An IPS Clearinghouse for Live-Presenter Audience Participation Planetarium Activities

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BIOGRAPHIES
Alan Gould was Director of the Lawrence Hall of Science Planetarium, UC Berkeley, from 1999 to 2009 and has been webmaster for the IPS since 2003. He is also a co-author on several programs in the Planetarium Activities for Successful shows (PASS) series. John Erickson is currently Director of the Lawrence Hall of Science Planetarium and a co-author on some of the PASS planetarium programs. Karrie Berglund is Head of Goal #1 (professional development) of the IPS Vision 2020 task force and co-founder of Digitalis Education Solutions. Susan Button is a longtime promoter of audience participation programs, past president of IPS, and IPS Portable Planetarium Committee Chair. Jeanne Bishop is a multi-decade experience planetarium educator and IPS Education Committee Chair. Martin Ratcliffe, in addition to being past IPS President, has been active in promoting audience participation through his position at Sky-Skan. Kevin Scott has been a key driver of audience participation planetarium activities at Evans & Sutherland.

ABSTRACT
There are a growing number of websites where documentation for audience participation activities that make for exciting planetarium programs are available. The IPS website (http://www.ips-planetarium.org/) has links to sources of such activities. They have been scattered in different places: Education Resources, Planetarian archives, and Portable Planetarium Committee page. Some of the IPS affiliates, e.g. APLF, GLPA, and MAPS, have web pages for planetarium activities. A clearinghouse page is now the "Live Interactive Shows" page (/lips) with sources for activities and links for networking with similarly interested planetarians, such as Live Interactive Planetarium Symposia (LIPS) and the associated email discussion group.

INTRODUCTION
The International Planetarium Society (IPS) website has links to resources including educational activities that can be used in audience participation planetarium shows.
Those resources are on various related IPS pages:

- the archives of the IPS journal The Planetarian (http://www.ips-planetarium.org/?page=plntrnarchive) particularly in the educational columns such as From the Classdome, Lip Service, Mobile News, or the IPS Education Committee column Seeking what Works.
- the IPS Portable Planetarium Committee has a number of activities and resources on its Resources for Portable Planetariums page (http://www.ips-planetarium.org/?page=portableresources). See specifically the Portable Planetarium Handbook for ideas about planetarium lessons.

In addition, affiliate organizations of the IPS (http://www.ips-planetarium.org/?page=affiliates) have their own websites with pages devoted to planetarium activities:

- APLF (Association des Planétariums de Langue Française - http://www.aplf-planetariums.org/),
- GLPA (Great Lakes Planetarium Association - http://glpa.org/resources), and
- MAPS (Middle Atlantic Planetarium Society - http://www.mapsplanetarium.org/category/education/).

Some of the prominent links on the IPS pages concerning audience participation programs are in the following sections of this poster paper.

I. PLANETARIUM ACTIVITIES FOR SUCCESSFUL SHOWS

Figure 3 – Planetarium Activities for Successful Shows resulted from a recasting of the acronym for Planetarium Activities for Student Success.
At the top of the list of hits if you aim your Internet search engine to “planetarium activities” is Planetarium Activities for Student Success (PASS), developed by Holt Planetarium staff at Lawrence Hall of Science (LHS) UC Berkeley over the years 1973–1994. National Science Foundation-funded workshops in the summer of 1978 (POP—Participatory Oriented Planetariums, with 100 planetarium educator participants) and in the summers of 1989-94 (POPS—Participatory Oriented Planetariums for Schools, with 150 participants). With the 1978 POP program, we produced Planetarium Educators Workshop Guide (IPS Special Report #10) that was distributed to all the members of the International Planetarium Society. With the POPS program we expanded Planetarium Educators Workshop Guide into the 12-volume PASS a series.

In each PASS planetarium show, visitors participate in observations, experiments, and discussion in order to experience science as exciting and understandable. They leave with feelings of accomplishment.

Titles and descriptions of all the PASS shows may be found on the PASS website - http://www.planetarium-activities.org.

Figure 4 – Students using starclocks in the planetarium. Starclock was originally part of the Sky Challenger planisphere with interchangeable star wheels for a variety of sky-watching activities.

With the advent and widespread proliferation of digital planetariums at the beginning of this millennium, we found that the audience participation principle is as valuable as ever. In furtherance of the PASS project's goal to promote audience participation in the planetarium world, PASS has established agreements with three planetarium manufacturers to adapt all of our PASS shows for each planetarium system for maximum ease of presentation by users. Those companies are the subjects in the next sections of this poster paper.

II. SKY-SKAN

The PASS series as adapted for Sky-Skan planetarium systems using Sky-Skan's DigitalSky software is called Interact! It was developed by the collaborative team of Toshi Komatsu and Alan Gould (PASS staff) and Martin Ratcliffe (Sky-Skan staff). PASS may soon be adapted for the newest version of that software, DarkMatter (https://www.skyskan.com/products/ds).

Figure 3 – In addition to having adapted PASS for DigitalSky software, Sky-Skan also has “Special Effects Discs For Classical Planetariums” that are of interest for use in audience participation programs on any platform.

III. DIGITALIS EDUCATION SOLUTIONS, INC

Figure 4 – This manufacturer of planetarium systems has a very good section with educational activities.

On the Digitalis Education Solutions website (http://digitaliseducation.com/), the Digitalis Open Astronomy Curricula page (http://digitaliseducation.com/curricula) has a set of activities organized by grade level appropriateness. One that you can find there, for example, is especially appropriate to this time of year: Halloween Astronomy.
IV. DIGISTAR

Planetariums with Evans & Sutherland systems using Digistar can get PASS shows customized for Digistar through scripts that are available through the Digistar User's Group library of online scripts, media objects, and planetarium shows. These PASS resources were created by the team at Evans & Sutherland, optimized for use with their Digistar planetarium systems.

V. SHARING IDEAS—LIVE INTERACTIVE PLANETARIUM SYMPOSIUM (LIPS)

The first Live Interactive Planetarium Symposium (LIPS) was in August of 2011 in Bremerton, Washington, organized by Karrie Berglund and Rob Spearman of Digitalis Education Solutions, Inc. It focused on live interactive planetarium lessons, connecting a live planetarium presenter with an audience, enhancing presenter performance skills, group management techniques, and sample activities. It offered an opportunity to network and share ideas with others doing live interactive shows. There have been LIPS every year since then (see http://lipsymposium.org/LIPS/node/48 where you can find a few resources from each year). Slides from Alan Gould's presentation on questioning strategies (The Question of Questions) at the 2011 LIPS is http://www.lipsymposium.org/LIPS/files/AlanGouldLIPS2011.pdf.

For upcoming LIPS, see http://lipsymposium.org.

We have established the main IPS clearinghouse for live presenter audience participation planetarium activities as the IPS website LIPS page (https://www.ips-planetarium.org/lips).

If you become aware of live presenter audience participation resources, please either add them to the following space in this poster or contact the author/IPS webmaster, Alan Gould agould@berkeley.edu and he will add your contributions to the growing list on the IPS LIPS page.

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• Jeff Nee, Informal Education Specialist at NASA Jet Propulsion Laboratory and past Lawrence Hall of Science Planetarium presenter,
• Karrie Berglund, Head of Goal #1 (professional development) of the IPS Vision 2020 task force, co-founder of LIPS and Digitalis Education Solutions,
• Martin Ratcliffe, past IPS President and active promoter audience participation through Sky-Skan,
• The team at Evans and Sutherland that adapted PASS for Digistar.

REFERENCES

Summary of websites referenced:
• IPS website - https://www.ips-planetarium.org
• Education Resources page (http://www.ips-planetarium.org/?page=edresources
• IPS journal The Planetarian - http://www.ips-planetarium.org/?page=plntrnarchive
• IPS Portable Planetarium Committee - http://www.ips-planetarium.org/?page=portableresources
• APLF (Association des Planétariums de Langue Francaise - http://www.aplf-planetariums.org/
• GLPA (Great Lakes Planetarium Association - http://elpa.org/resources
• MAPS (Middle Atlantic Planetarium Society - http://www.mapsplanetarium.org/category/education
• Planetarium Activities for Successful Shows (PASS) website - http://www.planetarium-activities.org
• Sky-Skan - https://www.skyskan.com
• Digitalis Education Solutions Open Astronomy Curricula page - http://digitaliseducation.com/curricula
• Digitalis adaptation of PASS - http://digitaliseducation.com/products-curricula-pass
• Live Interactive Planetarium Symposium (LIPS) - http://lipsymposium.org
• IPS clearinghouse for live presenter audience participation planetarium activities: https://www.ips-planetarium.org/lips