

LSST:UK Newsletter 30 (February 2023)

- [Introduction](#)
- [Update on efforts to create pipeline sky-subtraction that preserves low-surface-brightness flux](#)
- [Creation of new Low-Surface-Brightness Coordination Group](#)
- [Forthcoming meetings of interest](#)
- [Announcements](#)



Introduction

Rubin have released a video (see right) of one of the recent events in the dome, namely a test of the system that will be used to move the 50+ tonne surrogate mass that will be installed on the Telescope Mount Assembly (TMA) to provide realistic weight and balance for commissioning activities prior to the installation of the Primary/Tertiary Mirror (M1M3) assembly. The surrogate mass will be moved to the TMA using a ~5 tonne cart that runs on a series of rails, and this was a (successful) test of the movement of the unladen cart over those rails. The M1M3 assembly itself will later be moved using a similar cart-and-rails system.

The Observatory has also [announced](#) the renaming of the Community Engagement Team (CET) to become the Community Science Team (CST). The new name is intended better to reflect the team's objective to support science with LSST data and that engagement is just one part of how they work to achieve that.

Finally, as noted in the *Forthcoming Meetings of Interest* section, the date for the 2023 Rubin Project and Community Workshop (PCW) has been set to be 7-11 August, with the venue being Tucson, as usual. At the last PCW there was discussion of making these more hybrid meeting in future, so we will see what plans emerge for supporting remote participation.

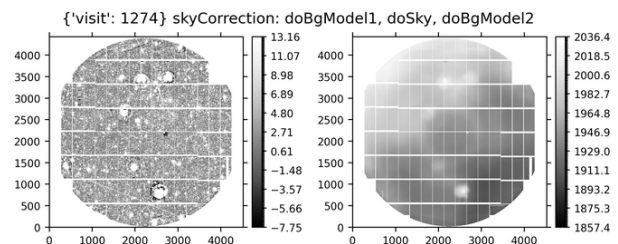


Those with ideas for future newsletter items should contact the LSST:UK Project Managers ([@ George Beckett](#) and [@ Terry Sloan](#) [lusc_pm@mist.is.ed.ac.uk](#)), while everyone is encouraged to subscribe to the [Rubin Observatory Digest](#) for more general news from the US observatory team.

[@ Bob Mann](#)

Update on efforts to create pipeline sky-subtraction that preserves low-surface-brightness flux

In December 2022, Aaron Watkins (lead of Work Package 3.7) spent two weeks at Princeton University, working directly with Rubin Data Management (DM) on sky-subtraction algorithms. From previous work done using simulated and real images, Watkins and DM have converged on a simple, easy-to-implement algorithm that is viable for preserving low-surface-brightness flux: aggressive masking of astrophysical sources accompanied by a simplistic sky model based on unmasked pixels. Kelvin (DM) and Watkins thus spent considerable time examining the existing Hyper Suprime-Cam pipeline sky-subtraction code to determine the feasibility of using an altered, LSB-flux-preserving version of it as the basis for the LSST pipeline sky-subtraction. They have determined this to be feasible and identified the parameters within the pipeline that need to be modified, from bin size used in creating different stages of the sky model, to the type of interpolation used across bins in reprojecting the sky models to the CCD frames. Watkins will therefore quantify the optimal set of such parameters via additional rounds of synthetic source injection, which he will then submit to DM as the quickest route to an LSB-flux-preserving sky-subtraction algorithm for LSST. In the meantime, to streamline future development, Kelvin and Watkins have



cleaned up and updated the existing HSC sky-subtraction code substantially, including by creating more thorough and comprehensible documentation and by enabling the generation of new diagnostic images showing each step of the sky-model generation process.

@ aaron.watkins

@ Sugata Kaviraj

Creation of new Low-Surface-Brightness Coordination Group

Watkins, Mireia Montes (co-chair of the Low-Surface-Brightness Working Group within the Galaxies Science Collaboration) and Kaviraj have spearheaded the creation of a new Low-Surface-Brightness (LSB) Coordination Group. This is the first community-driven coordination group within the LSST ecosystem and has received strong support from the Project. While the initiative for its creation has come from the Galaxies Science Collaboration, the purpose of this group is provide a cross science collaboration forum to inform the pipeline efforts described above and prepare the community for LSB science in the coming years. Given that the discovery space of LSST is in the LSB regime, this coordination group will likely play a significant role in the LSST landscape as we ramp up to commissioning this year. The initial meeting of the coordination group was attended by 50 researchers from 5 science collaborations. The group will interact primarily via Slack, at meetings of the LSB Working Group within the Galaxies Science Collaboration and at dedicated sessions at LSST conferences like the Project and Community Workshop and the LSST@Europe meetings. It is currently co-chaired by Aaron Watkins and Mireia Montes.

@ aaron.watkins

@ Sugata Kaviraj

Forthcoming meetings of interest

There are a number of meeting updates to report on this month. Please check-out the links below for more details.

The [first announcement of the LSST@Europe 5 meeting](#) has been made. The meeting will be held in Pore, Croatia, during 25th--29th September 2023. Registration information is expected to be published by end of March 2023.

The dates have also been confirmed for the **Rubin Project and Community Workshop 2023**: it will be held on 7th--11th August in Tucson, Arizona. More details are expected in the coming weeks.

The IDAC coordinators (along with representatives from LSST:UK, LIneA, and the LINCC programme) are organising an IDAC workshop during 21st--22nd March 2023, entitled [Supporting Computational Science with Rubin LSST](#). The workshop will be virtual and pre-signup is now available.

Other meetings of potential interest for the coming months include:

- 27th February – 3rd March: DESC Collaboration Meeting (virtual). Details to be published on [DESC members website](#) (login required).
- 24th - 28th July: DESC Collaboration Meeting (SLAC).

Members of the Consortium (not in receipt of travel funding through one of the Science Centre grants) may apply for travel support for meetings of this kind via the the LSST:UK Pool Travel Fund. Details are available at [Forthcoming LSST-related Meetings](#) .

Note that the current list of forthcoming meeting is always available on the [Relevant Meetings](#) page. You may also wish to check information held on the LSST organisation website [LSST-organised events](#) and the [LSST Corporation website](#).

@ George Beckett

Announcements

If you have significant announcements that are directly relevant to LSST:UK and would like to share the announcement in a future newsletter, please contact the [LSST:UK project managers](#).