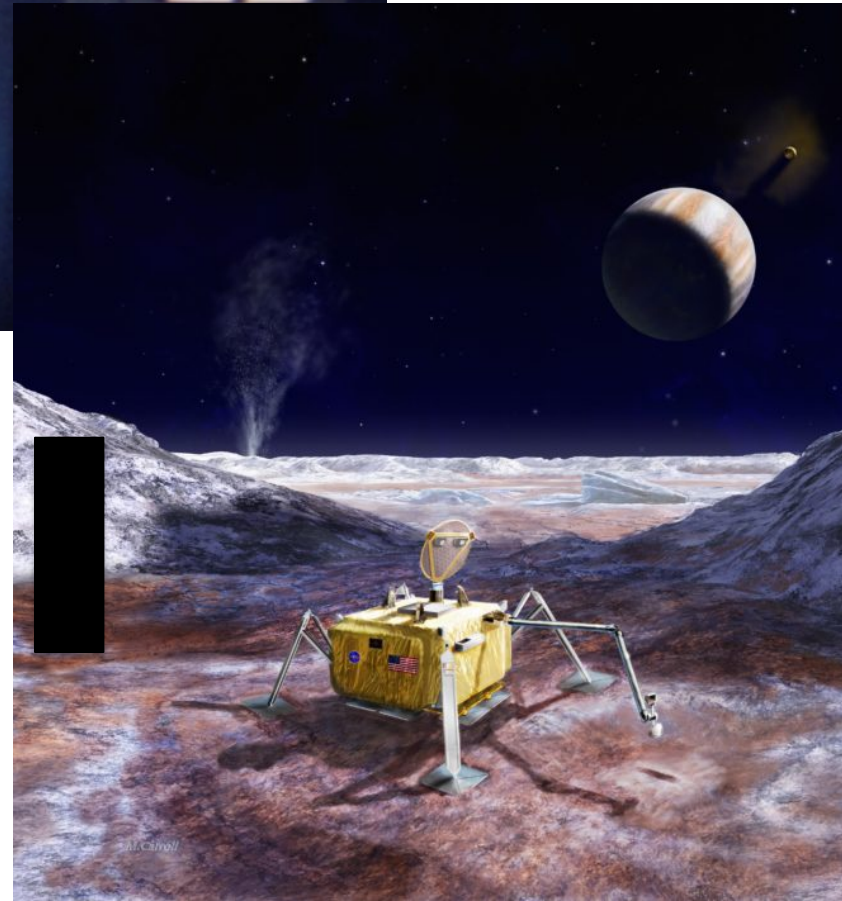
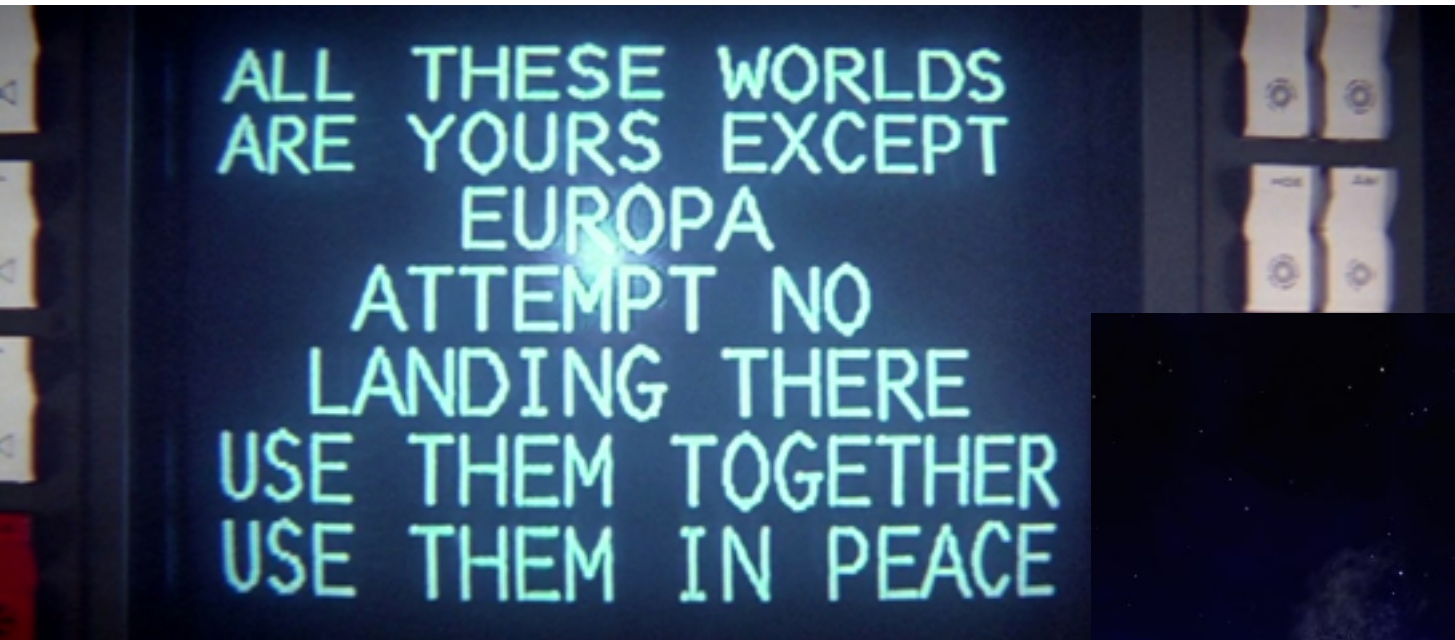


# **Suggestions for OPAG's Findings on the Europa Lander**

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OPAP might note that this is a direct violation of the Monolith.



# Suggested Findings

- OPAG notes that the Europa lander mission did not emerge from the decision making process of the science community.
- OPAG notes that the science goals of the Europa lander do not follow from our current knowledge of Europa.
- OPAG supports the Congressional directive to conduct a Europa lander life search mission and encourages NASA to maximize the science and public engagement of this mission.

The Europa lander mission did not emerge from the decision making process of the science community.

Because the science community had not defined any life detection mission. A failure of:

- The Decadal Survey
- Planetary Science Subcommittee
- Plans for the next Decadal
- NASA HQ
- The NASA Astrobiology Institute
- OPAG and MEPAG
- McKay, and other members of the astrobiology science community.

The science goals of the Europa lander do not follow from our current knowledge of Europa.

A life detection mission should follow convincing evidence (passes TMCO review) of, at minimum:

- Evidence liquid water, past or present **yes**
- Carbon in the water **no** (likely but not detected)
- Available N in the water **no** (likely but not detected)
- Biologically useful energy in the water **no** (unlikely)
- Organic material that can possibly be biological and a plausible strategy for sampling this material. **NO** (implausible)

# TMCO review?

- Should OPAG recommend that the Europa Lander Mission undergo independent TMCO review, like that used to select competed missions (eg. Discovery and New Frontiers)?
- No, because it would be Category IV on the science alone, if not on the technology.

Support the Congressional directive to conduct a Europa lander life search mission and encourage NASA to maximize the science and public engagement of this mission

1. It is the fundamental authority of Congress to decide how federal public funds are to be spent.
2. A bad life detection mission is better than no life detection mission.

# OPAG recommendation

OPAG should request that the missions concepts studied for the next Decadal Survey include:

- Life detection at Europa  
(start with the question not with the answer)
- Life detection at Enceladus (eg. ROW).

**Currently neither are in the list from CAPS**



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