Some [standard] tidal theory: The gravitational potential Φ at distance $\mathbf{r}$ around a central body with mass M_c modified by a body of mass M_o, orbiting at a distance d, is to good approximation given by:

$$\Phi(\mathbf{r}) = -GM_c/r - GM_o r^2/d^3\,[3\sin^2\theta\cos^2\varphi - 1]/2 \qquad (1)$$

where θ is the polar angle and φ is the azimuthal angle. Since the potential on an equipotential surface can be set equal to any constant, we may set it equal to $-GM_c/r_c$, where r_c is the radius of the (undistorted) central body, giving

$$-GM_c/r_c = -GM_c/r - GM_o r^2/d^3\,[3\sin^2\theta\cos^2\varphi - 1]/2 \qquad (2)$$

Let $h(\theta, \varphi) = r - r_c$ be the height of the displacement due to the tide, then rearrangement of eq.(2) gives (after division through by $-GM_c$):

$$h(\theta, \varphi) = (M_o/M_c)(r_c^4/d^3)[3\sin^2\theta\cos^2\varphi - 1]/2 \qquad (3)$$

where we approximate $r_c r^3$ by r_c^4, since, by definition, $r = r_c + h$ and h is very small compared to r_c.

For simplicity [and still to good approximation as most planetary orbits are close to a common plane] we consider the 2D case where $\theta = 90^o$ (looking 'down' on the orbital plane). The tidal height as a function of longitude (φ) is then

$$h(\varphi) = (M_o/M_c)(r_c^4/d^3)[3\cos^2\varphi - 1]/2 \qquad (4)$$

We can define the tidal *range* to be the difference between high tide ($h>0$) where $\varphi = 0^o$ or 180^o and low tide ($h<0$) perpendicular to the line connecting the centers of the two bodies, at $\varphi = 90^o$ or 270^o. The tidal range is thus

$$T = h(0^o) - h(90^o) = 3/2\,(M_o/M_c)(r_c/d)^3 r_c \qquad (5)$$

If we take the region in the Sun where solar magnetic fields are thought to originate to be the radius of the tachocline: $r_c = 0.713\,R_\odot = 496{,}248{,}000$ m and express masses in units of the Earth, we get for the maximal tidal range ('bulge' in millimeters) generated:

Planet	M_o	M_c	r_c m	d m	d AU	T mm
Mercury	0.0553	332946	496248000	5.7909E+10	0.3871	0.07776
Venus	0.8150	332946	496248000	1.0820E+11	0.7233	0.17577
Earth+Moon	1.0123	332946	496248000	1.4960E+11	1.0000	0.08261
Mars	0.1074	332946	496248000	2.2794E+11	1.5237	0.00248
Jupiter	317.8281	332946	496248000	7.7828E+11	5.2025	0.**18420**
Saturn	95.1609	332946	496248000	1.4274E+12	9.5415	0.00894
Uranus	14.5358	332946	496248000	2.8705E+12	19.1880	0.00017
Neptune	17.1478	332946	496248000	4.4983E+12	30.0695	0.00005

These tides are under the assumption that the Sun is a gas or fluid and is free to move.