Bloom et al. Transient Discovery of GRB 980703 document

**The Discovery and Broad-band follow-up of the Transient Afterglow of GRB 980703**


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**abstract**

We report on the discovery of the radio, infrared and optical transient coincident with an X-ray transient proposed to be the afterglow of GRB 980703. At later times when the transient has faded below detection, we see an underlying galaxy with $R = 22.6$; this galaxy is the brightest host galaxy (by nearly 2 magnitudes) of any cosmological GRB thus far. In keeping with an established trend, the GRB is not significantly offset from the host galaxy. Interpreting the multi-wavelength data in the framework of the popular fireball model requires that the synchrotron cooling break was between the optical and X-ray bands on July 8.5 UT and that the intrinsic extinction of the transient is $A_V = 0.9$. This is somewhat higher than the extinction for the galaxy as a whole, as estimated from spectroscopy.

Cosmology—Galaxies: General—Gamma Rays: Bursts