

M P C

ATMOS AND FX

Adelaide | London | Los Angeles | Toronto | Montréal | Paris | Liège | Berlin | Bangalore | Mumbai

ATMOS



atmosphere, aerial perspective, fog, crepuscular rays, stage lights

FX



fire, smoke, gas, explosions

WILL EARL

- Head of Optimization
- MPC, 10 years, Vancouver & London
- Industry, 20 years, New Zealand
- Asset, look-development and lighting
- Making efficient assets and renders





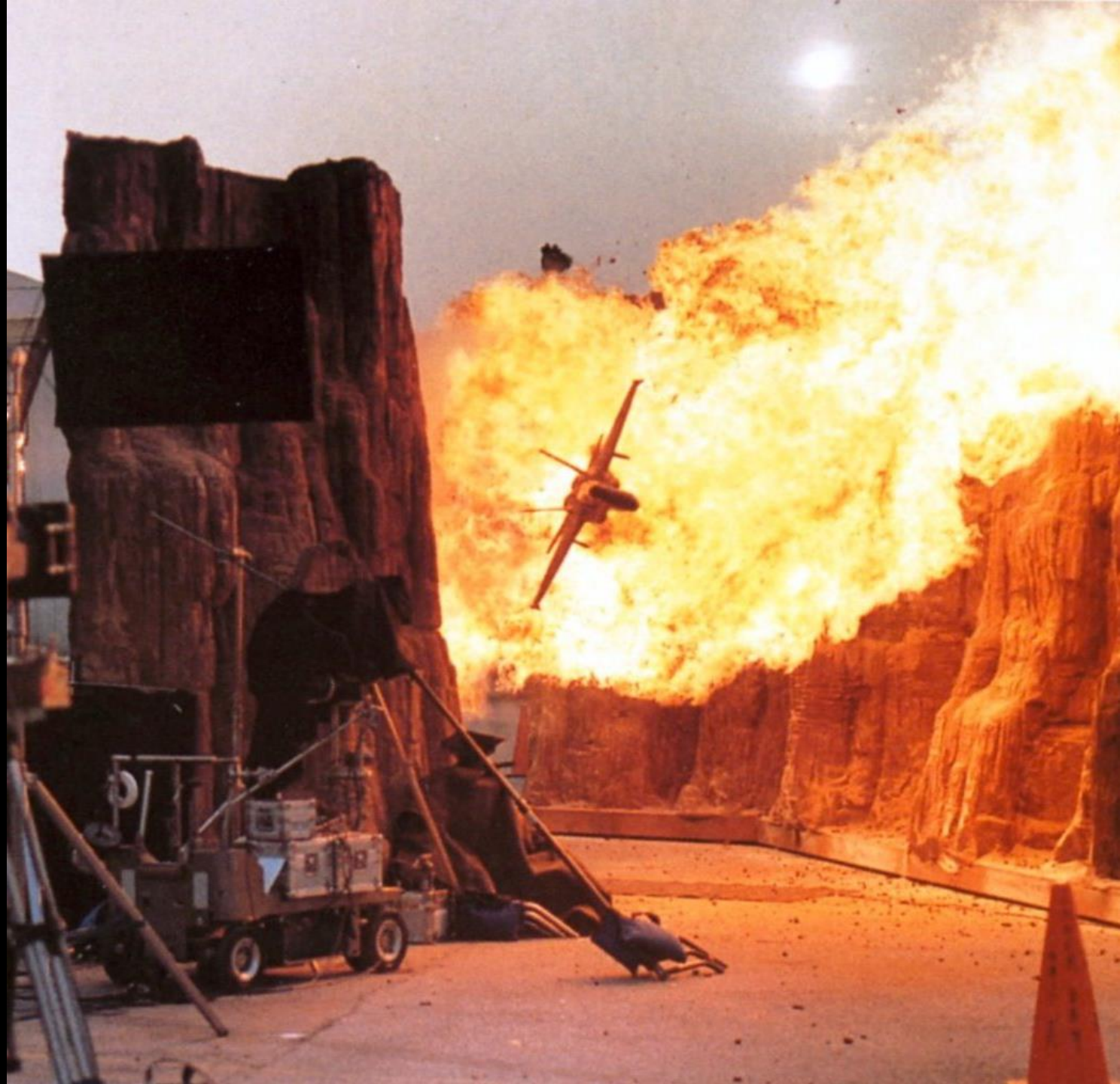
WORKSHOP

- History
- Reasons
- Concepts
- Atmos
- FX

HISTORY

FILMED ELEMENTS

- Shot at scale
- Miniatures
- Slow motion





Filmed elements

OPTICAL COMPOSITING

- Filmed against black-screen
- Additive layering



OPTICAL COMPOSITING



- Filmed against black-screen
- Additive layering

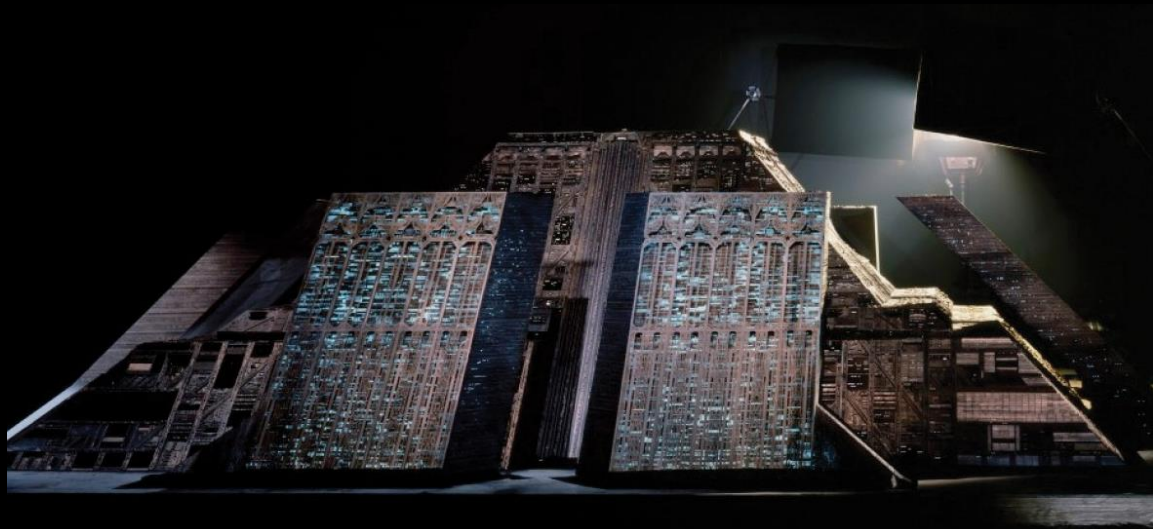


- Reflection in ground
- Mirroring the element

DIGITAL COMPOSITING

- Cards
- Particles and Sprites
- Plate interaction

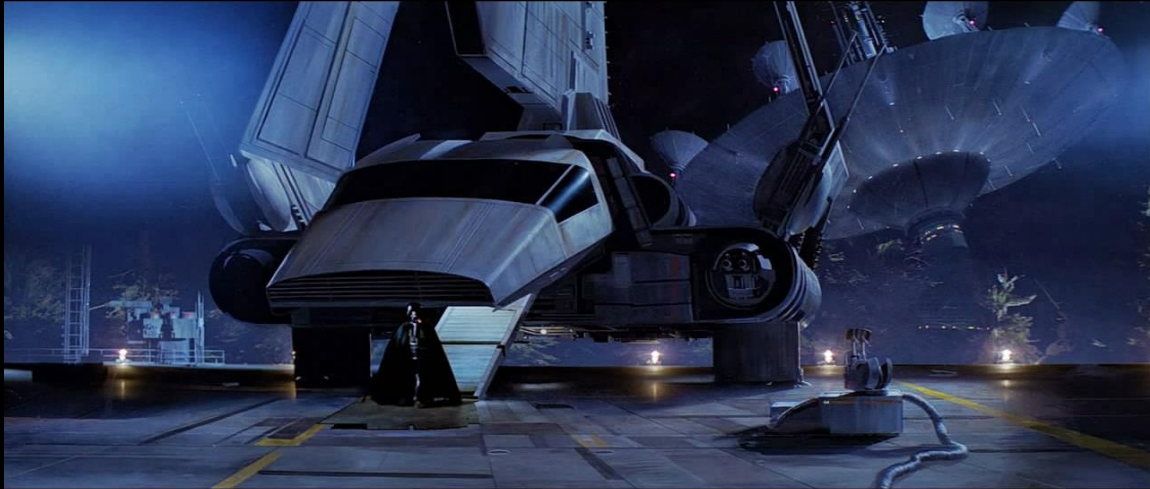




Miniature Atmosphere



Cloud tanks



Matte paintings

HISTORY (IS STILL IN USE)

REASONS

A dramatic scene of a fire with a silhouette of a person in the foreground and a cross on the left. The background is filled with bright orange and yellow flames, creating a high-contrast, intense atmosphere. The silhouette of a person's head and shoulders is prominent in the center, looking towards the fire. On the left side, a dark silhouette of a cross stands on a base. The overall mood is one of danger and contemplation.

SAFETY

- Doing it for real can be dangerous.

SAFETY



A large-scale fire scene, likely a movie set, featuring a massive fire with thick, billowing orange and yellow flames. In the background, a white building with arched windows is visible. The scene is set at night or in low light, with the fire providing the primary illumination. A dark, semi-transparent rectangular box is overlaid on the right side of the image, containing a list of production details.

EXPENSE

- Building sets / miniatures
- Large number of crew
- One take



LOOK AND MOTION

- Art-direction
- Magic and sci-fi effects
- Integration

CONCEPTS

VOLUMES

- Density
- Scattering
- Absorption
- Emission



UNIFORM

VARIATION

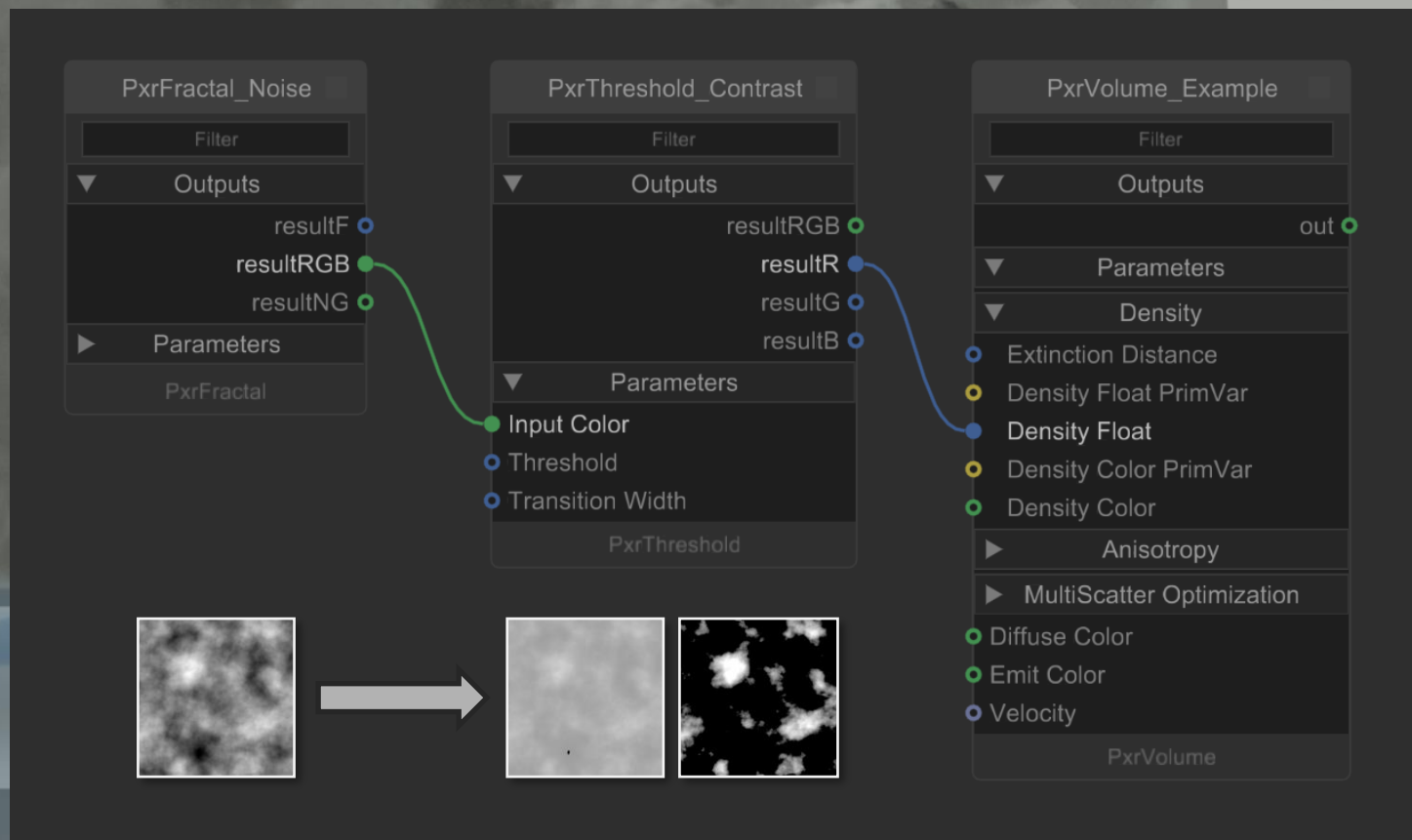
DENSITY



UNIFORM

VARIATION

DENSITY



LOW

HIGH

SCATTERING



BLUE

WHITE

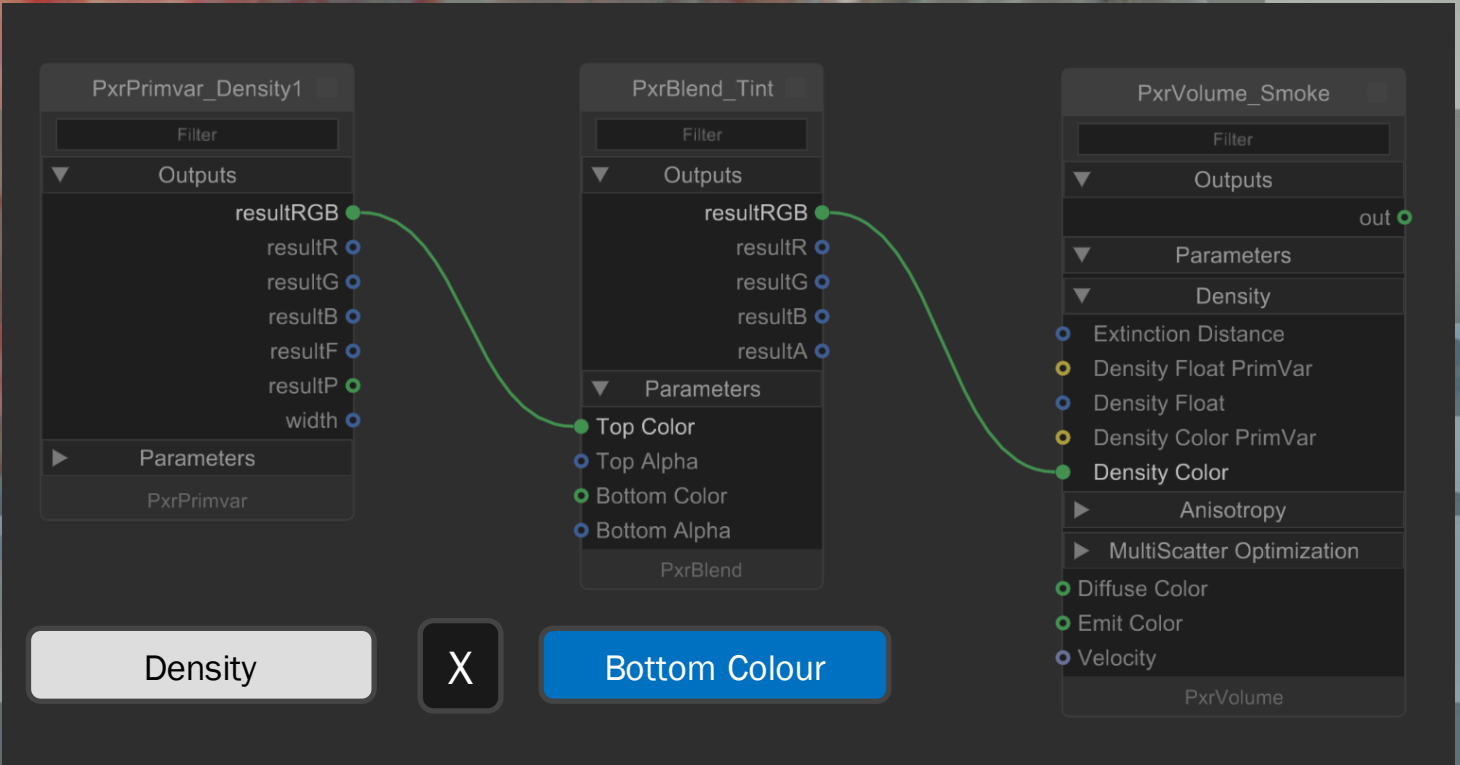
ABSORPTION



BLUE

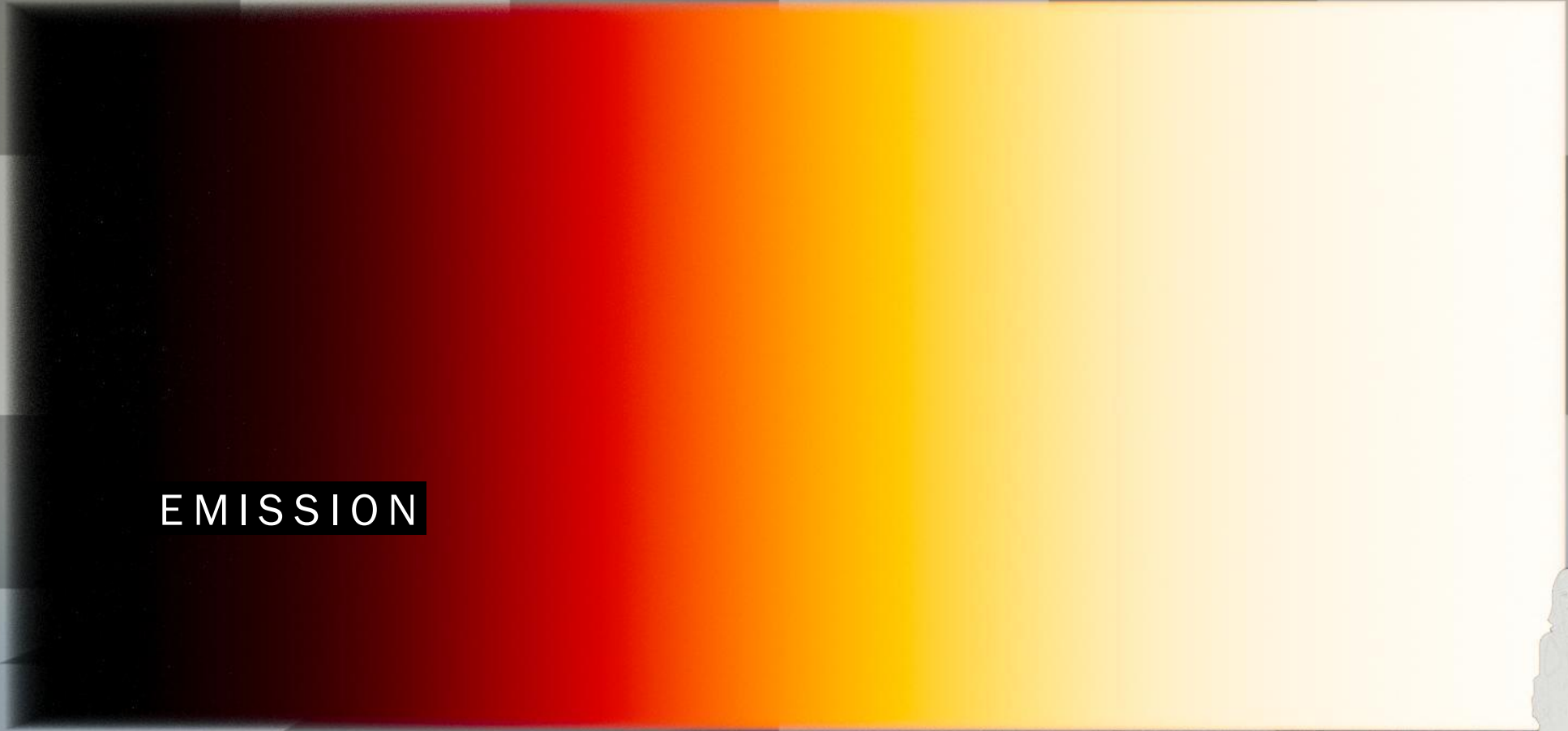
WHITE

ABSORPTION



0 K

3600 K



EMISSION



0 K

3600 K

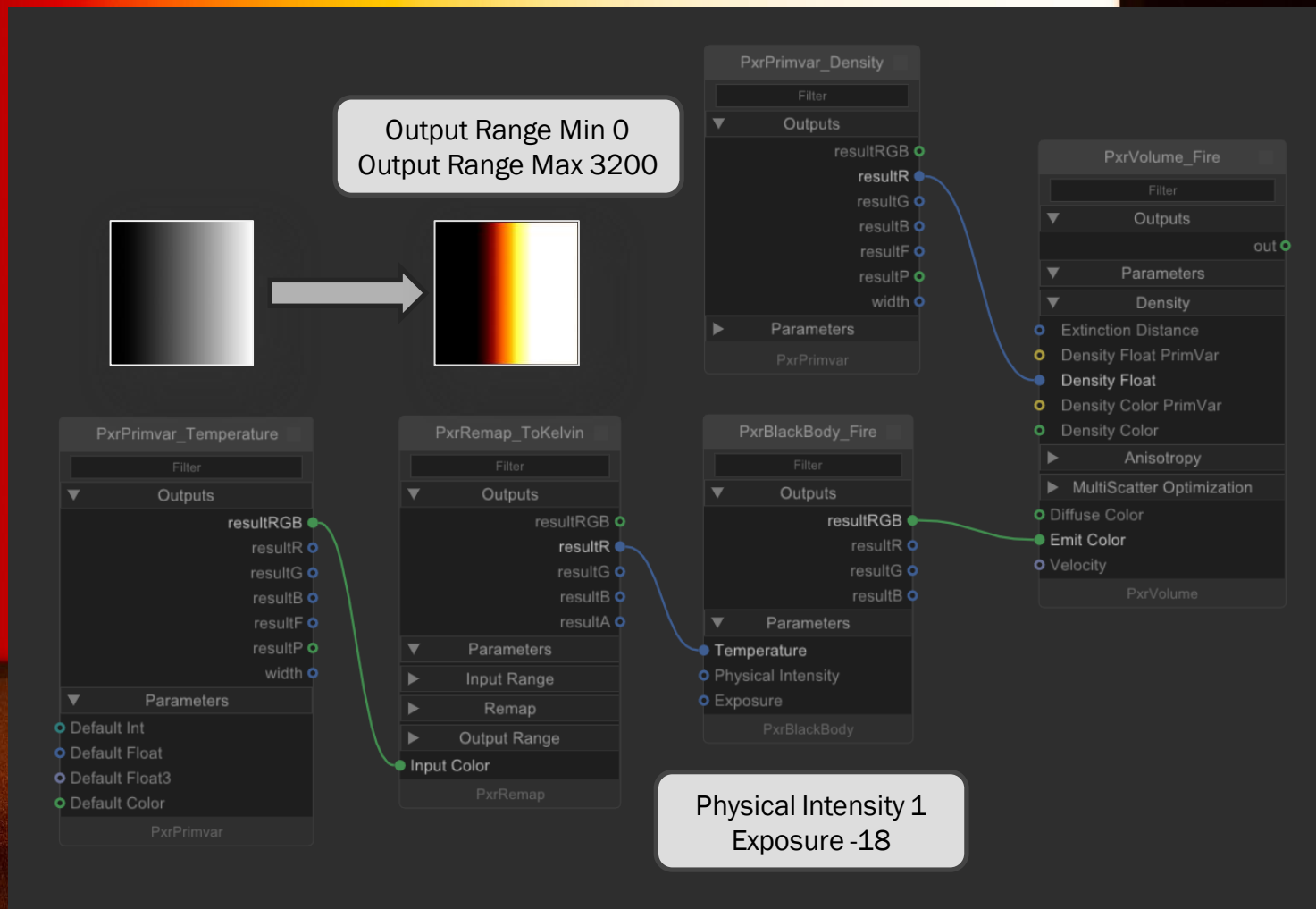
EMISSION



0 K

3600 K

EMISSION



0 K

3600 K

EMISSION

Blackbody Options Density Options Smoke Colour Options

Enable Blackbody Colour
 Enable Colour Ramp

Output Volume cacheColor
Heat heat
Temperature temperature

Ramp Options

Heat Range 0 3

Heat Ramp

Temperature Range 0 20

Temperature Ramp

Colour Ramp

Blackbody Options

Temperature (K) 5000

Enable Tone Mapping Tone Mapping: Adaptation 0.15

Tone Mapping: Burn 0

Final Scale 1

Temperature Scale 0.5

Intensity Scale 5

Color Adjustments

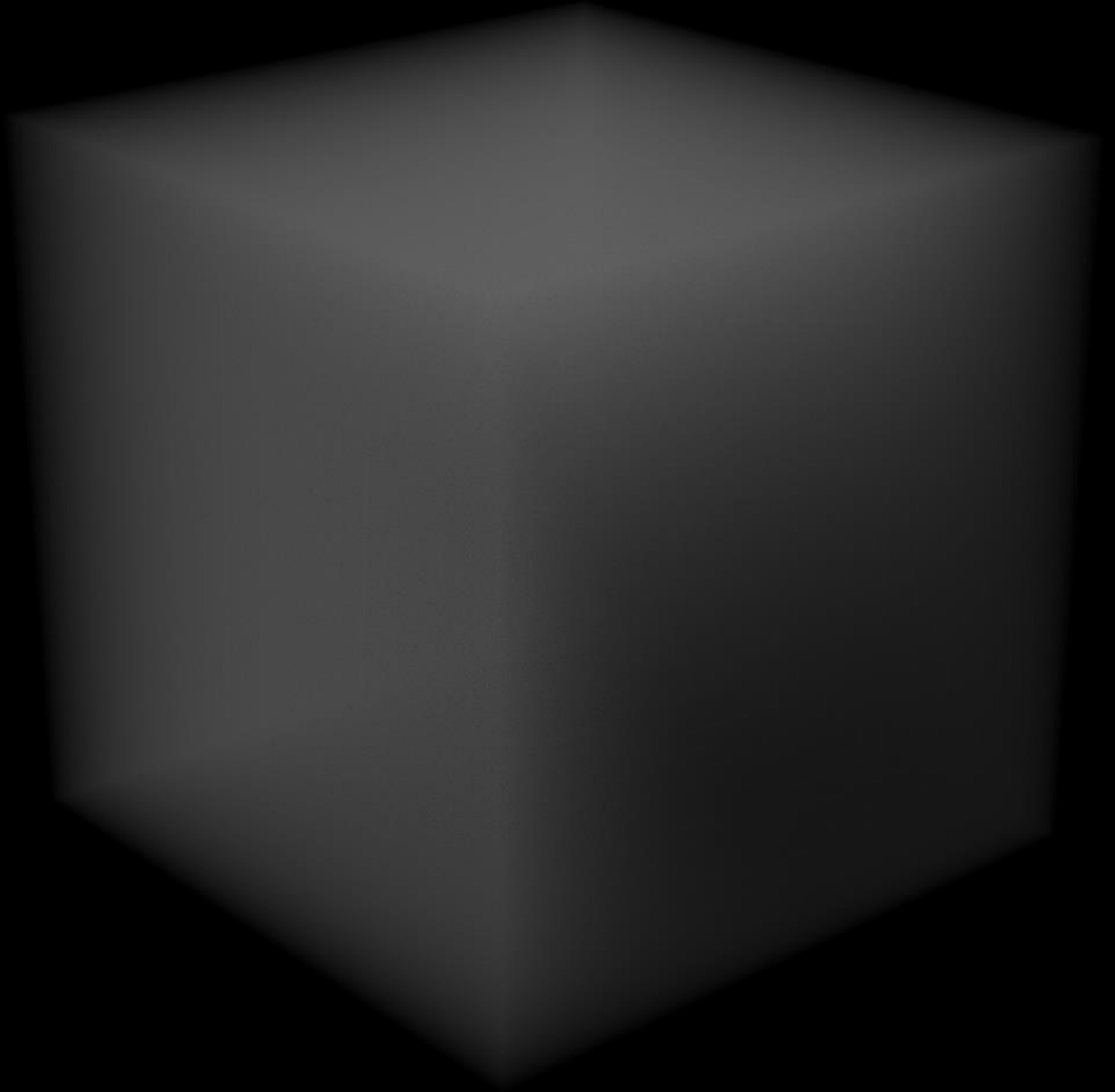
Exposure 0

Hue Shift 0

Saturation 1

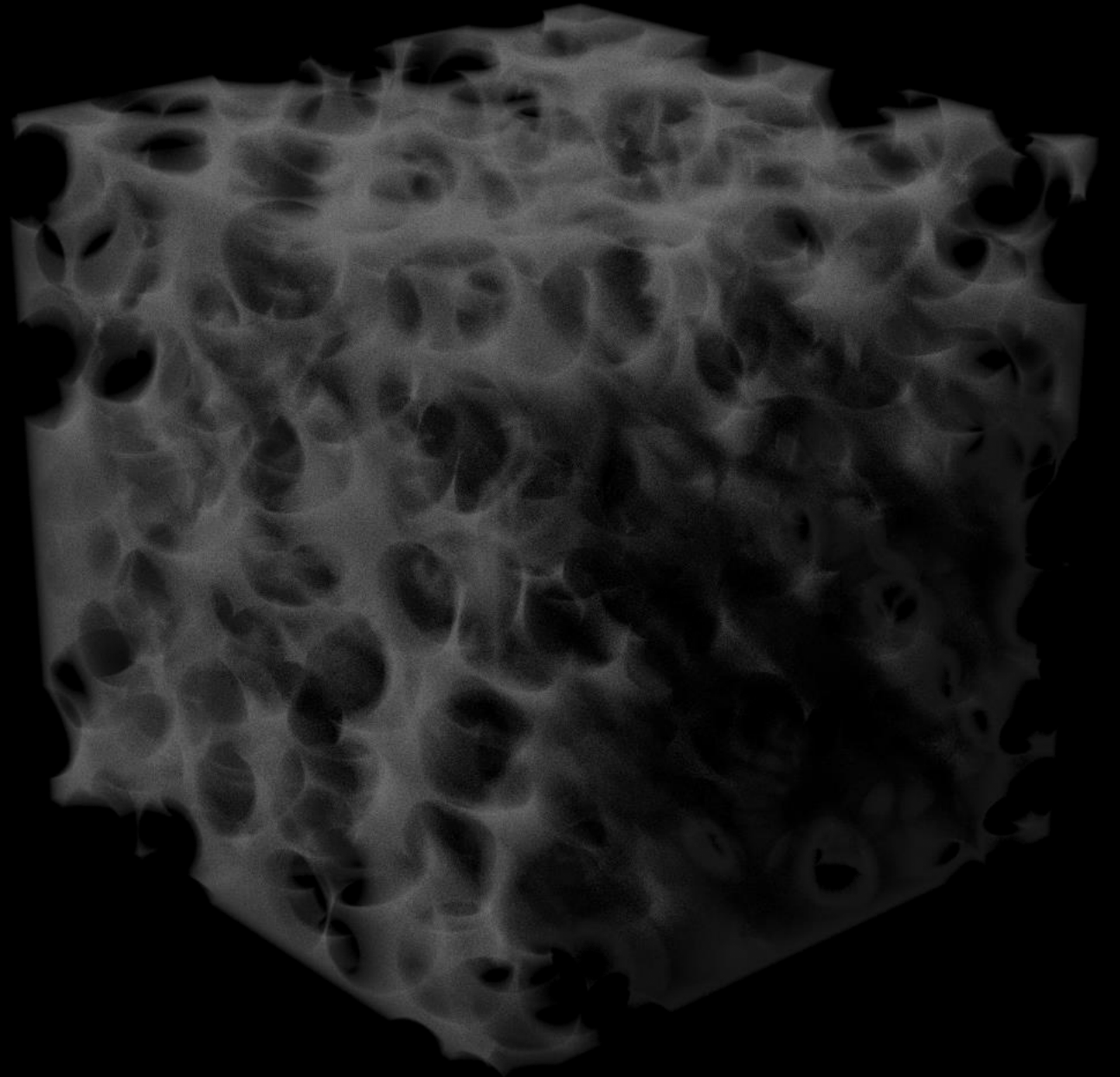
VOLUME GEOMETRY

- Box
- Spheres
- Cylinder
- Cone
- Blobbies



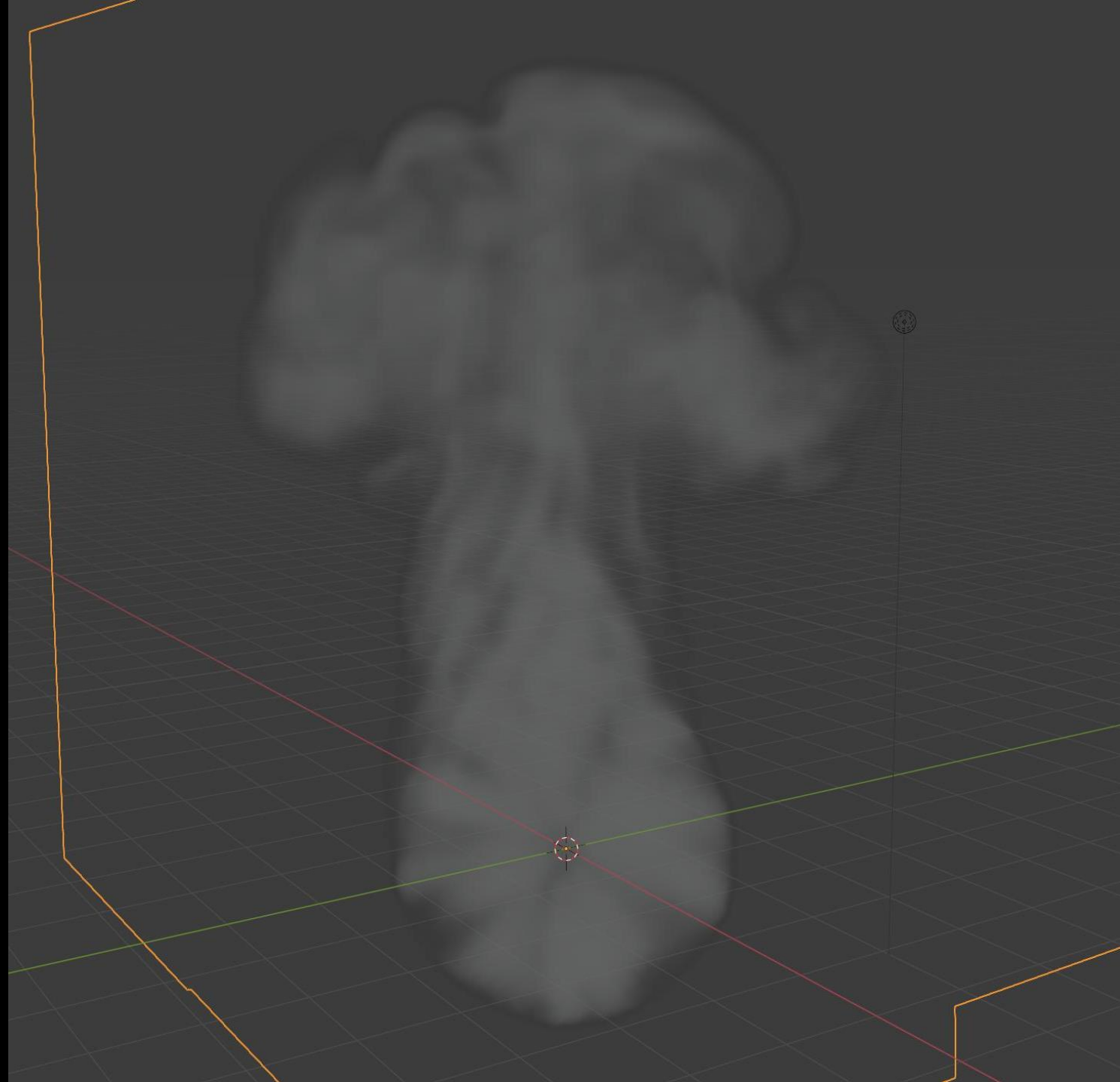
VOLUME GEOMETRY

- Box
- Noises
- 3D textures



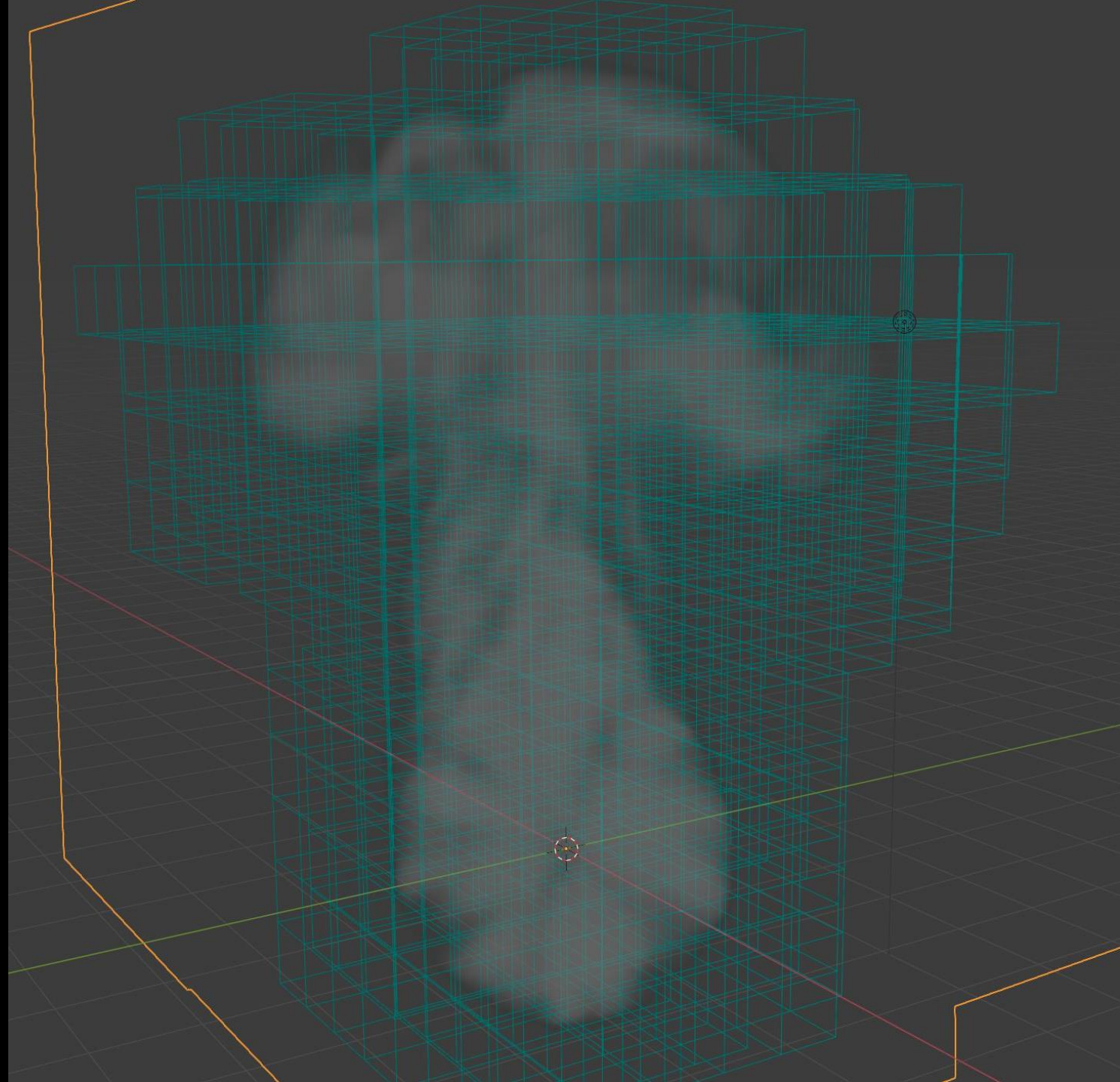
VOLUME GEOMETRY

- OpenVDB
- Volumetric Data
- Tools for Manipulating
- Sequence of File Caches



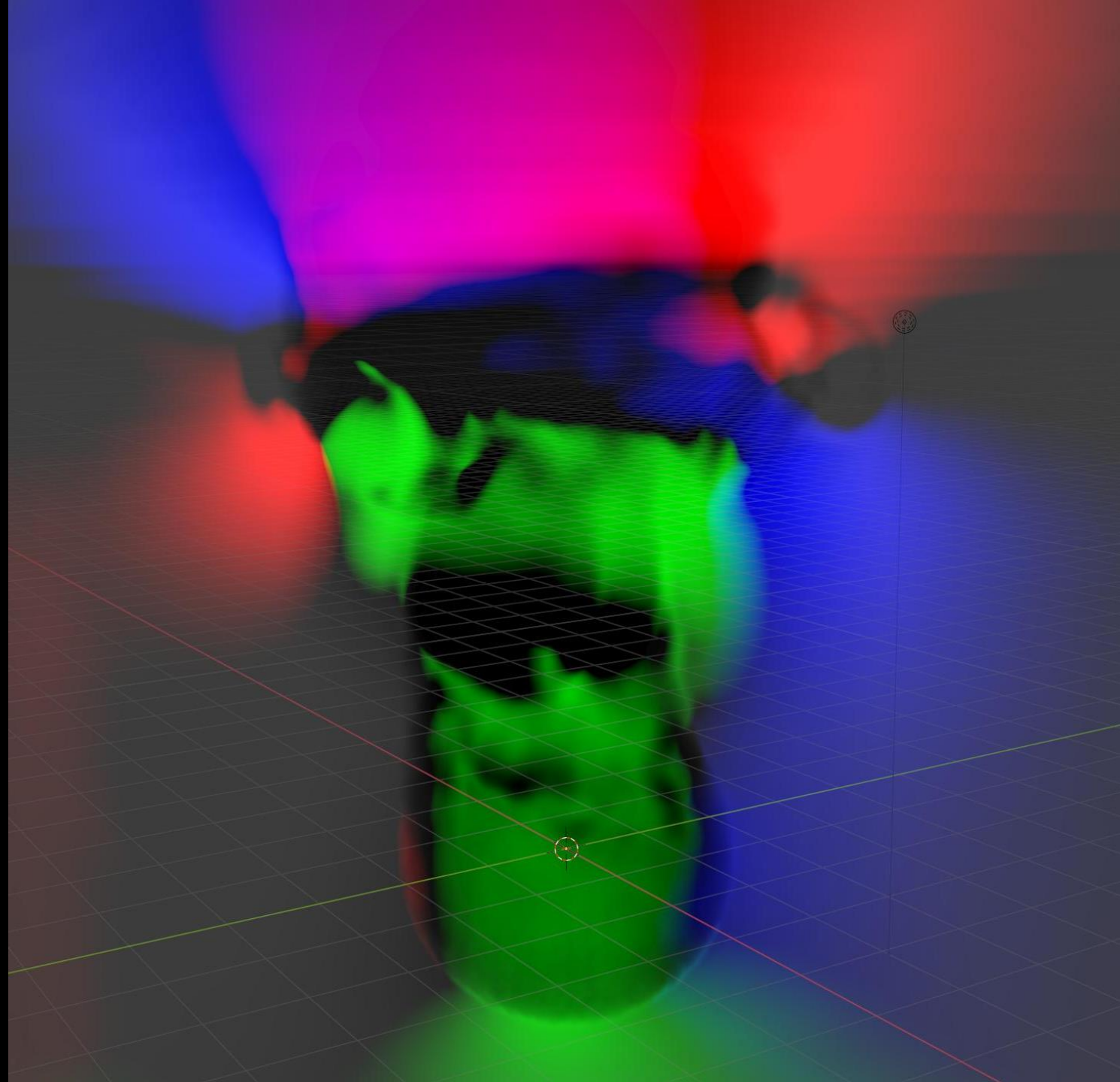
VOLUME GEOMETRY

- OpenVDB
- Volumetric Grids
 - Density



VOLUME GEOMETRY

- OpenVDB
- Volumetric Grids
 - Density
 - Temperature
 - Colour
 - Velocity



ATMOS

ATMOS

- Atmosphere
- Depth cue
- Tone / Mood



PHYSICALLY

- Microscopic Particles
- Dust / Sand / Water / Smoke





PHYSICALLY

- Microscopic Particles
- Dust / Water / Smoke



smoke



water

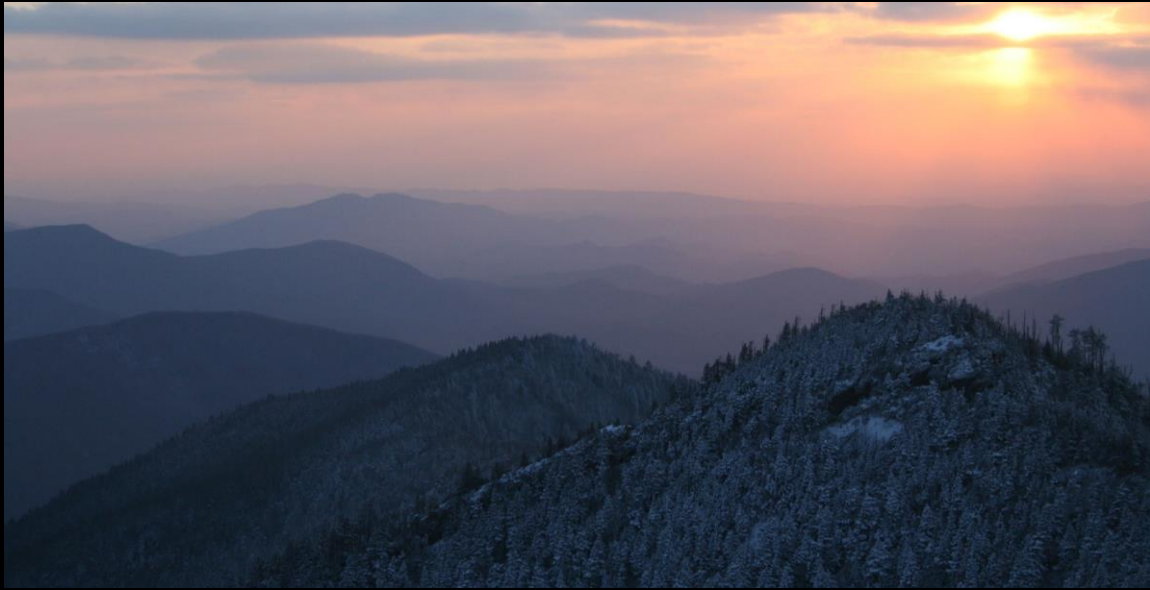


sand

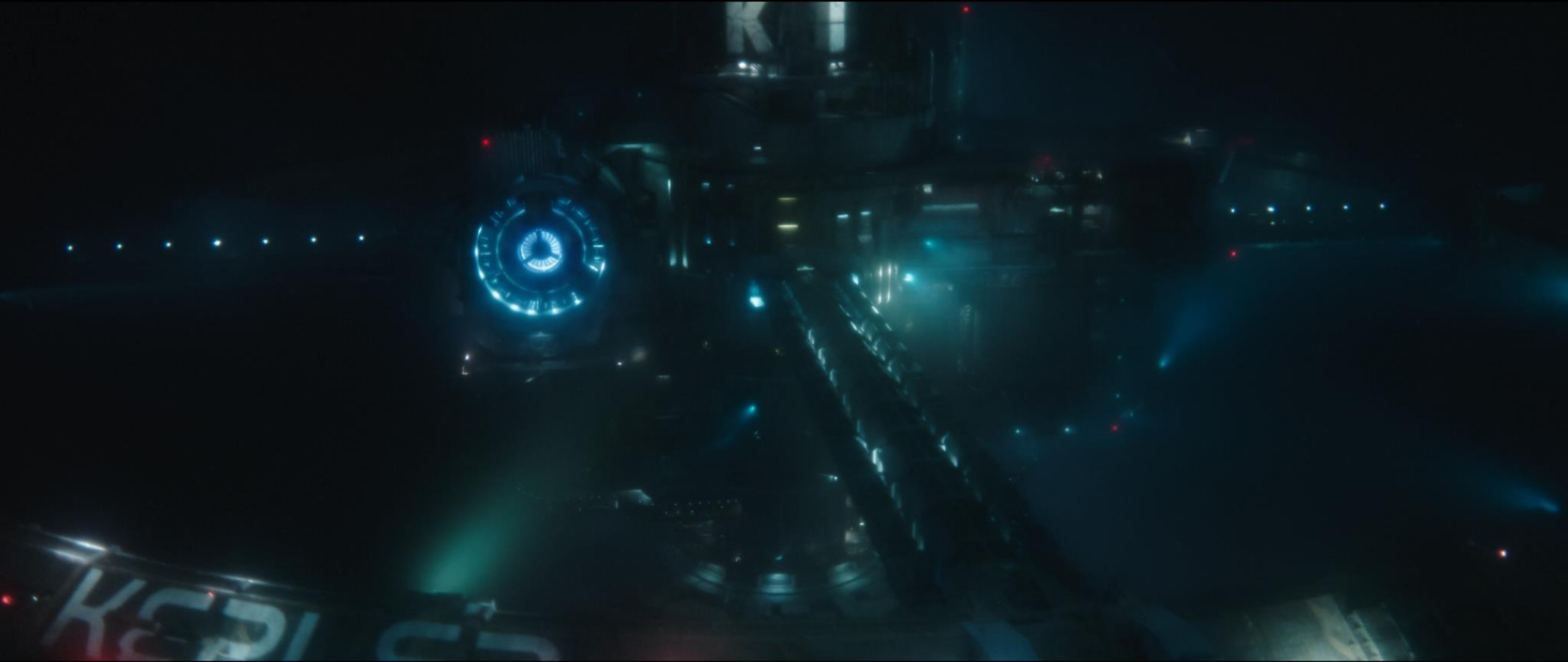
AERIAL PERSPECTIVE

- Large distances
- Lower contrast
- Colour desaturate
- Blends to background sky colour (often blue tint)





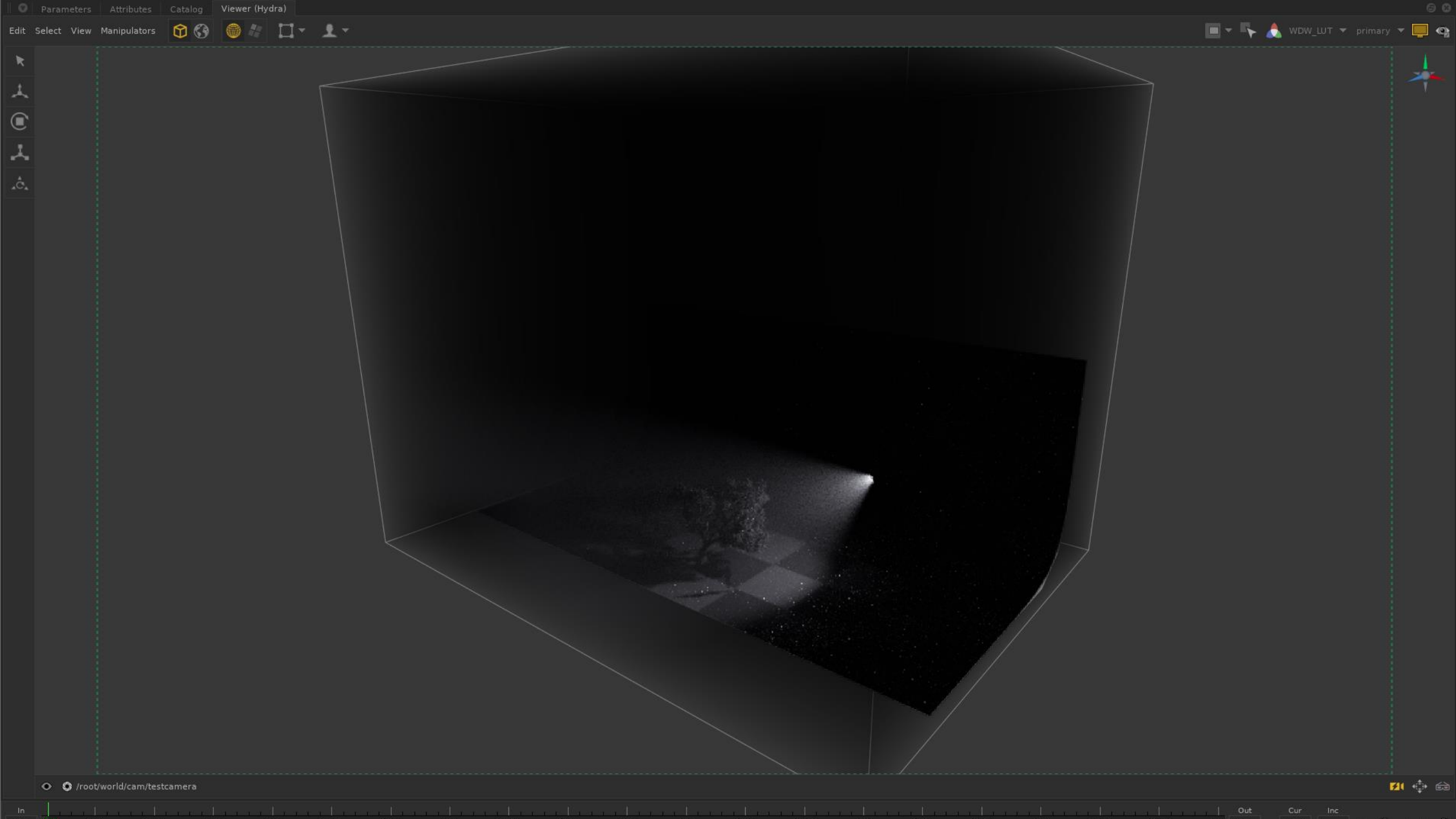
Aerial Perspective











Beauty Pass



Atmos Pass



Underwater



City at Night





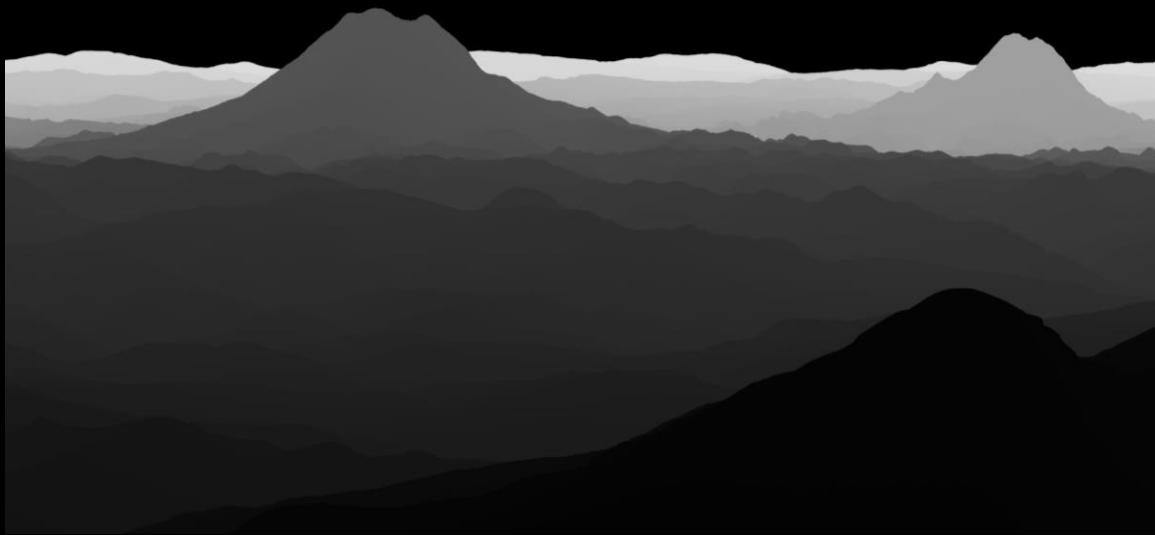
Depth Pass



Atmos Pass

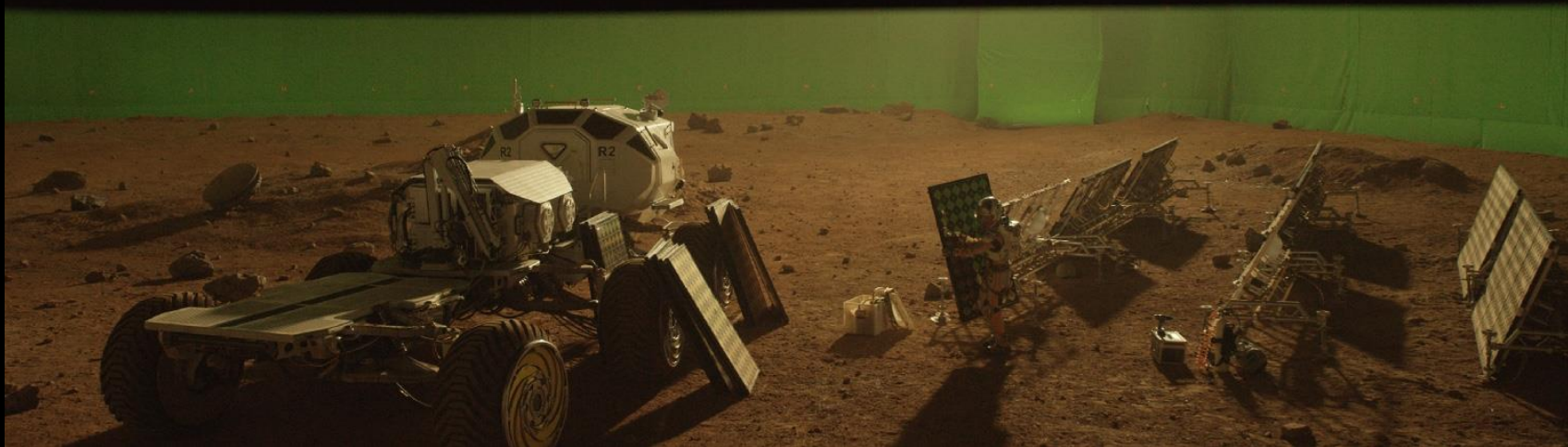


Depth Pass



Atmos Pass







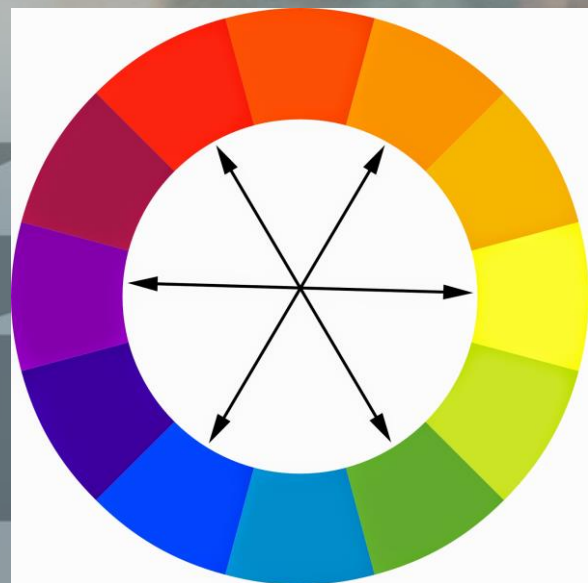
FX

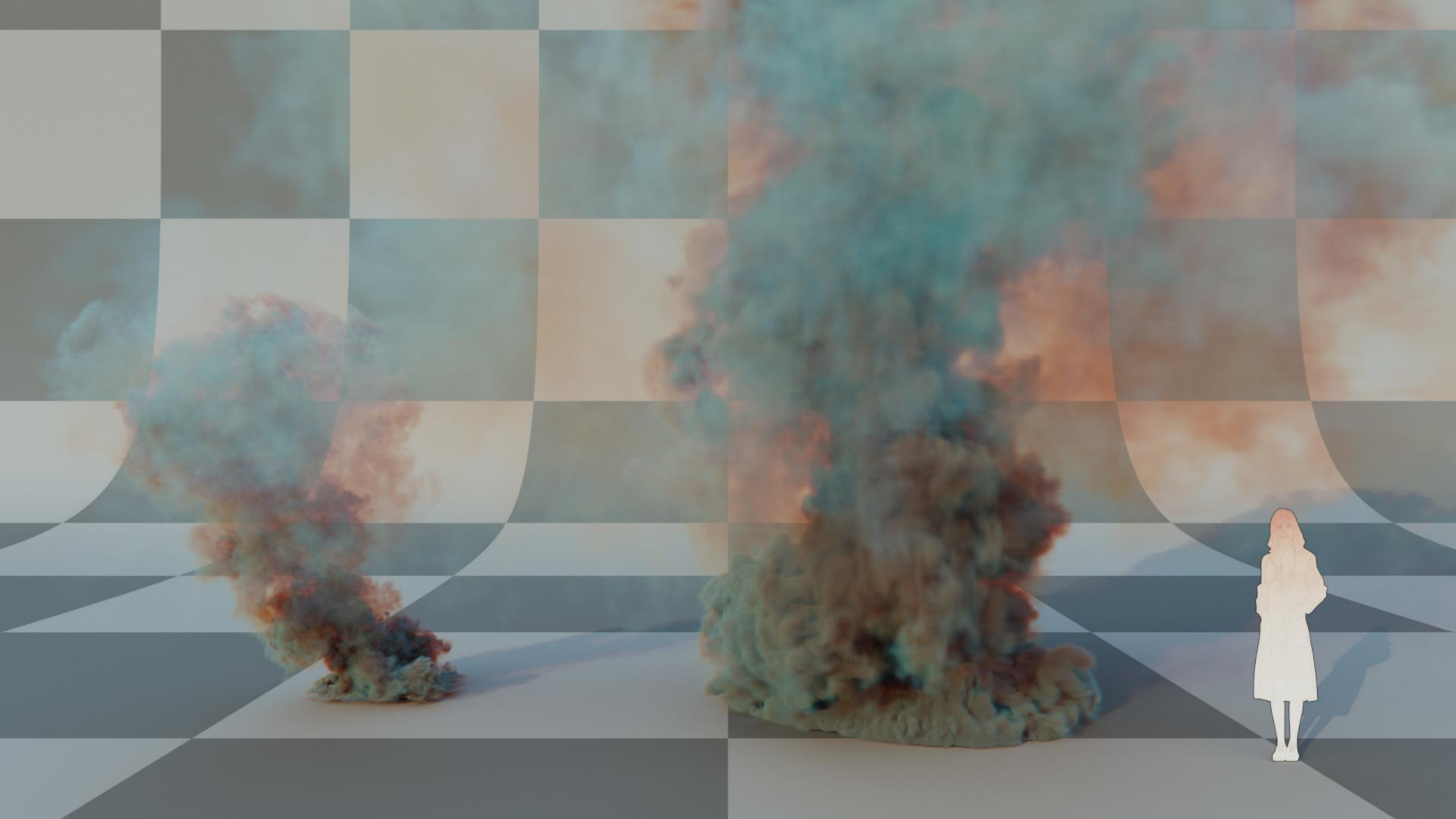
- Fire
- Smoke

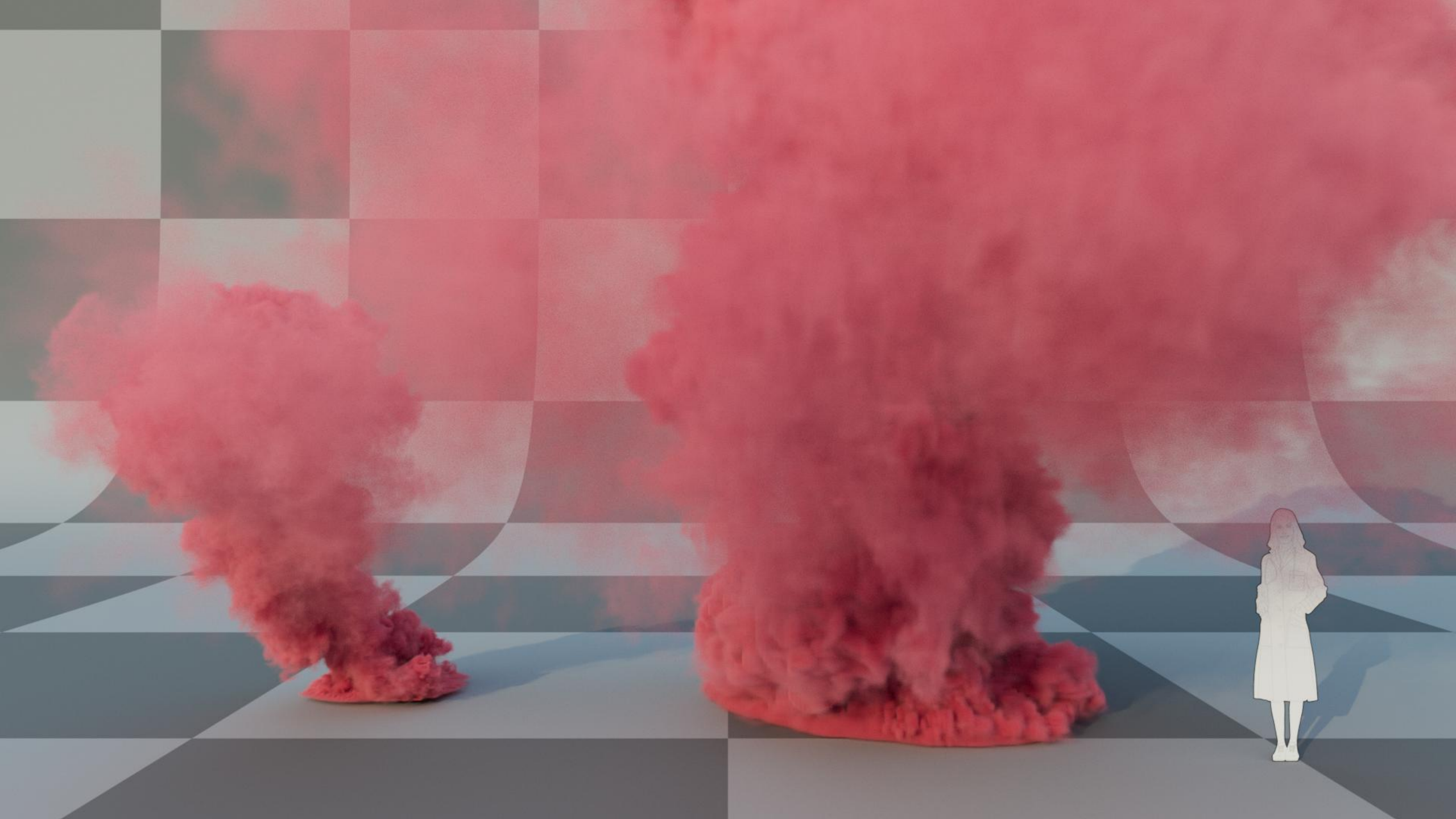






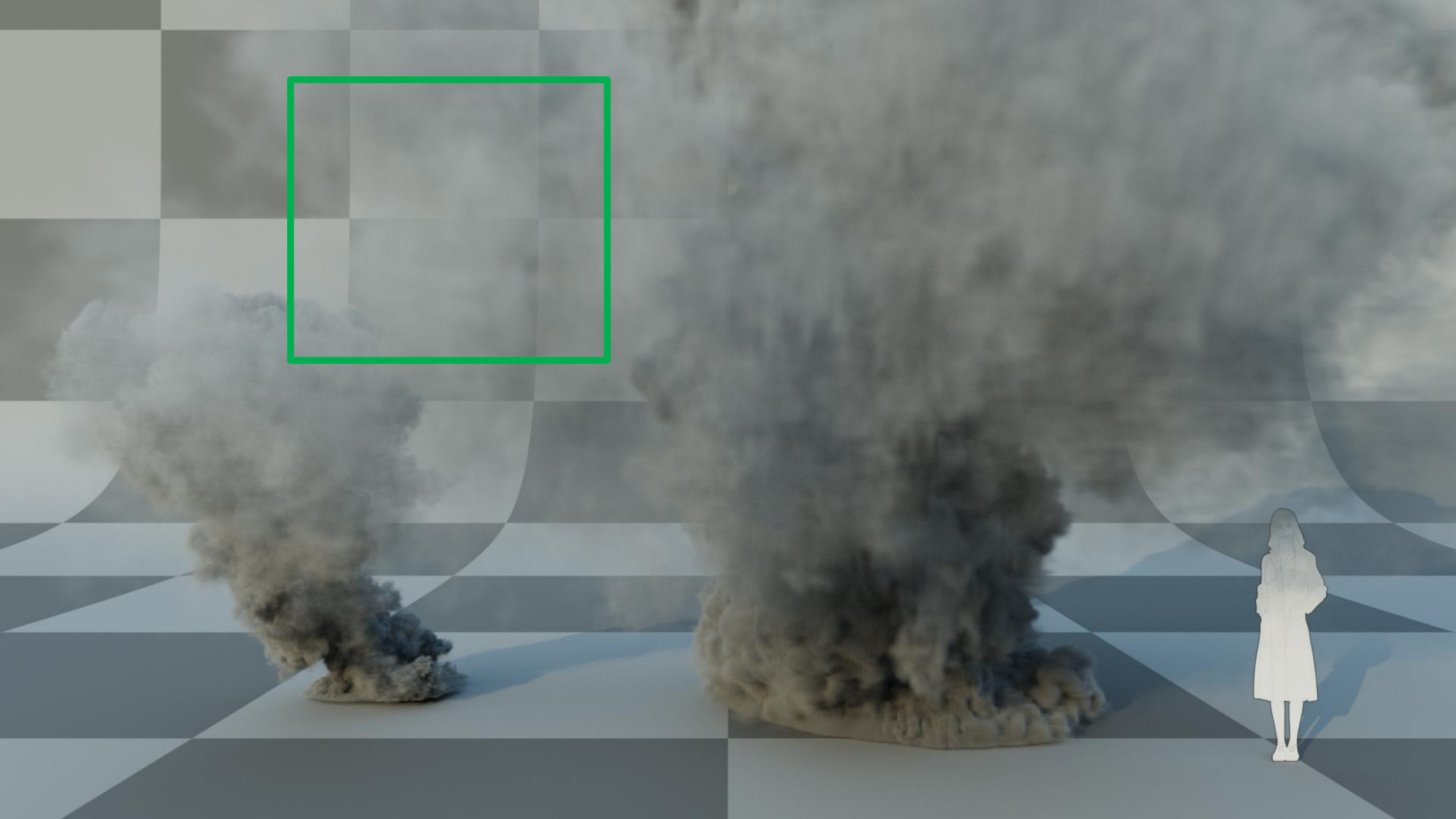


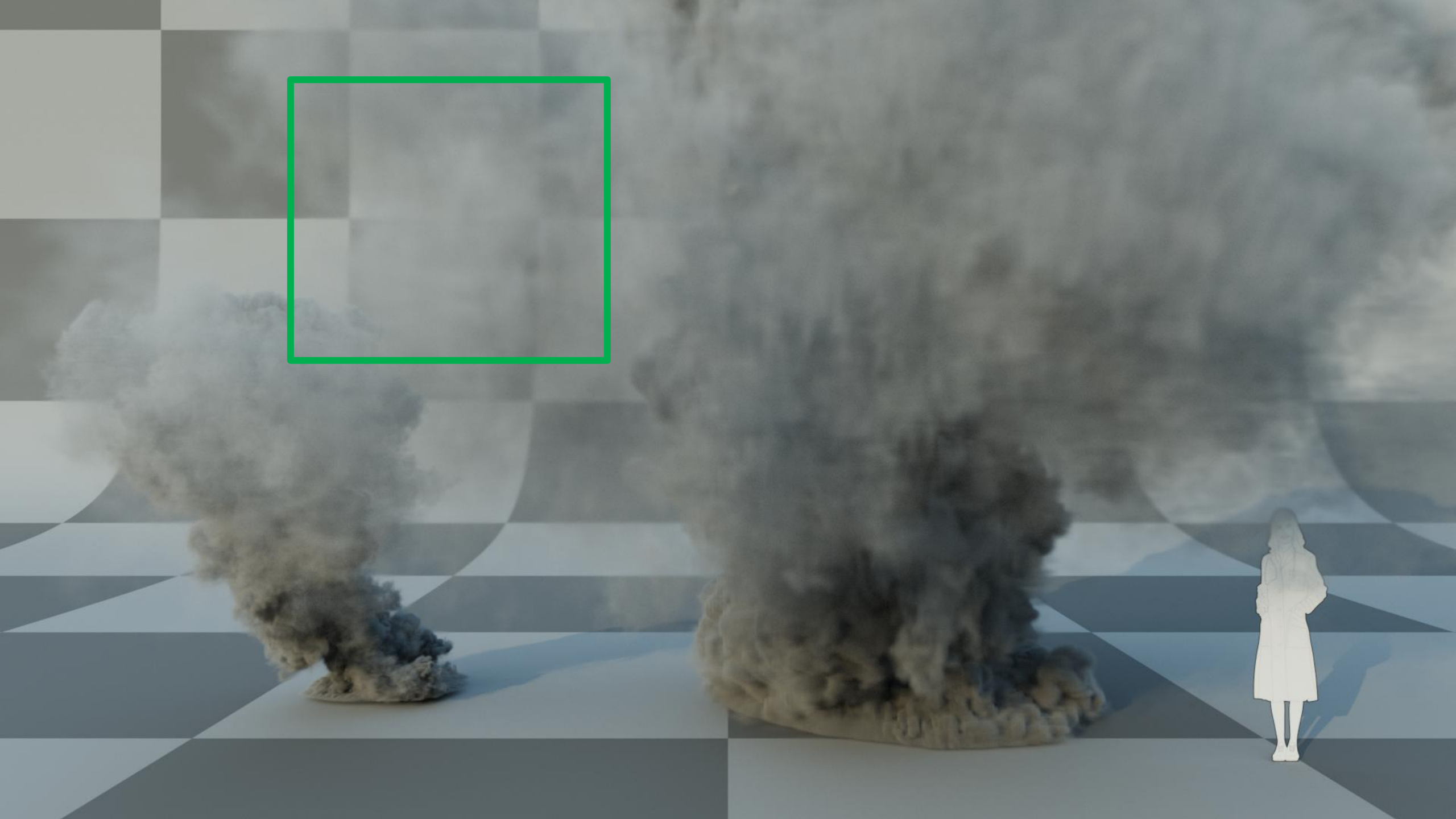












Side light (90 degrees)



Side light (120 degrees)



Back light (150 degrees)



Back light (180 degrees)



atmosphere



smoke



geometry



composite















THANK YOU

Will Earl

Head of Optimization

Will.Earl@mpcvfx.com

M P C

MPCVFX.COM