

Abstract Submitted
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More than Meets the Eye: The Evolution of Gamma-ray Burst Jets, and its Effect on the High Redshift Star Formation Rate. NICOLE LLOYD-RONNING, LANL and UNM, Los Alamos, AYCIN AYKUTALP, UT Austin, JARRETT JOHNSON, LANL, VALERIA U. HURTADO, Fisk-Vanderbilt, CHIARA CECCOBELLO, Chalmers — There is tantalizing evidence that the jets launched from gamma-ray bursts are narrower (more tightly collimated) at higher redshifts. This has important implications not only for the physics of the jet launch itself, but also on estimates of the high redshift star formation rate. We present observational evidence for anti-correlation between gamma-ray burst jet opening angle and redshift, discuss the potential physical mechanisms responsible for this correlation, and - finally - provide estimates of the high redshift star formation rate accounting for this important effect.

Nicole Lloyd-Ronning
LANL and UNM, Los Alamos

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