

EUROPA SINCE THE LAST OPAG

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- **JPL Europa Orbiter study**
- **Joint NASA-ESA study**
- **Europa Focus Group workshop**
- **The Planetary Society public meeting**
- **Budget issues**

EUROPA FOCUS GROUP

- **NASA Astrobiology Institute activity**
- **Includes all aspects of Europa**
- **Open to the community**
- **Series of workshops (including a field conference on Arctic ice) since 2001**
- **Web site: <http://astrobiology.asu.edu/focus/europa/intro.html>**

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Workshop 27-28 February 2006, NASA-AMES

- ~ 120 participants, including ~ 8 students (supported)
- Invited overviews
 - Overview: Pappalardo
 - Tectonics: McKinnon
 - Astrobiology: Baross
 - New Horizons: Spencer
- “Quickies”
- Break-outs
 - Science objectives, refined: Pappalardo
 - Lander concepts: Spilker
 - Astrobiology: McKay
- The Planetary Society (Sunday evening, 26 February)

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Astrobiology “break-out” session

- **Search for signs of life**
 - Inorganics (hard pars, magnetic chains, etc.)
 - Organic biomolecules
 - Younger is better (active), material from ocean
- **Step 1: survey Europa from orbit**
 - Thermal Emission Spectrometer
 - Ramen (with laser)
 - UV fluorescence (with laser)
 - Collect sputtered materials with analysis on orbiter
- **Step 2: lander with 1m depth organic analysis**
 - GCMS, in situ ms, Ramen, etc.
 - Bio-specific (microscope, etc.)