

Search of Gamma Ray Bursts detected by GBM alike to GRB170817A

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Methodology I

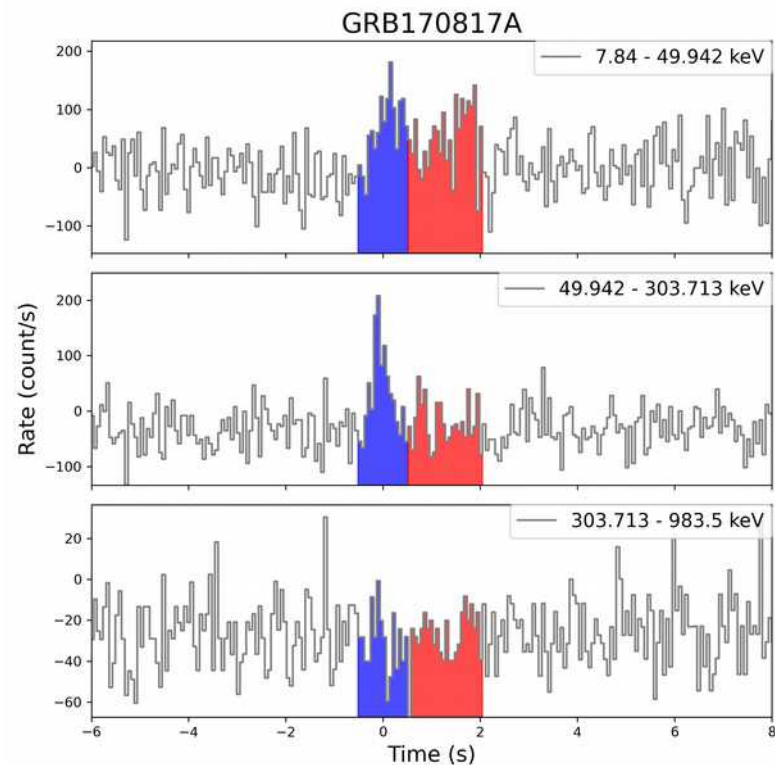
Manual procedure presented in von Kienlin, A., et al. (2019):

Data of Fermi-GBM from 2018-2020:

1. $T_{90} < 5\text{s}$ (124 bursts)
2. Location northern hemisphere (55 bursts)

From Light Curves:

1. Luminous peak at initial times (50-300 keV)
2. Tail after initial peak (8-50 keV)
3. Change in the LCs in different energy bands.



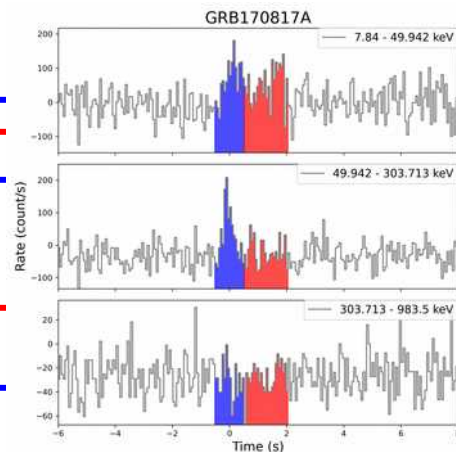
13 candidates!

Methodology II

Spectral analysis:

1. Initial peak: Comptonized (Compt)
2. Soft tail: (Black Body)

GRB	time (s)	Model	Epeak (keV)	Index	kT	C-stat/DOF
GRB 170817A	-0.512:0.512	Compt	181.7 ± 85.6	-0.84 ± 0.4		256.76/253
	0.512:2.048	BB			9.69 ± 1.16	320.74/254
GRB 191017C	-0.32:0.64	Compt	484.6 ± 214	-0.93 ± 0.17		263.91/253
	-0.32:0.64	BB			34.97 ± 2.02	320.39/256
	-0.32:0.64	PL		-1.27 ± 0.05		270.86/254
	0.64:0.896	Compt	79.04 ± 42.3	-0.55 ± 1.33		290.76/253
	0.64:0.896	BB		17.06 ± 3.64		291.41/254
	0.64:0.896	PL		-1.74 ± 0.28		292.39/254
GRB 200626A	-0.768:0.384	Compt	455.9 ± 33.7	-0.81 ± 0.05		31038/247
	-0.768:0.384	BB			32.61 ± 0.2	34996/248
	-0.768:0.384	PL		-2.03 ± 0.02		40106/248
	0.384:1.472	Compt	300 ± 18.7	-0.5 ± 0.08		56991/247
	0.384:1.472	BB			29.25 ± 0.17	50934/248
	0.384:1.472	PL		-2 ± 0.02		51958/248

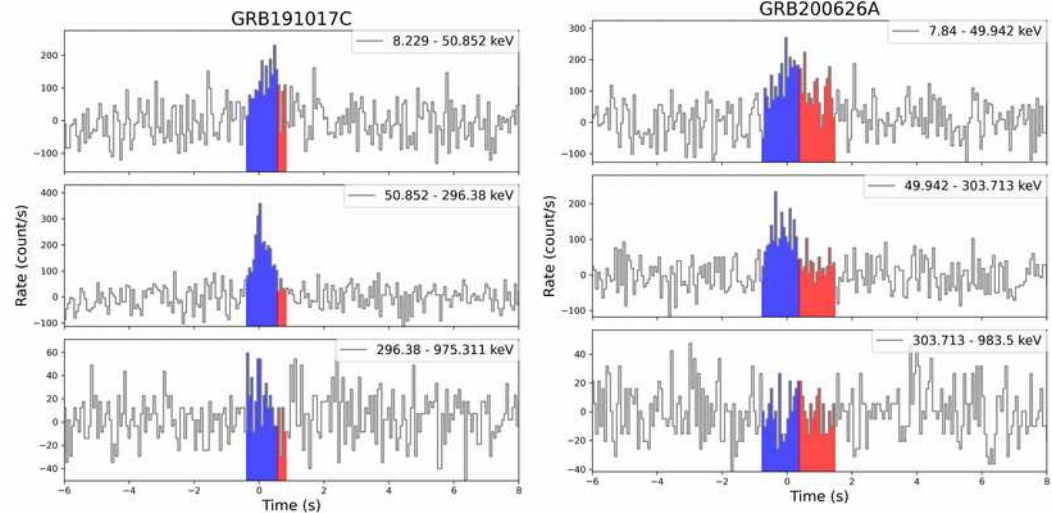


Results

- 55 bursts ($T_{90} < 5s$ & northern hemisphere)
- From LCs: 13 possible candidates

After spectral fitting:
Two bursts were characterized as
alike to GRB170817A!

1. GRB191017C
2. GRB200626A



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