

MARS LAUNCH TASKS

<u>TIME</u>	<u>PROG</u>	<u>TASK</u>
T + 0 min	0126	Engine ignition
T + 1 min, 30 sec	1423	Space Station connector separation
T + 2 min	1694	Throttle up to 80%
T + 2 min, 10 sec	1821	Begin Deep Space Network (DSN) communications
T + 5 min	1937	Enter position
T + 7 min, 30 sec	1979	Enter velocity
T + 10 min	1983	Jettison propulsion module
T + 12 min, 10 sec	2063	Report present trajectory
T + 15 min, 30 sec	2129	Enter pitch and attitude position
T + 20 min	2311	Run main engine performance checks
T + 21 min, 30 sec	2432	Run propellant status check
T + 25 min	2582	Report on-board computer status
T + 30 min, 5 sec	2594	Run systems check
T + 35 min	2804	Set automatic monitoring system
T + 40 min	3000	Activate cruise control

MARS ENTER ORBIT TASKS

<u>TIME</u>	<u>PROG</u>	<u>TASK</u>
T - 1 hr, 55 min	0018	Enter Mars/moon positions
T - 1 hr, 45 min	1217	Reduce velocity
T - 1 hr, 40 min	2331	Activate automatic positioning controls
T - 1 hr, 35 min	3112	Run Transfer and Excursion Vehicle systems checks
T - 1 hr, 20 min	3998	Initiate aerocapture procedures
T - 1 hr, 10 min	4898	Enter current velocity
T - 50 min	5788	Fire OMS orbit adjustments
T - 45 min	6775	Adjust orbit entry velocity
T - 40 min	7512	Report orbit entry to Earth
T - 35 min	8976	Prepare crew transfer to MEV

**Destination:
Mars!™**

Task Cards Mars Base Locations

MARS BASE LOCATION (MS-DOS ONLY)

<u>Base Area Name</u>	<u>Coordinates (Lat. - Long.)</u>	
Launch/Landing Area	8N	30
Crew Habitat	9N	29
Power Production	8N	29
Resource Management	9N	30

Destination: Mars!

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SHUTTLE LAUNCH TASKS

<u>TIME</u>	<u>PROG</u>	<u>TASK</u>
Ascent Phase		
T + 3 sec	0297	Liftoff
T + 7 sec	1449	Begin pitchover maneuver
T + 20 sec	1507	Complete roll
T + 26 sec	1731	Main engine throttle down to 75%
T + 60 sec	1992	Main engine throttle up to 100%
SRB Separation		
T + 2 min, 6 sec	2100	SRB separation
T + 2 min, 10 sec	2966	Check main engine performance
Main Engine Cutoff		
T + 7 min, 40 sec	3100	Main engine throttle down
T + 8 min, 28 sec	3190	Begin MECO sequence
T + 8 min, 31 sec	3290	Hold at 65% thrust
T + 8 min, 38 sec	3300	MECO (Main Engine Cutoff)
ET Separation		
T + 8 min, 50 sec	4100	ET Separation
T + 8 min, 55 sec	4151	Close umbilical doors
T + 8 min, 57 sec	4891	Check pitch attitude and altitude rate
Orbit Insertion		
T + 8 min, 59 sec	5000	Prepare for OMS-1
T + 10 min, 39 sec	5133	Dump MPS propellant
T + 12 min, 24 sec	5199	OMS-1 cutoff
T + 43 min, 58 sec	5200	OMS-2 ignition
T + 45 min, 34 sec	5285	OMS-2 cutoff

SHUTTLE REENTRY TASKS

<u>TIME</u>	<u>PROG</u>	<u>TASK</u>
Deorbit Burn Phase		
T - 1 hr, 15 min	6623	Prepare for deorbit burn
T - 1 hr, 10 min	6648	Load burn targets-attitude, position relating to landing site
T - 1 hr, 10 min	6732	Turn Orbiter aft in direction of travel
T - 1 hr, 8 min	6771	Maneuver to burn altitude
T - 60 min	6877	Fire OMS engines
T - 59 min	6950	Begin coast mode
Orbiter Entry Interface		
T - 31 min	7000	Begin pre-entry phase
T - 30 min	7241	Fire RCS thrusters
T - 29 min	7609	Check trajectory
Blackout		
T - 25 min	7758	RCS positioning
T - 24 min	7782	Test atmospheric density level
T - 23 min	7787	Shut down forward RCS thruster
T - 20 min	7800	Maximum heating
TEM Maneuvers		
T - 5 min, 20 sec	8000	Terminal area energy management maneuvers
Autoland		
T - 2 min	9000	Control to Autoland (MSBLS system)
T - 86 sec	9156	Autoland interface
T - 32 sec	9370	Initiate preflare
T - 14 sec	9843	Wheels down

SS APPROACH TASKS

<u>TIME</u>	<u>PROG</u>	<u>TASK</u>
T - 2 hr	0027	Fire OMS orbit adjustment
T - 1 hr, 50 min	1394	Enter Space Station rendezvous trajectory
T - 1 hr, 40 min	1461	Complete orbit adjustment maneuver
T - 1 hr, 30 min	1523	Adjust to appropriate velocity
T - 1 hr, 20 min	1644	Enter Space Station coordinates
T - 1 hr, 10 min	1812	Open Space Station voice channel
T - 1 hr, 5 min	1847	Send test commands to docking port
T - 1 hr, 3 min	1905	Initiate Long-Range Docking Sensor
T - 1 hr	1963	Run GN & C system checks
T - 55 min	2033	Reduce velocity
T - 50 min	2155	Report Orbiter position
T - 49 min	2280	Activate Short-Range Laser Docking Sensor
T - 45 min	2475	Fire Reaction Control System for docking position
T - 40 min	2512	Activate Laser Target Guide
T - 39 min	2577	Begin docking sequence

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