A Kent seaside will be a magnet for the storms of the world, reports Louise Cohen

What says artists don’t tackle the big issues? Katie Paterson (below) has camped next to a glacier, mapped the Universe’s exploded stars and looked back at the light and dark years in light of the Cambrian flooding last month; and the global issues being discussed in Copenhagen, it’s an environment that seems particularly topical.

I went to see Paterson in a coffee shop in Camden, North London, where she shuttles in — a slightly shy person, smiling, trolley-bred hat. She’s on her way to sell a Keith Lemon poster, installing her latest project, Streetlight Storm, on the pier.

The pier has 20 lamps, and they’re going to be lit in time with lightning storms as they happen everywhere from the North Pole to North Africa,” Paterson says. “They’ll all be going at once. Loosely, the brighter they are, the nearer the storm.

Is Paterson some kind of technological wizard? God, I don’t know anything about technology,” she giggles. “I just have these ideas and then I have to work, not how to do them — or get other people to do them.

In this case, Martin Fulghum, a light- ing expert at the University of Bath, has devised an antenna — “just like a big bit of chicken wire” — that picks up electrical signals from the lightning strikes. These signals are then connected electronically to the lights, courtesy of the engineer Ken Doyle.

So does Paterson intend her work as an environmental wake-up call? “In a way, but it’s more just about something that’s really far away but visually through something that’s near by, not too far away, working with everything, like radio or mobile phones.”

She’s thinking particularly of the work that launched her career in 2007. Having studied in Edinburgh, the Glasgow-born Paterson took her M.Res at the Slade for her degree show. She put a phone number on the wall in neon lights that allowed visitors to hear glacier melting live.

“I camped with the equipment on the edge of a glacier in Iceland, and we submersed in under water lake in the glacial lagoon,” Paterson says. “It was connected to a mobile phone on a satellite answer, so you could hear the glacier melting away, a sort of cracking.”

The piece was spotted by the director of Modern Art Oxford, who gave Paterson her first solo show. Together with the glacier’s musician, Paterson exhibited and installed her first creation, Earth-Moon-Earth. “It was cool to see how people would send signals to the Moon in Morse code and reflect from the Earth, but not all of it comes back to set the project to a clear signal,” Paterson reinterprets it back to the Moonlight Sonata for the Moon and has a piano with digital strings that come back — with gaps for the lost signals, presumably bouncing around the solar system. “I knew it totally would work.”

Bonnier it may, but Paterson is in a hit. That work — along with light bulbs replicating moonlight and a laser-laced motif of the Universe’s no-longer-existent stars — has been exhibited in Stockholm and New York as well as Tate Britain’s Arts and modern exhibition last year. She’s won awards and funding that allow her to keep working on this scale.

Paterson divides her time between her family in Glasgow, Camden, where she lives, and Cumbria, where she has a flat. “I love Berlin, and I’m thinking about moving there,” she says. “But I have somewhere else that’s meant to be the best moment.”

In 2001 that means moving to South Korea for a solo show and a tour of the seashores of South England with Streetlight Storm, and most excitingly, a trip to Hawaii.

She is elaborating on another previous work, Ancient Darkness, an image taken from the W.M. Keck Observatory that shows the clouds on the summit of an Hawaiian volcano. Consisting of two 1m telescopes that can work in conjunction, it’s so powerful that it can look 2010 years into the past.

“Yeah, it’s real good” she says. “Every time we look into the sky everything is in the past because of the distance. Even the light from the Sun is a few minutes old.”

So when we look at our closest galaxy, it’s 25,000 years in the past. Now they are looking back further, and it will be 5 or 6 per cent of the big bang. “We’re nearly looking at the beginning of the Universe.”

This is the daydreams of astronauts, sci-fi geeks and journalists everywhere. But a lot of people will question “reality”, Paterson admits. “I can’t get my head around this.”

Streetlight Storm, supported by Vauxhall Motors and Albion Gallery in partnership with Turner Contemporary and Whitbread Biennial, opens on January 21 and runs until March 12 on Deal Pier.