

# Gamma ray burst distances and the timescape cosmology

Peter R. Smale

(Submitted on 27 Jul 2011 (v1), last revised 22 Aug 2011 (this version, v2))

Gamma ray bursts can potentially be used as distance indicators, providing the possibility of extending the Hubble diagram to redshifts  $\sim 7$ . Here we follow the analysis of Schaefer (2007), with the aim of distinguishing the timescape cosmological model from the  $\Lambda$ CDM model by means of the additional leverage provided by GRBs in the range  $2 < z < 7$ . We find that the timescape model fits the GRB sample slightly better than the  $\Lambda$ CDM model, but that the systematic uncertainties are still too little understood to distinguish the models.

Comments: 7 pages, 7 figures, revised version accepted for publication in MNRAS  
Subjects: **Cosmology and Extragalactic Astrophysics (astro-ph.CO)**; General Relativity and Quantum Cosmology (gr-qc)  
Journal reference: Mon. Not. R. Astron. Soc. 418 (2011) 2779-2784  
DOI: [10.1111/j.1365-2966.2011.19678.x](https://doi.org/10.1111/j.1365-2966.2011.19678.x)  
Cite as: [arXiv:1107.5596](https://arxiv.org/abs/1107.5596) [astro-ph.CO]  
(or [arXiv:1107.5596v2](https://arxiv.org/abs/1107.5596v2) [astro-ph.CO] for this version)

## Submission history

From: Peter Smale [[view email](#)]

[v1] Wed, 27 Jul 2011 21:22:48 GMT (67kb)

[v2] Mon, 22 Aug 2011 21:48:58 GMT (82kb)

*[Which authors of this paper are endorsers?](#)*

## Download:

- [PDF](#)
- [PostScript](#)
- [Other formats](#)

## Current browse context:

astro-ph.CO

[< prev](#) | [next >](#)

[new](#) | [recent](#) | [1107](#)

## Change to browse by:

[astro-ph](#)

[gr-qc](#)

## References & Citations

- [INSPIRE HEP](#)  
([refers to](#) | [cited by](#))
- [NASA ADS](#)

## Bookmark([what is this?](#))

