Status Update
Astronomy & Astrophysics Advisory Committee
26 September 2017

Nigel Sharp
LSST Program Officer, MPS/AST
Overview

- Technical progress is excellent, although the Project team is very busy.
- Status by the numbers is good.
- Although both cost and schedule contingency are tight, construction is on track to complete on time and within budget.
- Challenges and risks remain.

Joint NSF-DOE annual progress review (September 6-8):

The Committee finds that an enormous amount of work has been accomplished and the progress is impressive. It is very exciting to see the project advance. The project has put together an excellent team of people and the many project participants and organizations are functioning well as a single team. LSST has robust management processes, and they appear to be ready for the significant challenges that lie ahead.

The overall consensus of the Committee is that the project is going very well.
Schedule Overview
Building and Site
The weather has been terrible – rain brought down rocks and blocked the road.
Building and Site
Building and Site

Then it snowed …
But if we look at December 2016
Building and Site
Building and Site

and then at August 2017
Building and Site
Building and Site

It begins to look a lot like the artist’s impression
Building and Site

It’s beginning to look a lot like the artist’s impression.
Telescope Mount Assembly

- Shipment to summit in Summer 2018
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Cell with >4400 machined deck plate holes
Surrogate mirror machined & ready
Support systems under test
M1M3 Mirror Cell & Surrogate

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Data Management

- New Project Manager fully in place
- Re-plan completed – budget approval pending
  - Contingency usage needed; subsystem cost up by 13% from beginning
  - Really does look like the major “hit” has been handled
  - Aligns the plan now, when there is still time to succeed
  - Current activities are consistent with re-plan (nothing radical)
- New management structures in place; focus on new PM and
  - Individual software product ownership
  - Empowering newly defined DM science team
  - Verification and Validation
- External review in July
  - Very supportive but, as always, made some recommendations
Camera Status

Overall coming along nicely

Filter exchange system prototype

Support grid
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L1 & L2 support

L1 (1.6m)

Support grid

RTM 2
But there are always problems

- Top tracked risks are all related to system commissioning
- Telescope and site now the critical path
  - 6.5 month delay – overall, 2.5 months of project schedule contingency used
  - M1M3 design/fabrication underestimated, but preparing for integration
- Software development risks addressed - new manager, additional staff
- Camera is two months off critical path but worrisome
  - Sensor mitigation decisions have overall impact
  - Additional fabrication challenges with optics
  - Integration and test relies on Camera delivery
- Staffing worries exacerbated by stress and anxiety
  - Operations transition, and possible moves to Chile
- Agency interactions – annual review said Project is over-reviewed
  - Changes to NSF requirements and guidelines

*Biggest next challenge for agencies is the operations proposal, submitted in August and scheduled for initial programmatic review in December*
Camera problems

Camera PM situation finally resolved

Two vendors continue to produce sensors within specification, but not quickly enough

Yield issues might be resolved without being understood (not good)

Cryogenics requiring more in-house effort than originally planned, and expertise is hard to get
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Continued small optics problems

Will polish out and be masked with negligible technical or science impact, but ... why?

Scratches on L1, and one small fracture - 1.5x1.2mm, 0.5mm deep
Site Visit

- September 20-22 – short but intense – Nigel Sharp, Ed Ajhar, Donna O’Malley
- Mountain tour; there’s nothing quite like seeing it in reality
- Rebuilding of Recinto area in La Serena.
  - Offices, data & computer center, remote operations center for LSST
  - Integrated with NOAO-S, CTIO and AURA
  - First significant work since Gemini building
  - Some parts more than 40 years old.
- Discussions with administrative staff – procedures, shipping, tracking
- Importation into Chile, property tagging, inventory control
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It got to be quite wearing on us
Any Questions?

Backup Slides
Revised Monte Carlo analysis

90% confidence – $64M remaining contingency is sufficient – 90% completion date 2022-08-02
Detailed plan for timely shipment to summit

- Hired Principal Surveyor Marine Transportation
  - Working with vendors to optimize shipping
  - Coordinating AURA/Chilean planning

TURN RADIOUS TOP
ASSEMBLY

FIG. 2

FIG. 3