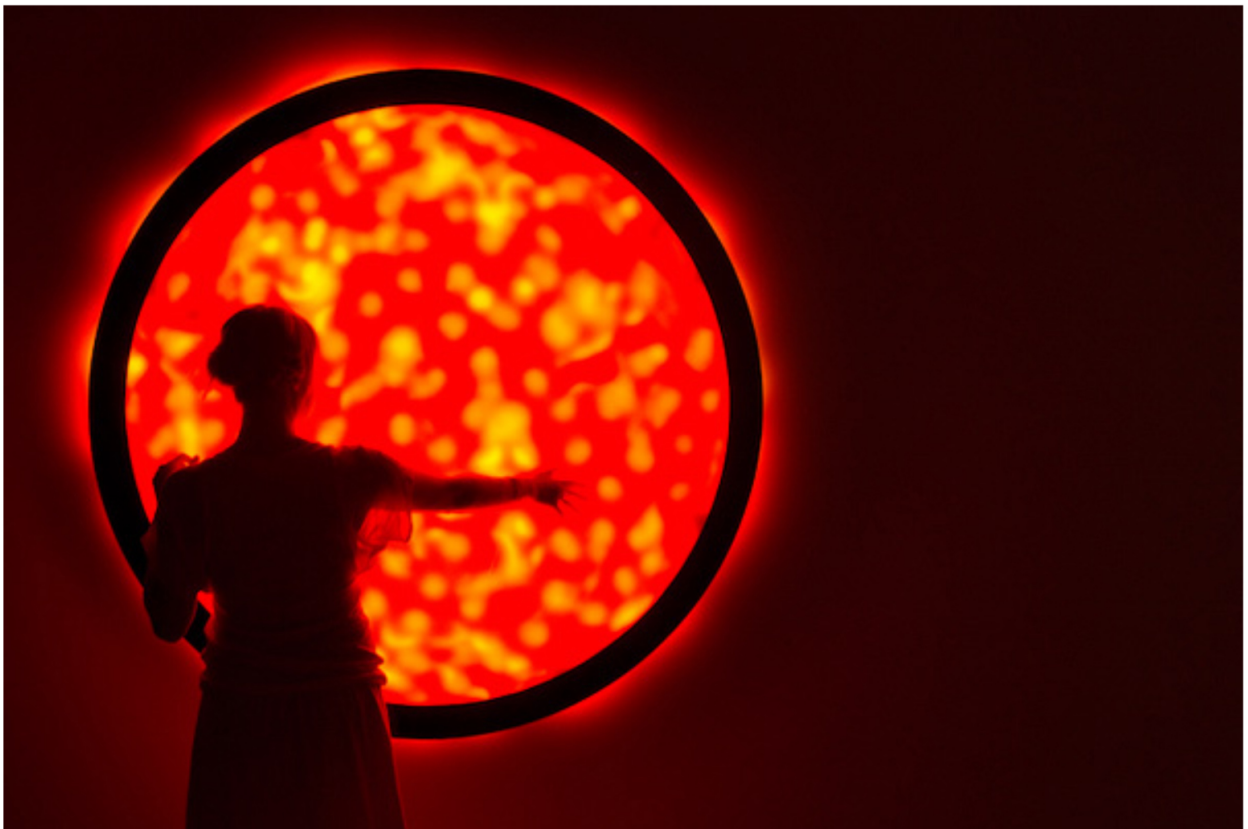# Make:

Flatsun Simulates Burning Solar Activity

It's about a bilion times smaller than our actual closest star (140 cm, the artist made sure to make this exact), but Rafael Lozano-Hemmer (http://www.lozano-hemmer.com/) has managed to recreate its glowing visuals in his art piece, *Flatsun*.

To do so, he designed and built a custom array of 60,000 red and yellow LEDs. They are controlled by a computer running eight processors, and a video camera detects the number of people in the room then alters *Flatsun's* activity based on that. If the room is crowded, the toiling flames increase in intensity. If the place empties out, Flatsun calms down.

To make the visual action of *Flatsun* properly mimic the sun, Rafael employed the fluid dynamic algorithms Navier Stokes, fractal flames, reaction diffusion, and Perlin noise.