

Moteur de Lancer de Rayons

Jean Caillé, Florian Denis, Audrey Fournieret, Simon Martin

IMAGE RENDU AVEC TOUS LES EFFETS

Description du moteur

- Choix des BRDFS
- Antialiasing
- Ombres portées
- Réfléctions
- Lumières étendues (de forme arbitraire) & ombres douces
- Flou de focus
- Path Tracing



IMAGE RENDU AVEC TOUS LES
EFFETS

Interface

Ray Tracing

Phong

No AA

Cast Shadows

Light samples density

50

Ray bounces number

0

Mirror

Render

This panel contains settings for Ray Tracing. It includes dropdown menus for shading (Phong) and anti-aliasing (No AA), a checked checkbox for casting shadows, a slider for light samples density set to 50, a slider for ray bounces number set to 0, and a checked checkbox for a mirror material. A 'Render' button is located at the bottom.

Pinhole camera

Focus On ...

Use focal Length

Focal Length

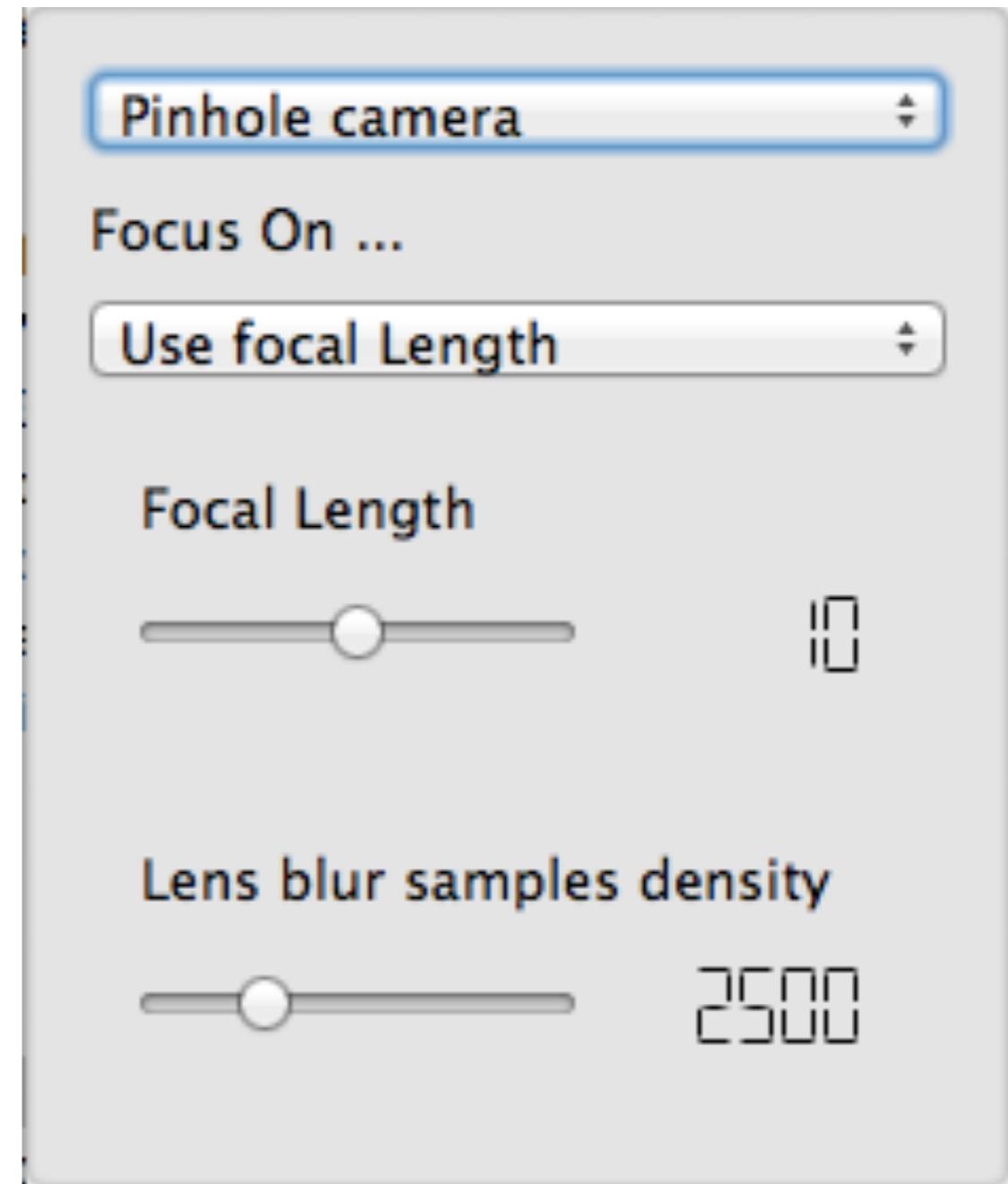
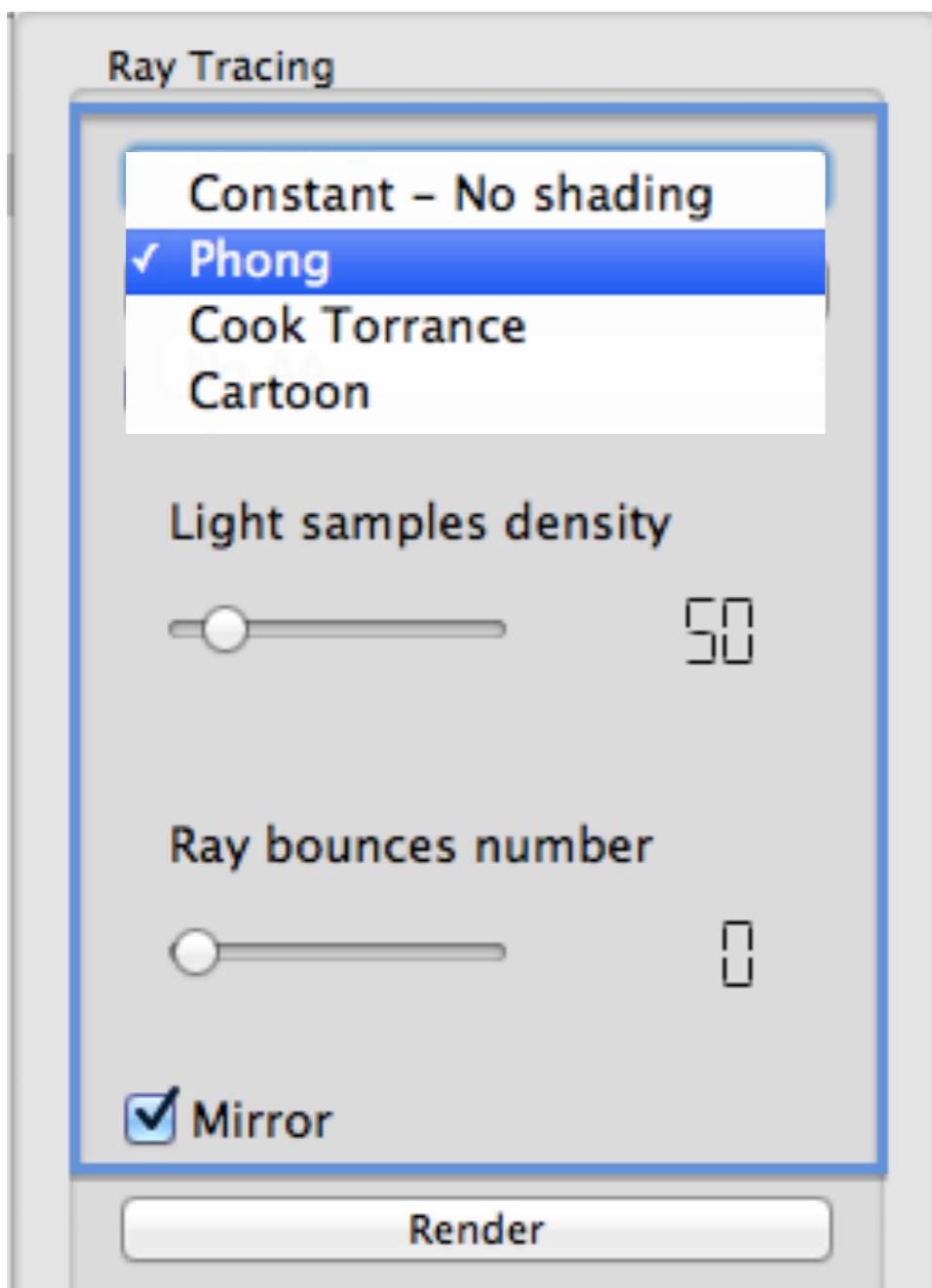
10

Lens blur samples density

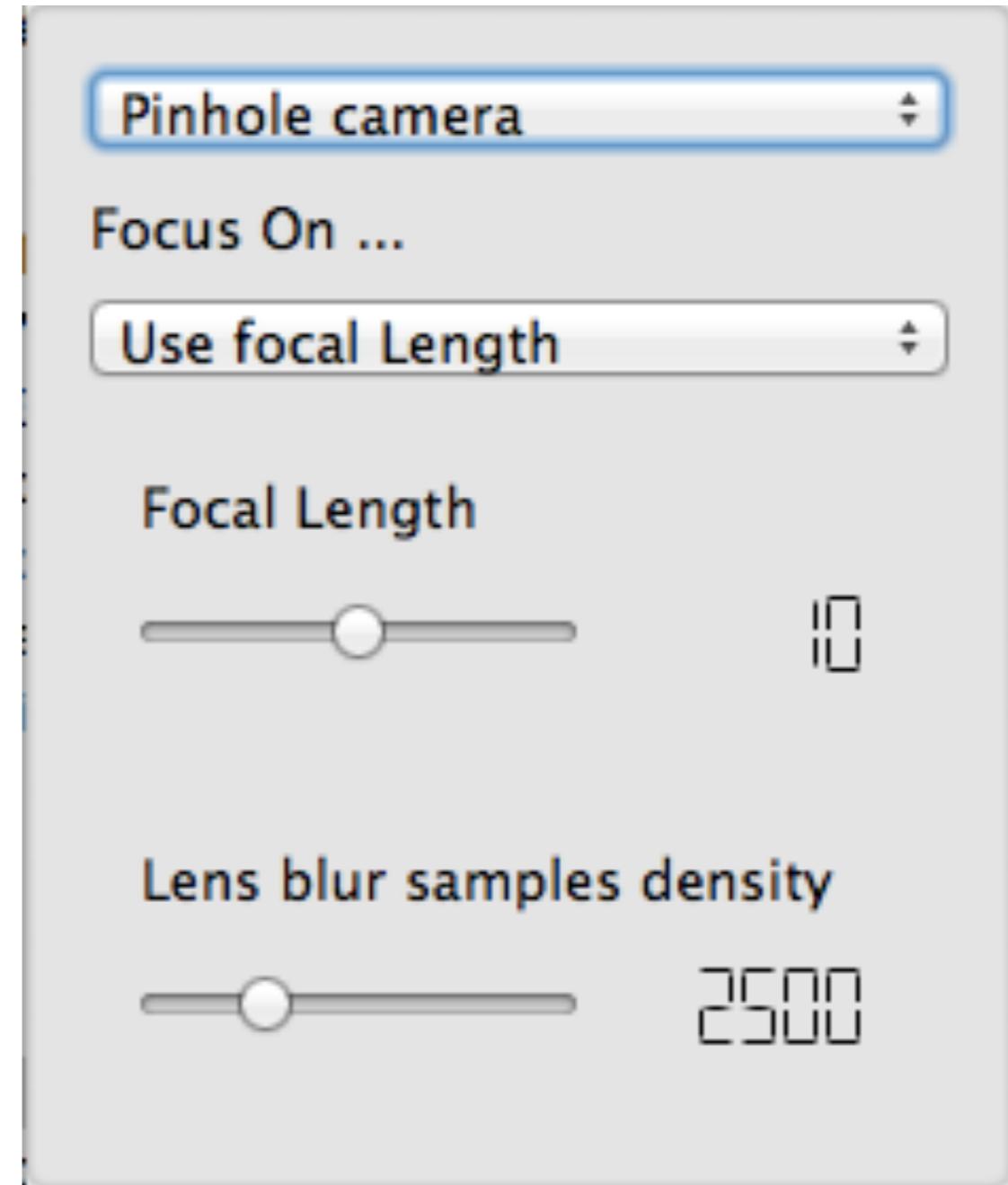
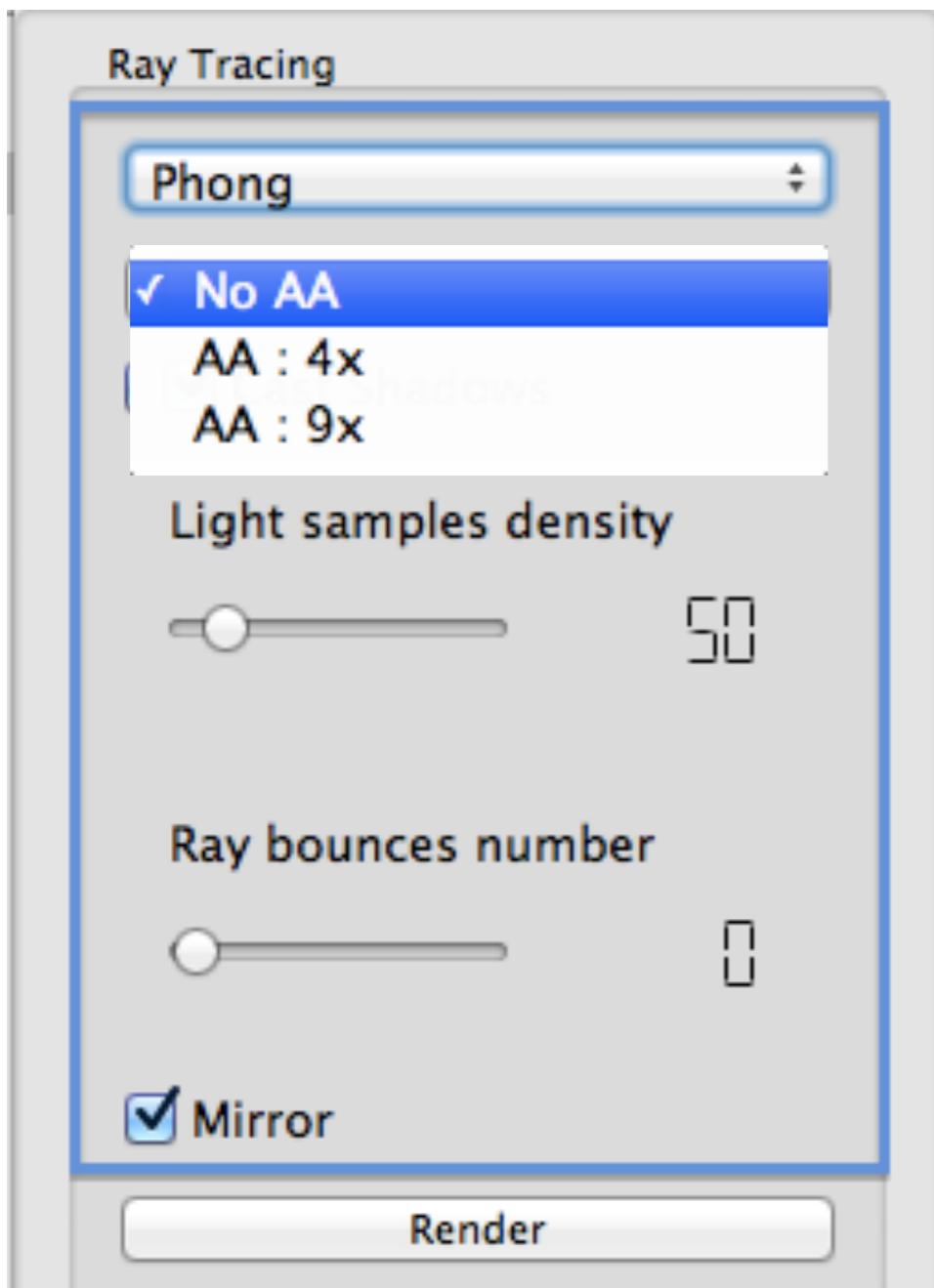
2500

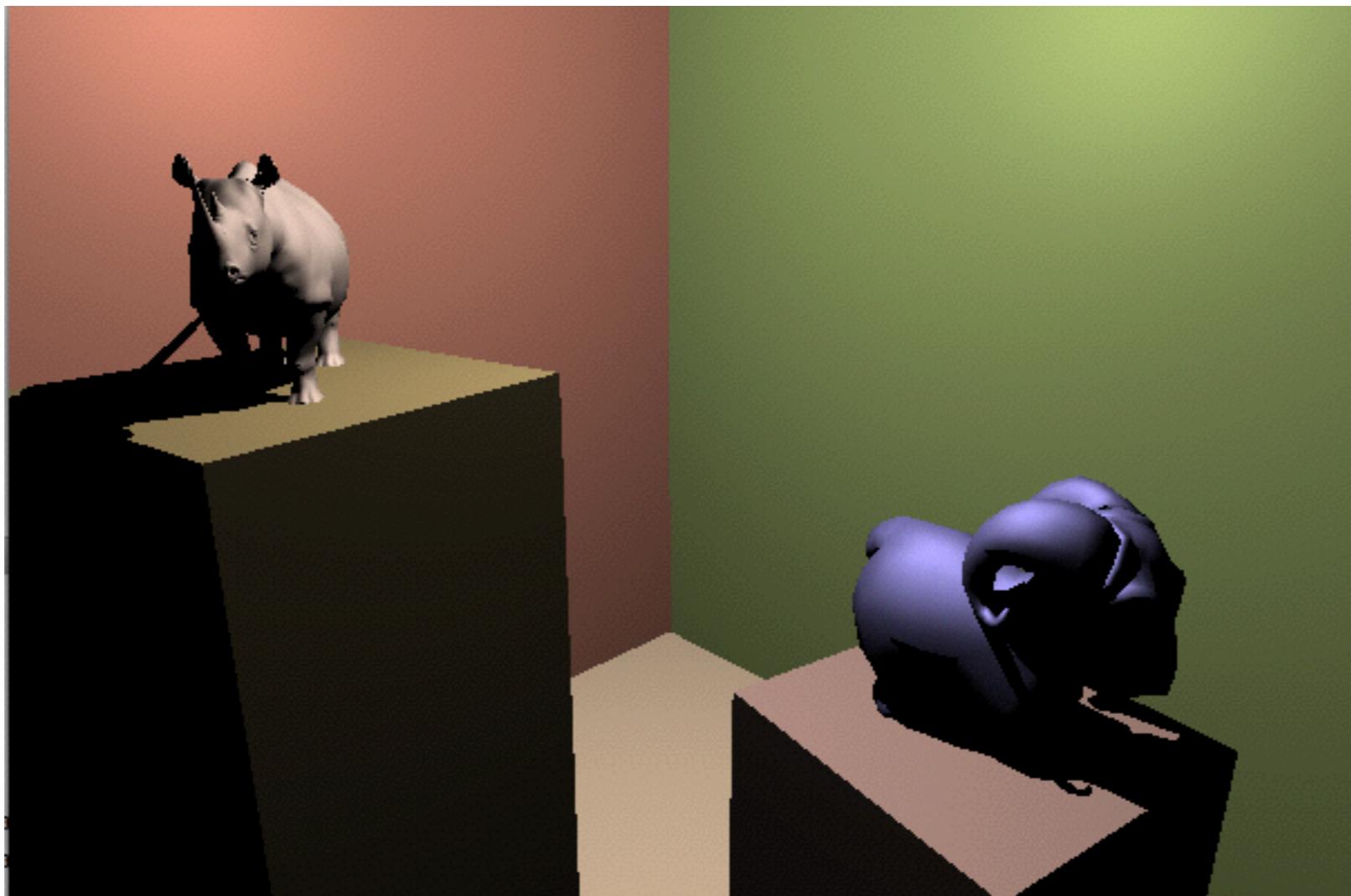
This panel contains settings for a Pinhole camera. It includes a dropdown menu for camera type (set to Pinhole camera), a dropdown menu for focus settings (set to Focus On ...), a dropdown menu for focal length (set to Use focal Length), a slider for focal length set to 10, and a slider for lens blur samples density set to 2500.

Interface



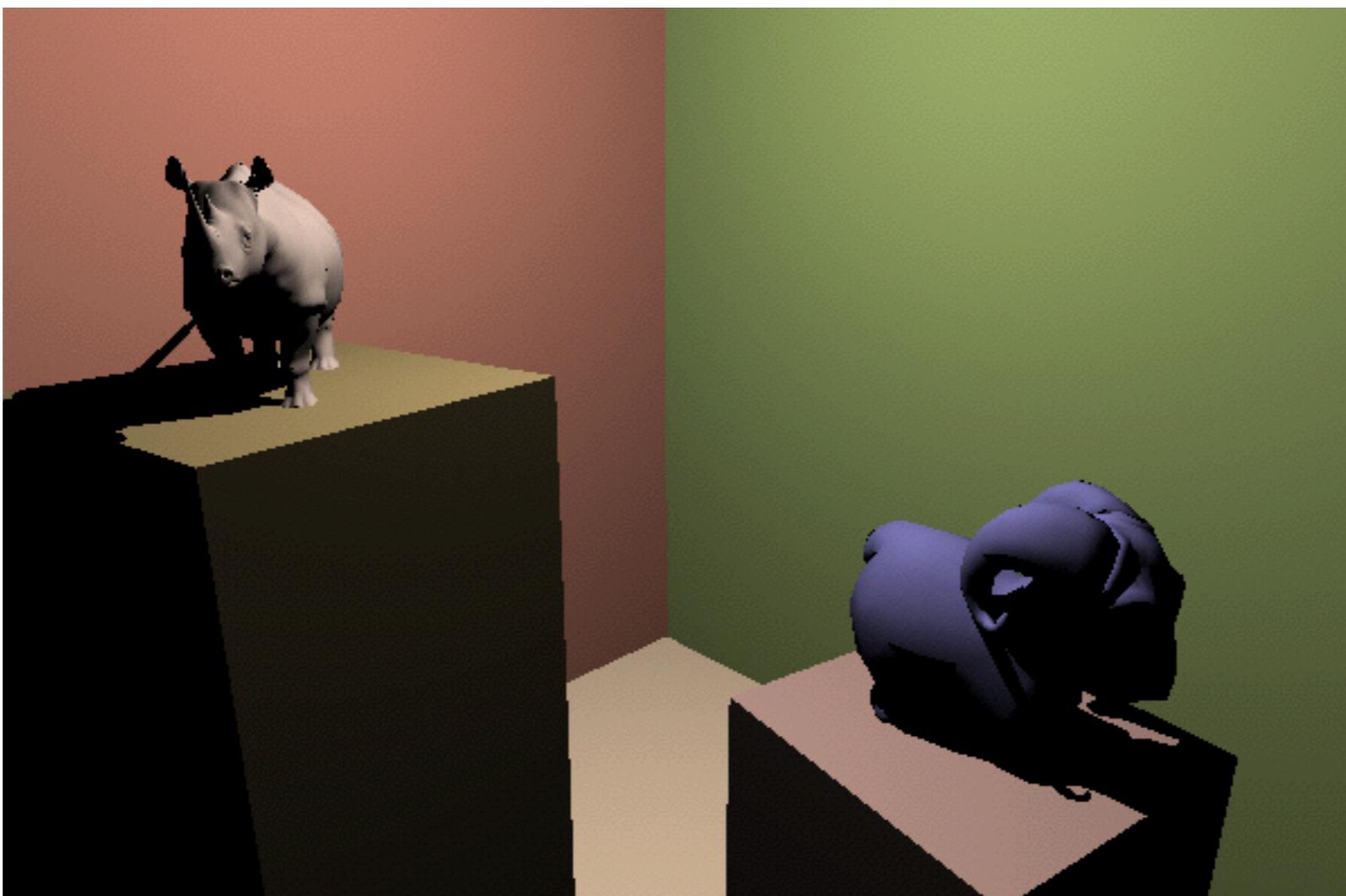
Interface





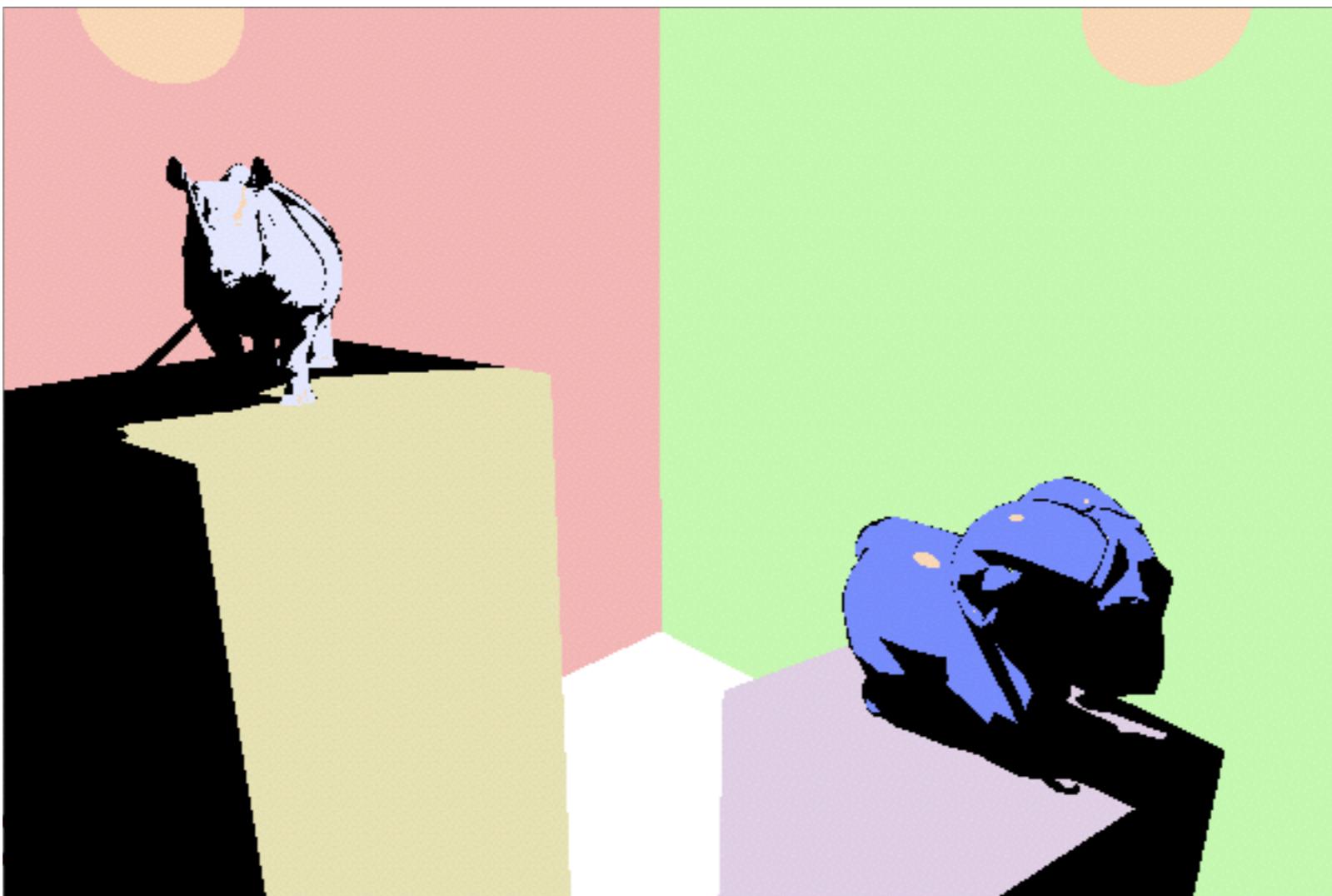
BRDF

Phong - Cook Torrance - Cartoon



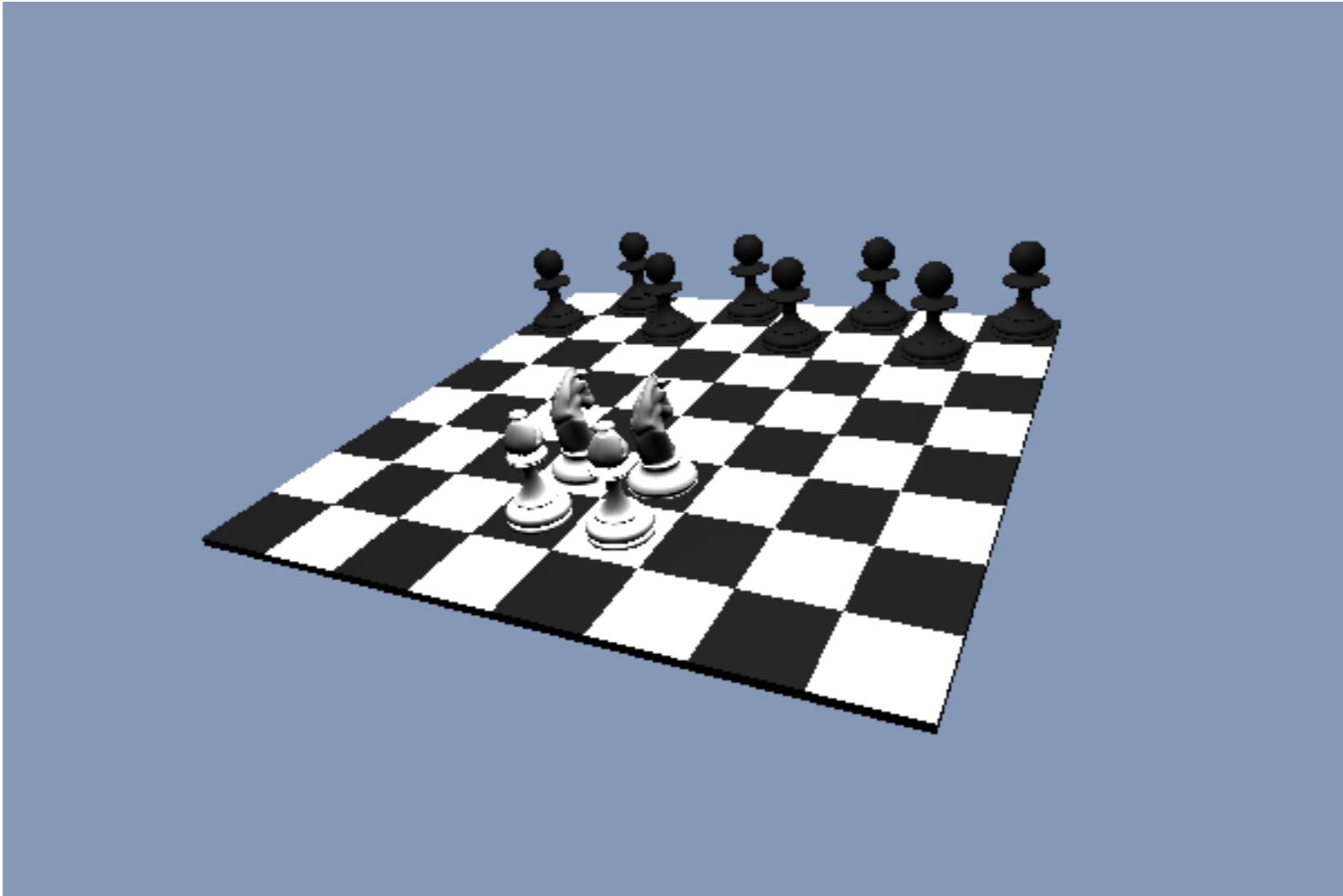
BRDF

Phong - **Cook Torrance** - Cartoon



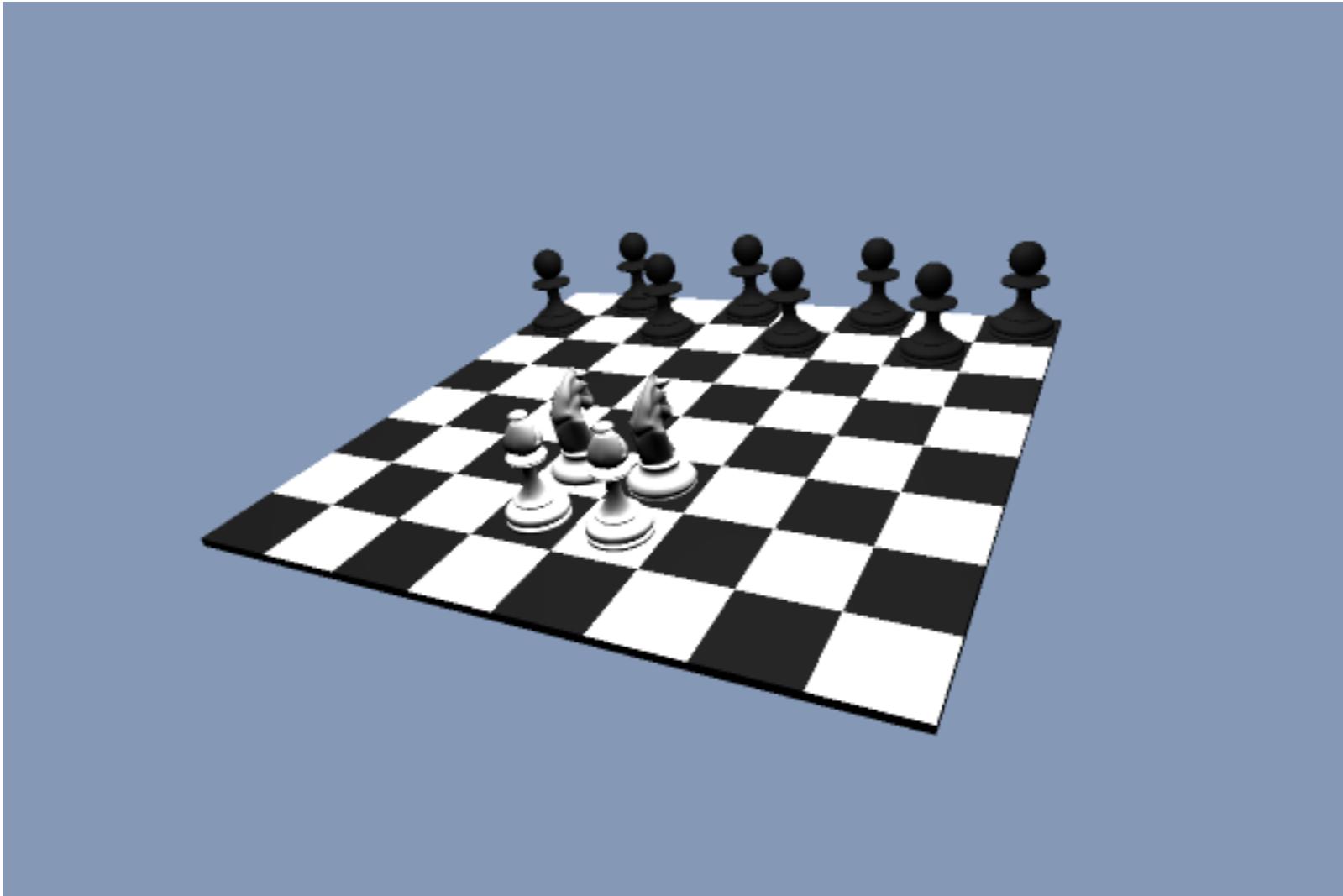
BRDF

Phong - Cook Torrance - **Cartoon**



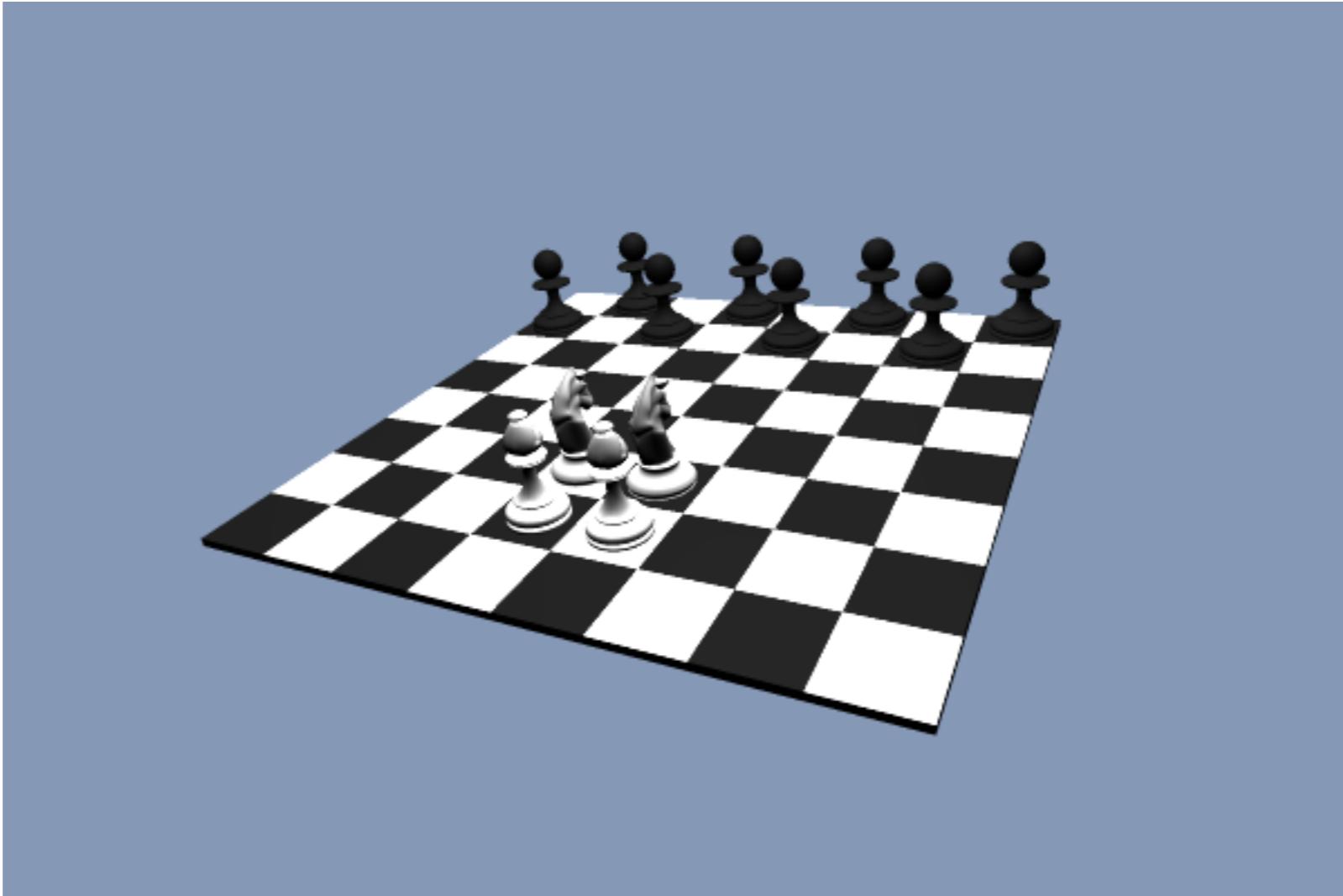
Antialiasing

0x - 4x - 9x



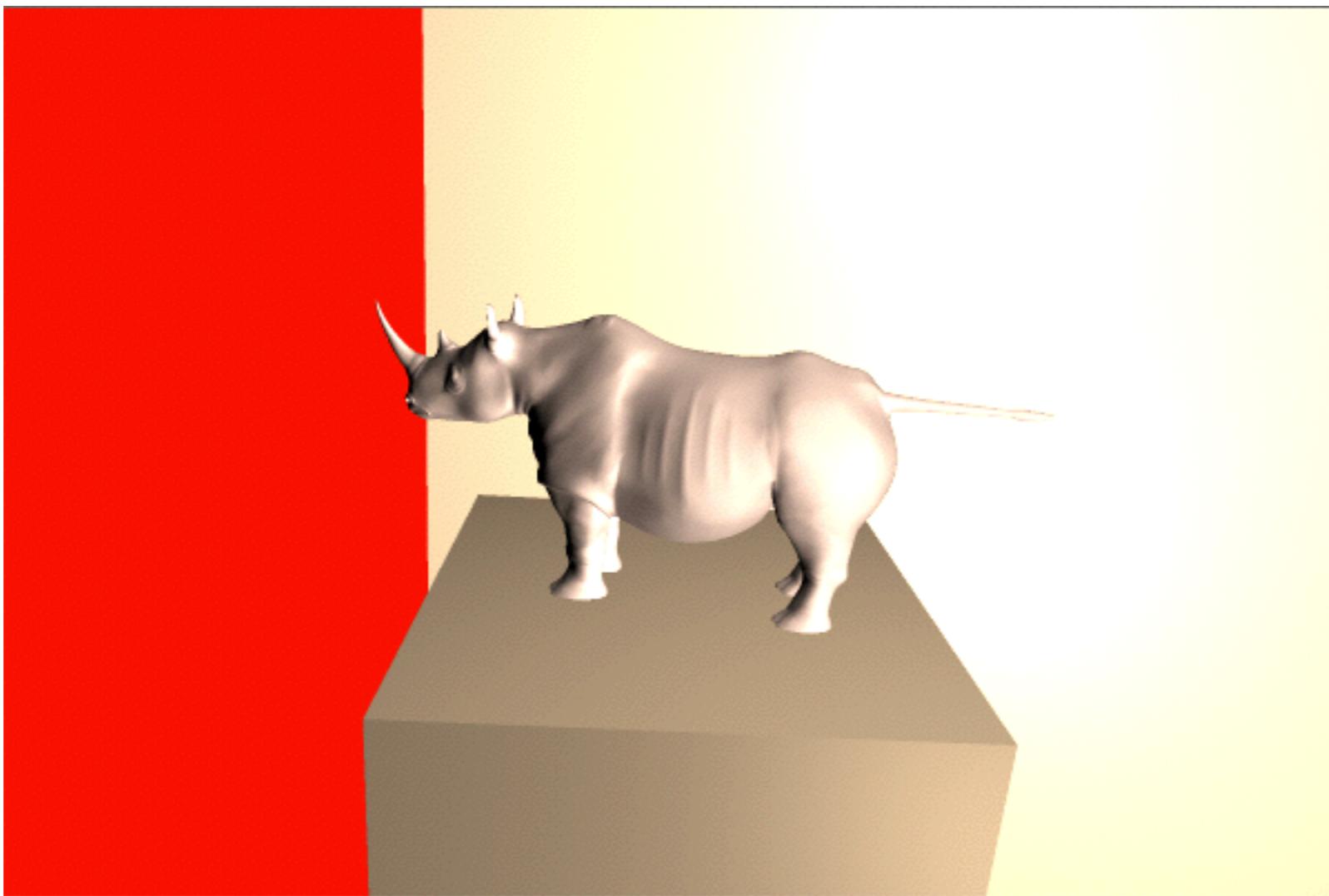
Antialiasing

0x - **4x** - 9x

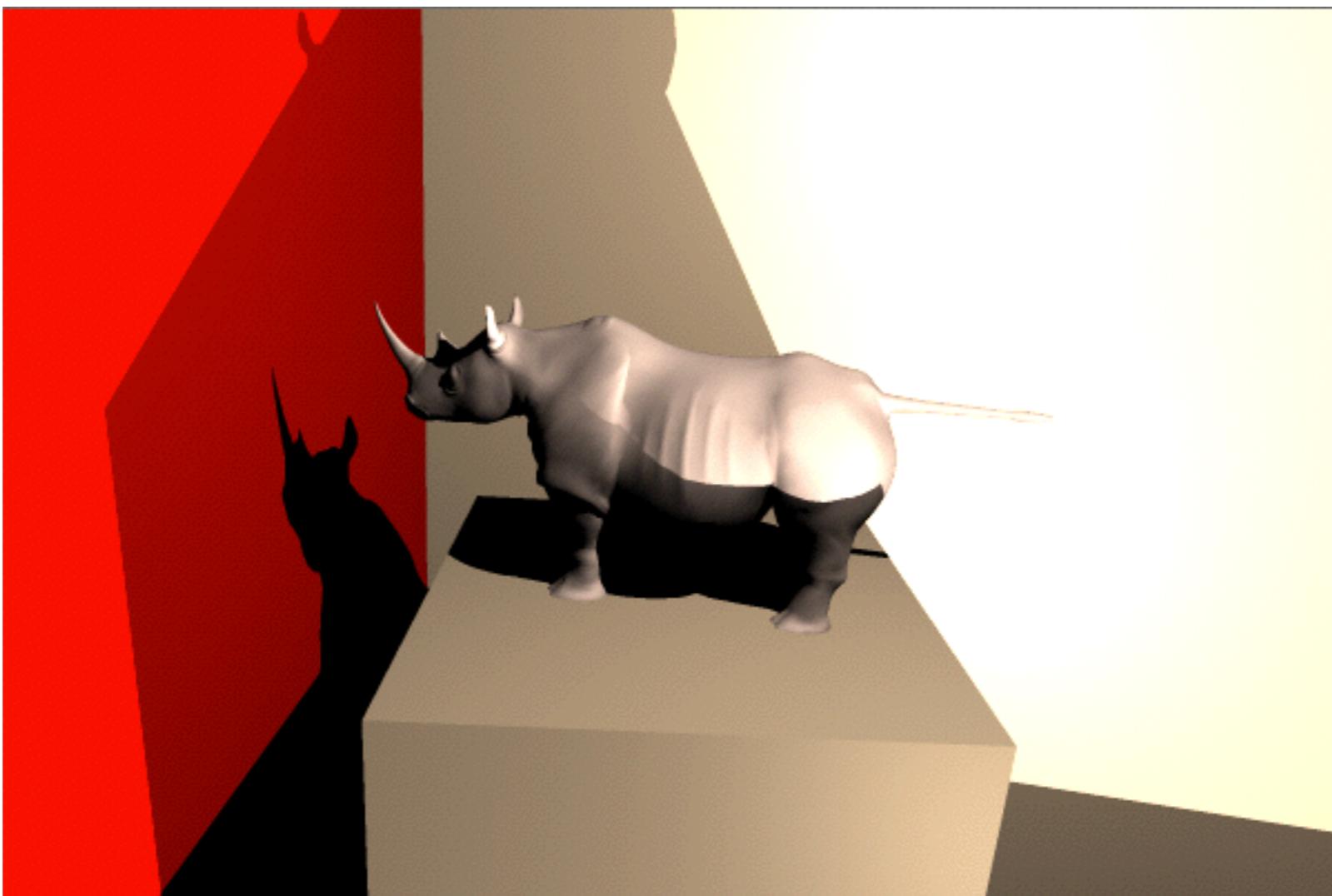


Antialiasing

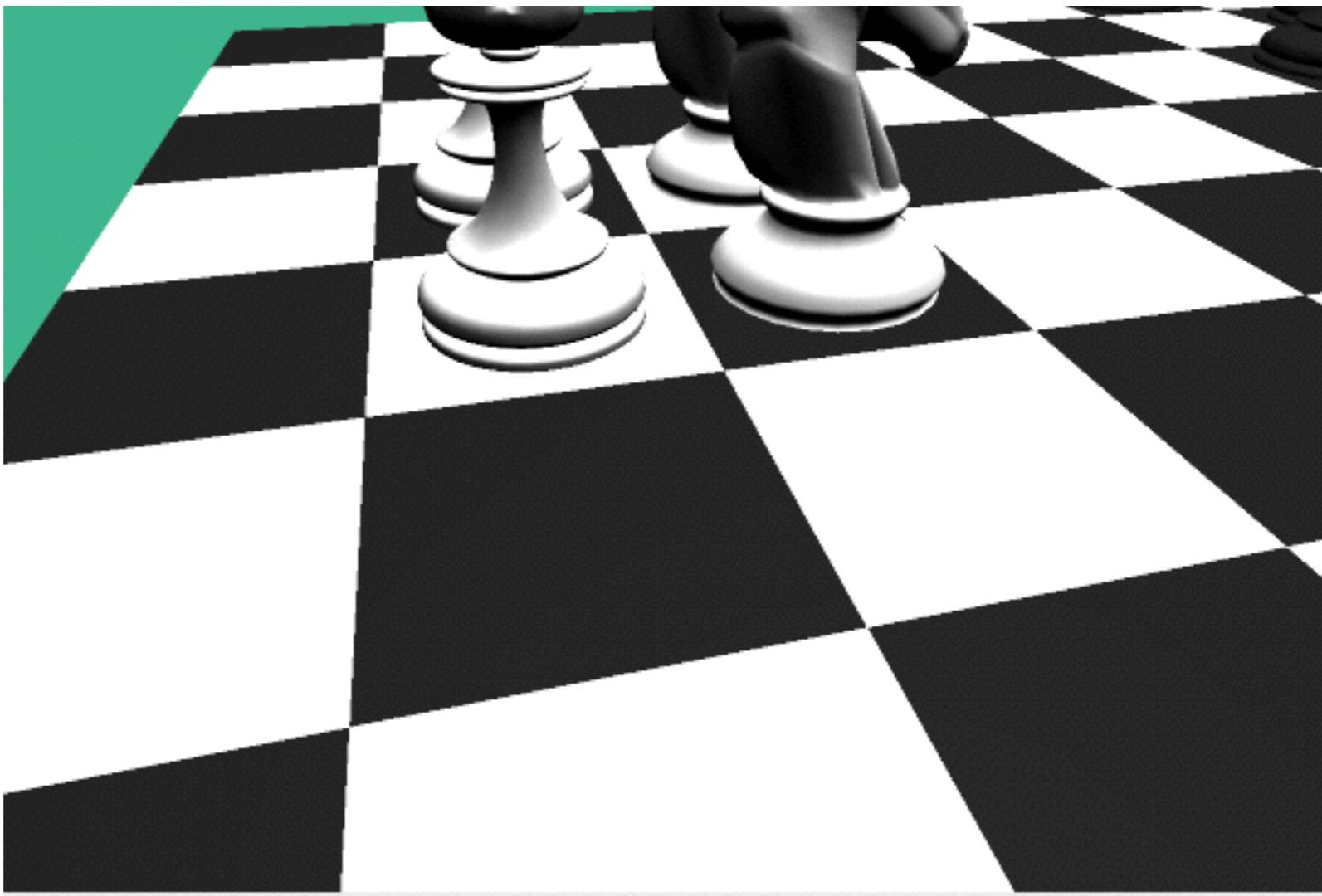
0x - 4x - **9x**



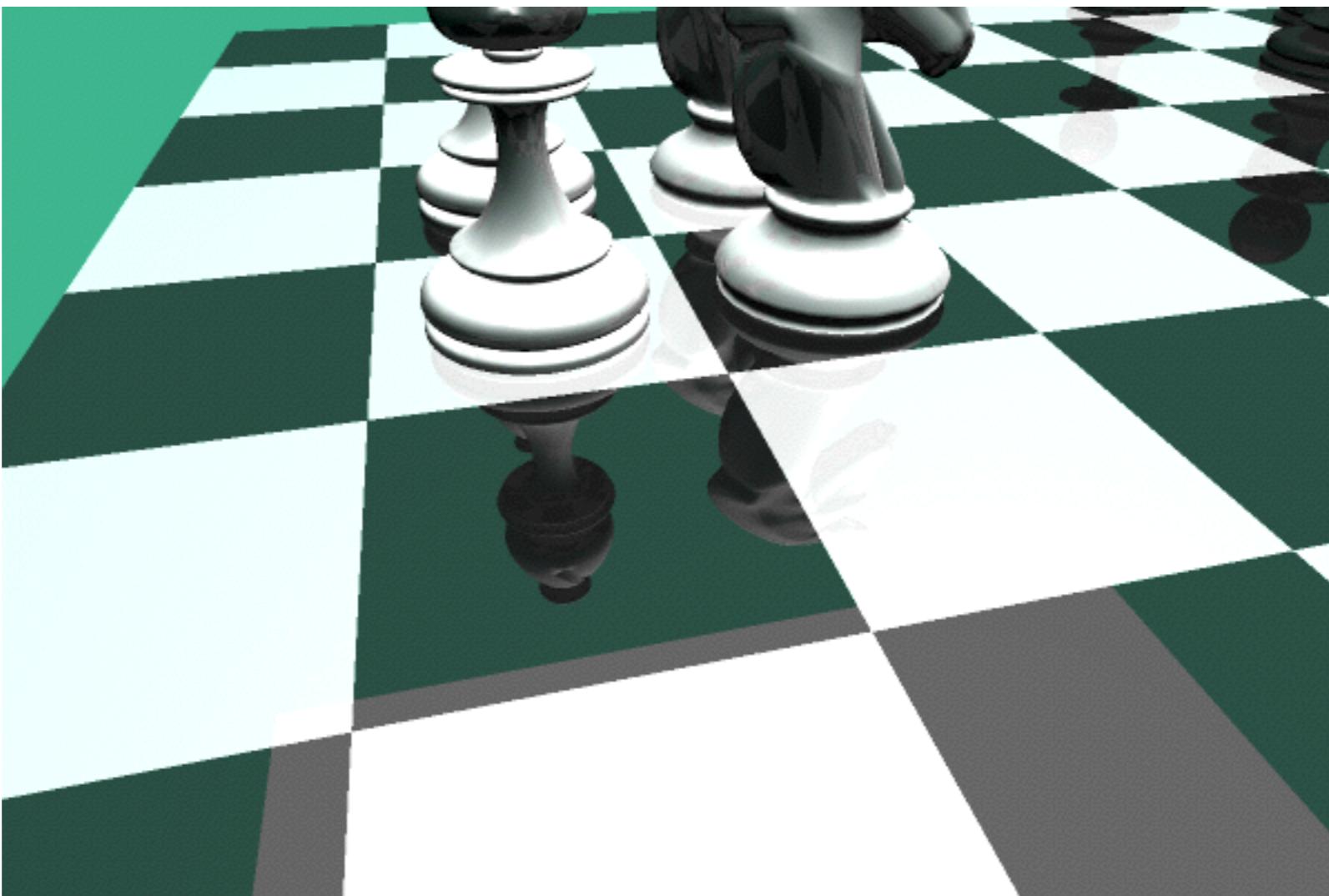
Ombres portées



Ombres portées



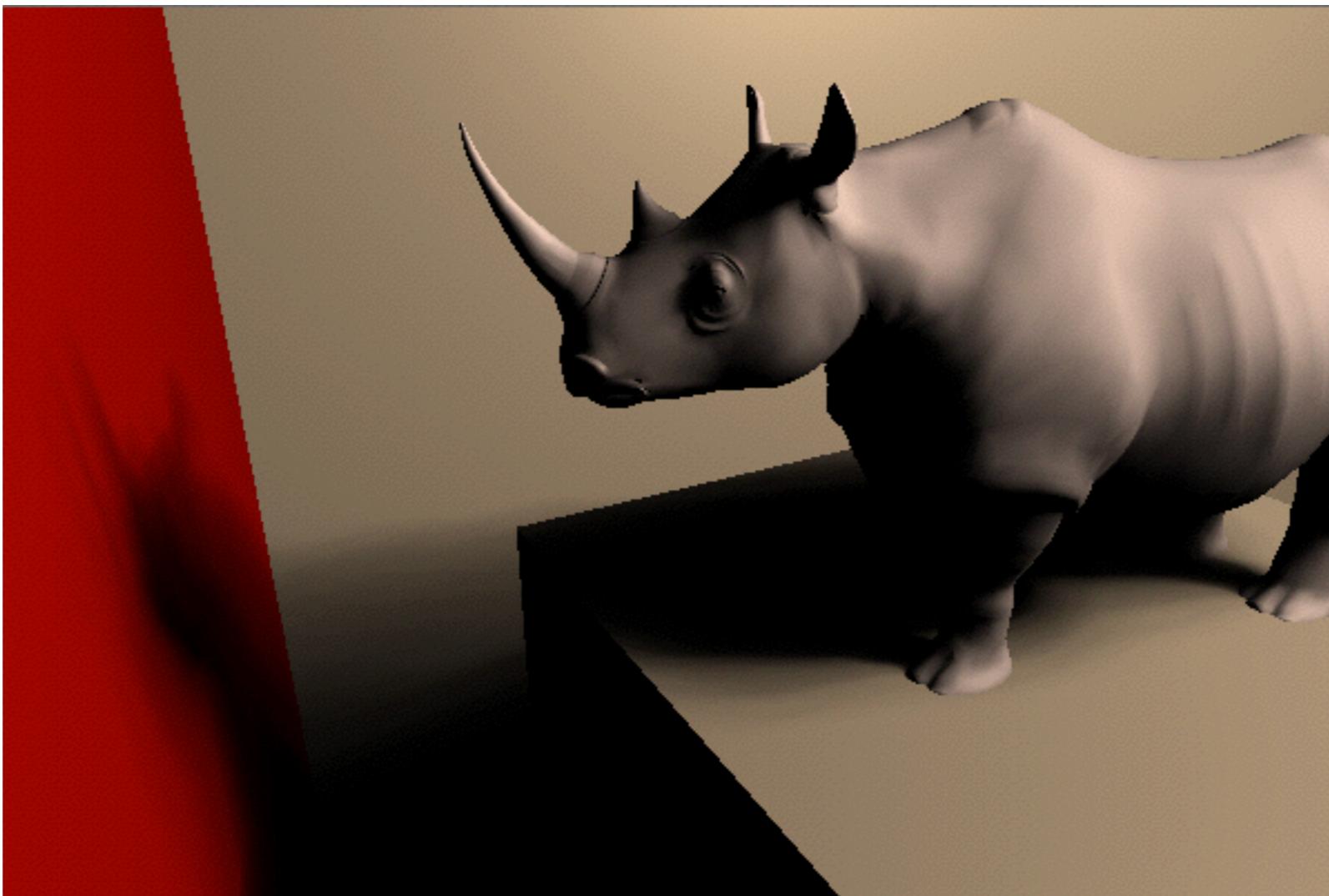
Réfléctions



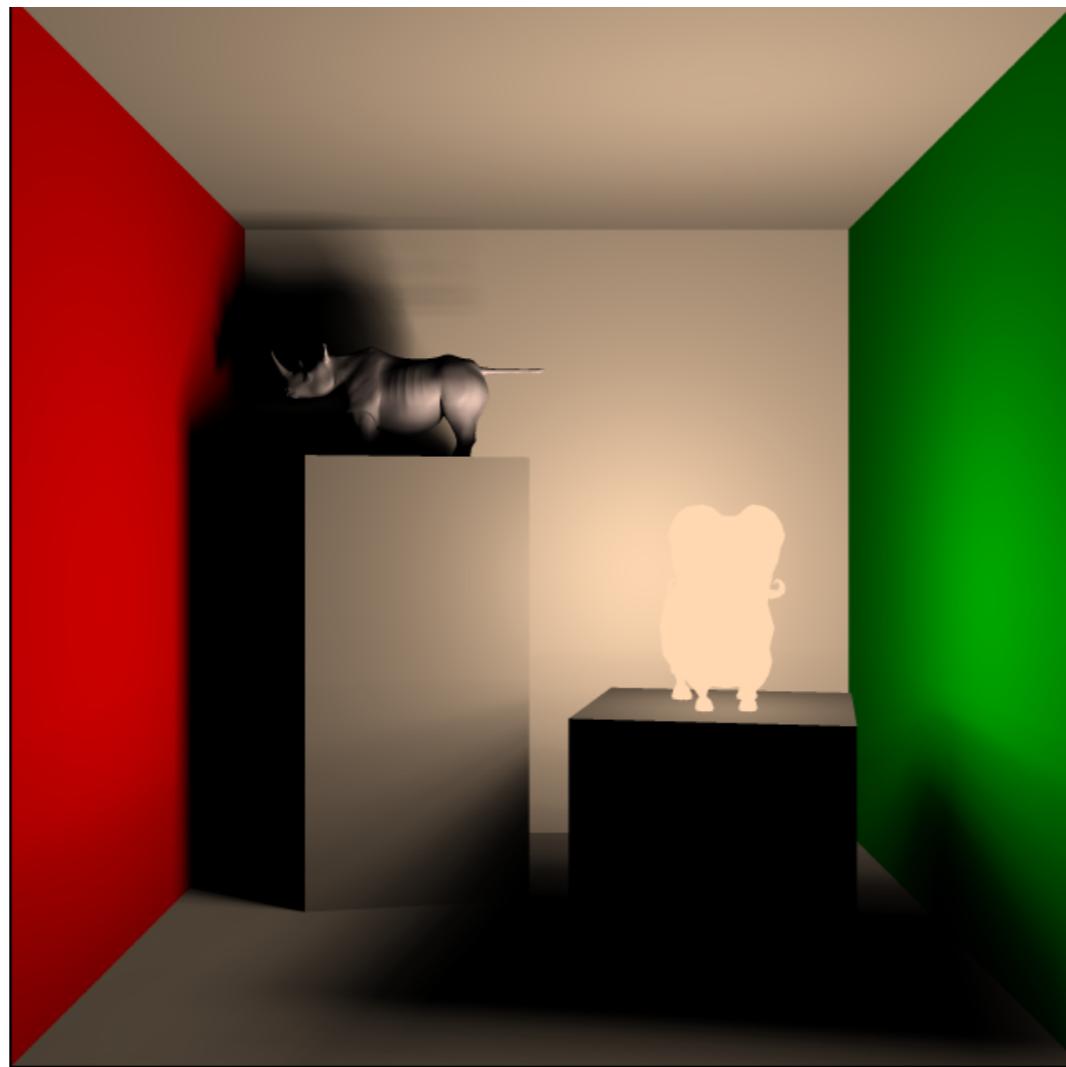
Réflexions



Sources de lumière étendues
1 échantillon

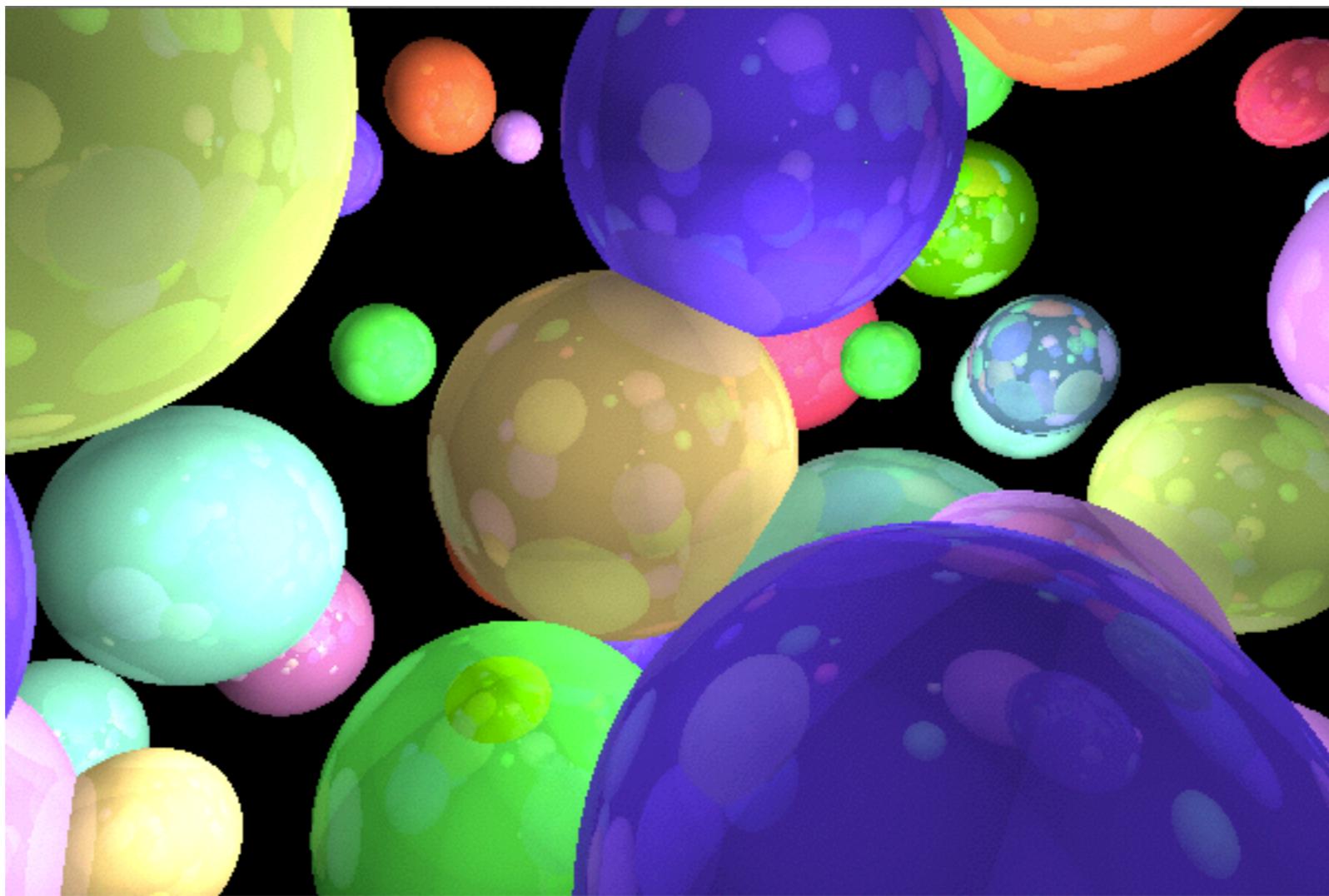


Sources de lumière étendues
N échantillons



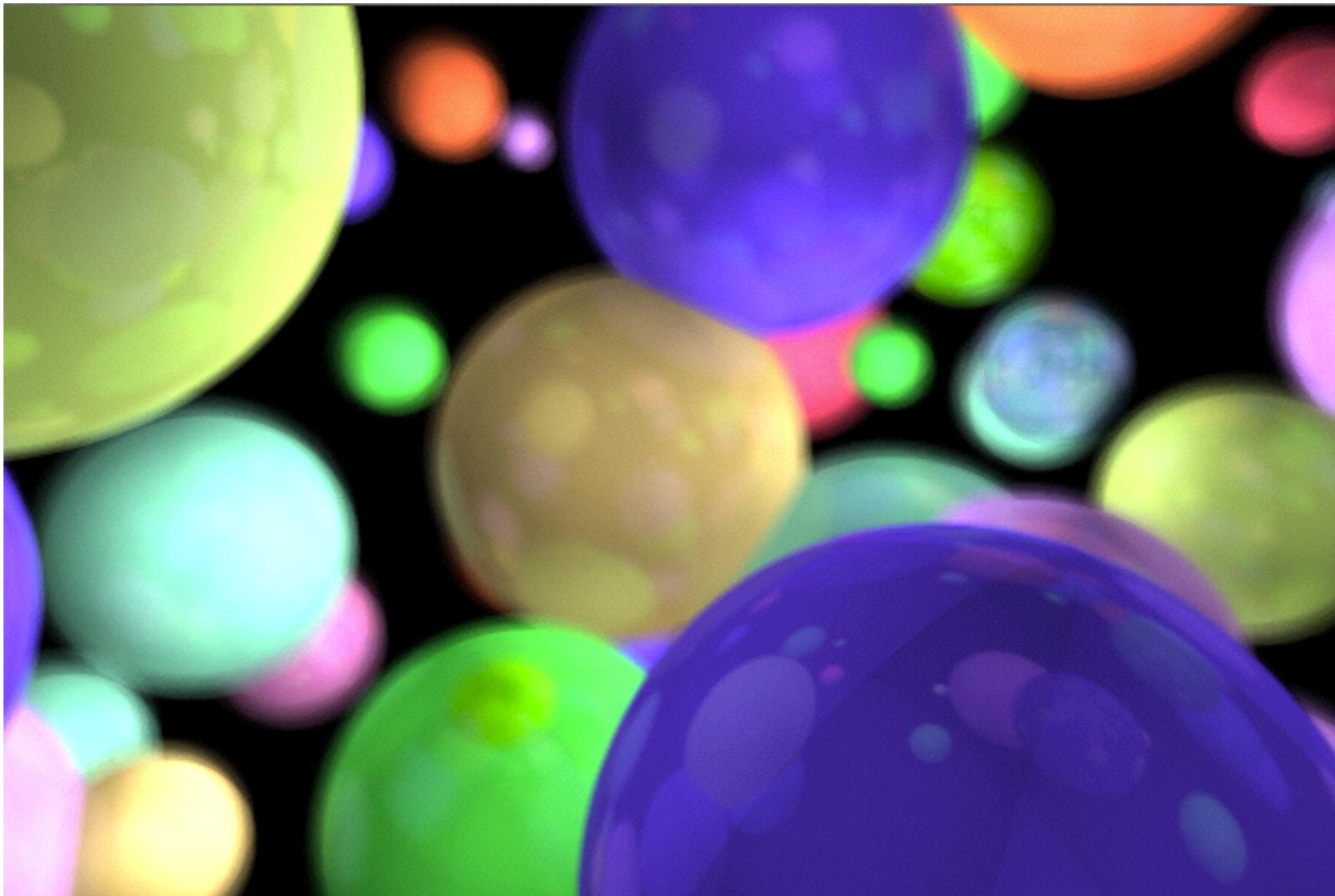
Sources de lumière étendues

Géométrie arbitraire - Échantillonage adaptatif



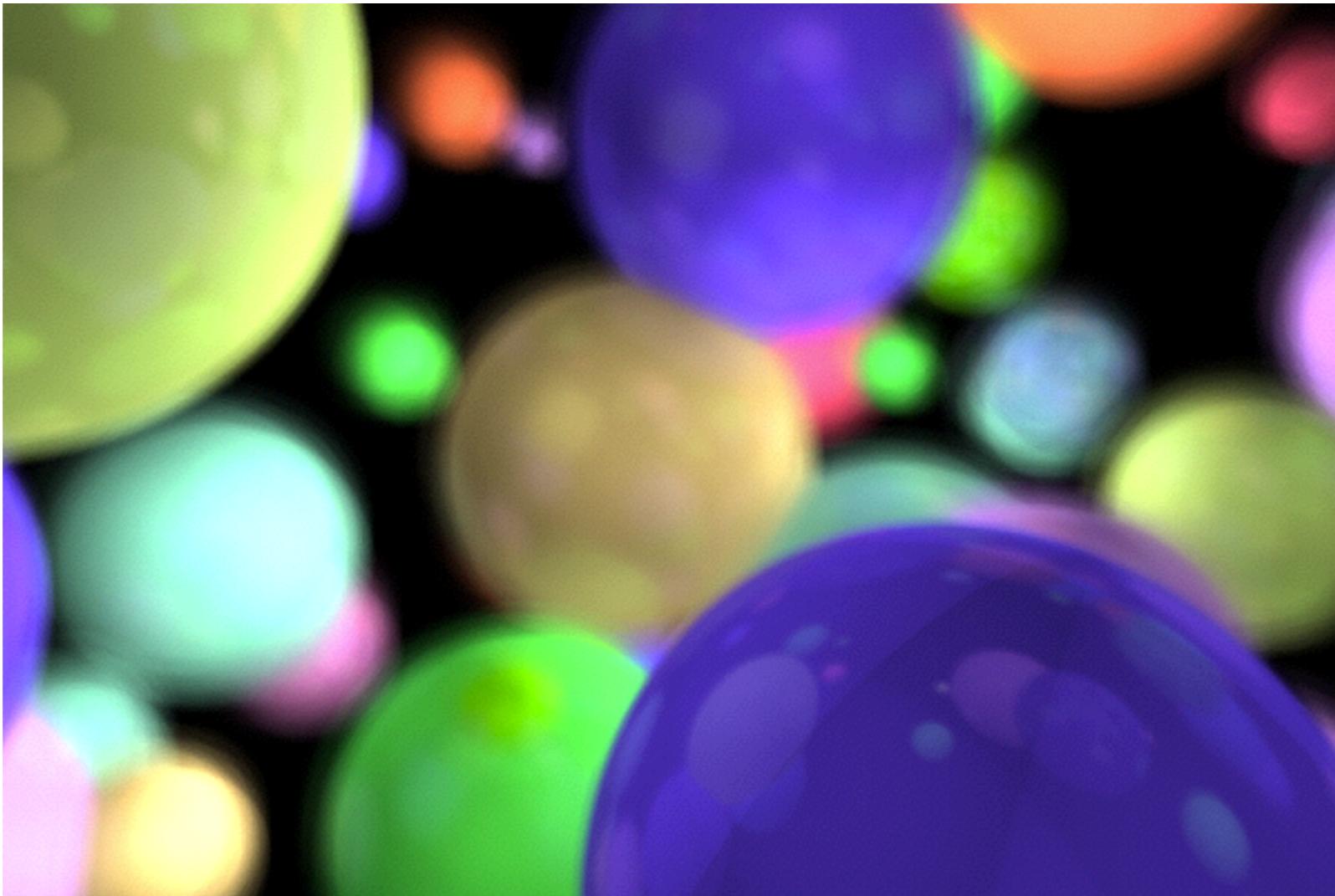
Flou de focus

Sténopé



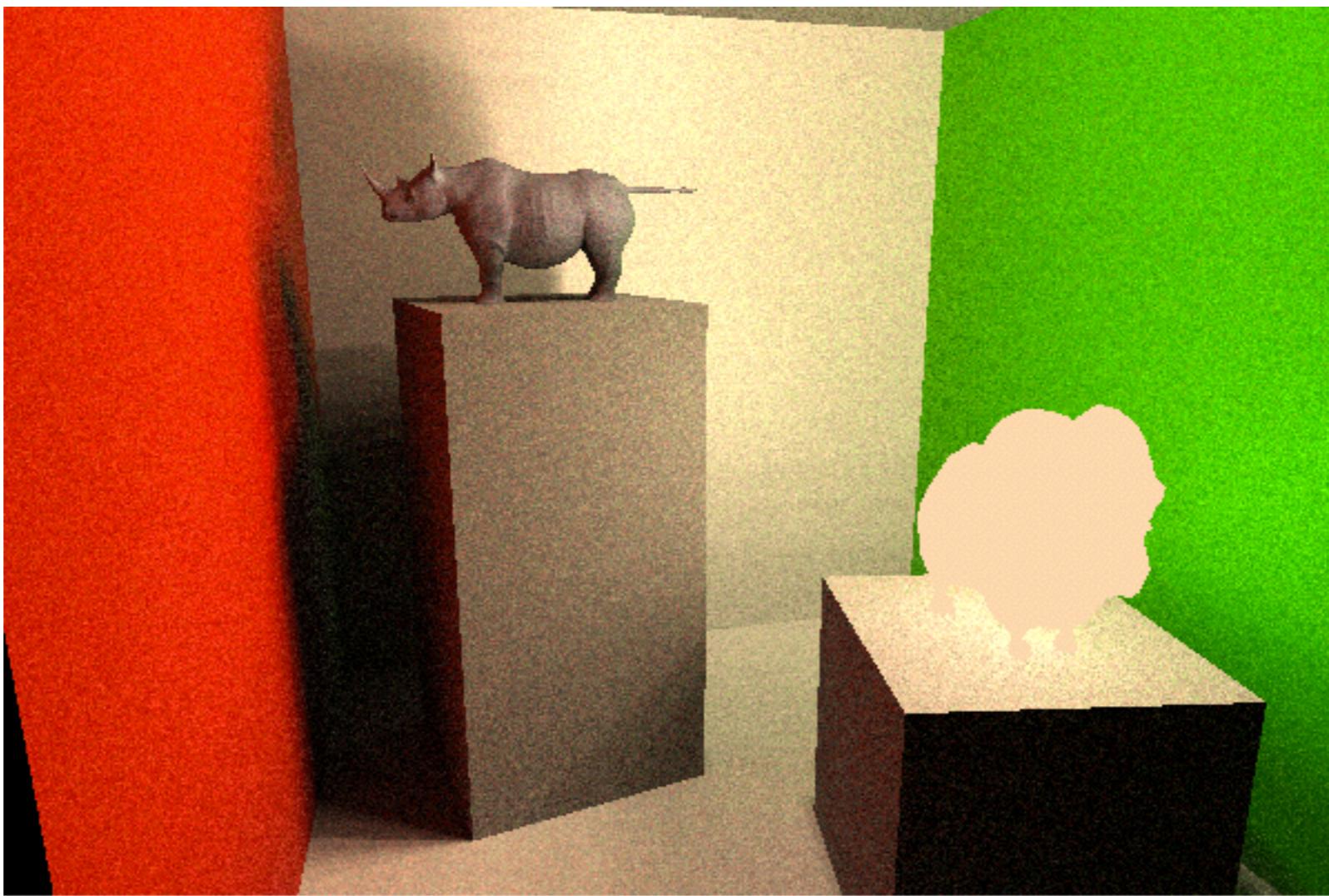
Flou de focus

Petite ouverture



Flou de focus

Grande ouverture



Path Tracing

Light Bleeding



Points techniques

Utilisation des KD-Tree

Render

Points techniques

Séparation des responsabilités

Render

Threading

RayIterator

RayTracer

Render

Threading

RayIterator

Basic Ray Iterator

Grid AA Ray Iterator

Lens Blur Ray Iterator

RayTracer

Basic (BRDF)

KDTree

Shadow

Extended Light

Mirror

Path Tracer

Render

Threading

RayIterator

Basic Ray Iterator

Grid AA Ray Iterator

Lens Blur Ray Iterator

RayTracer

Basic (BRDF)

KDTree

Shadow

Extended Light

Mirror

Path Tracer

Render

Threading

RayIterator

Basic Ray Iterator

Grid AA Ray Iterator

Lens Blur Ray Iterator

RayTracer

Basic (BRDF)

KDTree

Shadow

Extended Light

Mirror

Path Tracer

Render

Threading

RayIterator

Basic Ray Iterator

Grid AA Ray Iterator

Lens Blur Ray Iterator

Progressive Ray Iterator

RayTracer

Basic (BRDF)

KDTree

Shadow

Extended Light

Mirror

Path Tracer

Transparent

Améliorations Possibles

- Rendu Progressif
- Transparence
- Meilleur description de la scène
- Flou de mouvement

Merci pour votre
attention