

STS-109/HST SM-3B			SpaceCalc Shuttle Mission Planner					
Eastern Time		DD	HH	MM	STS-109 Master Flight Plan: Updated 02/12/02			
E	S	02/28/02	06:48	AM	00	00	00	STS-109 launch
V	L	02/28/02	06:57	AM	00	00	09	Main engine cutoff
A	E	02/28/02	07:33	AM	00	00	45	OMS-2 rocket firing (dV: 268.8 fps; 358.8 sm by 209.3 sm)
	E	02/28/02	07:38	AM	00	00	50	Begin post-insertion timeline
	P	02/28/02	08:18	AM	00	01	30	Payload bay door opening
		02/28/02	09:18	AM	00	02	30	Local area network setup
		02/28/02	09:43	AM	00	02	55	GIRA installation
		02/28/02	09:48	AM	00	03	00	HST: Gyro #6 powerup
		02/28/02	10:18	AM	00	03	30	Ergometer setup
		02/28/02	10:23	AM	00	03	35	OCA setup
		02/28/02	10:53	AM	00	04	05	Elevon park
		02/28/02	11:27	AM	00	04	39	NC1A rendezvous rocket firing
		02/28/02	12:14	PM	00	05	26	NC1 B rendezvous rocket firing
		02/28/02	12:28	PM	00	05	40	Group B computer powerdown
		02/28/02	01:48	PM	00	07	00	Crew sleep begins
		02/28/02	05:48	PM	00	11	00	HST: STIS/NCS noise test
		02/28/02	09:48	PM	00	15	00	Crew wakeup
		03/01/02	12:48	AM	00	18	00	MAGR setup
		03/01/02	12:48	AM	00	18	00	HHL checkout
		03/01/02	12:52	AM	00	18	04	NC2 rendezvous rocket firing
		03/01/02	01:23	AM	00	18	35	Robot arm (RMS) powerup
		03/01/02	01:33	AM	00	18	45	RMS checkout
		03/01/02	01:48	AM	00	19	00	HST PGSC configuration
		03/01/02	02:03	AM	00	19	15	10.2 cabin depress
		03/01/02	02:18	AM	00	19	30	RMS HST support hardware inspection
		03/01/02	03:18	AM	00	20	30	RMS payload bay survey

03/01/02	03:18 AM	00	20	30	Flight support structure prepped for HST berthing
03/01/02	04:33 AM	00	21	45	Crew meals begin
03/01/02	05:58 AM	00	23	10	Airlock preparations
03/01/02	06:13 AM	00	23	25	Rendezvous tools checkout
03/01/02	06:28 AM	00	23	40	EVA tools checkout
03/01/02	06:28 AM	00	23	40	Spacesuit checkout (3,4)
03/01/02	07:18 AM	01	00	30	HST: Solid state recorder playback
03/01/02	07:43 AM	01	00	55	PGT checkout
03/01/02	08:33 AM	01	01	45	PAO event
03/01/02	08:43 AM	01	01	55	Spacesuit checkout (1,2)
03/01/02	10:03 AM	01	03	15	REBA hardware checkout
03/01/02	10:18 AM	01	03	30	NC3 rendezvous rocket firing
03/01/02	11:08 AM	01	04	20	HST: Solar arrays latched
03/01/02	01:18 PM	01	06	30	Crew sleep begins
03/01/02	03:28 PM	01	08	40	HST: Solar array brakes on
03/01/02	04:28 PM	01	09	40	HST: Retract high gain antennas
03/01/02	09:18 PM	01	14	30	Crew wakeup
03/01/02	11:13 PM	01	16	25	Group B computer powerup
03/01/02	11:38 PM	01	16	50	Begin rendezvous timeline
03/01/02	11:48 PM	01	17	00	HST: Solar array slew
03/02/02	12:13 AM	01	17	25	EVA-1 tools configured
03/02/02	12:23 AM	01	17	35	NC4 rendezvous rocket firing
03/02/02	01:13 AM	01	18	25	Payload interrogater config
03/02/02	01:59 AM	01	19	11	TI rendezvous rocket firing
03/02/02	02:48 AM	01	20	00	HST: Maneuver to capture attitude
03/02/02	03:23 AM	01	20	35	RMS poised for capture
03/02/02	03:28 AM	01	20	40	HST in capture attitude
03/02/02	03:32 AM	01	20	44	R-bar arrival
03/02/02	04:02 AM	01	21	14	HST grapple and berthing (364 sm by 348.5 sm)
03/02/02	04:48 AM	01	22	00	HST latched to FSS
03/02/02	05:23 AM	01	22	35	RMS survey of HST/FSS
03/02/02	05:38 AM	01	22	50	HST: Switch to external power

03/02/02	06:48 AM	02	00	00	Group B computer powerdown
03/02/02	06:48 AM	02	00	00	Middeck prepped for spacewalk
03/02/02	07:18 AM	02	00	30	STS crew: Solar array retraction survey
03/02/02	07:38 AM	02	00	50	HST: Solar arrays slewed to 0 degrees
03/02/02	08:38 AM	02	01	50	HST: Solar array retraction
03/02/02	09:48 AM	02	03	00	HST: Solar array retraction
03/02/02	10:18 AM	02	03	30	RMS parked
03/02/02	10:33 AM	02	03	45	EVA review
03/02/02	12:48 PM	02	06	00	HST: KU-band checkout
03/02/02	01:18 PM	02	06	30	Crew sleep begins
03/02/02	01:28 PM	02	06	40	HST: Battery discharge begins
03/02/02	09:18 PM	02	14	30	Crew wakeup
03/02/02	09:28 PM	02	14	40	HST: PGSC checkout
03/02/02	11:18 PM	02	16	30	EVA-1: Preparations begin
03/03/02	12:48 AM	02	18	00	Spacesuit purge and pre-breathe
03/03/02	01:03 AM	02	18	15	RMS moves MFR to airlock
03/03/02	01:38 AM	02	18	50	EVA-1: Airlock depressurization
03/03/02	01:53 AM	02	19	05	EVA-1: Airlock egress
03/03/02	02:03 AM	02	19	15	EVA-1: Initial EVA setup
03/03/02	02:58 AM	02	20	10	EVA-1: -V2 solar array and diode box installation
03/03/02	06:48 AM	03	00	00	EVA-1: Linnehan off arm; Grunsfeld on
03/03/02	07:03 AM	03	00	15	EVA-1: P601 cable installation
03/03/02	07:33 AM	03	00	45	EVA-1: Daily closeout work
03/03/02	08:03 AM	03	01	15	EVA-1: Airlock ingress
03/03/02	08:13 AM	03	01	25	HST: Solar array slew
03/03/02	08:18 AM	03	01	30	EVA-1: Airlock repressurization
03/03/02	08:18 AM	03	01	30	RMS park
03/03/02	08:33 AM	03	01	45	HST: Solar array functional test
03/03/02	09:48 AM	03	03	00	EVA-2 tools configured
03/03/02	10:28 AM	03	03	40	HST: Solar arrays slewed to 0 degrees
03/03/02	11:03 AM	03	04	15	EVA review
03/03/02	01:18 PM	03	06	30	Crew sleep begins

03/03/02	08:18 PM	03	13	30	HST: Battery discharging
03/03/02	09:18 PM	03	14	30	Crew wakeup
03/03/02	11:18 PM	03	16	30	EVA-2: Preparations begin
03/04/02	12:03 AM	03	17	15	RMS moves MFR to airlock
03/04/02	12:48 AM	03	18	00	EVA-2: Spacesuit purge and pre-breathe
03/04/02	01:38 AM	03	18	50	EVA-2: Airlock depressurization
03/04/02	01:53 AM	03	19	05	EVA-2: Airlock egress
03/04/02	02:03 AM	03	19	15	EVA-2: Daily setup
03/04/02	02:33 AM	03	19	45	EVA-2: +V2 solar array and diode box installation
03/04/02	04:48 AM	03	22	00	HST: RWA preparation
03/04/02	06:33 AM	03	23	45	EVA-2: Reaction wheel assembly R&R
03/04/02	07:38 AM	04	00	50	EVA-2: Daily closeout
03/04/02	08:08 AM	04	01	20	EVA-2: Airlock ingress
03/04/02	08:23 AM	04	01	35	HST: Solar array slew
03/04/02	08:23 AM	04	01	35	RMS park
03/04/02	08:23 AM	04	01	35	EVA-2: Airlock repressurization
03/04/02	08:48 AM	04	02	00	HST: Solar array functional test
03/04/02	09:53 AM	04	03	05	EVA-3 tools configured
03/04/02	10:33 AM	04	03	45	HST: Solar arrays slewed to 0 degrees
03/04/02	11:13 AM	04	04	25	EVA review
03/04/02	01:18 PM	04	06	30	Crew sleep begins
03/04/02	02:48 PM	04	08	00	HST: Battery discharging
03/04/02	09:18 PM	04	14	30	Crew wakeup
03/04/02	10:18 PM	04	15	30	EVA-3: EVA preparations begin
03/04/02	11:13 PM	04	16	25	HST: Solar array slew
03/04/02	11:43 PM	04	16	55	RMS setup
03/04/02	11:48 PM	04	17	00	EVA-3: Spacesuit purge and pre-breathe
03/05/02	12:38 AM	04	17	50	EVA-3: Airlock depressurization
03/05/02	12:53 AM	04	18	05	EVA-3: Airlock egress
03/05/02	12:53 AM	04	18	05	HST: Hardware powerdown
03/05/02	01:03 AM	04	18	15	EVA-3: Daily setup

03/05/02	01:18 AM	04	18	30	EVA-3: PCU battery demate
03/05/02	02:03 AM	04	19	15	EVA-3: Power control unit installation
03/05/02	03:48 AM	04	21	00	EVA-3: MFR ops
03/05/02	03:58 AM	04	21	10	EVA-3: Power control unit installation
03/05/02	06:03 AM	04	23	15	HST: PCU aliveness test
03/05/02	06:23 AM	04	23	35	EVA-3: PCU battery mate
03/05/02	07:03 AM	05	00	15	EVA-3: Daily closeout
03/05/02	07:33 AM	05	00	45	EVA-3: Airlock ingress
03/05/02	07:48 AM	05	01	00	EVA-3: Airlock repressurization
03/05/02	08:13 AM	05	01	25	HST: PCU functional test
03/05/02	08:43 AM	05	01	55	HST: Solar array slew
03/05/02	09:08 AM	05	02	20	HST: PCU functional test (part 2)
03/05/02	09:18 AM	05	02	30	EVA-4 tools configured
03/05/02	10:33 AM	05	03	45	HST: Hardware power restored
03/05/02	10:38 AM	05	03	50	EVA review
03/05/02	12:48 PM	05	06	00	HST: Reaction wheel assembly functional test
03/05/02	01:18 PM	05	06	30	Crew sleep begins
03/05/02	09:18 PM	05	14	30	Crew wakeup
03/05/02	11:18 PM	05	16	30	EVA-4: Preparations begin
03/06/02	12:18 AM	05	17	30	HST: Solar arrays slewed to 0 degrees
03/06/02	12:38 AM	05	17	50	RMS moves MFR to airlock
03/06/02	12:48 AM	05	18	00	EVA-4: Spacesuit purge and pre-breathe
03/06/02	01:38 AM	05	18	50	EVA-4: Airlock depressurization
03/06/02	01:53 AM	05	19	05	EVA-4: Airlock egress
03/06/02	02:03 AM	05	19	15	EVA-4: Daily setup
03/06/02	02:18 AM	05	19	30	EVA-4: Advanced Camera for Surveys installation
03/06/02	05:08 AM	05	22	20	EVA-4: MFR ops
03/06/02	05:23 AM	05	22	35	EVA-4: ESM ops
03/06/02	06:53 AM	06	00	05	EVA-4: PCU cleanup
03/06/02	07:33 AM	06	00	45	EVA-4: Daily closeout
03/06/02	07:33 AM	06	00	45	HST: ACS functional test
03/06/02	08:03 AM	06	01	15	EVA-4: Airlock ingress

	03/06/02	08:18 AM	06	01	30	EVA-4: Airlock repressurization
	03/06/02	09:23 AM	06	02	35	HST: ACS computer dump
	03/06/02	09:48 AM	06	03	00	EVA-5 tools configured
	03/06/02	10:13 AM	06	03	25	HST: 486 memory dump
	03/06/02	11:08 AM	06	04	20	EVA review
	03/06/02	01:18 PM	06	06	30	Crew sleep begins
	03/06/02	09:18 PM	06	14	30	Crew wakeup
	03/06/02	11:18 PM	06	16	30	EVA-5: Preparations begin
	03/07/02	12:43 AM	06	17	55	RMS moves MFR to airlock
	03/07/02	12:48 AM	06	18	00	EVA-5: Spacesuit purge and pre-breathe
	03/07/02	01:38 AM	06	18	50	EVA-5: Airlock depressurization
	03/07/02	01:53 AM	06	19	05	EVA-5: Airlock egress
	03/07/02	02:03 AM	06	19	15	EVA-5: Daily setup
	03/07/02	02:18 AM	06	19	30	HST: ESM prep
	03/07/02	02:18 AM	06	19	30	EVA-5: NICMOS cryo cooler system
	03/07/02	04:13 AM	06	21	25	EVA-5: MFR ops
	03/07/02	04:28 AM	06	21	40	EVA-5: NCS radiator installation
	03/07/02	06:43 AM	06	23	55	HST: NICMOS functional test part 1
	03/07/02	07:03 AM	07	00	15	EVA-5: Final closeout
	03/07/02	07:23 AM	07	00	35	HST: High gain antenna deploy
	03/07/02	08:03 AM	07	01	15	EVA-5: Airlock ingress
	03/07/02	08:18 AM	07	01	30	EVA-5: Airlock repressurization
	03/07/02	08:23 AM	07	01	35	HST: NICMOS functional test part 2
	03/07/02	08:43 AM	07	01	55	RMS park
	03/07/02	09:20 AM	07	02	32	Shuttle reboost maneuver (364.55 sm by 353.05 sm; assumes 30 minute boost)
	03/07/02	09:48 AM	07	03	00	Contingency EVA tools configured
	03/07/02	10:18 AM	07	03	30	HST: Relax solar array latches
	03/07/02	01:18 PM	07	06	30	Crew sleep begins
	03/07/02	09:18 PM	07	14	30	Crew wakeup
	03/08/02	12:23 AM	07	17	35	HST: Solar array slew
	03/08/02	12:23 AM	07	17	35	HST: Prepare for battery charging

03/08/02	12:48 AM	07	18	00	HST: Battery charging
03/08/02	01:18 AM	07	18	30	Group B computer powerup
03/08/02	01:38 AM	07	18	50	PGSC setup
03/08/02	01:58 AM	07	19	10	RMS grapples HST
03/08/02	03:03 AM	07	20	15	HST umbilical retracted
03/08/02	03:13 AM	07	20	25	Maneuver to HST unberthing attitude
03/08/02	03:43 AM	07	20	55	Shuttle in unberthing attitude
03/08/02	03:58 AM	07	21	10	HST: Open telescope door
03/08/02	04:18 AM	07	21	30	Unberthing preparations begin
03/08/02	05:01 AM	07	22	13	HST is released from the shuttle
03/08/02	05:02 AM	07	22	14	Separation burn No. 1
03/08/02	05:35 AM	07	22	47	Separation burn No. 2
03/08/02	05:43 AM	07	22	55	RMS powerdown
03/08/02	05:58 AM	07	23	10	Crew meals begin
03/08/02	06:58 AM	08	00	10	Flight support structure stowed
03/08/02	07:03 AM	08	00	15	OMS adjust rocket firing (dV: 15 fps; 360 sm by 345 sm)
03/08/02	07:28 AM	08	00	40	Group B computer powerdown
03/08/02	07:43 AM	08	00	55	PGSC stow
03/08/02	08:08 AM	08	01	20	PAO event with entire crew
03/08/02	08:53 AM	08	02	05	14.7 cabin repress
03/08/02	12:18 PM	08	05	30	Crew sleep begins
03/08/02	08:18 PM	08	13	30	Crew wakeup
03/08/02	11:18 PM	08	16	30	Begin crew off-duty time
03/09/02	03:48 AM	08	21	00	Crew meal
03/09/02	04:48 AM	08	22	00	Resume crew off-duty time
03/09/02	08:18 AM	09	01	30	PAO event with entire crew
03/09/02	11:18 AM	09	04	30	Crew sleep begins
03/09/02	07:18 PM	09	12	30	Crew wakeup
03/10/02	12:03 AM	09	17	15	Crew photo
03/10/02	12:53 AM	09	18	05	PAO event: Crew news conference
03/10/02	01:43 AM	09	18	55	Flight control system checkout

03/10/02	02:43 AM	09	19	55	RCS hotfire test
03/10/02	03:03 AM	09	20	15	Crew deorbit review
03/10/02	03:33 AM	09	20	45	Crew meal
03/10/02	04:33 AM	09	21	45	Cabin stow begins
03/10/02	05:33 AM	09	22	45	CDR, PLT use PILOT simulator
03/10/02	07:06 AM	10	00	18	FRCS adjust rocket firing (358.8 sm by 335.8)
03/10/02	07:48 AM	10	01	00	PGSC stow part 1
03/10/02	07:58 AM	10	01	10	KU-band antenna stow
03/10/02	08:18 AM	10	01	30	Ergometer stow
03/10/02	11:18 AM	10	04	30	Crew sleep begins
03/10/02	07:18 PM	10	12	30	Crew wakeup
03/10/02	09:08 PM	10	14	20	Group B computer powerup
03/10/02	09:18 PM	10	14	30	Payload deactivation
03/10/02	09:43 PM	10	14	55	Deorbit IMU alignment
03/10/02	09:43 PM	10	14	55	PGSC stow part 2
03/10/02	10:03 PM	10	15	15	GIRA stow
03/10/02	10:18 PM	10	15	30	Printer stow
03/10/02	10:28 PM	10	15	40	Begin deorbit prep timeline
03/11/02	03:51 AM	10	21	03	Deorbit burn (rev. 164; dV: 468.2 fps)
03/11/02	05:01 AM	10	22	13	Landing (rev. 165)

Compiled by William Harwood