

# Mandelbrot Set Experiments

## Study of processing time using various computation methods

Experiments conducted on Wednesday, the 11th of August 2021, at 12:49:08

4 experiments were conducted by using the following computation methods:

→ Numba just-in-time compiling with parallel processing

Experiments conducted using a computer with:

Python version: 3.8.5

Python build: Sep 3 2020 21:29:08

Operating system: Windows

Operating platform: Windows-10-10.0.19041-SP0

Processor: Intel64 Family 6 Model 165 Stepping 2, GenuineIntel

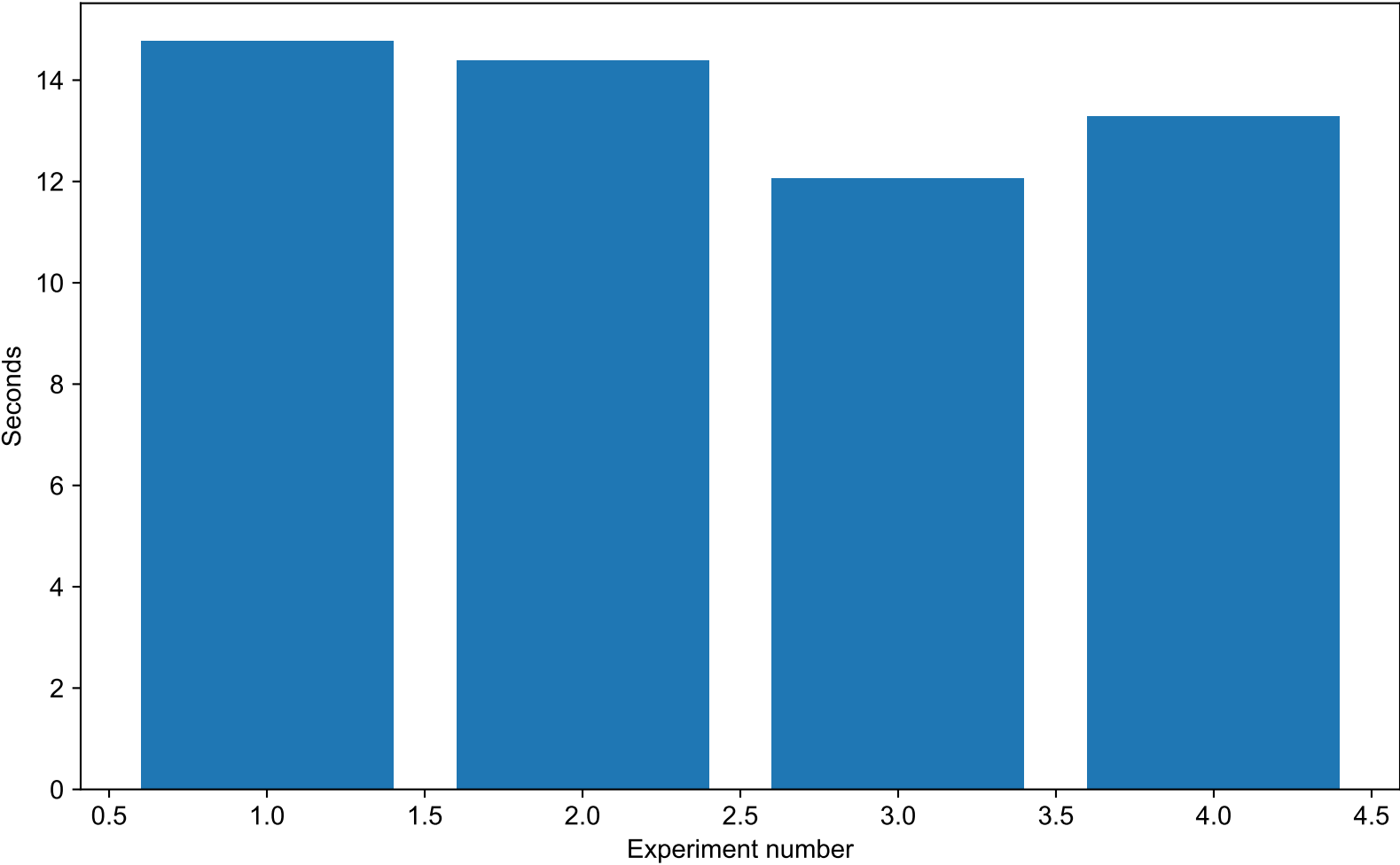
RAM installed: 34.06 GB

In the pages below, time statistics are presented for all the experiments, together with Mandelbrot set plots for each experiment:

Mandelbrot experiments time statistics

Experiments:

- 1: JIT Parallel, Default cores, 10000 points per axis, ET: 14.779489 seconds
- 2: JIT Parallel, Default cores, 10000 points per axis, ET: 14.393677 seconds
- 3: JIT Parallel, Default cores, 10000 points per axis, ET: 12.056177 seconds
- 4: JIT Parallel, Default cores, 10000 points per axis, ET: 13.294259 seconds



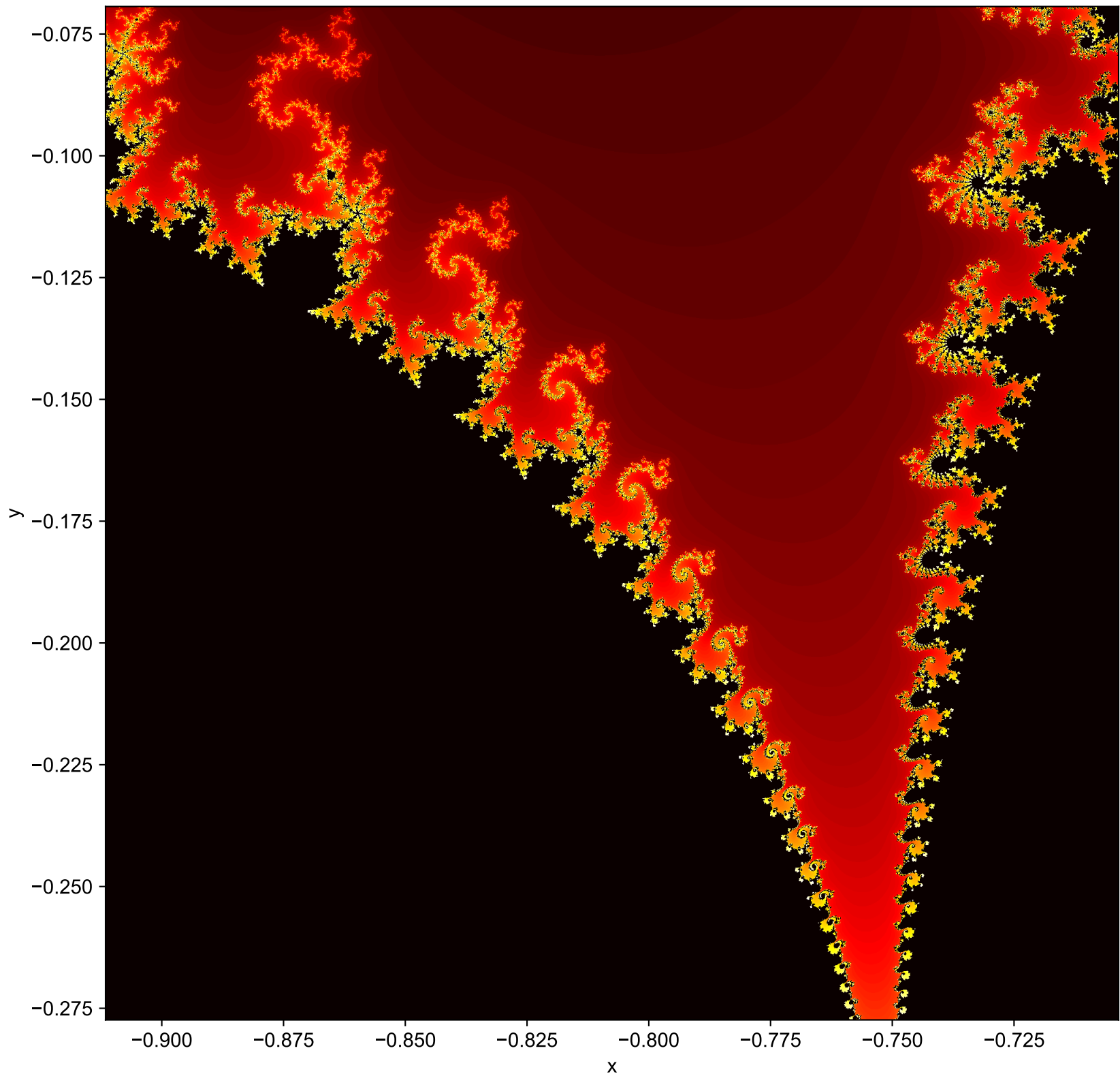
# Mandelbrot Set

Computation Method: JIT Parallel

Number of cores: Default

Number of points per axis: 10000

Elapsed computation time: 14.779489300000009 seconds



Value range: 0.2080300484832398

x min | x max: -0.9115527126838309 | -0.7035226642005911

y min | y max: -0.2773818584124742 | -0.06935180992923443

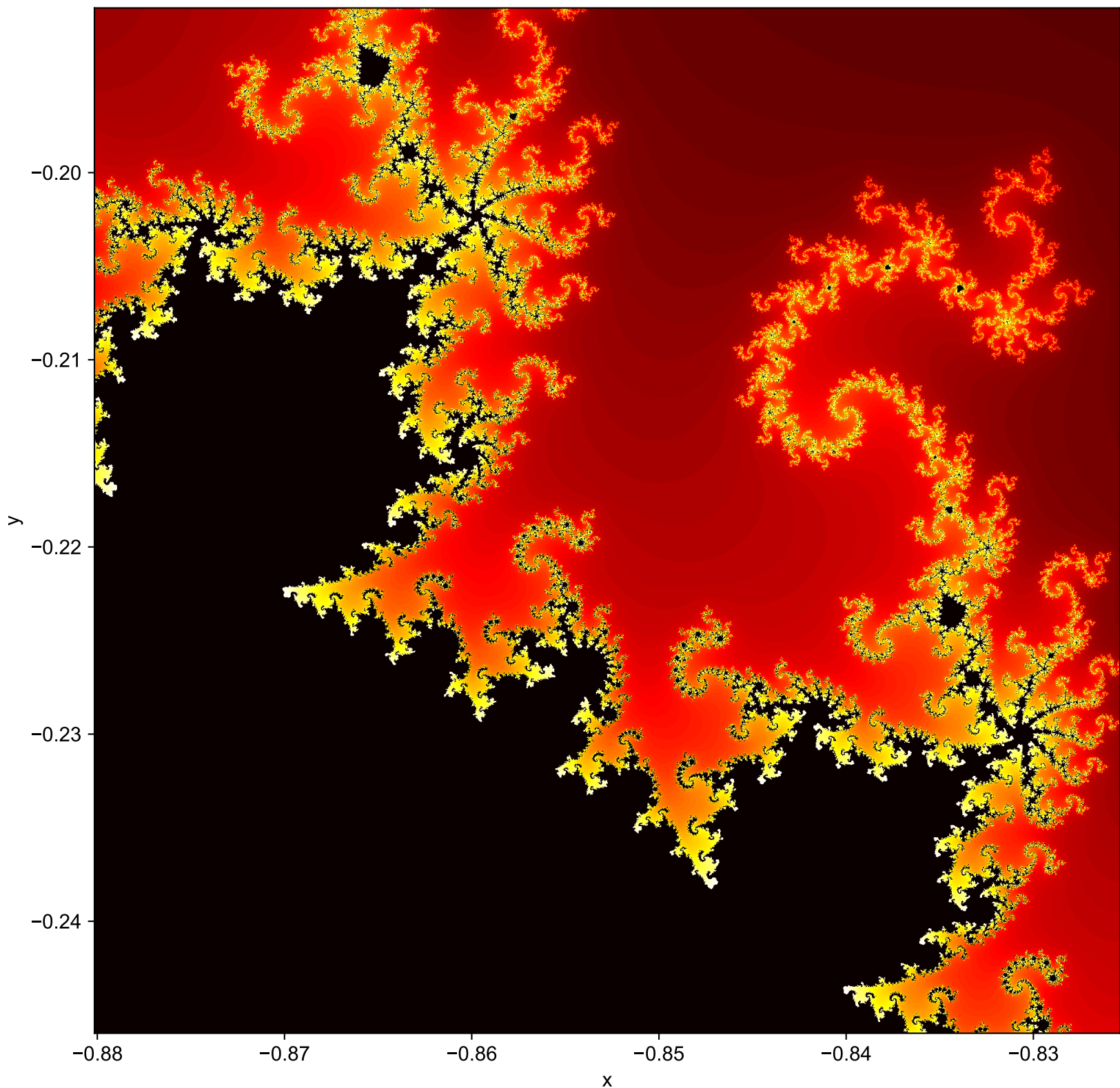
# Mandelbrot Set

Computation Method: JIT Parallel

Number of cores: Default

Number of points per axis: 10000

Elapsed computation time: 14.393676999999997 seconds



Value range: 0.05478081360044618

x min | x max: -0.8801542258957002 | -0.8253734122952541

y min | y max: -0.24598337162434378 | -0.19120255802389766

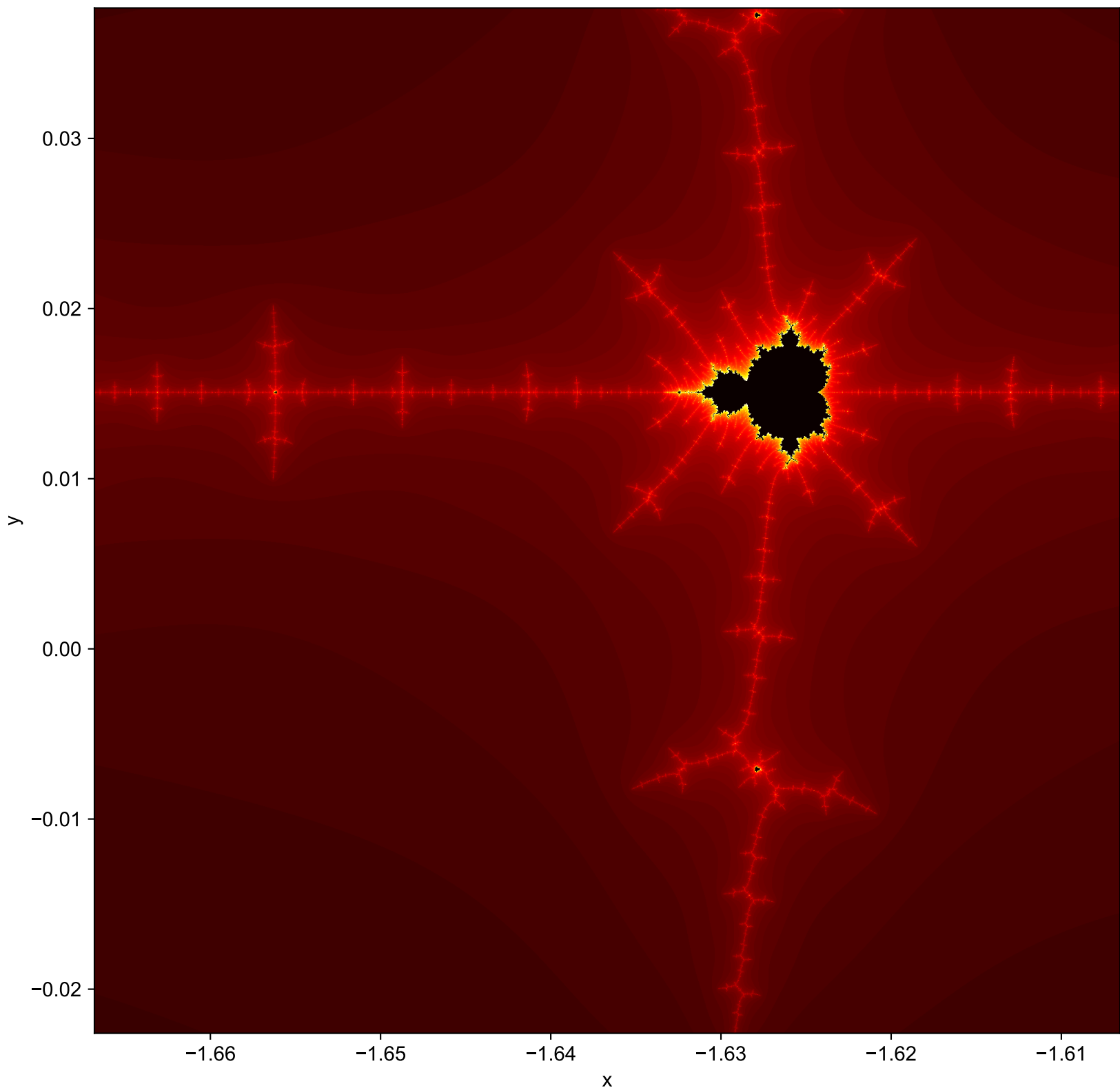
# Mandelbrot Set

Computation Method: JIT Parallel

Number of cores: Default

Number of points per axis: 10000

Elapsed computation time: 12.056176800000003 seconds



Value range: 0.06025889496049075

x min | x max: -1.6668128645656723 | -1.6065539696051816

y min | y max: -0.022591759038034436 | 0.03766713592245628



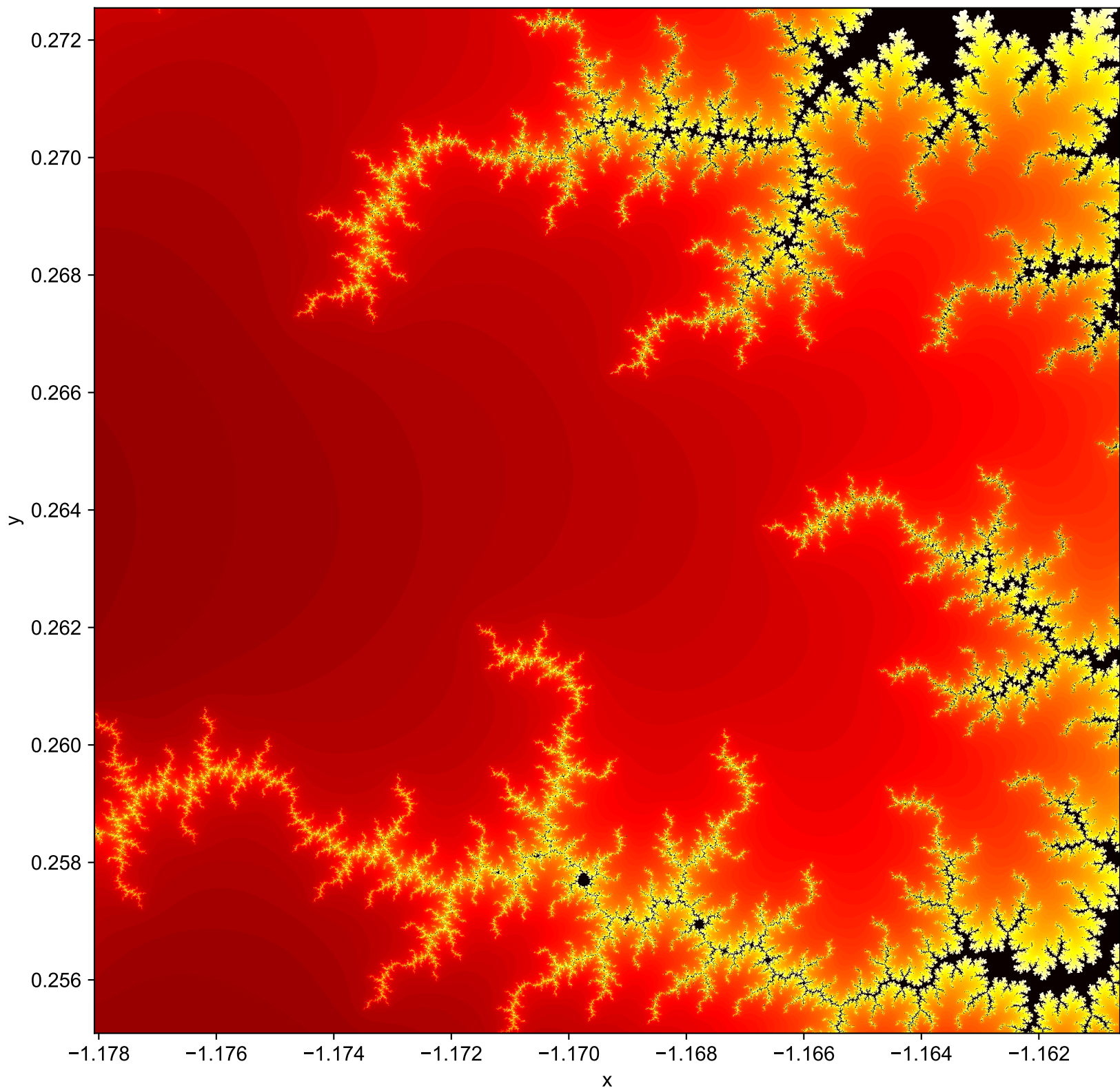
# Mandelbrot Set

Computation Method: JIT Parallel

Number of cores: Default

Number of points per axis: 10000

Elapsed computation time: 13.294258800000023 seconds



Value range: 0.017454855432348815

x min | x max: -1.178074161384516 | -1.1606193059521672

y min | y max: 0.2550916677612125 | 0.2725465231935613