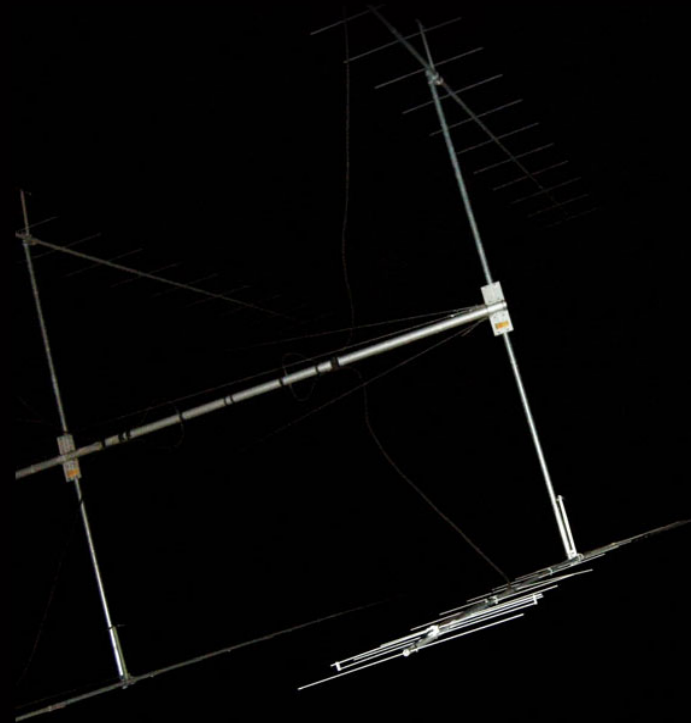


The Ancient, Distant, and Dead

BY GREG BOUSTEAD / MARCH 4, 2010

Signal-to-noise ratio is the relationship between meaningful information (a signal) and external factors (background noise). In a broader theoretical sense, it can refer to seeking out meaning from complexity. We do this in our daily lives, constantly and without thought, each time we take mundane actions and, ultimately, whenever we attempt to make sense of the world we live in. The young Scottish artist Katie Paterson toys with this balance. Whether it's hacking a mobile phone and burying it deep in the Arctic to capture the dying murmurs of a melting iceberg, or working with astronomers to capture the earliest known light of the universe, Paterson's work—with a nod to scientific research—explores the curiosities within some of our universe's infinite blips: remote ones, old ones, ones long gone.



Hello?

As part of Paterson's *Encounters* exhibition at Modern Art Oxford, a white neon sign displays a phone number that connects curious visitors to a live transmission of the gurgles and pops emanating from Vatnajökull, a massive glacier in the remote interior of Iceland.

MATERIALS:
HYDROPHONE, DE500 MOBILE PHONE



07757001122

Vatnajökull (the sound of)

Anyone from around the world could call in to the audio feed, which was captured by a jury-rigged mobile phone and submerged mic at Jökulsárlón lagoon, an outlet lagoon into which the glacier is steadily melting. About 10,000 people from 47 different countries eavesdropped on the glacial murmurs during the two-month period that the number was active.

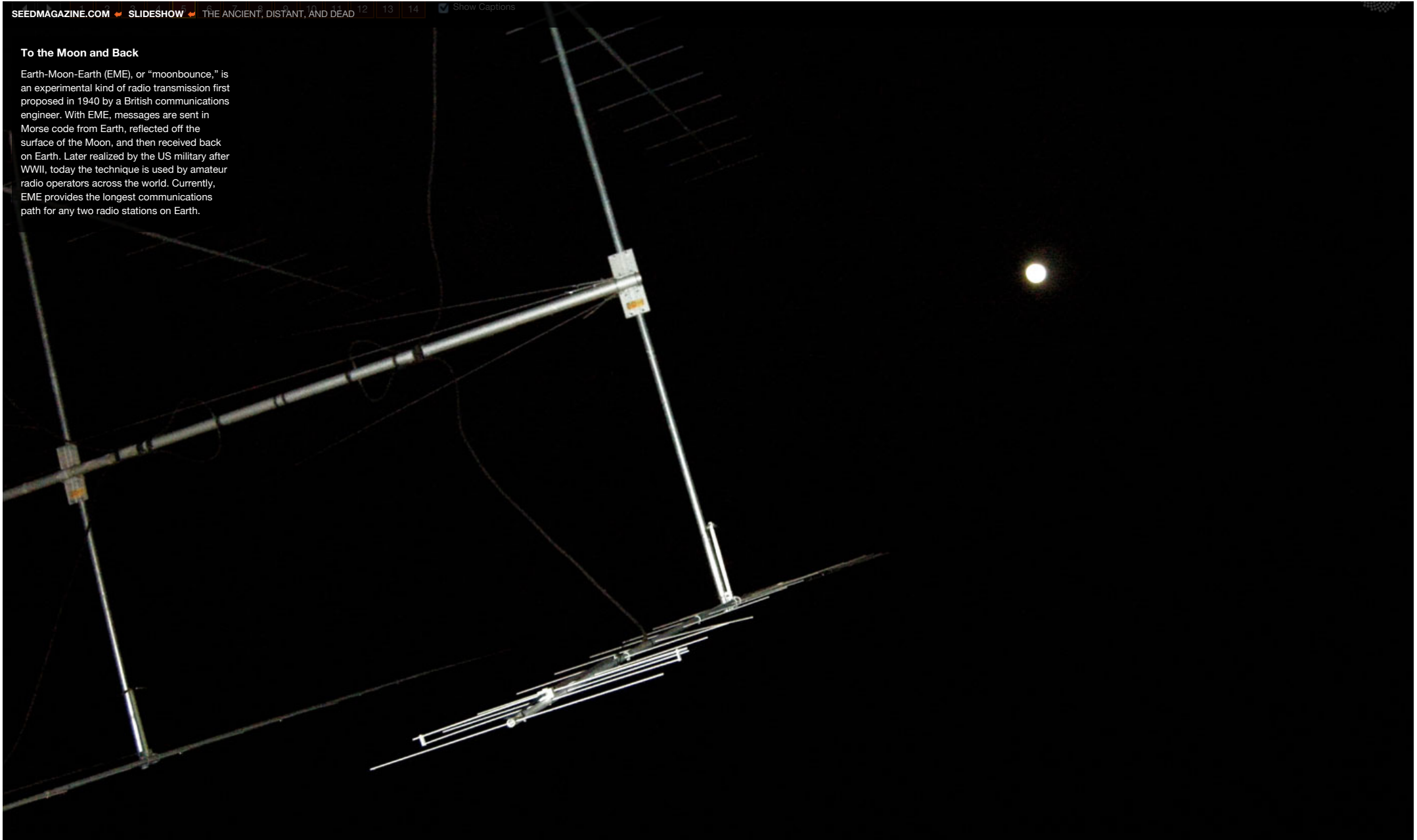
[LISTEN TO A RECORDED VERSION OF THE TRANSMISSION >>](#)





To the Moon and Back

Earth-Moon-Earth (EME), or "moonbounce," is an experimental kind of radio transmission first proposed in 1940 by a British communications engineer. With EME, messages are sent in Morse code from Earth, reflected off the surface of the Moon, and then received back on Earth. Later realized by the US military after WWII, today the technique is used by amateur radio operators across the world. Currently, EME provides the longest communications path for any two radio stations on Earth.



Moonbounce Sonata

Fascinated with this curious mode of communication, Paterson translated Beethoven's *Moonlight Sonata* into Morse code and sent it to the Moon via radio waves. Ostensibly "remixed" as it bounced off the contours of the Moon's surface, the sonata was then retranslated into a new score and played by a grand piano at Modern Art Oxford.

MATERIALS: EME TRANSMITTER/RECEIVER, DISKLAVIER GRAND PIANO

[LISTEN TO AN EXCERPT OF THE SONATA >>](#)



Incomplete Transmission

The Moon reflects only part of the information back; some of the transmission is "lost" in lunar craters, as can be seen in the Morse code of the *Moonlight Sonata* that was sent back. The new gaps and absences became intervals and rests.

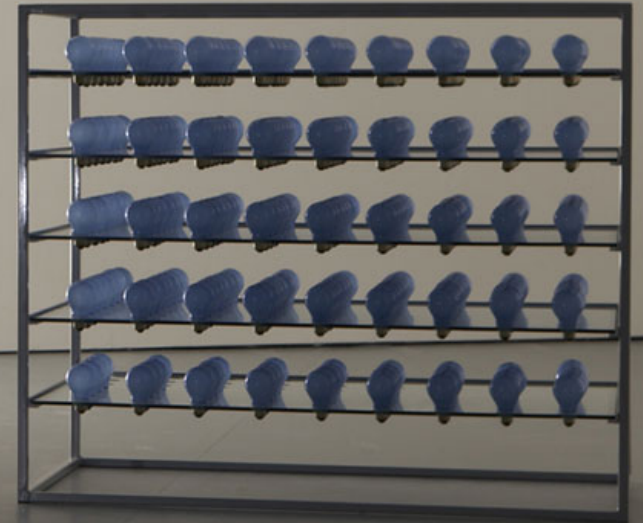
[LISTEN TO THE MORSE CODE, AS RECEIVED FROM THE MOON >>](#)



Moonglow for Life

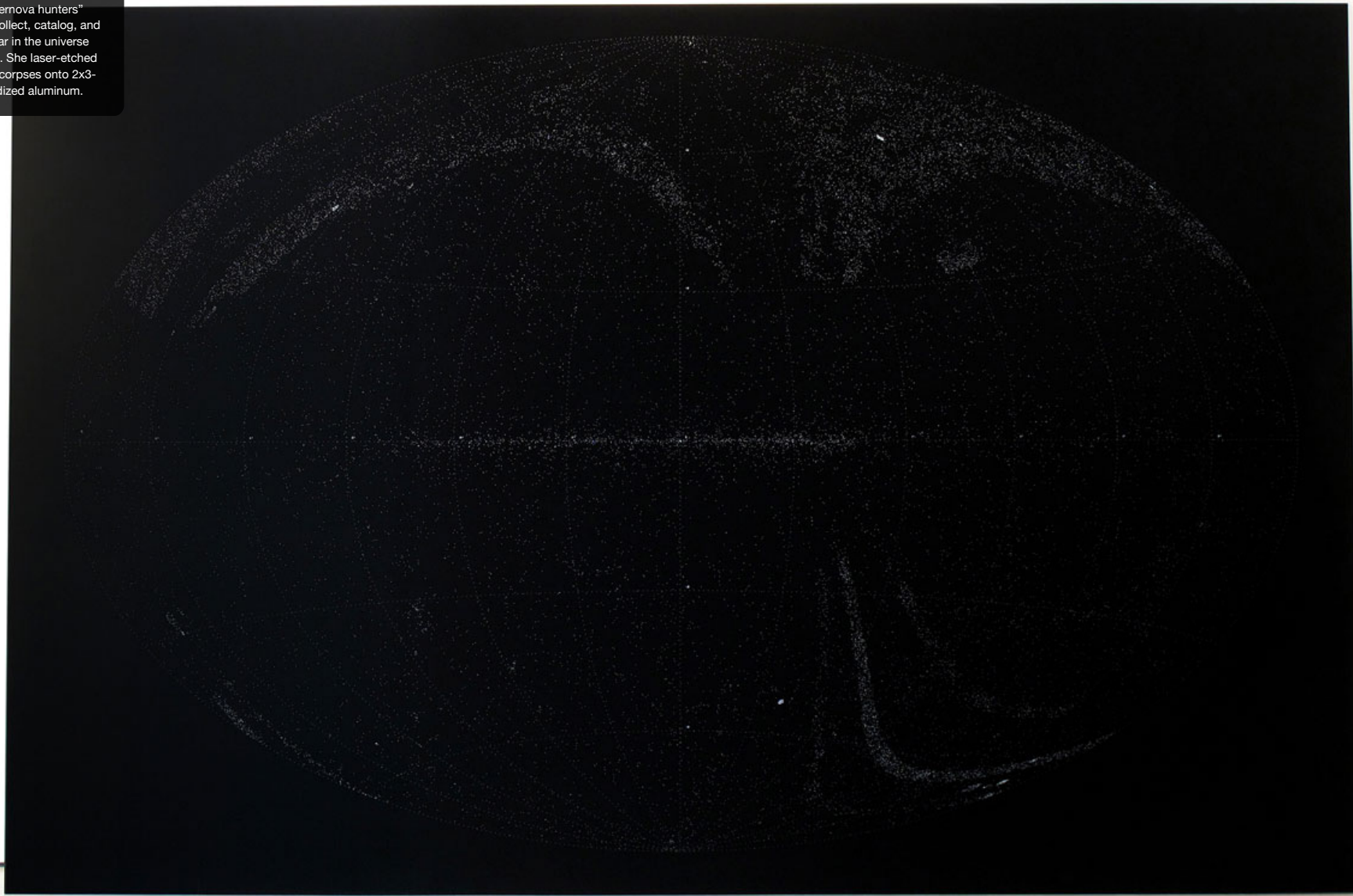
Lighting engineers, on Paterson's behalf, took painstaking measurements under a full Moon to recreate its exact spectral profile in these custom light bulbs. Each set produced contains enough light bulbs to provide a person with a lifetime supply of moonlight, based on the average human lifespan.

MATERIALS: SET OF 289 LIGHT BULBS,
FROSTED COLORED SHELL: 28W, 4500K



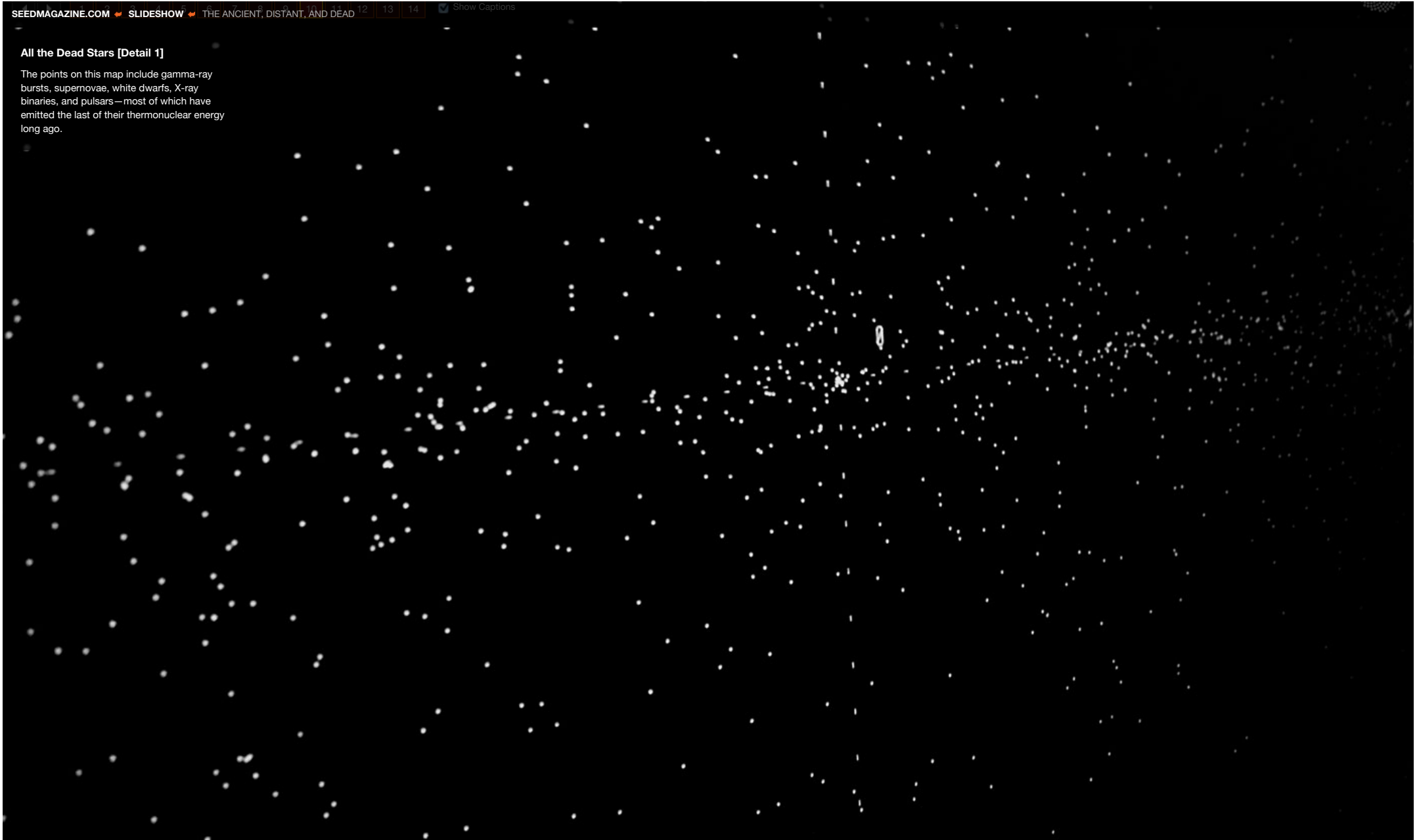
All the Dead Stars

Paterson worked with astronomers, astrophysicists, and "supernova hunters" throughout the world to collect, catalog, and plot every known dead star in the universe (there are roughly 27,000). She laser-etched the map of these cosmic corpses onto 2x3-meter sheet of black anodized aluminum.



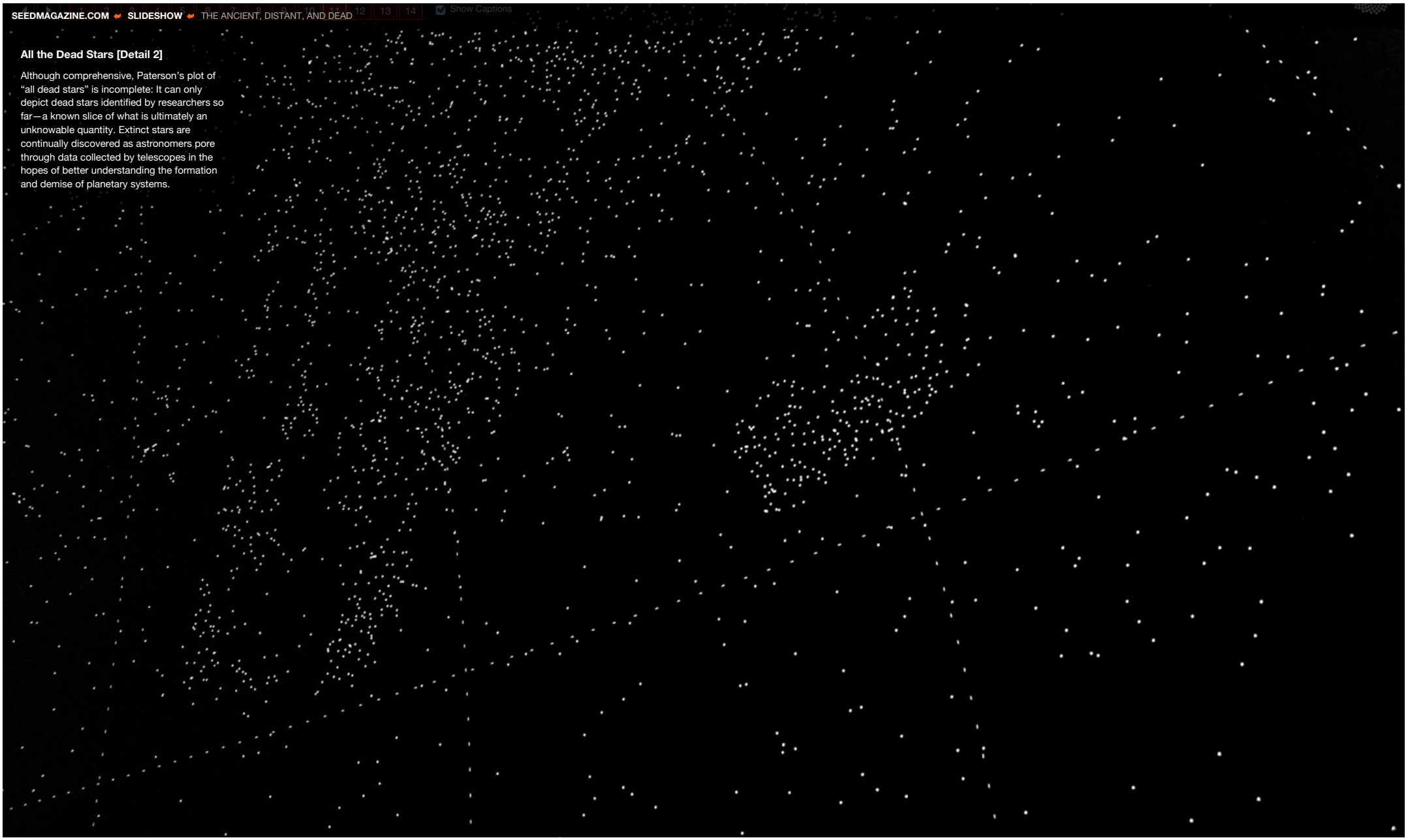
All the Dead Stars [Detail 1]

The points on this map include gamma-ray bursts, supernovae, white dwarfs, X-ray binaries, and pulsars—most of which have emitted the last of their thermonuclear energy long ago.



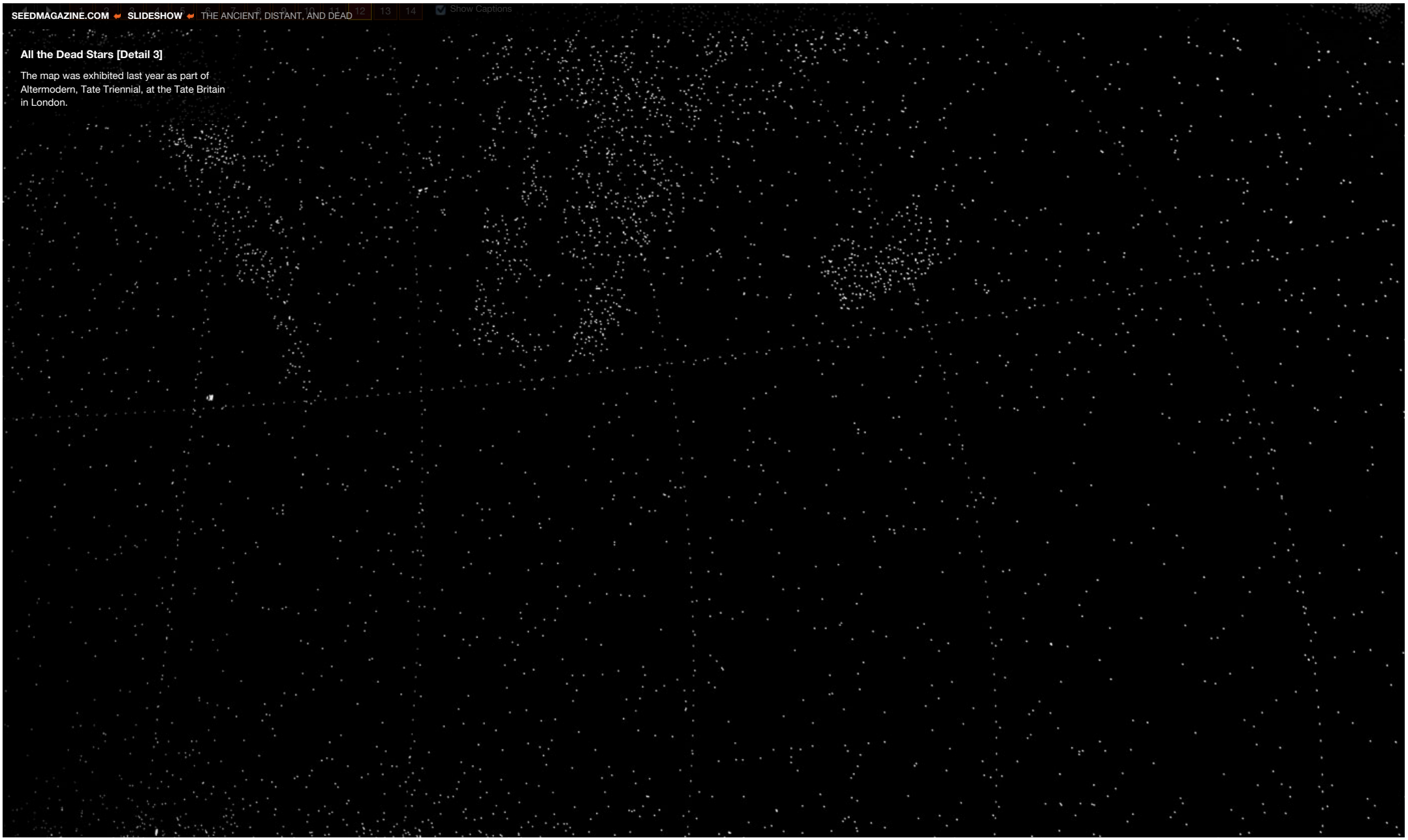
All the Dead Stars [Detail 2]

Although comprehensive, Paterson's plot of "all dead stars" is incomplete: It can only depict dead stars identified by researchers so far—a known slice of what is ultimately an unknowable quantity. Extinct stars are continually discovered as astronomers pore through data collected by telescopes in the hopes of better understanding the formation and demise of planetary systems.



All the Dead Stars [Detail 3]

The map was exhibited last year as part of Altermodern, Tate Triennial, at the Tate Britain in London.



Streetlight Storm

For Paterson's most recent installation, lights along a fishing pier in Deal, England, flicker in real-time synchrony with lightning storms across the world. The electromagnetic signatures of lightning from as far away as the North Pole or North Africa are received by an antenna on the pier and translated into visible light. As the pattern of lightning strikes changes, the pier lights oscillate in subtle correspondence that contrasts with the power and drama of the faraway storms they reflect.

MATERIALS: LIGHTNING DETECTOR,
ELECTRONICS, LIGHT BULBS



Ancient Darkness TV

Working with astronomers from the W.M. Keck Observatory, Paterson produced an image of "ancient darkness"—captured from the earliest observations of the universe, 13.2 billion years ago, shortly after the Big Bang, when stars and galaxies began to form. The dim image was broadcast for one minute on the New York television station MNN on November 22, 2009, as part of PERFORMA 09. The project was supported by the British Council Darwin Now awards.

