

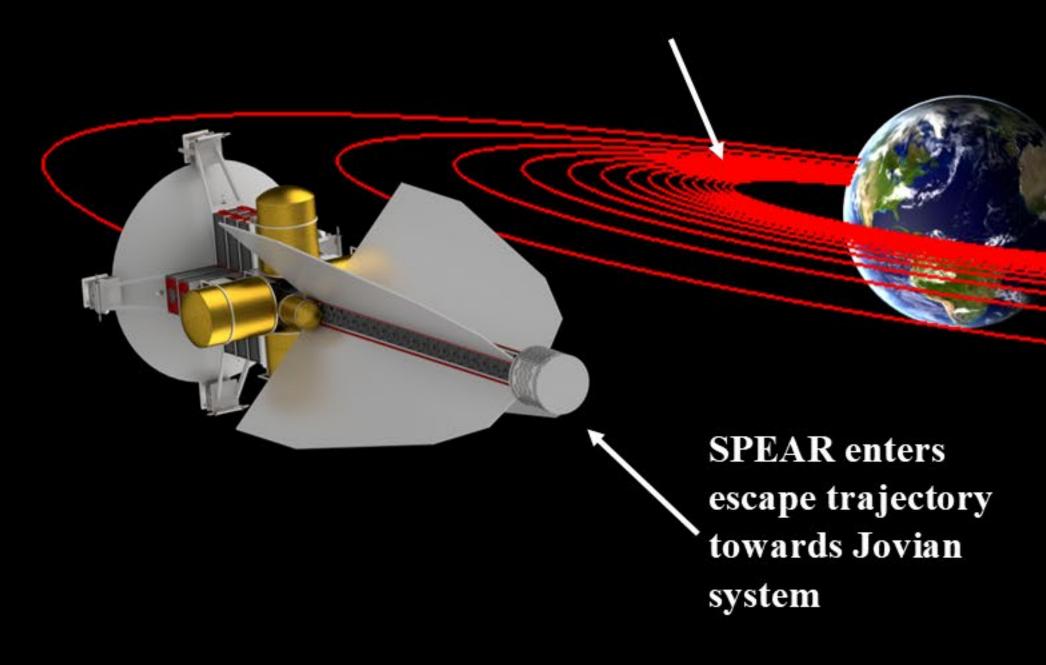
Nano-reactor remains inactive until parking orbit has been reached

Reactor ~3m from payload to minimize total ionizing dose Radiators match the contour of the Minotaur IV fairing.



Space allocated for payload adaptor.

### Spiral out maneuver with electric propulsion



Nano-reactor begins operation in LEO (700 km) avoiding ground crew contamination

> EP system optimized to reduce mass/cost, but maintain reasonable mission time

SPEAR enters Jupiter's SOI and begins maneuvers to reach Europa

## Earth Orbit

Moon

Sun

# **Jupiter Orbit**

Jüpider

Spiral transfer from Earth orbit to Jovian system via NEP Spiral maneuver once SPEAR is within Europa SOI

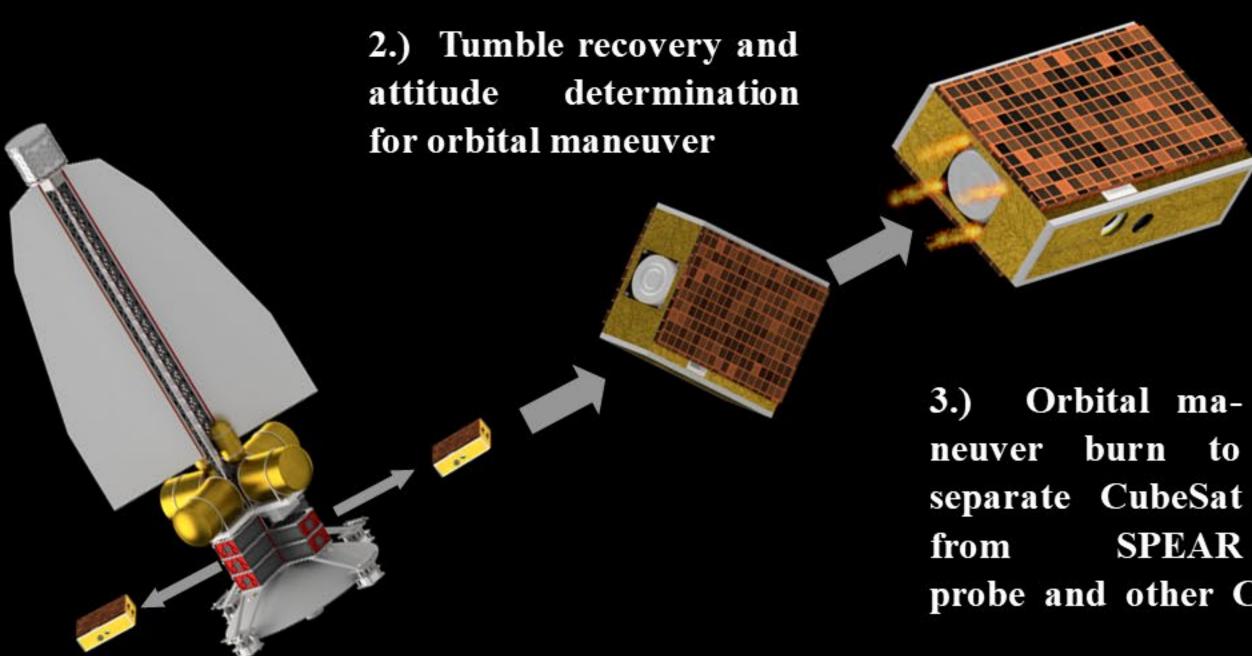
> **SPEAR** will monitor for plume activity

CCCCCC .....

### CubeSats deployed at final orbit to investigate Europa

**Orbit around Europa** will be determined by data collected about plumes from SPEAR or other missions/sources

Deployment of light-4.) weight rectenna to gather power from SPEAR RF beam



1.) Two CubeSats deployed from SPEAR Probe to minimize ADCS requirements on SPEAR

SPEAR probe and other CubeSats

5.) CubeSat begins collecting debris and analysis of Europa environment . Power is beamed to CubeSat to recharge batteries throughout mission.

Multiple CubeSats increase the probability of intercepting plume material and mapping of surface

#### SPEAR commands and powers the CubeSat constellation

CubeSats communicate with each other to share information about plume activity and hazards