




OpenEXR Project Update

April 17, 2024





OpenEXR Project Mission

The goal of the OpenEXR project is to keep the EXR format reliable and modern and to maintain its place as the preferred image format for entertainment content creation.

Major revisions are infrequent, and new features will be carefully weighed against increased complexity. The principal priorities of the project are:

- Robustness, reliability, security
- Backwards compatibility, data longevity
- Performance - read/write/compression/decompression time
- Simplicity, ease of use, maintainability
- Wide adoption, multi-platform support - Linux, Windows, macOS, and others

OpenEXR is intended solely for 2D data. It is not appropriate for storage of volumetric data, cached or lit 3D scenes, or more complex 3D data such as light fields.

Technical Steering Committee



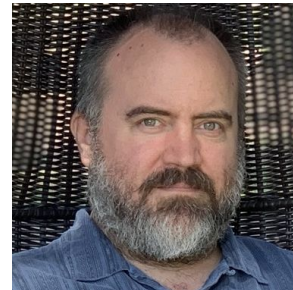
Cary Phillips
Industrial Light & Magic



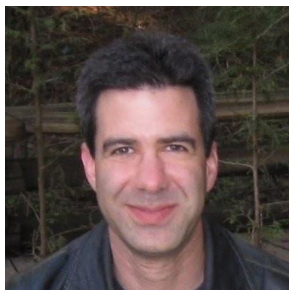
Christina Tempelaar-Lietz
Industrial Light & Magic



Joseph Goldstone
ARRI, Inc



Kimball Thurston
Wētā FX



Larry Gritz
Sony Pictures Imageworks



Nick Porcino
Pixar Animation Studios

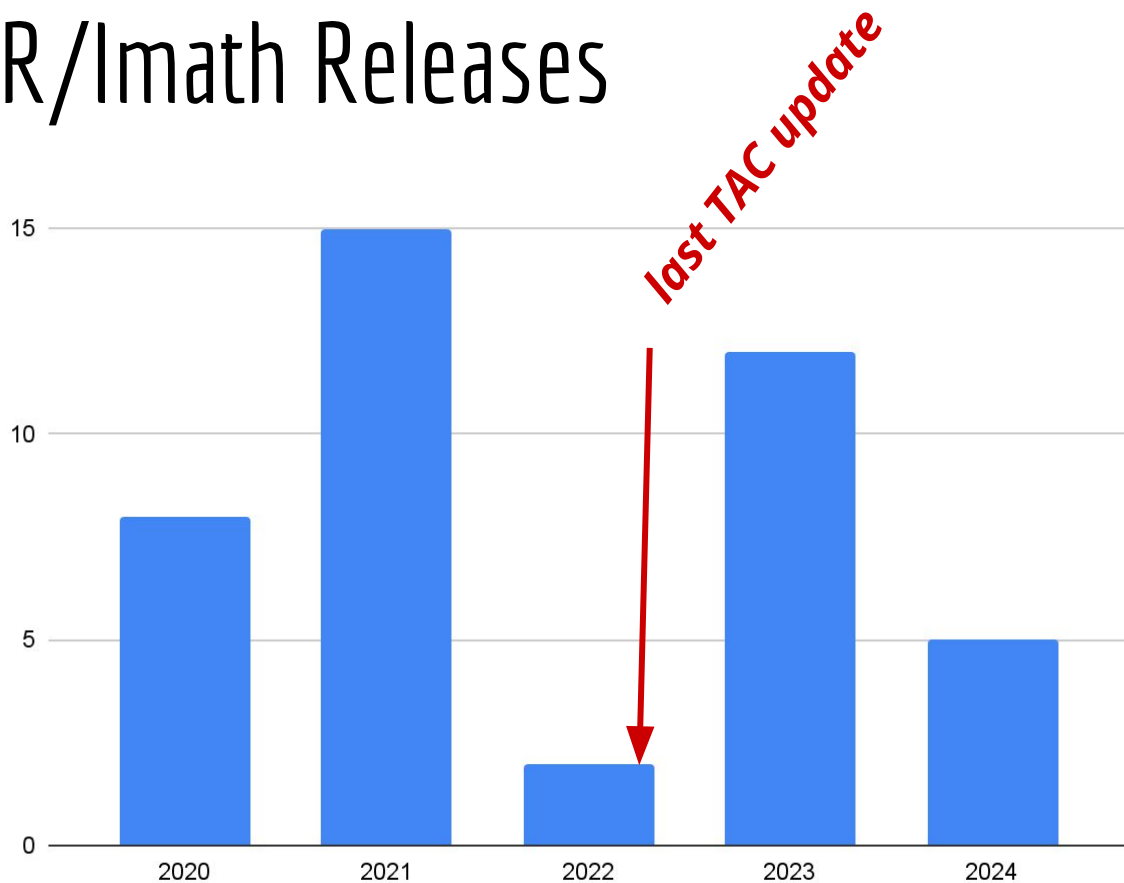


Peter Hillman
Wētā FX

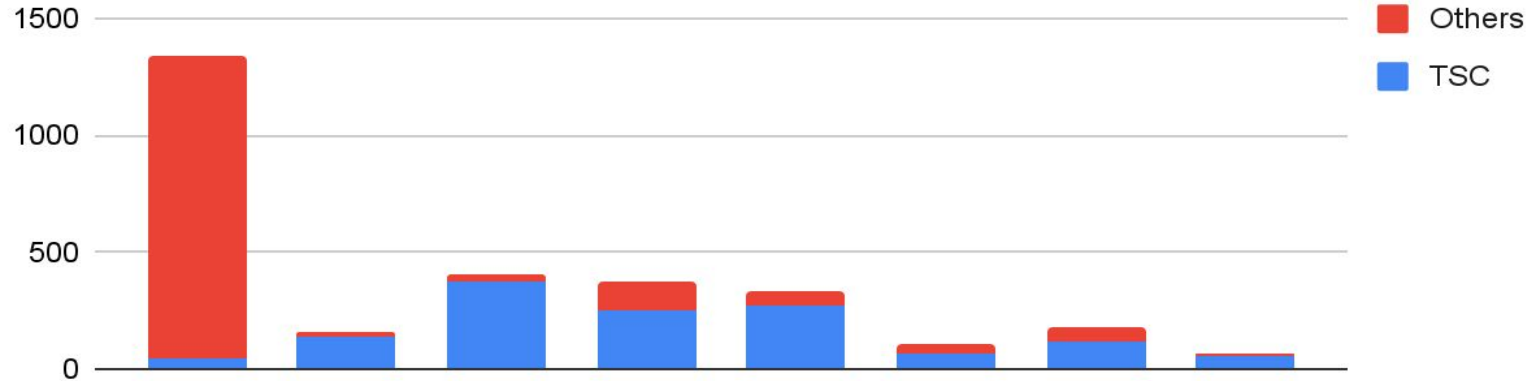


Rod Bogart
Epic Games

OpenEXR/Imath Releases

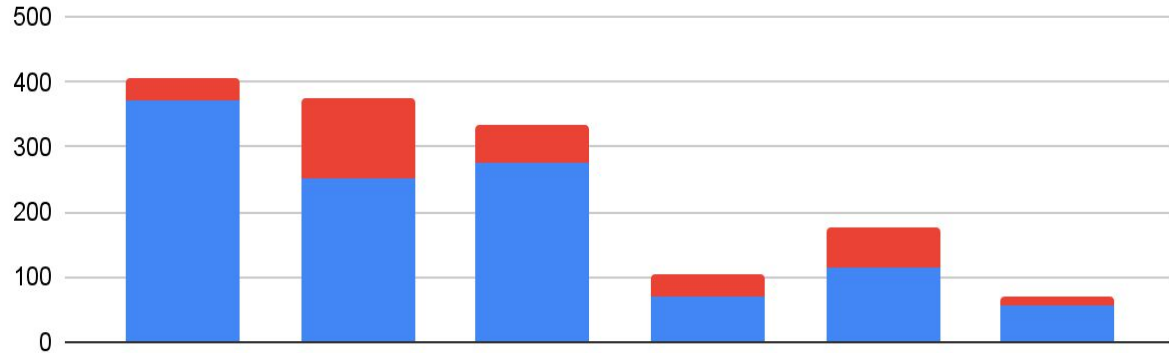


Commits: TSC Members vs. Others



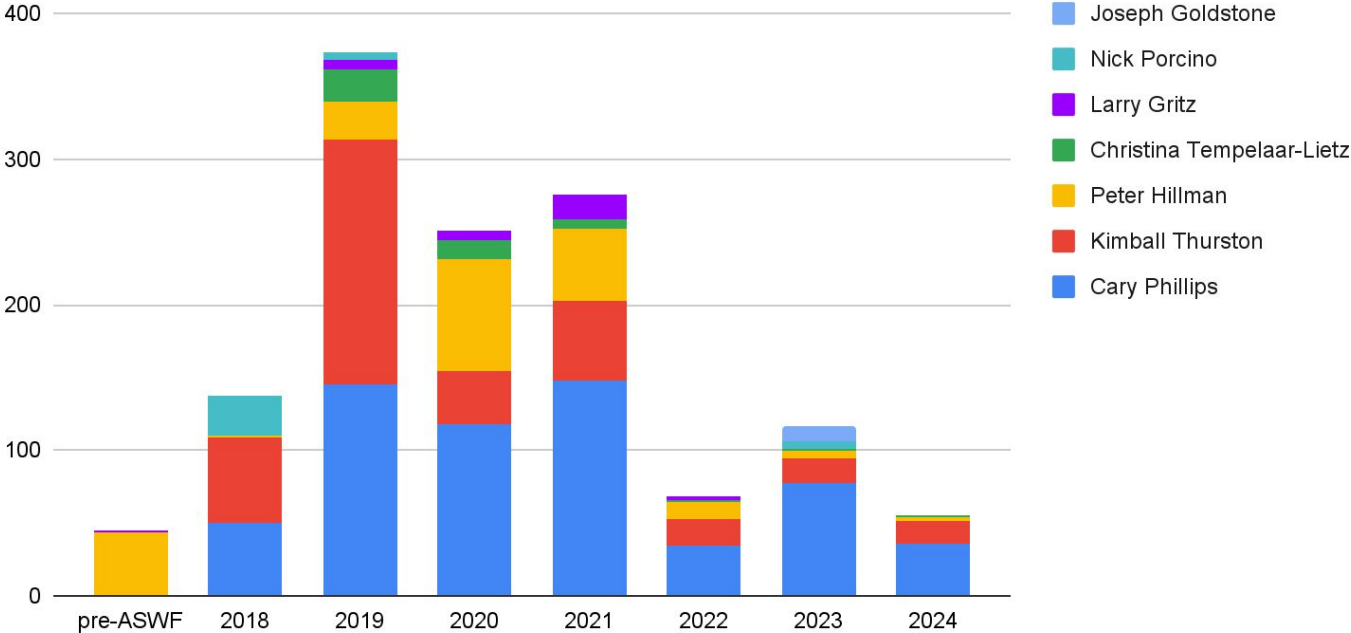
	pre-ASWF	2018	2019	2020	2021	2022	2023	2024
TSC	45	137	373	251	276	69	116	55
Others	1299	19	34	124	58	35	61	15
Total	1344	156	407	375	334	104	177	70
% Others	97%	12%	8%	33%	17%	34%	34%	21%

Commits: TSC Members vs. Others



	2019	2020	2021	2022	2023	2024
TSC	373	251	276	69	116	55
Others	34	124	58	35	61	15
Total	407	375	334	104	177	70
% Others	8%	33%	17%	34%	34%	21%
# Others	15	22	23	15	25	11

Commits: TSC Members



Roadmap: 2023

- ~~ABI compatibility: C-level base types~~ *minimal progress*
- ~~Core/Multithreading in the C++ API~~ *WIP*
- Website overhaul *done!*

2023: Improvements/New Functionality:

- Bug/security/build fixes
- Documentation/website improvements
- Groundwork: compression via `libdeflate`
- OpenSSF Badge: Silver 96%, Gold 74%
- `pip install openexr`

OpenSSF Badge

- Silver: 96%
- Gold: 74%

Outstanding...

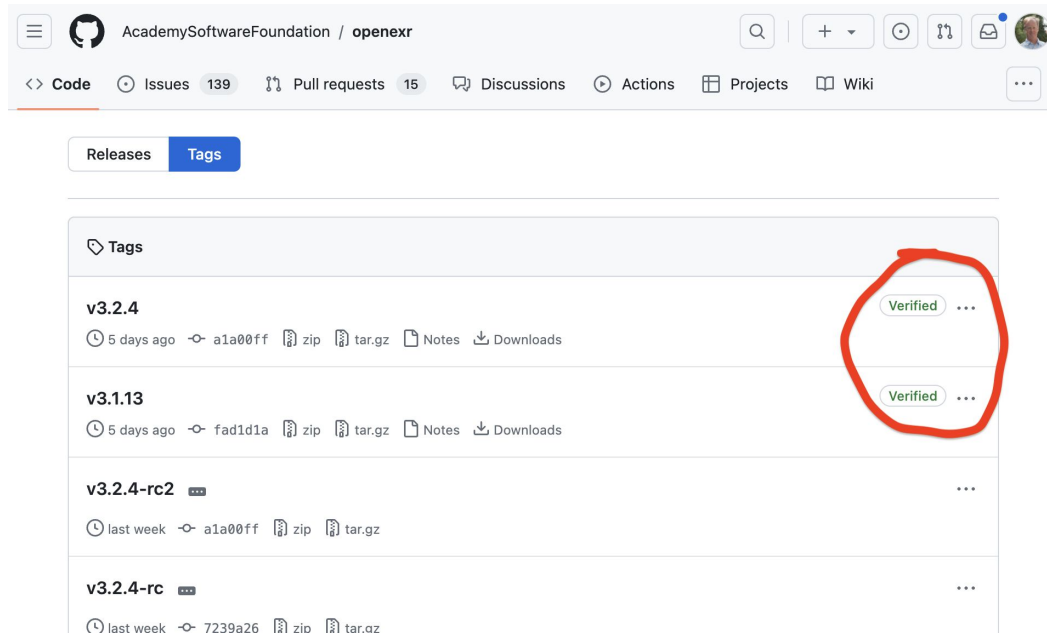
- Test coverage:
 - Currently at ~80%
- Security
 - “Secure design principles”
 - Assurance case
 - Security review
 - MITM attacks
- Reproducible build

Security

- Policy statement, CVE reporting
- OSS-fuzz
- Signed releases/verified tags
- Snyk scan
- OpenSSF Scorecard

Signed/verified tags:

```
% git tag -s v3.2.4
```



The screenshot shows the GitHub interface for the repository `AcademySoftwareFoundation / openexr`. The `Tags` tab is selected, displaying a list of tags. The tags `v3.2.4` and `v3.1.13` are highlighted with a red circle, indicating they are signed and verified. The `v3.2.4` tag is the most recent, created 5 days ago with commit `a1a00ff`. The `v3.1.13` tag is also 5 days old with commit `fad1d1a`. Other tags include `v3.2.4-rc2` (last week, commit `a1a00ff`) and `v3.2.4-rc` (last week, commit `7239a26`).

Tag	Created	Commit	Files	Actions	Verification
<code>v3.2.4</code>	5 days ago	<code>a1a00ff</code>	zip, tar.gz	Notes, Downloads	Verified
<code>v3.1.13</code>	5 days ago	<code>fad1d1a</code>	zip, tar.gz	Notes, Downloads	Verified
<code>v3.2.4-rc2</code>	last week	<code>a1a00ff</code>	zip, tar.gz		
<code>v3.2.4-rc</code>	last week	<code>7239a26</code>	zip, tar.gz		

Signed releases

`.github/workflows/release-sign.yml`

5 days ago

 cary-ilm

 v3.2.4 

 a1a00ff

Compare 

v3.2.4 Latest



Patch release that fixes handling of dwa compression in OpenEXRCore library.

Other miscellaneous changes:

- Add CMake `find_dependency` for `libdeflate`, to fix a vcpkg build error
- Remove the unused CMake option `OPENEXR_INSTALL_EXAMPLES`
- Fix some other compiler warnings.

Assets

 openexr-v3.2.4.tar.gz	18 MB	5 days ago
 openexr-v3.2.4.tar.gz.sigstore	8.96 KB	5 days ago
 Source code (zip)		5 days ago
 Source code (tar.gz)		5 days ago

  2  1  1  1 2 people reacted

Documentation Improvements:

- New-ish website (sphinx, readthedocs)
 - [now builds on windows/macOS...]
- Standard Attributes
- Scene-linear

Coming soon.. (hopefully):

- Compression via zstd
- C++ interface to OpenEXRCore
- Rewrite OpenEXR python bindings in pybind11
- Finish Imath port to Pybind11

Roadmap: Call for Community Contribution

- GPU-side enablement
- New compression schemes
- PyBind11 for Imath (retire boost dependency)

- Example images:

<https://github.com/AcademySoftwareFoundation/openexr-images>

- Performance metrics

Project Weaknesses/Needs...

- Windows support
- Hardware-we-don't-have support
- Widening the contributor community
- Transition planning

EOF

Agenda:

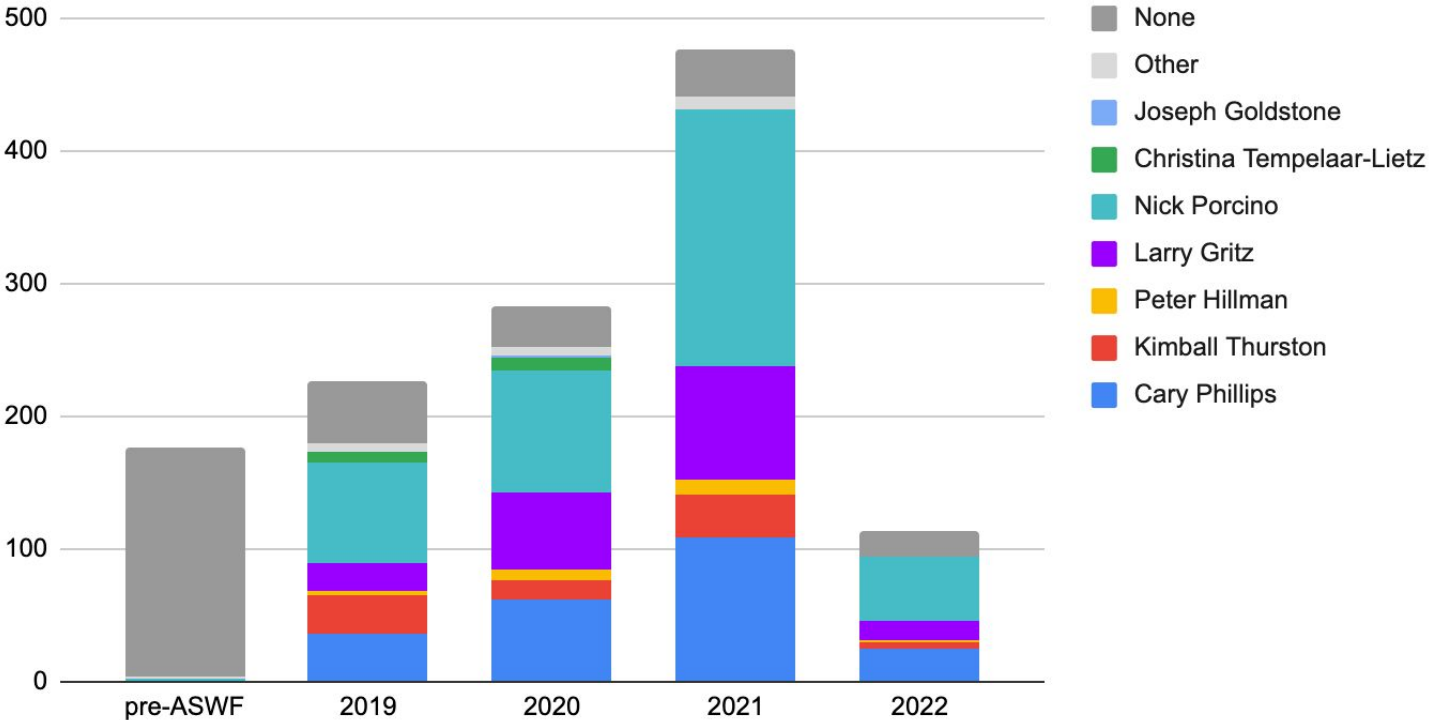
Community

people, process, sustainable project

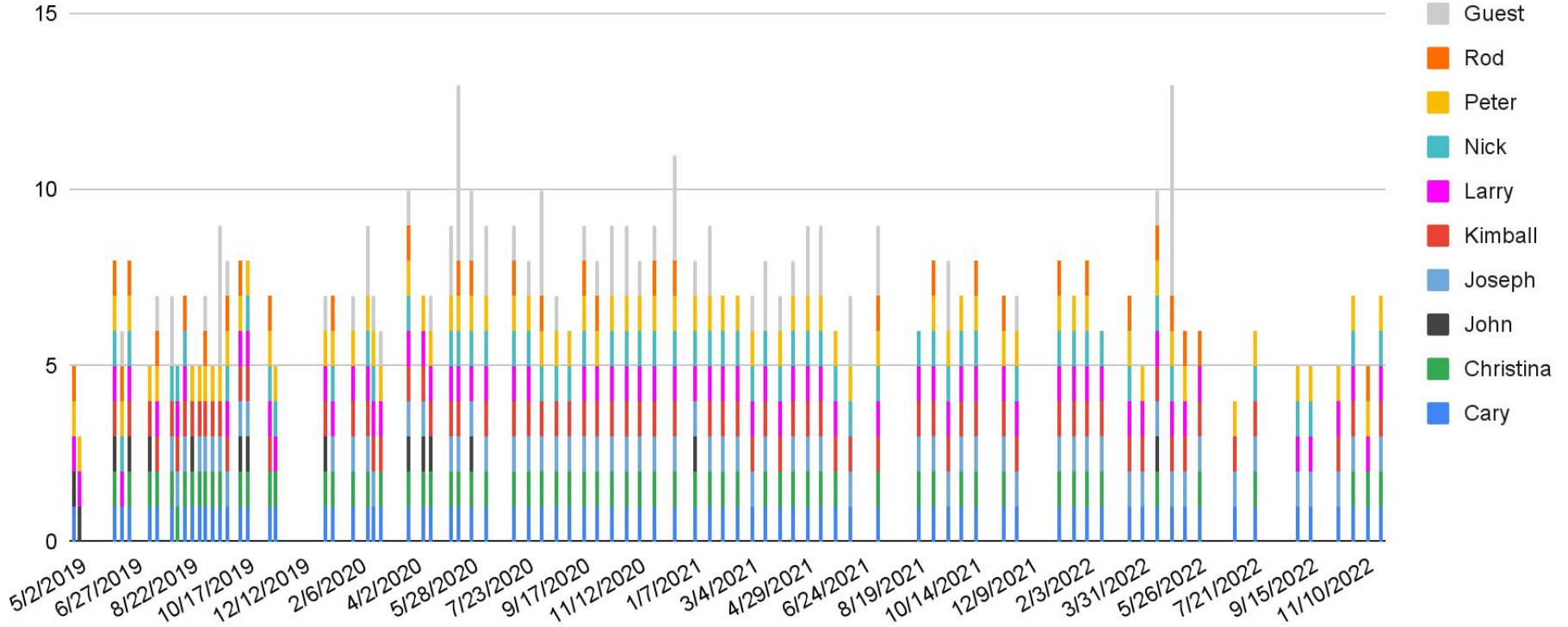
Technology

software features, future roadmap

PR Reviews:



TSC Meeting Attendance



TSC Meetings

In 3.5 years...

- Total # Meetings: 83
- Average TSC Member Attendance: 6.4
- Total TSC Hours: 539
- # Meetings w/Guests: 42
- Average Guest Attendance: 0.9