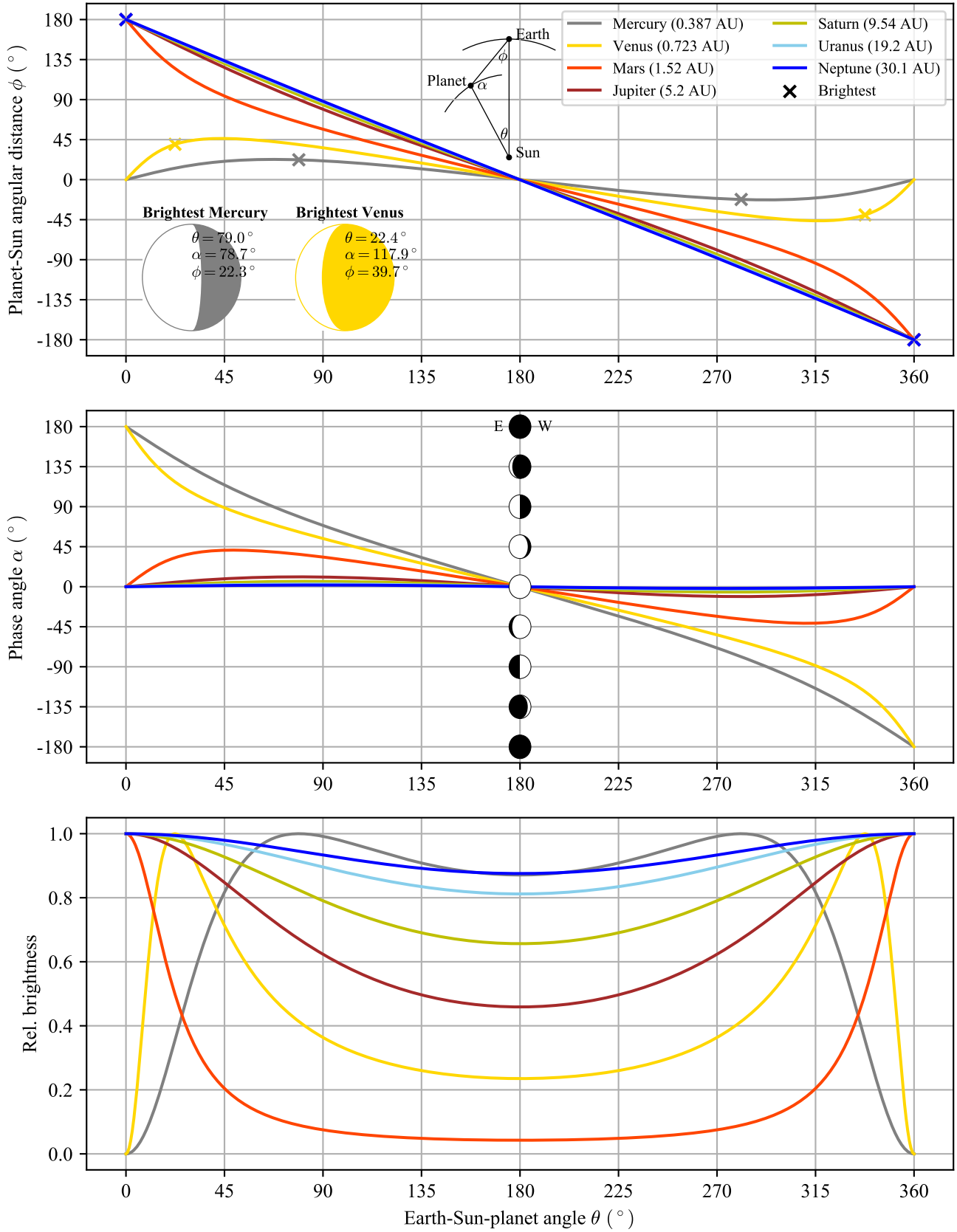
Planet-Sun angular distance ϕ (°)
Mercury (0.387 AU)
Venus (0.723 AU)
Mars (1.52 AU)
Jupiter (5.2 AU)
Saturn (9.54 AU)
Uranus (19.2 AU)
Neptune (30.1 AU)
Brightest
Earth
Planet
Sun
ϕ
α
θ
Brightest Mercury
$\theta = 79.0°$
$\alpha = 78.7°$
$\phi = 22.3°$
Brightest Venus
$\theta = 22.4°$
$\alpha = 117.9°$
$\phi = 39.7°$
Phase angle α (°)
E
W
Rel. brightness
Earth-Sun-planet angle θ (°)