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The sound of aurora borealis

“Songs of the Sky”, an episode from BBC Radio 3’s “Between the Ears” strand, takes a winter journey through central Alaska. Within a crisply atmospheric soundscape of crunching snow, splitting ice and howling wolves, the programme, produced by Kate Bissell, shows how a wildlife ranger and a hi-tech composer collaborated to create otherworldly music out of the Northern Lights, or aurora borealis. The lights make the Arctic and subarctic skies glow with spectacular colours when charged particles carried from the sun on solar winds interact with gaseous particles in the upper atmosphere at latitudes with a weaker electromagnetic field.

Karin Lehmkuhl Bodony, a Native Alaskan, is a biologist for the US Fish and Wildlife Service who studies the wilderness around the town of Galena. Matthew Burtner, another Alaskan, is a composer, sound artist and “eco-acoustician”. He uses computer technology to transform natural processes into the serendipitous sounds that enrich his compositions. The spooky alchemy of transforming light into sound begins with the (very) low-frequency radio recorder Ms Lehmkuhl carries into the forests as she observes the Northern Lights. Radio, as they say, has all the best pictures: it is easy to imagine the Alaskan skies her words evoke as she sees first “diamonds set in velvet” then, as the aurora shows its glittering hand, an initial “single turquoise band” that spools into dancing ribbons of gold and red. In woodlands where bears, wolves, lynx and wolverine still prowl (listeners hear some of them), her equipment registers the sonic imprint of the solar shower as it collides with agitated particles of oxygen and nitrogen to generate the lights.

So what does the solar system sound like? It whistles and it whoops. It crackles and it chirps. It gurgles, chatters, squeaks and flows in liquid waves of sound. Ms Lehmkuhl likens it to “listening to whales underwater”.