Contents

Preface	•		٠	·	٠	v
Chapter 1. Dynamical Approximations of the Restricted Three-Body	Pro	oble	m			1
1.1. Introduction						1
1.2. The sphere of action						2
1.3. The Jacobi integral						6
1.4. Two-body approximations at close distances (small D) in the	rest	rict	ted			0
	• . :			·	·	8
1.5. Restricted three-body problem in the vicinity of the planet's	orb	it ai	t			
arbitrary distance from the planet: second-order approximati	ons		•	•	•	15
1.6. The encounter velocity U , and its components \ldots \ldots	•		•	•	•	18
Chapter 2. Encounter Probabilities						31
2.1. Encounter cross-section in two-body interaction						31
2.2. Probability of encounter						35
2.3 Angular deflection	•			•		50
2.6. Angular deneemont	tir	 .n	·	•	•	55
2.4. Equivalent encounter cross-section for summary angular dene	CUIC	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	•	•	·	00
Chapter 3. Orbital Change						6 5
3.1. Orbital change and ejection						65
3.2. Omnidirectional encounter probabilities						72
3.3. Dynamical lifetime of cometary debris			•		•	79
Chapter 4 Acceleration and Resonance						87
A 1 Appendix of an accurator valuation (II) in multiple processing	•	• •	•	·	•	97
4.1. Acceleration of encounter velocity (D) in multiple crossings		· ·		•		01
4.2. Acceleration of encounter velocity (0) by single planet in em	pue	:ai]	prec	essi	ng	95
4.3 Resonances perfect resonance and the Trojans				-		101
4.4 Resonances in simple numerical ratios			•	•	•	103
4.5. Meteoric hodies in 1/1 resonance with the Earth	•	•••	•	•	•	118
4.0. Meteoric boules in 1/1 resonance with the Darth	•	•••	•	•	•	110
Chapter 5. Destruction Mechanics						123
5.1. Cratering						123
5.2. Explosion craters	•		•			128
Annandiaca						1 0 1
	•	• •	•	•	•	101
Appendix 1 Encounter parameters of the planets	•	• •	•	·	•	132
Appendix II Encounter parameters of the tidally receding Moon			•	•	•	134
Appendix III Probability of ejection, a re-appraisal.	•		•	·	•	136
Appendix IV List of symbols	•	• •	•	•	•	141
References	•			:		145
Subject index						149