

STS-129/ISS-ULF3				SpaceCalc Shuttle Mission Planner	
Eastern Time	DD	HH	MM	SS	Updated 11/23/09
Flight Day 1					
11/16 Mon 02:28:10 PM	00	00	00	00	Launch
11/16 Mon 03:05 PM	00	00	37	00	OMS-2 rocket firing
11/16 Mon 03:18 PM	00	00	50	00	Post insertion timeline begins
11/16 Mon 05:08 PM	00	02	40	00	SRMS powerup
11/16 Mon 05:23 PM	00	02	55	00	Laptop computer setup (part 1)
11/16 Mon 06:02 PM	00	03	34	46	NC-1 rendezvous rocket firing
11/16 Mon 06:13 PM	00	03	45	00	SRMS checkout
11/16 Mon 06:23 PM	00	03	55	00	Group B computer powerdown
11/16 Mon 06:28 PM	00	04	00	00	GIRA installation
11/16 Mon 06:58 PM	00	04	30	00	Wing leading edge sensors activated
11/16 Mon 07:03 PM	00	04	35	00	ET video downlink
11/16 Mon 07:08 PM	00	04	40	00	ET photo
11/16 Mon 07:23 PM	00	04	55	00	Umbilical camera downlink
11/16 Mon 07:28 PM	00	05	00	00	SEE setup
11/16 Mon 08:28 PM	00	06	00	00	Crew sleep begins
Flight Day 2 (Updated 11/17/09)					
11/17 Tue 04:28 AM	00	14	00	00	Crew wakeup
11/17 Tue 05:58 AM	00	15	30	00	Minicam downlink
11/17 Tue 06:37 AM	00	16	09	40	NC-2 rendezvous rocket firing
11/17 Tue 06:58 AM	00	16	30	00	SRMS unberths OBSS
11/17 Tue 07:23 AM	00	16	55	00	Ergometer setup
11/17 Tue 07:53 AM	00	17	25	00	Spacesuit checkout preps
11/17 Tue 08:13 AM	00	17	45	00	OBSS starboard wing survey
11/17 Tue 08:23 AM	00	17	55	00	Spacesuit checkout

11/17	Tue	10:08 AM	00	19	40	00	Crew meals begin
11/17	Tue	11:08 AM	00	20	40	00	OBSS nose cap survey
11/17	Tue	11:08 AM	00	20	40	00	Spacesuit prepped for transfer to station
11/17	Tue	11:58 AM	00	21	30	00	OBSS port wing survey
11/17	Tue	02:13 PM	00	23	45	00	SRMS berths OBSS
11/17	Tue	03:08 PM	01	00	40	00	SRMS grapples ELC1
11/17	Tue	03:23 PM	01	00	55	00	OMS pod survey
11/17	Tue	03:28 PM	01	01	00	00	Centerline camera setup
11/17	Tue	03:28 PM	01	01	00	00	LDRI downlink
11/17	Tue	03:58 PM	01	01	30	00	Orbiter docking system ring extension
11/17	Tue	04:28 PM	01	02	00	00	Rendezvous tools checkout
11/17	Tue	05:44 PM	01	03	16	11	NC-3 rendezvous rocket firing
11/17	Tue	08:28 PM	01	06	00	00	Crew sleep begins
Flight Day 3 (Updated 11/18/09)							
11/18	Wed	04:28 AM	01	14	00	00	STS/ISS crew wakeup
11/18	Wed	05:48 AM	01	15	20	00	Group B computer powerup
11/18	Wed	06:03 AM	01	15	35	00	Rendezvous timeline begins
11/18	Wed	06:03 AM	01	15	35	00	ISS daily planning conference
11/18	Wed	07:34 AM	01	17	06	17	NC-4 rendezvous rocket firing
11/18	Wed	07:53 AM	01	17	25	00	Spacesuits removed from airlock
11/18	Wed	09:05 AM	01	18	37	47	TI burn
11/18	Wed	09:44 AM	01	19	16	18	Sunset
11/18	Wed	10:04 AM	01	19	36	23	Range: 10,000 feet
11/18	Wed	10:13 AM	01	19	45	03	Range: 5,000 feet
11/18	Wed	10:18 AM	01	19	50	32	Range: 3,000 feet
11/18	Wed	10:20 AM	01	19	52	20	Sunrise
11/18	Wed	10:22 AM	01	19	54	41	MC-4 rendezvous burn
11/18	Wed	10:26 AM	01	19	58	41	Range: 1,500 feet
11/18	Wed	10:31 AM	01	20	03	41	Range: 1,000 feet
11/18	Wed	10:34 AM	01	20	06	41	KU antenna to low power
11/18	Wed	10:35 AM	01	20	07	41	+R bar arrival directly below ISS

11/18	Wed	10:41 AM	01	20	12	53	Range: 600 feet
11/18	Wed	10:48 AM	01	20	19	59	Noon
11/18	Wed	10:52 AM	01	20	23	59	RPM start window open
11/18	Wed	10:52 AM	01	20	24	00	Start pitch maneuver
11/18	Wed	10:56 AM	01	20	28	07	RPM full photo window close
11/18	Wed	11:00 AM	01	20	32	00	End pitch maneuver
11/18	Wed	11:02 AM	01	20	34	36	Initiate pitch up maneuver (575 ft)
11/18	Wed	11:04 AM	01	20	36	30	RPM start window close
11/18	Wed	11:14 AM	01	20	46	06	+V bar arrival; range: 310 feet
11/18	Wed	11:15 AM	01	20	46	56	Range: 300 feet
11/18	Wed	11:15 AM	01	20	47	38	Sunset
11/18	Wed	11:19 AM	01	20	51	06	Range: 250 feet
11/18	Wed	11:23 AM	01	20	55	16	Range: 200 feet
11/18	Wed	11:25 AM	01	20	57	46	Range: 170 feet
11/18	Wed	11:27 AM	01	20	59	26	Range: 150 feet
11/18	Wed	11:31 AM	01	21	03	36	Range: 100 feet
11/18	Wed	11:34 AM	01	21	06	36	Range: 75 feet
11/18	Wed	11:38 AM	01	21	10	46	Range: 50 feet
11/18	Wed	11:42 AM	01	21	14	06	Range: 30 feet; start stationkeeping
11/18	Wed	11:47 AM	01	21	19	06	End stationkeeping; push to dock
11/18	Wed	11:51 AM	01	21	23	26	Range: 10 feet
11/18	Wed	11:51 AM	01	21	23	39	Sunrise
11/18	Wed	11:53 AM	01	21	25	07	DOCKING
11/18	Wed	12:13 PM	01	21	45	00	Leak checks
11/18	Wed	12:13 PM	01	21	45	00	Video playback
11/18	Wed	12:33 PM	01	22	05	00	Post docking laptop reconfig
11/18	Wed	12:43 PM	01	22	15	00	Orbiter docking system prepped for ingress
11/18	Wed	12:43 PM	01	22	15	00	Group B computer powerdown
11/18	Wed	01:03 PM	01	22	35	00	Hatch open
11/18	Wed	01:48 PM	01	23	20	00	Welcome aboard!
11/18	Wed	01:58 PM	01	23	30	00	Safety briefing
11/18	Wed	02:28 PM	02	00	00	00	SRMS unberths ELC1
11/18	Wed	02:33 PM	02	00	05	00	Spacesuits moved to ISS

11/18	Wed	02:38	PM	02	00	10	00	EVA-1: Tools configured
11/18	Wed	03:08	PM	02	00	40	00	SSRMS grapples ELC1
11/18	Wed	03:33	PM	02	01	05	00	SRMS ungrapples ELC1
11/18	Wed	03:43	PM	02	01	15	00	SSRMS moves ELC1 to install point
11/18	Wed	04:08	PM	02	01	40	00	EVA-1: Equipment lock preps
11/18	Wed	04:23	PM	02	01	55	00	EVA-1: Procedures review
11/18	Wed	04:33	PM	02	02	05	00	SSRMS installs ELC1
11/18	Wed	05:33	PM	02	03	05	00	ISS evening planning conference
11/18	Wed	06:53	PM	02	04	25	00	EVA-1: Mask/pre-breathe
11/18	Wed	07:33	PM	02	05	05	00	EVA-1: Airlock depress to 10.2 psi
11/18	Wed	07:58	PM	02	05	30	00	ISS crew sleep begins
11/18	Wed	08:28	PM	02	06	00	00	STS crew sleep begins
Flight Day 4 (Updated 11/19/09)								
11/19	Thu	04:28	AM	02	14	00	00	Crew wakeup
11/19	Thu	05:03	AM	02	14	35	00	EVA-1: 14.7 psi repress/hygiene break
11/19	Thu	05:48	AM	02	15	20	00	EVA-1: Airlock depress to 10.2 psi
11/19	Thu	05:58	AM	02	15	30	00	ISS daily planning conference
11/19	Thu	06:13	AM	02	15	45	00	EVA-1: Campout EVA preps
11/19	Thu	07:43	AM	02	17	15	00	EVA-1: Spacesuit purge
11/19	Thu	07:58	AM	02	17	30	00	EVA-1: Spacesuit prebreathe
11/19	Thu	08:48	AM	02	18	20	00	EVA-1: Crew lock depressurization
11/19	Thu	09:18	AM	02	18	50	00	EVA-1: Spacesuits to battery power
11/19	Thu	09:23	AM	02	18	55	00	EVA-1: Airlock egress/setup
11/19	Thu	09:43	AM	02	19	15	00	EVA-1: Spare SASA install
11/19	Thu	12:33	PM	02	22	05	00	EVA-1/Satcher: PAO lube
11/19	Thu	12:33	PM	02	22	05	00	EVA-1/Foreman: SGANT cable install
11/19	Thu	01:23	PM	02	22	55	00	EVA-1/Foreman: NH3 bracket install
11/19	Thu	01:58	PM	02	23	30	00	EVA-1/Satcher: JEM RMS EE lube
11/19	Thu	02:03	PM	02	23	35	00	EVA-1/Foreman: Node 1/FGB MMOD shield
11/19	Thu	02:48	PM	03	00	20	00	EVA-1/Foreman: S0 1/4 cable
11/19	Thu	03:03	PM	03	00	35	00	EVA-1/Satcher: Cleanup and ingress

11/19 Thu 03:18 PM	03 00 50 00	EVA-1/Foreman: Cleanup and airlock ingress
11/19 Thu 03:48 PM	03 01 20 00	EVA-1: Airlock pressurization
11/19 Thu 04:03 PM	03 01 35 00	Spacesuit servicing
11/19 Thu 05:13 PM	03 02 45 00	ISS evening planning conference
11/19 Thu 07:28 PM	03 05 00 00	ISS crew sleep begins
11/19 Thu 07:58 PM	03 05 30 00	STS crew sleep begins
Flight Day 5 (Updated 11/20/09)		
11/20 Fri 04:28 AM	03 14 00 00	Crew wakeup
11/20 Fri 05:28 AM	03 15 00 00	ISS daily planning conference
11/20 Fri 06:08 AM	03 15 40 00	PAO event
11/20 Fri 07:28 AM	03 17 00 00	Node 1 PM IMV
11/20 Fri 07:28 AM	03 17 00 00	PAO event
11/20 Fri 07:53 AM	03 17 25 00	Post-EVA conference
11/20 Fri 08:03 AM	03 17 35 00	JEM RMS move to stow
11/20 Fri 08:43 AM	03 18 15 00	Spacesuit swap
11/20 Fri 09:48 AM	03 19 20 00	Crew meals begin
11/20 Fri 10:48 AM	03 20 20 00	Node 1 port mid cable
11/20 Fri 10:48 AM	03 20 20 00	EVA-2: Equipment lock preps
11/20 Fri 11:33 AM	03 21 05 00	EVA-2: Tools configured
11/20 Fri 01:08 PM	03 22 40 00	Node 1 NM cable
11/20 Fri 02:38 PM	04 00 10 00	SRMS grapples ELC-2
11/20 Fri 03:23 PM	04 00 55 00	EVA-2: Procedures review
11/20 Fri 04:33 PM	04 02 05 00	PAO event
11/20 Fri 05:03 PM	04 02 35 00	Evening planning conference
11/20 Fri 05:53 PM	04 03 25 00	EVA-2: Mask pre-breathe
11/20 Fri 06:33 PM	04 04 05 00	EVA-2: Airlock depress to 10.2 psi
11/20 Fri 06:58 PM	04 04 30 00	ISS crew sleep begins
11/20 Fri 07:28 PM	04 05 00 00	STS crew sleep begins
Flight Day 6 (Updated 11/21/09)		

11/21 Sat 03:58 AM	04	13	30	00	Crew wakeup
11/21 Sat 05:13 AM	04	14	45	00	EVA-2: Exercise EVA prep
11/21 Sat 05:28 AM	04	15	00	00	ISS daily planning conference
11/21 Sat 06:48 AM	04	16	20	00	SRMS unberths ELC2
11/21 Sat 07:28 AM	04	17	00	00	SSRMS grapples ELC2
11/21 Sat 07:38 AM	04	17	10	00	EVA-2: Spacesuit purge
11/21 Sat 07:43 AM	04	17	15	00	SRMS ungrapples ELC2
11/21 Sat 07:53 AM	04	17	25	00	EVA-2: Spacesuit prebreathe
11/21 Sat 08:53 AM	04	18	25	00	EVA-2: Crew lock depressurization
11/21 Sat 09:38 AM	04	19	10	00	EVA-2: Spacesuits to battery power
11/21 Sat 09:48 AM	04	19	20	00	EVA-2: Airlock egress
11/21 Sat 09:43 AM	04	19	15	00	SSRMS installs ELC2
11/21 Sat 10:08 AM	04	19	40	00	EVA-2: GATOR install
11/21 Sat 10:28 AM	04	20	00	00	SSRMS grapples MBS-1
11/21 Sat 11:23 AM	04	20	55	00	EVA-2: FPMU relocate
11/21 Sat 12:53 PM	04	22	25	00	EVA-2: S3 zenith PAS deploy
11/21 Sat 02:23 PM	04	23	55	00	EVA-2: CP1 WETA install
11/21 Sat 02:23 PM	04	23	55	00	SSRMS releases MBS-2
11/21 Sat 03:08 PM	05	00	40	00	EVA-2: Cleanup and ingress
11/21 Sat 03:38 PM	05	01	10	00	EVA-2: Airlock repressurization
11/21 Sat 03:53 PM	05	01	25	00	Spacesuit servicing
11/21 Sat 04:13 PM	05	01	45	00	Evening planning conference
11/21 Sat 06:28 PM	05	04	00	00	ISS crew sleep begins
11/21 Sat 06:58 PM	05	04	30	00	STS crew sleep begins
Flight Day 7 (Updated 11/22/09)					
11/22 Sun 02:58 AM	05	12	30	00	Crew wakeup
11/22 Sun 04:38 AM	05	14	10	00	ISS daily planning conference
11/22 Sun 06:08 AM	05	15	40	00	Shuttle crew off duty
11/22 Sun 10:08 AM	05	19	40	00	Spacesuit swap
11/22 Sun 10:23 AM	05	19	55	00	Crew meals

11/22	Sun	10:38 AM	05	20	10	00	PAO event
11/22	Sun	11:23 AM	05	20	55	00	Transfer ops
11/22	Sun	12:08 PM	05	21	40	00	Equipment lock preps
11/22	Sun	12:08 PM	05	21	40	00	PAO event
11/22	Sun	12:53 PM	05	22	25	00	EVA-3: Tools configured
11/22	Sun	02:23 PM	05	23	55	00	EVA-3: Procedures review
11/22	Sun	03:43 PM	06	01	15	00	Evening planning conference
11/22	Sun	04:53 PM	06	02	25	00	EVA-3: Mask pre-breathe
11/22	Sun	05:33 PM	06	03	05	00	EVA-3: Airlock depress to 10.2 psi
11/22	Sun	05:58 PM	06	03	30	00	ISS crew sleep begins
11/22	Sun	06:28 PM	06	04	00	00	STS crew sleep begins
Flight Day 8 (Updated 11/23/09)							
11/23	Mon	02:28 AM	06	12	00	00	STS/ISS crew wakeup
11/23	Mon	03:03 AM	06	12	35	00	EVA-3: 14.7 psi repress/hygiene break
11/23	Mon	03:48 AM	06	13	20	00	EVA-3: Airlock depress to 10.2 psi
11/23	Mon	04:03 AM	06	13	35	00	ISS daily planning conference
11/23	Mon	04:13 AM	06	13	45	00	EVA-3: Campout EVA preps
11/23	Mon	05:43 AM	06	15	15	00	EVA-3: Spacesuit purge
11/23	Mon	05:58 AM	06	15	30	00	EVA-3: Spacesuit prebreathe
11/23	Mon	06:48 AM	06	16	20	00	EVA-3: Crew lock depressurization
11/23	Mon	07:18 AM	06	16	50	00	EVA-3: Spacesuits to battery power
11/23	Mon	07:23 AM	06	16	55	00	EVA-3: Airlock egress/setup
11/23	Mon	07:48 AM	06	17	20	00	EVA-3: O2 tank transfer and MISSE 7
11/23	Mon	10:48 AM	06	20	20	00	EVA-3: Airlock MMOD shields
11/23	Mon	11:18 AM	06	20	50	00	EVA-3/Satcher: Ammonia tank assembly bolt
11/23	Mon	11:18 AM	06	20	50	00	EVA-3/Bresnik: P1/P3 jumper
11/23	Mon	11:38 AM	06	21	10	00	EVA-3/Satcher: Cheater bar stow
11/23	Mon	11:48 AM	06	21	20	00	EVA-3/Bresnik: S1/S3 jumper install
11/23	Mon	11:53 AM	06	21	25	00	EVA-3/Satcher: MSS tasks
11/23	Mon	12:18 PM	06	21	50	00	EVA-3/Bresnik: APFR 3 relocate
11/23	Mon	12:33 PM	06	22	05	00	EVA-3: Contingency time

11/23	Mon	01:18 PM	06	22	50	00	EVA-3: Cleanup and ingress
11/23	Mon	01:48 PM	06	23	20	00	EVA-3: Airlock repressurization
11/23	Mon	02:03 PM	06	23	35	00	Spacesuit servicing
11/23	Mon	03:13 PM	07	00	45	00	Evening planning conference
11/23	Mon	05:28 PM	07	03	00	00	ISS crew sleep begins
11/23	Mon	05:58 PM	07	03	30	00	STS crew sleep begins
Flight Day 9							
11/24	Tue	01:58 AM	07	11	30	00	Crew wakeup
11/24	Tue	02:58 AM	07	12	30	00	ISS daily planning conference
11/24	Tue	04:13 AM	07	13	45	00	Post-EVA reconfig/transfer
11/24	Tue	04:48 AM	07	14	20	00	Reboost operations
11/24	Tue	05:43 AM	07	15	15	00	EVA transfer to shuttle
11/24	Tue	01:13 PM	07	22	45	00	Rendezvous tools checkout
11/24	Tue	08:13 AM	07	17	45	00	Crew news conference
11/24	Tue	08:53 AM	07	18	25	00	Joint crew photo
11/24	Tue	09:13 AM	07	18	45	00	Joint crew meal
11/24	Tue	10:13 AM	07	19	45	00	Crew off duty
11/24	Tue	12:28 PM	07	22	00	00	Farewell ceremony
11/24	Tue	12:43 PM	07	22	15	00	Hatches closed
11/24	Tue	01:13 PM	07	22	45	00	Centerline camera install
11/24	Tue	01:13 PM	07	22	45	00	ODS leak checks
11/24	Tue	03:43 PM	08	01	15	00	Evening planning conference
11/24	Tue	05:28 PM	08	03	00	00	STS crew sleep begins
11/24	Tue	05:28 PM	08	03	00	00	ISS crew sleep begins
Flight Day 10							
11/25	Wed	01:28 AM	08	11	00	00	ISS crew wakeup
11/25	Wed	01:58 AM	08	11	30	00	STS crew wakeup
11/25	Wed	03:23 AM	08	12	55	00	Group B computer powerup
11/25	Wed	03:28 AM	08	13	00	00	ISS daily planning conference

11/25	Wed	03:43 AM	08	13	15	00	Maneuver to undocking attitude
11/25	Wed	04:13 AM	08	13	45	00	Undocking timeline begins
11/25	Wed	04:54 AM	08	14	26	00	UNDOCKING
11/25	Wed	04:55 AM	08	14	27	00	Initial separation
11/25	Wed	06:09 AM	08	15	41	00	Separation burn 1
11/25	Wed	06:37 AM	08	16	09	00	Separation burn 2
11/25	Wed	06:48 AM	08	16	20	00	Post-undocking PGSC reconfig
11/25	Wed	07:03 AM	08	16	35	00	Group B computer powerdown
11/25	Wed	07:18 AM	08	16	50	00	Crew meals begin
11/25	Wed	08:18 AM	08	17	50	00	OBSS starboard wing survey
11/25	Wed	08:18 AM	08	17	50	00	EVA unpack and stow
11/25	Wed	09:48 AM	08	19	20	00	PST ISS EVA entry preps
11/25	Wed	11:03 AM	08	20	35	00	Nose cap survey
11/25	Wed	11:53 AM	08	21	25	00	Port wing survey
11/25	Wed	01:38 PM	08	23	10	00	OBSS berthing
11/25	Wed	01:38 PM	08	23	10	00	LDRI downlink
11/25	Wed	02:38 PM	09	00	10	00	SRMS powerdown
11/25	Wed	05:28 PM	09	03	00	00	STS crew sleep begins
Flight Day 11							
11/26	Thu	01:28 AM	09	11	00	00	STS crew wakeup
11/26	Thu	05:23 AM	09	14	55	00	Cabin stow begins
11/26	Thu	05:38 AM	09	15	10	00	FCS checkout
11/26	Thu	06:48 AM	09	16	20	00	RCS hotfire
11/26	Thu	07:03 AM	09	16	35	00	PILOT operations
11/26	Thu	08:03 AM	09	17	35	00	Deorbit review
11/26	Thu	08:33 AM	09	18	05	00	PAO event
11/26	Thu	08:53 AM	09	18	25	00	Crew meal
11/26	Thu	09:53 AM	09	19	25	00	Cabin stow resumes
11/26	Thu	12:58 PM	09	22	30	00	Ergometer stow
11/26	Thu	01:28 PM	09	23	00	00	Recumbent seat setup
11/26	Thu	01:58 PM	09	23	30	00	LES checkout

11/26 Thu 02:03 PM	09 23 35 00	Wing leading edge sensor deact
11/26 Thu 02:28 PM	10 00 00 00	KU antenna stow
11/26 Thu 02:38 PM	10 00 10 00	PGSC stow (part 1)
11/26 Thu 05:28 PM	10 03 00 00	Crew sleep begins
Flight Day 12		
11/27 Fri 01:28 AM	10 11 00 00	Crew wakeup
11/27 Fri 03:53 AM	10 13 25 00	Group B computer powerup
11/27 Fri 04:08 AM	10 13 40 00	IMU alignment
11/27 Fri 04:43 AM	10 14 15 00	Deorbit timeline begins
11/27 Fri 08:40:10 AM	10 18 12 00	Deorbit ignition (rev. 201)
11/27 Fri 09:43:10 AM	10 19 15 00	Landing
		Compiled by William Harwood