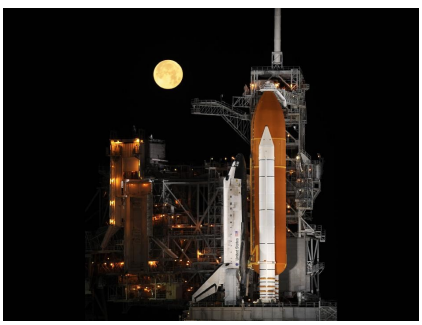


SPACE SHUTTLE MISSIONS SUMMARY

FLT	ORBITER	CREW (6+1 UP/6+1 DN)	LAUNCH SITE, LIFTOFF TIME,	LANDING SITE/ RUNWAY, CROSSRANGE	SSME-TL NOM- ABORT EMERG	SRB RSRM	ORBIT		FSW	PAYLOAD WEIGHTS,	MISSION HIGHLIGHTS (LAUNCH SCRUBS/DELAYS,
NO.		TITLE, NAMES & EVA'S	LANDING SITES, ABORT TIMES	LANDING TIMES FLT DURATION, WINDS	THROTTLE PROFILE ENG. S.N.	AND ET	INC	HA/HP		PAYLOADS/ EXPERIMENTS	TAL WEATHER, ASCENT I-LOADS, FIRSTS, SIGNIFICANT ANOMALIES, ETC.)

SPACE SHUTTLE MISSIONS SUMMARY

STS-119/ISS- 15A SEQ FLT # 125 KSC-125 PAD 39A (48) MLP-1 28 th SHUTTLE FLIGHT TO ISS	OV-103 (Flight 36) DISCOVER Y OMS PODS LPO1-39 RPO3-37 FRC3-36 PLT Tony Antonelli P780/R334/M289 MS1 Joseph Acaba P781/R335/M290 MS2 Steve Swanson Fit 2 (STS-117) P782/R308/V202/M266 MS3 Richard Arnold P783/R336/M291 MS4 John Phillips Fit 2 (STS-100) P784/R266/V203/M232 MS5 UP Stay ISS EXP 18FLT ENG Koichi Wakata Fit 3 (STS-72, STS-92) P785/R208/V164/M181 MS5 DN EXP 18/Flt ENG Sandra Magnus FLT 2 (STS-112) (UP ON STS-126, stay ISS) P786/R284/V200/F36 SS EVA 129 DOCKED QUEST EVA 52 EMU/TETHERED EVA 122 SCHEDULED EVA 120 DURATION 6:07 SS EVA 130 DOCKED QUEST EVA 53	CDR: Lee Archambault Fit 2 (STS-117) P779/R307/V201/M265 PLT Tony Antonelli P780/R334/M289 MS1 Joseph Acaba P781/R335/M290 MS2 Steve Swanson Fit 2 (STS-117) P782/R308/V202/M266 MS3 Richard Arnold P783/R336/M291 MS4 John Phillips Fit 2 (STS-100) P784/R266/V203/M232 MS5 UP Stay ISS EXP 18FLT ENG Koichi Wakata Fit 3 (STS-72, STS-92) P785/R208/V164/M181 MS5 DN EXP 18/Flt ENG Sandra Magnus FLT 2 (STS-112) (UP ON STS-126, stay ISS) P786/R284/V200/F36 SS EVA 129 DOCKED QUEST EVA 52 EMU/TETHERED EVA 122 SCHEDULED EVA 120 DURATION 6:07 SS EVA 130 DOCKED QUEST EVA 53	KSC 39A 074:23:43:44Z 7:43:44 PM EDT (P) 7:43:44 PM EDT (A) Sunday (12) 03/15/09 (10) LAUNCH WINDOW: 4M 14S (PLT in-plane) EOM PLS: KSC TAL: ZZA TAL WX: MRN SELECTED: RTLS: KSC15 CI/NOM TAL: ZZA30L N/N AOA: KSC15 CI/N 1 ST DAY PLS: EDW22 N/N TDEL: 0.000 (P) -0.008 (A) MAX Q NAV: 739.4 (P) 722.9 (A) SRB STG: 2:04.00 (P) 2:05.12 (A) PERE: NOMINAL 2 ENG TAL (MRN): 2:35 (P) 2:37 (A) NEG RETURN: 3:54 3:55 PTA (U/S 166 FPS): 5:12 5:15 SE TAL (ZZA 104): 6:00 6:00 PTM (U/S 181	KSC 15 (KSC 70) 087:19:13:26Z 2:13:26PM CDT Saturday (23) 03/28/09 (10) DEORBIT BURN: 087:18:08:14Z XRANGE: 222.2 NM ORBIT DIR: A/R (14) AIM PT: Close-In MLGTD: 2705 FT 087:19:13 :26Z VEL: 188 KGS KEAS 203 HDOT: -2.7 FPS TD NORM 195: 3473 FT DRAG CHUTE DEPLOY: 194 KEAS 087:19:1 3:29Z NLGTD: 5369 FT 087:19:1 3:34Z VEL: 152 KGS KEAS 167 HDOT: -6.7 FPS BRK INIT: 40 KGS DRAG CHUTE JETTISON: 60 KGS WEIGHT: 201713 LBS X CG: 1084.7 IN BRK DECEL FPS ²	104/104/109% PREDICTED : 100/104.5/104.5/72/104.5 ACTUAL: 100/104.5/104.5/72/104.5 1 = 2048 (9) 2 = 2051 (8) 3 = 2058 (3) 087:19:13 :26Z VEL: 188 KGS KEAS 203 HDOT: -2.7 FPS TD NORM 195: 3473 FT DRAG CHUTE DEPLOY: 194 KEAS 087:19:1 3:29Z NLGTD: 5369 FT 087:19:1 3:34Z VEL: 152 KGS KEAS 167 HDOT: -6.7 FPS BRK INIT: 40 KGS DRAG CHUTE JETTISON: 60 KGS WEIGHT: 201713 LBS X CG: 1084.7 IN BRK DECEL FPS ²	BI-135 51.6 (28) RSRM 103 ET-127 SLWT-33 LAT: 35.725 S LONG: 157.56 W LANDING: WEIGHT: 201713 LBS X CG: 1084.7 IN	DIRECT INSERTION POST OMS-2: 126.0x84.9 NM DEORBIT: HA 184.8 NM HP 21.6 NM ENTRY VELOCITY: 25849 FPS ENTRY RANGE: 4377 NM POST OMS-2: 126.0x84.9 NM	OI-33 (2) CARGO: 39088 LBS PAYLOAD CHARGEABLE: 32546 LBS DEPLOYED: 32489 LBS NON-DEPLOYED: 0 LBS MIDDECK: 57 LBS SHUTTLE ACCUMULATE WEIGHTS: 1517781 LBS NON-DEPLOYED: 1603765 LBS CARGO TOTAL: 4021804 LBS PERFORMANC E MARGINS (LBS): FPR: 2651 FUEL BIAS: 1063 FINAL TDDP: 1746 RECON:2016 PAYLOADS: ISS 15A (S6) MIDDECK: ISS 15A, MAUI SEITE, SIMPLEX 5 CRYO TANK SETS RMS (82) SRMS, ODS, OBSS, SSPTS	<p>Brief Mission Summary: ISS United States Operational Segment (USOS) assembly was completed with installation of S6 truss with final set of power generating Solar Arrays on Shuttle's 28th ISS Mission. This additional power prepares the ISS with the capability of housing six member crews in the near future.</p> <p>KSC W/D: OPF = 191+13H+3Wx, VAB = 6 + 0C, PAD = 47 + 14C: Total Work Days = 244 (OPF Processing occurred over a total time period of 207 days.)</p> <p>LAUNCH POSTPONEMENTS</p> <ul style="list-style-type: none"> - Added STS-119 to FDRD - launch date of 01/15/04 on 01/23/03 - Ppd. to NET 06/10/04 on 03/13/03 due to Columbia accident. - Ppd. to NET 06/30/04 on 04/17/03 due to Columbia accident. - Deleted from FDRD on 05/28/03 pending Columbia accident investigation outcome. - Re-Baselined in FDRD - Launch date of 11/06/08 on 10/04/07 - Ppd to 12/04/08 on 02/14/08. Slip due to ECO Sensor problems during STS-122 launch attempt. - Ppd to 02/12/09 on 07/03/08. Slip due to ET delivery schedule. - Ppd. to NET 02/19/09 on 02/04/09. Slip due to additional testing & analysis required to resolve MPS flow control valve issue - Ppd. to NET 02/22/09 on 02/09/09. Slip due to additional testing & analysis required to resolve MPS flow control valve issue - Ppd. to 02/27/09 on 02/14/09. Slip due to additional testing & analysis required to resolve MPS flow control valve issue - Ppd. to TBD at STS-119 "Continuation" FRR on 02/20/09. Managers could not reach a consensus. - Ppd. to tentative date of 03/12/09 on 02/25/09. MPS flow control valve U/R. - Launch date set for NET 03/11/09 on 03/04/09. MPS flow control valve U/R. - Launch date set for 03/11/09 at Delta FRR on 03/06/09. - Officially ppd. launch to 03/15/09 on 03/12/09 after Scrub on 03/11/09. Scrub was due to gaseous hydrogen leak in vent line. <p>LAUNCH SCRUB: Mar.11, 2009, Wednesday, with less than 20 minutes left in tanking process launch was scrubbed due to a gaseous hydrogen vent line leak. This line connects the Ground Umbilical Carrier Plate (GUCP), attached to ET, to the "flare stack" for burn-off of vented gaseous</p>
--	---	--	--	---	---	--	--	---	---



STS-119 - Waiting for GO!
Moon - Waiting for Constellation!
 (It will be a long wait - President directed cancellation of Constellation in 2010.)
 317861main_image_1301946-710STS119Moon.jpg :

SPACE SHUTTLE MISSIONS SUMMARY

SPACE SHUTTLE MISSIONS SUMMARY

**STS-119/
ISS- 15A**
Continued
d ...



Continued...

LAUNCH DELAYS: None. Launch occurred on time at 074:23:43:44Z, 7:43:44 p.m. EST, Sunday, March 15, 2009. Launch weather was relatively benign at KSC. A sea breeze developed at KSC and moved west of the Banana River about 3-hours prior to launch. The movement of the sea breeze inland produced favorable weather conditions with widely scattered clouds.

TAL WEATHER

TAL sites at both Zaragoza and Moron, Spain were acceptable for launch due to a high pressure system. Winds at Istres were out of limits following the passage of a cold front the day prior to launch, but launch proceeded with two acceptable TAL sites.

PERFORMANCE ENHANCEMENTS:

Include the standard set plus: 1) PE Operational High Q WIN/MAR, 2) OMS Assist, 3) 52 nautical mile MECO, & 4) Del Psi

FLIGHT DURATION CHANGES/LANDING:

- When STS-119 launch was slipped to March 15, 2009, (due to earlier scrub) the mission duration was reduced from 14 to 13 days to accommodate a Russian Soyuz mission to ISS later in the month. This also reduced number of EVA's from 4 to 3.
- For first KSC landing opportunity weather was no go with cloud decks building in at lower than anticipated broken (5/8) at 3000. Weather improved as did the wind direction. Discovery was given "Go" to land on second KSC opportunity. Landing occurred at 087:19:13:26Z (2:13:26 PM CDT Saturday, 03/28/09).

FIRSTS/SECONDS/LASTS:

- SSME ECP 1514 - LPOTP Bearing Ball Process Change
- SRB Hold Down Post Debris Containment mod
- S&MA: Orbiter LH2 T-0 Umbilical Ice: Update to IDBR-01 and NSTS-60559 to reflect new expected debris source.
- Last to be installed on ISS, the 45-foot S6 aluminum girder weighing more than 31,000 pounds was the first truss segment built (stored at KSC for six years).
- Second time a bat attempted to fly into space on Space Shuttle ET; coincidentally Koichi Wakata was on both flights.
- Discovery served as a hypersonic test bed during entry for new heat shield tiles in development for NASA's next-generation spacecraft.

ABOVE: STS-119 launch panorama into twilight sky. Photo by Ryan R. Smith (KSC-BOE-K2)

<http://www.ryansmithphotography.com/>

BELOW: S119-E-007747 --- STS-119 & Exp18 crews in ISS Harmony. From left (bottom row): PLT Antonelli, CDR Archambault, & Acaba/MS. From left (middle row): Magnus/MS, Exp 18 CDR Michael Fincke, Yury Lonchakov/Exp18FE(RSA), & Koichi Wakata/Exp18FE (JAXA). From left (top row) Swanson/MS, Arnold/MS, & Phillips/MS.



S119E007747

Continued...

SS EVA 131
DOCKED QUEST EVA 54
EMU/TETHERED EVA 124
SCHEDULED EVA 122
DURATION 6:27

MCC WHITE FCR (55)

FLIGHT DIRECTORS: SHUTTLE:

ASC/ENT- Richard Jones
LD/O1- Paul Dye
O2- Mike Sarafin (FD1- FD12)
O2-Tony Ceccacci (FD13-EOM)
O3- Richard LaBrose (Prelaunch - FD1)
O3- Norman Knight (FD2-FD8)
O3- Bryan Lunney (FD9-EOM)
Planning- Norm Knight - Bryan Lunney
MOD - John McCullough
Team 4 - Tony Ceccacci
Continued...

Continued...

MECO CMD:
8:23.6 8:23.8

VI:
25819.0
25819.6

OMS-2:
38:00
38:30.0
97.7 FPS 96.1 FPS

Continued...

WINDS:
15H KT
0.3L KTS
OFFICIAL:
15017P2
3 KTS
X1P1H17P23 KTS

DENS ALT:
1718 FT

FLT DURATION:
12:19:29:

42
S/T:
1196:11:09:28

OV-103:
318:03:39:
51

DISTANCE:
5,304,10
6 sm

TOTAL SHUTTLE DISTANCE:
485,578,25
9 sm

SPACE SHUTTLE MISSIONS SUMMARY

SPACE SHUTTLE MISSIONS SUMMARY

FLT NO.	ORBITER	CREW (7)	LAUNCH SITE, LIFTOFF TIME,	LANDING SITE/ RUNWAY, CROSSRANGE	SSME-TL NOM-ABORT EMERG	SRB RSRM AND ET	ORBIT		FSW	PAYLOAD WEIGHTS, PAYLOADS/ EXPERIMENTS	MISSION HIGHLIGHTS (LAUNCH SCRUBS/DELAYS, TAL WEATHER, ASCENT I-LOADS, FIRSTS, SIGNIFICANT ANOMALIES, ETC.)
		TITLE, NAMES & EVA'S	LANDING SITES, ABORT TIMES	LANDING TIMES FLT DURATION, WINDS	THROTTLE PROFILE ENG. S.N.		INC	HA/HP			

SPACE SHUTTLE MISSIONS SUMMARY

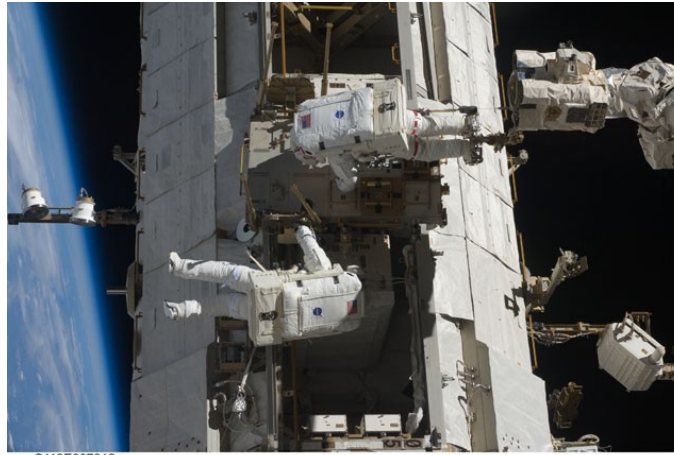
STS-119/ISS- 15A
Continued ...

Continued...

ISS
LD/O1 - Kwatsi Alibaruho
O2 - Heather Ranick
O3 - David Korth
Team 4 - Robert dempsey

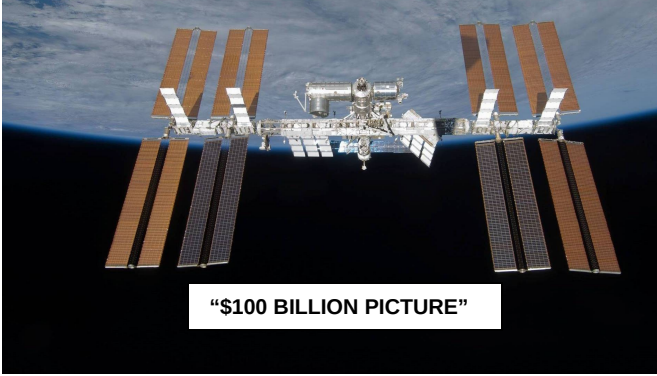
CAPCOMS:
SHUTTLE
A/E - George Zamka
Asc (Wx)- C. Hobaugh
Ent (Wx)- Al Poindexter
LD/O1 - George Zamka
O2 - Greg (Box) Johnson
Planning - Shannon Lucid
Team 4 - N/A

ISS

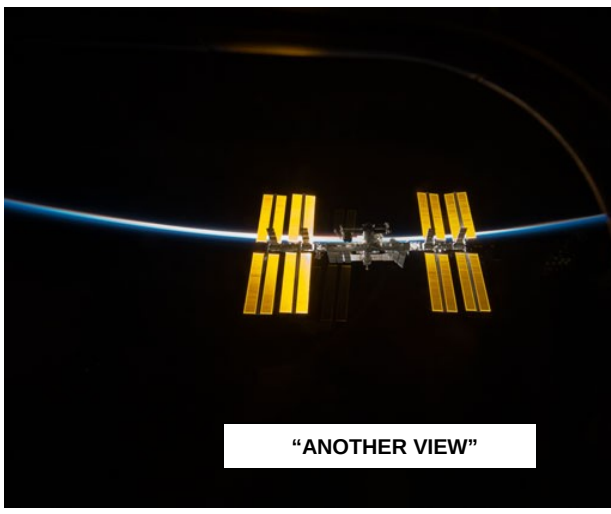


S119E-006673 --- Swanson (center) and Arnold (partially obscured above Swanson) during EVA 1 connected bolts to attach S6 truss to S5, plugged in power and data connectors, prepared a radiator for cooling, and readied new solar arrays.

S119-E-009765 (25 March 2009) --- ISS USOS assembly complete as seen during Shuttle fly-around [labeled the "\$100 Billion Picture" by ISS Lead Flight Director Kwatsi Alibaruho]. The ISS truss backbone measures 361 feet - longer than a football field.



"\$100 BILLION PICTURE"



"ANOTHER VIEW"

S119-E-010506
Backdropped by the blackness of space and the thin line of Earth's atmosphere, ISS is seen from Discovery post sep. Thin orange arc is outline of Discovery window.

Continued... **FIRSTS/SECONDS/LASTS:**

- March 27, 2009: In a rare example of overlapping space missions, a U.S. space shuttle [STS-119] is set to return to Earth on Saturday just a few hours after a Russian Soyuz arrives at the ISS. Together the crews of the three craft total 13 people, tying the record for humans in space, first set 14 years ago this month. [Robert Pearlman - collectSPACE.com]

MCC ROSES:
This was the 100th flight since the Challenger accident that a beautiful bouquet of roses was delivered to the Houston MOCR to celebrate each mission since the landing of STS-26 in 1988. In 1989 it was determined that the roses were sent by the Shelby family (Mark, Terry & MacKenzie) of Bedford, TX. On March 27, 2009, the Shelbys personally delivered their 100th bouquet in recognition of STS-119. They received a warm welcome in the MOCR, led by James "Milt" Heflin, JSC Associate Director (Technical). They also received several JSC mementos for their kindness and dedication to the Space Program.

NIGHT LAUNCH: # 32 (Into twilit sky)

RENDEZVOUS: #72 Rendezvous and dock with ISS.

EVENTS:

- FD1: OMS2 ignition at 075:00:22:14Z resulted in a 126.0 by 84.9 NM orbit.
- FD2: RCC inspection found no areas of concern
- T1 maneuver at 076:18:35:39.0Z resulted in a 196.8 by 183.3 NM orbit
- FD3: R-Bar Pitch Maneuver was performed. No issues.
- Docking Contact occurred at 076:21:19:49Z, **St. Patrick's Day**
- Hard Dock, hooks closed, occurred at 076:21:33:59Z
- ISS Hatch opened at 076:23:22:59Z (6:09 PM CDT, March 17, 2009) welcomed by ISS crew.
- IELK Seat Liner Transfer at 077:02:00Z (9:00 PM CDT) March 17, 2009). At that time Sandra Magnus became a member of STS-119 and Koichi Wakata joined the ISS Expedition 18 as Flight Engineer.
- FD5: Based on review of launch imagery, MMT cancelled FD6 focused inspection of Orbiter heat shield.
- FD5: EVA 1: Steve Swanson & Ricky Arnold: Activities included: S6 Connected to ISS, SABB Unstow, PCDF-PU Transfer, PVR Deploy, and 1B & 3B solar arrays deployed EVA1 duration 6:07.

SPACE SHUTTLE MISSIONS SUMMARY

SPACE SHUTTLE MISSIONS SUMMARY

**STS-119/
ISS- 15A**
Continued ...

JSC2009-E-060959 (20 March 2009) --- Group portrait of STS-119/15A ISS Orbit 1 Flight Control Team in JSC MOCR. FD Kwatsi Alibaruho (right) is visible on the front row.

Participated

In

ISS USOS

Complete



JSC2009-E-060960 (20 March 2009) --- Group portrait of Shuttle STS-119 Orbit 1 Flight Control Team in JSC MCC. FD Paul Dye (left) is visible on the front row.



Continued... **SIGNIFICANT ANOMALIES:**

- Ground Imagery Showed That When Thruster F4D's Tyvek Rain Cover Released at 5:28 Sec Met (~93fps Or 63 Mph), A ~21 Inches X ~7.4 Inches Piece Remained Attached to the Thruster Lip as Shown In Figures 1 and 2.

KSC:

- STS-119 Post Launch Debris

SRB: RSRM: SSME: None.

ET:

-During Initial Launch Attempt of STS-117/Et-127, a GH2 Leak was Detected at Approximately One Minute After Start of LH2 Topping

MOD:

-Inadvertent Abort Light Command Sent from FDO

Integration:

-Unexpected Debris/Expected Debris Exceeding Mass Allowable Prior to Pad

Continued... **EVENTS:**

Downlinked, P3 UCCAS Deploy unsuccessful, temporary tethers installed, S3 PAS Deploy deferred to EVA3, and Z1 Patch Panel Reconfig unsuccessful. EVA2 duration 6:30.

- FD8: CDR Lee Archambault maneuvered the Shuttle-ISS "stack" to avoid a 9-year-old piece of Chinese space junk (4" fragment) that could have been a close encounter during upcoming EVA3. (A 4' fragment from a Russian satellite had previously passed at a safe distance prior to Shuttle/ISS docking.)

- FD9: EVA3: Joe Acaba & Ricky Arnold: Activities included: UCCAS troubleshooting; tethered in place, CETA cart relocation and SSRMS LEE B lube completed. Numerous get aheads accomplished: CETA coupler, S1/S3 SSAS panel BBC reconfig, S1 FHRC outboard p-clamps released 2 of 6 (#5, #6), and retrieved bungee caddy from Nadir STBD A/L toolbox. EVA3 duration 6:27.

- Transfers:

- 32,962 lbs of hardware transferred to ISS (S6 Truss & Middeck)

- 1963 lbs of hardware returned from ISS to Discovery (middeck)

- 1142 lbs of water transferred to ISS

- FD11: Undocked at 084:19:53:26Z

- Fly-around initiated 084: 20:19Z

- Communications blackout during Entry occurred at GMT 87:18:47 to 87:18:52 d:h:m due to plasma effect.

SIGNIFICANT ANOMALIES:

Orbiter:

- Galley Water Leakage.

- WLES Group 2 Sensor S/N# 1033 Time Slip

- During MM/OD Monitoring With Group 2 Sensors, Sensor S/N 1024 On The Port Wing Unexpectedly Dropped Out Of On-Orbit Mode After 5-6 Hrs Of Monitoring.

- AVIU S/N 1031 Failure

- Failed Camera Shutter Actuation.

- Incorrect SORG Needle Installed

- V07P9379A Dropped To Lower Limit (Unit Step) During STS-119 Ascent

- Aft Stub Tile on the Upper Body Flap Was Suspect to be Damaged During FD3 On-Orbit Inspection. During Post-Flight Inspection the V070-395018-144 Tile Was Verified As Damaged.

Continued at left...