

20a) Cracks, where do they come from?

In this article we shall first have a look at *The Shadows of the Troll burst* (figure 1) taken from the cubic part of my fractal gallery (click "Pictures from Cubic Parameterspace" on my index-page). In this image a very strange phenomena is seen. The black set seems to have been cut by a laser-lighting only dividing the "set-elements" leaving the surrounding "sea" untouched. In fact this crack is not a result of some kind of filter or in anyway placed there by any post-processing. In fact this image is a one-layer image produced in the end of 1997 on my old Macintosh IIfx using MandelZot of Dave Platt.

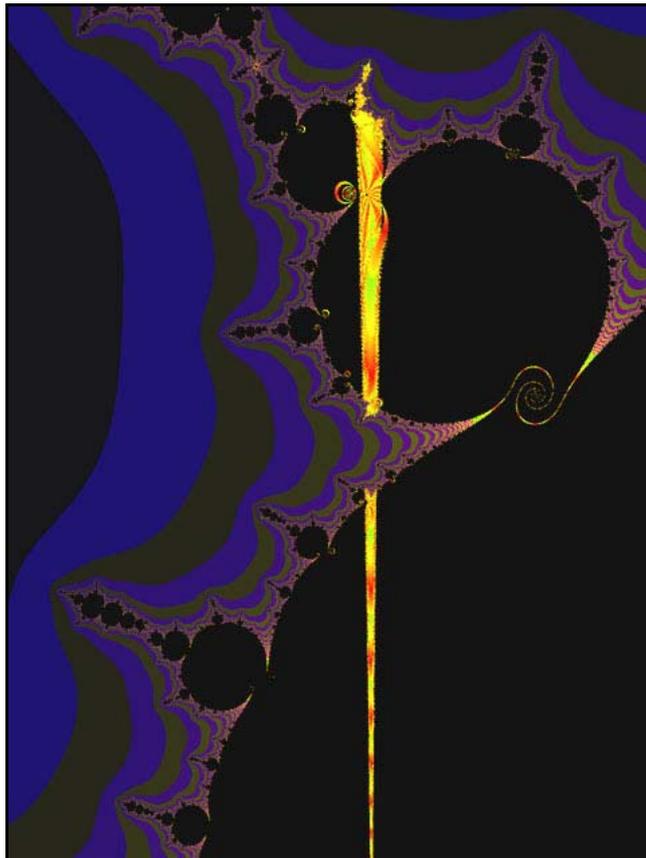


Fig 1. The Shadows of the Troll burst.

The 960x1280 resolution image took a week to calculate using boundary scan on some parts. It's remarkable to see how the iteration-terrain increases from 40 iterations to about 500 iterations were the crack ceases or begins from the low-iteration terrain. To see the crack requires at least 1000 iterations, and to keep the crack clean from artifacts, I've used the max iteration 32 765 of MandelZot. If the dear reader want to hunt for this crack using Cubic Parameterspace3 do as follows:

- 1) Select "new", "sp3", and "Cubic Parameterspace3".
- 2) Change the PlottedPlane to b-real, b-imag.
- 3) In the box "a-real", type 0.665575.
- 4) Zoom in the left part and increase the iterations to at least 25 000.
- 5) Of the infinite number of knobs to the left along the horizontal axis (b_{real}), zoom into the third one, and you will see the crack.

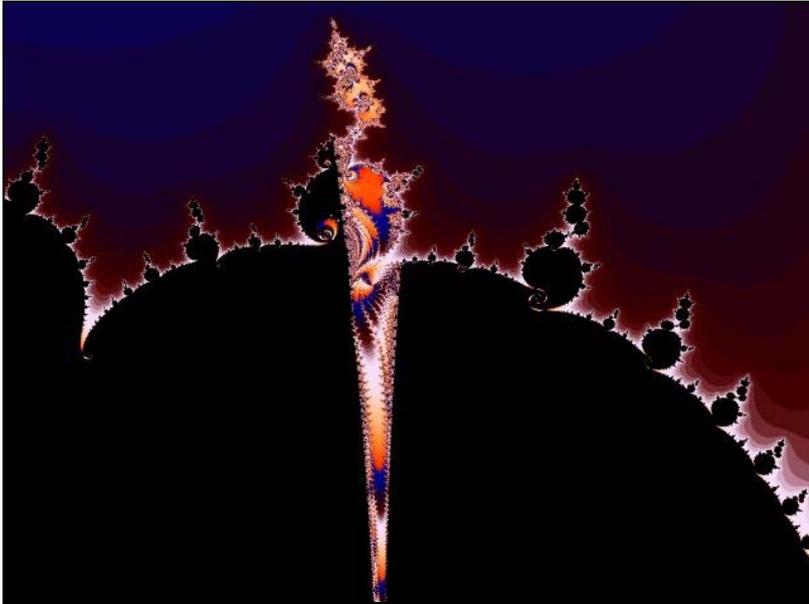


Fig 2. Crack 1.

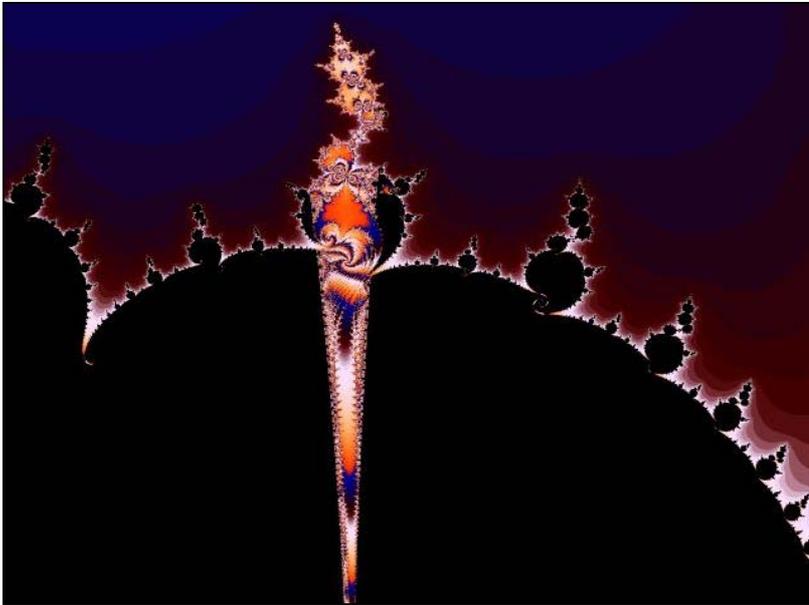


Fig 3 Crack 2.

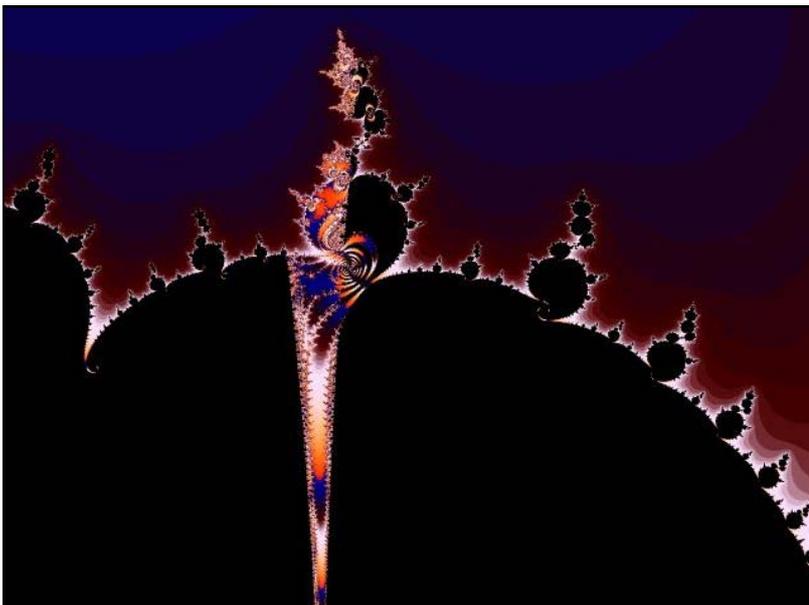


Fig 4. Crack 3.

Three other images (figure 2 - 4, Crack1-3), are all produced with UF. By slightly moving in direction a_{real} from 0.658, to 0.6583, and last to 0.6586, the crack has taken two steps to the left. After today's fractaling I wish you a good nights sleep with many dreams of mystical ravines for maybe already tomorrow I will give you my explanation to the appearance of these mystical cracks.

Regards

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