

TERMS

ΔV	change in velocity, delta velocity
Ω	ascending node
3BSOI	three-body sphere of influence
<i>ACE</i>	<i>Advanced Composition Explorer</i>
ACS	attitude control system
AAS	American Astronautical Society
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AIAA	American Institute of Aeronautics and Astronautics
AMMOS	Advanced Multi-Mission Operations System
<i>ARTEMIS</i>	<i>Acceleration, Reconnection, Turbulence and Electrodynamic of the Moon's Interaction with the Sun</i>
AU	astronomical unit, $\sim 149,600,000$ kilometers
BIPM	Bureau International des Poids et Mesures
BLT	ballistic lunar transfer

C_3	launch injection energy parameter
<i>CH-1</i>	<i>Chandrayaan-1</i>
cm/s	centimeter per second
CRTBP	circular restricted three-body problem
DAV	declination of apogee vector
DE	developmental ephemerides, e.g., DE421
deg	degree
DLA	declination of launch asymptote
DPO	distant prograde orbit
DRO	distant retrograde orbit
DSN	Deep Space Network
<i>DUNE</i>	<i>Dust Near Earth</i>
EDL	entry, descent, and landing
EL_1 / EL_2	Sun–Earth Lagrange point 1 / 2
EM	Earth–Moon
EME2000	Earth Mean Equator and Equinox of J2000
EMO2000	Earth Mean Orbit of J2000
EPO	Earth-phasing orbits
ET	Ephemeris Time, also called Dynamical Time
FPA	flight path angle
FPAz	flight path azimuth angle
GEO	geosynchronous Earth orbit
<i>GM</i>	gravitational constant \times mass
GPS	Global Positioning System
<i>GRAIL</i>	<i>Gravity Recovery and Interior Laboratory</i>
HGS-1	name given to <i>AsiaSat 3</i> after <i>AsiaSat 3</i> failed to get a correct orbit and was transferred to Hughes Global Services, Inc.

IAG	International Association of Geodesy
IAU	International Astronomical Union
<i>IBEX</i>	<i>Interstellar Boundary Explorer</i>
<i>ICE</i>	<i>International Cometary Explorer</i>
ICRF	International Celestial Reference Frame
<i>ISEE-3</i>	<i>International Sun–Earth Explorer-3</i>
ISRO	Indian Space Research Organization
ISTP	International Solar Terrestrial Physics
J2000	currently used standard equinox for January 1, 2000
JPL	Jet Propulsion Laboratory
JSC	Johnson Space Center
km	kilometer
km/s	kilometers per second
km ² /s ²	kilometers squared per second squared
km ³ /s ²	cubic kilometer per second squared
KSC	Kennedy Space Center
L ₁	Lagrange point 1, between the two primary bodies
L ₂	Lagrange point 2, on the far side of the smaller primary
L ₃	Lagrange point 3, on the far side of the larger primary
L ₄	Lagrange point 4, leading the smaller primary in its orbit about the barycenter
L ₅	Lagrange point 5, trailing the smaller primary in its orbit about the barycenter
<i>LCROSS</i>	<i>Lunar Crater Observation and Sensing Satellite</i>
L.E.	low energy
LEO	low-Earth orbit
LL ₁ / LL ₂	Earth–Moon lunar Lagrange point 1 / 2
LLO	low-lunar orbit
LOI	lunar-orbit insertion
LPABF	lunar principal-axis body-fixed

<i>LRO</i>	<i>Lunar Reconnaissance Orbiter</i>
LPO	libration-point orbit
LSP	Launch Services Program
LST	Local Solar Time
LTool	Libration Point Mission Design Tool
LTST	Local True Solar Time
MARS	Mid-Atlantic Regional Spaceport
MGSS	Multimission Ground System and Services Office
MI	manifold insertion
mm/s	millimeters per second
mo	month
MONTE	Mission-analysis, Operations, and Navigation Toolkit Environment
m/s	meters per second
<i>MUSES</i>	<i>Mu Space Engineering Spacecraft (Hiten) A</i>
NASA	National Aeronautics and Space Administration
NLS	NASA Launch Services
OLST	Orbit Local Solar Time
PSLV	Polar Satellite Launch Vehicle
RAV	right ascension of apogee vector
RFK78	Runge-Kutta-Fehlberg seventh-order (integrator)
RLA	right ascension of launch asymptote
SE	Sun–Earth
<i>SELENE</i>	<i>Selenological and Engineering Explorer</i>
SI	Système International
SKM	station-keeping maneuver
<i>SMART-1</i>	<i>Small Missions for Advanced Research in Technology 1</i>

SNOPT	sparse nonlinear optimizer
<i>SOHO</i>	<i>Solar and Heliospheric Observatory</i>
SOI	sphere of influence
SQP	sequential quadratic programming
SRM	state relationship matrix
TAI	Temps Atomique International / International Atomic Time
TCM	trajectory correction maneuver
TDB	Barycentric Dynamic Time
<i>THEMIS</i>	<i>Time History of Events and Macroscale Interactions during Substorms</i>
TIP	targeting interface point
TLC	trans-lunar cruise
TLI	trans-lunar injection
TOF	time of flight
TT	Terrestrial Time
USA	United States of America
USSR	Union of Soviet Socialist Republics (Soviet Union)
UT	Universal Time
UTC	Coordinated Universal Time
UTTR	Utah Test and Training Range
VLBI	very long baseline interferometry
<i>WMAP</i>	<i>Wilkinson Microwave Anisotropy Probe</i>
WSB	weak stability boundary
yr	year

Constants

AU	astronomical unit	1.49597871×10^8	km
c	speed of light	299,792.458	km/s
C	Jacobi constant (see Eq. 2.6)		
D_m	mean distance between the Earth and Moon	384,400	km
R_e	mean equatorial radius of the Earth	6378.1363	km
R_m	mean equatorial radius of the Moon	1737.4	km
G	universal gravitational constant	6.67300×10^{-20}	$\text{km}^3/\text{s}^2/\text{kg}$
GM_e	gravitational parameter of the Earth	398,600.432897	km^3/s^2
GM_m	gravitational parameter of the Moon	4902.800582	km^3/s^2
GM_{em}	gravitational parameter of the Earth–Moon Barycenter	403,503.233479	km^3/s^2
GM_s	gravitational parameter of the Sun	$1.32712440 \times 10^{11}$	km^3/s^2
μ_{em}	three-body constant of the Earth–Moon system	0.0121505856	
μ_{se}	three-body constant of the Sun–Earth/Moon system	$3.04042339 \times 10^{-6}$	