What's New for Radiance in 2018

Greg Ward
Anyhere Software

Bug Fixes & Related

* Fixed rcontrib virtual light source issue
* Increased rcontrib open file limit
* Improved bsdf2ttree accuracy
* Reduced bias in ambient super-sampling
* Added RAYPATH search with -f *.cal

New Features

* psketch program for stylized objects
* new rmtxop operators
* falsecolor improvements
* rvu "origin" command
* rtpict tool for parallel rendering
* aBSDF primitive for peak extraction

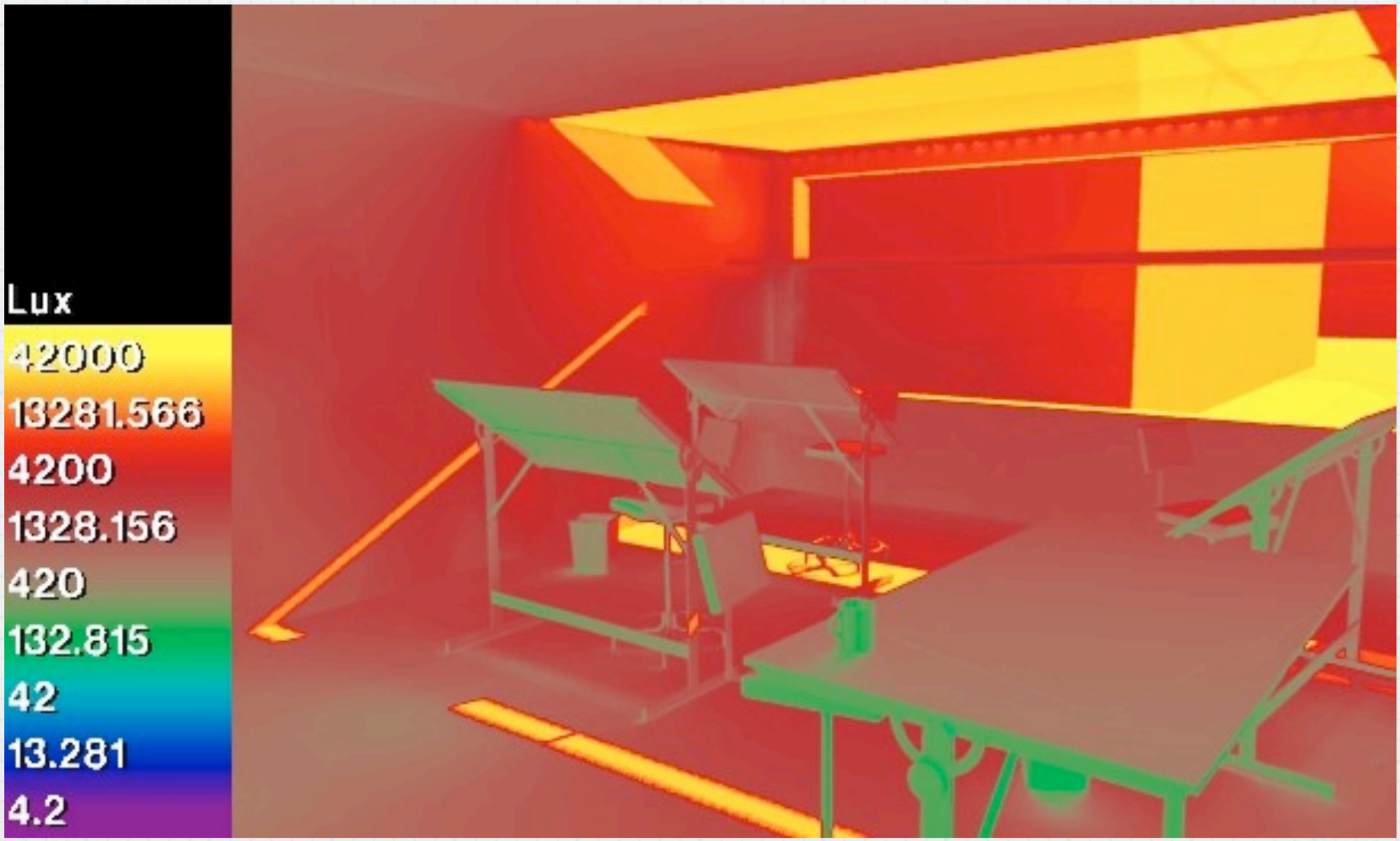
psketch program

psketch -m brown_tweed nightcabin.oct nightcab_lv2.hdr

New rmtxop Operators

* Original operator list:
  * concatination, addition ('+'), scaling (-s) and component transform (-c)
* New operators:
  * element-wise multiplication ('*') and division ('/')

falsecolor Improvements



Changes by Stephen Wasilewski and David Geisler-Moroder

rvu "origin" command

* Still can select point to make new origin
* Also accepts lone argument as distance to move forward or backward along the view direction
* Request from John Mardaljevic, who also asked for command originally...

rtpict tool for parallel rendering

* Perl script runs rtrace with multiprocessing if -n > 1 specified
  * otherwise, calls rpict directly
* rpict options and defaults compatible with multiprocessing all supported
* Codifies vwrays + rtrace trick many have been using for years...

aBSDF Primitive

* Peak extraction was introduced last year for "see-through" BSDF materials
  * applies to primary and shadow rays
* Lars Grobe wanted user control over when peak extraction was applied
  * "aBSDF" stands for "aperture BSDF"

BSDF Primitive Arguments

```
mod BSDF id
6+ thick BSDFfile ux uy uz funcfile
transform
0
0|3|6|9
  rfdif gfdif bfdif
  rbdif gbdif bbdif
  rtdif gtdif btdif
```

aBSDF Primitive Arguments

```
mod aBSDF id
5+ BSDFfile ux uy uz funcfile
transform
0
0|3|6|9
  rfdif gfdif bfdif
  rbdif gbdif bbdif
  rtdif gtdif btdif
```

Only difference is removal of "thickness" parameter

When to Use Each Type

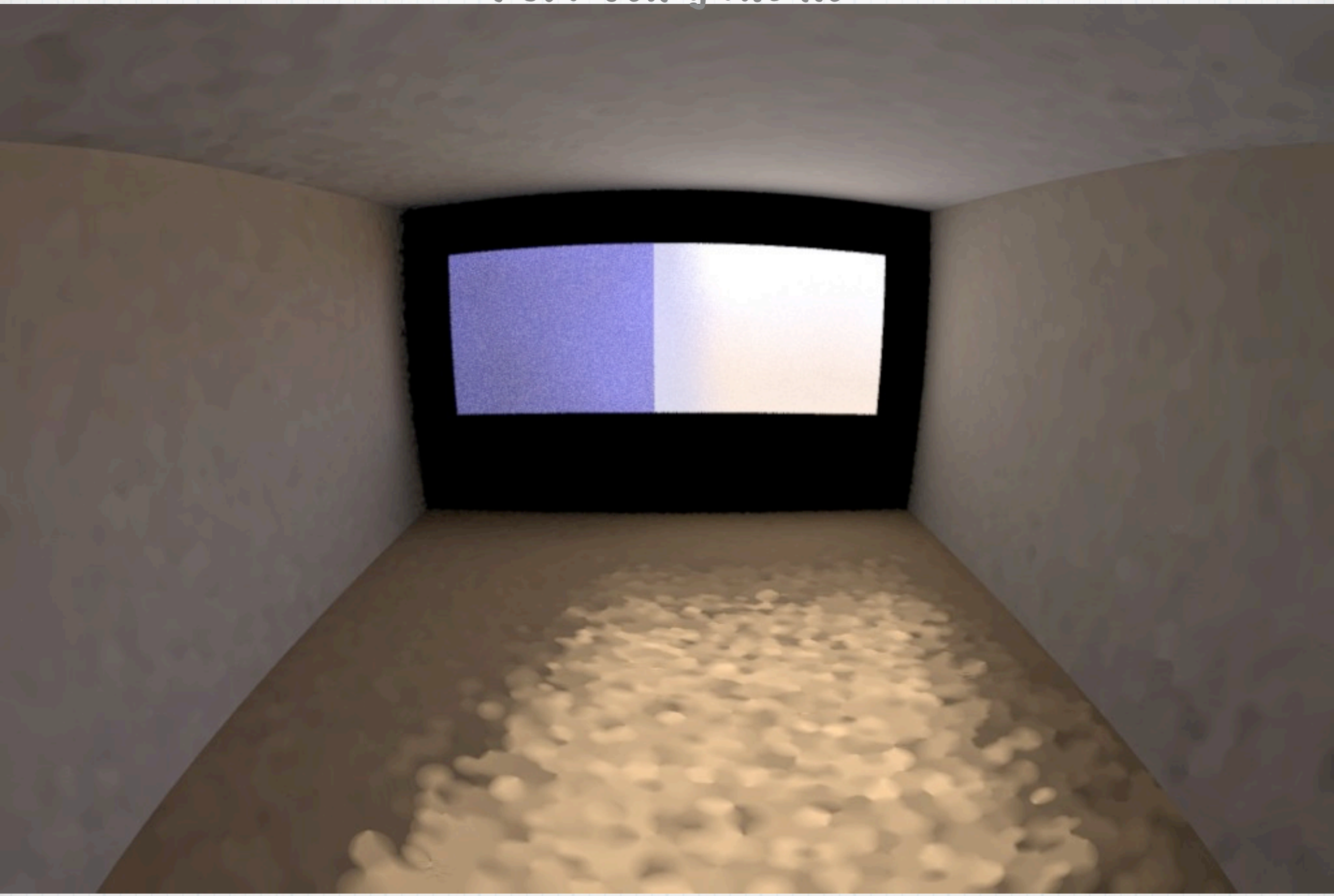
Choose "BSDF" when either:

A) Uses proxy geometry (thick > 0), or

B) Lacks significant view component

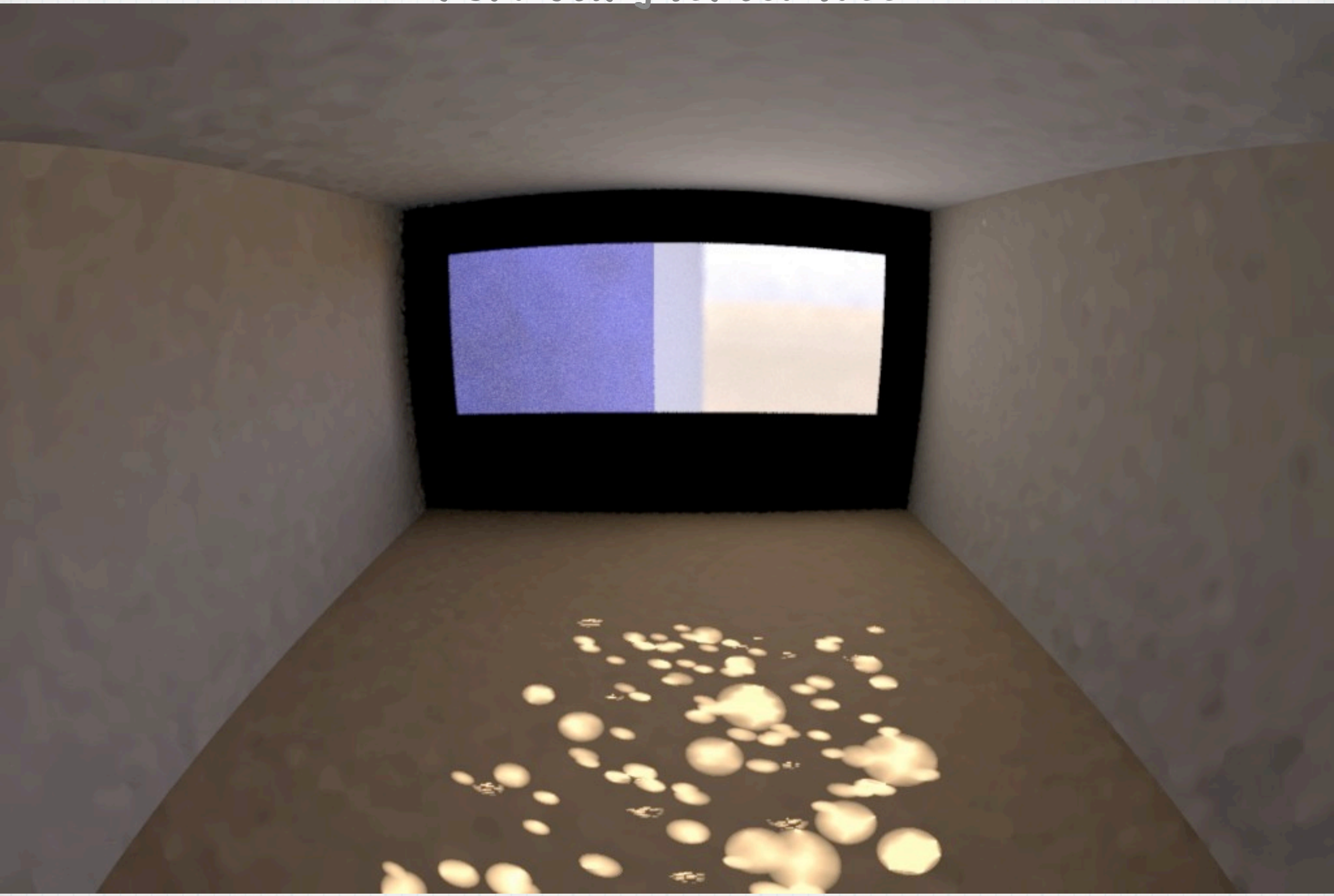
...use "aBSDF" otherwise

BSDF using Klems



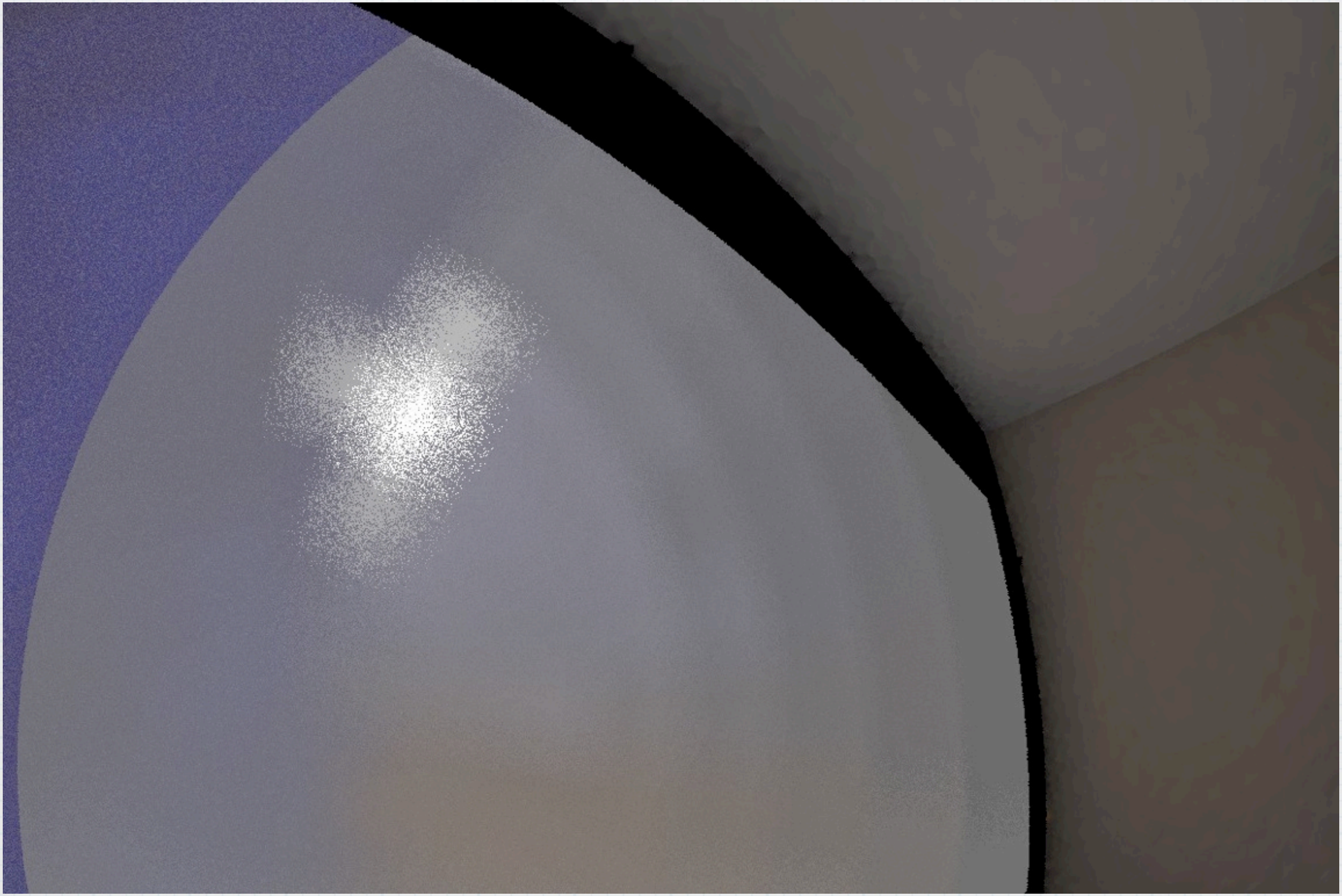
aBSDF using Klems

BSDF using tensor tree

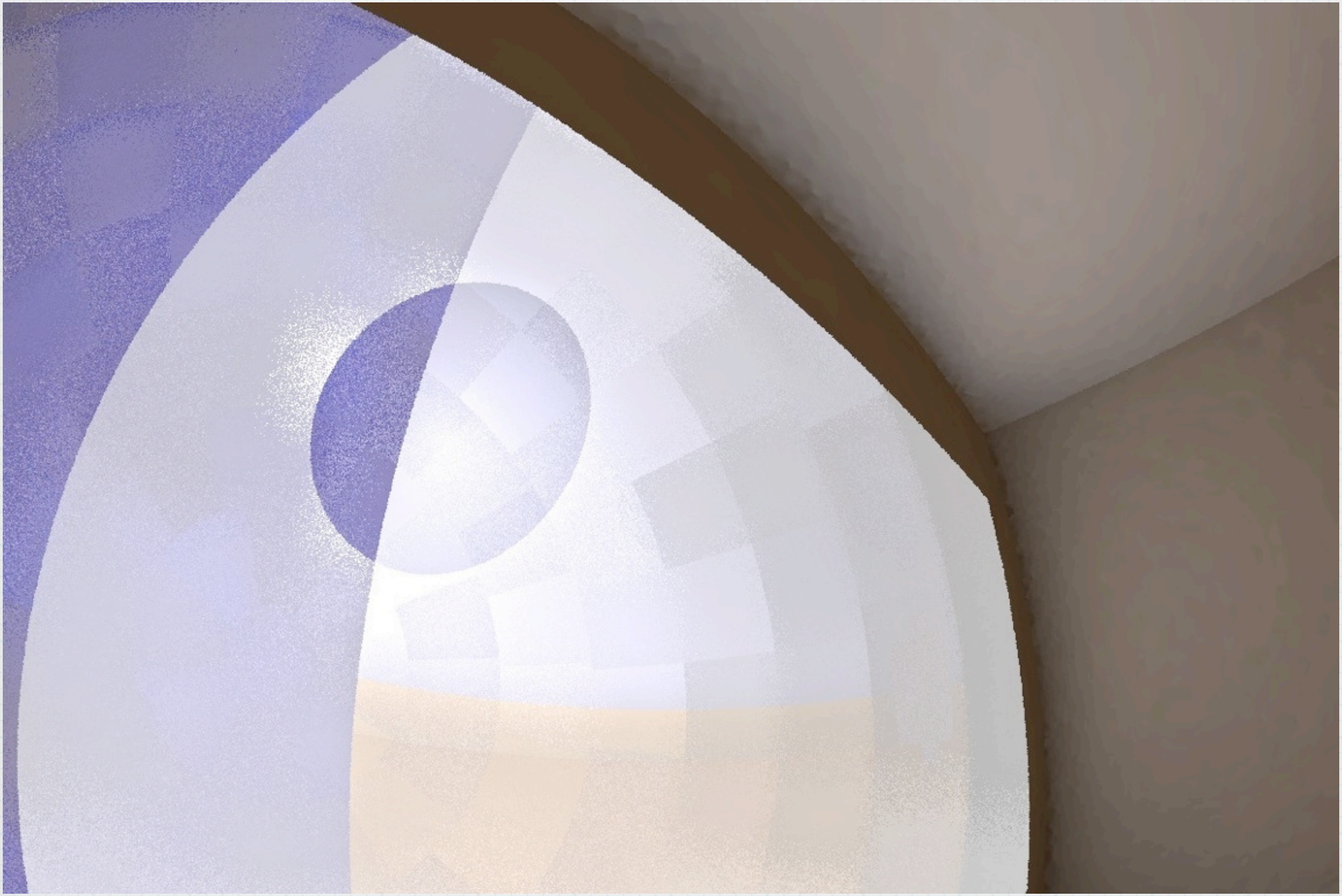


aBSDF using tensor tree

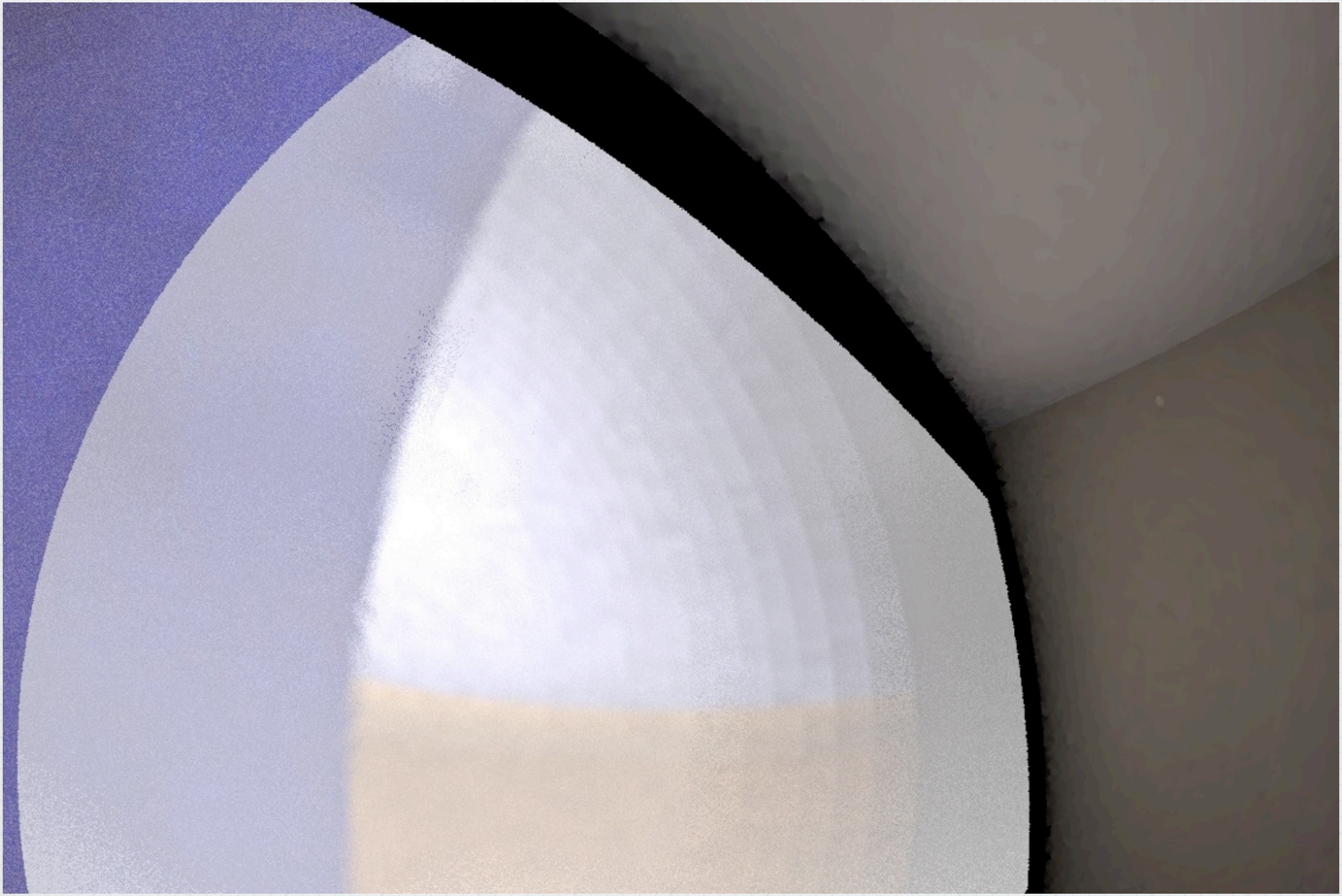
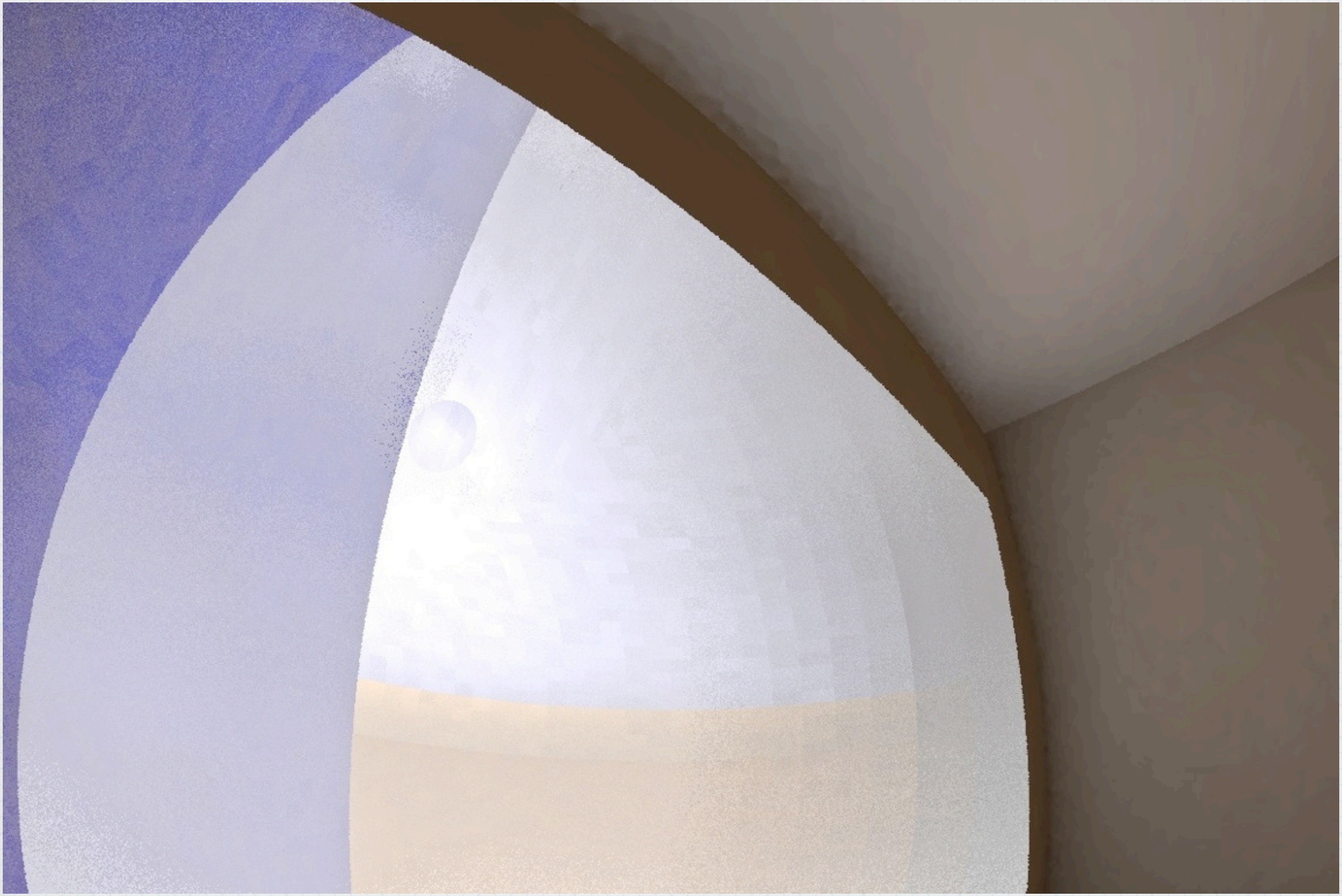
BSDF using Klems



aBSDF using Klems



BSDF using tensor tree



aBSDF using tensor tree