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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

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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

Astropy Collaboration, Price-Whelan, A. M., Sipőcz, B. M., et al. 2018, AJ, 156, 123, doi: 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

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

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

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

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

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

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