Gamma-Ray Bursts (GRBs): The Long and Short of It Long gamma-ray burst (>2 seconds' duration) **Short gamma-ray burst** (<2 seconds' duration) A red-giant star collapses onto its core.... Stars* in a compact binary system begin to spiral inward.... ...becoming so dense that it expels its outer layers in a supernova ...eventually colliding. explosion. The resulting torus has at its center a powerful black hole. Jet **Torus** Gamma rays *Possibly neutron stars.