



Vera C. Rubin Observatory  
Data Management

# Bibliography Verification

**Automated Content**

**LSST-test**

**Latest Revision: 2025-03-07**



## Abstract

Standard LSST document class example but using all bibtex entries. This allows the bib files to be tested as well as the associated bibtex style.

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# Bibliography Verification

## 1 Introduction

In the following pages, all bibliographic entries from this repository will be listed. These are used to test that the entries in the relevant .bib files are formatted correctly. Bibtex will issue Warnings but the build will only be stopped if Errors are located.

Test the standard references to baseline documents: (SRD), DPDD, LSR, OSS, DMSR, LDM-133, LDM-134, SUID, DMSD, MOPSD, DMMD, DM OpsCon, (LSE-63), LSE-180, UCAL.

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\citedsp: [LPM-17]
\citedsp[]: [Verify] [Requirements]
\citeds: (SRD; LPM-17, LSE-29)
\citeds[]: LDM-503
\citep[]{}: [e.g., 845, 369, are interesting]
\cite: [845, 369]
```

## References

- [1] **[PSTN-043]**, 2019, Performance Verification of the LSST Survey Scheduler, URL <https://pstn-043.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-043
- [2] **[PSTN-046]**, 2020, Vera C. Rubin Observatory LSST Camera Design and Delivered Performance, URL <https://pstn-046.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-046
- [3] **[DMTN-210]**, 2024, Implementation of the LSST Alert Distribution System, URL <https://dmtn-210.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-210
- [4] **[DMTN-214]**, 2025, Alert Distribution System Operator's Manual, URL <https://dmtn-214.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-214

- [5] Abazajian, K., Adelman-McCarthy, J.K., Ageros, M.A., et al., 2009, The Astrophysical Journal Supplement Series, 182, doi:10.1088/0067-0049/182/2/543, ADS Link
- [6] Abell, P.A., Allison, J., Anderson, S.F., et al., 2009 (arXiv:0912.0201)
- [7] Abrahamse, A., Knox, L., Schmidt, S., et al., 2011, ApJ, 734, 36 (arXiv:1011.2239), doi:10.1088/0004-637X/734/1/36, ADS Link
- [8] Ackerman, N., Atherton, T., Avalani, A.R., et al., 2018, arXiv e-prints, arXiv:1804.08406 (arXiv:1804.08406), doi:10.48550/arXiv.1804.08406, ADS Link
- [9] **[RTN-042]**, Adamow, M., 2023, Running BPS on personal HTCondor at USDF, URL <https://rtn-042.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-042
- [10] Adams, A., Avila, K., Heymann, E., et al., 2021, Guide to securing scientific software, URL <https://zenodo.org/record/5777646#.YfSEvmB1C3o>
- [11] **[SITCOMTN-128]**, Adari, P., 2024, Unrecognized Blends in Operations Rehearsal 3, URL <https://sitcomtn-128.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-128
- [12] **[SITCOMTN-140]**, Adari, P., 2024, Point vs Extended Object Classification with Blending in Operations Rehearsal 3, URL <https://sitcomtn-140.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-140
- [13] Aihara, H., Armstrong, R., Bickerton, S., et al., 2018, PASJ, 70, S8 (arXiv:1702.08449), doi:10.1093/pasj/psx081, ADS Link
- [14] **[DMTN-151]**, et al., M.L.G., 2021, Host Galaxy Association for DIAObjects, URL <https://dmtn-151.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-151
- [15] Alard, C., Lupton, R.H., 1998, ApJ, 503, 325 (arXiv:astro-ph/9712287), doi:10.1086/305984, ADS Link
- [16] Albrecht, A., Bernstein, G., Cahn, R., et al., 2006, ArXiv Astrophysics e-prints (arXiv:astro-ph/0609591), ADS Link
- [17] Alcock, C., Allsman, R.A., Alves, D., et al., 1999, ApJ, 521, 602 (arXiv:astro-ph/9903215), doi:10.1086/307567, ADS Link

- [18] Alejandro Plazas, A., Bernstein, G., 2012, PASP, 124, 1113 (arXiv:1204.1346), doi:10.1086/668294, ADS Link
- [19] Allan, A., Denny, R.B., Swinbank, J.D., 2017, arXiv e-prints, arXiv:1709.01264 (arXiv:1709.01264), doi:10.48550/arXiv.1709.01264, ADS Link
- [20] **[DMTN-169]**, Allbery, R., 2020, A model for Butler registry access control, URL <https://dmtn-169.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-169
- [21] **[SQR-037]**, Allbery, R., 2020, SQuaRE security risk assessment, URL <https://sqr-037.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-037
- [22] **[SQR-039]**, Allbery, R., 2020, Discussion of authentication and authorization for Science Platform, URL <https://sqr-039.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-039
- [23] **[SQR-042]**, Allbery, R., 2020, Dependency management for SQuaRE services, URL <https://sqr-042.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-042
- [24] **[SQR-044]**, Allbery, R., 2020, Science Platform identity management requirements, URL <https://sqr-044.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-044
- [25] **[SQR-048]**, Allbery, R., 2020, Kubernetes hardening recommendations, URL <https://sqr-048.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-048
- [26] **[DMTN-182]**, Allbery, R., 2021, Possible authorization approaches for Butler, URL <https://dmtn-182.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-182
- [27] **[RTN-020]**, Allbery, R., 2021, Security controls for administrative and developer access to IDF infrastructure, URL <https://rtn-020.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-020
- [28] **[SQR-049]**, Allbery, R., 2021, Science Platform token management design, URL <https://sqr-049.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-049

- [29] **[DMTN-230]**, Allbery, R., 2022, RSP HiPS service implementation strategy, URL <https://dmtn-230.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-230
- [30] **[DMTN-238]**, Allbery, R., 2022, RSP DataLink service implementation strategy, URL <https://dmtn-238.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-238
- [31] **[SQR-041]**, Allbery, R., 2022, Science Platform security risk assessment, URL <https://sqr-041.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-041
- [32] **[SQR-045]**, Allbery, R., 2022, Evaluation of CILogon COmanage for Rubin Science Platform, URL <https://sqr-045.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-045
- [33] **[SQR-046]**, Allbery, R., 2022, Evaluation of GitHub for Rubin Science Platform identity management, URL <https://sqr-046.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-046
- [34] **[SQR-071]**, Allbery, R., 2022, RSP user impersonation, URL <https://sqr-071.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-071
- [35] **[DMTN-250]**, Allbery, R., 2023, Discovery services for the Rubin Science Platform, URL <https://dmtn-250.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-250
- [36] **[SQR-063]**, Allbery, R., 2023, IVOA SODA implementation experience, URL <https://sqr-063.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-063
- [37] **[SQR-074]**, Allbery, R., 2023, Validation of new Phalanx deployments, URL <https://sqr-074.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-074
- [38] **[SQR-077]**, Allbery, R., 2023, Considerations for Python API documentation, URL <https://sqr-077.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-077
- [39] **[SQR-079]**, Allbery, R., 2023, Secrets management for Phalanx, URL <https://sqr-079.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-079

- [40] **[DMTN-208]**, Allbery, R., 2024, RSP image cutout service implementation strategy, URL <https://dmtn-208.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-208
- [41] **[DMTN-225]**, Allbery, R., 2024, User metadata for the Science Platform, URL <https://dmtn-225.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-225
- [42] **[DMTN-253]**, Allbery, R., 2024, Science Platform authentication for IDAC users, URL <https://dmtn-253.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-253
- [43] **[SQR-055]**, Allbery, R., 2024, COmanage configuration for Rubin Science Platform, URL <https://sqr-055.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-055
- [44] **[SQR-072]**, Allbery, R., 2024, One design pattern for FastAPI web applications, URL <https://sqr-072.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-072
- [45] **[SQR-091]**, Allbery, R., 2024, Draft IVOA web service standards framework, URL <https://sqr-091.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-091
- [46] **[SQR-092]**, Allbery, R., 2024, Draft IVOA JSON encoding, URL <https://sqr-092.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-092
- [47] **[SQR-093]**, Allbery, R., 2024, Draft IVOA SODA web service specification, URL <https://sqr-093.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-093
- [48] **[SQR-096]**, Allbery, R., 2024, UWS data service, URL <https://sqr-096.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-096
- [49] **[DMTN-193]**, Allbery, R., 2025, Web security for the Science Platform, URL <https://dmtn-193.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-193
- [50] **[DMTN-224]**, Allbery, R., 2025, RSP identity management implementation strategy, URL <https://dmtn-224.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-224



- [51] **[DMTN-234]**, Allbery, R., 2025, RSP identity management design, URL <https://dmtn-234.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-234
- [52] **[DMTN-235]**, Allbery, R., 2025, Token scopes for the Rubin Science Platform, URL <https://dmtn-235.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-235
- [53] **[SQR-051]**, Allbery, R., 2025, Leaks of credentials to services in the Rubin Science Platform, URL <https://sqr-051.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-051
- [54] **[SQR-069]**, Allbery, R., 2025, Implementation decisions for RSP identity management, URL <https://sqr-069.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-069
- [55] **[SQR-073]**, Allbery, R., 2025, RSP quotas and rate limiting, URL <https://sqr-073.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-073
- [56] **[SQR-066]**, Allbery, R., Thornton, A., 2023, RSP Notebook Aspect lab controller design, URL <https://sqr-066.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-066
- [57] **[DMTN-163]**, Allbery, R., Lim, K.T., Economou, F., O'Mullane, W., 2021, Encryption of Rubin Observatory data, URL <https://dmtn-163.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-163
- [58] Allende Prieto, C., 2007, AJ, 134, 1843 (arXiv:0707.2764), doi:10.1086/522051, ADS Link
- [59] **[LSE-16]**, Allsman, R., Dubois-Felsmann, G., Kantor, J., 2009, LSST Software Development Plan, URL <https://lsst.org/LSE-16>,  
Vera C. Rubin Observatory LSE-16
- [60] **[DMTN-080]**, AlSayyad, Y., 2019, Coaddition Artifact Rejection and CompareWarp, URL <https://dmtn-080.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-080
- [61] **[DMTR-302]**, AlSayyad, Y., 2021, LDM-503-13a: Science Pipelines Fall 2020 Release Test Plan and Report, URL <https://dmtr-302.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-302

- [62] **[DMTR-321]**, AlSayyad, Y., 2022, LDM-503-15a: Science Pipelines Fall 2021 Release Test Plan and Report, URL <https://dmtr-321.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-321
- [63] **[DMTR-411]**, AlSayyad, Y., 2023, LDM-503-16a: Science Pipelines Fall 2022 Release Test Plan Test Plan and Report, URL <https://dmtr-411.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-411
- [64] AlSayyad, Y., Connolly, A.J., Becker, A.C., et al., 2013, In: American Astronomical Society Meeting Abstracts #221, vol. 221 of American Astronomical Society Meeting Abstracts, 152.02, ADS Link
- [65] AlSayyad, Y., McGreer, I., Connolly, A., et al., 2015, Case study: Classifying high redshift quasars on the lsst-reprocessed sdss stripe 82 imaging, URL <http://www.noao.edu/meetings/bigdata/files/AlSayyad.pdf>,  
Presented at Tools for Astronomical Big Data, Tucson, AZ
- [66] **[RTN-063]**, AlSayyad, Y., Adelman-McCarthy, J., Yanny, B., et al., 2023, HSC PDR2 Re-processing and Operations Rehearsal for DRP, URL <https://rtn-063.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-063
- [67] Amaro-Seoane, P., Aoudia, S., Babak, S., et al., 2013, GW Notes, Vol. 6, p. 4-110, 6, 4 (arXiv:1201.3621), ADS Link
- [68] Amazon, Amazon Glacier – Cloud Archive, URL <https://aws.amazon.com/glacier/>
- [69] **[DMTN-306]**, and, , , et al., 2025, Data Movement Model for the Vera C. Rubin Observatory, URL <https://dmtn-306.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-306
- [70] Angeli, F.D., 2005, *The Gaia Software Toolbox - User guide*, Tech. rep., IoA, URL [http://www.rssd.esa.int/SA-general/Projects/GAIA/wiki/index.php?title=CU1:\\_GaiaTools](http://www.rssd.esa.int/SA-general/Projects/GAIA/wiki/index.php?title=CU1:_GaiaTools)
- [71] **[LSE-159]**, Angeli, G., 2013, Reviews Definitions, Guidelines, and Procedures, URL <https://ls.st/LSE-159>,  
Vera C. Rubin Observatory LSE-159
- [72] **[Document-11920]**, Angeli, G., McKercher, R., 2013, Document Cover Page and Style Guide, URL <https://ls.st/Document-11920>,  
Vera C. Rubin Observatory Document-11920

- [73] **[Document-9224]**, Angeli, G., McKercher, R., 2013, Change Controlled Document Cover Page and Style Guide, URL <https://ls.st/Document-9224>, Vera C. Rubin Observatory Document-9224
- [74] **[LPM-19]**, Angeli, G., McKercher, R., 2015, Change Control Process, URL <https://ls.st/LPM-19>, Vera C. Rubin Observatory LPM-19
- [75] Angeli, G.Z., Xin, B., Claver, C., et al., 2014, *Real time wavefront control system for the Large Synoptic Survey Telescope (LSST)*, vol. 9150 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 91500H, doi:10.1117/12.2055390
- [76] Angeli, G.Z., Xin, B., Claver, C., et al., 2016, *An integrated modeling framework for the Large Synoptic Survey Telescope (LSST)*, vol. 9911 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 991118, doi:10.1117/12.2234078
- [77] Ansari, S., Torra, J., López, P.P., et al., Algorithm Interface Control Document, CCB-GDAAS-ICD-001
- [78] Ansari, S.G., Torra, J., Luri, X., et al., 2003, In: Science and Technology, ASP Conference Series, vol. 298, page 97
- [79] Ansari, S.G., Lammers, U., ter Linden, M., 2005, In: Proc. Astronomical Data Analysis Software and Systems XIV, vol. 347, 429–, Astronomical Society of the Pacific
- [80] Antilogus, P., Astier, P., Doherty, P., Guyonnet, A., Regnault, N., 2014, *Journal of Instrumentation*, 9, C03048 (arXiv:1402.0725), doi:10.1088/1748-0221/9/03/C03048, ADS Link
- [81] **[DMTR-82]**, Arcanjo, V., Astudillo, A., Bezerra, J., et al., 2018, Network Bandwidth Tests between Chile and the United States, URL <https://ls.st/DMTR-82>, Vera C. Rubin Observatory DMTR-82
- [82] Arenou, F., Chéreau, F., private communication
- [83] Arenou, F., Lindegren, L., Froeschle, M., et al., 1995, *A&A*, 304, 52, ADS Link
- [84] Astropy Collaboration, Price-Whelan, A.M., Sipőcz, B.M., et al., 2018, *AJ*, 156, 123 (arXiv:1801.02634), doi:10.3847/1538-3881/aabc4f, ADS Link

- [85] Auer, L.H., Standish, E.M., 2000, AJ, 119, 2472, doi:10.1086/301325, ADS Link
- [86] Axelrod, T., 2005, Events in the LSST, URL [http://wiki.ivoa.net/internal/IVOA/VOEventSchedule/tim\\_axelrod.ppt](http://wiki.ivoa.net/internal/IVOA/VOEventSchedule/tim_axelrod.ppt),  
Presented at the IVOA VOEvent Workshop, Pasadena
- [87] Axelrod, T., 2007, In: Babu, G.J., Feigelson, E.D. (eds.) Statistical Challenges in Modern Astronomy IV, vol. 371 of Astronomical Society of the Pacific Conference Series, 142, ADS Link
- [88] Axelrod, T., Kantor, J., 2010, In: Supercomputing 2010, LSST Corporation, Supercomputing Conference, URL <https://docushare.lsstcorp.org/docushare/dsweb/Get/Document-10284/>
- [89] Axelrod, T., Connolly, A., Ivezić, Z., et al., 2004, In: American Astronomical Society Meeting Abstracts, vol. 205 of American Astronomical Society Meeting Abstracts, 108.11, ADS Link
- [90] Axelrod, T., Becker, A., Connolly, A., et al., 2005, In: American Astronomical Society Meeting Abstracts, vol. 37 of Bulletin of the American Astronomical Society, 1207, ADS Link
- [91] **[Document-5356]**, Axelrod, T., Allsman, R., Kantor, J., et al., 2008, LSST Data Challenge 2, URL <https://ls.st/Document-5356>,  
Vera C. Rubin Observatory Document-5356
- [92] Axelrod, T., Kantor, J., Lupton, R.H., Pierfederici, F., 2010, In: Radziwill, N.M., Bridger, A. (eds.) Software and Cyberinfrastructure for Astronomy, vol. 7740 of Proc. SPIE, 15, doi:10.1117/12.857297, ADS Link
- [93] **[LDM-17]**, Axelrod, T., et al., 2009, LSST Data Challenge 3a Final Report, URL <https://ls.st/LDM-17>,  
Vera C. Rubin Observatory LDM-17
- [94] Axelrod, T.S., 2006, In: Gabriel, C., Arviset, C., Ponz, D., Enrique, S. (eds.) Astronomical Data Analysis Software and Systems XV, vol. 351 of Astronomical Society of the Pacific Conference Series, 103, ADS Link
- [95] Axelrod, T.S., Allsman, R., Becker, A., et al., 2006, In: American Astronomical Society Meeting Abstracts, vol. 38 of Bulletin of the American Astronomical Society, 1018, ADS Link

- [96] Axelrod, T.S., Becla, J., Connolly, A., et al., 2007, In: American Astronomical Society Meeting Abstracts, vol. 211 of American Astronomical Society Meeting Abstracts, 137.26, ADS Link
- [97] Axelrod, T.S., Becker, A., Becla, J., et al., 2009, In: American Astronomical Society Meeting Abstracts #213, vol. 213 of American Astronomical Society Meeting Abstracts, 460.30, ADS Link
- [98] Baccaro, S., Cecilia, A., Di Sarcina, I., Piegari, A.M., 2004, In: E. Atad-Ettinger and P. Dierickx (ed.) Optical Fabrication, Metrology, and Material Advancements for Telescopes, vol. 5494 of Proc. SPIE, 529–535, doi:10.1117/12.553602, ADS Link
- [99] Baccaro, S., Piegari, A., Di Sarcina, I., Cecilia, A., 2005, IEEE transactions on nuclear science, 52, 1779
- [100] Bailer-Jones, C.A.L., 2002, Astrophysics and Space Science, 280, 21 (arXiv:astro-ph/0201014), ADS Link
- [101] Bailer-Jones, C.A.L., 2003, In: Munari, U. (ed.) GAIA Spectroscopy: Science and Technology, vol. 298 of Astronomical Society of the Pacific Conference Series, 199–+, ADS Link
- [102] Bailer-Jones, C.A.L., 2004, A&A, 419, 385 (arXiv:astro-ph/0402591), doi:10.1051/0004-6361:20035779, ADS Link
- [103] Bailer-Jones, C.A.L., 2005, In: Turon, C., O’Flaherty, K.S., Perryman, M.A.C. (eds.) ESA SP-576: The Three-Dimensional Universe with Gaia, 393–+, ADS Link
- [104] Bailer-Jones, C.A.L., 2010, MNRAS, 403, 96 (arXiv:0911.5242), doi:10.1111/j.1365-2966.2009.16125.x, ADS Link
- [105] Bailer-Jones, C.A.L., Andrae, R., Arcay, B., et al., 2013, A&A, 559, A74 (arXiv:1309.2157), doi:10.1051/0004-6361/201322344, ADS Link
- [106] **[DMTN-090]**, Banek, C., 2019, DAX Webservice Implementation Guide, URL <https://dmtn-090.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-090
- [107] **[DMTN-164]**, Banek, C., 2020, Nublado v2 Architecture, URL <https://dmtn-164.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-164

- [108] **[DMTN-264]**, Banek, C., 2023, TAP - IVOA Table Access Protocol service, URL <https://dmtn-264.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-264
- [109] **[DMTN-267]**, Banek, C., 2023, TAP UPLOAD: How it works in the CADM TAP Service, URL <https://dmtn-267.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-267
- [110] **[DMTN-279]**, Banek, C., 2024, Organization of Phalanx into projects, URL <https://dmtn-279.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-279
- [111] **[DMTN-245]**, Banovetz, J., 2023, Long Term Variability of AuxTel/LATISS Edge of Amplifier Banding in Bias Images, URL <https://dmtn-245.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-245
- [112] **[DMTN-276]**, Banovetz, J., Utsumi, Y., Slater, C., 2024, Effects of Persistence on E2V Sensors and its Impacts on DC2 Data, URL <https://dmtn-276.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-276
- [113] Barisits, M., Beermann, T., Berghaus, F., et al., 2019, Computing and Software for Big Science, 3, 11 (arXiv:1902.09857), doi:10.1007/s41781-019-0026-3, ADS Link
- [114] **[PSTN-005]**, Barr, J.D., 2019, Overview of the LSST Telescope, URL <https://pstn-005.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-005
- [115] **[ITTN-064]**, Barría, C., 2022, OS Update Playbook, URL <https://ittn-064.lsst.io/>,  
Vera C. Rubin Observatory ITTN-064
- [116] **[ITTN-071]**, Barría, C., 2023, rke Update Playbook, URL <https://ittn-071.lsst.io/>,  
Vera C. Rubin Observatory ITTN-071
- [117] Bastian, U., Biermann, M., 2005, A&A, 438, 745, doi:10.1051/0004-6361:20042372, ADS Link
- [118] Bastian, U., Gilmore, G., Halbwegs, J., et al., 1993, *ROEMER*, Tech. rep., Lund Observatory,  
Proposal for a Third Medium Size ESA Mission (M3), Lund 1993

- [119] **[PSTN-031]**, Bauer, A.E., 2019, LSST EPO: The User Feedback, URL <https://pstn-031.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-031
- [120] **[PSTN-029]**, Bauer, A.E., 2020, The Vera C. Rubin Observatory Education and Public Outreach Program, URL <https://pstn-029.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-029
- [121] Bauer, A.E., Bellm, E.C., Bolton, A.S., et al., 2019, arXiv e-prints, arXiv:1905.05116 (arXiv:1905.05116), doi:10.48550/arXiv.1905.05116, ADS Link
- [122] Beaumont, C., Goodman, A., Greenfield, P., 2015, In: Taylor, A.R., Rosolowsky, E. (eds.) Astronomical Data Analysis Software and Systems XXIV (ADASS XXIV), vol. 495 of Astronomical Society of the Pacific Conference Series, 101, ADS Link
- [123] **[LSE-389]**, Bechtol, K., 2018, Commissioning Science Validation Test Plan, URL <https://lse-389.lsst.io/>,  
Vera C. Rubin Observatory LSE-389
- [124] **[PSTN-039]**, Bechtol, K., 2020, Science Validation of LSST Data Release Processing, URL <https://pstn-039.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-039
- [125] **[SITCOMTN-075]**, Bechtol, K., 2023, System On-sky Test Plan, URL <https://sitcomtn-075.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-075
- [126] **[SITCOMTN-050]**, Bechtol, K., 2025, Summary of In-Kind Contributions to Rubin Observatory System Integration, Test, and Commissioning Efforts, URL <https://sitcomtn-050.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-050
- [127] **[SITCOMTN-076]**, Bechtol, K., on behalf of the Rubin Observatory Project Science Team, S.R., 2025, Information Sharing during Commissioning, URL <https://sitcomtn-076.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-076
- [128] **[DMTN-141]**, Bechtol, K., Carlin, J., Krughoff, S., 2020, Design concepts for the SV-distiller, URL <https://dmtn-141.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-141

- [129] **[SITCOMTN-010]**, Bechtol, K., Claver, C., Test, S.I., et al., 2021, Announcement of Opportunity: Community Engagement with Rubin Observatory Commissioning Effort, URL <https://sitcomtn-010.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-010
- [130] **[SITCOMTN-025]**, Bechtol, K., (chair), P.I., Jenness, T., et al., 2022, First-Look Analysis and Feedback Functionality Breakout Group Report, URL <https://sitcomtn-025.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-025
- [131] **[SITCOMTN-037]**, Bechtol, K., Dubois-Felsmann, G., Fausti, A., et al., 2023, First-Look Analysis and Feedback Functionality Breakout Group Report #2, URL <https://sitcomtn-037.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-037
- [132] **[SITCOMTN-061]**, Bechtol, K., Alexov, A., Claver, C., et al., 2024, System First Light Definition, URL <https://sitcomtn-061.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-061
- [133] Beck, K., 1999, *Extreme Programming Explained: Embrace Change*, Addison-Wesley, 1st edn.
- [134] Beck, R., Dobos, L., Budavári, T., Szalay, A.S., Csabai, I., 2016, MNRAS, 460, 1371 (arXiv:1603.09708), doi:10.1093/mnras/stw1009, ADS Link
- [135] Becker, A., 2007, Transient object detection and classification, URL <http://wiki.ivoa.net/twiki/bin/view/IVOA/HotwiredWorkshop>,  
Hot-wiring the Transient Universe: a Joint VOEvent & HTN Workshop June 4 - 7, 2007, Tucson, Arizona
- [136] Becker, A., 2014, Flexible and Scalable Methods for Time-Series Characterization, URL <http://eventos.cmm.uchile.cl/astro2014/wp-content/uploads/sites/13/2014/06/Astroinformatics2014.pdf>,  
Astroinformatics 2014, Chile
- [137] Becker, A., Axelrod, T., Ivezić, Z., et al., 2005, In: American Astronomical Society Meeting Abstracts, vol. 37 of Bulletin of the American Astronomical Society, 1206, ADS Link
- [138] Becker, A., Silvestri, N., Owen, R., Ivezić, Ž., Lupton, R., 2007, PASP, 119, 1462 (arXiv:0712.0637), doi:10.1086/524710, ADS Link



- [139] **[LDM-227]**, Becker, A., Krughoff, S., Connolly, A., et al., 2013, Report on Late Winter 2013 Production: Image Differencing, URL <https://ls.st/LDM-227>, Vera C. Rubin Observatory LDM-227
- [140] **[DMTN-069]**, Becker, A., Krughoff, S., Connolly, A., 2014, Report on Winter 2014 Production: Image Differencing, URL <https://dmtn-069.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-069
- [141] **[DMTN-070]**, Becker, A., Krughoff, S., Connolly, A., 2014, Report on Summer 2014 Production: Analysis of DCR, URL <https://dmtn-070.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-070
- [142] **[Document-11013]**, Becker, A., et al., 2011, Science White Paper for LSST Deep-Drilling Field Observations Opportunities for Solar System Science, URL <https://ls.st/Document-11013>, Vera C. Rubin Observatory Document-11013
- [143] Becker, A.C., Rest, A., Miknaitis, G., Smith, R.C., Stubbs, C., 2004, In: American Astronomical Society Meeting Abstracts, vol. 205 of American Astronomical Society Meeting Abstracts, 108.12, ADS Link
- [144] Becker, A.C., Silvestri, N., Owen, R., et al., 2009, In: American Astronomical Society Meeting Abstracts #213, vol. 213 of American Astronomical Society Meeting Abstracts, 460.28, ADS Link
- [145] Becker, A.C., Bloom, J.S., Walkowicz, L.M., LSST Collaboration, 2011, In: American Astronomical Society Meeting Abstracts #217, vol. 217 of American Astronomical Society Meeting Abstracts, 252.12, ADS Link
- [146] **[Document-1386]**, Becla, J., 2006, Database Ingest Tests, URL <https://ls.st/Document-1386>, Vera C. Rubin Observatory Document-1386
- [147] Becla, J., 2009, Scidb: Open source data management system for data-intensive scientific analytics, URL <http://www.slideshare.net/sdsc/scidb-open-source-data-management-system-for-dataintensive-scientific-analytics>, Talk at San Diego Supercomputer Center
- [148] **[Document-8256]**, Becla, J., 2009, Evaluation of Database Solutions, URL <https://ls.st/Document-8256>, Vera C. Rubin Observatory Document-8256

- [149] Becla, J., 2010, In: Astronomical Data Analysis Software and Systems XX, ADASS XX, SLAC National Accelerator Laboratory
- [150] **[DMTR-12]**, Becla, J., 2013, Qserv 300 node test, URL <https://ls.st/DMTR-12>, Vera C. Rubin Observatory DMTR-12
- [151] Becla, J., 2014, In: Taylor, A.R., Rosolowsky, E. (eds.) Astronomical Data Analysis Software and Systems XXIV (ADASS XXIV), Astronomical Society of the Pacific Conference Series
- [152] Becla, J., 2015, Enabling scalable data analytics for lsst and beyond through qserv, URL <http://www.noao.edu/meetings/bigdata/files/becla.pdf>, Presented at Tools for Astronomical Big Data, Tucson, AZ
- [153] **[DMTR-13]**, Becla, J., 2015, Qserv Summer 15 Large Scale Tests, URL <https://ls.st/DMTR-13>, Vera C. Rubin Observatory DMTR-13
- [154] **[DMTN-083]**, Becla, J., 2016, LSST DM Metadata and Provenance, URL <https://dmtn-083.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-083
- [155] **[LDM-555]**, Becla, J., 2017, Data Management Database Requirements, URL <https://ldm-555.lsst.io/>, Vera C. Rubin Observatory Data Management Controlled Document LDM-555
- [156] Becla, J., Lim, K.T., 2008, Data Science Journal, 7, doi:10.2481/dsj.7.1
- [157] Becla, J., Lim, K.T., 2008, Data Science Journal, 7, doi:10.2481/dsj.7.88
- [158] **[LDM-139]**, Becla, J., Lim, K.T., 2013, Data management storage sizing and i/o model explanation, URL <https://ls.st/LDM-139>, Vera C. Rubin Observatory LDM-139
- [159] **[LDM-141]**, Becla, J., Lim, K.T., 2013, Data Management Storage Sizing and I/O Model, URL <https://ls.st/LDM-141>, Vera C. Rubin Observatory LDM-141
- [160] **[LDM-463]**, Becla, J., Pease, N., 2017, Data Access Design, URL <https://ls.st/LDM-463>, Vera C. Rubin Observatory LDM-463

- [161] Becla, J., Wang, D.L., 2005, In: CIDR 2005, Second Biennial Conference on Innovative Data Systems Research, Asilomar, CA, USA, January 4-7, 2005, Online Proceedings, 70–83, URL <http://cidrdb.org/cidr2005/papers/P06.pdf>
- [162] Becla, J., Wang, D.L., 2014, In: Exascale Radio Astronomy, vol. 2, 30303, ADS Link
- [163] Becla, J., Nikolaev, S., Abdulla, G., et al., 2005, In: American Astronomical Society Meeting Abstracts, vol. 37 of Bulletin of the American Astronomical Society, 1207, ADS Link
- [164] Becla, J., Hanushevsky, A., Nikolaev, S., et al., 2006, In: Silva, D.R., Doxsey, R.E. (eds.) Observatory Operations: Strategies, Processes, and Systems, vol. 6270 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 62700R (arXiv:cs/0604112), doi:10.1117/12.671721, ADS Link
- [165] Becla, J., Lim, K.T., Monkewitz, S., Nieto-Santisteban, M., Thakar, A., 2008, In: Argyle, R.W., Bunclark, P.S., Lewis, J.R. (eds.) Astronomical Data Analysis Software and Systems XVII, vol. 394 of Astronomical Society of the Pacific Conference Series, 114, ADS Link
- [166] Becla, J., Lim, K.T., Wang, D.L., 2010, Data Science Journal, 8, MR1, doi:10.2481/dsj.xldb09
- [167] **[Document-11625]**, Becla, J., Lim, K.T., Wang, D., 2011, Database Architecture, URL <https://ls.st/Document-11625>, Vera C. Rubin Observatory Document-11625
- [168] **[Document-11701]**, Becla, J., Lim, K.T., Wang, D., 2011, Evaluation of Solid State Disks, URL <https://ls.st/Document-11701>, Vera C. Rubin Observatory Document-11701
- [169] Becla, J., Lim, K.T., Wang, D.L., 2012, Facts about xldb-2011, URL <http://www.osti.gov/scitech/biblio/1035489/>
- [170] **[DMTN-046]**, Becla, J., Lim, K.T., Wang, D., 2013, An investigation of database technologies, URL <https://dmtn-046.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-046
- [171] **[DMTN-048]**, Becla, J., Lim, K.T., Wang, D., 2013, Qserv design prototyping experiments, URL <https://dmtn-048.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-048

- [172] **[DMTR-21]**, Becla, J., Lim, K.T., Wang, D., 2013, Early (pre-2013) Large-Scale Qserv Tests, URL <https://ls.st/DMTR-21>,  
Vera C. Rubin Observatory DMTR-21
- [173] **[Document-26276]**, Becla, J., Lim, K.T., Wang, D., 2013, Scalable Partitioning, URL <https://ls.st/Document-26276>,  
Vera C. Rubin Observatory Document-26276
- [174] **[LDM-472]**, Becla, J., Economou, F., Mueller, F., et al., 2017, LSST DM Project Management and Tools, URL <https://ldm-472.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-472
- [175] **[LDM-135]**, Becla, J., Wang, D., Monkewitz, S., et al., 2017, Data Management Database Design, URL <https://ldm-135.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-135
- [176] **[DMTN-020]**, Becla, J., Economou, F., Gelman, M., et al., 2018, Data Management Project Management Guide, URL <https://dmtn-020.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-020
- [177] Bektesevic, D., Mehta, P., Juric, M., et al., 2019, In: American Astronomical Society Meeting Abstracts #233, vol. 233 of American Astronomical Society Meeting Abstracts, 245.05, ADS Link
- [178] Beletic, J.W., Blank, R., Gulbransen, D., et al., 2008, In: Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, vol. 7021 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 70210H, doi:10.1117/12.790382, ADS Link
- [179] **[DMTN-085]**, Bellm, E.C., Chiang, et al., 2019, QA Strategy Working Group Report, URL <https://dmtn-085.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-085
- [180] **[DMTR-91]**, Bellm, E., 2019, LDM-503-5: (Alert Distribution Validation) Test Plan and Report, URL <https://dmtr-91.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-91
- [181] **[DMTN-200]**, Bellm, E., 2023, Fluxes of variables in difference imaging, URL <https://dmtn-200.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-200

- [182] **[DMTN-259]**, Bellm, E., 2023, Mechanisms for Deprecating Bad Data in Alert Production, URL <https://dmtn-259.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-259
- [183] **[RTN-010]**, Bellm, E., 2023, Pre-operations Alert Distribution Integration Exercises, URL <https://rtn-010.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-010
- [184] **[RTN-061]**, Bellm, E., 2023, Planning for the First Public Release of LSSTCam Alerts, URL <https://rtn-061.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-061
- [185] **[DMTN-165]**, Bellm, E., Nelson, S., 2021, A Hybrid Notification and Alert Retrieval Service, URL <https://dmtn-165.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-165
- [186] **[LDM-682]**, Bellm, E., Blum, R., Graham, M., et al., 2019, Call for Letters of Intent for Community Alert Brokers, URL <https://ldm-682.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-682
- [187] **[LDM-612]**, Bellm, E., Blum, R., Graham, M., et al., 2020, Plans and Policies for LSST Alert Distribution, URL <https://ldm-612.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-612
- [188] **[LDM-723]**, Bellm, E., Blum, R., Graham, M., et al., 2020, Call for Proposals for Community Alert Brokers, URL <https://ldm-723.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-723
- [189] **[RDO-061]**, Bellm, E., Blum, R., Guy, L., 2021, Community Alert Broker MoU, URL <https://rdo-061.lsst.io/>,  
Vera C. Rubin Observatory RDO-061
- [190] **[DMTN-228]**, Bellm, E., Graham, M., Guy, L., the DM System Science Team, 2023, Measurement of Faint DIASources in LSST Prompt Processing, URL <https://dmtn-228.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-228
- [191] **[PSTN-021]**, Bellm, E.C., 2019, LSST Prompt Data Products, URL <https://pstn-021.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-021

- [192] **[RTN-008]**, Bellm, E.C., 2022, Rubin Observatory Processing of Gravitational Wave TOO Data in the Early Operations Era, URL <https://rtn-008.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-008
- [193] **[DMTN-118]**, Bellm, E.C., 2023, Review of Timeseries Features, URL <https://dmtn-118.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-118
- [194] **[DMTN-226]**, Bellm, E.C., Guy, L., 2024, Implementing the Rubin/LSST Alert Filtering System with ANTARES, URL <https://dmtn-226.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-226
- [195] **[DMTR-53]**, Bellm, E.C., Swinbank, J.D., 2018, LDM-503-3 (Alert Generation) Test Report, URL <https://dmtr-53.lsst.io/>, Vera C. Rubin Observatory Data Management Test Report DMTR-53
- [196] **[LDM-533]**, Bellm, E.C., Swinbank, J.D., 2019, LSST Level 1 System Test Specification, URL <https://ldm-533.lsst.io/>, Vera C. Rubin Observatory Data Management Controlled Document LDM-533
- [197] Benítez, N., 2000, ApJ, 536, 571 (arXiv:astro-ph/9811189), doi:10.1086/308947, ADS Link
- [198] Bernstein, G.M., Armstrong, R., 2014, MNRAS, 438, 1880 (arXiv:1304.1843), doi:10.1093/mnras/stt2326, ADS Link
- [199] Bernstein, G.M., Jarvis, M., 2002, AJ, 123, 583 (arXiv:astro-ph/0107431), doi:10.1086/338085, ADS Link
- [200] Bernstein, G.M., Armstrong, R., Krawiec, C., March, M.C., 2016, MNRAS, 459, 4467 (arXiv:1508.05655), doi:10.1093/mnras/stw879, ADS Link
- [201] Bernstein, G.M., Armstrong, R., Plazas, A.A., et al., 2017, PASP, 129, 074503 (arXiv:1703.01679), doi:10.1088/1538-3873/aa6c55, ADS Link
- [202] Berriman, G.B., Good, J.C., Laity, A.C., Kong, M., 2008, In: Argyle, R.W., Bunclark, P.S., Lewis, J.R. (eds.) Astronomical Data Analysis Software and Systems XVII, vol. 394 of Astronomical Society of the Pacific Conference Series, 83, ADS Link
- [203] Berry, D.S., Warren-Smith, R.F., Jenness, T., 2016, Astronomy and Computing, 15, 33 (arXiv:1602.06681), doi:10.1016/j.ascom.2016.02.003

- [204] Beyer, B., Jones, C., Petoff, J., Murphy, N.R., 2016, *Site Reliability Engineering: How Google Runs Production Systems*, O'Reilly Media, Inc., 1st edn.
- [205] **[RTN-089]**, Bianco, F., Jones, L., 2024, Charge to the Survey Cadence Optimization Committee, URL <https://rtn-089.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-089
- [206] **[Document-35896]**, Bianco, F., coordinator, S., SC, T., 2020, MEMO on the impact of delays in pixel-level data access, URL <https://ls.st/Document-35896>,  
Vera C. Rubin Observatory Document-35896
- [207] **[PSTN-054]**, Bianco, F.B., Jones, L., Ivezić, Ž., Ritz, S., the Rubin Project Science Team, 2022, Updated estimates of the Rubin system throughput and expected LSST image depth, URL <https://pstn-054.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-054
- [208] Bickerton, S.J., Lupton, R.H., 2013, MNRAS, 431, 1275 (arXiv:1302.4764), doi:10.1093/mnras/stt244, ADS Link
- [209] Bini, D., Crosta, M.T., de Felice, F., 2003, Classical and Quantum Gravity, 20, 4695, doi:10.1088/0264-9381/20/21/009, ADS Link
- [210] Blanton, M.R., Evans, J.D., Norman, D., et al., 2023, arXiv e-prints, arXiv:2311.04272 (arXiv:2311.04272), doi:10.48550/arXiv.2311.04272, ADS Link
- [211] Bloch, J., 2001, *Writing Effective Java*, Addison-Wesley, 1st edn.
- [212] Bloom, J.S., Richards, J.W., Nugent, P.E., et al., 2012, PASP, 124, 1175 (arXiv:1106.5491), doi:10.1086/668468, ADS Link
- [213] **[LSE-489]**, Blum, B., Ivezić, Ž., Kahn, S., Krabbendam, V., 2020, Charge to the Project-Wide Documentation Working Group, URL <https://lse-489.lsst.io/>,  
Vera C. Rubin Observatory LSE-489
- [214] **[RTN-070]**, Blum, B., Coley, E., Cutri, R.F., et al., 2024, Hiring Recipes, URL <https://rtn-070.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-070
- [215] **[RDO-018]**, Blum, R., 2021, PLAN for the OPERATIONS of the VERA C. RUBIN OBSERVATORY, URL <https://docushare.lsstcorp.org/docushare/dsweb/Get/RDO-18>,  
Vera C. Rubin Observatory RDO-018

- [216] **[RDO-013]**, Blum, R., the Rubin Operations Team, 2020, Vera C. Rubin Observatory Data Policy, URL <https://ls.st/RDO-013>,  
Vera C. Rubin Observatory RDO-013
- [217] **[RTN-093]**, Blum, R., Ivezić, Ž., Marshall, P., 2025, Criteria to start the Legacy Survey of Space and Time, URL <https://rtn-093.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-093
- [218] **[LDO-13]**, Blum, R., et al., 2019, LSST Data Policy, URL <https://ls.st/LDO-13>,  
Vera C. Rubin Observatory LDO-13
- [219] **[LDO-31-OBS-RDO-018]**, Blum, R., et al., 2020, OBSOLETE NOW RDO-018 - LSST Operations Proposal , URL <https://ls.st/LDO-31-OBS-RDO-018>,  
Vera C. Rubin Observatory LDO-31-OBS-RDO-018
- [220] Boch, T., Fitzpatrick, M., Taylor, M., et al., 2012, 411 (arXiv:1110.0528),  
doi:10.5479/ADS/bib/2012ivoa.spec.0411B, ADS Link
- [221] **[IVOAMOC]**, Boch, T., Donaldson, T., Durand, D., et al., 2014, *MOC - HEALPix Multi-Order Coverage map Version 1.0*,  
, URL <http://www.ivoa.net/documents/MOC/>
- [222] Bohlender, D.A., Durand, D., Dowler, P. (eds.), 2009, *Astronomical Data Analysis Software and Systems XVIII*, vol. 411 of Astronomical Society of the Pacific Conference Series, ADS Link
- [223] **[PSTN-018]**, Bolton, A., 2025, Rubin Observatory Data Facilities, URL <https://pstn-018.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-018
- [224] **[RTN-086]**, Bolton, A., TBD, O., 2025, Bulk Data Transfer Policies and Procedures, URL <https://rtn-086.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-086
- [225] Bolton, A., Ciardi, D., Olsen, K., 2016, Datasphere 2023, URL <http://dx.doi.org/10.5281/zenodo.51772>,  
Presented at the LSST OIR workshop, Tucson, May 2016
- [226] Bombrun, A., Lindegren, L., Holl, B., Jordan, S., 2010, A&A, 516, A77, doi:10.1051/0004-6361/200913503, ADS Link



- [227] Bombrun, A., Lindegren, L., Hobbs, D., et al., 2012, *Astronomy and Astrophysics*, 538, A77, doi:10.1051/0004-6361/201117904
- [228] **[PSTN-016]**, Bond, T.W., 2019, LSST Camera Integration and Tests, URL <https://pstn-016.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-016
- [229] Bonnarel, F., Fernique, P., Bienaymé, O., et al., 2000, *A&AS*, 143, 33, doi:10.1051/aas:2000331, ADS Link
- [230] Booch, G., Rumbaugh, J., Jacobson, I., 2005, *The Unified Modeling Language User Guide*, Addison-Wesley Professional, 2nd edn.
- [231] de Boor, C., 2001, *A Practical Guide to Splines*, Springer, revised edn.
- [232] Borncamp, D., Lim, P.L., 2016, *Satellite Detection in Advanced Camera for Surveys/Wide Field Channel Images*, Tech. rep., STScI, ADS Link
- [233] Borne, K., Becla, J., Davidson, I., Szalay, A., Tyson, J.A., 2008, In: Bailer-Jones, C.A.L. (ed.) *American Institute of Physics Conference Series*, vol. 1082 of American Institute of Physics Conference Series, 347–351 (arXiv:0811.0167), doi:10.1063/1.3059074, ADS Link
- [234] Borne, K., Accomazzi, A., Bloom, J., et al., 2009, In: *astro2010: The Astronomy and Astrophysics Decadal Survey*, vol. 2010, P6 (arXiv:0909.3892), doi:10.48550/arXiv.0909.3892, ADS Link
- [235] Borne, K.D., Jacoby, S., Carney, K., et al., 2009, In: *astro2010: The Astronomy and Astrophysics Decadal Survey*, vol. 2010, P7 (arXiv:0909.3895), doi:10.48550/arXiv.0909.3895, ADS Link
- [236] Bosch, J., 2015, Correcting sensor systematics in DM, URL <https://indico.bnl.gov/getFile.py/access?contribId=11&resId=1&materialId=slides&confId=1604>,  
Presented at LSST Weak Lensing Science: A Workshop on the Impact of the Last Kiloparsec
- [237] Bosch, J., 2015, Data management status, URL <http://dx.doi.org/10.5281/zenodo.47334>,  
Presented at the DEC 2015 Fall Meeting, Argonne National Laboratory

- [238] **[DMTN-038]**, Bosch, J., 2015, Measurement of Blended Objects in LSST, URL <https://dmtn-038.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-038
- [239] Bosch, J., 2016, LSST Classes, as AstroPy Spin-Off Candidates, URL <http://dx.doi.org/10.5281/zenodo.48435>,  
Presented at LSST/Astropy Summit, March 2016, Seattle
- [240] **[DMTN-015]**, Bosch, J., 2016, Flavors of Coadds, URL <https://dmtn-015.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-015
- [241] **[DMTN-023]**, Bosch, J., 2017, Pipeline Command-Line Drivers, URL <https://dmtn-023.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-023
- [242] **[LDM-513]**, Bosch, J., 2017, Proposal for Deblender Outputs as Level 2 Data Products, URL <https://ls.st/LDM-513>,  
Vera C. Rubin Observatory LDM-513
- [243] **[LDM-562]**, Bosch, J., 2017, Data Management System (DMS) Level 2 System Requirements, URL <https://ldm-562.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-562
- [244] **[DMTN-073]**, Bosch, J., 2018, The Gen3 Butler Registry Schema, URL <https://dmtn-073.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-073
- [245] **[DMTN-175]**, Bosch, J., 2021, Design sketch for a pipetask overhaul, URL <https://dmtn-175.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-175
- [246] **[DMTN-220]**, Bosch, J., 2022, Middleware Support for Campaign Definition and Management, URL <https://dmtn-220.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-220
- [247] **[DMTN-172]**, Bosch, J., 2023, Multi-Stage Image Characterization and Calibration for DRP, URL <https://dmtn-172.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-172
- [248] **[DMTN-196]**, Bosch, J., 2023, Practical, nearly-proper image subtraction, yet again, URL <https://dmtn-196.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-196

- [249] **[DMTN-249]**, Bosch, J., 2023, Revisiting division of responsibilities in Butler components, URL <https://dmtn-249.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-249
- [250] **[DMTN-271]**, Bosch, J., 2023, Butler management of quantum graph storage and execution, URL <https://dmtn-271.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-271
- [251] **[DMTN-167]**, Bosch, J., 2024, Policies and Conventions for Organizing Gen3 Data Repositories, URL <https://dmtn-167.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-167
- [252] **[DMTN-291]**, Bosch, J., 2024, DM Plans for Wavelength-Dependent PSFs and Astrometry, URL <https://dmtn-291.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-291
- [253] **[Document-15298]**, Bosch, J., Gee, P., Owen, R., Jurić, M., 2013, LSST DM S13 Report: Shapre Measurement Plans and Prototypes, URL <https://ls.st/Document-15298>,  
Vera C. Rubin Observatory Document-15298
- [254] Bosch, J., Armstrong, R., Bickerton, S., et al., 2018, PASJ, 70, S5 (arXiv:1705.06766), doi:10.1093/pasj/psx080, ADS Link
- [255] **[DMTR-51]**, Bosch, J., Chiang, H.F., Gower, M., et al., 2018, LDM-503-2 (HSC Reprocessing) Test Report, URL <https://dmtr-51.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-51
- [256] Bosch, J., AlSayyad, Y., Armstrong, R., et al., 2019, In: Teuben, P.J., Pound, M.W., Thomas, B.A., Warner, E.M. (eds.) Astronomical Data Analysis Software and Systems XXVII, vol. 523 of Astronomical Society of the Pacific Conference Series, 521, doi:10.48550/arXiv.1812.03248, ADS Link
- [257] **[DMTN-129]**, Bosch, J., Lupton, R., Slater, C., 2019, Crowded Field Photometry in LSST Data Release Production, URL <https://dmtn-129.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-129
- [258] **[LDM-534]**, Bosch, J., Chiang, H.F., Gower, M., Swinbank, J.D., 2021, LSST Level 2 System Test Specification, URL <https://ldm-534.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-534

- [259] **[DMTN-205]**, Bosch, J., Jenness, T., Gower, M., Salnikov, A., 2022, Tracking Provenance in Butler, URL <https://dmtn-205.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-205
- [260] **[PSTN-020]**, Bosch, J.F., 2019, LSST Data Release Processing, URL <https://pstn-020.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-020
- [261] **[DMTN-251]**, Bosch, J.F., 2024, A New Approach to LSST's Image Data Models, URL <https://dmtn-251.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-251
- [262] **[DMTN-289]**, Bosch, J.F., 2024, Caching Database Content in Butler, URL <https://dmtn-289.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-289
- [263] **[DMTN-294]**, Bosch, J.F., 2024, File Formats and Layouts for Cell-based Coadds, URL <https://dmtn-294.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-294
- [264] **[DMTN-303]**, Bosch, J.F., 2024, Writeable Butlers for Science Users, URL <https://dmtn-303.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-303
- [265] **[PSTN-019]**, Bosch, J.F., 2025, The LSST Science Pipelines Software: Optical Survey Pipelined Reduction and Analysis Environment, URL <https://pstn-019.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-019
- [266] **[DMTN-282]**, Bosch, J.F., Jenness, T., Salnikov, A., Lust, N.B., Allbery, R., 2024, Butler Client/Server Design Meeting October 2023, URL <https://dmtn-282.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-282
- [267] **[SITCOMTN-131]**, Boutigny, D., 2024, Monitor coupling in M1M3 VMS system and TMA drives together, URL <https://sitcomtn-131.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-131
- [268] **[SITCOMTN-101]**, Boutigny, D., Ferguson, P.S., Jeremie, A., 2024, Investigation into vibrations in the M1M3 surrogate on the TMA due to the Fan Coil Units, URL <https://sitcomtn-101.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-101

- [269] **[SITCOMTN-105]**, Boutigny, D., Kang, Y., MacBride, S., Quint, B.C., 2024, Compare TMA balancing data from previous balancing events with the next events, URL <https://sitcomtn-105.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-105
- [270] Bradley, J., 1727, Royal Society of London Philosophical Transactions Series I, 35, 637, ADS Link
- [271] Breivik, K., Connolly, A.J., Ford, K.E.S., et al., 2022, arXiv e-prints, arXiv:2208.02781 (arXiv:2208.02781), doi:10.48550/arXiv.2208.02781, ADS Link
- [272] Bretagnon, P., 1982, A&A, 114, 278, ADS Link
- [273] Bretagnon, P., Francou, G., 1988, A&A, 202, 309, ADS Link
- [274] Brett, D.R., West, R.G., Wheatley, P.J., 2004, MNRAS, 353, 369 (arXiv:astro-ph/0408118), doi:10.1111/j.1365-2966.2004.08093.x, ADS Link
- [275] Britton, M.C., 2004, In: Craig, S.C., Cullum, M.J. (eds.) Modeling and Systems Engineering for Astronomy, vol. 5497 of Proc. SPIE, 290–300, doi:10.1117/12.552316, ADS Link
- [276] Brooks, F.P., 1982, *The Mythical Man-Month: Essays on Software Engineering*, ADS Link
- [277] Brown, A.G.A., 2005, In: Turon, C., O’Flaherty, K.S., Perryman, M.A.C. (eds.) ESA SP-576: The Three-Dimensional Universe with Gaia, 377–+, ADS Link
- [278] Brown, M.J.I., Moustakas, J., Smith, J.D.T., et al., 2014, ApJS, 212, 18 (arXiv:1312.3029), doi:10.1088/0067-0049/212/2/18, ADS Link
- [279] Brown, S., 2010, *Characterisation and Mitigation of Radiation Damage on the Gaia Astrometric Field*, Ph.D. thesis, Institute of Astronomy, University of Cambridge, Madingley Road, Cambridge, CB3 0HA, United Kingdom
- [280] de Bruijne, J., 2004,  
private communication
- [281] de Bruijne, J., Jordi, C., 2004, URL <http://gaia.am.ub.es/PWG/common/instrumGAI2.html>,  
private communication
- [282] Brumfit, J., 2002, *Java Coding Standard and Guidelines for the Herschel Common Science System*, Tech. rep., ESTEC,  
HSCDT/TN009

- [283] Bucciarelli, B., Taff, L.G., Lattanzi, M.G., 1993, *J. Statist. Comput. Simul.*, 48, 29
- [284] Bucciarelli, B., Lattanzi, M.G., Taff, L.G., 1994, *ApJ*, 433, 831, doi:10.1086/174692, ADS Link
- [285] Budavári, T., Szalay, A.S., 2008, *ApJ*, 679, 301 (arXiv:0707.1611), doi:10.1086/587156, ADS Link
- [286] Burke, D.L., Rykoff, E.S., Allam, S., et al., 2018, *AJ*, 155, 41 (arXiv:1706.01542), doi:10.3847/1538-3881/aa9f22, ADS Link
- [287] Burrows, M., 2006, In: *Proceedings of the 7th Symposium on Operating Systems Design and Implementation, OSDI '06*, 335–350, USENIX Association, Berkeley, CA, USA, URL <http://dl.acm.org/citation.cfm?id=1298455.1298487>
- [288] Burt, D., 2003, *Gaia Technology Demonstrator: AF CCD DESIGN REPORT*, Tech. rep., e2v, GAIA-E2V-RP-020
- [289] Bus, S.J., Binzel, R.P., 2002, *Icarus*, 158, 106, doi:10.1006/icar.2002.6857, ADS Link
- [290] Bus, S.J., Binzel, R.P., 2002, *Icarus*, 158, 146, doi:10.1006/icar.2002.6856, ADS Link
- [291] Bus, S.J., Binzel, R.P., 2002, *Icarus*, 158, 106
- [292] Busonero, D., Gai, M., Gardiol, D., Lattanzi, M.G., Loreggia, D., 2006, *A&A*, 449, 827 (arXiv:astro-ph/0511572), doi:10.1051/0004-6361:20054180, ADS Link
- [293] **[DMTR-102]**, Butler, M., 2019, LDM-503-8b (Small Scale CCOB Data Access) Test Plan and Report, URL <https://dmtr-102.lsst.io/>, Vera C. Rubin Observatory Data Management Test Report DMTR-102
- [294] **[DMTR-121]**, Butler, M., 2019, LDM-503-8 Spectrograph Data Acquisition Test Plan and Report, URL <https://dmtr-121.lsst.io/>, Vera C. Rubin Observatory Data Management Test Report DMTR-121
- [295] **[DMTR-171]**, Butler, M., 2020, LDM-503-6: ComCam Interface Verification Readiness Test Plan and Report, URL <https://dmtr-171.lsst.io/>, Vera C. Rubin Observatory Data Management Test Report DMTR-171
- [296] **[DMTR-181]**, Butler, M., 2020, LDM-503-10: DAQ Validation Test Plan and Report, URL <https://dmtr-181.lsst.io/>, Vera C. Rubin Observatory Data Management Test Report DMTR-181

- [297] **[DMTR-182]**, Butler, M., 2020, LDM-503-10b: Large Scale CCOB Data Access Test Plan and Report, URL <https://dmtr-182.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-182
- [298] **[DMTR-61]**, Butler, M., Parsons, J., 2018, Ldm-503-04 and Idm-503-04b (raw image archiving service) test report, URL <https://ls.st/DMTR-61>,  
Vera C. Rubin Observatory DMTR-61
- [299] **[LDM-538]**, Butler, M., Parsons, J., Gower, M., 2021, LSST DM Raw Image Archiving Service Test Specification, URL <https://ldm-538.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-538
- [300] Butler, N.R., Bloom, J.S., 2011, AJ, 141, 93 (arXiv:1008.3143), doi:10.1088/0004-6256/141/3/93, ADS Link
- [301] Buton, C., Copin, Y., Aldering, G., et al., 2013, A&A, 549, A8 (arXiv:1210.2619), doi:10.1051/0004-6361/201219834, ADS Link
- [302] **[LPM-191]**, Calabrese, D., 2017, Travel Policy, URL <https://ls.st/LPM-191>,  
Vera C. Rubin Observatory LPM-191
- [303] **[RTN-055]**, Calderón, J., 2023, Study of the Linearity of the CCDs of the Vera C. Rubin Observatory, URL <https://rtn-055.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-055
- [304] Campaign Storage, Campaign Storage, URL <http://campaignstorage.com/>
- [305] Cardelli, J.A., Clayton, G.C., Mathis, J.S., 1989, ApJ, 345, 245, doi:10.1086/167900, ADS Link
- [306] **[SQR-024]**, Carlin, J., 2018, Enabling flake8 testing and Travis CI for existing DM repos, URL <https://sqr-024.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-024
- [307] **[DMTR-201]**, Carlin, J., 2020, LVV-P65 Fall 2019 Pipelines Release Acceptance Test Campaign Test Plan and Report, URL <https://dmtr-201.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-201
- [308] **[DMTR-251]**, Carlin, J., 2020, Characterization Metric Report: Science Pipelines Version 20.0.0, URL <https://dmtr-251.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-251

- [309] **[DMTR-261]**, Carlin, J., 2020, LVV-P71: Science Pipelines Release 20.0.0 Acceptance Test Campaign Test Plan and Report, URL <https://dmtr-261.lsst.io/>, Vera C. Rubin Observatory Data Management Test Report DMTR-261
- [310] **[DMTR-281]**, Carlin, J., 2020, Characterization Metric Report: Science Pipelines Version 21.0.0, URL <https://dmtr-281.lsst.io/>, Vera C. Rubin Observatory Data Management Test Report DMTR-281
- [311] **[LDM-742]**, Carlin, J., 2020, Vera C. Rubin Observatory DM Infrastructure Verification Document, URL <https://ldm-742.lsst.io/>, Vera C. Rubin Observatory Data Management Controlled Document LDM-742
- [312] **[LDM-752]**, Carlin, J., 2020, Vera C. Rubin Observatory DM Science Verification Document, URL <https://ldm-752.lsst.io/>, Vera C. Rubin Observatory Data Management Controlled Document LDM-752
- [313] **[DMTR-311]**, Carlin, J., 2021, Characterization Metric Report: Science Pipelines Version 22.0.0, URL <https://dmtr-311.lsst.io/>, Vera C. Rubin Observatory Data Management Test Report DMTR-311
- [314] **[DMTR-271]**, Carlin, J., 2022, LDM-GEN3: Gen 3 Butler Acceptance Testing Test Plan and Report, URL <https://dmtr-271.lsst.io/>, Vera C. Rubin Observatory Data Management Test Report DMTR-271
- [315] **[DMTR-351]**, Carlin, J., 2022, Characterization Metric Report: Science Pipelines Version 23.0.0, URL <https://dmtr-351.lsst.io/>, Vera C. Rubin Observatory Data Management Test Report DMTR-351
- [316] **[DMTR-371]**, Carlin, J., 2023, LVV-P99: Data Management Acceptance Test Campaign 1 Test Plan and Report, URL <https://dmtr-371.lsst.io/>, Vera C. Rubin Observatory Data Management Test Report DMTR-371
- [317] **[DMTR-391]**, Carlin, J., 2023, Characterization Metric Report: Science Pipelines Version 24.1.0, URL <https://dmtr-391.lsst.io/>, Vera C. Rubin Observatory Data Management Test Report DMTR-391
- [318] **[DMTR-392]**, Carlin, J., 2023, Characterization Metric Report: Science Pipelines Version 25.0.0, URL <https://dmtr-392.lsst.io/>, Vera C. Rubin Observatory Data Management Test Report DMTR-392



- [319] **[DMTR-401]**, Carlin, J., 2024, LVV-P106: Data Management Acceptance Test Campaign, Fall 2023 Test Plan and Report, URL <https://dmtr-401.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-401
- [320] **[DMTR-421]**, Carlin, J., 2024, Characterization Metric Report: Science Pipelines Version 26.0.0, URL <https://dmtr-421.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-421
- [321] **[DMTR-431]**, Carlin, J., 2024, Characterization Metric Report: Science Pipelines Version 27.0.0, URL <https://dmtr-431.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-431
- [322] **[DMTR-441]**, Carlin, J., 2024, LVV-P128 LDM-503-19 (All P1a and 1b DM requirements verified) Test Plan and Report, URL <https://dmtr-441.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-441
- [323] **[LDM-753]**, Carlin, J., 2024, Vera C. Rubin Observatory DM Science Verification Document, URL <https://ldm-753.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-753
- [324] **[DMTR-412]**, Carlin, J., 2025, LVV-P117: LDM-503-19a (All P1a DM requirements verified) Test Plan and Report, URL <https://dmtr-412.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-412
- [325] **[DMTR-451]**, Carlin, J., 2025, Characterization Metric Report: Science Pipelines Version 28.0.0, URL <https://dmtr-451.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-451
- [326] **[SCTR-116]**, Carlin, J., 2025, System-level Science Verification Acceptance Test Campaign: Photometric Calibration Test Plan and Report, URL <https://sctr-116.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Report SCTR-116
- [327] **[DMTR-191]**, Carlin, J., Krughoff, K.S., Comoretto, G., 2019, Characterization Metric Report: Science Pipelines Version 19.0.0, URL <https://dmtr-191.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-191
- [328] **[Document-13760]**, Carlson, E., 2017, Travel Request Instructions for AURA Employees, URL <https://ls.st/Document-13760>,  
Vera C. Rubin Observatory Document-13760

- [329] **[Document-13762]**, Carlson, E., 2017, LSST Travel Summary Report Template, URL <https://ls.st/Document-13762>,  
Vera C. Rubin Observatory Document-13762
- [330] Carrasco Kind, M., Brunner, R., 2013, TPZ: Trees for Photo-Z, Astrophysics Source Code Library (ascl:1304.011), ADS Link
- [331] Carrasco Kind, M., Brunner, R.J., 2013, MNRAS, 432, 1483 (arXiv:1303.7269), doi:10.1093/mnras/stt574, ADS Link
- [332] Carrasco Kind, M., Brunner, R.J., 2014, MNRAS, 441, 3550 (arXiv:1404.6442), doi:10.1093/mnras/stu827, ADS Link
- [333] Casertano, S., Hut, P., 1985, ApJ, 298, 80, doi:10.1086/163589, ADS Link
- [334] **[DMTN-126]**, (chair), Y.A., Daniel, S., Dubois-Felsmann, G., et al., 2020, Image Display Working Group Report, URL <https://dmtn-126.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-126
- [335] Chamberlin D., B.R., 1974, *SEQL: A Structured English Query Language*, Tech. rep., IBM research laboratory, URL <http://faculty.cse.tamu.edu/yurttas/PL/DBL/docs/sequel-1974.pdf>
- [336] Chambers, K.C., 2005, In: Seidelmann, P.K., Monet, A.K.B. (eds.) *Astrometry in the Age of the Next Generation of Large Telescopes*, vol. 338 of *Astronomical Society of the Pacific Conference Series*, 134, ADS Link
- [337] Chang, F., Dean, J., Ghemawat, S., et al., 2008, *ACM Trans. Comput. Syst.*, 26, 4:1, doi:10.1145/1365815.1365816
- [338] **[RTN-043]**, Charles, E., Villarreal, S., Mueller, F., 2023, Campaign management system design and prototype, URL <https://rtn-043.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-043
- [339] Chattopadhyay, B., Lin, L., Liu, W., et al., 2011, In: *Proceedings of VLDB*, vol. 4, 1318–1327, URL <https://research.google.com/pubs/pub37200.html>
- [340] **[DMTN-170]**, Chiang, H.F., 2021, Ingesting reprocessed HSC catalog data to Qserv at NCSA, URL <https://dmtn-170.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-170

- [341] **[RTN-024]**, Chiang, H.F., Dubois, R., 2023, Routine HSC/DC2 Processing at SLAC as early demonstrator, URL <https://rtn-024.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-024
- [342] **[DMTN-088]**, Chiang, H.F., Johnson, M.W.G., 2018, As-is HSC Reprocessing, URL <https://dmtn-088.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-088
- [343] **[DMTN-157]**, Chiang, H.F., Lim, K.T., 2020, Report of Google Cloud Proof of Concept 2020, URL <https://dmtn-157.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-157
- [344] **[DMTN-160]**, Chiang, H.F., Thrush, S., 2020, S18 HSC PDR1 reprocessing, URL <https://dmtn-160.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-160
- [345] **[DMTR-31]**, Chiang, H.F., Daues, G., Thrush, S., The NCSA Team, 2017, S17B HSC PDR1 Reprocessing Report, URL <https://ls.st/DMTR-31>,  
Vera C. Rubin Observatory DMTR-31
- [346] **[DMTN-137]**, Chiang, H.F., Bektesevic, D., the AWS-PoC team, 2020, AWS Proof of Concept Project Report, URL <https://dmtn-137.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-137
- [347] **[RTN-028]**, Chiang, J., 2022, Computing resource estimates for running the DRP pipeline at NERSC and on the SLAC SDF, URL <https://rtn-028.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-028
- [348] **[RTN-088]**, Chiang, J., O'Mullane, W., 2024, L3 - USDF ready for LSSTCam processing, URL <https://rtn-088.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-088
- [349] Chorier, P., Tribolet, P., Destéfánis, G., 2006, In: Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, vol. 6206 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 620601, doi:10.1117/12.669128, ADS Link
- [350] **[SITCOMTN-017]**, Christopher W. Stubbs and Patrick J. Ingraham, 2021, SIT-Com Image Quality Team Description, URL <https://sitcomtn-017.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-017

- [351] Ciardi, D., 2016, Large Synoptic Survey Telescope and Synergies with the VO, URL [http://wiki.ivoa.net/internal/IVOA/InterOpMay2016Focus/LSST\\_IVOA\\_20160506c.pdf](http://wiki.ivoa.net/internal/IVOA/InterOpMay2016Focus/LSST_IVOA_20160506c.pdf),  
Presentation at the Northern Spring IVOA Meeting, South Africa
- [352] **[LDM-482]**, Ciardi, D., Dubois-Felsmann, G., 2016, Data Access Policy for the Data Management Prototype DAC, URL <https://ls.st/LDM-482>,  
Vera C. Rubin Observatory LDM-482
- [353] Ciardi, D.R., 2016, LSST and Synergies with the VO, URL <http://dx.doi.org/10.5281/zenodo.44635>,  
Talk presented at the US Virtual Observatory Alliance Annual Meeting held at the Annual Astronomical Society meeting 227.
- [354] **[LDM-492]**, Ciardi, D.R., Wu, X., Dubois-Felsmann, G., 2016, A Vision for the Science User Interface and Tools, URL <https://ls.st/LDM-492>,  
Vera C. Rubin Observatory LDM-492
- [355] **[SITCOMTN-123]**, Cipriano, L.T.S., 2024, TMA Capacitor Bank discharge vs Acceleration profiles, URL <https://sitcomtn-123.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-123
- [356] Claeskens, J.F., Smette, A., Vandenbulcke, L., Surdej, J., 2006, MNRAS, 367, 879, doi:10.1111/j.1365-2966.2006.10024.x, ADS Link
- [357] **[SITCOMTN-002]**, Claver, C., 2020, Performance Assessment of the LSST Startracker, URL <https://sitcomtn-002.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-002
- [358] **[SCTR-81]**, Claver, C., 2023, LVV-P100: TMA Pointing and Tracking Verification Test Plan and Report, URL <https://sctr-81.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Report SCTR-81
- [359] **[LSE-39]**, Claver, C., Dubois-Felsmann, G., 2010, LSST Document Tree, URL <https://ls.st/LSE-39>,  
Vera C. Rubin Observatory LSE-39
- [360] **[LSE-79]**, Claver, C., The LSST Commissioning Planning Team, 2017, System AI&T and Commissioning Plan, URL <https://ls.st/LSE-79>,  
Vera C. Rubin Observatory LSE-79

- [361] **[LSE-17]**, Claver, C., Angeli, G., Selvy, B., 2016, Systems Engineering Management Plan, URL <https://ls.st/LSE-17>,  
Vera C. Rubin Observatory LSE-17
- [362] **[SITCOMTN-005]**, Claver, C., Bauer, A., Bechtol, K., et al., 2024, Construction Completeness and Operations Readiness Criteria, URL <https://sitcomtn-005.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-005
- [363] **[LSE-509]**, Claver, C.C., Ingraham, P., 2022, SIT-Com Management Plan, URL <https://lse-509.lsst.io/>,  
Vera C. Rubin Observatory LSE-509
- [364] **[PSTN-004]**, Claver, C.F., 2019, EXAMPLE: LSST Observatory System Operations Readiness Report, URL <https://pstn-004.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-004
- [365] **[PSTN-033]**, Claver, C.F., 2019, Active Optics Performance with LSST Commissioning Camera, URL <https://pstn-033.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-033
- [366] **[PSTN-034]**, Claver, C.F., 2019, LSST Active Optics Performance with the LSST Science Camera, URL <https://pstn-034.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-034
- [367] **[PSTN-041]**, Claver, C.F., 2019, The LSST Science Platform as a Commissioning Tool, URL <https://pstn-041.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-041
- [368] **[PSTN-042]**, Claver, C.F., 2020, Commissioning Science Data Quality Analysis Tools, Methods and Procedures, URL <https://pstn-042.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-042
- [369] **[LSE-29]**, Claver, C.F., The LSST Systems Engineering Integrated Project Team, 2017, LSST System Requirements (LSR), URL <https://ls.st/LSE-29>,  
Vera C. Rubin Observatory LSE-29
- [370] **[LSE-30]**, Claver, C.F., The LSST Systems Engineering Integrated Project Team, 2018, Observatory System Specifications (OSS), URL <https://ls.st/LSE-30>,  
Vera C. Rubin Observatory LSE-30
- [371] Claver, C.F., Sweeney, D.W., Tyson, J.A., et al., 2004, In: Oschmann, J.M., Jr. (ed.) Ground-based Telescopes, vol. 5489 of Proc. SPIE, 705–716, doi:10.1117/12.561728, ADS Link

- [372] Claver, C.F., Dubois-Felsmann, G.P., Delgado, F., et al., 2010, In: American Astronomical Society Meeting Abstracts #215, vol. 215 of American Astronomical Society Meeting Abstracts, 401.02, ADS Link
- [373] Claver, C.F., Chandrasekharan, S., Liang, M., et al., 2012, *Prototype pipeline for LSST wavefront sensing and reconstruction*, vol. 8444 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 84444P, doi:10.1117/12.926472
- [374] Claver, C.F., Selvy, B.M., Angeli, G., et al., 2014, In: Angeli, G.Z., Dierickx, P. (eds.) *Modeling, Systems Engineering, and Project Management for Astronomy VI*, vol. 9150 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 0, doi:10.1117/12.2056781, ADS Link
- [375] Colangelo, G., 2004, *Gaia System Requirements Document for Technical Assistance & Definition Phase*, Tech. rep., ESA, Gaia-SRC-001, Issue 1.0
- [376] Collins, J., 2001, *Good to Great: Why Some Companies Make the Leap...And Others Don't*, HarperCollins, URL <http://books.google.es/books?id=Q7ja95uwUT4C>
- [377] **[DMTN-106]**, Comoretto, G., 2019, DM Release Process, URL <https://dmtn-106.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-106
- [378] **[DMTN-110]**, Comoretto, G., 2019, Conda Environment Proposal for Science Pipelines, URL <https://dmtn-110.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-110
- [379] **[DMTN-174]**, Comoretto, G., 2020, Rubin-Env Integration with DM Build Tools, URL <https://dmtn-174.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-174
- [380] **[DMTN-140]**, Comoretto, G., 2021, Documentation Automation for the Verification and Validation of Rubin Observatory Software, URL <https://dmtn-140.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-140
- [381] **[DMTN-178]**, Comoretto, G., 2021, Docsteady Usecases for Rubin Observatory Constructions, URL <https://dmtn-178.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-178

- [382] **[LDM-692]**, Comoretto, G., 2021, DM Verification Control Document, URL <https://ldm-692.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-692
- [383] Comoretto, G., Gallegos, J., Els, S., et al., 2012, In: Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, vol. 8449 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, doi:10.1117/12.926797, ADS Link
- [384] **[LDM-672]**, Comoretto, G., Guy, L.P., O'Mullane, W., et al., 2019, LSST Software Release Management, URL <https://ldm-672.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-672
- [385] Comoretto, G., Guy, L.P., O'Mullane, W., et al., 2020, In: Angeli, G.Z., Dierickx, P. (eds.) Modeling, Systems Engineering, and Project Management for Astronomy IX, vol. 11450 of Proc. SPIE, 114500E, International Society for Optics and Photonics, SPIE, URL <https://doi.org/10.1117/12.2561604>, doi:10.1117/12.2561604
- [386] Connolly, A., 2002, Data Management for the LSST,  
Invited talk. Paper not submitted to proceedings.
- [387] Connolly, A., 2016, Surveying the Sky with the LSST: Software as the instrument of the Next Decade, URL <http://dx.doi.org/10.5281/zenodo.56737>,  
Plenary talk at the SPIE Astronomical Telescopes and Instrumentation Conference, Edinburgh, UK
- [388] Connolly, A., Boroson, T.A., 2002, In: Quinn, P.J. (ed.) Observatory Operations to Optimize Scientific Return III, vol. 4844 of Proc. SPIE, 225–231, doi:10.1117/12.460742, ADS Link
- [389] Connolly, A., LSST Team, 2002, In: American Astronomical Society Meeting Abstracts, vol. 201 of American Astronomical Society Meeting Abstracts, 134.05, ADS Link
- [390] **[PSTN-038]**, Connolly, A.J., 2020, Science Validation of LSST Alert Processing, URL <https://pstn-038.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-038
- [391] Connolly, A.J., Smith, I., Krughoff, K.S., Gibson, R., 2011, In: Evans, I.N., Accomazzi, A., Mink, D.J., Rots, A.H. (eds.) Astronomical Data Analysis Software and Systems XX, vol. 442 of Astronomical Society of the Pacific Conference Series, 443, ADS Link

- [392] Connolly, A.J., Angeli, G.Z., Chandrasekharan, S., et al., 2014, In: Angeli, G.Z., Dierickx, P. (eds.) Modeling, Systems Engineering, and Project Management for Astronomy VI, vol. 9150 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 14, doi:10.1117/12.2054953, ADS Link
- [393] **[ITTN-015]**, Constanzo, J., 2020, Wireless Integration with NOIRLabs , URL <https://ittn-015.lsst.io/>,  
Vera C. Rubin Observatory ITTN-015
- [394] **[ITTN-049]**, Constanzo, J., 2021, Internet Edge Firewall Design, URL <https://ittn-049.lsst.io/>,  
Vera C. Rubin Observatory ITTN-049
- [395] **[ITTN-050]**, Constanzo, J., 2021, Long-Haul Network Architecture, URL <https://ittn-050.lsst.io/>,  
Vera C. Rubin Observatory ITTN-050
- [396] **[ITTN-075]**, Constanzo, J., 2024, Rubin IPsec Tunnels, URL <https://ittn-075.lsst.io/>,  
Vera C. Rubin Observatory ITTN-075
- [397] **[ITTN-076]**, Constanzo, J., 2024, Rubin Pixel Zone, URL <https://ittn-076.lsst.io/>,  
Vera C. Rubin Observatory ITTN-076
- [398] **[SCTR-71]**, Corlies, L., 2022, LVV-P98: Verification of EPO Program Test Plan and Report, URL <https://sctr-71.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Report SCTR-71
- [399] Corporation, O., 2006, *Installing Oracle RAC 10g on Linux x86*, Tech. rep., Oracle
- [400] **[ITTN-016]**, Corral, L., 2020, Wi-Fi Infrastructure High-Level Design (HLD), URL <https://ittn-016.lsst.io/>,  
Vera C. Rubin Observatory ITTN-016
- [401] **[ITTN-017]**, Corral, L., 2020, VoIP Infrastructure High-Level Design (HLD), URL <https://ittn-017.lsst.io/>,  
Vera C. Rubin Observatory ITTN-017
- [402] **[ITTN-018]**, Corral, L., 2020, Network Infrastructure High-Level Design (HLD), URL <https://ittn-018.lsst.io/>,  
Vera C. Rubin Observatory ITTN-018



- [403] **[ITTN-023]**, Corral, L., 2020, Cisco ISE Cluster Deployment, URL <https://ittn-023.lsst.io/>,  
Vera C. Rubin Observatory ITTN-023
- [404] Núñez Corrales, S., Cragin, M., White (Wonders), A., et al., 2018, doi:10.13140/RG.2.2.31543.78249
- [405] **[SITCOMTN-132]**, Cortes, P., 2024, TopBox Control Update, URL <https://sitcomtn-132.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-132
- [406] Coster, A., Pankratius, V., Lind, F., Erickson, P., Semeter, J., 2014, In: Proceedings of the 27th International Technical Meeting of The Satellite Division of the Institute of Navigation (ION GNSS+ 2014), 1213–1221, URL <https://www.ion.org/publications/abstract.cfm?articleID=12273>
- [407] **[TSTN-018]**, Coughlin, E., 2020, AT CSC Overview, URL <https://tstn-018.lsst.io/>,  
Vera C. Rubin Observatory TSTN-018
- [408] **[TSTN-003]**, Coughlin, E., Ribeiro, T., Reuter, M., Bovill, R., 2020, Conda development guide., URL <https://tstn-003.lsst.io/>,  
Vera C. Rubin Observatory TSTN-003
- [409] Coughlin, M.W., Deustua, S., Guyonnet, A., et al., 2018, In: Observatory Operations: Strategies, Processes, and Systems VII, vol. 10704 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 1070420 (arXiv:1806.02422), doi:10.1117/12.2309582, ADS Link
- [410] **[SITCOMTN-111]**, Crenshaw, J.F., 2024, Notes on Wavefront Estimation, URL <https://sitcomtn-111.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-111
- [411] Cropper, M., Rosen, S., 2006, Spectra extraction, URL [http://wwwhip.obspm.fr/gaia/cu6/workshop\\_2/CU6\\_w2\\_Cropper\\_extraction.pdf](http://wwwhip.obspm.fr/gaia/cu6/workshop_2/CU6_w2_Cropper_extraction.pdf),  
CU6 Workshop2
- [412] Crosta, M.T., 2003, *Methods of Relativistic Astrometry for the analysis of astrometric data in the Solar System gravitational field*, Ph.D. thesis, Università di Padova
- [413] Crosta, M.T., Mignard, F., 2005, In: Turon, C., O’Flaherty, K.S., Perryman, M.A.C. (eds.) The Three-Dimensional Universe with Gaia, vol. 576 of ESA Special Publication, 281–+, ADS Link

- [414] Crosta, M.T., Mignard, F., 2006, *Classical and Quantum Gravity*, 23, 4853 (arXiv:astro-ph/0512359), doi:10.1088/0264-9381/23/15/006, ADS Link
- [415] **[Document-11019]**, Crotts, A., 2011, Standard Candle Relations and Photo-diversity of Type Ia Supernovae, URL <https://ls.st/Document-11019>, Vera C. Rubin Observatory Document-11019
- [416] Cuby, J.G., Bottini, D., Picat, J.P., 1998, In: D’Odorico, S. (ed.) *Optical Astronomical Instrumentation*, vol. 3355 of *Proc. SPIE*, 36–47, doi:10.1117/12.316769, ADS Link
- [417] Cudre-Mauroux, P., Kimura, H., Lim, K.T., et al., 2009, *Proc. VLDB Endow.*, 2, 1534, URL <http://dx.doi.org/10.14778/1687553.1687584>, doi:10.14778/1687553.1687584
- [418] **[SITCOMTN-119]**, Dagoret-Campagne, S., 2024, Three years of atmospheric parameters above Rubin-LSST site from MERRA2 database, URL <https://sitcomtn-119.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-119
- [419] Dahlen, T., Mobasher, B., Faber, S.M., et al., 2013, *ApJ*, 775, 93 (arXiv:1308.5353), doi:10.1088/0004-637X/775/2/93, ADS Link
- [420] **[SMTN-006]**, Daniel, S., Kalmbach, B., 2016, Generating the CatSim Bright Stars Catalog, URL <https://smtn-006.lsst.io/>, Vera C. Rubin Observatory Simulations Team Technical Note SMTN-006
- [421] DataTag, Datatag, research & technological development for a data transatlantic grid, <http://datatag.web.cern.ch/datatag/project.html>, URL <http://datatag.web.cern.ch/datatag/project.html>
- [422] **[DMTN-060]**, Daues, G., 2018, Distributed Data Management and File Transfer Systems, URL <https://dmtn-060.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-060
- [423] **[DMTN-089]**, Daues, G., Chiang, H.F., 2018, Notes on Singularity, URL <https://dmtn-089.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-089
- [424] de Bruijne, J., Kohley, R., Prusti, T., 2010, In: *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, vol. 7731 of *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, doi:10.1117/12.862062, ADS Link

- [425] de Bruijne, J.H.J., Lammers, U., Perryman, M.A.C., 2005, In: C. Turon, K. S. O’Flaherty, & M. A. C. Perryman (ed.) The Three-Dimensional Universe with Gaia, vol. 576 of ESA Special Publication, 67–+, ADS Link
- [426] de Felice, F., Preti, G., 2006, Classical and Quantum Gravity, 23, 5467, doi:10.1088/0264-9381/23/18/001, ADS Link
- [427] de Felice, F., Lattanzi, M.G., Vecchiato, A., Bernacca, P.L., 1997, In: R. M. Bonnet, E. Høg, P. L. Bernacca, L. Emiliani, A. Blaauw, C. Turon, J. Kovalevsky, L. Lindegren, H. Hassan, M. Bouffard, B. Strim, D. Heger, M. A. C. Perryman, & L. Woltjer (ed.) Hipparcos - Venice ’97, vol. 402 of ESA Special Publication, 767–770, ADS Link
- [428] de Felice, F., Lattanzi, M.G., Vecchiato, A., Bernacca, P.L., 1998, A&A, 332, 1133, ADS Link
- [429] de Felice, F., Bucciarelli, B., Lattanzi, M.G., Vecchiato, A., 2001, A&A, 373, 336, doi:10.1051/0004-6361:20010499, ADS Link
- [430] de Felice, F., Crosta, M.T., Vecchiato, A., Lattanzi, M.G., Bucciarelli, B., 2004, ApJ, 607, 580 (arXiv:astro-ph/0401637), doi:10.1086/383244, ADS Link
- [431] de Felice, F., Vecchiato, A., Crosta, M.T., Lattanzi, M.G., Bucciarelli, B., 2006, ApJ, 653, 1552, doi:10.1051/0004-6361:20042372, ADS Link
- [432] Dean, J., Ghemawat, S., 2008, Commun. ACM, 51, 107, doi:10.1145/1327452.1327492
- [433] Deelman, E., Vahi, K., Juve, G., et al., 2015, Future Generation Computer Systems, 46, 17, URL <http://pegasus.isi.edu/publications/2014/2014-fgcs-deelman.pdf>, Funding Acknowledgements: NSF ACI SDCI 0722019, NSF ACI SI2-SSI 1148515 and NSF OCI-1053575, doi:10.1016/j.future.2014.10.008
- [434] Dehnen, W., Binney, J.J., 1998, MNRAS, 298, 387 (arXiv:astro-ph/9710077), doi:10.1046/j.1365-8711.1998.01600.x, ADS Link
- [435] **[Document-28449]**, Delgado, F., 2018, Project Response to Telescope & Site Software Review Report 2018-02, URL <https://ls.st/Document-28449>, Vera C. Rubin Observatory Document-28449
- [436] Delgado, F., Reuter, M.A., 2016, In: Observatory Operations: Strategies, Processes, and Systems VI, vol. 9910 of Proc. SPIE, 991013, doi:10.1117/12.2233630, ADS Link

- [437] Delgado, F., Saha, A., Chandrasekharan, S., et al., 2014, In: Angeli, G.Z., Dierickx, P. (eds.) Modeling, Systems Engineering, and Project Management for Astronomy VI, vol. 9150 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 15, doi:10.1117/12.2056898, ADS Link
- [438] **[SITCOMTN-091]**, Dennihy, E., Shugart, A., Christensen, E., 2023, Operation of AuxTel in Survey Mode, URL <https://sitcomtn-091.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-091
- [439] DeWitt, D., 2008, MapReduce: A major step backwards, URL <https://web.archive.org/web/20090327050223/http://www.databasecolumn.com/2008/01/mapreduce-a-major-step-back.html>
- [440] DeWitt, D., 2008, MapReduce II, URL <https://web.archive.org/web/20090326224219/http://www.databasecolumn.com:80/2008/01/mapreduce-continued.html>
- [441] **[Publication-141]**, Dhital, S., et al., 2011, Science White Paper for LSST Deep-Drilling Field Observations Mapping the Milky Way's Ultracool Dwarfs, Subdwarfs, and White Dwarfs, URL <https://ls.st/Publication-141>, Vera C. Rubin Observatory Publication-141
- [442] Dierckx, P., 1995, *C and Surface Fitting with Splines*, Oxford Science Publications, Oxford University Press, paperback edn.
- [443] **[PP-22-0266]**, Directorate, N.S.A.C., 2022, Network infrastructure security guidance, URL [https://media.defense.gov/2022/Mar/01/2002947139/-1/-1/0/CTR\\_NSA\\_NETWORK\\_INFRASTRUCTURE\\_SECURITY\\_GUIDANCE\\_20220301.PDF](https://media.defense.gov/2022/Mar/01/2002947139/-1/-1/0/CTR_NSA_NETWORK_INFRASTRUCTURE_SECURITY_GUIDANCE_20220301.PDF)
- [444] **[NIST.FIPS.200]**, Division, C.S., 2006, Publication 200, minimum security requirements for federal information and information systems, URL <https://doi.org/10.6028/NIST.FIPS.200>
- [445] **[DMTN-104]**, DMLT, 2020, Data Management Detailed Product Tree, URL <https://dmtn-104.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-104
- [446] Dorigo, A., Elmer, P., Furano, F., Hanushevsky, A., 2005, WSEAS Transactions on Computers, 4, 348, URL [http://xrootd.org/presentations/xpaper3\\_cut\\_journal.pdf](http://xrootd.org/presentations/xpaper3_cut_journal.pdf)
- [447] Dossa, D., Matarazzo, C., Marshall, S., et al., 2005, In: American Astronomical Society Meeting Abstracts, vol. 37 of Bulletin of the American Astronomical Society, 1207, ADS Link

- [448] Dossa, D., Smith, R., Lambert, R., et al., 2006, In: Silva, D.R., Doxsey, R.E. (eds.) *Observatory Operations: Strategies, Processes, and Systems*, vol. 6270 of *Astronomical Telescopes and Instrumentation*, SPIE, SPIE
- [449] Dowler, P., Rixon, G., Tody, D., 2010, 327 (arXiv:1110.0497), doi:10.5479/ADS/bib/2010ivoa.spec.0327D, ADS Link
- [450] Dowler, P.D., Gaudet, S., Durand, D., et al., 2007, In: Shaw, R.A., Hill, F., Bell, D.J. (eds.) *Astronomical Data Analysis Software and Systems XVI*, vol. 376 of *Astronomical Society of the Pacific Conference Series*, 347, ADS Link
- [451] Dowler P., T.D., Rixon G., 2010, *Table Access Protocol*, Tech. rep., IVOA, REC-TAP-1.0
- [452] **[SCTR-21]**, Drass, H., 2022, LVV-P68: M2 Hexapod Functional Re-verification and Integration with SAL Test Plan and Report, URL <https://sctr-21.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Report SCTR-21
- [453] **[SITCOMTN-102]**, Drass, H., 2024, Technote Style and Writing Guide, URL <https://sitcomtn-102.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-102
- [454] **[SCTR-14]**, Drass, H., 2025, LVV-P63: Camera Hexapod Functional Re-Verification and Integration with SAL Test Plan and Report, URL <https://sctr-14.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Report SCTR-14
- [455] Drimmel, R., Spergel, D.N., 2001, *ApJ*, 556, 181, doi:10.1086/321556, ADS Link
- [456] **[DMTN-296]**, Drlica-Wagner, A., Neilsen, E., Jones, L., Ferguson, P., 2024, Calculations of Image and Catalog Depth, URL <https://dmtn-296.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-296
- [457] Drout, M.R., Chornock, R., Soderberg, A.M., et al., 2014, *ApJ*, 794, 23 (arXiv:1405.3668), doi:10.1088/0004-637X/794/1/23, ADS Link
- [458] **[RTN-057]**, Dubois, R., 2023, L2 - Ready for "DRP-like" Processing, URL <https://rtn-057.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-057
- [459] **[RTN-073]**, Dubois, R., 2024, Rules of Engagement for Accessing Data During the Embargo Period, URL <https://rtn-073.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-073

- [460] **[RTN-074]**, Dubois, R., 2024, Developing a USDF Outage Planning Board, URL <https://rtn-074.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-074
- [461] **[RTN-078]**, Dubois, R., 2024, USDF Disaster Recovery Plan, URL <https://rtn-078.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-078
- [462] **[RTN-079]**, Dubois, R., 2024, USDF Bulk Data Transfer Policy, URL <https://rtn-079.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-079
- [463] **[RTN-021]**, Dubois, R., O'Mullane, W., 2022, Data Facilities Transition Plan, URL <https://rtn-021.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-021
- [464] **[LSE-75]**, Dubois-Felsmann, G., 2011, Control System Interfaces between the Telescope and Data Management, URL <https://ls.st/LSE-75>,  
Vera C. Rubin Observatory LSE-75
- [465] **[LSE-76]**, Dubois-Felsmann, G., 2011, Infrastructure Interfaces between Summit Facility and Data Management, URL <https://ls.st/LSE-76>,  
Vera C. Rubin Observatory LSE-76
- [466] **[LSE-77]**, Dubois-Felsmann, G., 2013, Infrastructure Interfaces between Base Facility and Data Management, URL <https://ls.st/LSE-77>,  
Vera C. Rubin Observatory LSE-77
- [467] **[LSE-81]**, Dubois-Felsmann, G., 2013, LSST Science and Project Sizing Inputs, URL <https://ls.st/LSE-81>,  
Vera C. Rubin Observatory LSE-81
- [468] **[LSE-69]**, Dubois-Felsmann, G., 2014, Interface between the Camera and Data Management, URL <https://ls.st/LSE-69>,  
Vera C. Rubin Observatory LSE-69
- [469] **[LSE-130]**, Dubois-Felsmann, G., 2015, Support-Data Exchanges between Data Management and Camera, URL <https://ls.st/LSE-130>,  
Vera C. Rubin Observatory LSE-130

- [470] **[LSE-68]**, Dubois-Felsmann, G., 2015, Camera Data Acquisition Interface, URL <https://ls.st/LSE-68>,  
Vera C. Rubin Observatory LSE-68
- [471] **[LSE-140]**, Dubois-Felsmann, G., 2016, Auxiliary Instrumentation Interface between Data Management and Telescope, URL <https://ls.st/LSE-140>,  
Vera C. Rubin Observatory LSE-140
- [472] **[DMTN-055]**, Dubois-Felsmann, G., 2017, SuperTask Architecture and Design, URL <https://dmtn-055.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-055
- [473] **[DMTN-076]**, Dubois-Felsmann, G., 2018, Internet Endpoints for the Science Platform, URL <https://dmtn-076.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-076
- [474] **[DMTN-139]**, Dubois-Felsmann, G., 2019, LSST Image Service Architecture, URL <https://dmtn-139.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-139
- [475] **[DMTR-161]**, Dubois-Felsmann, G., 2020, LDM-503-10a: LSP with Authentication and TAP Test Plan and Report, URL <https://dmtr-161.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-161
- [476] **[DMTR-211]**, Dubois-Felsmann, G., 2020, DM-SUIT-8: Portal Integrated with Workspace Test Plan and Report, URL <https://dmtr-211.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-211
- [477] **[DMTN-136]**, Dubois-Felsmann, G., 2021, LSST Science Platform Portal Aspect Design and Maintenance Manual, URL <https://dmtn-136.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-136
- [478] **[DMTN-202]**, Dubois-Felsmann, G., 2021, Use cases and science requirements on a user batch facility, URL <https://dmtn-202.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-202
- [479] **[DMTR-301]**, Dubois-Felsmann, G., 2021, LDM-503-14a: RSP redeployed on the Interim Data Facility (IDF), ready for DP0.1 Test Plan and Report, URL <https://dmtr-301.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-301

- [480] **[DMTR-341]**, Dubois-Felsmann, G., 2021, LVV-P91 November 2021 Rubin Science Platform Verification Campaign Test Plan and Report Test Plan and Report, URL <https://dmtr-341.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-341
- [481] **[DMTN-105]**, Dubois-Felsmann, G., 2023, RSP Capabilities for AuxTel, Commissioning, and Early Operations, URL <https://dmtn-105.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-105
- [482] **[DMTN-186]**, Dubois-Felsmann, G., 2023, Conceptual design of a IVOA-service-availability service and associated UI, URL <https://dmtn-186.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-186
- [483] **[DMTN-187]**, Dubois-Felsmann, G., 2023, Options for the use and implementation of UWS services, URL <https://dmtn-187.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-187
- [484] **[DMTN-195]**, Dubois-Felsmann, G., 2023, Multi-image FITS convention with ASDF WCSes, URL <https://dmtn-195.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-195
- [485] **[DMTN-239]**, Dubois-Felsmann, G., 2023, Converting time-stream data to exposure/visit-indexed data, or "How to Create the Restructured EFD", URL <https://dmtn-239.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-239
- [486] **[DMTN-247]**, Dubois-Felsmann, G., 2023, Technical definition of DP0.3 (Solar System data), URL <https://dmtn-247.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-247
- [487] **[DMTN-252]**, Dubois-Felsmann, G., 2023, Convention for identifying bits in a mask/flags image in FITS, URL <https://dmtn-252.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-252
- [488] **[DMTN-257]**, Dubois-Felsmann, G., 2023, Summary of LSST Data Product Lifecycles, URL <https://dmtn-257.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-257
- [489] **[DMTN-273]**, Dubois-Felsmann, G., 2023, Felis validation and manipulation tools, URL <https://dmtn-273.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-273



- [490] **[DMTR-381]**, Dubois-Felsmann, G., 2023, LDM-503-RSPa: RSP on the Interim Data Facility (IDF) is ready for DP0.2 Test Plan and Report, URL <https://dmtr-381.lsst.io/>, Vera C. Rubin Observatory Data Management Test Report DMTR-381
- [491] **[RTN-050]**, Dubois-Felsmann, G., 2023, Technical definition of DP0.3 (Solar System data), URL <https://rtn-050.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-050
- [492] **[LSE-61]**, Dubois-Felsmann, G., Jenness, T., 2019, Data Management System (DMS) Requirements, URL <https://lse-61.lsst.io/>, Vera C. Rubin Observatory LSE-61
- [493] **[LSE-82]**, Dubois-Felsmann, G., Lim, K.T., 2013, Science and Project Sizing Inputs Explanation, URL <https://ls.st/LSE-82>, Vera C. Rubin Observatory LSE-82
- [494] **[LSE-72]**, Dubois-Felsmann, G., Schumacher, G., Selvy, B., 2014, OCS Command Dictionary for Data Management, URL <https://ls.st/LSE-72>, Vera C. Rubin Observatory LSE-72
- [495] **[LPM-231]**, Dubois-Felsmann, G., Ivezic, Z., Juric, M., 2018, LSST Data Product Categories, URL <https://lpm-231.lsst.io/>, Vera C. Rubin Observatory LPM-231
- [496] **[LDM-556]**, Dubois-Felsmann, G., Jenness, T., Bosch, J., et al., 2018, Data Management Middleware Requirements, URL <https://ldm-556.lsst.io/>, Vera C. Rubin Observatory Data Management Controlled Document LDM-556
- [497] **[LDM-554]**, Dubois-Felsmann, G., Ciardi, D., Mueller, F., Economou, F., 2019, Data Management LSST Science Platform Requirements, URL <https://ldm-554.lsst.io/>, Vera C. Rubin Observatory Data Management Controlled Document LDM-554
- [498] **[LDM-542]**, Dubois-Felsmann, G., Economou, F., Lim, K.T., et al., 2019, Science Platform Design, URL <https://ldm-542.lsst.io/>, Vera C. Rubin Observatory Data Management Controlled Document LDM-542
- [499] **[DMTN-275]**, Dubois-Felsmann, G.P., 2024, Time Series Queries in the RSP, URL <https://dmtn-275.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-275

- [500] **[DMTN-285]**, Dubois-Felsmann, G.P., 2024, Application of hscMap to full-focal-plane visualization, URL <https://dmtn-285.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-285
- [501] **[DMTN-307]**, Dubois-Felsmann, G.P., 2025, Column groups in the SDM and the RSP, URL <https://dmtn-307.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-307
- [502] **[DMTR-52]**, Dubois-Felsmann, G.P., Wu, X., 2018, LDM-503-1 (WISE Data Loaded in PDAC) Test Report, URL <https://dmtr-52.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-52
- [503] Dubois-Felsmann, G.P., Axelrod, T., Becker, A., et al., 2010, In: American Astronomical Society Meeting Abstracts #215, vol. 215 of American Astronomical Society Meeting Abstracts, 401.23, ADS Link
- [504] Dubois-Felsmann, G.P., Goldina, T., Ly, L., et al., 2016, In: American Astronomical Society Meeting Abstracts #227, vol. 227 of American Astronomical Society Meeting Abstracts, 348.06, doi:10.5281/zenodo.44653, ADS Link
- [505] **[LDM-540]**, Dubois-Felsmann, G.P., Guy, L., Carlin, J., et al., 2020, LSST Science Platform Test Specification, URL <https://ldm-540.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-540
- [506] Dyke, P., 2009, Microsoft SQL Server Project code-named 'Madison', PASS Summit Unite, URL [http://wiki.esi.ac.uk/w/files/5/5c/Dyke-Details\\_of\\_Project\\_Madison-1.pdf](http://wiki.esi.ac.uk/w/files/5/5c/Dyke-Details_of_Project_Madison-1.pdf)
- [507] EADS Astrium, 2004, *GAIA Point Spread Function and internal straylight evaluation*, Tech. rep., ESA,  
GAIASYS.NT.00134.T.ASTR
- [508] EADS Astrium, 2010, *GAIA PLM TB/TV test specification: functional and performance tests*, Tech. rep., ESA,  
GAIA.ASF.SP.PLM.00174
- [509] EADS Astrium, 2011, *Gaia Attitude- and Orbit-Control sub-System Normal Mode Final Tuning and Stability Analysis*, Tech. rep., ESA,  
GAIA.ASU.TCN.ESM.00153

- [510] Economou, F., 2014, In: Taylor, A.R., Rosolowsky, E. (eds.) *Astronomical Data Analysis Software and Systems XXIV (ADASS XXIV)*, Astronomical Society of the Pacific Conference Series
- [511] **[SQR-004]**, Economou, F., 2015, How to publish your proceedings with CoMPAAS, URL <https://sqr-004.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-004
- [512] Economou, F., 2016, Software development with distributed teams in large astronomy projects: The LSST experience (so far), URL <http://dx.doi.org/10.5281/zenodo.56342>,  
Seminar given at SKA Headquarters, Jodrell Bank, 23rd June 2016
- [513] Economou, F., 2016, The astronomer, the software engineer, and the cloud, URL <http://dx.doi.org/10.5281/zenodo.>,  
Talk at the SPIE Astronomical Telescopes and Instrumentation Conference, Edinburgh, UK
- [514] **[DMTN-016]**, Economou, F., 2016, Towards LSE-63 and beyond: A technical roadmap from QA to Level 3, URL <https://dmtn-016.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-016
- [515] **[SQR-010]**, Economou, F., 2017, SQuaRE services: An Overview, URL <https://sqr-010.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-010
- [516] **[PSTN-022]**, Economou, F., 2019, LSST Science Platform, URL <https://pstn-022.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-022
- [517] **[DMTN-173]**, Economou, F., 2020, The Observatory Logging Ecosystem, URL <https://dmtn-173.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-173
- [518] **[SQR-036]**, Economou, F., 2020, Operational models for generalist teams, URL <https://sqr-036.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-036
- [519] **[DMTN-212]**, Economou, F., 2023, The Rubin Science Platform, URL <https://dmtn-212.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-212
-

- [520] **[DMTN-278]**, Economou, F., 2024, Keep Calm and Carry On Improving Things: A sustainable model for first-rate observatory operations., URL <https://dmtn-278.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-278
- [521] **[DMTN-292]**, Economou, F., 2024, From observatory summit to the cloud: a general approach to service deployment and configuration management, URL <https://dmtn-292.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-292
- [522] **[DMTN-305]**, Economou, F., 2024, Rubin Science Platform issue tracker: roadmap and topics for further discussion, URL <https://dmtn-305.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-305
- [523] **[SQR-016]**, Economou, F., 2024, Stack release playbook, URL <https://sqr-016.lsst.io/>, Vera C. Rubin Observatory SQuaRE Technical Note SQR-016
- [524] **[SQR-087]**, Economou, F., 2024, Structured information service: preliminary notes, URL <https://sqr-087.lsst.io/>, Vera C. Rubin Observatory SQuaRE Technical Note SQR-087
- [525] **[SQR-089]**, Economou, F., 2024, Towards a metrics harness for Phalanx applications, URL <https://sqr-089.lsst.io/>, Vera C. Rubin Observatory SQuaRE Technical Note SQR-089
- [526] **[SQR-081]**, Economou, F., 2025, On Recruiting, URL <https://sqr-081.lsst.io/>, Vera C. Rubin Observatory SQuaRE Technical Note SQR-081
- [527] **[SQR-056]**, Economou, F., Allbery, R., 2021, Guidelines for gated updates for SQuaRE services (including Science Platform), URL <https://sqr-056.lsst.io/>, Vera C. Rubin Observatory SQuaRE Technical Note SQR-056
- [528] **[SQR-080]**, Economou, F., Allbery, R., 2024, Health-check notebooks organisation and mobu roadmap, URL <https://sqr-080.lsst.io/>, Vera C. Rubin Observatory SQuaRE Technical Note SQR-080
- [529] **[DMTN-207]**, Economou, F., Jenness, T., 2021, Architecture for the DM-to-EPO data export for Citizen Science projects, URL <https://dmtn-207.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-207

- [530] **[RTN-018]**, Economou, F., Sick, J., 2021, Community Forum Delivery Note, URL <https://rtn-018.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-018
- [531] **[SQR-084]**, Economou, F., Sick, J., 2024, Using Times Square for observatory reporting, URL <https://sqr-084.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-084
- [532] **[SQR-003]**, Economou, F., team, T.S., 2022, SQuaRE Overview, URL <https://sqr-003.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-003
- [533] **[SQR-018]**, Economou, F., Thornton, A., 2019, Investigations into JupyterLab as a basis for the LSST Science Platform, URL <https://sqr-018.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-018
- [534] **[LDM-522]**, Economou, F., Wood-Vasey, M., 2017, DM Science Quality Data Assurance System Conceptual Design, URL <https://ls.st/LDM-522>,  
Vera C. Rubin Observatory LDM-522
- [535] **[DMTR-11]**, Economou, F., Swinbank, J., Bosch, J., Krughoff, S., 2015, Characterization Metric Report: Science Pipelines Version 11.0 (Summer 2015), URL <https://ls.st/DMTR-11>,  
Vera C. Rubin Observatory DMTR-11
- [536] **[SQR-005]**, Economou, F., Ivezić, Ž., Jenness, T., 2016, Publication Board JIRA Project - User Note, URL <https://sqr-005.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-005
- [537] **[SQR-001]**, Economou, F., Peterson, J.M., Hoblitt, J., 2017, Git LFS Architecture Note, URL <https://sqr-001.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-001
- [538] **[DMTN-124]**, Economou, F., Krughoff, S., Fausti, A., et al., 2019, Automated Quality Control Systems, URL <https://dmtn-124.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-124
- [539] **[SQR-029]**, Economou, F., Krughoff, S., Sick, J., et al., 2019, DM-EFD prototype implementation, URL <https://sqr-029.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-029

- [540] **[SQR-035]**, Economou, F., Sick, J., Banek, C., et al., 2019, Deployment engineering for Kubernetes-based services., URL <https://sqr-035.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-035
- [541] **[DMTN-185]**, Economou, F., Dubois-Felsmann, G., Bechtol, K., et al., 2021, A Survey of Provenance, URL <https://dmtn-185.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-185
- [542] **[RTN-019]**, Economou, F., Thornton, A., Banek, C., Allbery, R., Krughoff, S., 2021, Science Platform Use for Summit Operations: Delivery Note, URL <https://rtn-019.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-019
- [543] **[SQR-061]**, Economou, F., Allbery, R., Thornton, A.J., Sick, J., 2024, Monitoring architecture for the RSP, URL <https://sqr-061.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-061
- [544] **[DMTN-109]**, Eggl, S., Jones, L., Jurić, M., 2019, LSST Asteroid Discovery Rates, URL <https://dmtn-109.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-109
- [545] EMC, 2011, *Greenplum Database 4.1 Administrator Guide*, Tech. rep., EMC Corporation, URL <http://www.greenplum.com/community/downloads/documentation/>
- [546] EMC, 2011, *Greenplum Database 4.1 Installation Guide*, Tech. rep., EMC Corporation, URL <http://www.greenplum.com/community/downloads/documentation/>
- [547] **[LSE-89]**, Emmons, B., Bauer, A., 2018, Education and Public Outreach Requirements, URL <https://ls.st/LSE-89>,  
Vera C. Rubin Observatory LSE-89
- [548] ESA, 1997, *The Hipparcos and Tycho Catalogues*, ESA,  
ESA SP-1200
- [549] ESA, 2000, *GAIA — Composition, Formation and Evolution of the Galaxy*, Tech. rep., ESA, Concept and Technology Study Report, ESA-SCI(2000)4
- [550] **[ESA/SPC(2009)6]**, ESA, 2009, *Licensing of Data Processing Software for the Science Programme*,  
ESA/SPC(2009)6

- [551] **[ECSS-M-30-01A]**, ESA Publications Division, 1999, *Organization and Conduct of Reviews*,  
ECSS-M-30-01A
- [552] **[ECSS-M-00-02A]**, ESA Publications Division, 2000, *Project Organisation*,  
ECSS-M-00-02A
- [553] **[ECSS-E-10-6a]**, ESA Publications Division, 2003, *Functional and Technical Specifications*,  
ECSS-E-10 part 6a
- [554] **[ECSS-Q-80B]**, ESA Publications Division, 2003, *Software Product Assurance*,  
ECSS-Q-80B
- [555] **[ECSS-M-10B]**, ESA Publications Division, 2003, *Project Breakdown Structures*,  
ECSS-M-10B
- [556] **[ECSS-M-20B]**, ESA Publications Division, 2003, *Project Organisation*,  
ECSS-M-20B
- [557] **[ECSS-M-30B]**, ESA Publications Division, 2003, *Project Phasing and Planning*,  
ECSS-M-30B
- [558] **[ECSS-M-40B]**, ESA Publications Division, 2003, *Space Project Management - configuration management*,  
ECSS-M-40B
- [559] **[ECSS-M-50B]**, ESA Publications Division, 2003, *Space Project Management - information/documentation management*,  
ECSS-M-50B Draft 8
- [560] **[ECSS-E-40-1B]**, ESA Publications Division, 2003, *Space engineering - Software - Part 1: Principles and requirements*,  
ECSS-E-40 Part 1B
- [561] **[ECSS-E-40-2B]**, ESA Publications Division, 2005, *Space engineering - Software - Part 2: Document Requirements Definitions*,  
ECSS-E-40 Part 2B
- [562] **[ECSS-M-ST-60C]**, ESA Publications Division, 2008, *Space project management - Cost and schedule management*,  
ECSS-M-ST-60C

- [563] **[ECSS-M-ST-10C]**, ESA Publications Division, 2008, *Space project management - Project planning and implementation*,  
ECSS-M-ST-10C
- [564] **[SITCOMTN-035]**, Esteves, J., 2022, Checking The AuxTel Pointing Model, URL <https://sitcomtn-035.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-035
- [565] **[SITCOMTN-090]**, Esteves, J., 2023, Auxtel Pinhole Observations Notes, URL <https://sitcomtn-090.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-090
- [566] **[SITCOMTN-064]**, Esteves, J.H., 2024, Startracker: Star Trails - Center Finder, URL <https://sitcomtn-064.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-064
- [567] **[SITCOMTN-065]**, Esteves, J.H., 2024, TMA 3.5 degree offset repeatability analysis, URL <https://sitcomtn-065.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-065
- [568] Evans, N.W., Belokurov, V., 2005, In: Turon, C., O’Flaherty, K.S., Perryman, M.A.C. (eds.) ESA SP-576: The Three-Dimensional Universe with Gaia, 385–+, ADS Link
- [569] Eyer, L., 1998, Ph.D. Thesis, ADS Link
- [570] Eyer, L., 2002, Acta Astronomica, 52, 241 (arXiv:astro-ph/0206074), ADS Link
- [571] Eyer, L., 2005, In: Turon, C., O’Flaherty, K.S., Perryman, M.A.C. (eds.) ESA SP-576: The Three-Dimensional Universe with Gaia, 513–+, ADS Link
- [572] Eyer, L., 2006, In: Sterken, C., Aerts, C. (eds.) Astronomical Society of the Pacific Conference Series, 15–+, ADS Link
- [573] Eyer, L., 2006, Memorie della Societa Astronomica Italiana, 77, 549 (arXiv:astro-ph/0511460), ADS Link
- [574] Eyer, L., Blake, C., 2002, In: Aerts, C., Bedding, T.R., Christensen-Dalsgaard, J. (eds.) ASP Conf. Ser. 259: IAU Colloq. 185: Radial and Nonradial Pulsations as Probes of Stellar Physics, 160–+, ADS Link
- [575] Eyer, L., Blake, C., 2005, MNRAS, 358, 30 (arXiv:astro-ph/0406333), doi:10.1111/j.1365-2966.2005.08651.x, ADS Link



- [576] Eyer, L., Cuypers, J., 2000, In: Szabados, L., Kurtz, D. (eds.) ASP Conf. Ser. 203: IAU Colloq. 176: The Impact of Large-Scale Surveys on Pulsating Star Research, 71–72, ADS Link
- [577] Eyer, L., Grenon, M., 1997, In: ESA SP-402: Hipparcos - Venice '97, 467–472, ADS Link
- [578] Eyer, L., Mignard, F., 2005, MNRAS, 361, 1136, doi:10.1111/j.1365-2966.2005.09266.x, ADS Link
- [579] Fabricius, C., Torra, J., GDAAS Algorithm Preparation Guidelines, CCB-GDAAS-002
- [580] **[TSTN-032]**, Fagrelus, P., 2022, AuxTel Illumination System Handbook, URL <https://tstn-032.lsst.io/>, Vera C. Rubin Observatory TSTN-032
- [581] **[TSTN-036]**, Fagrelus, P., 2022, AuxTel Calibration Illumination Control with Lab Jack, URL <https://tstn-036.lsst.io/>, Vera C. Rubin Observatory TSTN-036
- [582] **[SITCOMTN-049]**, Fagrelus, P., 2023, Flat Field Calibration Exposure Time Calculator, URL <https://sitcomtn-049.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-049
- [583] **[SITCOMTN-062]**, Fagrelus, P., 2023, Calibration Laser Operation, URL <https://sitcomtn-062.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-062
- [584] **[SITCOMTN-070]**, Fagrelus, P., 2023, Collimated Beam Projector (CBP) Exposure Time Calculator, URL <https://sitcomtn-070.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-070
- [585] **[SITCOMTN-086]**, Fagrelus, P., 2023, Rubin Baseline Calibration Plan, URL <https://sitcomtn-086.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-086
- [586] **[TSTN-039]**, Fagrelus, P., 2023, Calibration Laser Electronics Cabinet, URL <https://tstn-039.lsst.io/>, Vera C. Rubin Observatory TSTN-039

- [587] **[TSTN-040]**, Fagrelius, P., 2023, Tunable Laser Thermal Tests, URL <https://tstn-040.lsst.io/>,  
Vera C. Rubin Observatory TSTN-040
- [588] **[TSTN-041]**, Fagrelius, P., 2023, Adjustment of CBP Primary Mirror, URL <https://tstn-041.lsst.io/>,  
Vera C. Rubin Observatory TSTN-041
- [589] **[SITCOMTN-110]**, Fagrelius, P., 2024, TMA Performance Settings vs Capacitor Bank, URL <https://sitcomtn-110.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-110
- [590] **[TSTN-042]**, Fagrelius, P., 2024, Calibration FlatField Projector Electronics Cabinet, URL <https://tstn-042.lsst.io/>,  
Vera C. Rubin Observatory TSTN-042
- [591] **[TSTN-049]**, Fagrelius, P., 2024, Calibration Reflector, URL <https://tstn-049.lsst.io/>,  
Vera C. Rubin Observatory TSTN-049
- [592] Fankhauser, F., Tyson, J.A., Askari, J., 2023, arXiv e-prints, arXiv:2305.11123 (arXiv:2305.11123), doi:10.48550/arXiv.2305.11123, ADS Link
- [593] **[SQR-008]**, Fausti, A., 2016, SQUASH QA database, URL <https://sqr-008.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-008
- [594] **[SQR-022]**, Fausti, A., 2018, Creating new charts with the Bokeh Models API, URL <https://sqr-022.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-022
- [595] **[SQR-027]**, Fausti, A., 2018, Getting SQuaSH metrics to Honeycomb, URL <https://sqr-027.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-027
- [596] **[SQR-033]**, Fausti, A., 2019, QA Strategy Working Group recommendations for SQuaSH, URL <https://sqr-033.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-033
- [597] **[SQR-009]**, Fausti, A., 2020, The SQuaSH metrics dashboard, URL <https://sqr-009.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-009

- [598] **[SQR-031]**, Fausti, A., 2020, EFD deployment instructions, URL <https://sqr-031.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-031
- [599] **[SQR-038]**, Fausti, A., 2020, Implementation plan for the LDF EFD, URL <https://sqr-038.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-038
- [600] **[SQR-040]**, Fausti, A., 2020, The EFD Aggregator, URL <https://sqr-040.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-040
- [601] **[SQR-050]**, Fausti, A., 2021, The EFD replication service, URL <https://sqr-050.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-050
- [602] **[SQR-053]**, Fausti, A., 2021, Representing missing values in the EFD, URL <https://sqr-053.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-053
- [603] **[SQR-057]**, Fausti, A., 2021, Using Velero to back up Kubernetes resources, URL <https://sqr-057.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-057
- [604] **[SQR-058]**, Fausti, A., 2021, The EFD Transformation Service, URL <https://sqr-058.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-058
- [605] **[SQR-067]**, Fausti, A., 2022, Sasquatch: SQuaRE's Telemetry Service, URL <https://sqr-067.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-067
- [606] **[SQR-034]**, Fausti, A., 2023, EFD Operations, URL <https://sqr-034.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-034
- [607] **[SQR-068]**, Fausti, A., 2023, Sasquatch: beyond the EFD, URL <https://sqr-068.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-068
- [608] **[SQR-085]**, Fausti, A., 2024, USDF EFD storage requirements, URL <https://sqr-085.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-085

- [609] **[SQR-026]**, Fausti, A., Economou, F., Krughoff, S., 2018, Periodic report generation and publication via notebook templates, URL <https://sqr-026.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-026
- [610] **[Publication-142]**, Ferguson, H.C., 2011, Science White Paper for LSST Deep-Drilling Field Observations: LSST Deep Drilling for Galaxies, URL <https://ls.st/Publication-142>,  
Vera C. Rubin Observatory Publication-142
- [611] **[SITCOMTN-068]**, Ferguson, P., 2023, TMA slewing rates, URL <https://sitcomtn-068.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-068
- [612] **[SCTR-117]**, Ferguson, P., 2025, System-level Science Verification Acceptance Test Campaign: Sample Production Test Plan and Report, URL <https://sctr-117.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Report SCTR-117
- [613] **[SITCOMTN-081]**, Ferguson, P.S., 2024, Hardpoint oscillations during elevation slews, URL <https://sitcomtn-081.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-081
- [614] **[SITCOMTN-124]**, Ferguson, P.S., Carlin, J.L., 2025, Metrics and Plots Available in Com-Cam On-Sky Data, URL <https://sitcomtn-124.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-124
- [615] **[SITCOMTN-080]**, Ferguson, P.S., Neill, D.R., Sanmartin, D., et al., 2024, TMA torque analysis (with M1M3), URL <https://sitcomtn-080.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-080
- [616] **[DMTN-277]**, Ferguson, P.S., Rykoff, E.S., Carlin, J.L., Parejko, J.K., 2024, The Monster: a southern reference catalog with synthetic ugrizy fluxes for the Vera C. Rubin observatory, URL <https://dmtn-277.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-277
- [617] **[SITCOMTN-088]**, Ferguson, P.S., Sevilla, I., Hernández, J., 2024, Summary of M1M3 Tests, URL <https://sitcomtn-088.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-088
- [618] Fernandez, M.M., 2005, *Gaia TT&C Subsystem Analysis*, Tech. rep., ESA,  
Note prepared at request of Project team

- [619] Fernique, P., Allen, M., Boch, T., et al., 2017, HiPS - Hierarchical Progressive Survey Version 1.0, IVOA Recommendation 19 May 2017 (arXiv:1708.09704), ADS Link
- [620] Few, S., 2013, *Information Dashboard Design*, Analytics Press, 2 edn.
- [621] Fienga, A., Laskar, J., Simon, J.L., Manche, H., Gastineau, M., 2005, In: Turon, C., O’Flaherty, K.S., Perryman, M.A.C. (eds.) ESA SP-576: The Three-Dimensional Universe with Gaia, 293–+, ADS Link
- [622] Filippenko, A.V., 1982, PASP, 94, 715, doi:10.1086/131052, ADS Link
- [623] **[DMTN-045]**, Findeisen, K., 2017, PSF Fitting: Literature Overview, URL <https://dmtn-045.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-045
- [624] **[DMTN-054]**, Findeisen, K., 2017, Conventions Used by ap\_verify, URL <https://dmtn-054.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-054
- [625] **[DMTN-057]**, Findeisen, K., 2018, Integrating Verification Metrics into the LSST DM Stack, URL <https://dmtn-057.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-057
- [626] **[DMTN-098]**, Findeisen, K., 2019, Metrics Measurement Framework Design, URL <https://dmtn-098.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-098
- [627] **[DMTN-120]**, Findeisen, K., Bosch, J., 2020, Improving Extensibility in afw.image.Exposure and Replacing afw.table.io, URL <https://dmtn-120.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-120
- [628] **[DMTN-260]**, Findeisen, K., Lim, K.T., Bellm, E., Chiang, H.F., Parejko, J., 2024, Failure Modes and Error Handling for Prompt Processing, URL <https://dmtn-260.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-260
- [629] **[SITCOMTN-033]**, Fisher-Levine, M., 2022, SITCOM Developer Guide, URL <https://sitcomtn-033.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-033
- [630] **[SITCOMTN-098]**, Fisher-Levine, M., 2023, TMA Event Generation, URL <https://sitcomtn-098.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-098

- [631] **[SITCOMTN-100]**, Fisher-Levine, M., 2024, The Rapid Analysis Framework and RubinTV, URL <https://sitcomtn-100.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-100
- [632] Foley, M.J., 2011, Microsoft drops Dryad; puts its big-data bets on Hadoop, URL <http://www.zdnet.com/article/microsoft-drops-dryad-puts-its-big-data-bets-on-hadoop/>
- [633] **[NIST.800-53]**, FORCE, J.T., 2020, COMPUTER SECURITY, URL <https://doi.org/10.6028/NIST.SP.800-53r5>
- [634] Fornies-Marquina, J., Letosa, J., García-Gracia, M., Artacho, J., 1997, IEEE transactions on magnetics, 33, 1456
- [635] Förster, F., Maureira, J.C., San Martín, J., et al., 2016, ApJ, 832, 155 (arXiv:1609.03567), doi:10.3847/0004-637X/832/2/155, ADS Link
- [636] Förster, F., Cabrera-Vives, G., Castillo-Navarrete, E., et al., 2021, AJ, 161, 242 (arXiv:2008.03303), doi:10.3847/1538-3881/abe9bc, ADS Link
- [637] Fraedrich, R., Schneider, J., Westermann, R., 2009, IEEE Transactions on Visualization and Computer Graphics (Proceedings Visualization / Information Visualization 2009), 15, to appear, doi:xx.xxxx/xxxxxxxx.xxxxxxx
- [638] Freemon, D.M., 2013, arXiv e-prints, arXiv:1303.7467 (arXiv:1303.7467), doi:10.48550/arXiv.1303.7467, ADS Link
- [639] Freemon, D.M., 2014, arXiv e-prints, arXiv:1410.1939 (arXiv:1410.1939), doi:10.48550/arXiv.1410.1939, ADS Link
- [640] Freemon, D.M., Becla, J., Dubois-Felsmann, G.P., et al., 2011, In: Astronomical Data Analysis Software and Systems XXI, LSST Corporation, URL <https://www.eso.org/sci/php/meetings/adass2011/Slides/PDF/Posters/P045.pdf>
- [641] Freemon, D.M., Lim, K.T., Becla, J., Dubois-Felsman, G.P., Kantor, J., 2012, In: Radziwill, N.M., Chiozzi, G. (eds.) Software and Cyberinfrastructure for Astronomy II, vol. 8451 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 84510V, doi:10.1117/12.926596, ADS Link
- [642] **[LDM-143]**, Freemon, M., Pietrowicz, S., 2013, Site Specific Infrastructure Estimation Explanation, URL <https://lsst.lsst.org/LDM-143>,  
Vera C. Rubin Observatory LDM-143

- [643] **[LDM-144]**, Freemon, M., Pietrowicz, S., Alt, J., 2016, Site Specific Infrastructure Estimation Model, URL <https://ls.st/LDM-144>, Vera C. Rubin Observatory LDM-144
- [644] Fried, D.L., 1966, Journal of the Optical Society of America (1917-1983), 56, 1372, ADS Link
- [645] Furnell, R., 2005, *Gaia Space/Ground Interface Control Document Volume 1: RF Interface*, Tech. rep., ESA/ESOC, GAIA-ESC-ICD-515
- [646] Furnell, R., 2005, *Gaia Space/Ground Interface Control Document Volume 2: Generic Packet Structure*, Tech. rep., ESA/ESOC, GAIA-ESC-ICD-516
- [647] **[DMTR-141]**, G. Comoretto on behalf of Science Pipelines Team, 2019, Characterization Metric Report: Science Pipelines Version 18.0.0, URL <https://dmtr-141.lsst.io/>, Vera C. Rubin Observatory Data Management Test Report DMTR-141
- [648] Gai, M., Busonero, D., Gardiol, D., Loreggia, D., 2005, In: Turon, C., O’Flaherty, K.S., Perryman, M.A.C. (eds.) ESA SP-576: The Three-Dimensional Universe with Gaia, 433–+, ADS Link
- [649] Gaia Acronyms, URL <http://www.rssd.esa.int/Ageneral/Projects/GAIA/paramdb/glossary.txt>, Gaia Acronyms List
- [650] Gaia Collaboration, Brown, A.G.A., Vallenari, A., et al., 2016, A&A, 595, A2 (arXiv:1609.04172), doi:10.1051/0004-6361/201629512
- [651] Gaia Collaboration, Prusti, T., de Bruijne, J.H.J., et al., 2016, A&A, 595, A1 (arXiv:1609.04153), doi:10.1051/0004-6361/201629272, ADS Link
- [652] Gamma, E., Helm, R., Johnson, R., Vlissides, J., 1994, *Design Patterns: Elements of Reusable Object-Oriented Software*, Addison-Wesley Professional Computing Series
- [653] **[DMTN-029]**, Gaponenko, I., 2017, Loading SDSS Stripe82 Catalogs into PDAC, URL <https://dmtn-029.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-029

- [654] Gardiol, D., Loreggia, D., Mannu, S., et al., 2004, In: Craig, S.C., Cullum, M.J. (eds.) Modeling and Systems Engineering for Astronomy, Proc. SPIE, 461–470, doi:10.1117/12.550356, ADS Link
- [655] Gaudet, S., Hill, N., Armstrong, P., et al., 2010, In: Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, vol. 7740 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, doi:10.1117/12.858026, ADS Link
- [656] **[Publication-143]**, Gawiser, E., et al., 2011, Science White Paper for LSST Deep-Drilling Field Observations: Ultra-deep *ugrizy* Imaging to Reduce Main Survey Photo-z Systematics and to Probe Faint Galaxy Clustering, AGN, and Strong Lenses, URL <https://ls.st/Publication-143>, Vera C. Rubin Observatory Publication-143
- [657] **[DMTN-011]**, Gee, P., 2016, Testing Shear Bias Using Galsim Galaxy Simulations, URL <https://dmtn-011.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-011
- [658] **[LPM-18]**, Gessner, C., Krabbendam, V., 2014, Safety Policy, URL <https://ls.st/LPM-18>, Vera C. Rubin Observatory LPM-18
- [659] Gibson, R., 2011, In: Very Wide Field Surveys in the Light of Astro2010, University of Washington, Space Telescope Science Institute
- [660] Gibson, R.R., Ahmad, Z., Bankert, J., et al., 2011, In: Evans, I.N., Accomazzi, A., Mink, D.J., Rots, A.H. (eds.) Astronomical Data Analysis Software and Systems XX, vol. 442 of Astronomical Society of the Pacific Conference Series, 329, ADS Link
- [661] Gielesen, W., de Bruijn, D., van den Dool, T., et al., 2012, In: Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, vol. 8442 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, doi:10.1117/12.926322, ADS Link
- [662] **[Document-24920]**, Gill, R., 2018, LSST COMMUNICATIONS CODE OF CONDUCT, URL <https://ls.st/Document-24920>, Vera C. Rubin Observatory Document-24920
- [663] **[Document-28973]**, Gill, R., 2018, LSST MEETINGS CODE OF CONDUCT, URL <https://ls.st/Document-28973>, Vera C. Rubin Observatory Document-28973



- [664] Gill, R., Gracia, G., Lupton, R.H., O'Mullane, W., 2014, In: Modeling, Systems Engineering, and Project Management for Astronomy VI, vol. 9150 of SPIE, 91501E, doi:10.1117/12.2054745, ADS Link
- [665] **[RTN-081]**, Gill, R.K., 2024, Rubin Observatory Operations: Enabling collaborative ground-up budget planning across a multi-team organization, URL <https://rtn-081.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-081
- [666] Gilmore, G.F., de Boer, K.S., Favata, F., et al., 2000, In: Breckinridge, J.B., Jakobsen, P. (eds.) Proc. SPIE Vol. 4013, p. 453-472, UV, Optical, and IR Space Telescopes and Instruments, James B. Breckinridge; Peter Jakobsen; Eds., vol. 4013 of Presented at the Society of Photo-Optical Instrumentation Engineers (SPIE) Conference, 453-472, ADS Link
- [667] **[RTN-056]**, Giraldo, L., Calderon, J., Malagón, A.A.P., Lage, C., 2023, Study of the Photon Transfer Curve in the CCD detectors of the Vera C. Rubin Observatory, URL <https://rtn-056.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-056
- [668] **[SITCOMTN-097]**, Giro, E., 2023, technote, URL <https://sitcomtn-097.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-097
- [669] **[Document-37650]**, Gizis, J., Stars, Milky Way & Local Volume Science Collaboration, 2021, LSST Long-Haul Networks (LHN) End-to-end Test Plan, URL <https://lsst/Document-37650/>,  
Vera C. Rubin Observatory Document-37650
- [670] **[DMTN-127]**, Glasgow, J., Korrapati, H., 2019, Survey of Tools for LSST Client Data Distribution, URL <https://dmtn-127.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-127
- [671] Globus, Globus Transfer API Documentation, URL <https://docs.globus.org/api/transfer/>
- [672] Goldina, T., Roby, W., Wu, X., Ly, L., 2015, In: Taylor, A.R., Rosolowsky, E. (eds.) Astronomical Data Analysis Software and Systems XXIV (ADASS XXIV), vol. 495 of Astronomical Society of the Pacific Conference Series, 137, ADS Link
- [673] Gomez, A.E., Grenier, S., Udry, S., et al., 1997, In: ESA SP-402: Hipparcos - Venice '97, 621-624, ADS Link

- [674] **[ITTN-028]**, Gonzalez, I., Tapia, D., 2020, IT User Support - Remote Work, URL <https://ittn-028.lsst.io/>,  
Vera C. Rubin Observatory ITTN-028
- [675] **[ITTN-014]**, Gonzalez, I., Reinking, H., Silva, C., 2023, Computing Infrastructure, URL <https://ittn-014.lsst.io/>,  
Vera C. Rubin Observatory ITTN-014
- [676] Gonzalez-Nunez, J., 2015, In: Science Operations 2015: Science Data Management, 8, doi:10.5281/zenodo.34569, ADS Link
- [677] Gonzalez-Perez, V., Lacey, C.G., Baugh, C.M., et al., 2014, MNRAS, 439, 264 (arXiv:1309.7057), doi:10.1093/mnras/stt2410, ADS Link
- [678] **[DMTN-101]**, the Good, R.L., Malagón, A.A.P., Waters, C., 2025, Verifying LSST Calibration Data Products, URL <https://dmtn-101.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-101
- [679] **[ITTN-035]**, Goodenow, I., 2021, Move from Jira On-Premise to Atlassian Cloud, URL <https://ittn-035.lsst.io/>,  
Vera C. Rubin Observatory ITTN-035
- [680] **[ITTN-051]**, Goodenow, I., 2021, Moving Jira Software On-Premise service to Atlassian Jira Cloud, URL <https://ittn-051.lsst.io/>,  
Vera C. Rubin Observatory ITTN-051
- [681] **[LPM-101]**, Goodenow, I., McKercher, R., 2013, Tucson Site Disaster Recovery Plan, URL <https://lsst.org/LPM-101>,  
Vera C. Rubin Observatory LPM-101
- [682] Górski, K.M., Hivon, E., Banday, A.J., et al., 2005, ApJ, 622, 759 (arXiv:astro-ph/0409513), doi:10.1086/427976
- [683] Górski, K.M., Hivon, E., Banday, A.J., et al., 2005, ApJ, 622, 759 (arXiv:astro-ph/0409513), doi:10.1086/427976, ADS Link
- [684] **[SITCOMTN-137]**, Gorsuch, M.R., 2024, Getting Started with Cell-Based Coadds, URL <https://sitcomtn-137.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-137
- [685] Gosling, J., Joy, B., Steele, G., 2000, *The Java Language Specification*, Addison-Wesley, 2nd edn.

- [686] Gould, A., 2013, arXiv e-prints, arXiv:1304.3455 (arXiv:1304.3455), doi:10.48550/arXiv.1304.3455, ADS Link
- [687] **[DMTN-059]**, Gower, M., 2017, Batch Processing Facade Prototype 0.1, URL <https://dmtn-059.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-059
- [688] **[DMTN-122]**, Gower, M., Lim, K.T., 2019, Data Backbone Design, URL <https://dmtn-122.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-122
- [689] **[DMTN-123]**, Gower, M., Lim, K.T., 2019, Batch Production Services Design, URL <https://dmtn-123.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-123
- [690] **[LDM-635]**, Gower, M., Butler, M., Lim, K.T., 2019, Data Management Data Backbone Services Requirements, URL <https://ldm-635.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-635
- [691] **[DMTN-244]**, Gower, M., Kowalik, M., Lust, N., et al., 2022, Adding Workflow Management Flexibility to LSST Pipelines Execution, URL <https://dmtn-244.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-244
- [692] GPD, URL <http://www.rssd.esa.int/Gaia/paramdb>,  
Gaia Parameter Database
- [693] GPFS, IBM Spectrum Scale, URL <https://www.ibm.com/us-en/marketplace/scale-out-file-and-object-storage>
- [694] **[DMTN-231]**, Graham, M., 2023, Detection Efficiencies for diaSources., URL <https://dmtn-231.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-231
- [695] **[SITCOMTN-154]**, Graham, M., 2025, Photometric redshifts for ComCam data, URL <https://sitcomtn-154.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-154
- [696] **[RTN-002]**, Graham, M., Malagón, A.A.P., Carlin, J., et al., 2025, Community Science Use Cases, URL <https://rtn-002.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-002

- [697] Graham, M.J., Djorgovski, S.G., Donalek, C., et al., 2012, In: Peck, A.B., Seaman, R.L., Comeron, F. (eds.) Observatory Operations: Strategies, Processes, and Systems IV, vol. 8448 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 84480P (arXiv:1206.4035), doi:10.1117/12.926577, ADS Link
- [698] **[DMTN-107]**, Graham, M.L., Bellm, E.C., Slater, C.T., et al., 2020, Options for Alert Production in LSST Operations Year 1, URL <https://dmtn-107.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-107
- [699] **[DMTN-155]**, Graham, M.L., Guy, L.P., Swinbank, J., , the DM System Science Team, 2020, Interim Model for Community Support, URL <https://dmtn-155.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-155
- [700] **[DMTN-049]**, Graham, M.L., Bosch, J., Guy, L.P., , the DM System Science Team., 2022, A Roadmap to Photometric Redshifts for the LSST Object Catalog, URL <https://dmtn-049.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-049
- [701] **[DMTN-248]**, Graham, M.L., Guy, L.P., Bellm, E.C., the Data Management System Science Team, 2023, Options for Alert Packets, URL <https://dmtn-248.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-248
- [702] **[RTN-006]**, Graham, M.L., Adair, C.L., Annis, J., et al., 2024, Model for Community Science, URL <https://rtn-006.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-006
- [703] **[DMTN-065]**, Graham, M.L., AlSayyad, Y., Bechtol, K., et al., 2024, Data Management for LSST Special Programs, URL <https://dmtn-065.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-065
- [704] **[DMTN-102]**, Graham, M.L., Bellm, E., Guy, L., et al., 2024, LSST Alerts: Key Numbers, URL <https://dmtn-102.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-102
- [705] **[RTN-090]**, Graham, M.L., Lau, R.M., Guy, L.P., Bellm, E.C., 2024, Roadmap for Community Alert Filters with the ANTARES Broker, URL <https://rtn-090.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-090
- [706] **[RTN-045]**, Graham, M.L., Carlin, J.L., Adair, C.L., et al., 2025, Guidelines for User Tutorials, URL <https://rtn-045.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-045

- [707] Graham M., R.G., Morris D., 2009, *VOSpace specification*, Tech. rep., IVOA, REC-VOSpace-1.15
- [708] Graham M., R.G., Morris D., 2011, *VOSpace specification*, Tech. rep., IVOA, REC-VOSpace-2.0
- [709] Gray, J., 2006, *The Zones Algorithm for Finding Points-Near-a-Point or Cross-Matching Spatial Datasets*, Tech. Rep. MSR-TR-2006-52, Microsoft, URL <https://www.microsoft.com/en-us/research/publication/the-zones-algorithm-for-finding-points-near-a-point-or-cross-matching-spatial-datasets/>
- [710] Gray, J., Chong, W., Barclay, T., Szalay, A., vandenBerg, J., 2002, arXiv e-prints, cs/0208011 (arXiv:cs/0208011), doi:10.48550/arXiv.cs/0208011, ADS Link
- [711] Gray, J., Szalay, A.S., Thakar, A., et al., 2003, Distributed Data and Structures 4: Records of the 4th International Meeting, W. Litwin, G. Levy (eds), Paris France March 2002
- [712] Greenbaum, A., 1997, *Iterative Methods for Solving Linear Systems*, SIAM
- [713] Gregory, P.C., 2010, *Bayesian Logical Data Analysis for the Physical Sciences*, Cambridge University Press, 1 edn.
- [714] Greisen, E.W., Calabretta, M.R., 2002, A&A, 395, 1061 (arXiv:astro-ph/0207407), doi:10.1051/0004-6361:20021326
- [715] Gressler, W., DeVries, J., Hileman, E., et al., 2014, In: Stepp, L.M., Gilmozzi, R., Hall, H.J. (eds.) Ground-based and Airborne Telescopes V, vol. 9145 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 1, doi:10.1117/12.2056711, ADS Link
- [716] **[LTS-146]**, Gressler, W., Neill, D., Sebag, J., 2018, M2 Cell Assembly Specifications Document, URL <https://ls.st/LTS-146>, Vera C. Rubin Observatory LTS-146
- [717] GRIDFTP, 2005, Universal data transfer for the grid, <http://www-fp.globus.org/datagrid/deliverables/c2wpdraft3.pdf>, URL <http://www-fp.globus.org/datagrid/deliverables/C2WPdraft3.pdf>
- [718] Groom, D.E., Eberhard, P.H., Holland, S.E., et al., 2000, In: P. Amico & J. W. Beletic (ed.) Astrophysics and Space Science Library, vol. 252 of Astrophysics and Space Science Library, 201–+, ADS Link

- [719] Grossman, R., Gu, Y., Hong, X., et al., 2004, *Future Generation Computer Systems*, 21, 501, doi:10.1016/j.future.2004.10.007
- [720] **[DMTN-147]**, Gruendl, R., 2020, LDF Bulk Download Services, URL <https://dmtn-147.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-147
- [721] **[DMTR-231]**, Gruendl, R., 2020, LDM-503-11a: ComCam OPS Readiness Test Plan and Report, URL <https://dmtr-231.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-231
- [722] **[DMTN-159]**, Gruendl, R., O'Mullane, W., Blum, R., MacArthur, L., 2020, Report on Operations Rehearsal #2, URL <https://dmtn-159.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-159
- [723] **[DMTN-068]**, Gruendl, R.A., 2018, Lossy Compression WG Report, URL <https://dmtn-068.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-068
- [724] Grün, E., Zook, H.A., Fechtig, H., Giese, R., 1985, *Icarus*, 62, 244, doi:10.1016/0019-1035(85)90121-6, ADS Link
- [725] Guerrier, A., , *Software Design Document for Wavelength Calibration*, Tech. rep., ESA, GAIA-C6-TN-OPM-AG-003-1
- [726] Guerrier, A., , *Software Design Document for Apply Calibration*, Tech. rep., ESA, GAIA-C6-SP-OPM-AG-004-1
- [727] Gunn, A.G., Hall, J.C., Lockwood, G.W., Doyle, J.G., 1996, *A&A*, 305, 146, ADS Link
- [728] **[DMTN-146]**, Guy, L., 2020, Virtual Rubin Algorithms Workshop., URL <https://dmtn-146.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-146
- [729] **[DMTN-152]**, Guy, L., 2020, Rubin Algorithms Workshop - Scientific Summary, URL <https://dmtn-152.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-152
- [730] **[RTN-007]**, Guy, L., 2020, Charge to the Rubin Operations Survey Evaluation Working Group, URL <https://rtn-007.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-007

- [731] **[SITCOMTN-008]**, Guy, L., 2020, Charge to the Integration Planning Group, URL <https://sitcomtn-008.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-008
- [732] **[SITCOMTN-020]**, Guy, L., 2021, SITCOM Milestone Summary, URL <https://sitcomtn-020.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-020
- [733] **[DMTR-361]**, Guy, L., 2022, LVV-P96 LDM-503-14 Test Plan and Report, URL <https://dmtr-361.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-361
- [734] **[RTN-047]**, Guy, L., 2023, System Performance Management Plan, URL <https://rtn-047.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-047
- [735] **[SITCOMTN-087]**, Guy, L., 2023, Calibration System Milestone Summary, URL <https://sitcomtn-087.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-087
- [736] **[RTN-072]**, Guy, L., 2024, Rubin Operations Change Control Process, URL <https://rtn-072.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-072
- [737] **[RTN-075]**, Guy, L., 2024, Charge to the Rubin Telescope and Auxiliary Instrumentation Calibration Acceptance Board, URL <https://rtn-075.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-075
- [738] **[RTN-009]**, Guy, L., Roberts, A., Ivezić, Ž., 2020, Rubin Observatory Initial Key Performance Metrics, URL <https://rtn-009.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-009
- [739] **[LSE-439]**, Guy, L., Bechtol, K., Carlin, J., et al., 2021, Rubin Observatory LSST Science Validation Plan, URL <https://lse-439.lsst.io/>,  
Vera C. Rubin Observatory LSE-439
- [740] **[LDM-639]**, Guy, L., Wood-Vasey, W., Bellm, E., et al., 2022, LSST Data Management Acceptance Test Specification, URL <https://ldm-639.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-639

- [741] **[RTN-038]**, Guy, L., ..., the DM System Science Team, 2024, Rubin Science Performance Metrics, URL <https://rtn-038.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-038
- [742] **[LDM-652]**, Guy, L.P., 2019, LSST Science Platform Final Design Review, URL <https://ldm-652.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-652
- [743] **[PSTN-024]**, Guy, L.P., 2019, LSST Data Management System Verification and Validation, URL <https://pstn-024.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-024
- [744] **[DMTN-211]**, Guy, L.P., 2022, Faro: A framework for measuring the scientific performance of petascale Rubin Observatory data products, URL <https://dmtn-211.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-211
- [745] **[RTN-071]**, Guy, L.P., 2024, Proposal for implementing a Rubin GPT service, URL <https://rtn-071.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-071
- [746] **[RTN-011]**, Guy, L.P., Bechtol, K., Bellm, E., et al., 2025, Rubin Observatory Plans for an Early Science Program, URL <https://rtn-011.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-011
- [747] Guzman, J.C., Chiozzi, G., Bridger, A., Ibsen, J., 2014, In: Chiozzi, G., Radziwill, N.M. (eds.) Software and Cyberinfrastructure for Astronomy III, vol. 9152, 614 – 619, International Society for Optics and Photonics, SPIE, URL <https://doi.org/10.1117/12.2055921>,  
doi:10.1117/12.2055921
- [748] Guzman, J.C., Chiozzi, G., Bridger, A., Ibsen, J., 2014, In: Chiozzi, G., Radziwill, N.M. (eds.) Software and Cyberinfrastructure for Astronomy III, vol. 9152 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 91521P, doi:10.1117/12.2055921, ADS Link
- [749] Hamilton, W.R., 1843, In: Proceedings of the Royal Irish Academy, vol. 2, 424–434, URL <http://www.maths.tcd.ie/pub/HistMath/People/Hamilton/Quatern1/Quatern1.html>
- [750] Hamilton, W.R., 1844, In: Proceedings of the Royal Irish Academy, vol. 3, 1–16, URL <http://www.maths.tcd.ie/pub/HistMath/People/Hamilton/OnQuat/OnQuat.pdf>



- [751] Hamilton, W.R., 1847, In: Proceedings of the Royal Irish Academy, vol. 3, 1–16, URL <http://www.maths.tcd.ie/pub/HistMath/People/Hamilton/Quatern2/Quatern2.html>
- [752] Handy, C., 1993, *Understanding organizations*, Penguin Books, London, England New York, N.Y., USA
- [753] Hankins, T.L., 1980, *Sir William Rowan Hamilton*, The Johns Hopkins University Press
- [754] Hanushevsky, A., Trunov, A., Cottrell, L., 2001, In: In Proc. of the 2001 Int. Conf. on Computing in High Energy and Nuclear Physics (CHEP 2001), Beijing, URL <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.132.2288&rep=rep1>
- [755] Harrison, D.L., 2011, *Experimental Astronomy*, 31, 157 (arXiv:1107.0210), doi:10.1007/s10686-011-9240-7, ADS Link
- [756] Harrison P., R.G., 2010, *Universal Worker Service Pattern*, Tech. rep., IVOA, REC-UWS-1.0
- [757] **[DMTN-063]**, Hasan, I., Gee, P., Tyson, T., 2017, Testing the LSST DM Stack on Deep Lens Survey Data, URL <https://dmtn-063.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-063
- [758] **[RTN-087]**, Hascall, D., 2024, OpenMAINT-Jira Workflow and API Details v1.0, URL <https://rtn-087.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-087
- [759] Hassan, A., Fluke, C.J., 2011, *PASA*, 28, 150 (arXiv:1102.5123), doi:10.1071/AS10031, ADS Link
- [760] Haywood, M., Robin, A.C., Creze, M., 1997, *A&A*, 320, 428, ADS Link
- [761] Hechler, M., 2004, ESOC, private communication
- [762] Hechler, M., 2006, *GAIA Consolidated Report on Mission Analysis (CReMA)*, Tech. rep., ESA, European Space Operations Centre, GAIA-ESC-RP-0001, Issue 2.0
- [763] Hees, A., Hestroffer, D., Le Poncin-Lafitte, C., David, P., 2015, 125–131 (arXiv:1509.06868), doi:10.48550/arXiv.1509.06868, ADS Link

- [764] **[SITCOMTN-027]**, (he/him), E.P., 2022, Donut analysis for wavefront sensor verification, URL <https://sitcomtn-027.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-027
- [765] **[SITCOMTN-042]**, (he/him), E.P., 2022, Image quality contribution from uncorrected quasistatic wavefront errors, URL <https://sitcomtn-042.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-042
- [766] Helmi, A., de Zeeuw, P.T., 2000, MNRAS, 319, 657 (arXiv:astro-ph/0007166), ADS Link
- [767] **[DMTN-053]**, Hernandez, F., Boutigny, D., Tortay, L., 2017, Observations on I/O activity induced by ingestImages.py and processCcd.py, URL <https://dmtn-053.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-053
- [768] **[RTN-029]**, Hernandez, F., Boulc'h, Q.L., Bosch, J., et al., 2022, Procedure for creating a butler repository at FrDF for Data Preview 0.2, URL <https://rtn-029.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-029
- [769] **[SITCOMTN-120]**, Hernández, J., 2024, M2 Tests Index, URL <https://sitcomtn-120.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-120
- [770] Hernandez, J., Hutton, A., 2015, In: Taylor, A.R., Rosolowsky, E. (eds.) Astronomical Data Analysis Software and Systems XXIV (ADASS XXIV), vol. 495 of Astronomical Society of the Pacific Conference Series, 47, ADS Link
- [771] **[TSTN-008]**, Heyer, A., 2020, TMA User Guides, URL <https://tstn-008.lsst.io/>,  
Vera C. Rubin Observatory TSTN-008
- [772] **[TSTN-009]**, Heyer, A., 2020, Coating Chamber, URL <https://tstn-009.lsst.io/>,  
Vera C. Rubin Observatory TSTN-009
- [773] **[TSTN-011]**, Heyer, A., 2020, Technote for Andy to repurpose, URL <https://tstn-011.lsst.io/>,  
Vera C. Rubin Observatory TSTN-011
- [774] **[TSTN-005]**, Heyer, A., Coughlin, E., 2020, TSSW Documentation Guide, URL <https://tstn-005.lsst.io/>,  
Vera C. Rubin Observatory TSTN-005
- [775] Hildebrandt, H., Arnouts, S., Capak, P., et al., 2010, A&A, 523, A31 (arXiv:1008.0658), doi:10.1051/0004-6361/201014885, ADS Link

- [776] Hoblitt, J., 2015, Puppet vs jenkins: A tale of types and providers, URL <https://puppetlabs.com/presentations/puppet-vs-jenkins-tale-types-and-providers>,  
Talk presented at PuppetConf 2015, Portland
- [777] **[SQR-002]**, Hoblitt, J., 2015, Binary Science Pipeline Software Distribution, URL <https://sqr-002.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-002
- [778] **[SQR-028]**, Hoblitt, J., 2018, T&S Jenkins, URL <https://sqr-028.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-028
- [779] **[ITTN-003]**, Hoblitt, J., 2019, [Proposed] Improved Tucson Lab Network Architecture, URL <https://ittn-003.lsst.io/>,  
Vera C. Rubin Observatory ITTN-003
- [780] **[ITTN-004]**, Hoblitt, J., 2019, [Proposed] LSST On-Prem Domain Name Service (DNS), URL <https://ittn-004.lsst.io/>,  
Vera C. Rubin Observatory ITTN-004
- [781] **[ITTN-005]**, Hoblitt, J., 2019, Puppet Standards and Practices, URL <https://ittn-005.lsst.io/>,  
Vera C. Rubin Observatory ITTN-005
- [782] **[ITTN-002]**, Hoblitt, J., 2020, LSST On-Prem Deployment Platform, URL <https://ittn-002.lsst.io/>,  
Vera C. Rubin Observatory ITTN-002
- [783] **[SQR-030]**, Hoblitt, J., 2020, Jenkins Administration, URL <https://sqr-030.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-030
- [784] **[ITTN-062]**, Hoblitt, J., 2023, Foreman Playbook, URL <https://ittn-062.lsst.io/>,  
Vera C. Rubin Observatory ITTN-062
- [785] **[ITTN-066]**, Hoblitt, J., 2023, Kubernetes Policies, URL <https://ittn-066.lsst.io/>,  
Vera C. Rubin Observatory ITTN-066
- [786] **[ITTN-073]**, Hoblitt, J., 2024, Kubernetes Secrets Management, URL <https://ittn-073.lsst.io/>,  
Vera C. Rubin Observatory ITTN-073
-

- [787] **[ITTN-019]**, Hoblitt, J., Frez, R., Kollross, M., 2020, LHN Postmortem #1, URL <https://ittn-019.lsst.io/>,  
Vera C. Rubin Observatory ITTN-019
- [788] **[ITTN-011]**, Hoblitt, J., Thebo, A., Reinking, H., 2023, Bootstrapping the Deployment Platform, URL <https://ittn-011.lsst.io/>,  
Vera C. Rubin Observatory ITTN-011
- [789] Hoff, T., 2008, Skype Plans For PostgreSQL To Scale To 1 Billion Users, URL <http://highscalability.com/skype-plans-postgresql-scale-1-billion-users>
- [790] Høg, E., 1994, *A new era of global astrometry and photometry from space and ground*, Tech. rep., CUO,  
Contribution at the G. Colombo Memorial Conference : Ideas for Space Research after the Year 2000.
- [791] Høg, E., Bernacca, P.L., Emiliani, L., 1997, In: Perryman, M., Bernacca, P. (eds.) Proc. of Hipparcos Venice 97, xxvii-xxxv
- [792] Høg, E., Fabricius, C., Makarov, V.V., et al., 2000, A&A, 355, L27, ADS Link
- [793] Hogg, D.W., Lang, D., 2008, In: American Institute of Physics Conference Series, vol. 1082 of American Institute of Physics Conference Series, 331-338, doi:10.1063/1.3059072, ADS Link
- [794] Hogg, D.W., Lang, D., 2011, In: EAS Publications Series, vol. 45 of EAS Publications Series, 351-358 (arXiv:1008.0738), doi:10.1051/eas/1045059, ADS Link
- [795] Hohenkerk, C., Sinclair, A., 1985, NAO Technical Note, 63, URL <http://astro.ukho.gov.uk/data/tn/naotn63.pdf>
- [796] Holl, B., Lindegren, L., 2012, A&A, 543, A14, doi:10.1051/0004-6361/201218807, ADS Link
- [797] Holl, B., Hobbs, D., Lindegren, L., 2010, In: S. A. Klioner, P. K. Seidelmann, & M. H. Soffel (ed.) IAU Symposium, vol. 261 of IAU Symposium, 320-324, doi:10.1017/S1743921309990573, ADS Link
- [798] Holl, B., Lindegren, L., Hobbs, D., 2012, A&A, 543, A15, doi:10.1051/0004-6361/201218808, ADS Link
- [799] Holland, S.E., Groom, D.E., Palaio, N.P., Stover, R.J., Wei, M., 2003, IEEE transactions on electron devices, 50, 225

- [800] Holman, M.J., Payne, M.J., Blankley, P., Janssen, R., Kuindersma, S., 2018, AJ, 156, 135, doi:10.3847/1538-3881/aad69a, ADS Link
- [801] **[SITCOMTN-078]**, Homar, G.M., 2023, Iterative improvement of LUT through balance forces, URL <https://sitcomtn-078.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-078
- [802] **[SITCOMTN-089]**, Homar, G.M., 2023, Laser Tracker Offsets Analysis, URL <https://sitcomtn-089.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-089
- [803] **[SITCOMTN-079]**, Homar, G.M., 2024, Iterative improvement of LUT through balance forces, URL <https://sitcomtn-079.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-079
- [804] **[SITCOMTN-104]**, Homar, G.M., 2024, WET-001 - Optical State Measurement Verification Test, URL <https://sitcomtn-104.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-104
- [805] **[SITCOMTN-113]**, Homar, G.M., 2024, WET-007 - Comparison CWFS versus Other Approaches, URL <https://sitcomtn-113.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-113
- [806] **[SITCOMTN-114]**, Homar, G.M., 2024, AOS On-Sky Commissioning Tests Index, URL <https://sitcomtn-114.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-114
- [807] **[SITCOMTN-115]**, Homar, G.M., 2024, Control Loop Gains Test (CLT-002), URL <https://sitcomtn-115.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-115
- [808] **[SITCOMTN-116]**, Homar, G.M., 2024, Look-Up Table Rotator Dependence Test (LUTT-005), URL <https://sitcomtn-116.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-116
- [809] **[SITCOMTN-122]**, Homar, G.M., 2024, Laser Tracker Alignment System, URL <https://sitcomtn-122.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-122
- [810] **[SITCOMTN-129]**, Homar, G.M., 2024, Notes on Optical Feedback Controller, URL <https://sitcomtn-129.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-129

- [811] Hough, P.V.C., 1962, Method and means for recognizing complex patterns, URL <https://www.google.com/patents/US3069654>,  
US Patent 3,069,654
- [812] HPSS, HPSS – High Performance Storage Systems, URL <http://hpss-collaboration.org/>
- [813] HTCondor, HTCondor, URL <https://research.cs.wisc.edu/htcondor/index.html>
- [814] Huckle, H., 2007, *Continuum Normalisation*, Tech. rep., ESA,  
GAIA-C6-SP-MSSL-HEH-001-D
- [815] Huff, E., Mandelbaum, R., 2017, arXiv e-prints, arXiv:1702.02600 (arXiv:1702.02600),  
doi:10.48550/arXiv.1702.02600, ADS Link
- [816] **[PSTN-015]**, Huffer, M.E., 2019, LSST Camera Control System and DAQ, URL <https://pstn-015.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-015
- [817] IAU, 2001, Information Bulletin, 88,  
(errata in IAU Information Bulletin, 89)
- [818] Idreos, S., Groffen, F., Nes, N., et al., 2012, IEEE Data Eng. Bull., 35, 40, URL <http://sites.computer.org/debull/A12mar/monetdb.pdf>
- [819] Ilbert, O., Arnouts, S., McCracken, H.J., et al., 2006, A&A, 457, 841  
(arXiv:astro-ph/0603217), doi:10.1051/0004-6361:20065138, ADS Link
- [820] **[LTS-487]**, Ingraham, P., 2017, Auxiliary Telescope Spectrograph Statement of Work  
(SOW), URL <https://ls.st/LTS-487>,  
Vera C. Rubin Observatory LTS-487
- [821] **[LTS-488]**, Ingraham, P., 2017, Auxiliary Telescope Spectrograph Specifications Document,  
URL <https://ls.st/LTS-488>,  
Vera C. Rubin Observatory LTS-488
- [822] **[LSE-379]**, Ingraham, P., 2018, Auxiliary Telescope Concept of Operations, URL <https://ls.st/LSE-379>,  
Vera C. Rubin Observatory LSE-379
- [823] **[PSTN-027]**, Ingraham, P., 2020, Performance of the LSST Calibration Systems, URL  
<https://pstn-027.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-027

- [824] **[PSTN-028]**, Ingraham, P., 2020, Characterization of Atmospheric Properties with the Rubin Auxiliary Telescope, URL <https://pstn-028.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-028
- [825] **[SITCOMTN-013]**, Ingraham, P., 2021, First-look Analysis and Feedback Functionality Breakout Group Charge, URL <https://sitcomtn-013.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-013
- [826] **[SITCOMTN-015]**, Ingraham, P., 2021, Diagnosing AuxTel Image Motion and WFE non-repeatability, URL <https://sitcomtn-015.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-015
- [827] **[SITCOMTN-029]**, Ingraham, P., 2022, LATISS Filter Change Procedure, URL <https://sitcomtn-029.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-029
- [828] **[SITCOMTN-030]**, Ingraham, P., 2022, First-look Analysis and Feedback Functionality Breakout Group Charge #2, URL <https://sitcomtn-030.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-030
- [829] **[SITCOMTN-048]**, Ingraham, P., 2022, SIT-Com Documentation Workflow, URL <https://sitcomtn-048.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-048
- [830] **[TSTN-027]**, Ingraham, P., 2022, Seismic Event Recovery for the Auxiliary Telescope, URL <https://tstn-027.lsst.io/>,  
Vera C. Rubin Observatory TSTN-027
- [831] **[TSTN-015]**, Ingraham, P., Ribeiro, T., 2020, Using CWFS during operations and for collimation of the Auxiliary Telescope, URL <https://tstn-015.lsst.io/>,  
Vera C. Rubin Observatory TSTN-015
- [832] **[TSTN-024]**, Ingraham, P., Ribeiro, T., 2021, Concept of Control System Operations, URL <https://tstn-024.lsst.io/>,  
Vera C. Rubin Observatory TSTN-024
- [833] **[SITCOMTN-024]**, Ingraham, P., Stalder, B., 2021, Summit Power Reliability and Risk Evaluation Task Force Charge, URL <https://sitcomtn-024.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-024

- [834] **[SITCOMTN-019]**, Ingraham, P., Quint, B., Dennihy, E., Shugart, A., Sotuela, I., 2022, Observing Task Management Workflow Summary, URL <https://sitcomtn-019.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-019
- [835] Intersystems, 2008, Using Cache Globals, URL <http://docs.intersystems.com/documentation/cache/20082/pdfs/GGBL.pdf>
- [836] **[DMTN-297]**, Irving, D.H., 2024, Butler Databases for Community Science Users at the RSP, URL <https://dmtn-297.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-297
- [837] Isard, M., Budiu, M., Yu, Y., Birrell, A., Fetterly, D., 2007, In: Proceedings of the 2Nd ACM SIGOPS/EuroSys European Conference on Computer Systems 2007, EuroSys '07, 59–72, ACM, New York, NY, USA, doi:10.1145/1272996.1273005
- [838] Ivanova, M., Nes, N., Goncalves, R., Kersten, M., 2007, In: 19th International Conference on Scientific and Statistical Database Management (SSDBM 2007), 13, doi:10.1109/SSDBM.2007.19
- [839] Ivezic, Z., 2016, The impact of photo-z on LSST science requirements, URL <https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbXwaXR0cGhvdG96d29ya3Nob3AyMDE2fGd40jMwZDZmNWewYjhhMmY3Zjk>,  
Presented at the LSST Photo-z Workshop, Pittsburgh, April 5, 2016
- [840] **[PSTN-049]**, Ivezic, Z., 2020, Essential Performance Metrics, URL <https://pstn-049.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-049
- [841] **[PSTN-053]**, Ivezic, Z., 2022, Survey Cadence Optimization Committee’s Phase 1 Recommendation, URL <https://pstn-053.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-053
- [842] **[Document-25351]**, Ivezic, Z., Krabbendam, V., 2022, Leadership Roles, Responsibilities, Authorities and Accountabilities (R2A2s) for the Executive Committee of the Rubin Observatory Construction Projec, URL <https://lsst.org/Document-25351>,  
Vera C. Rubin Observatory Document-25351
- [843] **[DOCUMENT-27758]**, Ivezić, Ž., the LSST Project Science Team, 2018, On the Choice of LSST Flux Units, URL <https://pstn-001.lsst.io/>,  
Vera C. Rubin Observatory DOCUMENT-27758



- [844] **[PSTN-001]**, Ivezić, Ž., LSST Project Science Team, 2018, On the choice of LSST flux units, URL [PSTN-001.lsst.io](https://lsst.io),  
Vera C. Rubin Observatory PSTN-001
- [845] **[LPM-17]**, Ivezić, Ž., The LSST Science Collaboration, 2018, LSST Science Requirements Document, URL <https://lsst.org/LPM-17>,  
Vera C. Rubin Observatory LPM-17
- [846] Ivezić, Ž., Smith, J.A., Miknaitis, G., et al., 2007, *AJ*, 134, 973 (arXiv:astro-ph/0703157),  
doi:10.1086/519976, ADS Link
- [847] Ivezić, Ž., Tyson, J., Juri, M., et al., 2007, In: Valsecchi, G.B., Vokrouhlický, D. (eds.) IAU Symposium, vol. 236 of IAU Symposium, 353–362, doi:10.1017/S1743921307003420,  
ADS Link
- [848] Ivezić, Ž., Axelrod, T., Becker, A.C., et al., 2008, In: Bailer-Jones, C.A.L. (ed.) American Institute of Physics Conference Series, vol. 1082 of American Institute of Physics Conference Series, 359–365 (arXiv:0810.5155), doi:10.1063/1.3059076, ADS Link
- [849] Ivezić, Ž., Connolly, A.J., VanderPlas, J.T., Gray, A., 2014, *Statistics, Data Mining, and Machine Learning in Astronomy*, Princeton University Press, ADS Link
- [850] Ivezić, Ž., Kahn, S.M., Tyson, J.A., et al., 2019, *ApJ*, 873, 111 (arXiv:0805.2366),  
doi:10.3847/1538-4357/ab042c, ADS Link
- [851] Ivezić, Ž., Kahn, S.M., Tyson, J.A., et al., 2019, *ApJ*, 873, 111 (arXiv:0805.2366),  
doi:10.3847/1538-4357/ab042c, ADS Link
- [852] Ivezić, Z., et al., 2011, Parametrization and classification of 20 billion lsst objects: Lessons from sdss, SLAC-PUB-14716, URL <http://www.osti.gov/scitech/biblio/1029150/>,  
Republished version of 2008AIPC.1082..359I
- [853] J.A. Zensus, P.N., P.J. Napier, 1995, *Very Long Baseline Interferometry and the VLBA*, Astronomical Society of the Pacific, asp conference series vol. 82 edn.
- [854] Jacobson, I., Booch, G., Rumbaugh, J., 1999, *The Unified Software Development Process*, Addison-Wesley Professional, 1st edn.
- [855] **[LSE-131]**, Jacoby, S., Emmons, B., Sely, B., 2017, Interface between data management and education and public outreach, URL <https://lsst.org/LSE-131>,  
Vera C. Rubin Observatory LSE-131

- [856] Jagatheesan, A.S., Kantor, J., Plante, R., et al., 2010, In: Radziwill, N.M., Bridger, A. (eds.) *Software and Cyberinfrastructure for Astronomy*, vol. 7740 of Proc. SPIE, 1, doi:10.1117/12.857812, ADS Link
- [857] **[DMTN-022]**, Jammes, F., 2016, Tracks to optimize Qserv containers deployment and orchestration, URL <https://dmtn-022.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-022
- [858] **[DMTN-032]**, Jammes, F., 2017, Qserv Data Placement, URL <https://dmtn-032.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-032
- [859] **[DMTN-166]**, Jammes, F., 2023, Ingesting DC2 data inside Qserv at IN2P3, URL <https://dmtn-166.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-166
- [860] Janesick, J.R., 2001, *Scientific charge-coupled devices*, SPIE Optical Engineering Press, ADS Link
- [861] Jarvis, M., Meyers, J., Leget, P.F., Davis, C., 2021, Piff: PSFs In the Full FOV, Astrophysics Source Code Library, record ascl:2102.024, ADS Link
- [862] Jedicke, R., Magnier, E.A., Kaiser, N., Chambers, K.C., 2007, In: Valsecchi, G.B., Vokrouhlický, D., Milani, A. (eds.) *Near Earth Objects, our Celestial Neighbors: Opportunity and Risk*, vol. 236 of IAU Symposium, 341–352, doi:10.1017/S1743921307003419, ADS Link
- [863] Jee, M.J., Tyson, J.A., 2011, PASP, 123, 596 (arXiv:1011.1913), doi:10.1086/660137, ADS Link
- [864] **[DMTN-001]**, Jenness, T., 2015, Porting the stack to OS X El Capitan, URL <https://dmtn-001.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-001
- [865] Jenness, T., 2016, LSST Data Management Code Overview, URL <http://dx.doi.org/10.5281/zenodo.48434>,  
Presented at LSST/Astropy Summit, March 2016, Seattle
- [866] Jenness, T., 2016, Investigating interoperability of the LSST Data Management software stack with Astropy, URL <http://dx.doi.org/10.5281/zenodo.48434>,  
Talk at the SPIE Astronomical Telescopes and Instrumentation Conference, Edinburgh, UK

- [867] Jenness, T., 2016, In: Python in Astronomy 2016, 27, doi:10.5281/zenodo.48406, ADS Link
- [868] **[SQR-012]**, Jenness, T., 2016, Migrating LSST tests to py.test, URL <https://sqr-012.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-012
- [869] **[SQR-014]**, Jenness, T., 2016, Porting the LSST DM Stack to Python 3, URL <https://sqr-014.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-014
- [870] **[DMTN-000]**, Jenness, T., 2017, The LSST Data Management Technical Note Series, URL <https://dmtn-000.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-000
- [871] **[PSTN-044]**, Jenness, T., 2019, Geobelt satellites and LSST, URL <https://psn-044.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-044
- [872] **[DMTN-133]**, Jenness, T., 2020, OCS driven data processing, URL <https://dmtn-133.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-133
- [873] **[DMTN-176]**, Jenness, T., 2021, A client/server Butler, URL <https://dmtn-176.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-176
- [874] **[DMTN-229]**, Jenness, T., 2022, The Vera C. Rubin Observatory Data Butler and Pipeline Execution System, URL <https://dmtn-229.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-229
- [875] **[DMTN-177]**, Jenness, T., 2023, Limiting Registry Access During Workflow Execution, URL <https://dmtn-177.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-177
- [876] **[DMTN-203]**, Jenness, T., 2023, Tracking Metrics in Butler, URL <https://dmtn-203.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-203
- [877] **[DMTN-204]**, Jenness, T., 2023, Data Annotations in Butler, URL <https://dmtn-204.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-204

- [878] **[DMTN-206]**, Jenness, T., 2023, Simplifying Pipeline Execution APIs, URL <https://dmtn-206.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-206
- [879] **[DMTN-242]**, Jenness, T., 2023, Butler Client/Server Revisited, URL <https://dmtn-242.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-242
- [880] **[DMTN-288]**, Jenness, T., 2024, Converting Rubin Observatory's Data Butler to a client/server architecture, URL <https://dmtn-288.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-288
- [881] **[DMTN-295]**, Jenness, T., 2024, The Rubin Build Engineering Team, URL <https://dmtn-295.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-295
- [882] **[DMTN-302]**, Jenness, T., 2024, IVOA Identifier Usage at the Rubin Observatory, URL <https://dmtn-302.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-302
- [883] **[DMTN-283]**, Jenness, T., Irving, D.H., 2024, Butler Client/Server Implementation and Deployment Strategies, URL <https://dmtn-283.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-283
- [884] Jenness, T., LSST Data Management Team, 2016, In: American Astronomical Society Meeting Abstracts #227, vol. 227 of American Astronomical Society Meeting Abstracts, 348.15, doi:10.5281/zenodo.44634, ADS Link
- [885] Jenness, T., LSST Data Management Team, 2017, In: Lorente, N.P.F., Shortridge, K., Wayth, R. (eds.) Astronomical Data Analysis Software and Systems XXV, vol. 512 of Astronomical Society of the Pacific Conference Series, 297 (arXiv:1511.06790), doi:10.48550/arXiv.1511.06790, ADS Link
- [886] **[LDM-512]**, Jenness, T., O'Mullane, W., 2017, Data Management Risk Assessment Process, URL <https://ls.st/LDM-512>,  
Vera C. Rubin Observatory LDM-512
- [887] **[Report-142]**, Jenness, T., Swinbank, J., Krughoff, S., Dubois-Felsmann, G., Ciardi, D., 2015, Hot-Wiring the Transient Universe IV, URL <https://ls.st/Report-142>,  
Report on the Hot-Wiring the Transient Universe IV conference held in Santa Barbara in May 2015. Report-142

- [888] Jenness, T., Bosch, J., Owen, R., et al., 2016, In: Software and Cyberinfrastructure for Astronomy IV, vol. 9913 of Proc. SPIE, 99130G, doi:10.1117/12.2231313, ADS Link
- [889] **[LDM-592]**, Jenness, T., Bosch, J., Gower, M., et al., 2018, Data Access Use Cases, URL <https://ldm-592.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-592
- [890] Jenness, T., Economou, F., Findeisen, K., et al., 2018, In: Software and Cyberinfrastructure for Astronomy V, vol. 10707 of Proc. SPIE, 1070709, doi:10.1117/12.2312157, ADS Link
- [891] Jenness, T., Bosch, J., Schellart, P., et al., 2019, 523, 653 (arXiv:1812.08085), doi:10.48550/arXiv.1812.08085, ADS Link
- [892] Jenness, T., Bosch, J., Schellart, P., et al., 2019, In: Teuben, P.J., Pound, M.W., Thomas, B.A., Warner, E.M. (eds.) Astronomical Data Analysis Software and Systems XXVII, vol. 523 of Astronomical Society of the Pacific Conference Series, 653 (arXiv:1812.08085), doi:10.48550/arXiv.1812.08085, ADS Link
- [893] Jenness, T., Bosch, J.F., Salnikov, A., et al., 2022, In: Software and Cyberinfrastructure for Astronomy VII, vol. 12189 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 1218911 (arXiv:2206.14941), doi:10.1117/12.2629569, ADS Link
- [894] **[DMTN-300]**, Jenness, T., Voutsinas, S., Dubois-Felsmann, G.P., Salnikov, A., 2024, Implementing SIAv2 Over Rubin Observatory's Data Butler, URL <https://dmtn-300.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-300
- [895] Jessen, N.C., Nørgaard-Nielsen, H.U., Stevenson, T., et al., 2004, In: J. Antebi and D. Lemke (ed.) Astronomical Structures and Mechanisms Technology, vol. 5495 of Proc. SPIE, 23–30, doi:10.1117/12.550023, ADS Link
- [896] **[LDM-643]**, Johnson, M., Gruendl, R.A., 2020, Proposed DM OPS Rehearsals, URL <https://ldm-643.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-643
- [897] Jones, L., 2009, Fast Transients to Long Period Variables: Timescales in LSST, URL [http://www.cacr.caltech.edu/hotwired2/program/presentations/jones\\_hotwiring.pdf](http://www.cacr.caltech.edu/hotwired2/program/presentations/jones_hotwiring.pdf),  
Presented at Hot-Wiring the Transient Universe 2, Santa Cruz

- [898] **[LSE-180]**, Jones, L., 2013, Level 2 Photometric Calibration for the LSST Survey, URL <https://ls.st/LSE-180>,  
Vera C. Rubin Observatory LSE-180
- [899] **[SMTN-001]**, Jones, L., 2016, Simulating Moving Object Detections, URL <https://smtn-001.lsst.io/>,  
Vera C. Rubin Observatory Simulations Team Technical Note SMTN-001
- [900] **[SMTN-003]**, Jones, L., 2017, Trailing Losses for Moving Objects, URL <https://smtn-003.lsst.io/>,  
Vera C. Rubin Observatory Simulations Team Technical Note SMTN-003
- [901] **[SMTN-009]**, Jones, L., 2017, Minimoons and LSST, URL <https://smtn-009.lsst.io/>,  
Vera C. Rubin Observatory Simulations Team Technical Note SMTN-009
- [902] **[SMTN-012]**, Jones, L., 2020, Solar System Small Body Metrics, URL <https://smtn-012.lsst.io/>,  
Vera C. Rubin Observatory Simulations Team Technical Note SMTN-012
- [903] **[SMTN-013]**, Jones, L., 2020, Microlensing and TDE Metrics, URL <https://smtn-013.lsst.io/>,  
Vera C. Rubin Observatory Simulations Team Technical Note SMTN-013
- [904] **[SMTN-014]**, Jones, L., 2020, DESC Static Science (WFD) Metrics, URL <https://smtn-014.lsst.io/>,  
Vera C. Rubin Observatory Simulations Team Technical Note SMTN-014
- [905] **[SMTN-002]**, Jones, L., 2022, Calculating LSST limiting magnitudes and SNR, URL <https://smtn-002.lsst.io/>,  
Vera C. Rubin Observatory Simulations Team Technical Note SMTN-002
- [906] **[PSTR-001]**, Jones, L., 2024, LVV-P105: Survey Strategy Acceptance Test Campaign Test Plan and Report, URL <https://pstr-001.lsst.io/>,  
Vera C. Rubin Observatory PSTR-001
- [907] **[PSTR-002]**, Jones, L., 2025, LVV-P120 Survey Scheduler Acceptance Test Campaign Part 2 Test Plan and Report, URL <https://pstr-002.lsst.io/>,  
Vera C. Rubin Observatory PSTR-002
- [908] Jones, L., Brown, M., Ivezić, Z., et al., 2015, In: AAS/Division for Planetary Sciences Meeting Abstracts #47, vol. 47 of AAS/Division for Planetary Sciences Meeting Abstracts, 312.22, ADS Link

- [909] **[PSTN-051]**, Jones, R.L., 2021, Survey Strategy and Cadence Choices for the Vera C. Rubin Observatory Legacy Survey of Space and Time (LSST), URL <https://pstn-051.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-051
- [910] Jones, R.L., Padmanabhan, N., Ivezić, Z., et al., 2010, In: Observatory Operations: Strategies, Processes, and Systems III, vol. 7737 of Proc. SPIE, 77371F, doi:10.1117/12.857743, ADS Link
- [911] Jones, R.L., Yoachim, P., Chandrasekharan, S., et al., 2014, In: Peck, A.B., Benn, C.R., Seaman, R.L. (eds.) Observatory Operations: Strategies, Processes, and Systems V, vol. 9149 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 0, doi:10.1117/12.2056835, ADS Link
- [912] Jones, R.L., Slater, C.T., Moeyens, J., et al., 2018, *Icarus*, 303, 181 (arXiv:1711.10621), doi:10.1016/j.icarus.2017.11.033, ADS Link
- [913] Jordan, P.R., Jordan, D., Jerram, P.A., Pralong, J., Swindells, I., 2014, In: Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, vol. 9154 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 91540M, doi:10.1117/12.2069423, ADS Link
- [914] Jordi, C., Høg, E., Brown, A.G.A., de Bruijne, J., 2006, *Gaia spectrophotometers: optimization study*, Tech. rep., ESA, GAIA-CH-TN-UB-CJ-037
- [915] Jordi, C., Høg, E., Brown, A.G.A., et al., 2006, *MNRAS*, 367, 290 (arXiv:astro-ph/0512038), doi:10.1111/j.1365-2966.2005.09944.x, ADS Link
- [916] Jordi, C., Gebran, M., Carrasco, J.M., et al., 2010, *A&A*, 523, A48 (arXiv:1008.0815), doi:10.1051/0004-6361/201015441, ADS Link
- [917] Juric, M., 2012, Large synoptic survey telescope: The era of petascale survey astronomy, URL <http://physics.illinois.edu/events/detail.asp?id=23401858&startDate=9/11/2012>,  
Astrophysics colloquium at University of Illinois, 9/11/2012
- [918] **[DMTN-034]**, Juric, M., 2012, Summer 2012 LSST DM Data Challenge, URL <https://dmtn-034.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-034

- [919] Juric, M., 2013, LSST: Introduction and Data Management Requirements, URL <http://wiki.ivoa.net/internal/IVOA/InterOpMay2013/juric.pdf>,  
Presented at the IVOA Interoperability Meeting, Heidelberg, Germany
- [920] Juric, M., 2013, Enabling LSST Science: LSST Data Products, URL <https://project.lsst.org/meetings/lsst-europe-2013/sites/default/files/lsstcam13-juric.pdf>,  
LSST@Europe: The Path to Science, Cambridge
- [921] Juric, M., 2013, LSST: Entering the Era of Petascale Astronomy, URL <http://research.majuric.org/wp/wp-content/uploads/2013/11/LSST-Northwestern-Final.pdf>,  
Northwestern University CIERA Interdisciplinary Colloquium, 12 November 2013
- [922] Juric, M., 2013, LSST Data Management Entering the Era of Petascale Optical Astronomy, URL <http://www.slideserve.com/daphne/lsst-survey-data-products-mario-juric-lsst-data-management-project-scientist-radio-astronomy>  
Radio Astronomy in the LSST Era - Charlottesville, VA - May 6-8, 2013
- [923] Juric, M., 2014, LSST/DM: Building a Next Generation Survey Data Processing System, URL <http://www.slideshare.net/MarioJuric/lsstdm-building-a-next-generation-survey-data-processing-system>,  
A presentation about LSST Data Management delivered at Harvard-Smithsonian CfA Code Coffee.
- [924] Juric, M., 2014, Creating and Calibrating LSST Data Products, URL <http://www.slideshare.net/MarioJuric/gaiacal2014-talk-creating-and-calibrating-lsst-data-product>,  
Presented at Astrophysical calibration of Gaia and other surveys, Ringberg Castle
- [925] Juric, M., 2014, Mapping the Milky Way with Large Surveys, URL <http://research.majuric.org/wp/wp-content/uploads/2013/11/MW-JHU-Final.pdf>,  
Johns Hopkins Astronomy Colloquium, 25 February 2014
- [926] Juric, M., 2014, Large Synoptic Survey Telescope: Entering the Era of Petascale Optical Astronomy, URL <http://research.majuric.org/wp/wp-content/uploads/2013/11/LSST-STScI-20140204-Final.pdf>,  
Space Telescope Science Institute Colloquium, 4 February 2014
- [927] Juric, M., 2015, Large sky surveys: Entering the era of software-bound astronomy, URL <http://iszd.hr/AstroInfo2015/program.php>,  
Presented at Astroinformatics 2015, Dubrovnik



- [928] Juric, M., 2016, LSST Data Products, URL <https://project.lsst.org/meetings/lstt-europe-2016/sites/lstt.org.meetings.lstt-europe-2016/files/02%20-%20juric-LSST-LSSTEurope2-DataProducts-4.pptx>,  
Presented on 2016-06-20 at the LSST@Europe2 conference held in Serbia
- [929] **[PSTN-025]**, Jurić, M., 2019, LSST Moving Object Processing, URL <https://pstn-025.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-025
- [930] **[LDM-582]**, Juric, M., Gruendl, R., 2017, Lossy Compression Working Group Charge, URL <https://ls.st/LDM-582>,  
Vera C. Rubin Observatory LDM-582
- [931] Juric, M., Lupton, R., 2016, LSST Data Management Brief Status Update, URL <http://dx.doi.org/10.5281/zenodo.47280>,  
Talk presented at the Winter 2016 LSST DESC Meeting held at SLAC.
- [932] Juric, M., Tyson, T., 2015, Highlights of Astronomy, 16, 675, doi:10.1017/S174392131401285X, ADS Link
- [933] Juric, M., Monet, D., Gizis, J.E., et al., 2012, In: American Astronomical Society Meeting Abstracts #219, vol. 219 of American Astronomical Society Meeting Abstracts, 156.07, ADS Link
- [934] **[LDM-134]**, Jurić, M., Allsman, R., Kantor, J., 2013, Data Management Applications UML Use Case Model, URL <https://ls.st/LDM-134>,  
Vera C. Rubin Observatory LDM-134
- [935] **[DMTN-035]**, Juric, M., Becker, A., Shaw, R., Krughoff, K.S., Kantor, J., 2013, Winter 2013 LSST DM Data Challenge Release Notes, URL <https://dmtn-035.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-035
- [936] Juric, M., Kantor, J., Axelrod, T.S., et al., 2013, In: American Astronomical Society Meeting Abstracts #221, vol. 221 of American Astronomical Society Meeting Abstracts, 247.01, doi:10.5281/zenodo.192395, ADS Link
- [937] **[LDM-133]**, Jurić, M., Lim, K.T., Kantor, J., 2013, Data Management UML Domain Model, URL <https://ls.st/LDM-133>,  
Vera C. Rubin Observatory LDM-133
- [938] Juric, M., Jones, L., Axelrod, T., Ivezić, Z., 2015, In: IAU General Assembly, vol. 29, 2256348, ADS Link

- [939] Jurić, M., Kantor, J., Lim, K.T., et al., 2017, In: Lorente, N.P.F., Shortridge, K., Wayth, R. (eds.) *Astronomical Data Analysis Software and Systems XXV*, vol. 512 of *Astronomical Society of the Pacific Conference Series*, 279 (arXiv:1512.07914), doi:10.48550/arXiv.1512.07914, ADS Link
- [940] Jurić, M., Kantor, J., Lim, K.T., et al., 2017, In: Lorente, N.P.F., Shortridge, K., Wayth, R. (eds.) *Astronomical Data Analysis Software and Systems XXV*, vol. 512 of *Astronomical Society of the Pacific Conference Series*, 279 (arXiv:1512.07914), doi:10.48550/arXiv.1512.07914, ADS Link
- [941] Jurić, M., Kantor, J., Lim, K.T., et al., 2017, In: Lorente, N.P.F., Shortridge, K., Wayth, R. (eds.) *Astronomical Data Analysis Software and Systems XXV*, vol. 512 of *Astronomical Society of the Pacific Conference Series*, 279 (arXiv:1512.07914), doi:10.48550/arXiv.1512.07914, ADS Link
- [942] **[LSE-319]**, Jurić, M., Ciardi, D., Dubois-Felsmann, G., Guy, L., 2019, LSST Science Platform Vision Document, URL <https://lse-319.lsst.io/>, Vera C. Rubin Observatory LSE-319
- [943] **[DMTN-087]**, Juric, M., Eggl, S., Moeyens, J., Jones, L., 2020, Proposed Modifications to Solar System Processing and Data Products, URL <https://dmtn-087.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-087
- [944] **[LSE-163]**, Jurić, M., Axelrod, T., Becker, A., et al., 2023, Data Products Definition Document, URL <https://lse-163.lsst.io/>, Vera C. Rubin Observatory LSE-163
- [945] Kahn, S.M., Kurita, N., Gilmore, K., et al., 2010, In: McLean, I.S., Ramsay, S.K., Takami, H. (eds.) *Ground-based and Airborne Instrumentation for Astronomy III*, vol. 7735 of *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, 0, doi:10.1117/12.857920, ADS Link
- [946] Kaiser, N., 2004, Addition of images with varying seeing, URL [http://spider.ipac.caltech.edu/staff/fmasci/home/astro\\_refs/PanStars\\_Coaddor.pdf](http://spider.ipac.caltech.edu/staff/fmasci/home/astro_refs/PanStars_Coaddor.pdf), Pan-STARRS Document Control, PSDC-002-011-xx
- [947] **[SITCOMTN-130]**, Kalmbach, B., 2024, Masked Deblending in the Rubin Active Optics System Wavefront Estimation Pipeline, URL <https://sitcomtn-130.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-130

- [948] **[SITCOMTN-133]**, Kalmbach, B., 2024, WEP performance as a function of exposure time, URL <https://sitcomtn-133.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-133
- [949] **[SITCOMTN-135]**, Kalmbach, B., 2024, Pipeline Tasks in the AOS Wavefront Estimation Pipeline, URL <https://sitcomtn-135.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-135
- [950] Kane, T.R., Likins, P.W., Levinson, D.A., 1983, *Spacecraft dynamics*, McGraw Hill Book Company, 1 edn.
- [951] **[SITCOMTN-058]**, Kang, Y., 2023, Creation of the Star Catalog for CWFS correction, URL <https://sitcomtn-058.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-058
- [952] **[SITCOMTN-096]**, Kang, Y., 2023, Verification of the correct functioning of the M2 axial and tangent actuators in the closed-loop mode, URL <https://sitcomtn-096.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-096
- [953] **[SITCOMTN-082]**, Kang, Y., Quint, B.C., 2023, Hard Point Breakaway Analysis, URL <https://sitcomtn-082.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-082
- [954] **[DMTN-190]**, Kannawadi, A., 2022, Consistent galaxy colors with Gaussian-Aperture and PSF photometry, URL <https://dmtn-190.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-190
- [955] **[DMTN-215]**, Kannawadi, A., 2023, Tracking noise properties in Rubin Science Pipelines processing, URL <https://dmtn-215.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-215
- [956] Kantor, J., 2008, Lsst data management: Making petascale data accessible, *New Astronomy: The Data Challenge*, Rio de Janeiro, Brazil
- [957] Kantor, J., 2008, Lsst network requirements,  
Brazilian Symposium of Computer Networks and Distributed Systems
- [958] Kantor, J., 2008, Lsst data management: Making petascale data accessible, URL <http://www.slideserve.com/rusty/jeff-kantor-lsst-data-management-systems-manager-lsst-corporation-institute-for-astronomy>,  
Talk at Institute for Astronomy, University of Hawaii, 19 June 2008

- [959] Kantor, J., 2008, Lsst processing: Challenges and solutions, PUCÓN SYMPOSIUM 2008, Fifth AccessNova Forum: Ubiquitous Networks in Advanced Applications
- [960] Kantor, J., 2008, Lsst overview, PUCÓN SYMPOSIUM 2008, Fifth AccessNova Forum: Ubiquitous Networks in Advanced Applications
- [961] Kantor, J., 2010, In: Radziwill, N.M., Bridger, A. (eds.) Software and Cyberinfrastructure for Astronomy, vol. 7740 of Proc. SPIE, 1, doi:10.1117/12.857253, ADS Link
- [962] **[Document-26217]**, Kantor, J., 2010, Data Challenge 3b Performance Test 1.1, URL <https://ls.st/Document-26217>, Vera C. Rubin Observatory Document-26217
- [963] Kantor, J., 2014, In: Wozniak, P.R., Graham, M.J., Mahabal, A.A., Seaman, R. (eds.) The Third Hot-wiring the Transient Universe Workshop, 19–26, ADS Link
- [964] **[Document-14789]**, Kantor, J., 2014, LSST Long-Haul Networks (LHN) End-to-end Test Plan, URL <https://ls.st/document-14789>, Vera C. Rubin Observatory Document-14789
- [965] Kantor, J., 2015, Computing for ngvla: Lessons from lsst, URL <https://science.nrao.edu/science/meetings/2015/ngvla-tech-workshop/program>, Presented at Second ngVLA Technical Workshop, Socorro, NM
- [966] **[LDM-324]**, Kantor, J., 2016, Data Management Information Security Plan, URL <https://ls.st/LDM-324>, Vera C. Rubin Observatory LDM-324
- [967] **[LDM-142]**, Kantor, J., 2017, Network Sizing Model, URL <https://ls.st/LDM-142>, Vera C. Rubin Observatory LDM-142
- [968] **[LSE-309]**, Kantor, J., 2017, Summit to Base Information Technology and Communication (ITC) Design, URL <https://ls.st/LSE-309>, Vera C. Rubin Observatory LSE-309
- [969] **[Document-28547]**, Kantor, J., 2018, LSST Network Bandwidth Tests between Chile and the United States , URL <https://ls.st/Document-28547>, Vera C. Rubin Observatory Document-28547

- [970] **[DMTR-151]**, Kantor, J., 2019, LVV-P47 Summit - Base Network Integration Test Plan and Report, URL <https://dmtr-151.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-151
- [971] **[DMTR-241]**, Kantor, J., 2020, LVV-P73: Network Pre-Verification for Operation Rehearsal #2 Test Plan and Report, URL <https://dmtr-241.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-241
- [972] **[LDM-732]**, Kantor, J., 2020, Vera C. Rubin Observatory Network Verification Document, URL <https://ldm-732.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-732
- [973] Kantor, J., Axelrod, T., 2005, LSST Data Management Status, URL <http://www.slideshare.net/datacenters/sweeney-dm-status-review-20050322ppt>,  
Presented at DM Status Review
- [974] Kantor, J., Axelrod, T., 2010, In: Radziwill, N.M., Bridger, A. (eds.) Software and Cyberinfrastructure for Astronomy, vol. 7740 of Proc. SPIE, 1, doi:10.1117/12.857280, ADS Link
- [975] Kantor, J., Jagatheesan, A., 2010, In: 26th IEEE (MSST2010) Symposium on Massive Storage Systems and Technologies, IEEE MSST2010, LSST Corporation, IEEE, URL <http://storageconference.us/2010/Presentations/MSST/4.Kantor.pdf>
- [976] **[Document-7025]**, Kantor, J., Krabbendam, V., 2011, DM Risk Register, URL <https://ls.st/Document-7025>,  
Vera C. Rubin Observatory Document-7025
- [977] **[LPM-81]**, Kantor, J., Krabbendam, V., 2015, Cost Estimating Plan, URL <https://ls.st/LPM-81>,  
Vera C. Rubin Observatory LPM-81
- [978] Kantor, J., Axelrod, T., Becla, J., et al., 2007, In: Shaw, R.A., Hill, F., Bell, D.J. (eds.) Astronomical Data Analysis Software and Systems XVI, vol. 376 of Astronomical Society of the Pacific Conference Series, 3--+, ADS Link
- [979] **[Document-9044]**, Kantor, J., Axelrod, T., Allsman, R., Freemon, M., Lim, K.T., 2010, Data Challenge 3b Overview, URL <https://ls.st/Document-9044>,  
Vera C. Rubin Observatory Document-9044

- [980] **[LDM-138]**, Kantor, J., Axelrod, T., Lim, K.T., 2013, Data Management Compute Sizing Model, URL <https://ls.st/LDM-138>,  
Vera C. Rubin Observatory LDM-138
- [981] **[LDM-240]**, Kantor, J., Jurić, M., Lim, K.T., 2016, Data Management Releases, URL <https://ls.st/LDM-240>,  
Vera C. Rubin Observatory LDM-240
- [982] Kantor, J., Long, K., Becla, J., et al., 2016, In: Modeling, Systems Engineering, and Project Management for Astronomy VI, vol. 9911 of Proc. SPIE, 99110N, doi:10.1117/12.2233380, ADS Link
- [983] Kantor, J., Long, K., Becla, J., et al., 2016, Agile software development in an earned value world: a survival guide, URL <http://dx.doi.org/10.5281/zenodo.56593>,  
Talk at the SPIE Astronomical Telescopes and Instrumentation Conference, Edinburgh, UK
- [984] Kantor, J., Long, K., Becla, J., et al., 2016, In: Modeling, Systems Engineering, and Project Management for Astronomy VI, vol. 9911 of Proc. SPIE, 99110N, doi:10.1117/12.2233380, ADS Link
- [985] Kantor, J.P., 2006, In: Lewis, H., Bridger, A. (eds.) Advanced Software and Control for Astronomy, vol. 6274 of Proc. SPIE, 62740P, doi:10.1117/12.671685, ADS Link
- [986] Kantor, J.P., 2012, In: Angeli, G.Z., Dierickx, P. (eds.) Modeling, Systems Engineering, and Project Management for Astronomy V, vol. 8449 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 84490N, doi:10.1117/12.924887, ADS Link
- [987] Katz, D., 2006, Gaia - RVS: DPAC and CU6, URL [http://wwwhip.obspm.fr/gaia/cu6/workshop\\_2/CU6\\_w2\\_Katz\\_intro.pdf](http://wwwhip.obspm.fr/gaia/cu6/workshop_2/CU6_w2_Katz_intro.pdf),  
CU6 Workshop2
- [988] **[SITCOMTN-121]**, Kelkar, K., 2024, Summary of TMA tests, URL <https://sitcomtn-121.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-121
- [989] **[SITCOMTN-145]**, Kelkar, K., 2024, TEA vibration analyses, URL <https://sitcomtn-145.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-145

- [990] **[DMTN-270]**, Kelvin, L., 2023, Bright Star Subtraction in the LSST Science Pipelines, URL <https://dmtn-270.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-270
- [991] **[SCTR-115]**, Kelvin, L., 2025, System-level Science Verification Acceptance Test Campaign: Low Surface Brightness Test Plan and Report, URL <https://sctr-115.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Report SCTR-115
- [992] **[SITCOMTN-069]**, Kelvin, L.S., Dell'Antonio, I., Drlica-Wagner, A., et al., 2023, LSB SciUnit Data Requirements Document, URL <https://sitcomtn-069.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-069
- [993] Kerekes, G., Budav'ari, T., Csabai, I., Connolly, A.J., Szalay, A.S., 2010, ApJ, 719, 59 (arXiv:1006.2096), doi:10.1088/0004-637X/719/1/59, ADS Link
- [994] **[Publication-144]**, Kessler, R., et al., 2011, Science White Paper for LSST Deep-Drilling Field Observations: Supernova Light Curves, URL <https://ls.st/Publication-144>,  
Vera C. Rubin Observatory Publication-144
- [995] **[DMTN-002]**, Kind, M.C., 2016, SuperTask and Activator Notes, URL <https://dmtn-002.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-002
- [996] **[DMTN-033]**, Kind, M.C., 2016, Cluster and container management with Kubernetes , URL <https://dmtn-033.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-033
- [997] Kirsch, N., 2012, WD Red 3TB NAS Hard Drive Review, URL <http://www.legitreviews.com/article/2092/3/>
- [998] van Klaveren, B., 2016, LSST Data Access and VO: Pathfinding through TAP, ADQL and beyond, URL [http://wiki.ivoa.net/internal/IVOA/InterOpMay2016-DAL/LSST\\_DAX\\_IVOA\\_Interop\\_May-2016.pdf](http://wiki.ivoa.net/internal/IVOA/InterOpMay2016-DAL/LSST_DAX_IVOA_Interop_May-2016.pdf),  
Presentation at the Northern Spring IVOA Meeting, South Africa
- [999] **[DMTN-100]**, Klaveren, B.V., 2018, Namespacing Database Objects, URL <https://dmtn-100.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-100
- [1000] **[DMTN-138]**, Klaveren, B.V., 2019, Building and Distributing LSST Software with conda and conda-forge, URL <https://dmtn-138.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-138

- [1001] **[DMTN-094]**, Klaveren, B.V., 2022, LSP Authentication Design, URL <https://dmtn-094.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-094
- [1002] **[DMTN-116]**, Klaveren, B.V., 2022, LSP Authentication Implementation, URL <https://dmtn-116.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-116
- [1003] **[SITCOMTN-059]**, Kleinman, S., Johnson, T., Ingraham, P., 2023, FAFF Implementation Group (FIG) Mandate, URL <https://sitcomtn-059.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-059
- [1004] Klioner, S.A., 2001, ArXiv Astrophysics e-prints (arXiv:astro-ph/0107457), ADS Link
- [1005] Klioner, S.A., 2003, AJ, 125, 1580, ADS Link
- [1006] Klioner, S.A., 2004, Phys. Rev. D, 69, 124001 (arXiv:astro-ph/0311540), doi:10.1103/PhysRevD.69.124001, ADS Link
- [1007] Klioner, S.A., 2005, In: Turon, C., O’Flaherty, K.S., Perryman, M.A.C. (eds.) The Three-Dimensional Universe with Gaia, vol. 576 of ESA Special Publication, 207–+, ADS Link
- [1008] Klioner, S.A., 2008, A&A, 478, 951, doi:10.1051/0004-6361:20077786, ADS Link
- [1009] Klioner, S.A., 2008, In: H. Dittus, C. Lammerzahl, & S. G. Turyshev (ed.) Lasers, Clocks and Drag-Free Control: Exploration of Relativistic Gravity in Space, vol. 349 of Astrophysics and Space Science Library, 399, doi:10.1007/978-3-540-34377-6\_19, ADS Link
- [1010] Klioner, S.A., Peip, M., 2003, A&A, 410, 1063 (arXiv:astro-ph/0305204), doi:10.1051/0004-6361:20031283, ADS Link
- [1011] Klioner, S.A., Soffel, M.H., 2000, Phys. Rev. D, 62, 024019 (arXiv:gr-qc/9906123), ADS Link
- [1012] Klioner, S.A., Soffel, M.H., 2005, In: Turon, C., O’Flaherty, K.S., Perryman, M.A.C. (eds.) The Three-Dimensional Universe with Gaia, vol. 576 of ESA Special Publication, 305–+, ADS Link
- [1013] Klioner, S.A., Zschocke, S., Soffel, M.H., Butkevich, A.G., 2010, ArXiv e-prints (arXiv:1002.5016), ADS Link
- [1014] Knight, S., 2005, Computing in Science Engineering, 7, 79, doi:10.1109/MCSE.2005.11



- [1015] Kobayashi, Y., Gouda, G., Tsujimoto, T., et al., 2006, Exploiting Large Surveys for Galactic Astronomy, 26th meeting of the IAU, Joint Discussion 13, 22-23 August 2006, Prague, Czech Republic, JD13, #32, 13, ADS Link
- [1016] Kohley, R., Garé, P., Vétel, C., Marchais, D., Chassat, F., 2012, In: Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, vol. 8442 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, doi:10.1117/12.926144, ADS Link
- [1017] Kopeikin, S., Vlasov, I., 2004, Phys. Rep., 400, 209 (arXiv:gr-qc/0403068), doi:10.1016/j.physrep.2004.08.004, ADS Link
- [1018] Koppelman, H., Helmi, A., Veljanoski, J., 2018, ApJ, 860, L11, doi:10.3847/2041-8213/aac882, ADS Link
- [1019] Korn, G.A., Korn, T.M., 1961, *Mathematical handbook for scientists and engineers*, McGraw Hill Book Company, 1 edn.
- [1020] **[DMTN-179]**, Kovács, G., 2021, The ZOGY image differencing matching kernel and PSF solutions and their practical implementation issues, URL <https://dmtn-179.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-179
- [1021] Kovalevsky, J., 1998, ARA&A, 36, 99, doi:10.1146/annurev.astro.36.1.99, ADS Link
- [1022] Kovalevsky, J., Lindegren, L., Froeschle, M., et al., 1995, A&A, 304, 34, ADS Link
- [1023] **[DMTN-040]**, Kowalik, M., 2018, A closer look at Pegasus WMS, URL <https://dmtn-040.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-040
- [1024] **[DMTN-154]**, Kowalik, M., 2020, DBB Buffer Managers, URL <https://dmtn-154.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-154
- [1025] **[DMTN-042]**, Kowalik, M., Chiang, H.F., Gower, M., Pietrowicz, S., Kooper, R., 2017, Batch Production Services: Creating Workflows, URL <https://dmtn-042.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-042
- [1026] **[DMTN-025]**, Kowalik, M., Chiang, H.F., Daues, G., Kooper, R., 2018, A survey of workflow management systems, URL <https://dmtn-025.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-025

- [1027] **[LDM-633]**, Kowalik, M., Gower, M., Kooper, R., 2019, Offline Batch Production Services Use Cases, URL <https://ldm-633.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-633
- [1028] **[LDM-636]**, Kowalik, M., Gower, M., Kooper, R., 2019, Batch Production Service Requirements, URL <https://ldm-636.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-636
- [1029] **[LPM-72]**, Krabbendam, V., 2015, Scope Options, URL <https://ls.st/LPM-72>,  
Vera C. Rubin Observatory LPM-72
- [1030] **[LPM-20]**, Krabbendam, V., Selvy, B., 2015, Risk & Opportunity Management Plan, URL <https://ls.st/LPM-20>,  
Vera C. Rubin Observatory LPM-20
- [1031] **[DMTN-261]**, Krabbendam, V., Matheson, T., Blum, R., 2024, On the use of the CSDC ANTARES Broker for the Rubin/LSST Alert Filtering Service., URL <https://dmtn-261.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-261
- [1032] **[LPM-125]**, Krabendam, V., Goodenow, I., 2016, Project Management Office Information Security Plan, URL <https://ls.st/LPM-125>,  
Vera C. Rubin Observatory LPM-125
- [1033] **[EISD-EPNS-00003]**, Krall, C., 2004, *IMPLEMENTATION OF THE ESA NETWORK SECURITY POLICY*,  
EISD-EPNS-00003
- [1034] Krisciunas, K., Schaefer, B.E., 1991, PASP, 103, 1033, doi:10.1086/132921, ADS Link
- [1035] Kruchten, P., 2003, *The Rational Unified Process: An Introduction*, Addison-Wesley Professional, 3rd edn.
- [1036] Krughoff, K.S., 2014, Image differencing for lsst, URL <http://dx.doi.org/10.5281/zenodo.45300>,  
ZTF-LSST Joint Meeting November 12th 2014
- [1037] Krughoff, K.S., 2015, In: The Fourth Hot-wiring the Transient Universe Workshop, Santa Barbara, URL [http://lcogt.net/files/media/Krughoff\\_Hotwiring-2015-final.pptx](http://lcogt.net/files/media/Krughoff_Hotwiring-2015-final.pptx)

- [1038] **[LSE-349]**, Krughoff, K.S., 2019, Defining the Transformation Between Camera Engineering Coordinates and Camera Data Visualization Coordinates, URL <https://lse-349.lsst.io/>,  
Vera C. Rubin Observatory LSE-349
- [1039] **[PSTN-023]**, Krughoff, K.S., 2019, LSST Data Management Quality Assurance and Reliability Engineering, URL <https://pstn-023.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-023
- [1040] **[SQR-021]**, Krughoff, S., 2018, An Example JupyterLab Development Workflow, URL <https://sqr-021.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-021
- [1041] **[SQR-025]**, Krughoff, S., 2019, Welcome to the Notebook Aspect of the LSST Science Platform, URL <https://sqr-025.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-025
- [1042] **[DMTN-142]**, Krughoff, S., 2020, From Notebook to Library: Dealing with analysis code, URL <https://dmtn-142.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-142
- [1043] **[SQR-047]**, Krughoff, S., 2020, Technical considerations for nublado design, URL <https://sqr-047.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-047
- [1044] **[DMTR-291]**, Krughoff, S., 2021, DM-503-EFDa: EFD on Summit for M1/M3 Test Plan and Report, URL <https://dmtr-291.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-291
- [1045] **[DMTN-082]**, Krughoff, S., Economou, F., 2018, On accessing EFD data in the Science Platform, URL <https://dmtn-082.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-082
- [1046] **[DMTN-074]**, Krughoff, S., Swinbank, J., 2018, DM QA Status & Plans, URL <https://dmtn-074.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-074
- [1047] **[DMTR-41]**, Krughoff, S., Wood-Vasey, J., 2017, Characterization Metric Report: Science Pipelines Version 14.0, URL <https://ls.st/DMTR-41>,  
Vera C. Rubin Observatory DMTR-41

- [1048] Kubica, J., Axelrod, T., Barnard, K., et al., 2005, In: American Astronomical Society Meeting Abstracts, vol. 37 of Bulletin of the American Astronomical Society, 1207, ADS Link
- [1049] Kubica, J., Denneau, L., Jr., Moore, A., Jedicke, R., Connolly, A., 2007, In: Shaw, R.A., Hill, F., Bell, D.J. (eds.) Astronomical Data Analysis Software and Systems XVI, vol. 376 of Astronomical Society of the Pacific Conference Series, 395, ADS Link
- [1050] Kunszt, P.Z., Szalay, A.S., Thakar, A.R., 2001, In: Banday, A.J., Zaroubi, S., Bartelmann, M. (eds.) Mining the Sky, 631, doi:10.1007/10849171\_83, ADS Link
- [1051] **[SITCOMTN-018]**, Lage, C., 2021, Working with Rubin EFD timestamps., URL <https://sitcomtn-018.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-018
- [1052] **[SITCOMTN-028]**, Lage, C., 2021, Temperature compensation of the AuxTel focus model, URL <https://sitcomtn-028.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-028
- [1053] **[SITCOMTN-043]**, Lage, C., 2022, Auxiliary Telescope Polycold chiller maintenance procedures., URL <https://sitcomtn-043.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-043
- [1054] **[SITCOMTN-051]**, Lage, C., 2022, AuxTel mount jitter studies with data from accelerometers and anemometer., URL <https://sitcomtn-051.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-051
- [1055] **[SITCOMTN-056]**, Lage, C., 2023, Azimuth drive hysteresis in the Auxiliary Telescope, URL <https://sitcomtn-056.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-056
- [1056] **[SITCOMTN-057]**, Lage, C., 2023, Preliminary study of TMA performance based on soak testing from 26-Jan-2023, URL <https://sitcomtn-057.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-057
- [1057] **[SITCOMTN-071]**, Lage, C., 2023, StarTracker Narrow Camera to Fast Camera Offsets, URL <https://sitcomtn-071.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-071
- [1058] **[SITCOMTN-094]**, Lage, C., 2023, Interfacing with the Auxiliary Telescope dome hardware., URL <https://sitcomtn-094.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-094

- [1059] **[SITCOMTN-083]**, Lage, C., Sanmartim, D., 2024, M1M3 mirror cell bump testing, URL <https://sitcomtn-083.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-083
- [1060] **[SITCOMTN-067]**, Lage, C.S., 2024, Velocity, Acceleration, and Jerk analysis of TMA slews, URL <https://sitcomtn-067.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-067
- [1061] **[SITCOMTN-125]**, Lage, C.S., 2024, Neural network classification of AuxTel mount tracking failures., URL <https://sitcomtn-125.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-125
- [1062] **[SITCOMTN-026]**, Lage, C.S., 2025, AuxTel PowerUp sequence, URL <https://sitcomtn-026.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-026
- [1063] **[SITCOMTN-153]**, Lage, C.S., 2025, Improving temperature control of the AuxTel WREB board, URL <https://sitcomtn-153.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-153
- [1064] Laher, R.R., Levine, D., Mannings, V., et al., 2009, In: Bohlender, D.A., Durand, D., Dowler, P. (eds.) *Astronomical Data Analysis Software and Systems XVIII*, vol. 411 of *Astronomical Society of the Pacific Conference Series*, 106, ADS Link
- [1065] Lallo, M. and Petro, L., 1999, *Bidirectional reflectance distribution function for the NGST mirrors*, Tech. rep., Space Telescope Science Institute
- [1066] **[LSE-78]**, Lambert, R., Kantor, J., Huffer, M., et al., 2017, LSST Observatory Network Design, URL <https://lsst.org/LSE-78>,  
Vera C. Rubin Observatory LSE-78
- [1067] Lammers, U., ,  
unpublished results - see also [http://www.rssd.esa.int/\protect\discretionary{\char\hyphenchar\font}{}{}GAIA/\protect\discretionary{\char\hyphenchar\font}{}{}PoW\\_ground\\_station\\_visibility.html](http://www.rssd.esa.int/\protect\discretionary{\char\hyphenchar\font}{}{}GAIA/\protect\discretionary{\char\hyphenchar\font}{}{}PoW_ground_station_visibility.html)
- [1068] Lammers, U., ,  
unpublished results
- [1069] Lammers, U., Lindegren, L., O'Mullane, W., Hobbs, D., 2009, In: D. A. Bohlender, D. Durand, & P. Dowler (ed.) *Astronomical Data Analysis Software and Systems XVIII*, vol. 411 of *Astronomical Society of the Pacific Conference Series*, 55–+, ADS Link

- [1070] Larman, C., Basili, V.R., 2003, *Computer*, 36, 47, doi:10.1109/MC.2003.1204375
- [1071] Lasker, B., Lattanzi, M., McLean, B., et al., 2008, *The Astronomical Journal*, 136, doi:10.1088/0004-6256/136/2/735, ADS Link
- [1072] **[SITCOMTN-151]**, Last, F., 2024, Estimation of the Rubin effective area, URL <https://sitcomtn-151.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-151
- [1073] **[CTN-001]**, Last, F., 2025, LSSTCam Focal Plane Layout, URL <https://ctn-001.lsst.io/>,  
Vera C. Rubin Observatory CTN-001
- [1074] Lattanzi, M., Drimmel, R., 2003,  
private communication
- [1075] Lattanzi, M.G., Spagna, A., Sozzetti, A., Casertano, S., 2000, *MNRAS*, 317, 211  
(arXiv:astro-ph/0005024), ADS Link
- [1076] Lattanzi, M.G., Casertano, S., Jancart, S., et al., 2005, In: Turon, C., O’Flaherty, K.S., Perryman, M.A.C. (eds.) *ESA SP-576: The Three-Dimensional Universe with Gaia*, 251–+, ADS Link
- [1077] Lazio, J.W., Kimball, A., Barger, A.J., et al., 2014, *PASP*, 126, 196 (arXiv:1401.0716), doi:10.1086/675262, ADS Link
- [1078] Le Fèvre, O., Tasca, L.A.M., Cassata, P., et al., 2015, *A&A*, 576, A79 (arXiv:1403.3938), doi:10.1051/0004-6361/201423829, ADS Link
- [1079] van Leeuwen, F., 1997, *The Hipparcos Mission*, Springer, *Space Science Reviews*, Vol.81 edn.
- [1080] van Leeuwen, F., 2007, *Hipparcos, the New Reduction of the Raw Data*, Springer, *Astrophysics and Space Science Library*. Vol. 350 edn.
- [1081] **[SCTR-112]**, Leget, P.F., 2025, System-level Science Verification Acceptance Test Campaign: Astrometric Calibration Test Plan and Report, URL <https://sctr-112.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Report SCTR-112
- [1082] Leistedt, B., Hogg, D.W., 2017, *ApJ*, 838, 5 (arXiv:1612.00847), doi:10.3847/1538-4357/aa6332, ADS Link
- [1083] Lejeune, T., Cuisinier, F., Buser, R., 1998, *A&AS*, 130, 65 (arXiv:astro-ph/9710350), ADS Link

- [1084] Lenhardt, H., 2003, *GIS implementation in GDAAS2: Detailed Geometrical Calibration*, Tech. rep., ARI, GAIA-ARI-HL-001
- [1085] **[SATSCMP]**, Leon, I., 2009, *SCIENCE ARCHIVE - SOFTWARE CONFIGURATION MANAGEMENT PLAN (SCMP)*, SAT\_GEN\_PL\_2.0\_01\_SCMP\_05112009, URL [http://www.rssd.esa.int/l1ink/livelink/fetch/-415780/495310/1051419/Sw\\_Conf\\_Mng\\_Plan\\_v2-0.pdf?nodeid=2942288&vernum=-2](http://www.rssd.esa.int/l1ink/livelink/fetch/-415780/495310/1051419/Sw_Conf_Mng_Plan_v2-0.pdf?nodeid=2942288&vernum=-2)
- [1086] Levine, D.A., Mannings, V., Cutri, R., et al., 2007, In: American Astronomical Society Meeting Abstracts, vol. 211 of American Astronomical Society Meeting Abstracts, 137.24, ADS Link
- [1087] **[DMTN-201]**, Li, Y.T., 2021, USDF Object Storage Architecture and Planning, URL <https://dmtn-201.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-201
- [1088] **[RTN-025]**, Li, Y.T., 2021, USDF Object Storage Architecture and Planning, URL <https://rtn-025.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-025
- [1089] **[RDO-121]**, Lim, K., O'Mullane, W., 2025, Vera C. Rubin Observatory Prerelease Data Policy, URL <https://ls.st/RDO-121>, Vera C. Rubin Observatory RDO-121
- [1090] Lim, K.T., 2007, Preparing for scores of petabytes, IEEE Mass Storage Symposium, San Diego, CA, September 26, 2007
- [1091] Lim, K.T., 2008, Lsst and scidb, Stanford HPC Conference, Stanford, CA, USA, August 28, 2008
- [1092] Lim, K.T., 2008, Cyberinfrastructure lessons from Lsst data management, iPlant Workshop (remote presentation), December 16, 2008
- [1093] Lim, K.T., 2008, The Lsst data management system, Talk at Keck Observatory, December 2, 2008
- [1094] Lim, K.T., 2008, Astronomy, petabytes, and mysql, URL <http://conferences.oreilly.com/mysql2008/public/schedule/detail/849>, MySQL Conference, Santa Clara, CA, April 16, 2008

- [1095] Lim, K.T., 2011, Lsst applications and middleware, Talk at Fermilab, May 12, 2011
- [1096] Lim, K.T., 2012, The lsst database: What to expect, AAS Splinter Meeting, Austin TX, January 8, 2012
- [1097] Lim, K.T., 2012, Xldb and the large synoptic survey telescope, URL <http://idke.ruc.edu.cn/xldb/www.xldb-asia.org/slides/XLDB%20Asia%20-%20LSST.pdf>, XLDB Asia, Beijing, China, June 22-23 2012
- [1098] **[Document-15097]**, Lim, K.T., 2013, LSST Data Challenge Report: Summer 2013, URL <https://ls.st/Document-15097>, Vera C. Rubin Observatory Document-15097
- [1099] Lim, K.T., 2014, A quick tour of the lsst software stack, URL <https://indico.fnal.gov/contributionDisplay.py?contribId=52&confId=7946>, Talk at DES-LSST Workshop, Fermilab, March 25, 2014
- [1100] Lim, K.T., 2014, The designs for lsst's extremely large databases, URL <http://xldb-rio2014.linea.gov.br/abstract/#ktlim>, XLDB South America 2014, Rio de Janeiro, Brazil, June 4, 2014
- [1101] Lim, K.T., 2015, Astroparticle physics: An lsst perspective, URL [http://indico.cern.ch/event/357737/session/3/contribution/16/attachments/712039/977483/HEPSWF\\_Meeting.pdf](http://indico.cern.ch/event/357737/session/3/contribution/16/attachments/712039/977483/HEPSWF_Meeting.pdf), HEP Software Foundation Workshop, SLAC National Accelerator Lab, January 20, 2015
- [1102] **[DMTN-050]**, Lim, K.T., 2017, EFD Handling within DM, URL <https://dmtn-050.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-050
- [1103] **[DMTN-052]**, Lim, K.T., 2017, Initial Installation of a DAQ Test Stand at NCSA, URL <https://dmtn-052.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-052
- [1104] **[DMTN-067]**, Lim, K.T., 2017, Catalog Data Model, URL <https://dmtn-067.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-067
- [1105] **[DMTN-103]**, Lim, K.T., 2018, LSST Science Platform Deployments, URL <https://dmtn-103.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-103



- [1106] **[DMTN-111]**, Lim, K.T., 2019, DM Usage in Observatory Operations, URL <https://dmtn-111.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-111
- [1107] **[DMTN-125]**, Lim, K.T., 2019, Google Cloud Engagement Results, URL <https://dmtn-125.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-125
- [1108] **[DMTN-132]**, Lim, K.T., 2019, Independent LSST Identity Management, URL <https://dmtn-132.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-132
- [1109] **[LSE-400]**, Lim, K.T., 2019, Header Service Interface, URL <https://lse-400.lsst.io/>,  
Vera C. Rubin Observatory LSE-400
- [1110] **[DMTN-150]**, Lim, K.T., 2020, LSST + Google Cloud Proof of Concept 2020, URL <https://dmtn-150.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-150
- [1111] **[DMTN-092]**, Lim, K.T., 2021, Alert Production Pipeline Interfaces, URL <https://dmtn-092.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-092
- [1112] **[DMTN-189]**, Lim, K.T., 2021, Data Facility Specifications, URL <https://dmtn-189.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-189
- [1113] **[DMTN-143]**, Lim, K.T., 2022, Image Capture Simplification, URL <https://dmtn-143.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-143
- [1114] **[DMTN-218]**, Lim, K.T., 2022, The LSST Science Pipelines Build System, URL <https://dmtn-218.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-218
- [1115] **[DMTN-219]**, Lim, K.T., 2022, Proposal and Prototype for Prompt Processing, URL <https://dmtn-219.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-219
- [1116] **[RTN-036]**, Lim, K.T., 2022, Software Distribution at Data Facilities, URL <https://rtn-036.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-036

- [1117] **[DMTN-181]**, Lim, K.T., 2023, Campaign Management, URL <https://dmtn-181.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-181
- [1118] **[DMTN-188]**, Lim, K.T., 2023, IVOA Universal Worker Service: Roles and Implementation, URL <https://dmtn-188.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-188
- [1119] **[DMTN-198]**, Lim, K.T., 2023, Data Backbone Implementation, URL <https://dmtn-198.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-198
- [1120] **[DMTN-213]**, Lim, K.T., 2023, Multi-Site Data Release Processing Using PanDA and Rucio, URL <https://dmtn-213.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-213
- [1121] **[DMTN-254]**, Lim, K.T., 2023, Summit Architecture from the DM Perspective, URL <https://dmtn-254.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-254
- [1122] **[DMTN-255]**, Lim, K.T., 2023, Proposal for Implementing FAFF Rapid Analysis, URL <https://dmtn-255.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-255
- [1123] **[DMTN-227]**, Lim, K.T., 2024, The Consolidated Database of Image Metadata, URL <https://dmtn-227.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-227
- [1124] **[DMTN-284]**, Lim, K.T., 2024, Signed URLs for Data Releases at the USDF, URL <https://dmtn-284.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-284
- [1125] **[Document-32503]**, Lim, K.T., Committee, R., 2019, Identity Management Review Report, URL <https://lsst.org/Document-32503>,  
Vera C. Rubin Observatory Document-32503
- [1126] **[LDM-146]**, Lim, K.T., Allsman, R., Kantor, J., 2013, Data management middleware uml use case and activity model, URL <https://lsst.org/LDM-146>,  
Vera C. Rubin Observatory LDM-146

- [1127] **[LDM-140]**, Lim, K.T., Smith, C., Axelrod, T., Dubois-Felsmann, G., Freemon, M., 2013, Data Management Compute Sizing Explanation, URL <https://ls.st/LDM-140>, Vera C. Rubin Observatory LDM-140
- [1128] **[LDM-152]**, Lim, K.T., Dubois-Felsmann, G., Johnson, M., Juric, M., Petravick, D., 2019, Data Management Middleware Design, URL <https://ldm-152.lsst.io/>, Vera C. Rubin Observatory Data Management Controlled Document LDM-152
- [1129] **[DMTN-114]**, Lim, K.T., Guy, L., Chiang, H.F., 2019, LSST + Amazon Web Services Proof of Concept, URL <https://dmtn-114.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-114
- [1130] **[LDM-148]**, Lim, K.T., Bosch, J., Dubois-Felsmann, G., et al., 2020, Data Management System Design, URL <https://ldm-148.lsst.io/>, Vera C. Rubin Observatory Data Management Controlled Document LDM-148
- [1131] Lindegren, L., 1976, *A three-step procedure for deriving positions, proper motions, and parallaxes of stars observed by scanning great circles*, Tech. rep., Lund Observatory, Lund Observatory Technical note
- [1132] Lindegren, L., 1978, In: Prochazka, F.V., Tucker, R.H. (eds.) IAU Colloq. 48: Modern Astrometry, 197–217, ADS Link
- [1133] Lindegren, L., 1983, *Pseudosolution and pseudocovariances of least-squares problems with known null space*, Tech. rep., Lund Observatory, NDAC/LO/018, Hipparcos NDAC
- [1134] Lindegren, L., 1995, A&A, 304, 61, ADS Link
- [1135] Lindegren, L., 2005, In: Turon, C., O’Flaherty, K.S., Perryman, M.A.C. (eds.) The Three-Dimensional Universe with Gaia, vol. 576 of ESA Special Publication, 29–+, ADS Link
- [1136] Lindegren, L., 2009, Proceedings of the International Astronomical Union, 5, 296, doi:10.1017/S1743921309990548
- [1137] Lindegren, L., 2010, ISSI Scientific Reports Series, 9, 279, ADS Link
- [1138] Lindegren, L., et al, M.P., 1993, *GAIA : Global Astrometric Interferometer for Astrophysics*, Tech. rep., Lund, URL [http://www.astro.lu.se/%7Elennart/Astrometry/gaia\\_proposal.PDF](http://www.astro.lu.se/%7Elennart/Astrometry/gaia_proposal.PDF)
- [1139] Lindegren, L., Bastian, U., 2011, In: EAS Publications Series, vol. 45 of EAS Publications Series, 109–114, doi:10.1051/eas/1045018, ADS Link

- [1140] Lindegren, L., Perryman, M.A.C., 1994, *A Small Interferometer in Space for Global Astrometry: the Gaia Concept*, Tech. rep., Lund Observatory, IAU Symp. No 166, Astronomical and Astrophysical Objectives of sub-milliarcsecond Optical Astronomy, The Hague, 15–19 August 1994
- [1141] Lindegren, L., Perryman, M.A.C., 1994, *GAIA: Global Astrometric Interferometer for Astrophysics*, Tech. rep., Lund Observatory, Supplementary Information Submitted to the Horizon2000+ Survey Committee
- [1142] Lindegren, L., Perryman, M.A.C., Bastian, U., et al., 1993, *GAIA: Global Astrometric Interferometer for Astrophysics*, Tech. rep., Lund Observatory, Response to Call for Mission Concepts for Horizon 2000 Follow UP: Proposal for an astrometric interferometer as an ESA Cornerstone Mission
- [1143] Lindegren, L., Perryman, M.A.C., Bastian, U., et al., 1994, *GAIA: Global Astrometric Interferometer for Astrophysics*, Tech. rep., Lund Observatory, Proc. of Astronomical Telescopes and Instrumentation for the 21st Century. Technical Conference 2200, SPIE Symposium in Kona, 13–18 March 1994
- [1144] Lindegren, L., Lammers, U., Hobbs, D., et al., 2012, *A&A*, 538, A78 (arXiv:1112.4139), doi:10.1051/0004-6361/201117905, ADS Link
- [1145] Lindegren, L., Lammers, U., Hobbs, D., et al., 2012, *Astronomy and Astrophysics*, 538, A78, doi:10.1051/0004-6361/201117905
- [1146] ter Linden, M., de Wolf, H., Grim, R., 2005, In: 2005 International Conference on Parallel Processing Workshops (ICPPW'05), vol. icppw, 5–10, IEEE Computer Society, doi:10.1109/ICPPW.2005.37
- [1147] LINPACK, URL <http://www.top500.org/lists/linpack.php>, Linpack standard numerical benchmark
- [1148] Lock, D., 2000, *Project Phasing and Planning*, Gower, 7 edn.
- [1149] **[LPM-98]**, Long, K.E., 2016, LSST Project Controls System Description, URL <https://lsst/LPM-98>, Vera C. Rubin Observatory LPM-98
- [1150] **[PSTN-037]**, Lopez, M., 2020, Installation and Performance of the LSST Camera Refrigeration System, URL <https://pstn-037.lsst.io/>, Vera C. Rubin Observatory Project Science Technical Note PSTN-037

- [1151] López, P.P., Luri, X., Serraller, I., 2003, *Java Code Conventions*, Tech. rep., GMV/UB, GMV-GDAAS2-SCG-004
- [1152] **[LSE-209]**, Lotz, P., 2016, Software component to ocs interface, URL <https://ls.st/LSE-209>,  
Vera C. Rubin Observatory LSE-209
- [1153] **[LSE-70]**, Lotz, P., 2016, System communication protocol interface, URL <https://ls.st/LSE-70>,  
Vera C. Rubin Observatory LSE-70
- [1154] Lotz, P.J., Dubois-Felsmann, G.P., Lim, K.T., et al., 2016, In: *Software and Cyberinfrastructure for Astronomy IV*, vol. 9913 of Proc. SPIE, 991309, doi:10.1117/12.2231796, ADS Link
- [1155] **[Agreement-51]**, LSST, 2015, Memorandum of Agreement regarding collaboration in the scientific exploitation of data acquired with LSST by specified Principal Investigators and scientists at IN2P3, URL <https://ls.st/Agreement-51>,  
Vera C. Rubin Observatory Agreement-51
- [1156] LSST Dark Energy Science Collaboration (LSST DESC), Abolfathi, B., Alonso, D., et al., 2021, *ApJS*, 253, 31 (arXiv:2010.05926), doi:10.3847/1538-4365/abd62c, ADS Link
- [1157] LSST Data Management, LSST DM Developer Guide, URL <https://developer.lsst.io/>
- [1158] **[Report-241]**, LSST Project Science Team, 2015, Camera Mixed Focal Plane Option, URL <https://ls.st/Report-241>,  
Vera C. Rubin Observatory Report-241
- [1159] LSST Science Collaboration, 2009, ArXiv e-prints (arXiv:0912.0201), doi:10.48550/arXiv.0912.0201, ADS Link
- [1160] LSST Science Collaboration, Marshall, P., Anguita, T., et al., 2017, arXiv e-prints, arXiv:1708.04058 (arXiv:1708.04058), doi:10.48550/arXiv.1708.04058, ADS Link
- [1161] **[Document-11624]**, LSST Science Council, 2011, Optimization of LSST Deployment Parameters, URL <https://ls.st/Document-11624>,  
Vera C. Rubin Observatory Document-11624
- [1162] **[Document-16168]**, LSST Systems Engineering, 2014, LSST Key System Parameters Summary, URL <https://ls.st/Document-16168>,  
Vera C. Rubin Observatory Document-16168

- [1163] **[SITCOMTN-006]**, Lupton, R., 2021, Integration Milestones, URL <https://sitcomtn-006.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-006
- [1164] **[ITTN-063]**, Lupton, R., 2022, Moving the Commissioning Cluster to Cerro Pachón, URL <https://ittn-063.lsst.io/>,  
Vera C. Rubin Observatory ITTN-063
- [1165] **[SITCOMTN-032]**, Lupton, R., 2022, Visits, snaps, seqNums, and exposureIDs, URL <https://sitcomtn-032.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-032
- [1166] **[SITCOMTN-054]**, Lupton, R., 2023, ComCam support on Base Test Stand, URL <https://sitcomtn-054.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-054
- [1167] Lupton, R., Blanton, M.R., Fekete, G., et al., 2004, PASP, 116, 133 (arXiv:astro-ph/0312483), doi:10.1086/382245, ADS Link
- [1168] Luri, X., Palmer, M., Arenou, F., et al., 2014, A&A, 566, A119 (arXiv:1404.5861), doi:10.1051/0004-6361/201423636, ADS Link
- [1169] **[DMTN-241]**, Lust, N.B., Jenness, T., Bosch, J.F., et al., 2022, Data management and execution systems for the Rubin Observatory Science Pipelines, URL <https://dmtn-241.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-241
- [1170] **[Document-10963]**, Ma, Z., et al., 2011, Science White Paper for LSST Deep-Drilling Field Observations: Using LSST Deep Drilling Fields to Improve Weak Lensing Measurements, URL <https://lsst.org/Document-10963>,  
Vera C. Rubin Observatory Document-10963
- [1171] **[DMTN-298]**, Mainetti, G., Hernandez, F., 2024, Using UKDF Qserv instance as FrDF Rubin Science Platform TAP service backend, URL <https://dmtn-298.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-298
- [1172] **[DMTN-304]**, Mainetti, G., Hernandez, F., Boulc'h, Q.L., Boutigny, D., 2024, Processing DP0.2 at FrDF: A comparison with DP0.2 catalogs produced at IDF, URL <https://dmtn-304.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-304

- [1173] Makarov, V.V., 1998, A&A, 340, 309, ADS Link
- [1174] Mandelbaum, R., Jarvis, M., Lupton, R.H., et al., 2023, The Open Journal of Astrophysics, 6, 5 (arXiv:2209.09253), doi:10.21105/astro.2209.09253, ADS Link
- [1175] Mangum, J.G., Wallace, P., 2015, PASP, 127, 74 (arXiv:1411.1617), doi:10.1086/679582, ADS Link
- [1176] **[RTN-033]**, Margheim, S., Verma, A., Marshall, P., 2023, The In-Kind Helpdesk System, URL <https://rtn-033.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-033
- [1177] MariaDB, MariaDB – Enterprise Open Source Database & Data Warehouse, URL <https://mariadb.com/>
- [1178] **[RDO-011]**, Marshall, P., 2020, Release Scenarios for LSST Data, URL <https://lsst.io/RDO-011>,  
Vera C. Rubin Observatory RDO-011
- [1179] **[RTN-034]**, Marshall, P., 2023, Planning Tools for Rubin Operations, URL <https://rtn-034.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-034
- [1180] **[RTN-040]**, Marshall, P., 2023, The Rubin Resource Forum Charter, URL <https://rtn-040.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-040
- [1181] **[ACP]**, Marshall, P., 2024, Access Control Plan for the Vera C. Rubin Observatory U.S. Data Facility Embargo Rack , URL <https://lsst.io/ACP>,  
Internal document
- [1182] **[RTN-035]**, Marshall, P., et al., 2023, The Rubin Operations Center at SLAC, URL <https://rtn-035.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-035
- [1183] **[PSTN-030]**, Mason, B., 2020, LSST Education and Public Outreach: Infrastructure Overview, URL <https://pstn-030.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-030
- [1184] Matheson, T., Stubens, C., Wolf, N., et al., 2021, AJ, 161, 107 (arXiv:2011.12385), doi:10.3847/1538-3881/abd703, ADS Link

- [1185] **[ITTN-022]**, Maulen, G., 2020, Summit Building Fiber/Copper Deployment, URL <https://ittn-022.lsst.io/>,  
Vera C. Rubin Observatory ITTN-022
- [1186] **[ITTN-024]**, Maulen, G., 2020, Summit Outside of Building Fiber/Copper Deployment, URL <https://ittn-024.lsst.io/>,  
Vera C. Rubin Observatory ITTN-024
- [1187] **[ITTN-025]**, Maulen, G., 2020, La Serena Building Fiber/Copper Deployment, URL <https://ittn-025.lsst.io/>,  
Vera C. Rubin Observatory ITTN-025
- [1188] **[ITTN-026]**, Maulen, G., 2020, La Serena Datacenter Fiber/Copper Deployment, URL <https://ittn-026.lsst.io/>,  
Vera C. Rubin Observatory ITTN-026
- [1189] **[ITTN-034]**, Maulen, G., 2020, Summit base link, URL <https://ittn-034.lsst.io/>,  
Vera C. Rubin Observatory ITTN-034
- [1190] **[ITTN-046]**, Maulen, G., 2021, Cameras Fibers, URL <https://ittn-046.lsst.io/>,  
Vera C. Rubin Observatory ITTN-046
- [1191] **[ITTN-047]**, Maulen, G., Constanzo, J., Stockebrand, H., 2021, Third Floor Network Planning, URL <https://ittn-047.lsst.io/>,  
Vera C. Rubin Observatory ITTN-047
- [1192] **[DMTN-308]**, McCormick, J., 2025, Database Platform Comparison for the Prompt Products Database (PPDB), URL <https://dmtn-308.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-308
- [1193] **[DMTN-301]**, McCormick, J., Dubois-Felsmann, G.P., Salnikov, A., et al., 2024, Using Felis to Represent the Semantics and Metadata of Astronomical Data Catalogs, URL <https://dmtn-301.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-301
- [1194] McDowell, J., 2004, Toward an International Virtual Observatory: Proceedings of the ESO/ESA/NASA/NSF Conference Held at Garching, Germany, 10-14 June 2002, ESO ASTROPHYSICS SYMPOSIA. ISBN 3-540-21001-6
- [1195] **[LPM-51]**, McKercher, R., 2013, Document Management Plan, URL <https://ls.st/LPM-51>,  
Vera C. Rubin Observatory LPM-51



- [1196] **[LPM-43]**, McKercher, R., 2016, WBS Structure, URL <https://ls.st/LPM-43>, Vera C. Rubin Observatory LPM-43
- [1197] **[LPM-44]**, McKercher, R., 2016, WBS Dictionary, URL <https://ls.st/LPM-44>, Vera C. Rubin Observatory LPM-44
- [1198] Melchior, P., Moolekamp, F., Jerdee, M., et al., 2018, *Astronomy and Computing*, 24, 129 (arXiv:1802.10157), doi:10.1016/j.ascom.2018.07.001, ADS Link
- [1199] Melnik, S., Gubarev, A., Long, J.J., et al., 2010, *Proc. VLDB Endow.*, 3, 330, doi:10.14778/1920841.1920886
- [1200] **[DMTN-058]**, Menanteau, F., 2017, Design Concepts for the DM Header Service, URL <https://dmtn-058.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-058
- [1201] Merson, A.I., Baugh, C.M., Helly, J.C., et al., 2013, *MNRAS*, 429, 556 (arXiv:1206.4049), doi:10.1093/mnras/sts355, ADS Link
- [1202] **[DMTN-064]**, Meyers, J., 2018, Hyper Suprime-Cam donut analysis, URL <https://dmtn-064.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-064
- [1203] **[SMTN-019]**, Meyers, J., 2024, On-sky and hardware rotation angles., URL <https://smtn-019.lsst.io/>, Vera C. Rubin Observatory Simulations Team Technical Note SMTN-019
- [1204] **[SCTR-113]**, Meyers, J., 2025, System-level Science Verification Acceptance Test Campaign: Delivered Image Quality and PSF Modeling Test Plan and Report, URL <https://sctr-113.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Report SCTR-113
- [1205] Meyers, J.E., Burchat, P.R., 2015, *ApJ*, 807, 182 (arXiv:1409.6273), doi:10.1088/0004-637X/807/2/182, ADS Link
- [1206] Michalik, D., Lindegren, L., Hobbs, D., Lammers, U., Yamada, Y., 2012, In: Ballester, P., Egret, D., Lorente, N.P.F. (eds.) *Astronomical Data Analysis Software and Systems XXI*, vol. 461 of *Astronomical Society of the Pacific Conference Series*, 549 (arXiv:1201.2849), ADS Link

- [1207] Michalik, D., Lindegren, L., Hobbs, D., Lammers, U., Yamada, Y., 2013, In: de Grijs, R. (ed.) IAU Symposium, vol. 289 of IAU Symposium, 414–417, doi:10.1017/S1743921312021849, ADS Link
- [1208] Michalik, D., Lindegren, L., Hobbs, D., Lammers, U., 2014, A&A, 571, A85 (arXiv:1407.4025), doi:10.1051/0004-6361/201424606, ADS Link
- [1209] Michalik, D., Lindegren, L., Hobbs, D., 2015, A&A, 574, A115 (arXiv:1412.8770), doi:10.1051/0004-6361/201425310, ADS Link
- [1210] Michalik, D., Lindegren, L., Hobbs, D., Butkevich, A.G., 2015, A&A, 583, A68 (arXiv:1507.02963), doi:10.1051/0004-6361/201526936, ADS Link
- [1211] Microsoft, Microsoft – SQL Server 2016, URL <https://www.microsoft.com/en-us/sql-server/sql-server-2016>
- [1212] Microsystems, S., 1999, *Code Conventions for the Java Programming Language*, Tech. rep., Sun, <http://java.sun.com/docs/codeconv>
- [1213] Microsystems, S., 1999, *Java Look and Feel Design Guidelines*, Tech. rep., Sun, <http://java.sun.com/products/jlfdg/index.htm>
- [1214] Microsystems, S., 2000, *How to write Doc Comments for JavaDoc*, Tech. rep., Sun, <http://java.sun.com/products/jdk/javadoc/writingdoccomments/index.html>
- [1215] Mignard, F., 2000, A&A, 354, 522, ADS Link
- [1216] Mignard, F., 2001, *A practical scanning law for GAIA simulations*, Tech. rep., CERGA, GAIA-FM-010
- [1217] Mignard, F., 2002, In: Bienayme, O., Turon, C. (eds.) EAS Publications Series, vol. 2 of Engineering and Science, 107–121, ADS Link
- [1218] Mignard, F., 2002, *Considerations on the orbit of Gaia for simulations*, Tech. rep., Observatoire de la Côte D’Azur/CERGA, GAIA-FM-011
- [1219] Mignard, F., 2004, Observatoire de la Côte D’Azur/CERGA, private communication
- [1220] Mignard, F., 2005, In: Turon, C., O’Flaherty, K.S., Perryman, M.A.C. (eds.) ESA SP-576: The Three-Dimensional Universe with Gaia, 5–+, ADS Link

- [1221] Mignard, F., Klioner, S., 2012, *A&A*, 547, A59 (arXiv:1207.0025), doi:10.1051/0004-6361/201219927, ADS Link
- [1222] Milani, A., Gronchi, D., G. and Farnocchia, Ivezić, Ž., et al., 2008, *Icarus*, 195, 474, doi:10.1016/j.icarus.2007.11.033, ADS Link
- [1223] Miller, W.W., III, Sontag, C., Rose, J.F., 2003, In: Payne, H.E., Jedrzejewski, R.I., Hook, R.N. (eds.) *Astronomical Data Analysis Software and Systems XII*, vol. 295 of *Astronomical Society of the Pacific Conference Series*, 261–+, ADS Link
- [1224] **[LTS-210]**, Mills, D., 2015, *Engineering and Facility Database Design Document*, URL <https://ls.st/LTS-210>, Vera C. Rubin Observatory LTS-210
- [1225] Mills, D., Schumacher, G., 2010, In: Radziwill, N.M., Bridger, A. (eds.) *Software and Cyberinfrastructure for Astronomy*, vol. 7740 of *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, 77402C, doi:10.1117/12.857233, ADS Link
- [1226] Mills, D., Schumacher, G., Lotz, P., 2016, In: Hall, H.J., Gilmozzi, R., Marshall, H.K. (eds.) *Ground-based and Airborne Telescopes VI*, vol. 9906 of *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, 99065C, doi:10.1117/12.2233099, ADS Link
- [1227] Mohammadi, M., Bazhurov, T., 2017, *arXiv e-prints*, arXiv:1702.02968 (arXiv:1702.02968), doi:10.48550/arXiv.1702.02968, ADS Link
- [1228] Möller, A., Peloton, J., Ishida, E.E.O., et al., 2021, *MNRAS*, 501, 3272 (arXiv:2009.10185), doi:10.1093/mnras/staa3602, ADS Link
- [1229] Momcheva, I., Smith, A.M., Fox, M., 2019, In: *American Astronomical Society Meeting Abstracts #233*, vol. 233 of *American Astronomical Society Meeting Abstracts*, 457.06, ADS Link
- [1230] Monash, C., 2009, *eBay's two enormous data warehouses*, URL <http://www.dbms2.com/2009/04/30/ebays-two-enormous-data-warehouses/>
- [1231] Monash, C., 2009, *Teradata and Netezza are doing MapReduce too*, URL <http://www.dbms2.com/2009/09/03/teradata-and-netezza-are-doing-mapreduce-too/>
- [1232] Monash, C., 2010, *eBay followup — Greenplum out, Teradata > 10 petabytes, Hadoop has some value, and more*, URL <http://www.dbms2.com/2010/10/06/ebay-followup-greenplum-out-teradata-10-petabytes-hadoop-has-some-value-and-more/>

- [1233] **[TSTN-006]**, Mondrik, N., Ingraham, P., Brownsburger, S., 2019, LSST Atmospheric Transmission and Slitless Spectrograph (LATISS) Instrument Handbook, URL <https://tstn-006.lsst.io/>,  
Vera C. Rubin Observatory TSTN-006
- [1234] Moniez, M., 2003, A&A, 412, 105 (arXiv:astro-ph/0302460), doi:10.1051/0004-6361:20031478, ADS Link
- [1235] **[DMTN-194]**, Moolekamp, F., 2023, The current state of scarlet and looking toward the future, URL <https://dmtn-194.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-194
- [1236] **[DMTN-026]**, Moolekamp, F., Schellart, P., 2017, Pybind11 wrapping step-by-step, URL <https://dmtn-026.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-026
- [1237] Moore, G.E., 1965, Electronics, 38, 114
- [1238] Mora, A., Vosteen, A., 2012, In: Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, vol. 8442 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series (arXiv:1207.2087), doi:10.1117/12.926313, ADS Link
- [1239] Mora, A., Biermann, M., Brown, A.G.A., et al., 2014, In: Oschmann, J., Jacobus M., Clampin, M., Fazio, G.G., MacEwen, H.A. (eds.) Space Telescopes and Instrumentation 2014: Optical, Infrared, and Millimeter Wave, vol. 9143 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 91430X (arXiv:1407.3729), doi:10.1117/12.2054602, ADS Link
- [1240] Moreau, L., Clifford, B., Freire, J., et al., 2011, Future Generation Computer Systems, 27, 743, URL <https://eprints.soton.ac.uk/271449/>
- [1241] Moreno, F., Molina, A., Ortiz, J.L., 1997, A&A, 327, 1253, ADS Link
- [1242] **[DMTN-031]**, Morrison, C.B., 2018, Pessimistic Pattern Matching for LSST, URL <https://dmtn-031.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-031
- [1243] MPI, MPI Documents, URL <http://mpi-forum.org/docs/>
- [1244] MPI4PY, MPI for Python, URL <http://mpi4py.readthedocs.io/en/stable/>

- [1245] **[DMTR-71]**, Mueller, F., 2019, LVV-P46 (2018 Qserv Large Scale Testing) Test Plan and Report, URL <https://dmtr-71.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-71
- [1246] **[LDM-552]**, Mueller, F., 2019, Distributed Database Software Test Specification, URL <https://ldm-552.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-552
- [1247] **[TSTN-047]**, Mueller, F., 2024, Operator Control of Rubin Observatory NVR Camera Infrared Illuminators, URL <https://tstn-047.lsst.io/>,  
Vera C. Rubin Observatory TSTN-047
- [1248] **[DMTN-243]**, Mueller, F., Gaponenko, I., Gates, J., et al., 2022, Qserv: A Distributed Petascale Database for the LSST Catalogs, URL <https://dmtn-243.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-243
- [1249] Muinonen, K., Belskaya, I.N., Cellino, A., et al., 2010, *Icarus*, 209, 542, doi:10.1016/j.icarus.2010.04.003, ADS Link
- [1250] Munari, U., 2000, In: *Molecules in Space and in the Laboratory*, Proceedings of a workshop held 2-5 June 1999 in Carloforte, Cagliari., vol. 67, 179–, I. Porceddu, and S. Aiello. Bologna, Italy: Italian Physical Society, Conference Proceedings
- [1251] Munari, U., Tomasella, L., 1999, *A&AS*, 137, 521, ADS Link
- [1252] **[LDM-156]**, Myers, J., Jones, L., Axelrod, T., 2013, Moving Object Pipeline System Design, URL <https://ls.st/LDM-156>,  
Vera C. Rubin Observatory LDM-156
- [1253] Myers, J.A., Tatineni, M., Sinkovits, R.S., 2011, In: *Proceedings of the 2011 TeraGrid Conference: Extreme Digital Discovery*, TG '11, 8:1–8:4, ACM, New York, NY, USA, URL <http://doi.acm.org/10.1145/2016741.2016750>, doi:10.1145/2016741.2016750
- [1254] Naghib, E., Yoachim, P., Vanderbei, R.J., Connolly, A.J., Jones, R.L., 2019, *AJ*, 157, 151 (arXiv:1810.04815), doi:10.3847/1538-3881/aafece, ADS Link
- [1255] Narayan, G., Snodgrass, R., Keceioglu, J., et al., 2015, In: *IAU General Assembly*, vol. 29, 2258269, ADS Link
- [1256] Narayan, G., Axelrod, T., Holberg, J.B., et al., 2016, *ApJ*, 822, 67 (arXiv:1603.03825), doi:10.3847/0004-637X/822/2/67, ADS Link

- [1257] NASA/Science Office of Standards and Technology, 1995, *Definition of the Flexible Image Transport System (FITS)*, Tech. Rep. NOST 100-1.1, NASA/NOST
- [1258] National Academies of Sciences, Engineering, and Medicine, 2016, *Future Directions for NSF Advanced Computing Infrastructure to Support U.S. Science and Engineering in 2017–2020*, The National Academies Press, Washington, DC, doi:10.17226/21886
- [1259] National Research Council, 2001, *Astronomy and Astrophysics in the New Millennium*, The National Academies Press, Washington, DC, URL <https://www.nap.edu/catalog/9839/astronomy-and-astrophysics-in-the-new-millennium>, doi:10.17226/9839
- [1260] National Research Council, 2003, *Connecting Quarks with the Cosmos: Eleven Science Questions for the New Century*, The National Academies Press, Washington, DC, URL <https://www.nap.edu/catalog/10079/connecting-quarks-with-the-cosmos-eleven-science-questions-for-the>, doi:10.17226/10079
- [1261] National Research Council, 2003, *New Frontiers in the Solar System: An Integrated Exploration Strategy*, The National Academies Press, Washington, DC, URL <https://www.nap.edu/catalog/10432/new-frontiers-in-the-solar-system-an-integrated-exploration-strategy>, doi:10.17226/10432
- [1262] National Research Council, 2011, *Panel Reports—New Worlds, New Horizons in Astronomy and Astrophysics*, The National Academies Press, Washington, DC, URL <https://www.nap.edu/catalog/12982/panel-reports-new-worlds-new-horizons-in-astronomy-and-astrophysics>, doi:10.17226/12982
- [1263] **[LTS-206]**, Neill, D., Sebag, J., Gressler, W., 2017, Hexapods and Rotator Specifications Document, URL <https://ls.st/LTS-206>, Vera C. Rubin Observatory LTS-206
- [1264] **[RTN-037]**, Neilsen, E., 2022, Architecture for Scheduler and Observing Progress Monitoring Software, URL <https://rtn-037.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-037
- [1265] **[RTN-022]**, Neilsen, E., 2023, Seeing values for LSST strategy simulations, URL <https://rtn-022.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-022

- [1266] **[RTN-016]**, Neilsen, E., Jones, L., 2024, Background and concepts for monitoring survey progress and scheduler performance, URL <https://rtn-016.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-016
- [1267] **[RTN-012]**, Neilsen, E., Jones, L., Yoachim, P., 2020, Approximating Pre-calculated Sky Brightness with Zernike Coefficients, URL <https://rtn-012.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-012
- [1268] **[RTN-014]**, Neilsen, E., Jones, L., Yoachim, P., 2021, Lunar Complications in the Scheduling of Deep Drilling Fields, URL <https://rtn-014.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-014
- [1269] **[RTN-048]**, Neilsen, E.H., Jr., Jones, R.L., Yoachim, P., 2024, Requirements for Scheduler and Observing Progress Monitoring Software, URL <https://rtn-048.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-048
- [1270] **[DMTN-149]**, Nelson, S., 2020, Alert Stream Simulator for Community Broker Development, URL <https://dmtn-149.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-149
- [1271] **[DMTN-183]**, Nelson, S., 2021, Alert Database Design, URL <https://dmtn-183.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-183
- [1272] **[DMTN-290]**, Neto, A.F., 2024, Sasquatch: Rubin Observatory metrics and telemetry service, URL <https://dmtn-290.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-290
- [1273] **[LSE-479]**, Network Engineering Team (NET), 2020, Network Technical Document, URL <https://ls.st/LSE-479>,  
Vera C. Rubin Observatory LSE-479
- [1274] Nicastro, L., Calderone, G., 2008, In: Argyle, R.W., Bunclark, P.S., Lewis, J.R. (eds.) *Astronomical Data Analysis Software and Systems XVII*, vol. 394 of *Astronomical Society of the Pacific Conference Series*, 487 (arXiv:0711.4964), ADS Link
- [1275] **[LDM-502]**, Nidever, D., Economou, F., 2016, The Measurement and Verification of DM Key Performance Metrics, URL <https://ls.st/LDM-502>,  
Vera C. Rubin Observatory LDM-502
- [1276] Nidever, D.L., 2016, Evaluating the LSST Science Pipelines with Precursor Datasets, URL <http://dx.doi.org/10.5281/zenodo.44673>,  
NSF Pavilion talk at the 227th American Astronomical Society Meeting

- [1277] Nidever, D.L., 2016, Mapping the LMC outskirts with DECam, URL <http://dx.doi.org/10.5281/zenodo.47537>,  
Presented at Globular Clusters and Galaxy Halos, Leiden
- [1278] Nieto-Santisteban, M.A., Szalay, A.S., Thakar, A.R., et al., 2005, ArXiv Computer Science e-prints (arXiv:cs/0502018), ADS Link
- [1279] **[SITCOMTN-095]**, Noarbe, N.S., 2024, M1M3 - Settling time after a slew, URL <https://sitcomtn-095.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-095
- [1280] Nobari, S., Tauheed, F., Heinis, T., et al., 2013, In: Proceedings of the 2013 ACM SIGMOD International Conference on Management of Data, SIGMOD '13, 701–712, ACM, New York, NY, USA, doi:10.1145/2463676.2463700
- [1281] **[LCA-227]**, Nordby, M., Kurita, N., O'Neill, F., Marsh, D., 2014, LSST Camera Quality Implementation Plan, URL <https://lsst.org/LCA-227>,  
Vera C. Rubin Observatory LCA-227
- [1282] Nordin, J., Brinell, V., van Santen, J., et al., 2019, A&A, 631, A147 (arXiv:1904.05922), doi:10.1051/0004-6361/201935634, ADS Link
- [1283] Nordstrom, B., Latham, D.W., Morse, J.A., et al., 1994, A&A, 287, 338, ADS Link
- [1284] Obe, R.O., Hsu, L.S., 2015, *PostGIS in Action*, Manning Publications Co., Greenwich, CT, USA, 2nd edn.
- [1285] O'Connor, P., 2015, Journal of Instrumentation, 10, C05010 (arXiv:1501.04137), doi:10.1088/1748-0221/10/05/C05010, ADS Link
- [1286] **[RTN-060]**, Olsen, K., 2023, Supporting Computational Science with Rubin LSST, URL <https://rtn-060.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-060
- [1287] **[RTN-062]**, Olsen, K., 2023, In-Kind Team Communications Plan, URL <https://rtn-062.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-062
- [1288] O'Mullane, W., 2005, *Large Scientific Data Systems: analysis of some existing projects and their applicability to Gaia*, Tech. rep., University of Barcelona, URL [https://dms.cosmos.esa.int/COSMOS/doc\\_fetch.php?id=497678](https://dms.cosmos.esa.int/COSMOS/doc_fetch.php?id=497678),  
Trellball GAIA-C1-ESAC-HA-WOM-003



- [1289] **[DMTN-128]**, O'Mullane, W., 2019, LSST Data Management All Hands, URL <https://dmtn-128.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-128
- [1290] **[DMTN-130]**, O'Mullane, W., 2019, Technical items to honor a tech great, URL <https://dmtn-130.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-130
- [1291] **[DMTN-131]**, O'Mullane, W., 2019, When clouds might be good for LSST, URL <https://dmtn-131.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-131
- [1292] **[DMTN-134]**, O'Mullane, W., 2019, Interacting with DOE LABs, URL <https://dmtn-134.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-134
- [1293] **[LDM-722]**, O'Mullane, W., 2019, DM provenance review WG, URL <https://ldm-722.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-722
- [1294] **[PSTN-002]**, O'Mullane, W., 2019, Understanding of Telescope and Site Software situation, URL <https://pstn-002.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-002
- [1295] **[DMTN-144]**, O'Mullane, W., 2020, Distribution of Rubin Observatory data outside the data rights community, URL <https://dmtn-144.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-144
- [1296] **[DMTN-145]**, O'Mullane, W., 2020, Bringing Rubin Observatory software together, URL <https://dmtn-145.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-145
- [1297] **[LDM-702]**, O'Mullane, W., 2020, Image display working group charge, URL <https://ldm-702.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-702
- [1298] **[PSTN-050]**, O'Mullane, W., 2020, Notes on use of TeX and texmf for Construction papers, URL <https://pstn-050.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-050

- [1299] **[DMTN-108]**, O'Mullane, W., 2021, Security of Rubin Observatory data, URL <https://dmtn-108.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-108
- [1300] **[LDM-572]**, O'Mullane, W., 2021, Chilean Data Access Center, URL <https://ldm-572.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-572
- [1301] **[DMTN-223]**, O'Mullane, W., 2023, User batch - possibilities and plans., URL <https://dmtn-223.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-223
- [1302] **[DMTN-232]**, O'Mullane, W., 2023, Celebratory Milestones, URL <https://dmtn-232.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-232
- [1303] **[DMTN-246]**, O'Mullane, W., 2023, Running external code with Rubin pipelines, URL <https://dmtn-246.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-246
- [1304] **[RTN-031]**, O'Mullane, W., 2023, Second data facilities workshop findings, URL <https://rtn-031.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-031
- [1305] **[RTN-046]**, O'Mullane, W., 2023, Management and Execution plan for Data Management Operations., URL <https://rtn-046.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-046
- [1306] **[RTN-065]**, O'Mullane, W., 2023, Initial USDF throughput tests, URL <https://rtn-065.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-065
- [1307] **[DMTN-158]**, O'Mullane, W., 2024, DM Milestone Summary, URL <https://dmtn-158.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-158
- [1308] **[DMTN-263]**, O'Mullane, W., 2024, ObsLocTap: Publishing the Rubin Observing Schedule, URL <https://dmtn-263.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-263

- [1309] **[DMTN-287]**, O'Mullane, W., 2024, Rubin's Hybrid On Premises-Cloud Data Access Center, URL <https://dmtn-287.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-287
- [1310] **[DMTN-299]**, O'Mullane, W., 2024, Jim Gray Astronomy Science Facility, URL <https://dmtn-299.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-299
- [1311] **[ITTN-078]**, O'Mullane, W., 2024, TMA ring status, URL <https://ittn-078.lsst.io/>,  
Vera C. Rubin Observatory ITTN-078
- [1312] **[RTN-001]**, O'Mullane, W., 2024, Data Preview 0: Definition and planning., URL <https://rtn-001.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-001
- [1313] **[RTN-069]**, O'Mullane, W., 2024, Summit Software Team, URL <https://rtn-069.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-069
- [1314] **[RTN-082]**, O'Mullane, W., 2024, Pixel Zone system security plan, URL <https://rtn-082.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-082
- [1315] **[SITCOMTN-052]**, O'Mullane, W., 2024, SITCOM Milestone summary, URL <https://sitcomtn-052.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-052
- [1316] **[DMTR-331]**, O'Mullane, W., 2025, LDM-503-EFDb: Replication of Summit EFD to USDF Test Plan and Report, URL <https://dmtr-331.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-331
- [1317] **[PSTN-017]**, O'Mullane, W., 2025, Overview of the Vera C. Rubin Observatory Data Management, URL <https://pstn-017.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-017
- [1318] **[RTN-085]**, O'Mullane, W., 2025, Data Preview 1: Definition and planning, URL <https://rtn-085.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-085
- [1319] **[RTN-077]**, O'Mullane, W., AISayyad, Y., 2024, Non-Quality Performance Metrics for DM in Operations, URL <https://rtn-077.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-077

- [1320] **[RTN-080]**, O'Mullane, W., Blum, R., 2024, Statement of Work for the Rubin Observatory US Data Facility, URL <https://rtn-080.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-080
- [1321] **[DMTN-286]**, O'Mullane, W., Economou, F., 2024, Data security for Rubin communication channels, URL <https://dmtn-286.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-286
- [1322] **[LDM-563]**, O'Mullane, W., Jenness, T., 2017, Butler Working Group Charge, URL <https://lsst.org/LDM-563>,  
Vera C. Rubin Observatory LDM-563
- [1323] O'Mullane, W., Lindegren, L., 1999, *Baltic Astronomy*, 8, 57, ADS Link
- [1324] O'Mullane, W., Lindegren, L., 1999, *An Object-Oriented Framework for GAIA Data Processing*, Tech. rep., ESA
- [1325] O'Mullane, W., Luri, X., 2001, In: Brunner, R.J., Djorgovski, S.G., Szalay, A.S. (eds.) *Virtual Observatories of the Future*, vol. 225 of *Astronomical Society of the Pacific Conference Series*, 201, ADS Link
- [1326] **[PSTN-003]**, O'Mullane, W., Mueller, F., 2019, Discussion of Object vs. Source table queries and data distribution, URL <https://pstn-003.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-003
- [1327] **[ITTN-006]**, O'Mullane, W., Silva, C., 2020, Management and Planning of Rubin IT, URL <https://ittn-006.lsst.io/>,  
Vera C. Rubin Observatory ITTN-006
- [1328] **[DMTN-153]**, O'Mullane, W., Slater, C., 2020, Schema Management in DM, URL <https://dmtn-153.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-153
- [1329] **[DMTN-072]**, O'Mullane, W., Swinbank, J., 2018, Cloud technical assesment, URL <https://dmtn-072.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-072
- [1330] **[LPM-221]**, O'Mullane, W., Willman, B., 2017, Charge for LSST Data Access Policy Working Group, URL <https://lsst.org/LPM-221>,  
Vera C. Rubin Observatory LPM-221

- [1331] O'Mullane, W., Hazell, A., Bennett, K., Bartelmann, M., Vuerli, C., 2000, In: Manset, N., Veillet, C., Crabtree, D. (eds.) *Astronomical Data Analysis Software and Systems IX*, vol. 216 of *Astronomical Society of the Pacific Conference Series*, 419–+, [ADS Link](#)
- [1332] O'Mullane, W., Banday, A.J., Górski, K.M., Kunszt, P., Szalay, A.S., 2001, In: Banday, A.J., Zaroubi, S., Bartelmann, M. (eds.) *Mining the Sky*, 638, doi:10.1007/10849171\_84, [ADS Link](#)
- [1333] O'Mullane, W., Banday, A.J., Górski, K.M., Kunszt, P., Szalay, A.S., 2001, In: Banday, A.J., Zaroubi, S., Bartelmann, M. (eds.) *Mining the Sky*, 638–+, doi:10.1007/10849171\_84, [ADS Link](#)
- [1334] O'Mullane, W., Gray, J., Li, N., et al., 2004, In: Ochsenbein, F., Allen, M.G., Egret, D. (eds.) *Astronomical Data Analysis Software and Systems (ADASS) XIII*, vol. 314 of *Astronomical Society of the Pacific Conference Series*, 372, [ADS Link](#)
- [1335] O'Mullane, W., Li, N., Nieto-Santisteban, M., et al., 2005, *Batch is back: CasJobs, serving multi-TB data on the Web*, Tech. rep., Microsoft, Microsoft Technical Report MSR TR 2005 19 (arXiv:cs/0502072), [ADS Link](#)
- [1336] O'Mullane, W., Lammers, U., Bailer-Jones, C., et al., 2006, *ArXiv Astrophysics e-prints* (arXiv:astro-ph/0611885), [ADS Link](#)
- [1337] O'Mullane, W., Hoar, J., Lammers, U., 2008, 394, 191 (arXiv:0712.0249), doi:10.48550/arXiv.0712.0249, [ADS Link](#)
- [1338] O'Mullane, W., Hernández, J., Hoar, J., Lammers, U., 2009, In: Bohlender, D.A., Durand, D., Dowler, P. (eds.) *Astronomical Data Analysis Software and Systems XVIII*, vol. 411 of *Astronomical Society of the Pacific Conference Series*, 470, [ADS Link](#)
- [1339] O'Mullane, W., Lammers, U., Hernandez, J., 2011, In: I. N. Evans, A. Accomazzi, D. J. Mink, & A. H. Rots (ed.) *Astronomical Data Analysis Software and Systems XX*, vol. 442 of *Astronomical Society of the Pacific Conference Series*, 351, [ADS Link](#)
- [1340] O'Mullane, W., Lammers, U., Lindegren, L., Hernandez, J., Hobbs, D., 2011, *Experimental Astronomy*, 31, 215 (arXiv:1108.2206), doi:10.1007/s10686-011-9248-z, [ADS Link](#)
- [1341] O'Mullane, W., Luri, X., Parsons, P., et al., 2011, *Experimental Astronomy*, 31, 243 (arXiv:1108.0355), doi:10.1007/s10686-011-9241-6, [ADS Link](#)
- [1342] O'Mullane, W., Luri, X., Parsons, P., et al., 2011, *Experimental Astronomy*, 31, 243 (arXiv:1108.0355), doi:10.1007/s10686-011-9241-6, [ADS Link](#)

- [1343] **[LDM-553]**, O'Mullane, W., Swinbank, J.D., Jurić, M., DMLT, 2017, Evolution of the Data Management Plan and Organization, URL <https://ls.st/LDM-553>, Vera C. Rubin Observatory LDM-553
- [1344] **[DMTN-078]**, O'Mullane, W., Swinbank, J., Lim, K., et al., 2018, Potential proofs of concept for cloud deployment, URL <https://dmtn-078.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-078
- [1345] O'Mullane, W., Gaffney, N., Economou, F., et al., 2019, arXiv e-prints, arXiv:1907.13060 (arXiv:1907.13060), doi:10.48550/arXiv.1907.13060, ADS Link
- [1346] **[DMTN-119]**, O'Mullane, W., Gruendl, R., Blum, R., 2019, Report on Operations Rehearsal #1, URL <https://dmtn-119.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-119
- [1347] **[DMTN-096]**, O'Mullane, W., Swinbank, J., Guy, L., Bauer, A., 2020, Implementation and impacts of DM scope options., URL <https://dmtn-096.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-096
- [1348] **[LPM-251]**, O'Mullane, W., Willman, B., Graham, M., Guy, L., Blum, R., 2020, Proposed Policy for Independent Data Access Centers, URL <https://lpm-251.lsst.io/>, Vera C. Rubin Observatory LPM-251
- [1349] O'Mullane, W., Economou, F., Huang, F., et al., 2021, arXiv e-prints, arXiv:2111.15030 (arXiv:2111.15030), doi:10.48550/arXiv.2111.15030, ADS Link
- [1350] **[DMTN-209]**, O'Mullane, W., Economou, F., Huang, F., et al., 2021, Rubin Science Platform on Google: the story so far., URL <https://dmtn-209.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-209
- [1351] **[LSO-011]**, O'Mullane, W., Marshall, P., Guy, L., 2021, OBSOLETE see RDO-11 . Release Scenarios for LSST Data, URL <https://lso-011.lsst.io/>, Vera C. Rubin Observatory LSO-011
- [1352] **[RTN-003]**, O'Mullane, W., Willman, B., Graham, M., et al., 2021, Guidelines for Rubin Independent Data Access Centers, URL <https://rtn-003.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-003
- [1353] **[RTN-013]**, O'Mullane, W., Dubois, R., Chiang, H.F., 2022, Near term workflow for pre-operations with PanDA, URL <https://rtn-013.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-013

- [1354] **[DMTN-240]**, O'Mullane, W., Economou, F., Lim, K.T., et al., 2022, Software Architecture and System Design of Rubin Observatory, URL <https://dmtn-240.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-240
- [1355] **[RTN-041]**, O'Mullane, W., Alsayyad, Y., Chiang, H.F., et al., 2023, Data Preview 0.2 and Operations rehearsal for DRP., URL <https://rtn-041.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-041
- [1356] **[DMTN-135]**, O'Mullane, W., Dubois, R., Butler, M., Lim, K.T., 2023, DM sizing model and cost plan for construction and operations., URL <https://dmtn-135.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-135
- [1357] **[LDM-564]**, O'Mullane, W., Economou, F., Jenness, T., Loftus, A., Swinbank, J.D., 2023, Data Management Releases for Verification/Integration, URL <https://ldm-564.lsst.io/>, Vera C. Rubin Observatory Data Management Controlled Document LDM-564
- [1358] **[RTN-053]**, O'Mullane, W., Lim, K., Reinking, H., 2023, L2 - USDF ready for ComCam processing, URL <https://rtn-053.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-053
- [1359] **[LDM-294]**, O'Mullane, W., Swinbank, J., Juric, M., Guy, L., DMLT, 2023, Data Management Organization and Management, URL <https://ldm-294.lsst.io/>, Vera C. Rubin Observatory Data Management Controlled Document LDM-294
- [1360] **[LDM-503]**, O'Mullane, W., Swinbank, J., Juric, M., et al., 2023, Data Management Test Plan, URL <https://ldm-503.lsst.io/>, Vera C. Rubin Observatory Data Management Controlled Document LDM-503
- [1361] **[DMTN-199]**, O'Mullane, W., Allbery, R., AlSayyad, Y., et al., 2024, Rubin Observatory Data Security Standards Implementation, URL <https://dmtn-199.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-199
- [1362] **[RTN-030]**, O'Mullane, W., Allbery, R., Dubois, R., Lim, K., 2024, Rubin Data and Information Security Plan, URL <https://rtn-030.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-030
- [1363] **[RTN-005]**, O'Mullane, W., Bauer, A., Blum, R., et al., 2025, Rubin Operations Work Management and Budget Planning, URL <https://rtn-005.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-005

- [1364] O'Mullane W., N.V., 2010, *Charting the Galaxy with the Gaia Satellite and InterSystems Caché*, Tech. rep., InterSystems and DPAC, URL [http://www.intersystems.com/cache/whitepapers/charting\\_the\\_galaxy.html](http://www.intersystems.com/cache/whitepapers/charting_the_galaxy.html)
- [1365] **[SITCOMTN-149]**, On behalf of Rubin Observatory Project, 2025, An Interim Report on the ComCam On-Sky Campaign, URL <https://sitcomtn-149.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-149
- [1366] OpenMP, OpenMP, URL <http://www.openmp.org/>
- [1367] Oracle, Oracle – Database 12c, URL <https://www.oracle.com/database/index.html>
- [1368] Oracle, 2005, *Data Compression in 10g*, Tech. rep., Oracle Corporation, URL [http://www.oracle.com/technology/products/bi/db/10g/pdf/twp\\_data\\_compression\\_10gr2\\_0505.pdf](http://www.oracle.com/technology/products/bi/db/10g/pdf/twp_data_compression_10gr2_0505.pdf)
- [1369] Oracle, 2007, *Data Compression in 11g*, Tech. rep., Oracle Corporation, URL [http://download.oracle.com/docs/cd/B28359\\_01/server.111/b28318/schema.htm#CNCPT1132](http://download.oracle.com/docs/cd/B28359_01/server.111/b28318/schema.htm#CNCPT1132)
- [1370] Ortiz I., D.P., Lusted J., 2008, *Astronomical Data Query Language*, Tech. rep., IVOA, REC-ADQL-2.0
- [1371] **[SATMP]**, Osuna, P., 2011, *Science Archives and VO Team (SAT) Management Plan*, SAT\_GEN\_PL\_3.0\_06\_MP\_30\_May\_2011, URL [http://www.rssd.esa.int/l1ink/livelink/fetch/-415780/2741092/SAT\\_GEN\\_PL\\_3.0\\_06\\_MP\\_30May2011.pdf?nodeid=3120171&vernum=-2](http://www.rssd.esa.int/l1ink/livelink/fetch/-415780/2741092/SAT_GEN_PL_3.0_06_MP_30May2011.pdf?nodeid=3120171&vernum=-2)
- [1372] **[ITTN-001]**, Oteiza, N.S., Hoblitt, J., 2019, Redux Notes - Puppeton July, 2019, URL <https://ittn-001.lsst.io/>, Vera C. Rubin Observatory ITTN-001
- [1373] Otto, S., Politzer, H.D., Preskill, J., Wise, M.B., 1986, ApJ, 304, 62, doi:10.1086/164144, ADS Link
- [1374] Owen, R., 2016, In: Python in Astronomy 2016, 28, doi:10.5281/zenodo.48410, ADS Link
- [1375] **[TSTN-033]**, Owen, R., 2022, Exploring Kafka for Telescope Control, URL <https://tstn-033.lsst.io/>, Vera C. Rubin Observatory TSTN-033



- [1376] **[DMTN-041]**, Owen, R., Krughoff, S., 2014, Design of the LSST Camera Geometry system, URL <https://dmtn-041.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-041
- [1377] Owens, J.C., 1967, Appl. Opt., 6, 51, doi:10.1364/AO.6.000051, ADS Link
- [1378] **[DMTN-168]**, Padolski, S., Ye, S., Karavakis, E., 2022, Running Science Pipelines using PanDA, URL <https://dmtn-168.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-168
- [1379] Pankratius, V., Li, J., Gowanlock, M., et al., 2016, IEEE Intelligent Systems, 31, 3, doi:10.1109/MIS.2016.60
- [1380] **[DMTN-005]**, Parejko, J., 2016, Current LSST stack WCS usage, URL <https://dmtn-005.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-005
- [1381] **[DMTN-027]**, Parejko, J., 2016, Renaming an LSST git Repository, URL <https://dmtn-027.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-027
- [1382] **[DMTN-010]**, Parejko, J., Owen, R., 2016, WCS and Distortion Requirements and Existing Options, URL <https://dmtn-010.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-010
- [1383] **[SQR-017]**, Parejko, J., Sick, J., 2017, Validation Metrics Framework, URL <https://sqr-017.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-017
- [1384] Parejko, J., Jenness, T., Owen, R., 2016, In: Python in Astronomy 2016, 17, doi:10.5281/zenodo.48414, ADS Link
- [1385] **[SITCOMTN-077]**, Park, H., 2023, Drift During Tracking Verification, URL <https://sitcomtn-077.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-077
- [1386] **[SITCOMTN-039]**, Park, H., Hebert, C.A., Lage, C., Urbach, E., 2023, Stuttered Image Analysis, URL <https://sitcomtn-039.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-039

- [1387] **[SITCOMTN-084]**, Park, H., Lage, C., Boutigny, D., 2023, Position Repeatability Analysis, URL <https://sitcomtn-084.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-084
- [1388] **[DMTN-093]**, Patterson, M., Bellm, E., Swinbank, J., Nelson, S., 2020, Design of the LSST Alert Distribution System, URL <https://dmtn-093.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-093
- [1389] **[DMTN-028]**, Patterson, M.T., 2018, Benchmarking a distribution system for LSST alerts, URL <https://dmtn-028.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-028
- [1390] **[DMTN-081]**, Patterson, M.T., 2018, Deploying an alert stream mini-broker prototype, URL <https://dmtn-081.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-081
- [1391] Pavlo, A., Paulson, E., Rasin, A., et al., 2009, In: Proceedings of the 2009 ACM SIGMOD International Conference on Management of Data, SIGMOD '09, 165–178, ACM, New York, NY, USA, URL <http://doi.acm.org/10.1145/1559845.1559865>, doi:10.1145/1559845.1559865
- [1392] Pegasus, Pegasus WMS, URL <https://pegasus.isi.edu/>
- [1393] Pérez-Jordán, w., Castro-Almazán, J.A., Muñoz-Tuñón, C., 2018, MNRAS, 477, 5477 (arXiv:1804.05200), doi:10.1093/mnras/sty943, ADS Link
- [1394] Perryman, A., 2010, *The Making of History's Greatest Star Map*, Astronomers' universe, Springer, URL <http://books.google.es/books?id=P-5pZ8GNuPIC>
- [1395] Perryman, M., 2009, *Astronomical Applications of Astrometry: Ten Years of Exploitation of the Hipparcos Satellite Data*, Cambridge University Press
- [1396] Perryman, M., de Bruijne, J., Lammers, U., 2008, Experimental Astronomy, 22, 143, doi:10.1007/s10686-008-9116-7, ADS Link
- [1397] Perryman, M.A.C., ESA (eds.), 1997, *The HIPPARCOS and TYCHO catalogues. Astrometric and photometric star catalogues derived from the ESA HIPPARCOS Space Astrometry Mission*, vol. 1200 of ESA Special Publication, ADS Link
- [1398] Perryman, M.A.C., de Boer, K.S., Gilmore, G., et al., 2001, A&A, 369, 339 (arXiv:astro-ph/0101235), doi:10.1051/0004-6361:20010085, ADS Link

- [1399] Peschka, J., 2010, Facebook messaging - hbase comes of age, URL [https://web.archive.org/web/20110215081418/http://nosqlpedia.com/wiki/Facebook\\_Messaging\\_-\\_HBase\\_Comes\\_of\\_Age](https://web.archive.org/web/20110215081418/http://nosqlpedia.com/wiki/Facebook_Messaging_-_HBase_Comes_of_Age)
- [1400] **[SQR-007]**, Peterson, J.M., 2016, SQuaRE's Logging, monitoring and metrics system, URL <https://sqr-007.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-007
- [1401] Peterson, J.R., Jernigan, J.G., Kahn, S.M., et al., 2015, ApJS, 218, 14 (arXiv:1504.06570), doi:10.1088/0067-0049/218/1/14, ADS Link
- [1402] **[LPM-122]**, Petravick, D., 2015, LSST Information Classification Policy, URL <https://lsst/LPM-122>,  
Vera C. Rubin Observatory LPM-122
- [1403] **[DMTN-051]**, Petravick, D., 2017, LDF File Systems Baseline Overview, URL <https://dmtn-051.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-051
- [1404] **[LPM-123]**, Petravick, D., 2017, LSST General Acceptable Use Policy , URL <https://lsst/LPM-123>,  
Vera C. Rubin Observatory LPM-123
- [1405] **[LSE-239]**, Petravick, D., Hoblitt, J., Lim, K.T., et al., 2016, Base Facility Data Center Design Requirements, URL <https://lsst/LSE-239>,  
Vera C. Rubin Observatory LSE-239
- [1406] **[LDM-230]**, Petravick, D., Butler, M., Gelman, M., 2018, Concept of Operations for the LSST Data Facility Services, URL <https://ldm-230.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-230
- [1407] **[LDM-129]**, Petravick, D., Johnson, M., Butler, M., 2018, LSST Data Facility Logical Information Technology and Communications Design, URL <https://lsst/LDM-129>,  
Vera C. Rubin Observatory LDM-129
- [1408] **[LPM-121]**, Petravick, D.L., Withers, A., 2016, LSST Master Information Security Policy, URL <https://lsst/LPM-121>,  
Vera C. Rubin Observatory LPM-121
- [1409] Pickles, A.J., 1998, PASP, 110, 863, doi:10.1086/316197, ADS Link

- [1410] Pierfederici, F., 2009, LSST-PanSTARRS Solar System Events, URL <http://www.cacr.caltech.edu/hotwired2/program/presentations/pierfederici.pdf>,  
Presented at Hot-Wiring the Transient Universe 2, Santa Cruz
- [1411] **[DMTN-003]**, Pietrowicz, S., 2015, Description of v1.0 of the Alert Production Simulator, URL <https://dmtn-003.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-003
- [1412] **[DMTN-062]**, Pietrowicz, S., 2017, OpenShift investigation, URL <https://dmtn-062.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-062
- [1413] **[DMTN-071]**, Pietrowicz, S., 2018, Kubernetes Installation, URL <https://dmtn-071.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-071
- [1414] **[DMTN-084]**, Pietrowicz, S., 2018, Kubernetes Notes, URL <https://dmtn-084.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-084
- [1415] **[DMTN-095]**, Pietrowicz, S., 2018, Kubernetes Guidelines, URL <https://dmtn-095.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-095
- [1416] Pike, R., Dorward, S., Griesemer, R., Quinlan, S., 2005, Scientific Programming, 13, 277, doi:10.1155/2005/962135
- [1417] **[Document-5373]**, Pinto, P., Kantor, J., Strauss, M., Sweeney, D., 2008, Data Access White Paper, URL <https://ls.st/Document-5373>,  
Vera C. Rubin Observatory Document-5373
- [1418] Plante, R., Greene, G., Hanisch, R., et al., 2004, In: F. Ochsenbein, M. G. Allen, & D. Egret (ed.) Astronomical Data Analysis Software and Systems (ADASS) XIII, vol. 314 of Astronomical Society of the Pacific Conference Series, 585, ADS Link
- [1419] **[Document-9541]**, Plante, R., Allsman, R., Axelrod, T., et al., 2010, Results from Data Challenge 1, URL <https://ls.st/Document-9541>,  
Vera C. Rubin Observatory Document-9541
- [1420] **[DMTN-079]**, Plutchak, J., 2018, Investigations for Consolidating System Management and Deployment, URL <https://dmtn-079.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-079

- [1421] **[SITCOMTN-118]**, Polen, B., 2024, Giant Donut Test (WET-005), URL <https://sitcomtn-118.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-118
- [1422] **[SITCOMTN-127]**, Polen, B., 2024, Wavefront Estimation Chromaticity Test (WET-008),  
URL <https://sitcomtn-127.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-127
- [1423] **[SITCOMTN-142]**, Polen, B., 2024, Background Galaxies and Cosmic Rays, URL <https://sitcomtn-142.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-142
- [1424] Pourbaix, D., 2002, A&A, 385, 686 (arXiv:astro-ph/0201132), doi:10.1051/0004-6361:20020149, ADS Link
- [1425] Press, W.H., Teukolsky, S.A., Vetterling, W.T., Flannery, B.P., 2002, *Numerical Recipes in C*, Cambridge University Press, 2 edn.
- [1426] Prod'homme, T., Brown, A.G.A., Lindegren, L., Short, A.D.T., Brown, S.W., 2011, MNRAS, 414, 2215 (arXiv:1103.3630), doi:10.1111/j.1365-2966.2011.18537.x, ADS Link
- [1427] Project, A.L.S., Apache log4cxx, URL [https://logging.apache.org/log4cxx/latest\\_stable/](https://logging.apache.org/log4cxx/latest_stable/)
- [1428] **[LPM-162]**, Project Science Team, 2015, Project Publication Policy, URL <https://ls.st/LPM-162>,  
Vera C. Rubin Observatory LPM-162
- [1429] Protopapas, P., Giammarco, J.M., Faccioli, L., et al., 2006, MNRAS, 369, 677 (arXiv:astro-ph/0505495), doi:10.1111/j.1365-2966.2006.10327.x, ADS Link
- [1430] Prusti, T., 2014, In: EAS Publications Series, vol. 67 of EAS Publications Series, 15–21, doi:10.1051/eas/1567003, ADS Link
- [1431] **[SITCOMTN-092]**, Quint, B.C., 2024, M1M3 Force Balance System - Inertia Compensation, URL <https://sitcomtn-092.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-092
- [1432] **[SITCOMTN-109]**, Quint, B.C., 2024, M1M3 - analyze position and rotation stability throughout a tracking period, URL <https://sitcomtn-109.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-109

- [1433] **[SITCOMTN-126]**, Quint, B.C., 2024, AuxTel image quality wind study, URL <https://sitcomtn-126.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-126
- [1434] **[SITCOMTN-147]**, Quint, B.C., 2024, M2 Response to short and long slews, URL <https://sitcomtn-147.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-147
- [1435] **[SITCOMTN-150]**, Quint, B.C., 2024, Summary of M2 Tests, URL <https://sitcomtn-150.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-150
- [1436] **[SITCOMTN-138]**, Quint, B.C., 2025, Rotator Emergency Stopping Distance, URL <https://sitcomtn-138.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-138
- [1437] Quobyte, Quobyte – Data Center File System, URL <https://www.quobyte.com/>
- [1438] RabbitMQ, RabbitMQ – Messaging that just works, URL <https://www.rabbitmq.com/>
- [1439] **[SITCOMTN-141]**, Ramírez, K.P.n., 2024, M1M3 temperature analysis under mirror transportation, URL <https://sitcomtn-141.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-141
- [1440] Randles, C.A., da Silva, A.M., Buchard, V., et al., 2017, Journal of Climate, 30, 6823, URL <https://doi.org/10.1175/JCLI-D-16-0609.1> (<https://doi.org/10.1175/JCLI-D-16-0609.1>), doi:10.1175/JCLI-D-16-0609.1
- [1441] **[Document-8590]**, Rasmussen, A., 2015, Sensor Modeling for the LSST Camera Focal Plane: Current Status of SLAC Originated Code, URL <https://ls.st/Document-8590>,  
Vera C. Rubin Observatory Document-8590
- [1442] **[DMTN-039]**, Rawls, M., 2019, A Prototype AP Pipeline, URL <https://dmtn-039.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-039
- [1443] Re Fiorentin, P., Bailer-Jones, C.A.L., Lee, Y.S., et al., 2007, Astronomy and Astrophysics, 467, 1373 (arXiv:astro-ph/0703309), doi:10.1051/0004-6361:20077334, ADS Link
- [1444] Recio-Blanco, A., Bijaoui, A., de Laverny, P., 2006, MNRAS, 370, 141 (arXiv:astro-ph/0604385), doi:10.1111/j.1365-2966.2006.10455.x, ADS Link

- [1445] **[LSE-390]**, Reil, K., Claver, C., Riot, V., Krabbendam, V., 2020, Commissioning Execution Plan, URL <https://ls.st/LSE-390>,  
Vera C. Rubin Observatory LSE-390
- [1446] **[PSTN-036]**, Reil, K.A., 2020, LSST Camera Instrumental Signature Characterization, Calibration and Removal, URL <https://pstn-036.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-036
- [1447] **[ITTN-012]**, Reinking, H., 2020, Graylog k8s deployment and configuration, URL <https://ittn-012.lsst.io/>,  
Vera C. Rubin Observatory ITTN-012
- [1448] **[ITTN-027]**, Reinking, H., 2020, Monitoring over Icinga2, URL <https://ittn-027.lsst.io/>,  
Vera C. Rubin Observatory ITTN-027
- [1449] **[ITTN-036]**, Reinking, H., 2021, Virtualization Cluster Topology and Design, URL <https://ittn-036.lsst.io/>,  
Vera C. Rubin Observatory ITTN-036
- [1450] **[ITTN-048]**, Reinking, H., 2021, CentOS System Disk Encryption, URL <https://ittn-048.lsst.io/>,  
Vera C. Rubin Observatory ITTN-048
- [1451] **[ITTN-052]**, Reinking, H., 2021, Base Data Center Power off/Power on Procedure, URL <https://ittn-052.lsst.io/>,  
Vera C. Rubin Observatory ITTN-052
- [1452] **[ITTN-054]**, Reinking, H., 2021, TIG Infrastructure, URL <https://ittn-054.lsst.io/>,  
Vera C. Rubin Observatory ITTN-054
- [1453] **[DMTN-007]**, Reiss, D., 2016, Dipole characterization for image differencing, URL <https://dmtn-007.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-007
- [1454] **[DMTN-061]**, Reiss, D.J., 2017, State of image subtraction in the LSST stack, URL <https://dmtn-061.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-061
- [1455] **[DMTN-021]**, Reiss, D.J., Lupton, R.H., 2016, Implementation of Image Difference Decorrelation, URL <https://dmtn-021.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-021

- [1456] **[SMTN-007]**, Reuter, M., 2016, So, You Want to Write a Scheduler for SOCS, URL <https://smtn-007.lsst.io/>,  
Vera C. Rubin Observatory Simulations Team Technical Note SMTN-007
- [1457] **[SITCOMTN-001]**, Reuter, M., 2019, Operations Manual for Dome Seeing Monitor, URL <https://sitcomtn-001.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-001
- [1458] **[TSTN-019]**, Reuter, M., 2020, Deployment of Containerized Control System Components, URL <https://tstn-019.lsst.io/>,  
Vera C. Rubin Observatory TSTN-019
- [1459] **[TSTN-025]**, Reuter, M., 2020, Stress Testing New Releases, URL <https://tstn-025.lsst.io/>,  
Vera C. Rubin Observatory TSTN-025
- [1460] **[PSTN-040]**, Reuter, M.A., 2019, Tracking of LSST System Performance with Continuous Integration Methods, URL <https://pstn-040.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-040
- [1461] Reuter, M.A., Cook, K.H., Delgado, F., Petry, C.E., Ridgway, S.T., 2016, In: Modeling, Systems Engineering, and Project Management for Astronomy VI, vol. 9911 of Proc. SPIE, 991125, doi:10.1117/12.2232680, ADS Link
- [1462] **[Report-561]**, Review Committee, 2018, Telescope & Site (T&S) Software Review Report, URL <https://ls.st/Report-561>,  
Vera C. Rubin Observatory Report-561
- [1463] **[TSTN-002]**, Ribeiro, T., 2019, Software Deployment Strategy, URL <https://tstn-002.lsst.io/>,  
Vera C. Rubin Observatory TSTN-002
- [1464] **[TSTN-012]**, Ribeiro, T., 2020, Auxiliary Telescope M1 Pressure Look Up Table., URL <https://tstn-012.lsst.io/>,  
Vera C. Rubin Observatory TSTN-012
- [1465] **[TSTN-013]**, Ribeiro, T., 2020, Auxiliary Telescope Hexapod Look Up Table., URL <https://tstn-013.lsst.io/>,  
Vera C. Rubin Observatory TSTN-013



- [1466] **[TSTN-016]**, Ribeiro, T., 2020, Auxiliary Telescope: Determining sensitivity matrix for hexapod correction using CWFS data, URL <https://tstn-016.lsst.io/>,  
Vera C. Rubin Observatory TSTN-016
- [1467] **[TSTN-014]**, Ribeiro, T., 2021, Auxiliary Telescope Building and fitting pointing model., URL <https://tstn-014.lsst.io/>,  
Vera C. Rubin Observatory TSTN-014
- [1468] **[TSTN-017]**, Ribeiro, T., 2021, Handling CSC configuration and ancillary data., URL <https://tstn-017.lsst.io/>,  
Vera C. Rubin Observatory TSTN-017
- [1469] **[TSTN-029]**, Ribeiro, T., 2022, The Engineering Facility Database Large File Object Infrastructure, URL <https://tstn-029.lsst.io/>,  
Vera C. Rubin Observatory TSTN-029
- [1470] **[TSTN-030]**, Ribeiro, T., 2022, Kafka schemas and schema evolution, URL <https://tstn-030.lsst.io/>,  
Vera C. Rubin Observatory TSTN-030
- [1471] **[TSTN-031]**, Ribeiro, T., 2022, Integration Milestone Pf, URL <https://tstn-031.lsst.io/>,  
Vera C. Rubin Observatory TSTN-031
- [1472] **[TSTN-035]**, Ribeiro, T., 2022, Handling Targets of Opportunity, URL <https://tstn-035.lsst.io/>,  
Vera C. Rubin Observatory TSTN-035
- [1473] **[TSTN-037]**, Ribeiro, T., 2022, Telescope and Site Software Verification strategy, URL <https://tstn-037.lsst.io/>,  
Vera C. Rubin Observatory TSTN-037
- [1474] **[TSTN-038]**, Ribeiro, T., 2022, Postmortem for network failure for AT run in 20221206, URL <https://tstn-038.lsst.io/>,  
Vera C. Rubin Observatory TSTN-038
- [1475] **[TSTN-043]**, Ribeiro, T., 2023, TMA + M1M3 dynamic testing, URL <https://tstn-043.lsst.io/>,  
Vera C. Rubin Observatory TSTN-043
- [1476] **[TSTN-044]**, Ribeiro, T., 2024, Night Planning Tool, URL <https://tstn-044.lsst.io/>,  
Vera C. Rubin Observatory TSTN-044

- [1477] **[TSTN-045]**, Ribeiro, T., 2024, Replacing DDS with Apache Kafka as middleware technology for the Rubin Observatory Control System, URL <https://tstn-045.lsst.io/>, Vera C. Rubin Observatory TSTN-045
- [1478] **[TSTN-048]**, Ribeiro, T., 2024, Extending the ScriptQueue to allow parallel execution of SAL Scripts., URL <https://tstn-048.lsst.io/>, Vera C. Rubin Observatory TSTN-048
- [1479] **[TSTN-034]**, Ribeiro, T., Fausti, A., 2022, Catcher design, URL <https://tstn-034.lsst.io/>, Vera C. Rubin Observatory TSTN-034
- [1480] **[TSTN-001]**, Ribeiro, T., Ingraham, P., 2022, Proposal to conduct in-house CSC development., URL <https://tstn-001.lsst.io/>, Vera C. Rubin Observatory TSTN-001
- [1481] **[TSTN-020]**, Ribeiro, T., Ingraham, P., 2022, Configuration User Manual, URL <https://tstn-020.lsst.io/>, Vera C. Rubin Observatory TSTN-020
- [1482] **[LSE-150]**, Ribeiro, T., O'Mullane, W., Axelrod, T., Mills, D., 2020, Control Software Architecture, URL <https://lse-150.lsst.io/>, Vera C. Rubin Observatory LSE-150
- [1483] **[TSTN-023]**, Ribeiro, T., Reuter, M., Mills, D., Owen, R., 2020, DDS slow-down on large scale system., URL <https://tstn-023.lsst.io/>, Vera C. Rubin Observatory TSTN-023
- [1484] **[TSTN-028]**, Ribeiro, T., Clements, A., Mills, D., Reuter, M., Owen, R., 2022, The past, present and future of the Vera Rubin Observatory Control System Middleware, URL <https://tstn-028.lsst.io/>, Vera C. Rubin Observatory TSTN-028
- [1485] **[TSTN-046]**, Ribeiro, T., Reuter, M., Aranda, S., 2024, LOVE deployment configuration on k8s., URL <https://tstn-046.lsst.io/>, Vera C. Rubin Observatory TSTN-046
- [1486] Richards, G.T., Nichol, R.C., Gray, A.G., et al., 2004, ApJS, 155, 257 (arXiv:astro-ph/0408505), doi:10.1086/425356, ADS Link
- [1487] Richards, J.W., Starr, D.L., Butler, N.R., et al., 2011, ApJ, 733, 10 (arXiv:1101.1959), doi:10.1088/0004-637X/733/1/10, ADS Link

- [1488] Rickman, H., 2001, Transactions of the International Astronomical Union Proceedings of the Twenty-Fourth General Assembly. Edited by Hans Rickman. ISBN: 1-58381-087-0. San Francisco: Astronomical Society of the Pacific, 2001., 24, ADS Link
- [1489] Riskey, D., van Leeuwen, F., Brown, A.G.A., 2012, Experimental Astronomy, 34, 669, doi:10.1007/s10686-012-9310-5, ADS Link
- [1490] **[PSTN-012]**, Ritz, S., 2019, LSST Camera Cryostat, URL <https://pstn-012.lsst.io/>, Vera C. Rubin Observatory Project Science Technical Note PSTN-012
- [1491] **[PSTN-014]**, Ritz, S., 2019, LSST Camera Body and Mechanisms, URL <https://pstn-014.lsst.io/>, Vera C. Rubin Observatory Project Science Technical Note PSTN-014
- [1492] Rixon G., G.M., 2008, *Single-Sign-On Profile: Authentication Mechanisms*, Tech. rep., IVOA, REC-SSO-1.01
- [1493] **[SCTR-13]**, Roberts, A., 2020, LVV-P58 Ccw + Camera Rotator Interface Verification On Camera Cart Test Plan and Report, URL <https://sctr-13.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Report SCTR-13
- [1494] **[SCTR-12]**, Roberts, A., 2021, LVV-P64: CCW Functional Re-verification Test Plan and Report, URL <https://sctr-12.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Report SCTR-12
- [1495] **[SCTR-41]**, Roberts, A., 2022, LVV-P81: Level 3 System Spread Configuration Integration Test Plan and Report, URL <https://sctr-41.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Report SCTR-41
- [1496] **[SITCOMTN-011]**, Roberts, A., Heyer, A., 2021, CCW/Rotator Synchronous Motion Limit Switch Characterization, URL <https://sitcomtn-011.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-011
- [1497] **[SITCOMTN-016]**, Roberts, A., Drass, H., Stalder, B., 2021, CCW/Rotator Synchronous Motion Limit Switch Characterization with ComCam, URL <https://sitcomtn-016.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-016
- [1498] **[SITCOMTN-053]**, Roberts, A., Drass, H., Stalder, B., 2022, CCW/Rotator Synchronous Motion Limit Switch Characterization with ComCam, URL <https://sitcomtn-053.lsst.io/>

- io/,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-053
- [1499] **[RDO-71]**, Roberts, A., Blum, R., Claver, C., et al., 2024, Rubin Observatory Risk and Opportunity Management Plan, URL <https://rdo-71.lsst.io/>,  
Vera C. Rubin Observatory RDO-71
- [1500] Robin, A.C., Reylé, C., Derrière, S., Picaud, S., 2003, A&A, 409, 523 (arXiv:astro-ph/0401052), doi:10.1051/0004-6361/200311117, ADS Link
- [1501] Robin, A.C., Luri, X., Reylé, C., et al., 2012, A&A, 543, A100 (arXiv:1202.0132), doi:10.1051/0004-6361/201118646, ADS Link
- [1502] Robin, A.C., Luri, X., Reylé, C., et al., 2012, A&A, 543, A100 (arXiv:1202.0132), doi:10.1051/0004-6361/201118646, ADS Link
- [1503] Roby, W., Wu, X., Ly, L., Goldina, T., 2015, In: Taylor, A.R., Rosolowsky, E. (eds.) Astronomical Data Analysis Software and Systems XXIV (ADASS XXIV), vol. 495 of Astronomical Society of the Pacific Conference Series, 417, ADS Link
- [1504] Roby, W., Wu, X., Goldina, T., et al., 2016, In: Software and Cyberinfrastructure for Astronomy IV, vol. 9913 of Proc. SPIE, 99130Y, doi:10.1117/12.2233042, ADS Link
- [1505] Roby, W.W., 2016, Firefly: embracing future web technologies, URL <http://dx.doi.org/10.5281/zenodo.>,  
Talk at the SPIE Astronomical Telescopes and Instrumentation Conference, Edinburgh, UK
- [1506] **[SITCOMTN-099]**, Rodeghiero, G., 2024, M2 Cell Rigid Body Motion fault debugging, URL <https://sitcomtn-099.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-099
- [1507] **[SITCOMTN-103]**, Rodeghiero, G., 2024, M2 no-back driving data analysis, URL <https://sitcomtn-103.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-103
- [1508] **[SITCOMTN-148]**, Roodman, A., Utsumi, Y., MacBride, S., 2024, LSST Camera Electro-Optical Test Results, URL <https://sitcomtn-148.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-148

- [1509] Rose, J., Akella, R., Binengar, S., et al., 1995, In: Shaw, R.A., Payne, H.E., Hayes, J.J.E. (eds.) *Astronomical Data Analysis Software and Systems IV*, vol. 77 of *Astronomical Society of the Pacific Conference Series*, 429–+, [ADS Link](#)
- [1510] Röser, S., Schilbach, E., Schwan, H., et al., 2008, *A&A*, 488, 401 (arXiv:0806.1009), doi:10.1051/0004-6361:200809775, [ADS Link](#)
- [1511] **[SITCOMTN-093]**, Rosignoli, L., 2023, LVV-1791 M2 RBP REPEATABILITY TEST, URL <https://sitcomtn-093.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-093
- [1512] **[NIST.SP.800-171r3]**, Ross, R., Pillitteri, V., 2024, Special publication 800-171, protecting controlled unclassified information in nonfederal systems and organizations, URL <https://doi.org/10.6028/NIST.SP.800-171r3>
- [1513] **[NIST.SP.800-171r2]**, ROSS, R., VISCUSO, P., GUISSANIE, G., DEMPSEY, K., RIDDLE, M., 2020, Special publication 800-171, protecting controlled unclassified information in nonfederal systems and organizations, URL <https://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-171r2.pdf>
- [1514] Royce, W., 1970, In: *Proceedings of IEEE WESCON*, 1–9, URL <http://www.cs.umd.edu/class/spring2003/cmsc838p/Process/waterfall.pdf>
- [1515] Rucio, Rucio Distributed Data Management Documentation, URL <http://rucio.cern.ch/>
- [1516] **[RTN-051]**, Rumore, M., 2023, Rubin Observatory Risk Management Tool User Guide, URL <https://rtn-051.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-051
- [1517] **[RTN-076]**, Rumore, M., Guy, L., 2024, Migration Plan for Construction Project Documentation to Operations, URL <https://rtn-076.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-076
- [1518] **[SITCOMTN-012]**, Rumore, M., Claver, C., Cabrera, D., et al., 2024, Rubin Observatory Construction Documentation Inventory, URL <https://sitcomtn-012.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-012
- [1519] **[SITCOMTN-014]**, Rumore, M., Claver, C., Cabrera, D., et al., 2024, Project-wide Documentation Proposal for Rubin Observatory Operations, URL <https://sitcomtn-014.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-014

- [1520] **[PSTN-026]**, Rykoff, E.S., 2019, LSST Calibration Strategy and Pipelines, URL <https://pstn-026.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-026
- [1521] Saha, A., Wang, Z., Matheson, T., et al., 2016, In: Observatory Operations: Strategies, Processes, and Systems VI, vol. 9910 of Proc. SPIE, 99100F (arXiv:1611.05914), doi:10.1117/12.2232095, ADS Link
- [1522] **[RTN-084]**, Saha, A., O'Mullane, W., Graham, M., 2025, Resource Allocation Committee, URL <https://rtn-084.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-084
- [1523] Sahlmann, J., 2012, *Observing exoplanet populations with high-precision astrometry*, Ph.D. thesis, Observatoire de Genève, Université de Genève <EMAIL>Johannes.Sahlmann@unige.ch</EMAIL>
- [1524] Salgado, J., González-Nuñez, J., Gutiérrez-Sánchez, R., et al., 2019, In: Teuben, P.J., Pound, M.W., Thomas, B.A., Warner, E.M. (eds.) *Astronomical Data Analysis Software and Systems XXVII*, vol. 523 of *Astronomical Society of the Pacific Conference Series*, 445, ADS Link
- [1525] **[DMTN-018]**, Salnikov, A., 2016, Re-visiting L1 Database Design, URL <https://dmtn-018.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-018
- [1526] **[DMTN-113]**, Salnikov, A., 2019, Performance of RDBMS-based PPDB implementation, URL <https://dmtn-113.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-113
- [1527] **[DMTN-156]**, Salnikov, A., 2020, Performance of Cassandra-based APDB implementation, URL <https://dmtn-156.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-156
- [1528] **[DMTN-162]**, Salnikov, A., 2020, Planning next round of APDB tests, URL <https://dmtn-162.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-162
- [1529] **[DMTN-184]**, Salnikov, A., 2021, Testing Cassandra APDB implementation on GCP, URL <https://dmtn-184.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-184
-

- [1530] **[DMTN-191]**, Salnikov, A., 2021, Schema Migration for Butler Registry Database, URL <https://dmtn-191.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-191
- [1531] **[DMTN-236]**, Salnikov, A., 2022, ObsCore as a View of Butler Registry Tables, URL <https://dmtn-236.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-236
- [1532] **[DMTN-268]**, Salnikov, A., 2023, Data replication between APDB and PPDB, URL <https://dmtn-268.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-268
- [1533] **[DMTN-269]**, Salnikov, A., 2023, Database schema versioning for APDB, URL <https://dmtn-269.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-269
- [1534] **[DMTN-293]**, Salnikov, A., McCormick, J., 2024, Current status of APDB and PPDB implementation, URL <https://dmtn-293.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-293
- [1535] **[DMTN-256]**, Sánchez, B., 2023, Status of Difference Image Analysis, URL <https://dmtn-256.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-256
- [1536] Sánchez, C., Carrasco Kind, M., Lin, H., et al., 2014, MNRAS, 445, 1482 (arXiv:1406.4407), doi:10.1093/mnras/stu1836, ADS Link
- [1537] Sarro, L.M., Eyer, L., O'Mullane, W., De Ridder, J., 2012, *Astrostatistics and Data Mining*, Springer, doi:10.1007/978-1-4614-3323-1, ADS Link
- [1538] **[DMTN-197]**, Saunders, C., 2021, Streak Masking in DM Image Processing, URL <https://dmtn-197.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-197
- [1539] **[SITCOMTN-066]**, Saunders, C., 2023, SITCOM-716: Encoder Disagreement Study, URL <https://sitcomtn-066.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-066
- [1540] **[SITCOMTN-073]**, Saunders, C., 2023, Relative Pointing Verification, URL <https://sitcomtn-073.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-073

- [1541] **[DMTN-266]**, Saunders, C., 2024, Astrometric Calibration in the LSST Pipeline, URL <https://dmtn-266.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-266
- [1542] Schechter, P.L., Levinson, R.S., 2012, *Generic misalignment aberration patterns and the subspace of benign misalignment*, vol. 8444 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 844455, doi:10.1117/12.925075
- [1543] Schechter, P.L., Sobel Levinson, R., 2011, PASP, 123, 812 (arXiv:1009.0708), doi:10.1086/661111, ADS Link
- [1544] **[DMTN-013]**, Schellart, P., 2016, Wrapping C++ with Cython, URL <https://dmtn-013.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-013
- [1545] **[DMTN-014]**, Schellart, P., 2016, Wrapping C++ with pybind11, URL <https://dmtn-014.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-014
- [1546] **[DMTN-024]**, Schellart, P., 2016, Pybind11 coding guidelines, URL <https://dmtn-024.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-024
- [1547] **[DMTN-043]**, Schellart, P., 2017, Redesign of afw::math::Statistics, URL <https://dmtn-043.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-043
- [1548] **[DMTN-056]**, Schellart, P., Bosch, J., 2021, Butler Redesign Strawman, URL <https://dmtn-056.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-056
- [1549] **[PSTN-013]**, Schindler, R.H., 2019, LSST Camera Refrigeration, URL <https://pstn-013.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-013
- [1550] Schmitz, M., Baker, K., Chan, B., et al., 2011, In: Bulletin of the American Astronomical Society, vol. 43 of Bulletin of the American Astronomical Society, ADS Link
- [1551] Schneider, J., 2005, In: Turon, C., O'Flaherty, K.S., Perryman, M.A.C. (eds.) ESA SP-576: The Three-Dimensional Universe with Gaia, 263–266



- [1552] **[LTS-160]**, Schumacher, G., 2022, TCS to Hexapods and Rotator Interface Control Document, URL <https://ls.st/LTS-160>,  
Vera C. Rubin Observatory LTS-160
- [1553] **[LTS-161]**, Schumacher, G., 2022, TCS to M1M3 Assembly Interface Control Document, URL <https://ls.st/LTS-161>,  
Vera C. Rubin Observatory LTS-161
- [1554] **[LTS-162]**, Schumacher, G., 2022, TCS to M2 Assembly Interface Control Document , URL <https://ls.st/LTS-162>,  
Vera C. Rubin Observatory LTS-162
- [1555] **[LSE-62]**, Schumacher, G., Delgado, F., 2019, LSST Observatory Control System Requirements, URL <https://ls.st/LSE-62>,  
Vera C. Rubin Observatory LSE-62
- [1556] Schuman, E., 2004, At Wal-Mart, Worlds Largest Retail Data Warehouse Gets Even Larger, URL <http://www.eweek.com/enterprise-apps/at-wal-mart-worlds-largest-retail-data-warehouse-gets-even-larger>
- [1557] **[Document-26952]**, Science Working Group of the LSST, Strauss, M.A., 2004, Towards a Design Reference Mission for the Large Synoptic Survey Telescope, URL <https://ls.st/Document-26952>,  
Vera C. Rubin Observatory Document-26952
- [1558] National Academies of Sciences, E., Medicine, 2021, *Pathways to Discovery in Astronomy and Astrophysics for the 2020s*, The National Academies Press, Washington, DC, URL <https://nap.nationalacademies.org/catalog/26141/pathways-to-discovery-in-astronomy-and-astrophysics-for-the-2020s>,  
doi:10.17226/26141
- [1559] Scott, D., Pierfederici, F., Swaters, R., Thomas, B., Valdes, F., 2007, In: Shaw, R.A., Hill, F., Bell, D.J. (eds.) *Astronomical Data Analysis Software and Systems XVI*, vol. 376 of *Astronomical Society of the Pacific Conference Series*, 265–+, ADS Link
- [1560] Seabroke, G.M., Holland, A.D., Burt, D., Robbins, M.S., 2010, *Proc. SPIE*, 7742, 774
- [1561] Seabroke, G.M., Prod’homme, T., Murray, N.J., et al., 2013, *MNRAS*, 430, 3155 (arXiv:1302.1873), doi:10.1093/mnras/stt121, ADS Link
- [1562] Seaman, R., Williams, R., Allan, A., et al., 2011, *Sky Event Reporting Metadata Version 2.0*, IVOA Recommendation 11 July 2011 (arXiv:1110.0523), ADS Link

- [1563] **[LTS-88]**, Sebag, J., 2022, M1M3 Mirror Support Design Requirements Document, URL <https://ls.st/LTS-88>,  
Vera C. Rubin Observatory LTS-88
- [1564] **[LSE-60]**, Sebag, J., Krabbendam, V., 2018, LSST Telescope and Site (TS) Requirements, URL <https://ls.st/LSE-60>,  
Vera C. Rubin Observatory LSE-60
- [1565] **[DMTN-216]**, Sedaghat, N., 2023, Deep Learning Approach to Real-Bogus Classification for LSST Alert Production, URL <https://dmtn-216.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-216
- [1566] **[DMTN-217]**, Sedaghat, N., 2023, temp, URL <https://dmtn-217.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-217
- [1567] **[DMTN-274]**, Sedaghat, N., 2023, Report on the performance of image differencing from the perspective of the learning-based classifier task, URL <https://dmtn-274.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-274
- [1568] **[DMTN-272]**, Sedaghat, N., 2024, Real-bogus classifier – status report, URL <https://dmtn-272.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-272
- [1569] **[LSE-160]**, Selvy, B., 2013, Verification and Validation Process, URL <https://ls.st/LSE-160>,  
Vera C. Rubin Observatory LSE-160
- [1570] **[Document-26273]**, Selvy, B., 2017, Risk & Opportunity Management Report May 2017, URL <https://ls.st/Document-26273>,  
Vera C. Rubin Observatory Document-26273
- [1571] Selvy, B.M., Claver, C., Angeli, G., 2014, In: Angeli, G.Z., Dierickx, P. (eds.) Modeling, Systems Engineering, and Project Management for Astronomy VI, vol. 9150 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 0, doi:10.1117/12.2056773, ADS Link
- [1572] Selvy, B.M., Claver, C., Willman, B., et al., 2016, In: Modeling, Systems Engineering, and Project Management for Astronomy VI, vol. 9911 of Proc. SPIE, 99110D, doi:10.1117/12.2233904, ADS Link

- [1573] Selvy, B.M., Roberts, A., Reuter, M., et al., 2018, In: Angeli, G.Z., Dierickx, P. (eds.) Modeling, Systems Engineering, and Project Management for Astronomy VIII, vol. 10705 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 107050U, doi:10.1117/12.2310125, ADS Link
- [1574] **[ITTN-079]**, Seriche, G., 2024, Hardening Kubernetes Workload, URL <https://ittn-079.lsst.io/>,  
Vera C. Rubin Observatory ITTN-079
- [1575] **[ITTN-080]**, Seriche, G., 2024, Software development on Rubin LSST, URL <https://ittn-080.lsst.io/>,  
Vera C. Rubin Observatory ITTN-080
- [1576] **[LTS-807]**, Serio, A., 2018, LSST Operations Visualization Environment (LOVE) Requirements, URL <https://ls.st/LTS-807>,  
Vera C. Rubin Observatory LTS-807
- [1577] Sesar, B., Ivezić, Ž., Grammer, S.H., et al., 2010, ApJ, 708, 717 (arXiv:0910.4611), doi:10.1088/0004-637X/708/1/717, ADS Link
- [1578] **[Document-10762]**, Shaw, R., Strauss, M., 2011, LSST Data Challenge Handbook Version 1.1, URL <https://ls.st/Document-10762>,  
Vera C. Rubin Observatory Document-10762
- [1579] **[Document-15286]**, Shaw, R.A., 2012, LSST Data Challenge Handbook: Summer 2012 Data Release, URL <https://ls.st/Document-15286>,  
Vera C. Rubin Observatory Document-15286
- [1580] **[Document-15299]**, Shaw, R.A., 2013, LSST Data Challenge Handbook: Winter 2013 Early Data Release, URL <https://ls.st/Document-15299>,  
Vera C. Rubin Observatory Document-15299
- [1581] Shaw, R.A., Levine, D., Axelrod, T., Laher, R.R., Mannings, V.G., 2010, In: Radziwill, N.M., Bridger, A. (eds.) Software and Cyberinfrastructure for Astronomy, vol. 7740 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 77400H, doi:10.1117/12.857293, ADS Link
- [1582] Shaw, R.A., Axelrod, T., Becker, A.C., et al., 2012, In: American Astronomical Society Meeting Abstracts #219, vol. 219 of American Astronomical Society Meeting Abstracts, 156.03, ADS Link

- [1583] **[LDM-226]**, Shaw, R.A., Jurić, M., Becker, A., et al., 2013, LSST Data Challenge Report: Summer 2012/early-Winter 2013, URL <https://ls.st/LDM-226>, Vera C. Rubin Observatory LDM-226
- [1584] **[RTN-017]**, (she/her), R.G., 2023, Data rights and access management plan, URL <https://rtn-017.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-017
- [1585] **[RTN-058]**, (She/Her), S.T., 2023, Simonyi Survey Telescope Name Usage Convention, URL <https://rtn-058.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-058
- [1586] **[SITCOMTN-031]**, (She/Her), S.T., Ingraham, P., 2022, SIT-Com Observatory Workflows Charge, URL <https://sitcomtn-031.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-031
- [1587] Sheldon, E.S., Huff, E.M., 2017, ApJ, 841, 24 (arXiv:1702.02601), doi:10.3847/1538-4357/aa704b, ADS Link
- [1588] Sheldon, E.S., Becker, M.R., MacCrann, N., Jarvis, M., 2020, ApJ, 902, 138 (arXiv:1911.02505), doi:10.3847/1538-4357/abb595, ADS Link
- [1589] Sheldon, E.S., Becker, M.R., Jarvis, M., Armstrong, R., The LSST Dark Energy Science Collaboration, 2023, arXiv e-prints, arXiv:2303.03947 (arXiv:2303.03947), doi:10.48550/arXiv.2303.03947, ADS Link
- [1590] **[SITCOMTN-045]**, Shugart, A., 2022, AuxTel Spectrograph Startup Procedure, URL <https://sitcomtn-045.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-045
- [1591] **[SITCOMTN-074]**, Shugart, A., 2023, LATISS Warm-up and Cool-down Procedure, URL <https://sitcomtn-074.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-074
- [1592] Shupe, D.L., Moshir, M., Li, J., et al., 2005, In: Shopbell, P., Britton, M., Ebert, R. (eds.) Astronomical Data Analysis Software and Systems XIV, vol. 347 of Astronomical Society of the Pacific Conference Series, 491, ADS Link
- [1593] Shuster, M.D., 1993, Journal of the astronomical sciences, 41, n.4, 439

- [1594] **[SQR-000]**, Sick, J., 2015, The LSST DM Technical Note Publishing Platform, URL <https://sqr-000.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-000
- [1595] Sick, J., 2016, LSST DM Community Resources, URL <http://dx.doi.org/10.5281/zenodo.44643>,  
NSF Pavilion Talk given at AAS 227.
- [1596] **[LDM-493]**, Sick, J., 2016, Data Management Documentation Architecture, URL <https://ldm-493.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-493
- [1597] **[SQR-006]**, Sick, J., 2016, The LSST the Docs Platform for Continuous Documentation Delivery, URL <https://sqr-006.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-006
- [1598] **[SQR-013]**, Sick, J., 2016, LSST DocHub Design, URL <https://sqr-013.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-013
- [1599] **[SQR-020]**, Sick, J., 2018, Expressing LSST Project Metadata with JSON-LD, URL <https://sqr-020.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-020
- [1600] **[SQR-023]**, Sick, J., 2018, Design of the notebook-based report system, URL <https://sqr-023.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-023
- [1601] **[SQR-032]**, Sick, J., 2019, Rendering and testing examples and tutorials in LSST documentation, URL <https://sqr-032.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-032
- [1602] **[SQR-043]**, Sick, J., 2020, community.lsst.org forum operations guide, URL <https://sqr-043.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-043
- [1603] **[SQR-060]**, Sick, J., 2021, Design of the Semaphore user broadcast message system for the Rubin Science Platform, URL <https://sqr-060.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-060
- [1604] **[SQR-062]**, Sick, J., 2021, The Times Square service for publishing parameterized Jupyter Notebooks in the Rubin Science platform, URL <https://sqr-062.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-062

- [1605] **[SQR-065]**, Sick, J., 2022, Design of Noteburst, a programatic JupyterLab notebook execution service for the Rubin Science Platform, URL <https://sqr-065.lsst.io/>, Vera C. Rubin Observatory SQuaRE Technical Note SQR-065
- [1606] **[SQR-075]**, Sick, J., 2023, A vertical monorepo architecture for FastAPI client-server codebases, URL <https://sqr-075.lsst.io/>, Vera C. Rubin Observatory SQuaRE Technical Note SQR-075
- [1607] **[SQR-076]**, Sick, J., 2023, Shared Pydantic schemas as the basis for Kafka/Avro messages in SQuaRE Roundtable, URL <https://sqr-076.lsst.io/>, Vera C. Rubin Observatory SQuaRE Technical Note SQR-076
- [1608] **[SQR-082]**, Sick, J., 2023, UX for Docs: Documentation Engineering at Rubin, URL <https://sqr-082.lsst.io/>, Vera C. Rubin Observatory SQuaRE Technical Note SQR-082
- [1609] **[TESTTR-997]**, Sick, J., 2023, LVV-TEST Test Test Plan and Report, URL <https://testtr-997.lsst.io/>, Vera C. Rubin Observatory TESTTR-997
- [1610] **[TESTTR-998]**, Sick, J., 2023, LVV-TEST Test document Test Plan and Report, URL <https://testtr-998.lsst.io/>, Vera C. Rubin Observatory TESTTR-998
- [1611] **[SQR-083]**, Sick, J., 2024, Patterns for accessing external resources from Times Square notebooks, URL <https://sqr-083.lsst.io/>, Vera C. Rubin Observatory SQuaRE Technical Note SQR-083
- [1612] **[SQR-086]**, Sick, J., 2024, Deep linking to data documentation with IVOA DataLink, URL <https://sqr-086.lsst.io/>, Vera C. Rubin Observatory SQuaRE Technical Note SQR-086
- [1613] **[SQR-090]**, Sick, J., 2024, System for collecting user feedback in Rubin documentation, URL <https://sqr-090.lsst.io/>, Vera C. Rubin Observatory SQuaRE Technical Note SQR-090
- [1614] **[SQR-011]**, Sick, J., Economou, F., 2016, LSST Data Management Communication & Publication Platforms, URL <https://sqr-011.lsst.io/>, Vera C. Rubin Observatory SQuaRE Technical Note SQR-011

- [1615] **[SQR-019]**, Sick, J., Fausti, A., 2018, LSST Verification Framework API Demonstration, URL <https://sqr-019.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-019
- [1616] Sick, J., Courteau, S., Cuillandre, J.C., et al., 2014, AJ, 147, 109 (arXiv:1303.6290), doi:10.1088/0004-6256/147/5/109, ADS Link
- [1617] **[DMTN-030]**, Sick, J., Gill, M.S.S., Krughoff, S., Swinbank, J., 2018, Science Pipelines Documentation Design, URL <https://dmtn-030.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-030
- [1618] **[ITTN-013]**, Silva, C., 2020, VLAN Assignments, URL <https://ittn-013.lsst.io/>,  
Vera C. Rubin Observatory ITTN-013
- [1619] **[ITTN-020]**, Silva, C., 2020, Summit Service Levels, URL <https://ittn-020.lsst.io/>,  
Vera C. Rubin Observatory ITTN-020
- [1620] **[ITTN-021]**, Silva, C., 2020, Base Service Levels, URL <https://ittn-021.lsst.io/>,  
Vera C. Rubin Observatory ITTN-021
- [1621] **[ITTN-031]**, Silva, C., 2020, LHN Testing Plan, URL <https://ittn-031.lsst.io/>,  
Vera C. Rubin Observatory ITTN-031
- [1622] **[ITTN-032]**, Silva, C., 2020, Level 3 Integration Lab, URL <https://ittn-032.lsst.io/>,  
Vera C. Rubin Observatory ITTN-032
- [1623] **[ITTN-033]**, Silva, C., 2020, Notifications Workflow, URL <https://ittn-033.lsst.io/>,  
Vera C. Rubin Observatory ITTN-033
- [1624] **[ITTN-037]**, Silva, C., 2021, IT Linux Repo, URL <https://ittn-037.lsst.io/>,  
Vera C. Rubin Observatory ITTN-037
- [1625] **[ITTN-038]**, Silva, C., 2021, Cisco ACI Migration, URL <https://ittn-038.lsst.io/>,  
Vera C. Rubin Observatory ITTN-038
- [1626] **[ITTN-039]**, Silva, C., 2021, Summit Computer Room Revamp, URL <https://ittn-039.lsst.io/>,  
Vera C. Rubin Observatory ITTN-039
- [1627] **[ITTN-042]**, Silva, C., 2021, IT Priorities Planning, URL <https://ittn-042.lsst.io/>,  
Vera C. Rubin Observatory ITTN-042

- [1628] **[ITTN-030]**, Silva, C., 2022, Tucson test stand Upgrade, URL <https://ittn-030.lsst.io/>,  
Vera C. Rubin Observatory ITTN-030
- [1629] **[ITTN-044]**, Silva, C., 2022, LHN Specifications and Design Documents Catalog, URL <https://ittn-044.lsst.io/>,  
Vera C. Rubin Observatory ITTN-044
- [1630] **[ITTN-057]**, Silva, C., 2022, Disaster Recovery - Computing, URL <https://ittn-057.lsst.io/>,  
Vera C. Rubin Observatory ITTN-057
- [1631] **[ITTN-058]**, Silva, C., 2022, Disaster Recovery - Infrastructure Support Devices, URL <https://ittn-058.lsst.io/>,  
Vera C. Rubin Observatory ITTN-058
- [1632] **[ITTN-065]**, Silva, C., 2022, DevOps Out of Hours Support, URL <https://ittn-065.lsst.io/>,  
Vera C. Rubin Observatory ITTN-065
- [1633] **[ITTN-067]**, Silva, C., 2022, Rubin's Integration Guide, URL <https://ittn-067.lsst.io/>,  
Vera C. Rubin Observatory ITTN-067
- [1634] **[ITTN-055]**, Silva, C., 2023, Disaster Recovery, URL <https://ittn-055.lsst.io/>,  
Vera C. Rubin Observatory ITTN-055
- [1635] **[ITTN-056]**, Silva, C., 2023, Disaster Recovery - Network, URL <https://ittn-056.lsst.io/>,  
Vera C. Rubin Observatory ITTN-056
- [1636] **[ITTN-069]**, Silva, C., 2023, Patching Strategy, URL <https://ittn-069.lsst.io/>,  
Vera C. Rubin Observatory ITTN-069
- [1637] **[ITTN-074]**, Silva, C., 2024, Pixel Zone Technology Control Plan, URL <https://ittn-074.lsst.io/>,  
Vera C. Rubin Observatory ITTN-074
- [1638] **[ITTN-077]**, Silva, C., 2024, Physical Access Controls, URL <https://ittn-077.lsst.io/>,  
Vera C. Rubin Observatory ITTN-077



- [1639] **[ITTN-081]**, Silva, C., 2024, Summit Computer Room Cooling System, URL <https://ittn-081.lsst.io/>,  
Vera C. Rubin Observatory ITTN-081
- [1640] **[RTN-091]**, Silva, C., 2025, Rubin at the Summit - observatory cyber infrastructure and security, URL <https://rtn-091.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-091
- [1641] **[RTN-049]**, Silva, C., Alexov, A., 2022, Rubin Out of Hours Support, URL <https://rtn-049.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-049
- [1642] **[ITTN-029]**, Silva, C., Hoblitt, J., 2022, NCSA test stand relocation, URL <https://ittn-029.lsst.io/>,  
Vera C. Rubin Observatory ITTN-029
- [1643] **[ITTN-068]**, Silva, C., Hoblitt, J., 2023, Access Control, URL <https://ittn-068.lsst.io/>,  
Vera C. Rubin Observatory ITTN-068
- [1644] **[ITTN-070]**, Silva, C., Hoblitt, J., 2023, Rubin Observability Project, URL <https://ittn-070.lsst.io/>,  
Vera C. Rubin Observatory ITTN-070
- [1645] **[ITTN-059]**, Silva, C., Ingraham, P., 2022, Maintenance Window, URL <https://ittn-059.lsst.io/>,  
Vera C. Rubin Observatory ITTN-059
- [1646] **[ITTN-061]**, Silva, C., Lupton, R., 2022, Summit Computing Cluster, URL <https://ittn-061.lsst.io/>,  
Vera C. Rubin Observatory ITTN-061
- [1647] **[ITTN-043]**, Silva, C., Toro, E., Hoblitt, J., Constanzo, J., 2021, Rubin Network Re-Engineering, URL <https://ittn-043.lsst.io/>,  
Vera C. Rubin Observatory ITTN-043
- [1648] **[ITTN-040]**, Silva, C., Maulen, G., Tapia, D., 2022, Camera Fibers, URL <https://ittn-040.lsst.io/>,  
Vera C. Rubin Observatory ITTN-040
- [1649] Simmhan, Y., Barga, R., van Ingen, C., et al., 2009, In: 2009 42nd Hawaii International Conference on System Sciences, 1–10, doi:10.1109/HICSS.2009.235

- [1650] Simon, J.L., 1983, A&A, 120, 197, ADS Link
- [1651] **[SCTR-11]**, Siruno, K., 2020, LVV-P59 Camera Rotator Functional Re-Verification Test Plan and Report, URL <https://sctr-11.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Report SCTR-11
- [1652] **[SCTR-91]**, Siruno, K., 2023, LVV-P95: Hexapod Actuator Redesign Verification Test Plan and Report, URL <https://sctr-91.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Report SCTR-91
- [1653] Sivia, D., 1996, *Data Analysis. A Bayesian Tutorial*, OUP, 1 edn.
- [1654] **[SITCOMTN-134]**, Sjoberg, K., 2024, CBP Pointing and Ghosting Simulation Notebook, URL <https://sitcomtn-134.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-134
- [1655] Skrutskie, M.F., Cutri, R.M., Stiening, R., et al., 2006, The Astronomical Journal, 131, doi:10.1086/498708, ADS Link
- [1656] **[DMTN-086]**, Slater, C., 2018, Next-to-the-Database Processing Use Cases, URL <https://dmtn-086.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-086
- [1657] **[DMTN-237]**, Slater, C., 2022, Rubin Plot Navigator, URL <https://dmtn-237.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-237
- [1658] **[DMTN-258]**, Slater, C., 2023, Summer 2023 Crowded Fields Status, URL <https://dmtn-258.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-258
- [1659] **[RTN-052]**, Slater, C., Guy, L., 2024, Charge to the Data Release Board, URL <https://rtn-052.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-052
- [1660] **[DMTN-006]**, Slater, C., Jurić, M., Ivezić, Ž., Jones, L., 2016, False Positive Rates in the LSST Image Differencing Pipeline, URL <https://dmtn-006.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-006
- [1661] **[LDM-153]**, Slater, C., Mueller, F., Klaveren, B.V., Becla, J., 2019, LSST Database Baseline Schema, URL <https://ldm-153.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-153

- [1662] **[PSTN-045]**, Slater, C.T., 2019, LSST Petascale Distributed Database, URL <https://pstn-045.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-045
- [1663] **[LDM-523]**, Slater, C.T., Jones, R.L., Bellm, E., Jurić, M., 2017, Impact of a Heterogeneous Focal Plane on LSST Image Differencing, URL <https://ls.st/LDM-523>,  
Vera C. Rubin Observatory LDM-523
- [1664] Smith, K.W., Williams, R.D., Young, D.R., et al., 2019, Research Notes of the American Astronomical Society, 3, 26, doi:10.3847/2515-5172/ab020f, ADS Link
- [1665] Smith, R.C., Seaman, R., Kantor, J., Axelrod, T., 2010, In: Silva, D.R., Peck, A.B., Soifer, B.T. (eds.) Observatory Operations: Strategies, Processes, and Systems III, vol. 7737 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 77370V, doi:10.1117/12.858322, ADS Link
- [1666] **[Document-11622]**, Smith, W., Vera, V.P., 2011, Supplementary and clarifying agreement between the universidad de chile and aura covering the use of the lsst on cerro pachon, URL <https://ls.st/Document-11622>,  
Vera C. Rubin Observatory Document-11622
- [1667] **[Document-10548]**, Smith, W.S., Kahn, S.M., Sweeney, D.W., Tyson, J.A., Wolff, S.C., 2011, Fastlane Proposal for Construction of the Large Synoptic Survey Telescope, URL <https://ls.st/Document-10548>,  
Vera C. Rubin Observatory Document-10548
- [1668] Smolčić, V., Ivezić, Ž., Knapp, G.R., et al., 2004, ApJ, 615, L141 (arXiv:astro-ph/0403218), doi:10.1086/426475, ADS Link
- [1669] Soderhjelm, S., 2004, *Theoretical modelling of observational double-star distribution functions.*, Tech. rep., ESA,  
DMS-SS-05
- [1670] Söderhjelm, S., 2005, In: Turon, C., O’Flaherty, K.S., Perryman, M.A.C. (eds.) ESA SP-576: The Three-Dimensional Universe with Gaia, 97–+, ADS Link
- [1671] Soffel, M., Klioner, S.A., Petit, G., et al., 2003, AJ, 126, 2687 (arXiv:astro-ph/0303376), doi:10.1086/378162, ADS Link
- [1672] Software, T., 2005, *TIOBE Programming Community Index*, Tech. rep., TIOBE, URL <http://www.tiobe.com/tiobe-index>

- [1673] for Software Standardisation, E.B., Control, 2004, *Java Coding Standards*, Tech. rep., ESA, URL [http://www.rssd.esa.int/l1ink/liveliink/Java\\_coding\\_standards.pdf?func=doc.Fetch&nodeId=504569&docTitle=Java+coding+standards&vernum=1](http://www.rssd.esa.int/l1ink/liveliink/Java_coding_standards.pdf?func=doc.Fetch&nodeId=504569&docTitle=Java+coding+standards&vernum=1)
- [1674] Sordo, R., Vallenari, A., Tantalò, R., et al., 2011, *Journal of Physics Conference Series*, 328, 012006, doi:10.1088/1742-6596/328/1/012006, ADS Link
- [1675] **[NIST.800-114]**, Souppaya, M., Scarfone, K., 2016, *COMPUTER SECURITY*, URL <https://doi.org/10.6028/NIST.SP.800-114r1>
- [1676] **[NIST.800-46]**, Souppaya, M., Scarfone, K., 2016, *COMPUTER SECURITY*, URL <https://doi.org/10.6028/NIST.SP.800-46r2>
- [1677] Sozzetti, A., 2005, *PASP*, 117, 1021 (arXiv:astro-ph/0507115), doi:10.1086/444487, ADS Link
- [1678] Sozzetti, A., Casertano, S., Lattanzi, M.G., Spagna, A., 2001, *A&A*, 373, L21 (arXiv:astro-ph/0104391), doi:10.1051/0004-6361:20010788, ADS Link
- [1679] **[RTN-044]**, Speck, D., 2022, USDF Butler Postgres Design, URL <https://rtn-044.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-044
- [1680] Spite, M., 2005, In: Turon, C., O’Flaherty, K.S., Perryman, M.A.C. (eds.) *ESA SP-576: The Three-Dimensional Universe with Gaia*, 645–+, ADS Link
- [1681] Springel, V., White, S.D.M., Jenkins, A., et al., 2005, *Nature*, 435, 629 (arXiv:astro-ph/0504097), doi:10.1038/nature03597, ADS Link
- [1682] Spyak, P., Wolfe, W., 1991, *Optical Engineering*, 31, 1746
- [1683] **[PSTN-035]**, Stalder, B., 2020, Integration, Test and Commissioning Results from LSST Commissioning Camera, URL <https://pstn-035.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-035
- [1684] **[SITCOMTN-036]**, Stalder, B., 2022, Image Quality Control - Concept of Operations, URL <https://sitcomtn-036.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-036
- [1685] Stallman, R., 2001, *GNU Coding Standards*, Tech. rep., GNU

- [1686] **[DMTN-099]**, Stephens, C., 2018, Options for Generating Unique IDs in the LSST Gen3 Butler Registry, URL <https://dmtn-099.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-099
- [1687] Stetson, P.B., 1996, PASP, 108, 851, doi:10.1086/133808, ADS Link
- [1688] **[NIST.800-60]**, Stine, K., Kissel, R., Barker, W.C., Fahlsing, J., Gulick, J., 2008, INFORMATION SECURITY, 31, URL <https://nvlpubs.nist.gov/nistpubs/Legacy/SP/nistspecialpublication800-60v1r1.pdf>
- [1689] **[ITTN-053]**, Stockebrand, H., 2022, Securing VPN service with Multi-Factor Authentication, URL <https://ittn-053.lsst.io/>,  
Vera C. Rubin Observatory ITTN-053
- [1690] **[ITTN-060]**, Stockebrand, H., 2022, Network Automation, URL <https://ittn-060.lsst.io/>,  
Vera C. Rubin Observatory ITTN-060
- [1691] Stone, R.C., 1996, PASP, 108, 1051, doi:10.1086/133831, ADS Link
- [1692] Stonebraker, M., Abadi, D.J., Batkin, A., et al., 2005, In: Proceedings of the 31st International Conference on Very Large Data Bases, VLDB '05, 553–564, VLDB Endowment, URL <http://dl.acm.org/citation.cfm?id=1083592.1083658>
- [1693] Stonebraker, M., Becla, J., Dewitt, D., et al., 2009, In: Conference on Innovative Data Systems Research - CIDR, URL [http://www-db.cs.wisc.edu/cidr/cidr2009/Paper\\_26.pdf](http://www-db.cs.wisc.edu/cidr/cidr2009/Paper_26.pdf)
- [1694] **[RDO-051]**, Strauss, M., the Rubin Science Advisory Council, 2023, Users Committee Charge, URL <https://rdo-051.lsst.io/>,  
Vera C. Rubin Observatory RDO-051
- [1695] Street, R.A., Bowman, M., Saunders, E.S., Boroson, T., 2018, In: Software and Cyberinfrastructure for Astronomy V, vol. 10707 of Proc. SPIE, 1070711 (arXiv:1806.09557), doi:10.1117/12.2312293, ADS Link
- [1696] **[SITCOMTN-022]**, Stubbs, C., 2021, Aux Tel Tracking Problem Report Nov 2021, URL <https://sitcomtn-022.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-022

- [1697] **[SITCOMTN-021]**, Stubbs, C., Urbach, E., 2021, Image Quality Team Report: A First Look at Auxiliary Telescope Tracking, URL <https://sitcomtn-021.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-021
- [1698] **[PSTN-011]**, Stubbs, C.W., 2019, LSST Camera Rafts, URL <https://pstn-011.lsst.io/>, Vera C. Rubin Observatory Project Science Technical Note PSTN-011
- [1699] **[SITCOMTN-038]**, Suberlak, C., 2022, AuxTel data analysis: images to Zernikes, URL <https://sitcomtn-038.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-038
- [1700] **[SITCOMTN-044]**, Suberlak, C., 2022, The Sensitivity of Active Optics System Algorithm to Offset Centroid, URL <https://sitcomtn-044.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-044
- [1701] **[SITCOMTN-046]**, Suberlak, C., 2022, AOS Algorithm for Wavefront Estimation, URL <https://sitcomtn-046.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-046
- [1702] **[SITCOMTN-072]**, Suberlak, C., 2023, Sensitivity Matrix Calculation for AuxTel, URL <https://sitcomtn-072.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-072
- [1703] **[SITCOMTN-085]**, Suberlak, C., 2023, Donut stacking vs pairing for wavefront sensing estimation, URL <https://sitcomtn-085.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-085
- [1704] **[SITCOMTN-108]**, Suberlak, C., 2024, Generating AOS simulations with opSim, URL <https://sitcomtn-108.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-108
- [1705] **[SITCOMTN-139]**, Suberlak, C., 2024, WET-006: pairing vs stacking with WET-001 data, URL <https://sitcomtn-139.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-139
- [1706] **[SITCOMTN-144]**, Suberlak, C., 2024, Compare CWFS approaches with simulated WET-001 LsstCam data, URL <https://sitcomtn-144.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-144
- [1707] **[SITCOMTN-146]**, Suberlak, C., 2024, WET-007 analysis of WET-001 simulation of Lsst-ComCam, URL <https://sitcomtn-146.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-146

- [1708] **[SITCOMTN-156]**, Suberlak, C., 2025, Number of donut pairs and wavefront retrieval with LsstComCam data, URL <https://sitcomtn-156.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-156
- [1709] **[DMTR-22]**, Suberlak, K., Ivezić, Ž., The PDAC Team, 2017, Prototype Data Access Center: User Report, URL <https://ls.st/DMTR-22>,  
Vera C. Rubin Observatory DMTR-22
- [1710] **[DMTN-077]**, Suberlak, K., Slater, C., Ivezić, Ž., 2018, LSST Fall 2017 Crowded Fields Testing, URL <https://dmtn-077.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-077
- [1711] **[DMTN-012]**, Sullivan, I., 2016, StarFast - A Fast Simulation Building Tool for Testing Algorithms, URL <https://dmtn-012.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-012
- [1712] **[DMTN-019]**, Sullivan, I., 2016, Dipoles in difference imaging from DCR, URL <https://dmtn-019.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-019
- [1713] **[DMTN-037]**, Sullivan, I., 2018, DCR-matched template generation, URL <https://dmtn-037.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-037
- [1714] **[DMTN-121]**, Sullivan, I., 2019, Impact of variable seeing on DCR coadd generation, URL <https://dmtn-121.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-121
- [1715] **[DMTN-171]**, Sullivan, I., Bellm, E., 2021, Fall 2020 status of crowded field processing with the LSST Alert Production Pipelines, URL <https://dmtn-171.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-171
- [1716] **[DMTN-017]**, Sullivan, I.S., Reiss, D.J., 2015, Differential Chromatic Refraction: literature overview, URL <https://dmtn-017.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-017
- [1717] support, D., 2006, *Linux Deployment guide*, Tech. rep., Dell,  
<http://support.dell.com/support/edocs/software/appora10/lin10g/en/dg/10g21en0.pdf>
- [1718] **[LPM-55]**, Sweeney, D., McKercher, R., 2013, Project Quality Assurance Plan, URL <https://ls.st/LPM-55>,  
Vera C. Rubin Observatory LPM-55
-

- [1719] Sweeney, D., Claver, C., Jacoby, S., et al., 2010, In: Angeli, G.Z., Dierickx, P. (eds.) Modeling, Systems Engineering, and Project Management for Astronomy IV, vol. 7738 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 77380P, doi:10.1117/12.857301, ADS Link
- [1720] Swinbank, J., 2014, Astronomy and Computing, 7, 12 (arXiv:1409.4805), doi:10.1016/j.ascom.2014.09.001
- [1721] Swinbank, J., 2015, LSST: Introduction and Data Management Requirements, URL [http://wiki.ivoa.net/internal/IVOA/InterOpJune2015MCD/2015-06\\_-\\_LSST\\_at\\_IVOA\\_InterOp.pdf](http://wiki.ivoa.net/internal/IVOA/InterOpJune2015MCD/2015-06_-_LSST_at_IVOA_InterOp.pdf),  
Presented at the IVOA Interoperability Meeting, Sesto, Italy
- [1722] Swinbank, J., 2016, VOEvent Transport Protocol, URL [http://wiki.ivoa.net/internal/IVOA/InterOpMay2016-TDIG/2016-05\\_-\\_VTP\\_at\\_InterOp.pdf](http://wiki.ivoa.net/internal/IVOA/InterOpMay2016-TDIG/2016-05_-_VTP_at_InterOp.pdf),  
Presentation at the Northern Spring IVOA Meeting, South Africa
- [1723] **[DMTR-112]**, Swinbank, J., 2019, LDM-503-07 (Camera Data Processing) Test Plan and Report, URL <https://dmtr-112.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-112
- [1724] **[DMTR-192]**, Swinbank, J., 2020, LDM-503-11b: Science Pipelines Fall 2019 Release Test Plan and Report, URL <https://dmtr-192.lsst.io/>,  
Vera C. Rubin Observatory Data Management Test Report DMTR-192
- [1725] **[DMTR-14]**, Swinbank, J., Bosch, J., Krughoff, S., 2016, Characterization Metric Report: Science Pipelines Version 12.0, URL <https://lsst.org/DMTR-14>,  
Vera C. Rubin Observatory DMTR-14
- [1726] **[LDM-151]**, Swinbank, J., Axelrod, T., Becker, A., et al., 2020, Data Management Science Pipelines Design, URL <https://ldm-151.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-151
- [1727] **[DMTN-044]**, Swinbank, J.D., 2017, LSST DM Software Release Considerations, URL <https://dmtn-044.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-044
- [1728] **[LDM-622]**, Swinbank, J.D., 2018, Data Management QA Strategy Working Group Charge, URL <https://ldm-622.lsst.io/>,  
Vera C. Rubin Observatory Data Management Controlled Document LDM-622



- [1729] **[DMTR-111]**, Swinbank, J.D., 2019, LDM-503-09a (Science Pipelines Fall 2018 Release) Test Plan and Report, URL <https://dmtr-111.lsst.io/>, Vera C. Rubin Observatory Data Management Test Report DMTR-111
- [1730] Szalay, A.S., Gray, J., Thakar, A.R., et al., 2002, eprint arXiv:cs/0202013 (arXiv:cs/0202013), ADS Link
- [1731] Szalay, A.S., Gray, J., VandenBerg, J., 2002, In: J. A. Tyson & S. Wolff (ed.) Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, vol. 4836 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 333–338 (arXiv:cs/0208013), doi:10.1117/12.461427, ADS Link
- [1732] Szalay, A.S., Gray, J., Fekete, G., et al., 2007, eprint arXiv:cs/0701164 (arXiv:cs/0701164), ADS Link
- [1733] Szalay, A.S., Bell, G., Vandenberg, J., et al., 2008, *GrayWulf: Scalable Clustered Architecture for Data Intensive Computing*, Tech. Rep. MSR-TR-2008-187, Microsoft, URL <https://www.microsoft.com/en-us/research/publication/graywulf-scalable-clustered-architecture-for-data-intensive-computing/>
- [1734] **[Publication-145]**, Szkody, P., et al., 2011, Science White Paper for LSST Deep-Drilling Field Observations High Cadence Observations of the Magellanic Clouds and Select Galactic Cluster Fields, URL <https://ls.st/Publication-145>, Vera C. Rubin Observatory Publication-145
- [1735] Tabur, V., 2007, PASA, 24, 189 (arXiv:0710.3618), doi:10.1071/AS07028, ADS Link
- [1736] Taff, L.G., Bucciarelli, B., Lattanzi, M.G., 1990, ApJ, 361, 667, doi:10.1086/169230, ADS Link
- [1737] **[ITTN-072]**, Tapia, D., 2023, Kubernetes Cluster Deployment, URL <https://ittn-072.lsst.io/>, Vera C. Rubin Observatory ITTN-072
- [1738] **[ITTN-045]**, Tapia, D., Silva, C., 2024, Summit Onboarding Procedure, URL <https://ittn-045.lsst.io/>, Vera C. Rubin Observatory ITTN-045
- [1739] Tapiador, D., O'Mullane, W., Browni, A.G.A., et al., 2014, Computer Physics Communications, 185, doi:10.1016/j.cpc.2014.02.010

- [1740] team, A.G.F., 2003, *GAIA CCD and Focal Plan Technology Demonstrators: ASTRO FPA General Design Description*, Tech. rep., EADS/Astrium, GAIAFPA.NT.00120.T.ASTR
- [1741] project team, A.S., 2002, *Gaia System Level Technical Reassessment Study*, Tech. rep., EADS Astrium, EF5/FR/PC/038.02
- [1742] team, E.A.G., 2005, *GAIA Definition Study*, Tech. rep., EADS/Astrium, Final Presentation, Noordwijk, June 8, 2005
- [1743] Team, G.P., 2006, *Gaia Mission Implementation Requirement Document*, Tech. rep., ESA, GAIA-EST-RQ-00457
- [1744] **[RTN-004]**, Team, T.C.E., the Operations Executive Team, 2022, Guidelines for Community Participation in Data Preview 0, URL <https://rtn-004.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-004
- [1745] **[LEP-031]**, Team, T.L.E., 2018, LSST EPO Design, URL <https://lsst.org/LEP-031>, Vera C. Rubin Observatory LEP-031
- [1746] Texier, D., 2005, *Note on Science Operations Ground Segment Documentation*, Tech. rep., ESA, SOGS-TN-ESAC-DT-001
- [1747] Thain, D., Tannenbaum, T., Livny, M., 2005, Concurrency - Practice and Experience, 17, 323, URL <https://research.cs.wisc.edu/htcondor/doc/condor-practice.pdf>
- [1748] Thakar, A.R., 2008, Computing in Science and Engineering, 10, 9, doi:10.1109/MCSE.2008.17, ADS Link
- [1749] Thakar, A.R., Szalay, A.S., O'Mullane, W., et al., 2004, In: American Astronomical Society Meeting Abstracts, vol. 205 of American Astronomical Society Meeting Abstracts, 113.01, ADS Link
- [1750] Thakar, A.R., Szalay, A., Fekete, G., Gray, J., 2008, Computing in Science and Engineering, 10, 30, doi:10.1109/MCSE.2008.15, ADS Link
- [1751] The Gaia Team, Science Performance of the Gaia Mission, URL <https://www.cosmos.esa.int/web/gaia/science-performance>

- [1752] **[PSTN-055]**, The Rubin Observatory Survey Cadence Optimization Committee, 2023, Survey Cadence Optimization Committee's Phase 2 Recommendations, URL <https://pstn-055.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-055
- [1753] **[PSTN-056]**, The Rubin Observatory Survey Cadence Optimization Committee, 2025, Survey Cadence Optimization Committee's Phase 3 Recommendations, URL <https://pstn-056.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-056
- [1754] **[ITTN-007]**, Thebo, A., 2020, Infrastructure Monitoring, URL <https://ittn-007.lsst.io/>,  
Vera C. Rubin Observatory ITTN-007
- [1755] **[ITTN-008]**, Thebo, A., 2020, Cerro Pachon/La Serena VPN, URL <https://ittn-008.lsst.io/>,  
Vera C. Rubin Observatory ITTN-008
- [1756] **[ITTN-009]**, Thebo, A., 2020, Summit Time Synchronization, URL <https://ittn-009.lsst.io/>,  
Vera C. Rubin Observatory ITTN-009
- [1757] **[ITTN-010]**, Thebo, A., Hoblitt, J., 2023, User Identification and Authorization, URL <https://ittn-010.lsst.io/>,  
Vera C. Rubin Observatory ITTN-010
- [1758] Tholen, D.J., 1984, Ph.D. Thesis
- [1759] **[PSTN-006]**, Thomas, S., 2019, Performance of the LSST Telescope, URL <https://pstn-006.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-006
- [1760] **[SCTR-51]**, Thomas, S., 2022, LVV-P84: Alignment System Verification Test Plan and Report, URL <https://sctr-51.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Report SCTR-51
- [1761] **[SITCOMTN-023]**, Thomas, S., Guy, L., Roberts, A., 2022, SIT-COM Work Management and Organization, URL <https://sitcomtn-023.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-023
- [1762] Thomas, S.J., Chandrasekharan, S., Lotz, P., et al., 2016, In: Ground-based and Airborne Telescopes VI, vol. 9906 of Proc. SPIE, 99063B, doi:10.1117/12.2231798, ADS Link

- [1763] **[Document-31100]**, Thomson, J.R., 2019, LSST Benchmarkin of Qserv and BigQuery, URL <https://ls.st/Document-31100>,  
Vera C. Rubin Observatory Document-31100
- [1764] **[SQR-015]**, Thornton, A., 2017, Creating Microservices for api.lsst.codes, URL <https://sqr-015.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-015
- [1765] **[SQR-052]**, Thornton, A., 2021, Proposal for privilege separation in RSP Notebook Aspect containers, URL <https://sqr-052.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-052
- [1766] **[SQR-054]**, Thornton, A., 2021, Moving RSP Interactive Notebook containers to conda, URL <https://sqr-054.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-054
- [1767] **[SQR-059]**, Thornton, A., 2021, RSP Notebook container tag conventions, URL <https://sqr-059.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-059
- [1768] **[SQR-064]**, Thornton, A., 2022, The sciplat-lab build process, URL <https://sqr-064.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-064
- [1769] **[SQR-070]**, Thornton, A., 2022, A Telegraf Operator for Rubin Phalanx Applications, URL <https://sqr-070.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-070
- [1770] **[SQR-078]**, Thornton, A., 2023, User Fileservers in the RSP, URL <https://sqr-078.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-078
- [1771] **[DMTN-112]**, Thornton, A., Allbery, R., 2020, LSST DM Vault, URL <https://dmtn-112.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-112
- [1772] **[SQR-098]**, Thornton, A.J., 2025, File Storage Options at Google Cloud, URL <https://sqr-098.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-098

- [1773] **[SQR-088]**, Thornton, A.J., Economou, F., Allbery, R., 2024, Peeling apart the Pythons: Structure of Nublado images, URL <https://sqr-088.lsst.io/>,  
Vera C. Rubin Observatory SQuaRE Technical Note SQR-088
- [1774] **[DMTN-066]**, Thrush, S., 2017, Memory Needs of Pipeline tasks, URL <https://dmtn-066.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-066
- [1775] **[DMTN-161]**, Thrush, S., 2020, Node Utilization for HSC-RC2 Reprocessing Jobs, URL <https://dmtn-161.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-161
- [1776] **[DMTN-004]**, Thukral, V., 2016, Debugging in Docker Containers, URL <https://dmtn-004.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-004
- [1777] **[DMTN-009]**, Thukral, V., 2016, Vertical-partition Join Performance in MySQL, URL <https://dmtn-009.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-009
- [1778] **[DMTR-16]**, Thukral, V., 2017, Qserv Fall 16 Large Scale Tests/KPMs, URL <https://lsst/DMTR-16>,  
Vera C. Rubin Observatory DMTR-16
- [1779] **[DMTR-17]**, Thukral, V., 2018, Qserv Fall 17 Large Scale Tests/KPMs, URL <https://lsst/DMTR-17>,  
Vera C. Rubin Observatory DMTR-17
- [1780] **[PSTN-009]**, Tiago, R., 2019, LSST Observing System Software Architecture, URL <https://pstn-009.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-009
- [1781] **[PSTN-007]**, Tiago, R., 2020, The LSST Scheduler Overview and Performance, URL <https://pstn-007.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-007
- [1782] TokuTek, 2013, TokuDB: Scalable High Performance for MySQL and MariaDB Databases, URL <https://web.archive.org/web/20130819012209/http://www.tokutek.com/wp-content/uploads/2013/04/Tokutek-White-Paper.pdf>
- [1783] Tomaney, A.B., Crofts, A.P.S., 1996, AJ, 112, 2872 (arXiv:astro-ph/9610066), doi:10.1086/118228, ADS Link

- [1784] Tommaney, J., 2009, Calpont: Open source columnar storage engine for scalable mysql, URL <https://web.archive.org/web/20090429121116/http://www.mysqlconf.com/mysql2009/public/schedule/detail/8997>
- [1785] **[DMTN-047]**, Tommaney, J., Becla, J., Lim, K.T., Wang, D., 2011, Tests with InfiniDB, URL <https://dmtn-047.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-047
- [1786] TOP500, URL <http://www.top500.org>,  
TOP500 Supercomputer Sites
- [1787] **[RTN-026]**, Tucker, D.L., 2022, Validation Tests of the DP0.1 TAPserver on IDF, URL <https://rtn-026.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-026
- [1788] Turon, C., O'Flaherty, K.S., Perryman, M.A.C. (eds.), 2005, *The Three-Dimensional Universe with Gaia*, vol. 576 of ESA Special Publication, ADS Link
- [1789] Turon, C., O'Flaherty, K.S., Perryman, M.A.C. (eds.), 2005, *ESA SP-576: The Three-Dimensional Universe with Gaia*
- [1790] Tyson, J.A., Roat, C., Bosch, J., Wittman, D., 2008, In: Argyle, R.W., Bunclark, P.S., Lewis, J.R. (eds.) *Astronomical Data Analysis Software and Systems XVII*, vol. 394 of *Astronomical Society of the Pacific Conference Series*, 107 (arXiv:0808.3425), doi:10.48550/arXiv.0808.3425, ADS Link
- [1791] **[LSE-63]**, Tyson, T., Team, D., Collaboration, S., 2017, LSST Data Quality Assurance Plan, URL <https://lse-63.lsst.io/>,  
Vera C. Rubin Observatory LSE-63
- [1792] **[DMTN-221]**, Tzanidakis, A., Bellm, E., 2024, Periodicity Analysis in Alert Production, URL <https://dmtn-221.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-221
- [1793] Ulin, T., 2013, Driving MySQL Innovation, Percona Live: MySQL Conference and Expo, URL <https://www.youtube.com/watch?v=0pHTV59I1gs>
- [1794] Unknown, 1987, *Telemetry Summary of Concept and Rationale, Green Book*, Tech. rep., Consultative Committee for Space Data Systems, CCSDS 100.0-G-1, <http://www.ccsds.org/documents/100x0g1.pdf>

- [1795] Unknown, 2000, *Packet Telemetry, Blue Book*, Tech. rep., Consultative Committee for Space Data Systems,  
CCSDS 102.0-B-5, <http://www.ccsds.org/documents/102x0b5.pdf>
- [1796] Unknown, 2002, *Time Code Formats, Blue Book*, Tech. rep., Consultative Committee for Space Data Systems,  
CCSDS 301.0-B-3, <http://www.ccsds.org/documents/301x0b3.pdf>
- [1797] Unknown, 2002, *Telemetry Channel Coding, Blue Book*, Tech. rep., Consultative Committee for Space Data Systems,  
CCSDS 101.0-B-6, <http://www.ccsds.org/documents/101x0b6.pdf>
- [1798] Unknown, 2003, *Telemetric and Command Data Specification*, Tech. rep., Object Management Group — Space Domain Task Force, URL <http://www.omg.org/docs/space/03-03-12.pdf>,  
[space/2003-03-04](http://www.omg.org/docs/space/2003-03-04)
- [1799] **[LDM-130]**, Unknown, 2017, LSST Science User Interface and Tools Requirements, URL <https://ls.st/LDM-130>,  
Vera C. Rubin Observatory LDM-130
- [1800] **[LDM-532]**, Unknown, 2017, NCSA Enclave Test Specification, URL <https://ls.st/LDM-532>,  
Vera C. Rubin Observatory LDM-532
- [1801] **[LDM-535]**, Unknown, 2017, Data Backbone Test Specification, URL <https://ls.st/LDM-535>,  
Vera C. Rubin Observatory LDM-535
- [1802] **[LDM-536]**, Unknown, 2017, Data Backbone Data Services Test Specification, URL <https://ls.st/LDM-536>,  
Vera C. Rubin Observatory LDM-536
- [1803] **[LDM-537]**, Unknown, 2017, Data Backbone Infrastructure Test Specification, URL <https://ls.st/LDM-537>,  
Vera C. Rubin Observatory LDM-537
- [1804] **[LDM-539]**, Unknown, 2017, Data Access Center Enclave Test Specification, URL <https://ls.st/LDM-539>,  
Vera C. Rubin Observatory LDM-539

- [1805] **[LDM-541]**, Unknown, 2017, Commissioning Cluster Enclave Test Specification, URL <https://ls.st/LDM-541>,  
Vera C. Rubin Observatory LDM-541
- [1806] **[SITCOMTN-034]**, Urbach, E., 2022, Image Quality Team Work Repository, URL <https://sitcomtn-034.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-034
- [1807] **[SITCOMTN-040]**, Urbach, E., 2022, Aux Tel Accelerometer Analysis, URL <https://sitcomtn-040.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-040
- [1808] **[SITCOMTN-041]**, Urbach, E., 2022, AuxTel Anemometer Analysis, URL <https://sitcomtn-041.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-041
- [1809] **[SITCOMTN-055]**, Urbach, E., 2023, AuxTel Shack Hartmann Wavefront Sensor Analysis, URL <https://sitcomtn-055.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-055
- [1810] **[SITCOMTN-060]**, Urbach, E., 2023, Measurements of AuxTel Astigmatism, URL <https://sitcomtn-060.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-060
- [1811] **[SITCOMTN-063]**, Urbach, E., 2023, TMA 3.5 degree offset performance, URL <https://sitcomtn-063.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-063
- [1812] **[SCTR-111]**, Urbach, E., 2025, System-level Science Verification Acceptance Test Campaign: Throughput for Focused Light Test Plan and Report, URL <https://sctr-111.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Report SCTR-111
- [1813] **[SITCOMTN-106]**, Urbach, E.K., 2024, Time Synchronization for the CBP Calibration System, URL <https://sitcomtn-106.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-106
- [1814] **[SITCOMTN-152]**, Urbach, E.K., 2025, Collimated Beam Projector Installation and Com-Cam Testing, URL <https://sitcomtn-152.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-152



- [1815] Vagg, D., O'Callaghan, D., O'Hógáin, F., et al., 2016, In: Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, vol. 9913 of SPIE, 99131V (arXiv:1605.09287), doi:10.1117/12.2233619, ADS Link
- [1816] Vagg, D., O'Callaghan, D., O'Hógáin, F., et al., 2016, In: Software and Cyberinfrastructure for Astronomy IV, vol. 9913 of Proc. SPIE, 99131V (arXiv:1605.09287), doi:10.1117/12.2233619, ADS Link
- [1817] **[Gaia-NT-32000-115-CNES]**, Valadier, J.C., 2008, *Etude de risque EBIOS du systme CNES-DPC (Limited distribution)*, Gaia-NT-32000-115-CNES
- [1818] Valentijn, E.A., McFarland, J.P., Snigula, J., et al., 2007, In: R. A. Shaw, F. Hill, & D. J. Bell (ed.) Astronomical Data Analysis Software and Systems XVI, vol. 376 of Astronomical Society of the Pacific Conference Series, 491 (arXiv:astro-ph/0702189), ADS Link
- [1819] van Dokkum, P.G., 2001, PASP, 113, 1420 (arXiv:astro-ph/0108003), doi:10.1086/323894, ADS Link
- [1820] **[LDM-131]**, van Dyk, S., Levine, D., 2013, Science user interface and science user tools conceptual design, URL <https://ls.st/LDM-131>, Vera C. Rubin Observatory LDM-131
- [1821] van Leeuwen, F., 1997, Space Science Reviews, 81, 201, ADS Link
- [1822] van Leeuwen, F., 2005, A&A, 439, 805 (arXiv:astro-ph/0505431), doi:10.1051/0004-6361:20053192, ADS Link
- [1823] van Leeuwen, F., Fantino, E., 2005, A&A, 439, 791 (arXiv:astro-ph/0505432), doi:10.1051/0004-6361:20053193, ADS Link
- [1824] Vande Putte, D., Smith, R.C., Hawkins, N.A., Martin, J.S., 2003, MNRAS, 342, 151 (arXiv:astro-ph/0302507), doi:10.1046/j.1365-8711.2003.06524.x, ADS Link
- [1825] VanderPlas, J., Connolly, A.J., Ivezić, Ž., Gray, A., 2012, In: 2012 Conference on Intelligent Data Understanding, 47–54, doi:10.1109/CIDU.2012.6382200
- [1826] VanderPlas, J.T., Ivezić, Ž., 2015, ApJ, 812, 18 (arXiv:1502.01344), doi:10.1088/0004-637X/812/1/18, ADS Link
- [1827] Vecchiato, A., Lattanzi, M.G., Bucciarelli, B., et al., 2003, A&A, 399, 337 (arXiv:astro-ph/0301323), doi:10.1051/0004-6361:20021785, ADS Link

- [1828] **[RTN-027]**, Verification, T.D., team:, V., MacArthur, L., et al., 2023, Validation of the DPO.2 Processing, URL <https://rtn-027.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-027
- [1829] Veron-Cetty, M., Veron, P., 2010, *Astronomy and Astrophysics*, 518, doi:10.1051/0004-6361/201014188, ADS Link
- [1830] Vlemmings, W.H.T., Chatterjee, S., Briske, W.F., et al., 2005, *Memorie della Societa Astronomica Italiana*, 76, 531 (arXiv:astro-ph/0509025), ADS Link
- [1831] van der Vorst, H., 2003, *Iterative Krylov Methods for Large Linear Systems*, Cambridge University Press
- [1832] Vosteen, L.L.A., Draaisma, F., van Werkhoven, W.P., et al., 2009, In: *Astronomical and Space Optical Systems*, vol. 7439 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 743914, doi:10.1117/12.825240, ADS Link
- [1833] Vosteen, L.L.A., Draaisma, F., van Werkhoven, W.P., et al., 2009, In: *Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series*, vol. 7439 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, doi:10.1117/12.825240, ADS Link
- [1834] **[SQR-094]**, Voutsinas, S., 2024, TAP Query History via UWS, URL <https://sqr-094.lsst.io/>, Vera C. Rubin Observatory SQuaRE Technical Note SQR-094
- [1835] **[SQR-097]**, Voutsinas, S., 2025, Integrating QServ HTTP API into RSP TAP services, URL <https://sqr-097.lsst.io/>, Vera C. Rubin Observatory SQuaRE Technical Note SQR-097
- [1836] **[SQR-095]**, Voutsinas, S., Jenness, T., 2024, SIAv2 over Butler FastAPI service, URL <https://sqr-095.lsst.io/>, Vera C. Rubin Observatory SQuaRE Technical Note SQR-095
- [1837] Vuerli, C., O'Mullane, W., 2000, *DBMS-COTS test week report*, Tech. rep., ESA, PL-COM-OAT-TN-009
- [1838] Vuillermet, M., Billon-Lanfrey, D., Reibel, Y., et al., 2012, *Proc. SPIE 8353, Infrared Technology and Applications XXXVIII*, 38, 83532, doi:10.1117/12.921868
- [1839] Waas, F.M., 2009, In: Castellanos, M., Dayal, U., Sellis, T. (eds.) *Business Intelligence for the Real-Time Enterprise: Second International Workshop, BIRTE 2008*, Auckland,

New Zealand, August 24, 2008, Revised Selected Papers, 89–96, Springer Berlin Heidelberg, Berlin, Heidelberg, URL <http://www.greenplum.com/resources/>, doi:10.1007/978-3-642-03422-0\_7

- [1840] **[SITCOMTN-136]**, Walter, C., 2024, Calibration of the Rubin absolute timing, URL <https://sitcomtn-136.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-136
- [1841] Wang, D.L., Monkewitz, S.M., Lim, K.T., Becla, J., 2011, In: State of the Practice Reports, SC '11, 12:1–12:11, ACM, New York, NY, USA, URL <http://doi.acm.org/10.1145/2063348.2063364>, doi:10.1145/2063348.2063364
- [1842] Wang, D.L., Monkewitz, S.M., Lim, K.T., Becla, J., 2011, In: State of the Practice Reports, SC '11, 12:1–12:11, ACM, New York, NY, USA, doi:10.1145/2063348.2063364
- [1843] **[RTN-015]**, Wang, M., 2023, Brighter-Fatter Correction GPU Optimization Using CUDA C/C++, URL <https://rtn-015.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-015
- [1844] Warell, J., Lagerkvist, C.I., 2006, A&A, submitted
- [1845] **[DMTN-036]**, (of Washington), J.P.U., (Paris), P.A.L., 2018, jointcal: Simultaneous Astrometry & Photometry for thousands of Exposures with Large CCD Mosaics, URL <https://dmtn-036.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-036
- [1846] **[DMTN-192]**, Waters, C., 2023, Visualization of Calibration Verification, URL <https://dmtn-192.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-192
- [1847] **[DMTN-233]**, Waters, C., 2023, Queries for Calibration Quality Monitoring, URL <https://dmtn-233.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-233
- [1848] **[DMTN-262]**, Waters, C., 2023, Integrating Calibration Products Into the QA and Visualization System, URL <https://dmtn-262.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-262
- [1849] **[DMTN-222]**, Waters, C., 2025, Calibration Generation, Verification, Acceptance, and Certification., URL <https://dmtn-222.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-222

- [1850] **[SCTR-114]**, Waters, C., 2025, System-level Science Verification Acceptance Test Campaign: Instrument Signature Removal and Detector Characterization Test Plan and Report, URL <https://sctr-114.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Report SCTR-114
- [1851] **[DMTN-148]**, Waters, C.Z., 2021, DM Calibration Products, URL <https://dmtn-148.lsst.io/>,  
Vera C. Rubin Observatory Data Management Technical Note DMTN-148
- [1852] Wertz(Editor), J.R., 1978, *Spacecraft Attitude Determination and Control*, Kluwer Academic Publishers, 1 edn.
- [1853] **[RTN-054]**, White, B., 2023, Data Retention Plan, URL <https://rtn-054.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-054
- [1854] **[RTN-059]**, White, B., 2023, Rubin Data Retention Implementation Strategy, URL <https://rtn-059.lsst.io/>,  
Vera C. Rubin Observatory Technical Note RTN-059
- [1855] Wickham, H., 2014, Journal of Statistical Software, Articles, 59, 1, URL <https://www.jstatsoft.org/v059/i10>, doi:10.18637/jss.v059.i10
- [1856] Wieprecht, E., Brumfit, J., Bakker, J., et al., 2004, In: Ochsenbein, F., Allen, M.G., Egret, D. (eds.) *Astronomical Data Analysis Software and Systems (ADASS) XIII*, vol. 314 of *Astronomical Society of the Pacific Conference Series*, 376–+, ADS Link
- [1857] Wilkinson, M.I., 2005, In: Turon, C., O’Flaherty, K.S., Perryman, M.A.C. (eds.) *ESA SP-576: The Three-Dimensional Universe with Gaia*, 651–+, ADS Link
- [1858] Wilkinson, M.I., Evans, N.W., 1999, *MNRAS*, 310, 645 (arXiv:astro-ph/9906197), ADS Link
- [1859] Wilkinson, M.I., Vallenari, A., Turon, C., et al., 2005, *MNRAS*, 359, 1306 (arXiv:astro-ph/0506083), doi:10.1111/j.1365-2966.2005.09012.x, ADS Link
- [1860] Will, C., 1993, *Theory and experiment in gravitational physics*, Cambridge University Press, 2 edn.
- [1861] **[LPM-261]**, Willman, B., Graham, M., O’Mullane, W., Petravick, D., 2018, Access Policy for LSST Data and Data Access Center, URL <https://ls.st/LPM-261>,  
Vera C. Rubin Observatory LPM-261 Superseded by LDO-13

- [1862] Windmark, F., Lindegren, L., Hobbs, D., 2011, A&A, 530, A76 (arXiv:1104.2348), doi:10.1051/0004-6361/201116929, ADS Link
- [1863] **[LSE-279]**, Withers, A., 2017, Concept of Operations for Unified LSST Authentication and Authorization Services, URL <https://ls.st/LSE-279>, Vera C. Rubin Observatory LSE-279
- [1864] **[PSTN-010]**, Wolfe, J., 2019, LSST Camera Optics, URL <https://pstn-010.lsst.io/>, Vera C. Rubin Observatory Project Science Technical Note PSTN-010
- [1865] **[Document-15077]**, Wolff, S., 2013, LSST Project Overview, URL <https://ls.st/Document-15077>, Vera C. Rubin Observatory Document-15077
- [1866] **[LPM-73]**, Wolff, S., 2013, Operations Plan, URL <https://ls.st/LPM-73>, Vera C. Rubin Observatory LPM-73
- [1867] **[Document-13380]**, Wolff, S., Kahn, S., 2013, Data Rights and Data Management Policy, URL <https://ls.st/Document-13380>, Vera C. Rubin Observatory Document-13380
- [1868] **[Document-10549]**, Wolff, S.C., Kahn, S.M., Krabbendam, V.L., Sweeney, D.W., Tyson, J.A., 2011, Proposal to the National Science Foundation, URL <https://ls.st/Document-10549>, Vera C. Rubin Observatory Document-10549
- [1869] **[DMTN-008]**, Wood-Vasey, M., 2016, Introducing validate\_drp: Calculate SRD Key Performance Metrics for an output repository, URL <https://dmtn-008.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-008
- [1870] **[DMTR-15]**, Wood-Vasey, M., Swinbank, J., 2017, Characterization Metric Report: Science Pipelines Version 13.0, URL <https://ls.st/DMTR-15>, Vera C. Rubin Observatory DMTR-15
- [1871] **[DMTN-091]**, Wood-Vasey, M., Bellm, E., Bosch, J., et al., 2024, Test Datasets for Scientific Performance Monitoring, URL <https://dmtn-091.lsst.io/>, Vera C. Rubin Observatory Data Management Technical Note DMTN-091
- [1872] Wood-Vasey, W.M., Rest, A., Smartt, S., et al., 2010, In: Bulletin of the American Astronomical Society, vol. 42 of Bulletin of the American Astronomical Society, ADS Link

- [1873] Wu, X., Roby, W., Goldina, T., Ly, L., IRSA IPAC, 2015, In: American Astronomical Society Meeting Abstracts #225, vol. 225 of American Astronomical Society Meeting Abstracts, 434.06, ADS Link
- [1874] Wu, X., Ciardi, D., Dubois-Felsmann, G., et al., 2017, In: Lorente, N.P.F., Shortridge, K., Wayth, R. (eds.) Astronomical Data Analysis Software and Systems XXV, vol. 512 of Astronomical Society of the Pacific Conference Series, 455, ADS Link
- [1875] Wyrzykowski, Ł., Hodgkin, S., Blogorodnova, N., Koposov, S., Burgon, R., 2012, 21 (arXiv:1210.5007), doi:10.48550/arXiv.1210.5007, ADS Link
- [1876] **[PSTN-008]**, Xin, B., 2020, Active Optics System Performance of the Simonyi Survey Telescope, URL <https://pstn-008.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-008
- [1877] **[PSTN-032]**, Xin, B., 2020, Performance of Delivered Vera C. Rubin Observatory, URL <https://pstn-032.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-032
- [1878] **[SITCOMTN-007]**, Xin, B., 2020, The Rubin Observatory As-built Optical Model, URL <https://sitcomtn-007.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-007
- [1879] **[SCTR-31]**, Xin, B., 2021, LVV-P66: M2 Functional Re-verification and SAL Interface Verification Test Plan and Report, URL <https://sctr-31.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Report SCTR-31
- [1880] **[SITCOMTN-003]**, Xin, B., 2021, Coordinate Transformations within the Rubin Active Optics System, URL <https://sitcomtn-003.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-003
- [1881] **[SITCOMTN-009]**, Xin, B., 2021, Command Structure of the AOS CSCs, URL <https://sitcomtn-009.lsst.io/>,  
Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-009
- [1882] Xin, B., Claver, C., Liang, M., et al., 2015, Appl. Opt., 54, 9045 (arXiv:1506.04839), doi:10.1364/AO.54.009045, ADS Link
- [1883] Xin, B., Roodman, A., Angeli, G., Claver, C., Thomas, S., 2016, *Comparison of LSST and DECam wavefront recovery algorithms*, vol. 9906 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 99064], doi:10.1117/12.2234456

- [1884] Xin, B., Claver, C.F., Ivezić, Ž., et al., 2018, In: Proc. SPIE, vol. 10705 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 107050P, doi:10.1117/12.2313880, ADS Link
- [1885] **[SITCOMTN-004]**, Xin, B., Neill, D., Thomas, S., Claver, C., 2020, Standardizing the Implementation of the Rubin AOS LUTs, URL <https://sitcomtn-004.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Note SITCOMTN-004
- [1886] Yagi, M., 2012, PASP, 124, 1347 (arXiv:1210.8212), doi:10.1086/668891, ADS Link
- [1887] Yamada, Y., Hara, T., Yoshioka, S., et al., 2012, In: Ballester, P., Egret, D., Lorente, N.P.F. (eds.) Astronomical Data Analysis Software and Systems XXI, vol. 461 of Astronomical Society of the Pacific Conference Series, 585, ADS Link
- [1888] YAML, The Official YAML Web Site, URL <http://yaml.org/>
- [1889] **[RTN-032]**, Yang, W., 2022, Panda/Rucio Multi-site Configuration, URL <https://rtn-032.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-032
- [1890] **[RTN-023]**, Yanny, B., Slater, C., Padolski, S., et al., 2021, Campaign Tooling – tools for generating, monitoring and tracking data processing campaigns, URL <https://rtn-023.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-023
- [1891] **[RTN-039]**, Yanny, B., Kuropatkin, N., Lin, H., et al., 2023, Compute Resource Usage of DPO.2 production run, URL <https://rtn-039.lsst.io/>, Vera C. Rubin Observatory Technical Note RTN-039
- [1892] Yasuda, N., Mizumoto, Y., Ohishi, M., et al., 2004, In: F. Ochsenbein, M. G. Allen, & D. Egret (ed.) Astronomical Data Analysis Software and Systems (ADASS) XIII, vol. 314 of Astronomical Society of the Pacific Conference Series, 293, ADS Link
- [1893] **[SMTN-004]**, Yoachim, P., 2016, SMTN-004 LSST Focal Plane Fill Factor From Rotational Dithering, URL <https://smtn-004.lsst.io/>, Vera C. Rubin Observatory Simulations Team Technical Note SMTN-004
- [1894] **[SMTN-005]**, Yoachim, P., 2016, Cloud Statistics via All-Sky Camera, URL <https://smtn-005.lsst.io/>, Vera C. Rubin Observatory Simulations Team Technical Note SMTN-005

- [1895] **[SMTN-008]**, Yoachim, P., 2017, Using GAIA BP/RP to Photometrically Calibrate LSST, URL <https://smtn-008.lsst.io/>,  
Vera C. Rubin Observatory Simulations Team Technical Note SMTN-008
- [1896] **[SMTN-015]**, Yoachim, P., 2021, Early Rubin Science: Time Needed to Generate Difference Imaging Templates, URL <https://smtn-015.lsst.io/>,  
Vera C. Rubin Observatory Simulations Team Technical Note SMTN-015
- [1897] **[PSTN-052]**, Yoachim, P., 2022, Survey Strategy: Rolling Cadence, URL <https://pstn-052.lsst.io/>,  
Vera C. Rubin Observatory Project Science Technical Note PSTN-052
- [1898] **[SMTN-017]**, Yoachim, P., 2022, Survey Strategy Simulation v2.x Results, URL <https://smtn-017.lsst.io/>,  
Vera C. Rubin Observatory Simulations Team Technical Note SMTN-017
- [1899] **[SMTN-018]**, Yoachim, P., 2023, Satellite Mega Constellations, URL <https://smtn-018.lsst.io/>,  
Vera C. Rubin Observatory Simulations Team Technical Note SMTN-018
- [1900] **[SMTN-016]**, Yoachim, P., 2025, Surface Brightness Limit Derivations, URL <https://smtn-016.lsst.io/>,  
Vera C. Rubin Observatory Simulations Team Technical Note SMTN-016
- [1901] **[Document-15125]**, Yoachim, P., Jones, L., Ivezić, Ž., Axelrod, T., 2013, Photometric Self Calibration Design and Prototype, URL <https://lsst.org/Document-15125>,  
Vera C. Rubin Observatory Document-15125
- [1902] Yoachim, P., Coughlin, M., Angeli, G.Z., et al., 2016, In: Observatory Operations: Strategies, Processes, and Systems VI, vol. 9910 of Proc. SPIE, 99101A, doi:10.1117/12.2232947, ADS Link
- [1903] Zackay, B., Ofek, E.O., 2017, ApJ, 836, 188 (arXiv:1512.06879), doi:10.3847/1538-4357/836/2/188, ADS Link
- [1904] Zackay, B., Ofek, E.O., Gal-Yam, A., 2016, ApJ, 830, 27 (arXiv:1601.02655), doi:10.3847/0004-637X/830/1/27, ADS Link
- [1905] Zechmeister, M., Kürster, M., 2009, A&A, 496, 577 (arXiv:0901.2573), doi:10.1051/0004-6361:200811296, ADS Link



- [1906] Zellner, B., Tholen, D.J., Tedesco, E.F., 1985, *Icarus*, 61, 355, doi:10.1016/0019-1035(85)90133-2, ADS Link
- [1907] Zicari, R.V., 2011, *Objects in Space*, URL <http://www.odbms.org/blog/2011/02/objects-in-space/>
- [1908] Ziemke, J.R., Olsen, M.A., Witte, J.C., et al., *Journal of Geophysical Research: Atmospheres*, 119, 5671, URL <https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1002/2013JD020914> (<https://agupubs.onlinelibrary.wiley.com/doi/pdf/10.1002/2013JD020914>), doi:10.1002/2013JD020914
- [1909] **[SCTR-61]**, Zorzi, P., 2022, LVV-P93: M1M3 Thermal Control System Verification Testing on Level 3. Test Plan and Report, URL <https://sctr-61.lsst.io/>, Vera C. Rubin Observatory Commissioning Technical Report SCTR-61
- [1910] Zucker, S., Mazeh, T., 1994, *ApJ*, 420, 806, doi:10.1086/173605, ADS Link
- [1911] Zucker, S., Mazeh, T., Santos, N.C., Udry, S., Mayor, M., 2004, *A&A*, 426, 695, doi:10.1051/0004-6361:20040384, ADS Link