

Rubin Observatory

Algorithms Workshop

Leanne Guy

Data Management Scientist

17-19 March 2020

Virtual/Remote



CHARLES AND LISA SIMONY FUND
••• FOR ARTS AND SCIENCES •••

Vera C. Rubin Observatory

The aim of this workshop is to provide a forum for the presentation of the algorithmic challenges faced by LSST image processing, and to solicit feedback and ideas as to how the Rubin data products can best meet the scientific needs of the community.

Workshop Goals

1. **Communicate** the strategy for further development of Rubin Obs. image processing algorithms to stakeholders, seek their input to it, and hear any ideas they have about ramifications for science, or other approaches that maybe should be considered.
2. **Ensure** that the choice of Rubin Obs. image processing algorithms reflects the current state of the art.
3. **Demonstrate** the current performance of Rubin Obs. image processing pipelines, based on pre-cursor data, to the community.
4. **Document** the Rubin Obs. algorithmic strategy for image processing, describe what Rubin Observatory expects to deliver by the end of construction, and outline what further improvements should be prioritized during the first few years of operations



Changes for the virtual workshop

- The original agenda for the in-person meeting included a lot of free and unconference time to foster in-person interactive exploration and discussion. This has been diminished by moving to an all-virtual workshop.
- We are plan to organize follow-up, focused meetings around defined topics emerging from this virtual workshop:
 - In-person at **Rubin Observatory (LSST) Project and Community Workshop (PCW)** 10 – 14 August 2020, Tucson AZ. All invited speakers have been invited to attend .
 - Smaller virtual follow-up discussions in the coming months before the PCW



Code of conduct

An inclusive, collaborative environment is necessary to support a diverse group of individuals as they contribute their best effort

- Be Kind
- Trust
- Respect
- Inclusive

Meeting Code of Conduct is on the [LSST2019 Webpage](#)

Report any issues to Leanne Guy: leanne-at-lsst.org

Please abide by the code of conduct

Science Organizing Committee

Rubin
Observatory

Colin Slater, Co-chair
Deputy DM
Subsystem Scientist
UW/Rubin Obs.

Jim Bosch
LSST Data Release
Production Science Lead,
Princeton/Rubin Obs

Robert Lupton
LSST Calibration and
Pipeline Scientist,
Princeton/Rubin Obs.



Leanne Guy, Chair
LSST Data Management
Scientist,
AURA/Rubin Obs.

Eric Bellm,
LSST Alert Production
Science Lead Scientist,
UW/Rubin Obs.

Željko Ivezić,
LSST Deputy
Director & Project Scientist,
UW/Rubin Obs.



Local Organizing Committee

Rubin
Observatory

Michelle Poland

DM Administrative Assistant
AURA



Tammy Hojeibane

Events Coordinator
Department of Astrophysical
Sciences, Princeton

Michael Strauss

Chair, Department of Astrophysical Sciences
Professor of Astrophysical Sciences
Princeton

And a big thank you to the
Rubin Observatory
Communications Team



Virtual meeting format

Zoom: The workshop is all-virtual ([Zoom URL](#)). All sessions will be recorded and made available without restriction after the workshop. [Full Zoom connection details](#).

Moderators: Leanne Guy, John Swinbank, Colin Slater

Slack Channel: #mtg-algorithms-workshop for announcements, moderation and discussion

Twitter handle: #RubinAlgosWS

[Participants drive](#): contains agenda, Zoom connection details, all talks and session notes. Slides will be made available before the presentation (subject to change). Organized by day.

Session notes: A file for taking live notes is found in <participants drive>/<day>/Algorithms Workshop Live Notes. Moderators will note questions and responses; please feel free to contribute to these notes.



Virtual meeting format

Sign in Early or on Time: We have over 70 participants in this virtual meeting, scheduling will be challenging. Moderators will connect 15 mins before the start of the meeting.

Microphones: Moderators have control of your microphones, you will not be able to unmute.

Clarification questions during talks should be asked on slack. If someone else cannot answer the question, a moderator may interrupt the talk to allow the question to be asked.

In-depth questions/discussion will be taken at the end of each presentation. Please use **Zoom 'raise hand'** if you want to ask questions, a moderator will unmute you and ask you to speak when it is time. Adding your question to the #mtg-algorithms-workshop slack channel and/or the live session notes helps if some attendees missed the question.

Zoom chat: We will not be monitoring Zoom chat, please use #mtg-algorithms-workshop for all discussion/questions during the meeting.



Virtual meeting format

Presenters: When it is your time to present, a moderator will unmute you and turn on the 'spotlight video' Zoom function, which will set you as the primary active speaker for all participants in the meeting and recordings. The moderator will introduce you and confirm the time available for your presentation. Please make sure your camera is on and your face visible for this introduction. This helps to make this all-virtual meeting more personal. You can then begin sharing your slides and presenting. The slides on the shared screen will be recorded. An alarm will be played when you have 5 mins remaining.

When speaking, keep your points clear and concise and be aware of time lags.



Agenda

[Agenda link](#)

Time					Tuesday 17 March 2020	Wednesday 18 March 2020	Thursday 19 March 2020
HST	PDT	EDT	CET	AEDT(+1)			
05:45	08:45	11:45	16:45	02:45	ZOOM connection setup		
06:00	09:00	12:00	17:00	03:00	Introduction. Speaker: Leanne Guy	Invited talk: Gary B - Systematic effects in photometry and astrometry and lessons learnt from the DES	Invited talk: Konrad K - State of the art in Galaxy Photometry
06:15	09:15	12:15	17:15	03:15	Introduction to the LSST Science Pipelines. Speaker: Yusra AlSayyad		
06:45	09:45	12:45	17:45	03:45	Project plans for ISR and the Atmosphere. Speaker: Robert Lupton	Project plans for background Estimation. Speaker: Yusra AlSayyad	Project plans for galaxy photometry and model fitting. Speaker Jim Bosch & Dan Taranu
07:00	10:00	13:00	18:00	04:00			
07:30	10:30	13:30	18:30	04:30	Break		
08:00	11:00	14:00	19:00	05:00	Invited talk: Mike Jarvis - State of the art in PSF modelling	Project plans for photometric calibration. Speaker: Eli Rykoff	Invited talk: Erin Sheldon - Weak lensing
08:45	11:45	14:45	19:45	05:45	Project plans for PSF estimation and modelling. Speaker: Josh Meyers	Project plans for astrometric calibration and stellar motion measurements. Speaker: Jim Bosch	Project plans for shape measurement. Speaker : Jim Bosch
09:30	12:30	15:30	20:30	06:30	Break		
10:00	13:00	16:00	21:00	07:00	Project plans for deblending. Speaker: Fred Moolekamp	Invited talk: Gene Magnier - State of the art in difference imaging and lessons learnt from Pan-STARRS	Project plans for stellar crowded field processing. Speaker: Colin Slater
10:45	13:45	16:45	21:45	07:45	Project plans for building and using coadds. Speaker: Jim Bosch	Project plans for difference imaging. Speaker: Eric Bellm	Project plans for DCR in templates. Speaker: Ian Sullivan
11:30	14:30	17:30	22:30	08:30	Close	Close	Close

