

# Vision 2020 Scientific Community Outreach

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## **The Goal:**

Strengthen ties with professional astronomy and Space Science scientific communities

## **The Team:**

This goal is well aligned with the mission of the science and data visualization task force. That task force is serving as the advisory committee for this Vision2020 goal. The task force membership include scientists working in a variety of disciplines,

## **The Challenge:**

The scientific community (even the professional astronomical community) is vastly unaware of the power and opportunities available in the modern, digital planetarium. At worst they view the planetarium as hopelessly outdated, at best they view it as a wonderful tool for inspiring young people and the general public to take an interest in science. Few see it for what it is, a world-class powerful and flexible data visualization tool.

## **The Work:**

The Data to Dome initiative is aimed at streamlining the process of turning scientific data into scientific visualizations in the dome. Most of the Science and Data Visualization Task Force initiatives relate to this Vision 2020 goal, for example:

- Preparing planetaria for the big data streams that will come from next generation telescopes, satellites, experiments and computational simulations.
  - Next generation telescopes come on line around 2020 (JWST, LSST, TMT, EELT and others)
- Creating professional development opportunities aimed at developing more "data savvy" planetarians.
  - Data to Dome workshop in fall 2015

- Tutorial format of Planetarian column.
- Connecting data suppliers, with vendors and planetarium end-users by setting, and recommending, standards for real-time, or near real-time, scientific content distribution: imagery, videos, tabular data etc.
  - VOtable
  - VAMP
  - VOevent
- Encouraging the visualization of a wide range of scientific data in the dome (moving beyond astronomy).
- Advocating for the inclusion of dome visualization tools in standard scientific analysis and visualization packages.
  - yt
- Encouraging planetaria to make their facilities available to researchers from their communities to use as a visualization tool.

### **Other Opportunities:**

- Highly produced, In the dome science lectures
  - Events introduce scientific community to the power of the planetarium and lead to development of assets that can be shared by the community.
  - Business model requires sharing through travelling lectures or domecasting
  - Kavli Foundation is supporting domecasted lectures of Kavli Prize winners (Astrophysics, Neuroscience, Nanotechnology). First is March 5th, Mike Brown at Adler domecasted to DMNH, Peoria and one more TBD. Repeated at CalAcademy?
  - In discussions with Leaky Foundation for a similar arrangement with Human Evolution.
- An IPS sponsored registry (not repository) of rendered scientific visualizations
  - Way for big producers from the science community ESO, NAOJ, NCSA, etc. to make content available, but also works for individual investigators.
  - IPS avoids hosting fees and steers and leaves licensing issues to providers.
- Early IPS engagement with major scientific projects and missions
  - For example LSST is providing just under \$1M in funding for outreach to planetarium community during construction phase of project.