

- Chaos in stb
 - Cantor set
 - Sierpiński carpet
 - Sierpiński triangle
 - Lonentz attractor
 - Mandelbrot set
 - Koch snowflake
 - Barnsley fern
 - Bifurcation graph
 - TODO

Chaos In Stb

C library that simulates many fractals and attractors. You can generate them into terminal as ASCII art or into image rendered using [stb library](#).

Control set

- Available in stb

Sierpinski carpet

- Available in stb

A Sierpinski carpet is a fractal formed by recursively removing squares from a surface. It is named after its founder, the Polish mathematician Waclaw Sierpiński, who described it in 1916.

This fractal is a generalization of Cantor's set into two dimensions.

It is obtained by removing $\frac{1}{9}$ of the content from the square, and removing $\frac{1}{9}$ of their original content from the remaining 8 parts, each of which has $\frac{1}{9}$ of their content again in the same way. This procedure is repeated indefinitely. Again, it is easy to compute the area of a Sierpiński carpet that converges to zero.

The math proof: $1 - \sum_{n=0}^{\infty} \frac{8^n}{9^{n+1}} \implies a_1 = \frac{1}{9}, q = \frac{8}{9} \implies 1 - s = \frac{\frac{1}{9}}{1 - \frac{8}{9}} = 1 - 1 = 0$

The Sierpiński carpet has a fractal (Hausdorff) dimension equal to $\frac{\log(8)}{\log(3)} \approx 1.8928 \dots$

Figure 1 displays two heatmaps showing the spatial distribution of the 26 letters of the alphabet across a 10x10 grid of electrodes. The top row is labeled 'ASCII' and the bottom row is labeled 'stb'. Each heatmap shows a different spatial pattern of electrode activation for each letter, with colors ranging from blue (low) to red (high).

Sierpiński triangle

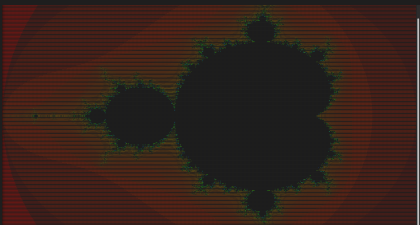
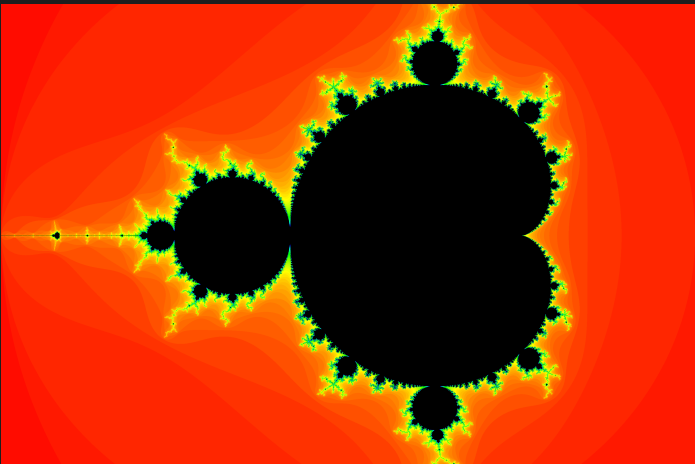
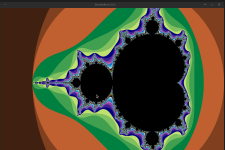
- Available in ASCII
- Available in stb

Lonentz attractor

- Available in ASCII
- Available in stb

Mandelbrot set

- Available in ASCII
- Available in stb
- Available in SDL

ASCII	stb	SDL
		

Koch snowflake

- Available in ASCII
- Available in stb

Barnsley fern

- Available in ASCII
- Available in sth

Bifurcation graph

- Available in ASCII
- Available in both

TODO

- ☐ ASCII User interface
- ☐ Cantor set
 - ☐ ASCII
 - ☐ stb
- ☒ Sierpinski carpet
 - ☒ ASCII
 - ☒ stb
- ☐ Sierpinski triangle
 - ☐ ASCII
 - ☐ stb
- ☐ Lönstedt attractor
 - ☐ ASCII
 - ☐ stb
- ☒ Mandelbrot set
 - ☒ ASCII
 - ☒ stb
 - ☒ SDL
- ☐ Koch snowflake
 - ☐ ASCII
 - ☐ stb
- ☐ Barnsley fern
 - ☐ ASCII
 - ☐ stb
- ☐ Bifurcation graph
 - ☐ ASCII
 - ☐ stb