



SCIENCE

Welcome Briefing Instrument Concepts for Europa Exploration Program

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ICEE Background



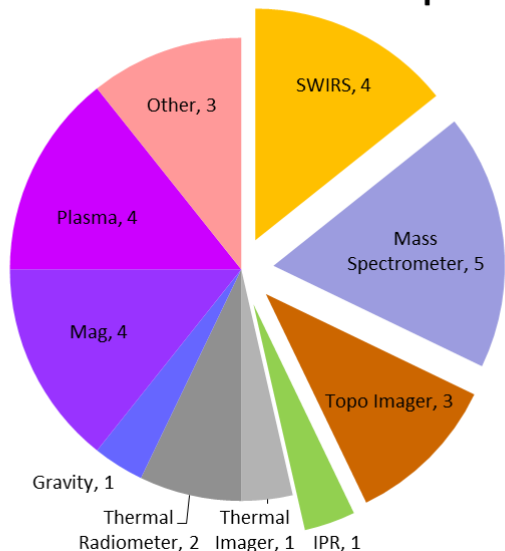
- The goal of the ICEE program is to mature and reduce the technical risk of instruments for a potential future Europa mission to the point where they may be proposed in response to a future announcement of flight opportunity (AO) without additional extensive technology development
 - Proposers (and selectees!) are strongly encouraged to address the long-standing challenges facing any Europa mission in the areas of radiation and planetary protection.
- A budget of \$15M (FY13) was available for the ICEE program
 - Budget considerations required an accelerated schedule for the program, thank you all for the hard work required to enable that schedule
- A total of 28 compliant proposals were submitted and reviewed, and 15 proposals were selected for funding based on evaluation findings, selection criteria stated in the NRA, and programmatic balance



Submission Statistics and Selections



Distribution of Instruments Proposed



Instrument Type	# Props	# Selections
SWIRS	4	3
Mass Spectrmttr	5	3
Topo Imager	3	2
IPR	1	1
Thermal	3	2
Gravity	1	0
Magnetometry	4	2
Plasma	4	1
Other	3	1
Total	28	15

PI	Inst	Title	Instrument Type
Bell, James	ASU	Topographic Imager Technology Development	Topo Imager
Turtle, Elizabeth	APL	Topographic and Reconnaissance Imaging for Europa Exploration	Topo Imager
Aslam, Shahid	GSFC	Thermal IMager for Europa Reconnaissance (TIMER) - "Tech Maturation and Risk Mitigation"	Thermal Imager
Kenyon, Matt	JPL	Thermal Radiometer Development for Europa Clipper mission	Thermal Rad
Smith, David	MIT	Extended Range Laser Altimeter (ERLA)	Laser Altimeter
Westlake, Joseph	APL	Plasma Instrument for Magnetic Sounding (PIMS)	Faraday Cup
Bagenal, Frances	Univ. CO	Colorado Europa Langmuir Probe	Langmuir Probe
Raymond, Carol	JPL	Vector/Scalar Magnetometer for Europa Clipper	Magnetometer
Moussessian, Alina	JPL	Ice Penetrating Radar for Europa Exploration	Radar
Kempf, Sascha	Univ. CO	Maturing the Surface Dust Analyzer (SUDA) for Europa Exploration	Dust Analyzer
Waite, Jack	SWRI	MASPEX-ICEE	Mass Spectrometer
Green, Robert	JPL	ESWIRS-RPM	SWIRS
Reuter, Dennis	GSFC	SIRSE: Spectral ImageR/ Spectrometer for Europa	SWIRS
Hand, Kevin	JPL	CIRIS SWIR/MIR spectrometer for Europa Clipper	SWIRS
Darrach, Murray	JPL	Mass Analyzer for Real-time Investigation of Neutrals at Europa (MARINE)	NMS



Welcome to the Team!



- Main purpose of the ICEE program is to invest in instrument development, but clearly this investment has broader benefits to NASA and to ICEE PIs
- The extent to which you reap those benefits is up to you
 - NASA and the Europa Formulation Team are ready to assist and are willing to work with you to protect (to the extent we are able) any information you feel to be sensitive



Background



Proposal Requirements (1 of 2)



- All proposals must specify:
 1. The science objectives of the proposed instrument. The science objectives, investigations, and measurements must be clearly stated, and the relationship among them explained.
 2. Relationship to Europa science objectives. The relationship between the science investigations and measurements of the proposed instrument must be concisely linked and contrasted to the six overarching goals for Europa exploration provided in the Decadal Survey and the science objectives and measurements of the Europa Clipper mission concept as described in Clipper portion of the “Europa Summer Study Final Report.”
 3. The capabilities of the proposed instrument and their relationship to proposed science objectives. The anticipated capabilities of the instrument must be provided as well as the relationship between them and the measurements necessary to support the science objectives. This relationship must be clearly explained and rationalized.
 4. Technology developments to mitigate risk. Proposers should describe specific technology developments or testing to be pursued if selected and how these activities will reduce risk and mature the instrument.



Proposal Requirements (2 of 2)



- All proposals must specify:
 5. Spacecraft accommodation. Proposals should provide an initial assessment of spacecraft accommodation of the proposed instrument, including a comparison to a similar instrument in the Europa Clipper strawman science payload (if any).
 6. One year awards. Proposals are limited to a duration of one year, but standard rules for no cost extensions will likely be followed.



Selection Considerations



- In addition to the standard criteria specified of Intrinsic Merit, Relevance, and Cost, NASA will also consider the following when formulating ICEE selection recommendations
 - The extent to which the proposed instrument supports the science objectives, investigations, and measurements of the Europa Clipper mission concept;
 - The presence of a similar instrument type in the strawman payload that requires maturation and technology development (specifically, the ice penetrating radar, shortwave infrared spectrometer, topographic imager, and mass spectrometer);
 - The likelihood that the proposed work will produce an instrument that can be considered selectable under a possible future AO within the near term.