1 Assumption and Theory

Symbol	Description	Value
$S.$	Solar constant/W$\cdot s^{-2}$	1367
G	Universal gravitational constant/$m^3kg^{-1}s^{-2}$	6.67259×10^{-11}
R_E	The distance from the sun to the earth/m	1.496×10^{11}
R_M	The distance from the sun to the Mars/m	2.2794×10^{11}
M_S	The masse of the sun/kg	1.9891×10^{30}
M_E	The masse of the earth/kg	5.965×10^{24}
M_M	The masse of the Mars/kg	6.4219×10^{23}
m	Total mass (sail plus payload)/kg	2000
T_E	The period of revolution of earth/s	3.1536×10^7 (365days)
T_M	The period of revolution of Mars/s	5.93568×10^7 (687days)
ω_E	The angular velocity of revolution of earth/rad$\cdot s^{-1}$	1.9924×10^{-7}
ω_M	The angular velocity of revolution of Mars/rad$\cdot s^{-1}$	1.0585×10^{-7}

Table 1: List of Constants