

TITLE: GCN GRB OBSERVATION REPORT  
NUMBER: 965  
SUBJECT: Redshift of the Optical Transient of GRB010222  
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P. M. Garnavich (Notre Dame), M. A. Pahre, S. Jha, M. Calkins,  
K. Z. Stanek, J. McDowell and R. Kilgard (Harvard-Smithsonian Center  
for Astrophysics) report:

A spectrum of the optical transient (GCN 961, 962, and 963) associated  
with GRB010222 (GCN 959, 960) was obtained with the F. L. Whipple  
Observatory 1.5m Tillinghast telescope (+ FAST spectrograph) on 2001  
February 22 beginning at UT 12:18, 4.92 hours after the burst. Two  
1200s spectra were obtained with a 3 arcsec wide slit and 300 l/mm  
grating, yielding 6 Angstrom resolution over the range from 3620 to  
7560 A. The OT was approximately R=18.4 mag around the time of the  
spectroscopy (GCN 963).

This spectrum shows a blue continuum and many narrow absorption lines  
with the following preliminary identifications:

Observed Wavelength (angstrom)	Line ID	Rest Wavelength (angstrom)	Redshift
6405.9	FeII	2585.4	1.477
6438.7	FeII(UV1)	2598.4,2599.4	1.477
6924.2	MgII	2796	1.476
6941.6	MgII	2803	1.476

The FeII (2585,2599) and MgII (2796,2803) doublet absorption features  
are strong, absorbing approximately 50 and 80% of the continuum at  
those wavelengths. These absorption lines constrain the redshift of  
the optical transient associated with GRB010222 to be at  $\geq 1.476$ . If  
the lines come from a host galaxy associated with the GRB, then the  
redshift is 1.476.

Additional unidentified absorption lines appear in the spectrum, data  
analysis is continuing.

This message can be cited.