

National Aeronautics and Space Administration



SCIENCE

NASA Perspective on Europa Mission Studies

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Europa Mission Studies



- NASA is adapting the Europa mission concept as a result of the Decadal Survey and the budget environment
 - DS recommended that “NASA should immediately undertake an effort to find major cost reductions for JEO, with the goal of minimizing the size of the budget increase necessary to enable the mission.”
 - DS also insisted that study results undergo independent review



Study Goal and Guidelines



- Intent of study is to define and validate a set of minimum concepts that demonstrate missions exist at the lower end of the cost spectrum that still provide significant science return
- Key study guidelines include:
 - The primary science objective is Europa and the EJSM/JEO science content is expected to be descoped
 - Concepts represent the minimum science missions that are at or very near the acceptable science “floor” below which the mission concept is not worth pursuing at the cost estimate
 - Cost target of \$1.5B (excluding LV); reliability of cost estimate takes precedence over target
 - Small, focused SDT to provide guidance on the scientific objectives, measurements, and priorities for the mission concept
 - A review of the cost, schedule, and technical results of the studies will be conducted by a board independent of the study team
 - Study and independent review reports are due in May



Europa Mission Concepts



- Last spring the SDT deconvolved JEO into a fly-by element and an orbiter element that together ~capture the JEO Europa science but also stand alone
 - These concepts were developed over the summer and are quite mature
 - They will undergo independent technical review in November and independent cost validation by Aerospace this winter
 - NASA relies on OPAG to provide feedback on the science of these missions
- Recently NASA requested a third concept, a Europa lander, be investigated under the same guidelines as the orbiter and fly-by missions
 - The SDT was augmented to provide additional expertise
 - The lander concept will undergo the same technical and cost reviews this winter
 - Again, NASA relies on OPAG to provide input on the science content of this mission



After the studies...



- As Jim said this morning (and the Decadal Survey acknowledged), a Europa flagship will most likely require new money
- The results of the Europa descope studies (and their independent review results) will be available prior to the development cycle for the FY14 budget
- The results will be considered as that budget submission to the Administration is put together