

## 3.0.57

### Release Date

March 20, 2019

This is a feature release, using the Arnold 5.3.0.0 core, and it includes the [beta version of Arnold GPU](#)

#### Important information about Arnold GPU (beta)

- Check the [system requirements](#) before using Arnold GPU. If you don't have a [supported card](#) or the [required drivers](#), GPU rendering will not work.
- Review the list of [supported features and known limitations](#) before you start using Arnold GPU.
- If you have any technical problems, questions, or feedback on Arnold GPU, use the beta forum on [Arnold Answers](#)

### Installation

Get the installer on [Solid Angle Downloads](#).

### Enhancements:

- **GPU rendering (BETA):** you can now switch between CPU and GPU render devices interactively and expect visually similar results. NVIDIA® GPUs from Turing™ to Maxwell™ architectures are supported, and Arnold will take advantage of multiple GPUs, NVLink™ and NVIDIA® RTX™ hardware accelerated raytracing if available. Note that due to beta status of GPU rendering, a number of features are missing, performance is not final, and use in production is not advised. We plan to gradually improve this in subsequent releases and would appreciate your feedback. For a complete description of requirements, features and caveats, see [Getting Started With Arnold GPU](#).
- **Improved adaptive sampling:** adaptive sampling now uses a more effective criterion. With the new metric, pixels are being dropped gradually in a smoother and much more predictable manner, resulting much lower render times for identical noise levels.
- **Improved skydome sampling:** Arnold now takes into account the normal of the shading point when importance sampling the skydome. Therefore bright areas in the skydome are less likely to "steal" samples when they are below the normal. Even for more uniformly colored skydomes, the improved sampler will waste fewer samples in directions that are below the hemisphere, allowing for lower skydome light sample rates to be used which should give a noticeable speedup.
- **Visible lights:** the quad, disk, cylinder and point lights now have a camera and a transmission attribute, allowing these lights to become visible in render.

- **Microfacet multiple scattering:** the GGX microfacet BSDF used in the `standard_surface` shader has been improved to account for multiple scattering between the microfacets, which is more physically correct and reduces energy loss on reflection, especially at higher roughness settings.
- **Improved random-walk SSS:** a new `randomwalk_v2` SSS mode has been added that scatters more accurately and deeply through highly-transparent/optically-thin objects, which produces SSS with more saturated colors around fine surface detail and heavily backlit regions of an object.
- **Anisotropy** controls forcoat in `standard_surface`.
- **Smart opaque:** built-in shaders now set their opaque flag automatically based on whether or not the shader settings would require disabling the opaque flag on the object to render correctly.
- **Operator connection on procedurals:** operator graphs can now be connected to procedural and alembic objects through the operator parameter. Only nodes in the procedural or nested procedurals are evaluated by the graph.
- **New include\_graph operator:** the `include_graph` operator allows importing operator graphs and shaders from a `.ass` file.
- **Improved ramp\_rgb shader:** several new interpolation modes were added, as well as an `implicit_uv` parameter, which allowstouse barycentric implicit UVs to drive the ramp, instead of regular UVs. This last option can be particularly useful with hair.
- **New uv\_projection shader:** this shader allows to do planar, spherical, cylindrical, ball, cubic and `shrink_wrap` projections.
- **Faster .ass file writing:** writing to `.ass` files, especially over some Windows networks, can be dramatically faster.
- **Autobump visibility** now exposed in the Arnold Properties.
- **MaterialX export:** the shaders applied to the geometry in the scene can be exported to a `MaterialX` document with a given look name from the render settings. The exported document contains the look development for the selected geometries including materials, shading graphs, geometry properties, and visibility settings. The look development can be applied using the `MaterialX` operator.
- **Operators** can now be grouped together in the Operator Graph.
- The **Merge** and **Switch** operators are now exposing the input ports.
- Improved UI for the **Set Parameter** operator.
- All the **plugin-specific c++ shaders**, used to translate some of the Max legacy maps (Bitmap, Blend, Multi/Sub Object, Particle Age, Physical Sun & Sky) have been replaced by Arnold native nodes, or graphs of them. As a result, exported `.ass` files should be kick-able under operative systems other than Windows.

## Fixes:

- Memory spike when instancing Pflow shapes.
- ActiveShade re-translating Pflow shapes when orbiting.
- Arnold Properties -> Displacement -> Zero cannot be set to a negative value.
- Export Selected does not export current frame if Animation check box not selected.
- Cannot set Animation Start to more than 1000 in the `.ASS` Exporter dialog box.

See the Arnold [5.3.0.0](#) release notes for the full list of enhancements and fixes.