02562 Rendering - Introduction

Rendering with Blender

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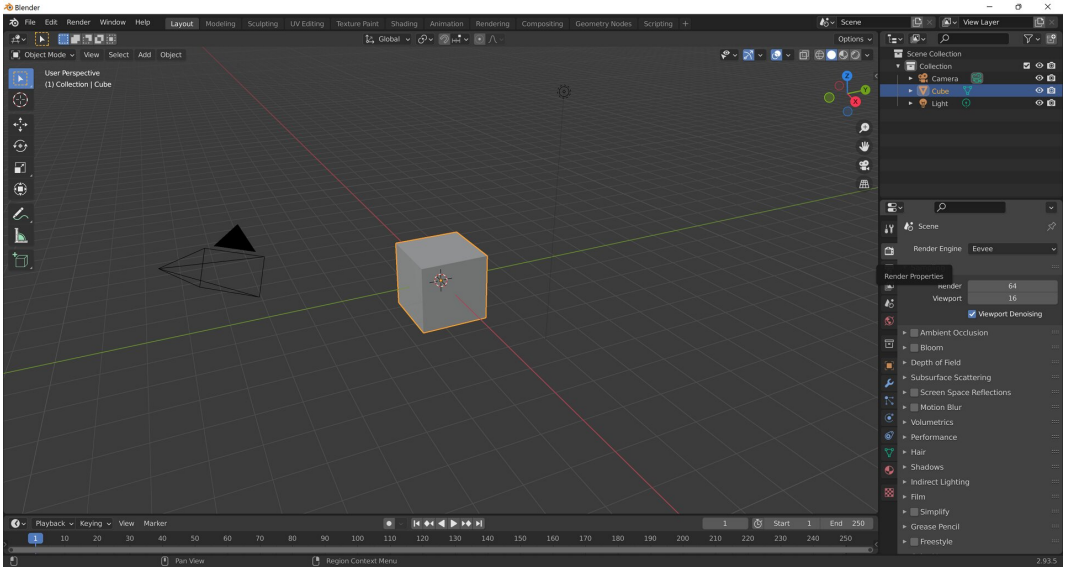
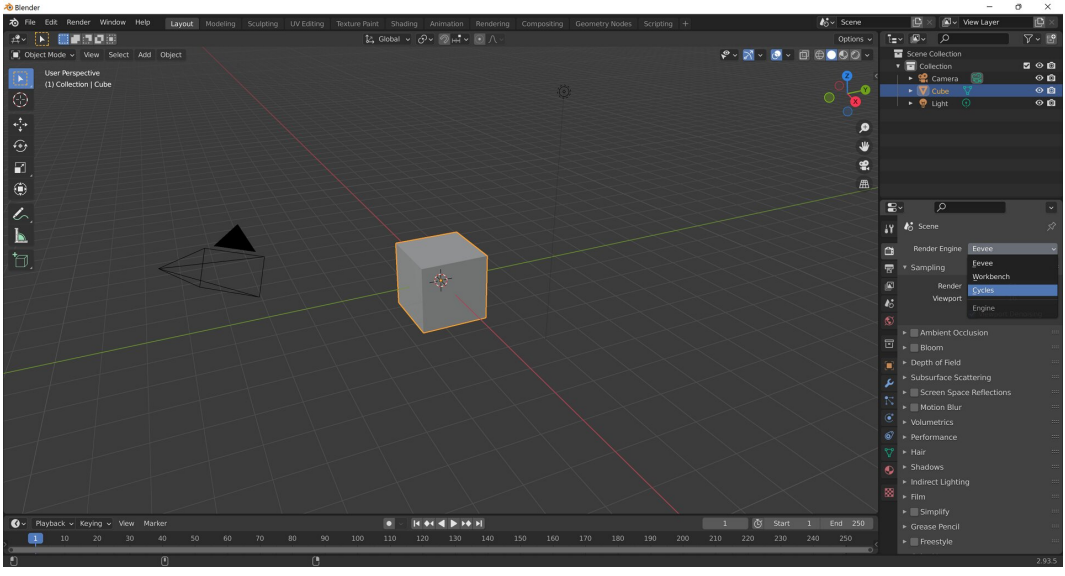
Production rendering using Blender

- Blender has a physically-based path tracer for production rendering called **Cycles**: `https://www.cycles-renderer.org/`
- Let us see if Cycles has a set of features similar to the ones we have been implementing:
  - Anti-aliased progressive path tracing with global illumination.
  - HDR environment lighting.
  - Diffuse, mirror, glass, glossy materials.
  - Casting shadows on the environment using holdout geometry.

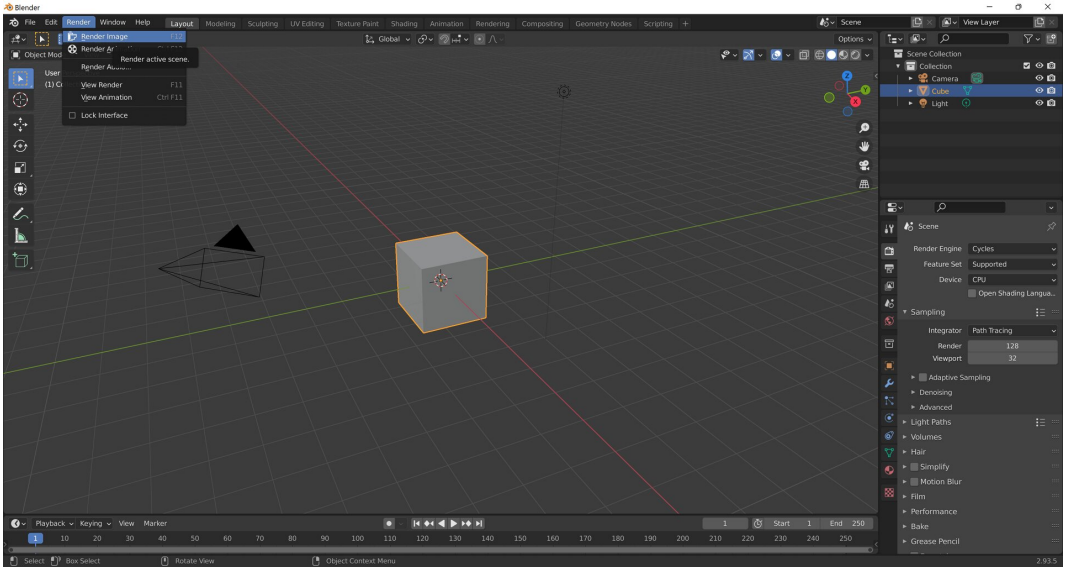
Switch to using the Cycles render engine



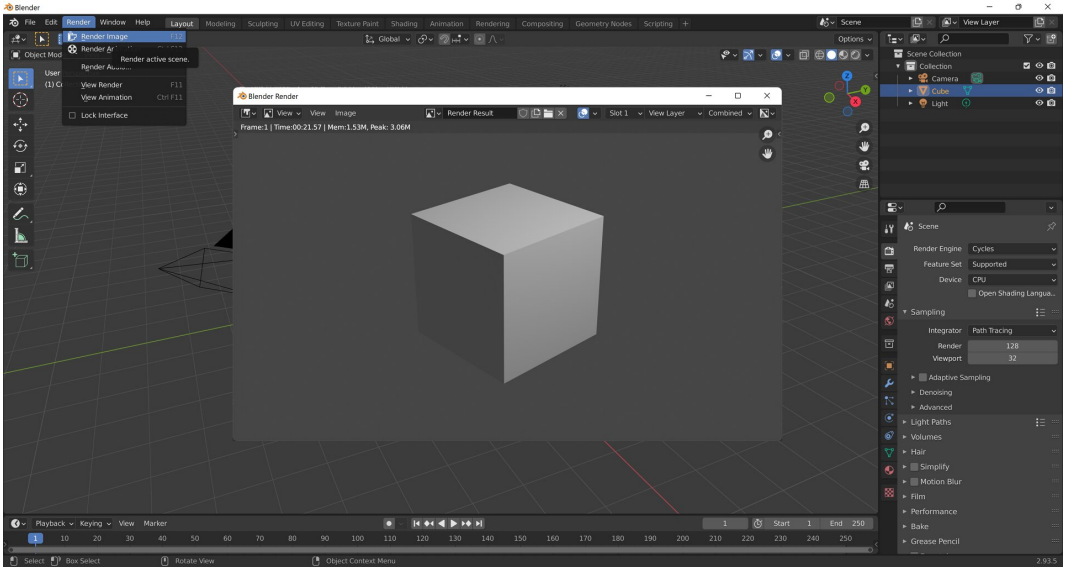
Switch to using the Cycles render engine



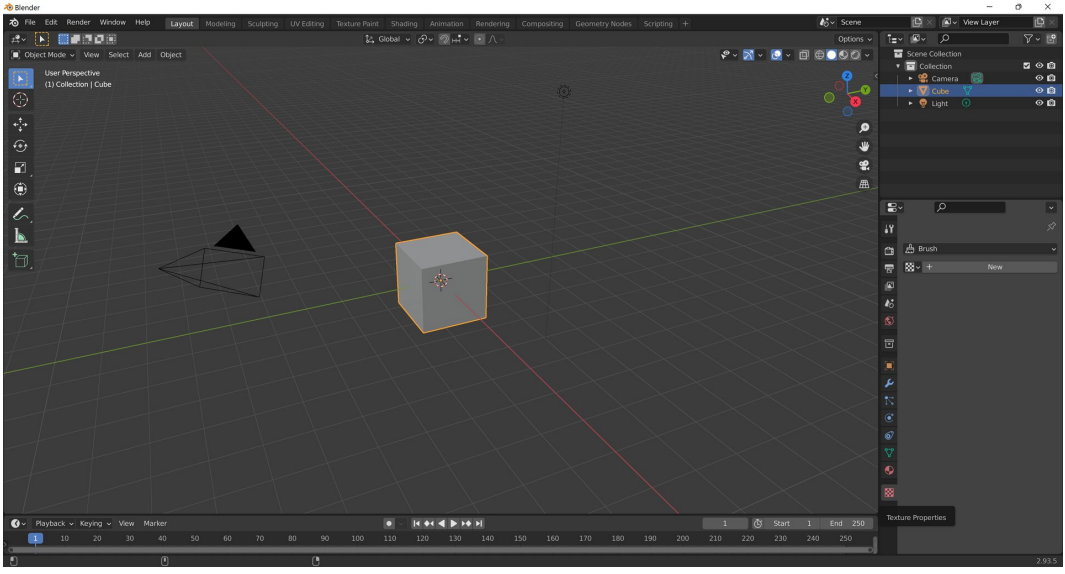
Start rendering ⟨F12⟩



Start rendering ⟨F12⟩



Add a texture



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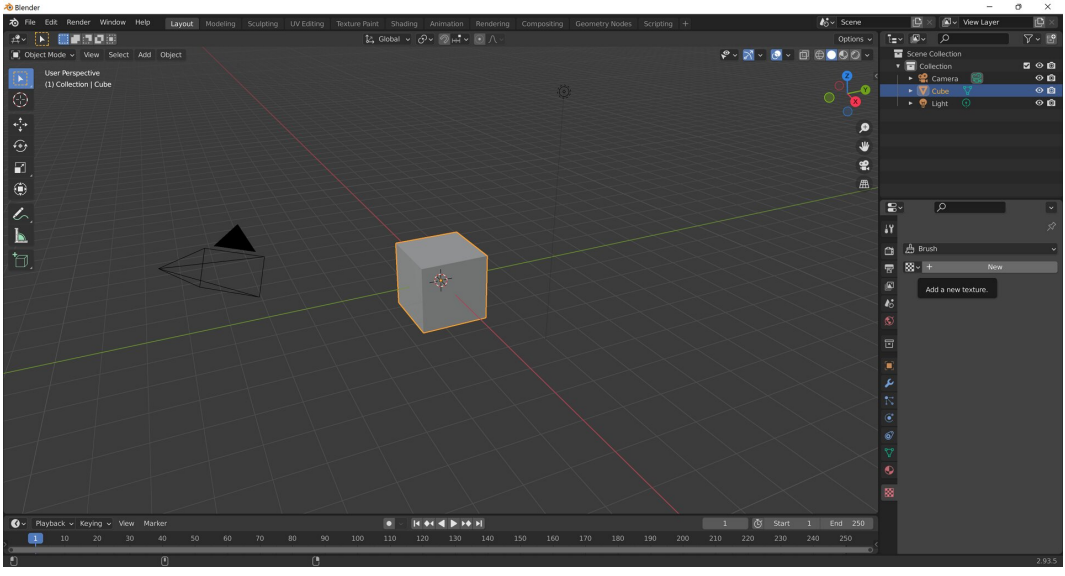

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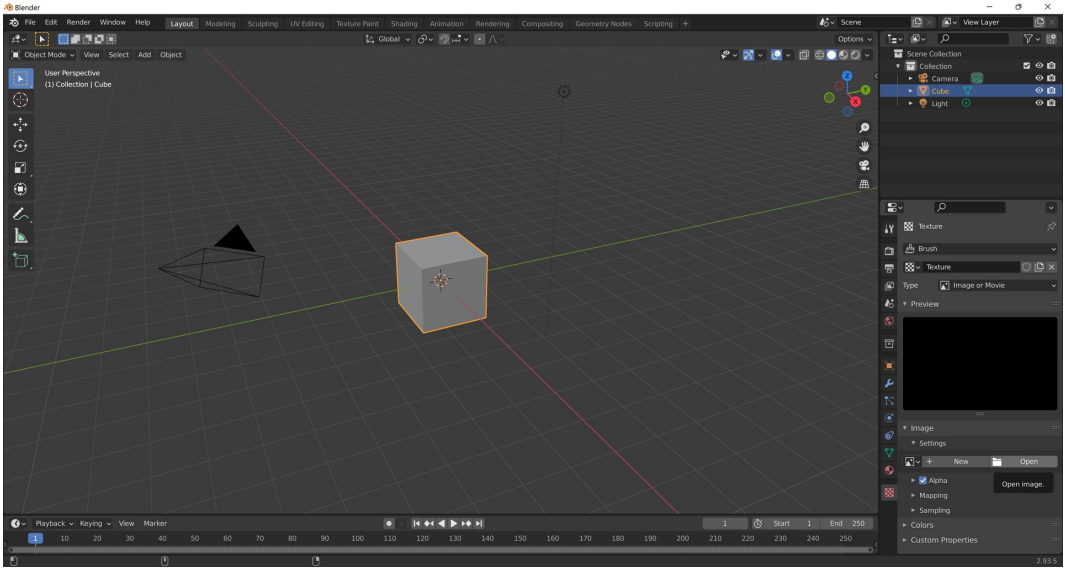
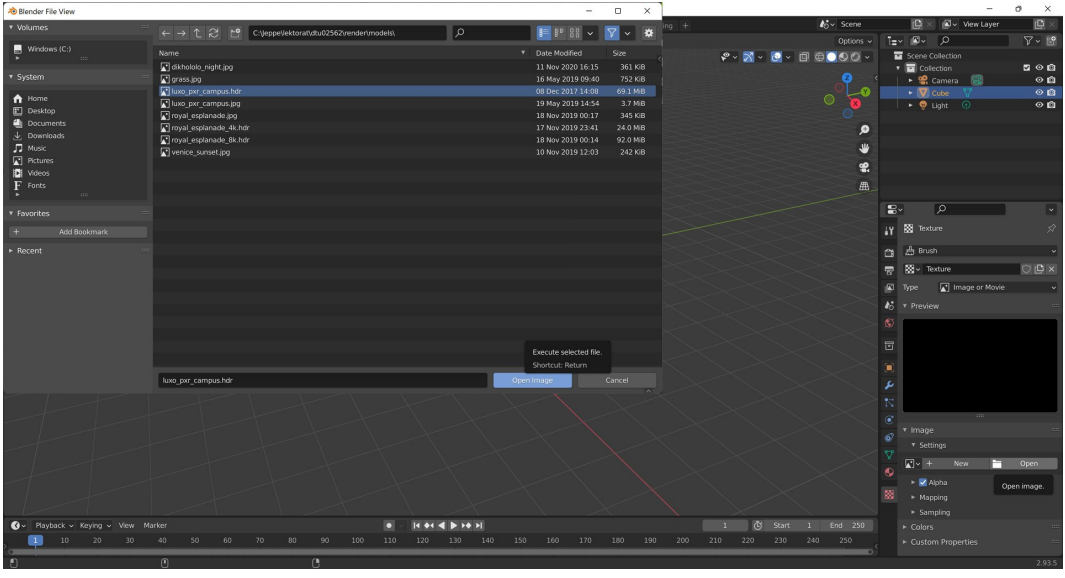


Load an image into the texture



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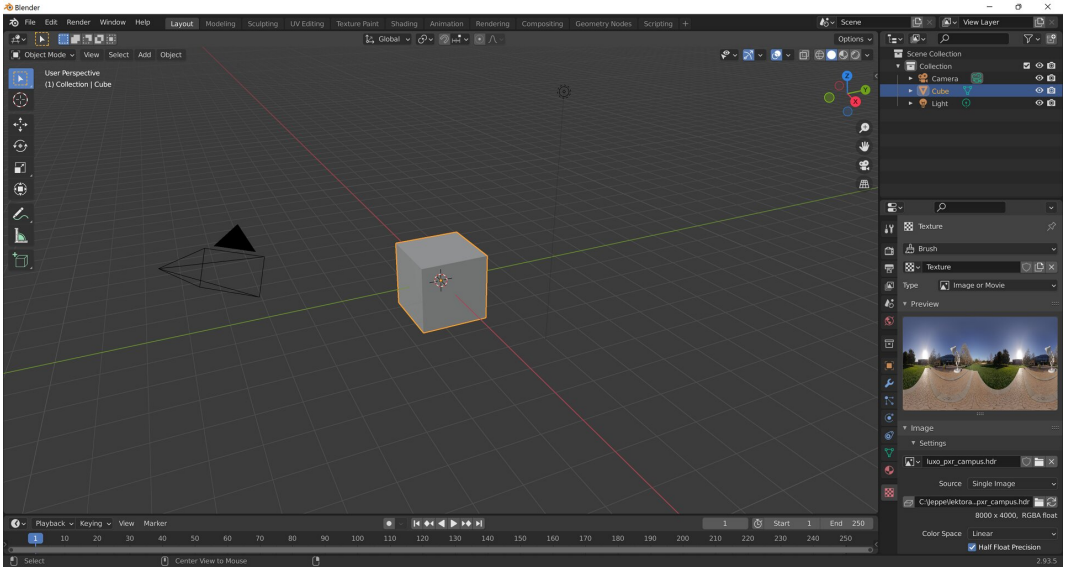
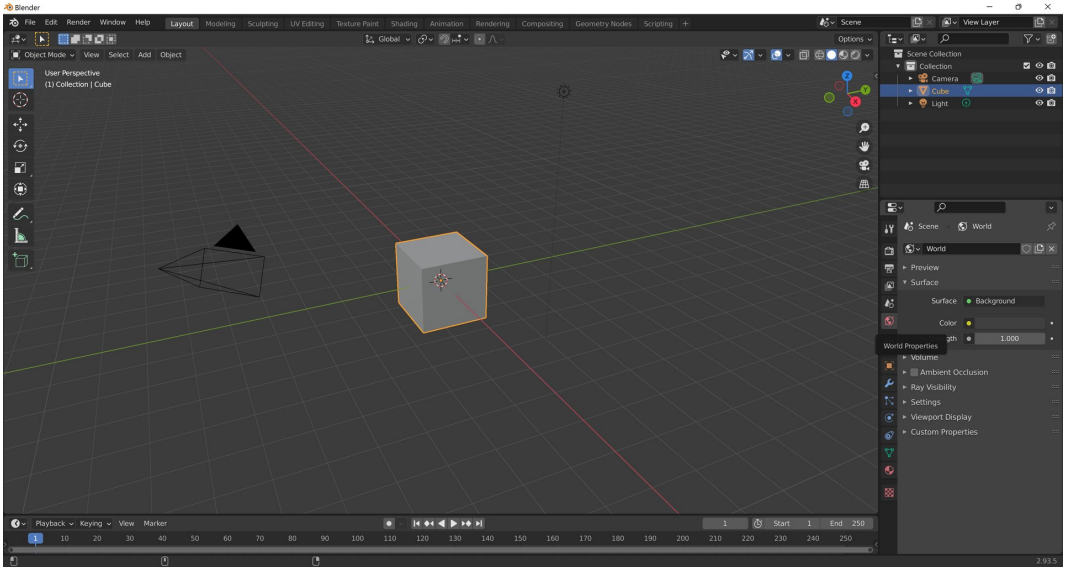


Insert texture as background environment



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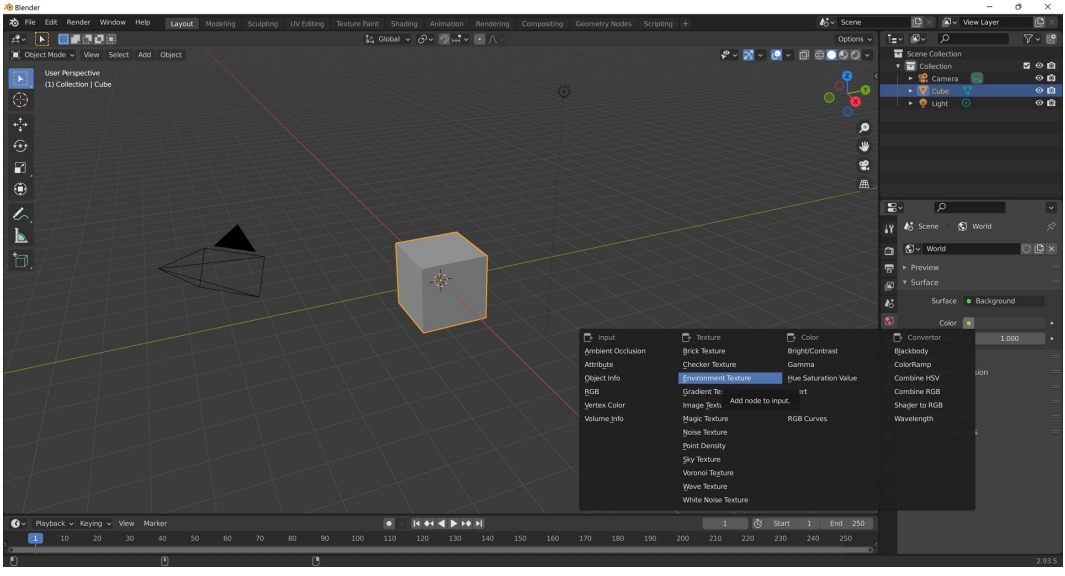

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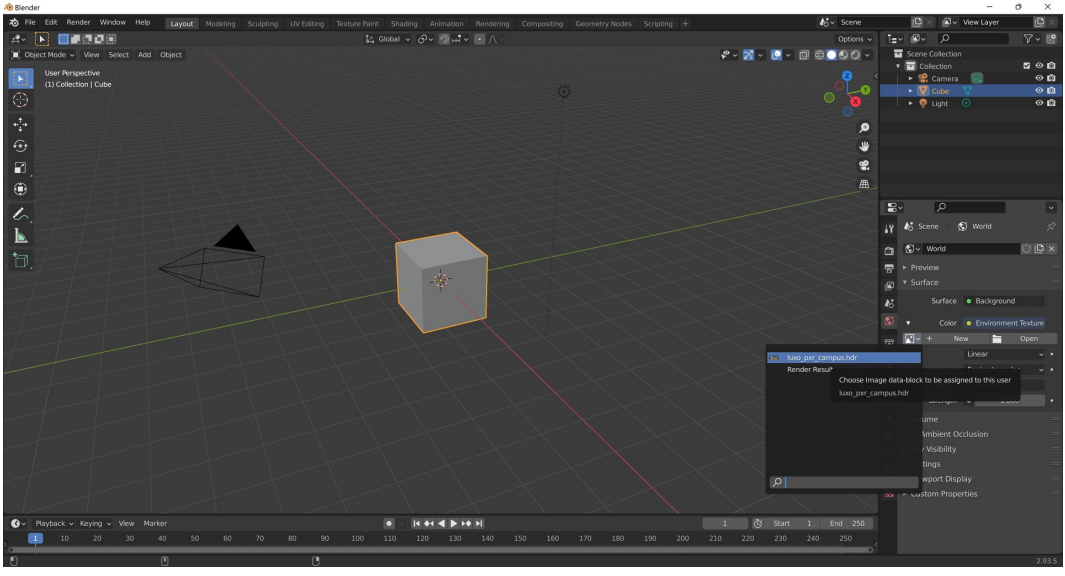
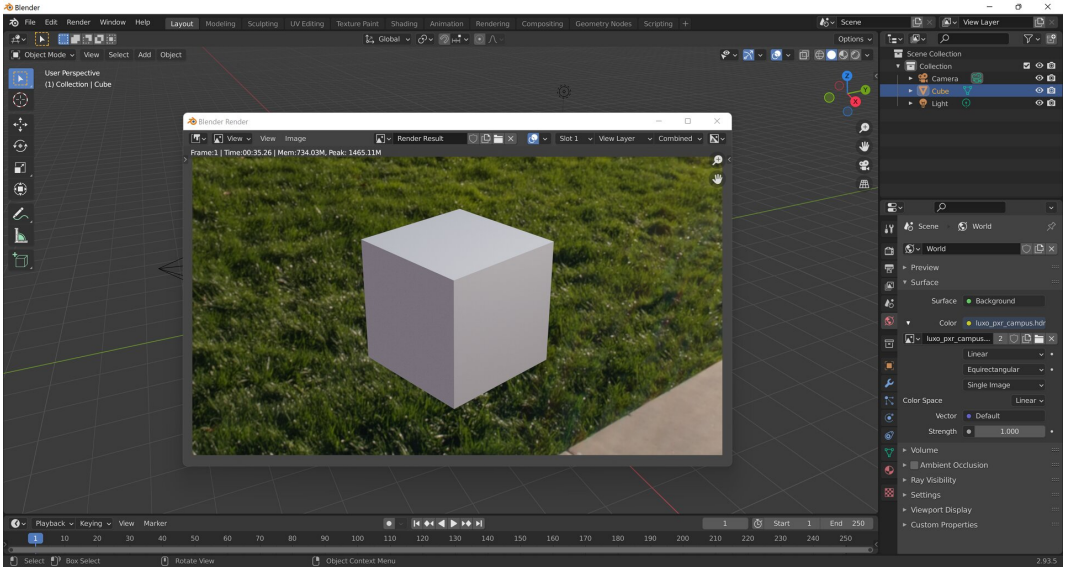
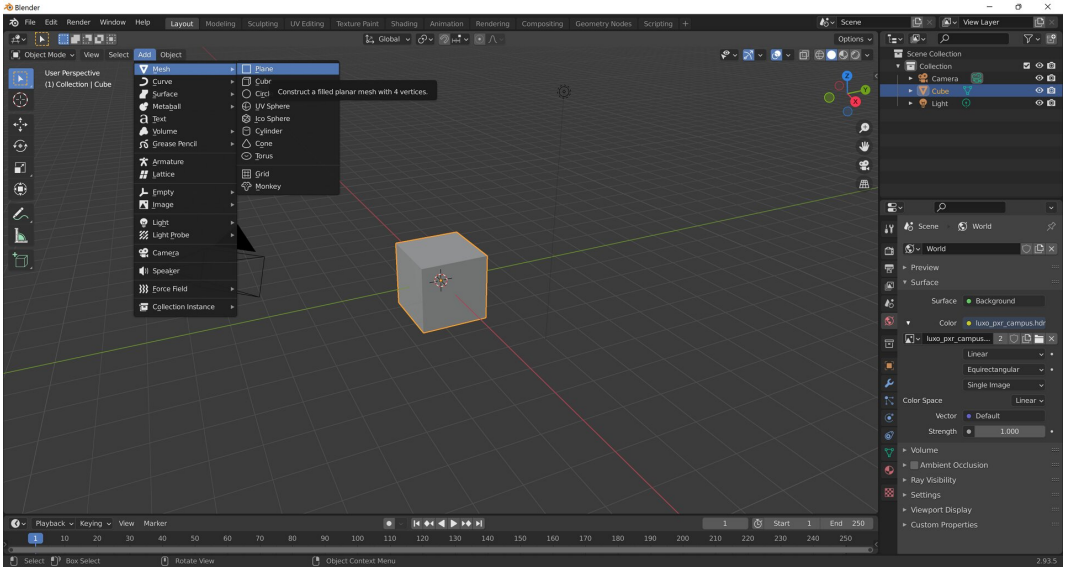


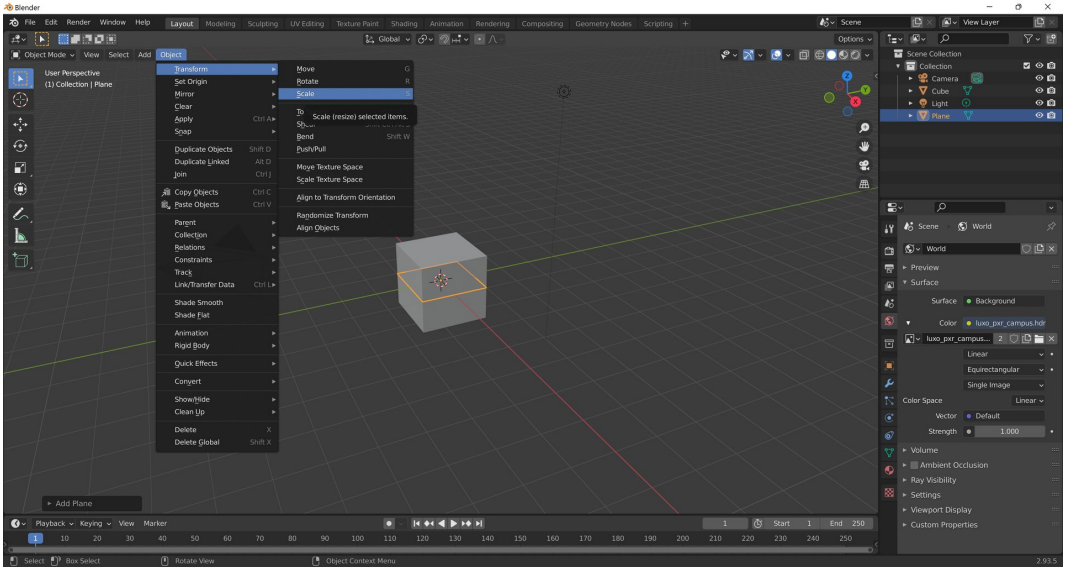
Insert texture as background environment and render



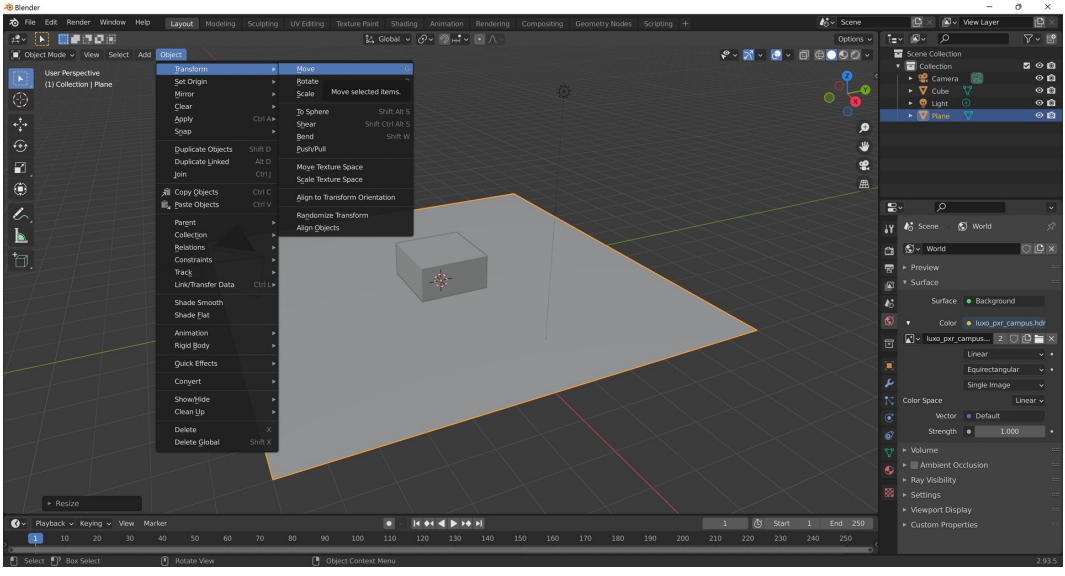
Add a planar quadrilateral (quad)



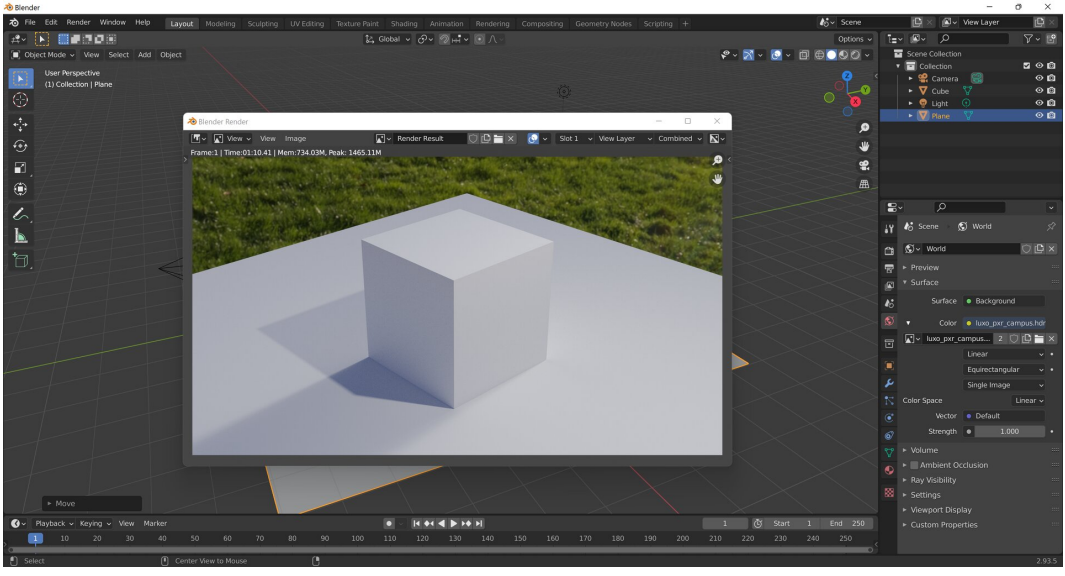
Scale and move the quad



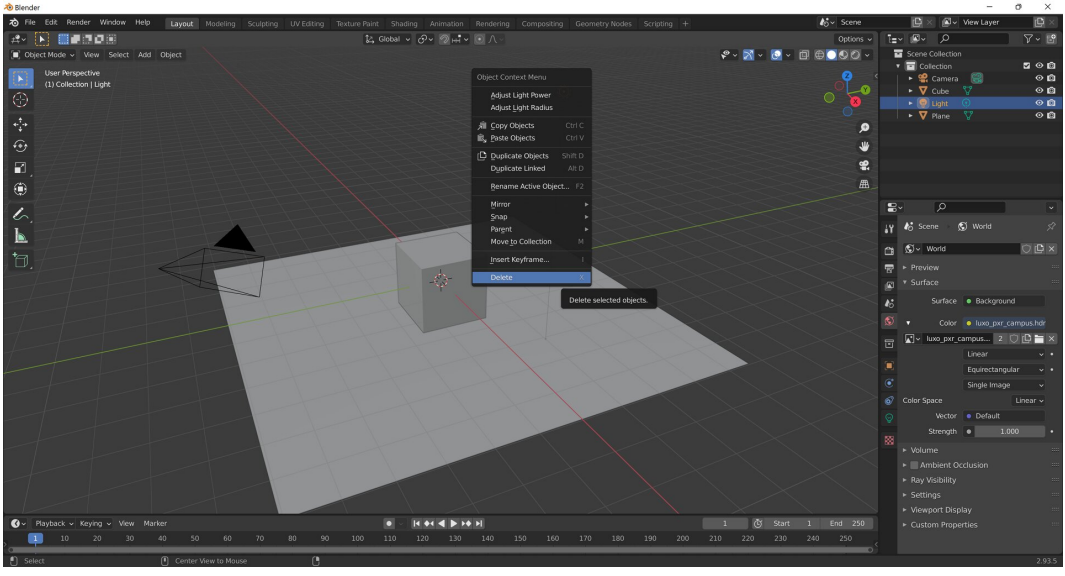
Scale and move the quad



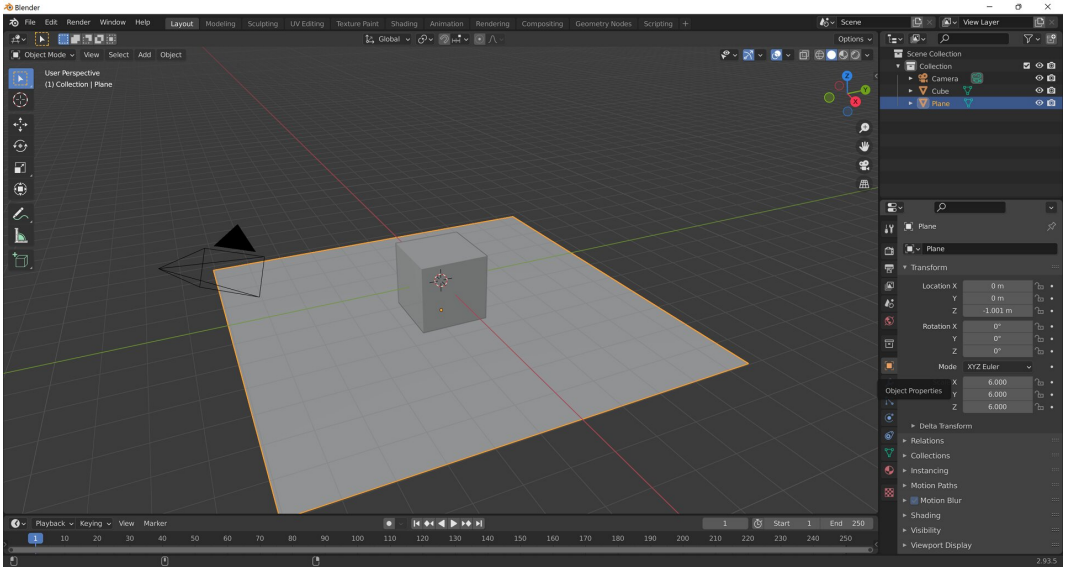
Scale and move the quad



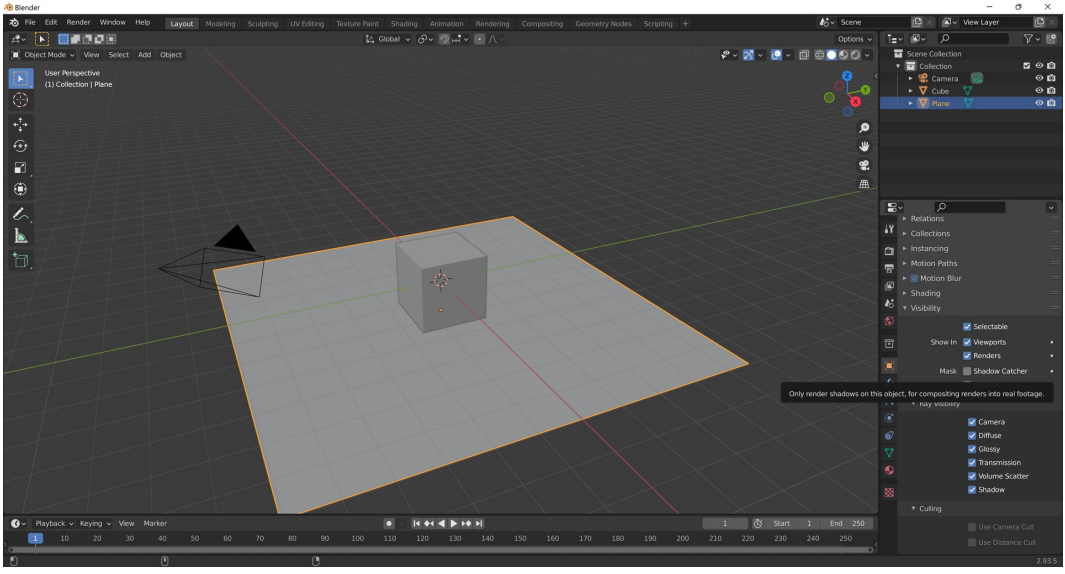
Remove the default point light



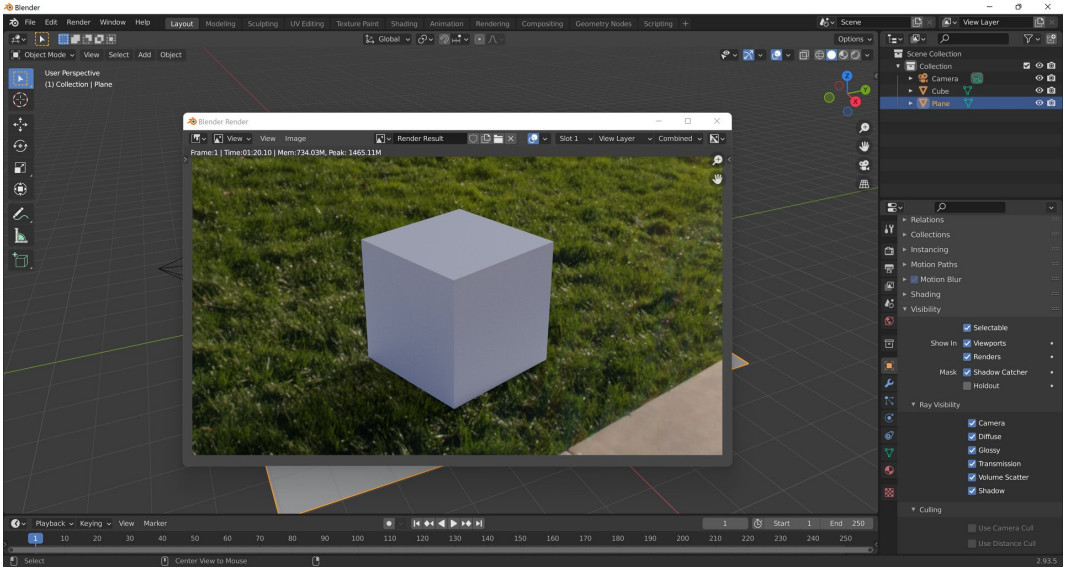
Let the quad catch shadows



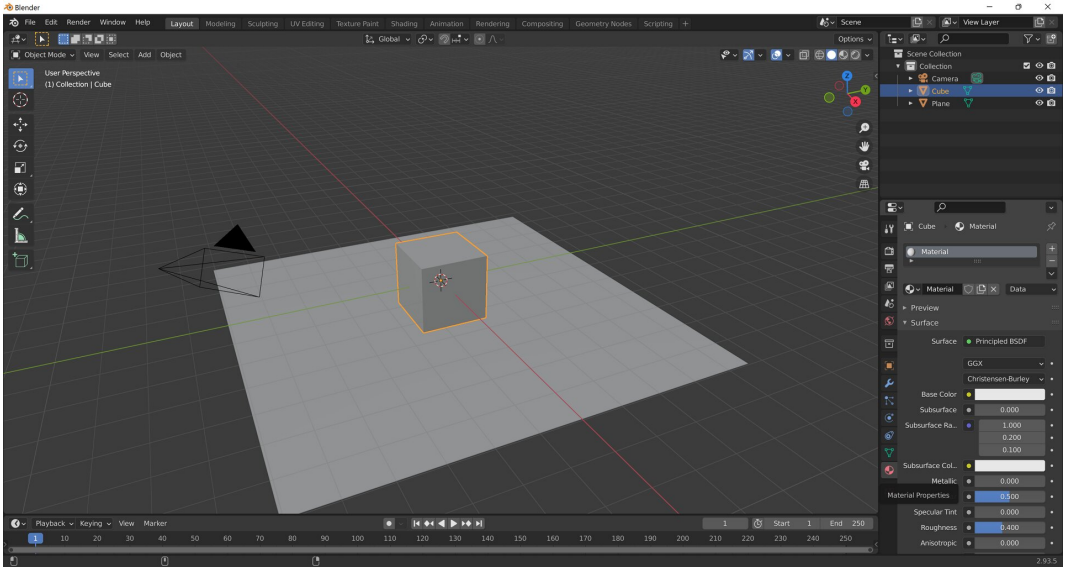
Let the quad catch shadows



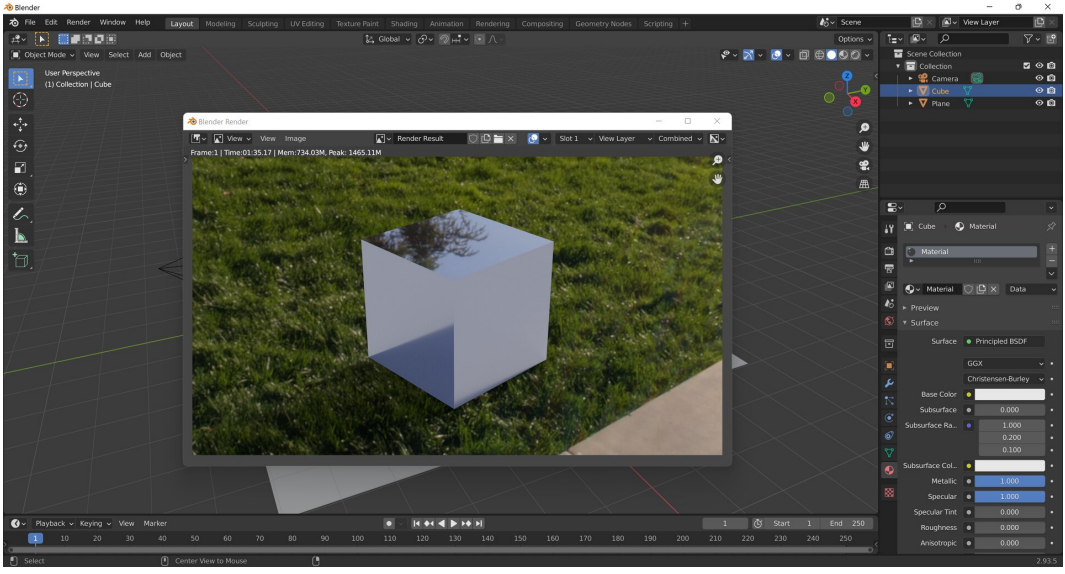
Let the quad catch shadows



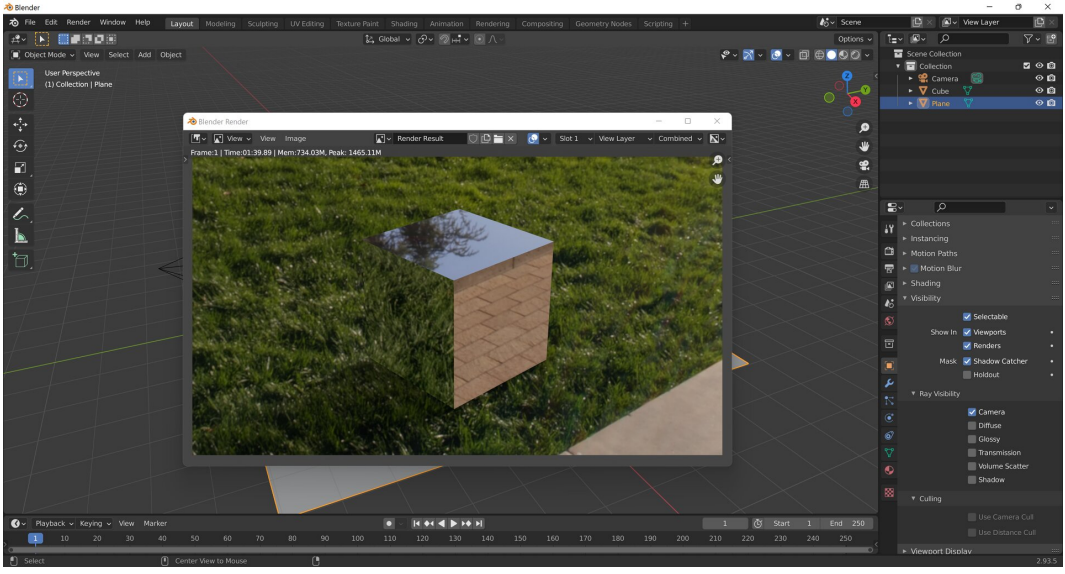
Set the material of the cube to be a mirror



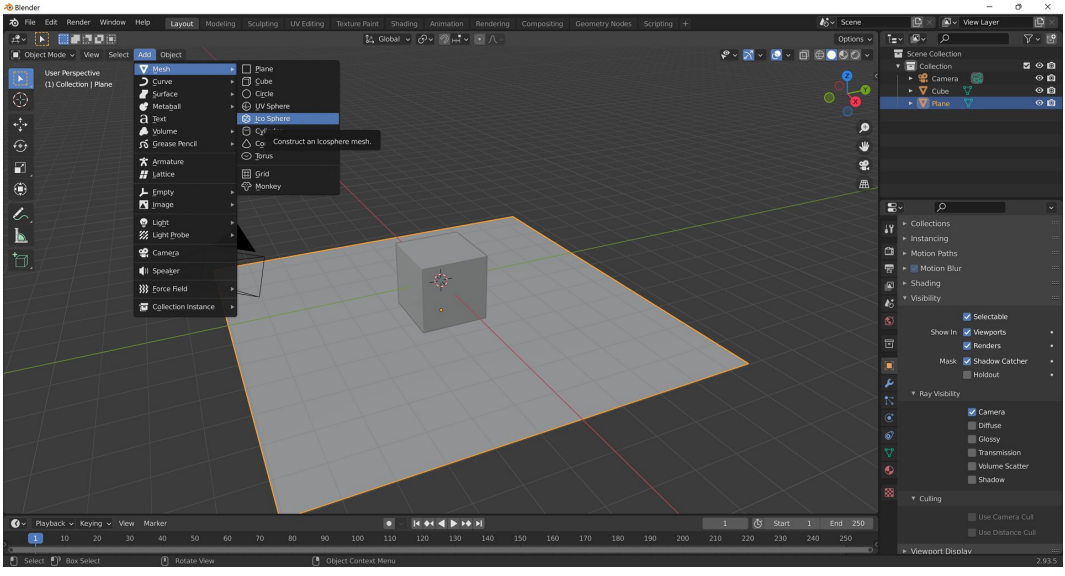
Set the material of the cube to be a mirror (unexpected result!)



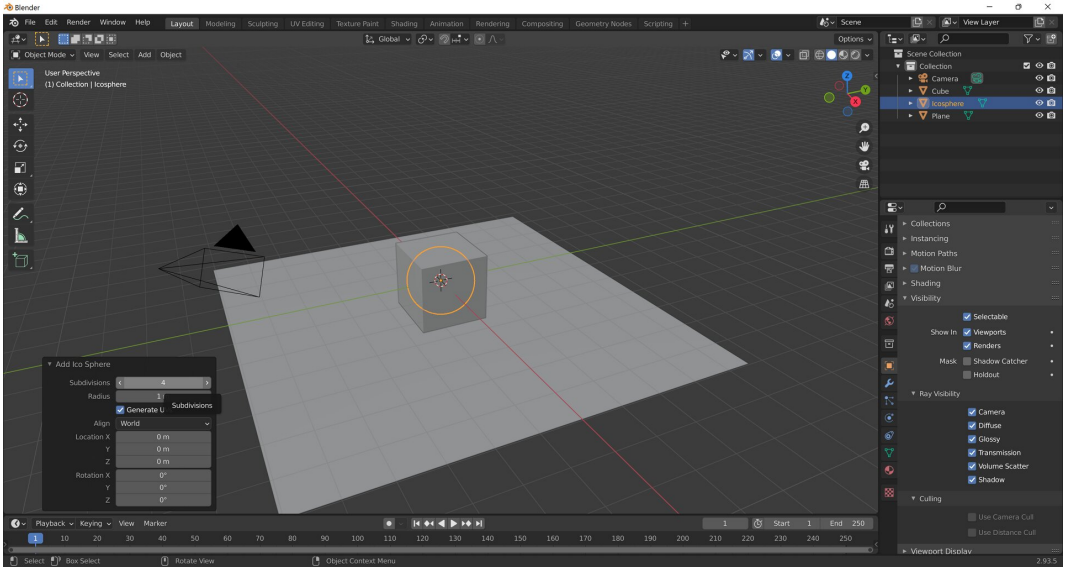
Make the quad visible to camera rays only



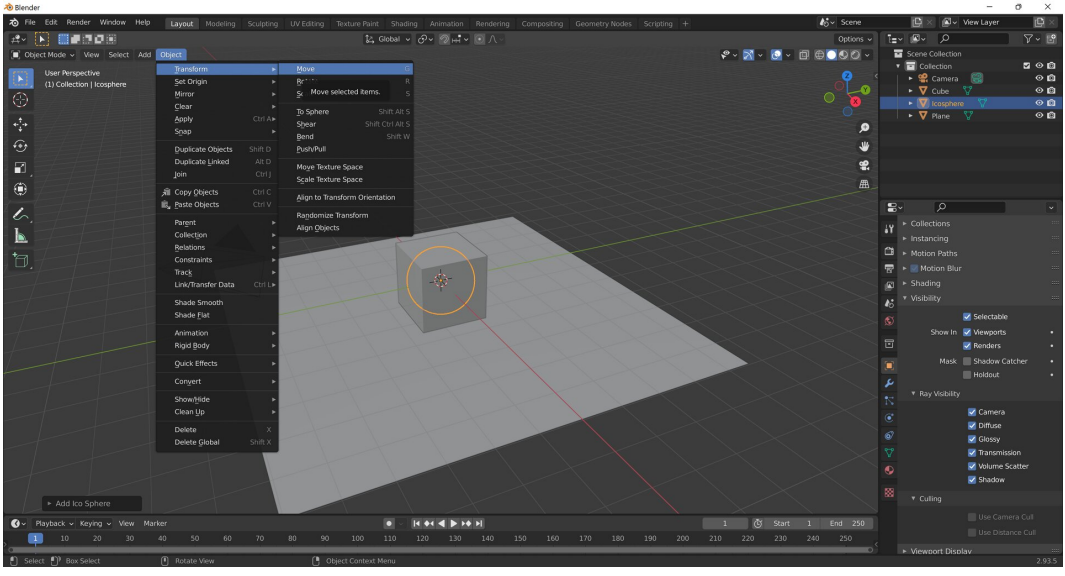
Add a subdivisible sphere



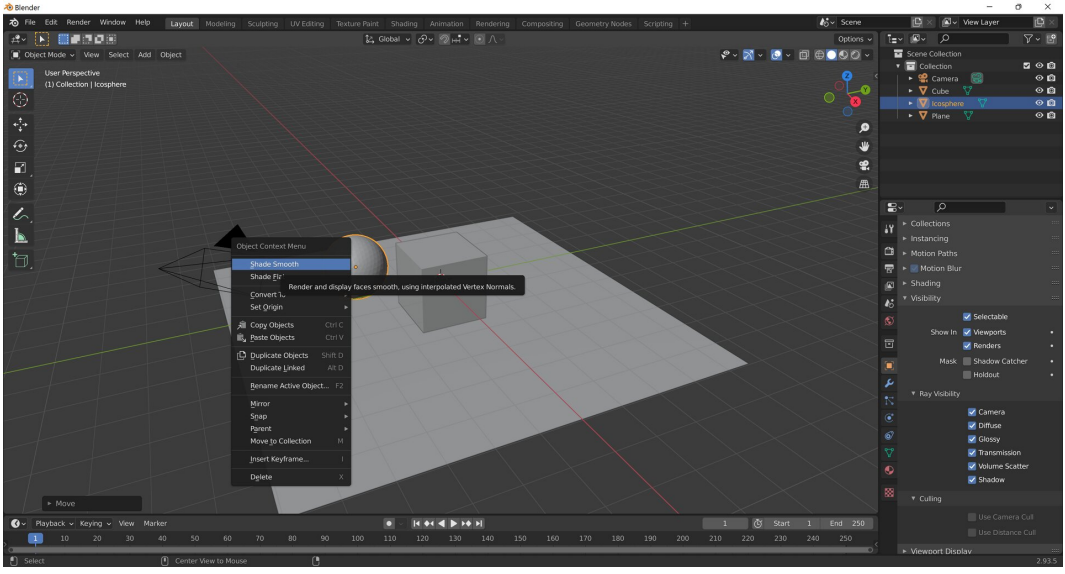
Add a subdivisible sphere and subdivide



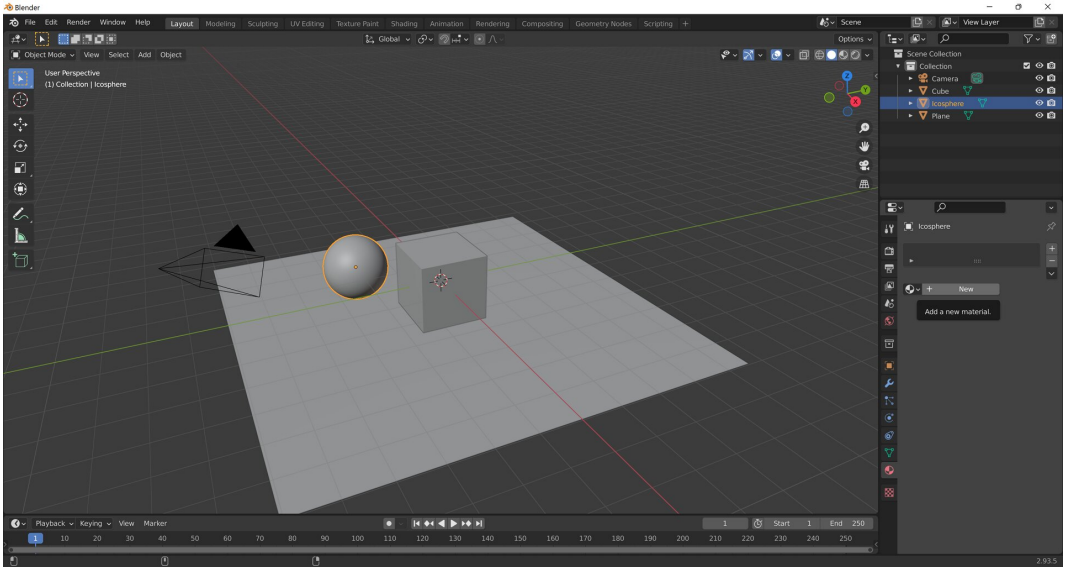
Position the sphere



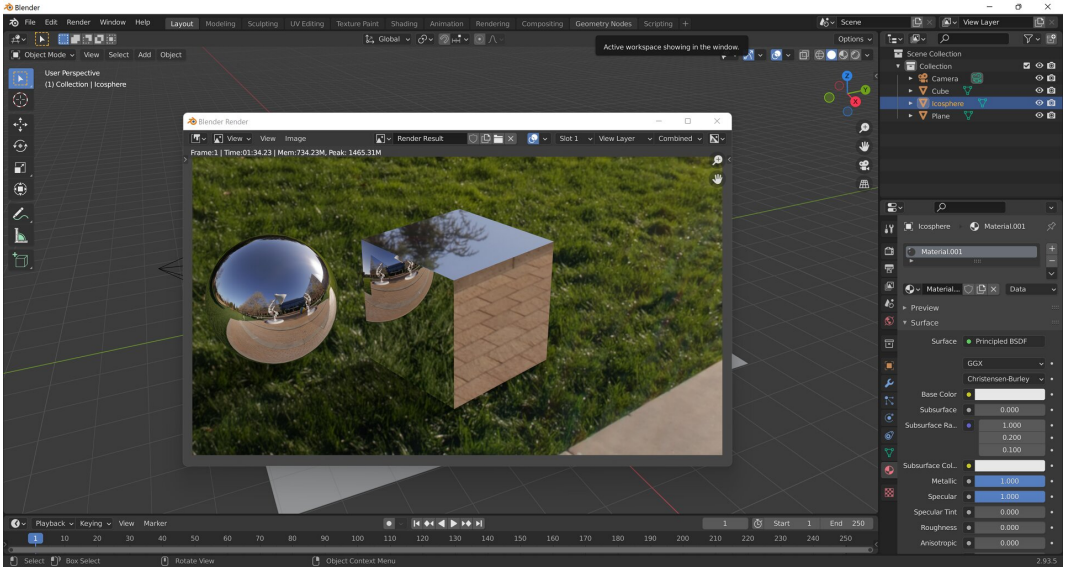
Use smooth shading for the sphere (interpolated vertex normals)



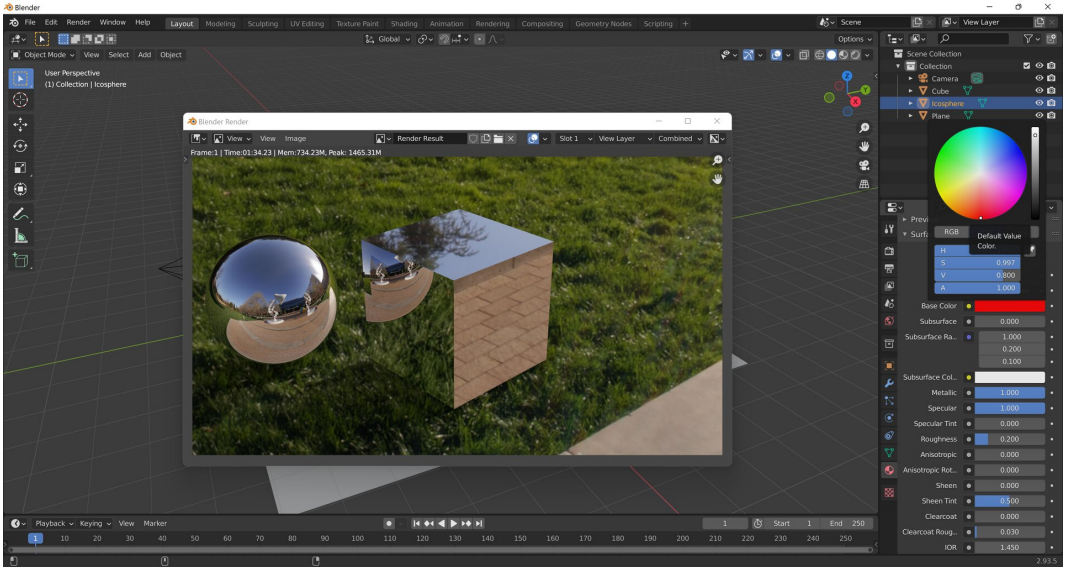
Add a material to the sphere



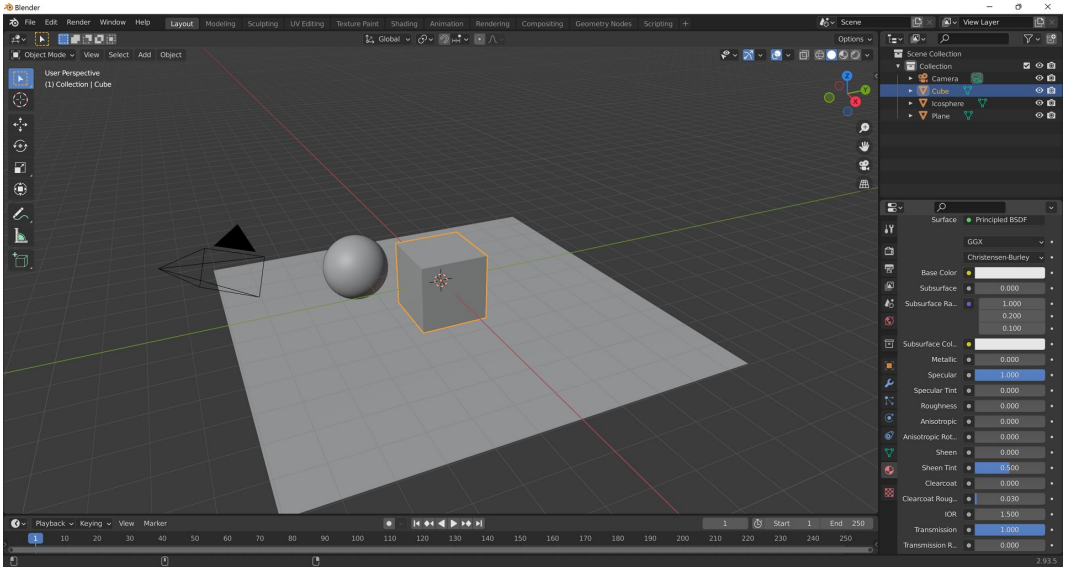
Make the sphere a mirror ball



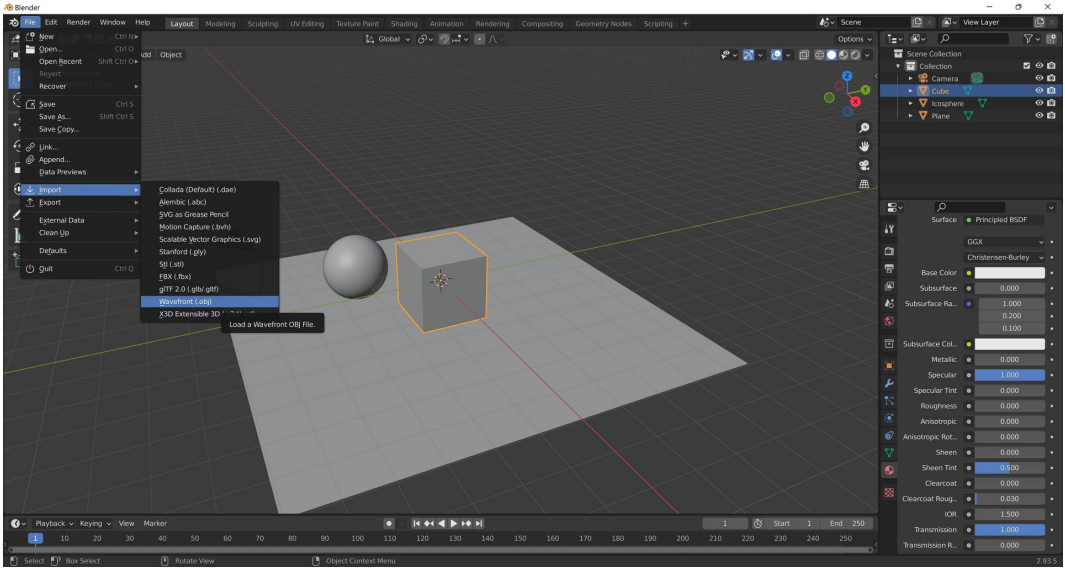
Make the sphere a glossy, coloured, metallic ball (Christmas ornament)



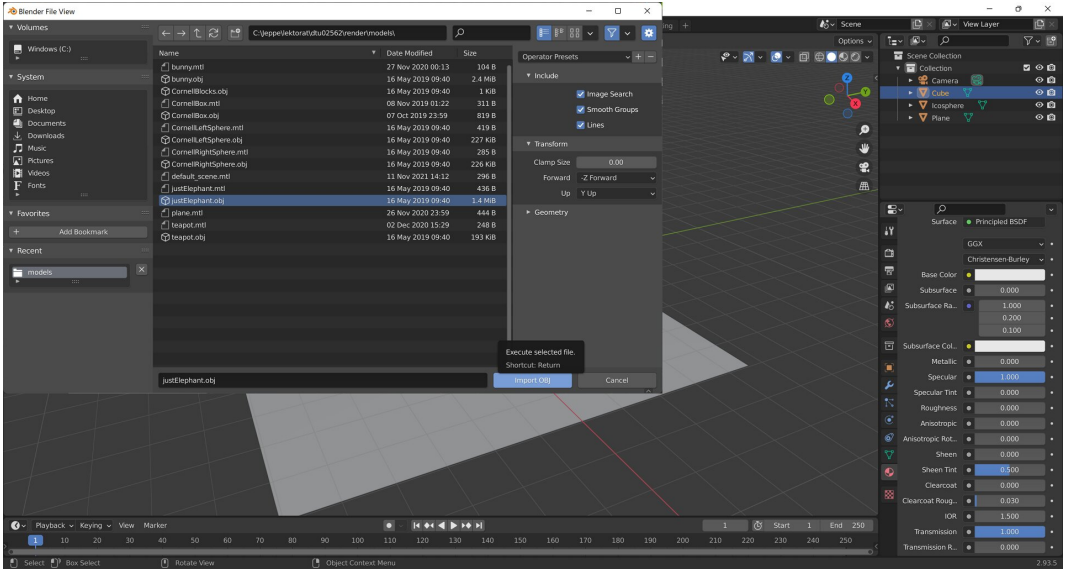
Make the cube a glass cube



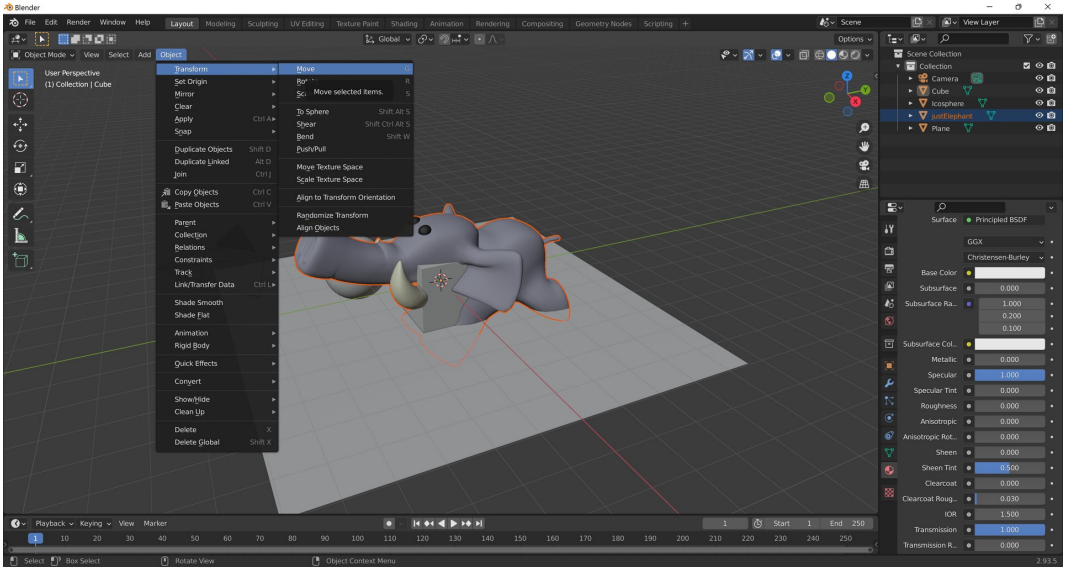
Import a triangle mesh



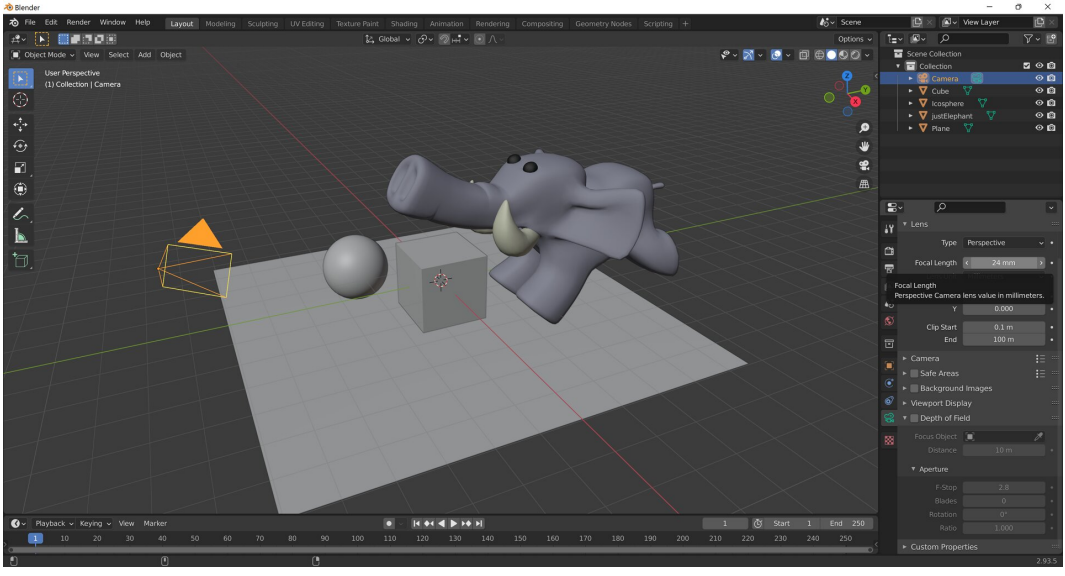
Import a triangle mesh



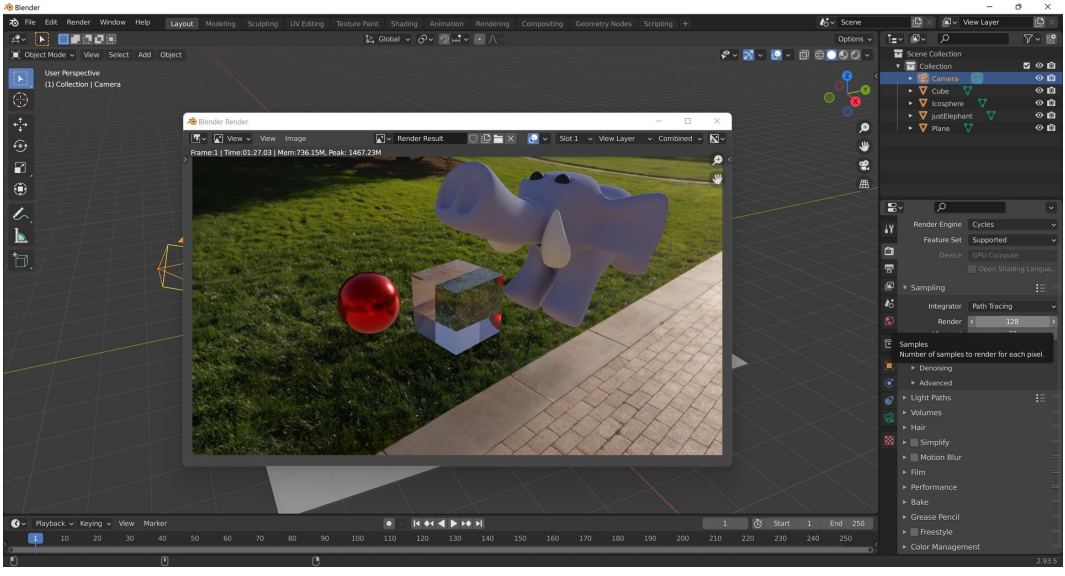
Position the model in the scene



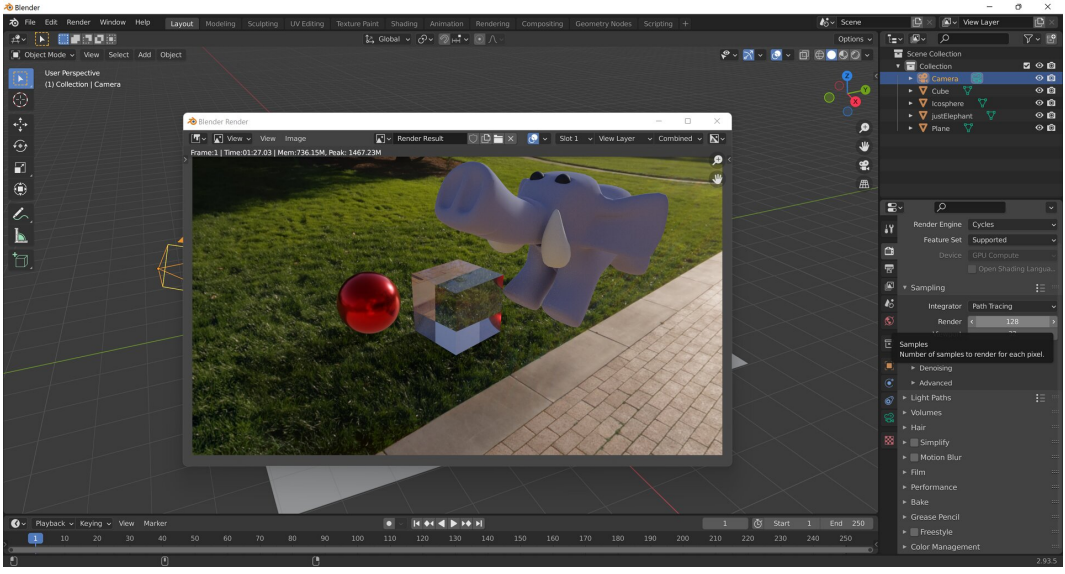
Widen the field of view (shorten the focal length of the camera)



Render the scene



What's up with the glass cube?



What's up with the glass cube? It's ok (except for the missing caustics).