OHB Sweden, ECAPS
  - Data handling and satellite operations– OHB Sweden, Unibap
  - Groundstation services, sounding rockets and balloons – Swedish Space Corporation (SSC)
  - Satcom equipment – Beyond Gravity, Satcube, Forsway, Requtech
  - AI – Unibap


NASA
J. MEIR
Astronaut
esa

Four New Space Programs

Budget: SEK 464 million 2025-2028

- Establish a **national satellite program** to ensure Sweden's capability to design, build, launch, and operate satellites under national management.
- Establish a **national dual-use space technology program**, supporting both civilian and military applications, as well as innovation for critical societal functions.
- Establish a **national space data program** to promote the development of knowledge, systems, and technologies, and to increase the use of space data for public and commercial benefit.
  - Expands the use of space data for research, public services, and business.
  - Strengthens sectors with high potential for space data (e.g., environment, agriculture, transportation).
- Prepare funding for a **national graduate school focused on space**, to strengthen Swedish space research internationally and ensure long-term talent development.