

LDT (formerly DCT) Selected Technical Publications & References (full papers)

Instruments				
Instrumentation Main Page				
<u>Facility Instruments:</u>				
Large Monolithic Imager (LMI)				
<u>Visitor / PI Instruments:</u>				
High-Res Spectrograph (EXPRES)				
Speckle Imager (QWSSI)				
High Speed Imager (POETS)				
NIR Spectrograph (RIMAS)				
<u>User Manuals:</u>				
LMI Manual				
DeVeny Manual				
NIHTS Manual				

Selected formal technical publications related to the LDT systems or to helping you understand the background for some of the systems.

A good example would SPIE papers. The links are to full PDF copies.

LDT/DCT specific

1. Bida, T. A., et al. 2004, *Proc. SPIE*, 5489, 196, Site testing for the Discovery Channel Telescope
2. Bida, T. A., et al. 2012, *Proc. SPIE*, 8444, 192, Design, development, and testing of the DCT Cassegrain instrument support assembly
3. Bida, T., et al. 2014, *Proc. SPIE*, 9147, 914796, 11pp., First-generation instrumentation for the Discovery Channel Telescope
4. Clark, C., et al. 2020, *Proc. SPIE*, 11446, 114462A, The optomechanical design of the Quad-camera Wavefront-sensing Six- channel Speckle Interferometer (QWSSI)
5. Cornelius, F., Sweatton, M., Hardesty, B., Collins, M., Levine, S. 2020, *Proc. SPIE*, 11445, 114457I, 9pp, Status and performance of Lowell Observatory's Lowell Discovery Telescope's active optical support system
6. DeGroff, W. T., et al. 2014, *Proc. SPIE*, 9145, 914582, 18pp., Status and performance of the Discovery Channel Telescope from commissioning into early science operations
7. Dunham, E. et al. 2018, *Proc. SPIE*, 10702, 107023E, NIHTS: the near-infrared high throughput spectrograph for the Discovery Channel Telescope
8. Gustafsson, A. et al. 2021, *PASP*, 133, 035001, Science Commissioning of NIHTS: The Near-infrared High Throughput Spectrograph on the Lowell Discovery Telescope
9. Levine, S. E. et al. 2012, *Proc. SPIE*, 8444, 844419, Status and performance of the Discovery Channel Telescope during commissioning
10. Levine, S. E., DeGroff, W. T. 2016, *Proc. SPIE*, 9906, 990672, Status and imaging performance of Lowell Observatory's Discovery Channel Telescope in its first year of full science operations

11. [Levine, S., DeGroot, W., Bida, T., Dunham, E., Jacoby, G. 2018, Proc. SPIE, 10700, 107004P](#), Status and performance of Lowell Observatory's Discovery Channel telescope and its growing suite of instruments
12. [Levine, S. E., Ellsworth-Bowers, T., Bida, T. A., Hamilton, R., Kuehn, K. 2022, Proc. SPIE, 12182, 1218227L](#), Status of the Lowell Discovery Telescope (LDT) and assessment of the image quality at the focal plane
13. [Mace, G. et al. 2018, Proc. SPIE, 10702, 107020Q](#), IGRINS at the Discovery Channel telescope and Gemini South
14. [Venetiou, A. J., Bida, T. A. 2012, Proc. SPIE, 8444, 84441E](#), Discovery Channel Telescope active optics system early integration and test

More general references useful to LDT/DCT

1. [Fried, D. L. 1965, J. Opt. Soc. Am., 55, 1427](#), Statistics of a Geometric Representation of a Wavefront Distortion
2. [Fried, D. L. 1966, J. Opt. Soc. Am., 56, 1372](#), Optical resolution through a randomly inhomogeneous medium for very long and very short exposures
3. [Lakshminarayanan, V., Fleck, A. 2011, JMOp, 58, 545](#), Zernike polynomials: a guide
4. [Noll, R. 1976, JOSA, 66, 207](#), Zernike polynomials and atmospheric turbulence
5. [Schwesinger, G., 1991, JMOp, 38, 1507](#), Lateral support of very large telescope mirrors by edge forces only
6. [Wallace, P. T. 2002, Proc. of SPIE, 4848, 125](#), A rigorous algorithm for telescope pointing