EXPANDING FERMI'S UNIVERSE

THROUGH THE USE OF ANIMATION AND GRAPHICS

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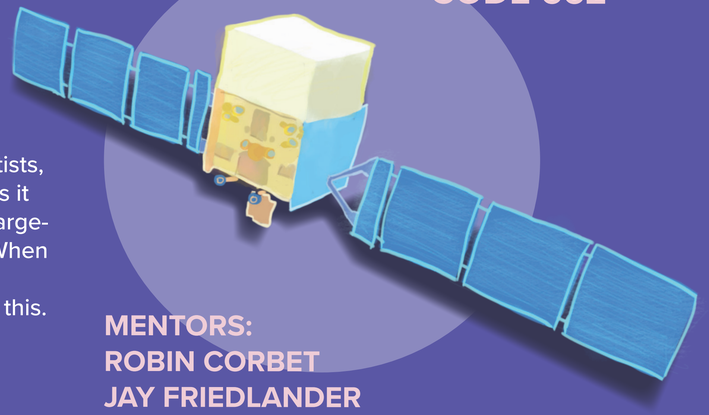
CODE 662



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VISUAL COMMUNICATION

Visual representation is one of the principal voices for communicating between NASA scientists, engineers, researcers and the public. Oftentimes it is visuals that will be the key to understanding large-scale cosmic events and theoretical concepts. When given a visual, people are able to imagine the unimaginable; it is artists who play a vital role in this.

VISUALLY REPRESENTING THE INVISIBLE

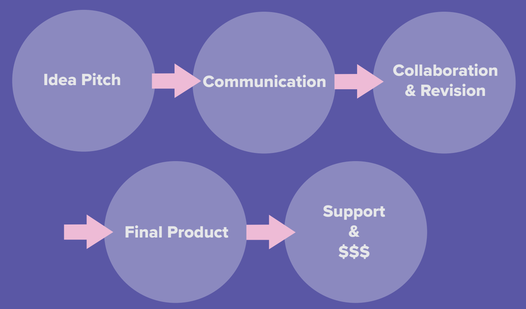
For Fermi in particular, visualization takes great consideration. How do you represent gamma-rays, which aren't something visible to the human eye? How will the public interpret the magenta streams of light that artists show bursting from collapsing stars? There is a delicate balance in figuring out how to represent space objects and events which we cannot see or cannot envision fully.

ASTROPHYSICS FOR THE GENERAL PUBLIC

Talking about space and the history of the universe is exciting and inspiring table-talk, however, when you start to get into the physics of it all... it can end up being a lot of incomprehensible science jargon. This is where the importance of translation and communication comes in. It can be a daunting task to break down astrophysics for the general public, but it is a key component in gathering interest, support, and very importantly: funding! The key is to say enough without over-explaining or "bogging down" the viewer. Hold their interest, answer their general questions, and visually demonstrate. It aids scientists in helping the public become aware of results coming out of their research,

FROM AN IDEA TO THE SCREEN

The process of creating a visual representation takes a lot of teamwork and meetings. It starts with an idea – a pitch – between a scientist or engineer and an artist. A script and storyboard must be created, science-checked, and revised many times before actual content is produced. Once the artist begins creating visuals, these must be reviewed and revised as well. Visuals demonstrating scientific concepts and research must be constructed carefully to properly portray what is being communicated while also considering the way that the public might react. Ideally, the process looks like this:

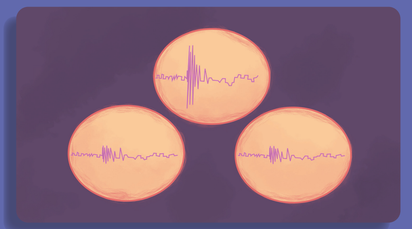


FERMI ANIMATION HIGHLIGHTS:

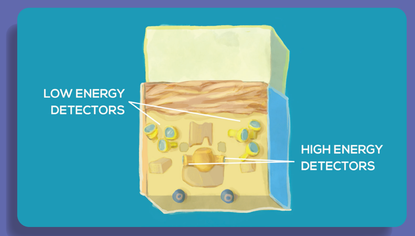
Fermi Reddit AMA Session Ad GIF
Advertising for a Reddit Ask Me Anything session with Fermi scientists and artists.

Astronomy on Tap Twitter Ad GIF
Advertising for an event at the DC9 club where scientists gave Fermi talks.

Fermi Repoint GIF
A short animation demonstrating Fermi repointing to view a bright GRB in 2016.

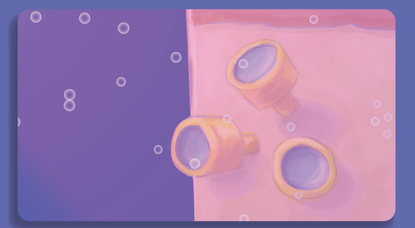


Gamma-Ray Burst Monitor Animation
Demonstrating the data Fermi collects from Gamma-Ray Bursts (GRBs).



Gamma-Ray Burst Monitor Animation
Illustrating the different gamma-ray detectors that make up the instrument.

Gamma-Ray Burst Monitor Animation
Showing viewers how Fermi aids other telescopes.



Gamma-Ray Burst Monitor Animation
Visualizing photons as they enter Fermi's detectors.

Gamma-Ray Burst Monitor Animation
Imitating the transmission of Fermi data to scientists.