T'd no idea how many dead stars there were'

Artist Katie Paterson has made a map of 27,000 'stel lar corpses' for her startling new show, writes Jay Richardson

IF, AS THE late, great astronomer Carl Sagan maintained, we are all made of "star stuff", then Glaswegian artist Katie Paterson retains more than most. The 27-year-old Edinburgh College of Art graduate's work is conceptually small and scale, metaphysically profound yet startlingly immediate. Recently she won the first Creative Awards prize to identify the UK's most promising creative talent. Paterson's previous projects include a show in which she posted her phone number in neon at a London art gallery, then camped out on Europe's largest glacier, in Iceland, next to a submerged microphone. Visitors to the gallery were invited to phone Paterson and listen to Europe's largest glacier at the greatest distance of 47 countries. For another project, she beamed Beethoven's Moonlight Sonata through a Morse code, to the moon as radio waves before playing the composition for the first time. At Tate Britain until April, she's plotted a map of All The Dead Stars - 27,000 'stellar corpses' - of stars since the dawn of time.

Snow is faintly falling when I first meet Katie Paterson Spitalfields for coffee, 24 hours before the map is unveiled as part of Alternative, the late's biggest solo show. The exhibition of artists deemed to be at the forefront of their generation, Paterson's work stands out. She works with materials, follows on from two other space-inspired works - her Beehive piece, Earth-Moon-Moon-Earth (Moonlight Sonata Redirected from the Surface of the Moon) and Lightbulb to the Moon - and is the only artist to commission a lightbulb that replicated moonlight, bathing a gallery in an eerie glow alongside 289 similar bulbs on a storage rack. Each bulb was capable of lasting 2000 hours, together representing the disconcertingly small quantity of moonlight the average human being experiences in a lifetime.

"I had the idea in April," Paterson recalls. "It sprang from another work where I'd learned that when a star collapses and detonates as a supernova, the middle C, like the chime you hear when you open the door to a chime, is the smallest sound that can travel through the door of the gallery as people walked in, a really pathetic sound."

Paterson began hunting for supernova hunters on the internet. Despite the fact the map would have no scientific value - aside from stimulating interest in 2009 as International Year of Astronomy, perhaps - she found a community eager to assist. The map was plotted by Dr David Johnston, astronomer at Oxford University, while Professor Ofer Lahav, head of astrophysics at University College London, will deliver an evening lecture on the death of stars outside the Tate on 6 March.

"When I began the project, I had no idea how many dead stars there were," Paterson says. "Some of what we now know as supernovae, pulsars and white dwarves - dead and dying stars -might have been observed even before Galileo recorded the first telescope observations exactly 400 years ago. It could have been one or ten billion. The first on the map is from 1006 AD but the map is only a tiny percentage of what exists in reality. They all had different deaths too. A supernova type 1a explodes with the force of a hundred billion suns. You can see that from the furthest point of the universe!"

"One of the reasons I've been so successful in persuading Japanese moon-bouncing enthusiasts, Slovakiar lightbulb manufacturers and Icelandic customs officials to facilitate her elaborate, technically complicated visions is that the fundamental ideas behind them remain so straightforward and universal. "I like to make work that you can sum up in a sentence, like 'phone a glacier'; she says, "yet with layers beneath that people can get to grips with themselves, rather than having to receive notions of what I'm trying to do or having to read a long explanation."

From her earliest education focusing on her masters degree at Slade School of Fine Art in 2007, Paterson now says she would be "coming to tutorials with no work, just saying; I've got this idea, let having nothing tangible and often feeling. "What the hell am I doing?" It's only been in the last few years that it's fallen into place and I've felt it's been worth carrying out. The last few projects have worked so well and it's given me much more confidence."

With representation from a London gallery and the £10,000 she won for the Creative 30 award, Paterson now intends to move to Berlin. Without pressing deadlines for the first time in several years, she is contemplating a project focused on space, technology, the control of matter on a molecular scale. "I've been looking at the submergence of a wave machine beneath the sea."

She's also been invited by Professor Richard Ellis CBE to study the earliest galaxies at the WI Kek Observatory on Hawaii's Mount Kea, volcanic home to the largest optical telescopes on the planet, where it's possible to see back some 13.2 billion years, effectively 95 per cent of the way to the Big Bang. "I've applied for funding, so fingers crossed," she says. "It would be incredible to see the moment the stars switched on, I can't quite get my head around seeing things that lived and died before the Earth even existed."All The Dead Stars appears as part of Alternative at Tate Britain, London, until 26 April. You can find out more about Kate Paterson's work at www.katiepaterson.org