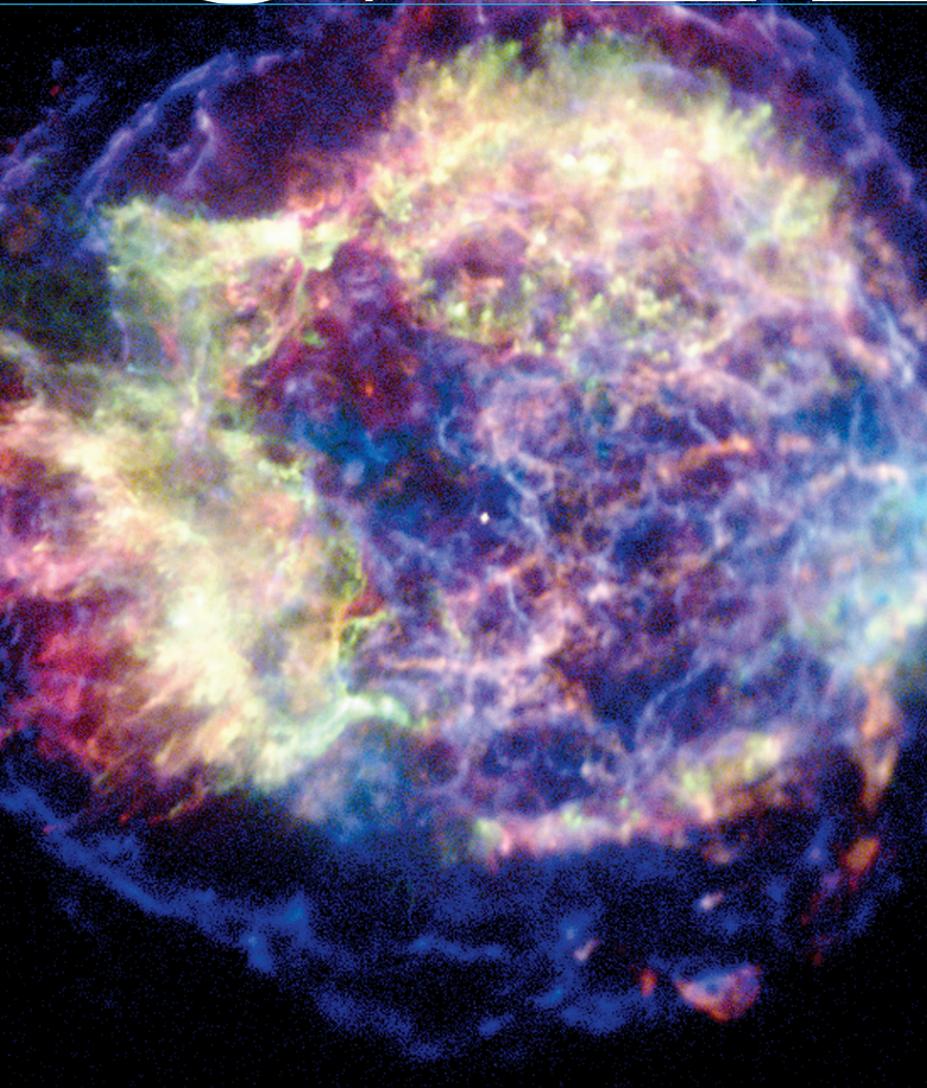


# SPEED



**DEFINITION:** distance traveled over a certain period of time

We often note when something is moving faster or slower than something else. Speed is often used interchangeably with velocity, but they are in fact not the same. Speed measures distance over time, and velocity does this and adds direction. Therefore, two objects may have the same speeds but different velocities if they are moving in different directions.

**Units:** miles per hour (mph), kilometers per hour (kph), meters per second (mps)

**COSMIC EXAMPLE**

**Cassiopeia A shockwave moving into interstellar medium: 10 million mph (16 million kph)**

The supernova remnant Cassiopeia A has a shockwave from the explosion that destroyed the star moving into space at 10 million mph (16 million kph).



**EVERYDAY EXPERIENCE**

Typical US speed limit on highways: 60 mph (96 kph)

**OLYMPIC EXAMPLE**

**Speed Skating:** Skaters can move over ten times faster on ice than the average human walks. 14.8 m/s

