

IAA Study Group Status Report

Responsible Commission: Commission VI

Study Number and Title: Future Directions in Space Exploration Education 6.2

Short Study Description:

Overall Goal: To address UNISPACE III 1(d) strategy for space exploration (1999) education and IAF/IAA/ISU Expert Workshop (2003) pilot proposal to build a platform for space literacy by exploring the potential for a Virtual Global Space Exploration Education Portal (VGSEEP) accessible to all audiences via the Internet.

Intermediate Goals: (1) Identify hi-tech space education tools built by space agencies and freely available. (2) Identify hi-tech space education projects either built or being built. (3) Hold a special session at an IAA standalone conference planned for ESTEC, Holland in 2007 with the aim of bringing together relevant educators, communicators, scientists and technical experts. (4) Build a resources website as a platform for space science literacy and a Virtual Global Space Exploration Education Portal (5) Provide a publication that reports our experience during the study group's terms and provides recommendations for the future of hi-tech space exploration education.

Rationale: Examples of virtual space exploration tools and projects include *World Wind*, which allows students to see the world from space and zoom down to a few thousand meters or less above the surface anywhere in the world and to view the Moon, Mars, Venus and Jupiter in similar ways; a *Virtual Lab*, with a light microscope to peer down to cellular level; an *SEM* and an *X-Ray Electron Dispersion Spectrometer* to examine objects well below the width of a human hair; a comparative tool in which students can seed their own data in almost any visual or text format called *What's the Difference*; and a *Virtual Field Trip* tool in which they can journey into the field with scientists.

In addition, distributed computing via the Internet is already allowing millions to view the search for life in the universe on their desktops, and to participate in searching for interstellar grains imbedded in aerogel. Web references: <http://learn.arc.nasa.gov> and <http://stardustathome.ssl.berkeley.edu/>

These may represent just a fraction of what has already been created, or may be possible in the near future. It has become the opportunity to invigorate, and in many cases initiate, the study of space science on a global scale. Students and the public would have finger-tip access to space science as it is done and, in some projects, the opportunity to contribute to the body of space exploration and life in the universe knowledge with data never before examined or processed by scientists.

Thus, this joining of the Internet with fast, cheap home computers and new technologies to open hi-tech interactive windows on space exploration represents a timely opportunity for the proposed study group. In one stroke, it could provide for all States space activities related education for all (**UNISPACE III**) and build a platform for space literacy as envisioned by the **IAF/IAA/ISU/UNESCO Expert Workshop** in a way that we can only just begin to envision in both formal and informal education settings. Museums and

classrooms are no longer limited to physical buildings. Space exploration has the opportunity to lead the way in educating and informing students and the public, and to encourage space scientists and engineers of the future.

To date there may have been only a few initial collaborations between educators, communicators, scientists and technical people pooling skills and understanding across these disciplines to forge a new way of opening space exploration to classrooms and in the home.

Progress in past six months: Discussion in November and December 2005 led to the suggestion of a number of possible members. All of these were approached and three had personal visits from the chair during the first three months of 2006.

Issues requiring resolution?: A co-chair needs to be established. After this the study group should engage in group email leading to a telecom (if necessary) before the end of 2006 to establish and implement a program leading to deliverables as in the overall and intermediate goals (or adjusted goals with input from current and new members).

Product Deliveries on Schedule? : Product deliveries were intended initially to begin with the Space and Society conference at ESTEC in 2007. A more likely venue would be one year later during the Space and Society conference in Canada in 2008. 2007 should be devoted to establishing an information base, which can begin with the UNESCO sponsored 'Human Space Exploration Workshop' during the 2006 IAC to which the chair is invited. This IAC can be utilized to strengthen the base of membership and establish a co-chair. During the rest of 2006 and during 2007 intermediate goals (1) and (2) can be fully addressed, as well as (4), at least in part.

Study Team Member Changes? The team currently remains small and needs to be expanded. The intended co-chair has been unable to go ahead due to work commitments. The membership currently includes:

Carol Oliver lead (Australia)
Chris Welch (UK)
Peggy Finarelli (USA)
Geoffrey Bruce (USA)
Kerrie Dougherty (Australia)
Mark Brake (UK)
Tom Gaskins (USA)
Olga Zhdanovich (Russia)
Isabel Hawkins (USA)

Commission VI leadership: Roger Malina

Name of person providing Study Group report: Carol Oliver, Study chair

Status Report Date: 29 Sept 2006