SCRIPT TO ACCOMPANY COMPARING COSMIC CAMERAS POWERPOINT

SLIDE 2
Much of what we know about space comes from the images that cameras send back.

This image was taken by the Stardust spacecraft's navigation camera. This camera was not intended to take images for scientific study. But, when it comes to comets – where only 5 nucleus' have been imaged – scientists will take all the information they can!

Principal Investigator Dr. Don Brownlee of the University of Washington, Seattle, explains "Although Stardust was designed to be a comet sample return mission, the fantastic details shown in these images greatly exceed our expectations." Ray Newburn of Jet Propulsion Laboratory, a co-investigator for Stardust, explains that the quality of the image is much greater than expected: "These images are better than we had hoped for in our wildest dreams. They will help us better understand the mechanisms that drive conditions on comets." And they did.

Since it was an imaging mission, the next comet mission, Deep Impact, had more and better cameras installed on the spacecraft.

This image can be found: http://stardust.jpl.nasa.gov/news/status/040102.html

SLIDE 3
This image shows the nucleus of comet Tempel 1 approximately 5 minutes before Deep Impact's probe smashed into its surface. It was taken by the probe's impactor camera. The Sun is to the right of the image. Shadows and bright areas indicate surface topography. Smooth regions with no features (lower left and upper right) are probably younger than rougher areas with circular features, which are probably impact craters. The probe crashed between the two dark-rimmed craters near the center and bottom of the comet. The nucleus is estimated to be about 5 kilometers (3.1 miles) across and 7 (4.3 miles) kilometers tall.

Addition Date: July 4, 2005
Image Credit: NASA/JPL-Caltech/UMD

SLIDE 4
The image depicts the first moments after Deep Impact's probe hit comet Tempel 1. The rough-hewn edges at the top and bottom of the flash are a result of light given off at impact.

This image was taken by Deep Impact's high-resolution camera. This image has a resolution of 88 m/pixel.

Image Credit: NASA/JPL-Caltech/UMD This image can be found at:

http://www.nasa.gov/mission_pages/deepimpact/multimedia/pia02141.html

SLIDE 5
This image shows the initial ejecta that resulted when NASA's Deep Impact probe collided with comet Tempel 1 at 10:52 p.m. Pacific time, July 3 (1:52 a.m. Eastern time, July 4). It was taken by the spacecraft's medium-resolution camera 16 seconds after impact.

Image Credit: NASA/JPL-Caltech/UMD

This image can be found:

http://photojournal.jpl.nasa.gov/catalog/PIA02121

SLIDE 8
This set of images is to model the differences in final image resolution between the Deep Impact Medium-resolution imager and the images from Stardust-NExT. The actual image will not have the bright flash from impact and may be slightly better or worse based on a number of factors. These images also do not take into account that:

1) The Stardust navigation camera does not have as many color levels as the Deep Impact imagers and images from Deep Impact's Medium-resolution imager can be stretched in many different ways to show different contrasts and the images from Stardust-NExT cannot be.

2) The nucleus will be in almost full sunlight when Stardust encounters it, so the shadowing will be dramatically reduced which may make the stretching problem more of an issue.

SLIDE 9
This pair of images shows the before-and-after comparison of the part of comet Tempel 1 that was hit by the impactor from NASA's Deep Impact spacecraft.

The left-hand image is a composite made from images obtained by Deep Impact in July 2005. The right-hand image shows the same region as viewed by NASA's Stardust spacecraft six years later, on Feb. 14, 2011.

Image Credit: NASA/JPL-Caltech/University of Maryland/Cornell