M P C

ATMOS AND FX

Adelaide | London | Los Angeles | Toronto | Montréal | Paris | Liége | 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

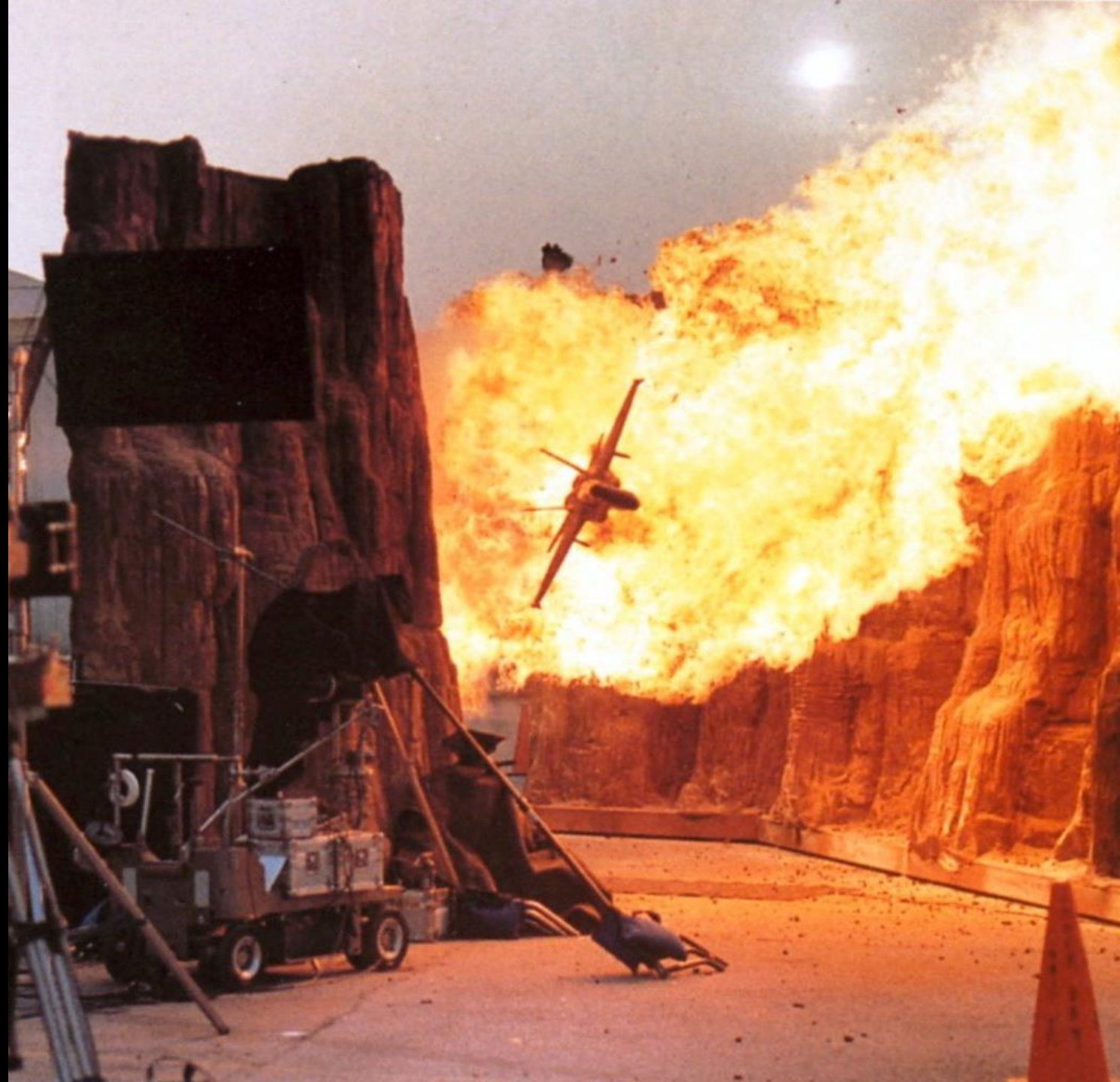
WORKSHOP

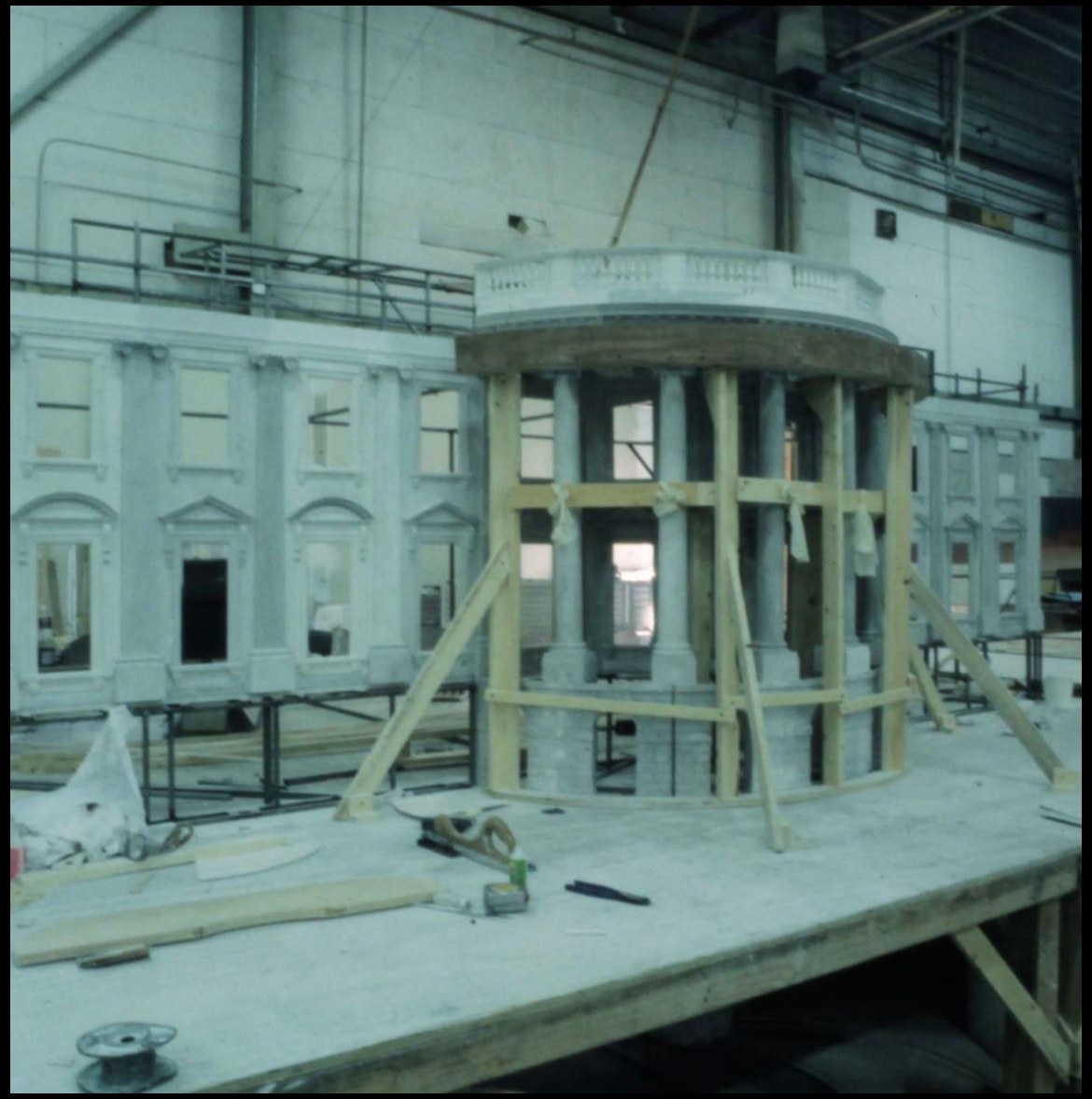
- History
- Reasons
- Concepts
- Atmos
- FX

HISTORY

FILMED ELEMENTS

- Shot at scale
- Miniatures
- Slow motion





Filmed elements

OPTICAL COMPOSITING

- Filmed against black-screen
- Additive layering

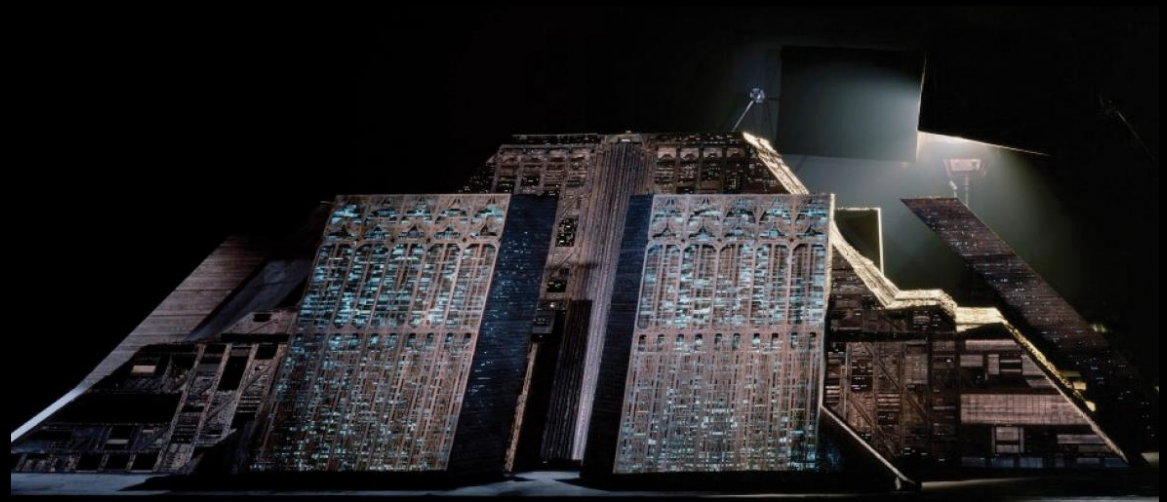
OPTICAL COMPOSITING

- Filmed against black-screen
- Additive layering

- Reflection in ground
- Mirroring the element

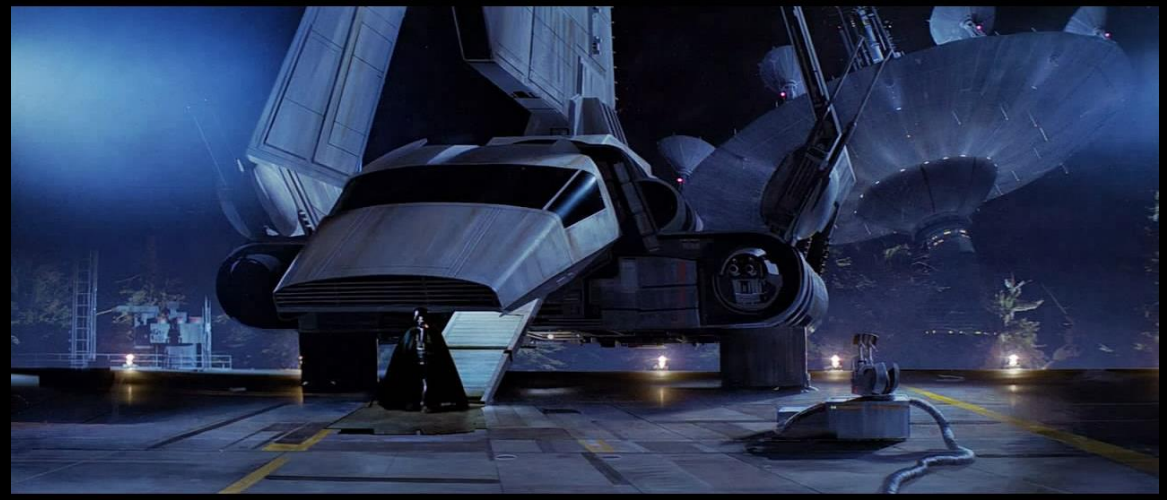
DIGITAL COMPOSITING

- Cards
- Particles and Sprites
- Plate interaction



Miniature Atmosphere

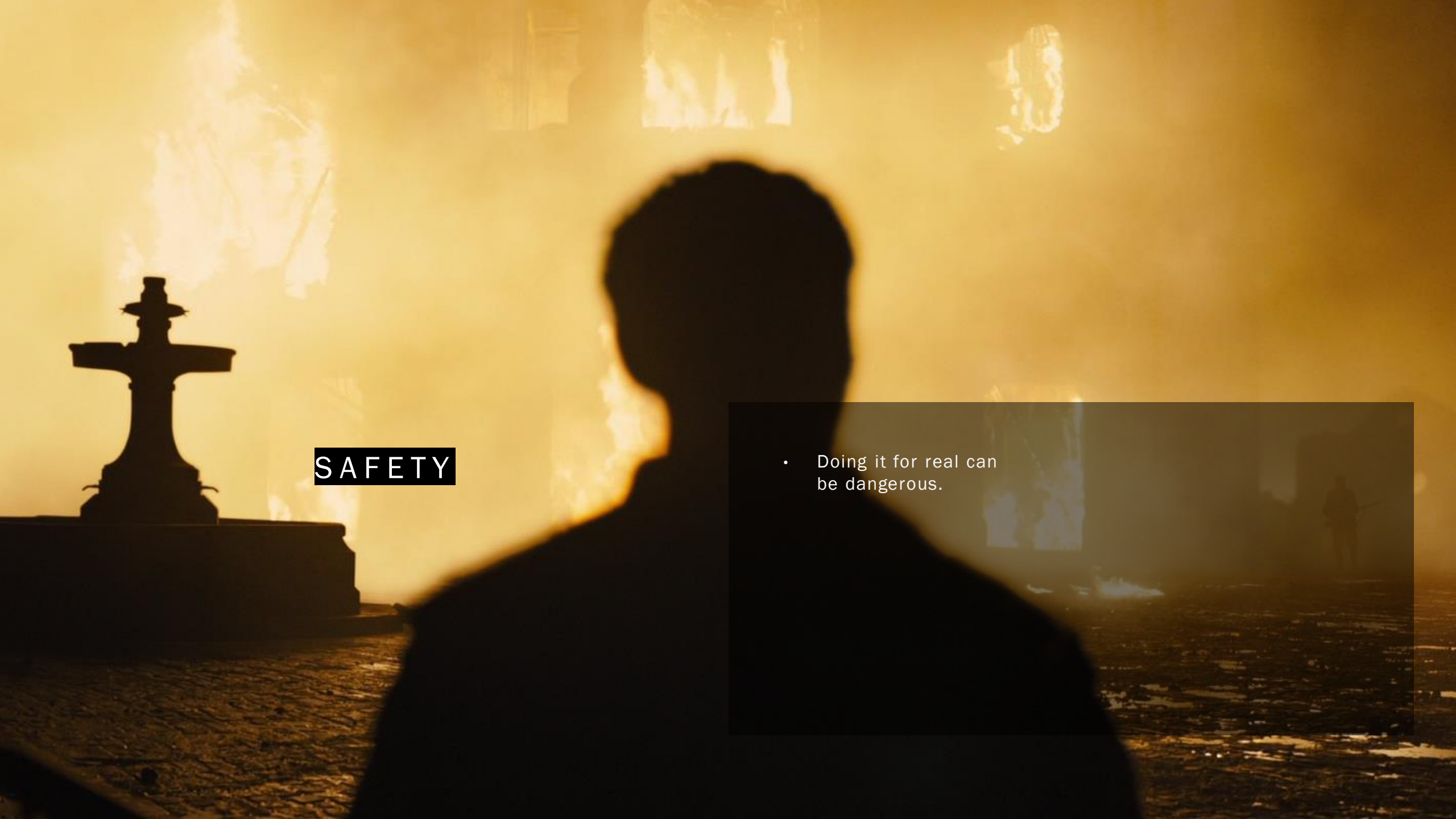
Cloud tanks



Matte paintings

HISTORY (IS STILL IN USE)

REASONS



SAFETY

- Doing it for real can be dangerous.

SAFETY

EXPENSE

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

LOOK AND MOTION

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

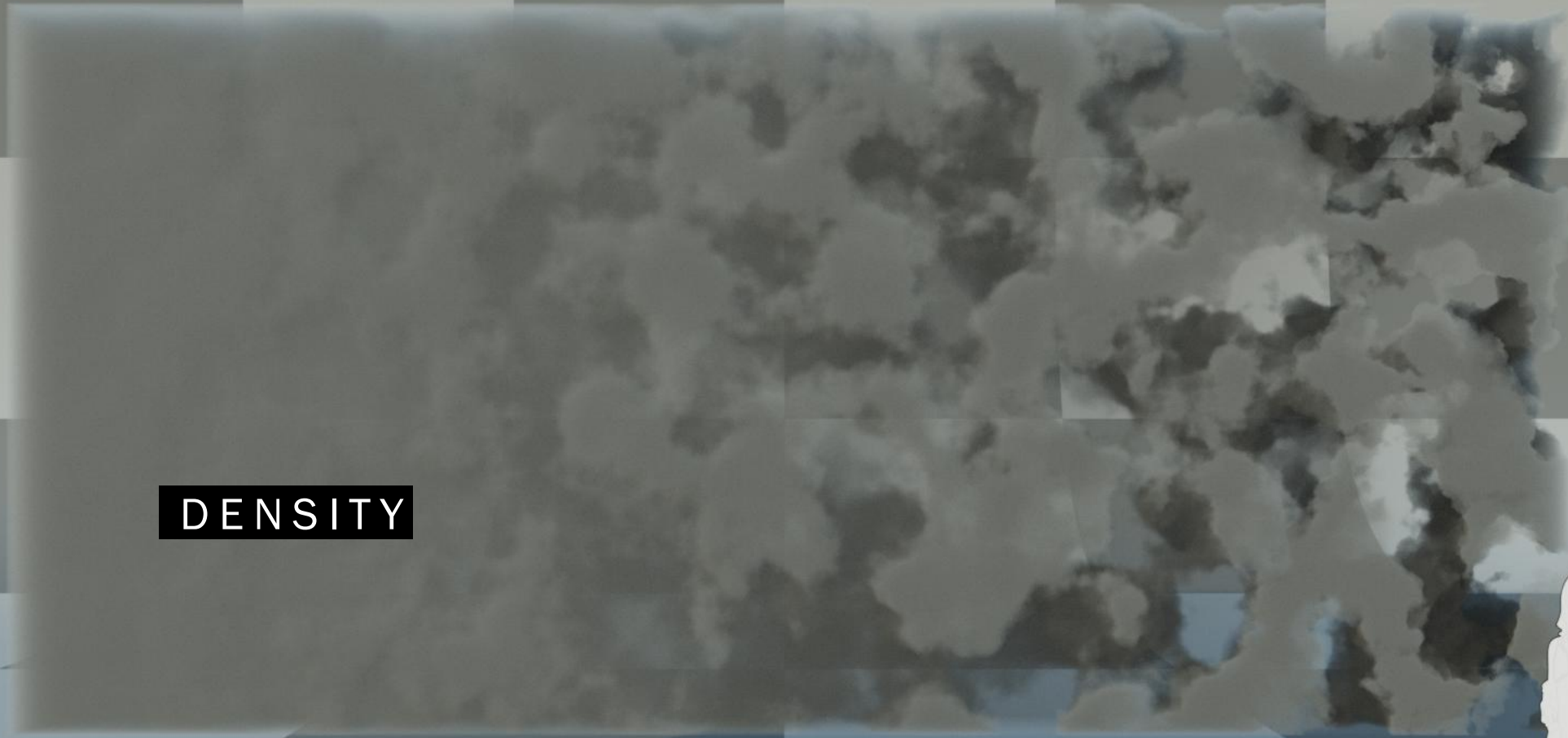
CONCEPTS

VOLUMES

- Density
- Scattering
- Absorption
- Emission

UNIFORM

VARIATION

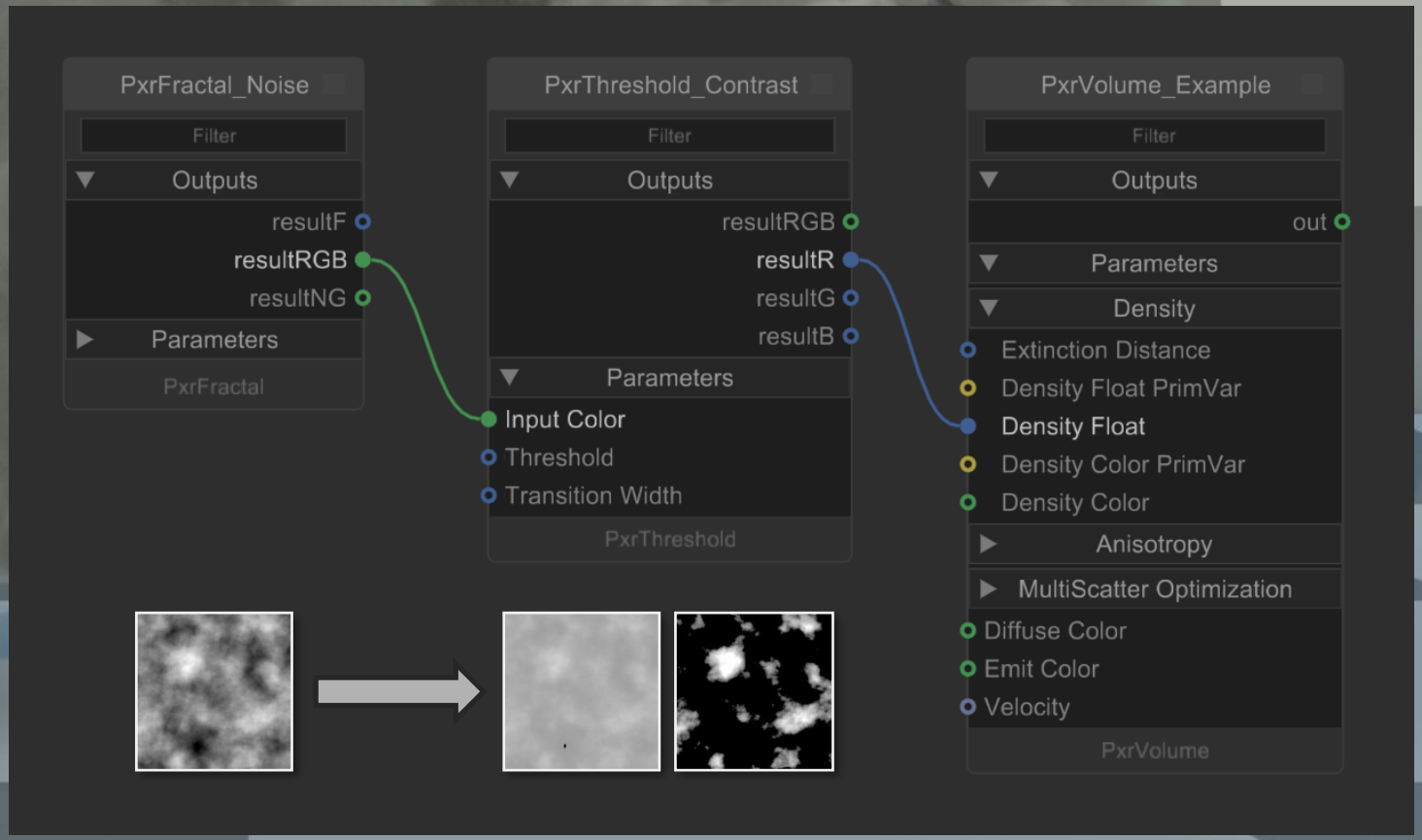


DENSITY

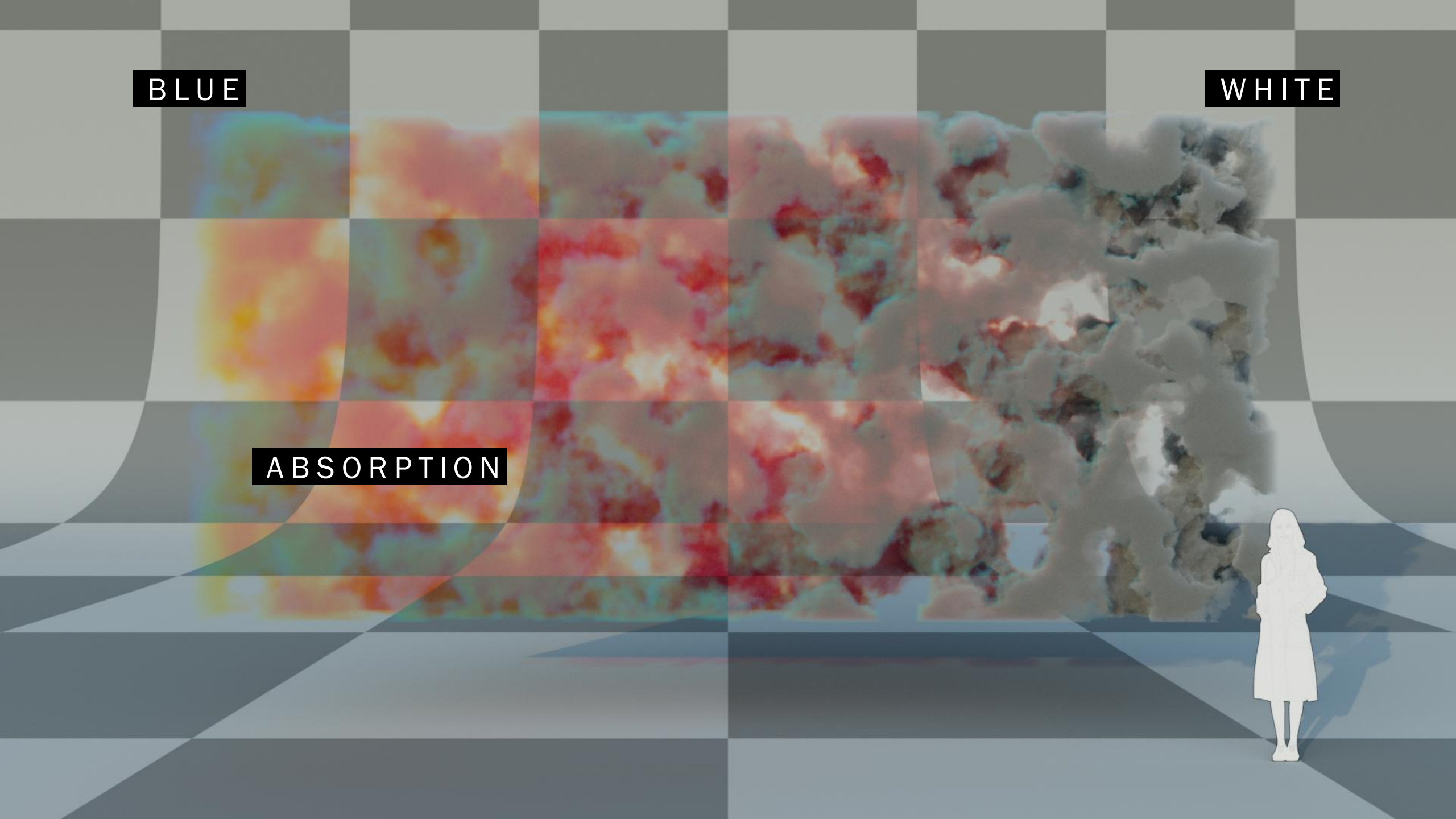
UNIFORM

VARIATION

DENSITY



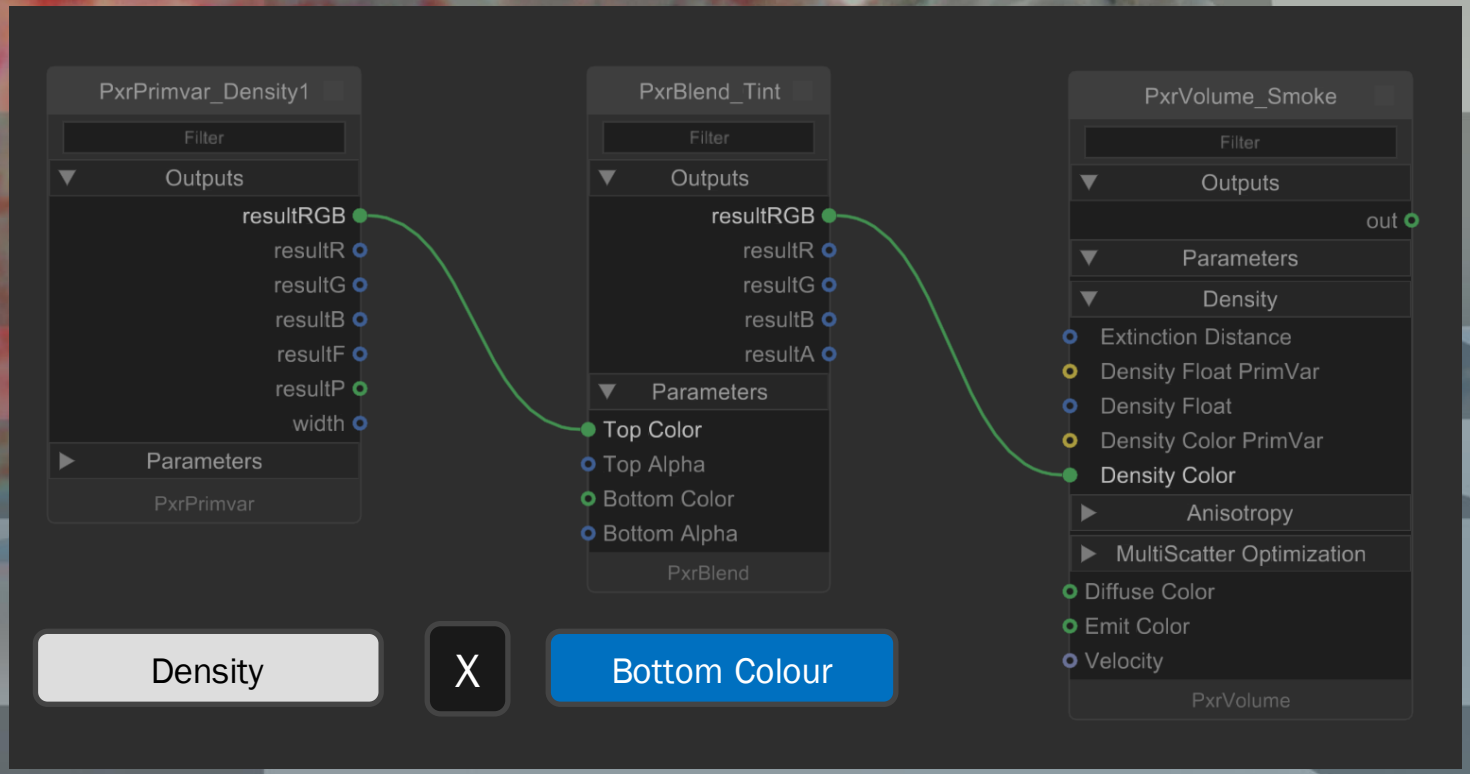

LOW
HIGH
SCATTERING


BLUE
WHITE
ABSORPTION

BLUE

WHITE

ABSORPTION



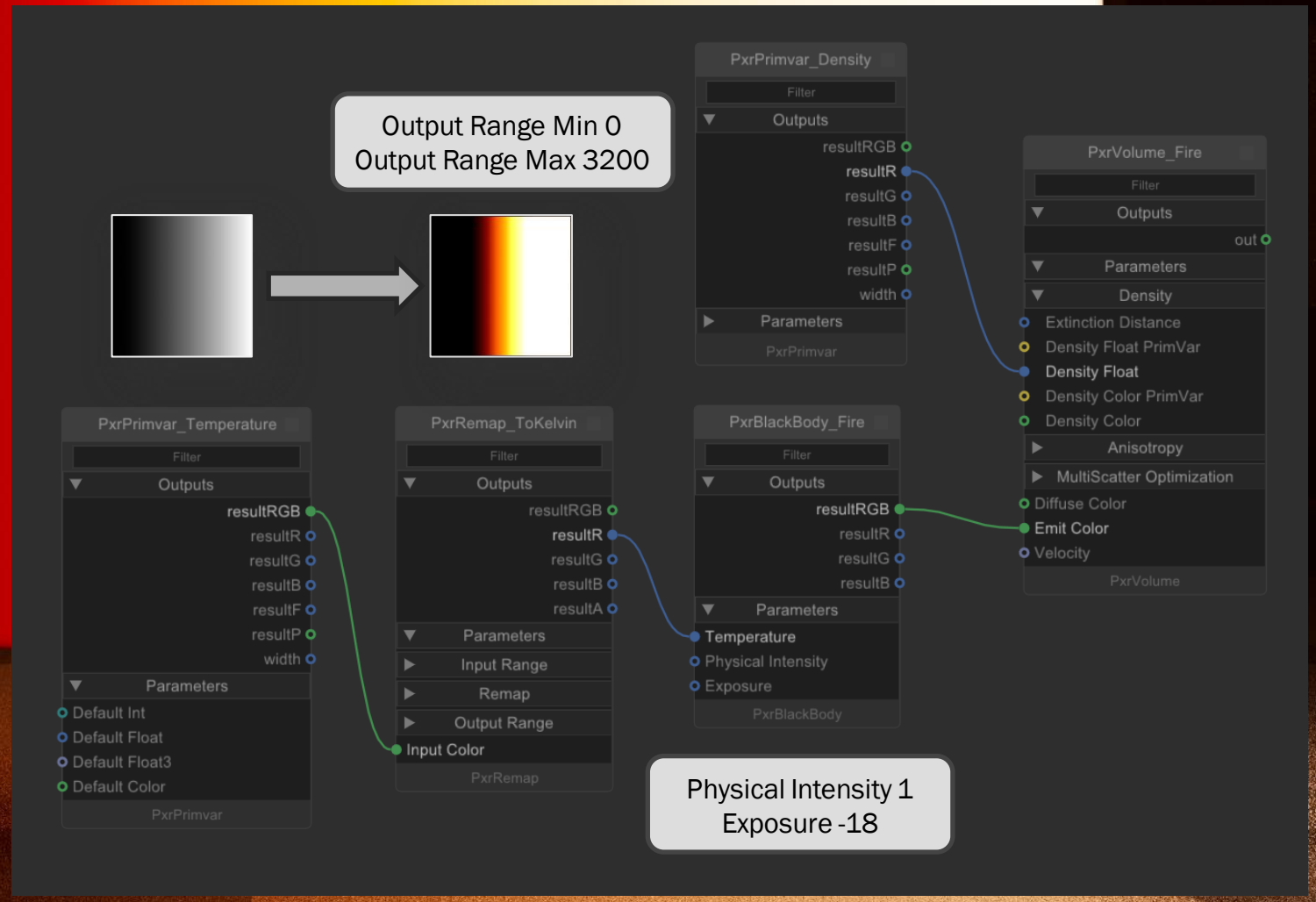

0 K
3600 K
EMISSION


0 K
3600 K
EMISSION

0 K

3600 K

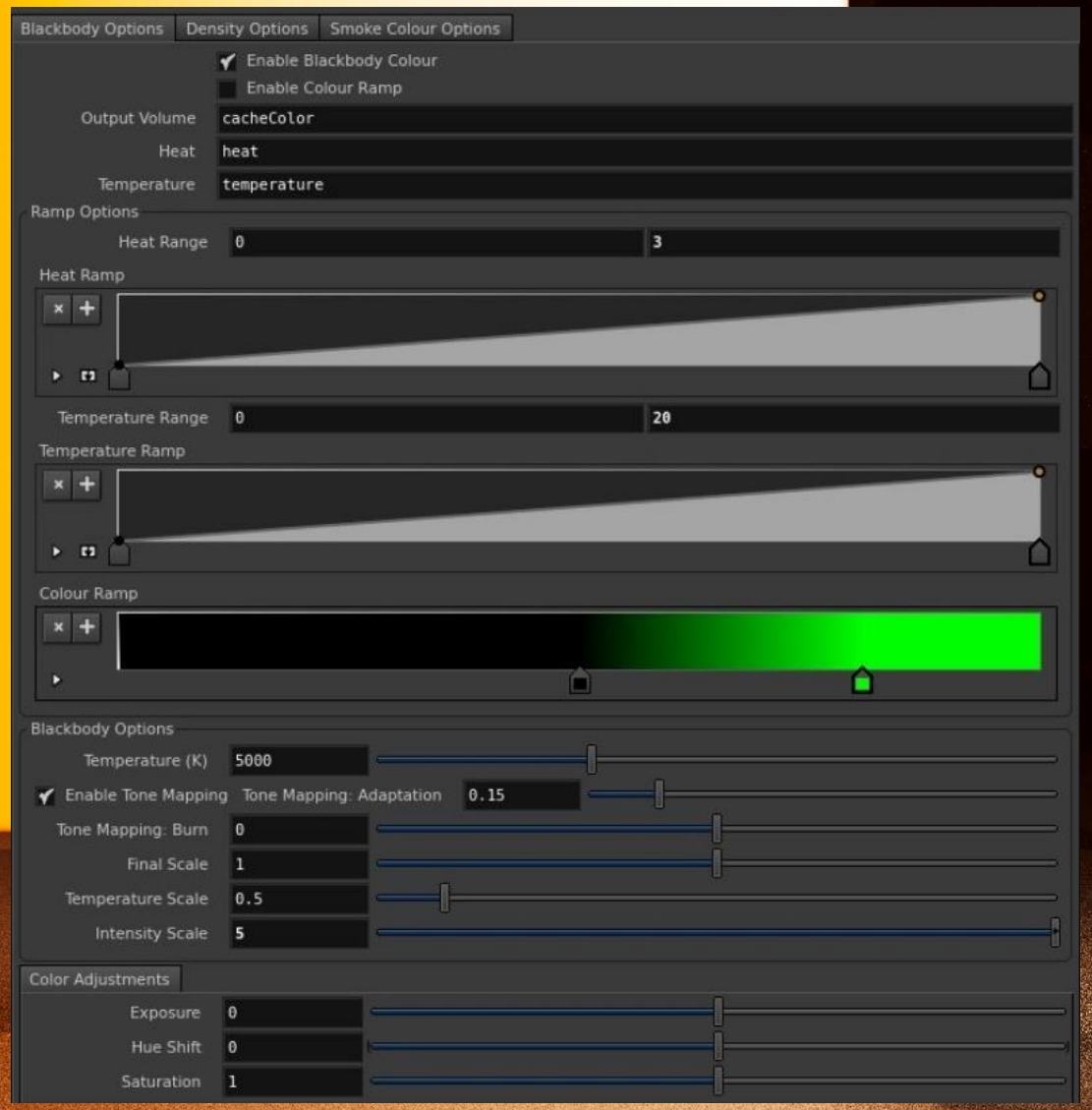
EMISSION



0 K

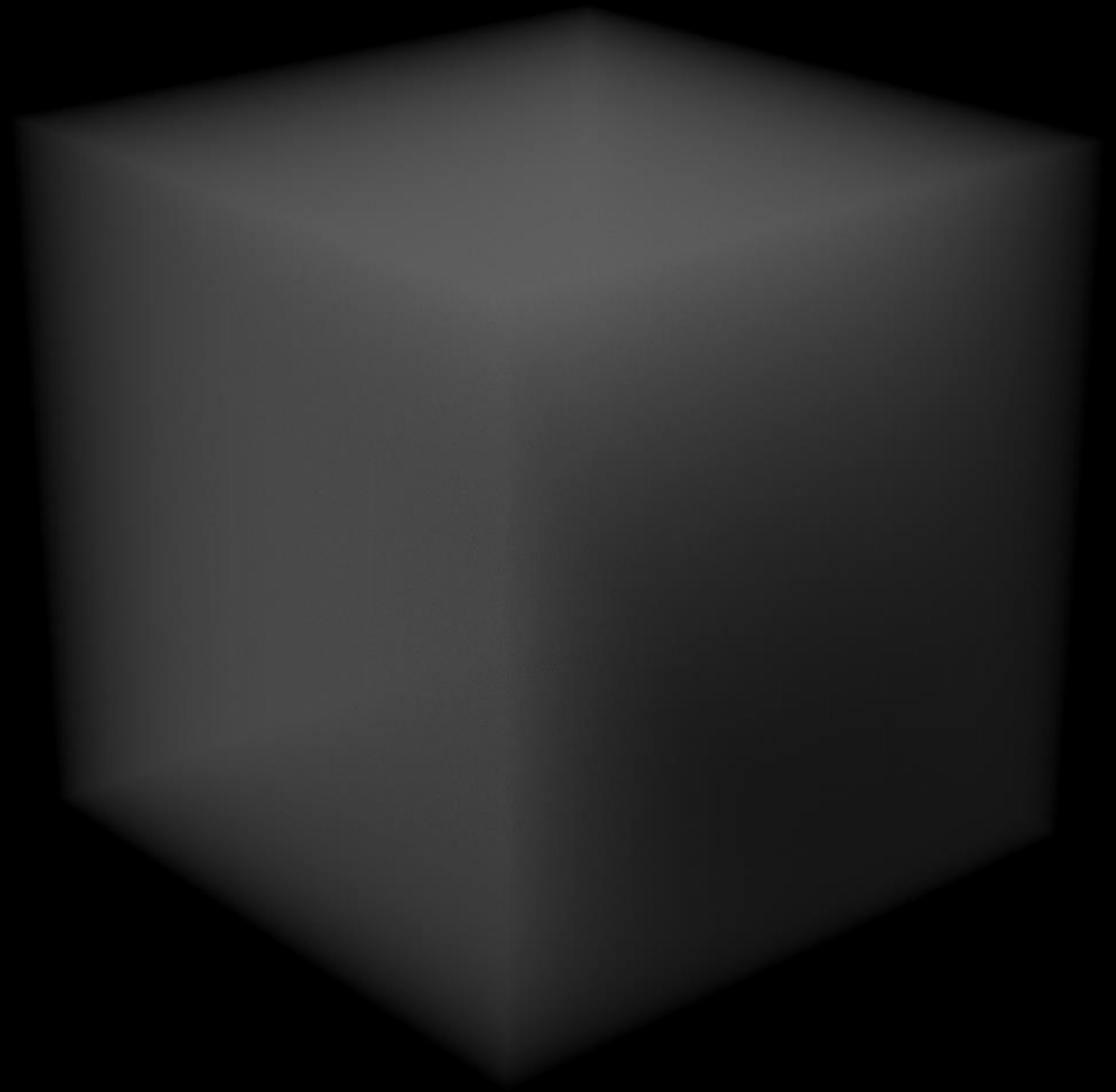
3600 K

EMISSION



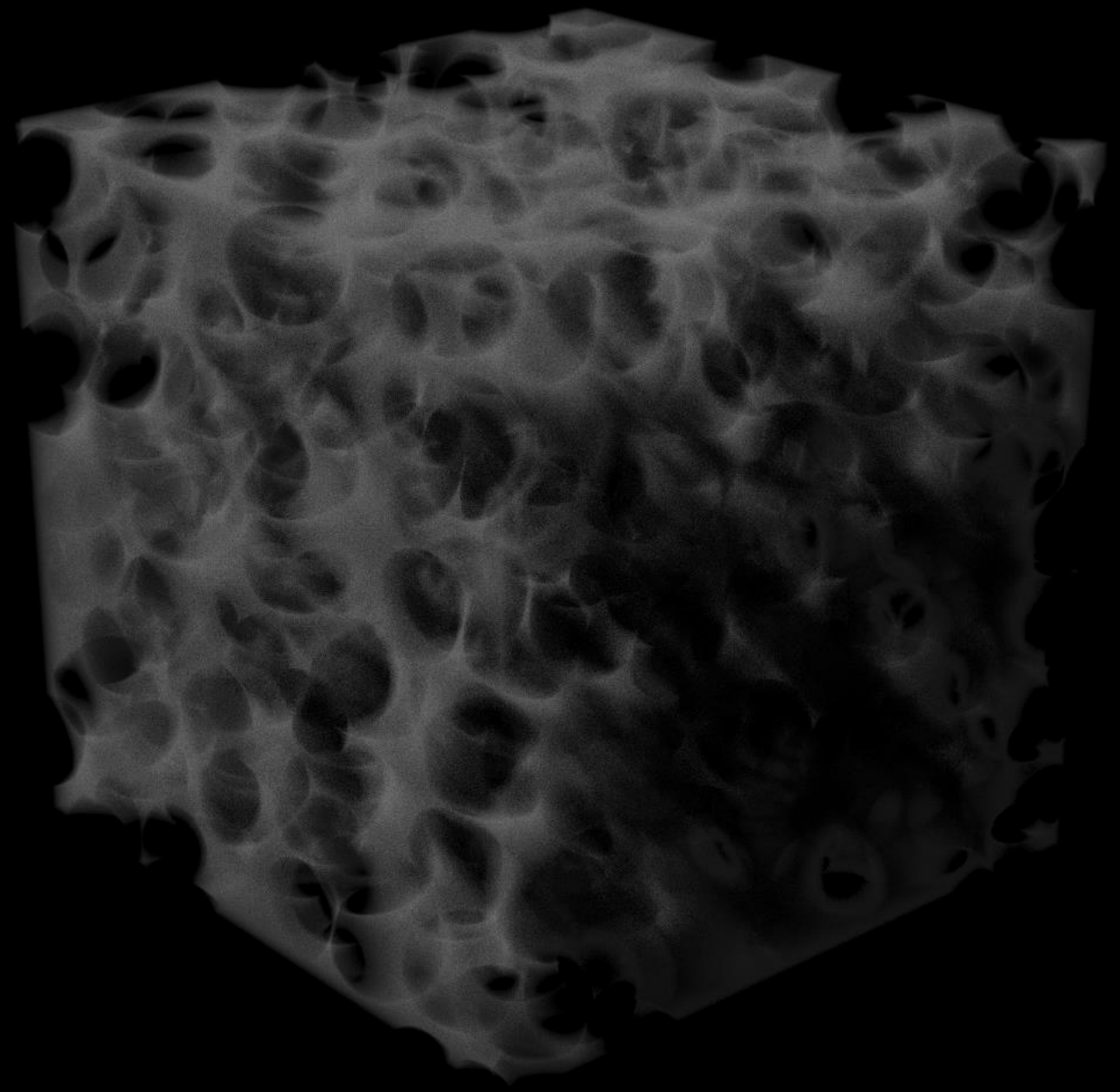
VOLUME GEOMETRY

- Box
- Spheres
- Cylinder
- Cone
- Blobbies



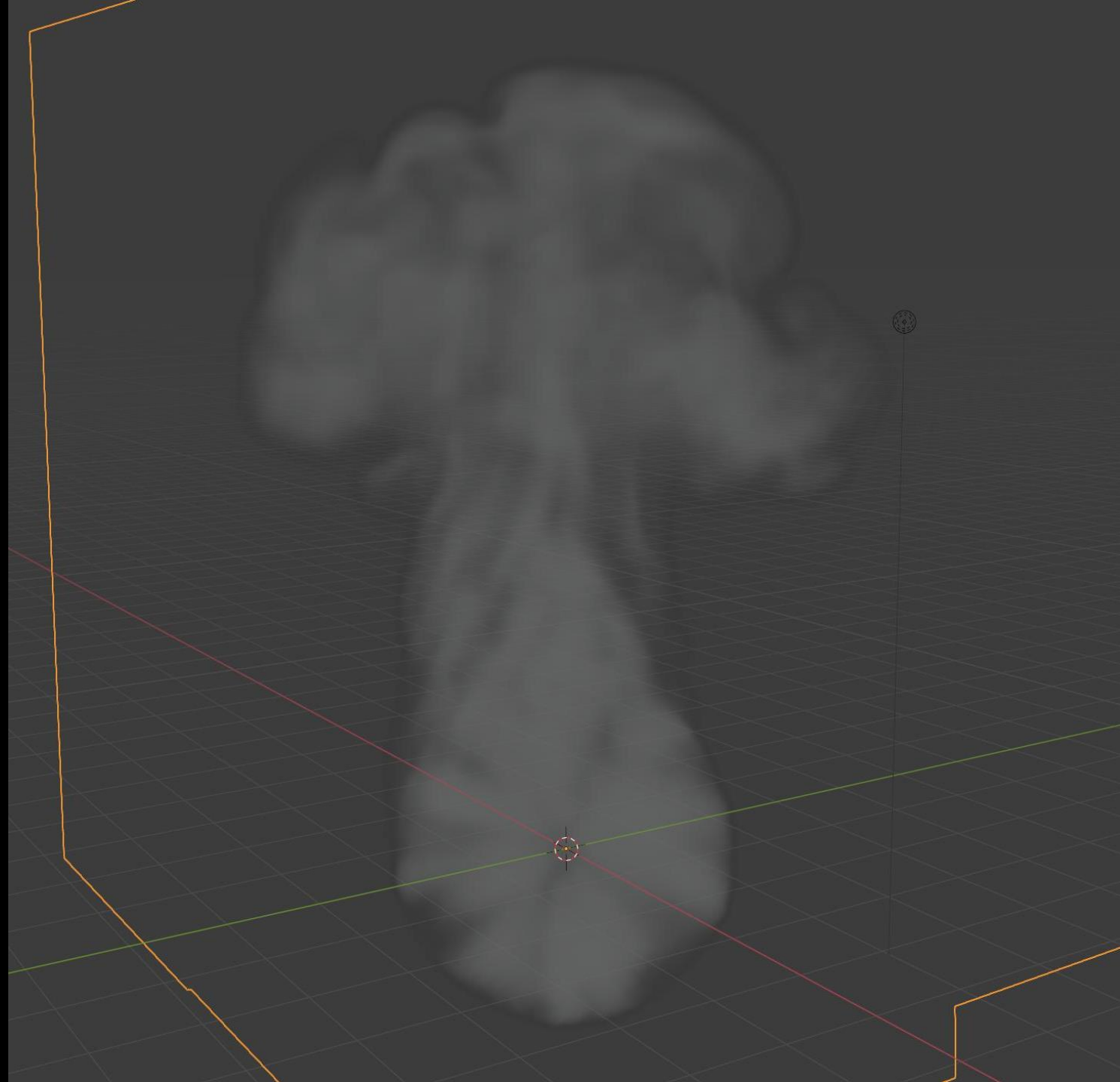
VOLUME GEOMETRY

- Box
- Noises
- 3D textures



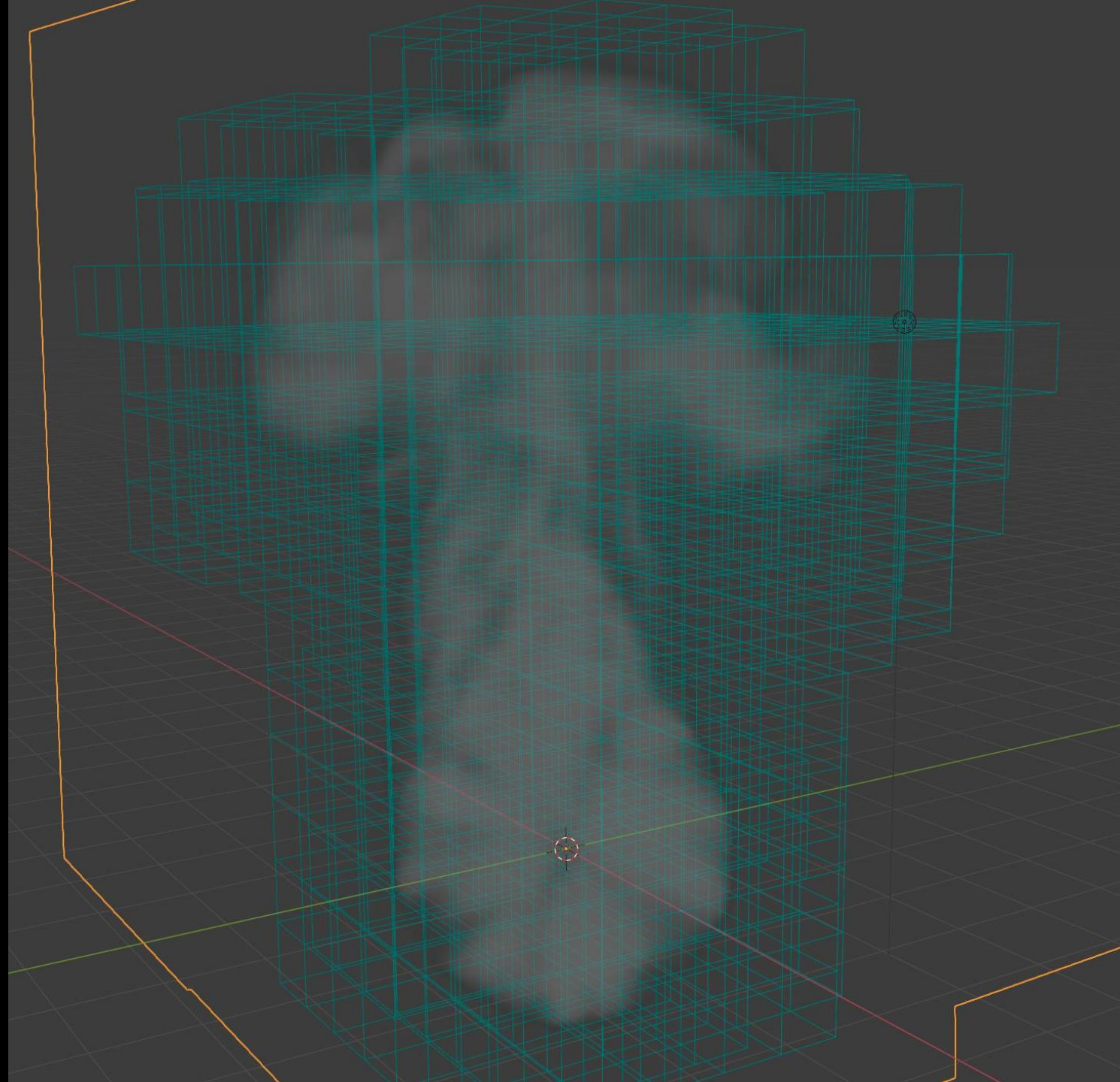
VOLUME GEOMETRY

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



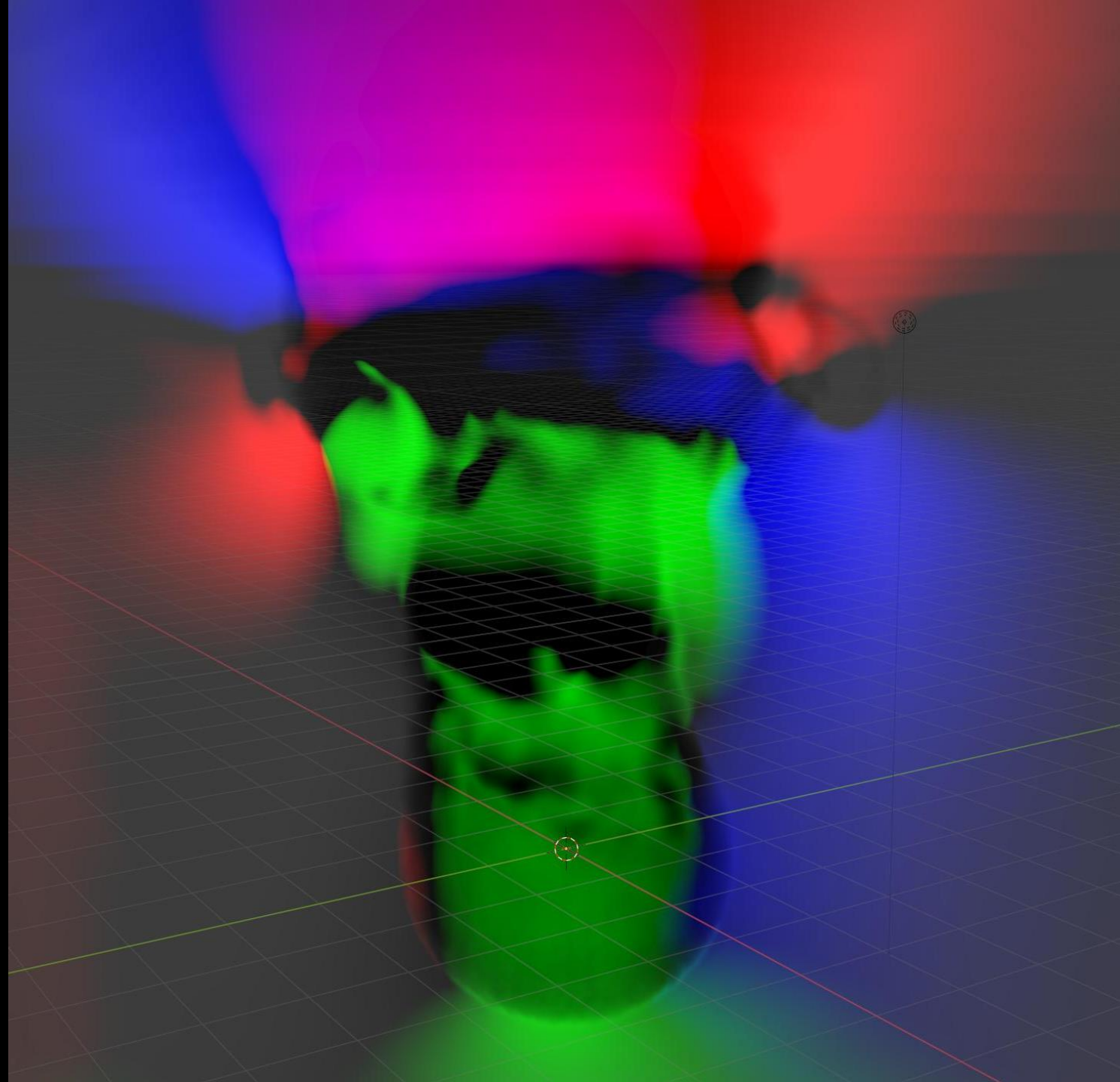
VOLUME GEOMETRY

- OpenVDB
- Volumetric Grids
  - Density



VOLUME GEOMETRY

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



ATMOS

ATMOS

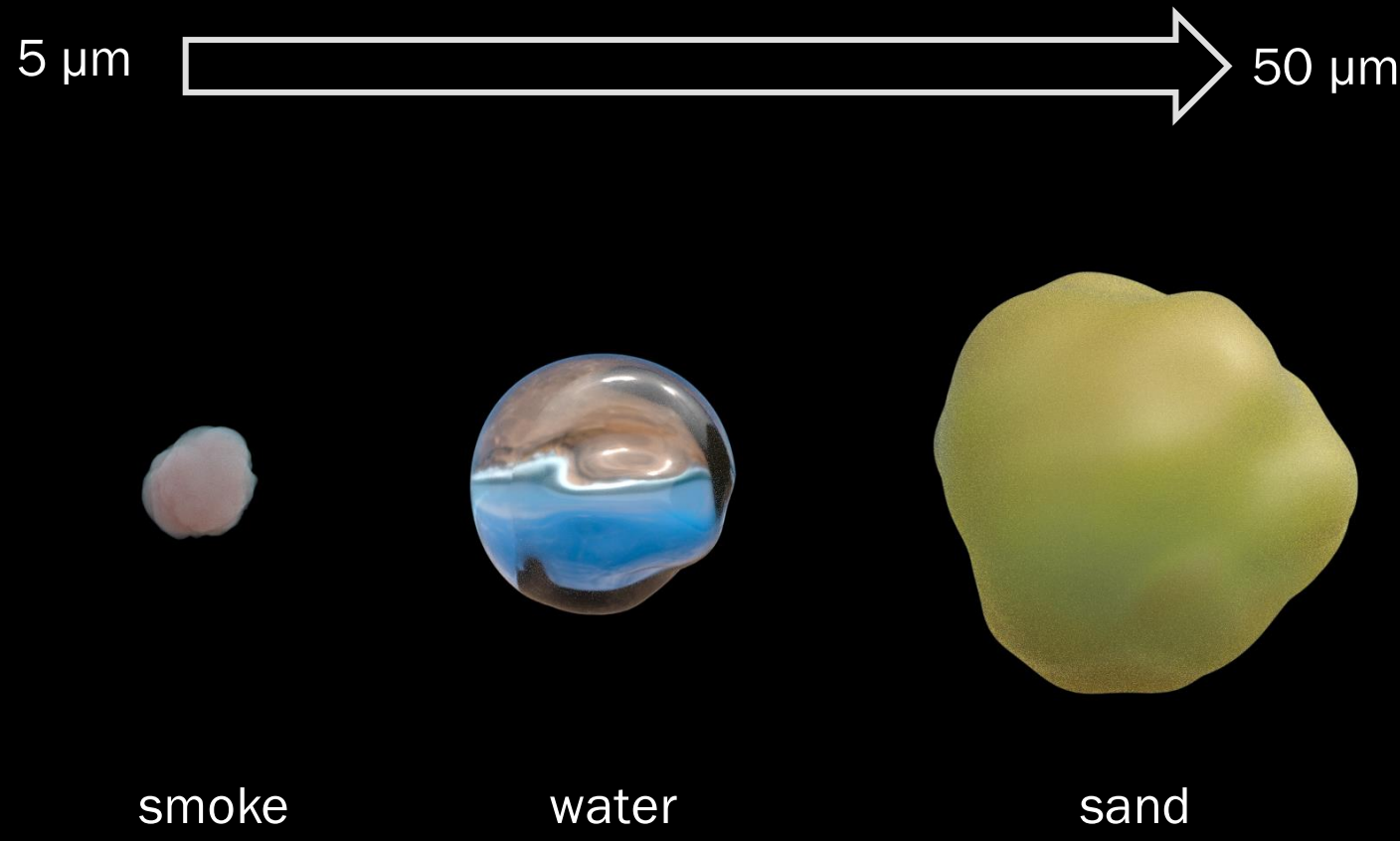
- Atmosphere
- Depth cue
- Tone / Mood

PHYSICALLY

- Microscopic Particles
- Dust / Sand / Water / Smoke

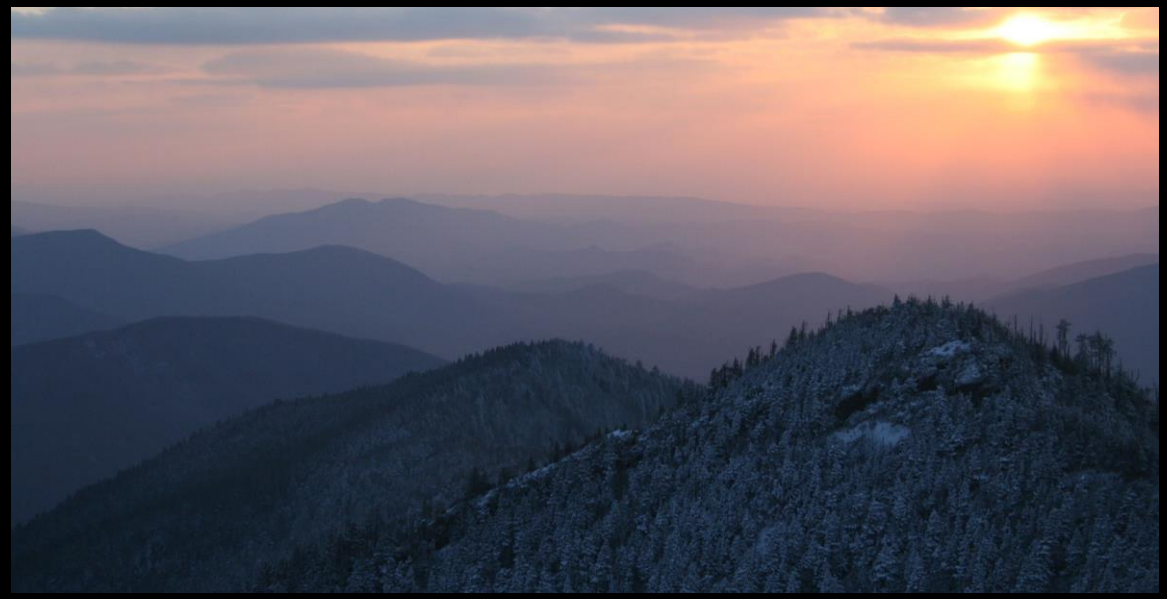
PHYSICALLY

- Microscopic Particles
- Dust / Water / Smoke

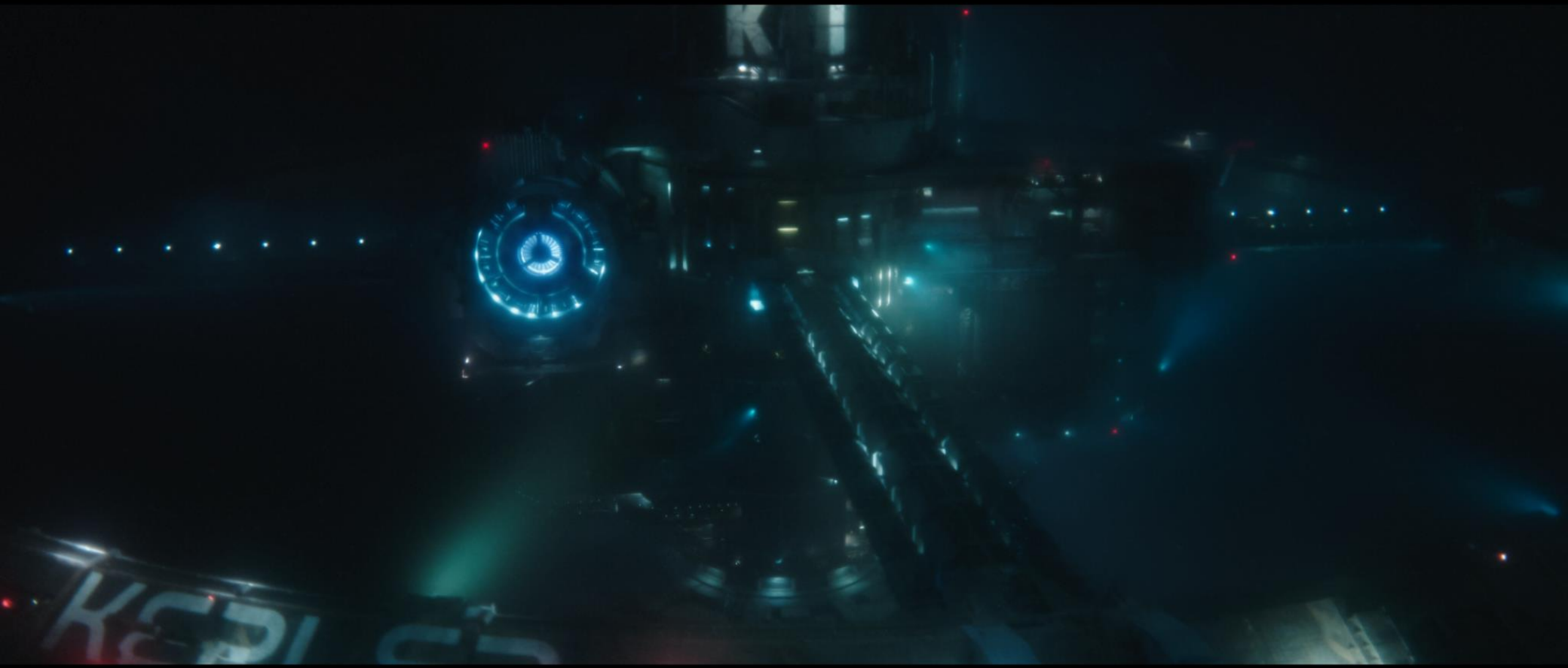


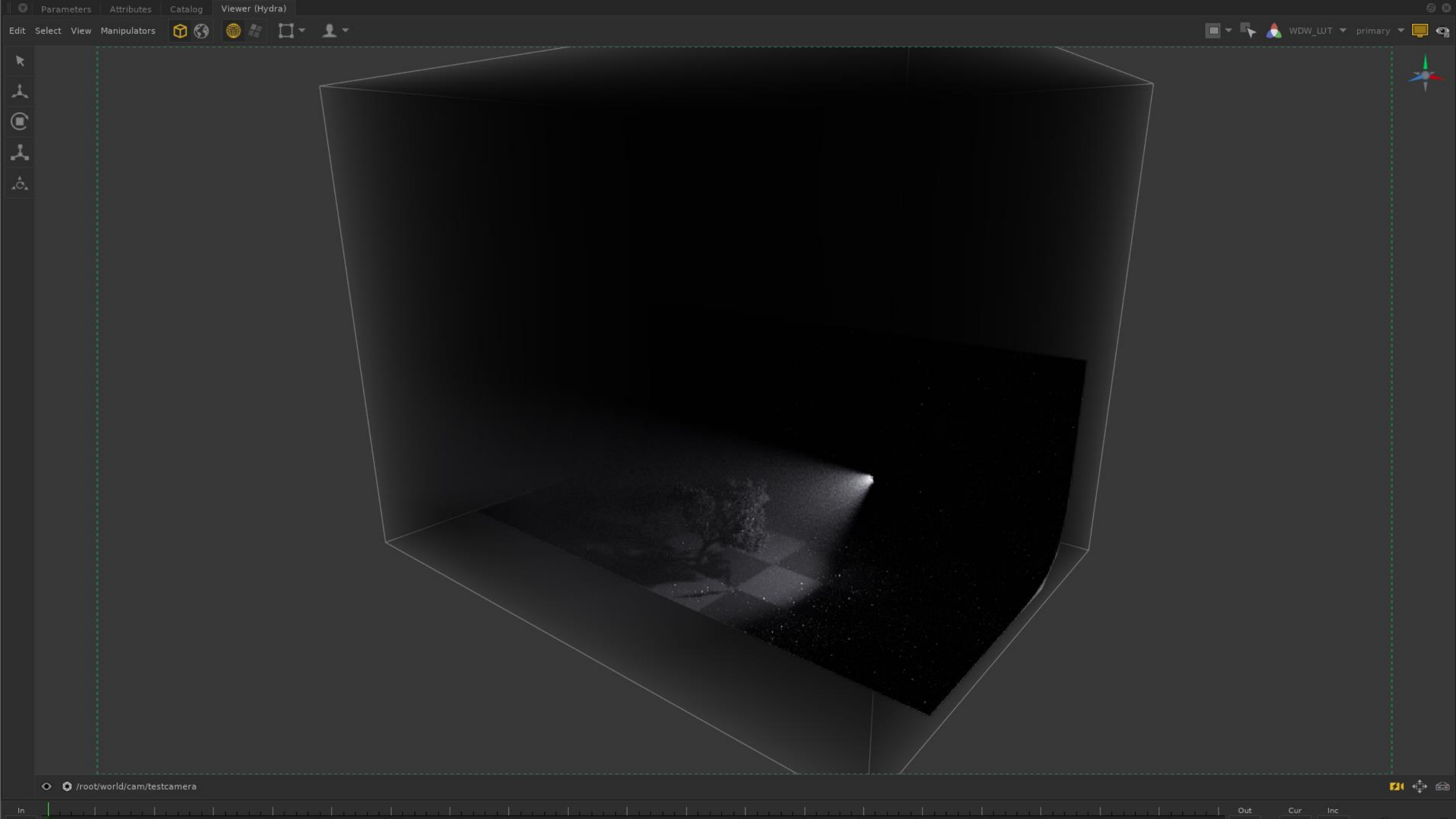
AERIAL PERSPECTIVE

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



Aerial Perspective




Parameters
Attributes
Catalog
Viewer (Hydra)
Edit
Select
View
Manipulators
WDW_LUT
primary
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In
Out
Cur
Inc

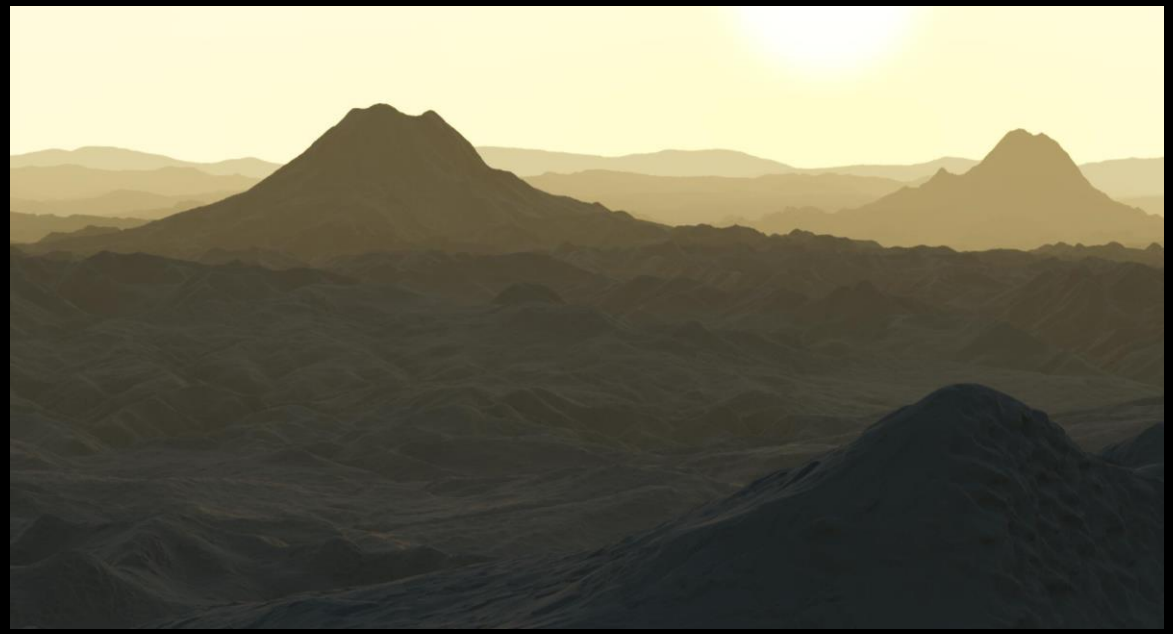
Beauty Pass

Atmos Pass

Underwater

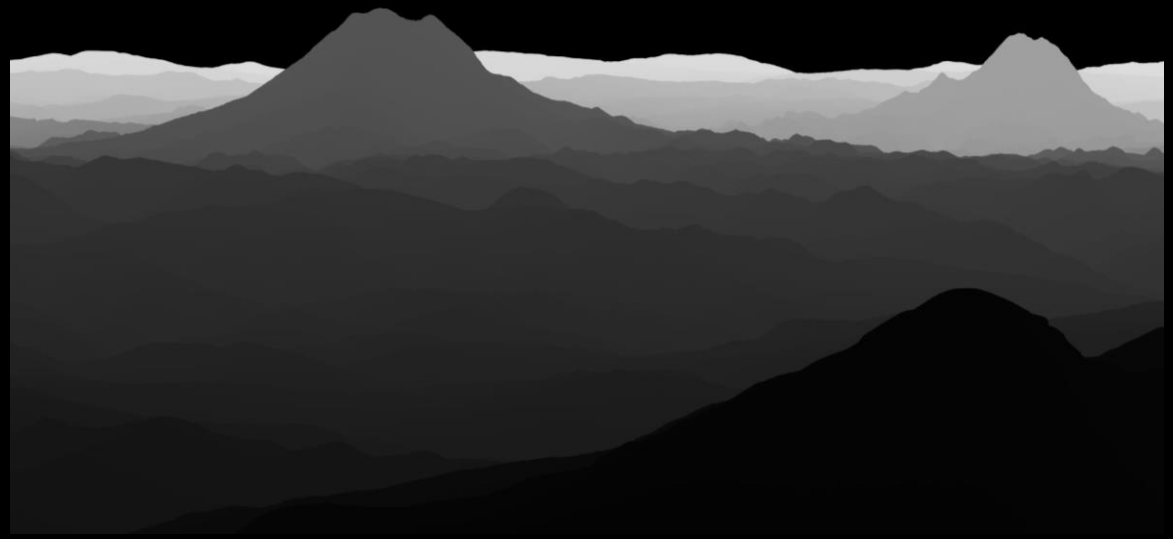
City at Night

Depth Pass



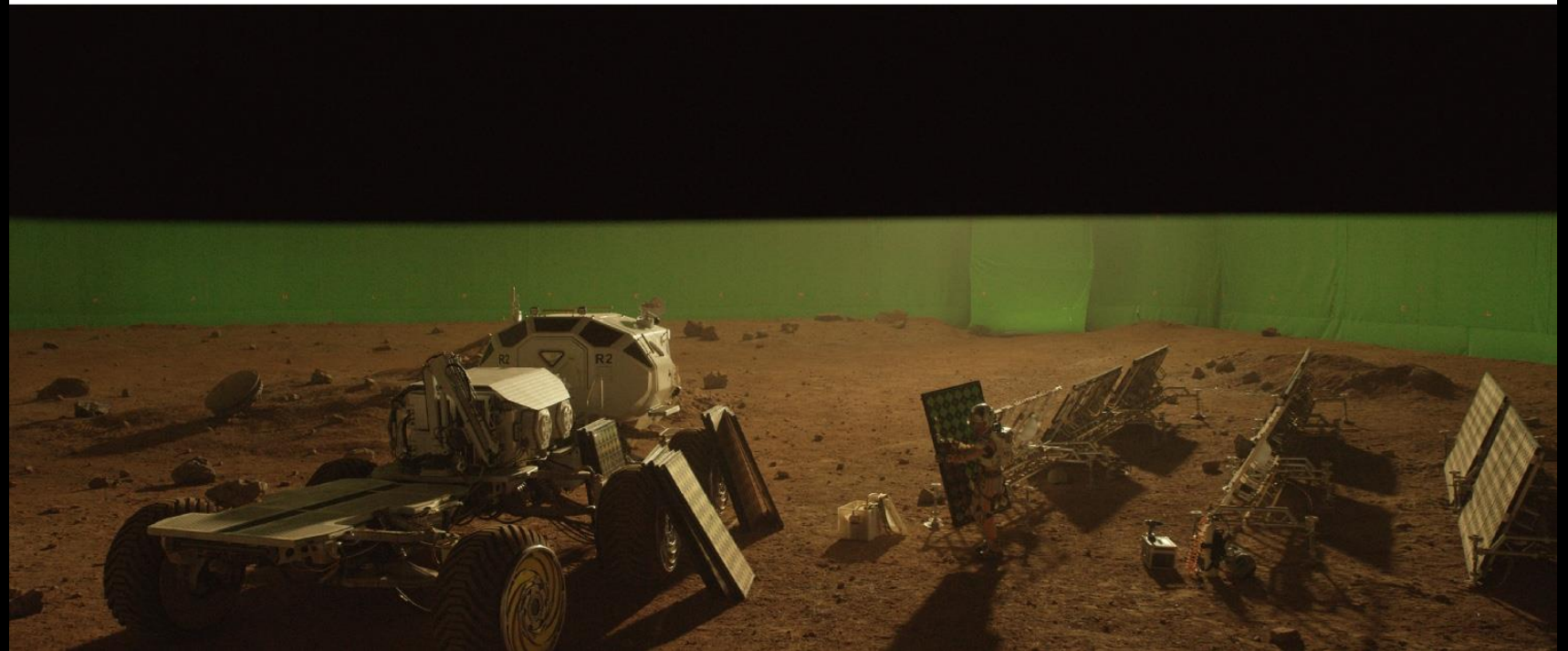
Atmos Pass

Depth Pass



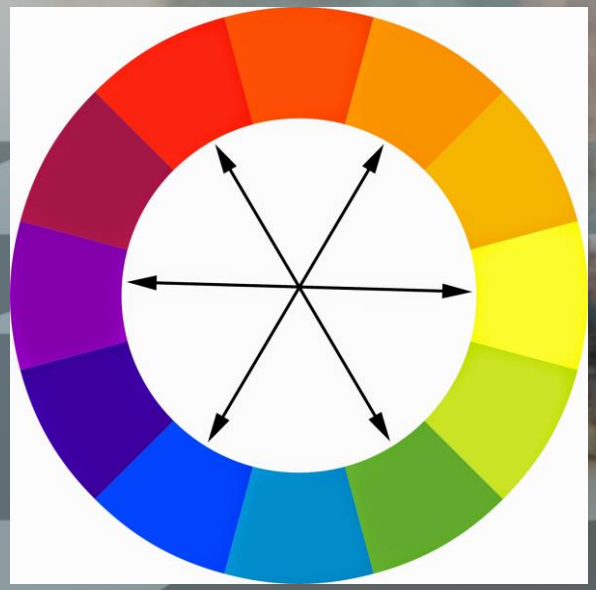
Atmos Pass

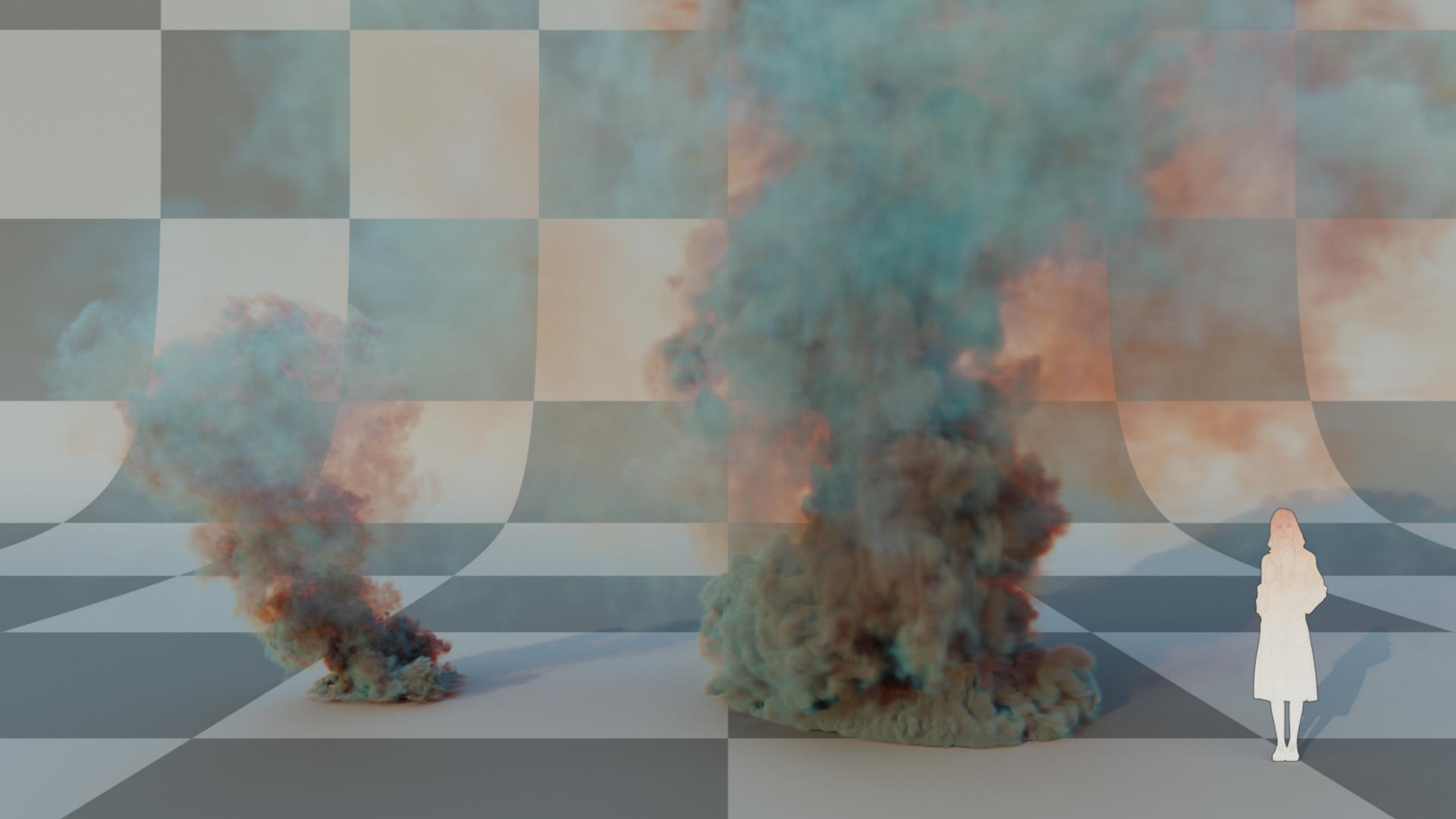

R2
R2

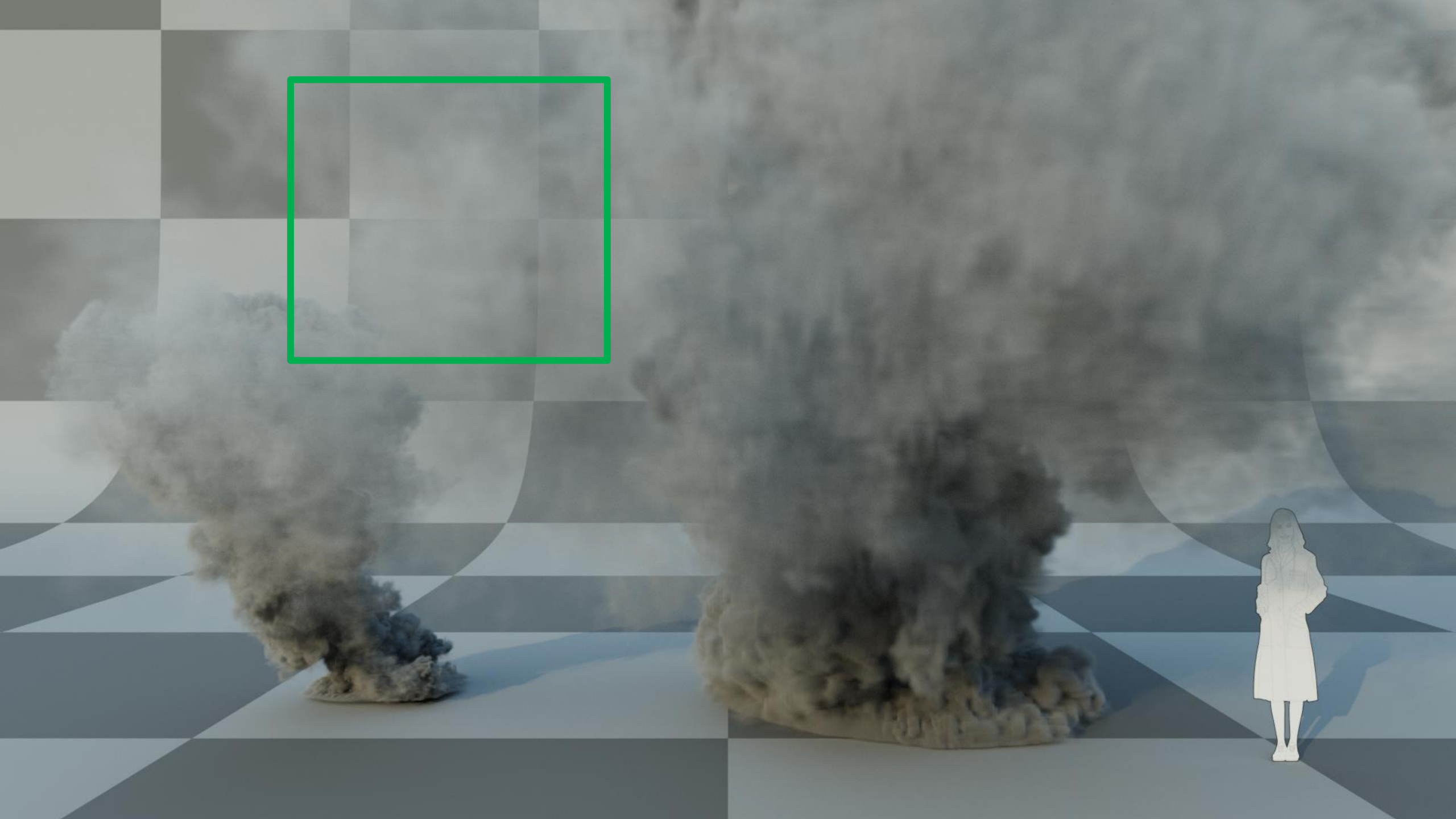

R2
R2

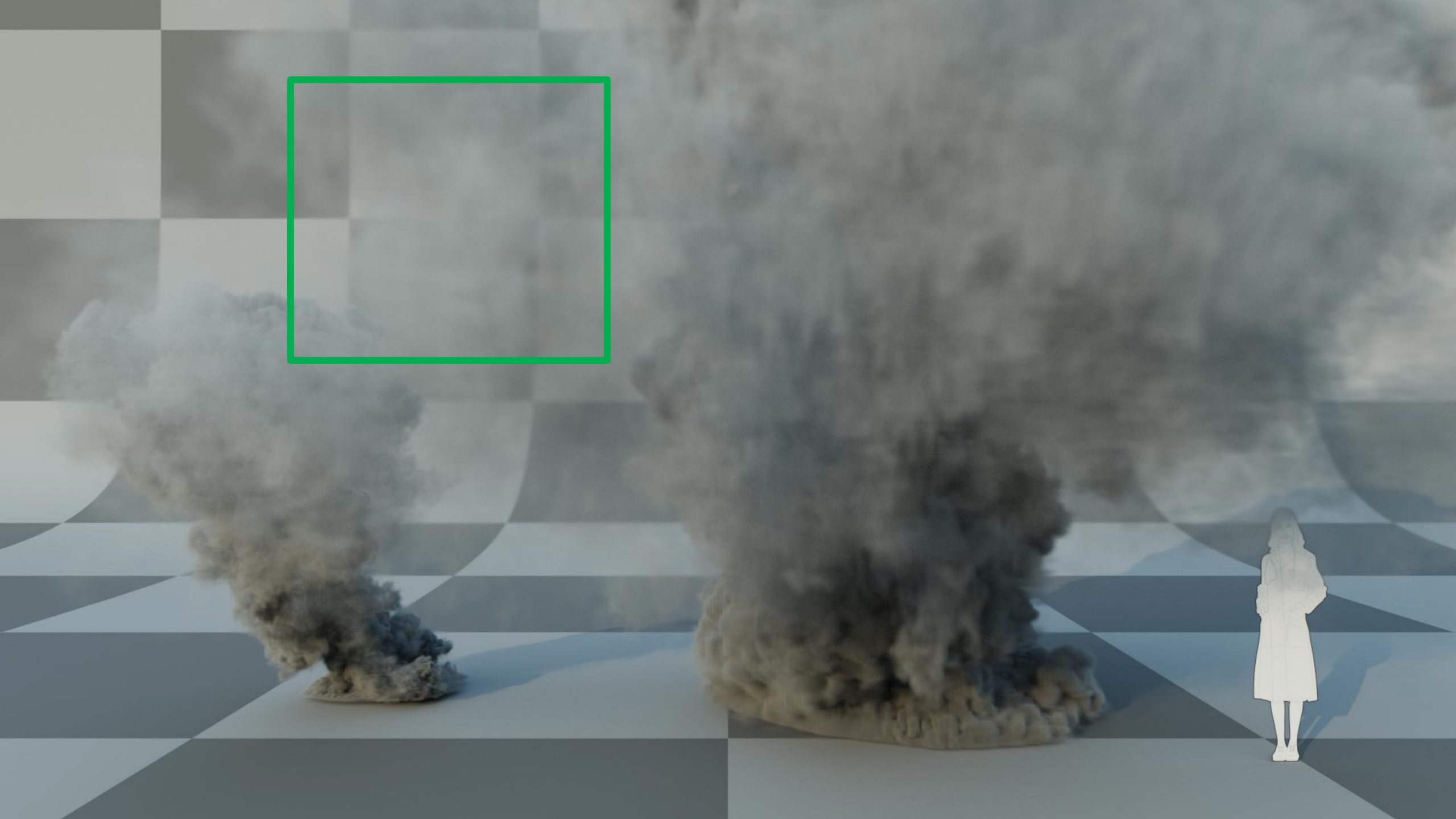
FX

- Fire
- Smoke









Side light (90 degrees)

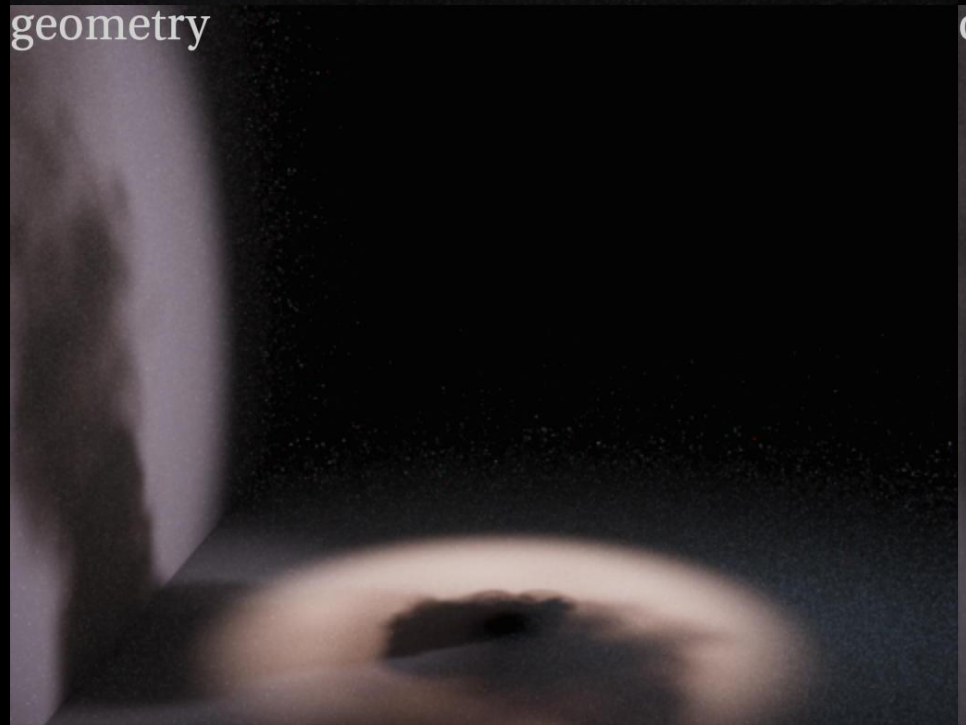
Side light (120 degrees)

Back light (150 degrees)

Back light (180 degrees)


atmosphere


smoke


geometry


composite


THANK YOU
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