COSMIC PITCH

National Aeronautics and Space Administration

NASA

COSMIC EXAMPLE

In Puppis A, a neutron star was kicked into space after it was created during the explosion of a massive star. The explosion sent the neutron star traveling through space with an initial velocity of **over 1.1 million mph (under 2 million kph).**

NASA/CHANDRA, ESA/XMM, F.ALVARO

Kicks

DEFINITION: When a short-duration impact, or contact, from one object to another causes a transfer of energy. This leads to acceleration and motion of the impacted object.

UNITS: km/s, mph

Soccer is a game based on kicking the ball. While we might all be familiar with a foot striking a ball on the pitch, there are cosmic kicks too. These include stars that collapse and send themselves hurtling into space. Stars can also get kicked from other things like by passing too close to a giant black hole that it gets flung out into interstellar space.

SOCCER EXAMPLE

When an elite soccer player kicks a ball, the ball can reach over **100 mph (160 kph)**

nasa.gov
chandra.si.edu/cosmicpitch