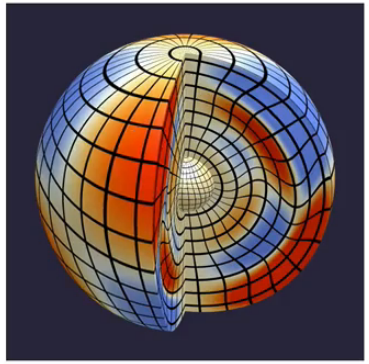
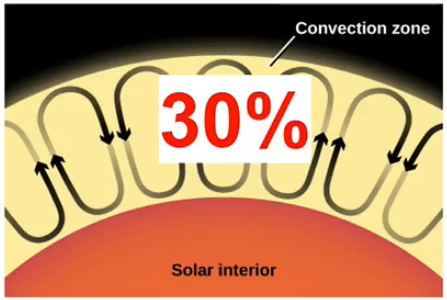
Observing the Solar Interior

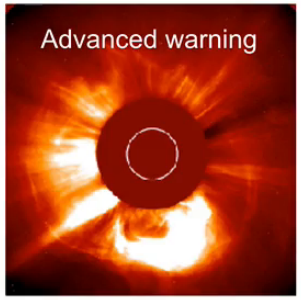
1 The Sun undergoes periodic expansion and contractions known as pulsations

Careful study of these pulsations allows us to infer the physical conditions inside the Sun — helioseismology



2 Things we can learn from helioseismology





3 Raymond Davis' experiment at Homestake mine (Lead, SD) first detected neutrinos from the Sun's core

Big surprise: only 1/3 the expected number found!

4 The Sudbury neutrino observatory found the missing neutrinos — they had converted to other "flavors" that Homestake couldn't detect

Neutrinos must have mass!