8-10)

ω_o = 70.4 rad/sec (don't actually need this!)
r_o = 11 km = 1.1×10^4 m
$\Delta\omega/\omega_o = 2.01 \times 10^{-6}$

Assume there are no external torques and that angular momentum is conserved. At any time, then the angular momentum L should equal the original value:

$L = L_o$

We don't even have to assume that the star is a uniform sphere, only that it has the same basic shape before and after the glitch (*i.e.* our γ should be the same).
$I\omega = I_o\omega_o$
${}^2/_5 mr^2\omega = {}^2/_5 mr_o^2\omega_o$
$r^2\,\omega = r_o^2\omega_o$
$r = [r_o^2\omega_o]^{1/2}\,\omega^{-1/2}$
$dr/d\omega = -{}^1/_2[r_o^2\omega_o]^{1/2}\,\omega^{-3/2} = -{}^1/_2[r_o^2\omega_o]^{1/2}\,\omega^{-1/2}\,\omega^{-1} = -{}^1/_2 r\,\omega^{-1}$

So,
$dr = -[r/2][d\omega/\omega]$ or $\Delta r = -[r/2][\Delta\omega/\omega] = -[1.1 \times 10^4/2][2.01 \times 10^{-6}] =$ -0.011 m