

NASA Debuts Unique Movie on a Sphere About Frozen Earth

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NASA has created a unique "spherical" movie about Earth's changing ice and snow cover as captured by NASA spacecraft. "Frozen," a 12-minute, narrated film, premieres at science centers and museums March 27.

NASA's Goddard Space Flight Center in Greenbelt, Md., produced the film for the "Science on a Sphere" projection system, a fully spherical video technology developed by the National Oceanic and Atmospheric Administration. The six-foot spheres are installed in more than 30 locations around the world.

Ice covers about 20 percent of the Earth's surface and plays a major role in the world's climate. [NASA](#) operates a sophisticated fleet of spacecraft that make global measurements of ice and snow in remote and treacherous locations not easily accessible to scientists on the ground. Data from these NASA satellites play a critical role in [climate change](#) research.

"Frozen" probes all parts of Earth where water exists in solid form as snow or ice, known as the cryosphere. The movie takes viewers from the everyday experience of sensing heat and cold to a discussion of how satellites "see" heat and cold with advanced sensors. It then projects dramatic displays of [satellite](#) data of Earth, including changing Arctic sea ice and global snow cover, onto the sphere. Images generated by NASA's Aqua satellite and the Landsat series are featured in "Frozen."

"With 'Frozen,' we're not only breaking new ground in terms of spherical

filmmaking but also transforming an otherwise technical subject into a powerful and poetic drama about the state of Earth," said Goddard's Michael Starobin, one of the film's producers.

Science on a Sphere uses a six-foot diameter carbon fiber sphere that hangs in a dark theater surrounded by four projectors. A computer system drives video content for the projectors to create a seamless image around the sphere.

"Science on a Sphere is a powerful and exciting new medium for telling all sorts of stories," said Starobin, who also produced and directed "Footprints," NASA's first movie for the system in 2006. "Footprints" explored the origin of hurricanes, the origin of gamma ray bursts and the human imperative to ask hard questions. NASA installed its first sphere at Goddard in 2006.

NOAA originally conceived Science on a Sphere to help illustrate Earth science principles by showing planet-wide data. Museums and universities have created hundreds of data visualizations for the platform since it first debuted in NOAA facilities, providing educational opportunities for millions of visitors. However, very few fully produced, narrated movies have been developed for the system.

"Frozen" marks the next step in the evolution of spherical filmmaking," Starobin said. "It moves the technology of the craft to new levels and, more importantly, tackles a single subject and uses the unique shape of the screen to discuss that subject in new ways. For example, where a flat screen only provides a sense of the remote, obscure scale of polar regions, a spherical presentation shows just how vast these places are. It highlights global processes in an orientation that matches reality."

For more information about "Frozen," including a list of locations showing the film, visit: www.nasa.gov/frozen

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