

www.phoronix-test-suite.com

pyhpc rocket

Intel Core i9-11900K testing with a ASUS ROG MAXIMUS XIII HERO (1007 BIOS) and AMD Radeon VII 16GB on Clear Linux OS 35150 via the Phoronix Test Suite.

Automated Executive Summary

1 had the most wins, coming in first place for 85% of the tests.

Based on the geometric mean of all complete results, the fastest (3) was 1.008x the speed of the slowest (2). 1 was 0.999x the speed of 3 and 2 was 0.993x the speed of 1.

The results with the greatest spread from best to worst included:

PyHPC Benchmarks (Device: CPU - Backend: Numpy - Project Size: 262144 - Benchmark: Equation of State) at 1.255x
PyHPC Benchmarks (Device: CPU - Backend: Numpy - Project Size: 65536 - Benchmark: Isoneutral Mixing) at 1.045x
PyHPC Benchmarks (Device: CPU - Backend: Numba - Project Size: 262144 - Benchmark: Isoneutral Mixing) at 1.044x
PyHPC Benchmarks (Device: CPU - Backend: Numba - Project Size: 4194304 - Benchmark: Equation of State) at 1.024x
PyHPC Benchmarks (Device: CPU - Backend: Numpy - Project Size: 262144 - Benchmark: Isoneutral Mixing) at 1.022x
PyHPC Benchmarks (Device: CPU - Backend: Numpy - Project Size: 1048576 - Benchmark: Isoneutral Mixing) at 1.005x
PyHPC Benchmarks (Device: CPU - Backend: Numpy - Project Size: 1048576 - Benchmark: Equation of State) at

1.004x
PyHPC Benchmarks (Device: CPU - Backend: Numba - Project Size: 4194304 - Benchmark: Isoneutral Mixing) at 1.003x
PyHPC Benchmarks (Device: CPU - Backend: Numpy - Project Size: 4194304 - Benchmark: Equation of State) at 1.002x
PyHPC Benchmarks (Device: CPU - Backend: Numpy - Project Size: 4194304 - Benchmark: Isoneutral Mixing) at 1.002x.

Test Systems:

1

2

3

Processor: Intel Core i9-11900K @ 5.10GHz (8 Cores / 16 Threads), Motherboard: ASUS ROG MAXIMUS XIII HERO (1007 BIOS), Chipset: Intel Device 43ef, Memory: 32GB, Disk: 2000GB Corsair Force MP600 + 257GB Flash Drive, Graphics: AMD Radeon VII 16GB (1801/1000MHz), Audio: Intel Device 43c8, Monitor: ASUS MG28U, Network: 2 x Intel + Intel Device 2725

OS: Clear Linux OS 35150, Kernel: 5.14.13-1083.native (x86_64), Desktop: GNOME Shell 41.0, Display Server: X Server 1.20.11, OpenGL: 4.6 Mesa 21.2.4 (LLVM 11.1.0), Vulkan: 1.2.182, Compiler: GCC 11.2.1 20211015 releases/gcc-11.2.0-353-g6a936be4ad + Clang 11.1.0 + LLVM 11.1.0, File-System: ext4, Screen Resolution: 3840x2160

Kernel Notes: Transparent Huge Pages: always
Environment Notes: FFLAGS="-g -O3 -feliminate-unused-debug-types -pipe -Wall -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -m64 -fasynchronous-unwind-tables -Wp,-D_REENTRANT -ftree-loop-distribute-patterns -Wl,-z -Wl,now -Wl,-z -Wl,relro -malign-data=abi -fno-semantic-interposition -ftree-vectorize -ftree-loop-vectorize -Wl,--enable-new-dtags" CXXFLAGS="-g -O3 -feliminate-unused-debug-types -pipe -Wall -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -Wformat -Wformat-security -m64 -fasynchronous-unwind-tables -Wp,-D_REENTRANT -ftree-loop-distribute-patterns -Wl,-z -Wl,now -Wl,-z -Wl,relro -fno-semantic-interposition -ffat-lto-objects -fno-trapping-math -Wl,-sort-common -Wl,--enable-new-dtags -mtune=skylake -fvisibility-inlines-hidden -Wl,--enable-new-dtags" MESA_GLSL_CACHE_DISABLE=0 FCFLAGS="-g -O3 -feliminate-unused-debug-types -pipe -Wall -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -m64 -fasynchronous-unwind-tables -Wp,-D_REENTRANT -ftree-loop-distribute-patterns -Wl,-z -Wl,now -Wl,-z -Wl,relro -malign-data=abi -fno-semantic-interposition -ftree-vectorize -ftree-loop-vectorize -Wl,-sort-common -Wl,--enable-new-dtags" CFLAGS="-g -O3 -feliminate-unused-debug-types -pipe -Wall -Wp,-D_FORTIFY_SOURCE=2 -fexceptions -Wformat -Wformat-security -m64 -fasynchronous-unwind-tables -Wp,-D_REENTRANT -ftree-loop-distribute-patterns -Wl,-z -Wl,now -Wl,-z -Wl,relro -fno-semantic-interposition -ffat-lto-objects -fno-trapping-math -Wl,-sort-common -Wl,--enable-new-dtags -mtune=skylake" THEANO_FLAGS="floatX=float32,openmp=true,gcc.cxxflags="-ftree-vectorize -mavx""
Processor Notes: Scaling Governor: intel_pstate performance - CPU Microcode: 0x40
Python Notes: Python 3.9.7
Security Notes: itlb_multihit: Not affected + l1tf: Not affected + mds: Not affected + meltdown: Not affected + spec_store_bypass: Mitigation of SSB disabled via prctl and seccomp + spectre_v1: Mitigation of usercopy/swapgs barriers and __user pointer sanitization + spectre_v2: Mitigation of Enhanced IBRS IBPB: conditional RSB filling + srbds: Not affected + tsx_async_abort: Not affected

	1	2	3

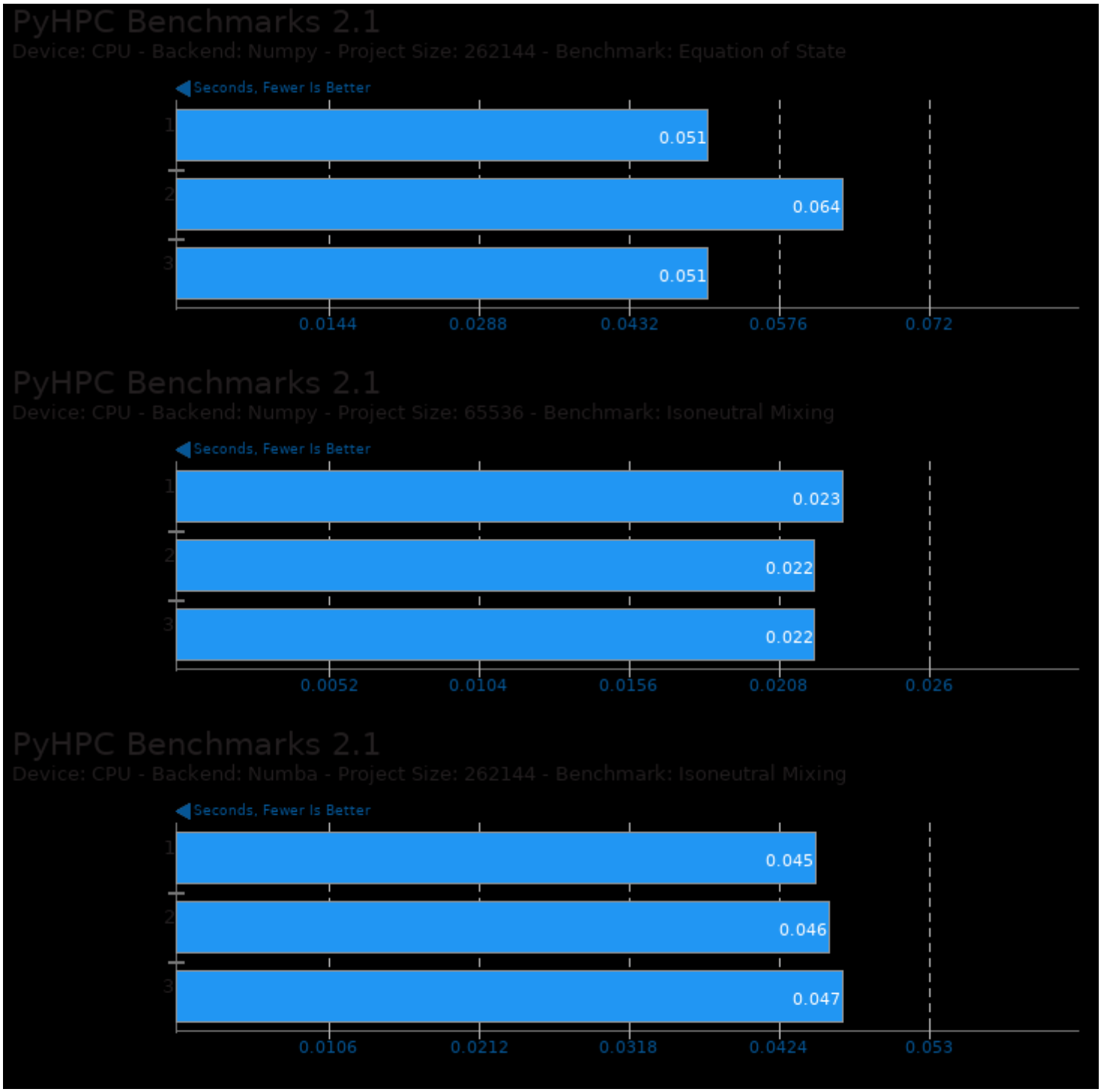
pyhpc rocket

PyHPC Benchmarks - CPU - Numpy - 262144 - Equation of State (sec)	0.051	0.064	0.051
Normalized	100%	79.69%	100%
PyHPC Benchmarks - CPU - Numpy - 65536 - Isoneutral Mixing (sec)	0.023	0.022	0.022
Normalized	95.65%	100%	100%
PyHPC Benchmarks - CPU - Numba - 262144 - Isoneutral Mixing (sec)	0.045	0.046	0.047
Normalized	100%	97.83%	95.74%
PyHPC Benchmarks - CPU - Numba - 4194304 - Equation of State (sec)	0.167	0.171	0.167
Normalized	100%	97.66%	100%
PyHPC Benchmarks - CPU - Numpy - 262144 - Isoneutral Mixing (sec)	0.091	0.089	0.089
Normalized	97.8%	100%	100%
PyHPC Benchmarks - CPU - Numpy - 1048576 - Isoneutral Mixing (sec)	0.416	0.417	0.415
Normalized	99.76%	99.52%	100%
PyHPC Benchmarks - CPU - Numpy - 1048576 - Equation of State (sec)	0.239	0.239	0.24
Normalized	100%	100%	99.58%
PyHPC Benchmarks - CPU - Numba - 4194304 - Isoneutral Mixing (sec)	0.8	0.8	0.802
Normalized	100%	100%	99.75%
PyHPC Benchmarks - CPU - Numpy - 4194304 - Equation of State (sec)	1.25	1.25	1.247
Normalized	99.76%	99.76%	100%
PyHPC Benchmarks - CPU - Numpy - 4194304 - Isoneutral Mixing (sec)	1.816	1.817	1.819
Normalized	100%	99.94%	99.84%
PyHPC Benchmarks - CPU - Numba - 1048576 - Isoneutral Mixing (sec)	0.196	0.196	0.196
PyHPC Benchmarks - CPU - Numba - 1048576 - Equation of State (sec)	0.042	0.042	0.042
PyHPC Benchmarks - CPU - Numba - 262144 - Equation of State (sec)	0.01	0.01	0.01
PyHPC Benchmarks - CPU - Numpy - 65536 - Equation of State (sec)	0.013	0.013	0.013
PyHPC Benchmarks - CPU - Numpy - 16384 - Isoneutral Mixing (sec)	0.005	0.005	0.005
PyHPC Benchmarks - CPU - Numpy - 16384 - Equation of State (sec)	0.002	0.002	0.002
PyHPC Benchmarks - CPU - Numba - 65536 - Isoneutral Mixing (sec)	0.012	0.012	0.012
PyHPC Benchmarks - CPU - Numba - 65536 - Equation of State (sec)	0.003	0.003	0.003
PyHPC Benchmarks - CPU - Numba - 16384 - Isoneutral Mixing (sec)	0.003	0.003	0.003

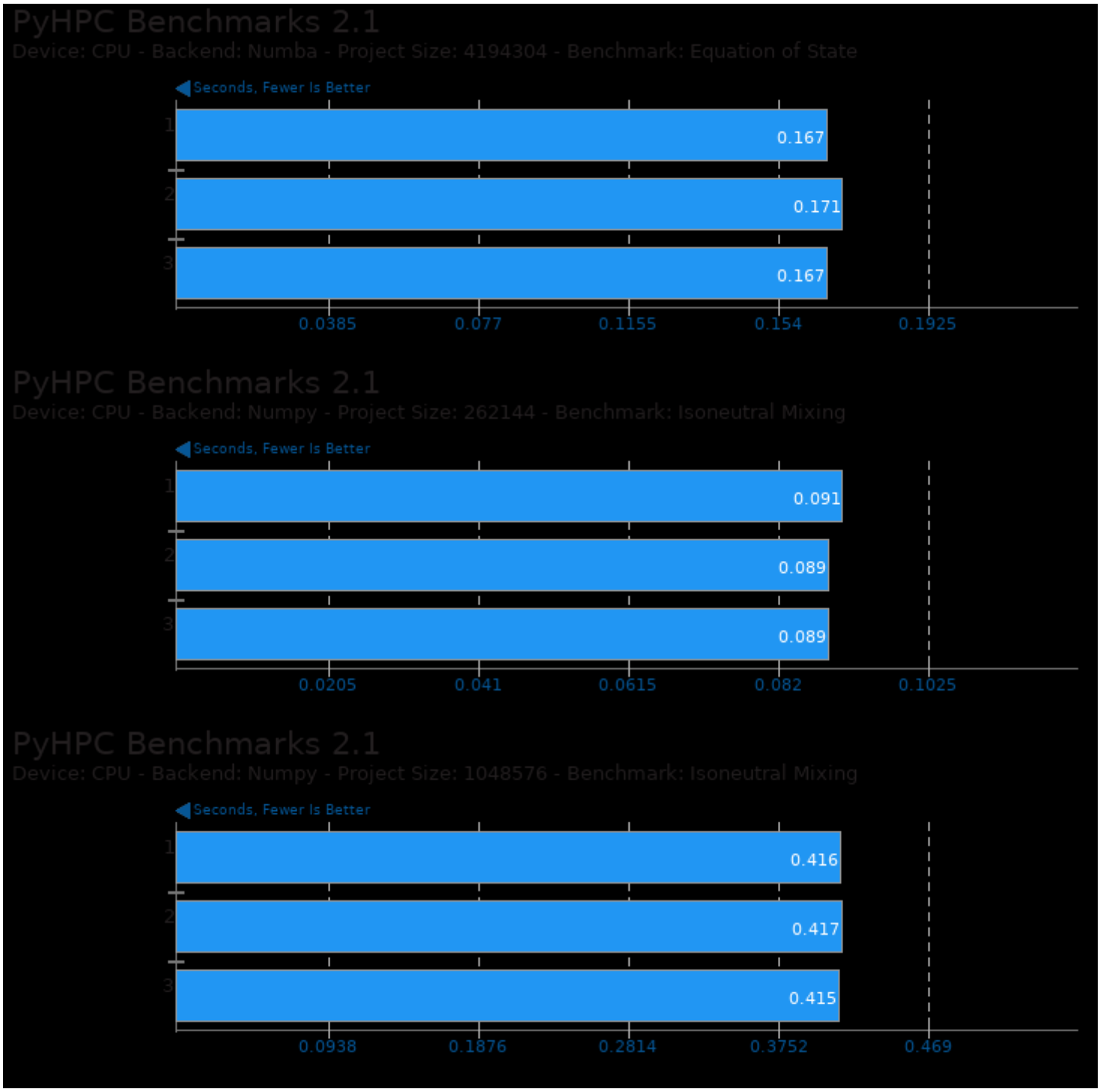
pyhpc rocket

PyHPC Benchmarks - CPU - Numba - 16384 - Equation of State (sec)	0.001	0.001	0.001
PyHPC Benchmarks - CPU - JAX - 4194304 - Isoneutral Mixing (sec)	0.584	0.584	0.584
PyHPC Benchmarks - CPU - JAX - 4194304 - Equation of State (sec)	0.032	0.032	0.032
PyHPC Benchmarks - CPU - JAX - 1048576 - Isoneutral Mixing (sec)	0.141	0.141	0.141
PyHPC Benchmarks - CPU - JAX - 1048576 - Equation of State (sec)	0.008	0.008	0.008
PyHPC Benchmarks - CPU - JAX - 262144 - Isoneutral Mixing (sec)	0.034	0.034	0.034
PyHPC Benchmarks - CPU - JAX - 262144 - Equation of State (sec)	0.001	0.001	0.001
PyHPC Benchmarks - CPU - JAX - 65536 - Isoneutral Mixing (sec)	0.01	0.01	0.01
PyHPC Benchmarks - CPU - JAX - 16384 - Isoneutral Mixing (sec)	0.002	0.002	0.002

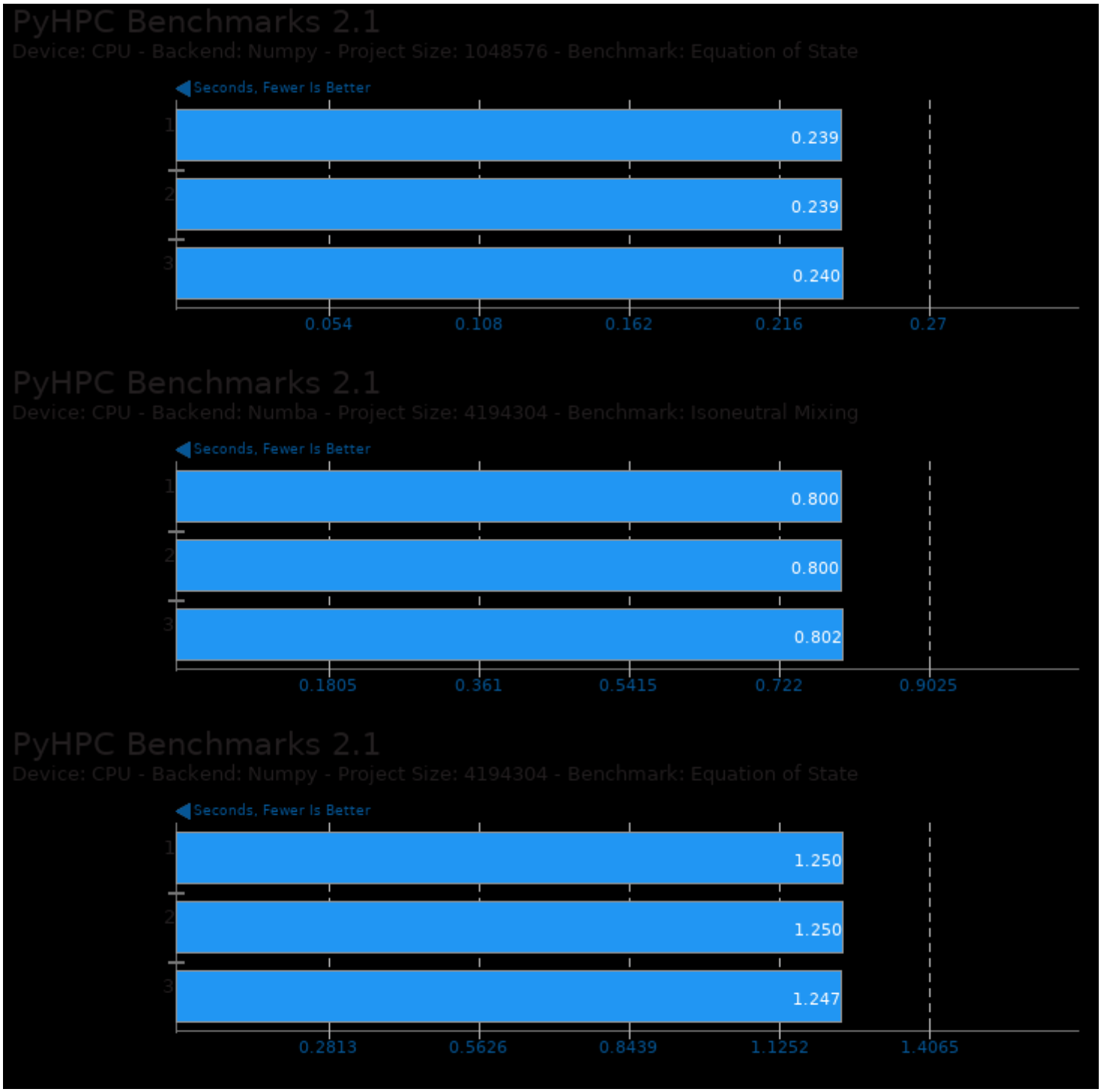
pyhpc rocket



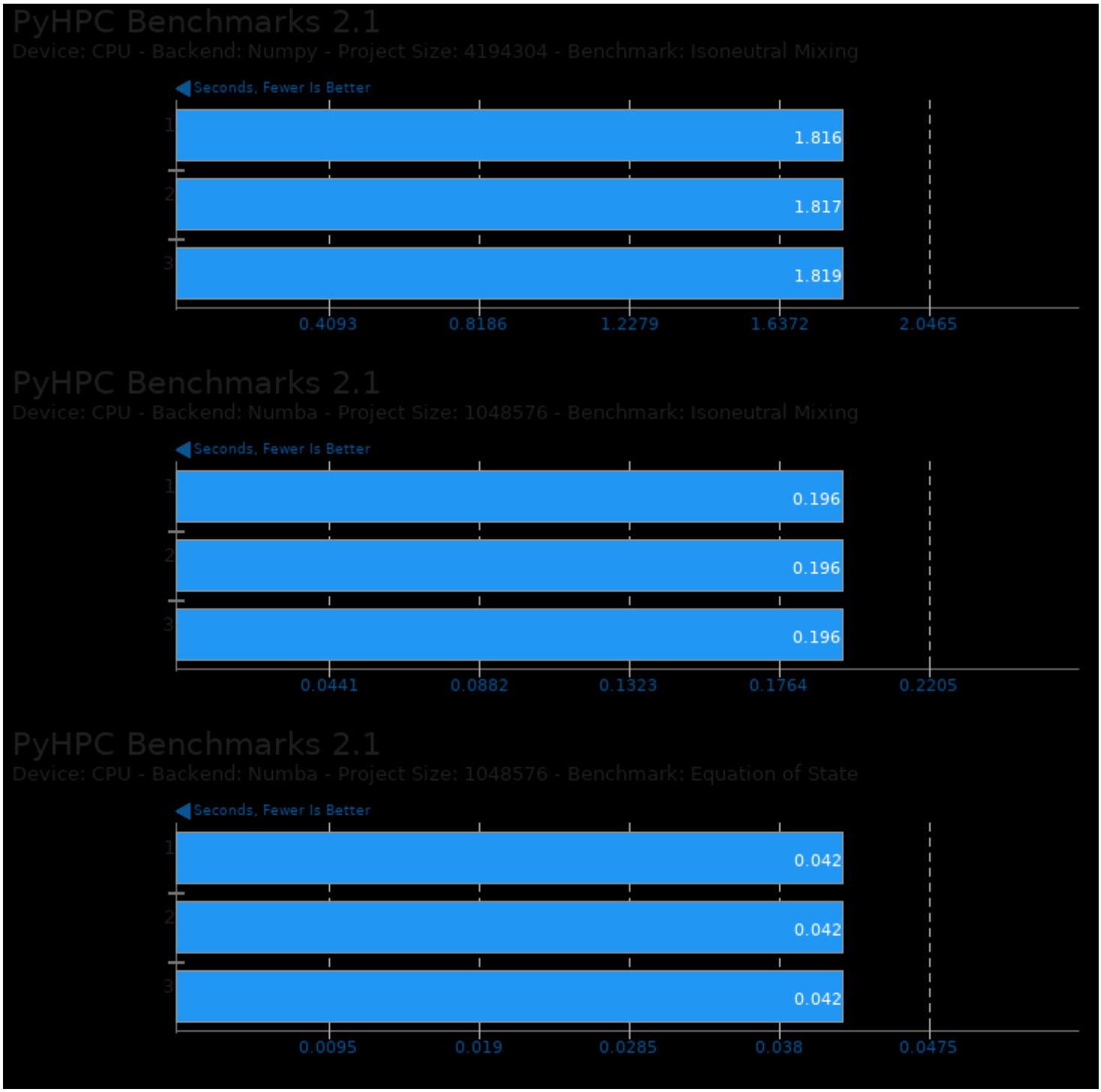
pyhpc rocket



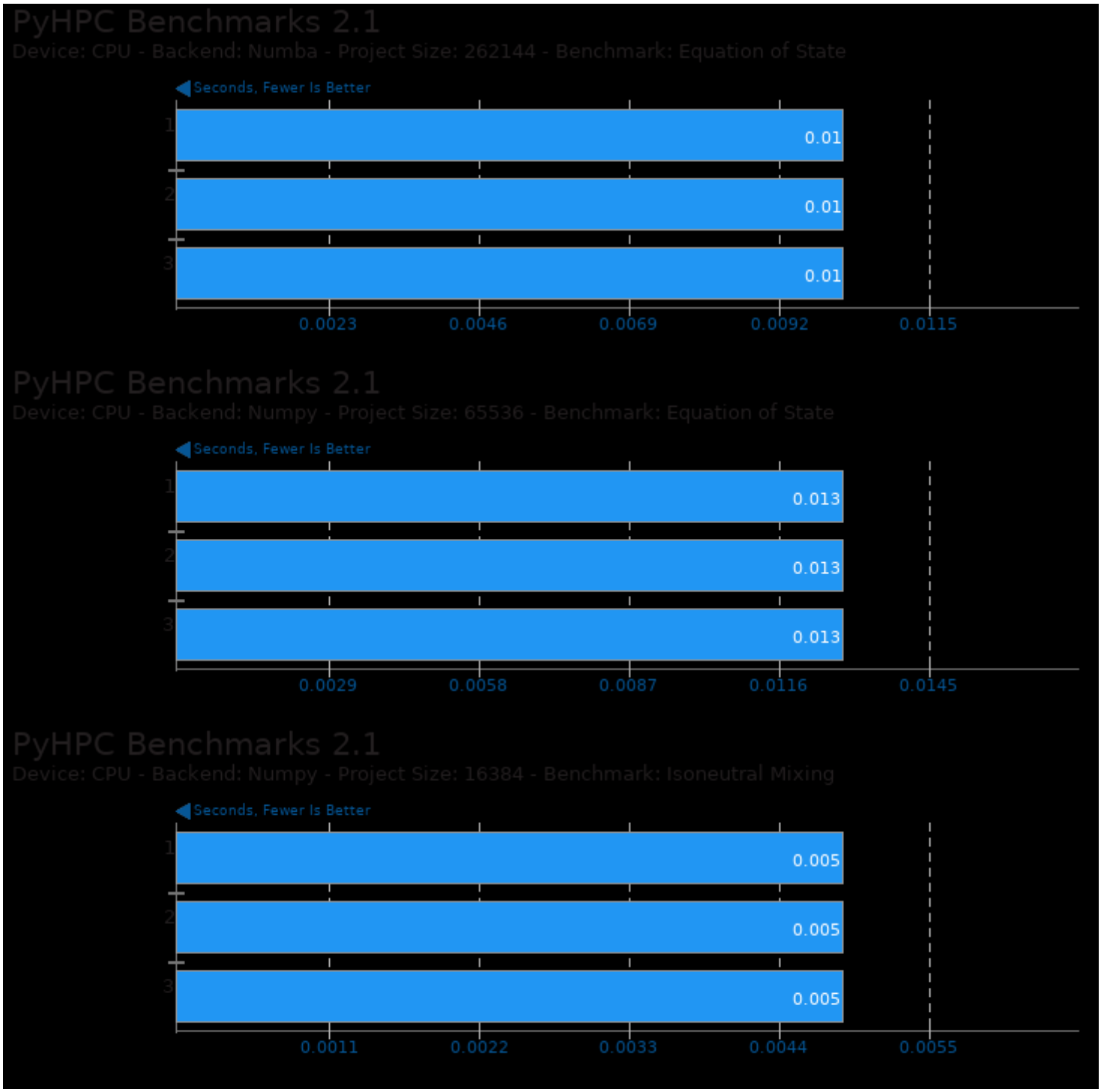
pyhpc rocket



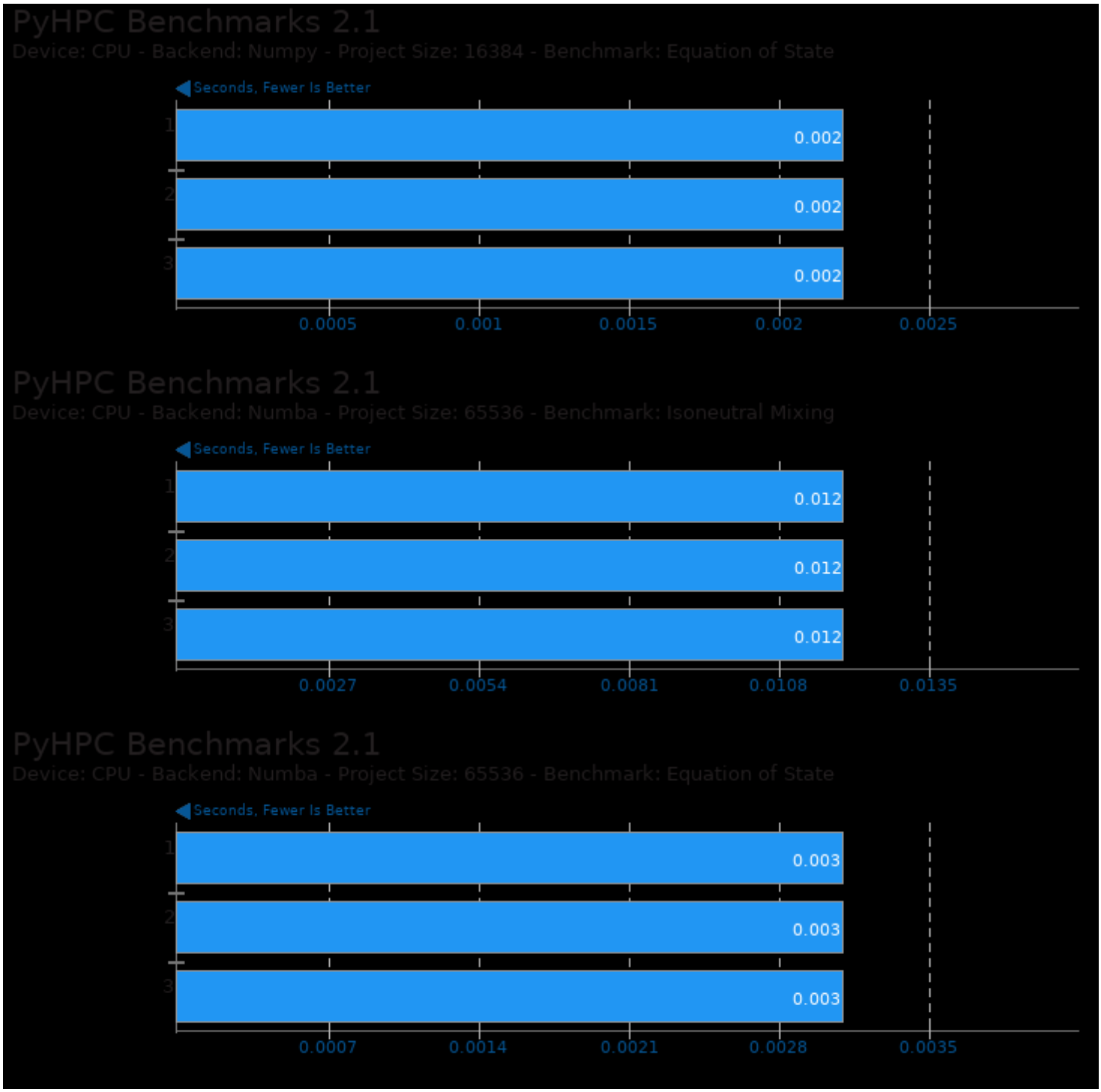
pyhpc rocket



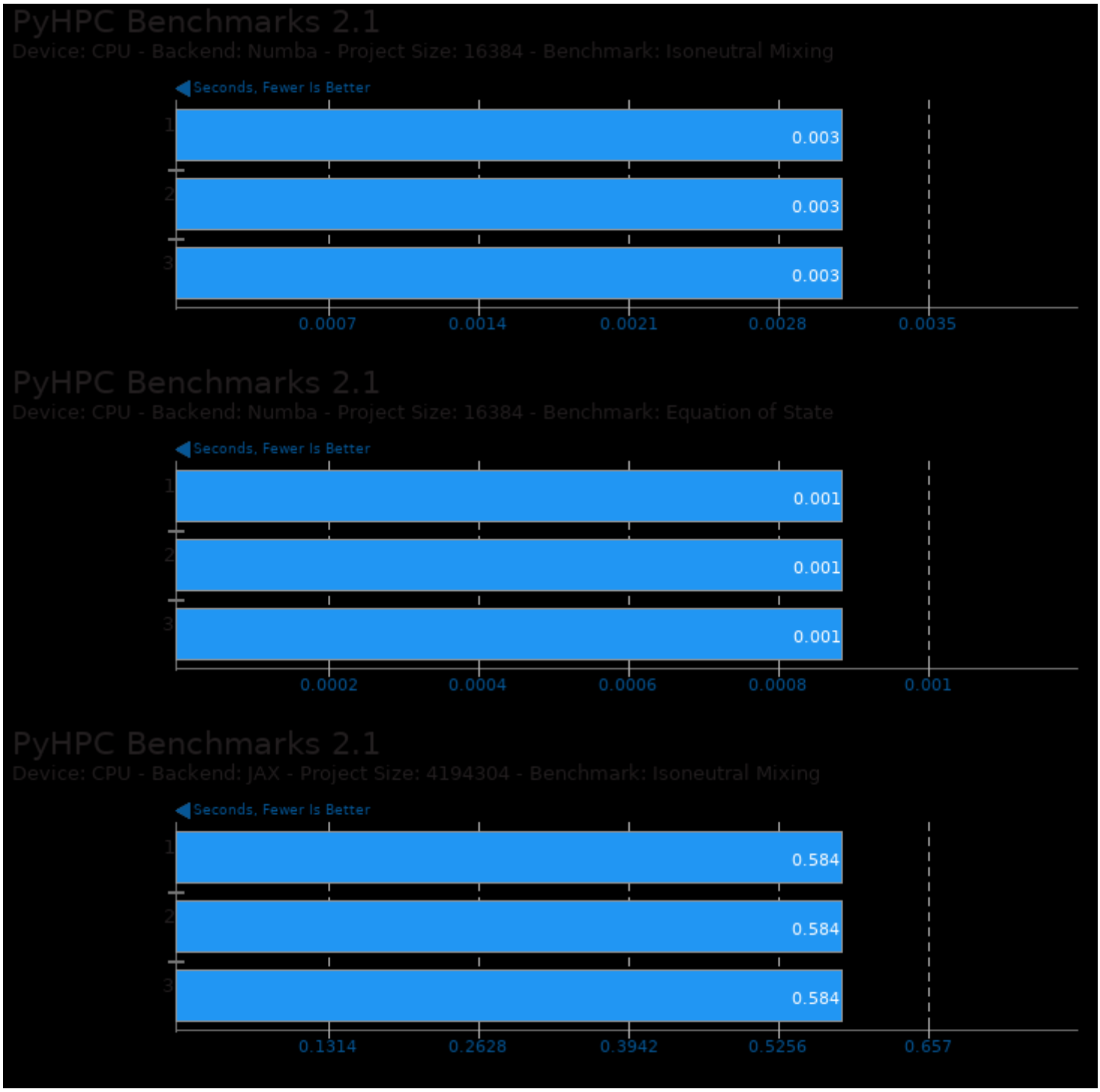
pyhpc rocket



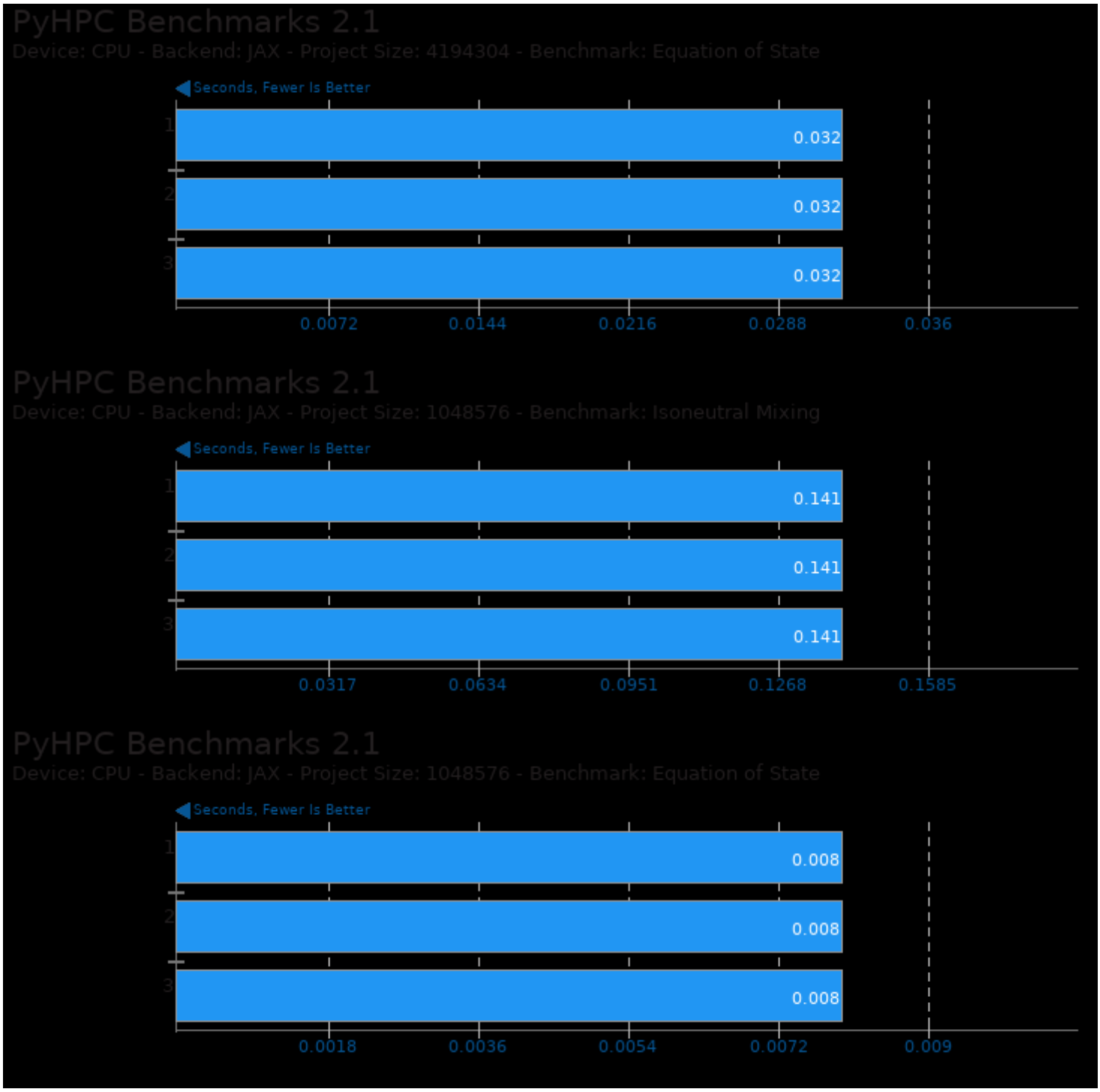
pyhpc rocket



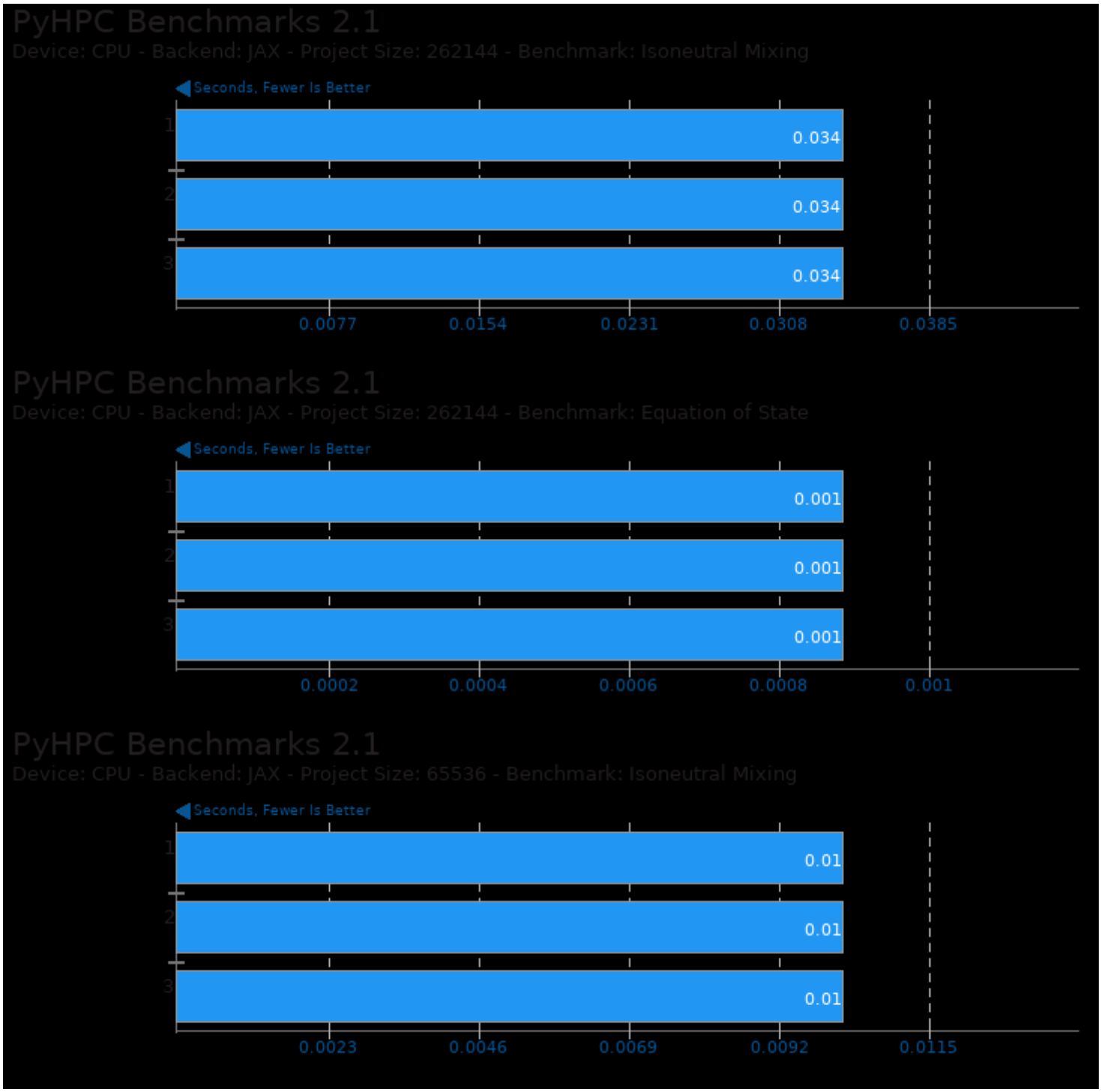
pyhpc rocket



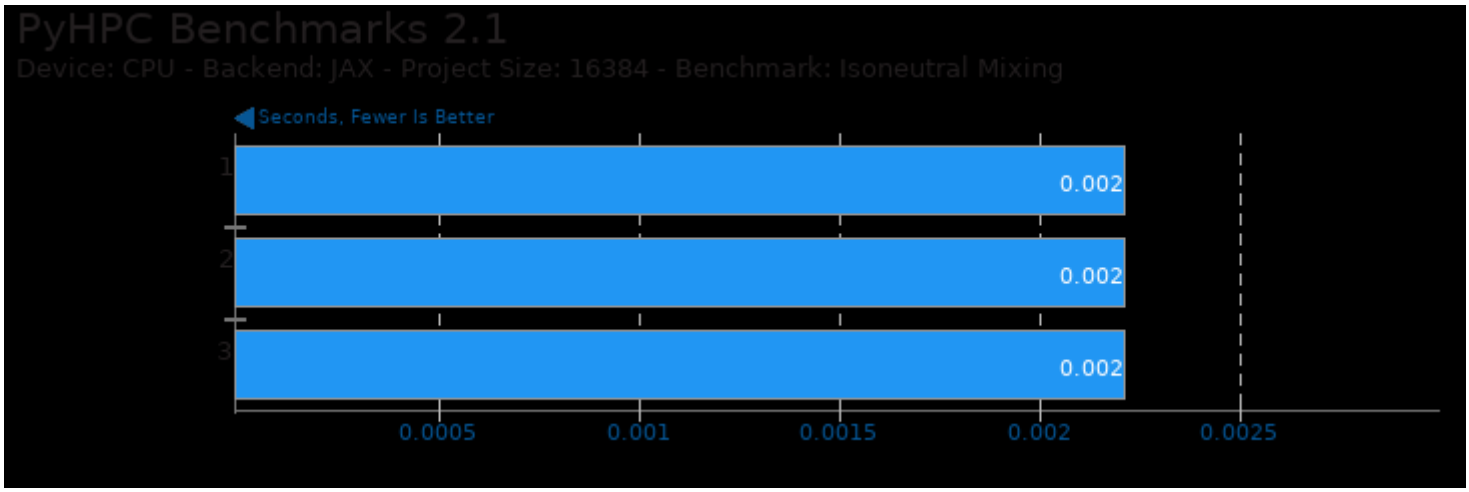
pyhpc rocket



pyhpc rocket



pyhpc rocket



This file was automatically generated via the Phoronix Test Suite benchmarking software on Friday, 29 March 2024 10:01.