

- [Find Similar Abstracts \(with default settings below\)](#)
- [arXiv e-print \(arXiv:1108.3343\)](#)
- [References in the Article](#)
- [Also-Read Articles \(Reads History\)](#)
- [Translate This Page](#)

Title: The Atacama Cosmology Telescope: High-Resolution Sunyaev-Zel'dovich Array Observations of ACT SZE-selected Clusters from the Equatorial Strip

Authors: [Reese, Erik D.](#); [Mroczkowski, Tony](#); [Menanteau, Felipe](#); [Hilton, Matt](#); [Sievers, Jonathan](#); [Aguirre, Paula](#); [Appel, John William](#); [Baker, Andrew J.](#); [Bond, J. Richard](#); [Das, Sudeep](#); [Devlin, Mark J.](#); [Dicker, Simon R.](#); [Dunner, Rolando](#); [Essinger-Hileman, Thomas](#); [Fowler, Joseph W.](#); [Hajian, Amir](#); [Halpern, Mark](#); [Hasselfield, Matthew](#); [Hill, J. Colin](#); [Hincks, Adam D.](#); [Huffenberger, Kevin M.](#); [Hughes, John P.](#); [Irwin, Kent D.](#); [Klein, Jeff](#); [Kosowsky, Arthur](#); [Lin, Yen-Ting](#); [Marriage, Tobias A.](#); [Marsden, Danica](#); [Moodley, Kavilan](#); [Niemack, Michael D.](#); [Nolta, Michael R.](#); [Page, Lyman A.](#); [Parker, Lucas](#); [Partridge, Bruce](#); [Rojas, Felipe](#); [Sehgal, Neelima](#); [Sifon, Cristobal](#); [Spergel, David N.](#); [Staggs, Suzanne T.](#); [Swetz, Daniel S.](#); [Switzer, Eric R.](#); [Thornton, Robert](#); [Trac, Hy](#); [Wollack, Edward J.](#)

Publication: eprint arXiv:1108.3343

Publication Date: 08/2011

Origin: ARXIV

Keywords: Astrophysics - Cosmology and Extragalactic Astrophysics

Comment: 12 pages, 5 figures, 7 tables; submitted to ApJ

Bibliographic Code: [2011arXiv1108.3343R](#)

Abstract

We present follow-up observations with the Sunyaev-Zel'dovich Array (SZA) of optically-confirmed galaxy clusters found in the equatorial survey region of the Atacama Cosmology Telescope (ACT): ACT-CL J0022-0036, ACT-CL J2051+0057, and ACT-CL J2337+0016. ACT-CL J0022-0036 is a newly-discovered, massive (10^{15} Msun), high-redshift ($z=0.81$) cluster revealed by ACT through the Sunyaev-Zel'dovich effect (SZE). Deep, targeted observations with the SZA allow us to probe a broader range of cluster spatial scales, better disentangle cluster decrements from radio point source emission, and derive more robust integrated SZE flux and mass estimates than we can with ACT data alone. For the two clusters we detect with the SZA we compute integrated SZE signal and derive masses from the SZA data only. ACT-CL J2337+0016, also known as Abell 2631, has archival Chandra data that allow an additional X-ray-based mass estimate. Optical richness is also used to estimate cluster masses and shows good agreement with the SZE and X-ray-based estimates. Based on the point sources detected by the SZA in these three cluster fields and an extrapolation to ACT's