

GRBs at high redshift

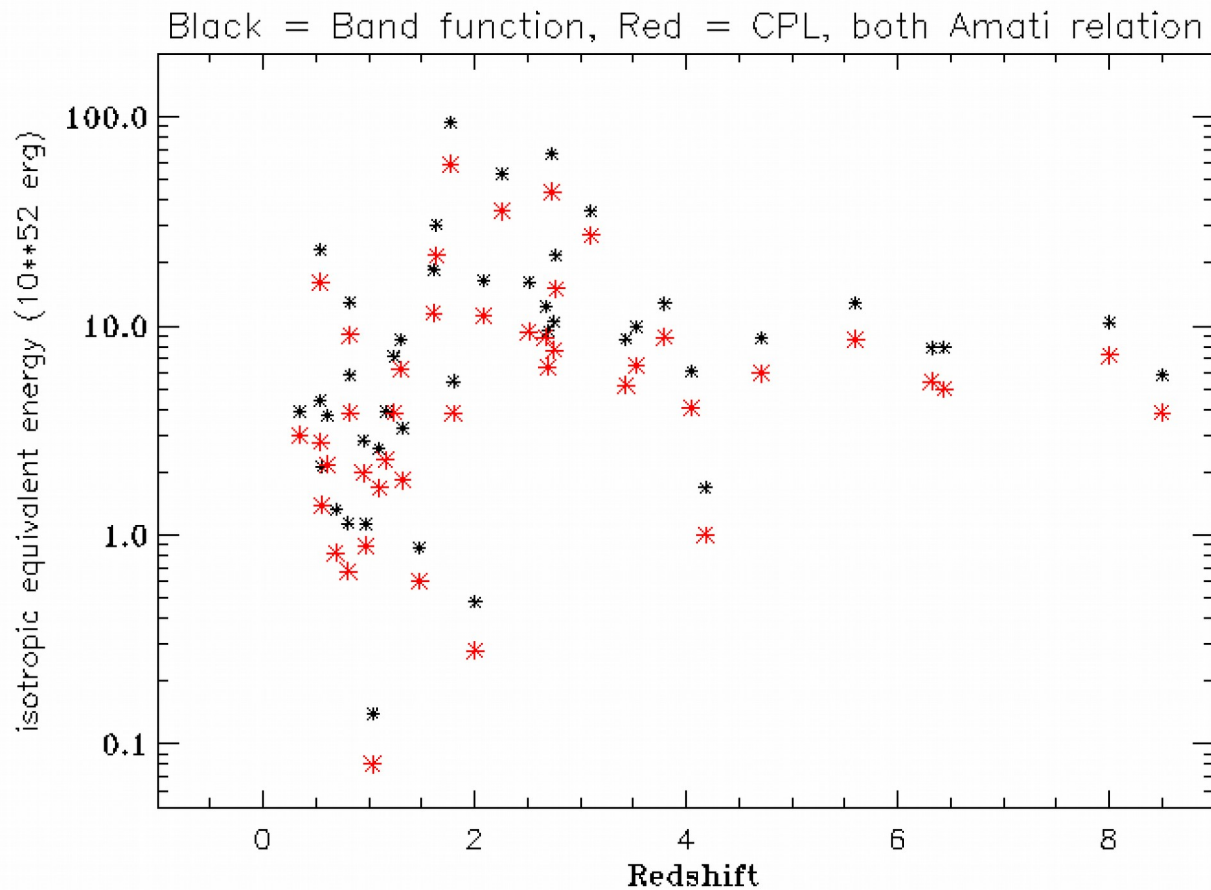
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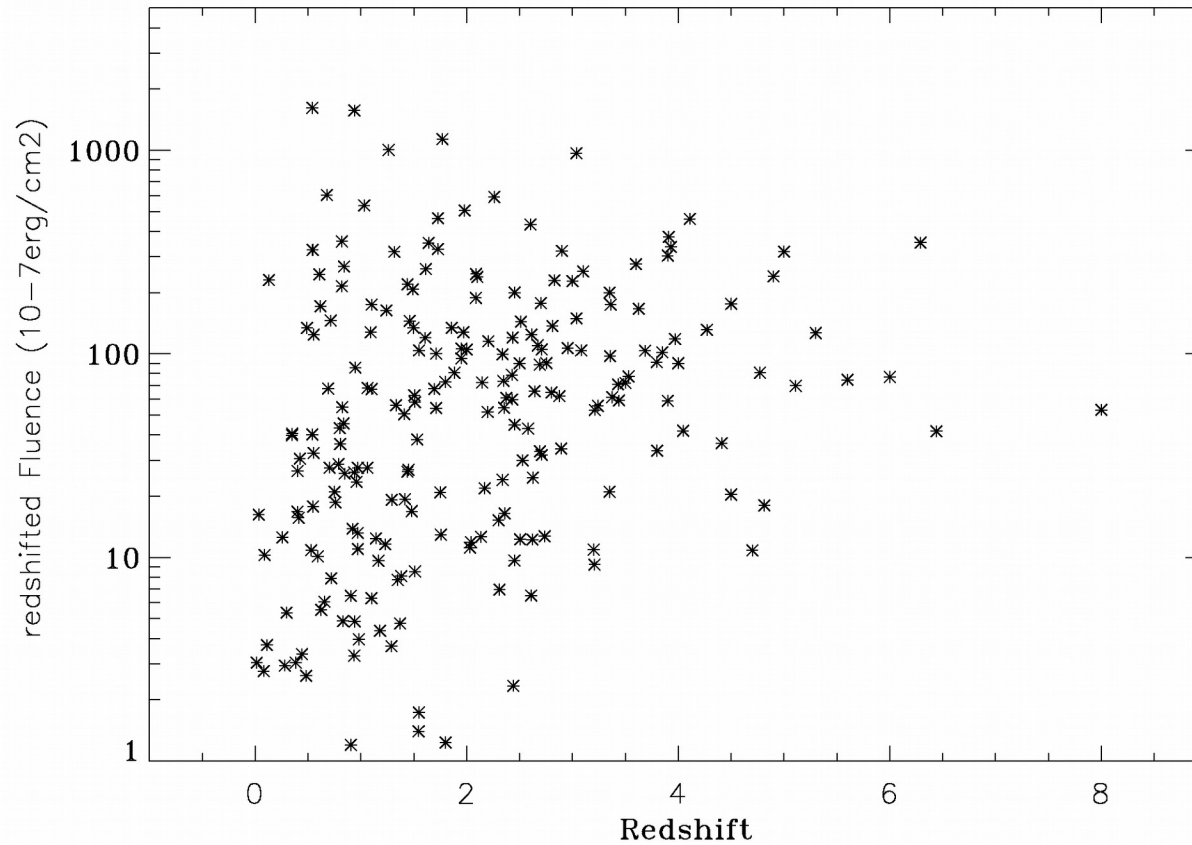
- Is there a peculiar property of the prompt emission of GRBs which could help us to detect more events at high redshift? Or at least tell us immediately after the trigger that we have a high z event?
- For the time being my answer is no.

If we know the redshift, then we can find Eiso, Fluence and Luminosity. Are they special at high redshift?

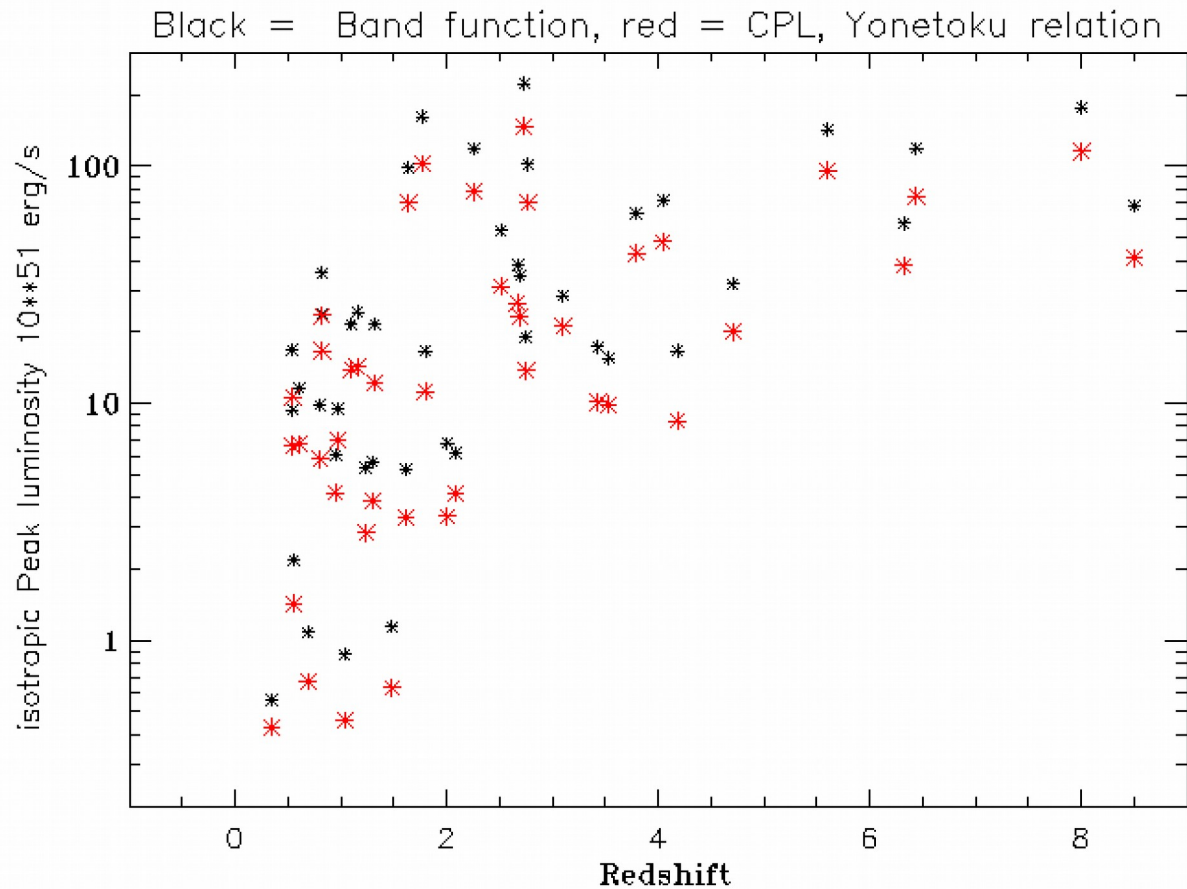
Eiso is not the biggest one



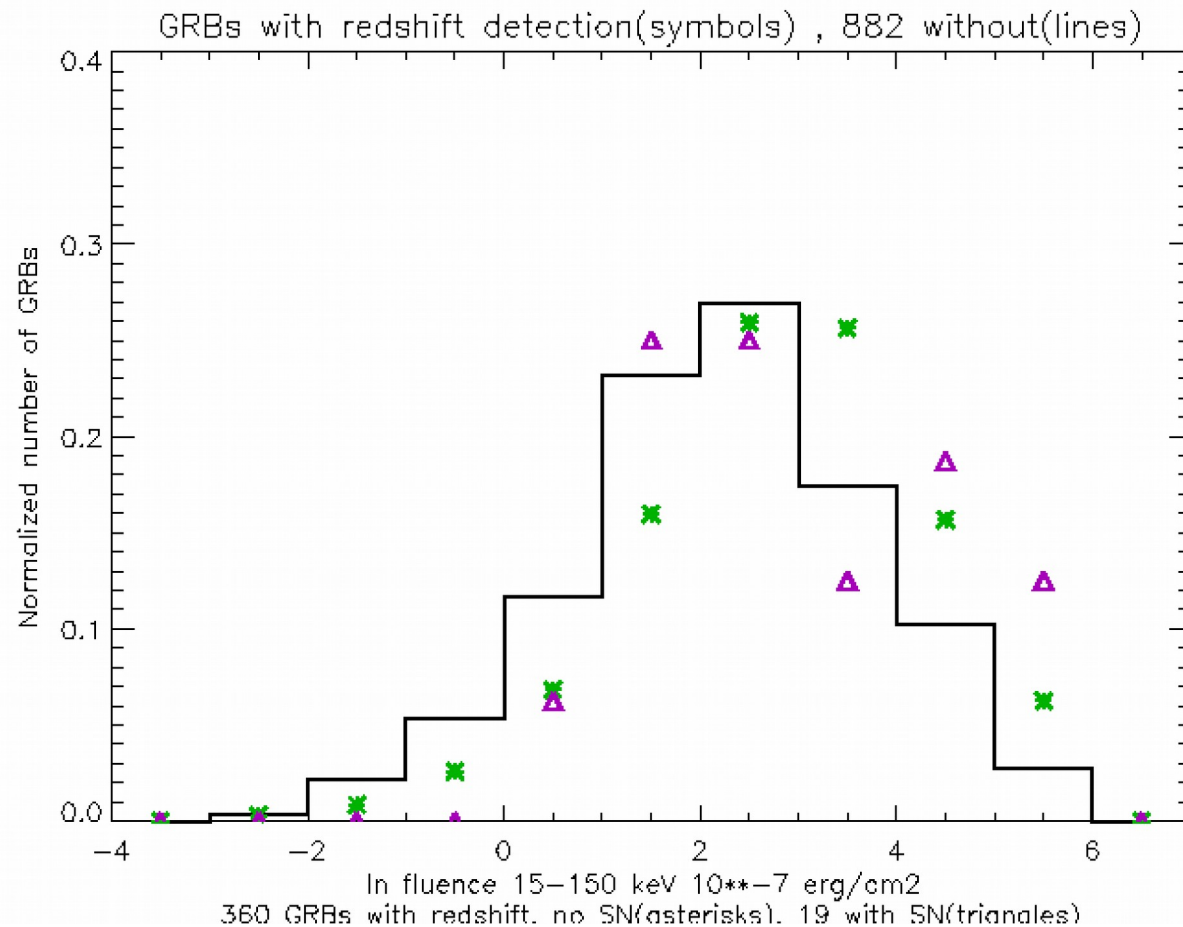
Fluence is not the biggest one



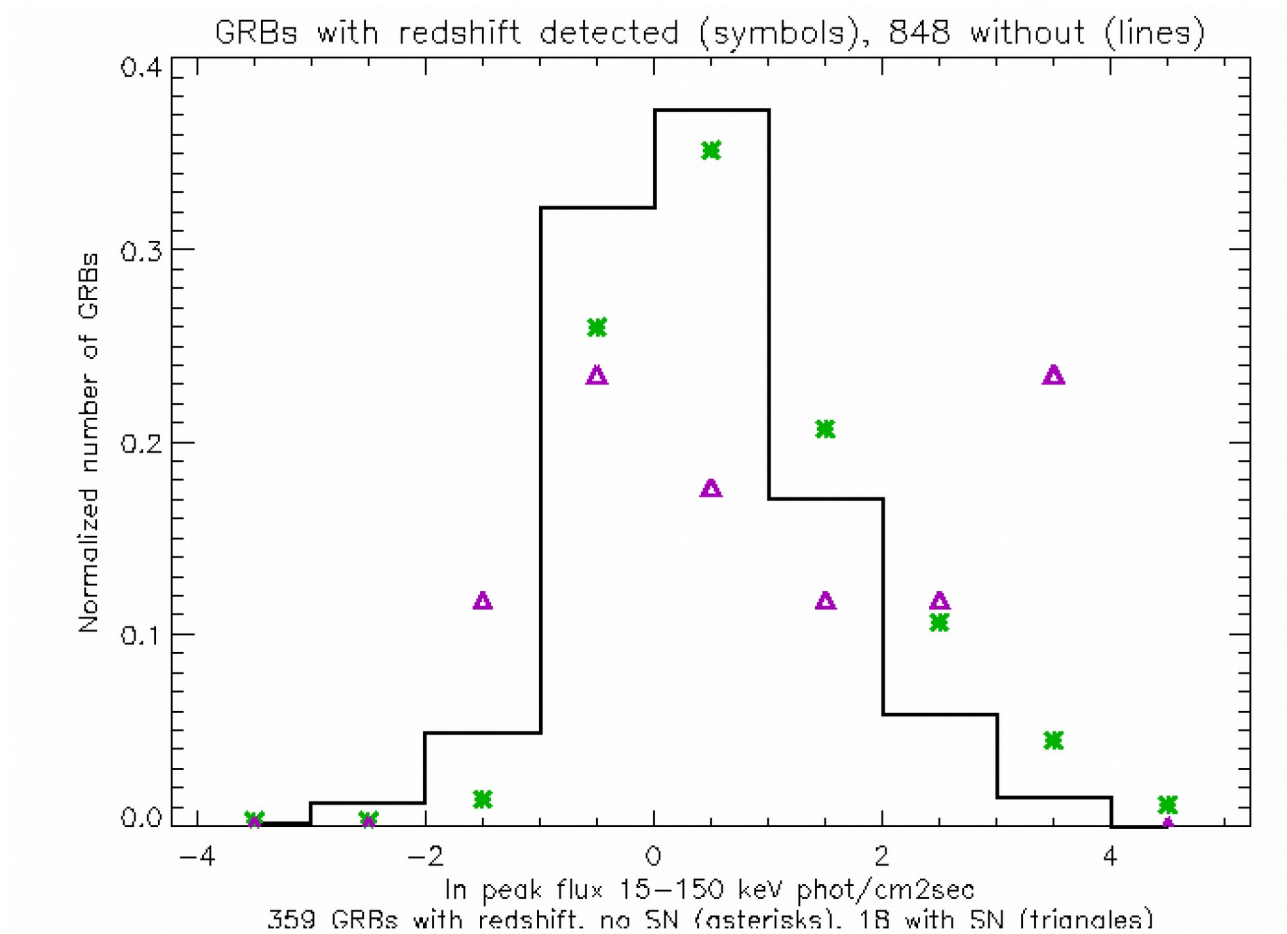
Peak luminosity is high, but not the biggest one for the highest redshift



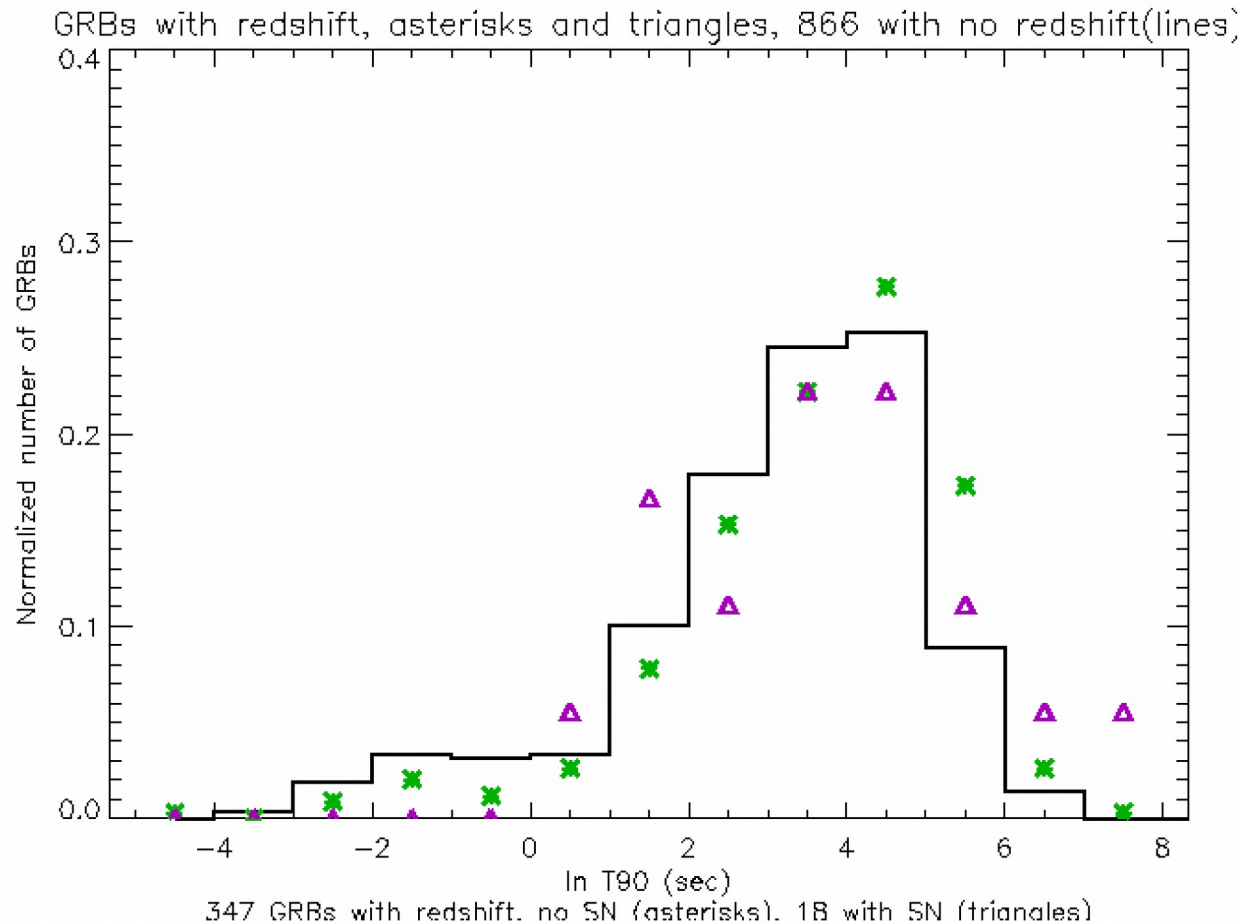
Near to the detector's limit it is more likely to detect GRBs which are more frequent



Same for peak flux, but we are probably at the limit



Duration is more complicate, because the energy range at the source changes with z



Conclusion

- How can we get more GRBs at high redshift?
- Obviously by increasing the sensitivity, especially for the peak flux.
- Probably by lowering the trigger energy threshold
- New time intervals for triggers? In any case it would help to detect different events
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- ps: graphs were not updated, e.g. GRB210905A at $z=6.3$ (Rossi et al., 2022) was not included