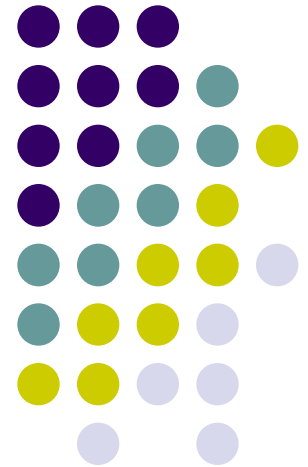


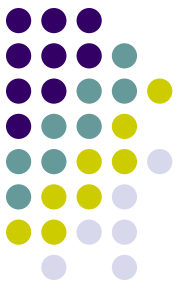
Bright and Slow-Rising Gamma-Ray Bursts

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Background and Goals

- Gamma-Ray Bursts (GRBs) are distant cosmic explosions that can occur during the formation of a black hole
- They are extremely bright, and can be seen over a huge distance. This makes them ideal for studying how the universe evolved.
- We worked to model the light emitted from two GRBs to see what the universe may have been like during early times

Results



- GRB 080319b
 - Brightest GRB ever observed, if you knew where to look when it occurred you could have seen it just by looking up at the sky (even without a telescope)
 - We saw that the color of the burst change from blue to red as time progressed.
- GRB 090313
 - We found that the light from this burst rose slowly over many minutes, instead of quickly rising to its maximum (within seconds) and then fading