


The Vera C. Rubin Observatory Data Preview 2

VERA C. RUBIN OBSERVATORY TEAM,¹ ERIC C. BELLM ,² JOHANN COHEN-TANUGI ,³ MELISSA L. GRAHAM ,^{2,4}
LEANNE P. GUY ,⁵ MINHEE HYUN ,⁵ YIJUNG KANG ,^{6,5} ARUN KANNAWADI ,^{7,8} KSHITIJ KELKAR ,⁵
SHUANG LIANG,⁹ KIAN-TAT LIM ,⁹ JAMES R. MULLANEY ,¹⁰ KATE NAPIER ,⁶ WILLIAM O'MULLANE ,⁵
AASHAY PAI ,¹¹ KARLA PEÑA RAMÍREZ ,⁵ AND IAN S. SULLIVAN ²

¹Vera C. Rubin Observatory Project Office, 950 N. Cherry Ave., Tucson, AZ 85719, USA

²University of Washington, Dept. of Astronomy, Box 351580, Seattle, WA 98195, USA

³LPCA, Université Clermont-Auvergne, CNRS/IN2P3, Clermont-Ferrand, France

⁴Institute for Data-intensive Research in Astrophysics and Cosmology, University of Washington, 3910 15th Avenue NE, Seattle, WA 98195, USA

⁵Vera C. Rubin Observatory, Avenida Juan Cisternas #1500, La Serena, Chile

⁶Kavli Institute for Particle Astrophysics and Cosmology, SLAC National Accelerator Laboratory, 2575 Sand Hill Rd., Menlo Park, CA 94025, USA

⁷Department of Physics, Duke University, Durham, NC 27708, USA

⁸Department of Astrophysical Sciences, Princeton University, Princeton, NJ 08544, USA

⁹SLAC National Accelerator Laboratory, 2575 Sand Hill Rd., Menlo Park, CA 94025, USA

¹⁰Astrophysics Research Cluster, School of Mathematical and Physical Sciences, University of Sheffield, Sheffield, S3 7RH, United Kingdom

¹¹Department of Astronomy and Astrophysics, University of Chicago, 5640 South Ellis Avenue, Chicago, IL 60637, USA

(Dated: April 11, 2026)

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

ACKNOWLEDGMENTS

. This material is based upon work supported in part by the National Science Foundation through Cooperative Agreements AST-1258333 and AST-2241526 and Cooperative Support Agreements AST-1202910 and AST-

2211468 managed by the [Association of Universities for Research in Astronomy](#) ([AURA](#)), and the Department of Energy under Contract No. DE-AC02-76SF00515 with the SLAC National Accelerator Laboratory managed by Stanford University. Additional Rubin Observatory funding comes from private donations, grants to universities, and in-kind support from LSST-DA Institutional Members.

This work has been supported by the French National Institute of Nuclear and Particle Physics (IN2P3) through dedicated funding provided by the National Center for Scientific Research (CNRS).

This work has been supported by STFC funding for UK participation in LSST, through grant ST/Y00292X/1.

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

Software: Rubin Data Butler (Jenness et al. 2022), LSST Science Pipelines ([Rubin Observatory Science](#))

58 Pipelines Developers 2025), LSST Feature Based Sched-
 59 uler v3.0 (Yoachim et al. 2024; Naghib et al. 2019) As-
 60 trophy (Astropy Collaboration et al. 2013, 2018, 2022)

61 PIFF (Jarvis et al. 2021), GBDES (Bernstein 2022),
 62 Qserv (Wang et al. 2011; Mueller et al. 2025), Slurm,
 63 HTCondor, CVMFS, FTS3, ESNet

APPENDIX

Glossary

66 Association of Universities for Research in Astronomy:

67 consortium of US institutions and international
 68 affiliates that operates world-class astronomical
 69 observatories, AURA is the legal entity respon-
 70 sible for managing what it calls independent
 71 operating Centers, including LSST, under respec-
 72 tive cooperative agreements with the National
 73 Science Foundation. AURA assumes fiducial

74 responsibility for the funds provided through
 those cooperative agreements. AURA also is the
 75 legal owner of the AURA Observatory properties
 76 in Chile.
 77

78 **AURA:** Association of Universities for Research in As-
 79 tronomy.

80 **DP2:** Data Preview 2.

REFERENCES

81 Astropy Collaboration, Robitaille, T. P., Tollerud, E. J.,
 82 et al. 2013, *A&A*, 558, A33,
 83 doi: [10.1051/0004-6361/201322068](https://doi.org/10.1051/0004-6361/201322068)
 84 Astropy Collaboration, Price-Whelan, A. M., Sipőcz, B. M.,
 85 et al. 2018, *AJ*, 156, 123, doi: [10.3847/1538-3881/aabc4f](https://doi.org/10.3847/1538-3881/aabc4f)
 86 Astropy Collaboration, Price-Whelan, A. M., Lim, P. L.,
 87 et al. 2022, *ApJ*, 935, 167, doi: [10.3847/1538-4357/ac7c74](https://doi.org/10.3847/1538-4357/ac7c74)
 88 Bernstein, G. M. 2022, gbdes: DECam instrumental
 89 signature fitting and processing programs, *Astrophysics*
 90 *Source Code Library*, record ascl:2210.011.
 91 <http://ascl.net/2210.011>
 92 Jarvis, M., Bernstein, G. M., Amon, A., et al. 2021,
 93 *MNRAS*, 501, 1282, doi: [10.1093/mnras/staa3679](https://doi.org/10.1093/mnras/staa3679)
 94 Jenness, T., Bosch, J. F., Salnikov, A., et al. 2022, in
 95 *Society of Photo-Optical Instrumentation Engineers*
 96 *(SPIE) Conference Series*, Vol. 12189, *Software and*
 97 *Cyberinfrastructure for Astronomy VII*, 1218911,
 98 doi: [10.1117/12.2629569](https://doi.org/10.1117/12.2629569)

99 Mueller, F., Gaponenko, I., Gates, J., et al. 2025, in
 100 *Astronomical Society of the Pacific Conference Series*,
 101 Vol. 538, *Astronomical Data Analysis Software and*
 102 *Systems XXXII*, ed. S. Gaudet, D. Bohlender, S. Gwyn,
 103 A. Hincks, & P. Teuben, 114, doi: [10.26624/XCPI7375](https://doi.org/10.26624/XCPI7375)
 104 Naghib, E., Yoachim, P., Vanderbei, R. J., Connolly, A. J.,
 105 & Jones, R. L. 2019, *AJ*, 157, 151,
 106 doi: [10.3847/1538-3881/aafece](https://doi.org/10.3847/1538-3881/aafece)
 107 Rubin Observatory Science Pipelines Developers. 2025, *The*
 108 *LSST Science Pipelines Software: Optical Survey*
 109 *Pipeline Reduction and Analysis Environment*, Project
 110 *Science Technical Note PSTN-019*, NSF-DOE Vera C.
 111 Rubin Observatory, doi: [10.71929/rubin/2570545](https://doi.org/10.71929/rubin/2570545)
 112 Wang, D. L., Monkewitz, S. M., Lim, K.-T., & Becla, J.
 113 2011, in *State of the Practice Reports*, SC '11 (New
 114 York, NY, USA: ACM), 12:1–12:11,
 115 doi: [10.1145/2063348.2063364](https://doi.org/10.1145/2063348.2063364)
 116 Yoachim, P., Jones, L., Eric H. Neilsen, J., & Becker, M. R.
 117 2024, *lsst/rubin_scheduler: v3.0.0*, v3.0.0, Zenodo,
 118 doi: [10.5281/zenodo.13985198](https://doi.org/10.5281/zenodo.13985198)