

DES

Andrés Alejandro Plazas Malagón

`aplazas@bnl.gov`

Department of Physics, Brookhaven National Laboratory, Bldg. 510, Upton, NY, 11792

- CCD testing and characterization (Fermilab)
 - Type¹: Infrastructure
 - Description: Measurement and validation of crosstalk, full-well, non-linearity, persistence (validation of the ERASE mechanism), diffusion, CTI.
 - Time: Summer 2006 (June-mid October), Summer 2007 (June-August), Summer 2008 (June-August). Total ≈ 9.5 months
 - People: J. Estrada, T. Diehl, B. Flaugher, D. Kubik, H. Cease., T. Shaw (Fermilab), G. Bernstein, B. Jain (Penn), J. P. Negret (Universidad de los Andes, Bogotá).
 - References: Diehl et al. (2008), Flaugher et al. (2010), Flaugher et al. (2012); Doc-db: 207, 795, 1921(upload by J. Estrada), 1968, 2043.
- Weak lensing systematics in DES (Ph.D work at University of Pennsylvania).
 - Type: Science
 - Description: Weak lensing systematics
 - * Test suite for validation of weak lensing pipeline (PSF, shear measurements).
 - * Validation and Science Verification periods: astrometric residuals maps, shear tests (tests from document Doc-db 6991).
 - Time: WL pipeline: 2009-2011; astrometric and shear tests for commissioning and SV: 2011-2012
 - People: G. Bernstein, M. Jarvis, B. Jain (Penn), WL working group.
 - References: Plazas (2012) (Ph.D thesis), Plazas & Bernstein (2012); Doc-db: 4980, 6770, 6471, 6696.
- Instrumental signatures, survey operations, first DES data quality analysis at Brookhaven National Laboratory/ Penn

¹According to the categories defined in the document Doc-db: 5247

- Type: Data management (WCS), Operations (observing, quality analysis).
- Description :
 - * Tree rings and glowing edges in DECam CCDs: templates for the photometric and astrometric solutions. Wavelength dependence. Astrometric residuals measurements helped determine that they are charge relocation, not QE variations. Important evidence in favor of re-visiting the current approach to data reduction by flat-fielding.
 - * Observer and run manager at CTIO for DES fist season (September 4-23, 2013: 0.4 FTE-year of builder work at 0.02 FTE-year per day according to DES doc-db 5247).
 - * Eyeball Squad 2012-2013 (SV and for DES first light); E. Sheldon and P. Melchior’s Exposure Checker Website (quality analysis).
- Time: Survey operator at CTIO: 0.4 FTE-year; tree rings and glowing edges: ≈ 1 year; Eyeball squad: a few weeks (the time the Eyeball Squad existed).
- People: Erin Sheldon (BNL), G. Bernstein, M.Jarvis, B. Jain, B. Armstrong (Penn), WL working group, S Kent (Fermilab), E. Sanchez (CIEMAT), D. Gren (Munich), M. March (Penn).
- References: Plazas, Bernstein, & Sheldon (2014); Doc-db: 7294, 7612

REFERENCES

- Diehl, H. et al., *Characterization of DECam focal plane detectors*. High Energy, Optical, and Infrared Detectors for Astronomy III. Edited by Dorn, David A.; Holland, Andrew D. Proceedings of the SPIE, Volume 7021, pp. 702107-702107-11 (2008)
- Flaugher, B. et al. *Status of the dark energy survey camera (DECam) project*. Ground-based and Airborne Instrumentation for Astronomy IV. Proceedings of the SPIE, Volume 8446, article id. 844611, 15 pp. (2012)
- Flaugher, B. et al. , *Status of the dark energy survey camera (DECam) project*, Ground-based and Airborne Instrumentation for Astronomy III. Edited by McLean, Ian S.; Ramsay, Suzanne K.; Takami, Hideki. Proceedings of the SPIE, Volume 7735, pp. 77350D-77350D-14 (2010).
- A. A. Plazas, *Weak gravitational lensing systematic errors in the Dark Energy Survey* (2012), ProQuest Dissertations And Theses; Thesis (Ph.D.)–University of Pennsylvania, 2012.; Publication Number: AAT 3551740; ISBN: 9781267898227; Source: Dissertation Abstracts International, Volume: 74-06(E), Section: B.; 138 p.
- A. A. Plazas & G. M. Bernstein, *Atmospheric dispersion effects in weak lensing measurements* (2012), Publications of the Astronomical Society of the Pacific, vol. 124, No. 920, pp 1113-1123

A. A. Plazas, G. M. Bernstein, & E. S. Sheldon, *Transverse electric field effects' in the Dark Energy Camera CCDs* (2014), arXiv:1403.6127