

3.2.1.0

Milestone 3.2.1

Enhancements

- **AOV support in standard shader:** The standard shader now writes to eight different AOVs: (trac#1791)

```
emission
direct_diffuse
direct_specular
indirect_diffuse
indirect_specular
reflection
refraction
sss
```

- **Better AOV type checking:** You will now get a warning message if you try to write to an AOV specifying the wrong output type: (trac#1792)

```
00:00:00    6mb          |  starting 2 bucket workers of size 64x64 ...
00:00:00    7mb WARNING |  [aov] type mismatch for "direct_diffuse" (RGB vs RGBA)
00:00:02    7mb          |  bucket workers done in 0:02.05
```

- **Added standard.roughness parameter:** The diffuse layer in the standard shader uses a Lambert BRDF when roughness is zero (the default value) and an Oren-Nayar BRDF when roughness is greater than zero. The range is from 0 to Pi. (trac#1796)
- **New utility shader mode bad_uv:** This new mode helps when debugging problematic geometry, by clearly marking polygons where UV mapping is broken (zero or non-finite derivatives). Problems in the U coordinate are shown as red polygons, and problems in the V coordinate are shown as blue. (trac#1800)

Incompatible changes

- **Removed legacy catclark_subdiv node:** This deprecated node existed solely for backwards compatibility with old scenes in our development testsuite. The polymesh.subdiv parameter, which accepted a catclark_subdiv node, has also been removed. (trac#1790)
- **Removed curves.self_intersectable parameter:** This fixes the ugly self-shadowing artifacts that you would get in ribbon mode with the default settings. (trac#1798)
- **Removed min() and max() Python methods:** These two AtPoint methods in the Python bindings were causing problems because they were aliasing the built-in Python functions. (trac#1799)

Bug fixes

| | |
|-------|------------------------------------------------------------------------------|
| #1794 | crash in AiCellular() when passing NULL delta/ID |
| #1795 | standard shader: SSS layer should be affected by Fresnel term |
| #1789 | remove dither_amplitude warnings with kick's drivers |
| #1797 | crash in AiNodeSetArray() when setting a parameter twice with the same array |