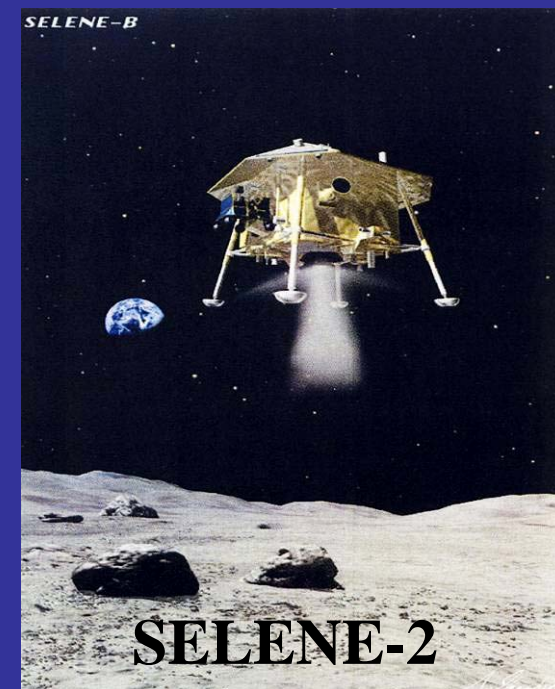


JAXA's Activities in Lunar Exploration



Technology demonstration

1990/1/24 Launch (M3S-II Rocket)
Orbit Maneuver by Lunar/Solar Gravity Assist
Technology of Lunar Orbit Insertion
Technology of Orbit Determination
1993/4/11 Impact on Lunar Surface



Landing, in-situ observation

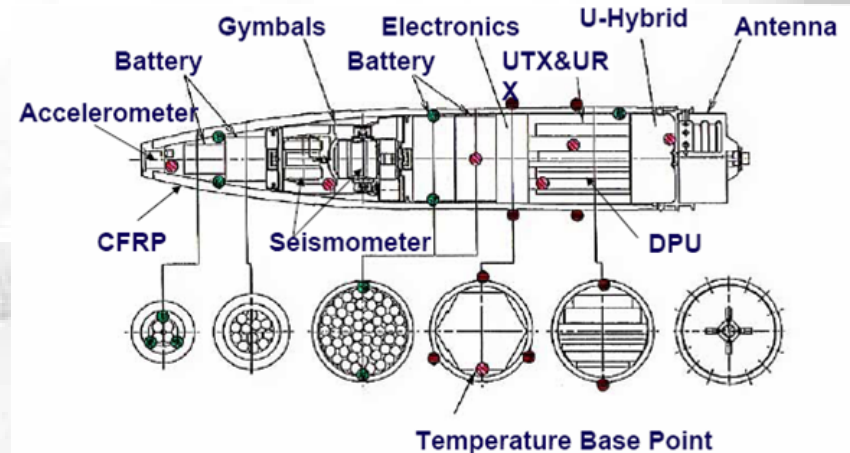
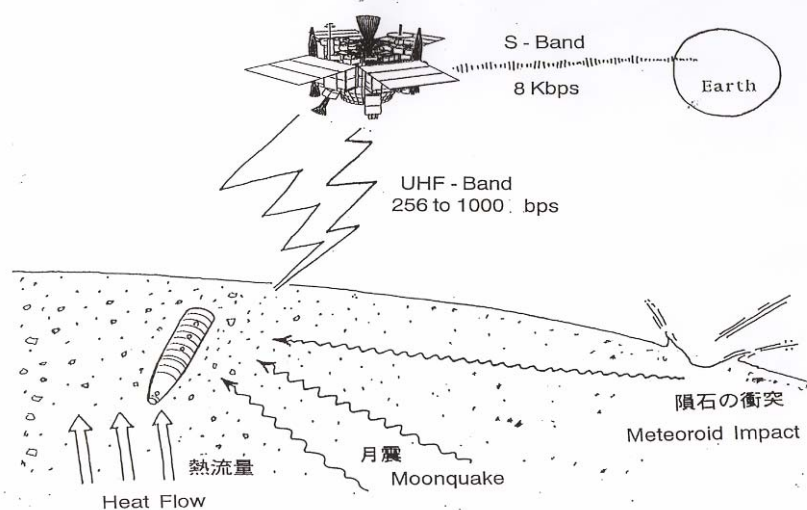
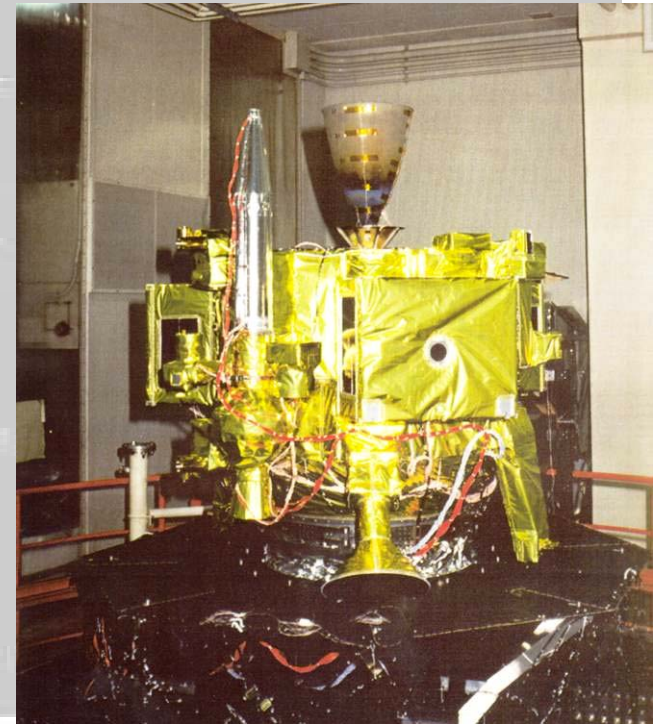
Past

In Development

Under Study

Outline of Lunar-A mission

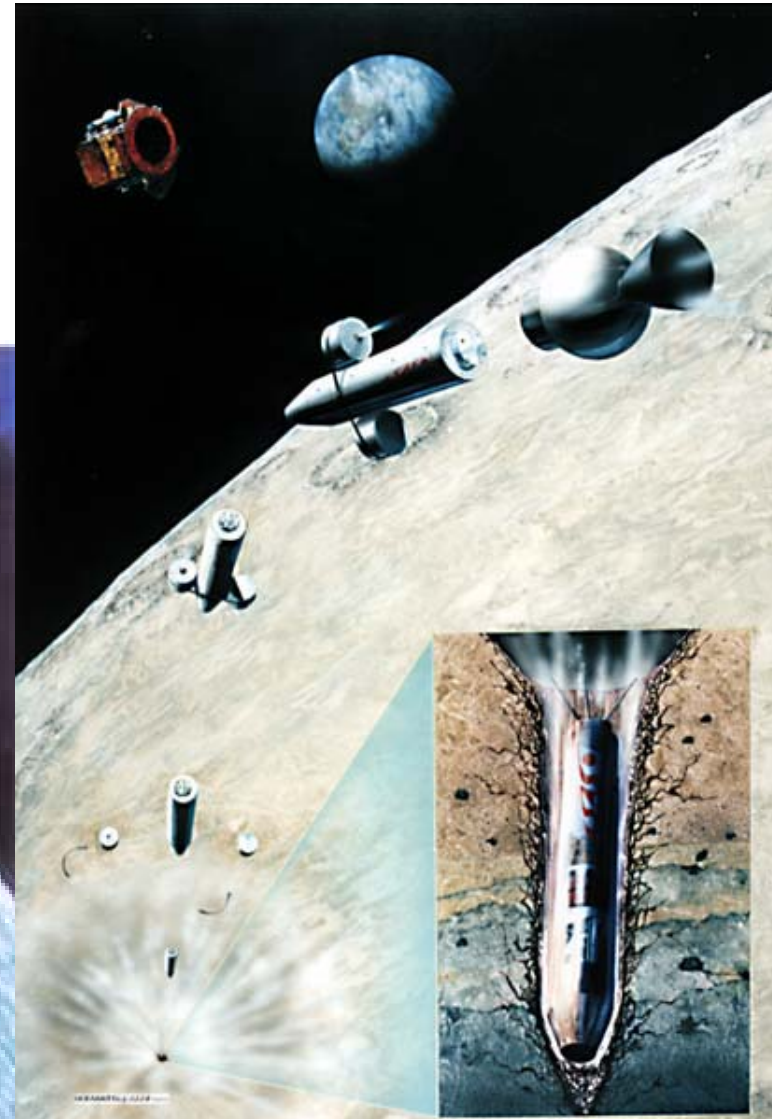
- Mass : Dry Mass 350kg (including two penetrators)
Wet Mass 540kg (Fuel 190 kg)
- Power : 4 Solar Panels , 428 W @BOL; 395W@EOL
Battery, Ni-MH cell; 15 AH: Li Battery, 50 AH
- Attitude Control : Spin-Stabilized, 6 rpm,
20N RCS x 6, 1 N x 4
- Communication : S/C ~ PNT via UHF band
(128 bps ~ 2 kbps)
S/C ~ USD DSN via S band (8 kbps)
- DHU : CPU 80C86 (4.5 MHz), 20 M SRAM



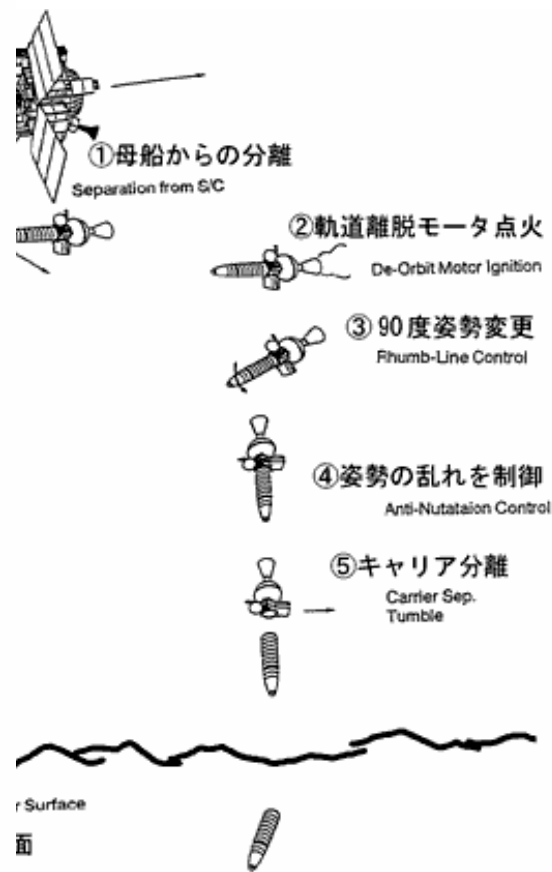
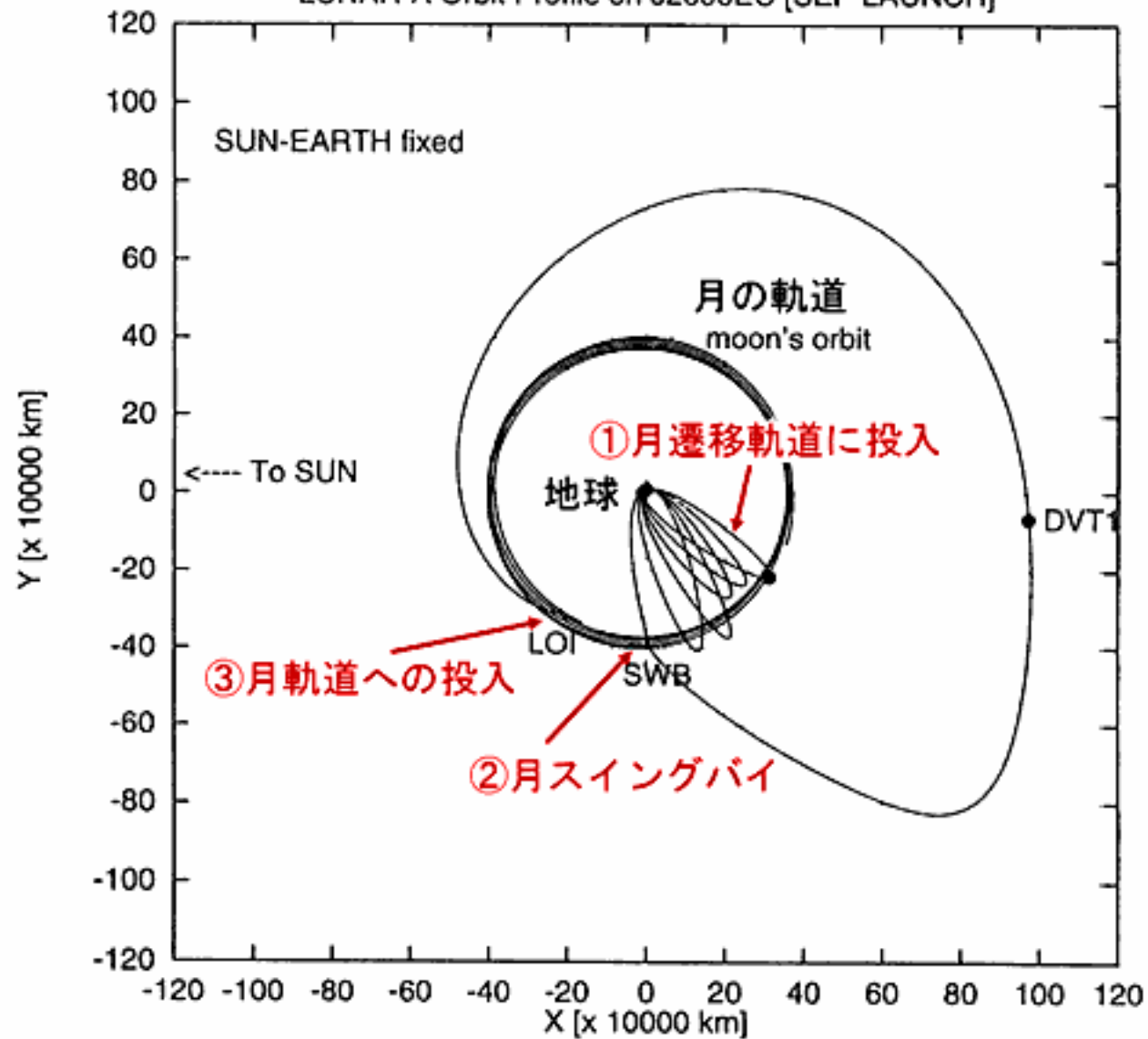
- Relative Temperature Sensor (Pt-thermometer)
- Absolute Temperature Sensor (K-type thermocouple)
- Thermal Conductivity Probe (heater+thermocouples)

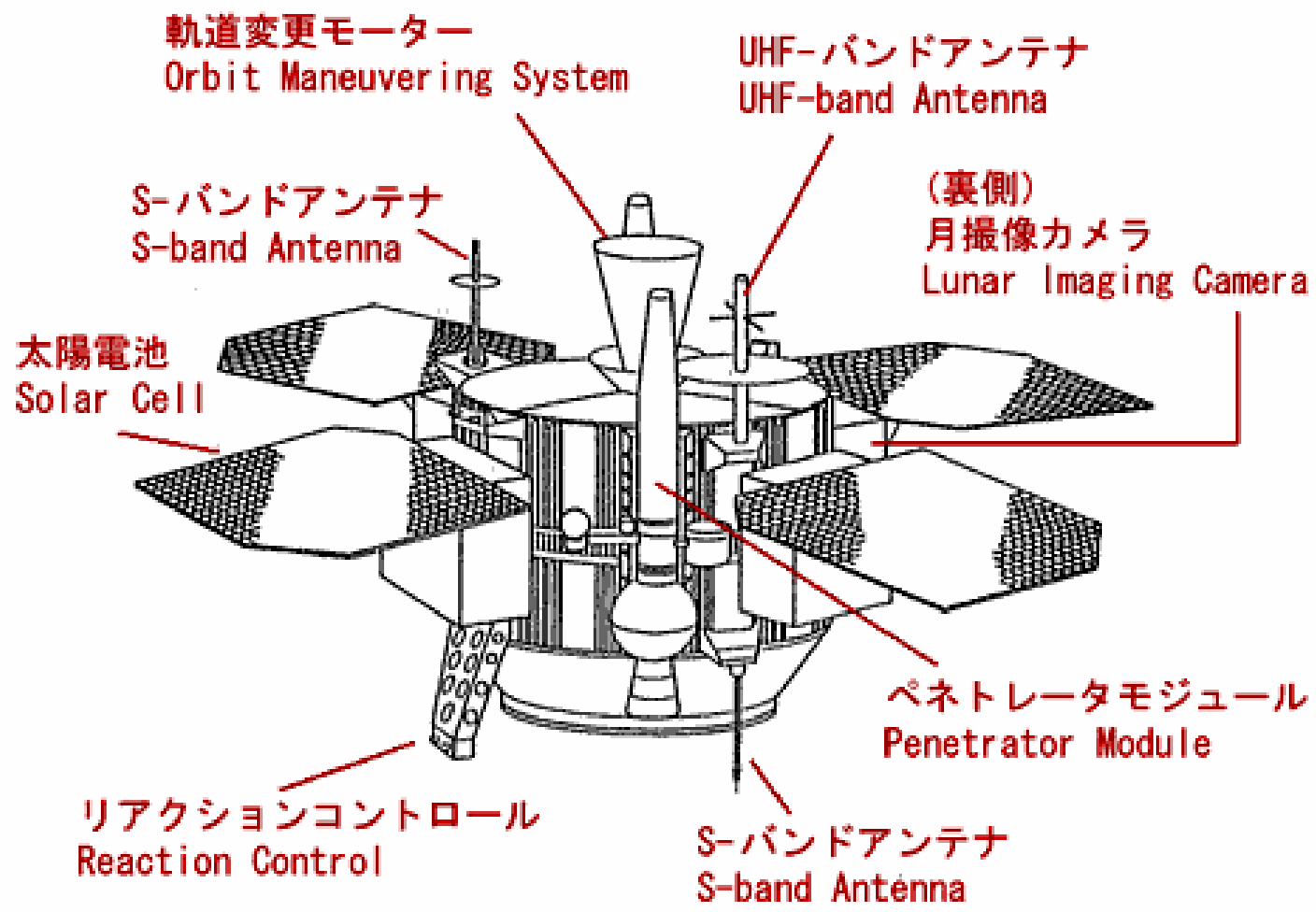
ルナー 計画 (Lunar-A Plan)

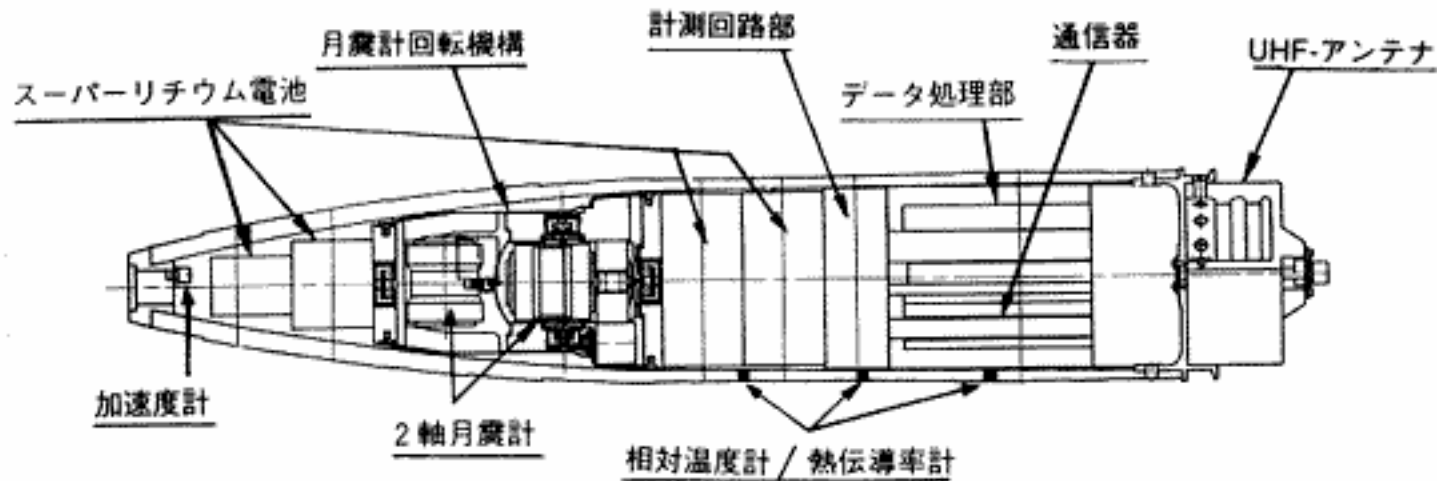
月に2本のペネトレータを打込む
ペネトレータは月震計、熱流量計を搭載
月内部構造を探查
地球スイングバイ航法を利用



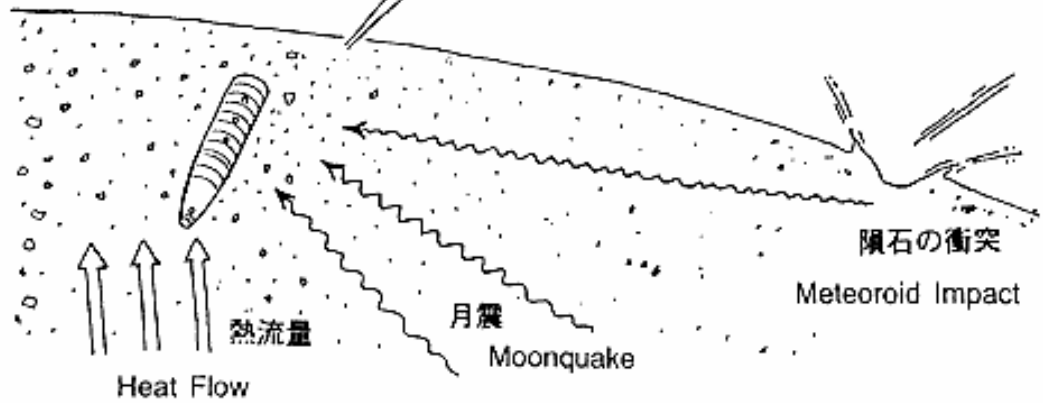
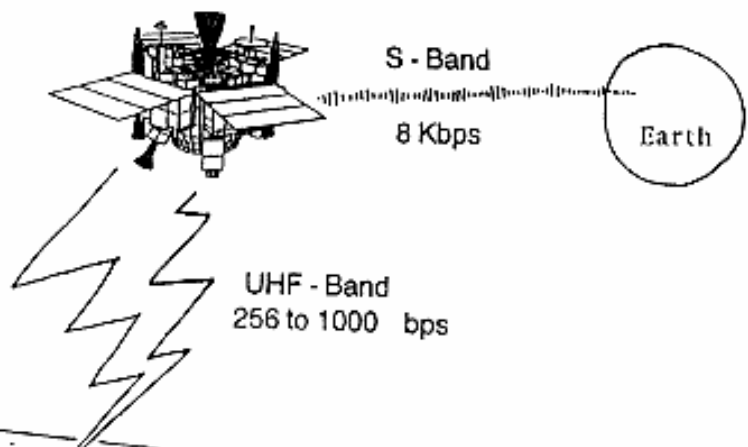
LUNAR-A Orbit Profile on J2000EC [SEP LAUNCH]







トレータの概観図



Current Status of Lunar-A

- ◆ Lunar-A Project has been reviewed by an external review board in JAXA.
- ◆ Suggestions for improvement were made:
 1. Assurance of robustness on communication link between Penetrator and S/C, including the data acquisition during deployment phase.
 2. Addition of CPU reset circuit for possible malfunction at the impact.
- ◆ Improvements suggested to the penetrator may take about 3years, including multiple Qualification tests.