

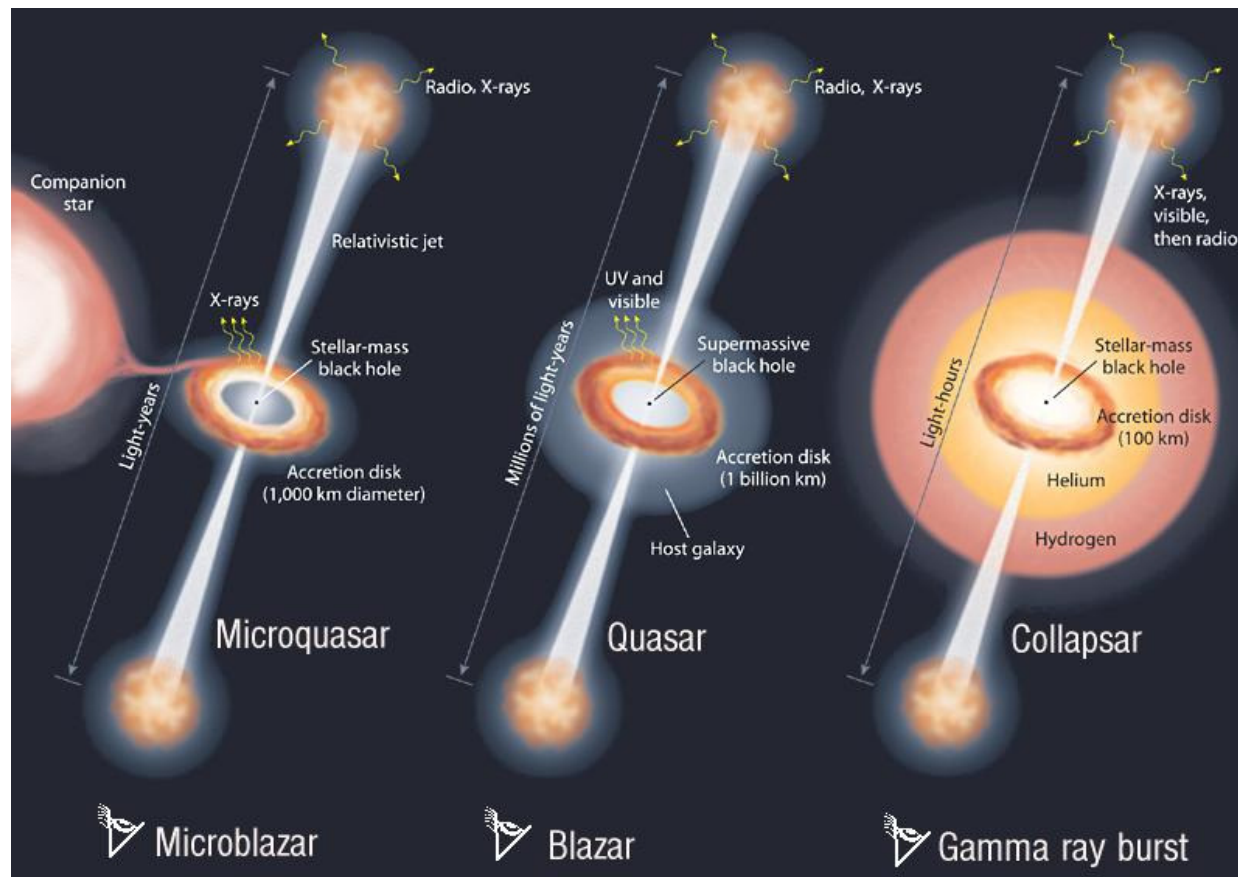


The 2005 Outburst of GRO J1655-40

Swift Observations of a Black Hole X-ray
Transient

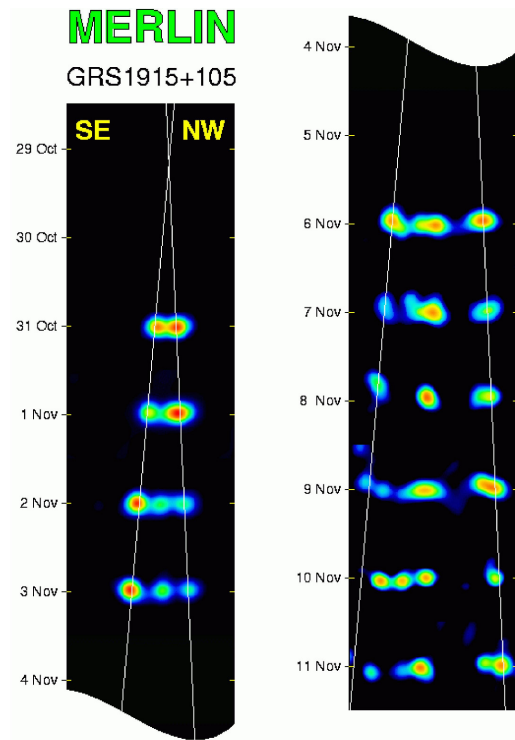
Catherine Brocksopp

Black Hole X-ray Transients

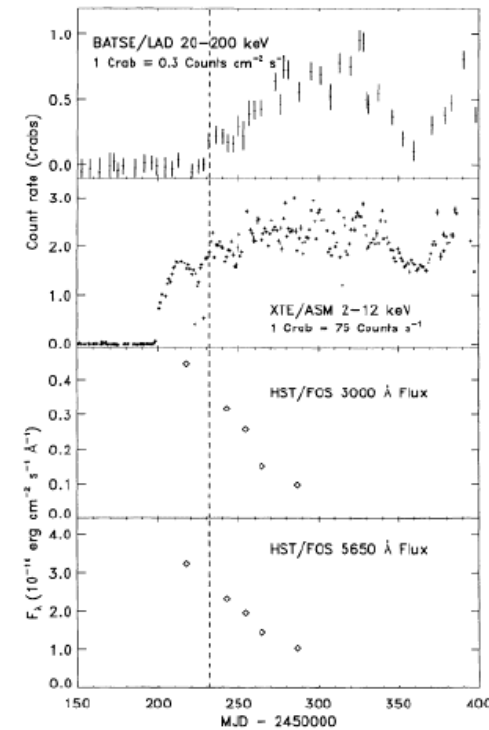


History of GRO J1655-40.....

- Discovered in 1994 when entering outburst
- Correlated radio and hard X-ray events
- Second Galactic source to display "apparent superluminal motion"
- Second (related to first?) outburst in 1996 with "strange" spectral behaviour



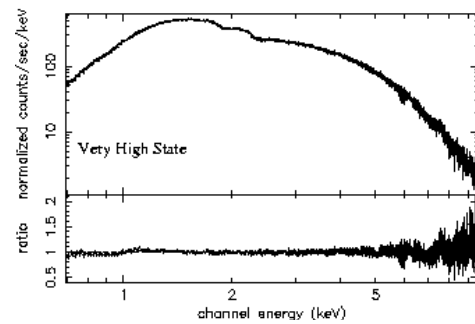
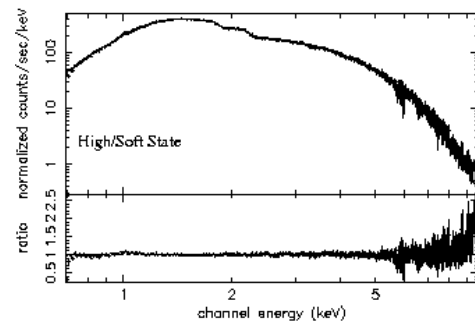
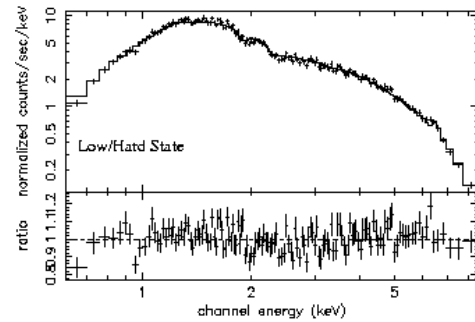
(Fender et al.)



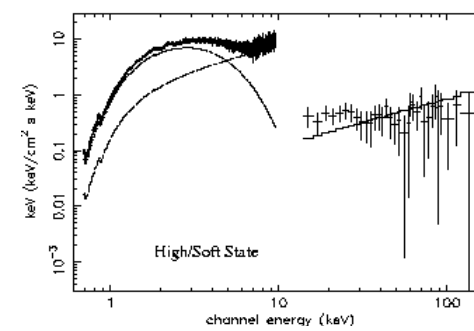
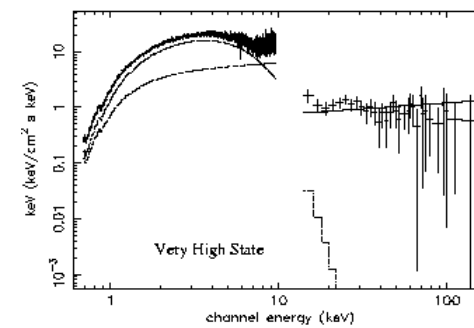
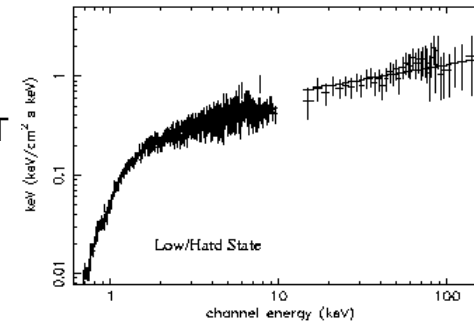
(Hynes et al.)

The 2005 outburst of GRO J1655-40 - *Swift* Observations

XRT

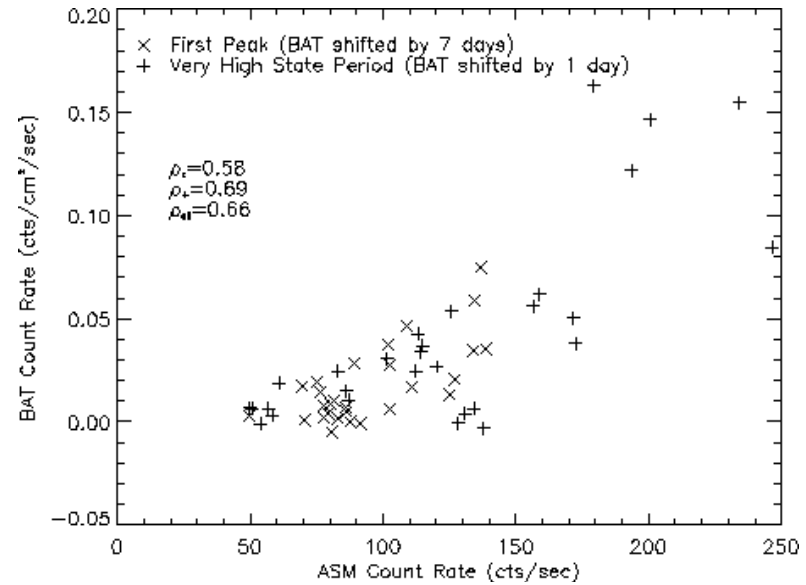
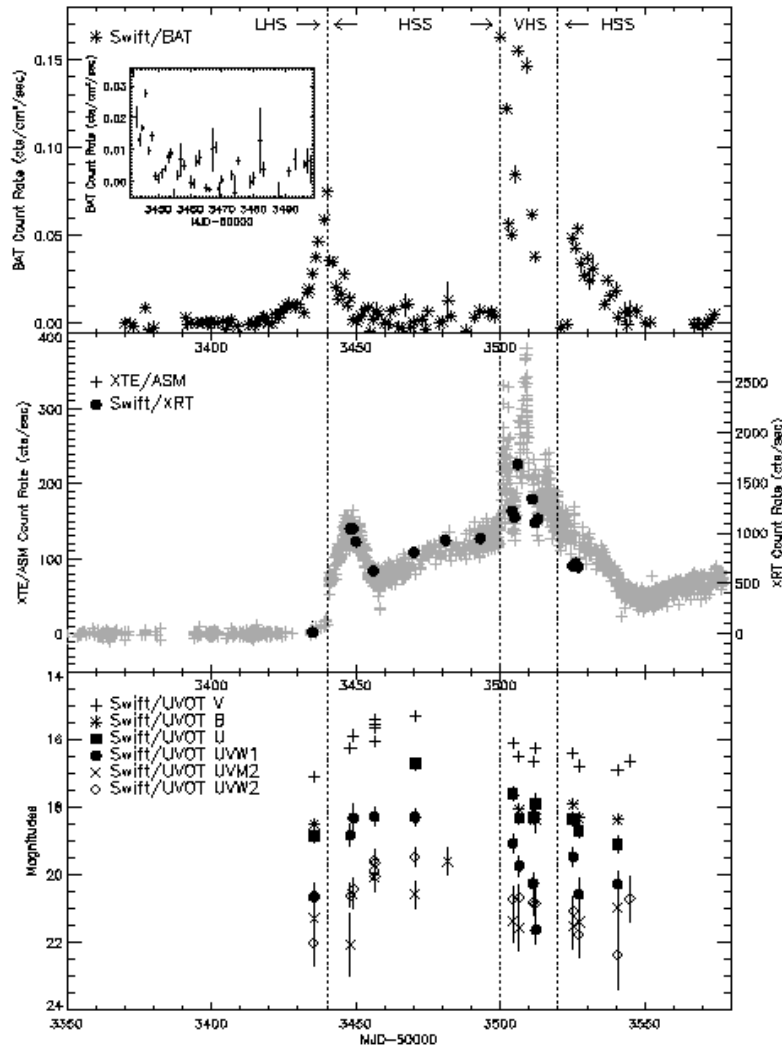


XRT+BAT



The 2005 outburst of GRO J1655-40.....

Swift Observations



What does this tell us?

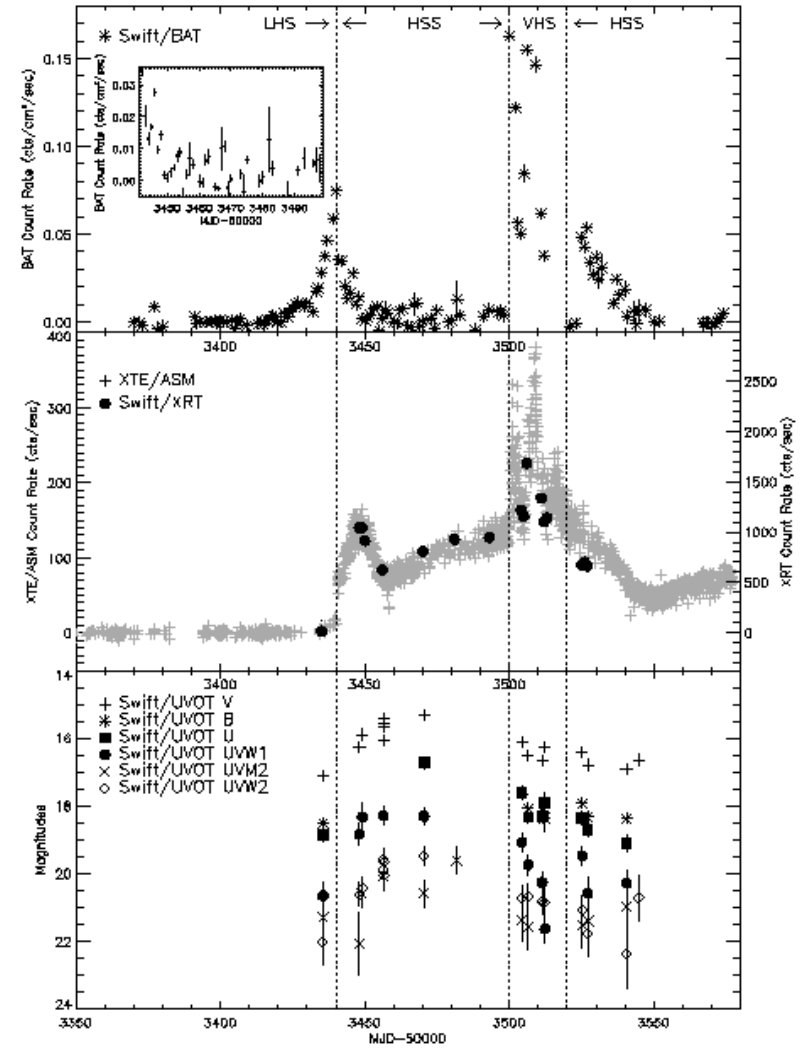
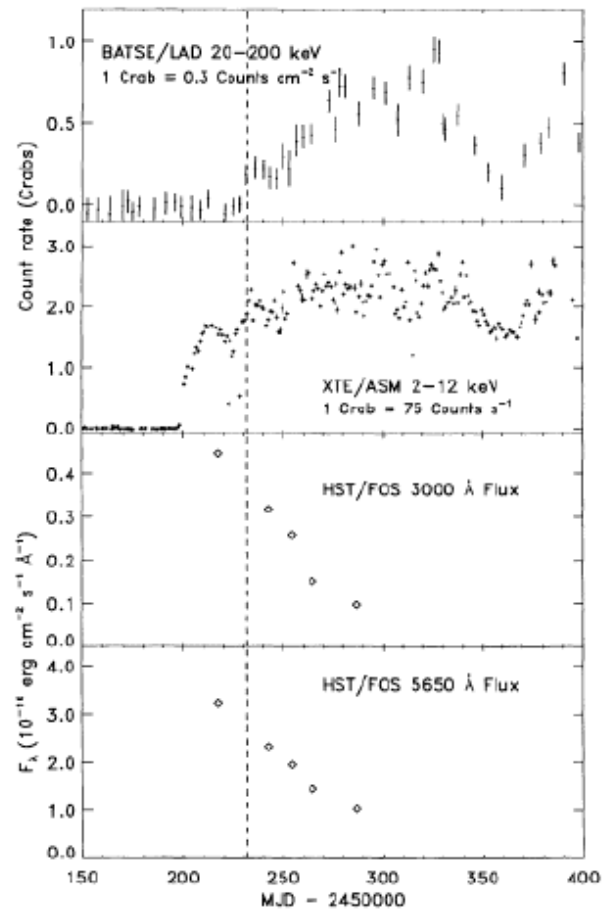
Can interpret correlation and lack of correlation between the various lightcurves in terms of the spectral components:

- accretion disc component, producing slowly-rising soft X-rays and optical/UV
- jet and/or corona component, producing hard X-rays and soft X-rays at times of more rapid variability

.....can use well-sampled lightcurves to give us detailed information about the accretion process

.....multiwavelength nature means that we can distinguish different components of the binary system even though they emit at similar frequencies

Comparing 2005 with 1996



Next steps.....

- Broad-band SED, including radio points from ATCA - can a jet model describe the spectra during the hard state?
 - *improved UVOT responses should now allow us to create νF_ν plots*
- Can we find out anything more about the X-ray spectral lines?
- Can we learn anything from the short-term lightcurves?