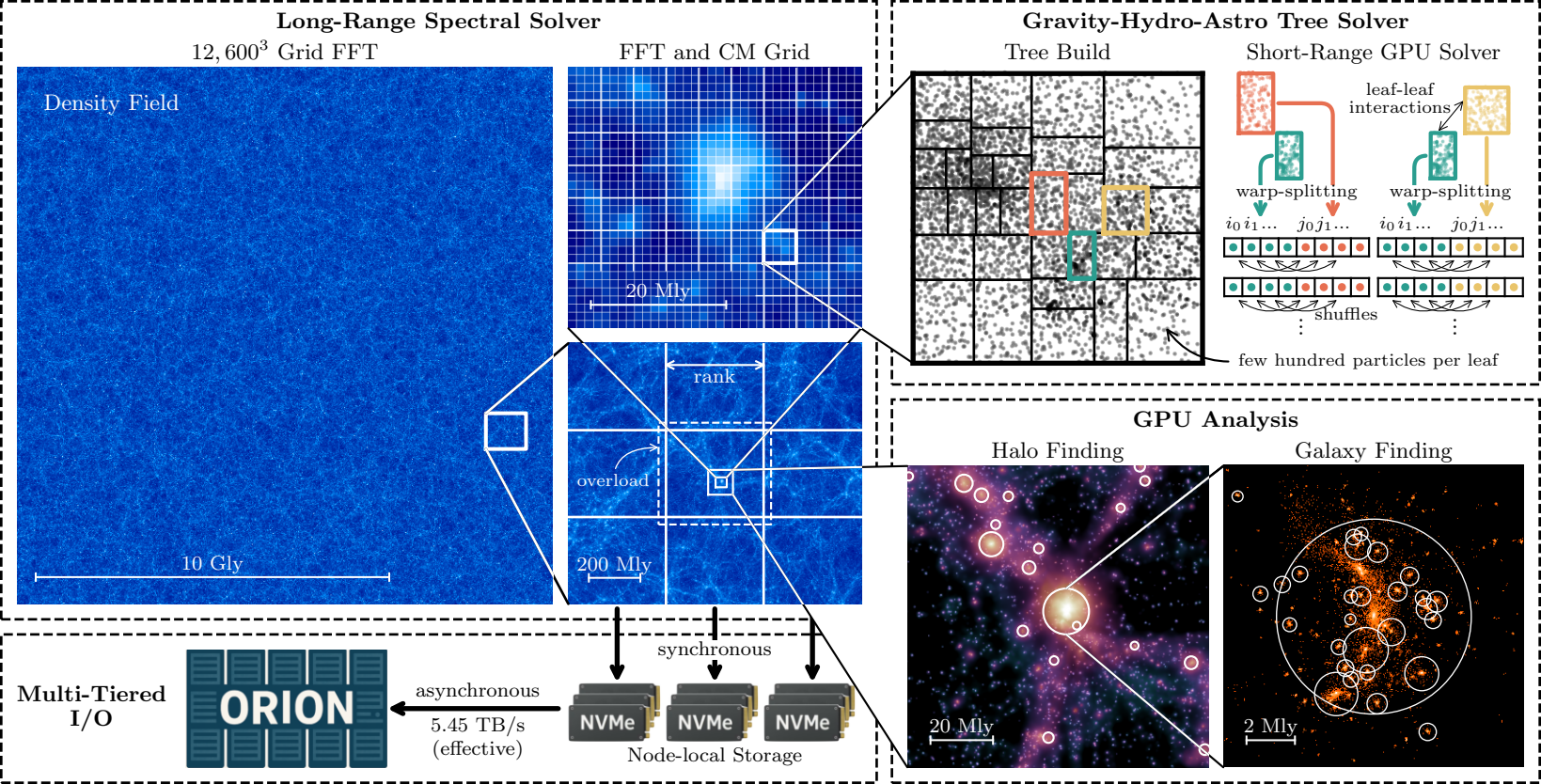
Long-Range Spectral Solver
$12,600^3$ Grid FFT
FFT and CM Grid
Density Field
20 Mly
rank
overload
200 Mly
10 Gly
Gravity-Hydro-Astro Tree Solver
Tree Build
Short-Range GPU Solver
leaf-leaf interactions
warp-splitting
warp-splitting
$i_0\,i_1\ldots$ $j_0\,j_1\ldots$
$i_0\,i_1\ldots$ $j_0\,j_1\ldots$
shuffles
few hundred particles per leaf
GPU Analysis
Halo Finding
Galaxy Finding
20 Mly
2 Mly
Multi-Tiered I/O
ORION
asynchronous
5.45 TB/s
(effective)
synchronous
NVMe
NVMe
NVMe
Node-local Storage