



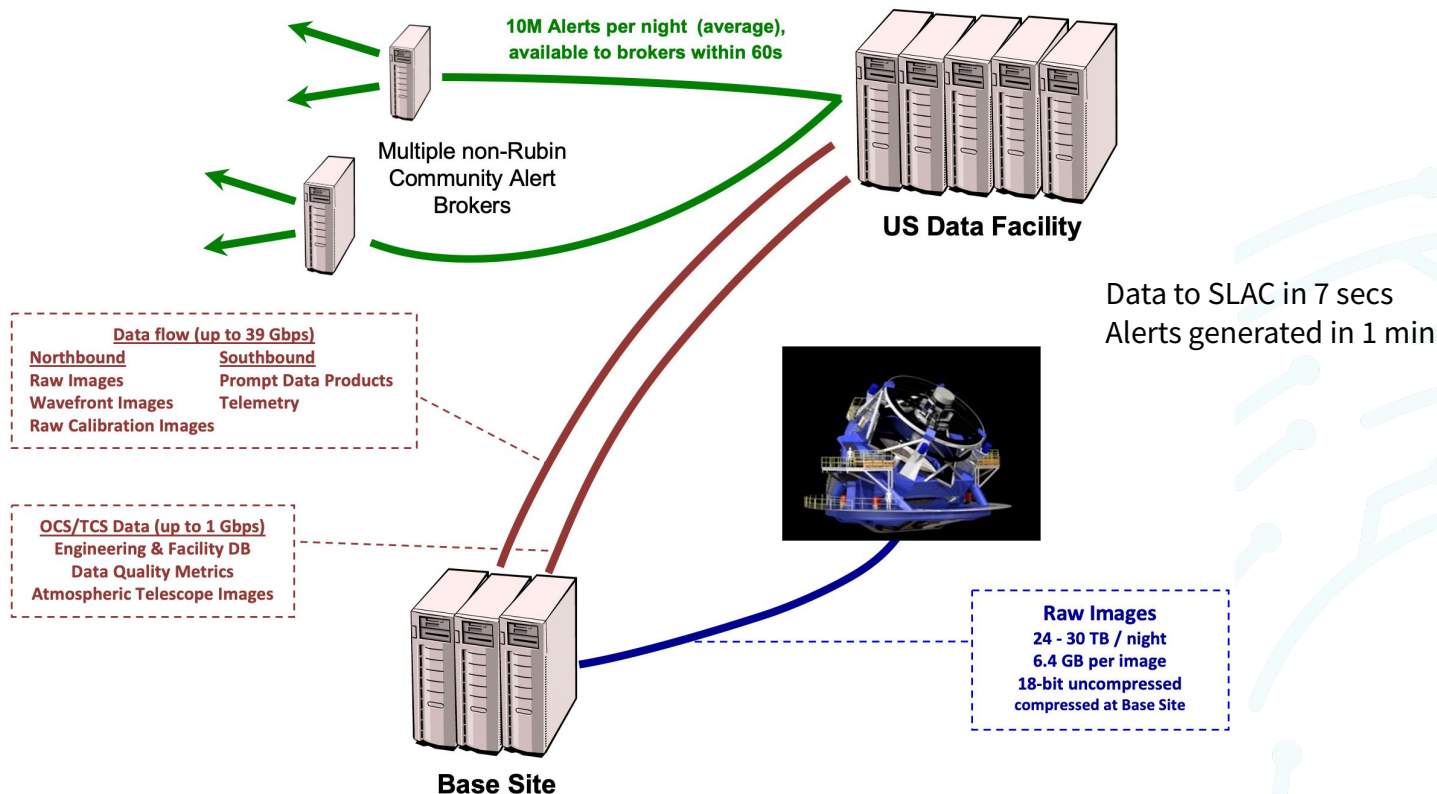
# Rubin Observatory US Data Facility +NET Networking Update

Mark Foster with Richard Dubois  
April 2022

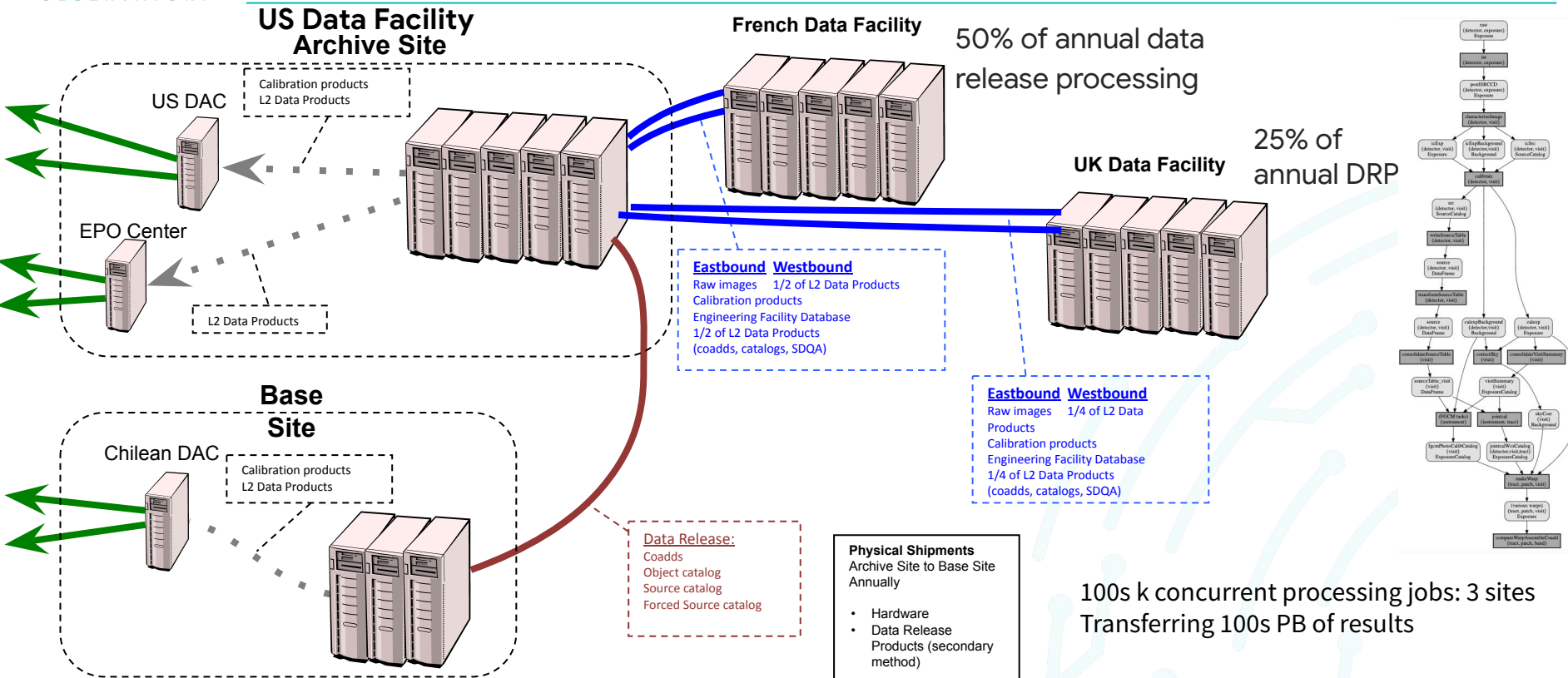


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# Data Flows: Prompt Processing

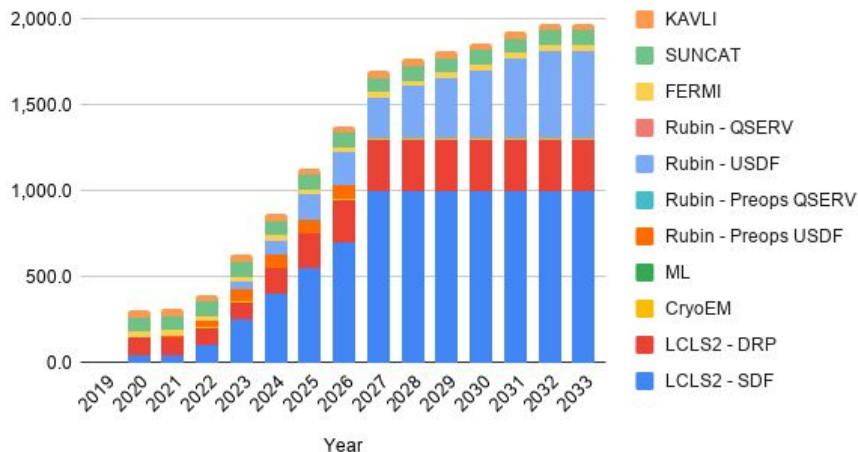


# Data Flows: Data Release Processing

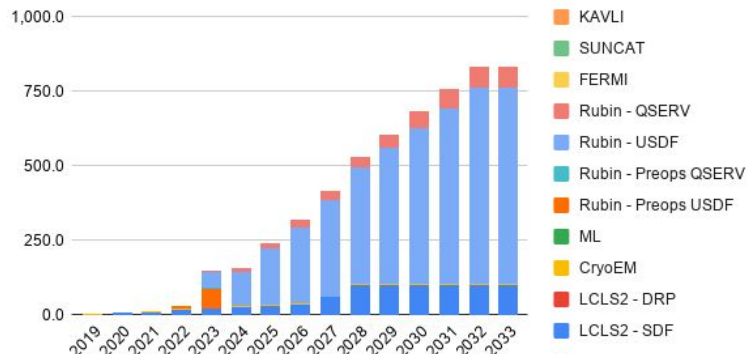


# SLAC Shared Data Facility (S3DF)

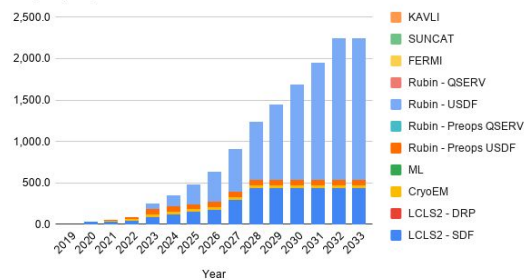
## CPU (TFLOPS)



## Disk (PB)



## Tape (PB)



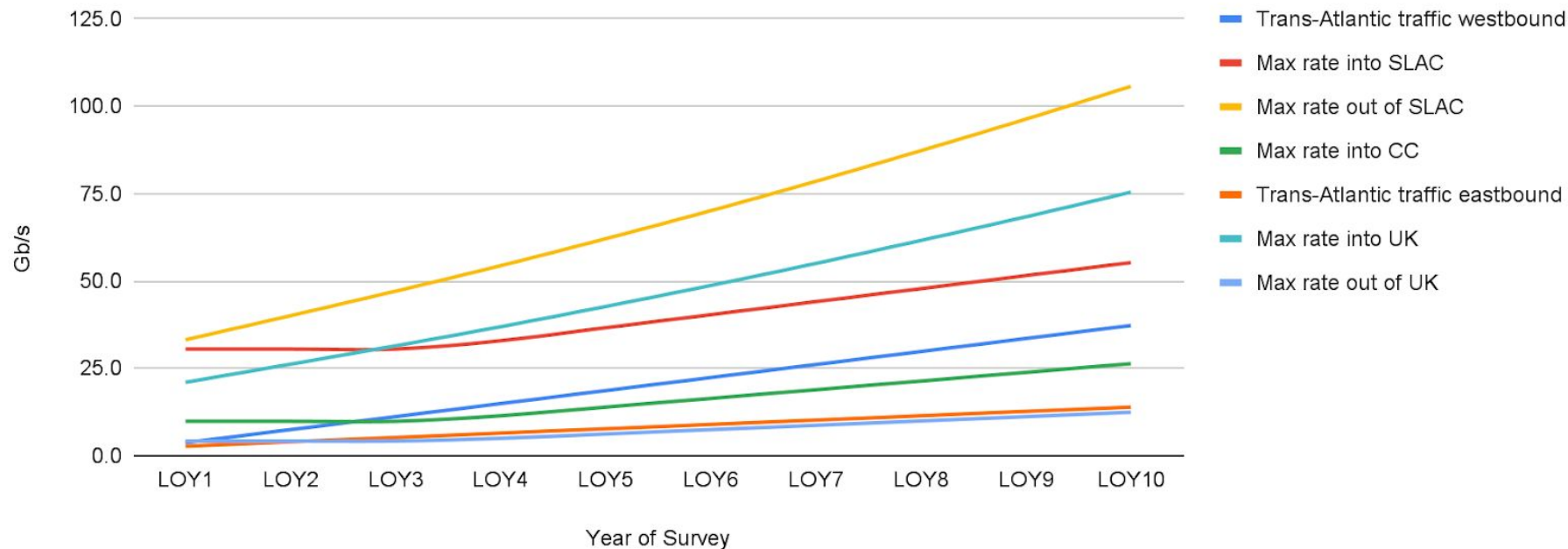
S3DF support buildings at SLAC: B050, SRCF, SRCF-II

CPU dominated by LCLS-II

Storage dominated by Vera Rubin USDF

# Projected Network Transfer Rates

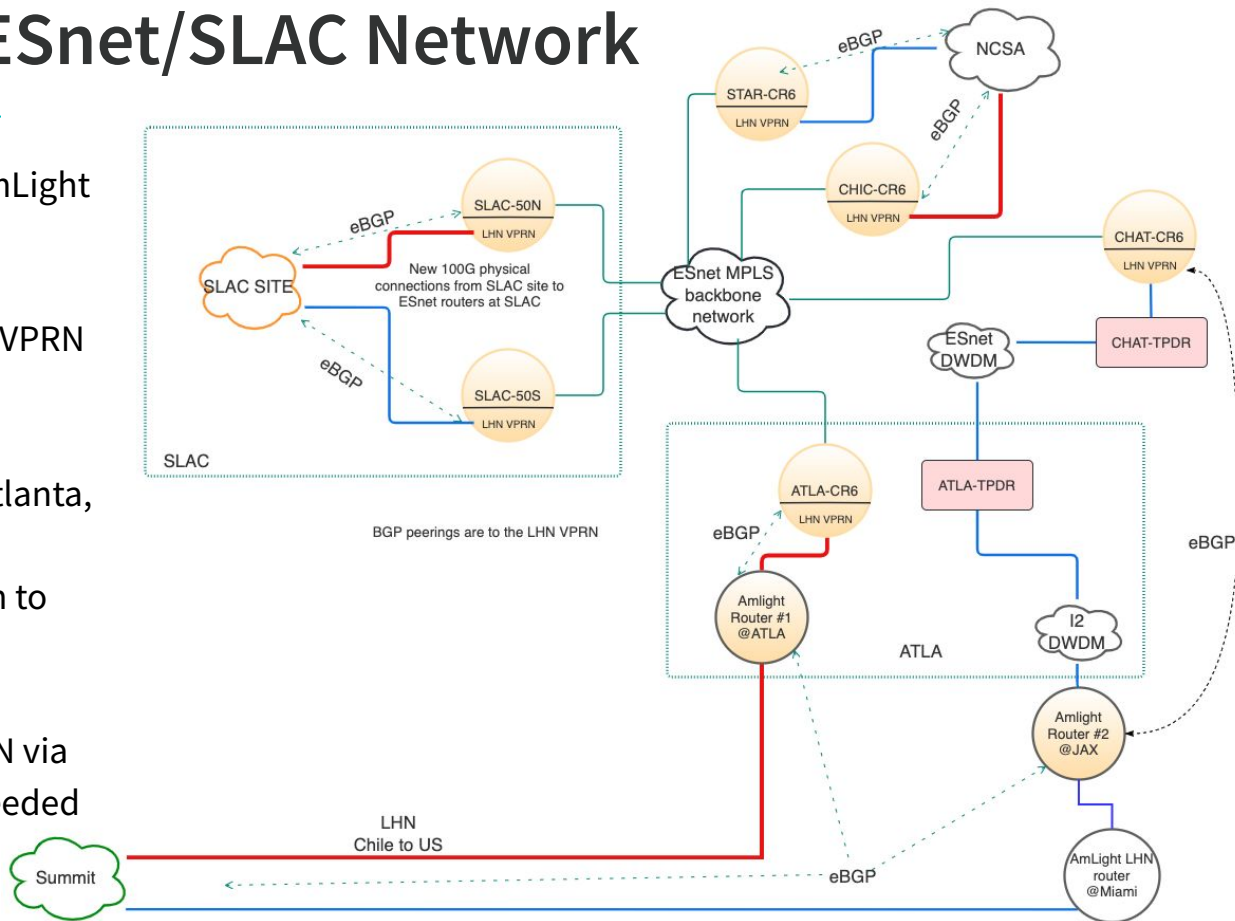
## Estimated Max Network Transfer Rates



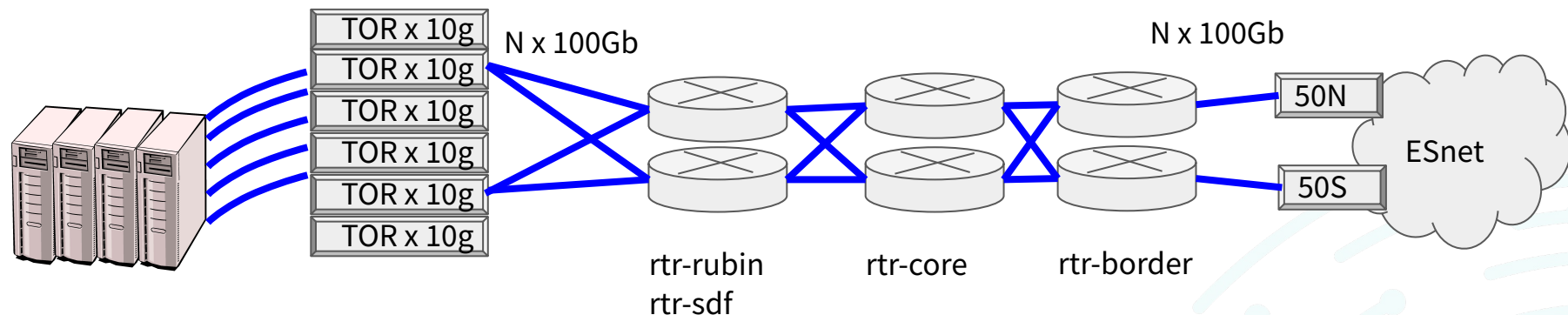
Assumes DRP transfers can proceed in parallel with processing

# AmLight/ESnet/SLAC Network

- Primary, backup optical waves AmLight to Atlanta, Chattanooga
- ESnet VPRN (similar to LHCONe)
- BGP between AmLight and ESnet VPRN
- Two new 100G links SLAC/ESnet, additional BGP to ESnet VPRN
- LHN PerfSONAR nodes at SLAC, Atlanta, Chattanooga, AmLight
- Preliminary/early implementation to conduct performance testing, assurance, and resiliency
- Straightforward extension of VPRN via ESnet to additional locations if needed



# SLAC / USDF Networking (notional)



USDF Server/Storage enclave: TOR switches: Nx10G with Nx100G (layer2) to routing infrastructure via SLAC core and SLAC border. Initially: Cisco Nexus 9336, Ruckus 7850-32Q

Currently support 200Gbps aggregate capability between SLAC and other sites with multiple ESnet 100Gbps links, 4x100Gbps later in 2022. Expect Nx400Gbps in 2023.

ESnet6: two optical nodes on SLAC premises: part of Bay Area optical ring (multi-Tbps optical capacity)



# Questions?



**SRCF-II (under construction)**



**SRCF**



**SRCF isles**