

Navstar 1

NSSDCA/COSPAR ID: 1978-020A

Description

Global Positioning System (GPS) was developed by the US Department of Defense to provide all-weather round-the-clock navigation capabilities for military ground, sea, and air forces. Since its implementation, GPS has also become an integral asset in numerous civilian applications and industries around the globe, including recreational used (e.g., boating, aircraft, hiking), corporate vehicle fleet tracking, and surveying. GPS employs 24 spacecraft in 20,200 km circular orbits inclined at 55 degrees. These vehicles are placed in 6 orbit planes with four operational satellites in each plane.

The first eleven spacecraft (GPS Block 1) were used to demonstrate the feasibility of the GPS system. They were 3-axis stabilized, nadir pointing using reaction wheels. Dual solar arrays supplied over 400 W. They had S-band (SGLS) communications for control and telemetry and UHF cross-link between spacecraft. They were manufactured by Rockwell Space Systems, were 5.3 m across with solar panels deployed, and had a design life expectancy of 5 years. Unlike the later operational satellites, GPS Block 1 spacecraft were inclined at 63 degrees.

Alternate Names

- GPS 1-1
- 10684
- NDS
- Navstar1

Facts in Brief

Launch Date: 1978-02-22

Launch Vehicle: Atlas F

Launch Site: Vandenberg AFB, United States

Mass: 450 kg

Nominal Power: 400 W

Funding Agency

- Department of Defense-Department of the Air Force (United States)

Discipline

- Navigation/Global Positioning

Additional Information

- Launch/Orbital information for Navstar 1
- Telecommunications information for Navstar 1
- Experiments on Navstar 1
- Data collections from Navstar 1

Questions and comments about this spacecraft can be directed to: Coordinated Request and User Support Office