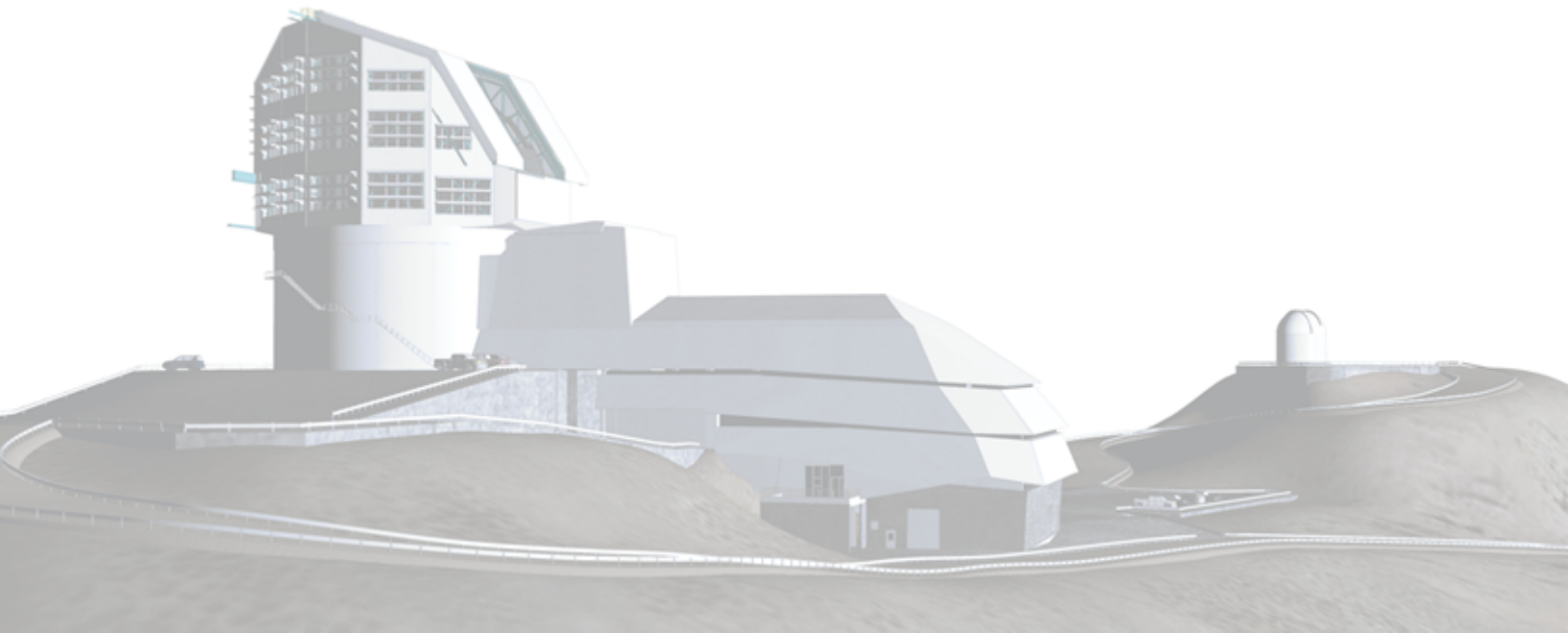
Vera C. Rubin Observatory
Data Management

Bibliography Verification

Automated Content

LSST-test

Latest Revision: 2024-02-06



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.

Contents

1 Introduction 1

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.

`\citedsp`: [LPM-17]
`\citedsp[]`: [Verify] [Requirements]
`\citeds`: (SRD; LPM-17, LSE-29)
`\citeds[]`: LDM-503
`\citep[][]`: [e.g., 783, 337, are interesting]
`\cite`: [783, 337]

References

[1] **[PSTN-043]** 2019, *Performance Verification of the LSST Survey Scheduler*, PSTN-043, URL `https://pstn-043.lsst.io/`,
Vera C. Rubin Observatory Project Science Technical Note

[2] **[PSTN-046]** 2020, *Vera C. Rubin Observatory LSST Camera Design and Delivered Performance*, PSTN-046, URL `https://pstn-046.lsst.io/`,
Vera C. Rubin Observatory Project Science Technical Note

[3] 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

[4] Abell, P.A., Allison, J., Anderson, S.F., et al., 2009 (`arXiv:0912.0201`)

[5] 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

[6] 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

[7] **[RTN-042]**, Adamow, M., 2023, *Running BPS on personal HTCondor at USDF*, RTN-042, URL https://rtn-042.lsst.io/,
Vera C. Rubin Observatory Technical Note

[8] Adams, A., Avila, K., Heymann, E., et al., 2021, Guide to securing scientific software, URL https://zenodo.org/record/5777646#.YfSEvmBlC3o

[9] Aihara, H., Armstrong, R., Bickerton, S., et al., 2017, ArXiv e-prints (arXiv:1702.08449), ADS Link

[10] **[DMTN-151]**, et al., M.L.G., 2021, *Host Galaxy Association for DIAObjects*, DMTN-151, URL https://dmtn-151.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[11] Alard, C., Lupton, R.H., 1998, ApJ, 503, 325 (arXiv:astro-ph/9712287), doi:10.1086/305984, ADS Link

[12] Albrecht, A., Bernstein, G., Cahn, R., et al., 2006, ArXiv Astrophysics e-prints (arXiv:astro-ph/0609591), ADS Link

[13] Alcock, C., Allsman, R.A., Alves, D., et al., 1999, ApJ, 521, 602 (arXiv:astro-ph/9903215), doi:10.1086/307567, ADS Link

[14] Alejandro Plazas, A., Bernstein, G., 2012, PASP, 124, 1113 (arXiv:1204.1346), doi:10.1086/668294, ADS Link

[15] Allan, A., Denny, R.B., Swinbank, J.D., 2017, arXiv e-prints (arXiv:1709.01264), ADS Link

[16] **[DMTN-169]**, Allbery, R., 2020, *A model for Butler registry access control*, DMTN-169, URL https://dmtn-169.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[17] **[SQR-037]**, Allbery, R., 2020, *SQuaRE security risk assessment*, SQR-037, URL https://sqr-037.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[18] **[SQR-039]**, Allbery, R., 2020, *Discussion of authentication and authorization for Science Platform*, SQR-039, URL https://sqr-039.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[19] **[SQR-042]**, Allbery, R., 2020, *Dependency management for SQuaRE services*, SQR-042, URL https://sqr-042.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[20] **[SQR-044]**, Allbery, R., 2020, *Science Platform identity management requirements*, SQR-044, URL https://sqr-044.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[21] **[SQR-048]**, Allbery, R., 2020, *Kubernetes hardening recommendations*, SQR-048, URL https://sqr-048.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[22] **[DMTN-182]**, Allbery, R., 2021, *Possible authorization approaches for Butler*, DMTN-182, URL https://dmtn-182.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[23] **[RTN-020]**, Allbery, R., 2021, *Security controls for adminstrative and developer access to IDF infrastructure*, RTN-020, URL https://rtn-020.lsst.io/,
Vera C. Rubin Observatory Technical Note

[24] **[SQR-049]**, Allbery, R., 2021, *Science Platform token management design*, SQR-049, URL https://sqr-049.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[25] **[SQR-051]**, Allbery, R., 2021, *Leaks of credentials to services in the Rubin Science Platform*, SQR-051, URL https://sqr-051.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[26] **[DMTN-193]**, Allbery, R., 2022, *Web security for the Science Platform*, DMTN-193, URL https://dmtn-193.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[27] **[DMTN-208]**, Allbery, R., 2022, *RSP image cutout service implementation strategy*, DMTN-208, URL https://dmtn-208.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[28] **[DMTN-230]**, Allbery, R., 2022, *RSP HiPS service implementation strategy*, DMTN-230, URL https://dmtn-230.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[29] **[DMTN-238]**, Allbery, R., 2022, *RSP DataLink service implementation strategy*, DMTN-238, URL https://dmtn-238.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[30] **[SQR-041]**, Allbery, R., 2022, *Science Platform security risk assessment*, SQR-041, URL https://sqr-041.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[31] **[SQR-045]**, Allbery, R., 2022, *Evaluation of CILogon COmanage for Rubin Science Platform*, SQR-045, URL https://sqr-045.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[32] **[SQR-046]**, Allbery, R., 2022, *Evaluation of GitHub for Rubin Science Platform identity management*, SQR-046, URL https://sqr-046.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[33] **[SQR-071]**, Allbery, R., 2022, *RSP user impersonation*, SQR-071, URL https://sqr-071.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[34] **[SQR-073]**, Allbery, R., 2022, *RSP quotas and rate limiting*, SQR-073, URL https://sqr-073.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[35] **[DMTN-250]**, Allbery, R., 2023, *Discovery services for the Rubin Science Platform*, DMTN-250, URL https://dmtn-250.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[36] **[SQR-055]**, Allbery, R., 2023, *COmanage configuration for Rubin Science Platform*, SQR-055, URL https://sqr-055.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[37] **[SQR-063]**, Allbery, R., 2023, *IVOA SODA implementation experience*, SQR-063, URL https://sqr-063.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[38] **[SQR-072]**, Allbery, R., 2023, *One design pattern for FastAPI web applications*, SQR-072, URL https://sqr-072.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[39] **[SQR-074]**, Allbery, R., 2023, *Validation of new Phalanx deployments*, SQR-074, URL https://sqr-074.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[40] **[SQR-077]**, Allbery, R., 2023, *Considerations for Python API documentation*, SQR-077, URL https://sqr-077.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[41] **[SQR-079]**, Allbery, R., 2023, *Secrets management for Phalanx*, SQR-079, URL https://sqr-079.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[42] **[DMTN-224]**, Allbery, R., 2024, *RSP identity management implementation strategy*, DMTN-224, URL https://dmtn-224.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[43] **[DMTN-225]**, Allbery, R., 2024, *User metadata for the Science Platform*, DMTN-225, URL https://dmtn-225.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[44] **[DMTN-234]**, Allbery, R., 2024, *RSP identity management design*, DMTN-234, URL https://dmtn-234.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[45] **[DMTN-235]**, Allbery, R., 2024, *Token scopes for the Rubin Science Platform*, DMTN-235, URL https://dmtn-235.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[46] **[DMTN-253]**, Allbery, R., 2024, *Science Platform authentication for IDAC users*, DMTN-253, URL https://dmtn-253.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[47] **[SQR-069]**, Allbery, R., 2024, *Implementation decisions for RSP identity management*, SQR-069, URL https://sqr-069.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[48] **[SQR-066]**, Allbery, R., Thornton, A., 2023, *RSP Notebook Aspect lab controller design*, SQR-066, URL https://sqr-066.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[49] **[DMTN-163]**, Allbery, R., Lim, K.T., Economou, F., O'Mullane, W., 2021, *Encryption of Rubin Observatory data*, DMTN-163, URL https://dmtn-163.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[50] Allende Prieto, C., 2007, AJ, 134, 1843 (arXiv:0707.2764), doi:10.1086/522051, ADS Link

[51] **[LSE-16]**, Allsman, R., Dubois-Felsmann, G., Kantor, J., 2009, *LSST Software Development Plan*, LSE-16, URL https://ls.st/LSE-16

[52] **[DMTN-080]**, AlSayyad, Y., 2019, *Coaddition Artifact Rejection and CompareWarp*, DMTN-080, URL https://dmtn-080.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[53] **[DMTR-302]**, AlSayyad, Y., 2021, *LDM-503-13a: Science Pipelines Fall 2020 Release Test Plan and Report*, DMTR-302, URL https://dmtr-302.lsst.io/, Vera C. Rubin Observatory Data Management Test Report

[54] **[DMTR-321]**, AlSayyad, Y., 2022, *LDM-503-15a: Science Pipelines Fall 2021 Release Test Plan and Report*, DMTR-321, URL https://dmtr-321.lsst.io/, Vera C. Rubin Observatory Data Management Test Report

[55] **[DMTR-411]**, AlSayyad, Y., 2023, *LDM-503-16a: Science Pipelines Fall 2022 Release Test Plan Test Plan and Report*, DMTR-411, URL https://dmtr-411.lsst.io/, Vera C. Rubin Observatory Data Management Test Report

[56] 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

[57] 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

[58] **[RTN-063]**, AlSayyad, Y., Adelman-McCarthy, J., Yanny, B., et al., 2023, *HSC PDR2 Reprocessing and Operations Rehearsal for DRP*, RTN-063, URL https://rtn-063.lsst.io/, Vera C. Rubin Observatory Technical Note

[59] Amaro-Seoane, P., Aoudia, S., Babak, S., et al., 2013, GW Notes, Vol. 6, p. 4-110, 6, 4 (arXiv:1201.3621), ADS Link

[60] Amazon, Amazon Glacier – Cloud Archive, URL https://aws.amazon.com/glacier/

[61] 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

[62] **[LSE-159]**, Angeli, G., 2013, *Reviews Definitions, Guidelines, and Procedures*, LSE-159, URL https://ls.st/LSE-159

[63] **[Document-11920]**, Angeli, G., McKercher, R., 2013, *Document Cover Page and Style Guide*, Document-11920, URL https://ls.st/Document-11920

[64] **[Document-9224]**, Angeli, G., McKercher, R., 2013, *Change Controlled Document Cover Page and Style Guide*, Document-9224, URL https://ls.st/Document-9224

[65] **[LPM-19]**, Angeli, G., McKercher, R., 2015, *Change Control Process*, LPM-19, URL https://ls.st/LPM-19

[66] 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

[67] 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

[68] Ansari, S., Torra, J., López, P.P., et al., Algorithm Interface Control Document, CCB-GDAAS-ICD-001

[69] Ansari, S.G., Torra, J., Luri, X., et al., 2003, In: Science and Technology, ASP Conference Series, vol. 298,
page 97

[70] 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

[71] 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

[72] **[DMTR-82]**, Arcanjo, V., Astudillo, A., Bezerra, J., et al., 2018, *Network Bandwidth Tests between Chile and the United States*, DMTR-82, URL https://ls.st/DMTR-82

[73] Arenou, F., Chéreau, F.,
private communication

[74] Arenou, F., Lindegren, L., Froeschle, M., et al., 1995, A&A, 304, 52, ADS Link

[75] 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

[76] Auer, L.H., Standish, E.M., 2000, AJ, 119, 2472, doi:10.1086/301325, ADS Link

[77] Axelrod, T., 2005, Events in the LSST, URL http://wiki.ivoa.net/internal/IVOA/VOEventSchedule/tim_axelrod.ppt,
Presented at the IVOA VOEvent Workshop, Pasadena

[78] 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

[79] Axelrod, T., Kantor, J., 2010, In: Supercomputing 2010, LSST Corporation, Supercomputing Conference, URL https://docushare.lsstcorp.org/docushare/dsweb/Get/Document-10284/

[80] Axelrod, T., Connolly, A., Ivezic, Z., et al., 2004, In: American Astronomical Society Meeting Abstracts, vol. 36 of Bulletin of the American Astronomical Society, #108.11, ADS Link

[81] 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

[82] Axelrod, T., 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

[83] **[Document-5356]**, Axelrod, T., Allsman, R., Kantor, J., et al., 2008, *LSST Data Challenge 2*, Document-5356, URL https://ls.st/Document-5356

[84] 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

[85] **[LDM-17]**, Axelrod, T., et al., 2009, *LSST Data Challenge 3a Final Report*, LDM-17, URL https://ls.st/LDM-17

[86] 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

[87] 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

[88] Axelrod, T.S., Becker, A., Becla, J., et al., 2009, In: American Astronomical Society Meeting Abstracts #213, vol. 41 of Bulletin of the American Astronomical Society, #460.30, ADS Link

[89] Baccaro, S., Cecilia, A., Di Sarcina, I., Piegari, A.M., 2004, In: E. Atad-Ettedgui 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

[90] Baccaro, S., Piegari, A., Di Sarcina, I., Cecilia, A., 2005, IEEE transactions on nuclear science, 52, 1779

[91] Bailer-Jones, C.A.L., 2002, Astrophysics and Space Science, 280, 21 (arXiv:astro-ph/0201014), ADS Link

[92] 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

[93] Bailer-Jones, C.A.L., 2004, A&A, 419, 385 (arXiv:astro-ph/0402591), doi:10.1051/0004-6361:20035779, ADS Link

[94] 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

[95] Bailer-Jones, C.A.L., 2010, MNRAS, 403, 96 (arXiv:0911.5242), doi:10.1111/j.1365-2966.2009.16125.x, ADS Link

[96] 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

[97] **[DMTN-090]**, Banek, C., 2019, *DAX Webservice Implementation Guide*, DMTN-090, URL https://dmtn-090.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[98] **[DMTN-164]**, Banek, C., 2020, *Nublado v2 Architecture*, DMTN-164, URL https://dmtn-164.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[99] **[DMTN-264]**, Banek, C., 2023, *TAP - IVOA Table Access Protocol service*, DMTN-264, URL https://dmtn-264.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[100] **[DMTN-267]**, Banek, C., 2023, *TAP UPLOAD: How it works in the CADC TAP Service*, DMTN-267, URL https://dmtn-267.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[101] **[DMTN-245]**, Banovetz, J., 2023, *Long Term Variability of AuxTel/LATISS Edge of Amplifier Banding in Bias Images*, DMTN-245, URL https://dmtn-245.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[102] **[DMTN-276]**, Banovetz, J., 2024, *Effects of Persistence and E2V Sensors using DC2 Data*, DMTN-276, URL https://dmtn-276.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[103] **[PSTN-005]**, Barr, J.D., 2019, *Overview of the LSST Telescope*, PSTN-005, URL https://pstn-005.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[104] **[ITTN-064]**, Barría, C., 2022, *OS Update Playbook*, ITTN-064, URL https://ittn-064.lsst.io/,
Vera C. Rubin Observatory

[105] **[ITTN-071]**, Barría, C., 2023, *rke Update Playbook*, ITTN-071, URL https://ittn-071.lsst.io/,
Vera C. Rubin Observatory

[106] Bastian, U., Biermann, M., 2005, A&A, 438, 745, doi:10.1051/0004-6361:20042372, ADS Link

[107] Bastian, U., Gilmore, G., Halbwachs, J., et al., 1993, *ROEMER*, Tech. rep., Lund Observatory,
Proposal for a Third Medium Size ESA Mission (M3), Lund 1993

[108] **[PSTN-031]**, Bauer, A.E., 2019, *LSST EPO: The User Feedback*, PSTN-031, URL https://pstn-031.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[109] **[PSTN-029]**, Bauer, A.E., 2020, *The Vera C. Rubin Observatory Education and Public Outreach Program*, PSTN-029, URL https://pstn-029.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[110] Bauer, A.E., Bellm, E.C., Bolton, A.S., et al., 2019, arXiv e-prints, arXiv:1905.05116 (arXiv:1905.05116), ADS Link

[111] Beaumont, C., Goodman, A., Greenfield, P., 2015, In: Taylor, A.R., Rosolowsky, E. (eds.) Astronomical Data Analysis Software an Systems XXIV (ADASS XXIV), vol. 495 of Astronomical Society of the Pacific Conference Series, 101, ADS Link

[112] **[LSE-389]**, Bechtol, K., 2018, *Commissioning Science Validation Test Plan*, LSE-389, URL https://lse-389.lsst.io/,
Vera C. Rubin Observatory

[113] **[PSTN-039]**, Bechtol, K., 2020, *Science Validation of LSST Data Release Processing*, PSTN-039, URL https://pstn-039.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[114] **[SITCOMTN-075]**, Bechtol, K., 2023, *System On-sky Test Plan*, SITCOMTN-075, URL https://sitcomtn-075.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[115] **[SITCOMTN-050]**, Bechtol, K., 2024, *Summary of In-Kind Contributions to Rubin Observatory System Integration, Test, and Commissioning Efforts*, SITCOMTN-050, URL https://sitcomtn-050.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[116] **[SITCOMTN-076]**, Bechtol, K., on behalf of the Rubin Observatory Project Science Team, S.R., 2024, *Information Sharing during Commissioning*, SITCOMTN-076, URL https://sitcomtn-076.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[117] **[DMTN-141]**, Bechtol, K., Carlin, J., Krughoff, S., 2020, *Design concepts for the SV-distiller*, DMTN-141, URL https://dmtn-141.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[118] **[SITCOMTN-010]**, Bechtol, K., Claver, C., Test, S.I., et al., 2021, *Announcement of Opportunity: Community Engagement with Rubin Observatory Commissioning Effort*, SITCOMTN-010, URL https://sitcomtn-010.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[119] **[SITCOMTN-025]**, Bechtol, K., (chair), P.I., Jenness, T., et al., 2022, *First-Look Analysis and Feedback Functionality Breakout Group Report*, SITCOMTN-025, URL https://sitcomtn-025.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[120] **[SITCOMTN-061]**, Bechtol, K., Alexov, A., Claver, C., et al., 2023, *System First Light Definition*, SITCOMTN-061, URL https://sitcomtn-061.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[121] **[SITCOMTN-037]**, Bechtol, K., Dubois-Felsmann, G., Fausti, A., et al., 2023, *First-Look Analysis and Feedback Functionality Breakout Group Report #2*, SITCOMTN-037, URL https://sitcomtn-037.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[122] Beck, K., 1999, *Extreme Programming Explained: Embrace Change*, Addison-Wesley, 1st edn.

[123] 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

[124] 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

[125] 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

[126] Becker, A., Axelrod, T., Ivezic, Z., et al., 2005, In: American Astronomical Society Meeting Abstracts, vol. 37 of Bulletin of the American Astronomical Society, 1206, ADS Link

[127] Becker, A., Silvestri, N., Owen, R., Ivezić, Ž., Lupton, R., 2007, PASP, 119, 1462 (arXiv:0712.0637), doi:10.1086/524710, ADS Link

[128] **[LDM-227]**, Becker, A., Krughoff, S., Connolly, A., et al., 2013, *Report on Late Winter2013 Production: Image Differencing*, LDM-227, URL https://ls.st/LDM-227

[129] **[DMTN-069]**, Becker, A., Krughoff, S., Connolly, A., 2014, *Report on Winter 2014 Production: Image Differencing*, DMTN-069, URL https://dmtn-069.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[130] **[DMTN-070]**, Becker, A., Krughoff, S., Connolly, A., 2014, *Report on Summer 2014 Production: Analysis of DCR*, DMTN-070, URL https://dmtn-070.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[131] **[Document-11013]**, Becker, A., et al., 2011, *Science White Paper for LSST Deep-Drilling Field Observations Opportunities for Solar System Science*, Document-11013, URL https://ls.st/Document-11013

[132] Becker, A.C., Rest, A., Miknaitis, G., Smith, R.C., Stubbs, C., 2004, In: American Astronomical Society Meeting Abstracts, vol. 36 of Bulletin of the American Astronomical Society, #108.12, ADS Link

[133] Becker, A.C., Silvestri, N., Owen, R., et al., 2009, In: American Astronomical Society Meeting Abstracts #213, vol. 41 of Bulletin of the American Astronomical Society, #460.28, ADS Link

[134] Becker, A.C., Bloom, J.S., Walkowicz, L.M., Collaboration, L., 2011, In: American Astronomical Society Meeting Abstracts #217, vol. 43 of Bulletin of the American Astronomical Society, #252.12, ADS Link

[135] **[Document-1386]**, Becla, J., 2006, *Database Ingest Tests*, Document-1386, URL https://ls.st/Document-1386

[136] 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

[137] **[Document-8256]**, Becla, J., 2009, *Evaluation of Database Solutions*, Document-8256, URL https://ls.st/Document-8256

[138] Becla, J., 2010, In: Astronomical Data Analysis Software and Systems XX, ADASS XX, SLAC National Accelerator Laboratory

[139] **[DMTR-12]**, Becla, J., 2013, *Qserv 300 node test*, DMTR-12, URL https://ls.st/DMTR-12

[140] Becla, J., 2014, In: Taylor, A.R., Rosolowsky, E. (eds.) Astronomical Data Analysis Software an Systems XXIV (ADASS XXIV), Astronomical Society of the Pacific Conference Series

[141] 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

[142] **[DMTR-13]**, Becla, J., 2015, *Qserv Summer 15 Large Scale Tests*, DMTR-13, URL https://ls.st/DMTR-13

[143] **[DMTN-083]**, Becla, J., 2016, *LSST DM Metadata and Provenance*, DMTN-083, URL https://dmtn-083.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[144] **[LDM-555]**, Becla, J., 2017, *Data Management Database Requirements*, LDM-555, URL https://ldm-555.lsst.io/, Vera C. Rubin Observatory Data Management Controlled Document

[145] Becla, J., Lim, K.T., 2008, Data Science Journal, 7, doi:10.2481/dsj.7.1

[146] Becla, J., Lim, K.T., 2008, Data Science Journal, 7, doi:10.2481/dsj.7.88

[147] **[LDM-139]**, Becla, J., Lim, K.T., 2013, *Data Management Storage Sizing and I/O Model Explanation*, LDM-139, URL https://ls.st/LDM-139

[148] **[LDM-141]**, Becla, J., Lim, K.T., 2013, *Data Management Storage Sizing and I/O Model*, LDM-141, URL https://ls.st/LDM-141

[149] **[LDM-463]**, Becla, J., Pease, N., 2017, *Data Access Design*, LDM-463, URL https://ls.st/LDM-463

[150] 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

[151] Becla, J., Wang, D.L., 2014, In: Exascale Radio Astronomy, vol. 2, ADS Link

[152] 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

[153] 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 Proc. SPIE, 0 (arXiv:cs/0604112), doi:10.1117/12.671721, ADS Link

[154] 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

[155] Becla, J., Lim, K.T., Wang, D.L., 2010, Data Science Journal, 8, MR1, doi:10.2481/dsj.xldb09

[156] **[Document-11625]**, Becla, J., Lim, K.T., Wang, D., 2011, *Database Architecture*, Document-11625, URL https://ls.st/Document-11625

[157] **[Document-11701]**, Becla, J., Lim, K.T., Wang, D., 2011, *Evaluation of Solid State Disks*, Document-11701, URL https://ls.st/Document-11701

[158] Becla, J., Lim, K.T., Wang, D.L., 2012, Facts about xldb-2011, URL http://www.osti.gov/scitech/biblio/1035489/

[159] **[DMTN-046]**, Becla, J., Lim, K.T., Wang, D., 2013, *An investigation of database technologies*, DMTN-046, URL https://dmtn-046.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[160] **[DMTN-048]**, Becla, J., Lim, K.T., Wang, D., 2013, *Qserv design prototyping experiments*, DMTN-048, URL https://dmtn-048.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[161] **[DMTR-21]**, Becla, J., Lim, K.T., Wang, D., 2013, *Early (pre-2013) Large-Scale Qserv Tests*, DMTR-21, URL https://ls.st/DMTR-21

[162] **[Document-26276]**, Becla, J., Lim, K.T., Wang, D., 2013, *Scalable Partitioning*, Document-26276, URL https://ls.st/Document-26276

[163] **[LDM-472]**, Becla, J., Economou, F., Mueller, F., et al., 2017, *LSST DM Project Management and Tools*, LDM-472, URL https://ldm-472.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[164] **[LDM-135]**, Becla, J., Wang, D., Monkewitz, S., et al., 2017, *Data Management Database Design*, LDM-135, URL https://ldm-135.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[165] **[DMTN-020]**, Becla, J., Economou, F., Gelman, M., et al., 2018, *Data Management Project Management Guide*, DMTN-020, URL https://dmtn-020.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[166] 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

[167] 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

[168] **[DMTN-085]**, Bellm, E.C., Chiang, et al., 2019, *QA Strategy Working Group Report*, DMTN-085, URL https://dmtn-085.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[169] **[DMTR-91]**, Bellm, E., 2019, *LDM-503-5: (Alert Distribution Validation) Test Plan and Report*, DMTR-91, URL https://dmtr-91.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[170] **[PSTN-021]**, Bellm, E., 2019, *LSST Prompt Data Products*, PSTN-021, URL https://pstn-021.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[171] **[DMTN-200]**, Bellm, E., 2023, *Fluxes of variables in difference imaging*, DMTN-200, URL https://dmtn-200.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[172] **[DMTN-259]**, Bellm, E., 2023, *Mechanisms for Deprecating Bad Data in Alert Production*, DMTN-259, URL https://dmtn-259.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[173] **[RTN-010]**, Bellm, E., 2023, *Pre-operations Alert Distribution Integration Exercises*, RTN-010, URL https://rtn-010.lsst.io/,
Vera C. Rubin Observatory Technical Note

[174] **[RTN-061]**, Bellm, E., 2023, *Planning for the First Public Release of LSSTCam Alerts*, RTN-061, URL https://rtn-061.lsst.io/,
Vera C. Rubin Observatory Technical Note

[175] **[DMTN-165]**, Bellm, E., Nelson, S., 2021, *A Hybrid Notification and Alert Retrieval Service*, DMTN-165, URL https://dmtn-165.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[176] **[LDM-682]**, Bellm, E., Blum, R., Graham, M., et al., 2019, *Call for Letters of Intent for Community Alert Brokers*, LDM-682, URL https://ldm-682.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[177] **[LDM-612]**, Bellm, E., Blum, R., Graham, M., et al., 2020, *Plans and Policies for LSST Alert Distribution*, LDM-612, URL https://ldm-612.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[178] **[LDM-723]**, Bellm, E., Blum, R., Graham, M., et al., 2020, *Call for Proposals for Community Alert Brokers*, LDM-723, URL https://ldm-723.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[179] **[RDO-061]**, Bellm, E., Blum, R., Guy, L., 2021, *Community Alert Broker MoU*, RDO-061, URL https://rdo-061.lsst.io/,
Vera C. Rubin Observatory

[180] **[DMTN-228]**, Bellm, E., Graham, M., Guy, L., the DM System Science Team, 2023, *Measurement of Faint DIASources in LSST Prompt Processing*, DMTN-228, URL https://dmtn-228.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[181] **[RTN-008]**, Bellm, E.C., 2022, *Rubin Observatory Processing of Gravitational Wave TOO Data in the Early Operations Era*, RTN-008, URL https://rtn-008.lsst.io/,
Vera C. Rubin Observatory Technical Note

[182] **[DMTN-118]**, Bellm, E.C., 2023, *Review of Timeseries Features*, DMTN-118, URL https://dmtn-118.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[183] **[DMTN-226]**, Bellm, E.C., Guy, L., 2023, *Implementing the Rubin/LSST Alert Filtering System with ANTARES*, DMTN-226, URL https://dmtn-226.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[184] **[DMTR-53]**, Bellm, E.C., Swinbank, J.D., 2018, *LDM-503-3 (Alert Generation) Test Report*, DMTR-53, URL https://dmtr-53.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[185] **[LDM-533]**, Bellm, E.C., Swinbank, J.D., 2019, *LSST Level 1 System Test Specification*, LDM-533, URL https://ldm-533.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[186] Benítez, N., 2000, ApJ, 536, 571 (arXiv:astro-ph/9811189), doi:10.1086/308947, ADS Link

[187] Bernstein, G.M., Armstrong, R., 2014, MNRAS, 438, 1880 (arXiv:1304.1843), doi:10.1093/mnras/stt2326, ADS Link

[188] Bernstein, G.M., Jarvis, M., 2002, AJ, 123, 583 (arXiv:astro-ph/0107431), doi:10.1086/338085, ADS Link

[189] Bernstein, G.M., Armstrong, R., Krawiec, C., March, M.C., 2016, MNRAS, 459, 4467 (arXiv:1508.05655), doi:10.1093/mnras/stw879, ADS Link

[190] 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

[191] 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

[192] 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

[193] Beyer, B., Jones, C., Petoff, J., Murphy, N.R., 2016, *Site Reliability Engineering: How Google Runs Production Systems*, O'Reilly Media, Inc., 1st edn.

[194] **[Document-35896]**, Bianco, F., coordinator, S., SC, T., 2020, *MEMO on the impact of delays in pixel-level data access*, Document-35896, URL https://ls.st/Document-35896

[195] **[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*, PSTN-054, URL https://pstn-054.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[196] Bickerton, S.J., Lupton, R.H., 2013, MNRAS, 431, 1275 (arXiv:1302.4764), doi:10.1093/mnras/stt244, ADS Link

[197] 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

[198] Bloch, J., 2001, *Writing Effective Java*, Addison-Wesley, 1st edn.

[199] Bloom, J.S., Richards, J.W., Nugent, P.E., et al., 2012, PASP, 124, 1175 (arXiv:1106.5491), doi:10.1086/668468, ADS Link

[200] **[LSE-489]**, Blum, B., Ivezić, Ž., Kahn, S., Krabbendam, V., 2020, *Charge to the Project-Wide Documentation Working Group*, LSE-489, URL https://lse-489.lsst.io/, Vera C. Rubin Observatory

[201] **[RDO-018]**, Blum, R., 2021, *PLAN for the OPERATIONS of the VERA C. RUBIN OBSERVATORY*, RDO-018, URL https://docushare.lsstcorp.org/docushare/dsweb/Get/RDO-18

[202] **[RDO-013]**, Blum, R., the Rubin Operations Team, 2020, *Vera C. Rubin Observatory Data Policy*, RDO-013, URL https://ls.st/RDO-013

[203] **[LDO-13]**, Blum, R., et al., 2019, *LSST Data Policy*, LDO-13, URL https://ls.st/LDO-13

[204] **[LDO-31-OBS-RDO-018]**, Blum, R., et al., 2020, *OBSOLETE NOW RDO-018 - LSST Operations Proposal* , LDO-31-OBS-RDO-018, URL https://ls.st/LDO-31-OBS-RDO-018

[205] **[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/

[206] 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

[207] 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

[208] Bombrun, A., Lindegren, L., Holl, B., Jordan, S., 2010, A&A, 516, A77, doi:10.1051/0004-6361/200913503, ADS Link

[209] Bombrun, A., Lindegren, L., Hobbs, D., et al., 2012, Astronomy and Astrophysics, 538, A77, doi:10.1051/0004-6361/201117904

[210] **[PSTN-016]**, Bond, T.W., 2019, *LSST Camera Integration and Tests*, PSTN-016, URL https://pstn-016.lsst.io/, Vera C. Rubin Observatory Project Science Technical Note

[211] Bonnarel, F., Fernique, P., Bienaymé, O., et al., 2000, A&AS, 143, 33, doi:10.1051/aas:2000331, ADS Link

[212] Booch, G., Rumbaugh, J., Jacobson, I., 2005, *The Unified Modeling Language User Guide*, Addison-Wesley Professional, 2nd edn.

[213] de Boor, C., 2001, *A Practical Guide to Splines*, Springer, revised edn.

[214] Borncamp, D., Lim, P.L., 2016, *Satellite Detection in Advanced Camera for Surveys/Wide Field Channel Images*, Tech. rep., STScI, ADS Link

[215] 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

[216] Borne, K., Accomazzi, A., Bloom, J., et al., 2009, In: astro2010: The Astronomy and Astrophysics Decadal Survey, vol. 2010 of ArXiv Astrophysics e-prints, 6P (arXiv:0909.3892), ADS Link

[217] Borne, K.D., Jacoby, S., Carney, K., et al., 2009, In: astro2010: The Astronomy and Astrophysics Decadal Survey, vol. 2010 of ArXiv Astrophysics e-prints, 7P (arXiv:0909.3895), ADS Link

[218] 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

[219] 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

[220] **[DMTN-038]**, Bosch, J., 2015, *Measurement of Blended Objects in LSST*, DMTN-038, URL https://dmtn-038.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[221] 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

[222] **[DMTN-015]**, Bosch, J., 2016, *Flavors of Coadds*, DMTN-015, URL https://dmtn-015.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[223] **[DMTN-023]**, Bosch, J., 2017, *Pipeline Command-Line Drivers*, DMTN-023, URL https://dmtn-023.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[224] **[LDM-513]**, Bosch, J., 2017, *Proposal for Deblender Outputs as Level 2 Data Products*, LDM-513, URL https://ls.st/LDM-513

[225] **[LDM-562]**, Bosch, J., 2017, *Data Management System (DMS) Level 2 System Requirements*, LDM-562, URL https://ldm-562.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[226] **[DMTN-073]**, Bosch, J., 2018, *The Gen3 Butler Registry Schema*, DMTN-073, URL https://dmtn-073.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[227] **[DMTN-175]**, Bosch, J., 2021, *Design sketch for a pipetask overhaul*, DMTN-175, URL https://dmtn-175.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[228] **[DMTN-220]**, Bosch, J., 2022, *Middleware Support for Campaign Definition and Management*, DMTN-220, URL https://dmtn-220.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[229] **[DMTN-172]**, Bosch, J., 2023, *Multi-Stage Image Characterization and Calibration for DRP*, DMTN-172, URL https://dmtn-172.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[230] **[DMTN-196]**, Bosch, J., 2023, *Practical, nearly-proper image subtraction, yet again*, DMTN-196, URL https://dmtn-196.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[231] **[DMTN-249]**, Bosch, J., 2023, *Revisiting division of responsibilities in Butler components*, DMTN-249, URL https://dmtn-249.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[232] **[DMTN-271]**, Bosch, J., 2023, *Butler management of quantum graph storage and execution*, DMTN-271, URL https://dmtn-271.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[233] **[DMTN-167]**, Bosch, J., 2024, *Policies and Conventions for Organizing Gen3 Data Repositories*, DMTN-167, URL https://dmtn-167.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[234] **[Document-15298]**, Bosch, J., Gee, P., Owen, R., Jurić, M., 2013, *LSST DM S13 Report: Shapre Measurement Plans and Prototypes*, Document-15298, URL https://ls.st/Document-15298

[235] Bosch, J., Armstrong, R., Bickerton, S., et al., 2018, PASJ, 70, S5 (arXiv:1705.06766), doi:10.1093/pasj/psx080, ADS Link

[236] **[DMTR-51]**, Bosch, J., Chiang, H.F., Gower, M., et al., 2018, *LDM-503-2 (HSC Reprocessing) Test Report*, DMTR-51, URL https://dmtr-51.lsst.io/, Vera C. Rubin Observatory Data Management Test Report

[237] 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, ADS Link

[238] **[DMTN-129]**, Bosch, J., Lupton, R., Slater, C., 2019, *Crowded Field Photometry in LSST Data Release Production*, DMTN-129, URL https://dmtn-129.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[239] **[LDM-534]**, Bosch, J., Chiang, H.F., Gower, M., Swinbank, J.D., 2021, *LSST Level 2 System Test Specification*, LDM-534, URL https://ldm-534.lsst.io/, Vera C. Rubin Observatory Data Management Controlled Document

[240] **[DMTN-205]**, Bosch, J., Jenness, T., Gower, M., Salnikov, A., 2022, *Tracking Provenance in Butler*, DMTN-205, URL https://dmtn-205.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[241] **[PSTN-020]**, Bosch, J.F., 2019, *LSST Data Release Processing*, PSTN-020, URL https://pstn-020.lsst.io/, Vera C. Rubin Observatory Project Science Technical Note

[242] Bradley, J., 1727, Royal Society of London Philosophical Transactions Series I, 35, 637, ADS Link

[243] 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

[244] Bretagnon, P., 1982, A&A, 114, 278, ADS Link

[245] Bretagnon, P., Francou, G., 1988, A&A, 202, 309, ADS Link

[246] 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

[247] 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

[248] Brooks, F.P., 1982, *The Mythical Man-Month: Essays on Software Engineering*, ADS Link

[249] 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

[250] 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

[251] 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

[252] de Bruijne, J., 2004,
private communication

[253] de Bruijne, J., Jordi, C., 2004, URL http://gaia.am.ub.es/PWG/common/instrumGAIA2.html,
private communication

[254] Brumfit, J., 2002, *Java Coding Standard and Guidelines for the Herschel Common Science System*, Tech. rep., ESTEC,
HSCDT/TN009

[255] Bucciarelli, B., Taff, L.G., Lattanzi, M.G., 1993, J. Statist. Comput. Simul., 48, 29

[256] Bucciarelli, B., Lattanzi, M.G., Taff, L.G., 1994, ApJ, 433, 831, doi:10.1086/174692, ADS Link

[257] Budavári, T., Szalay, A.S., 2008, ApJ, 679, 301 (arXiv:0707.1611), doi:10.1086/587156, ADS Link

[258] 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

[259] 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

[260] Burt, D., 2003, *Gaia Technology Demonstrator: AF CCD DESIGN REPORT*, Tech. rep., e2v, GAIA-E2V-RP-020

[261] Bus, S.J., Binzel, R.P., 2002, Icarus, 158, 106, doi:10.1006/icar.2002.6857, ADS Link

[262] Bus, S.J., Binzel, R.P., 2002, Icarus, 158, 146, doi:10.1006/icar.2002.6856, ADS Link

[263] Bus, S.J., Binzel, R.P., 2002, Icarus, 158, 106

[264] 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

[265] **[DMTR-102]**, Butler, M., 2019, *LDM-503-8b (Small Scale CCOB Data Access) Test Plan and Report*, DMTR-102, URL https://dmtr-102.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[266] **[DMTR-121]**, Butler, M., 2019, *LDM-503-8 Spectrograph Data Acquisition Test Plan and Report*, DMTR-121, URL https://dmtr-121.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[267] **[DMTR-171]**, Butler, M., 2020, *LDM-503-6: ComCam Interface Verification Readiness Test Plan and Report*, DMTR-171, URL https://dmtr-171.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[268] **[DMTR-181]**, Butler, M., 2020, *LDM-503-10: DAQ Validation Test Plan and Report*, DMTR-181, URL https://dmtr-181.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[269] **[DMTR-182]**, Butler, M., 2020, *LDM-503-10b: Large Scale CCOB Data Access Test Plan and Report*, DMTR-182, URL https://dmtr-182.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[270] **[DMTR-61]**, Butler, M., Parsons, J., 2018, *LDM-503-04 and LDM-503-04b (Raw Image Archiving Service) Test Report*, DMTR-61, URL https://ls.st/DMTR-61

[271] **[LDM-538]**, Butler, M., Parsons, J., Gower, M., 2021, *LSST DM Raw Image Archiving Service Test Specification*, LDM-538, URL https://ldm-538.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[272] Butler, N.R., Bloom, J.S., 2011, AJ, 141, 93 (arXiv:1008.3143), doi:10.1088/0004-6256/141/3/93, ADS Link

[273] Buton, C., Copin, Y., Aldering, G., et al., 2013, A&A, 549, A8 (arXiv:1210.2619), doi:10.1051/0004-6361/201219834, ADS Link

[274] **[PSTN-018]**, Buttler, M., 2020, *LSST Data Facility*, PSTN-018, URL https://pstn-018.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[275] **[LPM-191]**, Calabrese, D., 2017, *Travel Policy*, LPM-191, URL https://ls.st/LPM-191

[276] **[RTN-055]**, Calderón, J., 2023, *Study of the Linearity of the CCDs of the Vera C. Rubin Observatory*, RTN-055, URL https://rtn-055.lsst.io/,
Vera C. Rubin Observatory Technical Note

[277] Campaign Storage, Campaign Storage, URL http://campaignstorage.com/

[278] Cardelli, J.A., Clayton, G.C., Mathis, J.S., 1989, ApJ, 345, 245, doi:10.1086/167900, ADS Link

[279] **[SQR-024]**, Carlin, J., 2018, *Enabling flake8 testing and Travis CI for existing DM repos*, SQR-024, URL https://sqr-024.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[280] **[DMTR-201]**, Carlin, J., 2020, *LVV-P65 Fall 2019 Pipelines Release Acceptance Test Campaign Test Plan and Report*, DMTR-201, URL https://dmtr-201.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[281] **[DMTR-251]**, Carlin, J., 2020, *Characterization Metric Report: Science Pipelines Version 20.0.0*, DMTR-251, URL https://dmtr-251.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[282] **[DMTR-261]**, Carlin, J., 2020, *LVV-P71: Science Pipelines Release 20.0.0 Acceptance Test Campaign Test Plan and Report*, DMTR-261, URL https://dmtr-261.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[283] **[DMTR-281]**, Carlin, J., 2020, *Characterization Metric Report: Science Pipelines Version 21.0.0*, DMTR-281, URL https://dmtr-281.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[284] **[LDM-742]**, Carlin, J., 2020, *Vera C. Rubin Observatory DM Infrastructure Verification Document*, LDM-742, URL https://ldm-742.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[285] **[LDM-752]**, Carlin, J., 2020, *Vera C. Rubin Observatory DM Science Verification Document*, LDM-752, URL https://ldm-752.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[286] **[LDM-753]**, Carlin, J., 2020, *Vera C. Rubin Observatory DM Science Verification Document*, LDM-753, URL https://ldm-753.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[287] **[DMTR-311]**, Carlin, J., 2021, *Characterization Metric Report: Science Pipelines Version 22.0.0*, DMTR-311, URL https://dmtr-311.lsst.io/, Vera C. Rubin Observatory Data Management Test Report

[288] **[DMTR-271]**, Carlin, J., 2022, *LDM-GEN3: Gen 3 Butler Acceptance Testing Test Plan and Report*, DMTR-271, URL https://dmtr-271.lsst.io/, Vera C. Rubin Observatory Data Management Test Report

[289] **[DMTR-351]**, Carlin, J., 2022, *Characterization Metric Report: Science Pipelines Version 23.0.0*, DMTR-351, URL https://dmtr-351.lsst.io/, Vera C. Rubin Observatory Data Management Test Report

[290] **[DMTR-371]**, Carlin, J., 2023, *LVV-P99: Data Management Acceptance Test Campaign 1 Test Plan and Report*, DMTR-371, URL https://dmtr-371.lsst.io/, Vera C. Rubin Observatory Data Management Test Report

[291] **[DMTR-391]**, Carlin, J., 2023, *Characterization Metric Report: Science Pipelines Version 24.1.0*, DMTR-391, URL https://dmtr-391.lsst.io/, Vera C. Rubin Observatory Data Management Test Report

[292] **[DMTR-392]**, Carlin, J., 2023, *Characterization Metric Report: Science Pipelines Version 25.0.0*, DMTR-392, URL https://dmtr-392.lsst.io/, Vera C. Rubin Observatory Data Management Test Report

[293] **[DMTR-401]**, Carlin, J., 2024, *LVV-P106: Data Management Acceptance Test Campaign, Fall 2023 Test Plan and Report*, DMTR-401, URL https://dmtr-401.lsst.io/, Vera C. Rubin Observatory Data Management Test Report

[294] **[DMTR-421]**, Carlin, J., 2024, *Characterization Metric Report: Science Pipelines Version 26.0.0*, DMTR-421, URL https://dmtr-421.lsst.io/, Vera C. Rubin Observatory Data Management Test Report

[295] **[DMTR-191]**, Carlin, J., Krughoff, K.S., Comoretto, G., 2019, *Characterization Metric Report: Science Pipelines Version 19.0.0*, DMTR-191, URL https://dmtr-191.lsst.io/, Vera C. Rubin Observatory Data Management Test Report

[296] **[Document-13760]**, Carlson, E., 2017, *Travel Request Instructions for AURA Employees*, Document-13760, URL https://ls.st/Document-13760

[297] **[Document-13762]**, Carlson, E., 2017, *LSST Travel Summary Report Template*, Document-13762, URL https://ls.st/Document-13762

[298] Carrasco Kind, M., Brunner, R., 2013, TPZ: Trees for Photo-Z, Astrophysics Source Code Library (ascl:1304.011), ADS Link

[299] Carrasco Kind, M., Brunner, R.J., 2013, MNRAS, 432, 1483 (arXiv:1303.7269), doi:10.1093/mnras/stt574, ADS Link

[300] Carrasco Kind, M., Brunner, R.J., 2014, MNRAS, 441, 3550 (arXiv:1404.6442), doi:10.1093/mnras/stu827, ADS Link

[301] Casertano, S., Hut, P., 1985, ApJ, 298, 80, doi:10.1086/163589, ADS Link

[302] **[SITCOMTN-012]**, (chair), C.C., (co Chair), D.C., (co chair), R.M., et al., 2021, *Rubin Observatory Construction Documentation Inventory*, SITCOMTN-012, URL https://sitcomtn-012.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[303] **[SITCOMTN-014]**, (chair), C.C., (co Chair), D.C., (co chair), R.M., et al., 2022, *Project-wide Documentation Proposal for Rubin Observatory Operations*, SITCOMTN-014, URL https://sitcomtn-014.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[304] **[DMTN-126]**, (chair), Y.A., Daniel, S., Dubois-Felsmann, G., et al., 2020, *Image Display Working Group Report*, DMTN-126, URL https://dmtn-126.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[305] Chamberlin D., B.R., 1974, *SEQUL: A Structured English Query Language*, Tech. rep., IBM research laboratory, URL http://faculty.cse.tamu.edu/yurttas/PL/DBL/docs/sequel-1974.pdf

[306] 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

[307] Chang, F., Dean, J., Ghemawat, S., et al., 2008, ACM Trans. Comput. Syst., 26, 4:1, doi:10.1145/1365815.1365816

[308] **[RTN-043]**, Charles, E., Villarreal, S., Mueller, F., 2023, *Campaign management system design and prototype*, RTN-043, URL https://rtn-043.lsst.io/,
Vera C. Rubin Observatory Technical Note

[309] 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

[310] **[DMTN-170]**, Chiang, H.F., 2021, *Ingesting reprocessed HSC catalog data to Qserv at NCSA*, DMTN-170, URL https://dmtn-170.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[311] **[RTN-024]**, Chiang, H.F., Dubois, R., 2023, *Routine HSC/DC2 Processing at SLAC as early demonstrator*, RTN-024, URL https://rtn-024.lsst.io/,
Vera C. Rubin Observatory Technical Note

[312] **[DMTN-088]**, Chiang, H.F., Johnson, M.W.G., 2018, *As-is HSC Reprocessing*, DMTN-088, URL https://dmtn-088.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[313] **[DMTN-157]**, Chiang, H.F., Lim, K.T., 2020, *Report of Google Cloud Proof of Concept 2020*, DMTN-157, URL https://dmtn-157.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[314] **[DMTN-160]**, Chiang, H.F., Thrush, S., 2020, *S18 HSC PDR1 reprocessing*, DMTN-160, URL https://dmtn-160.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[315] **[DMTR-31]**, Chiang, H.F., Daues, G., Thrush, S., The NCSA Team, 2017, *S17B HSC PDR1 Reprocessing Report*, DMTR-31, URL https://ls.st/DMTR-31

[316] **[DMTN-137]**, Chiang, H.F., Bektesevic, D., the AWS-PoC team, 2020, *AWS Proof of Concept Project Report*, DMTN-137, URL https://dmtn-137.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[317] **[RTN-028]**, Chiang, J., 2022, *Computing resource estimates for running the DRP pipeline at NERSC and on the SLAC SDF*, RTN-028, URL https://rtn-028.lsst.io/,
Vera C. Rubin Observatory Technical Note

[318] Chorier, P., Tribolet, P., Destéfanis, 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

[319] **[SITCOMTN-017]**, Christopher W. Stubbs and Patrick J. Ingraham, 2021, *SIT-Com Image Quality Team Description*, SITCOMTN-017, URL https://sitcomtn-017.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[320] Ciardi, D., 2016, Large Synoptic Survey Telescope and Synergies with the VO, URL http://wiki.ivoa.net/internal/IVOA/InterOpMay2016Focus/LSST_IVOA_20160506c.pdf, Presentation at the Northern Spring IVOA Meeting, South Africa

[321] **[LDM-482]**, Ciardi, D., Dubois-Felsmann, G., 2016, *Data Access Policy for the Data Management Prototype DAC*, LDM-482, URL https://ls.st/LDM-482

[322] 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.

[323] **[LDM-492]**, Ciardi, D.R., Wu, X., Dubois-Felsmann, G., 2016, *A Vision for the Science User Interface and Tools*, LDM-492, URL https://ls.st/LDM-492

[324] Claeskens, J.F., Smette, A., Vandenbulcke, L., Surdej, J., 2006, MNRAS, 367, 879, doi:10.1111/j.1365-2966.2006.10024.x, ADS Link

[325] **[SITCOMTN-002]**, Claver, C., 2020, *Performance Assessment of the LSST Startracker*, SITCOMTN-002, URL https://sitcomtn-002.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[326] **[SCTR-81]**, Claver, C., 2023, *LVV-P100: TMA Pointing and Tracking Verification Test Plan and Report*, SCTR-81, URL https://sctr-81.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Report

[327] **[LSE-39]**, Claver, C., Dubois-Felsmann, G., 2010, *LSST Document Tree*, LSE-39, URL https://ls.st/LSE-39

[328] **[LSE-79]**, Claver, C., The LSST Commissioning Planning Team, 2017, *System AI&T and Commissioning Plan*, LSE-79, URL https://ls.st/LSE-79

[329] **[LSE-17]**, Claver, C., Angeli, G., Selvy, B., 2016, *Systems Engineering Management Plan*, LSE-17, URL https://ls.st/LSE-17

[330] **[SITCOMTN-005]**, Claver, C., Bauer, A., Bechtol, K., et al., 2021, *Construction Completeness and Operations Readiness Criteria*, SITCOMTN-005, URL https://sitcomtn-005.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[331] **[LSE-509]**, Claver, C.C., Ingraham, P., 2022, *SIT-Com Management Plan*, LSE-509, URL https://lse-509.lsst.io/, Vera C. Rubin Observatory

[332] **[PSTN-004]**, Claver, C.F., 2019, *EXAMPLE: LSST Observatory System Operations Readiness Report*, PSTN-004, URL https://pstn-004.lsst.io/, Vera C. Rubin Observatory Project Science Technical Note

[333] **[PSTN-033]**, Claver, C.F., 2019, *Active Optics Performance with LSST Commissioning Camera*, PSTN-033, URL https://pstn-033.lsst.io/, Vera C. Rubin Observatory Project Science Technical Note

[334] **[PSTN-034]**, Claver, C.F., 2019, *LSST Active Optics Performance with the LSST Science Camera*, PSTN-034, URL https://pstn-034.lsst.io/, Vera C. Rubin Observatory Project Science Technical Note

[335] **[PSTN-041]**, Claver, C.F., 2019, *The LSST Science Platform as a Commissioning Tool*, PSTN-041, URL https://pstn-041.lsst.io/, Vera C. Rubin Observatory Project Science Technical Note

[336] **[PSTN-042]**, Claver, C.F., 2020, *Commissioning Science Data Quality Analysis Tools, Methods and Procedures*, PSTN-042, URL https://pstn-042.lsst.io/, Vera C. Rubin Observatory Project Science Technical Note

[337] **[LSE-29]**, Claver, C.F., The LSST Systems Engineering Integrated Project Team, 2017, *LSST System Requirements (LSR)*, LSE-29, URL https://ls.st/LSE-29

[338] **[LSE-30]**, Claver, C.F., The LSST Systems Engineering Integrated Project Team, 2018, *Observatory System Specifications (OSS)*, LSE-30, URL https://ls.st/LSE-30

[339] 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

[340] Claver, C.F., Dubois-Felsmann, G.P., Delgado, F., et al., 2010, In: American Astronomical Society Meeting Abstracts #215, vol. 42 of Bulletin of the American Astronomical Society, #401.02, ADS Link

[341] 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

[342] 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

[343] Colangelo, G., 2004, *Gaia System Requirements Document for Technical Assistance & Definition Phase*, Tech. rep., ESA,
Gaia-SRC-001, Issue 1.0

[344] 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

[345] **[DMTN-106]**, Comoretto, G., 2019, *DM Release Process*, DMTN-106, URL https://dmtn-106.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[346] **[DMTN-110]**, Comoretto, G., 2019, *Conda Environment Proposal for Science Pipelines*, DMTN-110, URL https://dmtn-110.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[347] **[DMTN-174]**, Comoretto, G., 2020, *Rubin-Env Integration with DM Build Tools*, DMTN-174, URL https://dmtn-174.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[348] **[DMTN-140]**, Comoretto, G., 2021, *Documentation Automation for the Verification and Validation of Rubin Observatory Software*, DMTN-140, URL https://dmtn-140.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[349] **[DMTN-178]**, Comoretto, G., 2021, *Docsteady Usecases for Rubin Observatory Constructions*, DMTN-178, URL https://dmtn-178.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[350] **[LDM-692]**, Comoretto, G., 2021, *DM Verification Control Document*, LDM-692, URL https://ldm-692.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[351] 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

[352] **[LDM-672]**, Comoretto, G., Guy, L.P., O'Mullane, W., et al., 2019, *LSST Software Release Management*, LDM-672, URL https://ldm-672.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[353] 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

[354] Connolly, A., 2002, Data Management for the LSST,
Invited talk. Paper not submitted to proceedings.

[355] 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

[356] 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

[357] Connolly, A., LSST Team, 2002, In: American Astronomical Society Meeting Abstracts, vol. 34 of Bulletin of the American Astronomical Society, #134.05, ADS Link

[358] **[PSTN-038]**, Connolly, A.J., 2020, *Science Validation of LSST Alert Processing*, PSTN-038, URL https://pstn-038.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[359] 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

[360] 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

[361] **[ITTN-015]**, Constanzo, J., 2020, *Wireless Integration with NOIRLabs* , ITTN-015, URL https://ittn-015.lsst.io/,
Vera C. Rubin Observatory

[362] **[ITTN-049]**, Constanzo, J., 2021, *Internet Edge Firewall Design*, ITTN-049, URL https://ittn-049.lsst.io/,
Vera C. Rubin Observatory

[363] **[ITTN-050]**, Constanzo, J., 2021, *Long-Haul Network Architecture*, ITTN-050, URL https://ittn-050.lsst.io/,
Vera C. Rubin Observatory

[364] **[SCTR-71]**, Corlies, L., 2022, *LVV-P98: Verification of EPO Program Test Plan and Report*, SCTR-71, URL https://sctr-71.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Report

[365] Corporation, O., 2006, *Installing Oracle RAC 10g on Linux x86*, Tech. rep., Oracle

[366] **[ITTN-016]**, Corral, L., 2020, *Wi-Fi Infrastructure High-Level Design (HLD)*, ITTN-016, URL https://ittn-016.lsst.io/,
Vera C. Rubin Observatory

[367] **[ITTN-017]**, Corral, L., 2020, *VoIP Infrastructure High-Level Design (HLD)*, ITTN-017, URL https://ittn-017.lsst.io/,
Vera C. Rubin Observatory

[368] **[ITTN-018]**, Corral, L., 2020, *Network Infrastructure High-Level Design (HLD)*, ITTN-018, URL https://ittn-018.lsst.io/,
Vera C. Rubin Observatory

[369] **[ITTN-023]**, Corral, L., 2020, *Cisco ISE Cluster Deployment*, ITTN-023, URL https://ittn-023.lsst.io/,
Vera C. Rubin Observatory

[370] Núñez Corrales, S., Cragin, M., White (Wonders), A., et al., 2018, doi:10.13140/RG.2.2.31543.78249

[371] 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

[372] **[TSTN-018]**, Coughlin, E., 2020, *AT CSC Overview*, TSTN-018, URL https://tstn-018.lsst.io/,
Vera C. Rubin Observatory

[373] **[TSTN-003]**, Coughlin, E., Ribeiro, T., Reuter, M., Bovill, R., 2020, *Conda development guide.*, TSTN-003, URL https://tstn-003.lsst.io/,
Vera C. Rubin Observatory

[374] Coughlin, M.W., Deustua, S., Guyonnet, A., et al., 2018, In: Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, vol. 10704, 1070420, doi:10.1117/12.2309582, ADS Link

[375] Cropper, M., Rosen, S., 2006, Spectra extraction, URL http://wwwhip.obspm.fr/gaia/cu6/workshop_2/CU6_w2_Cropper_extraction.pdf,
CU6 Workshop2

[376] 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

[377] 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

[378] 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

[379] **[Document-11019]**, Crotts, A., 2011, *Standard Candle Relations and Photo-diversity of Type Ia Supernovae*, Document-11019, URL https://ls.st/Document-11019

[380] 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

[381] 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

[382] 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

[383] **[SMTN-006]**, Daniel, S., Kalmbach, B., 2016, *Generating the CatSim Bright Stars Catalog*, SMTN-006, URL https://smtn-006.lsst.io/,
Vera C. Rubin Observatory Simulations Team Technical Note

[384] 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

[385] **[DMTN-060]**, Daues, G., 2018, *Distributed Data Management and File Transfer Systems*, DMTN-060, URL https://dmtn-060.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[386] **[DMTN-089]**, Daues, G., Chiang, H.F., 2018, *Notes on Singularity*, DMTN-089, URL https://dmtn-089.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[387] 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

[388] 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

[389] de Felice, F., Preti, G., 2006, Classical and Quantum Gravity, 23, 5467, doi:10.1088/0264-9381/23/18/001, ADS Link

[390] 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

[391] de Felice, F., Lattanzi, M.G., Vecchiato, A., Bernacca, P.L., 1998, A&A, 332, 1133, ADS Link

[392] de Felice, F., Bucciarelli, B., Lattanzi, M.G., Vecchiato, A., 2001, A&A, 373, 336, doi:10.1051/0004-6361:20010499, ADS Link

[393] 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

[394] 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

[395] Dean, J., Ghemawat, S., 2008, Commun. ACM, 51, 107, doi:10.1145/1327452.1327492

[396] 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

[397] Dehnen, W., Binney, J.J., 1998, MNRAS, 298, 387 (arXiv:astro-ph/9710077), doi:10.1046/j.1365-8711.1998.01600.x, ADS Link

[398] **[Document-28449]**, Delgado, F., 2018, *Project Response to Telescope & Site Software Review Report 2018-02*, Document-28449, URL https://ls.st/Document-28449

[399] 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

[400] 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

[401] **[SITCOMTN-091]**, Dennihy, E., 2023, *Operation of AuxTel in Survey Mode*, SITCOMTN-091, URL https://sitcomtn-091.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[402] 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

[403] DeWitt, D., 2008, MapReduce II, URL https://web.archive.org/web/20090326224219/http://www.databasecolumn.com:80/2008/01/mapreduce-continued.html

[404] **[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*, Publication-141, URL https://ls.st/Publication-141

[405] Dierckx, P., 1995, *C and Surface Fitting with Splines*, Oxford Science Publications, Oxford University Press, paperback edn.

[406] **[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

[407] **[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

[408] **[DMTN-104]**, DMLT, 2020, *Data Management Detailed Product Tree*, DMTN-104, URL https://dmtn-104.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[409] Dorigo, A., Elmer, P., Furano, F., Hanushevsky, A., 2005, WSEAS Transactions on Computers, 4, 348, URL http://xrootd.org/presentations/xpaper3_cut_journal.pdf

[410] 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

[411] 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

[412] Dowler, P., Rixon, G., Tody, D., 2011, ArXiv e-prints (arXiv:1110.0497), ADS Link

[413] 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

[414] Dowler P., T.D., Rixon G., 2010, *Table Access Protocol*, Tech. rep., IVOA,
REC-TAP-1.0

[415] **[SCTR-14]**, Drass, H., 2021, *LVV-P63: Camera Hexapod Functional Re-verification Test Plan and Report*, SCTR-14, URL https://sctr-14.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Report

[416] **[SCTR-21]**, Drass, H., 2022, *LVV-P68: M2 Hexapod Functional Re-verification and Integration with SAL Test Plan and Report*, SCTR-21, URL https://sctr-21.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Report

[417] **[SITCOMTN-102]**, Drass, H., 2024, *Technote Style and Writing Guide*, SITCOMTN-102, URL https://sitcomtn-102.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[418] Drimmel, R., Spergel, D.N., 2001, ApJ, 556, 181, doi:10.1086/321556, ADS Link

[419] 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

[420] **[RTN-057]**, Dubois, R., 2023, *L2 - Ready for "DRP-like" Processing*, RTN-057, URL https://rtn-057.lsst.io/,
Vera C. Rubin Observatory Technical Note

[421] **[RTN-073]**, Dubois, R., 2024, *Rules of Engagement for Accessing Data During the Embargo Period*, RTN-073, URL https://rtn-073.lsst.io/,
Vera C. Rubin Observatory Technical Note

[422] **[RTN-074]**, Dubois, R., 2024, *Developing a USDF Outage Planning Board*, RTN-074, URL https://rtn-074.lsst.io/,
Vera C. Rubin Observatory Technical Note

[423] **[RTN-021]**, Dubois, R., O'Mullane, W., 2022, *Data Facilities Transition Plan*, RTN-021, URL https://rtn-021.lsst.io/,
Vera C. Rubin Observatory Technical Note

[424] **[LSE-75]**, Dubois-Felsmann, G., 2011, *Control System Interfaces between the Telescope and Data Management*, LSE-75, URL https://ls.st/LSE-75

[425] **[LSE-76]**, Dubois-Felsmann, G., 2011, *Infrastructure Interfaces between Summit Facility and Data Management*, LSE-76, URL https://ls.st/LSE-76

[426] **[LSE-77]**, Dubois-Felsmann, G., 2013, *Infrastructure Interfaces between Base Facility and Data Management*, LSE-77, URL https://ls.st/LSE-77

[427] **[LSE-81]**, Dubois-Felsmann, G., 2013, *LSST Science and Project Sizing Inputs*, LSE-81, URL https://ls.st/LSE-81

[428] **[LSE-69]**, Dubois-Felsmann, G., 2014, *Interface between the Camera and Data Management*, LSE-69, URL https://ls.st/LSE-69

[429] **[LSE-130]**, Dubois-Felsmann, G., 2015, *Support-Data Exchanges between Data Management and Camera*, LSE-130, URL https://ls.st/LSE-130

[430] **[LSE-68]**, Dubois-Felsmann, G., 2015, *Camera Data Acquisition Interface*, LSE-68, URL https://ls.st/LSE-68

[431] **[LSE-140]**, Dubois-Felsmann, G., 2016, *Auxiliary Instrumentation Interface between Data Management and Telescope*, LSE-140, URL https://ls.st/LSE-140

[432] **[DMTN-055]**, Dubois-Felsmann, G., 2017, *SuperTask Architecture and Design*, DMTN-055, URL https://dmtn-055.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[433] **[DMTN-076]**, Dubois-Felsmann, G., 2018, *Internet Endpoints for the Science Platform*, DMTN-076, URL https://dmtn-076.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[434] **[DMTN-139]**, Dubois-Felsmann, G., 2019, *LSST Image Service Architecture*, DMTN-139, URL https://dmtn-139.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[435] **[DMTR-161]**, Dubois-Felsmann, G., 2020, *LDM-503-10a: LSP with Authentication and TAP Test Plan and Report*, DMTR-161, URL https://dmtr-161.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[436] **[DMTR-211]**, Dubois-Felsmann, G., 2020, *DM-SUIT-8: Portal Integrated with Workspace Test Plan and Report*, DMTR-211, URL https://dmtr-211.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[437] **[DMTN-136]**, Dubois-Felsmann, G., 2021, *LSST Science Platform Portal Aspect Design and Maintenance Manual*, DMTN-136, URL https://dmtn-136.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[438] **[DMTN-202]**, Dubois-Felsmann, G., 2021, *Use cases and science requirements on a user batch facility*, DMTN-202, URL https://dmtn-202.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[439] **[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*, DMTR-301, URL https://dmtr-301.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[440] **[DMTR-341]**, Dubois-Felsmann, G., 2021, *LVV-P91 November 2021 Rubin Science Platform Verification Campaign Test Plan and Report Test Plan and Report*, DMTR-341, URL https://dmtr-341.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[441] **[DMTN-105]**, Dubois-Felsmann, G., 2023, *RSP Capabilities for AuxTel, Commissioning, and Early Operations*, DMTN-105, URL https://dmtn-105.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[442] **[DMTN-186]**, Dubois-Felsmann, G., 2023, *Conceptual design of a IVOA-service-availability service and associated UI*, DMTN-186, URL https://dmtn-186.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[443] **[DMTN-187]**, Dubois-Felsmann, G., 2023, *Options for the use and implementation of UWS services*, DMTN-187, URL https://dmtn-187.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[444] **[DMTN-195]**, Dubois-Felsmann, G., 2023, *Multi-image FITS convention with ASDF WCSes*, DMTN-195, URL https://dmtn-195.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[445] **[DMTN-239]**, Dubois-Felsmann, G., 2023, *Converting time-stream data to exposure/visit-indexed data, or "How to Create the Restructured EFD"*, DMTN-239, URL https://dmtn-239.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[446] **[DMTN-247]**, Dubois-Felsmann, G., 2023, *Technical definition of DP0.3 (Solar System data)*, DMTN-247, URL https://dmtn-247.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[447] **[DMTN-252]**, Dubois-Felsmann, G., 2023, *Convention for identifying bits in a mask/flags image in FITS*, DMTN-252, URL https://dmtn-252.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[448] **[DMTN-257]**, Dubois-Felsmann, G., 2023, *Summary of LSST Data Product Lifecycles*, DMTN-257, URL https://dmtn-257.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[449] **[DMTN-273]**, Dubois-Felsmann, G., 2023, *Felis validation and manipulation tools*, DMTN-273, URL https://dmtn-273.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[450] **[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*, DMTR-381, URL https://dmtr-381.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[451] **[RTN-050]**, Dubois-Felsmann, G., 2023, *Technical definition of DP0.3 (Solar System data)*, RTN-050, URL https://rtn-050.lsst.io/,
Vera C. Rubin Observatory Technical Note

[452] **[LSE-61]**, Dubois-Felsmann, G., Jenness, T., 2019, *Data Management System (DMS) Requirements*, LSE-61, URL https://lse-61.lsst.io/,
Vera C. Rubin Observatory

[453] **[LSE-82]**, Dubois-Felsmann, G., Lim, K.T., 2013, *Science and Project Sizing Inputs Explanation*, LSE-82, URL https://ls.st/LSE-82

[454] **[LSE-72]**, Dubois-Felsmann, G., Schumacher, G., Selvy, B., 2014, *OCS Command Dictionary for Data Management*, LSE-72, URL https://ls.st/LSE-72

[455] **[LPM-231]**, Dubois-Felsmann, G., Ivezic, Z., Juric, M., 2018, *LSST Data Product Categories*, LPM-231, URL https://lpm-231.lsst.io/,
Vera C. Rubin Observatory

[456] **[LDM-556]**, Dubois-Felsmann, G., Jenness, T., Bosch, J., et al., 2018, *Data Management Middleware Requirements*, LDM-556, URL https://ldm-556.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[457] **[LDM-554]**, Dubois-Felsmann, G., Ciardi, D., Mueller, F., Economou, F., 2019, *Data Management LSST Science Platform Requirements*, LDM-554, URL https://ldm-554.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[458] **[LDM-542]**, Dubois-Felsmann, G., Economou, F., Lim, K.T., et al., 2019, *Science Platform Design*, LDM-542, URL https://ldm-542.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[459] **[DMTN-275]**, Dubois-Felsmann, G.P., 2024, *Time Series Queries in the RSP*, DMTN-275, URL https://dmtn-275.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[460] **[DMTR-52]**, Dubois-Felsmann, G.P., Wu, X., 2018, *LDM-503-1 (WISE Data Loaded in PDAC) Test Report*, DMTR-52, URL https://dmtr-52.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[461] Dubois-Felsmann, G.P., Axelrod, T., Becker, A., et al., 2010, In: American Astronomical Society Meeting Abstracts #215, vol. 42 of Bulletin of the American Astronomical Society, #401.23, ADS Link

[462] Dubois-Felsmann, G.P., Goldina, T., Ly, L., et al., 2016, In: American Astronomical Society Meeting Abstracts, vol. 227 of American Astronomical Society Meeting Abstracts, #348.06, doi:10.5281/zenodo.44653, ADS Link

[463] **[LDM-540]**, Dubois-Felsmann, G.P., Guy, L., Carlin, J., et al., 2020, *LSST Science Platform Test Specification*, LDM-540, URL https://ldm-540.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[464] 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

[465] EADS Astrium, 2004, *GAIA Point Spread Function and internal straylight evaluation*, Tech. rep., ESA,
GAIASYS.NT.00134.T.ASTR

[466] EADS Astrium, 2010, *GAIA PLM TB/TV test specification: functional and performance tests*, Tech. rep., ESA,
GAIA.ASF.SP.PLM.00174

[467] 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

[468] Economou, F., 2014, In: Taylor, A.R., Rosolowsky, E. (eds.) Astronomical Data Analysis Software an Systems XXIV (ADASS XXIV), Astronomical Society of the Pacific Conference Series

[469] **[SQR-004]**, Economou, F., 2015, *How to publish your proceedings with CoMPAAS*, SQR-004, URL https://sqr-004.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[470] 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

[471] 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

[472] **[DMTN-016]**, Economou, F., 2016, *Towards LSE-63 and beyond: A technical roadmap from QA to Level 3*, DMTN-016, URL https://dmtn-016.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[473] **[SQR-010]**, Economou, F., 2017, *SQuaRE services: An Overview*, SQR-010, URL https://sqr-010.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[474] **[PSTN-022]**, Economou, F., 2019, *LSST Science Platform*, PSTN-022, URL https://pstn-022.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[475] **[DMTN-173]**, Economou, F., 2020, *The Observatory Logging Ecosystem*, DMTN-173, URL https://dmtn-173.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[476] **[SQR-036]**, Economou, F., 2020, *Operational models for generalist teams*, SQR-036, URL https://sqr-036.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[477] **[DMTN-212]**, Economou, F., 2023, *The Rubin Science Platform*, DMTN-212, URL https://dmtn-212.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[478] **[SQR-016]**, Economou, F., 2023, *Stack release playbook*, SQR-016, URL https://sqr-016.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[479] **[SQR-081]**, Economou, F., 2023, *On Recruiting*, SQR-081, URL https://sqr-081.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[480] **[DMTN-278]**, Economou, F., 2024, *Keep Calm and Carry On Improving Things: A sustainable model for first-rate observatory operations.*, DMTN-278, URL https://dmtn-278.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[481] **[SQR-056]**, Economou, F., Allbery, R., 2021, *Guidelines for gated updates for SQuaRE services (including Science Platform)*, SQR-056, URL https://sqr-056.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[482] **[SQR-080]**, Economou, F., Allbery, R., 2023, *Health-check notebooks organisation*, SQR-080, URL https://sqr-080.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[483] **[DMTN-207]**, Economou, F., Jenness, T., 2021, *Architecture for the DM-to-EPO data export for Citizen Science projects*, DMTN-207, URL https://dmtn-207.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[484] **[RTN-018]**, Economou, F., Sick, J., 2021, *Community Forum Delivery Note*, RTN-018, URL https://rtn-018.lsst.io/,
Vera C. Rubin Observatory Technical Note

[485] **[SQR-084]**, Economou, F., Sick, J., 2024, *Using Times Square for observatory reporting*, SQR-084, URL https://sqr-084.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[486] **[SQR-003]**, Economou, F., team, T.S., 2022, *SQuaRE Overview*, SQR-003, URL https://sqr-003.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[487] **[SQR-018]**, Economou, F., Thornton, A., 2019, *Investigations into JupyterLab as a basis for the LSST Science Platform*, SQR-018, URL https://sqr-018.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[488] **[LDM-522]**, Economou, F., Wood-Vasey, M., 2017, *DM Science Quality Data Assurance System Conceptual Design*, LDM-522, URL https://ls.st/LDM-522

[489] **[DMTR-11]**, Economou, F., Swinbank, J., Bosch, J., Krughoff, S., 2015, *Characterization Metric Report: Science Pipelines Version 11.0 (Summer 2015)*, DMTR-11, URL https://ls.st/DMTR-11

[490] **[SQR-005]**, Economou, F., Ivezić, Ž., Jenness, T., 2016, *Publication Board JIRA Project - User Note*, SQR-005, URL https://sqr-005.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[491] **[SQR-001]**, Economou, F., Peterson, J.M., Hoblitt, J., 2017, *Git LFS Architecture Note*, SQR-001, URL https://sqr-001.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[492] **[DMTN-124]**, Economou, F., Krughoff, S., Fausti, A., et al., 2019, *Automated Quality Control Systems*, DMTN-124, URL https://dmtn-124.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[493] **[SQR-029]**, Economou, F., Krughoff, S., Sick, J., et al., 2019, *DM-EFD prototype implementation*, SQR-029, URL https://sqr-029.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[494] **[SQR-035]**, Economou, F., Sick, J., Banek, C., et al., 2019, *Deployment engineering for Kubernetes-based services.*, SQR-035, URL https://sqr-035.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[495] **[DMTN-185]**, Economou, F., Dubois-Felsmann, G., Bechtol, K., et al., 2021, *A Survey of Provenance*, DMTN-185, URL https://dmtn-185.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[496] **[RTN-019]**, Economou, F., Thornton, A., Banek, C., Allbery, R., Krughoff, S., 2021, *Science Platform Use for Summit Operations: Delivery Note*, RTN-019, URL https://rtn-019.lsst.io/,
Vera C. Rubin Observatory Technical Note

[497] **[SQR-061]**, Economou, F., Allbery, R., Thornton, A., 2022, *Monitoring architecture for the RSP*, SQR-061, URL https://sqr-061.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[498] **[DMTN-109]**, Eggl, S., Jones, L., Jurić, M., 2019, *LSST Asteroid Discovery Rates*, DMTN-109, URL https://dmtn-109.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[499] EMC, 2011, *Greenplum Database 4.1 Administrator Guide*, Tech. rep., EMC Corporation, URL http://www.greenplum.com/community/downloads/documentation/

[500] EMC, 2011, *Greenplum Database 4.1 Installation Guide*, Tech. rep., EMC Corporation, URL http://www.greenplum.com/community/downloads/documentation/

[501] **[LSE-89]**, Emmons, B., Bauer, A., 2018, *Education and Public Outreach Requirements*, LSE-89, URL https://ls.st/LSE-89

[502] ESA, 1997, *The Hipparcos and Tycho Catalogues*, ESA,
ESA SP-1200

[503] ESA, 2000, *GAIA — Composition, Formation and Evolution of the Galaxy*, Tech. rep., ESA, Concept and Technology Study Report, ESA-SCI(2000)4

[504] **[ESA/SPC(2009)6]**, ESA, 2009, *Licensing of Data Processing Software for the Science Programme*,
ESA/SPC(2009)6

[505] **[ECSS-M-30-01A]**, ESA Publications Division, 1999, *Organization and Conduct of Reviews*,
ECSS-M-30-01A

[506] **[ECSS-M-00-02A]**, ESA Publications Division, 2000, *Project Organisation*,
ECSS-M-00-02A

[507] **[ECSS-E-10-6a]**, ESA Publications Division, 2003, *Functional and Technical Specifications*, ECSS-E-10 part 6a

[508] **[ECSS-Q-80B]**, ESA Publications Division, 2003, *Software Product Assurance*, ECSS-Q-80B

[509] **[ECSS-M-10B]**, ESA Publications Division, 2003, *Project Breakdown Structures*, ECSS-M-10B

[510] **[ECSS-M-20B]**, ESA Publications Division, 2003, *Project Organisation*, ECSS-M-20B

[511] **[ECSS-M-30B]**, ESA Publications Division, 2003, *Project Phasing and Planning*, ECSS-M-30B

[512] **[ECSS-M-40B]**, ESA Publications Division, 2003, *Space Project Managent - configuration management*, ECSS-M-40B

[513] **[ECSS-M-50B]**, ESA Publications Division, 2003, *Space Project Managent - information/-documentation management*, ECSS-M-50B Draft 8

[514] **[ECSS-E-40-1B]**, ESA Publications Division, 2003, *Space enginneering - Software - Part 1: Principles and requirements*, ECSS-E-40 Part 1B

[515] **[ECSS-E-40-2B]**, ESA Publications Division, 2005, *Space enginneering - Software - Part 2: Document Requirements Definitions*, ECSS-E-40 Part 2B

[516] **[ECSS-M-ST-60C]**, ESA Publications Division, 2008, *Space project management - Cost and schedule management*, ECSS-M-ST-60C

[517] **[ECSS-M-ST-10C]**, ESA Publications Division, 2008, *Space project management - Project planning and implementation*, ECSS-M-ST-10C

[518] **[SITCOMTN-035]**, Esteves, J., 2022, *Checking The AuxTel Pointing Model*, SITCOMTN-035, URL https://sitcomtn-035.lsst.io/, Vera C. Rubin Observatory Commissioning Technical Note

[519] **[SITCOMTN-064]**, Esteves, J., 2023, *Startracker: Star Trails - Center Finder*, SITCOMTN-064, URL https://sitcomtn-064.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[520] **[SITCOMTN-065]**, Esteves, J., 2023, *TMA 3.5 degree offset repeatability analysis*, SITCOMTN-065, URL https://sitcomtn-065.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[521] **[SITCOMTN-090]**, Esteves, J., 2023, *Auxtel Pinhole Observations Notes*, SITCOMTN-090, URL https://sitcomtn-090.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[522] 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

[523] Eyer, L., 1998, Ph.D. Thesis, ADS Link

[524] Eyer, L., 2002, Acta Astronomica, 52, 241 (arXiv:astro-ph/0206074), ADS Link

[525] 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

[526] Eyer, L., 2006, In: Sterken, C., Aerts, C. (eds.) Astronomical Society of the Pacific Conference Series, 15–+, ADS Link

[527] Eyer, L., 2006, Memorie della Societa Astronomica Italiana, 77, 549 (arXiv:astro-ph/0511460), ADS Link

[528] 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 Pulsationsn as Probes of Stellar Physics, 160–+, ADS Link

[529] Eyer, L., Blake, C., 2005, MNRAS, 358, 30 (arXiv:astro-ph/0406333), doi:10.1111/j.1365-2966.2005.08651.x, ADS Link

[530] 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

[531] Eyer, L., Grenon, M., 1997, In: ESA SP-402: Hipparcos - Venice '97, 467–472, ADS Link

[532] Eyer, L., Mignard, F., 2005, MNRAS, 361, 1136, doi:10.1111/j.1365-2966.2005.09266.x, ADS Link

[533] Fabricius, C., Torra, J., GDAAS Algorithm Preparation Guidelines, CCB-GDAAS-002

[534] **[TSTN-032]**, Fagrelius, P., 2022, *AuxTel Illumination System Handbook*, TSTN-032, URL https://tstn-032.lsst.io/, Vera C. Rubin Observatory

[535] **[TSTN-036]**, Fagrelius, P., 2022, *AuxTel Calibration Illumination Control with Lab Jack*, TSTN-036, URL https://tstn-036.lsst.io/, Vera C. Rubin Observatory

[536] **[SITCOMTN-049]**, Fagrelius, P., 2023, *Flat Field Calibration Exposure Time Calculator*, SITCOMTN-049, URL https://sitcomtn-049.lsst.io/, Vera C. Rubin Observatory Commissioning Technical Note

[537] **[SITCOMTN-062]**, Fagrelius, P., 2023, *Calibration Laser Operation*, SITCOMTN-062, URL https://sitcomtn-062.lsst.io/, Vera C. Rubin Observatory Commissioning Technical Note

[538] **[SITCOMTN-070]**, Fagrelius, P., 2023, *Collimated Beam Projector (CBP) Exposure Time Calculator*, SITCOMTN-070, URL https://sitcomtn-070.lsst.io/, Vera C. Rubin Observatory Commissioning Technical Note

[539] **[SITCOMTN-086]**, Fagrelius, P., 2023, *Rubin Baseline Calibration Plan*, SITCOMTN-086, URL https://sitcomtn-086.lsst.io/, Vera C. Rubin Observatory Commissioning Technical Note

[540] **[TSTN-039]**, Fagrelius, P., 2023, *Calibration Laser Electronics Cabinet*, TSTN-039, URL https://tstn-039.lsst.io/, Vera C. Rubin Observatory

[541] **[TSTN-040]**, Fagrelius, P., 2023, *Tunable Laser Thermal Tests*, TSTN-040, URL https://tstn-040.lsst.io/, Vera C. Rubin Observatory

[542] **[TSTN-041]**, Fagrelius, P., 2023, *Adjustment of CBP Primary Mirror*, TSTN-041, URL https://tstn-041.lsst.io/, Vera C. Rubin Observatory

[543] **[TSTN-042]**, Fagrelius, P., 2023, *Calibration FlatField Projector Electronics Cabinet*, TSTN-042, URL https://tstn-042.lsst.io/, Vera C. Rubin Observatory

[544] 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

[545] **[SQR-008]**, Fausti, A., 2016, *SQUASH QA database*, SQR-008, URL https://sqr-008.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[546] **[SQR-022]**, Fausti, A., 2018, *Creating new charts with the Bokeh Models API*, SQR-022, URL https://sqr-022.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[547] **[SQR-027]**, Fausti, A., 2018, *Getting SQuaSH metrics to Honeycomb*, SQR-027, URL https://sqr-027.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[548] **[SQR-033]**, Fausti, A., 2019, *QA Strategy Working Group recommendations for SQuaSH*, SQR-033, URL https://sqr-033.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[549] **[SQR-009]**, Fausti, A., 2020, *The SQuaSH metrics dashboard*, SQR-009, URL https://sqr-009.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[550] **[SQR-031]**, Fausti, A., 2020, *EFD deployment instructions*, SQR-031, URL https://sqr-031.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[551] **[SQR-038]**, Fausti, A., 2020, *Implementation plan for the LDF EFD*, SQR-038, URL https://sqr-038.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[552] **[SQR-040]**, Fausti, A., 2020, *The EFD Aggregator*, SQR-040, URL https://sqr-040.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[553] **[SQR-050]**, Fausti, A., 2021, *The EFD replication service*, SQR-050, URL https://sqr-050.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[554] **[SQR-053]**, Fausti, A., 2021, *Representing missing values in the EFD*, SQR-053, URL https://sqr-053.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[555] **[SQR-057]**, Fausti, A., 2021, *Using Velero to back up Kubernetes resources*, SQR-057, URL https://sqr-057.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[556] **[SQR-058]**, Fausti, A., 2021, *The EFD Transformation Service*, SQR-058, URL https://sqr-058.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[557] **[SQR-067]**, Fausti, A., 2022, *Sasquatch: SQuaRE's Telemetry Service*, SQR-067, URL https://sqr-067.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[558] **[SQR-034]**, Fausti, A., 2023, *EFD Operations*, SQR-034, URL https://sqr-034.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[559] **[SQR-068]**, Fausti, A., 2023, *Sasquatch: beyond the EFD*, SQR-068, URL https://sqr-068.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[560] **[SQR-085]**, Fausti, A., 2024, *USDF EFD storage requirements*, SQR-085, URL https://sqr-085.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[561] **[SQR-026]**, Fausti, A., Economou, F., Krughoff, S., 2018, *Periodic report generation and publication via notebook templates*, SQR-026, URL https://sqr-026.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[562] **[Publication-142]**, Ferguson, H.C., 2011, *Science White Paper for LSST Deep-Drilling Field Observations: LSST Deep Drilling for Galaxies*, Publication-142, URL https://ls.st/Publication-142

[563] **[DMTN-277]**, Ferguson, P., 2023, *The Monster: a southern reference catalog with synthetic ugrizy fluxes for the Vera C. Rubin observatory*, DMTN-277, URL https://dmtn-277.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[564] **[SITCOMTN-068]**, Ferguson, P., 2023, *TMA slewing rates*, SITCOMTN-068, URL https://sitcomtn-068.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[565] **[SITCOMTN-081]**, Ferguson, P., 2023, *Hardpoint oscillations during elevation slews*, SITCOMTN-081, URL https://sitcomtn-081.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[566] **[SITCOMTN-101]**, Ferguson, P., 2023, *Investigation into vibrations in the M1M3 due to FCUs*, SITCOMTN-101, URL https://sitcomtn-101.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[567] **[SITCOMTN-088]**, Ferguson, P., Sevilla, I., 2023, *M1M3 Dynamic tests*, SITCOMTN-088, URL https://sitcomtn-088.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[568] **[SITCOMTN-080]**, Ferguson, P., Neil, D., Sanmartim, D., et al., 2023, *TMA torque analysis (with M1M3)*, SITCOMTN-080, URL https://sitcomtn-080.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[569] Fernandez, M.M., 2005, *Gaia TT&C Subsystem Analysis*, Tech. rep., ESA,
Note prepared at request of Project team

[570] 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

[571] Few, S., 2013, *Information Dashboard Design*, Analytics Press, 2 edn.

[572] 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

[573] Filippenko, A.V., 1982, PASP, 94, 715, doi:10.1086/131052, ADS Link

[574] **[DMTN-045]**, Findeisen, K., 2017, *PSF Fitting: Literature Overview*, DMTN-045, URL https://dmtn-045.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[575] **[DMTN-054]**, Findeisen, K., 2017, *Conventions Used by ap_verify*, DMTN-054, URL https://dmtn-054.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[576] **[DMTN-057]**, Findeisen, K., 2018, *Integrating Verification Metrics into the LSST DM Stack*, DMTN-057, URL https://dmtn-057.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[577] **[DMTN-098]**, Findeisen, K., 2019, *Metrics Measurement Framework Design*, DMTN-098, URL https://dmtn-098.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[578] **[DMTN-120]**, Findeisen, K., Bosch, J., 2020, *Improving Extensibility in afw.image.Exposure and Replacing afw.table.io*, DMTN-120, URL https://dmtn-120.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[579] **[DMTN-260]**, Findeisen, K., Lim, K.T., Bellm, E., Chiang, H.F., Parejko, J., 2023, *Failure Modes and Error Handling for Prompt Processing*, DMTN-260, URL https://dmtn-260.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[580] **[SITCOMTN-033]**, Fisher-Levine, M., 2022, *SITCOM Developer Guide*, SITCOMTN-033, URL https://sitcomtn-033.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[581] **[SITCOMTN-098]**, Fisher-Levine, M., 2023, *TMA Event Generation*, SITCOMTN-098, URL https://sitcomtn-098.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[582] **[SITCOMTN-100]**, Fisher-Levine, M., 2024, *The Rapid Analysis Framework and RubinTV*, SITCOMTN-100, URL https://sitcomtn-100.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[583] 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/

[584] Fornies-Marquina, J., Letosa, J., García-Gracia, M., Artacho, J., 1997, IEEE transactions on magnetics, 33, 1456

[585] 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

[586] 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

[587] 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/xxxxxxx.xxxxxxx

[588] Freemon, D.M., 2013, ArXiv e-prints (arXiv:1303.7467), ADS Link

[589] Freemon, D.M., 2014, ArXiv e-prints (arXiv:1410.1939), ADS Link

[590] Freemon, D.M., Becla, J., Dubois-Felsmann, G.P., et al., 2010, In: Astronomical Data Analysis Software and Systems XX, LSST Corporation

[591] 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 Proc. SPIE, 0, doi:10.1117/12.926596, ADS Link

[592] **[LDM-143]**, Freemon, M., Pietrowicz, S., 2013, *Site Specific Infrastructure Estimation Explanation*, LDM-143, URL https://ls.st/LDM-143

[593] **[LDM-144]**, Freemon, M., Pietrowicz, S., Alt, J., 2016, *Site Specific Infrastructure Estimation Model*, LDM-144, URL https://ls.st/LDM-144

[594] Furnell, R., 2005, *Gaia Space/Ground Interface Control Document Volume 1: RF Interface*, Tech. rep., ESA/ESOC,
GAIA-ESC-ICD-515

[595] Furnell, R., 2005, *Gaia Space/Ground Interface Control Document Volume 2: Generic Packet Structure*, Tech. rep., ESA/ESOC,
GAIA-ESC-ICD-516

[596] **[DMTR-141]**, G. Comoretto on behalf of Science Pipelines Team, 2019, *Characterization Metric Report: Science Pipelines Version 18.0.0*, DMTR-141, URL https://dmtr-141.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[597] 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

[598] Gaia Acronyms, URL http://www.rssd.esa.int/Ageneral/Projects/GAIA/paramdb/glossary.txt,
Gaia Acronyms List

[599] Gaia Collaboration, Brown, A.G.A., Vallenari, A., et al., 2016, A&A, 595, A2 (arXiv:1609.04172), doi:10.1051/0004-6361/201629512

[600] 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

[601] Gamma, E., Helm, R., Johnson, R., Vlissides, J., 1994, *Design Patterns: Elements of Reusable Object-Oriented Software*, Addison-Wesley Professional Computing Series

[602] **[DMTN-029]**, Gaponenko, I., 2017, *Loading SDSS Stripe82 Catalogs into PDAC*, DMTN-029, URL https://dmtn-029.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[603] 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

[604] 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

[605] **[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*, Publication-143, URL https://ls.st/Publication-143

[606] **[DMTN-011]**, Gee, P., 2016, *Testing Shear Bias Using Galsim Galaxy Simulations*, DMTN-011, URL https://dmtn-011.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[607] **[LPM-18]**, Gessner, C., Krabbendam, V., 2014, *Safety Policy*, LPM-18, URL https://ls.st/LPM-18

[608] Gibson, R., 2011, In: Very Wide Field Surveys in the Light of Astro2010, University of Washington, Space Telescope Science Institute

[609] 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

[610] 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

[611] **[Document-24920]**, Gill, R., 2018, *LSST COMMUNICATIONS CODE OF CONDUCT*, Document-24920, URL https://ls.st/Document-24920

[612] **[Document-28973]**, Gill, R., 2018, *LSST MEETINGS CODE OF CONDUCT*, Document-28973, URL https://ls.st/Document-28973

[613] 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

[614] 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

[615] **[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*, RTN-056, URL https://rtn-056.lsst.io/,
Vera C. Rubin Observatory Technical Note

[616] **[SITCOMTN-097]**, Giro, E., 2023, *technote*, SITCOMTN-097, URL https://sitcomtn-097.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[617] **[Document-37650]**, Gizis, J., Stars, M.W..L.V.S.C., 2021, *LSST Long-Haul Networks (LHN) End-to-end Test Plan*, Document-37650, URL https://ls.st/Document-37650

[618] **[DMTN-127]**, Glasgow, J., Korrapati, H., 2019, *Survey of Tools for LSST Client Data Distribution*, DMTN-127, URL https://dmtn-127.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[619] Globus, Globus Transfer API Documentation, URL https://docs.globus.org/api/transfer/

[620] Goldina, T., Roby, W., Wu, X., Ly, L., 2015, In: Taylor, A.R., Rosolowsky, E. (eds.) Astronomical Data Analysis Software an Systems XXIV (ADASS XXIV), vol. 495 of Astronomical Society of the Pacific Conference Series, 137, ADS Link

[621] Gomez, A.E., Grenier, S., Udry, S., et al., 1997, In: ESA SP-402: Hipparcos - Venice '97, 621–624, ADS Link

[622] **[ITTN-028]**, Gonzalez, I., Tapia, D., 2020, *IT User Support - Remote Work*, ITTN-028, URL https://ittn-028.lsst.io/,
Vera C. Rubin Observatory

[623] **[ITTN-014]**, Gonzalez, I., Reinking, H., Silva, C., 2023, *Computing Infrastructure*, ITTN-014, URL https://ittn-014.lsst.io/,
Vera C. Rubin Observatory

[624] Gonzalez-Nunez, J., 2015, In: Science Operations 2015: Science Data Management, 8, doi:10.5281/zenodo.34569, ADS Link

[625] 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

[626] **[DMTN-101]**, the Good, R.L., 2018, *Verifying LSST Calibration Data Products*, DMTN-101, URL https://dmtn-101.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[627] **[ITTN-035]**, Goodenow, I., 2021, *Move from Jira On-Premise to Atlassian Cloud*, ITTN-035, URL https://ittn-035.lsst.io/,
Vera C. Rubin Observatory

[628] **[ITTN-051]**, Goodenow, I., 2021, *Moving Jira Software On-Premise service to Atlassian Jira Cloud*, ITTN-051, URL https://ittn-051.lsst.io/,
Vera C. Rubin Observatory

[629] **[LPM-101]**, Goodenow, I., McKercher, R., 2013, *Tucson Site Disaster Recovery Plan*, LPM-101, URL https://ls.st/LPM-101

[630] Górski, K.M., Hivon, E., Banday, A.J., et al., 2005, ApJ, 622, 759 (arXiv:astro-ph/0409513), doi:10.1086/427976

[631] Górski, K.M., Hivon, E., Banday, A.J., et al., 2005, ApJ, 622, 759 (arXiv:astro-ph/0409513), doi:10.1086/427976, ADS Link

[632] Gosling, J., Joy, B., Steele, G., 2000, *The Java Language Specification*, Addison-Wesley, 2nd edn.

[633] Gould, A., 2013, ArXiv e-prints (arXiv:1304.3455), ADS Link

[634] **[DMTN-059]**, Gower, M., 2017, *Batch Processing Facade Prototype 0.1*, DMTN-059, URL https://dmtn-059.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[635] **[DMTN-122]**, Gower, M., Lim, K.T., 2019, *Data Backbone Design*, DMTN-122, URL https://dmtn-122.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[636] **[DMTN-123]**, Gower, M., Lim, K.T., 2019, *Batch Production Services Design*, DMTN-123, URL https://dmtn-123.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[637] **[LDM-635]**, Gower, M., Butler, M., Lim, K.T., 2019, *Data Management Data Backbone Services Requirements*, LDM-635, URL https://ldm-635.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[638] **[DMTN-244]**, Gower, M., Kowalik, M., Lust, N., et al., 2022, *Adding Workflow Management Flexibility to LSST Pipelines Execution*, DMTN-244, URL https://dmtn-244.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[639] GPD, URL http://www.rssd.esa.int/Gaia/paramdb,
Gaia Parameter Database

[640] GPFS, IBM Spectrum Scale, URL https://www.ibm.com/us-en/marketplace/scale-out-file-and-object-storage

[641] **[DMTN-231]**, Graham, M., 2023, *Detection Efficiencies for diaSources.*, DMTN-231, URL https://dmtn-231.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[642] **[RTN-002]**, Graham, M., Adair, C., Annis, J., et al., 2023, *Community Science Use Cases*, RTN-002, URL https://rtn-002.lsst.io/,
Vera C. Rubin Observatory Technical Note

[643] 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 Proc. SPIE, 0 (arXiv:1206.4035), doi:10.1117/12.926577, ADS Link

[644] **[DMTN-065]**, Graham, M.L., Jurić, M., Lim, K.T., Bellm, E., 2019, *Data Management and LSST Special Programs*, DMTN-065, URL https://dmtn-065.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[645] **[DMTN-102]**, Graham, M.L., Bellm, E., Guy, L., et al., 2020, *LSST Alerts: Key Numbers*, DMTN-102, URL https://dmtn-102.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[646] **[DMTN-107]**, Graham, M.L., Bellm, E.C., Slater, C.T., et al., 2020, *Options for Alert Production in LSST Operations Year 1*, DMTN-107, URL https://dmtn-107.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[647] **[DMTN-155]**, Graham, M.L., Guy, L.P., Swinbank, J., , the DM System Science Team, 2020, *Interim Model for Community Support*, DMTN-155, URL https://dmtn-155.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[648] **[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*, DMTN-049, URL https://dmtn-049.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[649] **[RTN-006]**, Graham, M.L., Adair, C.L., Annis, J., et al., 2023, *Model for Community Science*, RTN-006, URL https://rtn-006.lsst.io/,
Vera C. Rubin Observatory Technical Note

[650] **[DMTN-248]**, Graham, M.L., Guy, L.P., Bellm, E.C., the Data Management System Science Team, 2023, *Options for Alert Packets*, DMTN-248, URL https://dmtn-248.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[651] Graham M., R.G., Morris D., 2009, *VOSpace specification*, Tech. rep., IVOA, REC-VOSpace-1.15

[652] Graham M., R.G., Morris D., 2011, *VOSpace specification*, Tech. rep., IVOA, REC-VOSpace-2.0

[653] 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/

[654] Gray, J., Chong, W., Barclay, T., Szalay, A., vandenBerg, J., 2002, arXiv e-prints, cs/0208011 (arXiv:cs/0208011), ADS Link

[655] 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

[656] Greenbaum, A., 1997, *Iterative Methods for Solving Linear Systems*, SIAM

[657] Gregory, P.C., 2010, *Bayesian Logical Data Analysis for the Physical Sciences*, Cambridge University Press, 1 edn.

[658] Greisen, E.W., Calabretta, M.R., 2002, A&A, 395, 1061 (arXiv:astro-ph/0207407), doi:10.1051/0004-6361:20021326

[659] 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

[660] **[LTS-146]**, Gressler, W., Neill, D., Sebag, J., 2018, *M2 Cell Assembly Specifications Document*, LTS-146, URL https://ls.st/LTS-146

[661] 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

[662] 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

[663] Grossman, R., Gu, Y., Hong, X., et al., 2004, Future Generation Computer Systems, 21, 501, doi:10.1016/j.future.2004.10.007

[664] **[DMTN-147]**, Gruendl, R., 2020, *LDF Bulk Download Services*, DMTN-147, URL https://dmtn-147.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[665] **[DMTR-231]**, Gruendl, R., 2020, *LDM-503-11a: ComCam OPS Readiness Test Plan and Report*, DMTR-231, URL https://dmtr-231.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[666] **[DMTN-159]**, Gruendl, R., O'Mullane, W., Blum, R., MacArthur, L., 2020, *Report on Operations Rehearsal #2*, DMTN-159, URL https://dmtn-159.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[667] **[DMTN-068]**, Gruendl, R.A., 2018, *Lossy Compression WG Report*, DMTN-068, URL https://dmtn-068.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[668] Grün, E., Zook, H.A., Fechtig, H., Giese, R., 1985, Icarus, 62, 244, doi:10.1016/0019-1035(85)90121-6, ADS Link

[669] Guerrier, A., , *Software Design Document for Wavelength Calibration*, Tech. rep., ESA, GAIA-C6-TN-OPM-AG-003-1

[670] Guerrier, A., , *Software Design Document for Apply Calibration*, Tech. rep., ESA, GAIA-C6-SP-OPM-AG-004-1

[671] Gunn, A.G., Hall, J.C., Lockwood, G.W., Doyle, J.G., 1996, A&A, 305, 146, ADS Link

[672] **[DMTN-146]**, Guy, L., 2020, *Virtual Rubin Algorithms Workshop.*, DMTN-146, URL https://dmtn-146.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[673] **[DMTN-152]**, Guy, L., 2020, *Rubin Algorithms Workshop - Scientific Summary*, DMTN-152, URL https://dmtn-152.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[674] **[RTN-007]**, Guy, L., 2020, *Charge to the Rubin Operations Survey Evaluation Working Group*, RTN-007, URL https://rtn-007.lsst.io/,
Vera C. Rubin Observatory Technical Note

[675] **[SITCOMTN-008]**, Guy, L., 2020, *Charge to the Integration Planning Group*, SITCOMTN-008, URL https://sitcomtn-008.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[676] **[SITCOMTN-020]**, Guy, L., 2021, *SITCOM Milestone Summary*, SITCOMTN-020, URL https://sitcomtn-020.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[677] **[DMTR-361]**, Guy, L., 2022, *LVV-P96 LDM-503-14 Test Plan and Report*, DMTR-361, URL https://dmtr-361.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[678] **[DMTN-251]**, Guy, L., 2023, *Rubin/ANTARES Alert Filtering System Memo*, DMTN-251, URL https://dmtn-251.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[679] **[DMTN-261]**, Guy, L., 2023, *Memo on the use of the ANTARES Broker to provide the Rubin/LSST Alert Filtering Service*, DMTN-261, URL https://dmtn-261.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[680] **[DMTR-412]**, Guy, L., 2023, *LVV-P72 LDM-503-19a Test Plan and Report*, DMTR-412, URL https://dmtr-412.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[681] **[RTN-038]**, Guy, L., 2023, *Rubin Science Performance Metrics*, RTN-038, URL https://rtn-038.lsst.io/,
Vera C. Rubin Observatory Technical Note

[682] **[RTN-047]**, Guy, L., 2023, *System Performance Management Plan*, RTN-047, URL https://rtn-047.lsst.io/,
Vera C. Rubin Observatory Technical Note

[683] **[RTN-052]**, Guy, L., 2023, *Charge to the Data Release Board*, RTN-052, URL https://rtn-052.lsst.io/,
Vera C. Rubin Observatory Technical Note

[684] **[SITCOMTN-087]**, Guy, L., 2023, *Calibration System Milestone Summary*, SITCOMTN-087, URL https://sitcomtn-087.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[685] **[RTN-072]**, Guy, L., 2024, *Rubin Operations Change Control Process*, RTN-072, URL https://rtn-072.lsst.io/,
Vera C. Rubin Observatory Technical Note

[686] **[RTN-009]**, Guy, L., Roberts, A., Ivezić, Ž., 2020, *Rubin Observatory Initial Key Performance Metrics*, RTN-009, URL https://rtn-009.lsst.io/,
Vera C. Rubin Observatory Technical Note

[687] **[LSE-439]**, Guy, L., Bechtol, K., Carlin, J., et al., 2021, *Rubin Observatory LSST Science Validation Plan*, LSE-439, URL https://lse-439.lsst.io/,
Vera C. Rubin Observatory

[688] **[LDM-639]**, Guy, L., Wood-Vasey, W., Bellm, E., et al., 2022, *LSST Data Management Acceptance Test Specification*, LDM-639, URL https://ldm-639.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[689] **[LDM-652]**, Guy, L.P., 2019, *LSST Science Platform Final Design Review*, LDM-652, URL https://ldm-652.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[690] **[PSTN-024]**, Guy, L.P., 2019, *LSST Data Management System Verification and Validation*, PSTN-024, URL https://pstn-024.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[691] **[DMTN-211]**, Guy, L.P., 2022, *Faro: A framework for measuring the scientific performance of petascale Rubin Observatory data products*, DMTN-211, URL https://dmtn-211.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[692] **[RTN-071]**, Guy, L.P., 2024, *Proposal for implementing a Rubin GPT service*, RTN-071, URL https://rtn-071.lsst.io/,
Vera C. Rubin Observatory Technical Note

[693] **[RTN-011]**, Guy, L.P., Bechtol, K., Bellm, E., et al., 2023, *Rubin Observatory Plans for an Early Science Program*, RTN-011, URL https://rtn-011.lsst.io/,
Vera C. Rubin Observatory Technical Note

[694] 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

[695] 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

[696] 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

[697] 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

[698] 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

[699] Handy, C., 1993, *Understanding organizations*, Penguin Books, London, England New York, N.Y., USA

[700] Hankins, T.L., 1980, *Sir William Rowan Hamilton*, The Johns Hopkins University Press

[701] 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), Beijng, URL http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.132.2288&rep=rep1

[702] Harrison, D.L., 2011, Experimental Astronomy, 31, 157 (arXiv:1107.0210), doi:10.1007/s10686-011-9240-7, ADS Link

[703] Harrison P., R.G., 2010, *Universal Worker Service Pattern*, Tech. rep., IVOA, REC-UWS-1.0

[704] **[DMTN-063]**, Hasan, I., Gee, P., Tyson, T., 2017, *Testing the LSST DM Stack on Deep Lens Survey Data*, DMTN-063, URL https://dmtn-063.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[705] Hassan, A., Fluke, C.J., 2011, ArXiv e-prints (arXiv:1102.5123), ADS Link

[706] Haywood, M., Robin, A.C., Creze, M., 1997, A&A, 320, 428, ADS Link

[707] Hechler, M., 2004, ESOC, private communication

[708] Hechler, M., 2006, *GAIA Consolidated Report on Mission Analysis (CReMA)*, Tech. rep., ESA, European Space Operations Cenre, GAIA-ESC-RP-0001, Issue 2.0

[709] Hees, A., Hestroffer, D., Le Poncin-Lafitte, C., David, P., 2015, ArXiv e-prints (arXiv:1509.06868), ADS Link

[710] **[SITCOMTN-027]**, (he/him), E.P., 2022, *Donut analysis for wavefront sensor verification*, SITCOMTN-027, URL https://sitcomtn-027.lsst.io/, Vera C. Rubin Observatory Commissioning Technical Note

[711] **[SITCOMTN-042]**, (he/him), E.P., 2022, *Image quality contribution from uncorrected quasistatic wavefront errors*, SITCOMTN-042, URL https://sitcomtn-042.lsst.io/, Vera C. Rubin Observatory Commissioning Technical Note

[712] Helmi, A., de Zeeuw, P.T., 2000, MNRAS, 319, 657 (arXiv:astro-ph/0007166), ADS Link

[713] **[DMTN-053]**, Hernandez, F., Boutigny, D., Tortay, L., 2017, *Observations on I/O activity induced by ingestImages.py and processCcd.py*, DMTN-053, URL https://dmtn-053.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[714] **[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*, RTN-029, URL https://rtn-029.lsst.io/, Vera C. Rubin Observatory Technical Note

[715] Hernandez, J., Hutton, A., 2015, In: Taylor, A.R., Rosolowsky, E. (eds.) Astronomical Data Analysis Software an Systems XXIV (ADASS XXIV), vol. 495 of Astronomical Society of the Pacific Conference Series, 47, ADS Link

[716] **[TSTN-008]**, Heyer, A., 2020, *TMA User Guides*, TSTN-008, URL https://tstn-008.lsst.io/,
Vera C. Rubin Observatory

[717] **[TSTN-009]**, Heyer, A., 2020, *Coating Chamber*, TSTN-009, URL https://tstn-009.lsst.io/,
Vera C. Rubin Observatory

[718] **[TSTN-011]**, Heyer, A., 2020, *Technote for Andy to repurpose*, TSTN-011, URL https://tstn-011.lsst.io/,
Vera C. Rubin Observatory

[719] **[TSTN-005]**, Heyer, A., Coughlin, E., 2020, *TSSW Documentation Guide*, TSTN-005, URL https://tstn-005.lsst.io/,
Vera C. Rubin Observatory

[720] Hildebrandt, H., Arnouts, S., Capak, P., et al., 2010, A&A, 523, A31 (arXiv:1008.0658), doi:10.1051/0004-6361/201014885, ADS Link

[721] 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

[722] **[SQR-002]**, Hoblitt, J., 2015, *Binary Science Pipeline Software Distribution*, SQR-002, URL https://sqr-002.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[723] **[SQR-028]**, Hoblitt, J., 2018, *T&S Jenkins*, SQR-028, URL https://sqr-028.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[724] **[ITTN-003]**, Hoblitt, J., 2019, *[Proposed] Improved Tucson Lab Network Architecture*, ITTN-003, URL https://ittn-003.lsst.io/,
Vera C. Rubin Observatory

[725] **[ITTN-004]**, Hoblitt, J., 2019, *[Proposed] LSST On-Prem Domain Name Service (DNS)*, ITTN-004, URL https://ittn-004.lsst.io/,
Vera C. Rubin Observatory

[726] **[ITTN-005]**, Hoblitt, J., 2019, *Puppet Standards and Practices*, ITTN-005, URL https://ittn-005.lsst.io/,
Vera C. Rubin Observatory

[727] **[ITTN-002]**, Hoblitt, J., 2020, *LSST On-Prem Deployment Platform*, ITTN-002, URL https://ittn-002.lsst.io/,
Vera C. Rubin Observatory

[728] **[SQR-030]**, Hoblitt, J., 2020, *Jenkins Administration*, SQR-030, URL https://sqr-030.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[729] **[ITTN-062]**, Hoblitt, J., 2023, *Foreman Playbook*, ITTN-062, URL https://ittn-062.lsst.io/,
Vera C. Rubin Observatory

[730] **[ITTN-066]**, Hoblitt, J., 2023, *Kubernetes Policies*, ITTN-066, URL https://ittn-066.lsst.io/,
Vera C. Rubin Observatory

[731] **[ITTN-073]**, Hoblitt, J., 2024, *Kubernetes Secrets Management*, ITTN-073, URL https://ittn-073.lsst.io/,
Vera C. Rubin Observatory

[732] **[ITTN-019]**, Hoblitt, J., Frez, R., Kollross, M., 2020, *LHN Postmortem #1*, ITTN-019, URL https://ittn-019.lsst.io/,
Vera C. Rubin Observatory

[733] **[ITTN-011]**, Hoblitt, J., Thebo, A., Reinking, H., 2023, *Bootstrapping the Deployment Platform*, ITTN-011, URL https://ittn-011.lsst.io/,
Vera C. Rubin Observatory

[734] Hoff, T., 2008, Skype Plans For PostgreSQL To Scale To 1 Billion Users, URL http://highscalability.com/skype-plans-postgresql-scale-1-billion-users

[735] 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.

[736] Høg, E., Bernacca, P.L., Emiliani, L., 1997, In: Perryman, M., Bernacca, P. (eds.) Proc. of Hipparcos Venice 97, xxvii–xxxv

[737] Høg, E., Fabricius, C., Makarov, V.V., et al., 2000, A&A, 355, L27, ADS Link

[738] 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

[739] 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

[740] Hohenkerk, C., Sinclair, A., 1985, NAO Technical Note, 63, URL http://astro.ukho.gov.uk/data/tn/naotn63.pdf

[741] Holl, B., Lindegren, L., 2012, A&A, 543, A14, doi:10.1051/0004-6361/201218807, ADS Link

[742] 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

[743] Holl, B., Lindegren, L., Hobbs, D., 2012, A&A, 543, A15, doi:10.1051/0004-6361/201218808, ADS Link

[744] Holland, S.E., Groom, D.E., Palaio, N.P., Stover, R.J., Wei, M., 2003, IEEE transactions on electron devices, 50, 225

[745] Holman, M.J., Payne, M.J., Blankley, P., Janssen, R., Kuindersma, S., 2018, AJ, 156, 135, doi:10.3847/1538-3881/aad69a, ADS Link

[746] **[SITCOMTN-078]**, Homar, G.M., 2023, *Iterative improvement of LUT through balance forces*, SITCOMTN-078, URL https://sitcomtn-078.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[747] **[SITCOMTN-079]**, Homar, G.M., 2023, *Iterative improvement of LUT through balance forces*, SITCOMTN-079, URL https://sitcomtn-079.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[748] **[SITCOMTN-089]**, Homar, G.M., 2023, *Laser Tracker Offsets Analysis*, SITCOMTN-089, URL https://sitcomtn-089.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[749] **[SITCOMTN-104]**, Homar, G.M., 2023, *WET-001 - Optical State Measurement Verification Test*, SITCOMTN-104, URL https://sitcomtn-104.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[750] Hough, P.V.C., 1962, Method and means for recognizing complex patterns, URL https://www.google.com/patents/US3069654,
US Patent 3,069,654

[751] HPSS, HPSS – High Performance Storage Systems, URL http://hpss-collaboration.org/

[752] HTCondor, HTCondor, URL https://research.cs.wisc.edu/htcondor/index.html

[753] Huckle, H., 2007, *Continuum Normalisation*, Tech. rep., ESA,
GAIA-C6-SP-MSSL-HEH-001-D

[754] Huff, E., Mandelbaum, R., 2017, ArXiv e-prints (arXiv:1702.02600), ADS Link

[755] **[PSTN-015]**, Huffer, M.E., 2019, *LSST Camera Control System and DAQ*, PSTN-015, URL https://pstn-015.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[756] IAU, 2001, Information Bulletin, 88,
(errata in IAU Information Bulletin, 89)

[757] Idreos, S., Groffen, F., Nes, N., et al., 2012, IEEE Data Eng. Bull., 35, 40, URL http://sites.computer.org/debull/A12mar/monetdb.pdf

[758] 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

[759] **[LTS-487]**, Ingraham, P., 2017, *Auxiliary Telescope Spectrograph Statement of Work (SOW)*, LTS-487, URL https://ls.st/LTS-487

[760] **[LTS-488]**, Ingraham, P., 2017, *Auxiliary Telescope Spectrograph Specifications Document*, LTS-488, URL https://ls.st/LTS-488

[761] **[LSE-379]**, Ingraham, P., 2018, *Auxiliary Telescope Concept of Operations*, LSE-379, URL https://ls.st/LSE-379

[762] **[PSTN-027]**, Ingraham, P., 2020, *Performance of the LSST Calibration Systems*, PSTN-027, URL https://pstn-027.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[763] **[PSTN-028]**, Ingraham, P., 2020, *Characterization of Atmospheric Properties with the Rubin Auxiliary Telescope*, PSTN-028, URL https://pstn-028.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[764] **[SITCOMTN-013]**, Ingraham, P., 2021, *First-look Analysis and Feedback Functionality Breakout Group Charge*, SITCOMTN-013, URL https://sitcomtn-013.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[765] **[SITCOMTN-015]**, Ingraham, P., 2021, *Diagnosing AuxTel Image Motion and WFE non-repeatability*, SITCOMTN-015, URL https://sitcomtn-015.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[766] **[SITCOMTN-029]**, Ingraham, P., 2022, *LATISS Filter Change Procedure*, SITCOMTN-029, URL https://sitcomtn-029.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[767] **[SITCOMTN-030]**, Ingraham, P., 2022, *First-look Analysis and Feedback Functionality Breakout Group Charge #2*, SITCOMTN-030, URL https://sitcomtn-030.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[768] **[SITCOMTN-048]**, Ingraham, P., 2022, *SIT-Com Documentation Workflow*, SITCOMTN-048, URL https://sitcomtn-048.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[769] **[TSTN-027]**, Ingraham, P., 2022, *Seismic Event Recovery for the Auxiliary Telescope*, TSTN-027, URL https://tstn-027.lsst.io/,
Vera C. Rubin Observatory

[770] **[TSTN-015]**, Ingraham, P., Ribeiro, T., 2020, *Using CWFS during operations and for collimation of the Auxiliary Telescope*, TSTN-015, URL https://tstn-015.lsst.io/,
Vera C. Rubin Observatory

[771] **[TSTN-024]**, Ingraham, P., Ribeiro, T., 2021, *Concept of Control System Operations*, TSTN-024, URL https://tstn-024.lsst.io/,
Vera C. Rubin Observatory

[772] **[SITCOMTN-024]**, Ingraham, P., Stalder, B., 2021, *Summit Power Reliability and Risk Evaluation Task Force Charge*, SITCOMTN-024, URL https://sitcomtn-024.lsst.io/, Vera C. Rubin Observatory Commissioning Technical Note

[773] **[SITCOMTN-019]**, Ingraham, P., Quint, B., Dennihy, E., Shugart, A., Sotuela, I., 2022, *Observing Task Management Workflow Summary*, SITCOMTN-019, URL https://sitcomtn-019.lsst.io/, Vera C. Rubin Observatory Commissioning Technical Note

[774] Intersystems, 2008, Using Cache Globals, URL http://docs.intersystems.com/documentation/cache/20082/pdfs/GGBL.pdf

[775] 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

[776] 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

[777] Ivezic, Z., 2016, The impact of photo-z on LSST science requirements, URL https://docs.google.com/viewer?a=v&pid=sites&srcid=ZGVmYXVsdGRvbWFpbnxwaXR0cGhvdG96d29ya3Nob3AyMDE2fGd4OjMwZDZmNWEwYjhhMmY3Zjk, Presented at the LSST Photo-z Workshop, Pittsburgh, April 5, 2016

[778] **[PSTN-049]**, Ivezic, Z., 2020, *Essential Performance Metrics*, PSTN-049, URL https://pstn-049.lsst.io/, Vera C. Rubin Observatory Project Science Technical Note

[779] **[PSTN-053]**, Ivezic, Z., 2022, *Survey Cadence Optimization Committee's Phase 1 Recommendation*, PSTN-053, URL https://pstn-053.lsst.io/, Vera C. Rubin Observatory Project Science Technical Note

[780] **[Document-25351]**, Ivezic, Z., Krabbendam, V., 2022, *Leadership Roles, Responsibilities, Authorities and Accountabilities (R2A2s) for the Executive Committee of the Rubin Observatory Construction Projec*, Document-25351, URL https://ls.st/Document-25351

[781] **[DOCUMENT-27758]**, Ivezić, Ž., the LSST Project Science Team, 2018, *On the Choice of LSST Flux Units*, DOCUMENT-27758, URL https://pstn-001.lsst.io/, Vera C. Rubin Observatory

[782] **[PSTN-001]**, Ivezić, Ž., LSST Project Science Team, 2018, *On the choice of LSST flux units*, PSTN-001, URL PSTN-001.lsst.io

[783] **[LPM-17]**, Ivezić, Ž., The LSST Science Collaboration, 2018, *LSST Science Requirements Document*, LPM-17, URL https://ls.st/LPM-17

[784] Ivezić, Ž., Smith, J.A., Miknaitis, G., et al., 2007, AJ, 134, 973 (arXiv:astro-ph/0703157), doi:10.1086/519976, ADS Link

[785] 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

[786] 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

[787] Ivezić, Ž., Connolly, A.J., VanderPlas, J.T., Gray, A., 2014, *Statistics, Data Mining, and Machine Learning in Astronomy*, Princeton University Press, ADS Link

[788] 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

[789] 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

[790] Ivezic, 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

[791] J.A. Zensus, P.N., P.J. Napier, 1995, *Very Long Baseline Interferometry and the VLBA*, Astronomical Socienty of the Pacific,, asp conference series vol. 82 edn.

[792] Jacobson, I., Booch, G., Rumbaugh, J., 1999, *The Unified Software Development Process*, Addison-Wesley Professional, 1st edn.

[793] **[LSE-131]**, Jacoby, S., Emmons, B., Selvy, B., 2017, *Interface between Data Management and Education and Public Outreach*, LSE-131, URL https://ls.st/LSE-131

[794] 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

[795] **[DMTN-022]**, Jammes, F., 2016, *Tracks to optimize Qserv containers deployment and orchestration*, DMTN-022, URL https://dmtn-022.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[796] **[DMTN-032]**, Jammes, F., 2017, *Qserv Data Placement*, DMTN-032, URL https://dmtn-032.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[797] **[DMTN-166]**, Jammes, F., 2023, *Ingesting DC2 data inside Qserv at IN2P3*, DMTN-166, URL https://dmtn-166.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[798] Janesick, J.R., 2001, *Scientific charge-coupled devices*, SPIE Optical Engineering Press, ADS Link

[799] 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

[800] Jee, M.J., Tyson, J.A., 2011, PASP, 123, 596 (arXiv:1011.1913), doi:10.1086/660137, ADS Link

[801] **[DMTN-001]**, Jenness, T., 2015, *Porting the stack to OS X El Capitan*, DMTN-001, URL https://dmtn-001.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[802] Jenness, T., 2016, In: Lorente, N.P.F., Shortridge, K. (eds.) ADASS XXV, vol. TBD of ASP Conf. Ser., TBD, ASP, San Francisco (arXiv:1511.06790)

[803] 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

[804] 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

[805] Jenness, T., 2016, In: Python in Astronomy 2016, 27, doi:10.5281/zenodo.48406, ADS Link

[806] **[SQR-012]**, Jenness, T., 2016, *Migrating LSST tests to py.test*, SQR-012, URL https://sqr-012.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[807] **[SQR-014]**, Jenness, T., 2016, *Porting the LSST DM Stack to Python 3*, SQR-014, URL https://sqr-014.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[808] **[DMTN-000]**, Jenness, T., 2017, *The LSST Data Management Technical Note Series*, DMTN-000, URL https://dmtn-000.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[809] **[PSTN-019]**, Jenness, T., 2019, *The LSST Pipelines Software*, PSTN-019, URL https://pstn-019.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[810] **[PSTN-044]**, Jenness, T., 2019, *Geobelt satellites and LSST*, PSTN-044, URL https://pstn-044.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[811] **[DMTN-133]**, Jenness, T., 2020, *OCS driven data processing*, DMTN-133, URL https://dmtn-133.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[812] **[DMTN-176]**, Jenness, T., 2021, *A client/server Butler*, DMTN-176, URL https://dmtn-176.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[813] **[DMTN-229]**, Jenness, T., 2022, *The Vera C. Rubin Observatory Data Butler and Pipeline Execution System*, DMTN-229, URL https://dmtn-229.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[814] **[DMTN-177]**, Jenness, T., 2023, *Limiting Registry Access During Workflow Execution*, DMTN-177, URL https://dmtn-177.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[815] **[DMTN-203]**, Jenness, T., 2023, *Tracking Metrics in Butler*, DMTN-203, URL https://dmtn-203.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[816] **[DMTN-204]**, Jenness, T., 2023, *Data Annotations in Butler*, DMTN-204, URL https://dmtn-204.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[817] **[DMTN-206]**, Jenness, T., 2023, *Simplifying Pipeline Execution APIs*, DMTN-206, URL https://dmtn-206.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[818] **[DMTN-242]**, Jenness, T., 2023, *Butler Client/Server Revisited*, DMTN-242, URL https://dmtn-242.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[819] Jenness, T., LSST Data Management Team, 2016, In: American Astronomical Society Meeting Abstracts, vol. 227 of American Astronomical Society Meeting Abstracts, #348.15, doi:10.5281/zenodo.44634, ADS Link

[820] **[LDM-512]**, Jenness, T., O'Mullane, W., 2017, *Data Management Risk Assessment Process*, LDM-512, URL https://ls.st/LDM-512

[821] **[Report-142]**, Jenness, T., Swinbank, J., Krughoff, S., Dubois-Felsmann, G., Ciardi, D., 2015, *Hot-Wiring the Transient Universe IV*, Report-142, URL https://ls.st/Report-142, Report on the Hot-Wiring the Transient Universe IV conference held in Santa Barbara in May 2015.

[822] 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

[823] **[LDM-592]**, Jenness, T., Bosch, J., Gower, M., et al., 2018, *Data Access Use Cases*, LDM-592, URL https://ldm-592.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[824] Jenness, T., Bosch, J.F., Schellart, P., et al., 2018, arXiv e-prints, arXiv:1812.08085 (arXiv:1812.08085), ADS Link

[825] 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

[826] Jenness, T., Bosch, J.F., Salnikov, A., et al., 2022, In: Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, vol. 12189 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 1218911 (arXiv:2206.14941), doi:10.1117/12.2629569, ADS Link

[827] 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

[828] **[LDM-643]**, Johnson, M., Gruendl, R.A., 2020, *Proposed DM OPS Rehearsals*, LDM-643, URL https://ldm-643.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[829] Jones, L., 2009, Fast Transients to Long Period Variables: Timescales in LSST, URL http://www.cacr.caltech.edu/hotwired2/program/presentations/jones_hotwiring.pdf,
Presented at Hot-Wiring the Transient Universe 2, Santa Cruz

[830] **[LSE-180]**, Jones, L., 2013, *Level 2 Photometric Calibration for the LSST Survey*, LSE-180, URL https://ls.st/LSE-180

[831] **[SMTN-001]**, Jones, L., 2016, *Simulating Moving Object Detections*, SMTN-001, URL https://smtn-001.lsst.io/,
Vera C. Rubin Observatory Simulations Team Technical Note

[832] **[SMTN-003]**, Jones, L., 2017, *Trailing Losses for Moving Objects*, SMTN-003, URL https://smtn-003.lsst.io/,
Vera C. Rubin Observatory Simulations Team Technical Note

[833] **[SMTN-009]**, Jones, L., 2017, *Minimoons and LSST*, SMTN-009, URL https://smtn-009.lsst.io/,
Vera C. Rubin Observatory Simulations Team Technical Note

[834] **[SMTN-012]**, Jones, L., 2020, *Solar System Small Body Metrics*, SMTN-012, URL https://smtn-012.lsst.io/,
Vera C. Rubin Observatory Simulations Team Technical Note

[835] **[SMTN-013]**, Jones, L., 2020, *Microlensing and TDE Metrics*, SMTN-013, URL https://smtn-013.lsst.io/,
Vera C. Rubin Observatory Simulations Team Technical Note

[836] **[SMTN-014]**, Jones, L., 2020, *DESC Static Science (WFD) Metrics*, SMTN-014, URL https://smtn-014.lsst.io/,
Vera C. Rubin Observatory Simulations Team Technical Note

[837] **[SMTN-002]**, Jones, L., 2022, *Calculating LSST limiting magnitudes and SNR*, SMTN-002, URL https://smtn-002.lsst.io/,
Vera C. Rubin Observatory Simulations Team Technical Note

[838] **[PSTR-001]**, Jones, L., 2023, *LVV-P105: Survey Strategy Acceptance Test Campaign Test Plan and Report*, PSTR-001, URL https://pstr-001.lsst.io/, Vera C. Rubin Observatory

[839] Jones, L., Brown, M., Ivezić, Z., et al., 2015, In: AAS/Division for Planetary Sciences Meeting Abstracts, vol. 47 of AAS/Division for Planetary Sciences Meeting Abstracts, #312.22, ADS Link

[840] **[PSTN-051]**, Jones, R.L., 2021, *Survey Strategy and Cadence Choices for the Vera C. Rubin Observatory Legacy Survey of Space and Time (LSST)*, PSTN-051, URL https://pstn-051.lsst.io/, Vera C. Rubin Observatory Project Science Technical Note

[841] Jones, R.L., Padmanabhan, N., Ivezic, 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

[842] 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

[843] 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

[844] Jorden, P.R., Jordan, D., Jerram, P.A., Pratlong, 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

[845] Jordi, C., Høg, E., Brown, A.G.A., de Bruijne, J., 2006, *Gaia spectrophometers: optimization study*, Tech. rep., ESA, GAIA-CH-TN-UB-CJ-037

[846] 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

[847] 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

[848] 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

[849] **[DMTN-034]**, Juric, M., 2012, *Summer 2012 LSST DM Data Challenge*, DMTN-034, URL https://dmtn-034.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[850] 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

[851] 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

[852] 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

[853] 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-astronom
Radio Astronomy in the LSST Era - Charlottesville, VA - May 6-8, 2013

[854] 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.

[855] 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

[856] 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

[857] 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

[858] 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

[859] Juric, M., 2016, LSST Data Products, URL https://project.lsst.org/meetings/lsst-europe-2016/sites/lsst.org.meetings.lsst-europe-2016/files/02%20-%20juric-LSST-LSSTEurope2-DataProducts-4.pptx,
Presented on 2016-06-20 at the LSST@Europe2 conference held in Serbia

[860] **[PSTN-025]**, Jurić, M., 2019, *LSST Moving Object Processing*, PSTN-025, URL https://pstn-025.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[861] **[LDM-582]**, Juric, M., Gruendl, R., 2017, *Lossy Compression Working Group Charge*, LDM-582, URL https://ls.st/LDM-582

[862] 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.

[863] Juric, M., Tyson, T., 2015, Highlights of Astronomy, 16, 675, doi:10.1017/S174392131401285X, ADS Link

[864] 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

[865] **[LDM-134]**, Jurić, M., Allsman, R., Kantor, J., 2013, *Data Management Applications UML Use Case Model*, LDM-134, URL https://ls.st/LDM-134

[866] **[DMTN-035]**, Juric, M., Becker, A., Shaw, R., Krughoff, K.S., Kantor, J., 2013, *Winter 2013 LSST DM Data Challenge Release Notes*, DMTN-035, URL https://dmtn-035.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[867] 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, ADS Link

[868] **[LDM-133]**, Jurić, M., Lim, K.T., Kantor, J., 2013, *Data Management UML Domain Model*, LDM-133, URL https://ls.st/LDM-133

[869] Juric, M., Jones, L., Axelrod, T., Ivezic, Z., 2015, IAU General Assembly, 22, 56348, ADS Link

[870] 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 ASP Conf. Ser., 279 (arXiv:1512.07914), ADS Link

[871] 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 ASP Conf. Ser., 279 (arXiv:1512.07914), ADS Link

[872] **[LSE-319]**, Jurić, M., Ciardi, D., Dubois-Felsmann, G., Guy, L., 2019, *LSST Science Platform Vision Document*, LSE-319, URL https://lse-319.lsst.io/,
Vera C. Rubin Observatory

[873] **[DMTN-087]**, Juric, M., Eggl, S., Moeyens, J., Jones, L., 2020, *Proposed Modifications to Solar System Processing and Data Products*, DMTN-087, URL https://dmtn-087.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[874] **[LSE-163]**, Jurić, M., Axelrod, T., Becker, A., et al., 2023, *Data Products Definition Document*, LSE-163, URL https://lse-163.lsst.io/,
Vera C. Rubin Observatory

[875] Juric, M., et al., 2016, In: Lorente, N.P.F., Shortridge, K. (eds.) ADASS XXV, vol. TBD of ASP Conf. Ser., TBD, ASP, San Francisco (arXiv:1512.07914)

[876] 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

[877] Kaiser, N., 2004, Addition of images with varying seeing, URL http://spider.ipac.caltech.edu/staff/fmasci/home/astro_refs/PanStars_Coadder.pdf,
Pan-STARRS Document Control, PSDC-002-011-xx

[878] Kane, T.R., Likins, P.W., Levinson, D.A., 1983, *Spacecraft dynamics*, McGraw Hill Book Company, 1 edn.

[879] **[SITCOMTN-058]**, Kang, Y., 2023, *Creation of the Star Catalog for CWFS correction*, SITCOMTN-058, URL https://sitcomtn-058.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[880] **[SITCOMTN-096]**, Kang, Y., 2023, *Verification of the correct functioning of the M2 axial and tangent actuators in the closed-loop mode*, SITCOMTN-096, URL https://sitcomtn-096.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[881] **[SITCOMTN-082]**, Kang, Y., Quint, B.C., 2023, *Hard Point Breakaway Analysis*, SITCOMTN-082, URL https://sitcomtn-082.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[882] **[DMTN-190]**, Kannawadi, A., 2022, *Consistent galaxy colors with Gaussian-Aperture and PSF photometry*, DMTN-190, URL https://dmtn-190.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[883] **[DMTN-215]**, Kannawadi, A., 2023, *Tracking noise properties in Rubin Science Pipelines processing*, DMTN-215, URL https://dmtn-215.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[884] Kantor, J., 2008, Lsst data management: Making petascale data accessible,
New Astronomy: The Data Challenge, Rio de Janeiro, Brazil

[885] Kantor, J., 2008, Lsst network requirements,
Brazilian Symposium of Computer Networks and Distributed Systems

[886] Kantor, J., 2008, Lsst data management: Making peta-scale 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

[887] Kantor, J., 2008, Lsst processing: Challenges and solutions,
PUCÓN SYMPOSIUM 2008, Fifth AccessNova Forum: Ubiquitous Networks in Advanced Applications

[888] Kantor, J., 2008, Lsst overview,
PUCÓN SYMPOSIUM 2008, Fifth AccessNova Forum: Ubiquitous Networks in Advanced Applications

[889] 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

[890] **[Document-26217]**, Kantor, J., 2010, *Data Challenge 3b Performance Test 1.1*, Document-26217, URL https://ls.st/Document-26217

[891] 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

[892] **[document-14789]**, Kantor, J., 2014, *LSST Long-Haul Networks (LHN) End-to-end Test Plan*, document-14789, URL https://ls.st/document-14789

[893] 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

[894] **[LDM-324]**, Kantor, J., 2016, *Data Management Information Security Plan*, LDM-324, URL https://ls.st/LDM-324

[895] **[LDM-142]**, Kantor, J., 2017, *Network Sizing Model*, LDM-142, URL https://ls.st/LDM-142

[896] **[LSE-309]**, Kantor, J., 2017, *Summit to Base Information Technology and Communication (ITC) Design*, LSE-309, URL https://ls.st/LSE-309

[897] **[Document-28547]**, Kantor, J., 2018, *LSST Network Bandwidth Tests between Chile and the United States* , Document-28547, URL https://ls.st/Document-28547

[898] **[DMTR-151]**, Kantor, J., 2019, *LVV-P47 Summit - Base Network Integration Test Plan and Report*, DMTR-151, URL https://dmtr-151.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[899] **[DMTR-241]**, Kantor, J., 2020, *LVV-P73: Network Pre-Verification for Operation Rehearsal #2 Test Plan and Report*, DMTR-241, URL https://dmtr-241.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[900] **[LDM-732]**, Kantor, J., 2020, *Vera C. Rubin Observatory Network Verification Document*, LDM-732, URL https://ldm-732.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[901] 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

[902] 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

[903] 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

[904] **[Document-7025]**, Kantor, J., Krabbendam, V., 2011, *DM Risk Register*, Document-7025, URL https://ls.st/Document-7025

[905] **[LPM-81]**, Kantor, J., Krabbendam, V., 2015, *Cost Estimating Plan*, LPM-81, URL https://ls.st/LPM-81

[906] 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

[907] **[Document-9044]**, Kantor, J., Axelrod, T., Allsman, R., Freemon, M., Lim, K.T., 2010, *Data Challenge 3b Overview*, Document-9044, URL https://ls.st/Document-9044

[908] **[LDM-138]**, Kantor, J., Axelrod, T., Lim, K.T., 2013, *Data Management Compute Sizing Model*, LDM-138, URL https://ls.st/LDM-138

[909] **[LDM-240]**, Kantor, J., Jurić, M., Lim, K.T., 2016, *Data Management Releases*, LDM-240, URL https://ls.st/LDM-240

[910] 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

[911] 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

[912] 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

[913] 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

[914] Kantor, J.P., 2012, In: Angeli, G.Z., Dierickx, P. (eds.) Modeling, Systems Engineering, and Project Management for Astronomy V, vol. 8449 of Proc. SPIE, 0, doi:10.1117/12.924887, ADS Link

[915] Katz, D., 2006, Gaia - RVS: DPAC and CU6, URL http://wwwhip.obspm.fr/gaia/cu6/workshop_2/CU6_w2_Katz_intro.pdf,
CU6 Workshop2

[916] **[DMTN-270]**, Kelvin, L., 2023, *Bright Star Subtraction in the LSST Science Pipelines*, DMTN-270, URL https://dmtn-270.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[917] **[SITCOMTN-069]**, Kelvin, L.S., Dell'Antonio, I., Drlica-Wagner, A., et al., 2023, *LSB SciUnit Data Requirements Document*, SITCOMTN-069, URL https://sitcomtn-069.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[918] 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

[919] **[Publication-144]**, Kessler, R., et al., 2011, *Science White Paper for LSST Deep-Drilling Field Observations: Supernova Light Curves*, Publication-144, URL https://ls.st/Publication-144

[920] **[DMTN-002]**, Kind, M.C., 2016, *SuperTask and Activator Notes*, DMTN-002, URL https://dmtn-002.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[921] **[DMTN-033]**, Kind, M.C., 2016, *Cluster and container management with Kubernetes* , DMTN-033, URL https://dmtn-033.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[922] Kirsch, N., 2012, WD Red 3TB NAS Hard Drive Review, URL http://www.legitreviews.com/article/2092/3/

[923] 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,
Presentation at the Northern Spring IVOA Meeting, South Africa

[924] **[DMTN-100]**, Klaveren, B.V., 2018, *Namespacing Database Objects*, DMTN-100, URL https://dmtn-100.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[925] **[DMTN-138]**, Klaveren, B.V., 2019, *Building and Distributing LSST Software with conda and conda-forge*, DMTN-138, URL https://dmtn-138.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[926] **[DMTN-094]**, Klaveren, B.V., 2022, *LSP Authentication Design*, DMTN-094, URL https://dmtn-094.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[927] **[DMTN-116]**, Klaveren, B.V., 2022, *LSP Authentication Implementation*, DMTN-116, URL https://dmtn-116.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[928] **[SITCOMTN-059]**, Kleinman, S., Johnson, T., Ingraham, P., 2023, *FAFF Implementation Group (FIG) Mandate*, SITCOMTN-059, URL https://sitcomtn-059.lsst.io/, Vera C. Rubin Observatory Commissioning Technical Note

[929] Klioner, S.A., 2001, ArXiv Astrophysics e-prints (arXiv:astro-ph/0107457), ADS Link

[930] Klioner, S.A., 2003, AJ, 125, 1580, ADS Link

[931] Klioner, S.A., 2004, Phys. Rev. D, 69, 124001 (arXiv:astro-ph/0311540), doi:10.1103/PhysRevD.69.124001, ADS Link

[932] 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

[933] Klioner, S.A., 2008, A&A, 478, 951, doi:10.1051/0004-6361:20077786, ADS Link

[934] 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

[935] Klioner, S.A., Peip, M., 2003, A&A, 410, 1063 (arXiv:astro-ph/0305204), doi:10.1051/0004-6361:20031283, ADS Link

[936] Klioner, S.A., Soffel, M.H., 2000, Phys. Rev. D, 62, 024019 (arXiv:gr-qc/9906123), ADS Link

[937] 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

[938] Klioner, S.A., Zschocke, S., Soffel, M.H., Butkevich, A.G., 2010, ArXiv e-prints (arXiv:1002.5016), ADS Link

[939] Knight, S., 2005, Computing in Science Engineering, 7, 79, doi:10.1109/MCSE.2005.11

[940] 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

[941] 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

[942] Kopeikin, S., Vlasov, I., 2004, Phys. Rep., 400, 209 (arXiv:gr-qc/0403068), doi:10.1016/j.physrep.2004.08.004, ADS Link

[943] Koppelman, H., Helmi, A., Veljanoski, J., 2018, ApJ, 860, L11, doi:10.3847/2041-8213/aac882, ADS Link

[944] Korn, G.A., Korn, T.M., 1961, *Mathematical handbook for scientists and engineers*, McGraw Hill Book Company, 1 edn.

[945] **[DMTN-179]**, Kovács, G., 2021, *The ZOGY image differencing matching kernel and PSF solutions and their practical implementation issues*, DMTN-179, URL https://dmtn-179.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[946] Kovalevsky, J., 1998, ARA&A, 36, 99, doi:10.1146/annurev.astro.36.1.99, ADS Link

[947] Kovalevsky, J., Lindegren, L., Froeschle, M., et al., 1995, A&A, 304, 34, ADS Link

[948] **[DMTN-040]**, Kowalik, M., 2018, *A closer look at Pegasus WMS*, DMTN-040, URL https://dmtn-040.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[949] **[DMTN-154]**, Kowalik, M., 2020, *DBB Buffer Managers*, DMTN-154, URL https://dmtn-154.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[950] **[DMTN-042]**, Kowalik, M., Chiang, H.F., Gower, M., Pietrowicz, S., Kooper, R., 2017, *Batch Production Services: Creating Workflows*, DMTN-042, URL https://dmtn-042.lsst.

io/,
Vera C. Rubin Observatory Data Management Technical Note

[951] **[DMTN-025]**, Kowalik, M., Chiang, H.F., Daues, G., Kooper, R., 2018, *A survey of workflow management systems*, DMTN-025, URL https://dmtn-025.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[952] **[LDM-633]**, Kowalik, M., Gower, M., Kooper, R., 2019, *Offline Batch Production Services Use Cases*, LDM-633, URL https://ldm-633.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[953] **[LDM-636]**, Kowalik, M., Gower, M., Kooper, R., 2019, *Batch Production Service Requirements*, LDM-636, URL https://ldm-636.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[954] **[LPM-72]**, Krabbendam, V., 2015, *Scope Options*, LPM-72, URL https://ls.st/LPM-72

[955] **[LPM-20]**, Krabbendam, V., Selvy, B., 2015, *Risk & Opportunity Management Plan*, LPM-20, URL https://ls.st/LPM-20

[956] **[LPM-125]**, Krabendam, V., Goodenow, I., 2016, *Project Management Office Information Security Plan*, LPM-125, URL https://ls.st/LPM-125

[957] **[EISD-EPNS-00003]**, Krall, C., 2004, *IMPLEMENTATION OF THE ESA NETWORK SECURITY POLICY*,
EISD-EPNS-00003

[958] Krisciunas, K., Schaefer, B.E., 1991, PASP, 103, 1033, doi:10.1086/132921, ADS Link

[959] Kruchten, P., 2003, *The Rational Unified Process: An Introduction*, Addison-Wesley Professional, 3rd edn.

[960] Krughoff, K.S., 2014, Image differencing for lsst, URL http://dx.doi.org/10.5281/zenodo.45300,
ZTF-LSST Joint Meeting November 12th 2014

[961] 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, doi:http://dx.doi.org/10.5281/zenodo.45300

[962] **[LSE-349]**, Krughoff, K.S., 2019, *Defining the Transformation Between Camera Engineering Coordinates and Camera Data Visualization Coordinates*, LSE-349, URL https:

//lse-349.lsst.io/,
Vera C. Rubin Observatory

[963] **[PSTN-023]**, Krughoff, K.S., 2019, *LSST Data Management Quality Assurance and Reliability Engineering*, PSTN-023, URL https://pstn-023.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[964] **[SQR-021]**, Krughoff, S., 2018, *An Example JupyterLab Development Workflow*, SQR-021, URL https://sqr-021.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[965] **[SQR-025]**, Krughoff, S., 2019, *Welcome to the Notebook Aspect of the LSST Science Platform*, SQR-025, URL https://sqr-025.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[966] **[DMTN-142]**, Krughoff, S., 2020, *From Notebook to Library: Dealing with analysis code*, DMTN-142, URL https://dmtn-142.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[967] **[SQR-047]**, Krughoff, S., 2020, *Technical considerations for nublado design*, SQR-047, URL https://sqr-047.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[968] **[DMTR-291]**, Krughoff, S., 2021, *DM-503-EFDa: EFD on Summit for M1/M3 Test Plan and Report*, DMTR-291, URL https://dmtr-291.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[969] **[DMTR-331]**, Krughoff, S., 2023, *LDM-503-EFDb: Replication of Summit EFD to USDF Test Plan and Report*, DMTR-331, URL https://dmtr-331.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[970] **[DMTN-082]**, Krughoff, S., Economou, F., 2018, *On accessing EFD data in the Science Platform*, DMTN-082, URL https://dmtn-082.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[971] **[DMTN-074]**, Krughoff, S., Swinbank, J., 2018, *DM QA Status & Plans*, DMTN-074, URL https://dmtn-074.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[972] **[DMTR-41]**, Krughoff, S., Wood-Vasey, J., 2017, *Characterization Metric Report: Science Pipelines Version 14.0*, DMTR-41, URL https://ls.st/DMTR-41

[973] 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

[974] 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

[975] 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

[976] **[SITCOMTN-018]**, Lage, C., 2021, *Working with Rubin EFD timestamps.*, SITCOMTN-018, URL https://sitcomtn-018.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[977] **[SITCOMTN-028]**, Lage, C., 2021, *Temperature compensation of the AuxTel focus model*, SITCOMTN-028, URL https://sitcomtn-028.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[978] **[SITCOMTN-026]**, Lage, C., 2022, *AuxTel PowerUp sequence*, SITCOMTN-026, URL https://sitcomtn-026.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[979] **[SITCOMTN-043]**, Lage, C., 2022, *Auxiliary Telescope Polycold chiller maintenance procedures.*, SITCOMTN-043, URL https://sitcomtn-043.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[980] **[SITCOMTN-051]**, Lage, C., 2022, *AuxTel mount jitter studies with data from accelerometers and anemometer.*, SITCOMTN-051, URL https://sitcomtn-051.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[981] **[SITCOMTN-056]**, Lage, C., 2023, *Azimuth drive hysteresis in the Auxiliary Telescope*, SITCOMTN-056, URL https://sitcomtn-056.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[982] **[SITCOMTN-057]**, Lage, C., 2023, *Preliminary study of TMA performance based on soak testing from 26-Jan-2023*, SITCOMTN-057, URL https://sitcomtn-057.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[983] **[SITCOMTN-067]**, Lage, C., 2023, *Velocity, Acceleration, and Jerk analysis of TMA slews*, SITCOMTN-067, URL https://sitcomtn-067.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[984] **[SITCOMTN-071]**, Lage, C., 2023, *StarTracker Narrow Camera to Fast Camera Offsets*, SITCOMTN-071, URL https://sitcomtn-071.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[985] **[SITCOMTN-094]**, Lage, C., 2023, *Interfacing with the Auxiliary Telescope dome hardware.*, SITCOMTN-094, URL https://sitcomtn-094.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[986] **[SITCOMTN-083]**, Lage, C., Sanmartim, D., 2023, *M1M3 mirror cell bump testing*, SITCOMTN-083, URL https://sitcomtn-083.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[987] 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

[988] Lallo, M. and Petro, L., 1999, *Bidirectional reflectance distribution function for the NGST mirrors*, Tech. rep., Space Telescope Science Institute

[989] **[LSE-78]**, Lambert, R., Kantor, J., Huffer, M., et al., 2017, *LSST Observatory Network Design*, LSE-78, URL https://ls.st/LSE-78

[990] 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

[991] Lammers, U., ,
unpublished results

[992] 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

[993] Larman, C., Basili, V.R., 2003, Computer, 36, 47, doi:10.1109/MC.2003.1204375

[994] Lasker, B., Lattanzi, M., McLean, B., et al., 2008, The Astronomical Journal, 136, doi:10.1088/0004-6256/136/2/735, ADS Link

[995] Lattanzi, M., Drimmel, R., 2003,
private communcation

[996] Lattanzi, M.G., Spagna, A., Sozzetti, A., Casertano, S., 2000, MNRAS, 317, 211 (arXiv:astro-ph/0005024), ADS Link

[997] 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

[998] Lazio, J.W., Kimball, A., Barger, A.J., et al., 2014, PASP, 126, 196 (arXiv:1401.0716), doi:10.1086/675262, ADS Link

[999] 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

[1000] van Leeuwen, F., 1997, *The Hipparcos Mission*, Springer, Space Science Reviews, Vol.81 edn.

[1001] van Leeuwen, F., 2007, *Hipparcos, the New Reduction of the Raw Data*, Springer, Astrophysics and Space Science Library. Vol. 350 edn.

[1002] Leistedt, B., Hogg, D.W., 2017, ApJ, 838, 5 (arXiv:1612.00847), doi:10.3847/1538-4357/aa6332, ADS Link

[1003] Lejeune, T., Cuisinier, F., Buser, R., 1998, A&AS, 130, 65 (arXiv:astro-ph/9710350), ADS Link

[1004] Lenhardt, H., 2003, *GIS implementation in GDAAS2: Detailed Geometrical Calibration*, Tech. rep., ARI,
GAIA-ARI-HL-001

[1005] **[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/llink/livelink/fetch/-415780/495310/1051419/Sw_Conf_Mng_Plan_v2-0.pdf?nodeid=2942288&vernum=-2

[1006] Levine, D.A., Mannings, V., Cutri, R., et al., 2007, In: American Astronomical Society Meeting Abstracts, vol. 39 of Bulletin of the American Astronomical Society, #137.24, ADS Link

[1007] **[DMTN-201]**, Li, Y.T., 2021, *USDF Object Storage Architecture and Planning*, DMTN-201, URL https://dmtn-201.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1008] **[RTN-025]**, Li, Y.T., 2021, *USDF Object Storage Architecture and Planning*, RTN-025, URL https://rtn-025.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1009] Lim, K.T., 2007, Preparing for scores of petabytes,
IEEE Mass Storage Symposium, San Diego, CA, September 26, 2007

[1010] Lim, K.T., 2008, Lsst and scidb,
Stanford HPC Conference, Stanford, CA, USA, August 28, 2008

[1011] Lim, K.T., 2008, Cyberinfrastructure lessons from lsst data management,
iPlant Workshop (remote presentation), December 16, 2008

[1012] Lim, K.T., 2008, The lsst data management system,
Talk at Keck Observatory, December 2, 2008

[1013] 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

[1014] Lim, K.T., 2011, Lsst applications and middleware,
Talk at Fermilab, May 12, 2011

[1015] Lim, K.T., 2012, The lsst database: What to expect,
AAS Splinter Meeting, Austin TX, January 8, 2012

[1016] 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

[1017] **[Document-15097]**, Lim, K.T., 2013, *LSST Data Challenge Report: Summer 2013*, Document-15097, URL https://ls.st/Document-15097

[1018] 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

[1019] 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

[1020] 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,
HEP Software Foundation Workshop, SLAC National Accelerator Lab, January 20, 2015

[1021] **[DMTN-050]**, Lim, K.T., 2017, *EFD Handling within DM*, DMTN-050, URL https://dmtn-050.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1022] **[DMTN-052]**, Lim, K.T., 2017, *Initial Installation of a DAQ Test Stand at NCSA*, DMTN-052, URL https://dmtn-052.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1023] **[DMTN-067]**, Lim, K.T., 2017, *Catalog Data Model*, DMTN-067, URL https://dmtn-067.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1024] **[DMTN-103]**, Lim, K.T., 2018, *LSST Science Platform Deployments*, DMTN-103, URL https://dmtn-103.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1025] **[DMTN-111]**, Lim, K.T., 2019, *DM Usage in Observatory Operations*, DMTN-111, URL https://dmtn-111.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1026] **[DMTN-125]**, Lim, K.T., 2019, *Google Cloud Engagement Results*, DMTN-125, URL https://dmtn-125.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1027] **[DMTN-132]**, Lim, K.T., 2019, *Independent LSST Identity Management*, DMTN-132, URL https://dmtn-132.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1028] **[LSE-400]**, Lim, K.T., 2019, *Header Service Interface*, LSE-400, URL https://lse-400.lsst.io

[1029] **[DMTN-150]**, Lim, K.T., 2020, *LSST + Google Cloud Proof of Concept 2020*, DMTN-150, URL https://dmtn-150.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1030] **[DMTN-092]**, Lim, K.T., 2021, *Alert Production Pipeline Interfaces*, DMTN-092, URL https://dmtn-092.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1031] **[DMTN-189]**, Lim, K.T., 2021, *Data Facility Specifications*, DMTN-189, URL https://dmtn-189.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1032] **[DMTN-143]**, Lim, K.T., 2022, *Image Capture Simplification*, DMTN-143, URL https://dmtn-143.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1033] **[DMTN-218]**, Lim, K.T., 2022, *The LSST Science Pipelines Build System*, DMTN-218, URL https://dmtn-218.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1034] **[DMTN-219]**, Lim, K.T., 2022, *Proposal and Prototype for Prompt Processing*, DMTN-219, URL https://dmtn-219.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1035] **[DMTN-227]**, Lim, K.T., 2022, *The Consolidated Database of Image Metadata*, DMTN-227, URL https://dmtn-227.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1036] **[RTN-036]**, Lim, K.T., 2022, *Software Distribution at Data Facilities*, RTN-036, URL https://rtn-036.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1037] **[DMTN-181]**, Lim, K.T., 2023, *Campaign Management*, DMTN-181, URL https://dmtn-181.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1038] **[DMTN-188]**, Lim, K.T., 2023, *IVOA Universal Worker Service: Roles and Implementation*, DMTN-188, URL https://dmtn-188.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1039] **[DMTN-198]**, Lim, K.T., 2023, *Data Backbone Implementation*, DMTN-198, URL https://dmtn-198.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1040] **[DMTN-213]**, Lim, K.T., 2023, *Multi-Site Data Release Processing Using PanDA and Rucio*, DMTN-213, URL https://dmtn-213.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1041] **[DMTN-254]**, Lim, K.T., 2023, *Summit Architecture from the DM Perspective*, DMTN-254, URL https://dmtn-254.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1042] **[DMTN-255]**, Lim, K.T., 2023, *Proposal for Implementing FAFF Rapid Analysis*, DMTN-255, URL https://dmtn-255.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1043] **[Document-32503]**, Lim, K.T., Committee, R., 2019, *Identity Management Review Report*, Document-32503, URL https://ls.st/Document-32503

[1044] **[LDM-146]**, Lim, K.T., Allsman, R., Kantor, J., 2013, *Data Management Middleware UML Use Case and Activity Model*, LDM-146, URL https://ls.st/LDM-146

[1045] **[LDM-140]**, Lim, K.T., Smith, C., Axelrod, T., Dubois-Felsmann, G., Freemon, M., 2013, *Data Management Compute Sizing Explanation*, LDM-140, URL https://ls.st/LDM-140

[1046] **[LDM-152]**, Lim, K.T., Dubois-Felsmann, G., Johnson, M., Juric, M., Petravick, D., 2019, *Data Management Middleware Design*, LDM-152, URL https://ldm-152.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[1047] **[DMTN-114]**, Lim, K.T., Guy, L., Chiang, H.F., 2019, *LSST + Amazon Web Services Proof of Concept*, DMTN-114, URL https://dmtn-114.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1048] **[LDM-148]**, Lim, K.T., Bosch, J., Dubois-Felsmann, G., et al., 2020, *Data Management System Design*, LDM-148, URL https://ldm-148.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[1049] 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

[1050] Lindegren, L., 1978, In: Prochazka, F.V., Tucker, R.H. (eds.) IAU Colloq. 48: Modern Astrometry, 197–217, ADS Link

[1051] Lindegren, L., 1983, *Pseudosolution and pseudocovariances of least-squares problems with known null space*, Tech. rep., Lund Observatory,
NDAC/LO/018, Hipparcos NDAC

[1052] Lindegren, L., 1995, A&A, 304, 61, ADS Link

[1053] 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

[1054] Lindegren, L., 2009, Proceedings of the International Astronomical Union, 5, 296, doi:10.1017/S1743921309990548

[1055] Lindegren, L., 2010, ISSI Scientific Reports Series, 9, 279, ADS Link

[1056] 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`

[1057] Lindegren, L., Bastian, U., 2011, In: EAS Publications Series, vol. 45 of EAS Publications Series, 109–114, doi:10.1051/eas/1045018, ADS Link

[1058] 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-milliarcsecon Optical Astronomy, The Hague, 15–19 August 1994

[1059] 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

[1060] 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

[1061] 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

[1062] Lindegren, L., Lammers, U., Hobbs, D., et al., 2012, A&A, 538, A78 (`arXiv:1112.4139`), doi:10.1051/0004-6361/201117905, ADS Link

[1063] Lindegren, L., Lammers, U., Hobbs, D., et al., 2012, Astronomy and Astrophysics, 538, A78, doi:10.1051/0004-6361/201117905

[1064] 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

[1065] LINPACK, URL http://www.top500.org/lists/linpack.php,
Linpack standard numerical benchmark

[1066] Lock, D., 2000, *Project Phasing and Planning*, Gower, 7 edn.

[1067] **[LPM-98]**, Long, K.E., 2016, *LSST Project Controls System Description*, LPM-98, URL https://ls.st/LPM-98

[1068] **[PSTN-037]**, Lopez, M., 2020, *Installation and Performance of the LSST Camera Refrigeration System*, PSTN-037, URL https://pstn-037.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1069] López, P.P., Luri, X., Serraller, I., 2003, *Java Code Conventions*, Tech. rep., GMV/UB, GMV-GDAAS2-SCG-004

[1070] **[LSE-209]**, Lotz, P., 2016, *Software Component to OCS Interface*, LSE-209, URL https://ls.st/LSE-209

[1071] **[LSE-70]**, Lotz, P., 2016, *System Communication Protocol Interface*, LSE-70, URL https://ls.st/LSE-70

[1072] 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

[1073] **[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*, Agreement-51, URL https://ls.st/Agreement-51

[1074] 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

[1075] LSST Data Management, LSST DM Developer Guide, URL https://developer.lsst.io/

[1076] **[Report-241]**, LSST Project Science Team, 2015, *Camera Mixed Focal Plane Option*, Report-241, URL https://ls.st/Report-241

[1077] LSST Science Collaboration, 2009, ArXiv e-prints (arXiv:0912.0201), ADS Link

[1078] LSST Science Collaboration, Marshall, P., Anguita, T., et al., 2017, ArXiv e-prints (arXiv:1708.04058), ADS Link

[1079] **[Document-11624]**, LSST Science Council, 2011, *Optimization of LSST Deployment Parameters*, Document-11624, URL https://ls.st/Document-11624

[1080] **[Document-16168]**, LSST Systems Engineering, 2014, *LSST Key System Parameters Summary*, Document-16168, URL https://ls.st/Document-16168

[1081] **[SITCOMTN-006]**, Lupton, R., 2021, *Integration Milestones*, SITCOMTN-006, URL https://sitcomtn-006.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1082] **[SITCOMTN-032]**, Lupton, R., 2022, *Visits, snaps, seqNums, and exposureIDs*, SITCOMTN-032, URL https://sitcomtn-032.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1083] **[SITCOMTN-054]**, Lupton, R., 2023, *ComCam support on Base Test Stand*, SITCOMTN-054, URL https://sitcomtn-054.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1084] Lupton, R., Blanton, M.R., Fekete, G., et al., 2004, PASP, 116, 133 (arXiv:astro-ph/0312483), doi:10.1086/382245, ADS Link

[1085] Luri, X., Palmer, M., Arenou, F., et al., 2014, A&A, 566, A119 (arXiv:1404.5861), doi:10.1051/0004-6361/201423636, ADS Link

[1086] **[DMTN-241]**, Lust, N.B., Jenness, T., Bosch, J.F., et al., 2022, *Data management and execution systems for the Rubin Observatory Science Pipelines*, DMTN-241, URL https://dmtn-241.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1087] **[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*, Document-10963, URL https://ls.st/Document-10963

[1088] Makarov, V.V., 1998, A&A, 340, 309, ADS Link

[1089] Mangum, J.G., Wallace, P., 2015, PASP, 127, 74 (arXiv:1411.1617), doi:10.1086/679582, ADS Link

[1090] **[RTN-033]**, Margheim, S., Verma, A., Marshall, P., 2023, *The In-Kind Helpdesk System*, RTN-033, URL https://rtn-033.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1091] MariaDB, MariaDB – Enterprise Open Source Database & Data Warehouse, URL https://mariadb.com/

[1092] **[RDO-011]**, Marshall, P., 2020, *Release Scenarios for LSST Data*, RDO-011, URL https://docushare.lsstcorp.org/docushare/dsweb/Get/RDO-11

[1093] **[RTN-034]**, Marshall, P., 2023, *Planning Tools for Rubin Operations*, RTN-034, URL https://rtn-034.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1094] **[RTN-040]**, Marshall, P., 2023, *The Rubin Resource Forum Charter*, RTN-040, URL https://rtn-040.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1095] **[RTN-070]**, Marshall, P., 2023, *Hiring Recipe*, RTN-070, URL https://rtn-070.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1096] **[RTN-035]**, Marshall, P., et al., 2023, *The Rubin Operations Center at SLAC*, RTN-035, URL https://rtn-035.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1097] **[PSTN-030]**, Mason, B., 2020, *LSST Education and Public Outreach: Infrastructure Overview*, PSTN-030, URL https://pstn-030.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1098] Matheson, T., Stubens, C., Wolf, N., et al., 2021, AJ, 161, 107 (arXiv:2011.12385), doi:10.3847/1538-3881/abd703, ADS Link

[1099] **[ITTN-022]**, Maulen, G., 2020, *Summit Building Fiber/Copper Deployment*, ITTN-022, URL https://ittn-022.lsst.io/,
Vera C. Rubin Observatory

[1100] **[ITTN-024]**, Maulen, G., 2020, *Summit Outside of Building Fiber/Copper Deployment*, ITTN-024, URL https://ittn-024.lsst.io/,
Vera C. Rubin Observatory

[1101] **[ITTN-025]**, Maulen, G., 2020, *La Serena Building Fiber/Copper Deployment*, ITTN-025, URL https://ittn-025.lsst.io/,
Vera C. Rubin Observatory

[1102] **[ITTN-026]**, Maulen, G., 2020, *La Serena Datacenter Fiber/Copper Deployment*, ITTN-026, URL https://ittn-026.lsst.io/,
Vera C. Rubin Observatory

[1103] **[ITTN-034]**, Maulen, G., 2020, *Summit base link*, ITTN-034, URL https://ittn-034.lsst.io/,
Vera C. Rubin Observatory

[1104] **[ITTN-046]**, Maulen, G., 2021, *Cameras Fibers*, ITTN-046, URL https://ittn-046.lsst.io/,
Vera C. Rubin Observatory

[1105] **[ITTN-047]**, Maulen, G., Constanzo, J., Stockebrand, H., 2021, *Third Floor Network Planning*, ITTN-047, URL https://ittn-047.lsst.io/,
Vera C. Rubin Observatory

[1106] 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

[1107] **[LPM-51]**, McKercher, R., 2013, *Document Management Plan*, LPM-51, URL https://ls.st/LPM-51

[1108] **[LPM-43]**, McKercher, R., 2016, *WBS Structure*, LPM-43, URL https://ls.st/LPM-43

[1109] **[LPM-44]**, McKercher, R., 2016, *WBS Dictionary*, LPM-44, URL https://ls.st/LPM-44

[1110] 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

[1111] Melnik, S., Gubarev, A., Long, J.J., et al., 2010, Proc. VLDB Endow., 3, 330, doi:10.14778/1920841.1920886

[1112] **[DMTN-058]**, Menanteau, F., 2017, *Design Concepts for the DM Header Service*, DMTN-058, URL https://dmtn-058.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1113] 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

[1114] **[DMTN-064]**, Meyers, J., 2018, *Hyper Suprime-Cam donut analysis*, DMTN-064, URL https://dmtn-064.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1115] Meyers, J.E., Burchat, P.R., 2015, ApJ, 807, 182 (arXiv:1409.6273), doi:10.1088/0004-637X/807/2/182, ADS Link

[1116] 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

[1117] 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

[1118] Michalik, D., Lindegren, L., Hobbs, D., Lammers, U., 2014, A&A, 571, A85 (arXiv:1407.4025), doi:10.1051/0004-6361/201424606, ADS Link

[1119] Michalik, D., Lindegren, L., Hobbs, D., 2015, A&A, 574, A115 (arXiv:1412.8770), doi:10.1051/0004-6361/201425310, ADS Link

[1120] 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

[1121] Microsoft, Microsoft – SQL Server 2016, URL https://www.microsoft.com/en-us/sql-server/sql-server-2016

[1122] Microsystems, S., 1999, *Code Conventions for the Java Programming Language*, Tech. rep., Sun,
http://java.sun.com/docs/codeconv

[1123] Microsystems, S., 1999, *Java Look and Feel Design Guidelines*, Tech. rep., Sun,
http://java.sun.com/products/jlf/dg/index.htm

[1124] Microsystems, S., 2000, *How to write Doc Comments for JavaDoc*, Tech. rep., Sun,
http://java.sun.com/products/jdk/javadoc/writingdoccomments/index.html

[1125] Mignard, F., 2000, A&A, 354, 522, ADS Link

[1126] Mignard, F., 2001, *A practical scanning law for GAIA simulations*, Tech. rep., CERGA, GAIA-FM-010

[1127] Mignard, F., 2002, In: Bienayme, O., Turon, C. (eds.) EAS Publications Series, vol. 2 of Engineering and Science, 107–121, ADS Link

[1128] Mignard, F., 2002, *Considerations on the orbit of Gaia for simulations*, Tech. rep., Observatoire de la Côte D'Azur/CERGA,
GAIA-FM-011

[1129] Mignard, F., 2004,
Observatoire de la Côte D'Azur/CERGA, private communication

[1130] 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

[1131] Mignard, F., Klioner, S., 2012, A&A, 547, A59 (arXiv:1207.0025), doi:10.1051/0004-6361/201219927, ADS Link

[1132] 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

[1133] 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

[1134] **[LTS-210]**, Mills, D., 2015, *Engineering and Facility Database Design Document*, LTS-210, URL https://ls.st/LTS-210

[1135] Mohammadi, M., Bazhirov, T., 2017, ArXiv e-prints (arXiv:1702.02968), ADS Link

[1136] Möller, A., Peloton, J., Ishida, E.E.O., et al., 2021, MNRAS, 501, 3272 (arXiv:2009.10185), doi:10.1093/mnras/staa3602, ADS Link

[1137] 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

[1138] Monash, C., 2009, eBay's two enormous data warehouses, URL http://www.dbms2.com/2009/04/30/ebays-two-enormous-data-warehouses/

[1139] 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/

[1140] 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/

[1141] **[TSTN-006]**, Mondrik, N., Ingraham, P., Brownsburger, S., 2019, *LSST Atmospheric Transmission and Slitless Spectrograph (LATISS) Instrument Handbook*, TSTN-006, URL https://tstn-006.lsst.io/, Vera C. Rubin Observatory

[1142] Moniez, M., 2003, A&A, 412, 105 (arXiv:astro-ph/0302460), doi:10.1051/0004-6361:20031478, ADS Link

[1143] **[DMTN-194]**, Moolekamp, F., 2023, *The current state of scarlet and looking toward the future*, DMTN-194, URL https://dmtn-194.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[1144] **[DMTN-026]**, Moolekamp, F., Schellart, P., 2017, *Pybind11 wrapping step-by-step*, DMTN-026, URL https://dmtn-026.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[1145] Moore, G.E., 1965, Electronics, 38, 114

[1146] 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

[1147] Mora, A., Biermann, M., Brown, A.G.A., et al., 2014, In: Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, vol. 9143 of Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 0 (arXiv:1407.3729), doi:10.1117/12.2054602, ADS Link

[1148] Moreau, L., Clifford, B., Freire, J., et al., 2011, Future Generation Computer Systems, 27, 743, URL https://eprints.soton.ac.uk/271449/

[1149] Moreno, F., Molina, A., Ortiz, J.L., 1997, A&A, 327, 1253, ADS Link

[1150] **[DMTN-031]**, Morrison, C.B., 2018, *Pessimistic Pattern Matching for LSST*, DMTN-031, URL https://dmtn-031.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[1151] MPI, MPI Documents, URL http://mpi-forum.org/docs/

[1152] MPI4PY, MPI for Python, URL http://mpi4py.readthedocs.io/en/stable/

[1153] **[DMTR-71]**, Mueller, F., 2019, *LVV-P46 (2018 Qserv Large Scale Testing) Test Plan and Report*, DMTR-71, URL https://dmtr-71.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[1154] **[LDM-552]**, Mueller, F., 2019, *Distributed Database Software Test Specification*, LDM-552, URL https://ldm-552.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[1155] **[DMTN-243]**, Mueller, F., Gaponenko, I., Gates, J., et al., 2022, *Qserv: A Distributed Petascale Database for the LSST Catalogs*, DMTN-243, URL https://dmtn-243.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1156] Muinonen, K., Belskaya, I.N., Cellino, A., et al., 2010, Icarus, 209, 542, doi:10.1016/j.icarus.2010.04.003, ADS Link

[1157] 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

[1158] Munari, U., Tomasella, L., 1999, A&AS, 137, 521, ADS Link

[1159] **[LDM-156]**, Myers, J., Jones, L., Axelrod, T., 2013, *Moving Object Pipeline System Design*, LDM-156, URL https://ls.st/LDM-156

[1160] 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

[1161] Naghib, E., Yoachim, P., Vanderbei, R.J., Connolly, A.J., Jones, R.L., 2018, arXiv e-prints, arXiv:1810.04815 (arXiv:1810.04815), ADS Link

[1162] Narayan, G., Snodgrass, R., Keceioglu, J., et al., 2015, IAU General Assembly, 22, 58269, ADS Link

[1163] 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

[1164] NASA/Science Office of Standards and Technology, 1995, *Definition of the Flexible Image Transport System (FITS)*, Tech. Rep. NOST 100-1.1, NASA/NOST

[1165] 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

[1166] 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

[1167] 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

[1168] 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

[1169] 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

[1170] **[LTS-206]**, Neill, D., Sebag, J., Gressler, W., 2017, *Hexapods and Rotator Specifications Document*, LTS-206, URL https://ls.st/LTS-206

[1171] **[RTN-037]**, Neilsen, E., 2022, *Architecture for Scheduler and Observing Progress Monitoring Software*, RTN-037, URL https://rtn-037.lsst.io/, Vera C. Rubin Observatory Technical Note

[1172] **[RTN-048]**, Neilsen, E., 2022, *Requirements for Scheduler and Observing Progress Monitoring Software*, RTN-048, URL https://rtn-048.lsst.io/, Vera C. Rubin Observatory Technical Note

[1173] **[RTN-016]**, Neilsen, E., 2023, *Background and concepts for monitoring survey progress and scheduler performance*, RTN-016, URL https://rtn-016.lsst.io/, Vera C. Rubin Observatory Technical Note

[1174] **[RTN-022]**, Neilsen, E., 2023, *Seeing values for LSST strategy simulations*, RTN-022, URL https://rtn-022.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1175] **[RTN-012]**, Neilsen, E., Jones, L., Yoachim, P., 2020, *Approximating Pre-calculated Sky Brightness with Zernike Coefficients*, RTN-012, URL https://rtn-012.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1176] **[RTN-014]**, Neilsen, E., Jones, L., Yoachim, P., 2021, *Lunar Complications in the Scheduling of Deep Drilling Fields*, RTN-014, URL https://rtn-014.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1177] **[DMTN-149]**, Nelson, S., 2020, *Alert Stream Simulator for Community Broker Development*, DMTN-149, URL https://dmtn-149.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1178] **[DMTN-183]**, Nelson, S., 2021, *Alert Database Design*, DMTN-183, URL https://dmtn-183.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1179] **[DMTN-210]**, Nelson, S., 2022, *Implementation of the LSST Alert Distribution System*, DMTN-210, URL https://dmtn-210.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1180] **[DMTN-214]**, Nelson, S., Smart, B., 2023, *Alert Distribution System Operator's Manual*, DMTN-214, URL https://dmtn-214.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1181] **[LSE-479]**, Network Engineering Team (NET), 2020, *Network Technical Document*, LSE-479, URL https://ls.st/LSE-479

[1182] 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

[1183] **[LDM-502]**, Nidever, D., Economou, F., 2016, *The Measurement and Verification of DM Key Performance Metrics*, LDM-502, URL https://ls.st/LDM-502

[1184] 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

[1185] 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

[1186] Nieto-Santisteban, M.A., Szalay, A.S., Thakar, A.R., et al., 2005, ArXiv Computer Science e-prints (arXiv:cs/0502018), ADS Link

[1187] **[SITCOMTN-095]**, Noarbe, N.S., 2023, *M1M3 - Settling time after a slew*, SITCOMTN-095, URL https://sitcomtn-095.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1188] 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

[1189] **[LCA-227]**, Nordby, M., Kurita, N., O'Neill, F., Marsh, D., 2014, *LSST Camera Quality Implementation Plan*, LCA-227, URL https://ls.st/LCA-227

[1190] Nordin, J., Brinnel, V., van Santen, J., et al., 2019, A&A, 631, A147 (arXiv:1904.05922), doi:10.1051/0004-6361/201935634, ADS Link

[1191] Nordstroem, B., Latham, D.W., Morse, J.A., et al., 1994, A&A, 287, 338, ADS Link

[1192] Obe, R.O., Hsu, L.S., 2015, *PostGIS in Action*, Manning Publications Co., Greenwich, CT, USA, 2nd edn.

[1193] O'Connor, P., 2015, Journal of Instrumentation, 10, C05010 (arXiv:1501.04137), doi:10.1088/1748-0221/10/05/C05010, ADS Link

[1194] **[RTN-060]**, Olsen, K., 2023, *Supporting Computational Science with Rubin LSST*, RTN-060, URL https://rtn-060.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1195] **[RTN-062]**, Olsen, K., 2023, *In-Kind Team Communications Plan*, RTN-062, URL https://rtn-062.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1196] 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,
Treball GAIA-C1-ESAC-HA-WOM-003

[1197] **[DMTN-128]**, O'Mullane, W., 2019, *LSST Data Management All Hands*, DMTN-128, URL https://dmtn-128.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1198] **[DMTN-130]**, O'Mullane, W., 2019, *Technical items to honor a tech great*, DMTN-130, URL https://dmtn-130.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1199] **[DMTN-131]**, O'Mullane, W., 2019, *When clouds might be good for LSST*, DMTN-131, URL https://dmtn-131.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1200] **[DMTN-134]**, O'Mullane, W., 2019, *Interactiong with DOE LABs*, DMTN-134, URL https://dmtn-134.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1201] **[LDM-722]**, O'Mullane, W., 2019, *DM provenance review WG*, LDM-722, URL https://ldm-722.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[1202] **[PSTN-002]**, O'Mullane, W., 2019, *Understanding of Telescope and Site Software situation*, PSTN-002, URL https://pstn-002.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1203] **[DMTN-144]**, O'Mullane, W., 2020, *Distribution of Rubin Observatory data outside the data rights community*, DMTN-144, URL https://dmtn-144.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1204] **[DMTN-145]**, O'Mullane, W., 2020, *Bringing Rubin Observatory software together*, DMTN-145, URL https://dmtn-145.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1205] **[LDM-702]**, O'Mullane, W., 2020, *Image display working group charge*, LDM-702, URL https://ldm-702.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[1206] **[PSTN-050]**, O'Mullane, W., 2020, *Notes on use of TeX and texmf for Construction papers*, PSTN-050, URL https://pstn-050.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1207] **[DMTN-108]**, O'Mullane, W., 2021, *Security of Rubin Observatory data*, DMTN-108, URL https://dmtn-108.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1208] **[LDM-572]**, O'Mullane, W., 2021, *Chilean Data Access Center*, LDM-572, URL https://ldm-572.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[1209] **[PSTN-017]**, O'Mullane, W., 2021, *Overview of LSST Data Management*, PSTN-017, URL https://pstn-017.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1210] **[RTN-001]**, O'Mullane, W., 2021, *Data Preview 0: Definition and planning.*, RTN-001, URL https://rtn-001.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1211] **[DMTN-223]**, O'Mullane, W., 2023, *User batch - possibilities and plans.*, DMTN-223, URL https://dmtn-223.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1212] **[DMTN-232]**, O'Mullane, W., 2023, *Celebratory Milestones*, DMTN-232, URL https://dmtn-232.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1213] **[DMTN-246]**, O'Mullane, W., 2023, *Running external code with Rubin pipelines*, DMTN-246, URL https://dmtn-246.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1214] **[DMTN-263]**, O'Mullane, W., 2023, *ObsLocTap: Publishing the Rubin Observing Schedule*, DMTN-263, URL https://dmtn-263.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1215] **[RTN-031]**, O'Mullane, W., 2023, *Second data facilities workshop findings*, RTN-031, URL https://rtn-031.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1216] **[RTN-046]**, O'Mullane, W., 2023, *Management and Execution plan for Data Management Operations.*, RTN-046, URL https://rtn-046.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1217] **[RTN-065]**, O'Mullane, W., 2023, *Initial USDF throughput tests*, RTN-065, URL https://rtn-065.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1218] **[SITCOMTN-052]**, O'Mullane, W., 2023, *SITCOM Milestone summary*, SITCOMTN-052, URL https://sitcomtn-052.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1219] **[RTN-069]**, O'Mullane, W., 2024, *Summit Software Team*, RTN-069, URL https://rtn-069.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1220] **[LDM-563]**, O'Mullane, W., Jenness, T., 2017, *Butler Working Group Charge*, LDM-563, URL https://ls.st/LDM-563

[1221] O'Mullane, W., Lindegren, L., 1999, Baltic Astronomy, 8, 57, ADS Link

[1222] O'Mullane, W., Lindegren, L., 1999, *An Object-Oriented Framework for GAIA Data Processing*, Tech. rep., ESA

[1223] 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

[1224] **[PSTN-003]**, O'Mullane, W., Mueller, F., 2019, *Discussion of Object vs. Source table queries and data distribution*, PSTN-003, URL https://pstn-003.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1225] **[ITTN-006]**, O'Mullane, W., Silva, C., 2020, *Management and Planning of Rubin IT*, ITTN-006, URL https://ittn-006.lsst.io/,
Vera C. Rubin Observatory

[1226] **[DMTN-153]**, O'Mullane, W., Slater, C., 2020, *Schema Management in DM*, DMTN-153, URL https://dmtn-153.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1227] **[DMTN-072]**, O'Mullane, W., Swinbank, J., 2018, *Cloud technical assesment*, DMTN-072, URL https://dmtn-072.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1228] **[LPM-221]**, O'Mullane, W., Willman, B., 2017, *Charge for LSST Data Access Policy Working Group*, LPM-221, URL https://ls.st/LPM-221

[1229] 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

[1230] 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

[1231] 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

[1232] 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

[1233] OMullane, 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

[1234] O'Mullane, W., Lammers, U., Bailer-Jones, C., et al., 2006, ArXiv Astrophysics e-prints (arXiv:astro-ph/0611885), ADS Link

[1235] O'Mullane, W., Hoar, J., Lammers, U., 2007, ArXiv e-prints, 712 (arXiv:0712.0249), ADS Link

[1236] O'Mullane, W., Hernández, J., Hoar, J., Lammers, U., 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, 470, ADS Link

[1237] 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

[1238] 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

[1239] 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

[1240] O'Mullane, W., Luri, X., Parsons, P., et al., 2011, ArXiv e-prints (arXiv:1108.0355), ADS Link

[1241] **[LDM-553]**, O'Mullane, W., Swinbank, J.D., Jurić, M., DMLT, 2017, *Evolution of the Data Management Plan and Organization*, LDM-553, URL https://ls.st/LDM-553

[1242] **[DMTN-078]**, O'Mullane, W., Swinbank, J., Lim, K., et al., 2018, *Potential proofs of concept for cloud deployment*, DMTN-078, URL https://dmtn-078.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[1243] O'Mullane, W., Gaffney, N., Economou, F., et al., 2019, arXiv e-prints, arXiv:1907.13060 (arXiv:1907.13060), ADS Link

[1244] **[DMTN-119]**, O'Mullane, W., Gruendl, R., Blum, R., 2019, *Report on Operations Rehersal #1*, DMTN-119, URL https://dmtn-119.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[1245] **[DMTN-096]**, O'Mullane, W., Swinbank, J., Guy, L., Bauer, A., 2020, *Implementation and impacts of DM scope options.*, DMTN-096, URL https://dmtn-096.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[1246] **[LPM-251]**, O'Mullane, W., Willman, B., Graham, M., Guy, L., Blum, R., 2020, *Proposed Policy for Independent Data Access Centers*, LPM-251, URL https://lpm-251.lsst.io/, Vera C. Rubin Observatory

[1247] **[DMTN-209]**, O'Mullane, W., Economou, F., Huang, F., et al., 2021, *Rubin Science Platform on Google: the story so far.*, DMTN-209, URL https://dmtn-209.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[1248] **[LSO-011]**, O'Mullane, W., Marshall, P., Guy, L., 2021, *OBSOLETE see RDO-11 . Release Scenarios for LSST Data*, LSO-011, URL https://lso-011.lsst.io/, Vera C. Rubin Observatory

[1249] **[RTN-003]**, O'Mullane, W., Willman, B., Graham, M., et al., 2021, *Guidelines for Rubin Independent Data Access Centers*, RTN-003, URL https://rtn-003.lsst.io/, Vera C. Rubin Observatory Technical Note

[1250] **[RTN-013]**, O'Mullane, W., Dubois, R., Chiang, H.F., 2022, *Near term workflow for pre-operations with PanDA*, RTN-013, URL https://rtn-013.lsst.io/, Vera C. Rubin Observatory Technical Note

[1251] **[DMTN-240]**, O'Mullane, W., Economou, F., Lim, K.T., et al., 2022, *Software Architecture and System Design of Rubin Observatory*, DMTN-240, URL https://dmtn-240.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[1252] **[DMTN-199]**, O'Mullane, W., Allbery, R., AlSayyad, Y., et al., 2023, *Rubin Observatory Data Security Standards Implementation*, DMTN-199, URL https://dmtn-199.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[1253] **[RTN-030]**, O'Mullane, W., Allbery, R., Dubois, R., Lim, K., 2023, *Rubin Data and Information Security Plan*, RTN-030, URL https://rtn-030.lsst.io/, Vera C. Rubin Observatory Technical Note

[1254] **[RTN-041]**, O'Mullane, W., Alsayyad, Y., Chiang, H.F., et al., 2023, *Data Preview 0.2 and Operations rehearsal for DRP.*, RTN-041, URL https://rtn-041.lsst.io/, Vera C. Rubin Observatory Technical Note

[1255] **[DMTN-135]**, O'Mullane, W., Dubois, R., Butler, M., Lim, K.T., 2023, *DM sizing model and cost plan for construction and operations.*, DMTN-135, URL https://dmtn-135.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[1256] **[LDM-564]**, O'Mullane, W., Economou, F., Jenness, T., Loftus, A., Swinbank, J.D., 2023, *Data Management Releases for Verification/Integration*, LDM-564, URL https://ldm-564.lsst.io/, Vera C. Rubin Observatory Data Management Controlled Document

[1257] **[RTN-053]**, O'Mullane, W., Lim, K., Reinking, H., 2023, *L2 - USDF ready for ComCam processing*, RTN-053, URL https://rtn-053.lsst.io/, Vera C. Rubin Observatory Technical Note

[1258] **[LDM-294]**, O'Mullane, W., Swinbank, J., Juric, M., Guy, L., DMLT, 2023, *Data Management Organization and Management*, LDM-294, URL https://ldm-294.lsst.io/, Vera C. Rubin Observatory Data Management Controlled Document

[1259] **[LDM-503]**, O'Mullane, W., Swinbank, J., Juric, M., et al., 2023, *Data Management Test Plan*, LDM-503, URL https://ldm-503.lsst.io/, Vera C. Rubin Observatory Data Management Controlled Document

[1260] **[RTN-005]**, O'Mullane, W., Bauer, A., Blum, R., et al., 2024, *Rubin Operations Work Management and Budget Planning*, RTN-005, URL https://rtn-005.lsst.io/, Vera C. Rubin Observatory Technical Note

[1261] 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

[1262] OpenMP, OpenMP, URL http://www.openmp.org/

[1263] Oracle, Oracle – Database 12c, URL https://www.oracle.com/database/index.html

[1264] 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

[1265] 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

[1266] Ortiz I., D.P., Lusted J., 2008, *Astronomical Data Query Language*, Tech. rep., IVOA, REC-ADQL-2.0

[1267] **[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/llink/livelink/fetch/-415780/2741092/SAT_GEN_PL_3.0_06_MP_30May2011.pdf?nodeid=3120171&vernum=-2

[1268] **[ITTN-001]**, Oteiza, N.S., Hoblitt, J., 2019, *Redux Notes - Puppeton July, 2019*, ITTN-001, URL https://ittn-001.lsst.io/,
Vera C. Rubin Observatory

[1269] Otto, S., Politzer, H.D., Preskill, J., Wise, M.B., 1986, ApJ, 304, 62, doi:10.1086/164144, ADS Link

[1270] Owen, R., 2016, In: Python in Astronomy 2016, 28, doi:10.5281/zenodo.48410, ADS Link

[1271] **[TSTN-033]**, Owen, R., 2022, *Exploring Kafka for Telescope Control*, TSTN-033, URL https://tstn-033.lsst.io/,
Vera C. Rubin Observatory

[1272] **[DMTN-041]**, Owen, R., Krughoff, S., 2014, *Design of the LSST Camera Geometry system*, DMTN-041, URL https://dmtn-041.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1273] Owens, J.C., 1967, Appl. Opt., 6, 51, doi:10.1364/AO.6.000051, ADS Link

[1274] **[DMTN-168]**, Padolski, S., Ye, S., Karavakis, E., 2022, *Running Science Pipelines using PanDA*, DMTN-168, URL https://dmtn-168.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1275] Pankratius, V., Li, J., Gowanlock, M., et al., 2016, IEEE Intelligent Systems, 31, 3, doi:10.1109/MIS.2016.60

[1276] **[DMTN-005]**, Parejko, J., 2016, *Current LSST stack WCS usage*, DMTN-005, URL https://dmtn-005.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1277] **[DMTN-027]**, Parejko, J., 2016, *Renaming an LSST git Repository*, DMTN-027, URL https://dmtn-027.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1278] **[DMTN-010]**, Parejko, J., Owen, R., 2016, *WCS and Distortion Requirements and Existing Options*, DMTN-010, URL https://dmtn-010.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1279] **[SQR-017]**, Parejko, J., Sick, J., 2017, *Validation Metrics Framework*, SQR-017, URL https://sqr-017.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[1280] Parejko, J., Jenness, T., Owen, R., 2016, In: Python in Astronomy 2016, 17, doi:10.5281/zenodo.48414, ADS Link

[1281] **[SITCOMTN-077]**, Park, H., 2023, *Drift During Tracking Verification*, SITCOMTN-077, URL https://sitcomtn-077.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1282] **[SITCOMTN-039]**, Park, H., Hebert, C.A., Lage, C., Urbach, E., 2023, *Stuttered Image Analysis*, SITCOMTN-039, URL https://sitcomtn-039.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1283] **[SITCOMTN-084]**, Park, H., Lage, C., Boutigny, D., 2023, *Position Repeatability Analysis*, SITCOMTN-084, URL https://sitcomtn-084.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1284] **[DMTN-093]**, Patterson, M., Bellm, E., Swinbank, J., Nelson, S., 2020, *Design of the LSST Alert Distribution System*, DMTN-093, URL https://dmtn-093.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1285] **[DMTN-028]**, Patterson, M.T., 2018, *Benchmarking a distribution system for LSST alerts*, DMTN-028, URL https://dmtn-028.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1286] **[DMTN-081]**, Patterson, M.T., 2018, *Deploying an alert stream mini-broker prototype*, DMTN-081, URL https://dmtn-081.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1287] 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

[1288] Pegasus, Pegasus WMS, URL https://pegasus.isi.edu/

[1289] Pérez-Jordán, w., Castro-Almazán, J.A., Muñoz-Tuñón, C., 2018, MNRAS, 477, 5477 (arXiv:1804.05200), doi:10.1093/mnras/sty943, ADS Link

[1290] Perryman, A., 2010, *The Making of History's Greatest Star Map*, Astronomers' universe, Springer, URL http://books.google.es/books?id=P-5pZ8GNuPIC

[1291] Perryman, M., 2009, *Astronomical Applications of Astrometry: Ten Years of Exploitation of the Hipparcos Satellite Data*, Cambridge University Press

[1292] Perryman, M., de Bruijne, J., Lammers, U., 2008, Experimental Astronomy, 22, 143, doi:10.1007/s10686-008-9116-7, ADS Link

[1293] 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

[1294] 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

[1295] 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

[1296] **[SQR-007]**, Peterson, J.M., 2016, *SQuaRE's Logging, monitoring and metrics system*, SQR-007, URL https://sqr-007.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[1297] 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

[1298] **[LPM-122]**, Petravick, D., 2015, *LSST Information Classification Policy*, LPM-122, URL https://ls.st/LPM-122

[1299] **[DMTN-051]**, Petravick, D., 2017, *LDF File Systems Baseline Overview*, DMTN-051, URL https://dmtn-051.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1300] **[LPM-123]**, Petravick, D., 2017, *LSST General Acceptable Use Policy* , LPM-123, URL https://ls.st/LPM-123

[1301] **[LSE-239]**, Petravick, D., Hoblitt, J., Lim, K.T., et al., 2016, *Base Facility Data Center Design Requirements*, LSE-239, URL https://ls.st/LSE-239

[1302] **[LDM-230]**, Petravick, D., Butler, M., Gelman, M., 2018, *Concept of Operations for the LSST Data Facility Services*, LDM-230, URL https://ldm-230.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[1303] **[LDM-129]**, Petravick, D., Johnson, M., Butler, M., 2018, *LSST Data Facility Logical Information Technology and Communications Design*, LDM-129, URL https://ls.st/LDM-129

[1304] **[LPM-121]**, Petravick, D.L., Withers, A., 2016, *LSST Master Information Security Policy*, LPM-121, URL https://ls.st/LPM-121

[1305] Pickles, A.J., 1998, PASP, 110, 863, doi:10.1086/316197, ADS Link

[1306] 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

[1307] **[DMTN-003]**, Pietrowicz, S., 2015, *Description of v1.0 of the Alert Production Simulator*, DMTN-003, URL https://dmtn-003.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1308] **[DMTN-062]**, Pietrowicz, S., 2017, *OpenShift investigation*, DMTN-062, URL https://dmtn-062.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1309] **[DMTN-071]**, Pietrowicz, S., 2018, *Kubernetes Installation*, DMTN-071, URL https://dmtn-071.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1310] **[DMTN-084]**, Pietrowicz, S., 2018, *Kubernetes Notes*, DMTN-084, URL https://dmtn-084.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1311] **[DMTN-095]**, Pietrowicz, S., 2018, *Kubernetes Guidelines*, DMTN-095, URL https://dmtn-095.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1312] Pike, R., Dorward, S., Griesemer, R., Quinlan, S., 2005, Scientific Programming, 13, 277, doi:10.1155/2005/962135

[1313] **[Document-5373]**, Pinto, P., Kantor, J., Strauss, M., Sweeney, D., 2008, *Data Access White Paper*, Document-5373, URL https://ls.st/Document-5373

[1314] 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

[1315] **[Document-9541]**, Plante, R., Allsman, R., Axelrood, T., et al., 2010, *Results from Data Challenge 1*, Document-9541, URL https://ls.st/Document-9541

[1316] **[DMTN-079]**, Plutchak, J., 2018, *Investigations for Consolidating System Management and Deployment*, DMTN-079, URL https://dmtn-079.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1317] Pourbaix, D., 2002, A&A, 385, 686 (arXiv:astro-ph/0201132), doi:10.1051/0004-6361:20020149, ADS Link

[1318] Press, W.H., Teukolsky, S.A., Vetterling, W.T., Flannery, B.P., 2002, *Numerical Recipes in C*, Cambridge University Press, 2 edn.

[1319] 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

[1320] Project, A.L.S., Apache log4cxx, URL https://logging.apache.org/log4cxx/latest_stable/

[1321] **[LPM-162]**, Project Science Team, 2015, *Project Publication Policy*, LPM-162, URL https://ls.st/LPM-162

[1322] 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

[1323] Prusti, T., 2014, In: EAS Publications Series, vol. 67 of EAS Publications Series, 15–21, doi:10.1051/eas/1567003, ADS Link

[1324] **[SITCOMTN-092]**, Quint, B.C., 2023, *M1M3 Force Balance System - Inertia Compensation*, SITCOMTN-092, URL https://sitcomtn-092.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1325] **[SITCOMTN-109]**, Quint, B.C., 2024, *M1M3 - analyze position and rotation stability throughout a tracking period*, SITCOMTN-109, URL https://sitcomtn-109.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1326] Quobyte, Quobyte – Data Center File System, URL https://www.quobyte.com/

[1327] RabbitMQ, RabbitMQ – Messaging that just works, URL https://www.rabbitmq.com/

[1328] 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

[1329] **[Document-8590]**, Rasmussen, A., 2015, *Sensor Modeling for the LSST Camera Focal Plane: Current Status of SLAC Originated Code*, Document-8590, URL https://ls.st/Document-8590

[1330] **[DMTN-039]**, Rawls, M., 2019, *A Prototype AP Pipeline*, DMTN-039, URL https://dmtn-039.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1331] 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

[1332] 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

[1333] **[LSE-390]**, Reil, K., Claver, C., Riot, V., Krabbendam, V., 2020, *Commissioning Execution Plan*, LSE-390, URL https://ls.st/LSE-390

[1334] **[PSTN-036]**, Reil, K.A., 2020, *LSST Camera Instrumental Signature Characterization, Calibration and Removal*, PSTN-036, URL https://pstn-036.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1335] **[ITTN-012]**, Reinking, H., 2020, *Graylog k8s deployment and configuration*, ITTN-012, URL https://ittn-012.lsst.io/,
Vera C. Rubin Observatory

[1336] **[ITTN-027]**, Reinking, H., 2020, *Monitoring over Icinga2*, ITTN-027, URL https://ittn-027.lsst.io/,
Vera C. Rubin Observatory

[1337] **[ITTN-036]**, Reinking, H., 2021, *Virtualization Cluster Topology and Design*, ITTN-036, URL https://ittn-036.lsst.io/,
Vera C. Rubin Observatory

[1338] **[ITTN-048]**, Reinking, H., 2021, *CentOS System Disk Encryption*, ITTN-048, URL https://ittn-048.lsst.io/,
Vera C. Rubin Observatory

[1339] **[ITTN-052]**, Reinking, H., 2021, *Base Data Center Power off/Power on Procedure*, ITTN-052, URL https://ittn-052.lsst.io/,
Vera C. Rubin Observatory

[1340] **[ITTN-054]**, Reinking, H., 2021, *TIG Infrastructure*, ITTN-054, URL https://ittn-054.lsst.io/,
Vera C. Rubin Observatory

[1341] **[DMTN-007]**, Reiss, D., 2016, *Dipole characterization for image differencing*, DMTN-007, URL https://dmtn-007.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1342] **[DMTN-061]**, Reiss, D.J., 2017, *State of image subtraction in the LSST stack*, DMTN-061, URL https://dmtn-061.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1343] **[DMTN-021]**, Reiss, D.J., Lupton, R.H., 2016, *Implementation of Image Difference Decorrelation*, DMTN-021, URL https://dmtn-021.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1344] **[SMTN-007]**, Reuter, M., 2016, *So, You Want to Write a Scheduler for SOCS*, SMTN-007, URL https://smtn-007.lsst.io/,
Vera C. Rubin Observatory Simulations Team Technical Note

[1345] **[SITCOMTN-001]**, Reuter, M., 2019, *Operations Manual for Dome Seeing Monitor*, SITCOMTN-001, URL https://sitcomtn-001.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1346] **[TSTN-025]**, Reuter, M., 2020, *Stress Testing New Releases*, TSTN-025, URL https://tstn-025.lsst.io/,
Vera C. Rubin Observatory

[1347] **[PSTN-040]**, Reuter, M.A., 2019, *Tracking of LSST System Performance with Continuous Integration Methods*, PSTN-040, URL https://pstn-040.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1348] 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

[1349] **[Report-561]**, Review Committee, 2018, *Telescope & Site (T&S) Software Review Report*, Report-561, URL https://ls.st/Report-561

[1350] **[TSTN-002]**, Ribeiro, T., 2019, *Software Deployment Strategy*, TSTN-002, URL https://tstn-002.lsst.io/,
Vera C. Rubin Observatory

[1351] **[TSTN-012]**, Ribeiro, T., 2020, *Auxiliary Telescope M1 Pressure Look Up Table.*, TSTN-012, URL https://tstn-012.lsst.io/,
Vera C. Rubin Observatory

[1352] **[TSTN-013]**, Ribeiro, T., 2020, *Auxiliary Telescope Hexapod Look Up Table.*, TSTN-013, URL https://tstn-013.lsst.io/,
Vera C. Rubin Observatory

[1353] **[TSTN-016]**, Ribeiro, T., 2020, *Auxiliary Telescope: Determining sensitivity matrix for hexapod correction using CWFS data*, TSTN-016, URL https://tstn-016.lsst.io/,
Vera C. Rubin Observatory

[1354] **[TSTN-014]**, Ribeiro, T., 2021, *Auxiliary Telescope Building and fitting pointing model.*, TSTN-014, URL https://tstn-014.lsst.io/,
Vera C. Rubin Observatory

[1355] **[TSTN-017]**, Ribeiro, T., 2021, *Handling CSC configuration and ancillary data.*, TSTN-017, URL https://tstn-017.lsst.io/,
Vera C. Rubin Observatory

[1356] **[TSTN-029]**, Ribeiro, T., 2022, *The Engineering Facility Database Large File Object Infrastructure*, TSTN-029, URL https://tstn-029.lsst.io/,
Vera C. Rubin Observatory

[1357] **[TSTN-030]**, Ribeiro, T., 2022, *Kafka schemas and schema evolution*, TSTN-030, URL https://tstn-030.lsst.io/,
Vera C. Rubin Observatory

[1358] **[TSTN-031]**, Ribeiro, T., 2022, *Integration Milestone Pf*, TSTN-031, URL https://tstn-031.lsst.io/,
Vera C. Rubin Observatory

[1359] **[TSTN-035]**, Ribeiro, T., 2022, *Handling Targets of Opportunity*, TSTN-035, URL https://tstn-035.lsst.io/,
Vera C. Rubin Observatory

[1360] **[TSTN-037]**, Ribeiro, T., 2022, *Telescope and Site Software Verification strategy*, TSTN-037, URL https://tstn-037.lsst.io/,
Vera C. Rubin Observatory

[1361] **[TSTN-038]**, Ribeiro, T., 2022, *Postmortem for network failure for AT run in 20221206*, TSTN-038, URL https://tstn-038.lsst.io/,
Vera C. Rubin Observatory

[1362] **[TSTN-043]**, Ribeiro, T., 2023, *TMA + M1M3 dynamic testing*, TSTN-043, URL https://tstn-043.lsst.io/,
Vera C. Rubin Observatory

[1363] **[TSTN-034]**, Ribeiro, T., Fausti, A., 2022, *Catcher design*, TSTN-034, URL https://tstn-034.lsst.io/,
Vera C. Rubin Observatory

[1364] **[TSTN-001]**, Ribeiro, T., Ingraham, P., 2022, *Proposal to conduct in-house CSC development.*, TSTN-001, URL https://tstn-001.lsst.io/,
Vera C. Rubin Observatory

[1365] **[TSTN-020]**, Ribeiro, T., Ingraham, P., 2022, *Configuration User Manual*, TSTN-020, URL https://tstn-020.lsst.io/,
Vera C. Rubin Observatory

[1366] **[LSE-150]**, Ribeiro, T., O'Mullane, W., Axelrod, T., Mills, D., 2020, *Control Software Architecture*, LSE-150, URL https://lse-150.lsst.io/,
Vera C. Rubin Observatory

[1367] **[TSTN-023]**, Ribeiro, T., Reuter, M., Mills, D., Owen, R., 2020, *DDS slow-down on large scale system.*, TSTN-023, URL https://tstn-023.lsst.io/,
Vera C. Rubin Observatory

[1368] **[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*, TSTN-028, URL https://tstn-028.lsst.io/,
Vera C. Rubin Observatory

[1369] 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

[1370] 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

[1371] Rickman, H., 2001, Transactions of the International Astronomical Union Proceedings of the Twenty-Fourth General Assembly. Editedy by Hans Rickman. ISBN: 1-58381-087-0. San Francisco: Astronomical Society of the Pacific, 2001., 24, ADS Link

[1372] Risquez, D., van Leeuwen, F., Brown, A.G.A., 2012, Experimental Astronomy, 34, 669, doi:10.1007/s10686-012-9310-5, ADS Link

[1373] **[PSTN-012]**, Ritz, S., 2019, *LSST Camera Cryostat*, PSTN-012, URL https://pstn-012.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1374] **[PSTN-014]**, Ritz, S., 2019, *LSST Camera Body and Mechanisms*, PSTN-014, URL https://pstn-014.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1375] Rixon G., G.M., 2008, *Single-Sign-On Profile: Authentication Mechanisms*, Tech. rep., IVOA,
REC-SSO-1.01

[1376] **[SCTR-13]**, Roberts, A., 2020, *LVV-P58 Ccw + Camera Rotator Interface Verification On Camera Cart Test Plan and Report*, SCTR-13, URL https://sctr-13.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Report

[1377] **[SCTR-12]**, Roberts, A., 2021, *LVV-P64: CCW Functional Re-verification Test Plan and Report*, SCTR-12, URL https://sctr-12.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Report

[1378] **[SCTR-41]**, Roberts, A., 2022, *LVV-P81: Level 3 System Spread Configuration Integration Test Plan and Report*, SCTR-41, URL https://sctr-41.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Report

[1379] **[SITCOMTN-011]**, Roberts, A., Heyer, A., 2021, *CCW/Rotator Synchronous Motion Limit Switch Characterization*, SITCOMTN-011, URL https://sitcomtn-011.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1380] **[SITCOMTN-016]**, Roberts, A., Drass, H., Stalder, B., 2021, *CCW/Rotator Synchronous Motion Limit Switch Characterization with ComCam*, SITCOMTN-016, URL https://sitcomtn-016.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1381] **[SITCOMTN-053]**, Roberts, A., Drass, H., Stalder, B., 2022, *CCW/Rotator Synchronous Motion Limit Switch Characterization with ComCam*, SITCOMTN-053, URL https://sitcomtn-053.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1382] **[RDO-71]**, Roberts, A., Blum, R., Claver, C., et al., 2023, *Rubin Observatory Risk and Opportunity Management Plan*, RDO-71, URL https://rdo-71.lsst.io/,
Vera C. Rubin Observatory

[1383] Robin, A.C., Reylé, C., Derrière, S., Picaud, S., 2003, A&A, 409, 523 (arXiv:astro-ph/0401052), doi:10.1051/0004-6361:20031117, ADS Link

[1384] 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

[1385] Robin, A.C., Luri, X., Reylé, C., et al., 2012, ArXiv e-prints (arXiv:1202.0132), ADS Link

[1386] Roby, W., Wu, X., Ly, L., Goldina, T., 2015, In: Taylor, A.R., Rosolowsky, E. (eds.) Astronomical Data Analysis Software an Systems XXIV (ADASS XXIV), vol. 495 of Astronomical Society of the Pacific Conference Series, 417, ADS Link

[1387] 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

[1388] 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

[1389] **[SITCOMTN-099]**, Rodeghiero, G., 2023, *M2 Cell Rigid Body Motion fault debugging*, SITCOMTN-099, URL https://sitcomtn-099.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1390] **[SITCOMTN-103]**, Rodeghiero, G., 2024, *M2 no-back driving data analysis*, SITCOMTN-103, URL https://sitcomtn-103.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1391] Rose, J., Akella, R., Binegar, 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

[1392] Röser, S., Schilbach, E., Schwan, H., et al., 2008, A&A, 488, 401 (arXiv:0806.1009), doi:10.1051/0004-6361:200809775, ADS Link

[1393] **[SITCOMTN-093]**, Rosignoli, L., 2023, *LVV-1791 M2 RBP REPEATABILITY TEST*, SITCOMTN-093, URL https://sitcomtn-093.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1394] **[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

[1395] Royce, W., 1970, In: Proceedings of IEEE WESCON, 1–9, URL http://www.cs.umd.edu/class/spring2003/cmsc838p/Process/waterfall.pdf

[1396] Rucio, Rucio Distributed Data Management Documentation, URL http://rucio.cern.ch/

[1397] **[RTN-051]**, Rumore, M., 2023, *Rubin Observatory Risk Management Tool User Guide*, RTN-051, URL https://rtn-051.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1398] **[PSTN-026]**, Rykoff, E.S., 2019, *LSST Calibration Strategy and Pipelines*, PSTN-026, URL https://pstn-026.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1399] 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

[1400] 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>

[1401] 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

[1402] **[DMTN-018]**, Salnikov, A., 2016, *Re-visiting L1 Database Design*, DMTN-018, URL https://dmtn-018.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1403] **[DMTN-113]**, Salnikov, A., 2019, *Performance of RDBMS-based PPDB implementation*, DMTN-113, URL https://dmtn-113.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1404] **[DMTN-156]**, Salnikov, A., 2020, *Performance of Cassandra-based APDB implementation*, DMTN-156, URL https://dmtn-156.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1405] **[DMTN-162]**, Salnikov, A., 2020, *Planning next round of APDB tests*, DMTN-162, URL https://dmtn-162.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1406] **[DMTN-184]**, Salnikov, A., 2021, *Testing Cassandra APDB implementation on GCP*, DMTN-184, URL https://dmtn-184.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1407] **[DMTN-191]**, Salnikov, A., 2021, *Schema Migration for Butler Registry Database*, DMTN-191, URL https://dmtn-191.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1408] **[DMTN-236]**, Salnikov, A., 2022, *ObsCore as a View of Butler Registry Tables*, DMTN-236, URL https://dmtn-236.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1409] **[DMTN-268]**, Salnikov, A., 2023, *Data replication between APDB and PPDB*, DMTN-268, URL https://dmtn-268.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1410] **[DMTN-269]**, Salnikov, A., 2023, *Database schema versioning for APDB*, DMTN-269, URL https://dmtn-269.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1411] **[DMTN-256]**, Sánchez, B., 2023, *Status of Difference Image Analysis*, DMTN-256, URL https://dmtn-256.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1412] Sánchez, C., Carrasco Kind, M., Lin, H., et al., 2014, MNRAS, 445, 1482 (arXiv:1406.4407), doi:10.1093/mnras/stu1836, ADS Link

[1413] 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

[1414] **[DMTN-197]**, Saunders, C., 2021, *Streak Masking in DM Image Processing*, DMTN-197, URL https://dmtn-197.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1415] **[DMTN-266]**, Saunders, C., 2023, *Astrometric fitting for the Data Release Production*, DMTN-266, URL https://dmtn-266.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1416] **[SITCOMTN-066]**, Saunders, C., 2023, *SITCOM-716: Encoder Disagreement Study*, SITCOMTN-066, URL https://sitcomtn-066.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1417] **[SITCOMTN-073]**, Saunders, C., 2023, *Relative Pointing Verification*, SITCOMTN-073, URL https://sitcomtn-073.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1418] 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

[1419] Schechter, P.L., Sobel Levinson, R., 2011, PASP, 123, 812 (arXiv:1009.0708), doi:10.1086/661111, ADS Link

[1420] **[DMTN-013]**, Schellart, P., 2016, *Wrapping C++ with Cython*, DMTN-013, URL https://dmtn-013.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1421] **[DMTN-014]**, Schellart, P., 2016, *Wrapping C++ with pybind11*, DMTN-014, URL https://dmtn-014.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1422] **[DMTN-024]**, Schellart, P., 2016, *Pybind11 coding guidelines*, DMTN-024, URL https://dmtn-024.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1423] **[DMTN-043]**, Schellart, P., 2017, *Redesign of afw::math::Statistics*, DMTN-043, URL https://dmtn-043.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1424] **[DMTN-056]**, Schellart, P., Bosch, J., 2021, *Butler Redesign Strawman*, DMTN-056, URL https://dmtn-056.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1425] **[PSTN-013]**, Schindler, R.H., 2019, *LSST Camera Refrigeration*, PSTN-013, URL https://pstn-013.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1426] 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

[1427] 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

[1428] **[LTS-160]**, Schumacher, G., 2022, *TCS to Hexapods and Rotator Interface Control Document*, LTS-160, URL https://ls.st/LTS-160

[1429] **[LTS-161]**, Schumacher, G., 2022, *TCS to M1M3 Assembly Interface Control Document*, LTS-161, URL https://ls.st/LTS-161

[1430] **[LTS-162]**, Schumacher, G., 2022, *TCS to M2 Assembly Interface Control Document* , LTS-162, URL https://ls.st/LTS-162

[1431] **[LSE-62]**, Schumacher, G., Delgado, F., 2019, *LSST Observatory Control System Requirements*, LSE-62, URL https://ls.st/LSE-62

[1432] 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

[1433] **[Document-26952]**, Science Working Group of the LSST, Strauss, M.A., 2004, *Towards a Design Reference Mission for the Large Synoptic Survey Telescope*, Document-26952, URL https://ls.st/Document-26952

[1434] 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

[1435] 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

[1436] Seabroke, G.M., Holland, A.D., Burt, D., Robbins, M.S., 2010, Proc. SPIE, 7742, 774

[1437] 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

[1438] 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

[1439] **[LTS-88]**, Sebag, J., 2022, *M1M3 Mirror Support Design Requirements Document*, LTS-88, URL https://ls.st/LTS-88

[1440] **[LSE-60]**, Sebag, J., Krabbendam, V., 2018, *LSST Telescope and Site (TS) Requirements*, LSE-60, URL https://ls.st/LSE-60

[1441] **[DMTN-216]**, Sedaghat, N., 2023, *Deep Learning Approach to Real-Bogus Classification for LSST Alert Production*, DMTN-216, URL https://dmtn-216.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[1442] **[DMTN-217]**, Sedaghat, N., 2023, *temp*, DMTN-217, URL https://dmtn-217.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[1443] **[DMTN-272]**, Sedaghat, N., 2023, *Real-bogus classifier – status report*, DMTN-272, URL https://dmtn-272.lsst.io/, Vera C. Rubin Observatory Data Management Technical Note

[1444] **[DMTN-274]**, Sedaghat, N., 2023, *Report on the performance of image differencing from the perspective of the learning-based classifier task*, DMTN-274, URL https://dmtn-274.

lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1445] **[LSE-160]**, Selvy, B., 2013, *Verification and Validation Process*, LSE-160, URL https://ls.st/LSE-160

[1446] **[Document-26273]**, Selvy, B., 2017, *Risk & Opportunity Management Report May 2017*, Document-26273, URL https://ls.st/Document-26273

[1447] 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

[1448] 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

[1449] 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

[1450] **[LTS-807]**, Serio, A., 2018, *LSST Operations Viszualization Enviroment (LOVE) Requirements* , LTS-807, URL https://ls.st/LTS-807

[1451] 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

[1452] **[Document-10762]**, Shaw, R., Strauss, M., 2011, *LSST Data Challenge Handbook Version 1.1*, Document-10762, URL https://ls.st/Document-10762

[1453] Shaw, R., Axelrod, T., Becker, A.C., et al., 2012, In: American Astronomical Society Meeting Abstracts, vol. 219 of American Astronomical Society Meeting Abstracts, #156.03, ADS Link

[1454] **[Document-15286]**, Shaw, R.A., 2012, *LSST Data Challenge Handbook: Summer 2012 Data Release*, Document-15286, URL https://ls.st/Document-15286

[1455] **[Document-15299]**, Shaw, R.A., 2013, *LSST Data Challenge Handbook: Winter 2013 Early Data Release*, Document-15299, URL https://ls.st/Document-15299

[1456] 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 Proc. SPIE, 0, doi:10.1117/12.857293, ADS Link

[1457] **[LDM-226]**, Shaw, R.A., Jurić, M., Becker, A., et al., 2013, *LSST Data Challenge Report: Summer 2012/early-Winter 2013*, LDM-226, URL https://ls.st/LDM-226

[1458] **[RTN-017]**, (she/her), R.G., 2023, *Data rights and access management plan*, RTN-017, URL https://rtn-017.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1459] **[RTN-058]**, (She/Her), S.T., 2023, *Simonyi Survey Telescope Name Usage Convention*, RTN-058, URL https://rtn-058.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1460] **[SITCOMTN-031]**, (She/Her), S.T., Ingraham, P., 2022, *SIT-Com Observatory Workflows Charge*, SITCOMTN-031, URL https://sitcomtn-031.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1461] Sheldon, E.S., Huff, E.M., 2017, ApJ, 841, 24 (arXiv:1702.02601), doi:10.3847/1538-4357/aa704b, ADS Link

[1462] 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

[1463] 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

[1464] **[SITCOMTN-045]**, Shugart, A., 2022, *AuxTel Spectrograph Startup Procedure*, SITCOMTN-045, URL https://sitcomtn-045.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1465] **[SITCOMTN-074]**, Shugart, A., 2023, *LATISS Warm-up and Cool-down Procedure*, SITCOMTN-074, URL https://sitcomtn-074.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1466] 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

[1467] Shuster, M.D., 1993, Journal of the astronautical sciences, 41, n.4, 439

[1468] **[SQR-000]**, Sick, J., 2015, *The LSST DM Technical Note Publishing Platform*, SQR-000, URL https://sqr-000.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[1469] Sick, J., 2016, LSST DM Community Resources, URL http://dx.doi.org/10.5281/zenodo.44643,
NSF Pavilion Talk given at AAS 227.

[1470] **[LDM-493]**, Sick, J., 2016, *Data Management Documentation Architecture*, LDM-493, URL https://ldm-493.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[1471] **[SQR-006]**, Sick, J., 2016, *The LSST the Docs Platform for Continuous Documentation Delivery*, SQR-006, URL https://sqr-006.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[1472] **[SQR-013]**, Sick, J., 2016, *LSST DocHub Design*, SQR-013, URL https://sqr-013.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[1473] **[SQR-020]**, Sick, J., 2018, *Expressing LSST Project Metadata with JSON-LD*, SQR-020, URL https://sqr-020.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[1474] **[SQR-023]**, Sick, J., 2018, *Design of the notebook-based report system*, SQR-023, URL https://sqr-023.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[1475] **[SQR-032]**, Sick, J., 2019, *Rendering and testing examples and tutorials in LSST documentation*, SQR-032, URL https://sqr-032.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[1476] **[SQR-043]**, Sick, J., 2020, *community.lsst.org forum operations guide*, SQR-043, URL https://sqr-043.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[1477] **[SQR-060]**, Sick, J., 2021, *Design of the Semaphore user broadcast message system for the Rubin Science Platform*, SQR-060, URL https://sqr-060.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[1478] **[SQR-062]**, Sick, J., 2021, *The Times Square service for publishing parameterized Jupyter Notebooks in the Rubin Science platform*, SQR-062, URL https://sqr-062.lsst.io/, Vera C. Rubin Observatory SQuaRE Technical Note

[1479] **[SQR-065]**, Sick, J., 2022, *Design of Noteburst, a programatic JupyterLab notebook execution service for the Rubin Science Platform*, SQR-065, URL https://sqr-065.lsst.io/, Vera C. Rubin Observatory SQuaRE Technical Note

[1480] **[SQR-075]**, Sick, J., 2023, *A vertical monorepo architecture for FastAPI client-server codebases*, SQR-075, URL https://sqr-075.lsst.io/, Vera C. Rubin Observatory SQuaRE Technical Note

[1481] **[SQR-076]**, Sick, J., 2023, *Shared Pydantic schemas as the basis for Kafka/Avro messages in SQuaRE Roundtable*, SQR-076, URL https://sqr-076.lsst.io/, Vera C. Rubin Observatory SQuaRE Technical Note

[1482] **[SQR-082]**, Sick, J., 2023, *UX for Docs: Documentation Engineering at Rubin*, SQR-082, URL https://sqr-082.lsst.io/, Vera C. Rubin Observatory SQuaRE Technical Note

[1483] **[TESTTR-997]**, Sick, J., 2023, *LVV-TEST Test Test Plan and Report*, TESTTR-997, URL https://testtr-997.lsst.io/, Vera C. Rubin Observatory

[1484] **[TESTTR-998]**, Sick, J., 2023, *LVV-TEST Test document Test Plan and Report*, TESTTR-998, URL https://testtr-998.lsst.io/, Vera C. Rubin Observatory

[1485] **[SQR-083]**, Sick, J., 2024, *Patterns for accessing external resources from Times Square notebooks*, SQR-083, URL https://sqr-083.lsst.io/, Vera C. Rubin Observatory SQuaRE Technical Note

[1486] **[SQR-011]**, Sick, J., Economou, F., 2016, *LSST Data Management Communication & Publication Platforms*, SQR-011, URL https://sqr-011.lsst.io/, Vera C. Rubin Observatory SQuaRE Technical Note

[1487] **[SQR-019]**, Sick, J., Fausti, A., 2018, *LSST Verification Framework API Demonstration*, SQR-019, URL https://sqr-019.lsst.io/, Vera C. Rubin Observatory SQuaRE Technical Note

[1488] 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

[1489] **[DMTN-030]**, Sick, J., Gill, M.S.S., Krughoff, S., Swinbank, J., 2018, *Science Pipelines Documentation Design*, DMTN-030, URL https://dmtn-030.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1490] **[ITTN-013]**, Silva, C., 2020, *VLAN Assignments*, ITTN-013, URL https://ittn-013.lsst.io/,
Vera C. Rubin Observatory

[1491] **[ITTN-020]**, Silva, C., 2020, *Summit Service Levels*, ITTN-020, URL https://ittn-020.lsst.io/,
Vera C. Rubin Observatory

[1492] **[ITTN-021]**, Silva, C., 2020, *Base Service Levels*, ITTN-021, URL https://ittn-021.lsst.io/,
Vera C. Rubin Observatory

[1493] **[ITTN-031]**, Silva, C., 2020, *LHN Testing Plan*, ITTN-031, URL https://ittn-031.lsst.io/,
Vera C. Rubin Observatory

[1494] **[ITTN-032]**, Silva, C., 2020, *Level 3 Integration Lab*, ITTN-032, URL https://ittn-032.lsst.io/,
Vera C. Rubin Observatory

[1495] **[ITTN-033]**, Silva, C., 2020, *Notifications Workflow*, ITTN-033, URL https://ittn-033.lsst.io/,
Vera C. Rubin Observatory

[1496] **[ITTN-037]**, Silva, C., 2021, *IT Linux Repo*, ITTN-037, URL https://ittn-037.lsst.io/,
Vera C. Rubin Observatory

[1497] **[ITTN-038]**, Silva, C., 2021, *Cisco ACI Migration*, ITTN-038, URL https://ittn-038.lsst.io/,
Vera C. Rubin Observatory

[1498] **[ITTN-039]**, Silva, C., 2021, *Summit Computer Room Revamp*, ITTN-039, URL https://ittn-039.lsst.io/,
Vera C. Rubin Observatory

[1499] **[ITTN-042]**, Silva, C., 2021, *IT Priorities Planning*, ITTN-042, URL https://ittn-042.lsst.io/,
Vera C. Rubin Observatory

[1500] **[ITTN-030]**, Silva, C., 2022, *Tucson test stand Upgrade*, ITTN-030, URL https://ittn-030.lsst.io/,
Vera C. Rubin Observatory

[1501] **[ITTN-044]**, Silva, C., 2022, *LHN Specifications and Design Documents Catalog*, ITTN-044, URL https://ittn-044.lsst.io/,
Vera C. Rubin Observatory

[1502] **[ITTN-057]**, Silva, C., 2022, *Disaster Recovery - Computing*, ITTN-057, URL https://ittn-057.lsst.io/,
Vera C. Rubin Observatory

[1503] **[ITTN-058]**, Silva, C., 2022, *Disaster Recovery - Infrastructure Support Devices*, ITTN-058, URL https://ittn-058.lsst.io/,
Vera C. Rubin Observatory

[1504] **[ITTN-065]**, Silva, C., 2022, *DevOps Out of Hours Support*, ITTN-065, URL https://ittn-065.lsst.io/,
Vera C. Rubin Observatory

[1505] **[ITTN-067]**, Silva, C., 2022, *Rubin's Integration Guide*, ITTN-067, URL https://ittn-067.lsst.io/,
Vera C. Rubin Observatory

[1506] **[ITTN-055]**, Silva, C., 2023, *Disaster Recovery*, ITTN-055, URL https://ittn-055.lsst.io/,
Vera C. Rubin Observatory

[1507] **[ITTN-056]**, Silva, C., 2023, *Disaster Recovery - Network*, ITTN-056, URL https://ittn-056.lsst.io/,
Vera C. Rubin Observatory

[1508] **[ITTN-069]**, Silva, C., 2023, *Patching Strategy*, ITTN-069, URL https://ittn-069.lsst.io/,
Vera C. Rubin Observatory

[1509] **[RTN-049]**, Silva, C., Alexov, A., 2022, *Rubin Out of Hours Support*, RTN-049, URL https://rtn-049.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1510] **[ITTN-029]**, Silva, C., Hoblitt, J., 2022, *NCSA test stand relocation*, ITTN-029, URL https://ittn-029.lsst.io/,
Vera C. Rubin Observatory

[1511] **[ITTN-070]**, Silva, C., Hoblitt, J., 2023, *Rubin Observability Project*, ITTN-070, URL https://ittn-070.lsst.io/,
Vera C. Rubin Observatory

[1512] **[ITTN-059]**, Silva, C., Ingraham, P., 2022, *Maintenance Window*, ITTN-059, URL https://ittn-059.lsst.io/,
Vera C. Rubin Observatory

[1513] **[ITTN-061]**, Silva, C., Lupton, R., 2022, *Summit Computing Cluster*, ITTN-061, URL https://ittn-061.lsst.io/,
Vera C. Rubin Observatory

[1514] **[ITTN-043]**, Silva, C., Toro, E., Hoblitt, J., Constanzo, J., 2021, *Rubin Network Re-Engineering*, ITTN-043, URL https://ittn-043.lsst.io/,
Vera C. Rubin Observatory

[1515] **[ITTN-040]**, Silva, C., Maulen, G., Tapia, D., 2022, *Camera Fibers*, ITTN-040, URL https://ittn-040.lsst.io/,
Vera C. Rubin Observatory

[1516] 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

[1517] Simon, J.L., 1983, A&A, 120, 197, ADS Link

[1518] **[SCTR-11]**, Siruno, K., 2020, *LVV-P59 Camera Rotator Functional Re-Verification Test Plan and Report*, SCTR-11, URL https://sctr-11.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Report

[1519] **[SCTR-91]**, Siruno, K., 2023, *LVV-P95: Hexapod Actuator Redesign Verification Test Plan and Report*, SCTR-91, URL https://sctr-91.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Report

[1520] Sivia, D., 1996, *Data Analysis. A Bayesian Tutorial*, OUP, 1 edn.

[1521] Skrutskie, M.F., Cutri, R.M., Stiening, R., et al., 2006, The Astronomical Journal, 131, doi:10.1086/498708, ADS Link

[1522] **[DMTN-086]**, Slater, C., 2018, *Next-to-the-Database Processing Use Cases*, DMTN-086, URL https://dmtn-086.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1523] **[DMTN-237]**, Slater, C., 2022, *Rubin Plot Navigator*, DMTN-237, URL https://dmtn-237.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1524] **[DMTN-258]**, Slater, C., 2023, *Summer 2023 Crowded Fields Status*, DMTN-258, URL https://dmtn-258.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1525] **[DMTN-006]**, Slater, C., Jurić, M., Ivezić, Ž., Jones, L., 2016, *False Positive Rates in the LSST Image Differencing Pipeline*, DMTN-006, URL https://dmtn-006.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1526] **[LDM-153]**, Slater, C., Mueller, F., Klaveren, B.V., Becla, J., 2019, *LSST Database Baseline Schema*, LDM-153, URL https://ldm-153.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[1527] **[PSTN-045]**, Slater, C.T., 2019, *LSST Petascale Distributed Database*, PSTN-045, URL https://pstn-045.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1528] **[LDM-523]**, Slater, C.T., Jones, R.L., Bellm, E., Jurić, M., 2017, *Impact of a Heterogeneous Focal Plane on LSST Image Differencing*, LDM-523, URL https://ls.st/LDM-523

[1529] 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

[1530] 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 Proc. SPIE, 0, doi:10.1117/12.858322, ADS Link

[1531] **[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*, Document-11622, URL https://ls.st/Document-11622

[1532] **[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*, Document-10548, URL https://ls.st/Document-10548

[1533] Smolčić, V., Ivezić, Ž., Knapp, G.R., et al., 2004, ApJ, 615, L141 (arXiv:astro-ph/0403218), doi:10.1086/426475, ADS Link

[1534] Soderhjelm, S., 2004, *Theoretical modelling of observational double-star distribution functions.*, Tech. rep., ESA,
DMS-SS-05

[1535] 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

[1536] Soffel, M., Klioner, S.A., Petit, G., et al., 2003, AJ, 126, 2687 (arXiv:astro-ph/0303376), doi:10.1086/378162, ADS Link

[1537] Software, T., 2005, *TIOBE Programming Community Index*, Tech. rep., TIOBE, URL http://www.tiobe.com/tiobe-index

[1538] for Software Standarisation, E.B., Control, 2004, *Java Coding Standards*, Tech. rep., ESA, URL http://www.rssd.esa.int/llink/livelink/Java_coding_standards.pdf?func=doc.Fetch&nodeId=504569&docTitle=Java+coding+standards&vernum=1

[1539] Sordo, R., Vallenari, A., Tantalo, R., et al., 2011, Journal of Physics Conference Series, 328, 012006, doi:10.1088/1742-6596/328/1/012006, ADS Link

[1540] **[NIST.800-114]**, Souppaya, M., Scarfone, K., 2016, COMPUTER SECURITY, URL https://doi.org/10.6028/NIST.SP.800-114r1

[1541] **[NIST.800-46]**, Souppaya, M., Scarfone, K., 2016, COMPUTER SECURITY, URL https://doi.org/10.6028/NIST.SP.800-46r2

[1542] Sozzetti, A., 2005, PASP, 117, 1021 (arXiv:astro-ph/0507115), doi:10.1086/444487, ADS Link

[1543] 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

[1544] **[RTN-044]**, Speck, D., 2022, *USDF Butler Postgres Design*, RTN-044, URL https://rtn-044.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1545] 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

[1546] Springel, V., White, S.D.M., Jenkins, A., et al., 2005, Nature, 435, 629 (arXiv:astro-ph/0504097), doi:10.1038/nature03597, ADS Link

[1547] Spyak, P., Wolfe, W., 1991, Optical Engineering, 31, 1746

[1548] **[PSTN-035]**, Stalder, B., 2020, *Integration, Test and Commissioning Results from LSST Commissioning Camera*, PSTN-035, URL https://pstn-035.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1549] **[SITCOMTN-036]**, Stalder, B., 2022, *Image Quality Control - Concept of Operations*, SITCOMTN-036, URL https://sitcomtn-036.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1550] Stallman, R., 2001, *GNU Coding Standards*, Tech. rep., GNU

[1551] **[DMTN-099]**, Stephens, C., 2018, *Options for Generating Unique IDs in the LSST Gen3 Butler Registry*, DMTN-099, URL https://dmtn-099.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1552] Stetson, P.B., 1996, PASP, 108, 851, doi:10.1086/133808, ADS Link

[1553] **[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

[1554] **[ITTN-053]**, Stockebrand, H., 2022, *Securing VPN service with Multi-Factor Authentication*, ITTN-053, URL https://ittn-053.lsst.io/,
Vera C. Rubin Observatory

[1555] **[ITTN-060]**, Stockebrand, H., 2022, *Network Automation*, ITTN-060, URL https://ittn-060.lsst.io/,
Vera C. Rubin Observatory

[1556] Stone, R.C., 1996, PASP, 108, 1051, doi:10.1086/133831, ADS Link

[1557] 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

[1558] 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

[1559] **[RDO-051]**, Strauss, M., the Rubin Science Advisory Council, 2023, *Users Committee Charge*, RDO-051, URL https://rdo-051.lsst.io/,
Vera C. Rubin Observatory

[1560] 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

[1561] **[SITCOMTN-022]**, Stubbs, C., 2021, *Aux Tel Tracking Problem Report Nov 2021*, SITCOMTN-022, URL https://sitcomtn-022.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1562] **[SITCOMTN-021]**, Stubbs, C., Urbach, E., 2021, *Image Quality Team Report: A First Look at Auxiliary Telescope Tracking*, SITCOMTN-021, URL https://sitcomtn-021.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1563] **[PSTN-011]**, Stubbs, C.W., 2019, *LSST Camera Rafts*, PSTN-011, URL https://pstn-011.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1564] **[SITCOMTN-038]**, Suberlak, C., 2022, *AuxTel data analysis: images to Zernikes*, SITCOMTN-038, URL https://sitcomtn-038.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1565] **[SITCOMTN-044]**, Suberlak, C., 2022, *The Sensitivity of Active Optics System Algorithm to Offset Centroid*, SITCOMTN-044, URL https://sitcomtn-044.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1566] **[SITCOMTN-046]**, Suberlak, C., 2022, *AOS Algorithm for Wavefront Estimation*, SITCOMTN-046, URL https://sitcomtn-046.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1567] **[SITCOMTN-072]**, Suberlak, C., 2023, *Sensitivity Matrix Calculation for AuxTel*, SITCOMTN-072, URL https://sitcomtn-072.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1568] **[SITCOMTN-085]**, Suberlak, C., 2023, *Donut stacking vs pairing for wavefront sensing estimation*, SITCOMTN-085, URL https://sitcomtn-085.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1569] **[SITCOMTN-108]**, Suberlak, C., 2024, *Generating AOS simulations with opSim*, SITCOMTN-108, URL https://sitcomtn-108.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1570] **[DMTR-22]**, Suberlak, K., Ivezić, Ž., The PDAC Team, 2017, *Prototype Data Access Center: User Report*, DMTR-22, URL https://ls.st/DMTR-22

[1571] **[DMTN-077]**, Suberlak, K., Slater, C., Ivezić, Ž., 2018, *LSST Fall 2017 Crowded Fields Testing*, DMTN-077, URL https://dmtn-077.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1572] **[DMTN-012]**, Sullivan, I., 2016, *StarFast - A Fast Simulation Building Tool for Testing Algorithms*, DMTN-012, URL https://dmtn-012.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1573] **[DMTN-019]**, Sullivan, I., 2016, *Dipoles in difference imaging from DCR*, DMTN-019, URL https://dmtn-019.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1574] **[DMTN-037]**, Sullivan, I., 2018, *DCR-matched template generation*, DMTN-037, URL https://dmtn-037.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1575] **[DMTN-121]**, Sullivan, I., 2019, *Impact of variable seeing on DCR coadd generation*, DMTN-121, URL https://dmtn-121.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1576] **[DMTN-171]**, Sullivan, I., Bellm, E., 2021, *Fall 2020 status of crowded field processing with the LSST Alert Production Pipelines*, DMTN-171, URL https://dmtn-171.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1577] **[DMTN-017]**, Sullivan, I.S., Reiss, D.J., 2015, *Differential Chromatic Refraction: literature overview*, DMTN-017, URL https://dmtn-017.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1578] support, D., 2006, *Linux Deployment guide*, Tech. rep., Dell,
http://support.dell.com/support/edocs/software/appora10/lin10g/en/dg/10g21en0.pdf

[1579] **[LPM-55]**, Sweeney, D., McKercher, R., 2013, *Project Quality Assurance Plan*, LPM-55, URL https://ls.st/LPM-55

[1580] 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 Proc. SPIE, 0, doi:10.1117/12.857301, ADS Link

[1581] Swinbank, J., 2014, Astronomy and Computing, 7, 12 (arXiv:1409.4805), doi:10.1016/j.ascom.2014.09.001

[1582] Swinbank, J., 2015, LSST: Introduction and Data Management Requirements, URL http://wiki.ivoa.net/internal/IVOA/InterOpJune2015MCD/2015-06_-_LSST_at_IVOA_InterOp.pdf,
Presented at the IVOA Interoperability Meeting, Sesto, Italy

[1583] Swinbank, J., 2016, VOEvent Transport Protocol, URL http://wiki.ivoa.net/internal/IVOA/InterOpMay2016-TDIG/2016-05_-_VTP_at_InterOp.pdf,
Presentation at the Northern Spring IVOA Meeting, South Africa

[1584] **[DMTR-112]**, Swinbank, J., 2019, *LDM-503-07 (Camera Data Processing) Test Plan and Report*, DMTR-112, URL https://dmtr-112.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[1585] **[DMTR-192]**, Swinbank, J., 2020, *LDM-503-11b: Science Pipelines Fall 2019 Release Test Plan and Report*, DMTR-192, URL https://dmtr-192.lsst.io/,
Vera C. Rubin Observatory Data Management Test Report

[1586] **[DMTN-158]**, Swinbank, J., O'Mullane, W., 2024, *DM Milestone Summary*, DMTN-158, URL https://dmtn-158.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1587] **[DMTR-14]**, Swinbank, J., Bosch, J., Krughoff, S., 2016, *Characterization Metric Report: Science Pipelines Version 12.0*, DMTR-14, URL https://ls.st/DMTR-14

[1588] **[LDM-151]**, Swinbank, J., Axelrod, T., Becker, A., et al., 2020, *Data Management Science Pipelines Design*, LDM-151, URL https://ldm-151.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[1589] **[DMTN-044]**, Swinbank, J.D., 2017, *LSST DM Software Release Considerations*, DMTN-044, URL https://dmtn-044.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1590] **[LDM-622]**, Swinbank, J.D., 2018, *Data Management QA Strategy Working Group Charge*, LDM-622, URL https://ldm-622.lsst.io/,
Vera C. Rubin Observatory Data Management Controlled Document

[1591] **[DMTR-111]**, Swinbank, J.D., 2019, *LDM-503-09a (Science Pipelines Fall 2018 Release) Test Plan and Report*, DMTR-111, URL https://dmtr-111.lsst.io/, Vera C. Rubin Observatory Data Management Test Report

[1592] Szalay, A.S., Gray, J., Thakar, A.R., et al., 2002, eprint arXiv:cs/0202013 (arXiv:cs/0202013), ADS Link

[1593] 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

[1594] Szalay, A.S., Gray, J., Fekete, G., et al., 2007, eprint arXiv:cs/0701164 (arXiv:cs/0701164), ADS Link

[1595] 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/

[1596] **[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*, Publication-145, URL https://ls.st/Publication-145

[1597] Tabur, V., 2007, PASA, 24, 189 (arXiv:0710.3618), doi:10.1071/AS07028, ADS Link

[1598] Taff, L.G., Bucciarelli, B., Lattanzi, M.G., 1990, ApJ, 361, 667, doi:10.1086/169230, ADS Link

[1599] **[ITTN-072]**, Tapia, D., 2023, *Kubernetes Cluster Deployment*, ITTN-072, URL https://ittn-072.lsst.io/, Vera C. Rubin Observatory

[1600] **[ITTN-045]**, Tapia, D., Silva, C., 2022, *Summit Onboarding Procedure*, ITTN-045, URL https://ittn-045.lsst.io/, Vera C. Rubin Observatory

[1601] Tapiador, D., O'Mullane, W., Browni, A.G.A., et al., 2014, Computer Physics Communications, 185, doi:10.1016/j.cpc.2014.02.010

[1602] Taylor, M., Boch, T., Fitzpatrick, M., et al., 2011, ArXiv e-prints (arXiv:1110.0528), ADS Link

[1603] 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

[1604] project team, A.S., 2002, *Gaia System Level Technical Reassessment Study*, Tech. rep., EADS Astrium, EF5/FR/PC/038.02

[1605] team, E.A.G., 2005, *GAIA Definition Study*, Tech. rep., EADS/Astrium, Final Presentation, Noordwijk, June 8, 2005

[1606] Team, G.P., 2006, *Gaia Mission Implementation Requirement Document*, Tech. rep., ESA, GAIA-EST-RQ-00457

[1607] **[RTN-004]**, Team, T.C.E., the Operations Executive Team, 2022, *Guidelines for Community Participation in Data Preview 0*, RTN-004, URL `https://rtn-004.lsst.io/`, Vera C. Rubin Observatory Technical Note

[1608] **[LEP-031]**, Team, T.L.E., 2018, *LSST EPO Design*, LEP-031, URL `https://ls.st/LEP-031`

[1609] Texier, D., 2005, *Note on Science Operations Ground Segment Documentation*, Tech. rep., ESA, SOGS-TN-ESAC-DT-001

[1610] Thain, D., Tannenbaum, T., Livny, M., 2005, Concurrency - Practice and Experience, 17, 323, URL `https://research.cs.wisc.edu/htcondor/doc/condor-practice.pdf`

[1611] Thakar, A.R., 2008, Computing in Science and Engineering, 10, 9, doi:10.1109/MCSE.2008.17, ADS Link

[1612] 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

[1613] 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

[1614] The Gaia Team, Science Performance of the Gaia Mission, URL `https://www.cosmos.esa.int/web/gaia/science-performance`

[1615] **[RTN-045]**, The Rubin Observatory Community Science Team, 2023, *Guidelines for User Tutorials*, RTN-045, URL `https://rtn-045.lsst.io/`, Vera C. Rubin Observatory Technical Note

[1616] **[PSTN-055]**, The Rubin Observatory Survey Cadence Optimization Committee, 2023, *Survey Cadence Optimization Committee's Phase 2 Recommendations*, PSTN-055, URL https://pstn-055.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1617] **[ITTN-007]**, Thebo, A., 2020, *Infrastructure Monitoring*, ITTN-007, URL https://ittn-007.lsst.io/,
Vera C. Rubin Observatory

[1618] **[ITTN-008]**, Thebo, A., 2020, *Cerro Pachon/La Serena VPN*, ITTN-008, URL https://ittn-008.lsst.io/,
Vera C. Rubin Observatory

[1619] **[ITTN-009]**, Thebo, A., 2020, *Summit Time Synchronization*, ITTN-009, URL https://ittn-009.lsst.io/,
Vera C. Rubin Observatory

[1620] **[ITTN-010]**, Thebo, A., Hoblitt, J., 2023, *User Identification and Authorization*, ITTN-010, URL https://ittn-010.lsst.io/,
Vera C. Rubin Observatory

[1621] Tholen, D.J., 1984, Ph.D. Thesis

[1622] **[PSTN-006]**, Thomas, S., 2019, *Performance of the LSST Telescope*, PSTN-006, URL https://pstn-006.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1623] **[SCTR-51]**, Thomas, S., 2022, *LVV-P84: Alignment System Verification Test Plan and Report*, SCTR-51, URL https://sctr-51.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Report

[1624] **[SITCOMTN-023]**, Thomas, S., Guy, L., Roberts, A., 2022, *SIT-COM Work Management and Organization*, SITCOMTN-023, URL https://sitcomtn-023.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1625] 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

[1626] **[Document-31100]**, Thomson, J.R., 2019, *LSST Benchmarkin of Qserv and BigQuery*, Document-31100, URL https://ls.st/Document-31100

[1627] **[SQR-015]**, Thornton, A., 2017, *Creating Microservices for api.lsst.codes*, SQR-015, URL https://sqr-015.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[1628] **[SQR-052]**, Thornton, A., 2021, *Proposal for privilege separation in RSP Notebook Aspect containers*, SQR-052, URL https://sqr-052.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[1629] **[SQR-054]**, Thornton, A., 2021, *Moving RSP Interactive Notebook containers to conda*, SQR-054, URL https://sqr-054.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[1630] **[SQR-059]**, Thornton, A., 2021, *RSP Notebook container tag conventions*, SQR-059, URL https://sqr-059.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[1631] **[SQR-064]**, Thornton, A., 2022, *The sciplat-lab build process*, SQR-064, URL https://sqr-064.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[1632] **[SQR-070]**, Thornton, A., 2022, *A Telegraf Operator for Rubin Phalanx Applications*, SQR-070, URL https://sqr-070.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[1633] **[SQR-078]**, Thornton, A., 2023, *User Fileservers in the RSP*, SQR-078, URL https://sqr-078.lsst.io/,
Vera C. Rubin Observatory SQuaRE Technical Note

[1634] **[DMTN-112]**, Thornton, A., Allbery, R., 2020, *LSST DM Vault*, DMTN-112, URL https://dmtn-112.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1635] **[DMTN-066]**, Thrush, S., 2017, *Memory Needs of Pipeline tasks*, DMTN-066, URL https://dmtn-066.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1636] **[DMTN-161]**, Thrush, S., 2020, *Node Utilization for HSC-RC2 Reprocessing Jobs*, DMTN-161, URL https://dmtn-161.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1637] **[DMTN-004]**, Thukral, V., 2016, *Debugging in Docker Containers*, DMTN-004, URL https://dmtn-004.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1638] **[DMTN-009]**, Thukral, V., 2016, *Vertical-partition Join Performance in MySQL*, DMTN-009, URL https://dmtn-009.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1639] **[DMTR-16]**, Thukral, V., 2017, *Qserv Fall 16 Large Scale Tests/KPMs*, DMTR-16, URL https://ls.st/DMTR-16

[1640] **[DMTR-17]**, Thukral, V., 2018, *Qserv Fall 17 Large Scale Tests/KPMs*, DMTR-17, URL https://ls.st/DMTR-17

[1641] **[PSTN-009]**, Tiago, R., 2019, *LSST Observing System Software Architecture*, PSTN-009, URL https://pstn-009.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1642] **[PSTN-007]**, Tiago, R., 2020, *The LSST Scheduler Overview and Performance*, PSTN-007, URL https://pstn-007.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1643] 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

[1644] Tomaney, A.B., Crotts, A.P.S., 1996, AJ, 112, 2872 (arXiv:astro-ph/9610066), doi:10.1086/118228, ADS Link

[1645] 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

[1646] **[DMTN-047]**, Tommaney, J., Becla, J., Lim, K.T., Wang, D., 2011, *Tests with InfiniDB*, DMTN-047, URL https://dmtn-047.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1647] TOP500, URL http://www.top500.org,
TOP500 Supercomputer Sites

[1648] **[RTN-026]**, Tucker, D.L., 2022, *Validation Tests of the DP0.1 TAPserver on IDF*, RTN-026, URL https://rtn-026.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1649] 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

[1650] Turon, C., O'Flaherty, K.S., Perryman, M.A.C. (eds.), 2005, *ESA SP-576: The Three-Dimensional Universe with Gaia*

[1651] 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), ADS Link

[1652] **[LSE-63]**, Tyson, T., Team, D., Collaboration, S., 2017, *LSST Data Quality Assurance Plan*, LSE-63, URL https://lse-63.lsst.io/,
Vera C. Rubin Observatory

[1653] **[DMTN-221]**, Tzanidakis, A., Bellm, E., 2023, *Periodicity Analysis in Alert Production*, DMTN-221, URL https://dmtn-221.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1654] Ulin, T., 2013, Driving MySQL Innovation, Percona Live: MySQL Conference and Expo, URL https://www.youtube.com/watch?v=OpHTV59I1gs

[1655] 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

[1656] 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

[1657] 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

[1658] 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

[1659] 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

[1660] **[LDM-130]**, Unknown, 2017, *LSST Science User Interface and Tools Requirements*, LDM-130, URL https://ls.st/LDM-130

[1661] **[LDM-532]**, Unknown, 2017, *NCSA Enclave Test Specification*, LDM-532, URL https://ls.st/LDM-532

[1662] **[LDM-535]**, Unknown, 2017, *Data Backbone Test Specification*, LDM-535, URL https://ls.st/LDM-535

[1663] **[LDM-536]**, Unknown, 2017, *Data Backbone Data Services Test Specification*, LDM-536, URL https://ls.st/LDM-536

[1664] **[LDM-537]**, Unknown, 2017, *Data Backbone Infrastructure Test Specification*, LDM-537, URL https://ls.st/LDM-537

[1665] **[LDM-539]**, Unknown, 2017, *Data Access Center Enclave Test Specification*, LDM-539, URL https://ls.st/LDM-539

[1666] **[LDM-541]**, Unknown, 2017, *Commissioning Cluster Enclave Test Specification*, LDM-541, URL https://ls.st/LDM-541

[1667] **[SITCOMTN-034]**, Urbach, E., 2022, *Image Quality Team Work Repository*, SITCOMTN-034, URL https://sitcomtn-034.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1668] **[SITCOMTN-040]**, Urbach, E., 2022, *Aux Tel Accelerometer Analysis*, SITCOMTN-040, URL https://sitcomtn-040.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1669] **[SITCOMTN-041]**, Urbach, E., 2022, *AuxTel Anemometer Analysis*, SITCOMTN-041, URL https://sitcomtn-041.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1670] **[SITCOMTN-055]**, Urbach, E., 2023, *AuxTel Shack Hartmann Wavefront Sensor Analysis*, SITCOMTN-055, URL https://sitcomtn-055.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1671] **[SITCOMTN-060]**, Urbach, E., 2023, *Measurements of AuxTel Astigmatism*, SITCOMTN-060, URL https://sitcomtn-060.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1672] **[SITCOMTN-063]**, Urbach, E., 2023, *TMA 3.5 degree offset performance*, SITCOMTN-063, URL https://sitcomtn-063.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1673] **[SITCOMTN-106]**, Urbach, E.K., 2024, *Time Synchronization for the CBP Calibration System*, SITCOMTN-106, URL https://sitcomtn-106.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1674] 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

[1675] 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

[1676] **[Gaia-NT-32000-115-CNES]**, Valadier, J.C., 2008, *Etude de risque EBIOS du systme CNES-DPC (Limited distribution)*,
Gaia-NT-32000-115-CNES

[1677] 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

[1678] van Dokkum, P.G., 2001, PASP, 113, 1420 (arXiv:astro-ph/0108003), doi:10.1086/323894, ADS Link

[1679] **[LDM-131]**, van Dyk, S., Levine, D., 2013, *Science User Interface and Science User Tools Conceptual Design*, LDM-131, URL https://ls.st/LDM-131

[1680] van Leeuwen, F., 1997, Space Science Reviews, 81, 201, ADS Link

[1681] van Leeuwen, F., 2005, A&A, 439, 805 (arXiv:astro-ph/0505431), doi:10.1051/0004-6361:20053192, ADS Link

[1682] van Leeuwen, F., Fantino, E., 2005, A&A, 439, 791 (arXiv:astro-ph/0505432), doi:10.1051/0004-6361:20053193, ADS Link

[1683] 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

[1684] 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

[1685] VanderPlas, J.T., 2017, ArXiv e-prints (arXiv:1703.09824), ADS Link

[1686] VanderPlas, J.T., Ivezić, Ž., 2015, ApJ, 812, 18 (arXiv:1502.01344), doi:10.1088/0004-637X/812/1/18, ADS Link

[1687] 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

[1688] **[RTN-027]**, Verification, T.D., team:, V., MacArthur, L., et al., 2023, *Validation of the DP0.2 Processing*, RTN-027, URL https://rtn-027.lsst.io/, Vera C. Rubin Observatory Technical Note

[1689] Veron-Cetty, M., Veron, P., 2010, Astronomy and Astrophysics, 518, doi:10.1051/0004-6361/201014188, ADS Link

[1690] Vlemmings, W.H.T., Chatterjee, S., Brisken, W.F., et al., 2005, Memorie della Societa Astronomica Italiana, 76, 531 (arXiv:astro-ph/0509025), ADS Link

[1691] van der Vorst, H., 2003, *Iterative Krylov Methods for Large Linear Systems*, Cambridge University Press

[1692] 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

[1693] 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

[1694] Vuerli, C., O'Mullane, W., 2000, *DBMS-COTS test week report*, Tech. rep., ESA, PL-COM-OAT-TN-009

[1695] 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

[1696] 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

[1697] 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:http://doi.acm.org/10.1145/2063348.2063364

[1698] 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

[1699] **[RTN-015]**, Wang, M., 2023, *Brighter-Fatter Correction GPU Optimization Using CUDA C/C++*, RTN-015, URL https://rtn-015.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1700] Warell, J., Lagerkvist, C.I., 2006, A&A, submitted

[1701] **[DMTN-036]**, of Washington), J.P.U., Paris), P.A.L., 2018, *jointcal: Simultaneous Astrometry & Photometry for thousands of Exposures with Large CCD Mosaics*, DMTN-036, URL https://dmtn-036.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1702] **[DMTN-192]**, Waters, C., 2023, *Visualization of Calibration Verification*, DMTN-192, URL https://dmtn-192.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1703] **[DMTN-222]**, Waters, C., 2023, *Calibration Generation, Verification, Acceptance, and Certification.*, DMTN-222, URL https://dmtn-222.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1704] **[DMTN-233]**, Waters, C., 2023, *Queries for Calibration Quality Monitoring*, DMTN-233, URL https://dmtn-233.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1705] **[DMTN-262]**, Waters, C., 2023, *Integrating Calibration Products Into the QA and Visualization System*, DMTN-262, URL https://dmtn-262.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1706] **[DMTN-148]**, Waters, C.Z., 2021, *DM Calibration Products*, DMTN-148, URL https://dmtn-148.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1707] Wertz(Editor), J.R., 1978, *Spacecraft Attitude Determination and Control*, Kluwer Academic Publishers, 1 edn.

[1708] **[RTN-054]**, White, B., 2023, *Data Retention Plan*, RTN-054, URL https://rtn-054.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1709] **[RTN-059]**, White, B., 2023, *Rubin Data Retention Implementation Strategy*, RTN-059, URL https://rtn-059.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1710] Wickham, H., 2014, Journal of Statistical Software, Articles, 59, 1, URL https://www.jstatsoft.org/v059/i10, doi:10.18637/jss.v059.i10

[1711] 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

[1712] 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

[1713] Wilkinson, M.I., Evans, N.W., 1999, MNRAS, 310, 645 (arXiv:astro-ph/9906197), ADS Link

[1714] 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

[1715] Will, C., 1993, *Theory and experiment in gravitational physics*, Cambridge University Press, 2 edn.

[1716] **[LPM-261]**, Willman, B., Graham, M., O'Mullane, W., Petravick, D., 2018, *Access Policy for LSST Data and Data Access Center*, LPM-261, URL https://ls.st/LPM-261,
Superseded by LDO-13

[1717] Windmark, F., Lindegren, L., Hobbs, D., 2011, A&A, 530, A76 (arXiv:1104.2348), doi:10.1051/0004-6361/201116929, ADS Link

[1718] **[LSE-279]**, Withers, A., 2017, *Concept of Operations for Unified LSST Authentication and Authorization Services*, LSE-279, URL https://ls.st/LSE-279

[1719] **[PSTN-010]**, Wolfe, J., 2019, *LSST Camera Optics*, PSTN-010, URL https://pstn-010.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1720] **[Document-15077]**, Wolff, S., 2013, *LSST Project Overview*, Document-15077, URL https://ls.st/Document-15077

[1721] **[LPM-73]**, Wolff, S., 2013, *Operations Plan*, LPM-73, URL https://ls.st/LPM-73

[1722] **[Document-13380]**, Wolff, S., Kahn, S., 2013, *Data Rights and Data Management Policy*, Document-13380, URL https://ls.st/Document-13380

[1723] **[Document-10549]**, Wolff, S.C., Kahn, S.M., Krabbendam, V.L., Sweeney, D.W., Tyson, J.A., 2011, *Proposal to the National Science Foundation*, Document-10549, URL https://ls.st/Document-10549

[1724] **[DMTN-008]**, Wood-Vasey, M., 2016, *Introducing validate_drp: Calculate SRD Key Performance Metrics for an output repository*, DMTN-008, URL https://dmtn-008.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1725] **[DMTR-15]**, Wood-Vasey, M., Swinbank, J., 2017, *Characterization Metric Report: Science Pipelines Version 13.0*, DMTR-15, URL https://ls.st/DMTR-15

[1726] **[DMTN-091]**, Wood-Vasey, M., Bellm, E., Bosch, J., et al., 2023, *Test Datasets for Scientific Performance Monitoring*, DMTN-091, URL https://dmtn-091.lsst.io/,
Vera C. Rubin Observatory Data Management Technical Note

[1727] 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

[1728] Wu, X., Roby, W., Goldina, T., Ly, L., IRSA IPAC, 2015, In: American Astronomical Society Meeting Abstracts, vol. 225 of American Astronomical Society Meeting Abstracts, #434.06, ADS Link

[1729] Wu, X., Ciardi, D., Dubois-Felsmann, G., et al., 2016, In: Lorente, N.P.F., Shortridge, K. (eds.) ADASS XXV, vol. TBD of ASP Conf. Ser., TBD, ASP, San Francisco

[1730] Wyrzykowski, L., Hodgkin, S., Blogorodnova, N., Koposov, S., Burgon, R., 2012, ArXiv e-prints (arXiv:1210.5007), ADS Link

[1731] **[PSTN-008]**, Xin, B., 2020, *Active Optics System Performance of the Simonyi Survey Telescope*, PSTN-008, URL https://pstn-008.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1732] **[PSTN-032]**, Xin, B., 2020, *Performance of Delivered Vera C. Rubin Observatory*, PSTN-032, URL https://pstn-032.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1733] **[SITCOMTN-007]**, Xin, B., 2020, *The Rubin Observatory As-built Optical Model*, SITCOMTN-007, URL https://sitcomtn-007.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1734] **[SCTR-31]**, Xin, B., 2021, *LVV-P66: M2 Functional Re-verification and SAL Interface Verification Test Plan and Report*, SCTR-31, URL https://sctr-31.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Report

[1735] **[SITCOMTN-003]**, Xin, B., 2021, *Coordinate Transformations within the Rubin Active Optics System*, SITCOMTN-003, URL https://sitcomtn-003.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1736] **[SITCOMTN-009]**, Xin, B., 2021, *Command Structure of the AOS CSCs*, SITCOMTN-009, URL https://sitcomtn-009.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1737] Xin, B., Claver, C., Liang, M., et al., 2015, Appl. Opt., 54, 9045 (arXiv:1506.04839), doi:10.1364/AO.54.009045, ADS Link

[1738] 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, 99064J, doi:10.1117/12.2234456

[1739] 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

[1740] **[SITCOMTN-004]**, Xin, B., Neill, D., Thomas, S., Claver, C., 2020, *Standardizing the Implementation of the Rubin AOS LUTs*, SITCOMTN-004, URL https://sitcomtn-004.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Note

[1741] Yagi, M., 2012, PASP, 124, 1347 (arXiv:1210.8212), doi:10.1086/668891, ADS Link

[1742] 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

[1743] YAML, The Official YAML Web Site, URL http://yaml.org/

[1744] **[RTN-032]**, Yang, W., 2022, *Panda/Rucio Multi-site Configuration*, RTN-032, URL https://rtn-032.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1745] **[RTN-023]**, Yanny, B., Slater, C., Padolski, S., et al., 2021, *Campaign Tooling – tools for generating, monitoring and tracking data processing campaigns*, RTN-023, URL https://rtn-023.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1746] **[RTN-039]**, Yanny, B., Kuropatkin, N., Lin, H., et al., 2023, *Compute Resource Usage of DP0.2 production run*, RTN-039, URL https://rtn-039.lsst.io/,
Vera C. Rubin Observatory Technical Note

[1747] 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

[1748] **[SMTN-005]**, Yoachim, P., 2016, *Cloud Statistics via All-Sky Camera*, SMTN-005, URL https://smtn-005.lsst.io/,
Vera C. Rubin Observatory Simulations Team Technical Note

[1749] **[SMTN-008]**, Yoachim, P., 2017, *Using GAIA BP/RP to Photometrically Calibrate LSST*, SMTN-008, URL https://smtn-008.lsst.io/,
Vera C. Rubin Observatory Simulations Team Technical Note

[1750] **[SMTN-015]**, Yoachim, P., 2021, *Early Rubin Science: Time Needed to Generate Difference Imaging Templates*, SMTN-015, URL https://smtn-015.lsst.io/,
Vera C. Rubin Observatory Simulations Team Technical Note

[1751] **[PSTN-052]**, Yoachim, P., 2022, *Survey Strategy: Rolling Cadence*, PSTN-052, URL https://pstn-052.lsst.io/,
Vera C. Rubin Observatory Project Science Technical Note

[1752] **[SMTN-016]**, Yoachim, P., 2022, *Surface Brightness Limit Derivations*, SMTN-016, URL https://smtn-016.lsst.io/,
Vera C. Rubin Observatory Simulations Team Technical Note

[1753] **[SMTN-017]**, Yoachim, P., 2022, *Survey Strategy Simulation v2.x Results*, SMTN-017, URL https://smtn-017.lsst.io/,
Vera C. Rubin Observatory Simulations Team Technical Note

[1754] **[SMTN-018]**, Yoachim, P., 2023, *Satellite Mega Constellations*, SMTN-018, URL https://smtn-018.lsst.io/,
Vera C. Rubin Observatory Simulations Team Technical Note

[1755] **[Document-15125]**, Yoachim, P., Jones, L., Ivezić, Ž., Axelrod, T., 2013, *Photometric Self Calibration Design and Prototype*, Document-15125, URL https://ls.st/Document-15125

[1756] 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

[1757] 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

[1758] Zechmeister, M., Kürster, M., 2009, A&A, 496, 577 (arXiv:0901.2573), doi:10.1051/0004-6361:200811296, ADS Link

[1759] Zellner, B., Tholen, D.J., Tedesco, E.F., 1985, Icarus, 61, 355, doi:10.1016/0019-1035(85)90133-2, ADS Link

[1760] Zicari, R.V., 2011, Objects in Space, URL http://www.odbms.org/blog/2011/02/objects-in-space/

[1761] 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

[1762] **[SCTR-61]**, Zorzi, P., 2022, *LVV-P93: M1M3 Thermal Control System Verification Testing on Level 3. Test Plan and Report*, SCTR-61, URL https://sctr-61.lsst.io/,
Vera C. Rubin Observatory Commissioning Technical Report

[1763] Zucker, S., Mazeh, T., 1994, ApJ, 420, 806, doi:10.1086/173605, ADS Link

[1764] Zucker, S., Mazeh, T., Santos, N.C., Udry, S., Mayor, M., 2004, A&A, 426, 695, doi:10.1051/0004-6361:20040384, ADS Link