

**THIRTY-SEVENTH ANNUAL REPORT
(July 1, 2008 – June 30, 2009)**

PETERSON PLANETARIUM

submitted by

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&
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to

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***This is the 37th annual report since the Peterson Planetarium has been the responsibility of the Departments (or Division) of Physical Sciences.**

INTRODUCTION

The two previous reporting periods were characterized as a “crossroad” for Peterson Planetarium. One aspect was fiscal considerations which have largely been addressed (with the upgrades, etc.). The other aspect was the position status of the director during the protracted cancer battle (~1.5 years) and now following the death (~2.0 years ago) of Ron Keith, whose position responsibility included directing the Peterson Planetarium. The latter personnel aspect persists.

This Thirty-Seventh Annual Report is divided in to the following principal sections: HIGHLIGHTS of the REPORTING PERIOD, ATTENDANCE and USAGE PATTERNS, PERSONNEL, BUDGET, and FUTURE CONSIDERATIONS.

HIGHLIGHTS of the REPORTING PERIOD

Four items of differing significance are considered highlights of the current reporting period, July 1, 2008 through June 30, 2009:

- DeWayne Backhus continued to assume administrative and general oversight responsibility as interim director of Peterson Planetarium. With a continuing graduate student and one continuing and one new undergraduate student (see subsequent PERSONNEL section for elaboration), Planetarium programming was sustained for on-campus general education and space science/astronomy course students; “special” campus-based activities, e.g., Family Day; area pre-college school groups; and community “special-interest” groups were served to a slightly greater extent than in the recent past. Reviving evening, public program scheduling (admission-charged programs), which has been moribund since 2003/04, was not possible.
- A second, continuing development concerned planning for a replacement in the “Keith” position. Permission to advertise a position, which included responsibility for directing the operation of Peterson Planetarium, was granted. Solicitation for applicants occurred, and several candidates were interviewed. However, a hire was not consummated, and the search was closed as a casualty of the State of Kansas budget reductions for universities in FY 2010.
- Some progress was made toward future programming. A second edition of a Hubble Space Telescope-based program titled *Hubble Vision 2* was purchased. However, the digital format of that program must be converted to the presentation format that exists in Peterson Planetarium. A provider of these services, Gamma Tech, is known, but the cost may be up to \$600 (the show cost \$620). Subsequent to that conversion, installation in the Planetarium is possible. Progress was also made toward implementation of the *Our Place in Space* program; see FUTURE CONSIDERATIONS section.
- An attempt is made each month to connect science-hall users with celestial phenomena. This is done two ways at the Planetarium entry: (1) each month a sky calendar from *Sky and Telescope* is posted at the entry, and (2) a display board for posting the annual *Sky Gazer’s Almanac* was produced by University Facilities staff and mounted on the modular display façade at the Planetarium entry. That visually attractive *Almanac* can enable a person to determine celestial events for a given day, as well as the time of day for the event. (Also, see a related goal for this entry area in FUTURE CONSIDERATIONS section.)

ATTENDANCE and USAGE PATTERNS

The three tables attached document attendance patterns for the reporting period. The total number of programs presented, 91, represented a nearly 20 percent increase over the preceding year, and the total attendance, 2131, was nearly 26 percent greater in FY 2009 than FY 2010.

More specifically, Table 1 provides greater detail regarding attendance by group categories. The three principal categories are *ESU Group Activities* (ESU classes, Family Day patrons, etc.), *Local Community and/or Special-Interest Groups*, and *School Groups* (principally pre-college). Data reveal the following:

- ESU general education class use represents the largest sub-category of attendees—48 programs (53 percent of total) and 955 attendees (45 percent of the total). These percentages decreased in the past year as the numbers in the other “off-campus” categories increased. The preceding ESU-based includes only general education/introductory course students.
- As in the past, the second largest patronage is area school groups—elementary, middle, and high school students. There were 23 of these groups (25 percent of the total), and they represented 743 attendees, which was 35 percent of the total attendees. The largest subset of these pre-college students were middle schoolers (nominally 4th through 8th graders).
- A goal has been to increase programming directed toward community patrons, i.e., non-school-based groups. That category did increase in representation in the statistics this past year—from 3 to 9 programs, and 44 to 189 attendees. These reflect about 10 percent of the totals for those served. Capability for general public programming is a goal reflected throughout the body of the Report, as well as the appended draft plan for enhanced programming.

Table 2 reflects trends through time for annual attendance by major group classifications. Decreases (in absolute numbers) may be noticed for two type groups (ESU general education and other ESU-based), and increases characterized two categories (local community/non-school and school groups, most often pre-college).

Table 3 provides at a glance the trend in total programs, total attendance, and average attendance per program. Without performing regression analyses, as indicated the number of programs, the attendance, and the average attendance all increased to some degree.

A point noted previously persists: an opportunity for expanded programming exists with the categories of groups or patrons least served relative to past years. For example, calendar year 2009 has been dubbed by the United Nations as the International Year of Astronomy to coincide with the 400th anniversary of the development and use of the telescope by Galileo (historians of science may debate nuances of this) toward, ultimately, revolutionary developments in astronomy. Programs could have been developed to celebrate that with the general public. (That was the case in 1972 on the occasion of the 500th anniversary of the birth of Nicolaus Copernicus when *The Copernican Revolution* public program was developed by Backhus.)

PERSONNEL

During the period a graduate student, Michael Newton (physics major/BS degree, and earth science MS student), has been indispensable to the operation. He is most knowledgeable of the instruments, knows the software that enables automation of presentations, can do first-order trouble-shooting, and with his background can do some live programs concentrating on the current sky. He needs to complete his MS research; his available time with us yet is uncertain. His presence determines a lot about our capability for programming in the near term.

Two undergraduate students, Lynn Lefebvre (senior, physical sciences major pursuing several minors toward the BS degree), and Cameron Brigham (a Freshman English major recruited from the Fall 2008 PH 110/111 Space Science class) have been invaluable relative to presentation assistance. Both also serve as laboratory assistants for the PH 111 Introduction to Space Science Laboratory counterpart to the PH 110 lecture course which Backhus teaches. Both have had PH 110/111 and know the routines. Lefebvre, however, will only be here in the Fall, 2009, prior to an active military duty status.

In a pattern similar to the previous year, Newton presented 60 of the 91 programs; Backhus 16; Lefebvre, 10; and Brigham, who was in a "familiarization" mode, presented 5. Although, several other faculty, e.g., Michael Morales, Marcia Schulmeister, Rich Sleezer, and Ken Thompson schedule their classes for exposure to the Planetarium, they depend on a trained assistant for the operation, particularly the presentation of the automated programs. As noted, Michael Newton handled nearly all of the automated presentations.

The Physical Sciences office staff under the supervision of Ginger Tabares assist with program requests, complete an information form (that was recently developed and which has proved quite functional), and Newton has finalized most scheduling arrangements via email or telephone correspondence. Backhus and Tabares also handle all of the budget-related matters.

BUDGET

OOE. The OOE allocation for covering operating expenses in FY 2009 was \$804, an amount that has been relatively "flat" in recent years (in FY 1987 it was \$675). The total expended with a "subsidy" from Physical Sciences was \$986 (which enabled the purchase of the *Hubble Vision 2* program).

In addition to the Hubble program which cost \$620 with shipping, items costing over \$25 included *The Observers Handbook* (\$65), projector lamps (\$110), and a replacement EXIT sign (\$95).

The allocation for OOE in FY 2010 remains \$804. Next year the Peterson Planetarium Restricted-Use account may need to be utilized. Further, the Fall, 2009, is the next scheduled Preventive Maintenance Contract bi-annual visit by Spitz, Inc., personnel. A request for \$7,325 has been made to the College of Liberal Arts and Sciences for FY 2010 capital equipment funds to cover a Contract. Dean Steve Brown has expressed support for that request and expenditure. Processing of the Contract request must be done soon to secure a desired date.

Student Payroll. The FY 2009 student payroll allocation was \$1151 (all "regular"); in FY 2008 it was \$1081 "regular" plus \$306 "work study." The student payroll was expended in its entirety, and \$84 was transferred from the Science and Mathematics Education Center student payroll account to create a zero balance. [In

addition, during the Fall 2008 Newton was on a combined ESU/Space Grant graduate assistant award (\$4000 plus a tuition waiver in excess of \$2000), so this, too, served to subsidize programming. However, Newton was only on a “student payroll” basis in the Spring semester.]

As may be noted from past annual reports, student payroll allocations to Peterson Planetarium have increased from \$675 in FY 1987, at which time it was identical to the OOE. However, it is marginally adequate for minimal levels of programming unless subsidized by funds from other sources for personnel support.

Restricted-Use Account. A nominal charge (\$10 per group) is made for most programs presented to external groups who request programs (some groups “plead” no means of support, and we concede to a presentation). During this past year \$250 was deposited in that account; the account balance is \$2,885. An attempt has been made to build that account.

FUTURE CONSIDERATIONS

Attached is an update of the draft plan for future programming, **Enhancing Future Programming in Peterson Planetarium**. Indeed, as noted in HIGHLIGHTS, we have purchased a sequel to the current Hubble program (which must be converted to the capability of Peterson Planetarium). But in addition, Michael Newton has been working on a program titled *Our Place in Space*, which dates back to the Ron Keith period, to adapt and program it into the Peterson Planetarium repertoire. It would be a most appropriate program for the lower elementary school grades. That is the vision the draft plan reflects.

The continuing director assignment is another consideration. In addition to the fiscal uncertainties, discussions concerning faculty-load crediting are such that reassignment for directing responsibilities may be problematic. I consider such a responsibility to be much different than the typical service activities of faculty.

A goal indicated in the Departments of Physical Sciences Annual Report is to remodel the directory façade at the south end of the first floor. Similarly, the walnut-finished Planetarium entry façade was designed and installed at the same time as the walnut-finished directory and display area at the south end of the first floor. The entry façade to the Planetarium should, likewise, be remodeled to match the oak-trimmed wood décor throughout the remainder of Cram Science Hall. I ask that others direct attention toward realizing that goal. These were two areas that received no attention at the time of the remodeling and code-related work in the 1990s.

Finally, I close this Report with a quote of Elizabeth Marincola, president of the Society for Science and the Public, on the occasion of the recognition of the three top finalists at the Intel International Science and Engineering Fair, the world’s largest high school competition. Marincola stated: “With your achievements come responsibilities.... The science-initiated must rise to the challenge of becoming science communicators. We keep its mystery and its beauty to ourselves at our peril.” (Science News, June 6, 2009, p.9) This quote seems appropriate in the context of the Planetarium’s potential for “outreach” beyond the campus.

Attachments: Table 1 Planetarium Usage by Group Classification

Table 2 Annual Attendance by Group Classification

Table 3 Comparative Attendance Data

Enhancing Future Programming in Peterson Planetarium (a draft plan)

Table 1
 Planetarium Usage by Group Classification
 Period: July 1, 2008 through June 30, 2009

Group Description	Number of Visits by Group Type	Attendance by Group	% of Total Usage by Attendance	% of Total Usage by No. of Visits
I. ESU Group Activities				
A. General Education Classes				
1. ES 110 Intro. To Earth Science	16	391	18	18
2. PS 115 Our Physical World	5	113	5	5
3. PH 110/111 Space Science	27	451	21	30
B. Upper division courses	2	23	1	2
C. Special Events (Parents' Day, Alumni Weekend, and other ESU)	3	57	3	3
<i>Subtotal</i>	<i>53</i>	<i>1035</i>	<i>48</i>	<i>58</i>
II. Local Community and/or Special Interest Groups				
A. Scouts and Brownies	1	7	<1	1
B. Special Interest	8	182	9	9
C. Scheduled Public Programs	0	0	0	0
<i>Subtotal</i>	<i>9</i>	<i>189</i>	<i>9</i>	<i>10</i>
III. School Groups/Related*				
A. School groups				
1. Elementary	10	308	14	11
2. Middle School	10	394	19	11
3. High School	2	41	2	2
4. Other Colleges	1	39	2	1
B. Special Events*	6	125	6	7
<i>Subtotal</i>	<i>29</i>	<i>907</i>	<i>43</i>	<i>32</i>
Total	91	2131	100	100

*E.g., QUEST students, an enrichment program

Table 2
Annual Attendance by Group Classification

Recording Period	ESU General Education	ESU Upper Division/ Graduate Classes or Special Events	Local Community/ Special Interest	Public Presentations	School Classes/ School Related	Total
1972/73	1606	141	984	774	1572	5077
1973/74	1440	295	537	606	1645	4523
1974/75	1065	137	495	268	1533	3498
1975/76	1155	296	669	519	1275	3914
1976/77	827	107	684	364	1234	3216
1977/78	1163	123	659	235	1640	3820
1978/79	908	116	701	222	1787	3734
1979/80	752	157	450	435	1600	3394
1980/81	656	176	443	275	1807	3357
1981/82	669	51	756	283	1056	2815
1982/83	731	112	388	283	1018	2532
1983/84	735	21	368	170	1501	2795
1984/85	781	0	283	220	1267	2551
1985/86	1258	105	518	303	1157	3341
1986/87	1474	52	351	0	1203	3080
1987/88	1120	0	830	206	678	2834
1988/89	1115	0	837	55	985	2992
1989/90	1103	40	559	50	817	2569
1990/91	942	8	341	0	867	2158
1991/92	1170	44	170	0	577	1961
1992/93	1150	162	310	0	628	2250
1993/94	1334	81	174	271	539	2399
1994/95	548	37	120	0	104	809
1995/96	0	0	0	0	0	0
1996/97	470	49	307	420	932	2178
1997/98	913	366	427	51	1278	3035
1998/99	1035	91	261	85	1119	2591
1999/00	1029	383	169	67	984	2632
2000/01	978	256	626	120	845	2825
2001/02	1042	274	122	33	1086	2557
2002/03	1221	302	222	156	797	2698
2003/04	1101	83	81	0	597	1862
2004/05	1059	95	178	0	950	2282
2005/06	1121	133	169	0	906	2329
2006/07	1050	104	62	0	371	1587
2007/08	1030	86	44	0	534	1694
2008/09	955	80	189	0	907	2131

Table 3
Comparative Attendance Data
Period: 1972/73 to present

Reporting Period	Number of Lectures	Attendance	Average Attendance
1972/73	141	4595	32.6
1973/74	143	4241	29.7
1974/75	132	3498	26.5
1975/76	141 (160)*	3914 (4795)*	27.8
1976/77	122 (127)*	3216 (3312)*	26.4
1977/78	132	3820	28.9
1978/79	121	3734	30.9
1979/80	124	3394	27.4
1980/81	122	3357	27.5
1981/82	102	2815	27.6
1982/83	103	2532	24.6
1983/84	104	2795	26.9
1984/85	91	2551	28.0
1985/86	120	3341	27.8
1986/87	98	3080	31.4
1987/88	91	2834	31.1
1988/89	99	2992	30.2
1989/90	89	2569	28.9
1990/91	76	2158	28.4
1991/92	69	1961	28.4
1992/93	85	2250	26.5
1993/94	82	2399	29.3
1994/95**	27	809	30.0
1995/96**	0	0	0
1996/97	82	2178	26.6
1997/98	141	3035	21.5
1998/99	118	2591	22.0
1999/00	114	2389	23.1
2000/01	126	2825	22.4
2001/02	115	2557	22.2
2002/03	116	2698	23.3
2003/04	85	1862	21.9
2004/05	102	2282	22.4
2005/06	110	2329	21.2
2006/07	70	1587	22.7
2007/08	76	1694	22.3
2008/09	91	2131	23.4

* The numbers in parentheses for the mid-1970s include programs prepared and presented by Joe Ott, Division of Music, for the years indicated; those without parentheses are those programmed by the Division of Physical Sciences during those years.

** The period from the 1994/95 through 1995/96 academic years was when Peterson Planetarium sustained devastating water damage. No or reduced programming occurred. Subsequently the chamber was remodeled and a new Spitz System 512 instrument was installed.

Enhancing Future Programming in Peterson Planetarium (a draft plan, updated June, 2009)

Background

Past programming in Peterson Planetarium has served a number of off-campus clientele (patron groups) in addition to on-campus students in ESU classes. These include: (1) area K-12 school children, (2) membership from a variety of civic and community organizations ranging in age from Brownies and Cub Scouts to senior citizens groups, and (3) those from the general public in response to public program presentations. In recent years (since the late 1980s) fewer off-campus patrons have been served than prior to about the mid-1980s. This is documented by annual reports for Peterson Planetarium in recent years; reports have been prepared since the early 1970s when responsibility for Peterson Planetarium was transferred to the Physical Sciences from Mathematics.

This is the genesis of a plan for increasing programming directed at off-campus patrons, or what has often been referred to as “outreach.” Outreach serves several objectives; principal among those are to (1) increase the public’s scientific literacy in an informal, often “entertaining” educational sense, and (2) nurture an interest of young persons toward potential science, technology (or technical), engineering, and mathematics careers (i.e., STEM careers). The ultimate goal is greater public awareness of and support for the sciences, and an adequate supply of scientists, physical science educators and others in technical positions to maintain U.S. competitiveness in a global economy.

Current Developments

Peterson Planetarium was refurbished and rededicated in January, 1997, following the installation of a then state-of-the-art Spitz System 512 projector and auxiliaries. During the 2007 calendar year new carpet was installed, and the ATM-3 computer-based interface and accompanying software were upgraded by Spitz personnel to an ATM-4 automation system. The completion of that installation, the conversion of two automated programs to ATM-4 compatible code, and preventative maintenance agreement work by Spitz personnel in October, 2007 and November, 2009, provides a facility that is ready for greater utilization.

In addition to a “ready facility,” a position announcement is soliciting applicants for a new hire in the Departments of Physical Sciences with responsibility for teaching courses for preservice elementary teaching candidates and introductory physics for allied science majors, and directing the operation of Peterson Planetarium when the current fiscal and other circumstances deem that appropriate. Those factors will provide the opportunity for enhanced programming and outreach. That is the expectation.

Elements of a Plan

The following are considered steps to achieve the expectation of enhanced programming in the near future. They are considered tentative so that a new director has an opportunity to provide leadership for a plan to be “finalized” during the first year of an appointment.

- Sustain current use by on-campus general education (e.g., ES 110/111 and PS 115) and space science/astronomy course students;
- Increase the number of automated programs beyond the current two (“More Than Meets the Eye” and “Through the Eyes of Hubble”) for various groups (K-12 school groups, and civic/community patron groups);
- Plan, develop, and execute programs for the general public; these may be automated, e.g., programs such as the Christmas “star,” or live programs, e.g., a program for a season, or for the current sky (i.e., one featuring prominent celestial objects in the evening of a given date);
- Develop and deliver planetarium-based courses for inservice teachers, either during the academic year or the summer session.

Other initiatives are also welcome for consideration.

Epilogue

Annual reports and other historical documents related to Peterson Planetarium can provide additional context, and inform the discussion concerning future plans.

This embryonic, draft plan will also be shared with candidates interviewed for the position that will include the Peterson Planetarium responsibility.

This plan can also serve as a template for a plan refined by the successful candidate during the first-year of appointment, and tempered by feedback from others.

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