



Small Missions: Exploration Science Content Criteria and Guidance for Proposers

Exploration Science Content	#	Sub-Criteria
	1.1	Does the mission concept address an important goal or challenge within a priority area(s)*?
	1.2	Has excellent scientific justification and motivation been provided and flown to clear objectives and testable hypotheses?
	1.3	What are the mission data products and to what extent will they impact or be enabling for scientific discovery?
	1.4	Will the mission outcomes also benefit addressing challenges on Earth and / or enabling sustained, responsible human space exploration?
	1.5	Has an integrated mission concept design and approach been adequately described with the applied methods and analyses traceable to addressing the identified objectives and hypotheses?
	1.6	Have scientific risks been discussed and mitigation suggested?

***Priority Areas for this specific Call:**

- Understanding environments in deep space and at the Moon, and the effects on technology and biology of exposure to these environments;
- Observing, predicting and mitigating changes that human activity will introduce to these environments;
- Finding, characterizing and quantifying potential resources and understanding how local environments affect resource extraction processes;
- Providing improved / higher resolution mapping of potential landing sites and locations of high interest for Exploration.



Category **Exploration Science Criterion Guidance for Proposers****Significance** **1.1 Does the mission concept address an important goal or challenge within a priority area(s)*?**

The proposal unambiguously demonstrates, with supporting in-depth explanation, the importance of the goal or challenge it seeks to investigate, is within the scope of the Call, and is within a priority area(s). Demonstration of a connection to the ESA Terrae Novae strategy document and ESA SciSpacE spotlight(s) is appreciated. Demonstration of a connection to a relevant [SciSpacE White Paper](#) is also beneficial.

Significance **1.2 Has excellent science justification and motivation been provided and flown to clear objectives and testable hypotheses?**

The proposal demonstrates excellent and detailed science justification and motivation with supporting references from relevant peer review publications. Justified objectives and associated testable hypotheses that can contribute to addressing the goal(s) or challenges are described.

Significance **1.3 What are the mission data products and to what extent will they impact or be enabling for scientific discovery?**

The mission data products and associated research have been identified and their likely impact described. The mission outcomes should ideally lead to a radical change for the advancement of the field, or provide incremental knowledge required to significantly further the field. Supplementing an existing data set is deemed as a secondary benefit and should not be a sole driver of a mission and its associated data products.

Knowledge Translation **1.4 Will the mission outcomes also benefit addressing challenges on Earth and / or enabling sustained, responsible human space exploration?**

The proposal has identified and clearly discussed the extent to which the mission concept outcomes may contribute to benefitting these areas. Mission concepts where the outcomes can contribute to providing a measurable and much needed benefit for space exploration, as well as providing a benefit to Earth will be assessed more favourably within this criterion.

Category **Exploration Science Criterion Guidance for Proposers****Approach** **1.5 Has an integrated mission concept design and approach been adequately described with applied methods and analyses traceable to addressing the identified objectives and hypotheses?**

An integrated mission concept configuration and profile has been adequately described with supporting figures and timeline of mission lifetime. Applied methods, analytical measurements, and associated hardware requirements and operational scenarios are clearly presented and are traceable to addressing the identified objectives and hypotheses. Ideally this is supported via the use of a traceability table / matrix. Where appropriate and useful, publications of prior testing or heritage examples are provided.

Approach **1.6 Have scientific risks been discussed and mitigation suggested?**

Scientific risks that may impact the mission's ability to meet identified objectives and to address the mission goals and challenges have been identified, discussed and potential mitigation routes suggested. This should be additional to any technical development risk assessment.
