Proposal for Forming an IAA Study Group SG 3.10

Title of Study: *Technologies to enable near-term interstellar precursor missions*

Proposer(s): *Dr David G Fearn, Dr Gregory Matloff*

Primary IAA Commission Preference: *Commission 3*
(From Commission 1 to Commission 6)
Secondary IAA Commission Interests: *Commissions 1 and 4*
(From Commission 1 to Commission 6)

Members of Study Team

Chairs: *Dr David G Fearn (UK), Dr Gregory Matloff (USA)*

Secretary: *To be appointed (if needed)*

Other Members: *Tentative list of possible contributors (most remain to be contacted):*

Claudio Bruno
Brice Cassenti
Giancarlo Genta
Mike Gruntman
Anders Hansson
Les Johnson
Junichiro Kawaguchi
Roger Lenard
Claudio Maccone
Colin McInnes
Ralph McNutt
Ed Stone
Giovanni Vulpetti

Short Description of Scope of Study: *The aim of the study is to establish which are the critical technologies required to enable interstellar precursor missions to take place within the next 10 to 15 years. In this context, such missions are defined as those reaching to at least 200 astronomical units (AU) from the sun, preferably 400 AU, within a period of no more than 30 years. The study will also establish the status of these technologies and will recommend the research programmes needed to permit such missions to be undertaken successfully.*

Overall Goal: *To provide in a Final Report the information required to persuade funding agencies to consider seriously near-term interstellar precursor missions.*

Intermediate Goals: *To provide the individual contributions necessary to enable the compilation of the Final Report. To hold such technical meetings as are necessary to expedite the overall programme.*

Methodology: *The study has been broken down into clearly defined individual sections. These will be allocated to lead writers, who have the necessary acknowledged expertise to produce authoritative texts. They will produce an initial draft in each case, consulting as widely as appropriate. The supporting experts will then provide additional text as necessary, and will also act as editors where required, so that a consensus view is obtained. These individual contributions will then be compiled into the Final Report by the Chairs of the Study Team. Meetings will be held at intervals to co-ordinate the overall study (eg: in association with the IAA Spring Meetings in Paris).*

Time Line: *It is proposed to complete the study within 2 years, ending in June 2009.*

Final Product (Report, Publication, etc.): *A Final Report, which will be published by a recognised publisher, such as the AIAA, BIS, Praxis/Springer, etc. It is likely that conference and journal papers will also be written using this material.*

Target Community:
i. That part of the scientific community who wish to study in situ the interaction between the solar system and the interstellar medium, and also the physical properties of that medium.
ii. Funding agencies who may be interested in mounting missions of this kind.

Support Needed: *Experts from the IAA to carry out the required peer review of the Final Report.*

Potential Sponsors: *Possible publishers.*

To be returned to IAA Secretariat Paris fax: 33 1 47 23 82 16 email: sgeneral@iaanet.org

Date: *25 March 2007* **Signature:**

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