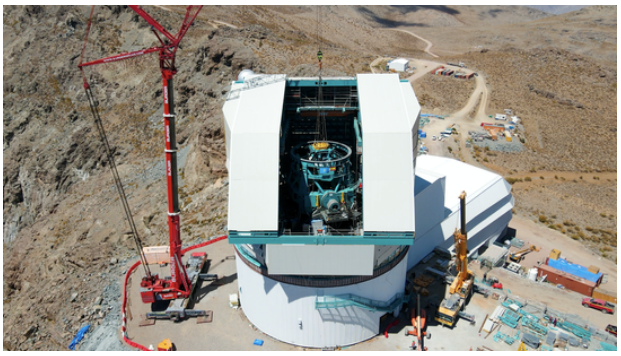
LSST:UK Newsletter 9 (March 2021)

Introduction

Construction milestones continue to be met on the summit of Cerro Pachón. The image on the right shows the successful outcome of the installation of the Top-End Assembly (TEA).

The Rubin Observatory has released a video on YouTube - https://www.youtube.com/watch?v=NOaS8jzkTMI - following the TEA installation, accompanied by suitably stirring music.

The Telescope Mount Assembly now just needs to have the camera mass surrogate installed and it will be complete, allowing a variety of tests before the eventual arrival of the camera itself.

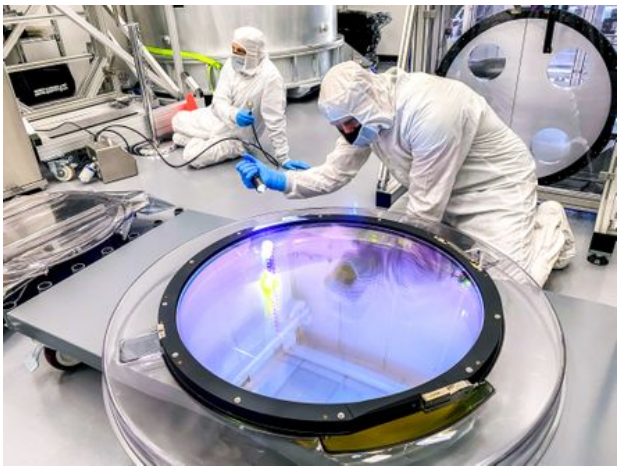


(Credit: Rubin Obs/NSF/AURA)

Meanwhile, a milestone was reached in the camera construction, with the arrival at SLAC of the first filter, that for the r band (pictured right).

Each filter is almost 80cm in diameter and weighs about 40kg. Before arrival at SLAC for eventual integration into the camera, the filters each undergo a journey that takes them to France for the shaping and polishing of the substrate, followed by coating and installation in their individual frames at different locations in the US.

The remaining five filters - for the u, g, i, z and y bands - are due to arrive in SLAC in the next few months, after which all six will be loaded into the filter exchanger by the end of 2021. The camera is due to be shipped to Chile early in 2022.



(Credit: Travis Lange/SLAC National Accelerator Laboratory)

Finally, the Observatory has released another YouTube video - https://www.youtube.com/watch?v=41_VUIPwWAk - that summarises a decade of construction on Cerro Pachón in 80 seconds, to the accompaniment of a rather jauntier ditty than that chosen for the TEA installation video.

Those with ideas for future newsletter items should contact the LSST:UK Project Managers (@ George Beckett and @ Terry Sloan lusc_pm@mlist.is.ed.ac.uk), while everyone is encouraged to subscribe to the Rubin Observatory Digest for more general news from the US observatory team.

@ Bob Mann

LSST:UK All-Hands Meeting

The 2021 LSST:UK All-Hands Meeting will take place on 11-13 May, with roughly two days' worth of sessions distributed across the three days, to help prevent Zoom-fatigue. Organising committees are now being set up, and they will issue a call for contributions soon, but the

intention is to supplement more formal presentations with use of a tool like Gather to try and recreate online some of the more social aspects of a real conference. So, please mark those dates in your calendars, and watch out for further announcements on the *lusc-announce* email list.

@ Bob Mann

2021 Mid-Year Junior Associates Selection Round

Preparations have begun for the mid-year call for Junior Associates. The timetable is still to be finalised, but we anticipate the call being open during May, with new data-rights holders being appointed for July 2021. The call will be advertised via the LUSC-ANNOUNCE mailing list, plus existing Junior Associates who are eligible to reapply will contacted directly by email.

More information on Rubin Observatory data rights can be found at LSST:UK Affiliate PIs and Junior Associates.

@ George Beckett

Update on the UK in-kind package

In the December/January newsletter, I reported that the full UK in-kind proposal had been submitted in November 2020. This was then reviewed by Rubin Observatory staff and by the Contribution Evaluation Committee, leading to the release of a feedback document on March 3rd. That feedback was very positive: of the fifteen individual contributions proposed for our in-kind package in November, six were “Accepted” and the remaining nine were “Accepted with modifications”, where the requested modifications were minor clarifications or corrections. An updated proposal, revised in the light of the feedback comments, was resubmitted on March 19th; it, and the feedback document, can be found linked from the Science Working Group home page on the wiki.

The Rubin staff are currently working their way through all the revised proposals submitted by all the international groups seeking data rights through in-kind contributions. The proposal documents were structured so that text from them could be automatically extracted to generate the Statements of Work that will accompany the data rights agreements and specify what each will be delivered through each contribution. Before that process can begin, the Rubin leadership will present the whole suite of proposed in-kind packages to the US funding agencies, and they will then begin direct negotiations - with STFC, in our case - to finalise the details of the data rights agreements, which are still expected to be concluded this summer.

@ Bob Mann

IRIS

LSST:UK sources all of its significant, computing-infrastructure needs from the STFC programme, IRIS, which offers three kinds of infrastructure:

- Large-scale high-through computing and storage on grid infrastructure managed by GridPP [www.gridpp.ac.uk].
- High-performance computing resources from DiRAC [www.dirac.ac.uk].
- Cloud computing and storage [available from several IRIS member institutions].

Time and capacity on these different infrastructures is secured through an annually (April—March) Resource Scrutiny and Allocation Panel (RSAP). The RSAP treats LSST:UK as a single user and expects the consortium to formulate a single unified request to IRIS, late in each calendar year, based on the aggregated requirements of the LSST:UK members.

For LSST:UK, the DAC team is the point of contact with the RSAP. The DAC team has engaged successfully with the RSAP since its inception in late 2018 and has, at the time of writing, secured more than 25 million core hours of computing time and 2 Petabytes of storage.

As well as applying for infrastructure on behalf of the Consortium, the DAC team also works with IRIS to ensure that the infrastructure procured by IRIS is relevant to LSST:UK’s needs. The DAC team maintains a five-year forecast of infrastructure requirements, which feeds into the IRIS Delivery Board’s provisioning plans, and highlights potentially demanding LSST:UK use cases to the IRIS Technical Working Group, to ensure that LSST:UK technology needs are considered when planning and provisioning new infrastructure.

Around October of each year, the DAC team requests details, from both the Phase Bactivities and the wider UK Consortium, of forthcoming infrastructure requirements. In November 2020, LSST:UK finalised its request for computing time in the period April 2021—March 2022, which has now been approved as follows:

Application (Team)	Compute Time Awarded (Million core hours)	Storage Awarded (PB)
Lasair (UK Community Broker for ZTF)	0.4	0.05

DESC DC2/ DC3 Simulations	1	0.5
LSST Pipeline Processing	2	0.3

If you are interested to learn more about the capabilities of IRIS, or if you think your LSST:UK-related research would benefit from access to IRIS infrastructure, please contact George Beckett.

@ George Beckett

Data Preview 0

The Rubin Observatory will be running a series of Data Previews over the next couple of years that will give users access to LSST-like data products using the tools - primarily the Rubin Science Platform - that will be available through the Data Access Centres for analysis of survey data products. The first of these is Data Preview 0 (DP0), and the Rubin Community Engagement Team (CET) have now released a suite documentation describing DP0 and how to apply to access it.

A useful starting point is the post on the community.lsst.org site entitled *Data Preview 0: An early opportunity to prepare for science with Rubin Observatory*. That post includes links to further information, and the CET has now also published FAQs on *Community Participation in DP0*, *The DP0 Data Set* and *Technical Aspects of Rubin Science Platform Accounts for DP0*. These original documents should be read by everyone who is interested in DP0, but a very brief summary is as follows:

- DP0 will feature simulated data from DESC Data Challenge 2 corresponding to five years of survey observations across 300 square degrees of extragalactic sky;
- Two versions of the DP0 dataset will be released: DP0.1 (June 2021) will be data products from DESC's run of the LSST pipeline stack, while DP0.2 (March 2022) will be a re-reduction by the Rubin Observatory using the latest version of the pipeline software;
- RSP accounts will be provided for 300 DP0 Delegates, who will be expected to provide feedback to the CET and/or help disseminate information about the RSP within their respective communities;
- The application form to apply to be a DP0 Delegate will remain open until **April 30, 2021** and LSST:UK consortium members are encouraged to consider applying.

@ Bob Mann

Recent LSST:UK outputs

LSST:UK has recently produced the following technical reports.

Title	Author	Description
D3.11.2 Demonstration Software for One Example Catalogue	Tom Wilson, Tim Naylor, George Beckett, Mike Read	LSST:UK Work Package 3.11 is mainly tasked with the creation of new software to enable more robust cross-matches of LSST and other catalogues, including the effects of position perturbation from blended objects. These matches will then be hosted on the UKDAC, accessible to users. This deliverable D3.11.2 comprises software that provides an end-to-end complete cross-match. This software is installable by the end user and includes documentation. The deliverable also includes a description of the draft interface document between the WP3.11 software and the UKDAC.

@ Terry Sloan

Forthcoming meetings of interest

The global pandemic has led to almost all face-to-face meetings being cancelled. However, in light of continued restrictions on travel, Rubin Observatory business has moved online and we aim to maintain a list of relevant/ interesting upcoming meetings on our Confluence site. Of particular note, there are three meetings planned for the near future:

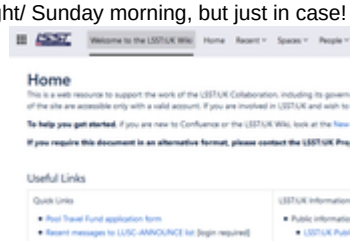
- The **Rubin Observatory Project and Community Workshop** has been confirmed to be a virtual meeting which will run during 9th–13th August 2021. More details to follow.
- The next **DESC Virtual Collaboration Meeting** has been confirmed for 19th–23rd July 2021. DESC members may find out more from DESC site (login required).

- During 7th--10th June, Penn State University will virtually host the **Statistical Challenges in Modern Astronomy VII**. More information at meeting website.

@ George Beckett

Notice of upcoming maintenance for LSST:UK Confluence site

Atlassian (the providers of our wiki service) has advised that our Confluence site will be offline for up to six hours, from midnight on 11th April, to migrate to new and upgraded hosting. Hopefully no-one is planning to work late night on a Saturday night/ Sunday morning, but just in case!



@ George Beckett