

LAWRENCE WEINER: *POLARIS* (1990)

CHUCK KEETON

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STARS DON'T STAND STILL IN THE SKY.

With this deceptively simple phrase, the artist Lawrence Weiner connects your nightly experience of stargazing with thousands of years of intellectual inquiry. From Apollonius and Ptolemy to Copernicus, Kepler, and Newton, preeminent scholars have puzzled over patterns of motion in the sky. It's not just stars that don't stand still: the planets, Moon, and Sun all execute a complicated dance over the course of days, months, and years.

Stars are actually pretty well behaved; planets are the real troublemakers. They wander among the background stars, mostly following sedate paths but every once in a while turning around and moving "backward" for a few months. This retrograde motion, which is evoked by the back and forth arrows in Weiner's drawing, has played a major role in developing our modern understanding of orbital motion and gravity. The fact that stars and planets don't stand still, in other words, ultimately helped us to deduce some fundamental workings of the universe.

On the surface there is an ironic tension between the title of this work and the text within it, because what

makes Polaris special is that it *does* seem to stand still in the sky. That's what made it a key navigational beacon in the long centuries before GPS. Digging a little deeper, though, we can now use long-exposure photographs to see that Polaris really does move throughout the night, if only slightly. Earth's rotation axis is not perfectly aligned with the star. What's more, Polaris will not remain the North Star forever. As it spins Earth also precesses, like a top tipped over on its side. Over thousands of years, Earth's rotation axis will rotate away from Polaris and then circle around again. Polaris will once again be the North Star in 28,000 CE. So indeed no stars—not even Polaris—stand still in the sky!

If you would like to see Polaris directly, step outside one evening, look to the north, and see if you can find the Big Dipper. The two stars on the end of the bowl of the Big Dipper are called the pointer stars, because a line drawn through them points to Polaris. If you watch these stars over the course of hours, weeks, or months, you will see for yourself how Weiner's words and shapes reference these continual motions in the sky and the underlying physics of the cosmos.

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