Table 1: Notation Standard for *Planetary Ring Systems*

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The following variables have changed since the draft of October 23: B, $B_\odot$, D_2, D_3, D_e, I/F, N_2, N_3, Q, $Q_{\rm ext}$, $Q_{\rm T}$, R, W, W_e, s, α, κ, μ, μ_0, ν, $\dot{\Omega}$, ϖ_0, $\dot{\varpi}$, $\tau_{\rm LOS}$, $\tau_\perp$

B	elevation angle (angle of observer above rings): $B = \|90° - \theta_e\|$
$B_\odot$	solar elevation angle (angle of Sun above rings): $B_\odot = \|90° - \theta_i\|$
D_2	area filling factor (fraction of ring surface area occupied by particles)
D_3	volume filling factor (fraction of total volume occupied by particles)
D_e	equivalent depth (see Glossary)
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
I	orbital inclination
I/F	reflectivity (see Glossary)
I_m	moon's inclination
J_2	planetary oblateness parameter
$\vec{L}$	orbital angular momentum
M_P	planet mass
M_m	moon mass
N_2	surface number density of ring particles
N_3	volume number density of ring particles
Q	tidal quality factor
$Q_{\rm ext}$	photometric extinction coefficient

Continued on next page

Table 1 – continued from previous page

$Q_{\rm T}$	Toomre's Q
R	physical radius of an object
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
W	radial width
W_e	equivalent width (see Glossary)
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
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 (in context of a size distribution)
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

Continued on next page

Table 1 – continued from previous page

y	cartesian approximation of azimuthal coordinate
z	vertical displacement above ring-plane
α	phase angle
ϵ	coefficient of restitution
κ	radial (epicyclic) frequency
λ	inertial longitude
λ_0	reference longitude
λ_T	Toomre critical wavelength
μ	$\sin B$
μ_0	$\sin B_\odot$
ν	vertical frequency
$\nu_{\rm eff}$	effective kinematic shear viscosity
Ω	longitude of ascending node
Ω_m	moon's longitude of ascending node
$\dot{\Omega}$	nodal regression rate
$\dot{\Omega}_0$	free nodal regression rate
ω	argument of pericenter
ω_c	collision frequency
ϖ	longitude of pericenter
ϖ_0	single-scattering albedo
ϖ_m	moon's longitude of pericenter
$\dot{\varpi}$	apsidal precession rate
$\dot{\varpi}_0$	free apsidal precession rate
φ_{CR}	resonant argument of a corotation resonance
φ_{LR}	resonant argument of a Lindblad resonance
φ_{VR}	resonant argument of a vertical resonance
ρ	ring particle mass density
$\rho_{\rm crit}$	Roche critical density
ρ_P	planet mass density
Σ	ring surface mass density
τ	ring optical depth
τ_D	dynamical optical depth
$\tau_{\rm LOS}$	line-of-sight optical depth
$\tau_\perp$	normal optical depth
θ_e	emission angle (angle of target-observer vector from north pole)

Continued on next page

Table 1 – continued from previous page

θ_i	incidence angle (angle of target-Sun vector from north pole)