

## Otkriven do sada najdalji objekt - GRB090423

Autor Slobodan Danko Bosanac  
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Teleskop SWIFT u orbiti otkrio je snažan signal u gama području u dalekom svemiru. Mjerenjem je ustanovljeno da je to objekt s do sada najvećim crvenim pomakom, dakle do sada otkriven najudaljeniji objekt.

A gamma-ray burst detected in April by NASA's Swift orbiter has a higher redshift ( $z = 8.26 \pm 0.08$ ) than any other celestial entity for which a redshift has been measured—except for the cosmic microwave background (CMB) at  $z \approx 1100$ . That means the massive star whose collapse to a black hole the GRB is presumed to manifest was significantly more distant than any star or galaxy yet observed. Its demise provides a glimpse of the cosmos just 625 million years after the Big Bang. Beyond revealing that such stars already existed back then and providing a first approximation to their formation rate, the discovery adds a potentially powerful new probe to the search for the first generation of stars and the investigation of how UV radiation from early stars reionized the intergalactic medium. After the first moment of cosmic transparency, signaled by the CMB, and before there were stars, almost all the primordial hydrogen and helium was unionized. To reconstruct the history of cosmic reionization, one seeks to measure the absorption by neutral atomic hydrogen of light arriving from sources at various very high redshifts. Such observations with quasars have revealed that cosmic reionization was essentially complete by  $z = 6$  (950 Myr after the Big Bang). But high-redshift GRBs seem to be essential for tracing its earlier stages. GRBs are briefly luminous enough to be seen at much greater distances than quasars. (N. R. Tanvir et al., <http://arxiv.org/abs/0906.1577>; R. Salvaterra et al., <http://arxiv.org/abs/0906.1578>.)—Bertram Schwarzschild