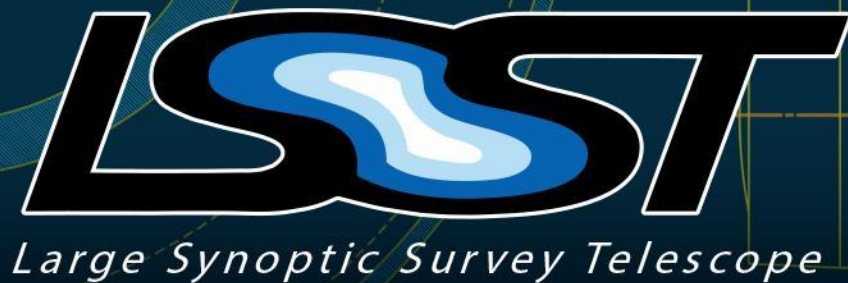


Running DM Stack with Pegasus

Hsin-Fang Chiang, NCSA

LSST 2017 Project & Community Workshop

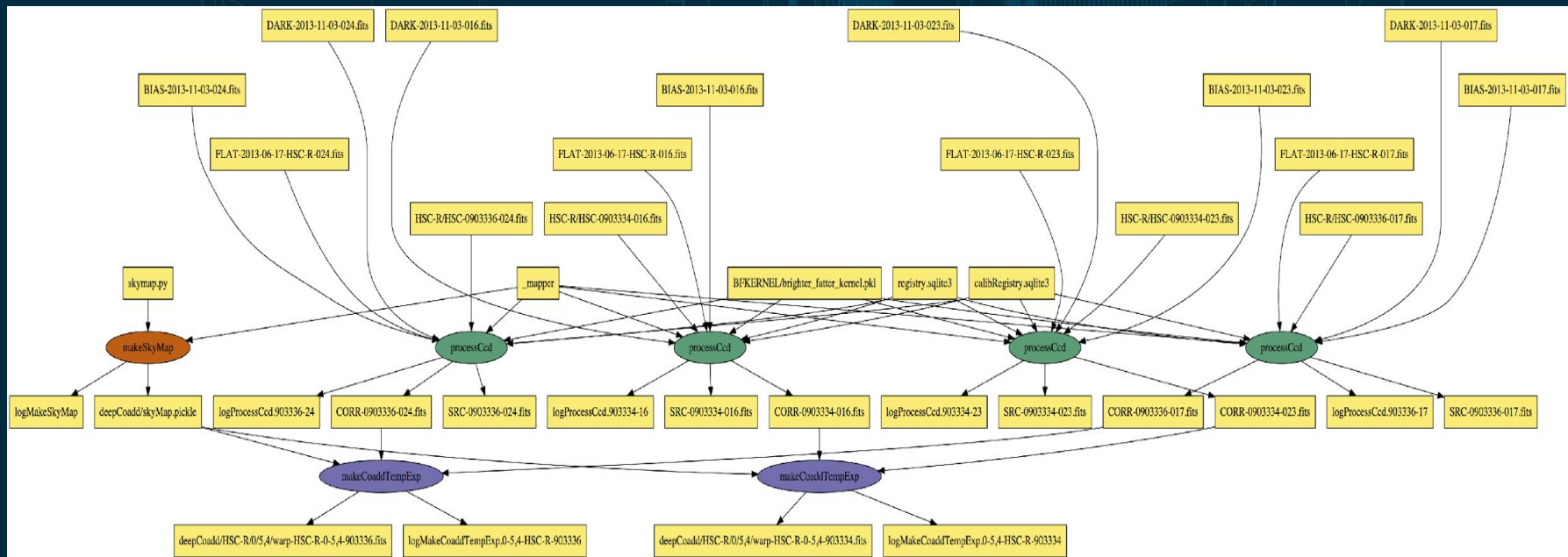


Aug 17, 2017

Yes We Can!



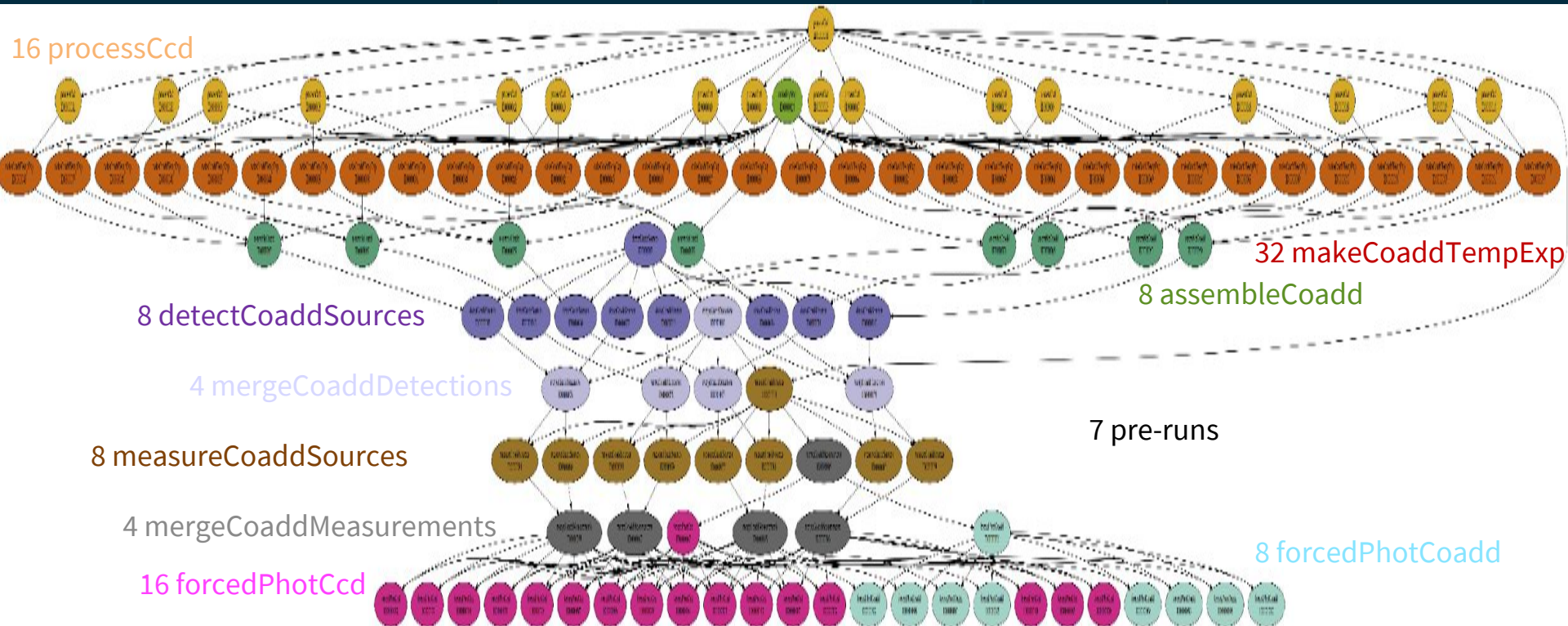
- Run through HTCondor glide-ins on Slurm Verification Cluster
- Alternatively:
 - Pegasus plugin in Orca (orchestration utility)
 - Running Pegasus on Nebula
- To create a Pegasus workflow dax:
site catalog, transformation catalog, replica catalog,



Today I can run ..



- A test workflow equivalent to ci_hsc
- A test workflow with 4 patches, 8 visits, 2 filters



- 10 CmdLineTasks, 112 jobs, 321 files

Recent test with a tract of HSC RC data

- Stack Version: w_2017_28 from Jul 17
- HSC “RC” WIDE data: 83 visits, 5 bands
- Tract: 8766
- Pipeline tasks:

makeSkyMap

ProcessCcd

mosaic

makeCoaddTempExp

assembleCoadd

detectCoaddSources

mergeCoaddDetections

measureCoaddSources

mergeCoaddMeasurements

forcedPhotCoadd

Recent test with a tract of HSC RC data

- Stack Version: w_2017_28 from Jul 17
- HSC “RC” WIDE data: 83 visits, 5 bands
- Tract: 8766
- Pipeline tasks:

	count	failed	max	mean	total (sec)
makeSkyMap	1	0	31	31	31
ProcessCcd	8568	38	3810	168	1439180
mosaic	5	0	1614	1200	6001
makeCoaddTempExp	2327	0	131	55	128265
assembleCoadd	407	2	255	134	54536
detectCoaddSources	406	0	110	37	15128
mergeCoaddDetections	82	0	66	35	2877
measureCoaddSources	406	0	6036	1349	547647
mergeCoaddMeasurements	82	0	67	48	3906
forcedPhotCoadd	406	0	784	492	199748

Quick-and-dirty hacks so to workaround

- Not dealing with big design questions here
 - Shared Butler repo
 - SuperTask and Butler Working Groups
- Work behind Butler and CmdLineTask implementations
 - Use private methods illegally
- Build and use an “overlap” database separately
- Translate implicit science workflows (eg. from TaskRunner)
- Make explicit all file inputs and outputs, given a dataId
 - Include reference catalog shards
 - Include image “metadata”
 - Not exact for now
- Fragile with software version changes

To be solved by
SuperTask
+ Supervisory Framework
+ New Butler