

# Santa Rosa Junior College

## Program Resource Planning Process

### *Planetarium 2018*

#### **1.1a Mission**

##### **1.1a Mission:**

The Santa Rosa Junior College Planetarium's mission is to provide interesting educational programs on astronomy and related science disciplines. These programs are presented for the college, area schools, and general public. They are commensurate with and reflect the high academic standards found in the science academic curriculum.

#### **1.1b Mission Alignment**

##### **1.1b Mission Alignment:**

The Planetarium reflects the District's mission with its commitment to provide programs that enhance the knowledge of those who attend. We also encourage them to further their knowledge of science.

#### **1.1c Description**

##### **1.1c Description:**

The Planetarium accomplishes its mission by structuring its programs in five basic formats.

1. The Planetarium provides educational programs for the college's academic classes. Although primarily for the Earth and Space Science classes, it is also utilized by other classes such as ESL, Disability Resources, College Skills, etc.
2. The Planetarium offers four public shows (different topics for each show) during the academic year: two in the fall semester and two in the spring semester. This schedule,

implemented in 2009-10, is a reduction from previous years when six different shows (three each semester) were offered. The number of performances of each show (typically two shows on Friday night, two shows on Saturday night and two shows on Sunday afternoon per weekend) were further reduced in 2010-11 to save costs. In 2010-11 each show was scheduled for three performances a weekend (one show on Friday and Saturday night and one show on Sunday afternoon).

3. The Planetarium also offers free First Friday Night Sky (FFNS) shows on the first Friday of each month- September through December and February through May. This program began in 2008-09 to help attract new audiences to the Planetarium. These shows provide information about the phenomenon found in that particular night's sky using demonstrations with special effects and features of the Planetarium. While admission is free; donations are accepted. These FFNS programs attract new customers and have provided an increase in our regular paid public shows.
4. The Planetarium also offers school shows during the week (Tuesday through Thursday) at 10 am and 12 noon and 10 am on select Fridays. These shows are available to public, private and charter schools throughout North-Central California by advance reservation. Admission is \$1.50 per person with a minimum of \$35.
5. The Planetarium provides on a pre-arranged and planned basis special shows for non-profit educational organizations. These organizations include: Memorial Hospital's "Life Learning Center", the astronomy badge requirements for the Girl Scouts, Sonoma State University's Excel and Super Kids programs, and AmeriCorps CalSERVES, etc.

## **1.1d Hours of Office Operation and Service by Location**

### **1.1d Hours of Office Operation and Service by Location:**

All programs are provided at the Planetarium located in Lark Hall on the Santa Rosa campus, room 2001.

1. SRJC faculty schedules time in the Planetarium by contacting the Planetarium's office.
2. Public shows are offered 16 weekends a year (8 in the fall and 8 in the spring). Performances of each show are scheduled Friday and Saturday nights at 7pm and Sunday afternoons at 1:30pm.
3. First Friday Night Sky programs are offered on 8 first Fridays of the months September-December and February-May. Two shows are offered on these Friday evenings: 7:00pm and 8:30pm
4. School shows are provided during the fall and spring academic year at 10am and 12noon on Tuesdays, Wednesdays, Thursdays and at 10am on select Fridays (with the exception of school holidays and weeks in which a new public show is being installed in the Planetarium). The Planetarium's school shows are well-attended and generate revenue for SRJC.

5. Special shows on pre-arranged dates and times are provided during the fall and spring academic year. They are generally on weekday afternoons, evenings, and occasionally weekends.

General hours of operation other than the above show times are Monday through Friday 8am to 5pm.

## 1.2 Program/Unit Context and Environmental Scan

Beginning July 1, 2012 the Planetarium Specialist reports to the Science, Technology, Engineering, Math (STEM) Dean. The public and school shows will be operated in conjunction with the college's Earth & Space Science department, as the Planetarium is a vital resource for the college's instructional program. The Planetarium Specialist works closely with faculty from Earth and Space Science, helping the faculty utilize the features of the Planetarium to teach astronomy and related science disciplines (such as Geography, Geology, Meteorology, etc.). For example, the Planetarium Specialist created a new school show entitled "Exploring Planet Earth" to utilize the Planetarium's technology to introduce the subject of geology.

## 2.1a Budget Needs

### 2.1a Resources: Budget Needs

**Budget Category 4000:** present budget is adequate, allocated, and used effectively.

**Budget Category 5000:** present budget is adequate, allocated, and used effectively except for the following:

**5652** - A planetarium trust is established for general planetarium administrative support and maintenance: Specialized Goto star projector maintenance is done on a 2 to 3 year schedule as needed. We contract with an outside planetarium installation and maintenance firm to do this specialized maintenance. This was last done in July 2016 at a cost of \$2,102.28. To facilitate ongoing and future maintenance of the planetarium the following funding streams began July 1, 2012. All incoming revenue streams including: Public Show sales, School Show sales, and all donations are deposited in the Planetarium's trust.

## 2.1b Budget Requests

Rank	Location	SP	M	Amount	Brief Rationale
0001	Santa Rosa	02	05	\$2,000,000.00	Replace the current GOTO GX-10 star projector as well as the vast majority of all current analog slide projectors with a single hybrid (analog and digital) projector system. The current system is nearly 40 years old and much of the technology has become obsolete as well as more difficult and expensive to maintain. Hybrid systems have made tremendous strides forward in functionality and capability in ways too numerous to list here. For example, full-dome movie and 3D rendering capability will make it possible to put on presentations appropriate for any topic, especially STEM. Planetarium programs can still be made "in house" but nationally many public planetariums and science museums produce science content for planetarium domes in multiple content areas, opening up presentation possibilities not available with the current system. A complete renovation creating a cutting-edge, totally transformed space to last for decades is possible and within our reach with a one-time investment of -- at most -- \$2M.
0002	Santa Rosa	04	07	\$1,450,000.00	<p>Replace all non-GOTO Star Projector control circuitry and wiring with safer, easier to maintain, and more cost-effective computer/slave control system. This system would be digital-ready for future conversion from analog to digital. Additional information regarding this request is found in sections 2.4c, 2.4e, 2.5a, 2.5b, and 6.3b.</p> <p>Note: The budget estimate for this item is a rough estimate based on data from 2008. A more current estimate would have to be done should these projects receive funding priority.</p>
0003	Santa Rosa	04	07	\$200,000.00	Replacement and upgrade the Planetarium's Special Effects and Visual Projection Systems from Analog to Digital. Brief rationale: digital special effects and projection systems for the planetarium environment are in their most early stages. As this new technology becomes more wide spread in use, the analog technology will become obsolete. For example: we use 33 carousel analog slide projectors. These units are no longer being manufactured. The planetarium has, in total, some 120 analog special effects and visual projection projectors.
0004	Santa Rosa	04	07	\$650,000.00	Replacement of the current Electro-Mechanical "GOTO GX-10" Star Projector and Control system. Estimate based on today's technology and pricing), Brief rationale: the state of planetarium star projectors appropriate for our type and size planetarium is currently in a state of hybrid change from electro-mechanical to digital. Some of the features of these new hybrid systems have great educational advantages over our present GOTO GX-10 projector. However, even though our present GOTO GX-10 projector could (with proper pro-active maintenance) last for another 5 to 10 years, it will become ever more expensive to maintain, will become more difficult to integrate with the newer planetarium technologies, and will eventually fail.

## 2.2a Current Classified Positions

Position	Hr/Wk	Mo/Yr	Job Duties
Planetarium Specialists	40.00	11.00	The Planetarium Specialist coordinates, creates, designs, and presents planetarium shows including selecting appropriate content, visual effects, and soundtracks to educate, entertain, and inspire audiences about astronomy and the physical sciences; performs demonstrations; and gives lectures. The Specialist must have the ability to design, develop, and present planetarium shows for various groups; use optical, electronic, and mechanical equipment within the planetarium; maintain and perform minor repairs on planetarium projectors and audio systems; entertain and inspire both children and adults; communicate effectively in English; demonstrate commitment and sensitivity to diversity; follow and give oral and written directions; perform clerical work with accuracy; train and direct the work of Administrative Assistance, Planetarium Lecturers, and student assistants; maintain records; generate budget requests; maintain cooperative working relationships; demonstrate sensitivity to, and respect for a diverse population; translate complex theories and phenomena into everyday language. Knowledge of telescopes, projectors, and optical equipment used in planetarium; audio systems and electronic equipment; photography used to create planetarium visual effects, as well as knowledge of a wide variety of music scores; physics and astronomy is required. Minimum qualifications are a bachelor's degree in astronomy; a masters is preferred. In general the Planetarium specialist oversee the operation of the SRJC Planetarium including supervision of STNC and Student Employees. Position has been vacant since January 1, 2017.

## 2.2b Current Management/Confidential Positions

Position	Hr/Wk	Mo/Yr	Job Duties
none	0.00	0.00	

## 2.2c Current STNC/Student Worker Positions

Position	Hr/Wk	Mo/Yr	Job Duties
STNC	24.00	10.50	<p>Administrative Assistant 1: STNC employees in the Planetarium are paid an hourly wage. The Administrative Assistant 1 position performs all the administrative function once handled by the Community Education department. In the Fall Semester 2012 the Planetarium and all function were removed from the Community Education department and placed in the STEM cluster. The functions provided by the STNC Administrative Assistant 1 includes, but is not limited to: handling all school show reservations, billing, deposits, communications, general office duties such as mail, phone, customer service, typing, researching data, updating Facebook and Twitter, and generating reports as assigned. This function is a permanent, part time, position requiring up to 25 assigned hour per week for the months August through mid June and as so needs to be established as such ASAP. This position can be combined with Admin. Assist. requirements/needs in the Bussman Service Center Admin. Assist. position establishing a full time 40 hour per week 11 month a year position..</p>
Student Workers	12.00	9.00	<p>Planetarium Student Workers are paid an hourly wage. Student Workers provide assistance for the various public planetarium programs. They greet, sell tickets to, and issue parking permits for planetarium customers attending the public programs. They also do basic accounting associated with ticket sales, parking permits, and attendance numbers. In addition they assist the planetarium lecturer with running the audio system and providing for the safety of the planetarium customers during the public programs.</p>
STNC	20.00	10.00	<p>Planetarium Lecturer: STNC employees in the Planetarium are paid an hourly wage. They are utilized to give occasional school shows during the week and public shows on the weekends; and when necessary on an emergency basis (i.e. in cases where the Planetarium Specialist is ill). To be able to adequately assist giving shows, these STNCs must train to be able to present the shows and must have experience giving shows. To maintain this level of presentation skill we make sure STNCs have an opportunity to do a sufficient number of public shows and variety of school shows. Depending on the number of school and public shows an STNC could work, with pay, as much as 20 hours a week updating, practicing, and giving shows.</p>

Position	Hr/Wk	Mo/Yr	Job Duties
Planetarium Projectionist Professional Expert	40.00	12.00	In lieu of a permanent Planetarium Specialist, the Planetarium Projectionist coordinates, creates, designs, and presents planetarium shows including selecting appropriate content, visual effects, and soundtracks to educate, entertain, and inspire audiences about astronomy and the physical sciences; performs demonstrations; and gives lectures. The Projectionist must have the ability to design, develop, and present planetarium shows for various groups; use optical, electronic, and mechanical equipment within the planetarium; maintain and perform minor repairs on planetarium projectors and audio systems; entertain and inspire both children and adults; communicate effectively in English; demonstrate commitment and sensitivity to diversity; follow and give oral and written directions; perform clerical work with accuracy; train and direct the work of Administrative Assistance, Planetarium Lecturers, and student assistants; maintain records; generate budget requests; maintain cooperative working relationships; demonstrate sensitivity to, and respect for a diverse population; translate complex theories and phenomena into everyday language. Knowledge of telescopes, projectors, and optical equipment used in planetarium; audio systems and electronic equipment; photography used to create planetarium visual effects, as well as knowledge of a wide variety of music scores; physics and astronomy is required. In general the Planetarium Projectionist oversees the operation of the SRJC Planetarium including supervision of STNC and Student Employees.

## 2.2d Adequacy and Effectiveness of Staffing

Staffing at the STNC Planetarium Lecture level is difficult because these are specialized positions and require someone who is available on weekends for public shows (Friday & Saturday nights and Sunday afternoons) as well as during weekdays for school shows.

These employees need to have or develop a hard-to-find skill set of knowledge and abilities such as:

- Knowledge of astronomy, physics and related sciences.
- Ability to interface effectively with the general public.
- Simplify scientific concepts.
- Effective public speaking.
- Identify and solve and correct minor technical problems (such as changing projector bulbs, properly setting-up the planetarium's Goto star projector and other projection systems, etc.).
- Multi-task by effectively/artistically operating the planetarium's vast visual and audio technology.
- Supervise the planetarium's environment.
- Monitor and plan where he/she is in the program, while being the oratorical presenter.

We do not consider this (as noted in 2.2e) an STNC position. Given the needs of this position requires a high level of commitment to SRJC's Planetarium program. We see this as in fact a part-time Classified position with work assignment hours. This position is primarily a back-up and load relief function to assist the Planetarium Specialist; who would otherwise be on campus seven days a week. This position does not fit as a Short Term Non Continuing position and is an on-going function with at least part-time commitment required for the overall function of the Planetarium.

Staffing at the STNC Administrative Assistant 1 position is not in any way a Short Term Non-Continuing position. This position as an STNC was done to facilitate a fast transfer of all support functions previously done in the Community Education department to STEM. This position needs to be established as a regular Classified full time, part time, position working on a set time schedule from August through mid June.

## 2.2e Classified, STNC, Management Staffing Requests

Rank	Location	SP	M	Current Title	Proposed Title	Type
0001	Santa Rosa	02	06	STNC, Planetarium Specialist	Planetarium Lecturer (non-director)	Classified
0001	Santa Rosa	02	06	STNC	50% Planetarium Specialist to Cover Shows	Classified

## 2.3a Current Contract Faculty Positions

Position	Description
NA	



**2.3b Full-Time and Part-Time Ratios**

<b>Discipline</b>	<b>FTEF Reg</b>	<b>% Reg Load</b>	<b>FTEF Adj</b>	<b>% Adj Load</b>	<b>Description</b>
NA	0.0000	0.0000	0.0000	0.0000	

### **2.3c Faculty Within Retirement Range**

NA

### **2.3d Analysis of Faculty Staffing Needs and Rationale to Support Requests**

NA

### 2.3e Faculty Staffing Requests

Rank	Location	SP	M	Discipline	SLO Assessment Rationale
0000	ALL	00	00	NA	

## 2.4b Rationale for Instructional and Non-Instructional Equipment, Technology, and Software

### For the digital-opto-mechanical hybrid projector system upgrade:

- A complete renovation creating a cutting-edge, totally transformed space to last for decades is possible and within our reach with a one-time investment.
- It doesn't seem feasible to fix the electrical system on our current projector. While it could possibly be less expensive than a new system, it would probably cost more than half as much as an all new projector. We would then still be stuck with 40 year old technology after spending hundreds of thousands of dollars.
- Based on our tours/field trip we recommend a new hybrid system because:
  - The star fields produced by the opto-mechanical (star-ball) projectors were still tremendously higher quality and substantially more realistic than the digital star fields. The defining feature of the SRJC planetarium has always been its amazing star field, and we value keeping the identity of the planetarium intact. We would lose this if we went to an all-digital system.
  - The modern digital projectors have mind-blowing capabilities in terms of 3-D universe and planetary visualizations and full-dome movie presentations. The difference in what is possible with a new system compared to what is possible now simply cannot be overstated.
- The appeal and viability of the planetarium as a public destination within Sonoma County and jewel of SRJC will be reaffirmed and ensured for many years mainly because of two increased capabilities:
  - Full-dome professionally-produced planetarium movie presentations can be incorporated into our public and elementary school shows.
  - Stunning real time 3D visualizations and animations that are completely impossible now can be used for public and elementary school shows and astronomy courses. The pedagogical power and value of this is impossible to describe in this document and must be seen.
- The planetarium's academic use can be expanded to other disciplines & departments throughout the college community:
  - Relevant to Earth & Space Sciences, map data can be imported into the system to view global dynamic systems in motion such as tectonic plates and hurricane systems from any angle, expanding the planetarium's usage and pedagogical value to our entire department.
  - Full-dome movie capability will make it possible to put on presentations appropriate for any topic, especially STEM. Nationally many public planetariums and science museums produce science content for planetarium domes in multiple content areas.
- The opto-mechanical star ball projector can be expected to last many decades just as our current projector has lasted 40 years.

- If one of the systems has trouble the other system can still be used until repairs can be completed.

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The current seating in the planetarium is such that visitors are not able to lean back in their chairs. This is not a minor issue as much of what is being presented is on a 360 x 180 degree dome, requiring visitors to see behind themselves to fully experience the show. Reclining chairs would easily allow this, but our current chairs do not lean back, making it necessary for audience members to literally sit up and twist to turn around and see what is being displayed behind them. Many customers have complained about this on a regular basis.

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A new video projector would be a good improvement in the planetarium, as the current video projector (which used to be common in other classrooms) is old and gets very hot very quickly. Likewise, a video disk player that has blu-ray playability would allow for higher resolution videos using that projector. The current system can only play DVDs.

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Student employees currently sell tickets for public planetarium shows at the door. They handle cash and keep earnings in a small lockable aluminum box. A small, basic cash register would not only make their work easier, more efficient, and less prone to error, it would also look more professional to those buying tickets to attend a program.

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The Control Console and associated equipment (Special Effects Projectors, circuitry, etc.) technology was established in the late 1970s and early 1980s. This technology is old, frail, and replacement parts as simple as projection bulbs (let alone such things as IC circuitry) is becoming increasingly hard to find.

As noted in 2.1b, 2.4e and 3.5; the console control circuitry and wiring needs to be replaced with a safer, easier to maintain, and more cost-effective computer/slave control system. This new system must be able to support digital systems in the future. This will require the coordinated effort and planning of both SRJC and outside contractors.

SRJC resources should include, but not limited to, Planetarium, Earth & Space Science, Purchasing, Facilities Operations, academic Affairs/Administrators, Accounting, Administrative Services, Environmental Health & Safety, Media Services, Public Relations, SRJC Foundation, and Warehouse.

Outside Contractors: should include, but not limited to, oversight contractor to provide a Single Point of Contact for all preliminary and specific estimates, development, design, engineering, on-site removal of control console circuitry and wiring, installation of new control console circuitry and wiring, testing, and SRJC personnel training. In addition, SRJC may choose to initiate some form of maintenance contract(s). Significant steps or actions should include, but not limited to: First Year an internal planning and funding group, and an internal overall design and coordination group to initially interface with outside resources; Second Year an internal development, design, and engineering group to interface with outside resources on item

specific issues; and, Third Year an internal implementation group to oversee all outside resource activities through turn-up, testing, and training of SRJC personnel.

Conventional audio & visual instructional equipment (such as: 35mm projectors, audio amplifiers, etc.) needs should be adequate with successful maintenance for the next few semesters but some irreplaceable components for these are beginning to dwindle from what the Planetarium has stored for future use. Planetarium specific instructional equipment (such as: special effects projectors and their control systems) needs should also be adequate for the next few years given our ability to obtain parts for maintenance of these units, however this technology is becoming obsolete as digital and hybrid systems are easily out-competing them.

Please also note that planetarium technology in general needs to begin a transition from analog to digital. As this occurs over the coming years the ability to obtain replacement parts for the older analog technology will become even more difficult to the point of requiring the purchase of newer replacement units; this is not easily projected as it depends on unforeseen equipment failure and parts availability.

## 2.4c Instructional Equipment Requests

Rank	Location	SP	M	Item Description	Qty	Cost Each	Total Cost	Requestor	Room/Space	Contact
0001	Santa Rosa	02	05	MEAS H: Replace GOTO Projector with Hybrid system	1	\$2,000,000.00	\$2,000,000.00	Victor Tam	Planetarium (rm 2001)	Travis Job
0002	Santa Rosa	04	07	MEAS H: Replace/upgrade Console wiring	1	\$1,450,000.00	\$1,450,000.00	Victor Tam	Planetarium (rm 2001)	Travis Job
0003	Santa Rosa	02	07	MEAS H: New standard video proj and blu-ray player	1	\$0.00	\$0.00	Travis Job, Keith Waxman	Planetarium (rm 2001)	Travis Job

## 2.4d Non-Instructional Equipment and Technology Requests

Rank	Location	SP	M	Item Description	Qty	Cost Each	Total Cost	Requestor	Room/Space	Contact
0001	Santa Rosa	06	01	(Meas H) New chairs/seating for the planetarium	90	\$0.00	\$0.00	Travis Job, Keith Waxman	2001	Travis Job
0002	Santa Rosa	07	06	Register for cash & iPad for credit cars @ door	1	\$599.00	\$599.00	Travis Job	2001	Travis Job

## 2.5a Minor Facilities Requests

Rank	Location	SP	M	Time Frame	Building	Room Number	Est. Cost	Description
0001	Santa Rosa	04	07	Urgent	Planetarium, Lark Hall	2001	\$0.00	The overhead light directly above the planetarium entrance (outside) is on only intermittently. When it's not functioning, this not only draws attention away from our entrance, it makes it more difficult for our patrons to see, especially for night shows.
0001	Santa Rosa	04	07	Urgent	Earth & Space Sciences offices, Lark Hall	2028	\$0.00	The doorknob on the door for the planetarium office is old and the lock does not function properly. Far more often than not, after the door is locked, jiggling the knob will immediately unlock it. Cash earned from show attendance is sometimes temporarily stored in this office, making a working lock on the door imperative.



## **2.5b Analysis of Existing Facilities**

The SRJC Planetarium technology/facility is of the relative old 1970/80 analog type. As a result, parts to maintain the Planetarium are becoming more difficult to find and more expensive. The time may not be in the too distant future where operation of the Planetarium will be severely impacted to the point of becoming practically inoperable. Highly suggest SRJC determine the future of the Planetarium and begin the planning process to accomplish that future.

## **3.1 Develop Financial Resources**

The Planetarium is aware of it's financial position and continuously looks a ways to improve revenue through increased attendance while making judicious use of available funds.

## **3.2 Serve our Diverse Communities**

The Planetarium provides astronomy and related science educational shows to all area residents through public, school, and special arranged shows. The information in our public shows is produced primarily for an adult audience with, or without, a background in astronomy and science. Our school shows serve students from K-12 and the content is adjusted to the specific age group in attendance.

Often the first interface between the general public and SRJC is through our public shows with an annual attendance of around 3,000.

Our school show programs are more than likely the very first exposure of school age students to SRJC, along in many cases parents and teachers. School show attendance annually runs around 8,000 attendees spread over nearly 100 area and surrounding schools, including public, charter, church, home schools, etc.

Another introduction to SRJC that serves our diverse community comes through special shows/programs presented to organizations such as AmeriCorps Cal Serves, SSU's Super Kids Summer Camp, Santa Rosa Department of Parks and Recreation, etc. Exposure through these specific organizations runs near 1,000 attendees annually.

In addition SRJC astronomy students and students from various area schools and colleges attend our public shows for extra credit in their astronomy and related subject classes running in the area of around 500 annually.

The planetarium is also used in SRJC's Earth and Space Science classes to augment their class and lab activities. Academic use of the Planetarium by SRJC instructors run an annual attendance of around 1,500 to 2,000 students depending on class schedules.

### **3.3 Cultivate a Healthy Organization**

- The Planetarium Specialist regularly attends PDA day meetings and spends hours on a weekly basis to keep updated on the latest developments in the field of astronomy and related science fields. This includes, but is not limited to, daily use of the internet for research and updates from sources such as: NASA, JPL, relevant books, DVD courses, attend many of the “What Physicists Do” programs at Sonoma State, and ongoing communication with colleagues.
- Student Workers are supported through job-training to upgrade their planetarium job skills including interfacing skills with students and the general public. The Planetarium Specialist works with these students to ensure they achieve academic success as well.
- STNC Planetarium Lecturer position, is encouraged to continuously improve (through SRJC classes and their own initiated reading) their knowledge of astronomy, related science fields, public speaking, and interacting with the public. In addition, they receive on-the-job training and supervision in these areas.
- STNC Administrative Assistant 1 position, is encouraged to continuously improve (through SRJC classes and their own initiated reading) their knowledge and skills of (but not limited to) office functions, customer service, marketing, and research. In addition, they receive on-the-job training and supervision in these areas.

### **3.4 Safety and Emergency Preparedness**

The Planetarium Specialist is located in Lark Hall. The Planetarium Specialist makes sure that all STNC workers and Student workers in the Planetarium are aware of safety procedures and know the location of emergency/safety supplies.

The biggest safety issue in the Planetarium is the wiring in the console; see item 2.4e above.

### **3.5 Establish a Culture of Sustainability**

The Planetarium aggressively works at sustainability, as being an older analog planetarium specific parts and components are becoming very difficult to find. We diligently work to sustain the planetarium's technology via the most economical means such as designing a work around using any available components instead of purchasing expensive assemblies. Example: we need to replace a high temperature cabling that carries power to the star bulbs in the Goto star projector. We could have purchased these cabling assemblies from the manufacture for \$60 each. We searched the internet for equivalent components, found them, and can replace the worn cabling assemblies for less than about \$20.

We also recycle and/or reuse any parts or components to create the smallest negative impact on the environment.

We sustain social equality in that we staff our operation and offer our programs and services to any interested persons or organization regardless of any social identity.

#### **4.1a Course Student Learning Outcomes Assessment**

NA

#### **4.1b Program Student Learning Outcomes Assessment**

NA

## 4.1c Student Learning Outcomes Reporting

Type	Name	Student Assessment Implemented	Assessment Results Analyzed	Change Implemented
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## 4.2a Key Courses or Services that address Institutional Outcomes

Course/Service	1a	1b	1c	2a	2b	2c	2d	3a	3b	4a	4b	5	6a	6b	6c	7
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## 4.2b Narrative (Optional)

The planetarium supports student learning. Earth & Space Science instructors bring their classes into the planetarium for presentations on specific academic subjects using the planetarium's technology. Many Earth & Space Science instructors also offer extra credit for attending planetarium public shows.

The planetarium supports assessing student learning outcomes by providing subject specific preview and follow-up review questions to the teachers of various educational institutions in conjunction with their participation in the planetarium's school show programs.

All persons attending SRJC planetarium's public and school shows (which includes SRJC students) are exposed, through the content and delivery of our shows, to the overall educational values of SRJC; especially in the following Institutional Learning Outcomes: Personal Development and Management (appreciate the value of lifelong learning), Communication (listening actively& respectfully), Critical Analysis, and Creativity.

All programs presented in the SRJC planetarium are first, educational and, second, entertaining. These programs strive to inspire the audience to learn more about astronomy and related science disciplines. The programs are designed to be of interest to people who know little about these subject areas as well as those who are quite knowledgeable in these fields.

## 5.0 Performance Measures

In 2010-11, we cut the number of public show performances from 96 to 48 (a 50% reduction). The total audience dropped by 23%. In fact, attendance per show increased from an average of

33 per show in 2009-10 to an average of 52+ per show in 2010-11 and an average attendance in 2011-12 was 55, making a more efficient use of limited resources. In the 2012-2013 school year we increased our fees from \$5 to \$8 for General Admission and from \$3 to \$5 for Students and Seniors. Although our total attendance dropped as a result, our admission revenues increased from \$8,887 in 2011-2012 to \$11,958 in 2012-2013.

From March 15, 2014 through March 15, 2015 our regular paid public shows were attended by 1,940 customers, producing \$10,859 in sale and donations.

Many SRJC instructors and teachers from surrounding schools give students extra credit if they attend a public Planetarium show (number of extra credit slip issued from March 15, 2014 through March 15, 2015 totalled 423, further evidence of the high regard instructors have for the educational quality of these presentations.

SRJC Earth and Space Science instructors also use the planetarium in their regular credit classes. As of March 15, 2014 to March 15, 2015 SRJC instructors have used the Planetarium 31 times numbering 1,581 SRJC student experiences.

In addition to our regular paid planetarium shows we provide a series of First Friday Night Sky programs on the first Fridays of the month September through December and February through May. The intent of these programs is promotional and therefore give at no cost to customers; we do ask for and receive donations for the programs. From March 15, 2014 through March 15, 2015 the free "First Friday Night Sky" shows attracted 1,121 visitors and donations were \$1,060.70.

As for our school show program from March 15, 2014 through March 15, 2015, we gave 121 school shows to 91 different schools that attended 133 times. The number of attendees to these school shows was 7,505 bringing in \$12,025.00 in revenue.

We have schools from as far away as San Francisco and Napa attend our school show programs saying that we are the only remaining planetarium that provides significant and valued educational programming.

In addition the planetarium provides special planetarium programs to non-profit educational organizations. From March 15, 2014 through March 15, 2015 we presented 10 special school and planetarium programs for 6 non-SRJC educational organizations including SSU Super Kids Summer Camp and in support of the university's astronomy programs, Santa Rosa Recreation and Parks Department, AmeriCorps Cal Serves program, the YMCA and Santa Rosa High. This exposed the SRJC and the Planetarium to an additional 735 community residents with revenues included in the above \$12,025.00.

The Planetarium is publicised through the SRJC web-site, Constant Contact subscribed e-mail newsletter, Facebook and Twitter. These public outreach technologies have a positive effect on our overall attendance. We are constantly analyzing attendance statistics to help plan future show content and scheduling.

## **5.1 Effective Class Schedule: Course Offerings, Times, Locations, and Delivery Modes (annual)**

NA

## **5.2a Enrollment Efficiency**

NA

## **5.2b Average Class Size**

NA

## **5.3 Instructional Productivity**

NA

## **5.4 Curriculum Currency**

NA

## **5.5 Successful Program Completion**

NA

## **5.6 Student Success**

NA

## **5.7 Student Access**

NA

## **5.8 Curriculum Offered Within Reasonable Time Frame**

NA

## **5.9a Curriculum Responsiveness**

NA

## **5.9b Alignment with High Schools (Tech-Prep ONLY)**

NA

## **5.10 Alignment with Transfer Institutions (Transfer Majors ONLY)**

NA

## **5.11a Labor Market Demand (Occupational Programs ONLY)**

NA

## **5.11b Academic Standards**

NA





## 6.1 Progress and Accomplishments Since Last Program/Unit Review

Rank	Location	SP	M	Goal	Objective	Time Frame	Progress to Date
0001	Santa Rosa	03	05	Maintain or increase the use of our School and Special educational shows as noted in section 3.2	Facilitate the ability of area schools and educational organizations to utilize the planetarium to assist meeting their science and astronomy educational goals.	current school year	time, staffing, and flexibility to meet the customer's scheduling needs required for them to take advantage of the planetarium's educational programing.
0001	Santa Rosa	05	07	Continue finding technical and equipment solutions to the outdated analog technologies of the planetarium as noted in sections 2.1b, 2.4b, and 2.4c	Look for and harvest technical and equipment work arounds needed to maintain the planetarium's outdated and mostly unavailable equipment and components needed to maintains the planetarium's functionality.	current school year	The skills, research, and technical knowledge of the planetarium staff and technician, Don Dalby, to find and/or create equipment related work arounds to replace broken, outdate, and no longer available equipment and components.
0002	Santa Rosa	01	01	Continue to encourage the use of the planetarium by faculty to enhances the learning outcomes of their students and classes as noted in section 4.2b.	Make the planetarium available to SRJC classes were in the venue of the planetarium will assist students in understanding and comprehension of astronomy and related science concepts as appropriate.	current school year	Coordination, accommodation, and when appropriate the training of faculty in the use of the planetarium technology in their teaching agenda.
0003	Santa Rosa	07	07	Continue to look for alternate programing opportunities to maintain and/or increase the level of funding for the planetarium trust.	To look for and use alternative ways to produce operational revenues for the planetarium though such activities as noted in and in addition to those noted in sections 3.2	current school year	Creiative alternative to the traditional formate and programing of the planetarium to attract new revenue producing, and possibly non-traditional planetarium type, customers.

**6.2b PRPP Editor Feedback - Optional**

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## 6.3a Annual Unit Plan

Rank	Location	SP	M	Goal	Objective	Time Frame	Resources Required
0001	Santa Rosa	03	05	Maintain or increase the use of our School and Special educational shows as noted in section 3.2	Facilitate the ability of area schools and educational organizations to utilize the planetarium to assist meeting their science and astronomy educational goals.	current school year	time, staffing, and flexibility to meet the customer's scheduling needs required for them to take advantage of the planetarium's educational programing.
0001	Santa Rosa	05	07	Continue finding technical and equipment solutions to the outdated analog technologies of the planetarium as noted in sections 2.1b, 2.4b, and 2.4c	Look for and harvest technical and equipment work arounds needed to maintain the planetarium's outdated and mostly unavailable equipment and components needed to maintains the planetarium's functionality.	current school year	The skills, research, and technical knowledge of the planetarium staff and technician, Don Dalby, to find and/or create equipment related work arounds to replace broken, outdate, and no longer available equipment and components.
0002	Santa Rosa	01	01	Continue to encourage the use of the planetarium by faculty to enhances the learning outcomes of their students and classes as noted in section 4.2b.	Make the planetarium available to SRJC classes were in the venue of the planetarium will assist students in understanding and comprehension of astronomy and related science concepts as appropriate.	current school year	Coordination, accommodation, and when appropriate the training of faculty in the use of the planetarium technology in their teaching agenda.
0003	Santa Rosa	07	07	Continue to look for alternate programing opportunities to maintain and/or increase the level of funding for the planetarium trust.	To look for and use alternative ways to produce operational revenues for the planetarium though such activities as noted in and in addition to those noted in sections 3.2	current school year	Creiative alternative to the traditional formate and programing of the planetarium to attract new revenue producing, and possibly non-traditional planetarium type, customers.