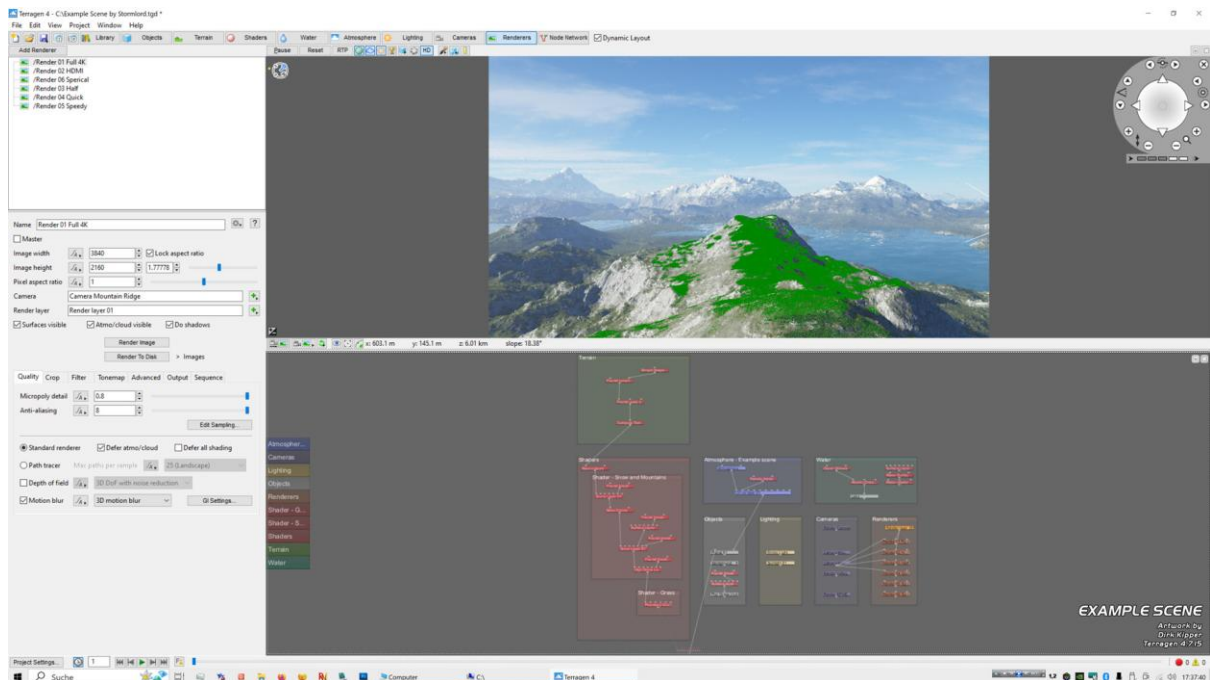# Masking
Example scenes by Stormlord

Masking

This small tutorial is about masking.
How to mask terrain out specific details like water, objects, ect. inside a scene?

Example Scene by Stormlord
Masking example

Note:
The scene itself is the Terragen standard scene, which pops up if you start Terragen.
I just have set different cameras at some prominent spots. A mountain (frontal view),
a valley and a mountain ridge. The positions are carefully and specially selected for
test purposes, like vector masking or developing basic shader setup in mountainous
terrain. Just try out the different cameras and see yourself. A good starter scene!

The situation

Often you have a nice Terragen rendering, but details in the scene needs more color
or details have to be more brightened. So the problem is, how do you mask only the
details of interest? E.g. the water surface only or the single tree in the foreground?

For these problems I have created a standard procedure to mask out specific details.
I just render everything in black. Except the objects or details which are of interest,
they are rendered in white.

So basically you need a white and a black material.
When masking water surfaces in black, reflections has to be set to zero !

Masking
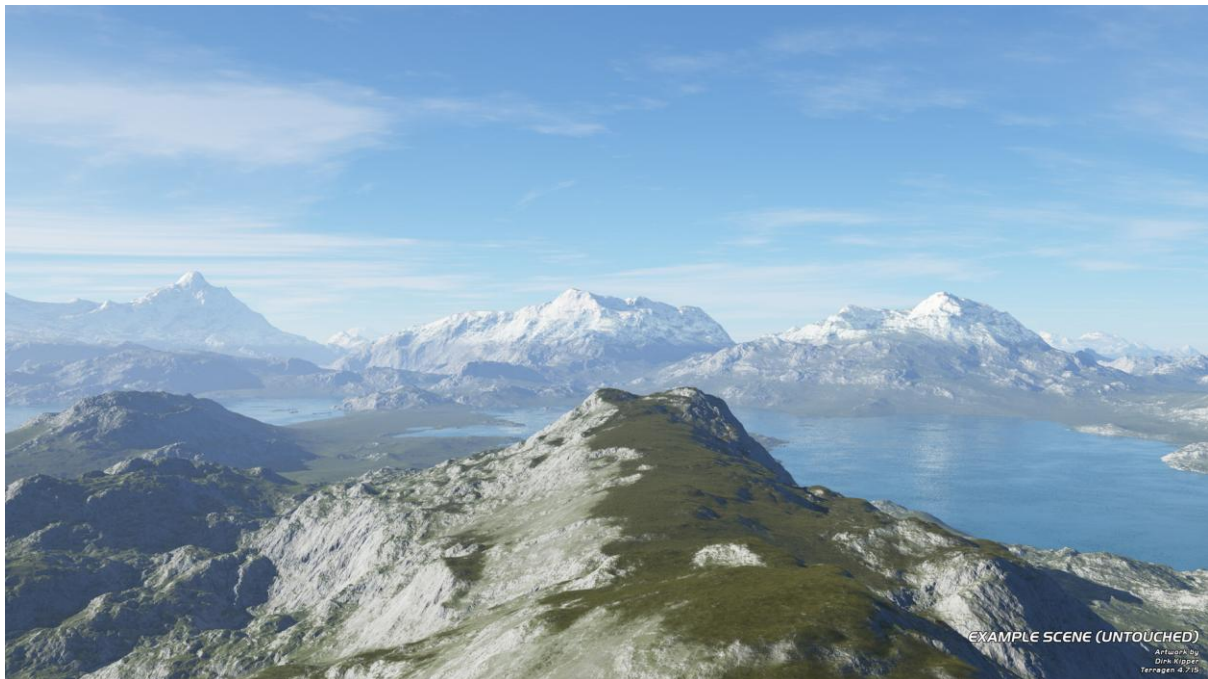# Example scenes by Stormlord

White, gray and black

I found out, best is a whitish material with illumination set to 3.0 as white. An illumination material is better than a white one, because this way you can deactivate all lights in the scene. This speeds up the render time.

When you're rendering the detail with just a simple white material, you will end up with gray tones in the mask. So I set illumination to 3.0. This gives you a bright white output, instead of a whitish gray. Grey tones in a mask result in an unsharp mask.

After a lot of masking, I found out, that illumination set to 3.0 is mostly optimal. If you go up to 100 for example, then the contours wear out and become unsharp. A value below 3.0 will sometimes end in white-grayish colors, which is sub-optimal. So it is best to stay with 3.0 to get a clean, sharp and contoured mask for proper masking.
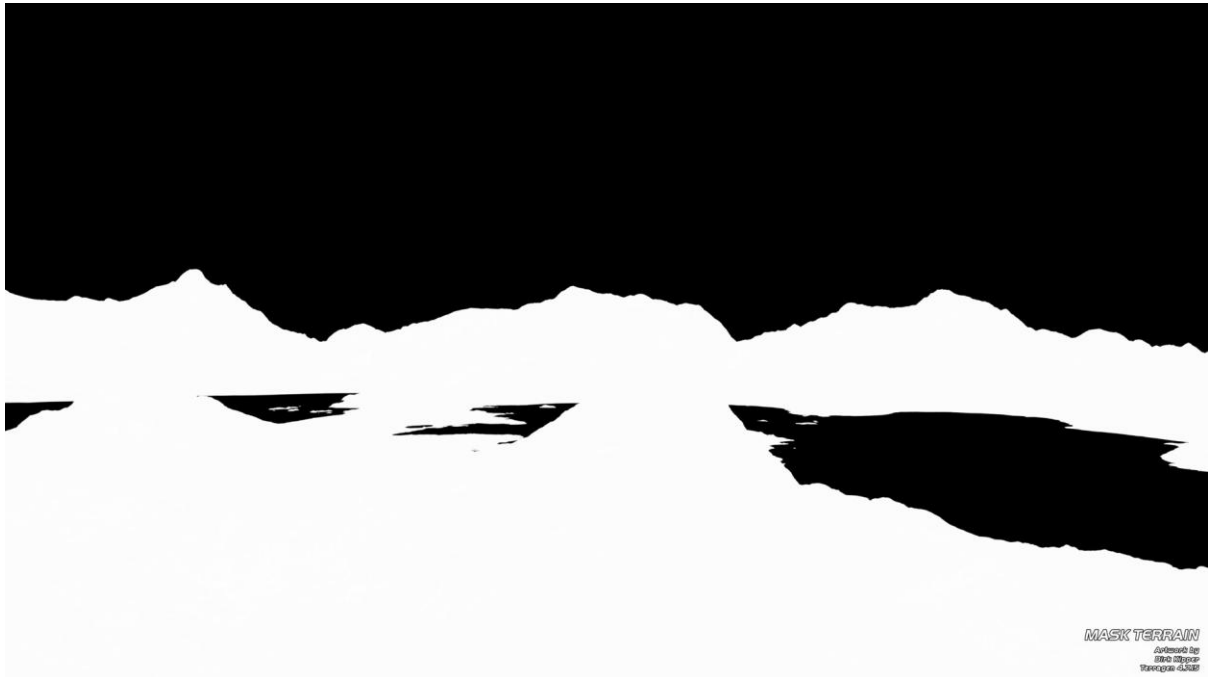
The example scene

Example Scene by Stormlord
(Untouched rendering)

This is my example scene based upon the "Standard Scene" in Terragen.
This scene will be used to develop basic masking scenes as an example.
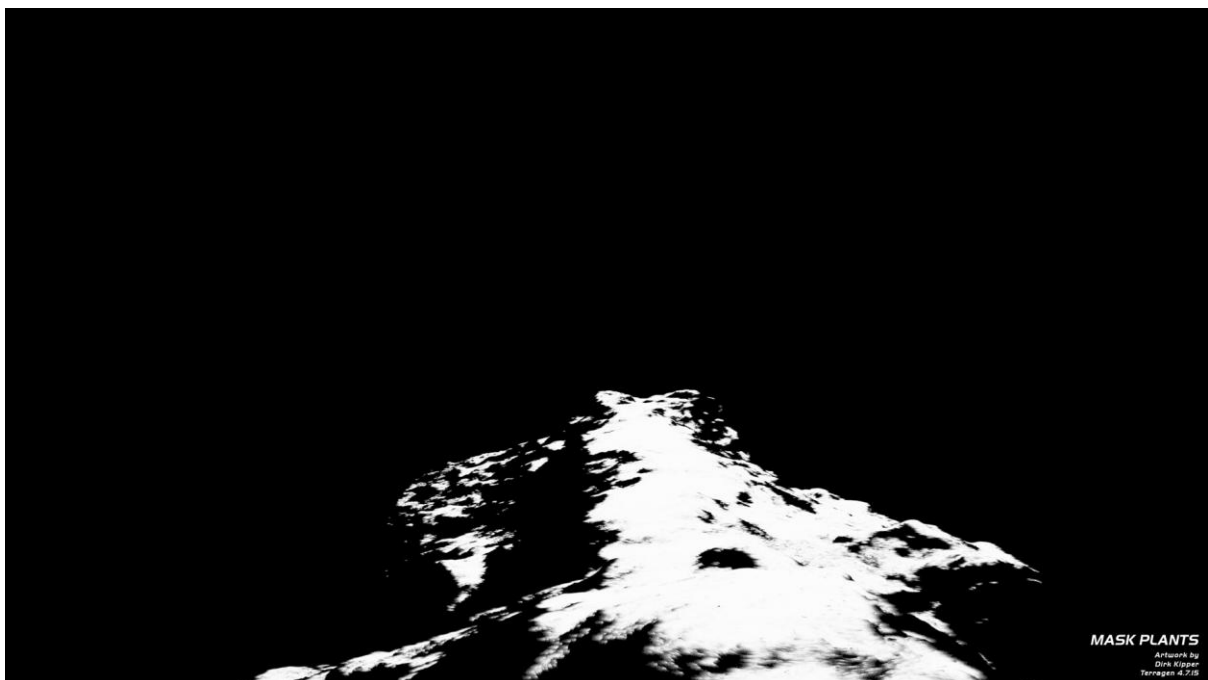
Masking
Example scenes by Stormlord

<u>Masking terrain (plants, objects)</u>

Masking Terrain

In this masking example, I used a white material with illumination set to 3.0 for the terrain. The water has a standard black material. The reflection in the water shader is set to 0.0 (no reflection). Atmosphere is deactivated, so the sky will not be rendered and remains black. All lights are deactivated, which results in faster render times.

Masking Plants

Masking
Example scenes by Stormlord

MASKING PROCESS
How to do...

1.	At the end of the Shader Node set a white luminous material.
2.	Water surfaces get a black material with NO REFLECTION !
3.	Disable Atmosphere Node from the planet (no atmo = black)
4.	Set in objects like plants inside the parts shader "Luminosity" to 3.0.
	Values bigger than 3.0 wear out the contours.
	Values below 3.0 can sometimes end up into more gray colors.
	Stay with 3.0 !
5.	Deaktivate all light sources.
6.	Depending on the mask, set color to black or white.

STORMLORD

Creating all masks in Adobe Photoshop CS 5.5

After rendering all necessary masks for further manipulation, I put them all together.

Here is how to get the mask correctly in Photoshop:
Pull the rendered mask in and lay it on top of all layers. Go inside the mask channel tab, hold left STRG, and click with the left mouse button on the RGB channel. So all white pixels will be selected. Then you can add or substract other areas to get the desired mask. Mostly, terrain, water, sky, plants and objects of special interest.
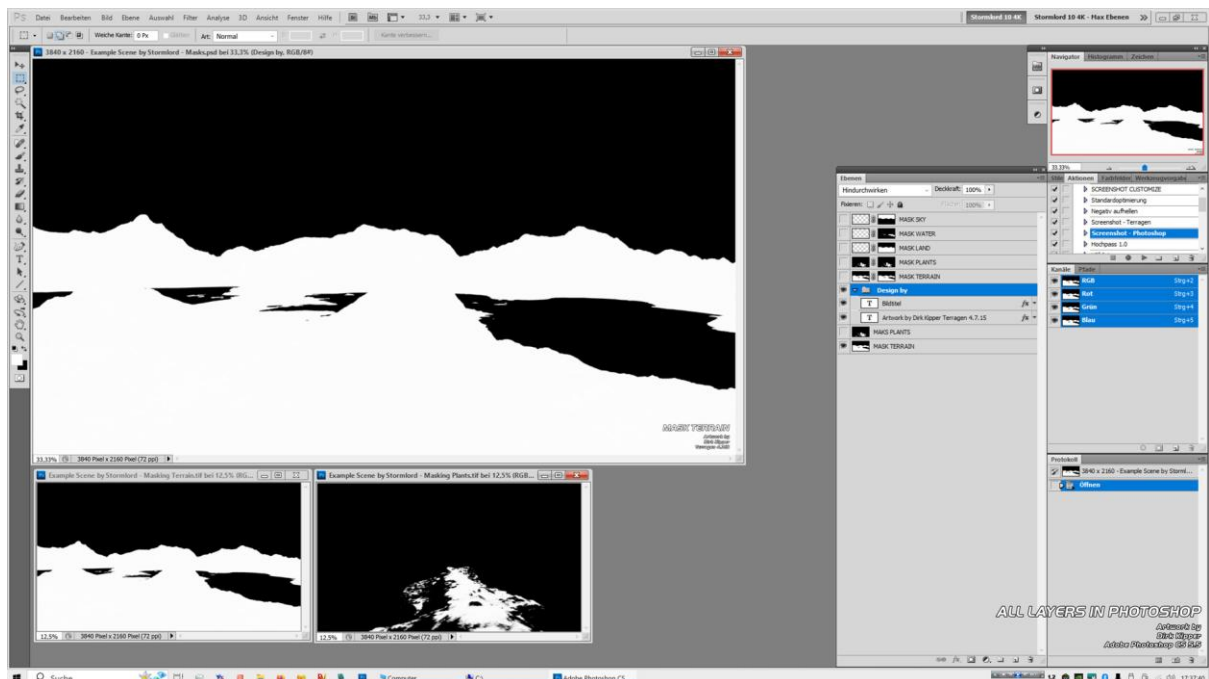
Screenshot Adobe Photoshop CS 5.5
(All masks ready to go)

Masking
Example scenes by Stormlord

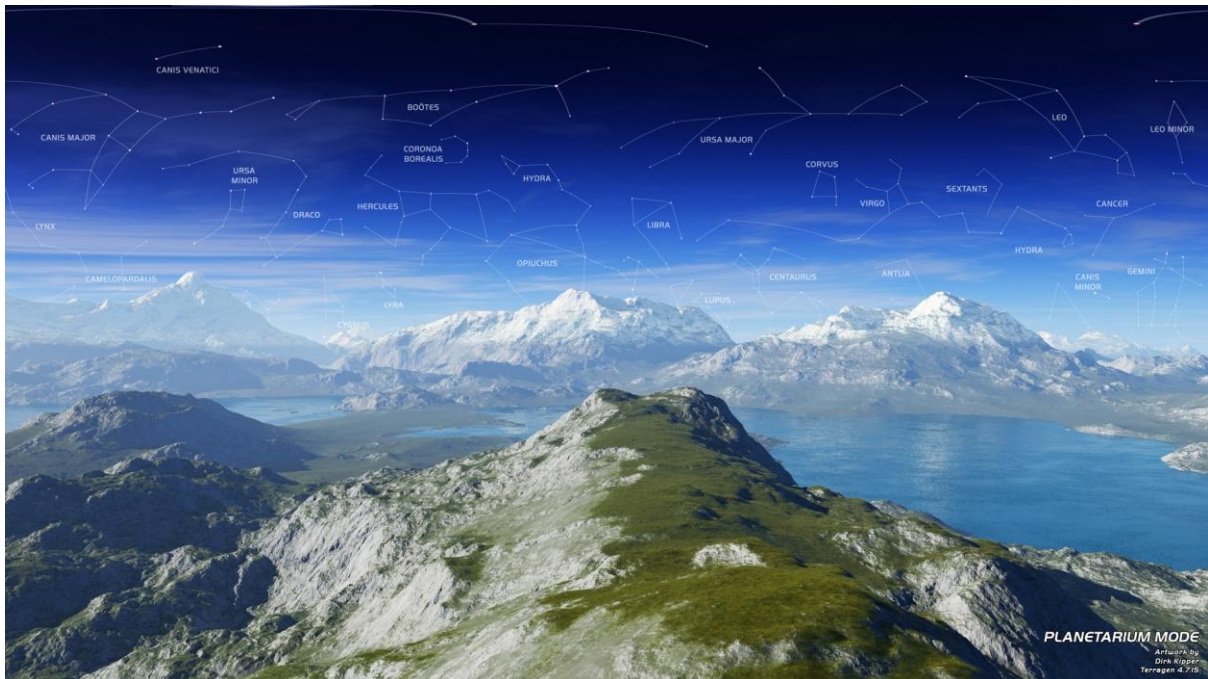## Manpulation with masks

Example Scene by Stormlord
(Optimized)

Example Scene by Stormlord
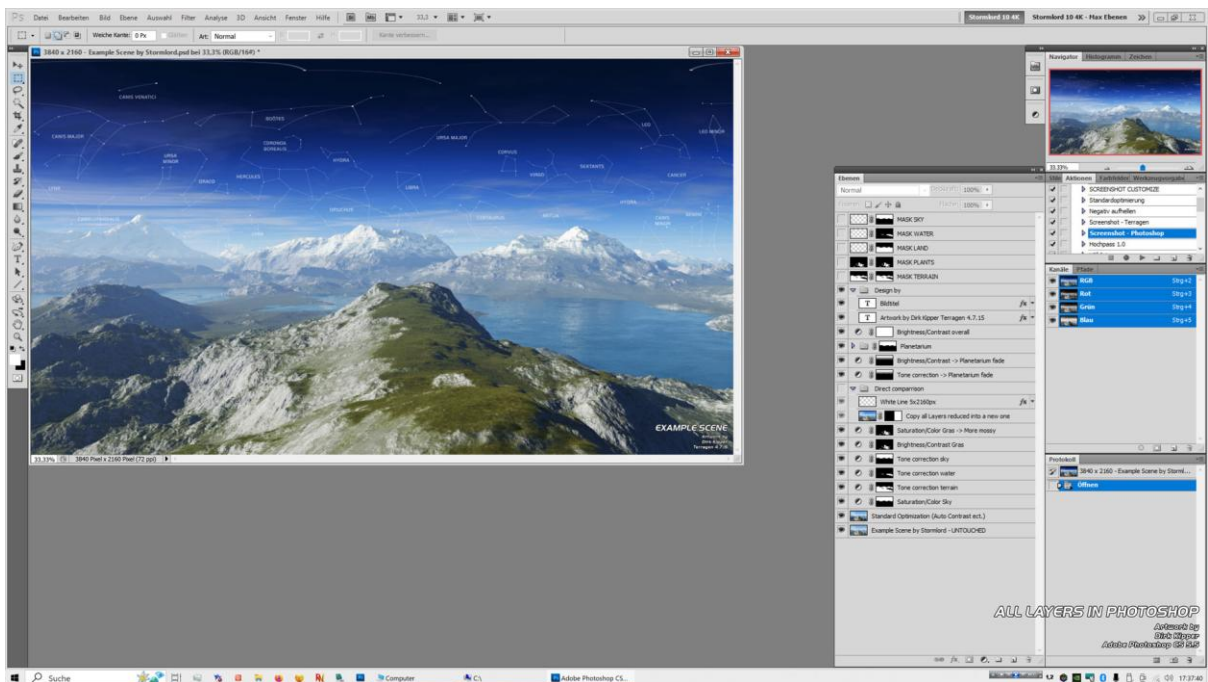(Direct comparison side by side)

Masking
Example scenes by Stormlord

Everything is possible with masks

Example Scene by Stormlord
(Planetarium style)

Example Scene by Stormlord
(All layers in Adobe Photoshop CS 5.5)

Masking
Example scenes by Stormlord

<u>Real life example</u>

There is the famous Terragen 4.0 Benchmark which everybody can download here...
https://planetside.co.uk/terragen-4-benchmark/

Terragen 4.0 Benchmark
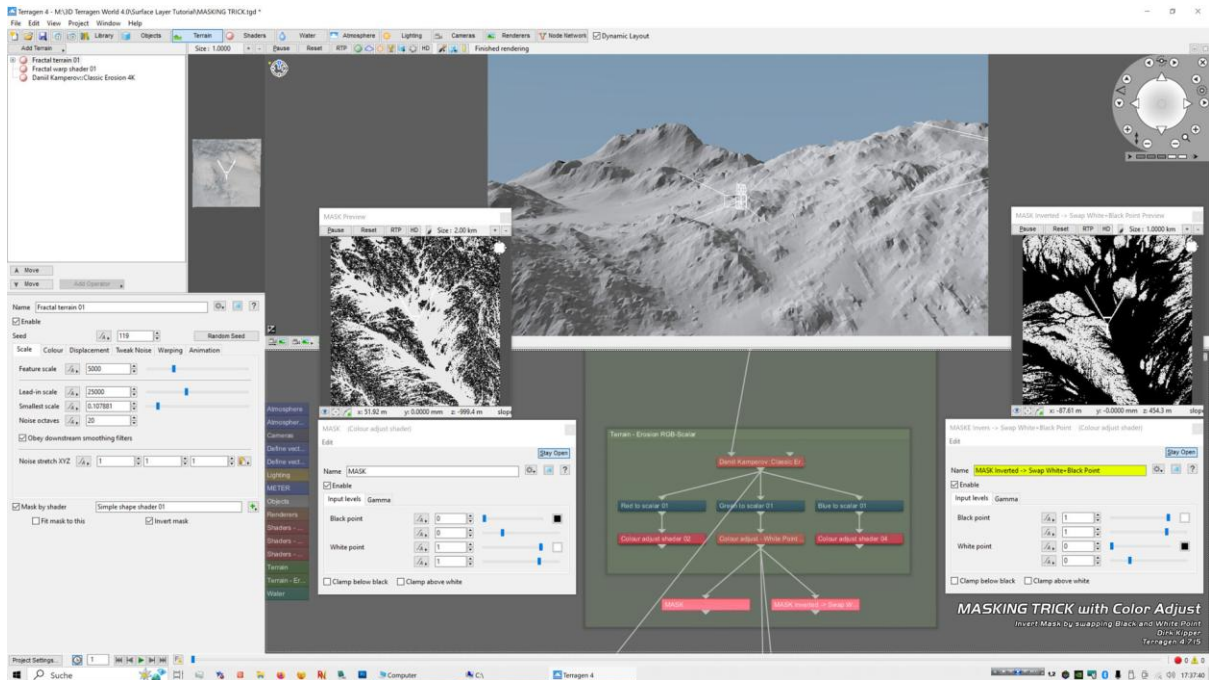(Rendered as desktop in 4K and optimized with masks)

Terragen 4.0 Benchmark
(Direct comparison original/optimized)

Masking
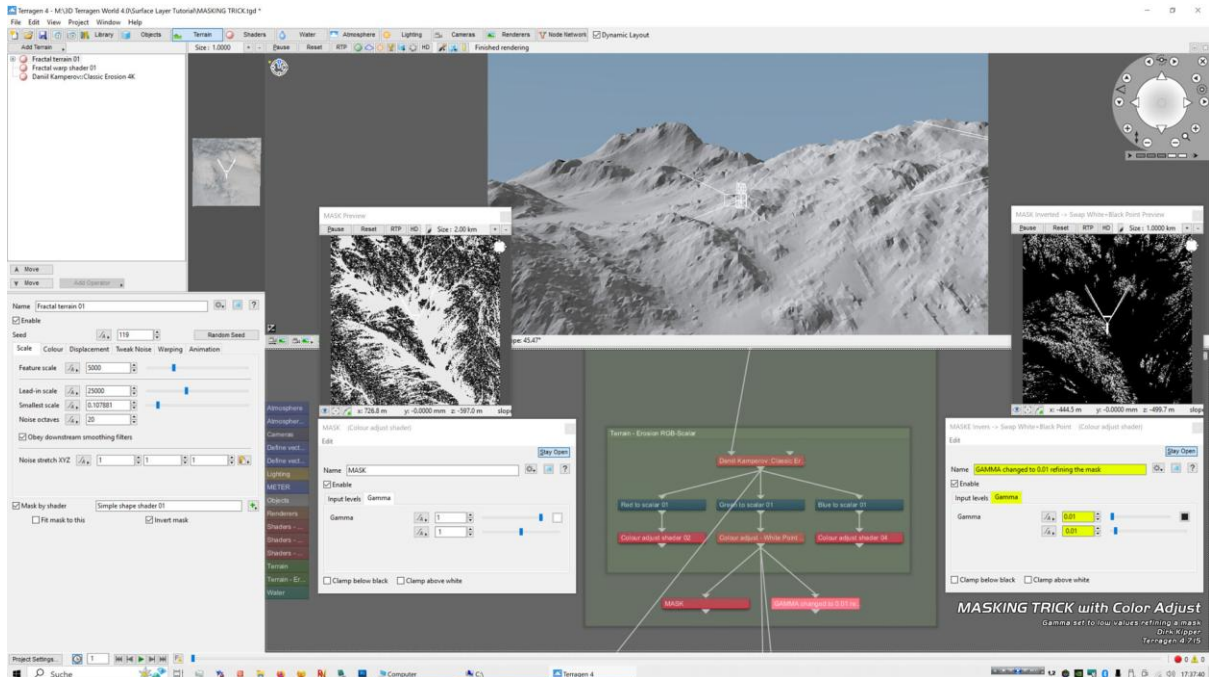# Example scenes by Stormlord

Masking Tricks / Inverting and Refining

Here are two powerfull tricks. Add a Color Adjust Node after a mask and swap the Black and White Point to invert it. Lower the Gamma in the inverted mask to refine it.

Masking Trick 1
Inverting a mask by swapping white and black point in a Color Adjust Node
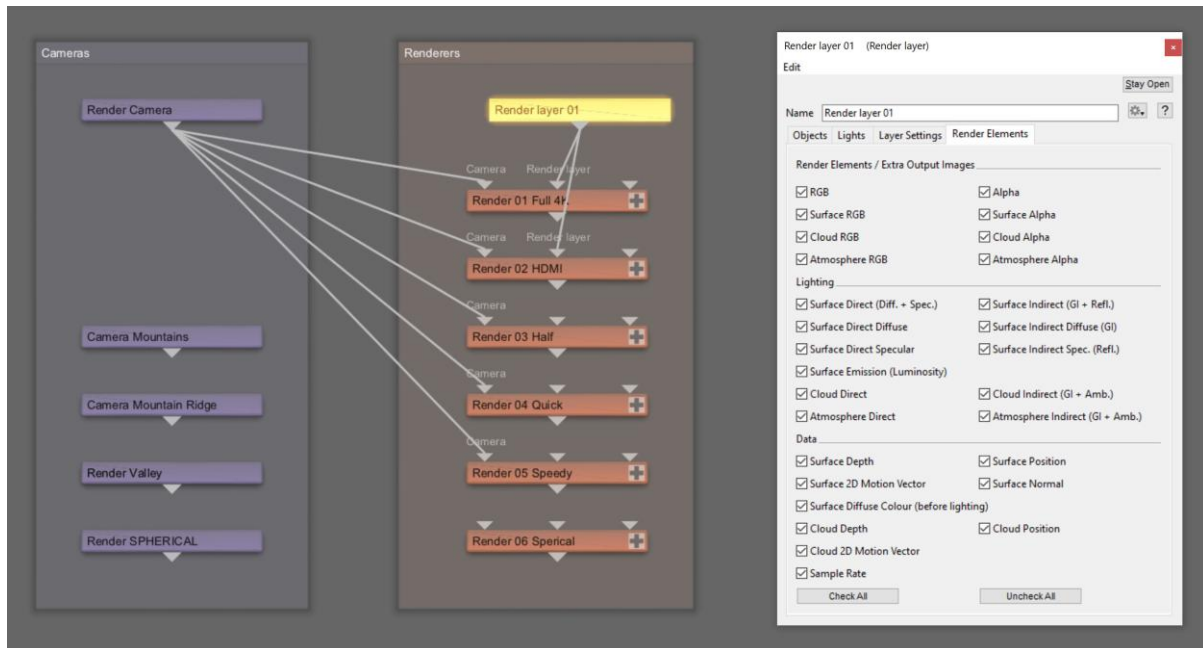

Masking Trick 2
Gamma set to very low values refining a mask

Masking
Example scenes by Stormlord

<u>Render Layer</u>

For those who have a license for Terragen professional it is possible to render seperate elements with the Render Layer Node. There are some elements which can be very usefull as masks for further editing.

Terragen 4.7.15
Render Layer / Render Elements Tab

<u>Mostly relevant for masking is:</u>

-        Alpha
-        Surface Alpha
-        Cloud Alpha
-        Atmosphere Alpha
-        tgSurfDepth

You can save the output as .exr or .tif file (in 32,16 or 8-Bit depth).
I use 32-bit for .exr and 16-bit for .tif files for maximum quality.


<u>General advice</u>

Please always save your rendering at least as 16-Bit .tif file (or 32-bit .exr). Further manipulation can lead to unwanted color steps, if you save your image only in 8-Bit. Then most problems occur later in postwork in the sky or water, where you have very fine color steps between pixels. Same with saving... save them not as .jpg file if you want to have your rendering in a very good quality. Better save them as .tif or as .bmp (for desktops). This guarantees you a very pleasant viewer experience.
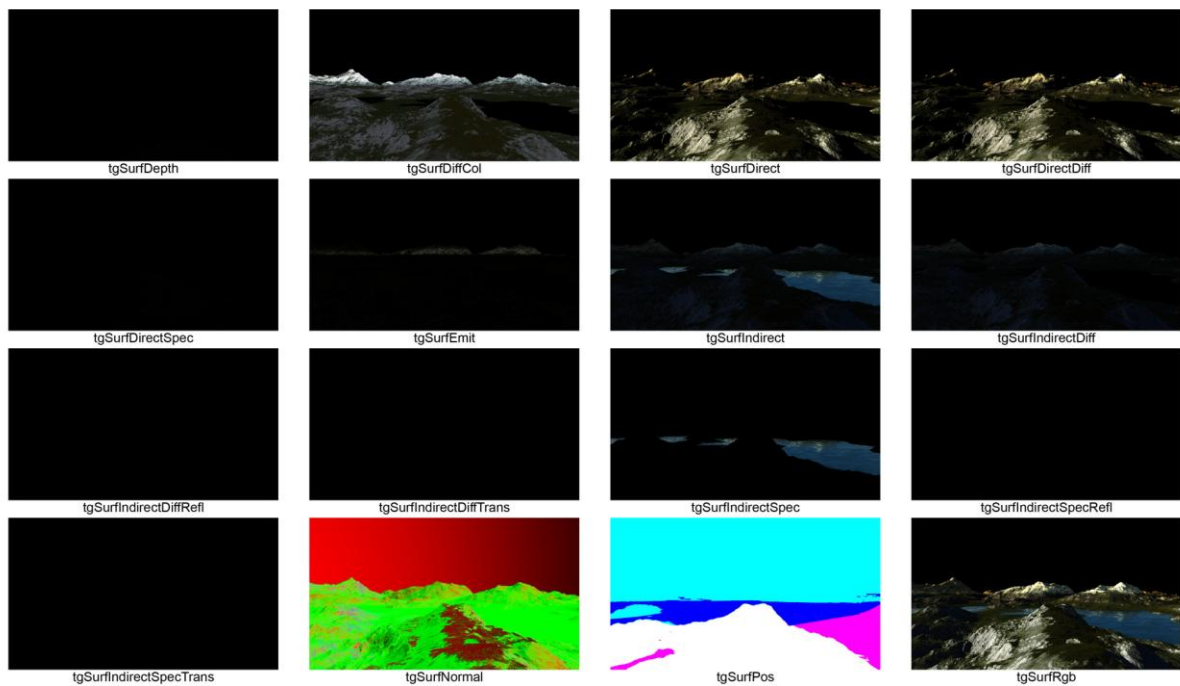
Masking
Example scenes by Stormlord

Render Layer at a glance

These are the render elements from my example scene.
Please pay attention to render element tgSurfDept on page 2.
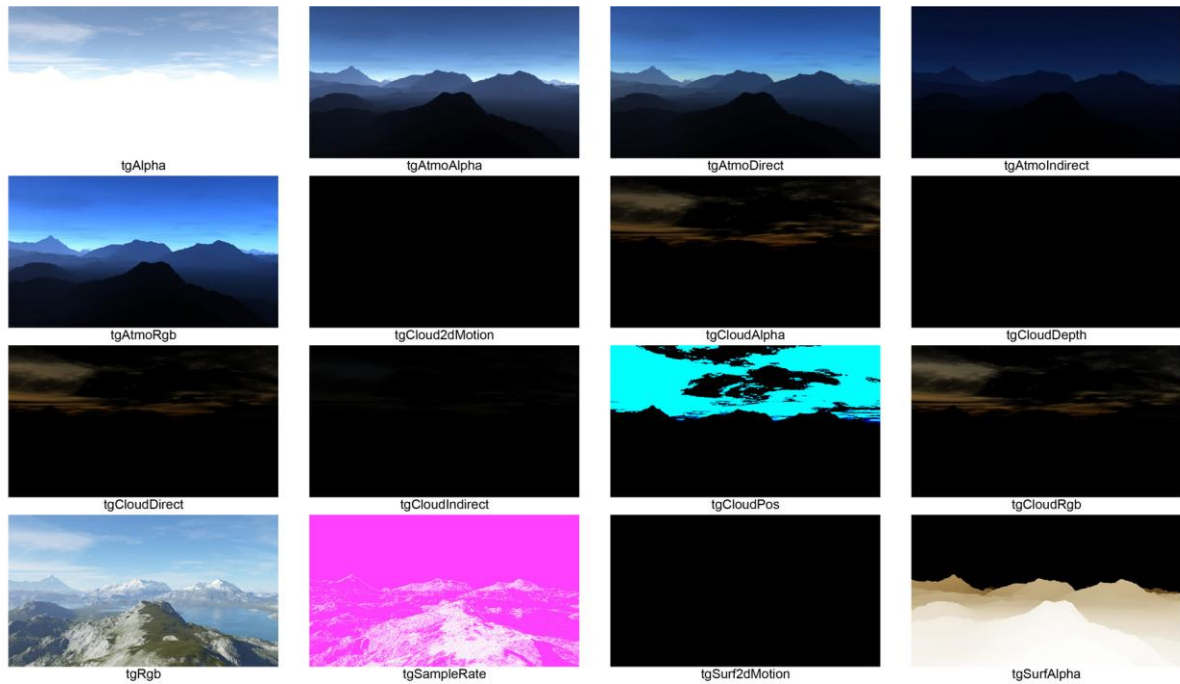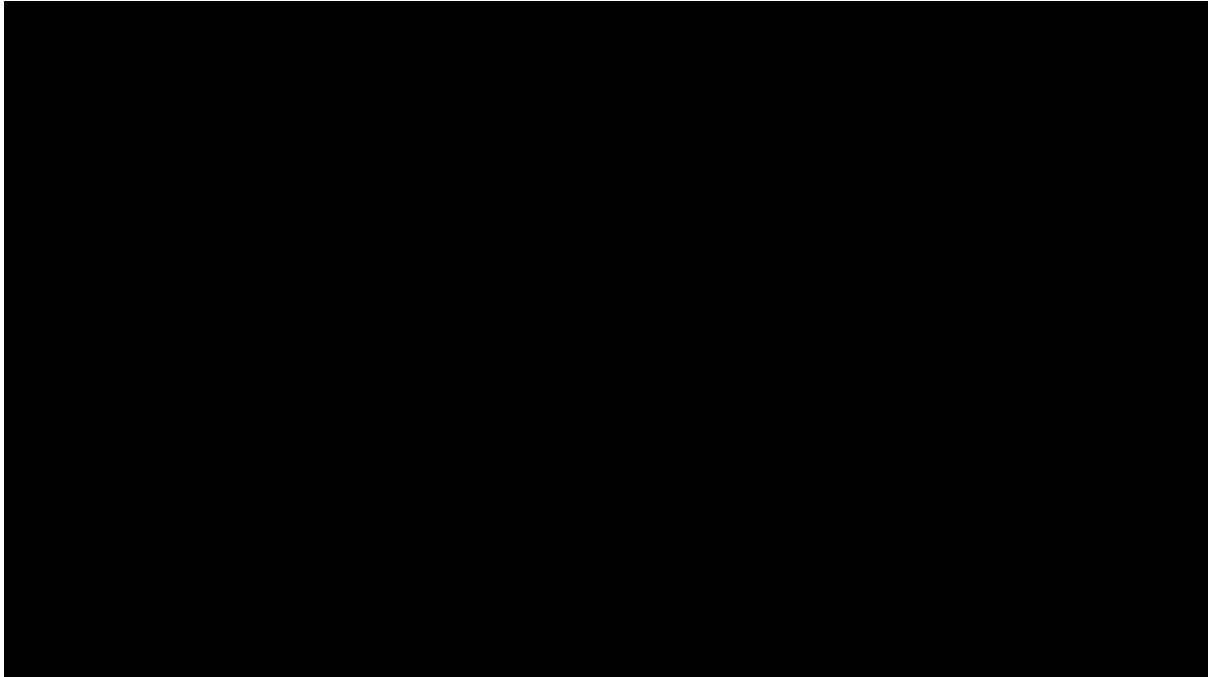

Render elements 1

Render elements 2

Masking
Example scenes by Stormlord

<u>Special Case "tgSurfDepth"</u>

While tgSurfDepth is saved in 16-bit as tif file, you mostly see only a black rendering.
This is because the differences here are so subtle. So let's try auto contrast!
This way you can use the mask with auto contrast tgSurfDepth very well as Z-Depth!

tgSurfDepth

tgSurfDepth with auto contrast

Masking
Example scenes by Stormlord

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http://www.dirkkipper.de/Galerie_Terragen/Terragen_02/index.php

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