

The background of the slide is a dark blue technical drawing. It features various engineering sketches in yellow and light blue, including circular arcs, dashed lines, and structural components. The top right shows a detailed view of a mechanical assembly, while the bottom left shows a circular cross-section with a central hole and a label 'L19'.

DM Science F19 Highlights and S20 Plans

30 October 2019

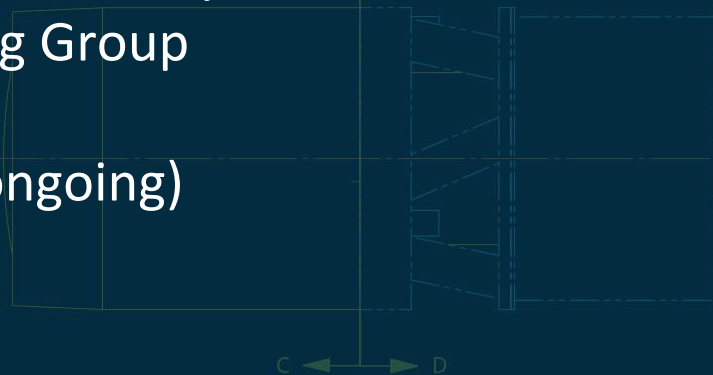


Large Synoptic Survey Telescope

DM Science F19 Highlights

Science Studies

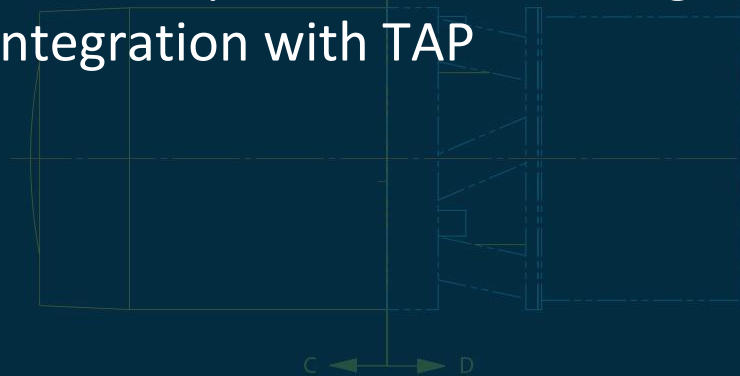
- Detection efficiencies for difference images (ongoing)
- Role of DM in producing/serving photometric redshifts (ongoing)
- Strategy for [crowded fields processing](#)
- Potential timeseries features to compute (ongoing)
- Review of design for Data Quality Assurance System for DM Science
- Participation in Image Display Working Group
- [Options for LOY1 Alerts](#)
- AWS PoC cloud deployment of DRP (ongoing)



DM Science F19 Highlights

Verification & Validation

- Hiring new DM V&V Scientist - Jeff Carlin started October 2019
- Increased test case definition coverage for DMSR
- Several efforts to improve requirements definitions (DMSR/OSS)
 - Review of AP requirements prioritization (ongoing)
- Definition of minimum datasets for scientific performance testing
- Defined milestone test for LSP A&A integration with TAP



DM Science F19 Highlights

Community Engagement

- Detailed responses to LSP review (S19) prepared
- Continued support for stack club via a roster (fortnightly)
- Strong presence at PCW -- sessions on:
 - Crowded fields, DIA workshop, Photo-z, Science Validation
- Representation at several science collaboration meetings, workshops and conferences, e.g.
 - DESC, SMWLV/TVSSC, LSST@Asia, TOM Toolkit, Hotwired ...
- Community Broker Workshop
 - 15 LOI, 3 LONI, Strong participation from the community
 - [Many good recommendations and followup actions](#)

DM Science S20 Plans

Alerts & Community Brokers -- Eric, Melissa, Leanne

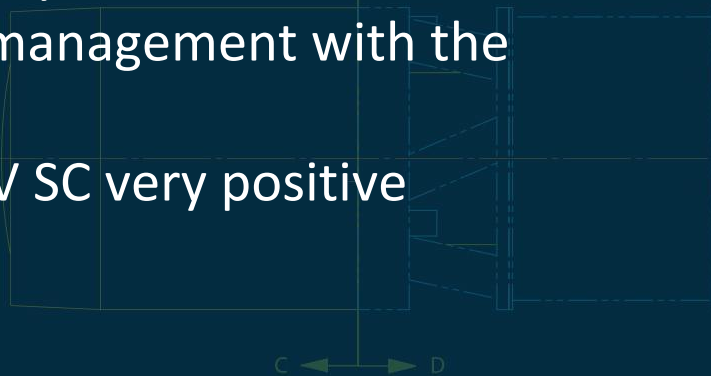
- Many issues still being worked through from the workshop
- Broker Call for full proposals in preparation -- end 2019
- LSE-459 policy proposal for LOY1 alerts in preparation
 - Working with ops
 - Need to understand the implications of a 'template filler' program to incrementally increase the number of alerts produced in LOY1
- Workshop paper in prep - targeting November



DM Science S20 Plans

Crowded Fields Processing -- Colin, Jim, Robert L

- PST has requested DM to develop a plan for processing crowded fields.
- Initial proposal for crowded field processing is described in [DMTN-129](#)
- Prototyping work ongoing by Colin, goal is to have a basic “DAOPHOT-like” capability built natively into the stack.
- Going to require careful expectation management with the community.
 - First meeting at PCW with SMWLV SC very positive



DM Science S20 Plans

Serving photometric redshifts -- Melissa, Jim, Gregory, Leanne

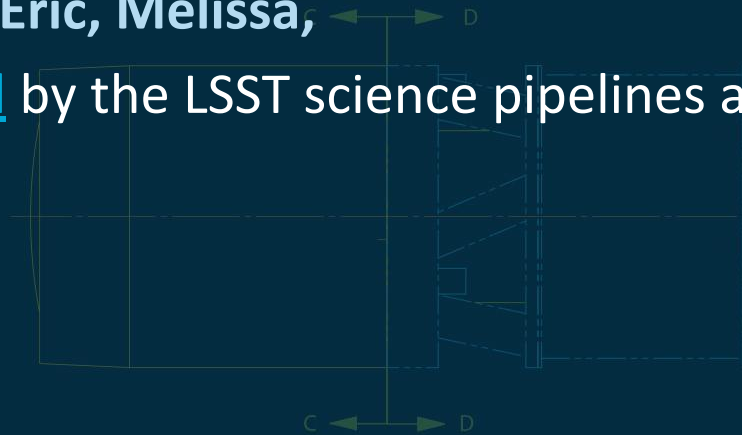
- DM is required to produce and serve photometric redshifts
- Ongoing studying of various options
- Working with operations and the community

Time series features in Object tables -- Eric, Melissa,

- Time series features to be calculated by the LSST science pipelines and published in the Object tables

Detection Efficiencies -- Melissa,

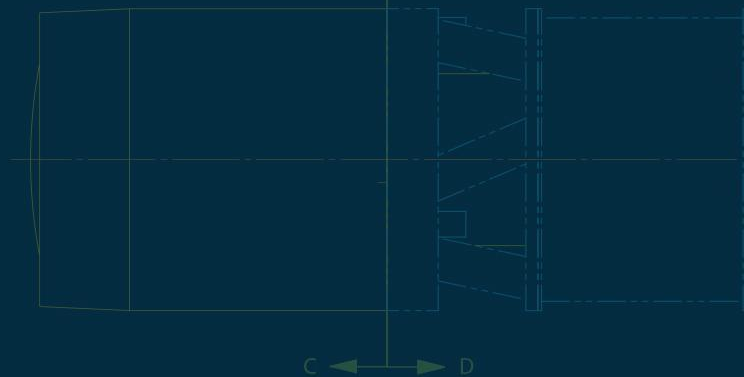
Special Programs -- Melissa,



DM Science S20 Plans

Science Platform -- Gregory, Simon, Colin

- Execute responses to LSP review actions
- Provide guidance for detailed design of image access services
- Contribute to definition and execution of LDM-554 V&V
- Prepare for next major LSP evaluation exercise
 - Based on HSC DR2 with LSST-style DPs + Gaia + WISE



DM Science S20 Plans

AWS PoC -- Hsin-Fang, K-T, Dino, Wil, NCSA & HTCondor & AWS

- Lead the PoC to do DRP processing on the AWS platform
- DRP in Gen3 with AWS backend on file storage and registry
- Able to execute one tract of HSC-RC2 successfully
- Lead a tutorial session in Petabytes to Science workshop
- Plan to wrap up this phase of PoC in S20

Support/hand-over reprocessing at NCSA -- Hsin-Fang.

Provenance WG -- Gregory, Robert G, Simon.



DM Science S20 Plans

Algorithms Workshop -- Leanne, Colin, Jim, Robert L, Eric, Željko



Large Synoptic Survey Telescope

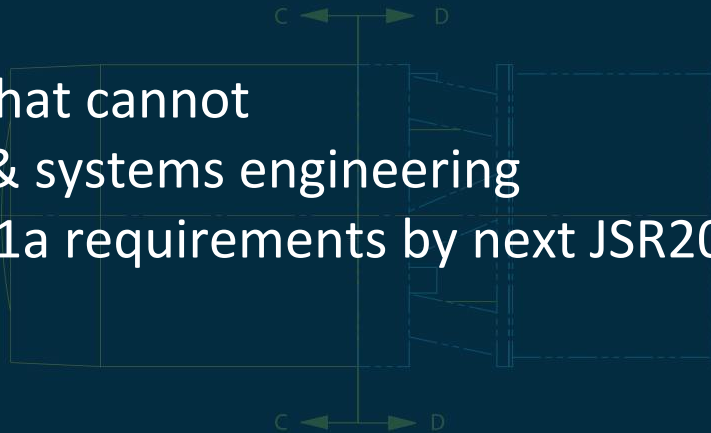
LSST Algorithms Workshop

17-19 March, 2020 | Princeton, NJ, USA

DM Science S20 Plans

Verification & Validation -- Jeff C, Leanne, Simon, Gabriele & all SST

- Building plans for verification testing at the DMSR level
- Currently analysing all requirements to build a plan for verifying all by end of construction
- Aim to include as many tests as possible in the existing plan for milestones
- Plan additional milestones for those that cannot
- Working closely with commissioning & systems engineering
- Aim to show significant coverage of P1a requirements by next JSR2020



Staffing

- Michael Wood-Vasey -- steps down but remains ex-officio
- Jeff Carlin -- takes over as V&V scientist
- Hsin-Fang -- SST Analyst/DAX working on SDM Standardization
- Leanne & Melissa 25% on Operations from FY20
- Gregory now at 50%
- Robert L now PO for CAP and working with T&S for a few months to help with SAL/AuxTel

