Conducting Science in a Program of Human Exploration

The Shuttle Mission: Enabling Science & Exploration

First: A Few General Lessons Learned From Apollo, Skylab, ASTP and Shuttle/Spacelab

Noel W. Hinners
Masters Forum 18
May 13, 2009
Apollo Science: Spectacular, Forefront And Productive
There will ALWAYS be diverse opinions as to the merits of doing science in human space flight programs.
## Key Elements of Successful Apollo Science

<table>
<thead>
<tr>
<th>Apollo Era</th>
<th>Now</th>
<th>Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Funding Was <strong>More</strong> Than Adequate</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>• Apollo Was Not a “Threat” to Science</td>
<td>X</td>
<td>?</td>
</tr>
<tr>
<td>• Lunar Science—Exciting; Good “Community” Support</td>
<td>X</td>
<td>?</td>
</tr>
<tr>
<td>• Joint Program Management Between Science and Human Exploration – Each Doing What it Does Best</td>
<td>X</td>
<td>?</td>
</tr>
<tr>
<td>• Apollo Management and NASA Leadership Were Vocal Advocates of Science</td>
<td>X</td>
<td>?</td>
</tr>
</tbody>
</table>

Despite the Lack of Political Imperative, The VSE Should Strive to Emulate Apollo
April 5, 1969

Pres. Nixon Buying the Shuttle (and Not a Space Station)
Jan. 5, 1972

Human Space Flight is Inherently Political
Science/Space Flight Post-Apollo

**Skylab: Apollo Telescope Mount – 1973/1974**
- Joint OMSF/OSS Program Office
- Science by OSS; Funding, Mngt. by OMSF
- “Successful” Results & Relationship

**Apollo-Soyuz Test Project - 1975**
- Joint OMSF/OSS Program Office
- Science by OSS; Funding, Mngt. by OMSF
- “Successful” Results & Relationship after a review by the Space Science Board

**Shuttle/Spacelab – 1981 - Present**
- All Things to All People; No Joint Office
- OSS Selected, Managed and Funded Science
- Non-Uniform Support by Science Community
- Variable results (to follow in MF 18)
An Unmitigated Success
When Proposed, Servicing Was But a Promise

Shuttle Servicing Save(s)d Hubble’s Butt
Conducting Science in a Program of Human Exploration

A Surmountable Challenge

If We Learn Lessons From Lessons Learned