PSR J0337+1715 Triple System

Outer Orbit

P_{orb}=327days

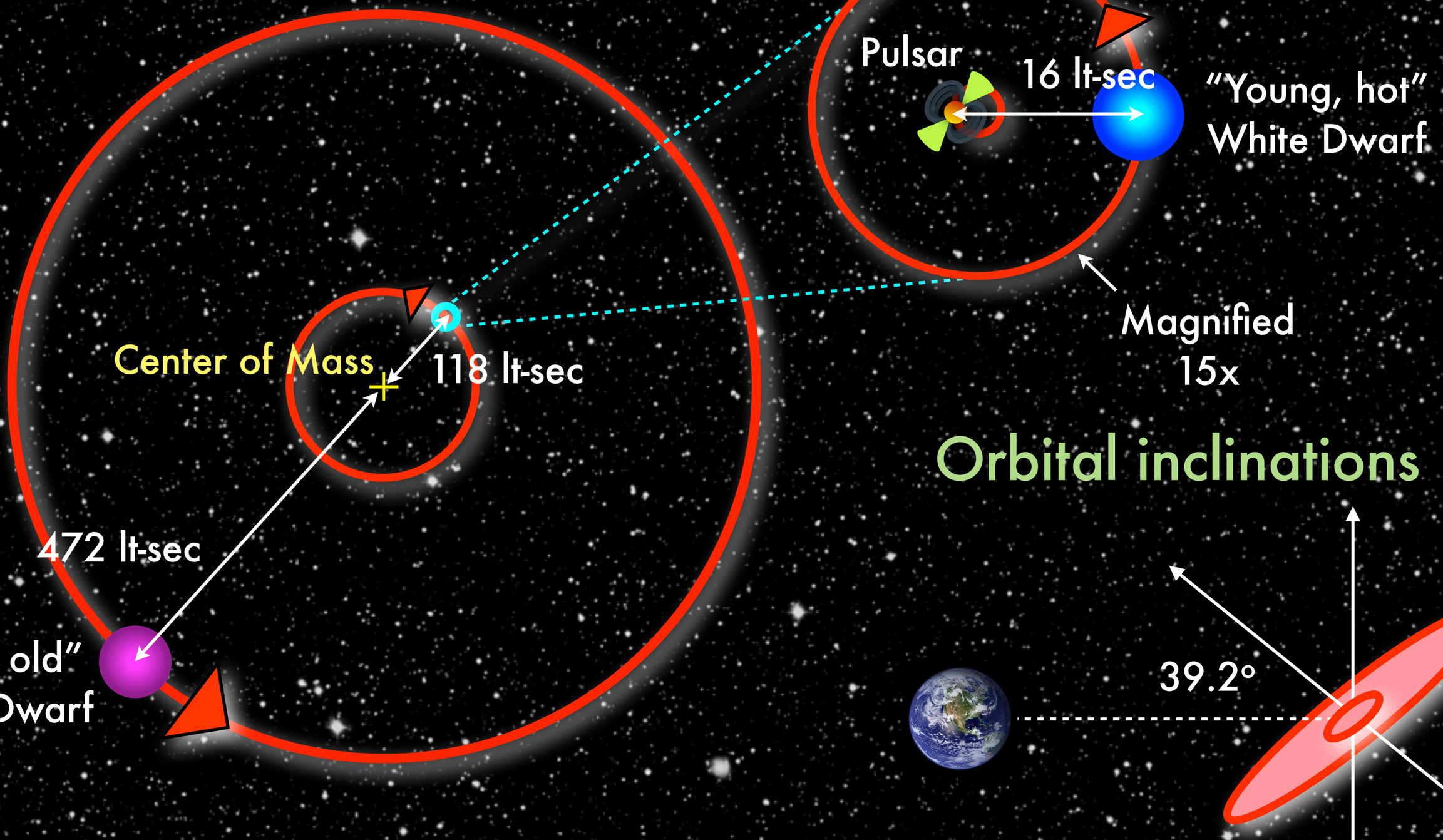
$M_{WD} = 0.41 M_{Sun}$

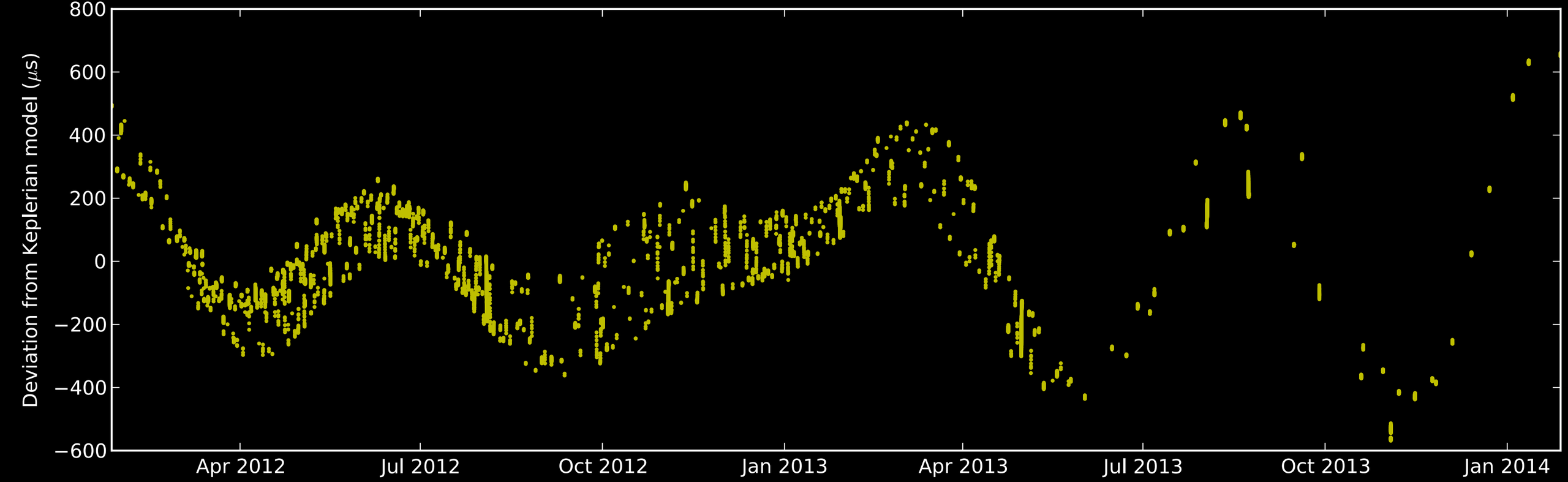
Inner Orbit

P_{orb}=1.6days

$M_{PSR} = 1.44 M_{Sun}$

$M_{WD} = 0.20 M_{Sun}$





Radio telescopes, including the Westerbork Synthesis Radio Telescope operated by ASTRON, allow us to measure how early or late the pulses from this radio pulsar are as it moves around its orbit. We can then compute the delays - shown above - due to the interaction between the inner and outer orbit. These measurements, and the tremendous density of the pulsar, let us test one of the foundations of Einstein's theory of gravity, the Strong Equivalence Principle.

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Netherlands Institute for Radio Astronomy