

The Vera C. Rubin Observatory Data Preview 2

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ABSTRACT

We present Rubin Data Preview 2 (DP2), the second data preview from the NSF-DOE Vera C. Rubin Observatory,

Keywords: Rubin Observatory - LSST

1. INTRODUCTION

2. COMMISSIONING WITH LSSTCAM

3. OVERVIEW OF THE CONTENTS OF RUBIN DP2

4. DATA RELEASE PROCESSING

5. PERFORMANCE CHARACTERIZATION AND KNOWN ISSUES

6. RUBIN SCIENCE PLATFORM

7. SUPPORT FOR COMMUNITY SCIENCE

8. SUMMARY AND FUTURE RELEASES

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Facilities: Rubin:Simonyi (LSSTComCam), Rubin:USDAC

Software: Rubin Data Butler ([Jenness et al. 2022](#)), LSST Science Pipelines ([Rubin Observatory Science Pipelines Developers 2025](#)), LSST Feature Based Scheduler v3.0 ([Yoachim et al. 2024](#); [Naghib et al. 2019](#)) Astropy ([Astropy Collaboration et al. 2013, 2018, 2022](#)) PIFF ([Jarvis et al. 2021](#)), GBDES ([Bernstein 2022](#)), Qserv ([Wang et al. 2011](#); [Mueller et al. 2023](#)), Slurm, HTCondor, CVMFS, FTS3, ESNet

APPENDIX

Glossary

Association of Universities for Research in Astronomy:
consortium of US institutions and international

affiliates that operates world-class astronomical observatories, AURA is the legal entity responsible for managing what it calls independent operating Centers, including LSST, under respective cooperative agreements with the National Science Foundation. AURA assumes fiducial responsibility for the funds provided through

those cooperative agreements. AURA also is the legal owner of the AURA Observatory properties in Chile.

AURA: Association of Universities for Research in Astronomy.

DP2: Data Preview 2.

REFERENCES

- Astropy Collaboration, Robitaille, T. P., Tollerud, E. J., et al. 2013, *A&A*, 558, A33, doi: [10.1051/0004-6361/201322068](https://doi.org/10.1051/0004-6361/201322068)
- Astropy Collaboration, Price-Whelan, A. M., Sipőcz, B. M., et al. 2018, *AJ*, 156, 123, doi: [10.3847/1538-3881/aabc4f](https://doi.org/10.3847/1538-3881/aabc4f)
- Astropy Collaboration, Price-Whelan, A. M., Lim, P. L., et al. 2022, *ApJ*, 935, 167, doi: [10.3847/1538-4357/ac7c74](https://doi.org/10.3847/1538-4357/ac7c74)
- Bernstein, G. M. 2022, gbdes: DECam instrumental signature fitting and processing programs, Astrophysics Source Code Library, record ascl:2210.011. <http://ascl.net/2210.011>
- Jarvis, M., et al. 2021, *Mon. Not. Roy. Astron. Soc.*, 501, 1282, doi: [10.1093/mnras/staa3679](https://doi.org/10.1093/mnras/staa3679)
- Jenness, T., Bosch, J. F., Salnikov, A., et al. 2022, in Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, Vol. 12189, Software and Cyberinfrastructure for Astronomy VII, 1218911, doi: [10.1117/12.2629569](https://doi.org/10.1117/12.2629569)
- Mueller, F., et al. 2023, in ASP Conf. Ser., Vol. TBD, ADASS XXXII, ed. S. Gaudet, S. Gwyn, P. Dowler, D. Bohlender, & A. Hincks (San Francisco: ASP), in press. <https://dmtn-243.lsst.io>
- Naghib, E., Yoachim, P., Vanderbei, R. J., Connolly, A. J., & Jones, R. L. 2019, *The Astronomical Journal*, 157, 151, doi: [10.3847/1538-3881/aafece](https://doi.org/10.3847/1538-3881/aafece)
- Rubin Observatory Science Pipelines Developers. 2025, The LSST Science Pipelines Software: Optical Survey Pipeline Reduction and Analysis Environment, Project Science Technical Note PSTN-019, NSF-DOE Vera C. Rubin Observatory, doi: [10.71929/rubin/2570545](https://doi.org/10.71929/rubin/2570545)
- Wang, D. L., Monkewitz, S. M., Lim, K.-T., & Becla, J. 2011, in *State of the Practice Reports*, SC '11 (New York, NY, USA: ACM), 12:1–12:11, doi: [10.1145/2063348.2063364](https://doi.org/10.1145/2063348.2063364)
- Yoachim, P., Jones, L., Eric H. Neilsen, J., & Becker, M. R. 2024, *lsst/rubin_scheduler*: v3.0.0, v3.0.0, Zenodo, doi: [10.5281/zenodo.13985198](https://doi.org/10.5281/zenodo.13985198)