The Mandelbrot Set

Consider the following iterated system,

$$z_{n+1} = z_n^2 + c \quad \text{with} \quad z_0 = 0.$$

The Mandelbrot set is the set of complex numbers c for which z_n does not diverge to infinity as $n \to \infty$.

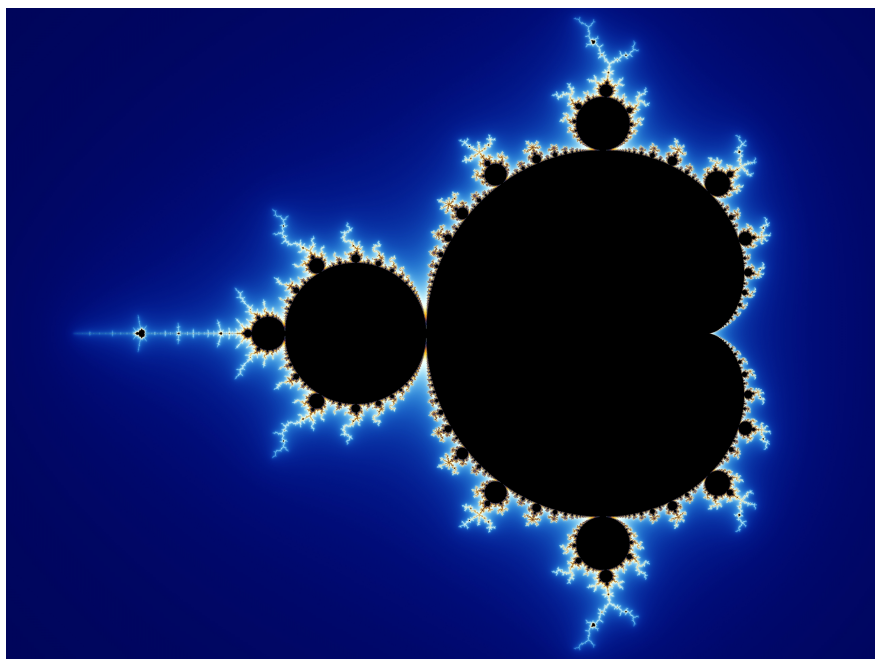

Figure 1: The Mandelbrot set

The elaborate boundary of the set is infinitely complex and exhibits self-similarity, and is therefore a fractal object.