Current NASA Interest in Space Nuclear Power

W. James Adams
TRANSIT IV-A

FIRST SATELLITE POWERED BY A NUCLEAR BATTERY
THREE IN ONE SHOT HERALDING A NEW ERA IN THE CONQUEST OF SPACE

INJUN
Studying intense radiation in the Van-Allen Belt

GREB III
Measuring X-Ray radiation from the sun

TRANSIT IV-A
With plutonium-238 generator in orbit
Radioisotope Missions

- RTG's were used safely in 28 missions since 1961
  - 10 Earth orbit (Transit, Nimbus, LES)
  - 8 planetary (Pioneer, Voyager, Galileo, Ulysses, Cassini, New Horizons)
  - 6 on lunar surface (Apollo ALSEP)
  - 4 on Mars surface (Viking 1 & 2)
- 3 RHUs on Mars Pathfinder, 8 RHUs for each MER

Distances & Planets Are Not To Scale
Radioisotope Power Enables Missions

Electric Power Level (kWe)

Duration of Use

1 hr 1 day 1 month 1 year 10 years