

# 400 Years of the Telescope

NSF Grant DRL #0813414

## Summative Evaluation



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American Association of Museums Conference

Los Angeles, California

May 25, 2010



INSTITUTE FOR LEARNING INNOVATION



The Institute for Learning Innovation (ILI) is a nonprofit organization dedicated to understanding, facilitating and communicating about free-choice learning.

# What we'll cover today

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- ◆ Summary of 400 Years project
- ◆ Purpose of the evaluation
- ◆ Methods
- ◆ Preliminary Results
- ◆ Implications for museums

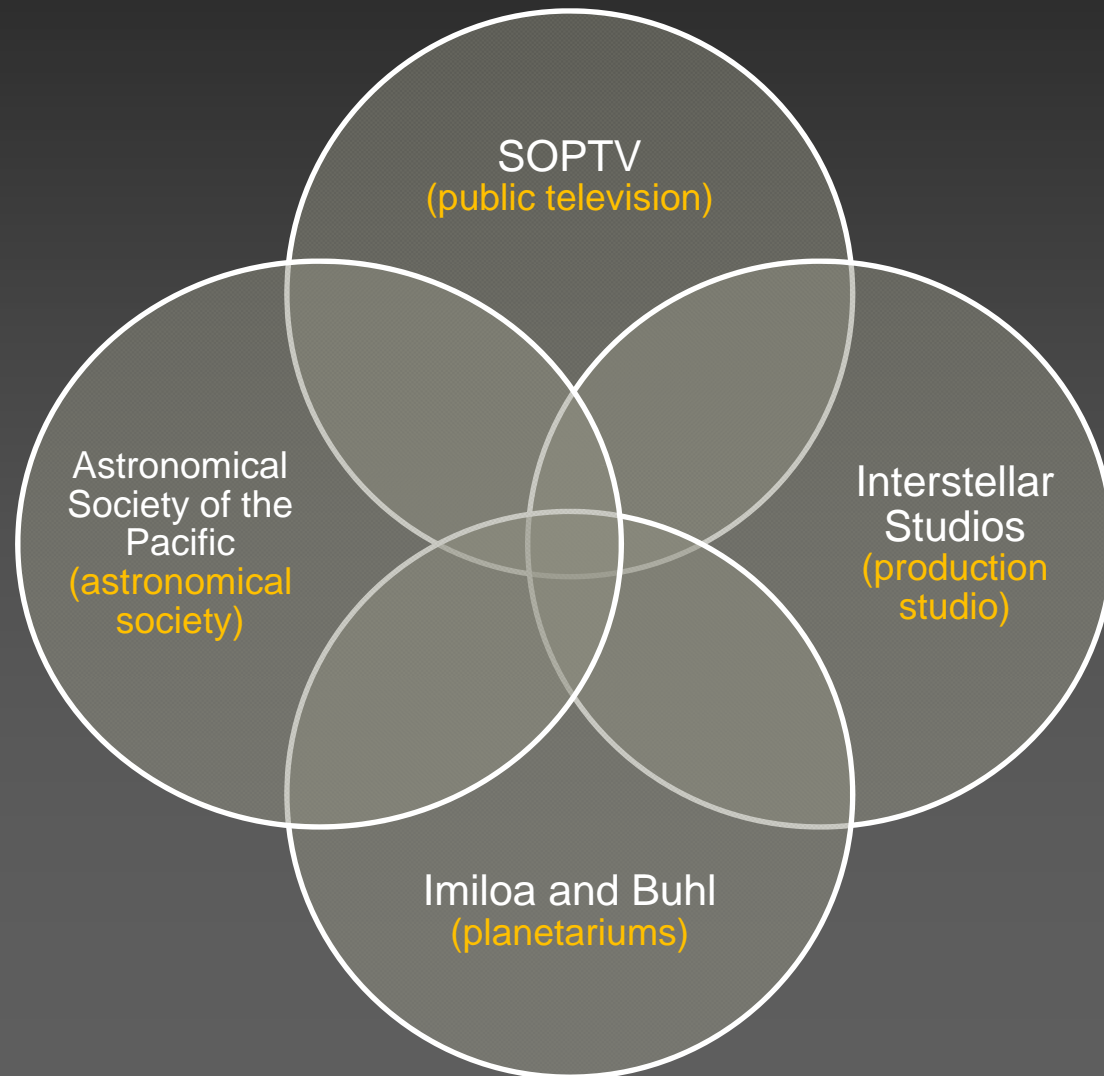
**NOTE:** These are preliminary findings,  
data are still being collected



## 2009 was the International Year of Astronomy

400 years since Galileo  
turned his telescope to  
the night sky

*400 Years of the Telescope* was an NSF-funded project celebrating IYA with a **unique partnership** between public television, a production studio, planetariums and an astronomical society



# Purpose: *400 Years of the Telescope*

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To provide the general public with a menu of linked choices for engaging in observational astronomy

## Media-centered deliverables:

- PBS documentary (400 Years of the Telescope)
- Planetarium program (Two Small Pieces of Glass)

## Activity-centered deliverables

- Interactive website
- Astronomy club events (star parties)

# Purpose: *400 Years of the Telescope*

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To get people to look up at the night sky



# Summative evaluation, *400 Years*

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The purpose of the 400 Years summative evaluation was to see to what degree the menu of linked experiences contributed to **sustained and active engagement in astronomy.**

# The Big Evaluation Questions:

What are the individual and cumulative impacts of the menu of deliverables?

Which path(s) are people taking when engaging in the activities?

# Data collection

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- ◆ 1<sup>st</sup> round: April to August 2009
  - Initial launch of project
  - All four deliverables
- ◆ 2<sup>nd</sup> round: April to June, 2010
  - Re-launch of PBS documentary
  - Planetarium program and website
  - Difference: no star parties this time

**NOTE:** Findings reported are only from 1<sup>st</sup> round

# 1<sup>st</sup> Round data collection

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Method: web survey:

- asked about all four deliverables
- mostly same questions each deliverable

Entry points were the deliverables (n=507):

- ◆ PBS documentary (n = 256)
- ◆ Web site (n = 100)
- ◆ Planetarium program (n = 81)
- ◆ Star parties (n = 69)

# 1<sup>st</sup> Round data collection

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Method: web survey:

- asked about all four deliverables
- mostly same questions each deliverable

Entry points were the deliverables (n=507):

- ◆ PBS documentary (50% of sample)
- ◆ Web site (20% of sample)
- ◆ Planetarium program (15% of sample)
- ◆ Star parties (14% of sample)

# Overall project outcomes

Interest - in science

Interest - in astronomy

Attitude – still things to discover in astronomy

Attitude – astronomy something anyone can do

Affect - excitement about astronomy

Affect – looking at sky as connecting to universe

Affect – looking at sky as awe-inspiring

Self-efficacy – can do astronomy myself

Intention - want to look up at the night sky

# Specific deliverable outcomes

Appreciation – work astronomers doing

Awareness – how much is out there

Awareness – how beautiful universe is

Awareness – still so much to learn

Learning – about astronomy

Learning – how telescopes work

Learning – history of astronomy

Inspiration – to learn more about astronomy

Intention - want to look up at the night sky

# Main Findings

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- ◆ Two-thirds engaged in more than one activity
  - Most frequently did 2 activities (median)
  - More than one in ten did four activities
- ◆ More activities = positive overall project outcomes
  - True for 8 of 9 main project outcomes (sig. diff.)
- ◆ Planetarium program and star parties slightly more likely to lead to something else

# Which activities were first

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- ◆ Documentary (50%) (50% of sample)
- ◆ Web site (12%) (20% of sample)
- ◆ Planetarium (20%) (15% of sample)
- ◆ Star party (15%) (14% of sample)

# When an activity is first...

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- ◆ Documentary most often followed by planetarium
- ◆ Web site most often followed by star party
- ◆ Planetarium most often followed by documentary or star party
- ◆ Star party most often followed by web site

	Planetarium	Website	Star Party	Documentary	Across activities
There's still so much to learn about the universe.	6.5	6.0	6.2	6.6	6.3
It helped me see how beautiful the universe is.	6.1	5.7	6.2	6.2	6.1
It made me want to look up at the night sky to see what's out there.	6.0	5.7	6.3	5.9	6.0
It showed just how much is out there in the universe.	5.9	5.7	6.0	6.1	5.9
I feel inspired to learn more about astronomy.	5.8	5.8	6.1	6.0	5.9
It helped me see how diverse the universe is.	5.8	5.7	6.0	6.0	5.9
I gained an appreciation about the work astronomers are doing.	5.8	5.7	5.7	6.2	5.9
I learned new things about astronomy.	5.5	5.5	5.8	5.8	5.7
I learned new things about the history of astronomy.	5.7	5.5	5.1	5.9	5.6
I learned new things about how telescopes work.	5.7	5.1	5.5	5.6	5.5
Average	5.9	5.6	5.9	6.0	5.9

# Specific deliverables

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- ◆ Gaining new perspectives, appreciation highest
- ◆ Cognitive learning items were lower
- ◆ Some variation among different activities
- ◆ Website lower than other three activities
- ◆ “Made me want to look at night sky” third highest rated item

# Summary of Preliminary Findings

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- ◆ More activities, greater outcomes
- ◆ Activities better suited for affective outcomes
- ◆ Different activities had different outcomes
- ◆ Documentary + planetarium program
- ◆ Web site + star party

# Challenges

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- ◆ With many partners come many voices
- ◆ Comprehensive survey was long
- ◆ Can't control # for each deliverable
- ◆ Single method for four deliverables
- ◆ Relying on others to distribute surveys

# Opportunities

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- ◆ Linking various activities is important
- ◆ Focus on the affective components
- ◆ Study how to link affective to cognitive gains
- ◆ Doing more with the website
- ◆ Some activities lead to other specific activities
- ◆ Partnerships like this can be effective

Thank you  
(and more to come...)

Questions:

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