

# Monthly Report - December 2017

Thaddeus LaCoursiere  
Digital Dome Program Coordinator

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## Executive Summary

My time in December was largely spent in the dome presenting shows for school groups, the public, and private groups. More time was spent producing new shows for January. Other time was spent on planetarium-related programming, e.g. Full STEAM Ahead, and communication with staff about what is happening in the planetarium. Cleaning in the dome and offices were accomplished through volunteer help.

## Job Duties

Pursuant to my listed job duties, I have worked on the follow areas:

### 1 Digital Dome

**Understanding, and/or learning how to fully operate and maintain the Spitz Digital Dome equipment, computer Software programs, and present public and school programs.**

#### 1.0.1 Training

The majority of my time has been spent in the dome learning the Spitz software packages. This training includes increasing my familiarity with Starry Night 7 (SN7) and Automatic Theater Management 4 (ATM-4), each of which provide ways to control what is seen on the dome. More hands-on training has been in the form of the creation and presentation of live and pre-recorded shows for audiences, where the chance to engage (to the extent made possible by the software) in free form interaction has

illuminated what features are available in the software. Additional learning has happened through the SciDome Google Group (set up and run by Spitz) and through email and phone calls with Spitz support staff.

Several issues with the Spitz software and hardware were dealt with over the past month. A error log form has been created and is filled out as events happen.

Electrical plugs for the UPSs' are being obtained through the Facilities Manager in order to connect other equipment to the UPSs' as needed, and to neaten up the existing connections.

I performed general maintenance on and around the digital dome, including vacuuming, dome calibration, and neatenning up existing files and folders. There is still general work to be done, especially screwing down seats that lost their floor screws during the renovation.

### 1.0.2 Program Presentation

Table 1: Planetarium Attendance December 2017

Visitors	Number of Shows	Attended Shows	Cost of Free Tickets	Planetarium Revenue
1118	92	62	\$527.00	\$4035.00

For December 2017, over 1000 visitors attended the planetarium, and two-thirds of listed shows were held. Not every show brought in revenue, e.g. a special show was held for the Key of Hope group visiting from South Africa, and each school group had several tickets comped for chaperones. However, every visitor is counted as each one represents a potential marketing opportunity for future shows. The majority of shows did bring in revenue, with over \$4000 made through ticket sales, school groups, and grants.

The total planetarium revenue for 2017 is calculated at \$12,691.00. The total revenue here is taken from the planetarium attendance logs and may not reflect the total amount taken through the register as record keeping and pricing varies and is not always recorded at the same level of detail.

## 2 Volunteers

**Help identify, recruit, and train individuals with the aptitude to volunteer as a digital dome operator/presenter.**

I have presented most shows (>90%) particularly any special events where the presentation and script required specific or in-depth knowledge, or the presentation

style required extra flexibility. John Heath has continued to present shows, especially on the weekends to allow for me to take a short break, and during times when I am not available, e.g. attending training or conferences. Presentation training has been limited as more time has been spent on familiarizing presenters with the show content and how to navigate the software system.

The search for additional volunteers continues; John Caplis has not been able to continue presenting at this time due to work considerations.

I have worked with volunteers outside of the dome to clean up old planetarium files and records. Doris and Judy have gone through old files and, according to my guidelines, sorted out relevant and non-relevant files. Relevant files have been returned to storage and non-relevant files have been shredded. Future work involves cataloguing ancient planetarium equipment to donate to other planetariums / museums.

### 3 Show and Program Scheduling

**Manage the schedule for public programs pertaining to the digital dome theater, planetarium, and astronomy presented either by yourself, or volunteers.**

The initial schedule created continues to be updated as needs and wants demand. At the beginning of December, additional shows were added on Sunday at 1:00 pm, 2:00 pm, & 3:00 pm to accommodate weekend visitors, and shows were removed from Tuesday in reflection of lower attendance during the week. The current show schedule runs Wednesday through Sunday. The Monday and Tuesday's openings also allow for groups to have unfettered access to the planetarium as dictated by their schedule

With additional volunteers or staff assistance, extra shows may be added or events held in the planetarium, however as it stands, the current schedule reflects an acceptable compromise between the need to have the dome open to the public while also balancing other job duties.

Extra shows were scheduled for the end of December and beginning of January to take advantage of school breaks and potential visitors. The show times will mostly remain the same into the new year however the weekday shows will change to 1:00 PM (from the current 12:00 PM) and the show content will change, with three new shows replacing previous ones. A 2018 show schedule has been created, although there are several gaps and questions remain about whether all listed shows will be obtained, this schedule will ideally make future show development and planning easier.

This schedule is only for Saturday shows as the other days are anticipated to revolve around Saturday (the most active day for regular visitors). The Sunday show time and show schedule is not anticipated to change.

2018 Saturday Schedule						
	<u>January</u>	<u>February</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>
	Starting January 1		Starting March 20		Starting May 1	
<b>12:00 PM</b>	Space Shape	Space Shapes	Space Colors	Space Colors	Reef?	Reef?
<b>1:00 PM</b>	From Earth to the Universe	From Earth to the Universe	Habitat Earth	Habitat Earth	Habitat Earth	Habitat Earth
<b>2:00 PM</b>	Michigan Skies Live	Michigan Skies Live	Michigan Skies Live	Michigan Skies Live	Michigan Skies Live	Michigan Skies Live
<b>3:00 PM</b>	Explore: Stars!	Explore: Stars!	Explore: Mars!	Explore: Jupiter!	Explore: Galaxies!	Explore: Galaxies!
<b>4:00 PM</b>	Phantom of the Universe	From Earth to the Universe	Habitat Earth	Habitat Earth	Losing the Dark	Losing the Dark
	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>
	Starting July 1		Starting September 1		Starting November 1	
<b>12:00 PM</b>	Reef?	Reef?	Space Basics	Space Basics		Starting December 1? Or after SoL event?
<b>1:00 PM</b>	Habitat Earth	Sunstruck	Oasis in Space	Out There	Out There	
<b>2:00 PM</b>	Michigan Skies Live	Michigan Skies Live	Michigan Skies Live	Michigan Skies Live	Michigan Skies Live	Michigan Skies Live
<b>3:00 PM</b>	Explore: Our Sun!	Explore: Our Sun!	Explore: Saturn!	Explore: Star Clusters!	Explore: Meteor Showers (and comets) / holiday show by end of November	Holiday show
<b>4:00 PM</b>	Habitat Earth	Sunstruck	Oasis in Space	Out There	Out There	

Figure 1: 2018 Saturday planetarium schedule

## 4 Community Partnerships

Work to create a public network within the community of educators/business professionals/educational institutions who will help strengthen the vision of utilizing the Digital Dome Planetarium to its full capacity.

I have worked to build partnerships with many groups and individuals, including:

- Alpena County George N. Fletcher Public Library through Christina St. John
- Rockport State Park through the Michigan DNR and Friends of Rockport;
- University of Michigan through Matt Linke; and
- Alpena Area Convention & Visitors Bureau through Mary Beth Stutzman, President & CEO.

Work with Mary Beth Stutzman looks to be a potential way to garner memberships for an astronomical society. The collaboration is based around the growing light pollution problem in Alpena and should attract members of the public interested both in that and astronomy in general. Mary Beth also recommended the Community Foundation for Northeast Michigan (CFNEM) as a potential umbrella for the society's 501(c)3 status and funds. The name for the astronomical society is not yet decided.

## 5 Professional Development - General

**Keep abreast of professional and technical knowledge relating to best practices in museums and digital planetarium education outreach.**

I am subscribed to multiple museum and scientific listservs where current issues and knowledge in museums and planetaria are discussed and disseminated. I have also reached out to these same groups to gain a better understanding of current approaches in planetaria as they relate to specific topics, as well as for technical support.

One concern raised during December was how to best fit public and private groups together, if at all. A discussion was previously held on the DOME-L listserv about this topic; I curated the relevant replies and put together my own thoughts on the topic and presented the information to Christine Witulski, Executive Director.

## 6 Professional Development - Planetaria

**Participate in ongoing training and online Webinars to fully utilize the programming potential of the Spitz Dome equipment.**

No webinars relevant to the Spitz equipment were attended during the past two months. I continue to pursue informational training provided by Spitz and other SciDome users, although such sessions are limited and only come through the SciDome Owners Google group.

## 7 Technical Support

**Be familiar with Spitz, tech support and how and when to utilize it.**

I have gained great familiarity with Spitz technical support and have communicated with them multiple times by phone, email, and in person during the Spitz Summer Institute. Issues dealt with include, but are not limited to: understanding the peculiarities of the different software packages, training on individual aspects and large-scale features of the different software packages, alerting them to bugs and software issues, installation of new features, and hardware fixes and support. The frequency of contact has dropped dramatically in the last month as the official (paid) technical support has expired, however, online forums and email remain open, albeit with a longer response time.

A more detailed error log has been created and is being filled out as needed.

## 8 Program Creation

**Become proficient in building digital programs, and/or work with individuals and other institutions/museums/universities to build digital programs.**

Show creation in December focused on creating several new dome shows. Two shows were for the final two Full STEAM Ahead events; each show talked about spectroscopy (the study of light) and how astronomers can act as “space detectives” to find out what happened a long, long time ago, to a star far, far away.

Another new show—“Explore: Stars!”—was created for the new January show schedule. This show touches on the many different parts of a star’s life as well as different types of star groupings and objects in the universe.

Three new short shows were created to work in conjunction with the fulldome movies being shown in January: “Space Shapes,” “From Earth to the Universe,” and “Phantom of the Universe.” This short shows are played at the beginning or end of the movie and link to the movie content to reinforce key concepts.

## 9 Curriculum and Show Development

**Fully understand all Spitz training materials and curriculum materials. Continue to develop new Digital Dome curriculum and Museum activities that align with Michigan State Benchmarks for school field trips and provide “edutainment” for the public.**

I have continued to research and understand Spitz’s included materials and to work them into shows where appropriate. Michigan’s adoption of the Next Generation Science Standards (NGSS) have influenced the show presentations and content particularly with school groups. A new show specifically for schools (“Exploring the Solar System: The Inner Worlds”) incorporates a range of educational standards in order to be applicable to several grades (3rd through 5th). Shows constructed and presented to the public (such as the pre-show for “Phantom of the Universe” or Full STEAM Ahead shows) require a different approach. Although the same questions and ideas are presented, the approach in a more “fun” context is challenging, especially given the way that the Spitz software is designed to be used.

Additional activities to go along with the dome presentations have been created and are under development, much of that work has been done in conjunction with Kat Tomaszewski, Media & Education Outreach Coordinator for the Full STEAM Ahead days where the educational activities she has developed are matched with the dome content seen during the shows offered during that same program. Two different Full STEAM Ahead shows have been developed covering the solar system (which is being adapted for school groups) and spectroscopy (the study of light, spectra, and associated uses).

The Full STEAM Ahead days at the Museum have been a very useful way to familiarize myself with the system and the different parts of it (SN7 and ATM-4). Past shows that included exoplanets gave me the chance to look into that database, and the shows about the solar system revealed more about what is present in the general software. This has been a valuable way to learn more of the strengths and weaknesses, including what information is and is not already present, and what information can and cannot be added. Furthermore, the activities developed during the “Solar System” Full STEAM Ahead days are an important add-on to existing and new planetarium shows. The January show schedule includes a show (Space Shapes) that will incorporate two of the previously planned activities and supplies. Future shows, especially ones for younger audiences and school groups, are planned around this same idea. Building up educational resources has been very helpful in strengthening the capabilities of the planetarium.

## 10 Specialized Programming

### **Create specialized programming with a focus on Northeast Michigan's unique cultural heritage.**

I am continuing to work on creating an underwater dome show utilizing footage of the shipwrecks in Thunder Bay provided by NOAA Great Lakes Maritime Heritage Center and by John Bright.

I have begun work with Mary Beth Stuzman about how to reduce the impact of light pollution in Alpena. New infrastructure has not taken into account its impact on the night sky. Failing to create and maintain a lighting policy threatens the status of our dark sky preserves, particularly Rockport State Park. Blake Gingrich (DNR), Eric Ostrander (DNR), Sue Keller (Friends of Negwegon) State Park, and Carol Dodge (Friends of Rockport) have all been alerted as to our plans and have indicated their willingness to take part in outreach activities and possibly policy development.

## 11 Education Scheduling

### **Work with the Education Outreach Coordinator to schedule and conduct fieldtrips.**

The school year field trip season finished in December with 402 visitors recorded coming from three different schools. I worked closely with Kat Tomaszewski, Media & Education Outreach Coordinator to provide an integrated dome experience for all groups that visited the planetarium during their time here. I am also worked on creating a specific solar astronomy field trip package for schools who visit in the future.

Contact with visiting teachers prior to and after their visit is crucial to ensuring that the time they spend at the museum and in the dome are as impactful as possible.

## 12 Program Evaluation and Feedback

### **Evaluate Digital Dome programs and provide qualitative and quantitative data.**

I created a survey for the planetarium for visiting school groups and this was distributed by Kat Tomaszewski, Media & Education Outreach Coordinator along with additional questions that she put together. The results have not been finalized yet.



### **Show evaluation**

Informal evaluation was conducted as part of the showing of “The Moon,” a new fulldome show from AV-Imagineering (AVI). This show was purchased using funds from a previous grant from Alpena Youth & County Recreation and money raised as part of the “Giving Tuesday” campaign.

The evaluation is included below.

### The Moon free showing

12/30/2017

#### Summary

Overall this was a successful show, particularly given the difficulty in blending live and pre-recorded content in the Spitz software. Only one show was needed due to attendance. Length was approximately 45 minutes, audience seemed engaged throughout except in last 5 minutes. Small additions and changes can and need to be made to the planetarium show live content and summative evaluation.

#### Attendance

Under 5	4
Ages 5 - 8	12
Age 8 and up	4
Total children	20
Total adults	23
Total attendance	43

Only one woman (with a son) had been to a Full STEAM Ahead (did not ask if about specific FSA events, that may be how people know about them versus the longer name, e.g. CSI Besser vs Full STEAM Ahead). No one had heard about the Giving Tuesday campaign. Alpena Youth and County Recreation grant funds and Giving Tuesday funds were used to purchase the show (from what I understand), however we have a wider audience that might be able to support us in the future fundraising efforts and program impact. A small specific return for Giving Tuesday contributors, e.g. a Moon photo or other low-cost gift, may also be a good way to show the positive community impact on programing.

**End of show**

Based on a straw poll taken at the end of the show

Grade	Number
K	5
1	1
2	4
3	1
4	2
5 and up	Unknown

Amount learned	
Nothing	4
Little	3
Medium	14
A lot	16

Responses were taken by raising hands and counted by John H. Not every child knew what grade they were in or headed to, parents assisted. There was a mix of young and old, children accompanied by middle-aged adults, and a few older (>60 years old) couples.

### Audience Remarks

People remarked that they learned about craters on the moon, how they formed, lack of an atmosphere, name of gibbous phase.

One question from audience member about moon rotation

- Visitor approached presenter since there was no time left at end for presenter-led questions and most people left immediately from the planetarium
  - Shorter show would give more time to answer questions
    - It's possible that the longer show also *answered* the questions people had.
    - The show can also be run straight through without any audience participation or interaction in which case the length would be approximately 20 minutes.

Unfortunately, no surveys were made for this show due to time, schedule, and being sick. Education Coordinator provided the front copy of the Fall Harvest Festival survey which would have provided some information about general attendance, but would not have been meaningful in relation to what we would like to know when premiering a new show that is done in a very different style than previous shows. Additionally, without the front postcard feature the survey was more likely to elicit confusion.

### Technical problems with Spitz software

- SpitzVideo crashes in-between transitions between SpitzVideo and Starry Night 7
  - Only way to show video clip is through SpitzVideo
  - Show continued, however error window remained on screen and there is no way to know if closing it (or which option to use to close it) would affect the show, e.g. would video crash? Would SN7 or ATM4 crash?
    - Recovery to exact time in that case is incredibly difficult if not impossible and would ruin audience immersion
- Transition between SpitzVideo and Starry Night 7 involves a bright flash
  - Remark from audience: "it's lightning!"
  - Happens every time (6 times in this particular show) transition takes place
- Starry Night 7 does not fade up properly after transition, just flashes into view
  - Command through ATM4 does not work
- Can not handle audience responses in unstructured manner
  - Differences and similarities between the Earth and the Moon
  - Names of phases
  - What they learned

### Things to work on

- Survey for shows similar to this, where children are accompanied by adults, possible question topics are
  - Age
    - Age of children
  - Grade
  - Amount learned
  - What age it would be appropriate for
    - Who would they recommend it to/for
  - How they heard about it
  - Presenter
  - Would they pay
  - Additional comments / what are two things that you learned

- Correcting lighting cues in show so that there is a clear difference between pre-recorded and live portions
  - Will help reinforce the “hands raised” to respond versus “shout out answer”
- Adding additional possible responses to similarity/difference and moon phase
  - Impossible to add every possible response
  - Impossible to bring up single responses as they are given
    - Bringing up single responses as they are given reduces repeat responses and gives a clear signal that someone has been listened to, as well as a point of reference as the show goes along
- Additional hands-on activities to reinforce what is covered in show
  - Drawings
  - Action with props
    - Moon phases
    - Earth rotation
      - Faster than Moon, explains why Moon is in different place as well
    - Moon rotation
      - It does rotate

Teaching techniques were great  
participation was great  
ESO program - good teaching tool  
with help from a presenter  
Explained well with adequate stops  
for discussion & questions  
Only difficulty was kid looking at  
the sun with sunglasses -  
Necessitates emphasizing that  
special glasses are needed to  
look at the sun.

Great review at the end -  
with visuals & question/answer participation  
Evaluation - using hands for achieved goals.

Only addition would be hands-on activities.  
Maybe as an option down stairs

- Drawings
- action with props
- Outside if possible with sketch book  
to help begin real sky follow-through

# 12 PROGRAM EVALUATION AND FEEDBACK

Event Date: 12-30-17 The Moon Premier									
Number of people attending	SPECIFY NUMBER FROM EACH COUNTY/COUNTIES (list all in your group)					Number of Children under 5	Number of Children Ages 5-8	Number of Children Ages 8 - up	Number of Adults
	Alpena County	Alcona County	Montmorency County	Preque Isle County	Other (please specify city or county)				
4	✓					0	2	0	2
3	✓				Georgetown		1	0	2
3	✓					0	1	1	1
3				✓		1	1	0	1
3	✓					1	1	0	1
2	✓					0	0	0	2
3	✓					0	2	0	1
4	✓					0	1	1	2
2	✓					0	1	0	1
6	✓				Oakland	0	1	0	5
3	✓				Genesee <del>Genesee</del>	0	0	1	2
2	✓					0	0	1	1
3	✓					1	1	0	1
3	✓	✓				1	1		1



## 13 Media and Publicity

**Work with the Media Coordinator to publicize the schedule of all digital dome presentations and calendar of events on the Museum’s website; assist in creating press releases, articles, blogs, Facebook posts, etc. The Program Coordinator is responsible to give regular updates concerning the Digital Dome for Social media and website.**

I have worked extensively with Kat Tomaszewski, Media & Education Outreach Coordinator, to publicize the current and upcoming schedules of shows and events. This publicization includes social media promotion, printed flyers, in person conversations with staff and public. I have also made multiple television appearances to promote upcoming events, e.g. new and updated planetarium shows and schedule, and museum events like Full STEAM Ahead and the showing of “The Moon.”

I have continued to appear on WBKB Channel 11 every Wednesday morning to give updates about the planetarium, museum, events, and to talk about recent happenings in space news. I have also created and edited articles for Diane Speer of the *Alpena News* about new planetarium shows and events.

## 14 GLPA Conference

**Attend the Great Lakes Planetarium Conference.**

Next years planetarium conference is scheduled for October 10-13, 2018 at the Abrams Planetarium at Michigan State University. The estimated cost is currently \$350-375.

The host for the 2019 GLPA conference remains open to any potential applicants.

## 15 Additional Staff Assistance

**Assist Museum colleagues as needed and/or requested to fulfill the mission and purpose of the Museum.**

I have worked with every department, including Kat Tomaszewski, Media & Education Outreach Coordinator in planetarium content and training; Matt Klimczak, General Manager in planetarium maintenance and supplies, and Christine Witulski, Executive Director, in many different areas from scheduling to show evaluation.