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Description of the Cover Art

Curious about the slick cover art? Starting from NASA’s famous “Earth at Night” image, we played some games with Adobe Photoshop to introduce curvature and atmosphere to the Earth and then added silicon integrated circuit oceans (read: Silicon Earth). The original concept of showing the Earth with an integrated circuit overlay was mine, but Peter Gordon led me to NASA’s night view, and Poornima Ozarkar, the artistic wife of one of my Ph.D. students, executed a large number of design iterations to get it right. Final result? Pretty slick!

The “Earth at Night” (courtesy of NASA, 2000) is actually a composite of images created from data gathered by satellites that are a part of the U.S. Air Force’s Defense Meteorological Satellite Program (DMSP), and that reside at about 800 km above the Earth’s surface, in Sun-synchronous, near-polar orbits (99 degree inclination). The night view of the Earth clearly shows evidence of human civilization, speaking volumes about our reliance on electricity, and also suggests why it’s awfully tough to get a great view of the Milky Way when you live in big cities! The brightest areas are obviously not the most populated, but rather the most urbanized (read: light pollution?!). The integrated circuit spanning the oceans of the Silicon Earth is actually a SiGe radar chip designed by my Georgia Tech research team.