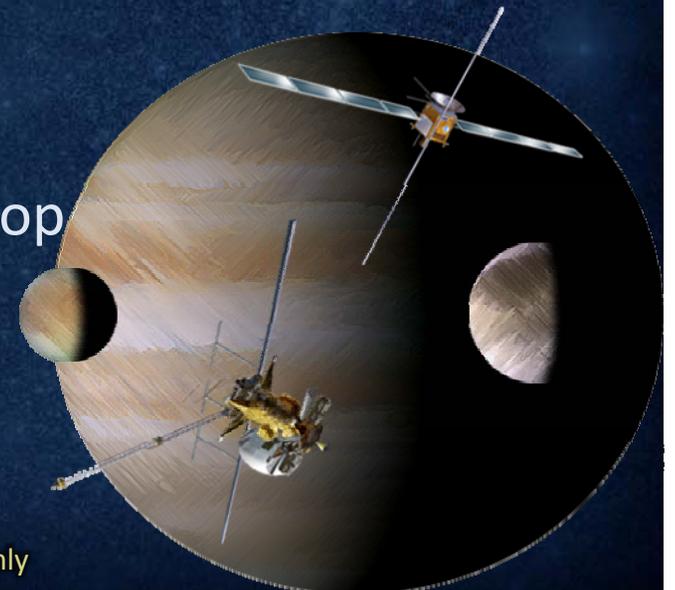




Program Library Documents

Curt Niebur
EJSM Program Scientist
NASA Headquarters

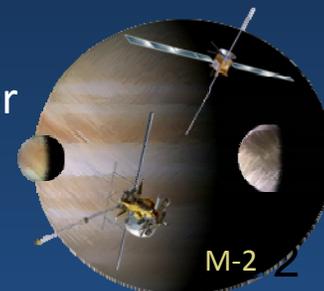
EJSM Instrument Workshop
July 27-29, 2010





Program Library Purpose

- Documents in the Program Library are provided to potential proposers as additional resources to the AO to aid in concept and proposal development
- Document hierarchy
 - The AO takes precedence over any discrepancies in any documents contained in the Program Library
 - The Program Library will be the sole source for the most current version of all documents contained within it
 - Many of these are publically released historical documents providing background and additional details
 - Proposal Information Package (PIP) will supersede historical documents in the Program Library
- A web link to the Program Library will be released prior to AO release
 - The Program Library is managed by Science Office for Mission Assessments at NASA Langley
- The documents provided by the pre-Project to the AO library will dominantly address unique features of the JEO mission such as:
 - Radiation
 - Planetary Protection
 - Synergistic science opportunities with ESA's Jupiter Ganymede Orbiter





Anticipated Program Library Documents (1)

- General topic documents

*Historical Document

Document	Description
Proposal Information Package (PIP)	Current information on project policies, assumptions, guidelines relevant to potential instrument proposers.
Jupiter Europa Orbiter Mission Study 2008: Final Report*	Historical document outlining the JEO mission concept point design.
Europa Jupiter System Mission Joint Study Report*	Historical executive summary document outlining the JEO and JGO components of the EJSM mission.
Outer Planets Flagship Mission Science Operations Concept Study Report*	Lessons learned from past and present operational missions in the area of Phase E cost drivers and operations.
JEO Environmental Requirements Document	Defines the environmental design and verification requirements for JEO, instruments and subsystems.
Mission Assurance and Safety Requirements Document	Safety and Mission Assurance guidelines and requirements for the JEO instruments to ensure mission success and safety of personnel, payloads, equipment, and facilities.
Data Management and Archive Plan	A high-level plan for timely generation, validation, and delivery of instrument and integrated data products: both within the JEO Project, and from the Project to the Planetary Data System in complete, well-documented, permanent archives.
Technology Development Plan Requirements Document	Outlines requirements and the approach to developing individual technology development plans for JEO.
OPFM Long Life Design Guidelines	Provides a look at the entire life cycle of a mission in order to identify processes and techniques that could extend the lifetime of spacecraft avionics.



Anticipated Program Library Documents (2)

- Radiation and Parts & Materials documents (1/2)

*Historical Document

Document	Description
JEO Radiation Design Guidelines	Provides guidelines and recommendations to support the design of space avionics, including payload, in a high radiation environment.
Assessment of Radiation Effects on Science and Engineering Detectors for the JEO Mission Study*	Assessment of the planning payload to determine if feasible pathways exist for known technologies to satisfy science measurement requirements.
JEO Total Dose and Displacement Damage Design Guideline	Guideline discussing effects of radiation on various categories of components, the design data for specific electronic and opto-electronic piece parts, and the way in which those effects must be incorporated into circuit designs.
Introduction to Space Radiation Effects on Materials	Discussed the challenges imposed on materials by the extreme radiation environment, ionization and displacement damage effects on a wide range of materials and advice for assessing material susceptibility.
JEO Designing Circuits and Systems for SEE	Provides discussion of single event effects and considerations for designing circuits and systems for tolerating SEE.
Avoiding Problems Cause by Spacecraft On-orbit internal Charging Effects	Establishes guidelines and design practices to be to minimize the detrimental effects of spacecraft internal charging.
Radiation Shielding Guideline	Provides radiation shielding design guidelines and an introduction to the analysis tools and processes.

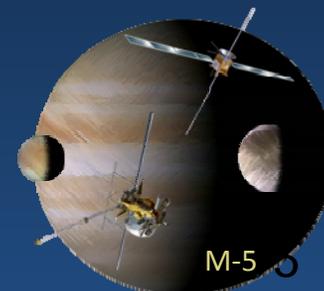




Anticipated Program Library Documents (3)

- Radiation and Parts & Materials documents (2/2)

Document	Description
ASIC via FPGA Guideline with Addendum on JEO	Plan for use of ASICS via FPGAs in development on JEO.
Internal Electrostatic Discharging Guideline (NASA-HDBK-4002)	Provides the fundamental physics behind the Jovian charging environment and spacecraft charging. Design guidelines for assessing and controlling charging effects are provided.
Validation of Secondary Particle Environment for Detectors	Description of benchmark beam studies on detectors as relevant to instrument providers.
Approved Parts and Materials List	Official selection source for all EEE parts and materials to be used on the JEO spacecraft subsystems and instruments.
OPFM Parts Program Requirements	Establishes the baseline EEE Parts Program Requirements for the future Outer Planet Flagship Missions.

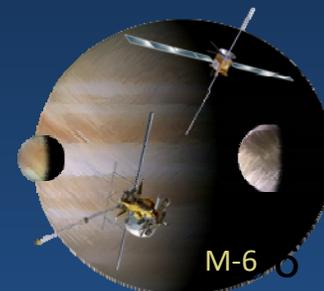




Anticipated Program Library Documents (3)

- Planetary Protection documents

Document	Description
Planetary Protection Requirements for JEO	Describes JEO planetary protection requirements.
JEO Planetary Protection Design Guidelines	Design guidelines to inform instrument providers on the impact of Planetary Protection on their instrument designs and to be a resource for support data on how PP can be accommodated.



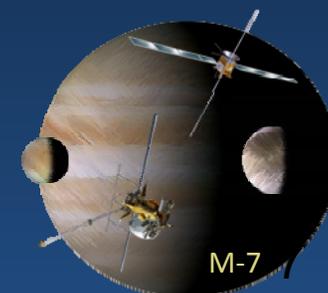


Anticipated Program Library Documents (4)

- Synergistic Science

*Historical Document

Document	Description
Jupiter Ganymede Orbiter Assessment Study Report*	Historical document outlining the ESA assessment study on the JGO mission concept.
ESA JGO Payload Definition Document*	Document describing the model payload for JGO.





Anticipated Program Library Documents (5)

- NASA and Program documents

*Historical Document

Document	Description
Guidelines and Criteria for the Phase A Concept Study	Provides proposers who are selected via the AO in Step 1 with guidelines and criteria for preparation of the Concept Study Report.
Model Phase A and Bridge Phase Contract	Example contract that will be implemented with instrument providers upon Step 1 selection to cover Phase A and the bridge phase (pending Step 2 selection)
Model Technical Assistance Agreement (TAA)	Example of TAA between U.S. and foreign persons.
Program Level Requirements Document	Describes Level 1 program requirements.
International Letter of Agreement Sample	Example of a letter of agreement to be initiated between NASA and foreign partners.
NASA Export Control Program	Describes NASA's export control policies and procedures.
NASA Program and Project Management Processes and Requirements*	Establishes program and project management requirements by which contractors/service providers are governed.
NASA Software Policy*	Describes NASA's policies related to software.
NASA TRL Definition Chart*	NASA defined Technology Readiness Levels (TRL).



Summary

- Program Library documents are additional references for more in-depth information for use in preparing proposals
 - AO supersedes any information in these documents
 - Many of the publically released historical documents can be currently found at
<http://opfm/europajupitersystemmissioneism/instrumentresources/>
OR <http://opfm/europajupitersystemmissioneism/ejsmpresentations/>
- A web link to the Program Library will be released prior to AO release
- Questions or comments on Program Library documents and their anticipated content should be directed to

Curt Niebur

