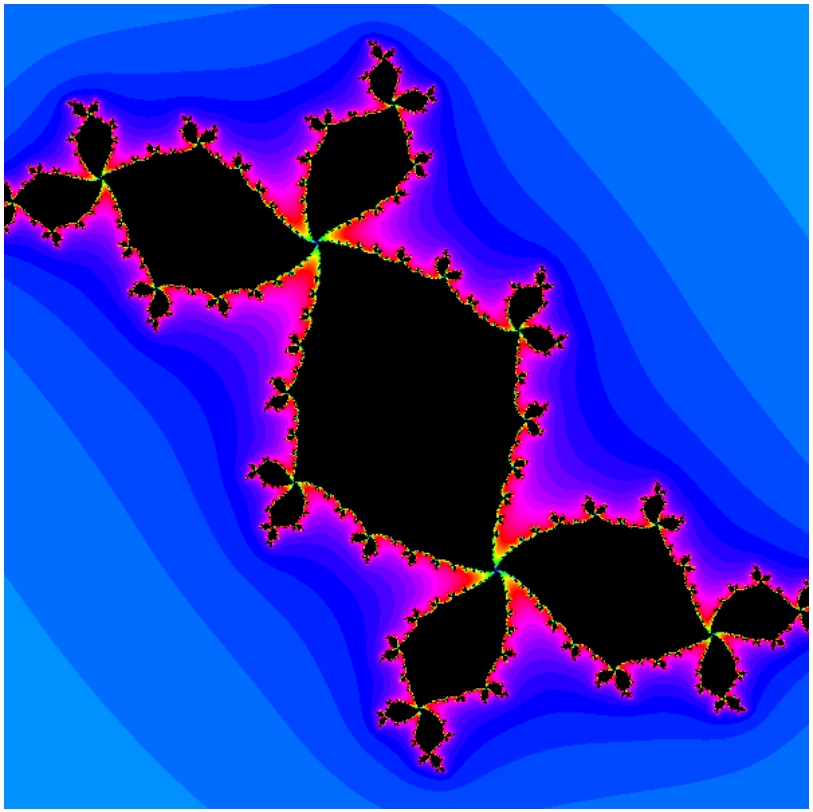
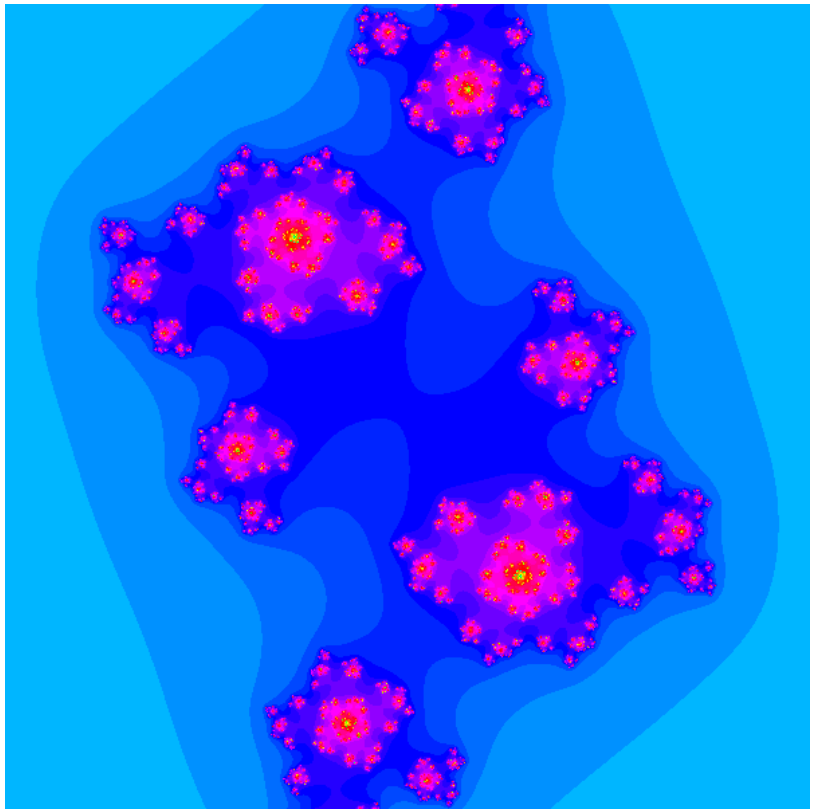
Scott Kaschner
Butler University COMD Research Member

Let $f_n(z) = z^n + q(z)$,
$n = 4$



$K(q)$

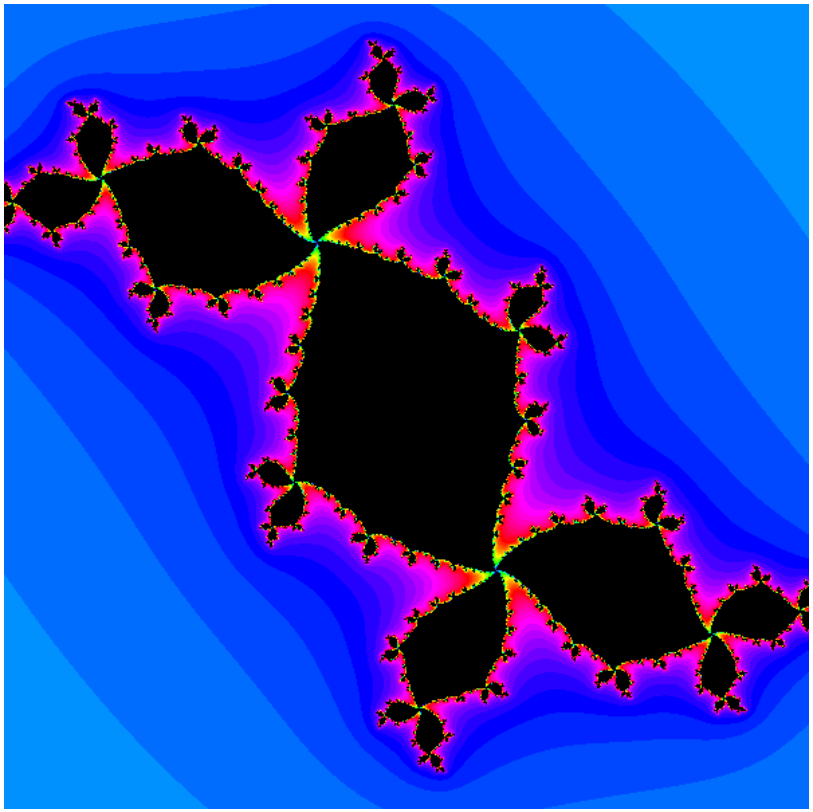


$K(f_4)$

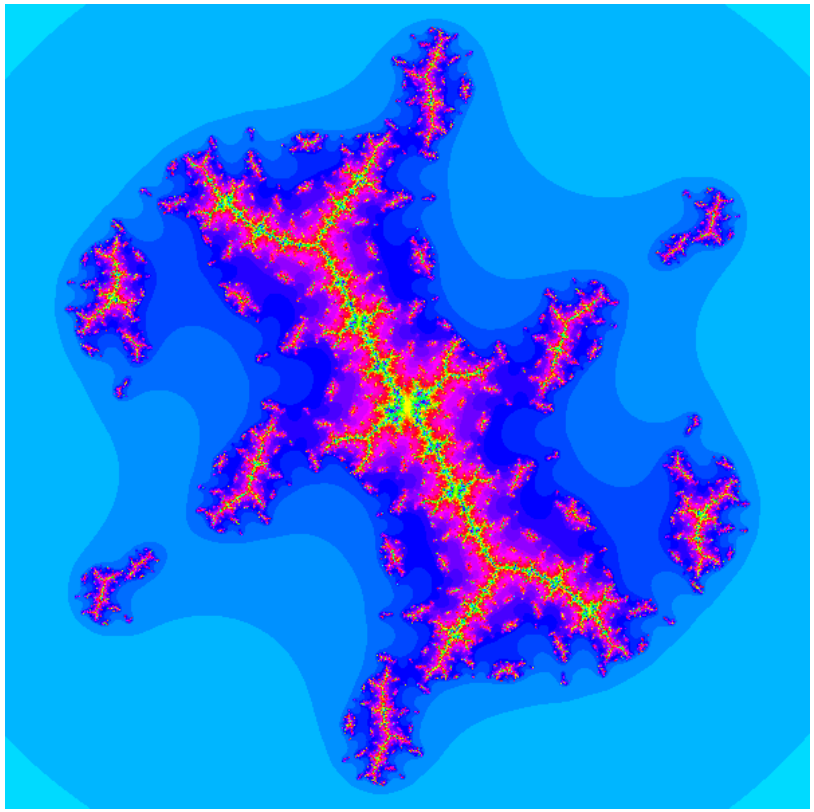
$\mathbb{P}^1$

Scott Kaschner
Butler University COMD Research Member

Let $f_n(z) = z^n + q(z)$,
$n = 8$



$K(q)$



$K(f_8)$

$\mathbb{P}^1$

Scott Kaschner
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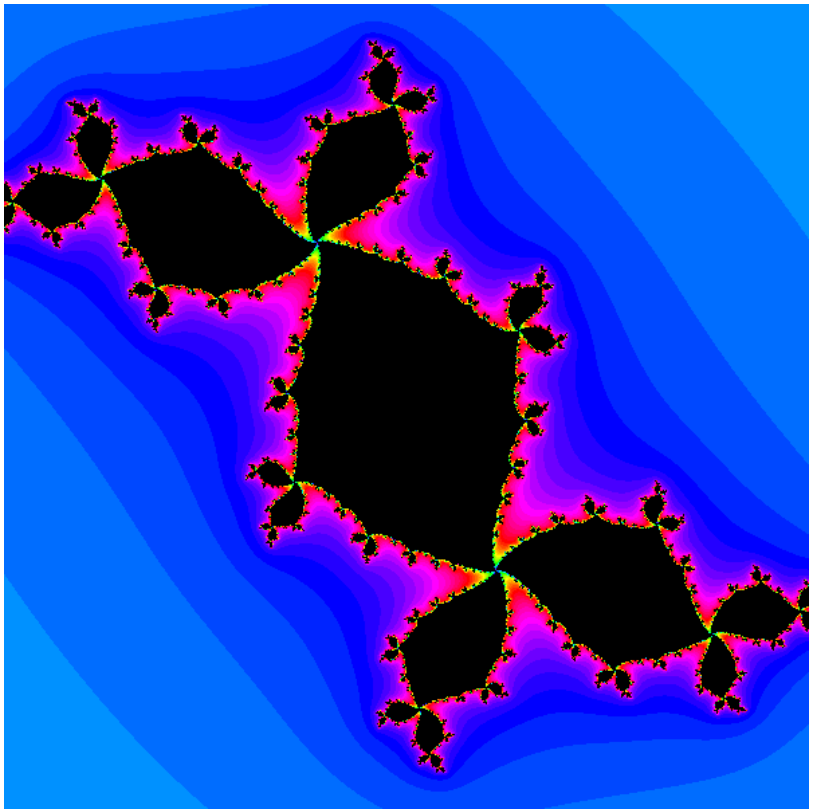
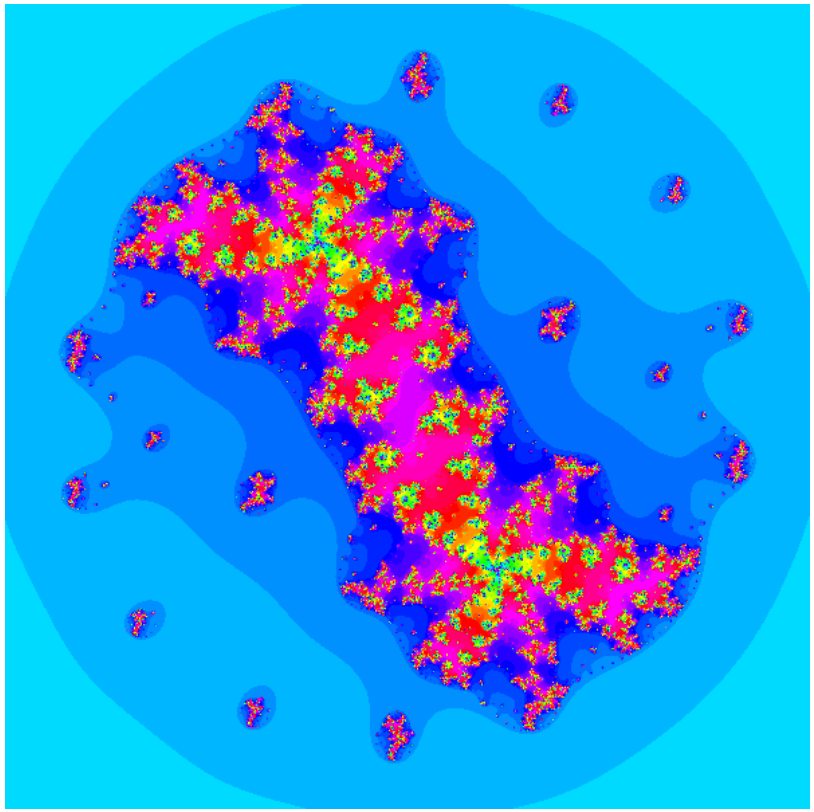
Let $f_n(z) = z^n + q(z)$,
$n = 16$



$K(q)$



$K(f_{16})$

$\mathbb{P}^1$

Scott Kaschner
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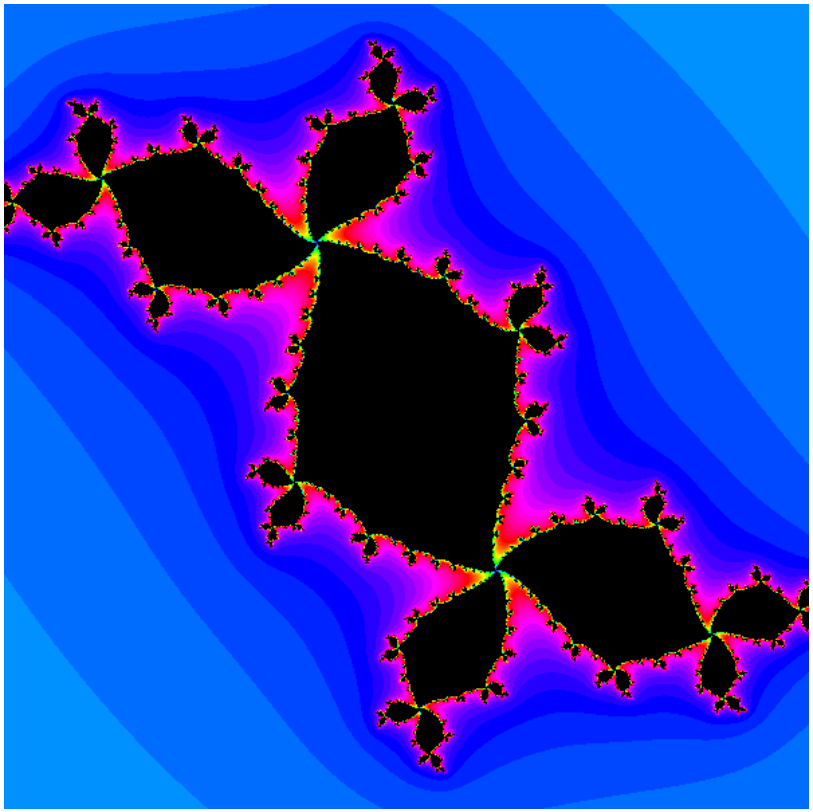
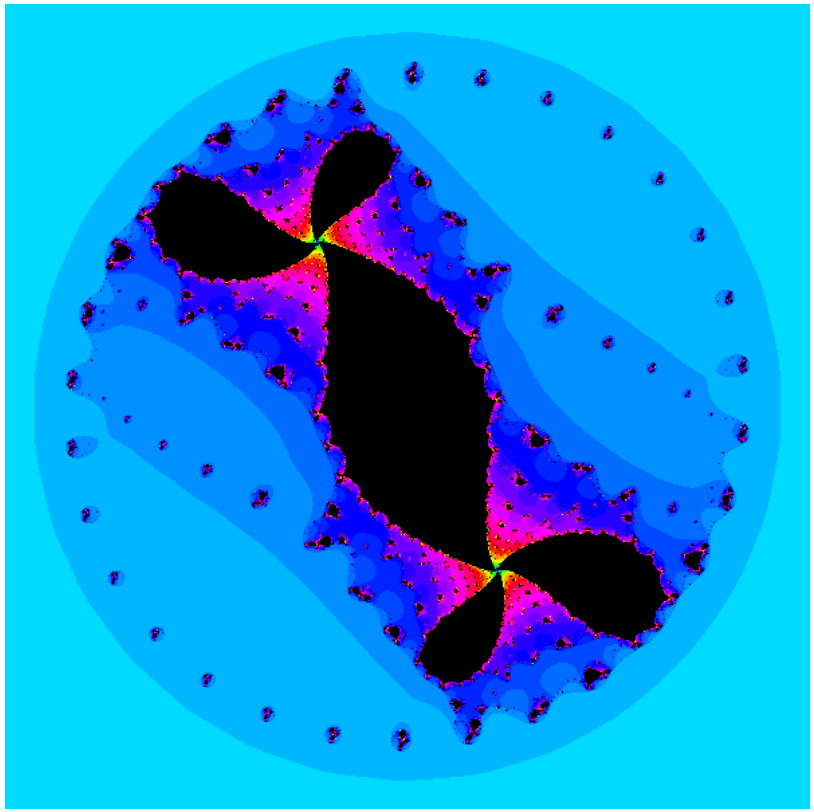
Let $f_n(z) = z^n + q(z)$,
$n = 32$



$K(q)$

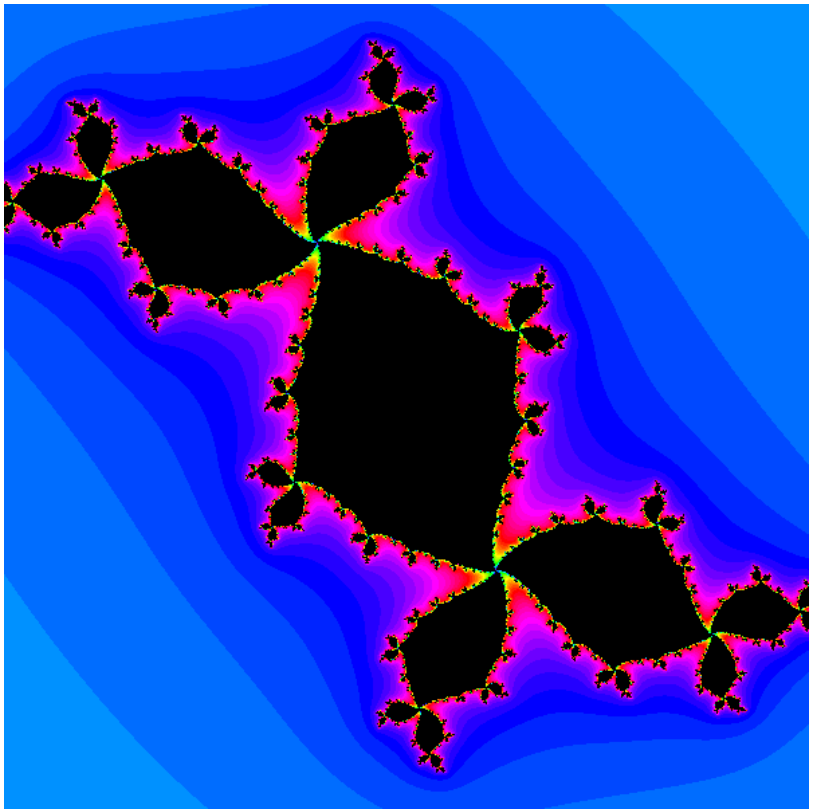


$K(f_{32})$

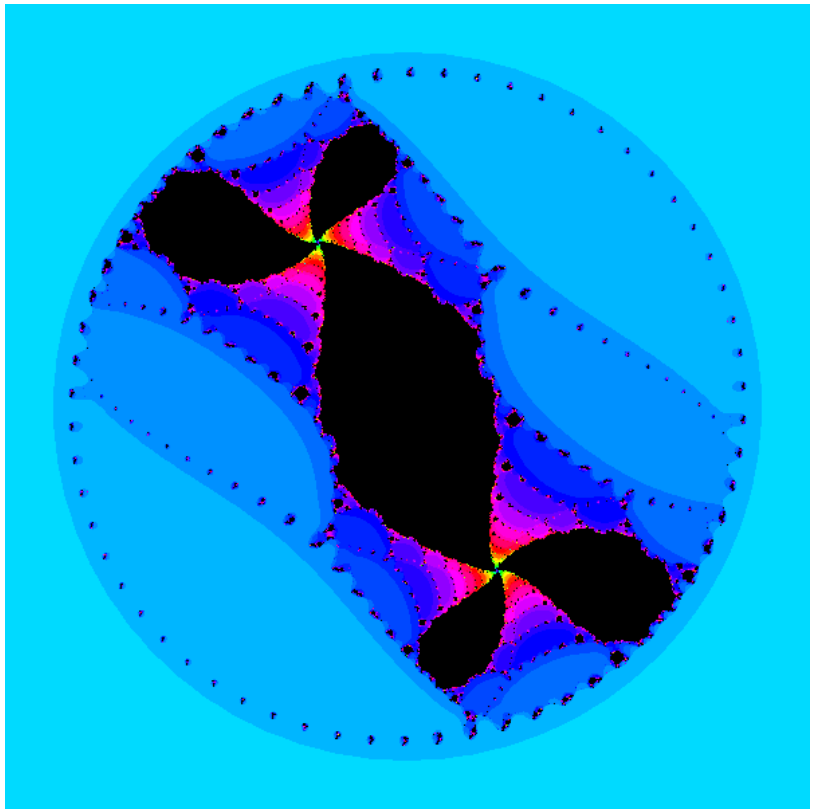
$\mathbb{P}^1$

Scott Kaschner
Butler University COMD Research Member

Let $f_n(z) = z^n + q(z)$,
$n = 64$



$K(q)$



$K(f_{64})$

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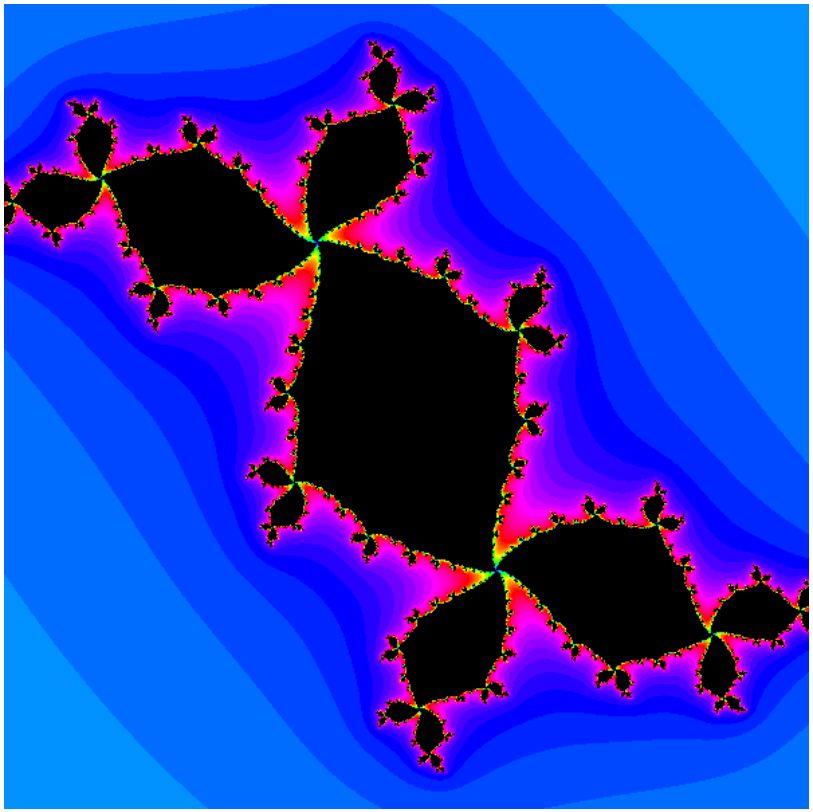
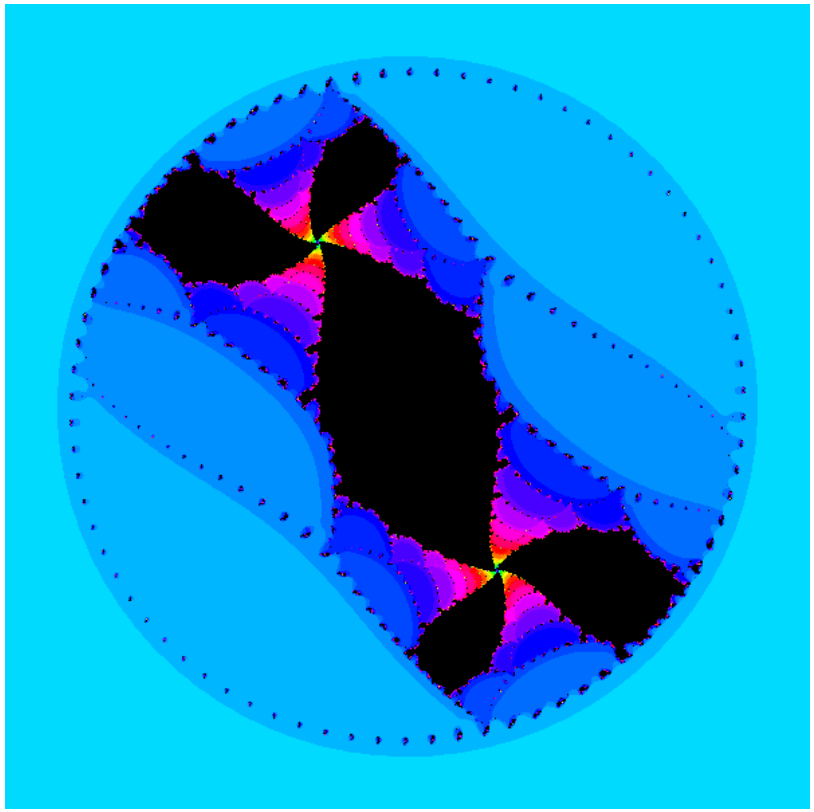
Butler University COMD Research Member

Let $f_n(z) = z^n + q(z)$,
$n = 80$



$K(q)$



$K(f_{80})$

$\mathbb{P}^1$

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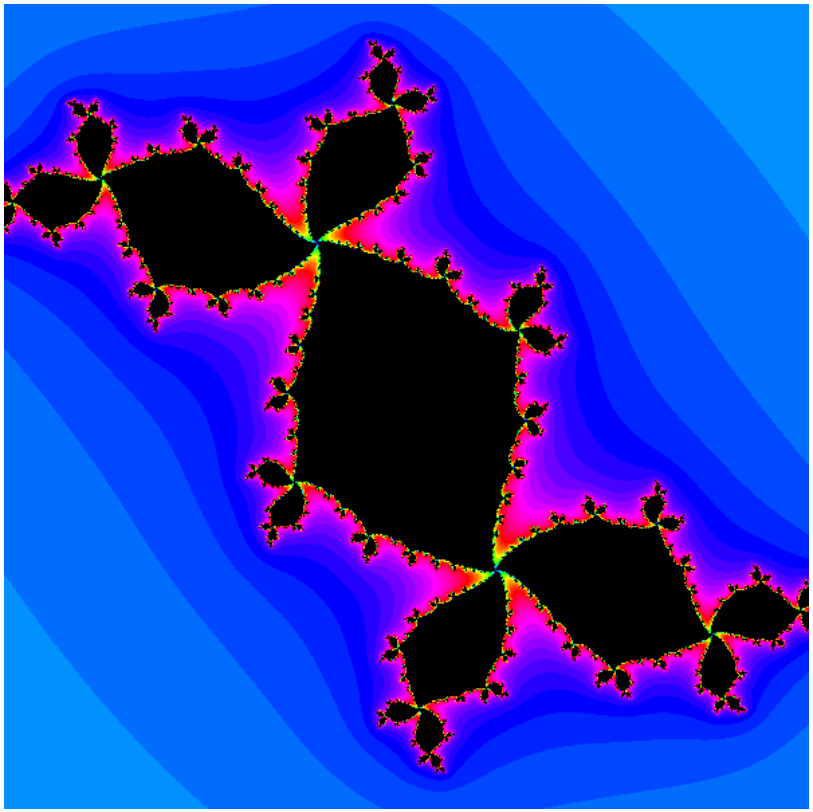
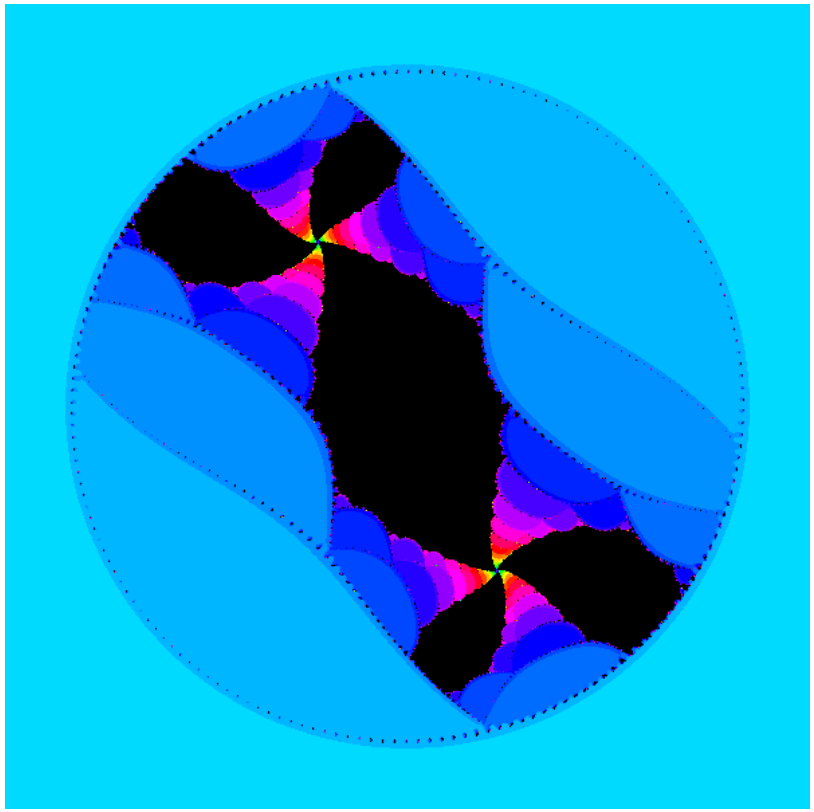
Let $f_n(z) = z^n + q(z)$,
$n = 180$



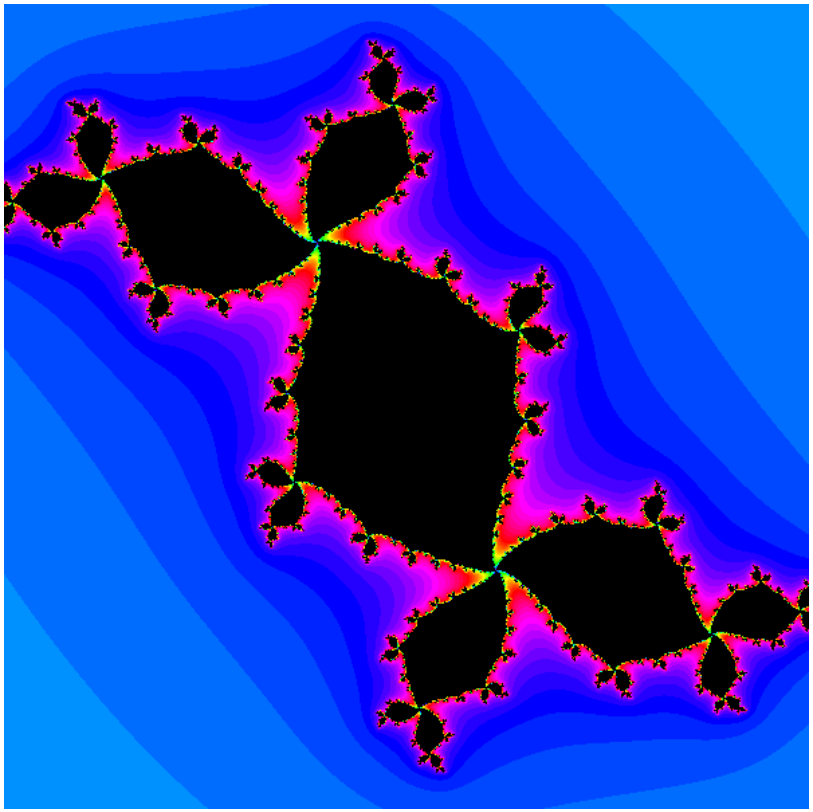
$K(q)$



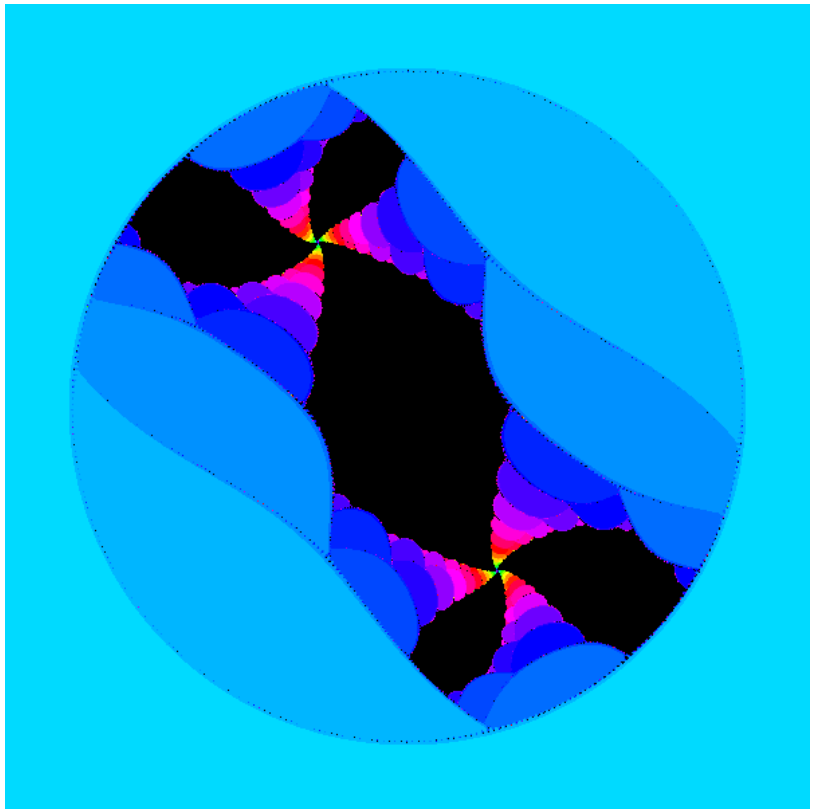
$K(f_{180})$

Scott Kaschner
Butler University COMD Research Member

Let $f_n(z) = z^n + q(z)$,
$n = 360$



$K(q)$

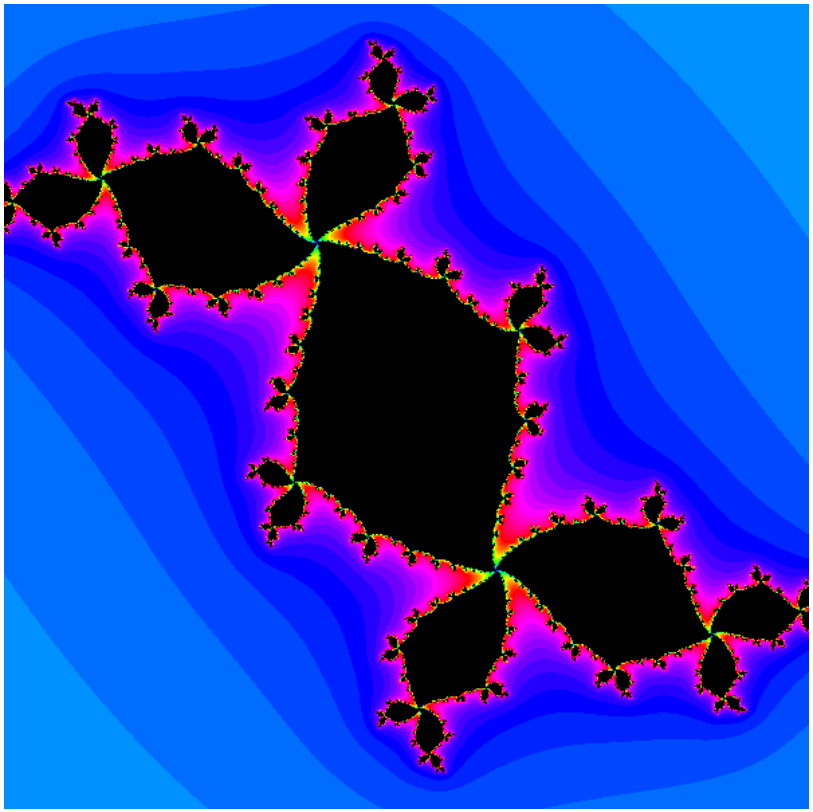


$K(f_{360})$

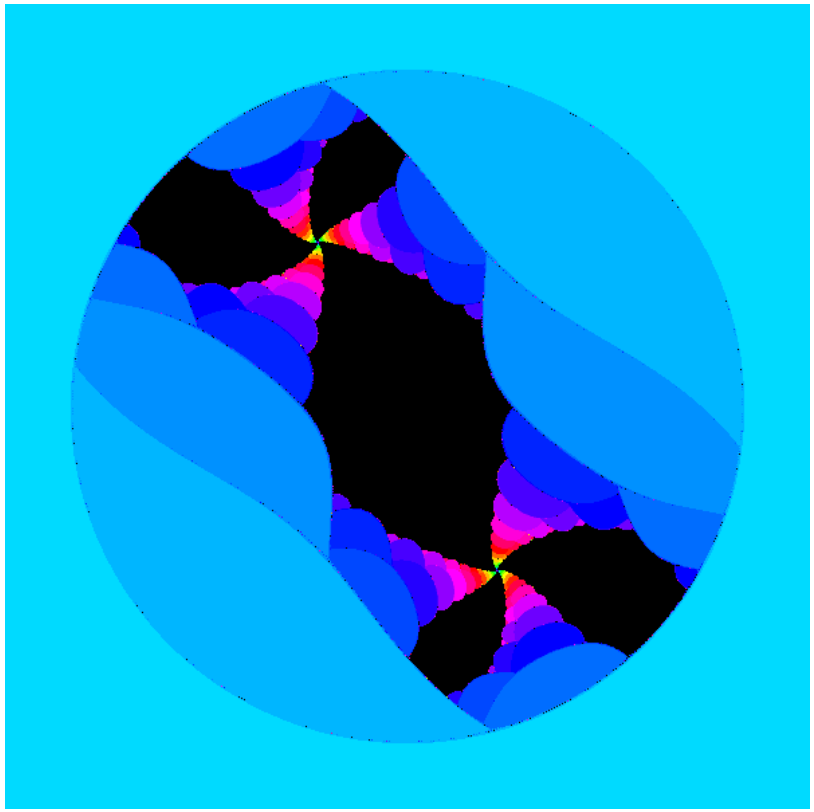
$\mathbb{P}^1$

Scott Kaschner
Butler University COMD Research Member

Let $f_n(z) = z^n + q(z)$,
$n = 720$



$K(q)$

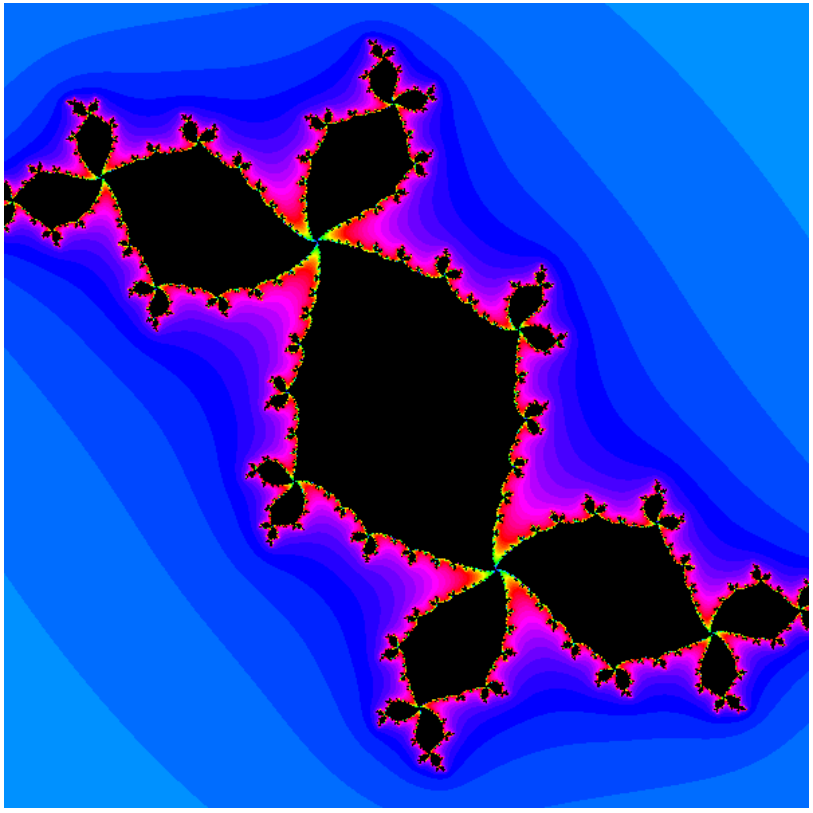


$K(f_{720})$

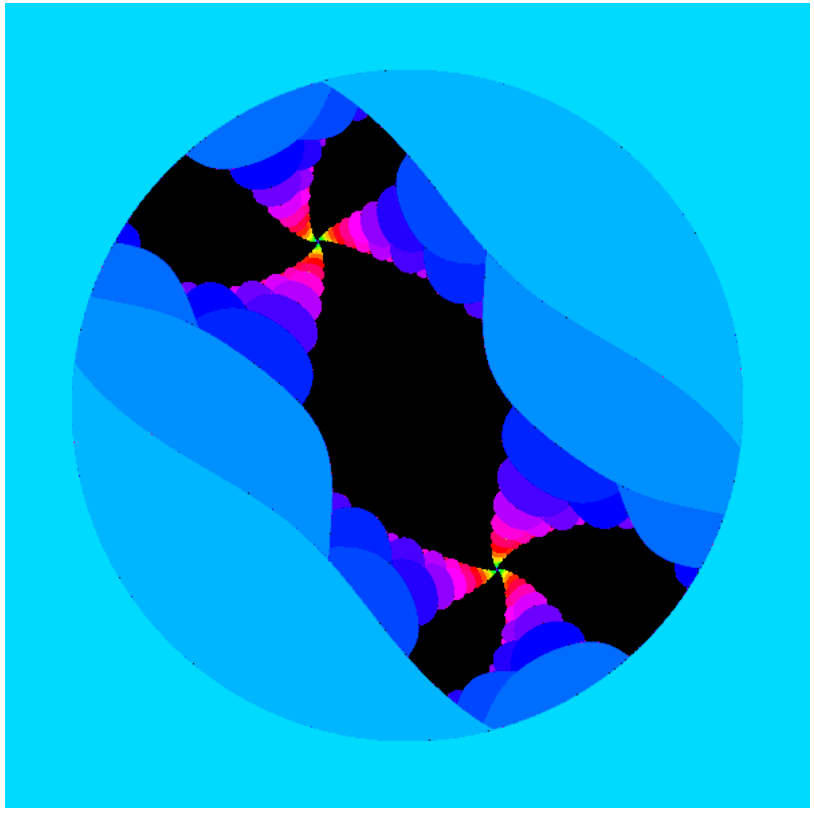
$\mathbb{P}^1$

Scott Kaschner
Butler University COMD Research Member

Let $f_n(z) = z^n + q(z)$,
$n = 1,800$



$K(q)$

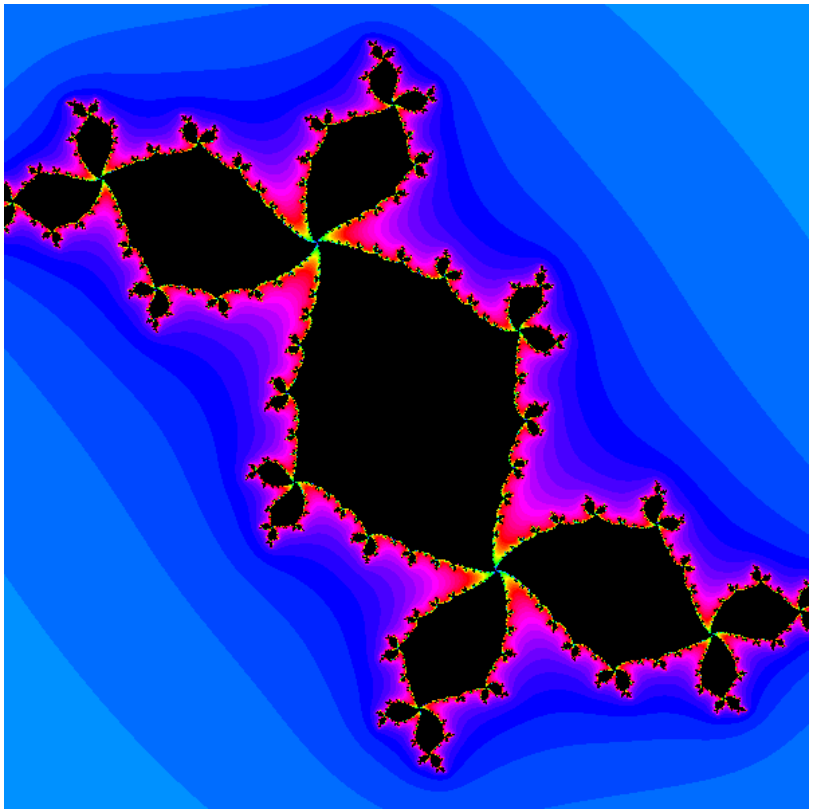


$K(f_{1800})$

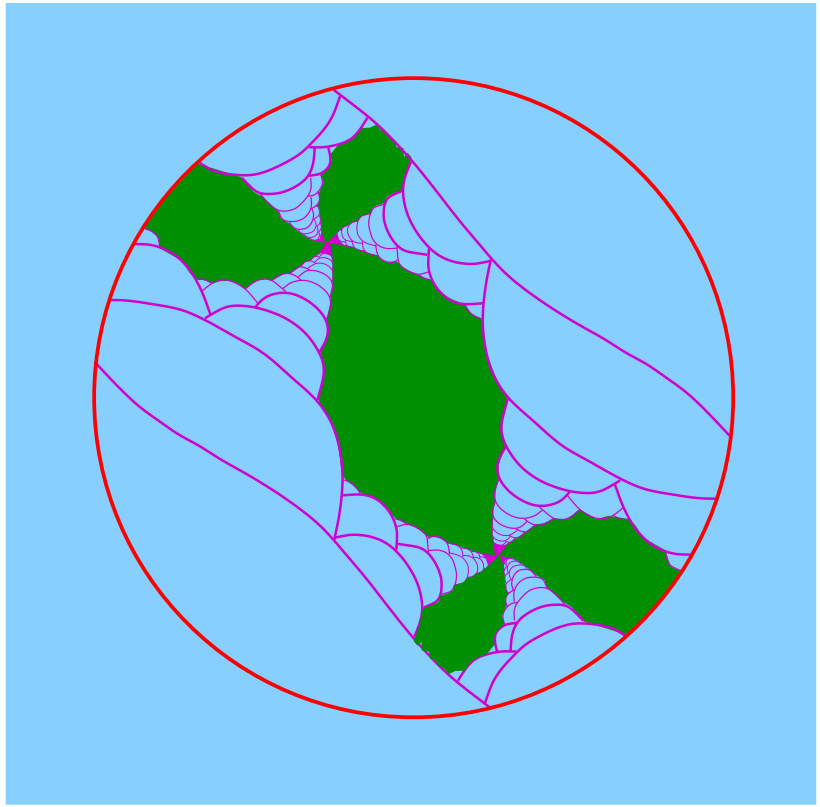
$\mathbb{P}^1$

Scott Kaschner
Butler University COMD Research Member

Let $f_n(z) = z^n + q(z)$,



$K(q)$



$\lim_{n\to\infty} K(f_n)$

$\mathbb{P}^1$

$$F_a\colon \mathbb{P}^2 \to \mathbb{P}^2 \quad \text{by} \quad F_a[x:y:z] = [-y^2 : ax^2 - axz : z^2 - x^2].$$

Indeterminacy: $p = [1:0:1]$. Critical set: $\{x = z\}$ and $\{y = 0\}$

$$\{x = z\} \setminus \{p\} \longrightarrow [1:0:0] \longrightarrow [0:-a:1] \longrightarrow [-a:0:1] \longrightarrow \cdots$$

$$\{y = 0\} \longrightarrow \{x = 0\}$$

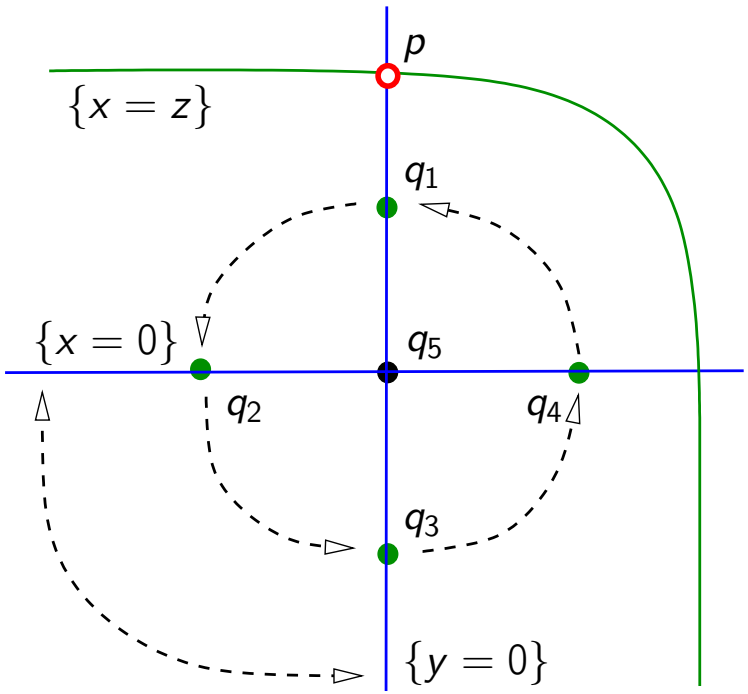
$$F_a\colon \mathbb{P}^2 \to \mathbb{P}^2 \quad \text{by} \quad F_a[x:y:z] = [-y^2 : ax^2 - axz : z^2 - x^2].$$

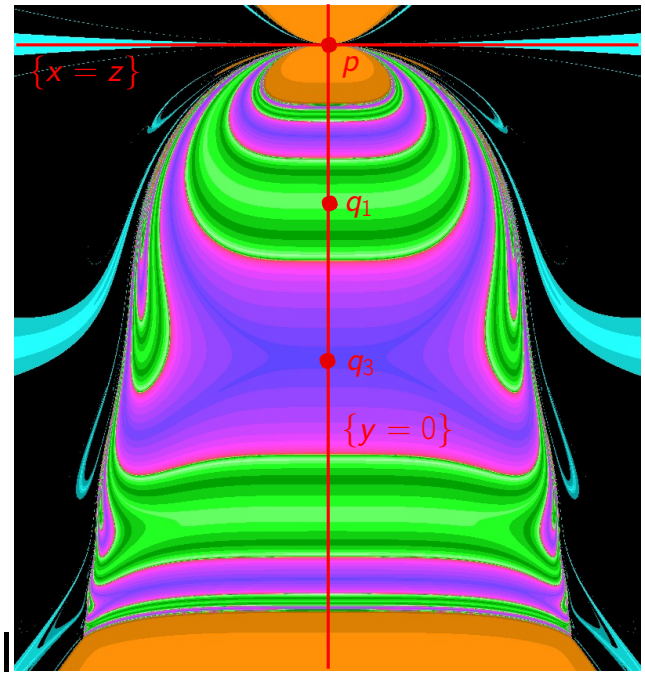
Indeterminacy: $p = [1:0:1]$. Critical set: $\{x = z\}$ and $\{y = 0\}$

When $a = 1$,

$$\{x = z\} \setminus \{p\} \longrightarrow \underset{[1:0:0]}{q_1} \longrightarrow \underset{[0:-1:1]}{q_2} \longrightarrow \underset{[-1:0:1]}{q_3} \longrightarrow \underset{[0:1:0]}{q_4}$$

$$\{y = 0\} \longrightarrow \{x = 0\}$$





$\mathbb{P}^2$