



How to Present a Universe of Data with OpenSpace



ASTC 2019

Algol

Mothallah

NGC 1514

Hamal

HD 285968

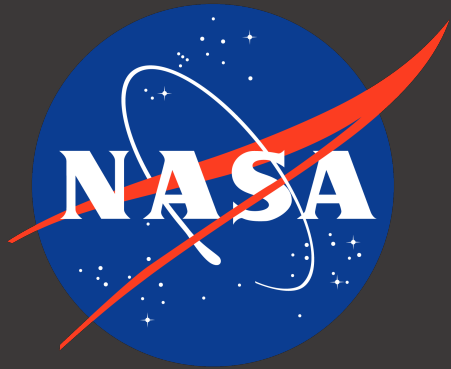
Ain

Aldebaran

An introduction to OpenSpace

Ro Kinzler
American Museum of Natural History

ASTC 2019



NASA SCIENCE
SHARE THE SCIENCE

The Science Mission Directorate (SMD) engages the Nation's science community to further enable NASA science experts and content into the learning environment more effectively and efficiently with learners of all ages.

Created in November 2016, this collaborative leverages over 200 partnerships through a network of 24 science and community-based institutions across the U.S.

BE A LEADER IN SCIENCE

SAFEGUARD & IMPROVE
LIFE ON EARTH

DISCOVER SECRETS
OF THE UNIVERSE

FOCUS ON IMPACT

SEARCH FOR
LIFE ELSEWHERE

ENABLE INNOVATION

COMMERCIAL
PARTNERS

INTERNATIONAL
PARTNERS

BE INTERCONNECTED

ACROSS THE AGENCY

INSPIRE LEARNERS OF ALL AGES



OpenSpace

An open source software for visualizing the universe, including NASA mission activities and science results, for use in informal science institutions (ISIs).



OpenSpace

Open source

Free to download and use

Real data

Cutting-edge visualizations

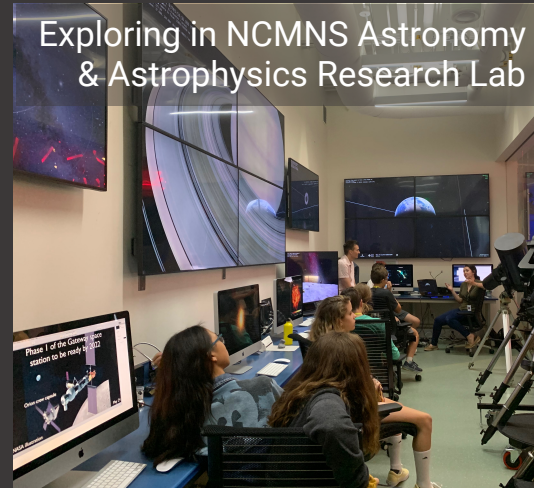
Project partners



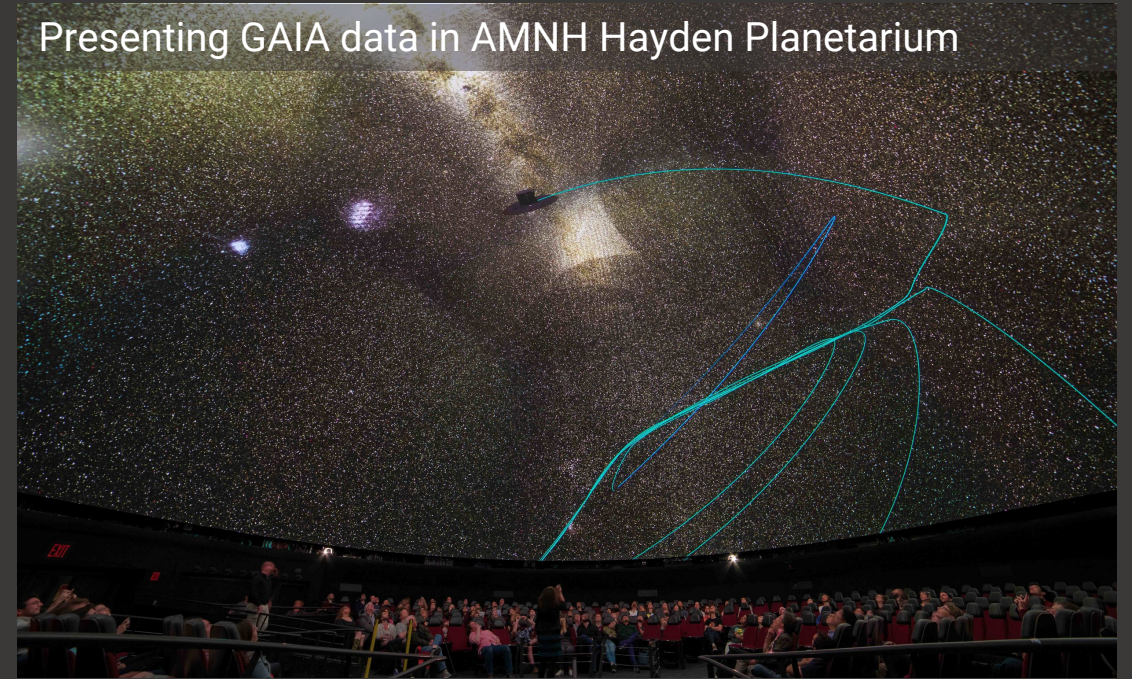
Domes, Theaters, Flat Screens, Touch Tables, VR Goggles...



Going to Mars in NCMNS Daily Planet



Exploring in NCMNS Astronomy & Astrophysics Research Lab



Presenting GAIA data in AMNH Hayden Planetarium



ENLIL solar wind on a flat screen



Operating from a CAS laptop



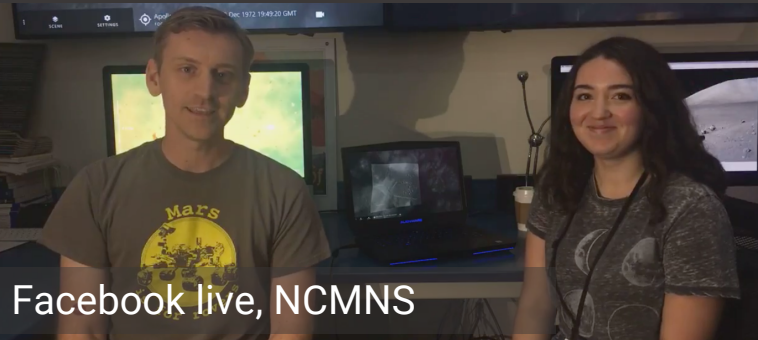
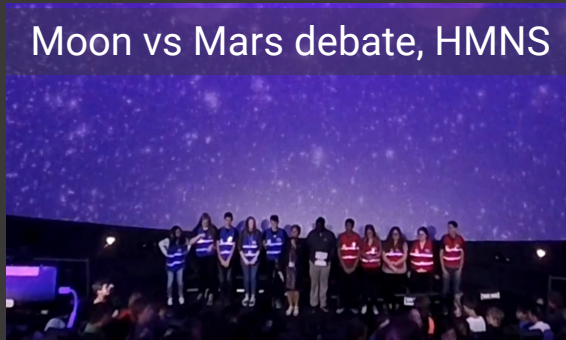
Multi-screen display at the University of Chicago

Apollo 11 Moon Landing 50th Anniversary

5,655
people

11
institutions

Moon vs Mars debate, HMNS



Facebook live, NCMNS

California Academy of Sciences' portable dome at
Splashdown 50 at the USS Hornet Museum



Livestreamed recreation of Apollo 11 landing



BACK WE'VE HAD WE HAD
A GREAT TIME

COMING UP



SpaceFest, AMNH

How will you use OpenSpace?



How to Present a Universe of Data Through OpenSpace

Association of Science-Technology Centers annual meeting, September 20, 2019

Workshop Schedule

- 9 am** **An introduction to OpenSpace**
Ro Kinzler
- 9:15 am** **Set the universe free: OpenSpace in action**
Carter Emmart
The Grand Tour
- Rachel Smith
Astrobiology and the Search for Life Beyond Earth
- Mark SubbaRao
Galaxy Zoo and Citizen Science
- Q&A
- 10 am** **Getting started with OpenSpace**
Micah Acinapura and Alex Bock
Install and launch
Interface
Flying
Digital Universe (DU) Content
Scenes: New Horizons, Rosetta, Gaia, Messenger, Insight
- 11 am** **Break**
- 11:15 am** **Getting started with OpenSpace, continued**
Scenes, continued
Globebrowsing: Earth, Moon, Mars
Customization: Colors, brightness, settings, etc.



How to Present a Universe of Data Through OpenSpace

Association of Science-Technology Centers annual meeting, September 20, 2019

12 pm

Putting OpenSpace into use at your institution

Engaging high school interns

Mark SubbaRao

Informal interactive opportunities, and videos for museums and teaching

Rachel Smith

Live, interactive presentation tool

Carter Emmart

Discussion, questions, and sharing of ideas

Workshop Leaders

American Museum of Natural History

Ro Kinzler, rkinzler@amnh.org

Carter Emmart, carter@amnh.org

Micah Acinapura, macinapura@amnh.org

Corrie Roe, croe@amnh.org

North Carolina Museum of Natural Sciences

Rachel Smith, rachel.smith@naturalsciences.org

The Adler Planetarium & Astronomy Museum

Mark SubbaRao, msubbarao@adlerplanetarium.org

Linköping University

Alex Bock, alexander.bock@liu.se

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