



SMEX

Concept Study & Downselect

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SMEX 2003 Phase A Kickoff Meeting
November 21, 2003



Downselection

- SMEX AO, Section 1.2
 - For Stage 2, NASA will conduct a detailed review of the Phase A concept study results to evaluate the implementing details of the selected investigations, namely, any modifications of the scientific objectives, the proposed cost to NASA, design details of the investigation hardware, plans for mission implementation, including all technical and management factors, details of the education and public outreach programs, plans for any new/advanced technology infusion and transfer, and plans for participation of small disadvantaged businesses and minority institutions. As a result of this second evaluation, NASA intends to confirm for flight by exercising contract options (see Section 7.4.2) two SMEX investigations, and possibly one or more Mission(s) of Opportunity, for implementation leading to flight.



Phase A Concept Study

- SMEX AO, Section 7.4.3
 - The concept studies are intended to provide NASA with more definitive information regarding the cost, risk, and feasibility of the investigations, as well as a detailed plan for the conduct of an appropriate education and outreach program before downselect to proceed into Phase B. The product of the concept studies will be reports to be delivered by each selected investigation team five months after the Project Initiation Conference. The content and format of the study reports are specified in the *Guidelines and Criteria for the Phase A Concept Study* document in the Explorer Program Library (Appendix C). The NASA review of the completed concept study report will include all mission facets including E/PO. NASA may request presentations and/or site visits to review the final concept study results with the investigators.



Evaluation and Selection Criteria

- SMEX AO, Section 7.4.4
 - Scientific merit of the proposed investigation;
 - Scientific implementation merit of the proposed investigation;
 - Technical, management, and cost feasibility, including cost risk, of the proposed investigation;
 - Quality of plans for education and public outreach;
 - Quality of plans for advanced technology infusion and transfer; and
 - Quality of subcontracting plans for small disadvantaged business activities and minority institutions.



Evaluation and Selection Criteria

- SMEX AO, Section 7.4.4
 - Any changes to science and the science implementation scheme contained in the Phase A Concept Study Report from those in the original proposal will be carefully evaluated.
 - In conjunction with the Phase A Concept Study Report, detailed information on the relevant experience and past performance of the major partner organizations over the last five years shall be submitted. NASA will also use information from other sources, such as the NASA Past Performance Database, to evaluate the likelihood that technical, schedule, and cost requirements will be met.



Relevant Documents

- <http://explorer.larc.nasa.gov/explorer/sel.html>
 - SMEX Guidelines and Criteria for the Phase A Concept Study (Rev November 2003)
 - SMEX Sample Terms and Conditions for the Phase A (Concept Study) Contract
 - Draft Model Contract
 - SMEX Safety, Reliability, and Quality Assurance Requirements
 - Example Mission Definition and Requirements Document
- <http://spacescience.nasa.gov/codesr/smex/>
- <http://spacescience.nasa.gov/codesr/midex/retreat03/>



Concept Study Report Evaluation

- HQ/Paul Hertz will Chair the Evaluation Team
- LaRC/Carlos Liceaga will Co-Chair & lead the TMCO evaluation
- Per the Concept Study Guidelines and schedule, final reports must be delivered to address specified NLT 4:00 pm EDT, June 18, 2004.



Concept Study Report Content

- Phase 1 Selections based primarily on Scientific Merit and Technical Merit.
 - The science objectives MUST not change from the original proposal.
 - Any changes to the science implementation will be evaluated.
 - If there is no substantive change in the science implementation, then the scientific merit and the science implementation merit of the proposed investigation will not be reevaluated.
 - Science section from Proposal MUST be repeated in the CSR.
 - Any and all Changes MUST be highlighted. In addition, a CHANGES page up front that does not count against the page count should summarize significant changes to the Science Investigation section by identifying the original requirements, the new requirements, the rationale for the changes, and the location in the CSR.
 - A science panel will be convened, if needed, to review any changes to Scientific Merit



Concept Study Report Content

- Phase 2 Downselection will emphasize implementation: Technical, Management, Cost, and Other factors (TMCO) feasibility, which are the last three criteria.
 - It is expected that changes will be required in the description of the science implementation, especially as relates to the criterion for feasibility. 5 additional pages are allowed in the Science Investigation section to address this.



Evaluation Criteria (AO §7.4.4)

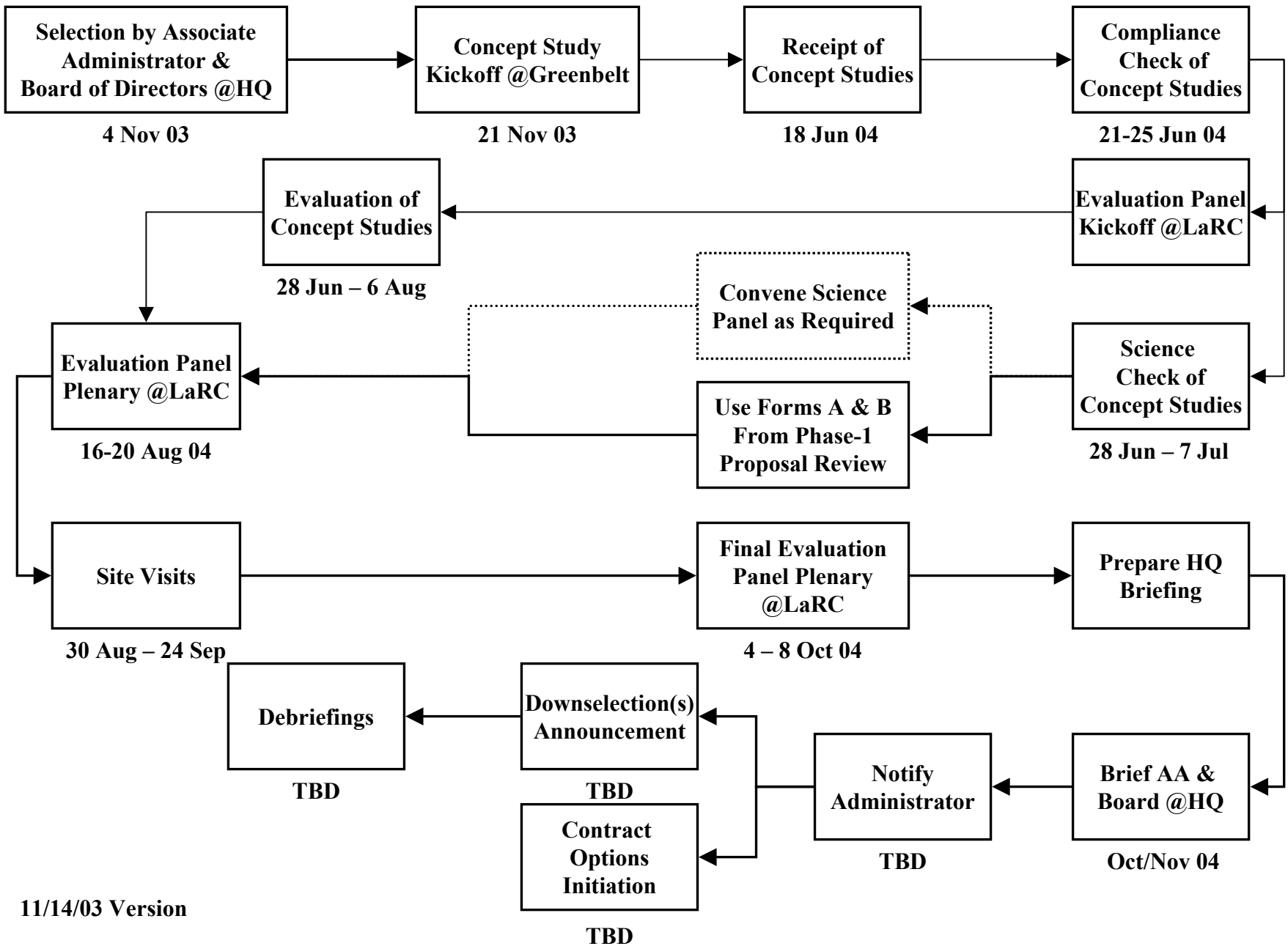
- The Concept Study Report will be evaluated on 5 criteria
 - Scientific merit of investigation
 - Same criterion as in AO.
 - Science objectives **MUST** not change from the original proposal.
 - Scientific merit will not be evaluated if no change.
 - Grade from original proposal will be used.
 - Scientific implementation merit of the investigation
 - Same criterion as in AO
 - Scientific implementation merit not evaluated if no substantive changes in science implementation
 - Evaluate Technical Feasibility of the science implementation.



Evaluation Criteria (AO §7.4.4)

- The Concept Study Report will be evaluated on 5 criteria
 - Technical, cost, and management feasibility, including cost risk, of the investigation
 - Described in Concept Study Guidelines and discussed in TMCO section of Briefing
 - Quality of plans for education and public outreach
 - Described in Concept Study Guidelines and E/PO section of Briefing
 - Quality of plans for new technology and small disadvantaged business activities
 - Described in Concept Study Guidelines and TMCO section of Briefing

SMEX Downselect Schedule/Evaluation Flow





Downselection Evaluation Process

- The SMEX Downselect Evaluation Panel is composed of the following evaluators and is chaired by the Explorer Program Scientist.
 - Selected science peer experts will review and evaluate the Concept Study Reports with changes to Scientific Merit and Scientific Implementation Merit (as applicable).
 - Selected technical peer experts will review and evaluate the Concept Study reports for all mission aspects (Technical feasibility, Cost, Flight system, Integration and test, Mission design, Management, Operations, Launch Services, etc.).
 - Selected expert and peer reviewers will review and evaluate the Education and Public Outreach, Technology Transfer and Infusion, and Small Disadvantaged Business and Minority Institution plans in each Concept Study Report.



Downselection Evaluation Process

- After a review and evaluation period of about 6 weeks, the SMEX Downselect Evaluation Panel will convene for a Preliminary Evaluation Plenary to consider preliminary findings and issues/questions to be reviewed during the site visits.
- Specific Concept Study Report questions will be forwarded to each Proposer at least 3 working days prior to the SMEX Downselect Evaluation Panel site visit.



Downselection Evaluation Process

- The SMEX Downselect Evaluation Panel will then conduct site visits to each Proposer's designated facilities to hear briefings by each Proposer. Ground rules for site visits have been established during previous Explorer downselect activities.
 - 7 hours presentations, 1 hour tour, breaks, lunch, private caucus: suggest 8:00 a.m. – 6:00 p.m. schedule.
 - No splinter sessions unless requested by NASA.
 - See previous ground rules on the web.
- Probable site visit dates (Tue and Thu):
 - Aug 31, Sep 2, Sep 14, Sep 16, Sep 21, Sep 23
 - Dates will be established in the Spring
 - Will group site visits by geography



Downselection Evaluation Process

- The SMEX Downselect Evaluation Panel will then meet the subsequent day after each site visit to discuss the findings from the site visit briefing.
- After all site visits are complete, the SMEX Downselect Evaluation Panel will then convene to finalize findings and to develop individual ratings for each proposal for each of the evaluation criteria. All ratings will be supported with strengths and weaknesses sufficient to justify the rating. Ratings will be based on a linear 9 point scale where 9 is excellent or low risk (highest rating) and 1 is poor or high risk (lowest rating).



Downselection Evaluation Process

- A Final Evaluation Plenary session of the SMEX Downselect Evaluation Panel will review individual criterion ratings and reach consensus criteria ratings for each of the Concept Study Reports.
- At the Final Evaluation Plenary session,
 - The Explorer Program Scientist will be the chair.
 - The evaluation findings for each Concept Study Report will be reviewed and discussed leading to a consensus agreement for the evaluation.
 - Separate consensus criterion ratings for each Concept Study Report and supporting documentation to justify these ratings will be produced.



Downselection Evaluation Process

- Results of the Downselection Evaluation will be developed into a briefing and presented to the Associate Administrator for Space Science and the Space Science Directors.
- Each PI will be invited to brief the Associate Administrator for Space Science and the Space Science Directors on the Scientific Merit of the investigation.
 - Ground rules for science presentations to headquarters have been established in previous Explorer downselects. See the web.
- Downselection will be made by the Associate Administrator for Space Science with the Space Science Directors.
 - Associate Administrator for Space Science: Edward Weiler
 - Executive Director for Science: J. David Bohlin
 - Director, Astronomy and Physics: Anne Kinney
 - Director, Sun-Earth Connection: Dick Fisher
 - Director, Solar System Exploration: Orlando Figueroa

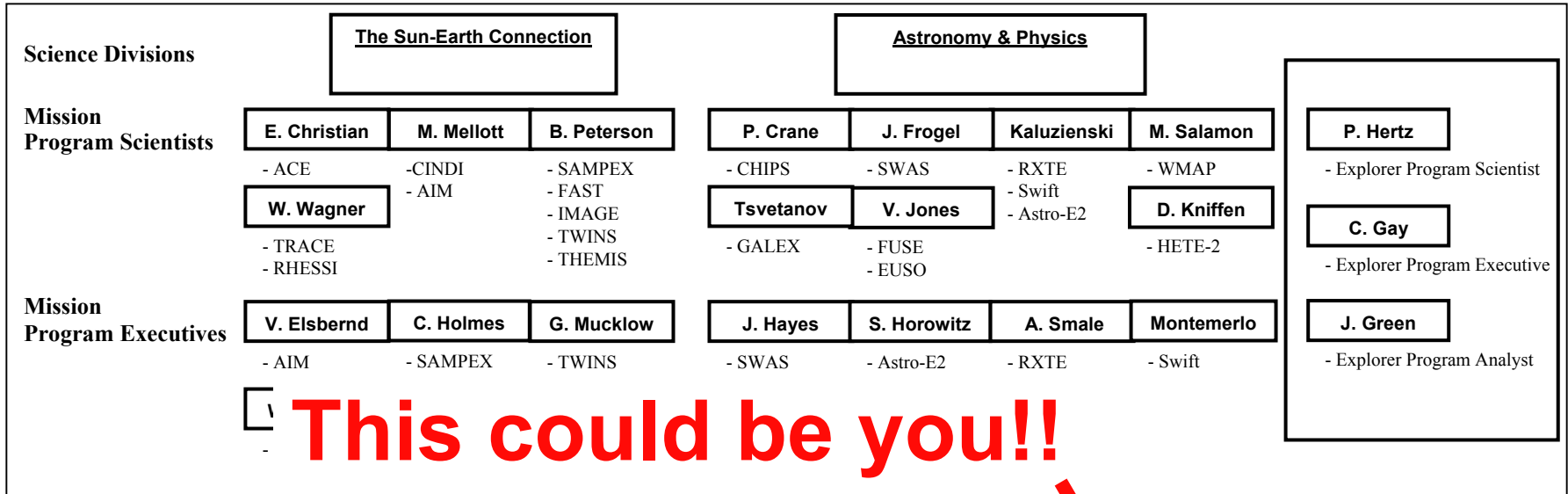


Competition Conditions

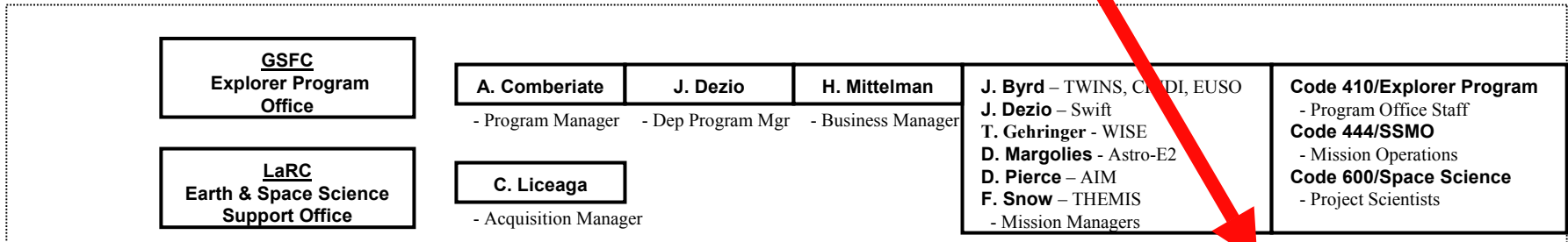
- “Blackout” after the Kickoff Meeting
 - Communications after this meeting will be controlled.
 - Technical and expert advice should be obtained directly from identified points of contact.
 - All programmatic questions, including questions of policy, questions of interpretation, and questions of clarification, should come to HQ/Paul Hertz.
 - Answers will be posted on the SMEX Downselect Information page
<http://spacescience.nasa.gov/codesr/smex/>
 - Charts from this Kickoff meeting will be posted.
- Site Visits will be coordinated with Paul Hertz
- Relevant documentation, including the Guidelines and Criteria for the Concept Study Report
<http://explorer.larc.nasa.gov/explorer/sel.html>

Explorer Program Organization

NASA Headquarters Office of Space Science



NASA Field Centers



Explorer Projects (development only)

Swift	TWINS	CINDI	Astro-E2	AIM	THEMIS	EUSO	WISE	SMEX 10	SMEX 11
- GSFC - Penn St - U Leicester - MSSL - OAB - SpectrumAstro	- LANL - SWRI - Aerospace	- UT Dallas - AFRL	- GSFC - ISAS	- Hampton U - SDL - NRL - LASP - Ball Aerospace	- UC Berkeley - Swales	- MSFC - ESA	- UCLA - JPL - SDL - Ball Aerospace	- TBD	- TBD



SMEX Phase A

- Paul Hertz is single POC for all activities
<http://spacescience.nasa.gov/codesr/smex/>
- “Shadow Program Scientists” for each project
 - Help evaluate CSR for changes in science implementation
 - Help evaluate changes in science implementation if required
 - Attend site visits (optional, but fun)
- Nominees
 - ANITA – Vernon Jones
 - DUO – Lou Kaluziński
 - IBEX – Eric Christian
 - JMEX – Mary Mellott
 - NEXUS – Bill Wagner
 - NuSTAR – Don Kniffen