Transforming Solar System Exploration: 
The Applied Physics Laboratory and the 
Origins of the Discovery Program, 
1989-1993

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“Solar System Exploration @ 50”
Origins of Discovery

- Sense of crisis in planetary exploration community 1989, no launches since 1978
- In contrast, Len Fisk’s expansive view as Assoc. Admin. for Space Science and Applications
- Geoff Briggs’ initiative spring 1989 for small planetary spacecraft and the SSED strategic planning workshop, UNH 6/89, and NEAR
- Tom Krimigis, APL, and the ACE talk
Stamatios “Tom” Krimigis 1986
The ACE Spacecraft is based on AMPTE design heritage

Basic Octagonal Shape, with Corners Widened to Accommodate Experiment Fields of View

Most Experiments and S/C Electronics on Top Deck

Four 32 x 50 inch Solar Panels

4.0 m Astromast Magnetometer and Balance Booms

Six Sphericonical Fuel Tanks on Lower Deck

60 cm Parabolic Antenna

Prudent Redundancy
Discovery Limps Along

- FY 90—formation of Discovery Project Science Working Group and naming of Bob Farquhar as program mgr. 9/89
- DPSWG held two meetings during FY, inconclusive—NEAR concept languished
- 1989/90 went by with little progress—unclear why: lack of urgency from the top?; distracting impact of Pres. Bush’s SEI on space science program?
Wesley Huntress at SSED

- Huntress became SSED Director 8/90—Discovery one of 3 objectives
- Revised DPSWG and created Jim Martin’s tech. committee
- NEAR study contracts to JPL and APL—politics of JPL and planetary expl.
NEAR, the Moon and Mars

- Showdown in Pasadena: JPL vs. APL 5/91 on NEAR
- JPL gets second chance but Huntress picks APL to send message, wants to find JPL a low-cost project
- Lunar Scout, Mike Griffin and Code X—OSSA loses Moon, wants to save Mars
MESUR (Mars) Pathfinder

- Huntress/Fisk transferred Ames’ MESUR study and Pathfinder concept to JPL
- Micro-rover added, put under Discovery banner 3/92, to solve OSSA’s problems with JPL, strategic plan and Code X
APL Strikes Back

- APL’s NEAR bumped to second, 1998 launch instead of 1997
- Farquhar finds 1996 launch for Eros, late 1992
- Pathfinder still first, NEAR minimal funds in FY 94 budget, Krimigis launches campaign
End Game

- Krimigis’s connections to Sen. Barbara Mikulski’s office and maneuvering over the FY 94 NASA budget, summer 1993
- Conf. Cttee. approves Discovery with both NEAR and Pathfinder – starts better funded and forestalls threat of one-mission program
- Krimigis and Huntress as 2 key actors
- Discovery’s impact on US planetary and space science programs