Earth in line of lethal gamma-ray burst

If Hit, It Will Destroy Quarter Of Our Planet's Ozone Layer, Up UVB Radiation By 50%

Washington: Earth may be lying within the sights of a potentially lethal gamma-ray burst that can wipe out a quarter of our planet's protective atmospheric ozone, scientists claim.

A Wolf-Rayet star called WR 104, some 8,000 light years away is ripe to undergo a core-collapse supernova of the sort that could generate a seconds-long burst of dangerous gamma-rays.

"We could see it go supernova anywhere from tomorrow to 500,000 years from now," said Grant Hill, an astronomer at the WM Keck Observatory in Hawaii. "For all intents and purposes, the gamma-ray burst and optical photons from the supernova would arrive simultaneously," Hill said. It has been debated whether a GRB from WR 104 — which lies in the direction of our Milky Way's galactic centre — would actually cross Earth's path. However, Hill said that given the continuing uncertainty about the star's alignment with our own, such a scenario can't be ruled out, Forbes.com reported.

THREAT FROM ABOVE

If such a GRB did hit Earth's atmosphere, said Adrian Melott, a physicist at the University of Kansas, it would likely cause a 50% increase in solar UVB radiation. This would not only disrupt photosynthesis among marine and freshwater plankton, but also likely precipitate some sort of broader extinction event, Melott said. There have been conflicting measurements of the star's rotational axis and whether WR 104's polar orientation lies 'face on' to Earth's line of sight or whether it is inclined by as much as 30 to 40 degrees. If the star lies 'pole on' to Earth that would mean that we would be directly in the line of fire of such a burst which might travel along a beam as large as 20-degrees in diameter. If indeed, the star's polar inclination to earth is 30 degrees, then Earth would be untouched.

Peter Tuthill, an astronomer at the University of Sydney in Australia, and colleagues, first found WR 104 in 1998. PTI