DP0 Delegate Assembly: *Delegate Presenters!*

Speakers: Louise Edwards and Kristen Larson

Friday Nov 5 2021, 9am-11am US Pacific

Presented by
the Rubin Observatory Community Engagement Team

VERA C. RUBIN OBSERVATORY

NSF NOIRLab AURA SLAC U.S. DEPARTMENT OF ENERGY

Delegate Assembly: *Delegate Presenters!*

Today's speakers: DP0 Delegates Louise Edwards and Kristen Larson
Rubin Staff:

9:00am -- Welcome.
Suggest a breakout topic while we get set up, and:
- Log in to the Rubin Science Platform
  - URL in any browser: data.lsst.cloud
- Open in the Notebook Aspect:
  - (instructions next slide)

9:05am -- Announcements

9:10am -- Presentations

10:00am -- DP0 Delegate Profiles

10:10am -- Breakouts begin

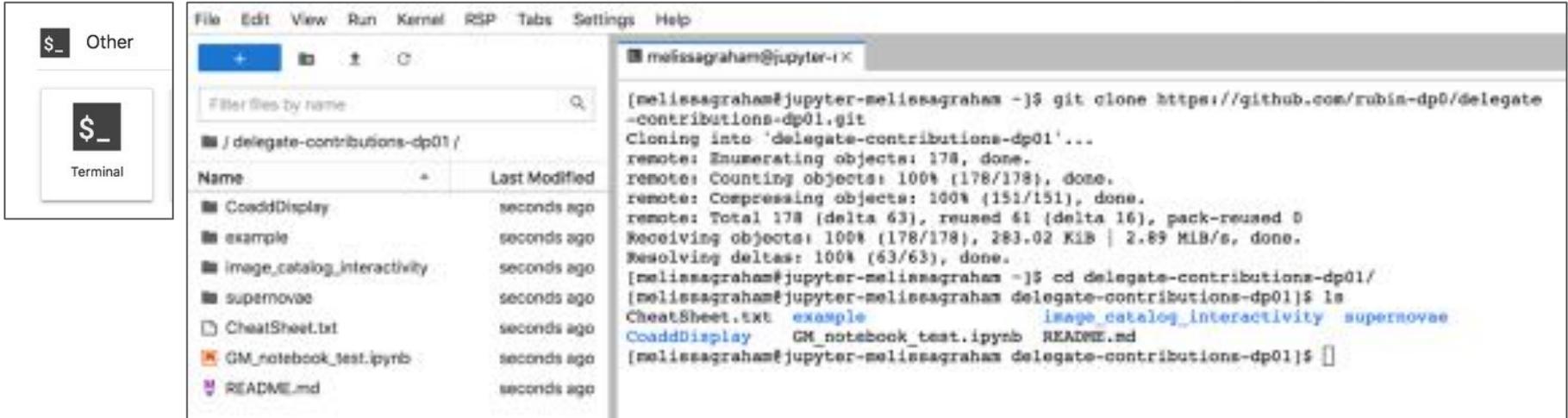**Breakouts** (*if in italics, it's still just a suggestion*)

Room	Topic	Facilitator
main	general RSP Q&A, tech Qs for Rubin staff	
1	resolved stellar populations	Alex
2	large scale structure	Louise
3	extinction	Kristen
4		

How to get the Notebook for today's tutorial

Today's tutorials are in the the Git repository at: https://github.com/rubin-dp0/delegate-contributions-dp01

These instructions to 'git clone' the repository will download the contents to your RSP home directory.
1. Log into the Notebook Aspect of the RSP at URL data.lsst.cloud (medium server ok), and launch a terminal.
2. In the RSP terminal, type "git clone https://github.com/rubin-dp0/delegate-contributions-dp01.git".
3. Use the left menu to navigate the directories and open Jupyter Notebooks.

Volunteers to Present on Nov 19?

Delegate Assemblies (dp0-1.lsst.io)
 - **first hour**: presentations
   - **suggest a topic you'd like to learn about, or:**
   - **volunteer to present your DP0 work**
   - **slides of work in progress would be great!**
   - **code/NB tutorial format is not necessary**
 - **second hour**: breakout discussions
   - Q&A with Rubin staff
   - DP0 science working groups

DP0 Working Groups ([ls.st/clo5677](ls.st/clo5677)**)**
   - grassroots formation, self-organized
   - share notebooks in github.com/rubin-dp0

Stack Club: co-working biweekly on Fridays from 9-11am US Pacific (alternating with the assemblies)

2021-11-19	*delegate presenter(s)*	*delegate working groups*	*TBD*
2021-12-03	Image Processing	*delegate working groups*	Andrew Bradshaw (Rubin Camera Subsystem Team)
2022-01-14	*delegate presenter(s)*	*delegate working groups*	*TBD*
2022-01-28	Special Session on DP0.1: A Half-Year In Review	*small group discussions for delegate feedback*	The Community Engagement Team
2022+, if desired	*delegate presenter(s)*	*delegate working groups*	*TBD*

delegate-contributions-dp01
🔴 Jupyter Notebook   ☆ 2   ⑂ 0   ⊙ 0   ⑊ 0   Updated on Jul 15

"Delegate Profiles"

A new feature of our Delegate Assemblies.

Who: For today, a ~random subset of delegates; in the future, all will be invited.

What: A single-slide, 30-second introduction to your science interests regarding Rubin DP0.

When: At the midpoint of DP0 Delegate Assemblies.

Why: To enable networking between delegates, and inspire collaborative working groups.

How: When invited, create a slide and then speak to it for 30s when called upon.

Keep in mind that all delegates are encouraged to share their DP0 interests and work on Community.lsst.org, in our Data Preview 0 category, at any time!
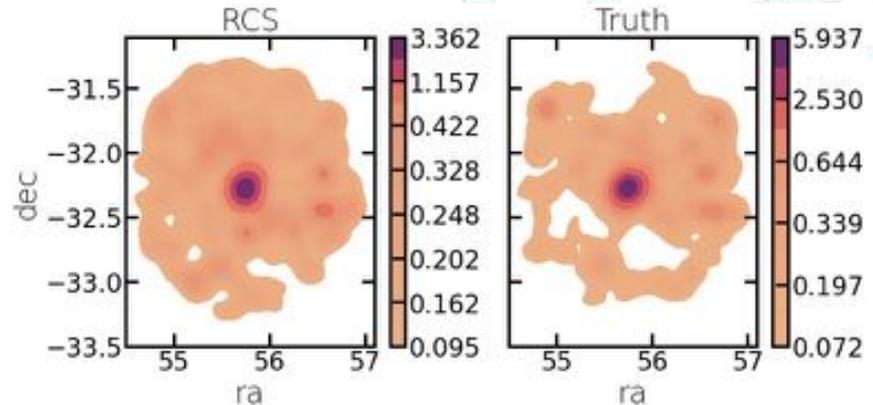
DP0 Delegate Profiles

Louise O.V. Edwards
California Polytechnic State University, San Luis Obispo
Assistant Professor (going up for tenure this year!)

Interests
- Diffuse light (Intracluster Light)
- Large scale structure (clusters and filaments)
- Find and characterize large scale filaments around clusters
- Would love to collaborate

What is the relationship between the formation and evolution of galaxies and their environment?

- We know the cosmic star formation rate density peaks around z~2 (Madau & Dickinson, 2014)

- We know that star formation rate is a function of mass (e.g.Tomczak et al. 2016)

- *What is the relationship between the star formation rate and environment?*

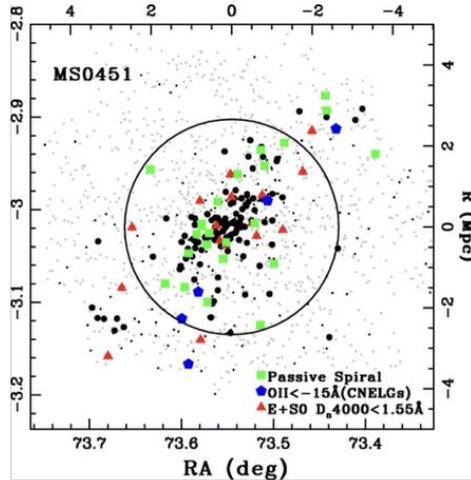Large, Red, Dead - OLD
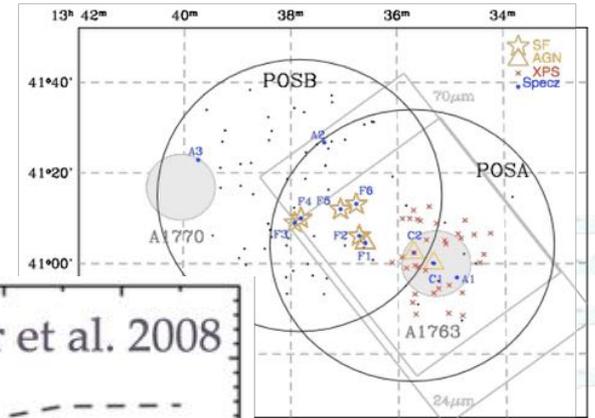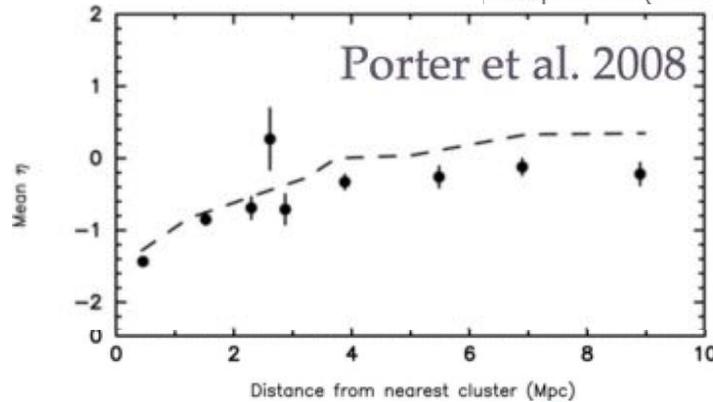
? How? Where? When?

Dwarf Starburst - YOUNG

Are filaments an environment that drives SF?

- There is evidence that filaments contain a higher fraction of star forming galaxies, and galaxies with higher star formation rates

Moran et al. 2005
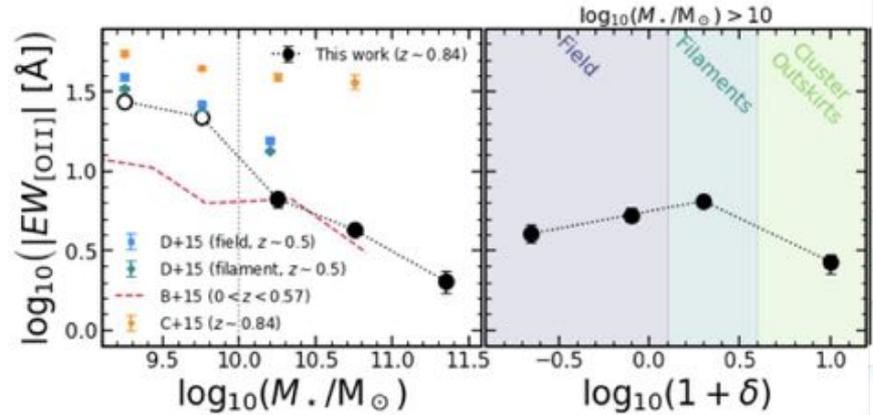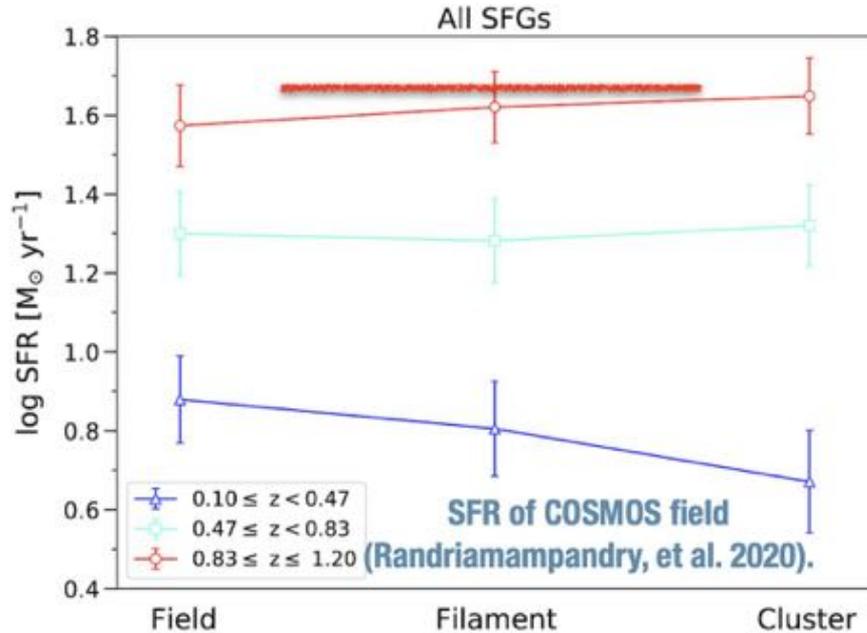

Porter et al. 2008

Edwards et al. 2010a,b

Small sample sizes retain controversy between studies

SFR of COSMOS field (Randriamampandry, et al. 2020).

Emission line properties of z~0.84 supercluster (Paulino-Afonso, et al. 2020).

Working with the DP0 dataset: Goals

- To identify galaxies in cosmological filaments around massive cluster cores and measure properties of those galaxies. This will produce catalogs of galaxy shape, color, SFH, and orientation for galaxies in filaments and cluster cores.
- To experiment and implement Python packages into the analysis such as Seaborn/KDE, Prospector/Bagpipes and STARLIGHT, statmorph and sextractor.

Tour of notebook

- Learning the RSP through investigating structure around one z~0.2 cluster
- Can be found on

  rubin-dp0/delegate-contributions-dp01/Structure/StructureAroundCluster

DP0 Delegate Profiles

photos ok

plots ok too

Copy paste this template slide and fill it in for yourself.
Remember you'll just have 30s to speak. **Thank you for participating!**

Start with basic information such as:
- Name
- Affiliation
- Career Level

Then add some sciencey stuff like:
- Rubin Science Interests
- DP0-Specific Interest (if you've formed one yet)
- Interested in collaborating on any DP0 investigations?
- Things you want to learn
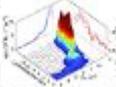
DP0 Delegate Profile: Matteo Monelli

- Name : Matteo Monelli (monelli@iac.es)
- Affiliation : IAC- Instituto de Astrofísica de Canarias (Tenerife, Spain)
- Position : Advanced Severo Ochoa Fellow
- Science Collaborations : TVS and SMWLV

Science goals with Rubin-LSST
- Deep CMDs of MW satellites

- Star Formation History of the MW and LG galaxies

- Pulsating variable stars as population tracers and distance indicators

DP0 goals
- Preparatory work for the detection, characterization, and classification of variable sources
- Using the simulated variable stars to test detection and classification algorithms
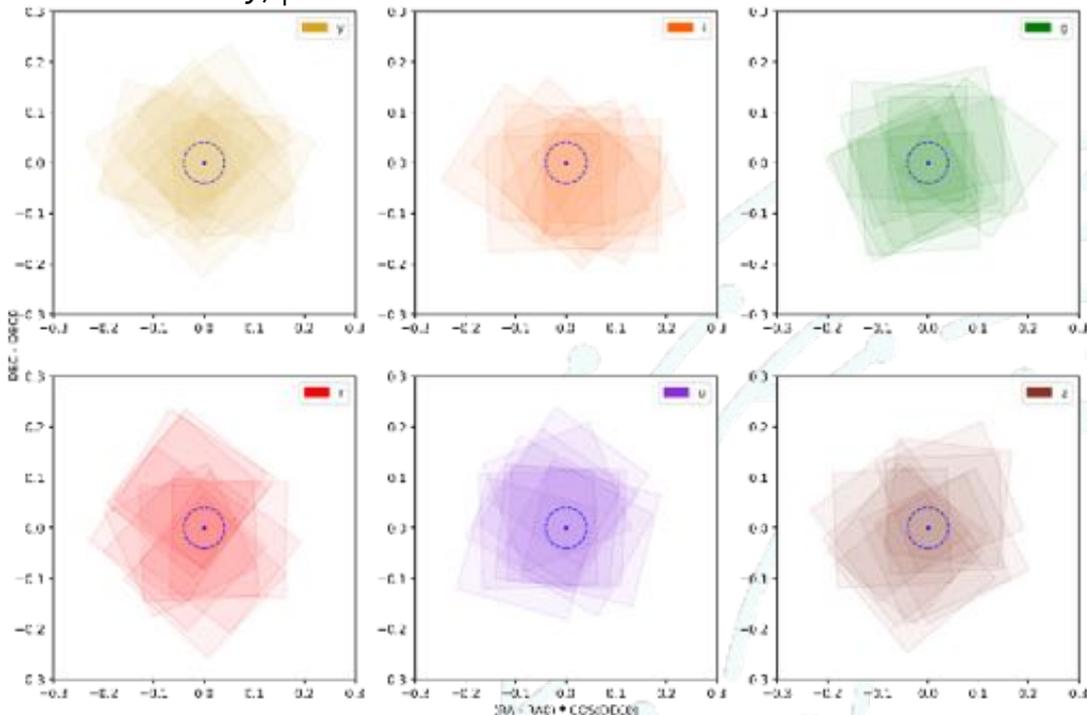
DP0 Delegate Profile: Dylan Green (He/Him)

Dylan Green (dylanag@uci.edu) | University of California, Irvine
Graduate Student (Prof. David Kirkby) | **DESC**

Dp0 Research Interests:

- How to use the Butler & Rubin Science Pipeline
- Studying the dithering of calexp LSST images
- Exploring different coaddition techniques

DP0 Delegate Profile: Ricardo Demarco

Basic biographical information (see also: **http://www.astro-udec.cl/rdemarco/**)**:**
- Name: **Ricardo Demarco**
- Affiliation: Department of Astronomy, **Universidad de Concepción**, Chile (since 2009)
- Career Level: **Associate Professor**
- Service: Executive Director, Chilean Astronomical Society
- Ph.D.: Université Denis Diderot (Paris 7), France (2003)
- Postdoctoral work: Johns Hopkins Univ. (2004-2008); Univ. of Calif. Riverside (2008-2009)

Scientific interests:
- Rubin: better understand how the local **environment determines the properties of galaxies**, particularly their **star formation quenching; member of the Galaxies SC**
- DP0-Specific: **identification and characterization of large scale structures** (groups, clusters, filaments of galaxies) with AI techniques (to be started)

Director of the Galaxy and Large Scale Structure Evolution (GaLSSev) group at the Univ. of Concepción: **http://www.astro-udec.cl/rdemarco/En/science_team.html**

DP0 Delegate Profile: Ilaria Musella

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Ilaria Musella (ilaria.musella@inaf.it)
Staff Researcher at Italian National Institute for Astrophysics (INAF) - Astronomical Observatory of Capodimonte (Naples)
Science Collaborations: TVS and SMWLV
Cadence Note: Classical variable stars in different Galactic environments: pulsation behaviour recovery (I. Musella et al.)

Science goals with Rubin-LSST
Pulsating variable stars as distance indicators and population tracers both from theoretical and observational point of view to
- investigate the dependence of the properties in different environments characterized by different chemical compositions
- constrain the coefficients of period-luminosity (PL) and period-luminosity-color (PLC) relations of Cepheid and RR Lyrae stars to an unprecedented level of accuracy
- derive 3D structure and constraints on Star Formation History of the studied stellar systems and of the MW and Local Group galaxies.

DP0-Specific Interest

To test metrics/notebook we are working on to recover accurate periods, mean magnitudes and amplitudes, together with well sampled light curves in different environments, adopting a multi-filter approach.

DP0 Delegate Profile: Erin Howard (They/She)

Biographical Information:
- Name: **Erin Howard**
- Affiliation: **Western Washington University**
- Career Level: Senior **Undergraduate**

Scientific Interests:
- Rubin Science Interests: Identifying variable stars, particularly eclipsing binaries. Helping build software and data pipelines to make the Rubin dataset more manageable.
- DP0-Specific Interest: Retooling my TESS EB statistical pre-classifier to work with LSST data.
- Interested in collaborations: Absolutely!

Fun Fact:
The VRO/LSST group got me back into school in 2015 when they visited Bremerton, Washington and emphasized how much they need comp sci folks.

DP0 Delegate Profile: Katrin Heitmann
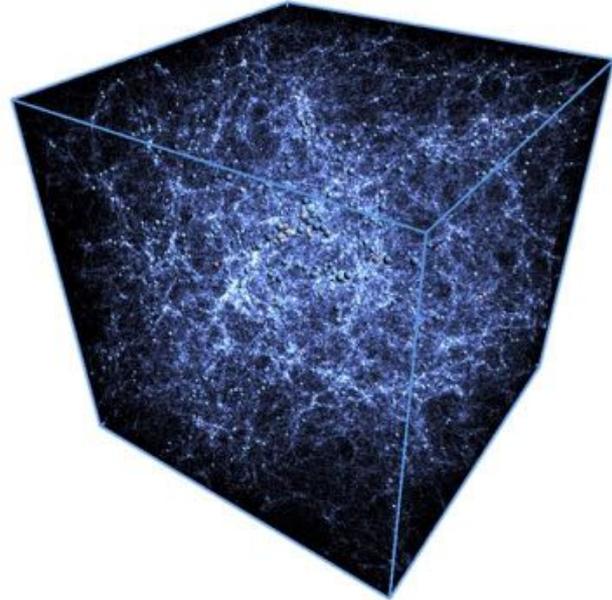
Matter distribution underlying DC2 from the "Outer Rim simulation"

Biographical Information:
- Name: **Katrin Heitmann**
- Affiliation: **Argonne National Laboratory**
- Career Level: **Senior Staff Member**

Science Interests
- Member of LSST DESC (currently Spokesperson)
- Large-scale structure probes of dark energy
- Computational cosmology
- Strong involvement in the creation of DC2
- Want to learn how to efficiently use the RSP to explore Rubin data
- Always interested in collaborations! How can we make simulations more realistic?