

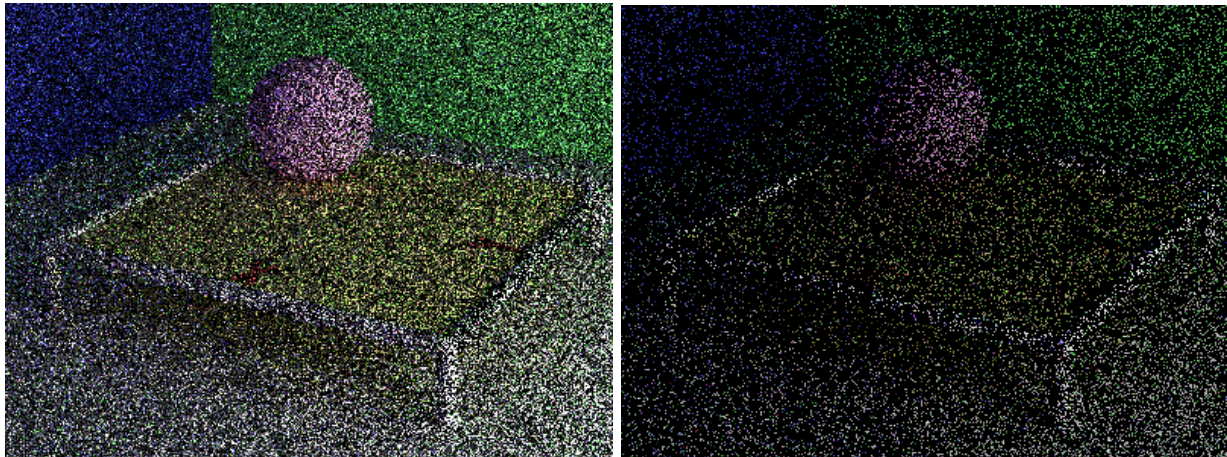
**CS 500**  
**Project 2**  
**Dylan Washburne**  
**DigiPen**

Implemented path tracing on my rays, using random numbers to terminate poorly-aimed bounces via “Russian Roulette”, randomness within each pixel to add what is essentially “antialiasing”, and an explicit light connection to increase the rate of convergence.

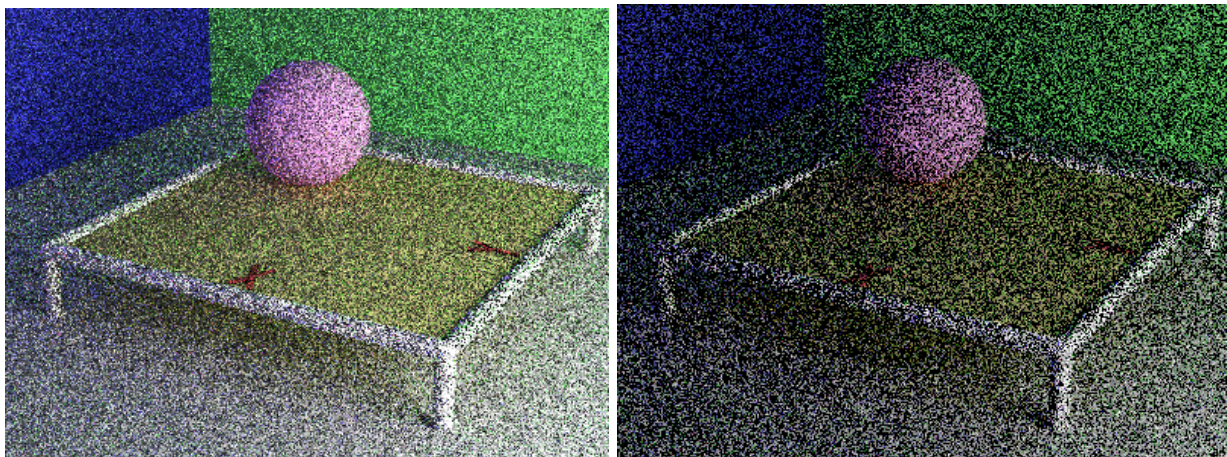
The increased convergence is extremely obvious in the earliest cycles, largely because more pixels gain actual color:

(left = explicit, right = non-explicit)

1 cycle



8 cycles



4096 cycles - No longer what I would call an early cycle, the convergence also has a benefit in what I would call “texture noise”, because the more consistent accumulation of light makes the scene distribute light far more smoothly in a gradient-like pattern than the naive approach’s randomly brighter and darker pixels.

