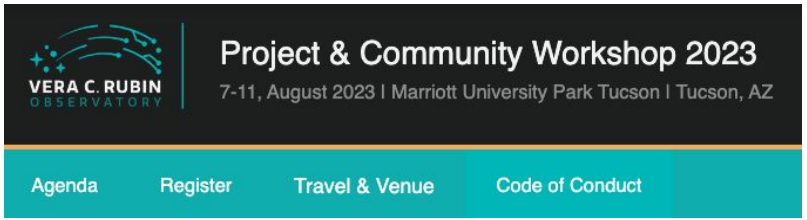
LSST Photo-z Roadmap Overview (DMTN-049)

Presented by Melissa Graham

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).

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.

full code of conduct

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

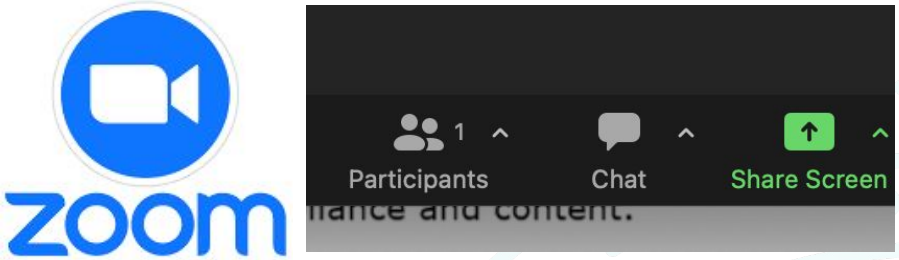
Reminder - Virtual Participation

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

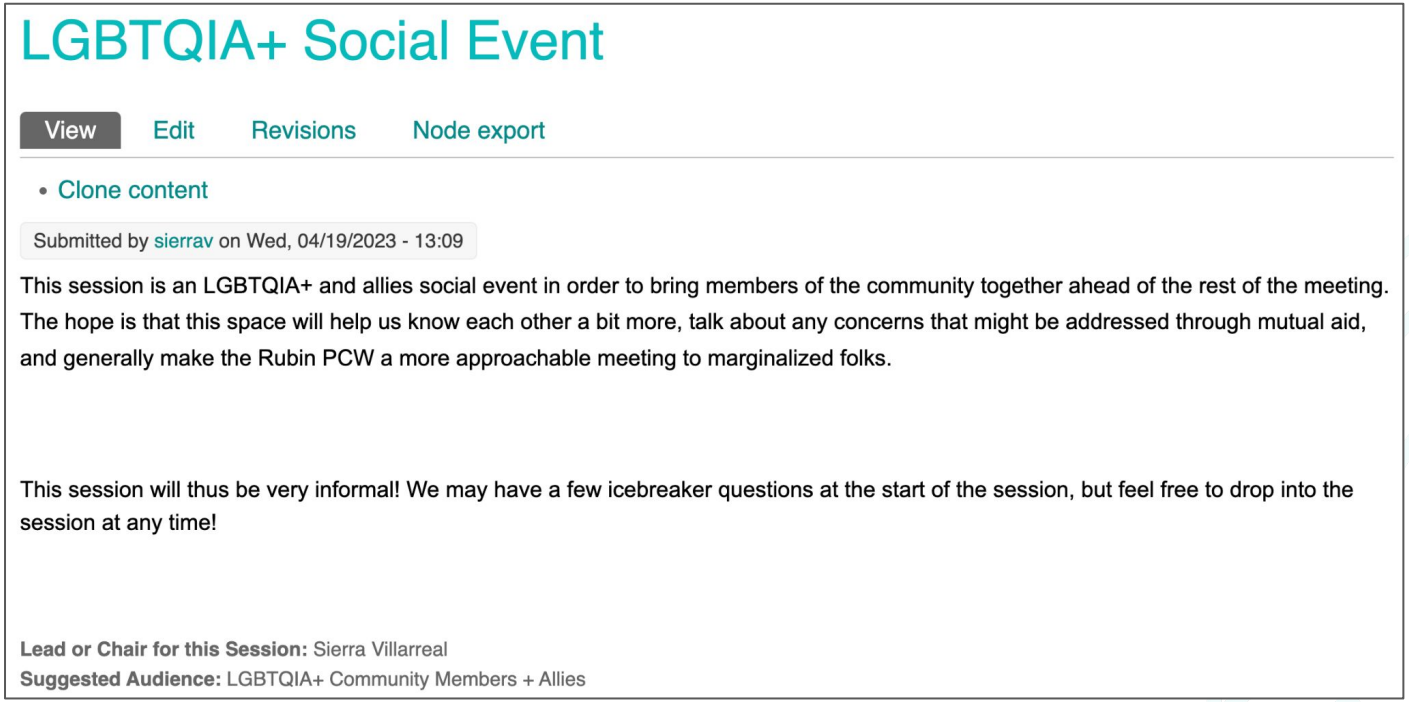


In Zoom, use the chat to:
- request to unmute to ask a question, or
- type your question so someone can speak it aloud.

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.

LGBTQIA+ session (and lunch!)

Happening now, next door in Madera.



LGBTQIA+ Social Event

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Submitted by sierrav on Wed, 04/19/2023 - 13:09

This session is an LGBTQIA+ and allies social event in order to bring members of the community together ahead of the rest of the meeting. The hope is that this space will help us know each other a bit more, talk about any concerns that might be addressed through mutual aid, and generally make the Rubin PCW a more approachable meeting to marginalized folks.

This session will thus be very informal! We may have a few icebreaker questions at the start of the session, but feel free to drop into the session at any time!

Lead or Chair for this Session: Sierra Villarreal
Suggested Audience: LGBTQIA+ Community Members + Allies

← Sierra plans to extend this social session into lunch, all are welcome.

Welcome

Preliminary Agenda

- 10 min -- Melissa Grahm -- Welcome and update on the PZ Roadmap & Commissioning
- 10 min -- Sam Schmidt -- Update from the DESC PZ Working Group
- 10 min -- Julia Gschwend -- TBD (PZ Server?)
- 10 min -- Renée Hlozek -- Photometric redshifts and supernova cosmology
- 10 min -- Biprateep Dey -- Calibrated Predictive Distributions for Photometric Redshifts (abstract below)
- 10 min -- Jeffrey Newman -- PZ for Next-Generation Surveys
- 10 min -- Simona Mei -- Getting image-based ML PZ estimators working with RAIL
- 10 min -- Alex Malz -- The Last Metric?

Rubin Data Management

In the annual Data Releases, the Object table will have photometric redshift estimate(s).

DM will select one or more existing, community-vetted algorithms that meet a set of minimum scientific attributes and serve the widest variety of science applications.

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- *Sep 2021* *Letters of Recommendation regarding Object PZ*
- *Feb 2022* *Summary of the LoR; shortlisted PZ estimators announced*
- *mid-2022* *PZ Commissioning Team formed*
- 2023 PZ Commissioning Team work proceeds
- by Apr 2025 Data Preview 1 released, PZ Validation Cooperative begins
- by Mar 2026 Data Preview 2 released, PZ Validation Cooperative continues
- mid-2026 Decisions made by DM regarding Object PZ for DR1
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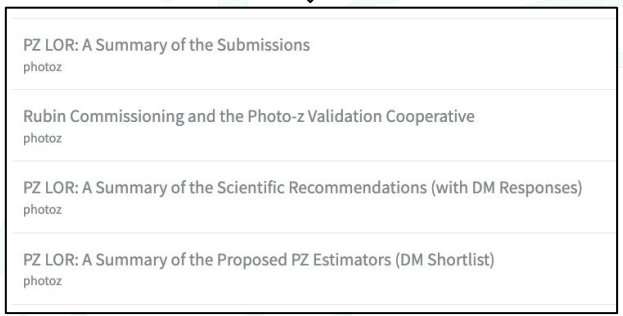
Rubin commissioning and early operations timeline details:

ls.st/rtn-011
lsst.org/scientists/early-science

Rubin Data Management

Letters of Recommendation for LSST Object Photo-z (2021-2022)

- The call for “Letters of Recommendation” invited the community to “*define their minimum scientific needs … and/or to advocate for one or more PZ estimators*”.
- DMTN-049 described the minimum scientific attributes and technical constraints.
- 20 submissions total, all LOR are available at community.lsst.org/c/sci/photoz
  - 13 advocate for particular estimators
  - 6 describe science use-cases and related needs
  - +1 “non-LoR” describing DESC’s photo-z work
- 5 estimators with established performance shortlisted:
  - GPz, DEmP, DNF, LePhare, BPZ
- ‘shortlisted’ means PZ commissioning team *priority*
  - additional / alternative estimators will be considered



Rubin Data Management

The PZ Commissioning Team (2022-2026)

Science community members were invited to join: community.lsst.org/t/6310.

This team will:

- develop infrastructure for PZ validation in the Rubin Science Platform
- guide early implementation and validation for a few of the shortlisted PZ estimators
- have access to the pre-release commissioning data for their work
- enable broad participation in the “PZ Validation Cooperative” with Data Previews 1 & 2
- assist the community in providing feedback & recommendations about DM’s decision

The team members:

- Ignacio Sevilla Noarbe
-Julia Gschwend
-Bryce Kalmbach
-John Franklin Crenshaw
-Alex Malz
-Markus Rau
-Eric Charles
-Shahab Joudaki
-Sam Schmidt
-Drew Oldag
-Melissa DeLucchi
-Olivia Lynn

Rubin Data Management

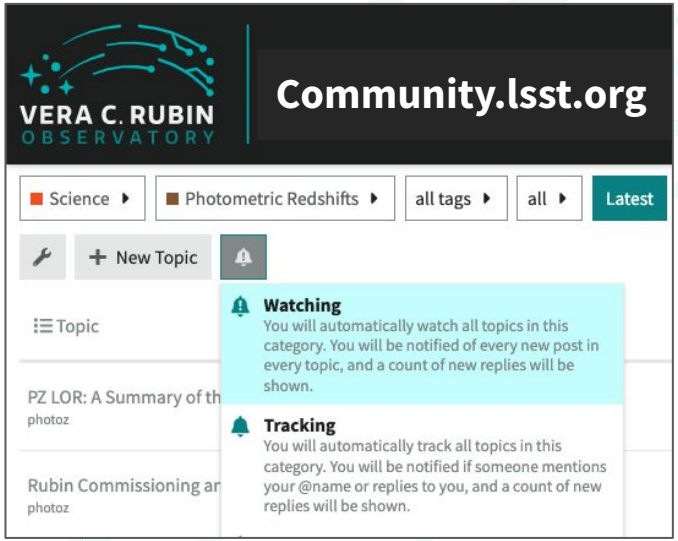
The PZ Validation Cooperative with Data Previews 1 & 2

By DP1's release, the PZ Commissioning Team aims to have assembled the experience and infrastructure to support science validation for PZ estimators by the broader community.

The science community will be guided on how to use DP 1 & 2 and how to provide input to Data Management.

Until then:

- join an LSST Science Collaboration (e.g., DESC)
- participate in DP0 (simulated data)
- set yourself to "watching" the PZ category in the Forum



But there's a lot of other PZ work happening!

Reminder that the Rubin Data Management team's scope is limited.

"DM will select one or more existing, community-vetted algorithms that meet a set of minimum scientific attributes and serve the widest variety of science applications."

But much more is happening than just that process! For example,

- Different science goals may need more specialized or advanced photo-z.
- Various in-kind teams are providing pz-related contributions.
- Combining LSST data with other facilities will improve photo-z catalogs.
- Individuals & teams will produce and release their own photo-z catalogs.

And that's really the focus of this breakout session:
hearing about all the other photo-z related development and scientific results.