

# Moteur de Lancer de Rayons

Jean Caillé, Florian Denis, Audrey Fournernet, Simon Martin

IMAGE RENDU AVEC TOUS LES EFFETS

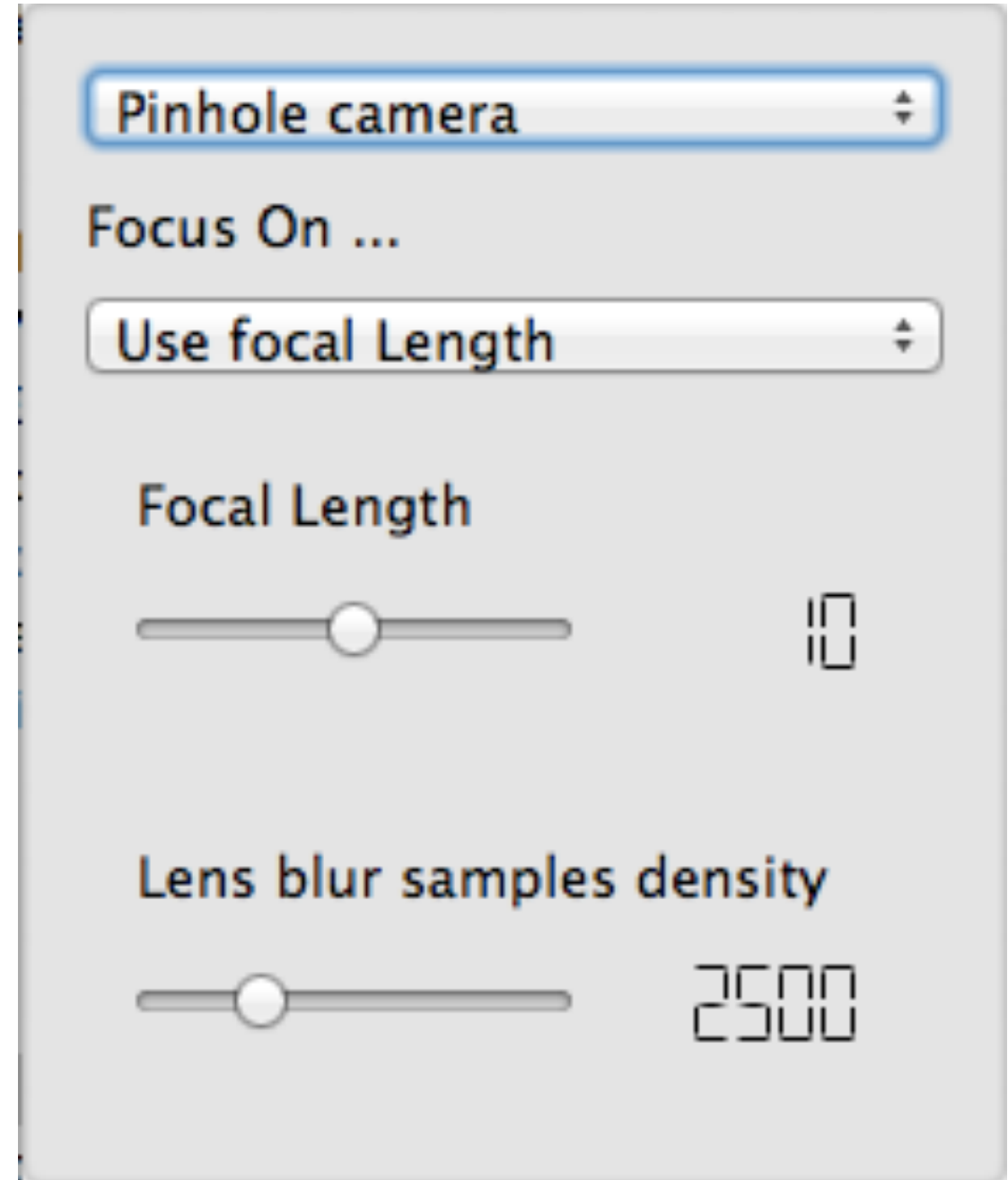
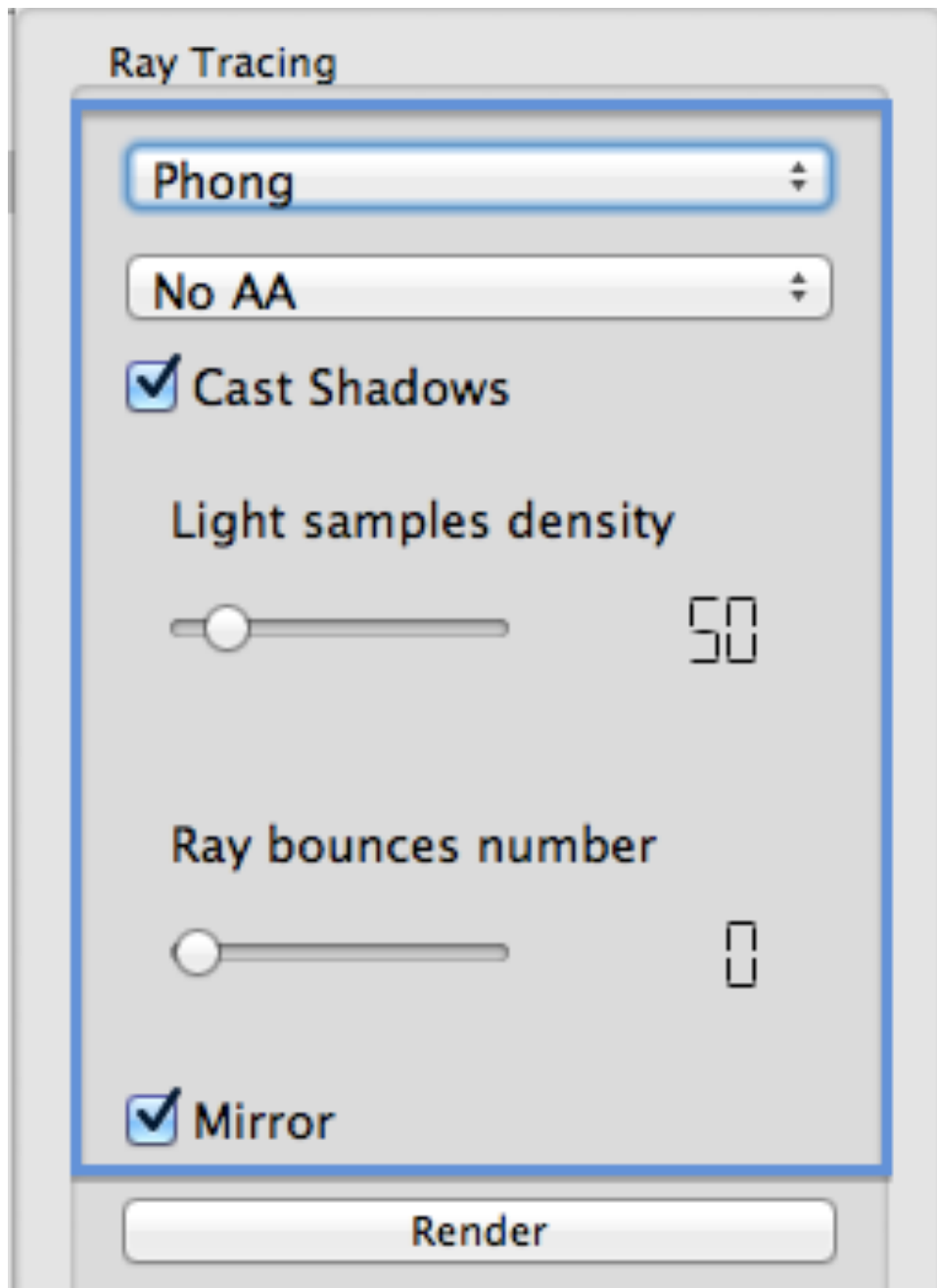
# Description du moteur

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

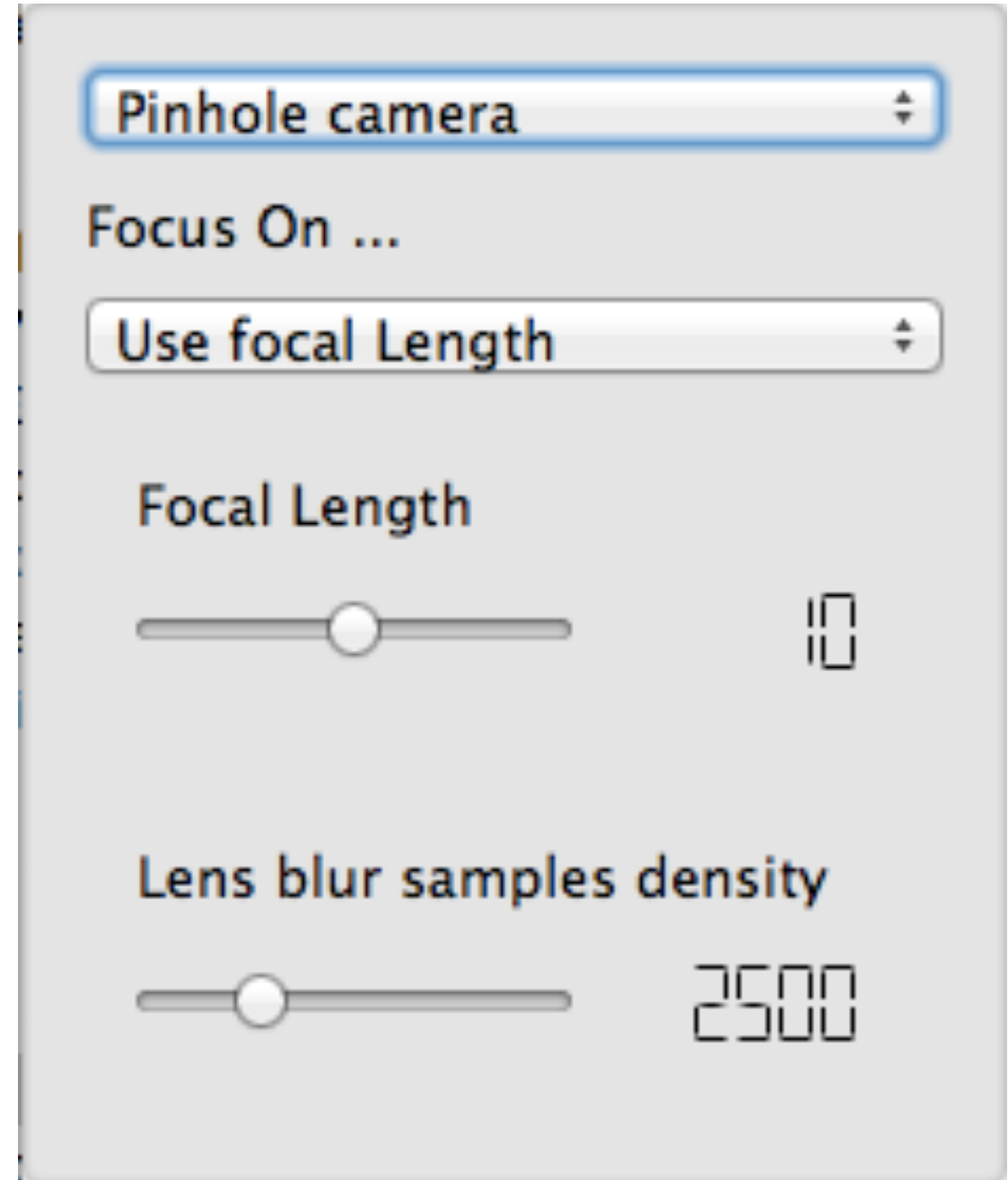
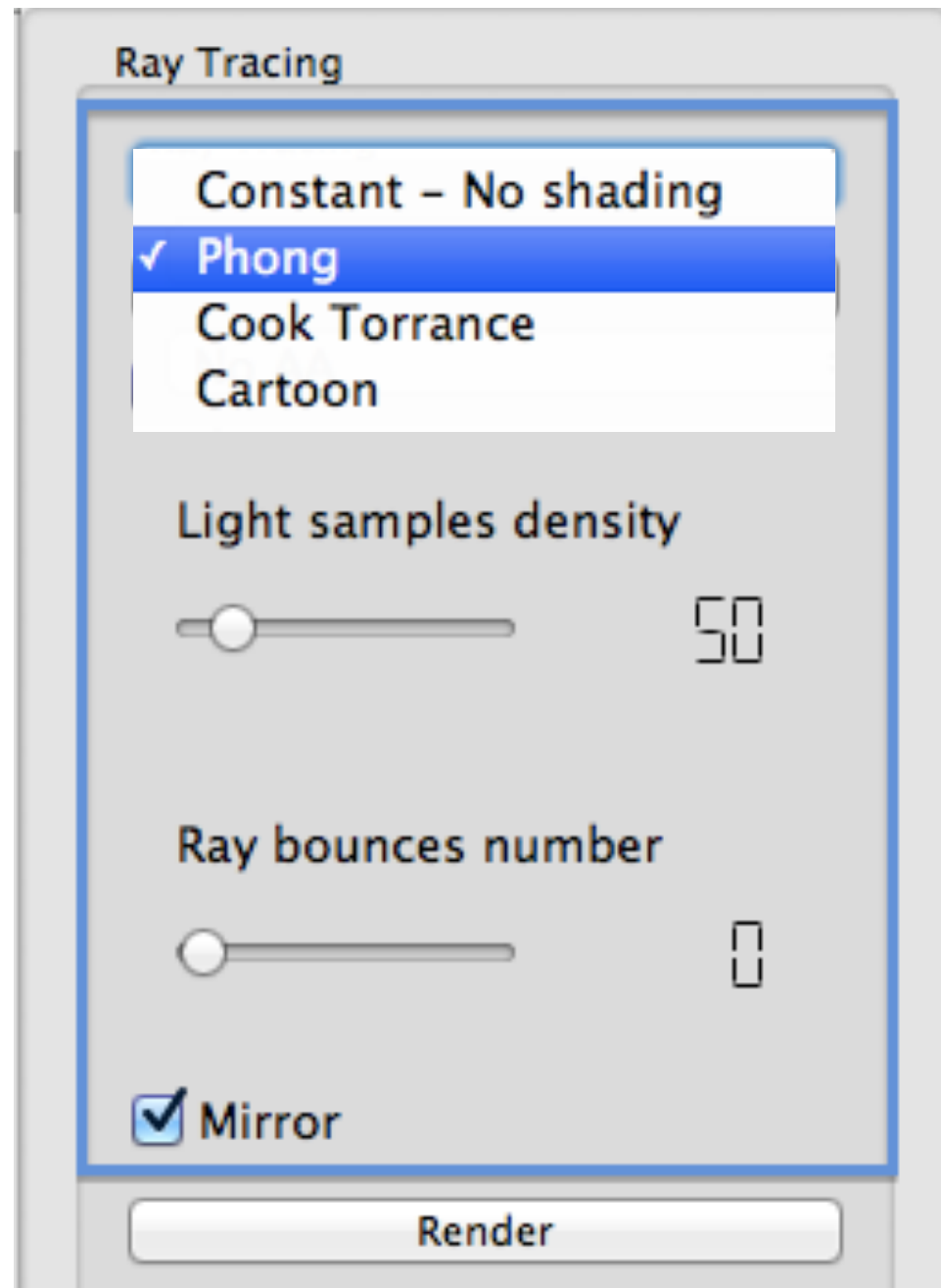


IMAGE RENDU AVEC TOUS LES  
EFFETS

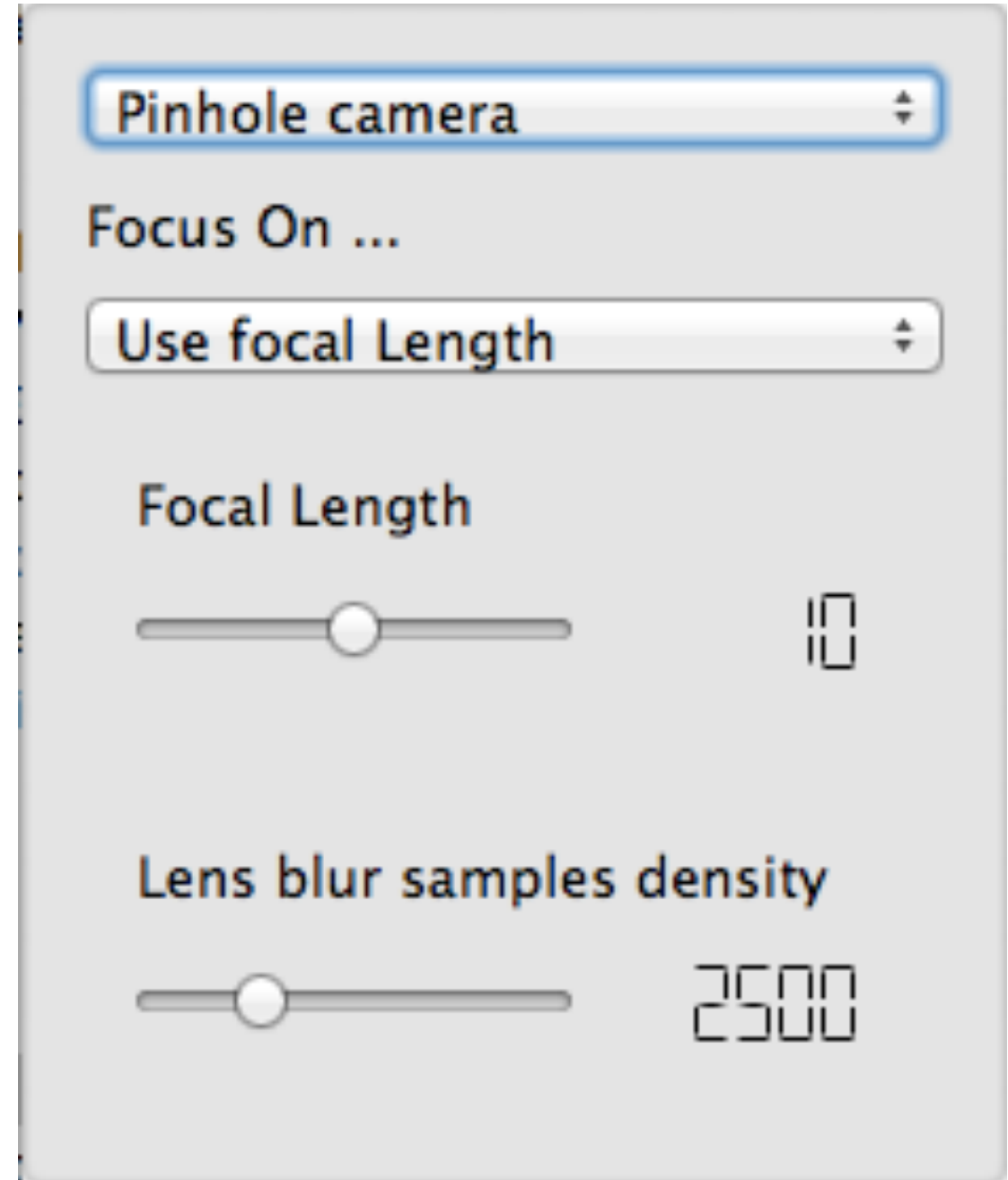
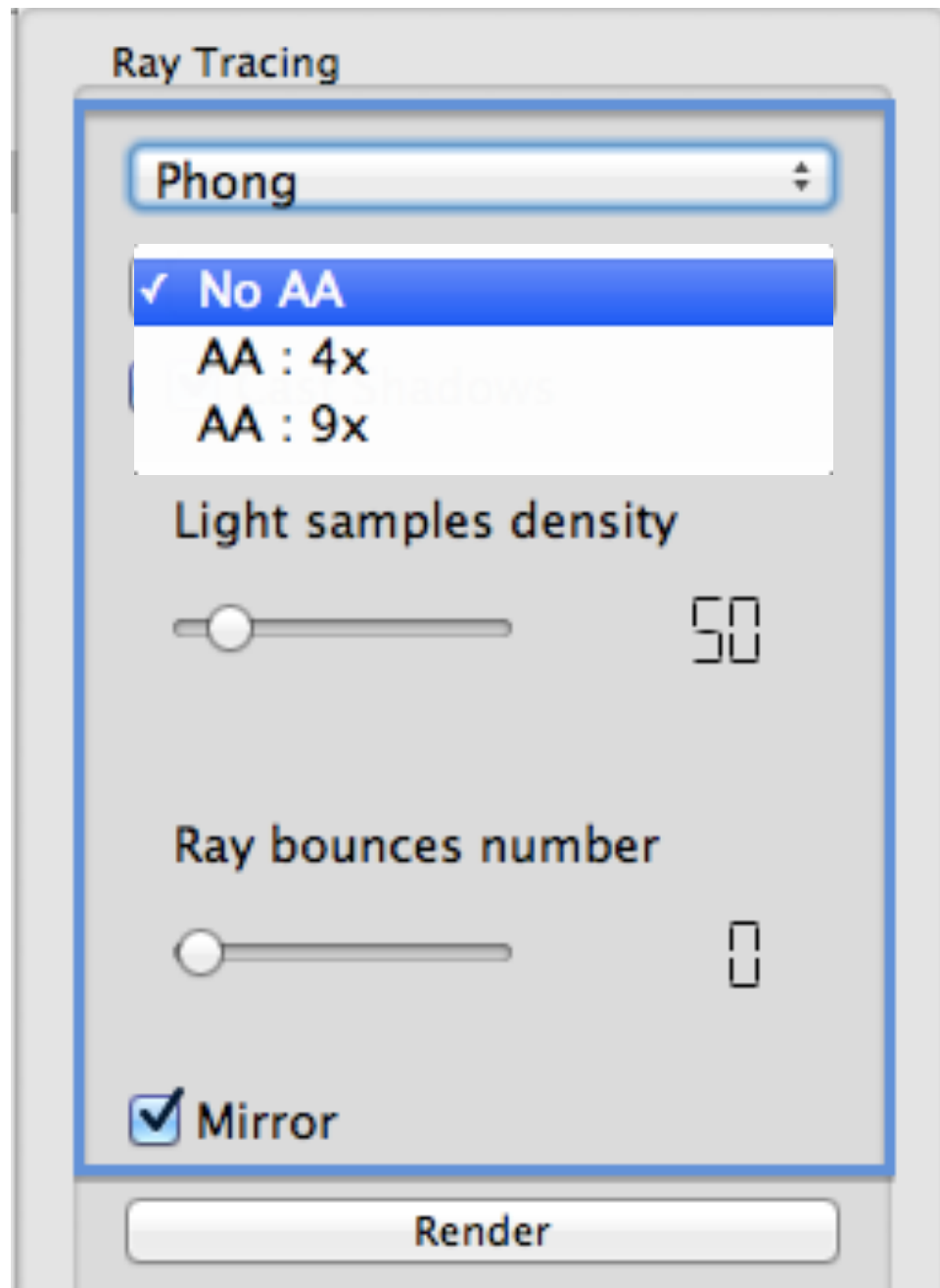
# Interface



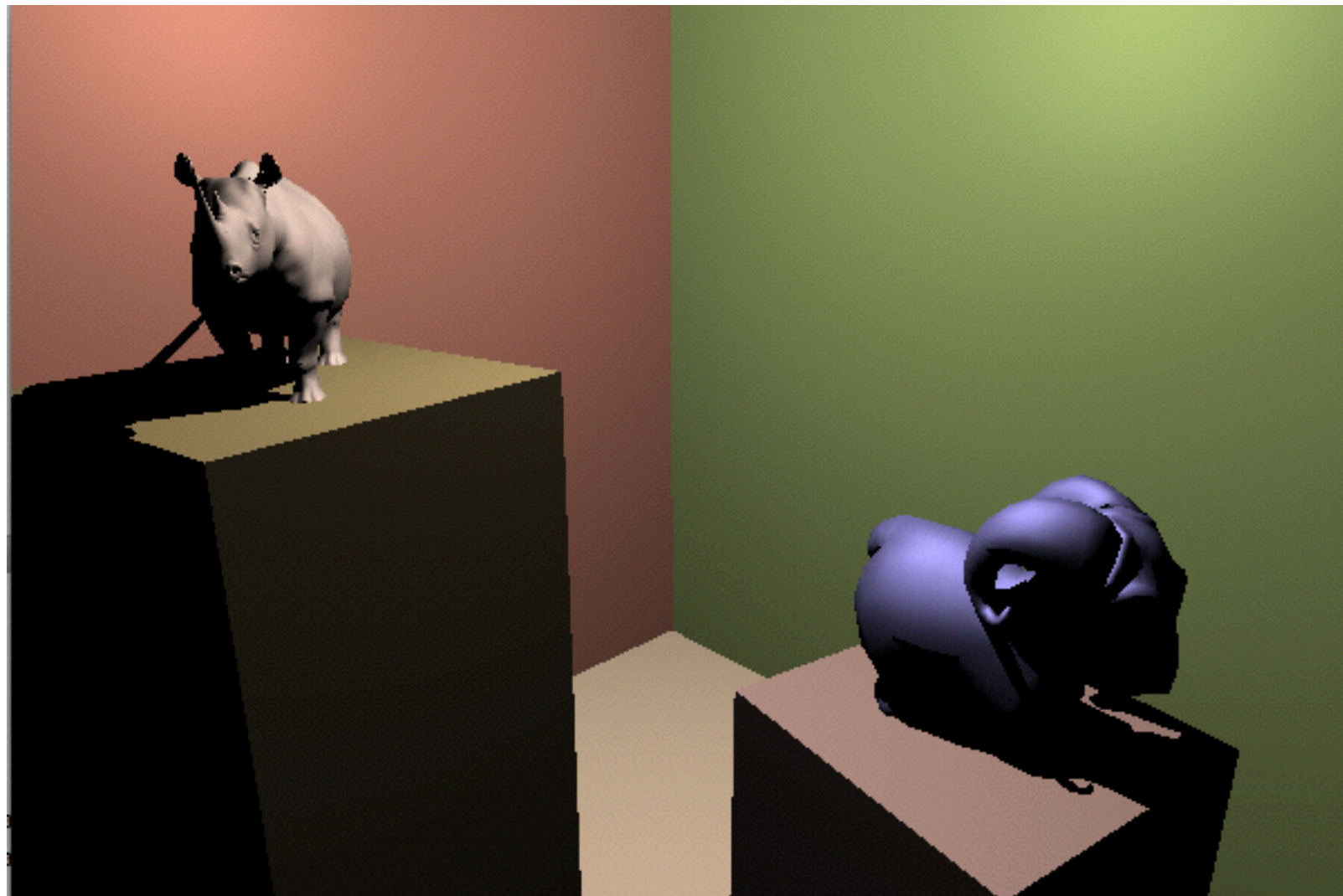
# Interface



# Interface

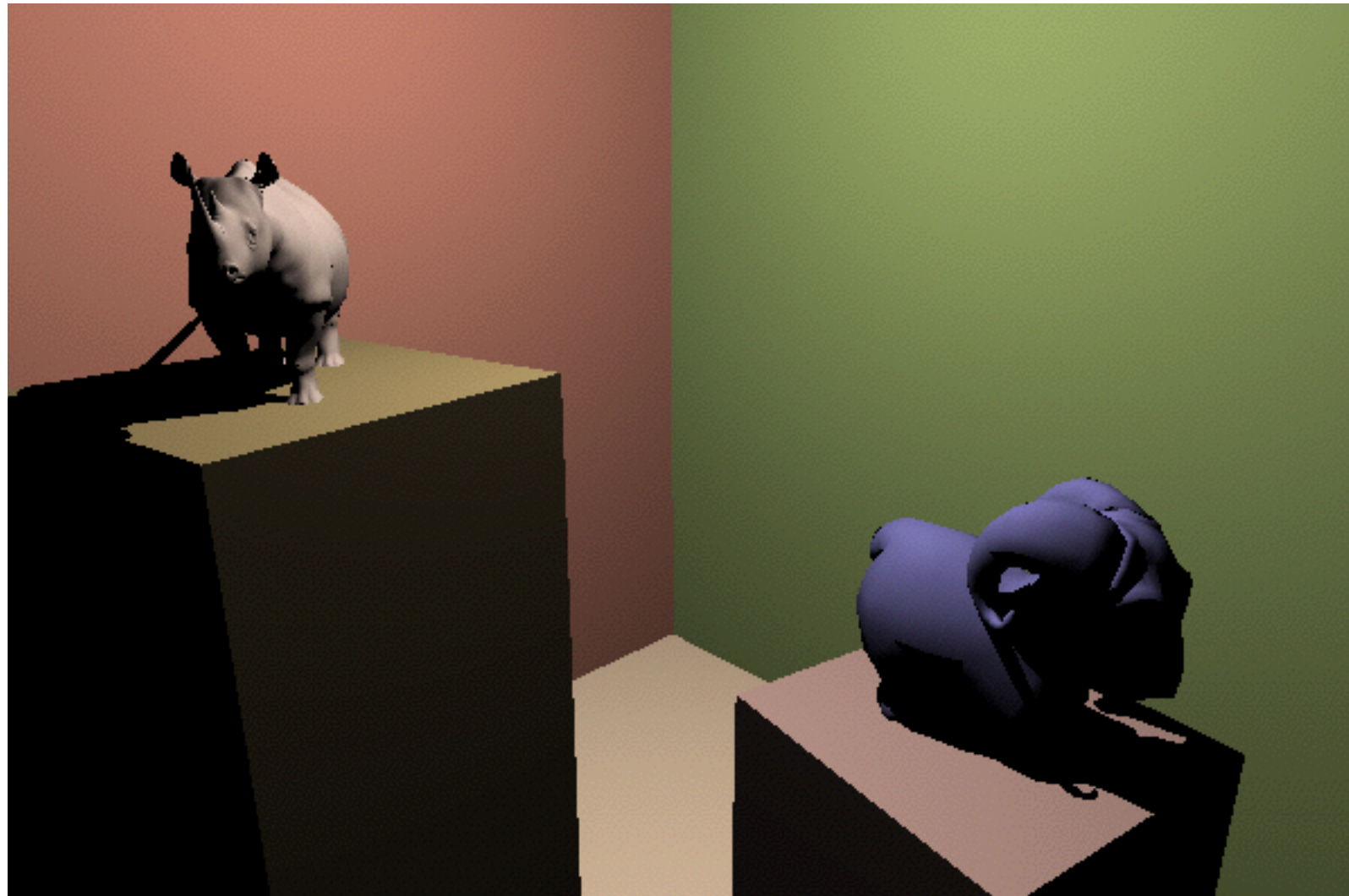






# BRDF

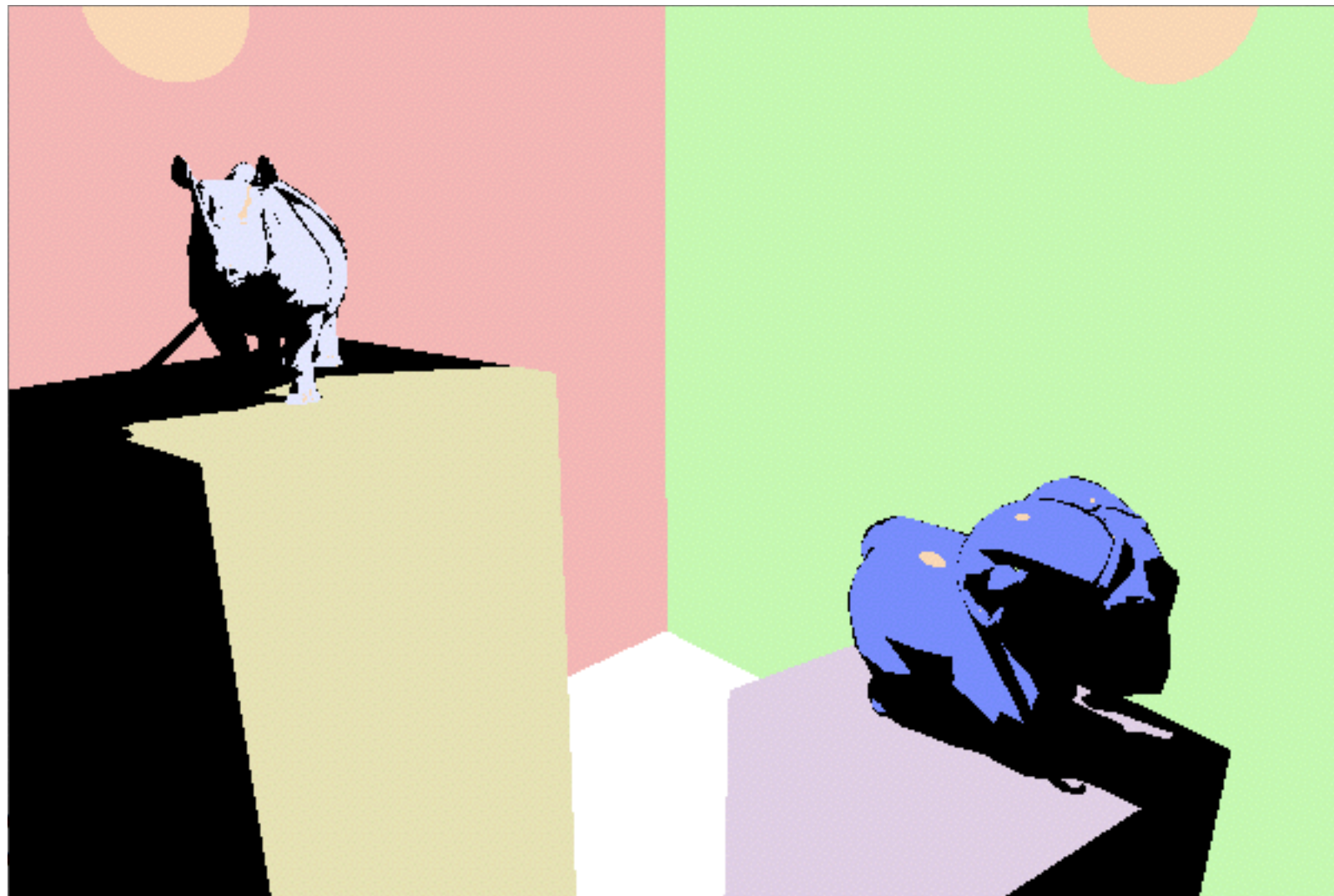
**Phong** - Cook Torrance - Cartoon



# BRDF

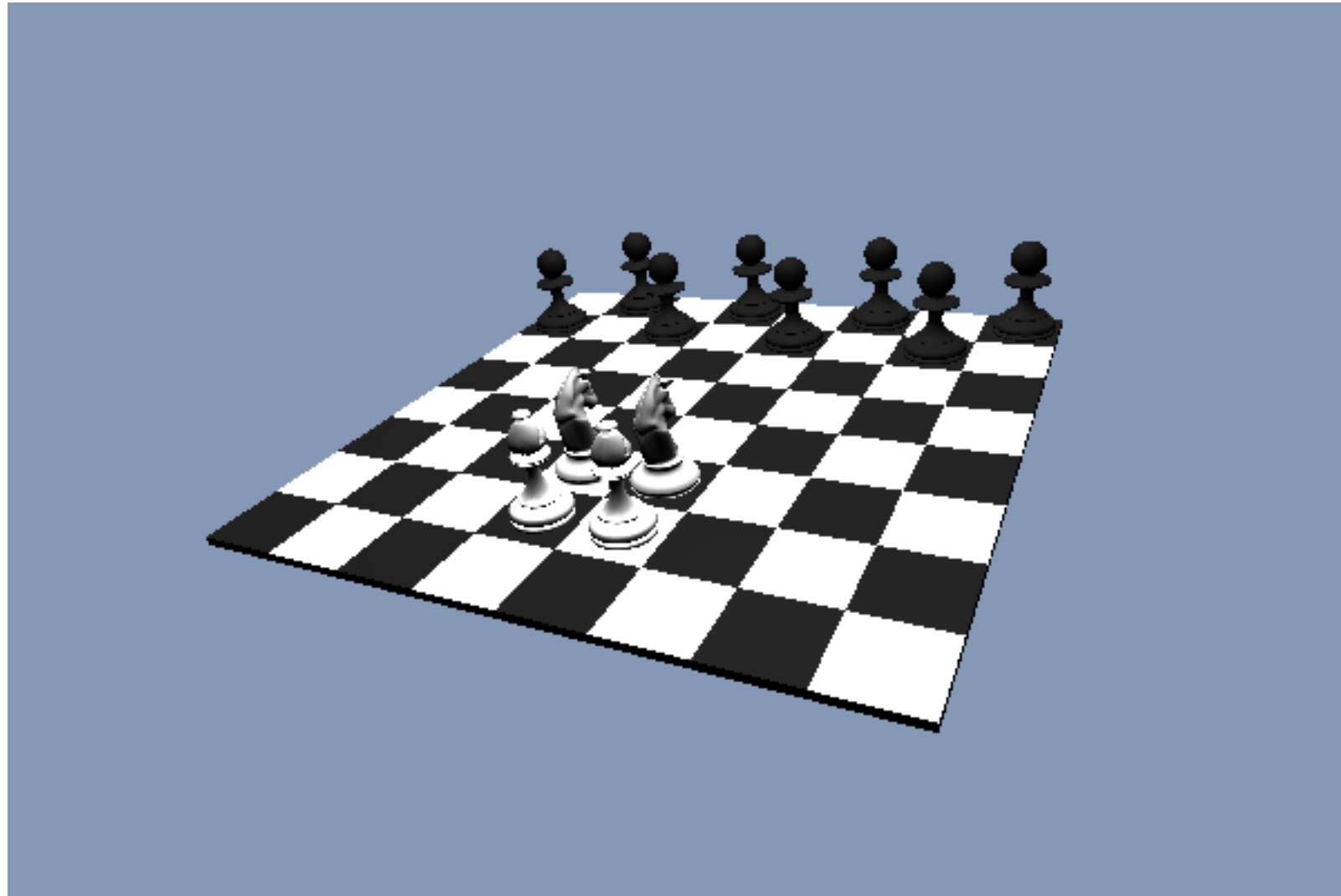
Phong - **Cook Torrance** - Cartoon





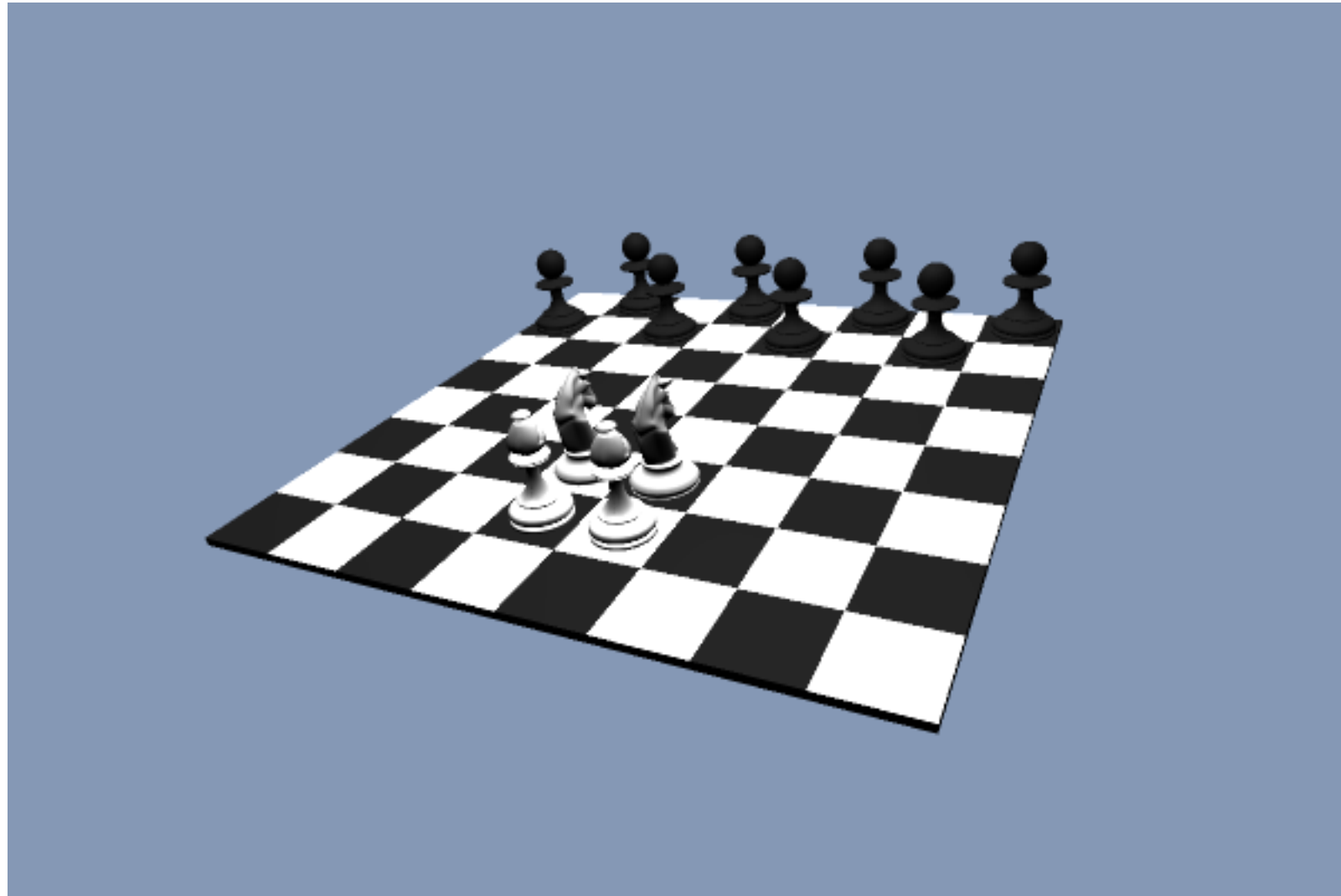
# BRDF

Phong - Cook Torrance - **Cartoon**



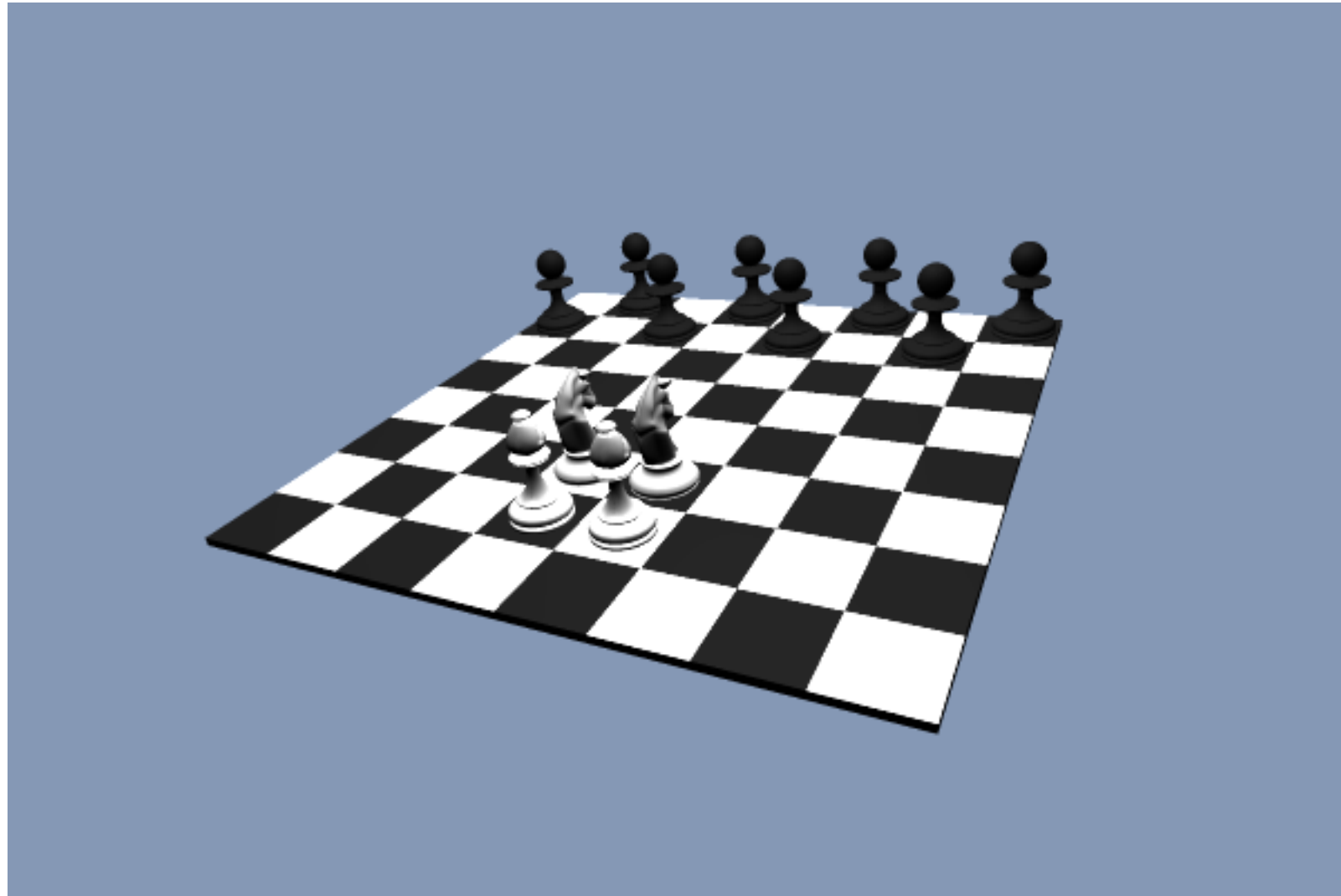
# Antialiasing

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



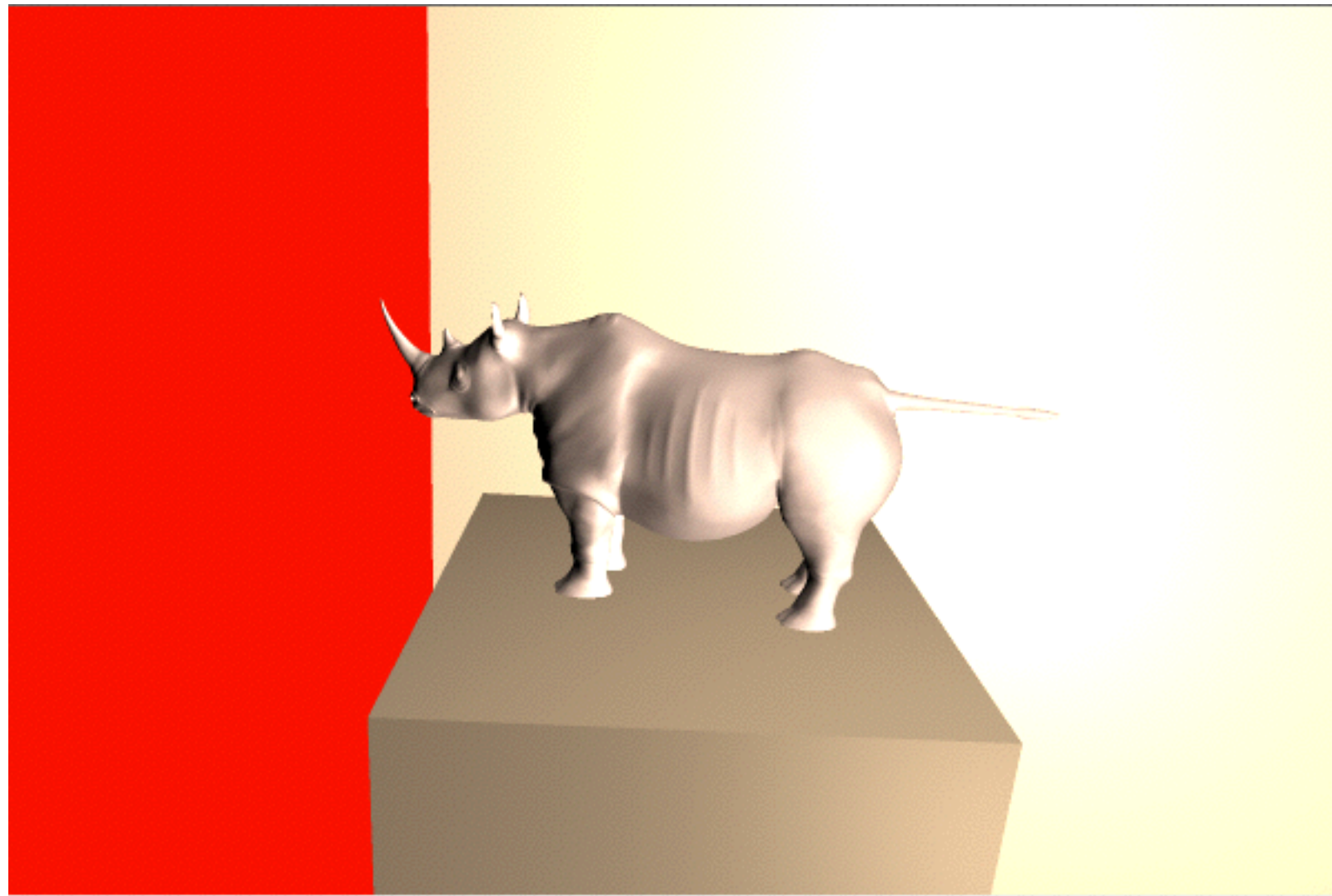
# Antialiasing

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



# Antialiasing

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

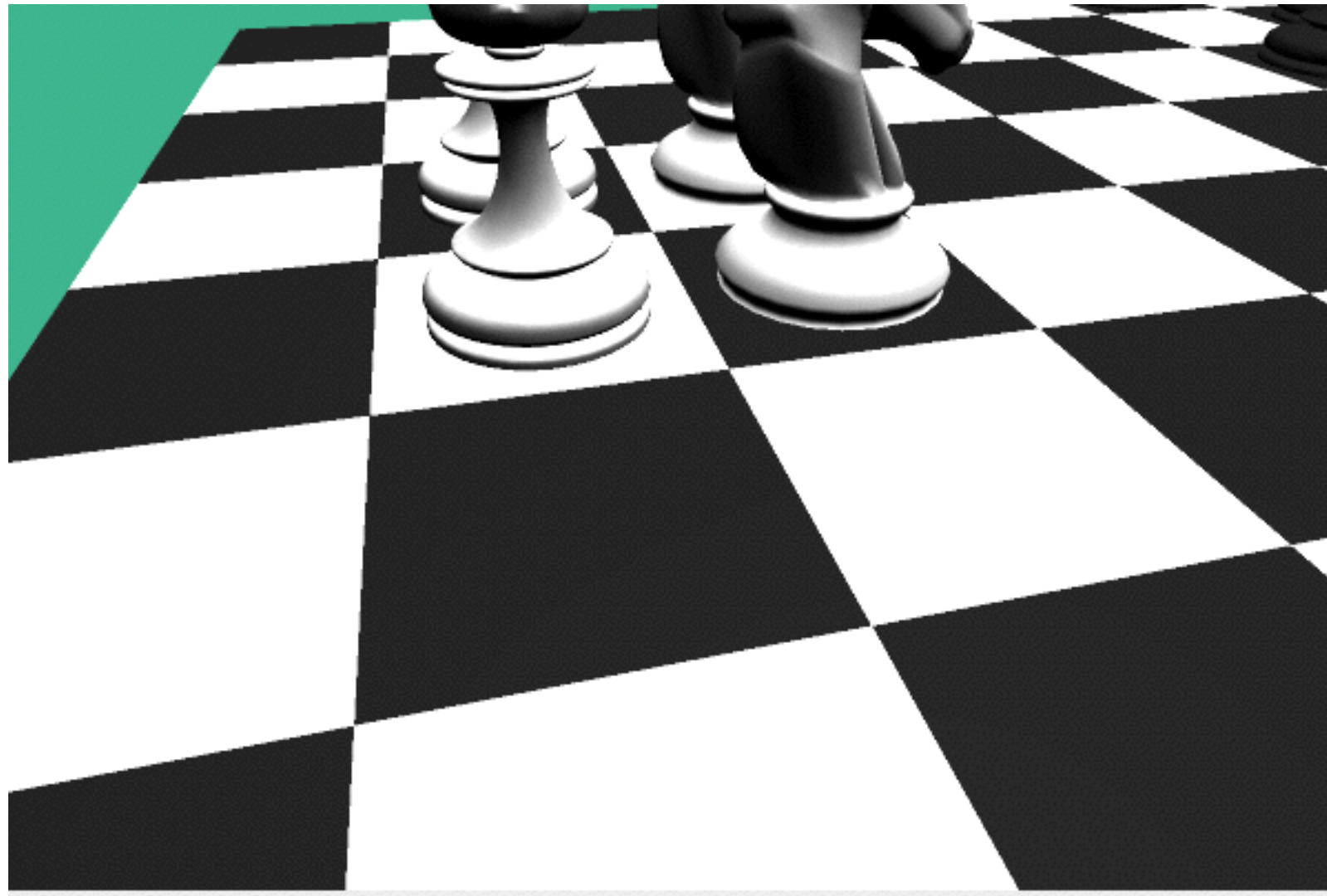


Ombres portées

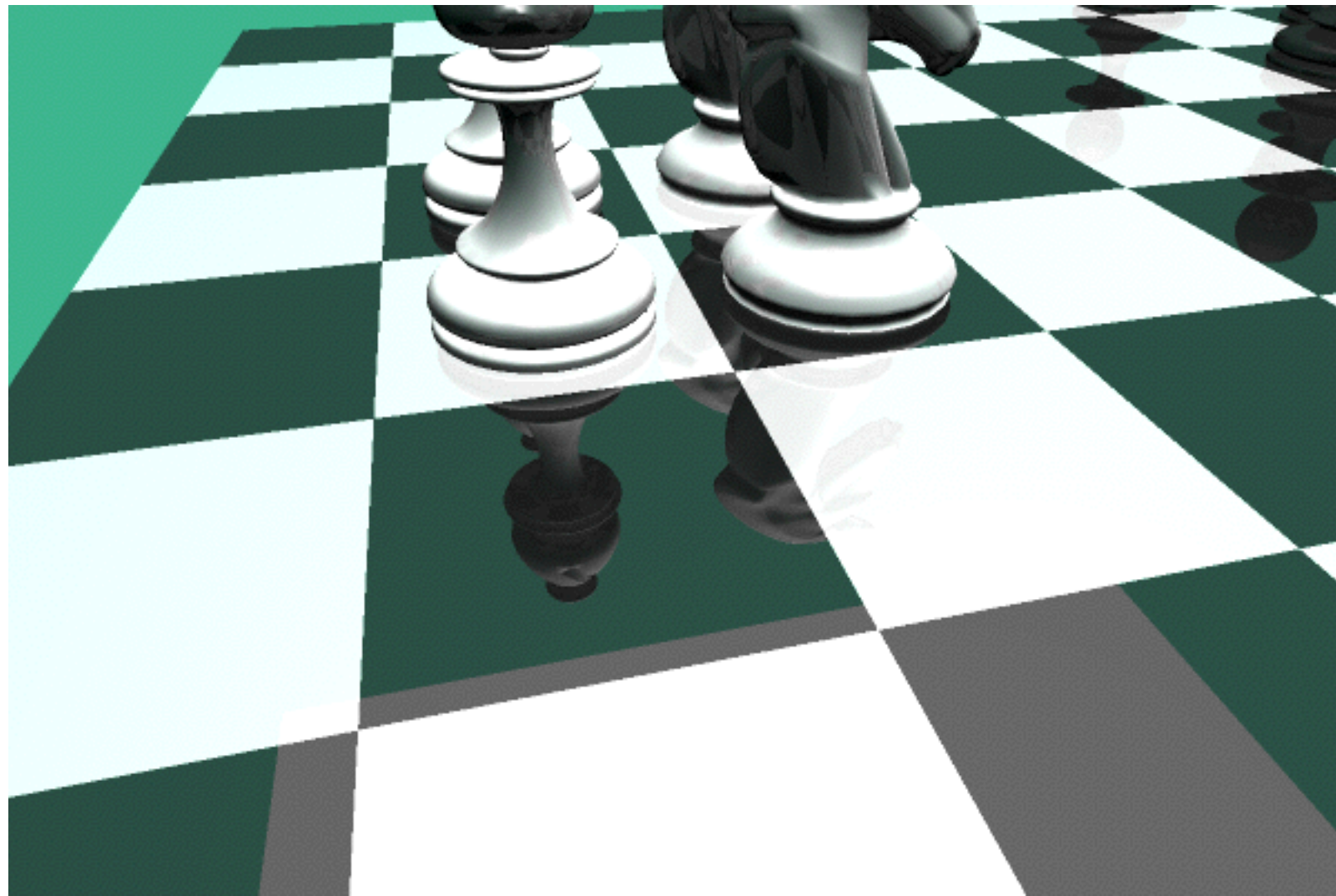




Ombres portées



# Réflexions



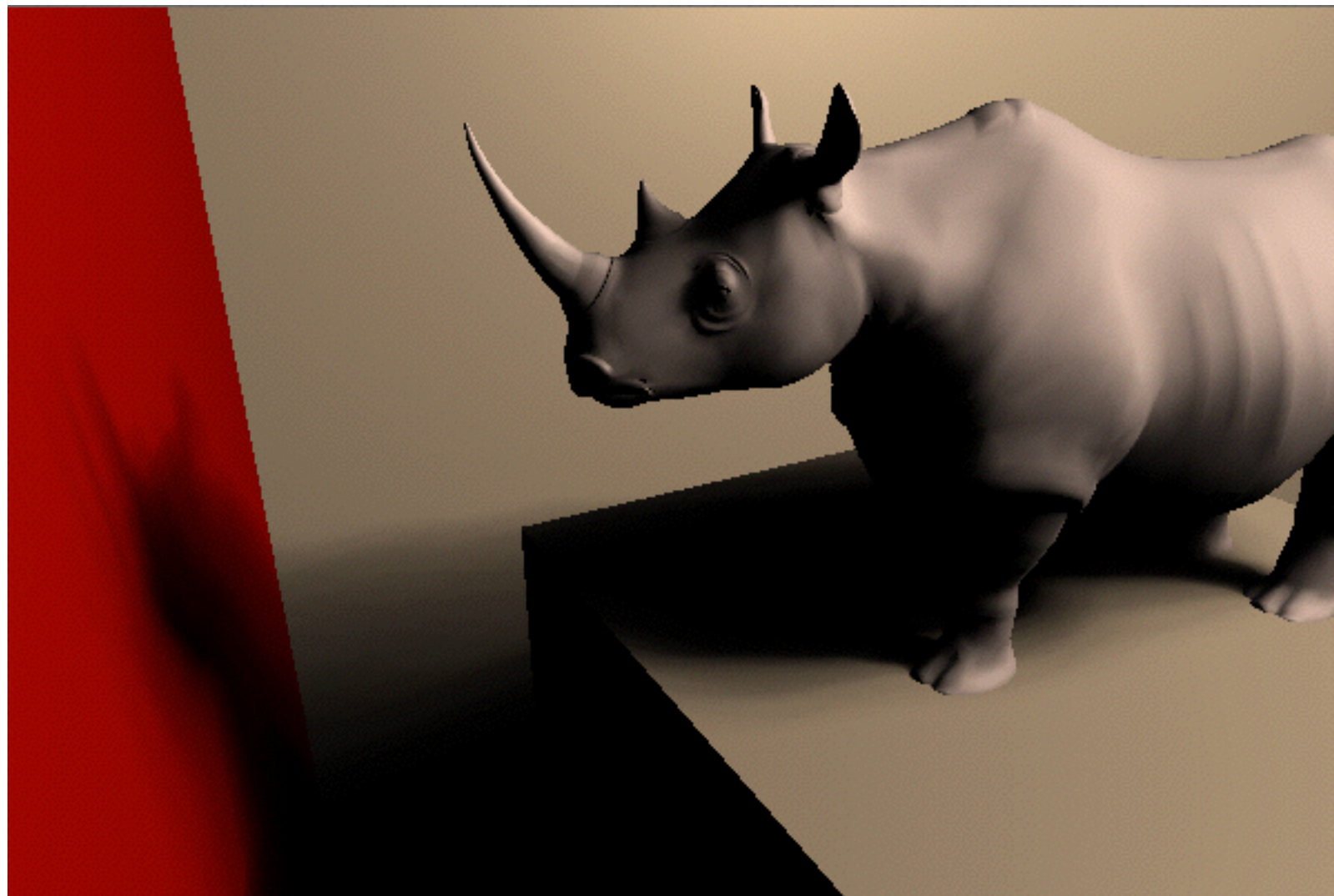
# Réflexions



# Sources de lumière étendues

1 échantillon

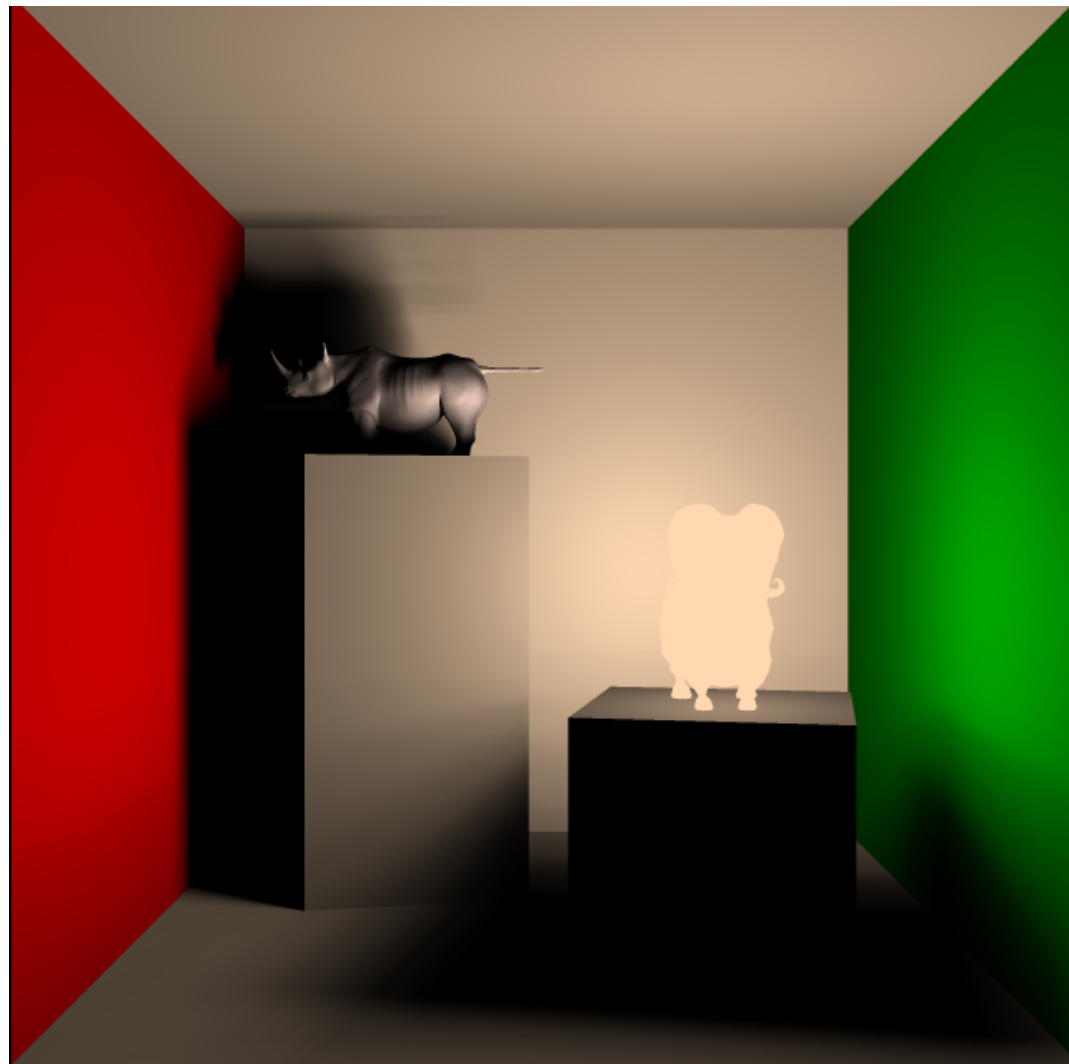




# Sources de lumière étendues

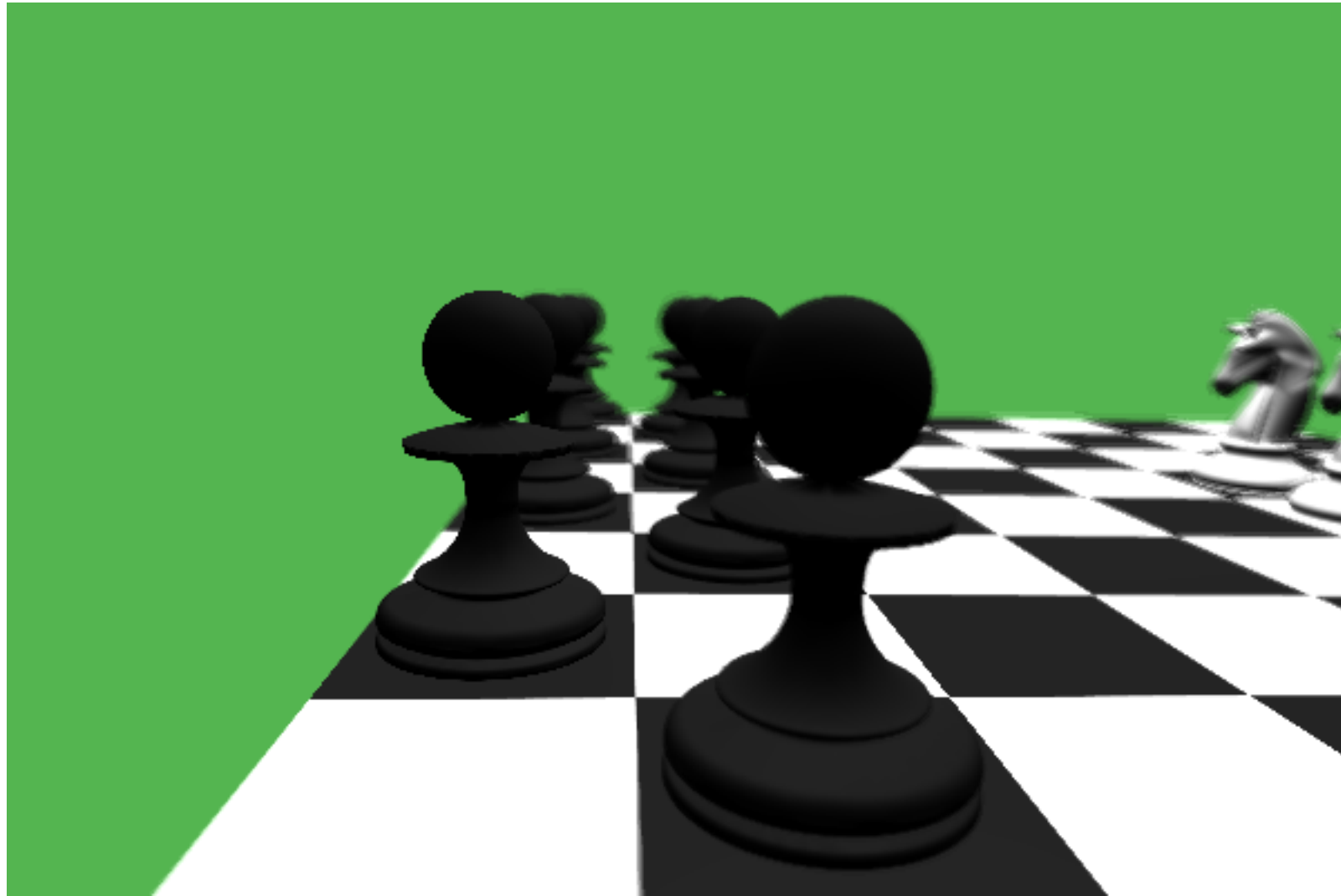
N échantillons





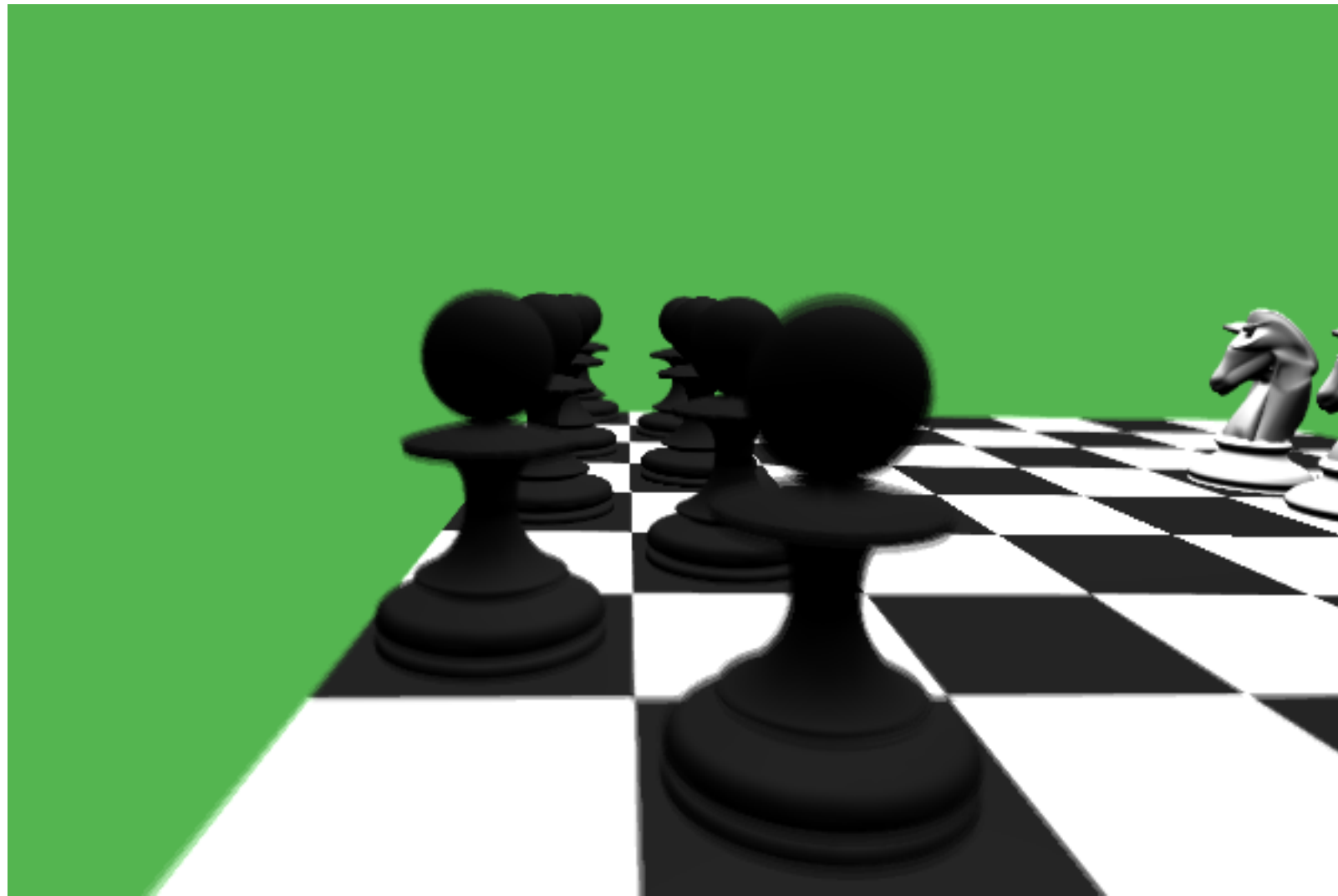
# Sources de lumière étendues

Géométrie arbitraire - Échantillonnage adaptatif



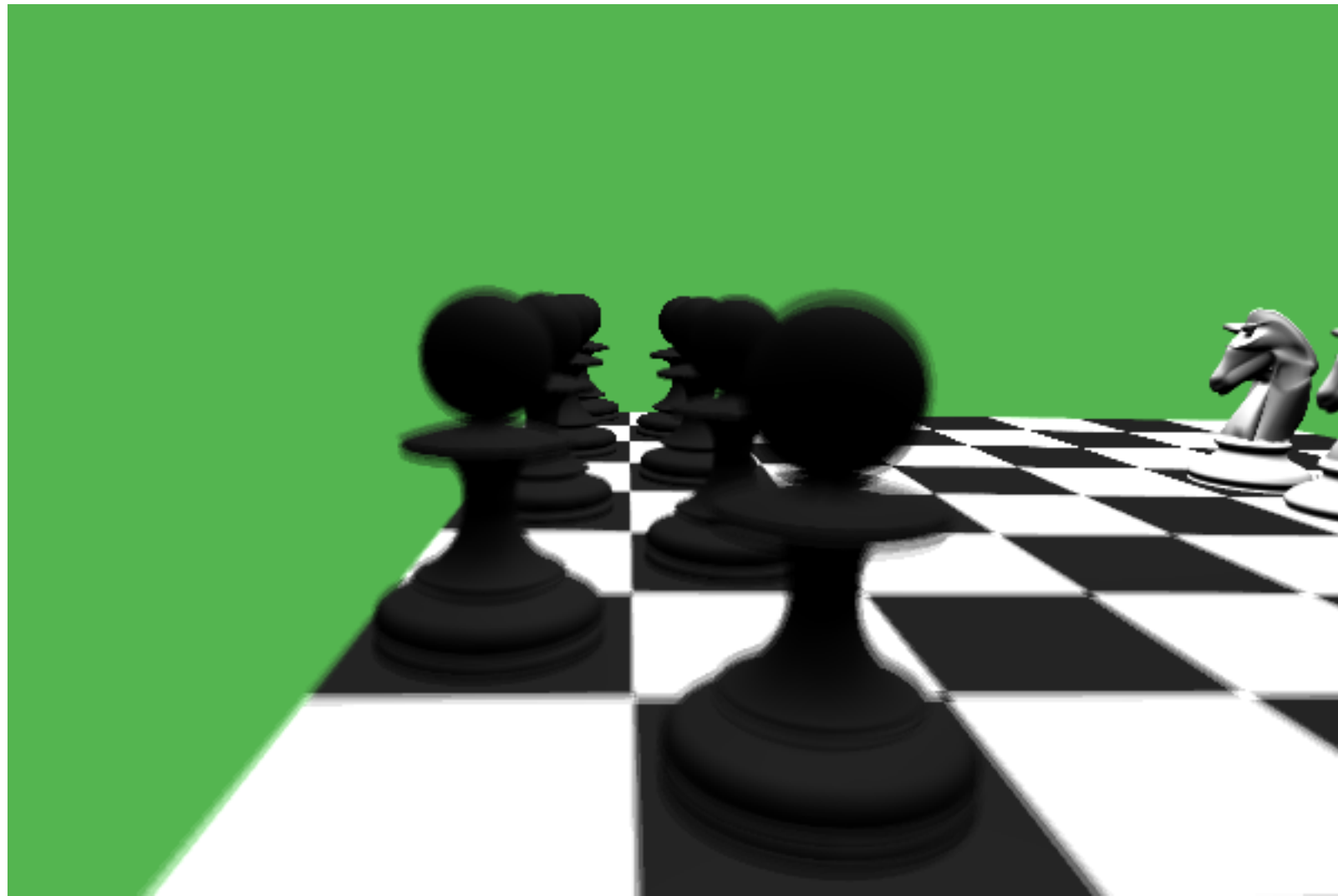
# Flou de focus

Mise au point sur la première pièce



# Flou de focus

Mise au point sur la 4ème pièce



# Flou de focus

Mise au point sur le dernier pion



# Path Tracing

Sans Path Tracing





# Path Tracing

Path Tracing léger





# Path Tracing

Path Tracing loud



# 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

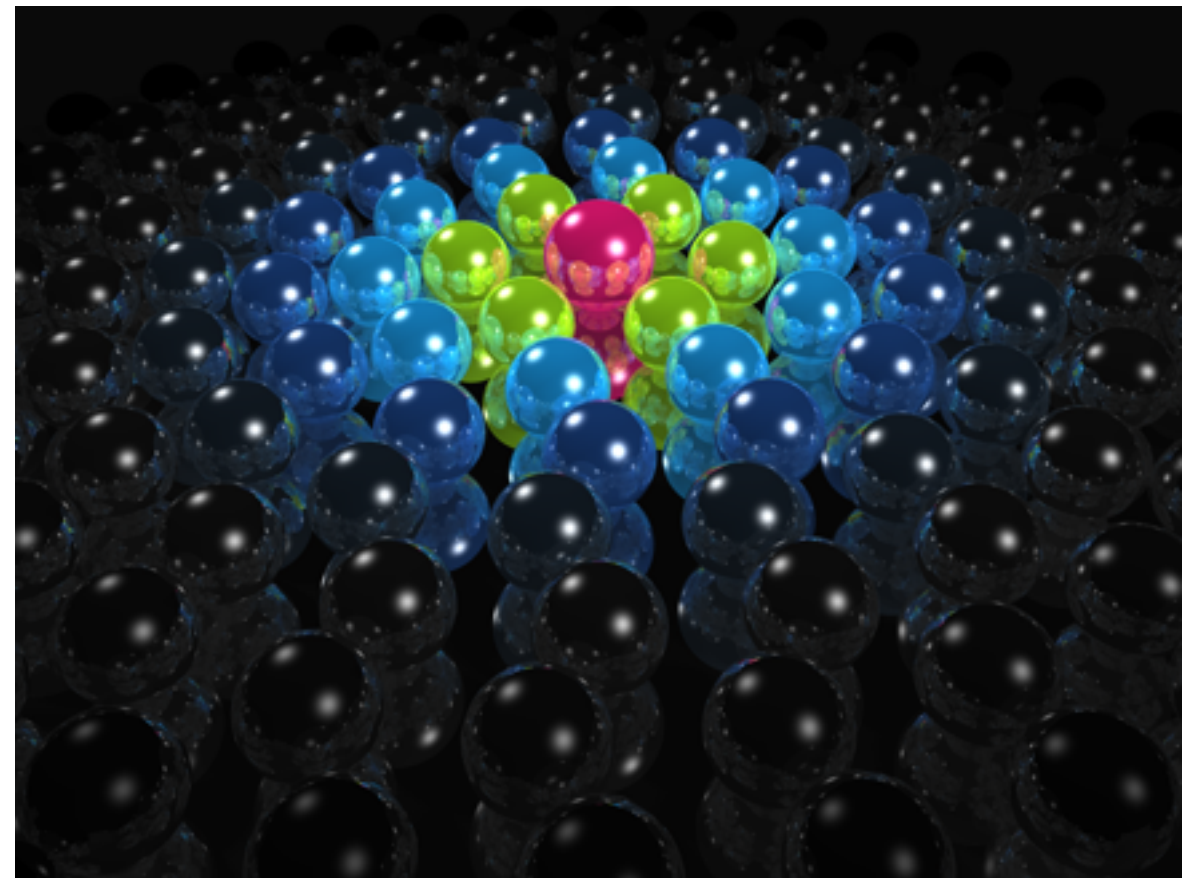
Mirror

Path Tracer

Transparent

# Améliorations Possibles

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



Merci pour votre  
attention