

APPLICATIONS

Facts and figures

3669 VIEWS 3 LIKES

[ESA](#) / [Applications](#) / [Observing the Earth](#) / [Proba-1](#)

Mission	
---------	--

Launch date	22 October 2001
Launch site	Sriharikota, India
Launcher	Antrix/ISRO PSLV-C3
Orbit	LEO Sun-synchronous
Orbital parameters	681x561 km
Orbital plane inclination	97.9 degrees
Orbital period	96.97 minutes
Mission duration	One year (planned)
Number of instruments	Eight
Number of technological payloads	Six
Mission operations and ground station	ESA/REDU dedicated 2.4 m dish, average of 4 contacts of 10 m/day, automated evening & weekend passes

Spacecraft	
Spacecraft mass	94 kg
Instrument mass	25 kg
Technological payload mass	30 kg
Shape	60x60x80 cm box shaped aluminium honeycomb structure

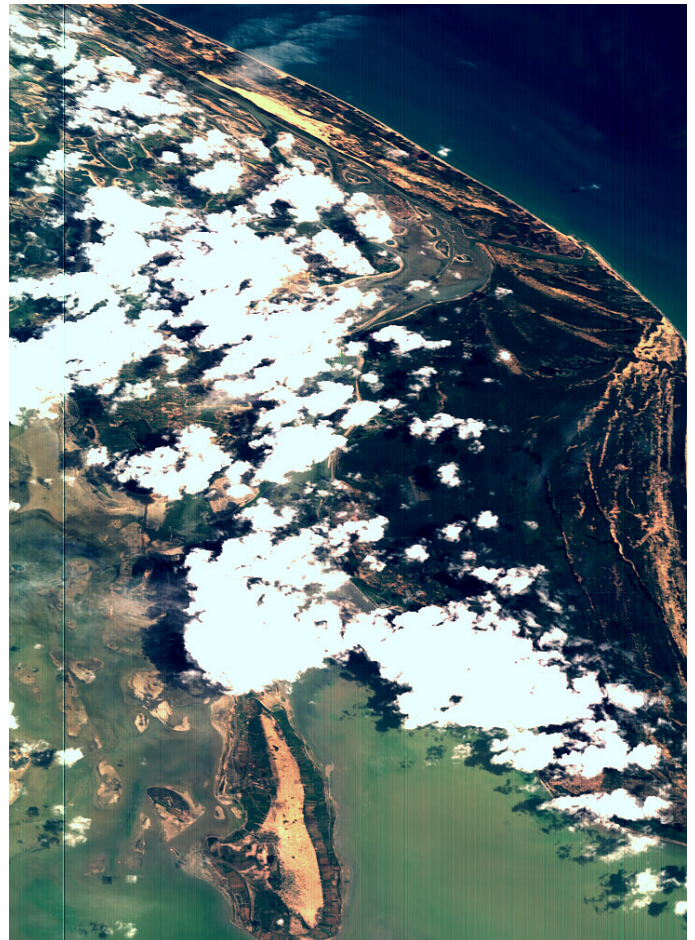


— Proba PFM during vibration tests

Proba-1 platform features

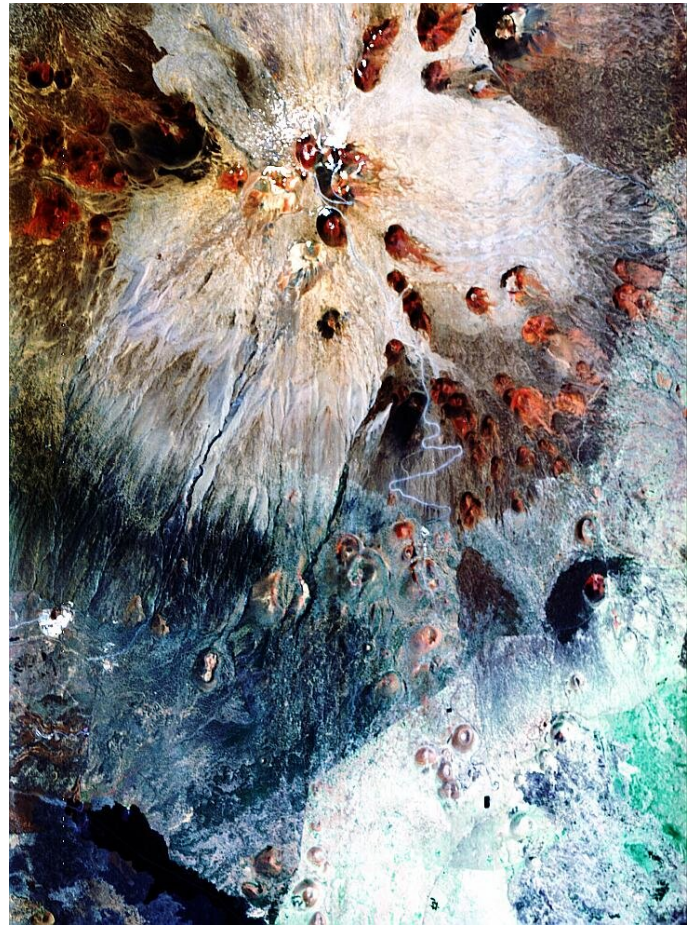
- Computing system (highest performance computing system yet flown on an ESA spacecraft)
 - ERC-32 (SPARC V7) processor, >80 krad, 10 MIPS, 2 MFLOPS
 - TCS 21 020 digital signal processor, >100 krad, 15 MIPS, 45 MFLOPS
 - 12 other processors in subsystems/payload
 - off-the-shelf operating system (Vx Works)
 - full automatic code generation of all attitude control and navigation software (~50 000 lines of code)
- 3-axis stabilisation (Earth pointing or inertial) by four miniaturised reaction wheels

- absolute pointing accuracy: 150 arcsec
- relative pointing stability: 10 arcsec over 10 s
- 2-headed star tracker providing arcsec level pointing knowledge
- GPS sensor providing 20 m position and fly-by knowledge
- Spacecraft agility (along- and across-track), enabling multiple payload imaging (typically 5) of the same target in the same pass
- Slew rate: up to 1 deg/s
- Autonomous navigation via GPS and orbit propagation (no propulsion)
- GaAs solar cells on five structure faces
- 120 W peak
- 17 W in safe mode
- 28 Vdc regulated power bus
- 9 Ah Li-Ion battery
- Passive thermal-control system
- 1 Mbit/s S-band downlink



— Sriharikota, India - CHRIS image - 8 February 2002

- 4 kbit/s uplink
- 1.2 Gbit data storage



— Mauna Kea volcano, Hawaii - CHRIS image - 15 April 2002

Related Links

FOCUS ON
APPLICATIONS

**Third Party Missions
overview**

FOCUS ON
Space Engineering

FOCUS ON
**Polar Satellite Launch
Vehicle**

FOCUS ON
Observing the Earth

FOCUS ON
**Indian Space Research
Organisation**