Table 1: Notation Standard for *Planetary Ring Systems*
(Draft October 23, 2015)

B	elevation angle above rings
D_2	average surface number density of ring particles
E	Orbital energy
F_D	azimuthal drag force
F_G	central gravitational force from planet, GM_Pm/a^2
F_I	inertially fixed force
F_m	gravitational force from a moon
F_N	component of perturbing force normal to orbit plane
F_r	radial component of perturbing force (cylindrical coordinates)
F_R	radial component of perturbing force (spherical coordinates)
F_z	vertical component of perturbing force
F_λ	azimuthal component of perturbing force
F_Θ	tangential component of perturbing force (in orbit plane)
G	gravitational constant
H	ring vertical thickness
J_2	planetary oblateness parameter
$\vec{L}$	orbital angular momentum
M_P	planet mass
M_m	moon mass
R	planet radius
U	gravitational potential
V_r	average radial velocity of ring particles
V_z	average vertical velocity of ring particles
V_λ	average azimuthal velocity of ring particles
a	orbital semi-major axis
a_m	moon's orbital semi-major axis
c	root-mean-square (rms) velocity dispersion
c_z	vertical rms velocity dispersion
e	orbital eccentricity
e_f	forced eccentricity
e_l	free eccentricity
e_m	moon's eccentricity
f	true anomaly
I	orbital inclination

Continued on next page

Table 1 – continued from previous page

I_m	moon's inclination
h	$e\cos(\varpi - \lambda_0)$
k	$e\sin(\varpi - \lambda_0)$
k_r	radial wavenumber
m	ring particle mass
n	orbital mean motion
n_P	pattern speed
r_H	Hill radius
r_R	Roche limit
$\vec{r}$	particle's position vector
r	radial distance from planet's spin axis
s	ring particle radius
u_r	random radial velocity of ring particles
u_z	random vertical velocity of ring particles
u_λ	random azimuthal velocity of ring particles
$\vec{v}$	particle's velocity vector
v_r	radial velocity of ring particles
v_z	vertical velocity of ring particles
v_λ	azimuthal velocity of ring particles
x	cartesian approximation of radial coordinate
y	cartesian approximation of azimuthal coordinate
z	vertical displacement above ring-plane
ϵ	coefficient of restitution
λ	inertial longitude
λ_0	reference longitude
λ_T	Toomre critical wavelength
ν_{eff}	effective kinematic shear viscosity
ρ	ring particle mass density
ρ_{crit}	Roche critical density
ρ_P	planet mass density
Σ	ring surface mass density
τ	ring optical depth
τ_D	dynamical optical depth
φ_{CR}	resonant argument of a corotation resonance
φ_{LR}	resonant argument of a Lindblad resonance
φ_{VR}	resonant argument of a vertical resonance

Continued on next page

Table 1 – continued from previous page

ω	argument of pericenter
ω_c	collision frequency
ϖ	longitude of pericenter
ϖ_m	moon's longitude of pericenter
$\dot{\varpi}_0$	free apsidal precession rate
Ω	longitude of ascending node
Ω_m	moon's longitude of ascending node
$\dot{\Omega}_0$	free nodal regression rate