Program/Phase	*Number of Messages*	*Bodies per Message*
Manager/workers		
Get task	`2 * (numTasks+PR)`	`2`
Exchange forces	`PR * (PR-1)`	`n`
Exchange bodies	`PR * (PR-1)`	`2 * n`
Heartbeat		
Exchange bodies	`PR * (PR-1) / 2`	`2 * n`
Exchange forces	`PR * (PR-1) / 2`	`n`
Pipeline		
Circulate bodies	`PR * PR`	`3 * n * PR`

Figure Table 11.1 Comparison of message-passing programs for n-body problem.