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An eye for the invisible: How birds sense the Earth's magnetic field

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Every year, millions of birds prepare to embark on a great journey – migration. But how do they know where to go? One of the many ways that birds navigate is through their perception of Earth’s Magnetic field. Invisible to human beings, birds sense this force, and can use it to travel towards a pole or the equator. I study songbirds’ brains to understand how songbirds perceive magnetic fields. One brain region, called Cluster N, seems to be important for some songbirds to “see” the magnetic field at night. But there’s still so many questions we have. Can Cluster N be used outside of migration? What other types of stimuli can activate Cluster N? Can Cluster N be found in non-migratory birds that also perceive electromagnetic fields? By asking these questions, we will further understand how songbirds navigate with their “eyes for the invisible”.

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