VERA C. RUBIN OBSERVATORY

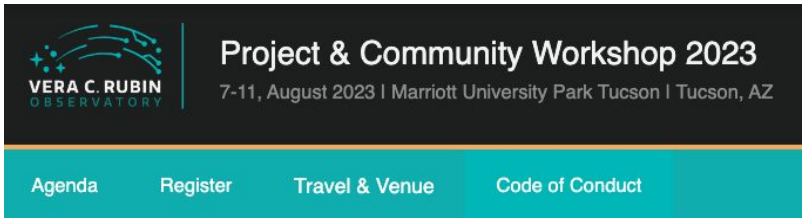
Users Committee Meeting

At the Rubin 2023 PCW
Fri Aug 11, 9:00am in Canyon ABC

The first hour is open to an audience.

NSF NOIR Lab AURA SLAC U.S. DEPARTMENT OF ENERGY

Reminder - Code of Conduct



Harassment and unprofessional conduct (including the use of offensive language) of any kind is not permitted at any time and should be reported to:

- Andrew Connolly (ajc@astro.washington.edu),
- John Franklin Crenshaw (jfc20@uw.edu), and/or
- Alysha Shugart (ashugart@lsst.org).

full code of conduct

Rubin Observatory adheres to the principles of kindness, trust, respect, diversity, and inclusiveness in order to provide a learning environment that produces rigor and excellence.

Check name-tags for these contact comfort level stickers.

Wear a mask if you want to!

Use the confidential email rubin2023-covid@lists.lsst.org to request a test, report your test results, or ask questions.

If someone is wearing a pin like this, and it indicates a low social battery, please give them their space or offer to restart the conversation at a later time.

If you feel unsafe at any time send an email to rubin2023-helpline@lists.lsst.org

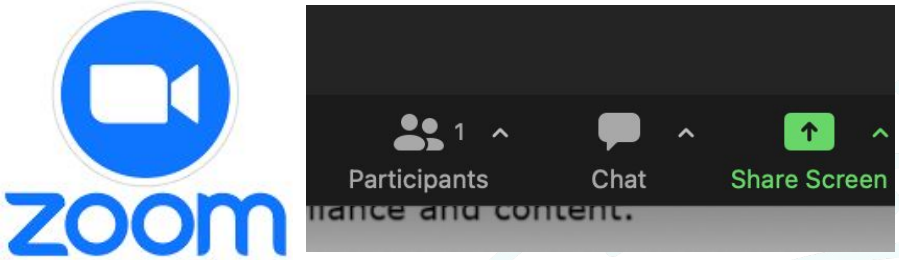
Reminder - Virtual Participation

Virtual participants should be muted when they're not speaking.

In-person participants should speak into the room microphone(s), or the chair should repeat all questions into the microphone, so that the virtual participants can hear what is said.

In the Rubin2023_PCW Slack Space, all participants can use the session's channel for Q&A and discussion.

The channel name convention is, e.g.: #day1-mon-slot3a-intro-to-rubin



In Zoom, use the chat to:
- request to unmute to ask a question, or
- type your question so someone can speak it aloud.

The Zoom "raise hand" feature is generally harder for moderators to track, and is not preferred, but may be used at the discretion of the session chair.

speaker: Melissa

Introduction to the Users Committee

The Rubin Users Committee is charged with soliciting feedback from the science community (LSST “users”) about the LSST data products and Rubin Science Platform, and recommending improvements in their twice-yearly reports that are delivered to the Rubin Operations director.

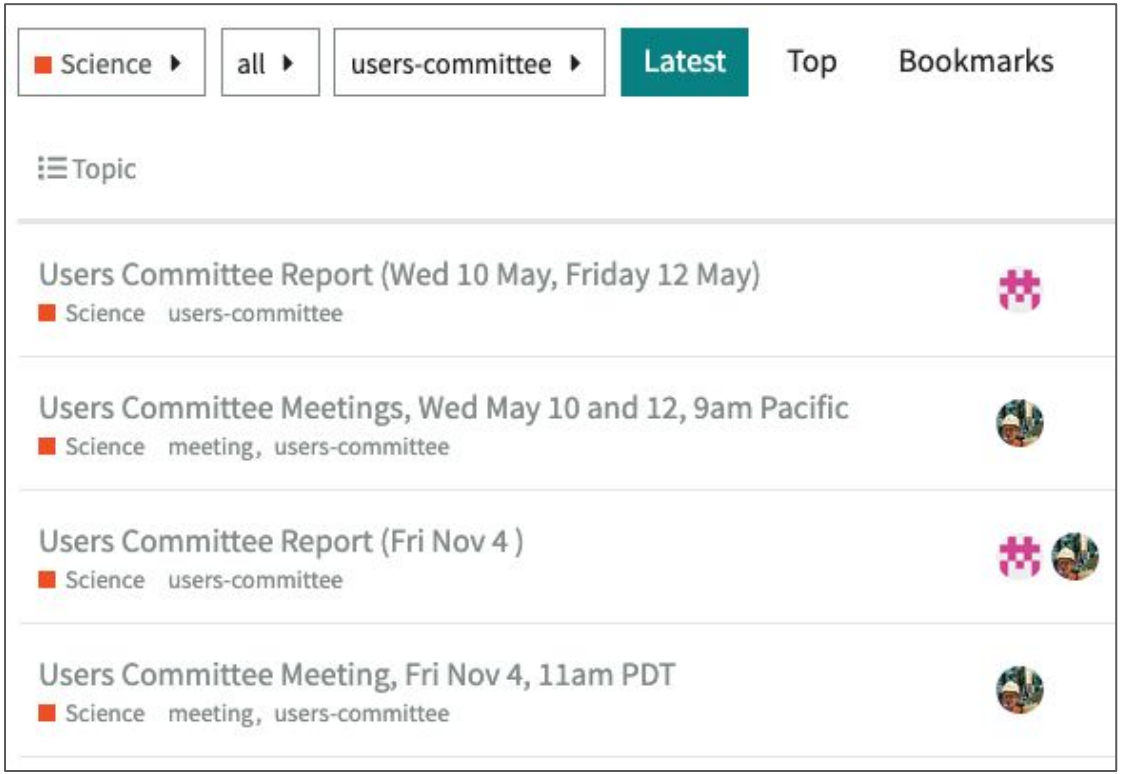
Charge: rdo-051.lsst.io
Website: lsst.org/scientists/users-committee
Reports: available in the Rubin Community Forum (tag = “users-committee”)
Meetings: two formal meetings per year; first ~hour open to community members to attend
Contact: via the Rubin Community Forum (Community.lsst.org; direct message to individuals or to the @Users-Committee group) or via email to RubinObs-Users-Committee@lists.lsst.org

The Rubin Users Committee looks forward to hearing from the Rubin science community.

Igor Andreoni	Dominique Boutigny	Alejandra Muñoz Arancibia	Alessandra Corsi
Qingling Ni	Markus Rabus	Francisco Javier Sanchez Lopez	Matthew Holman
V. Ashley Villar	Anja von der Linden	Matthew P. Wiesner	Michael Wood-Vasey

speaker: Melissa

Users Committee Reports



Rubin Users Committee Reports and meeting notes are all publicly available via the Rubin Community Forum.

Community.lsst.org
category: Science
tag: users-committee

2023A Report
Thank you for the 2023A report.

Rubin staff have reviewed the report and are preparing a response.

speaker: Melissa

Agenda

- Welcome
  - audience is welcome to attend and listen to the discussion
  - UC members should open the meeting minutes doc and sign in →
- UC members invited to raise issues for discussion
- Audience invited to raise issues for UC to discuss
- Discussion items (*UC will decide order)
  - RSP Developments (~30 min; Gregory & Frossie)
  - *emphasizing the link between Portal and Notebook
  - *supporting user-installed software
  - *role of UC through commissioning **UC chair priority**
  - *V&V / characterization reports
  - *
  - *

Meeting Minutes Document

UC's Google Drive: linked in the topic of the UC Members' private Slack channel.

Slides and meeting minutes are all in the Google Drive.

Discussion

RSP Developments

23A Report: *The committee is concerned that some of the features of RSP@IDF will effectively be frozen-in with DP0.2/DP0.3 … [and that] there will not be an updated RSP environment and associated data interaction until DP1.*

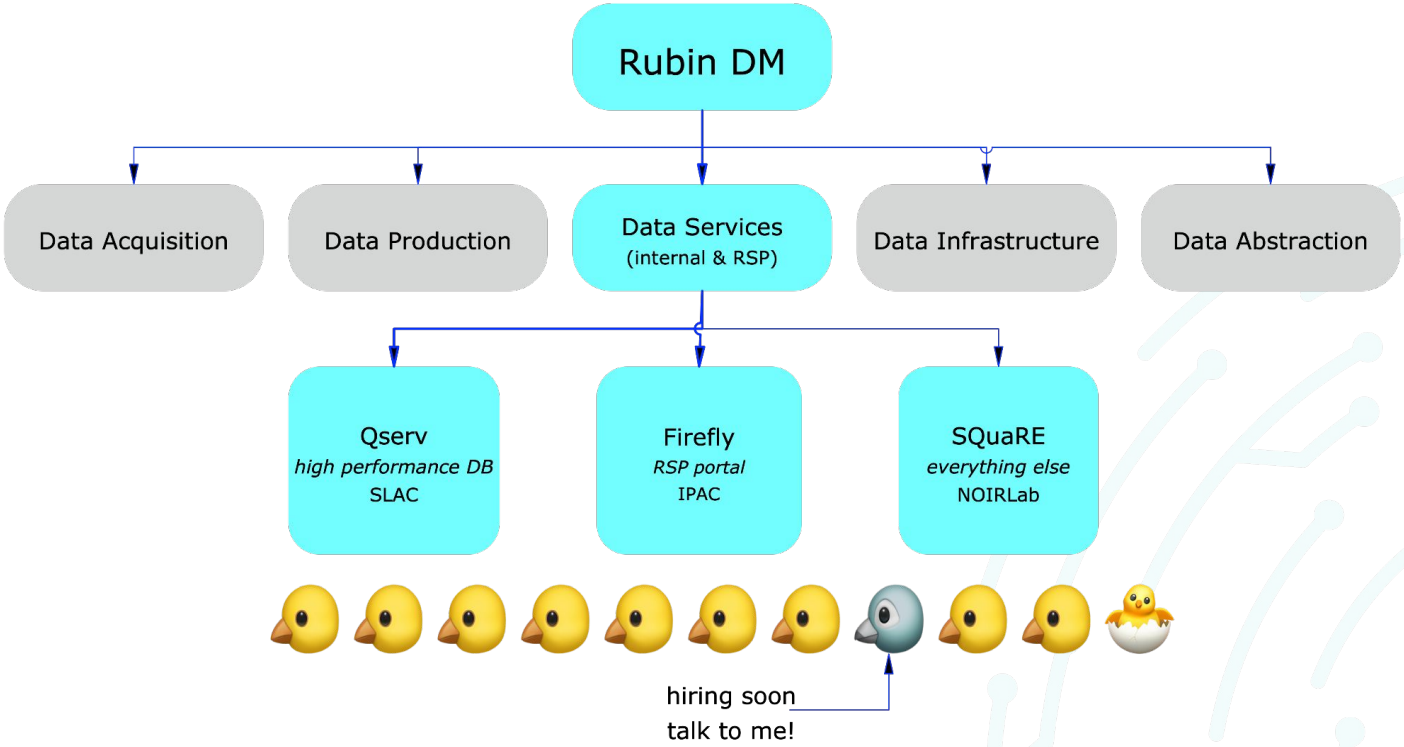
The RSP instance running at the IDF is not frozen and will continue to be under continuous development. It has received and will continue to receive new features as and when they are developed, tested and deployed.

Gregory Dubois-Felsmann and Frossie Economou will attend and speak to planned RSP developments.

DP0.3 != DP0.2

- DP0.3 introduced a dual back end catalogue architecture to the RSP, with DP0.2 catalogs held in Qserv and the DP0.3 catalogs held in Postgres. This is a step towards the work needed to support both the Data Release and Prompt Products Database catalogs in the RSP.
- Currently these TAP servers are addressed as different endpoints; however, we are evaluating the effort required to provide a dispatch layer to expose one single endpoint (*input welcome*).
- DP0.3 was also the the first instance of a hybrid service, with the RSP deployment on the Google Cloud Platform (data.lsst.cloud) dispatching queries to a database deployed on-premises at SLAC (the model baselined for the operations-era RSP).
- … except on SLAC shutdown week, where we provided uninterrupted service by switching to a GCP-hosted DP0.3 database

Rubin Data Services



How do we decide what to work on

The main sources of work items are:

- Rubin Construction RSP requirements [incl. agency-visible milestones]
- Response to internal (project needs) [incl. project-only RSP and non-RSP]
- Response to external user needs [includes user-visible RSP features]
  - E.g., via CST and User Committee feedback
- Development to support our ability to offer the service
- Readiness of systems we rely on
- Emerging directorate priorities
- Confluence with work already underway

… i.e., **RSP development has never been (or will ever be) frozen** (we release every Patch Thursday!) however

- Pre-first-photon, new user features are often not the top priority; this does not mean they don't get done, however it does mean that we avoid committing to a timescale due to the lack of elasticity in the schedule and pacing the teams.
- DP1 *is* a key milestone because it is a rendezvous point across the project that includes systems we rely on *and* a major scaling event and also real (c.f. ObsLocTAP).

User visible things to look forward to

(Yes before DP1)

- TAP temporary table upload queries in Qserv (e.g., when a user has a list of N objects and wishes to perform cone searches around every one of them in a single bulk operation) 🎄 (already supported in DP0.3)
- Networked access to your RSP home space (beta 🎄) (this is going to make **so** many users happy, retires the biggest source of user complaints)
- JupyterLab 4.0 for Notebooks
- UI/UX improvements for the Portal, and new features
  - Including UI support for JOINs between tables
- More portal-notebook link-up features (e.g., query history & query transfer)
- … and more
- PS. You also all got more memory now [large nublado pod 12GB->16GB]

Meanwhile, under the hood

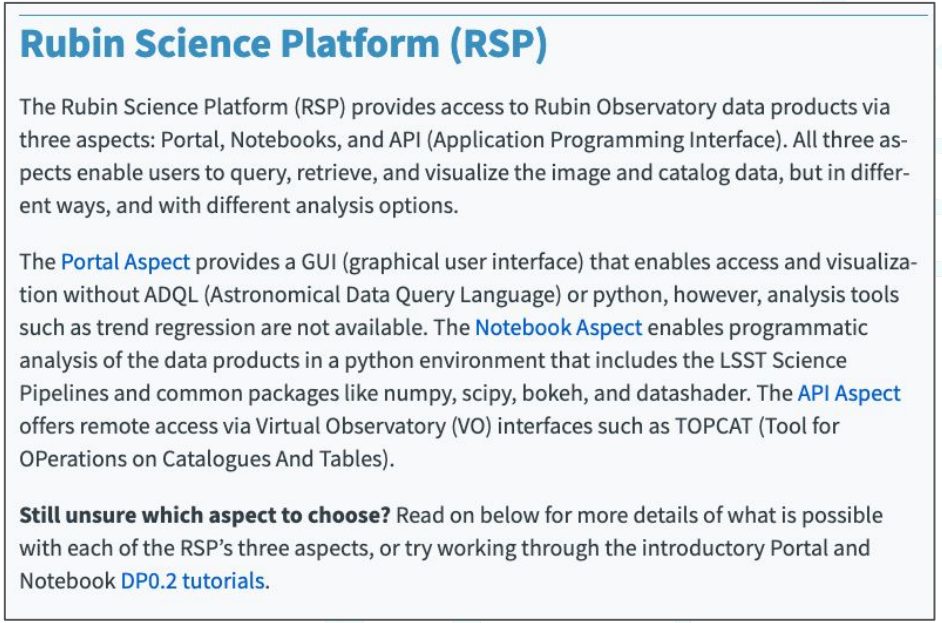
(also before DR1)

- Nublado v3 (just released this month) speeds up log-in and fixes the pod shutdown UX as a side effect of major re-engineering for better operation ✅
- Major revamp of secrets management (underway) - directorate/IDACs 🎄
- A major new RSP service for summit operations (pre-release testing) 🎄
- Service instrumentation for better monitoring (better operations)
- An initial implementation of our quota+throttling design (scale-up preparation)
- Plan for implementing user catalogs (major requirement)
- Integration with client-server Butler (needed to meet major requirements)
- …. And much more

emphasizing the link between Portal and Notebook

23A Report: *… emphasize more … the link between the portal and the notebook aspects … [e.g.,] tutorials that show how to carry out the same identical tasks using the portal and the notebook … [identify] things that cannot be done easily in one of the aspects.*

- CST has been thinking along the same lines
- for DP0.3, the introductory notebook (01) and portal tutorials (01 & 02) are matched
  - worked well and the plan is to do more
- a few more words have been added to the RSP instructions to advice on aspect choice →
  - find this by visiting dp0-2.lsst.io; scroll down and click on Rubin Science Platform (RSP)



Rubin Science Platform (RSP)

The Rubin Science Platform (RSP) provides access to Rubin Observatory data products via three aspects: Portal, Notebooks, and API (Application Programming Interface). All three aspects enable users to query, retrieve, and visualize the image and catalog data, but in different ways, and with different analysis options.

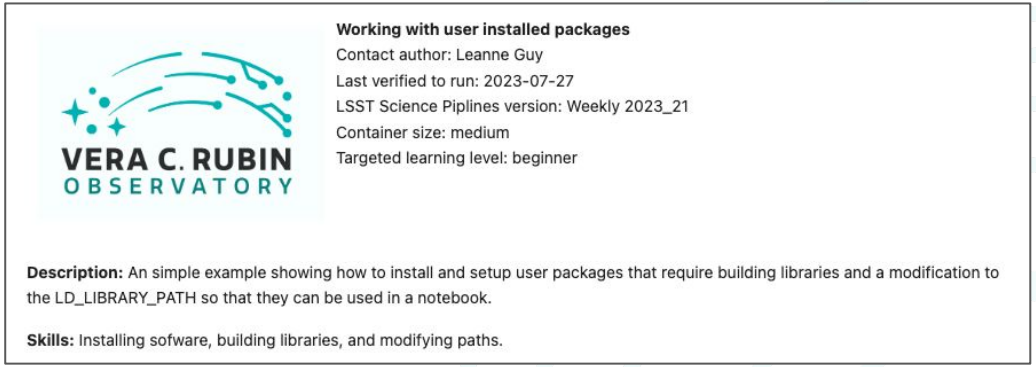
The Portal Aspect provides a GUI (graphical user interface) that enables access and visualization without ADQL (Astronomical Data Query Language) or python, however, analysis tools such as trend regression are not available. The Notebook Aspect enables programmatic analysis of the data products in a python environment that includes the LSST Science Pipelines and common packages like numpy, scipy, bokeh, and datashader. The API Aspect offers remote access via Virtual Observatory (VO) interfaces such as TOPCAT (Tool for OPerations on Catalogues And Tables).

Still unsure which aspect to choose? Read on below for more details of what is possible with each of the RSP's three aspects, or try working through the introductory Portal and Notebook DP0.2 tutorials.

supporting user-installed software

23A Report: *… The documentation related to user-installed software capabilities is good but as managing a working Conda environment is particularly tricky … a more detailed set of instructions with examples on how to do this would be useful.*

- CST is currently working to update the instructions for user-installed packages
- Leanne Guy has created a new tutorial notebook that provides an example
- DP02_11_Working_with_user_packages



Working with user installed packages
Contact author: Leanne Guy
Last verified to run: 2023-07-27
LSST Science Piplines version: Weekly 2023_21
Container size: medium
Targeted learning level: beginner

Description: An simple example showing how to install and setup user packages that require building libraries and a modification to the LD_LIBRARY_PATH so that they can be used in a notebook.

Skills: Installing sofware, building libraries, and modifying paths.

role of UC through commissioning

MWV: *What is the Operations Team vision for engagement with the IDF RSP during these next two years? E.g., DP0.3 will likely see a burst of interest, and then engagement will likely fall off. But meanwhile the RSP will continue to develop and advance, largely in the context of the Commissioning activities, where the "users" will be Rubin members and Commissioning In-Kind/Community contributors. What is the role of the UC in this environment?*

MLG: Rubin staff and Commissioning team members will primarily be using the RSP deployed at the USDF (SLAC) to access commissioning data. DP1 will be released via the IDF. RSP *functionality* will continue to be deployed at both IDF & USDF. The CST will continue to upgrade and develop documentation and tutorials, and provide engagement activities (assemblies etc., but especially the Summer School as it is a visible point-of-entry). The UC will be kept up-to-date so it can track this development. There are also plans to engage the UC further in testing, focus groups, and science validation processes for the RSP.

Other discussion?

V&V / characterization reports

2022B Report: *We recommend the project provide a characterization and validation report for DP0.2.*

Response to 22B: Full verification and validation reports will be provided for all data releases starting with Data Preview 1. As DP0.2 is simulated data with perfect reference catalogs, characterization and performance numbers would not be very meaningful (and could be misleading).

2023A Report: *The UC still thinks such a report would be very helpful. A report for DP1 may be too late to be of full value.*

MWV: *When will the Users' Committee see an example of a characterization report? Will it be on the release of DP1? Will it be in time to provide useful feedback in advance of DR1?*

DP1 is when the community will be able to start to prepare for LSST data, and there will be a characterization and validation report for DP1. There will be time enough for feedback before DR1.

other topic

UC Closed Session

Report writing. Use breakout rooms if desired.