

ASTROLYMPICS PRESSURE

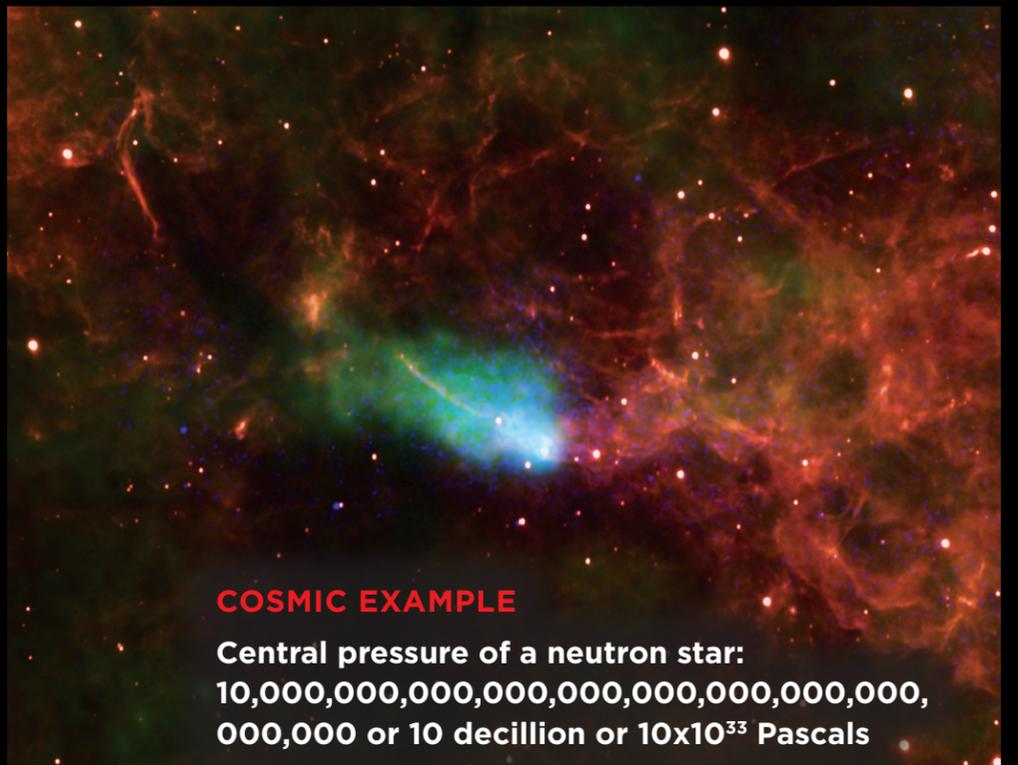
DEFINITION: force over a particular area

The word 'pressure' takes on lots of meanings in today's language. The physical definition of pressure states how much push, or gravitational force, is being exerted by all the matter around or nearby. Solids, liquids or gasses can experience or exert pressure.

Units: many different units used depending on field of science: pounds per square inch (psi), millibars, etc. Below we use Pascals (Newton/meter²) which is about 0.000145 pounds per square inch

EVERYDAY EXAMPLE

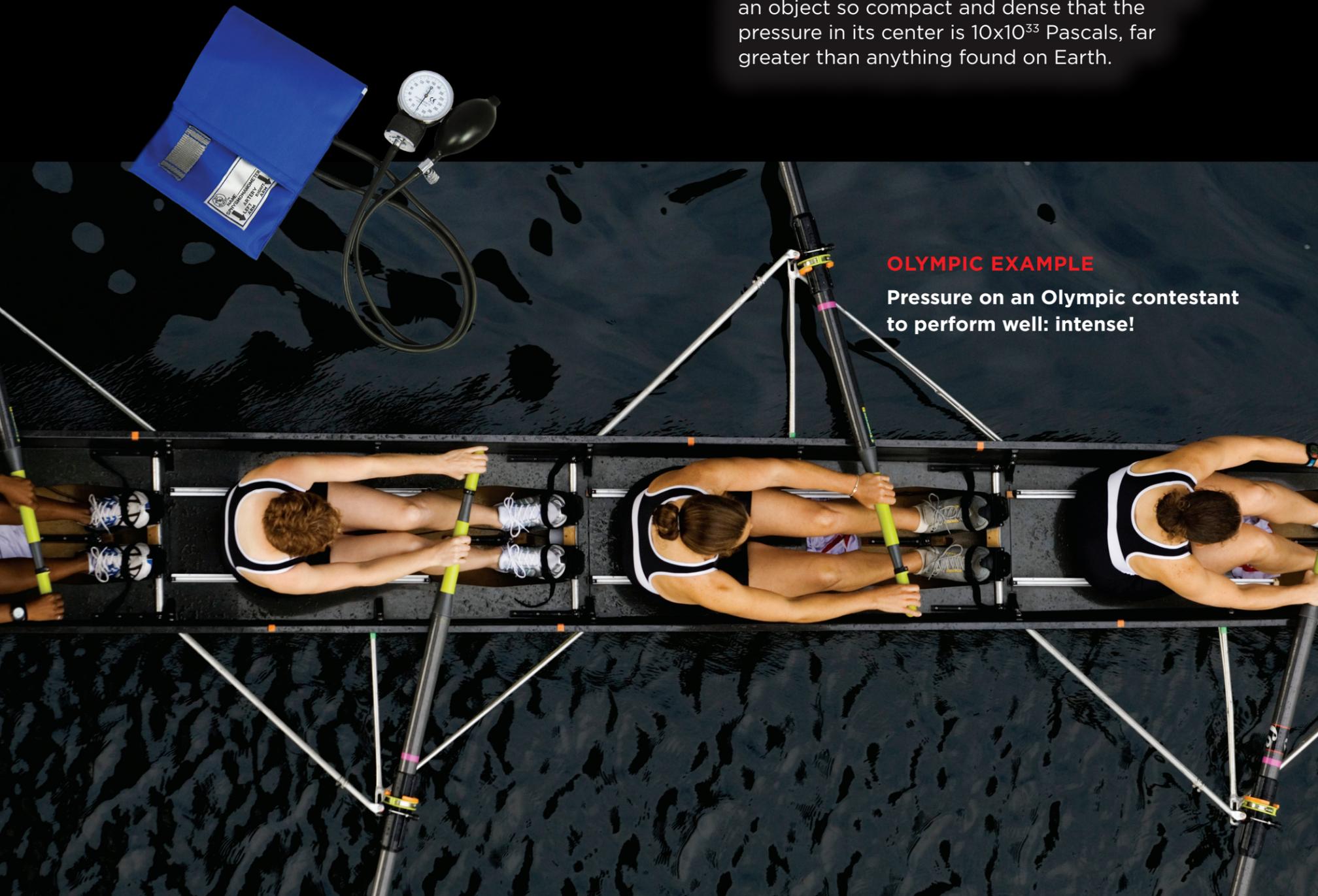
human blood pressure (15,000 Pascals); pressure of atmosphere at sea level (101,325 Pascals).



COSMIC EXAMPLE

Central pressure of a neutron star:
10,000,000,000,000,000,000,000,000,
000,000 or 10 decillion or 10×10^{33} Pascals

Within the blue-green cloud is a neutron star, an object so compact and dense that the pressure in its center is 10×10^{33} Pascals, far greater than anything found on Earth.



OLYMPIC EXAMPLE

Pressure on an Olympic contestant to perform well: intense!