



**Fig. 1** Moon Phase Angle

### Moon Phase Angle $\psi$

**$xy$ -axes** = fixed direction but moving frame centered on Earth

**$x'y'$ -axes** = moving 'noon' frame centered on Earth (always points at Sun)

**$x''y''$ -axes** = fixed frame of Sun

$\psi$  = moon phase angle =  $\pi/2 + (\phi - \theta)$