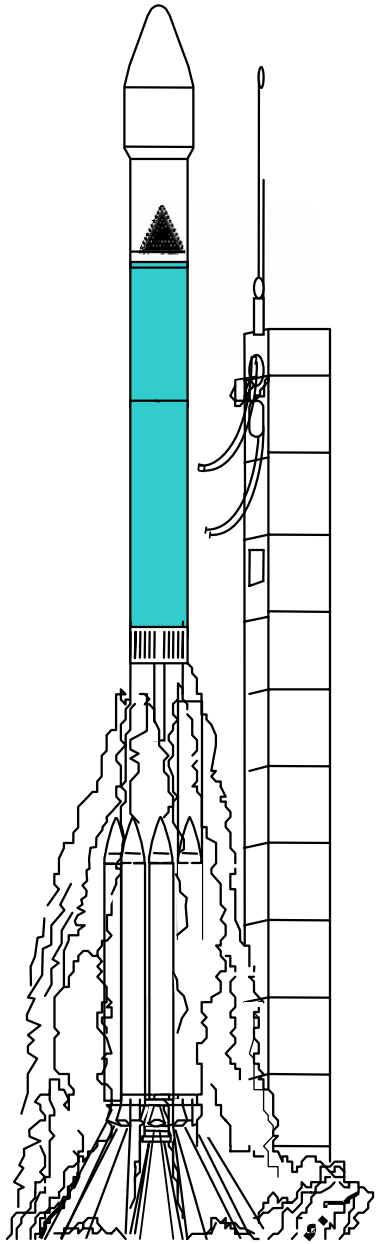

THEMIS
Launch Management Coordination Meeting

February 13, 2007

John F. Kennedy Space Center
Delta II/ NLS

DRAFT 11-28-06

Agenda

• Introduction	Chuck Dovale
• Launch Management Structure, Seating and Communications Channel Summary	Tracey Post
• Launch Day Roles & Responsibilities	Tracey Post
• Launch Windows, Status Checks, and Protocol	Tracey Post
• Weather Constraints and Collision Avoidance	Tracey Post
• Recycle Requirements and Mandatory Constraints/Assets	Tracey Post
• Mission Dress Rehearsal Details	Tracey Post
• Launch Day Script	Tracey Post
• Range Calendar and Remaining Meetings	Tracey Post
• NASA Launch Manager's Summary	Chuck Dovale

DRAFT 11-28-06

Launch Management Structure, Seating And Communications Channel Summary

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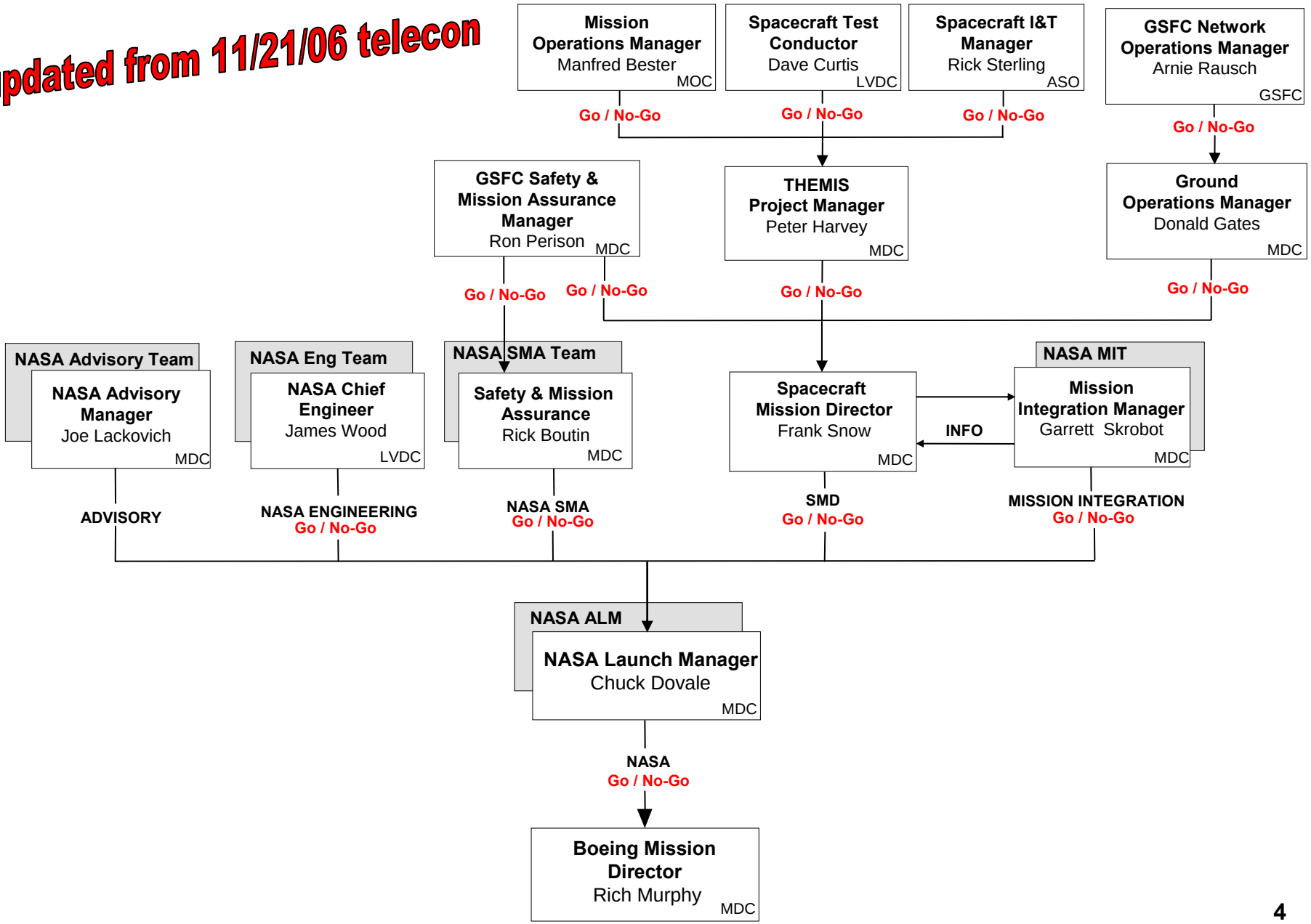
THEMIS
Launch Day Management Flow

John F. Kennedy Space Center

LAUNCH SERVICES PROGRAM

updated from 11/21/06 telecon



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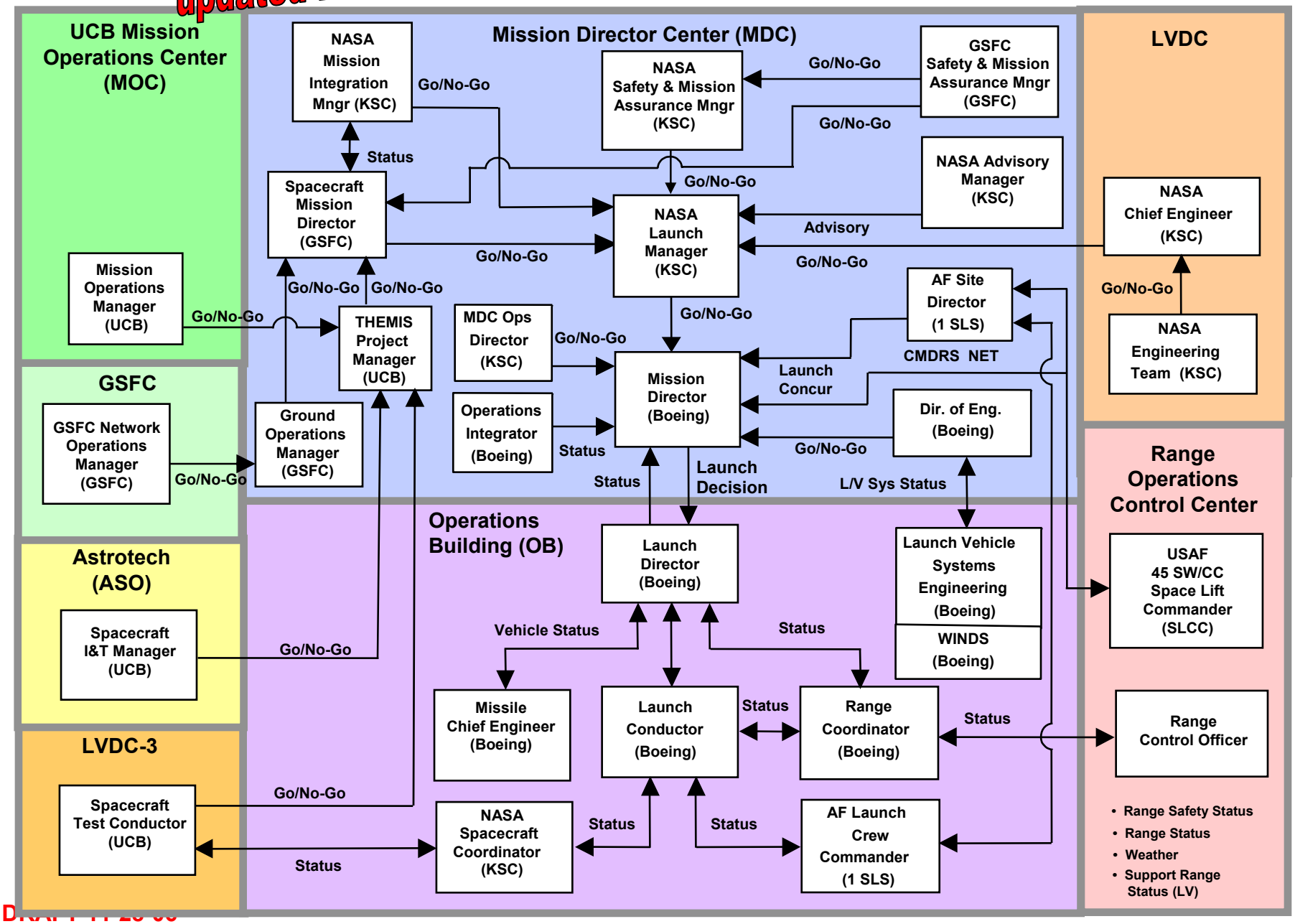
THEMIS
Launch Decision Flow

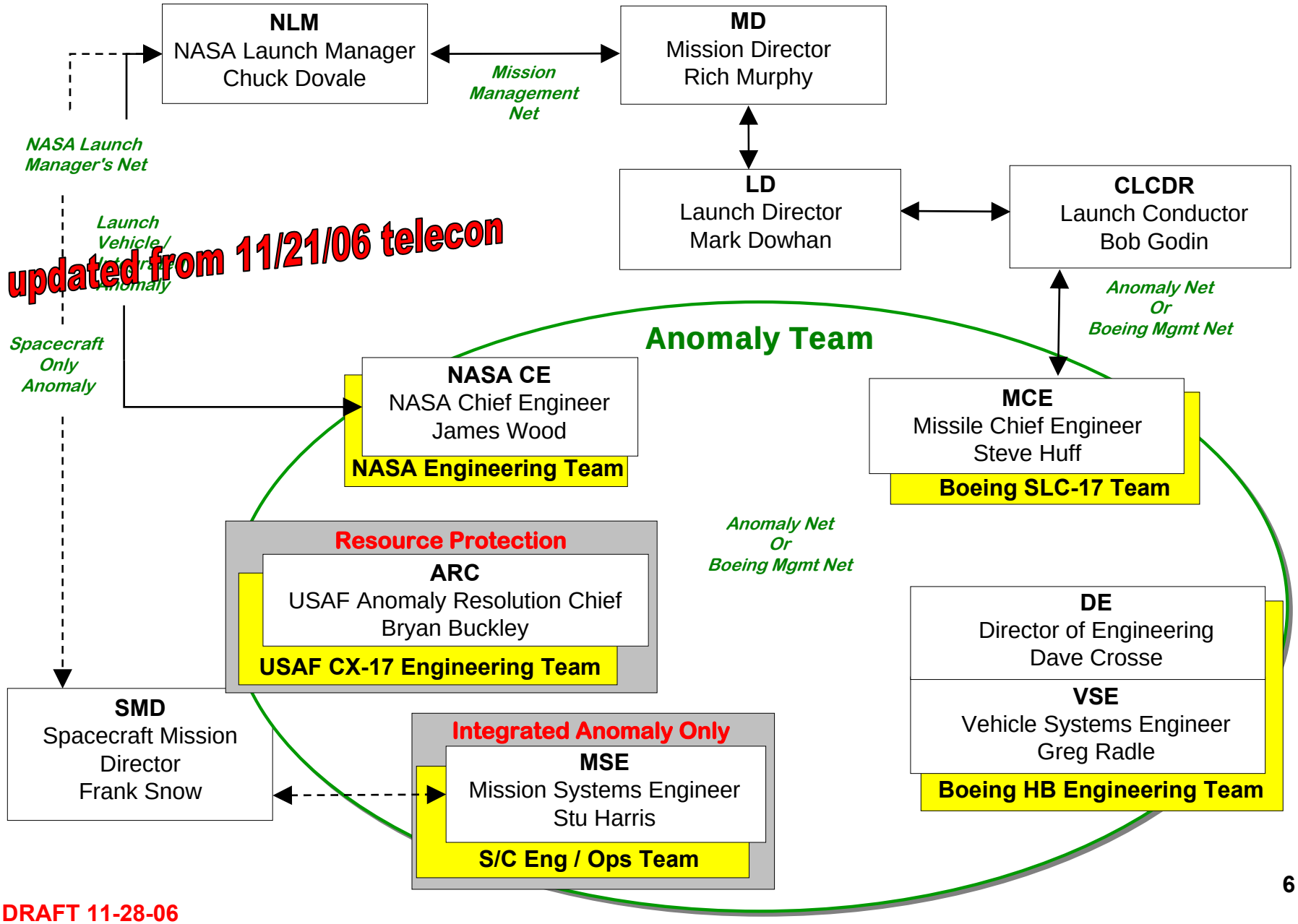
John F. Kennedy Space Center

LAUNCH SERVICES PROGRAM

updated from 11/21/06 telecon

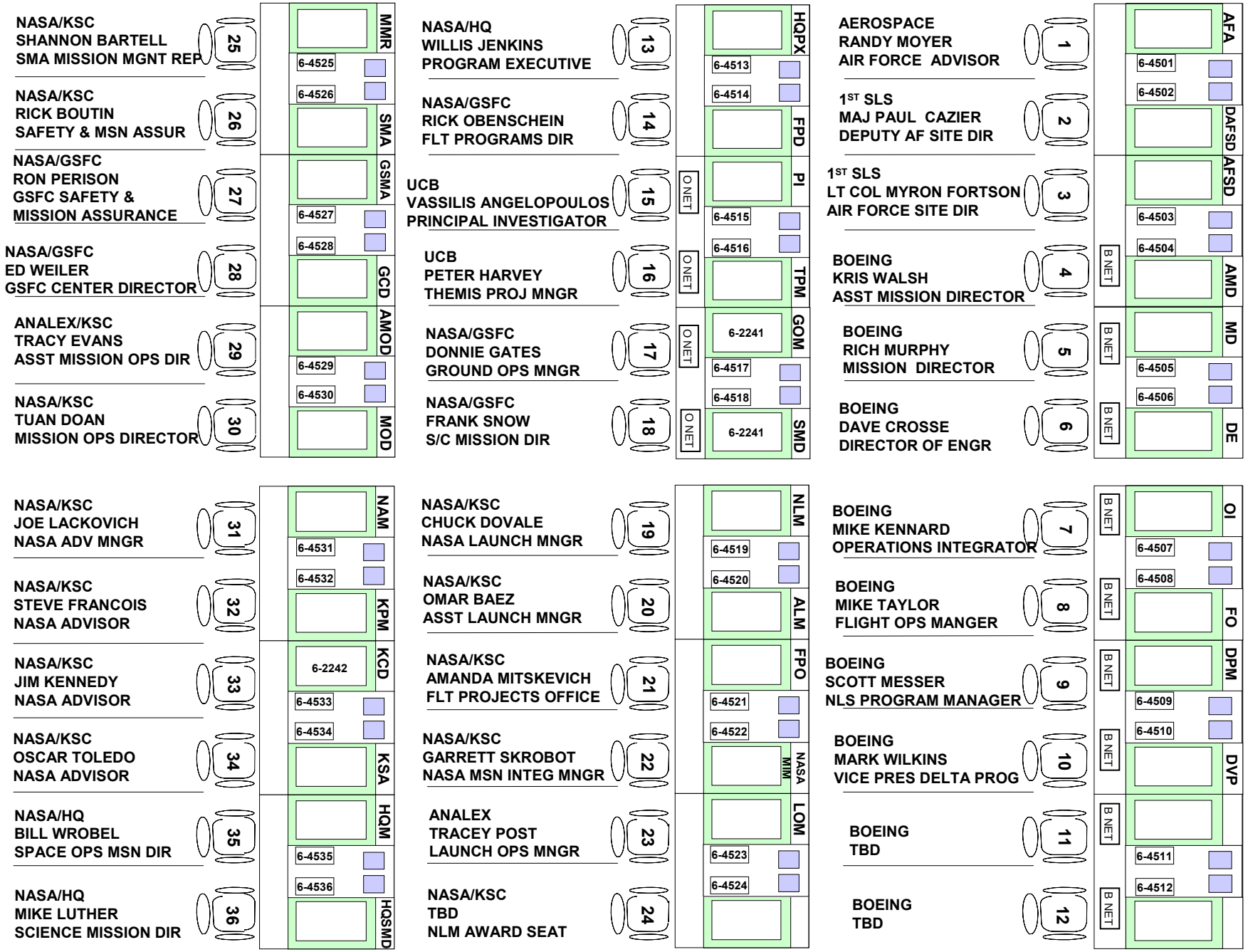


THEMIS
Anomaly Resolution



DRAFT 11-28-06

THEMIS Mission Director's Center



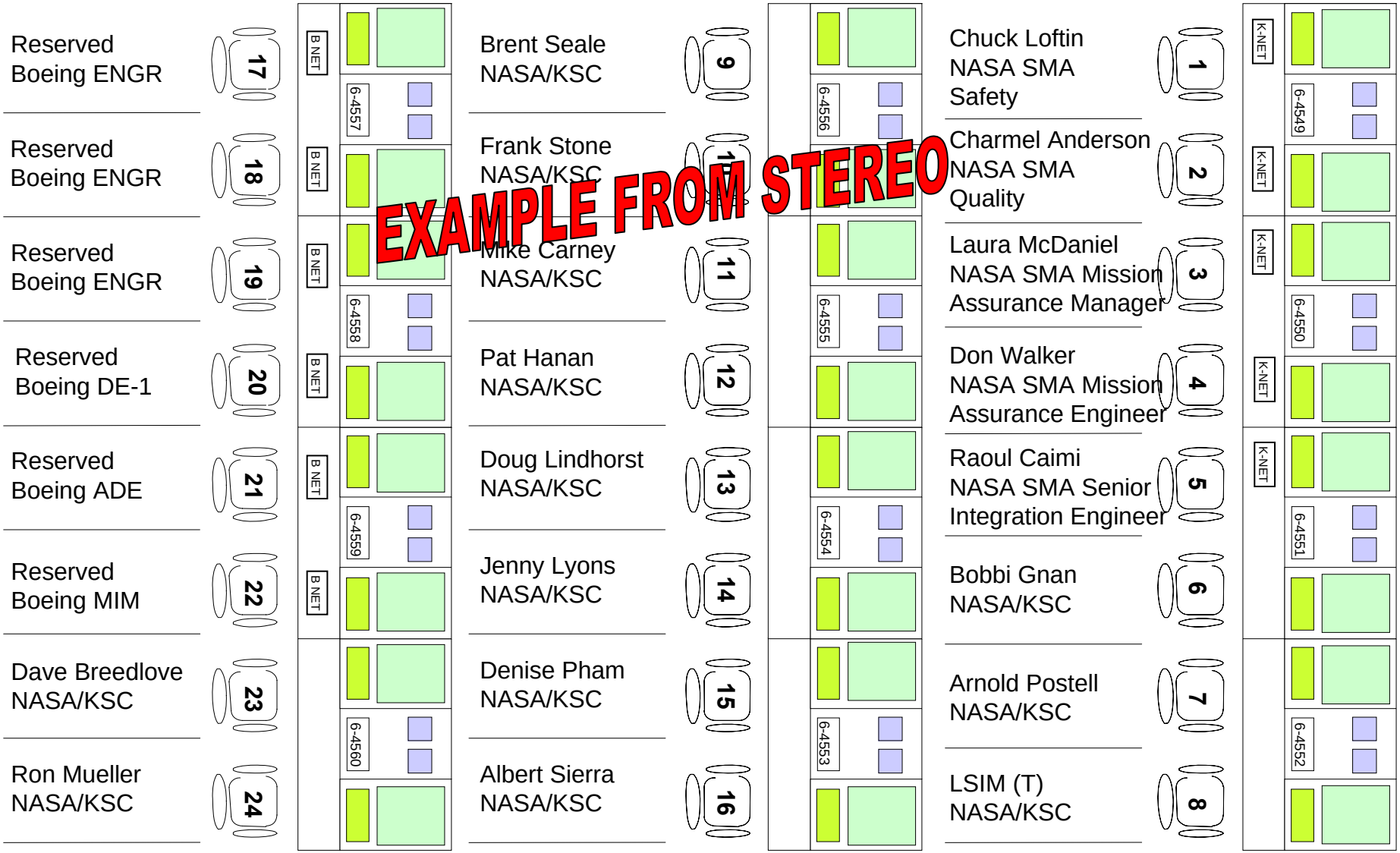
Seating POC: Tracey Post
28 Nov 06

XXXX-Network Drop for Laptops

STEREO
Mission Support LVDC-1

John F. Kennedy Space Center

LAUNCH SERVICES PROGRAM



EXAMPLE FROM STEREO

XXXX-Network Drop for Laptops

Seating POC: Tracey Post
LVDC-1, REV

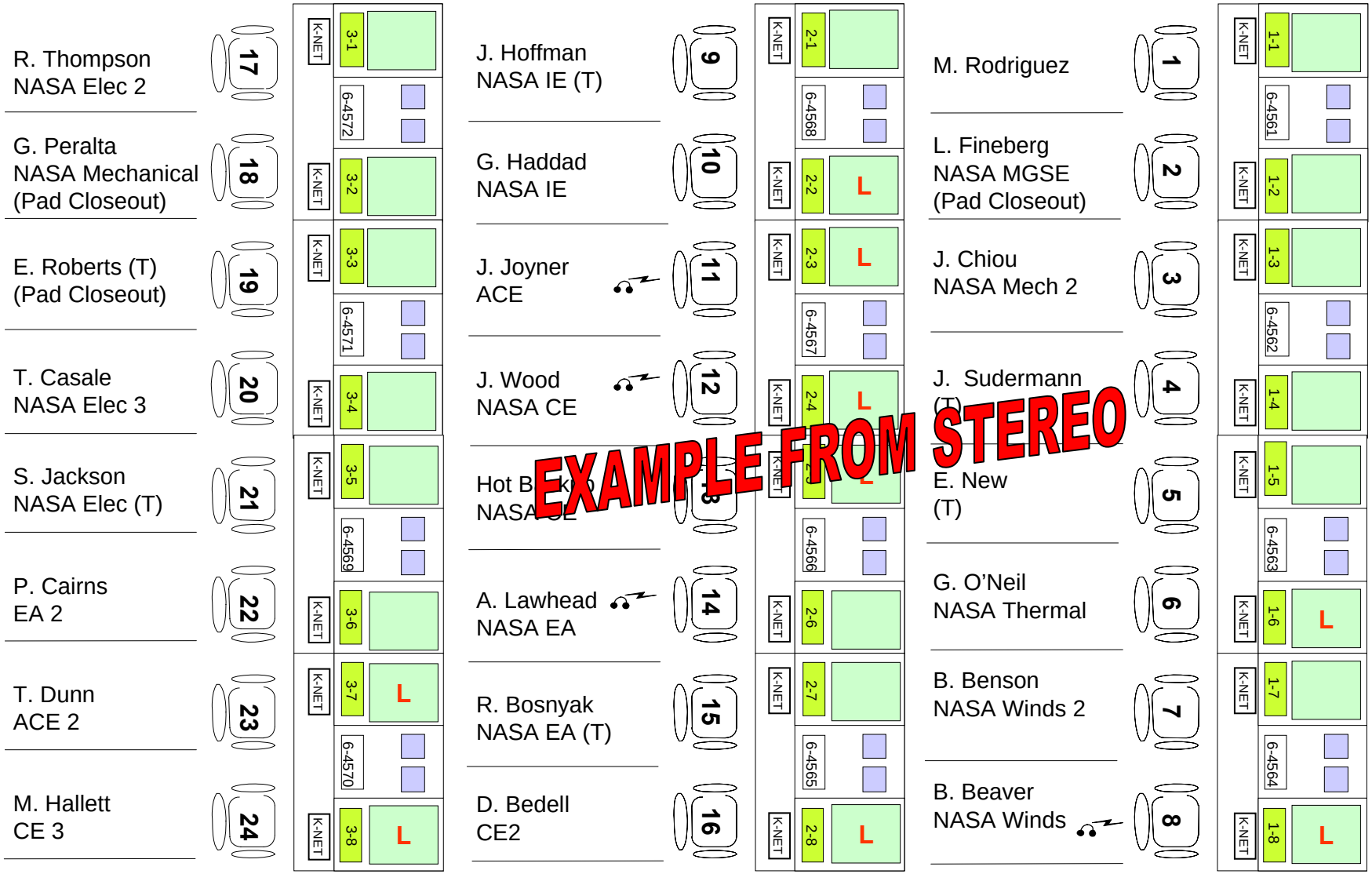
DRAFT 11-28-06

STEREO
Engineering Support LVDC-2

John F. Kennedy Space Center

AE FAX: 321-853-6461

LAUNCH SERVICES PROGRAM



EXAMPLE FROM STEREO

TM Lab:
See Separate Chart

L - ETDS/WinPlot Laptop
Wireless Headset
K-NET Network Drop

OB ESA:
NASA Flight Controls – S. Jeffress [6-3366] / N. Wood (M) [6-3367]
NASA Prop – A. Karban [6-3365] / C. Holmes (T) [6-3364]
NASA Winds 3 – S. Good [6-3362]

OB FAX near Winds Console: 6-2984

Seating POC: A. Lawhead
LVDC-2, REV. 6, 10/19/06

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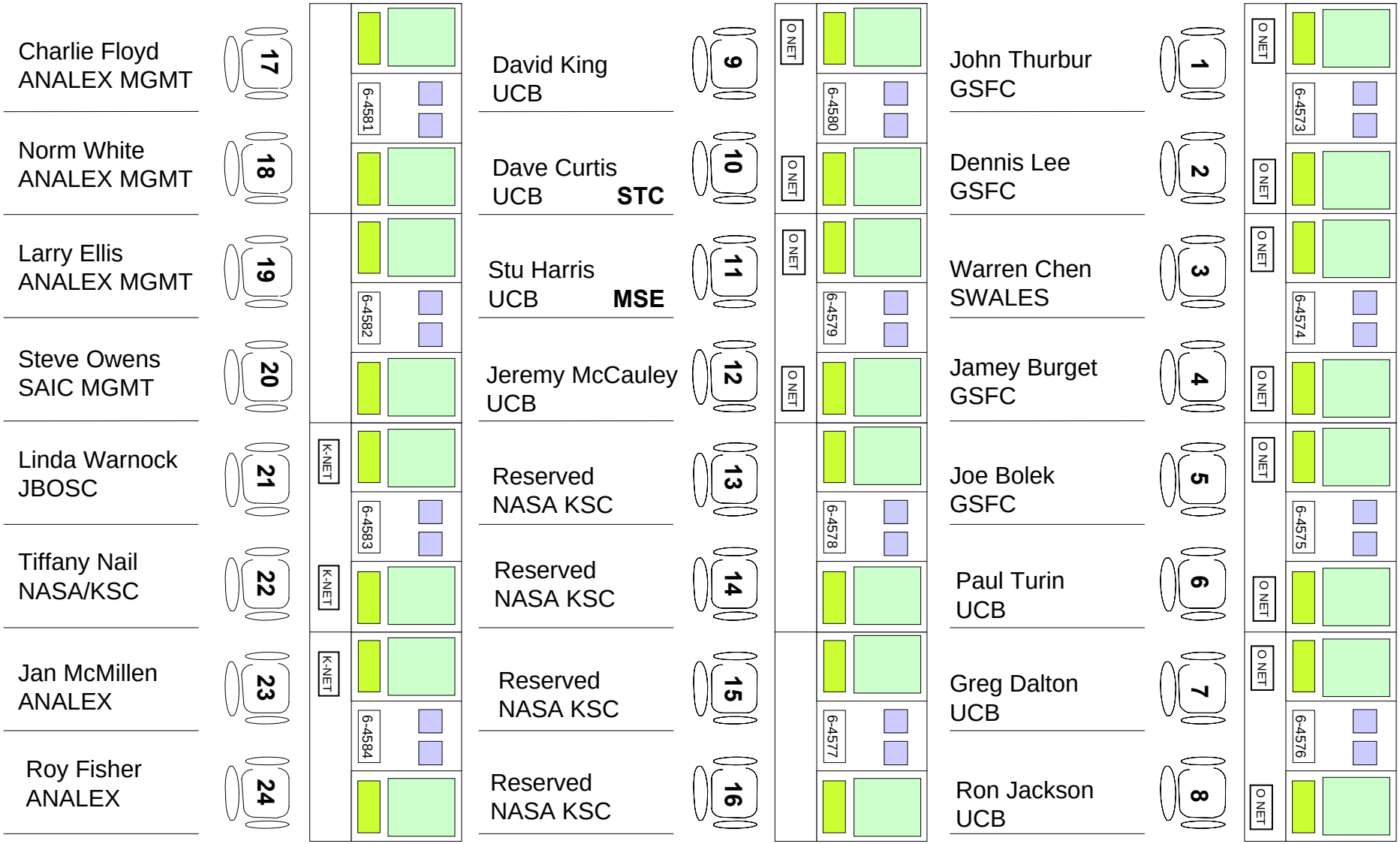
THEMIS
Mission Support LVDC-3

updated from 11/21/06 telecon

LAUNCH SERVICES PROGRAM



xxxx-Network Drop for Laptops

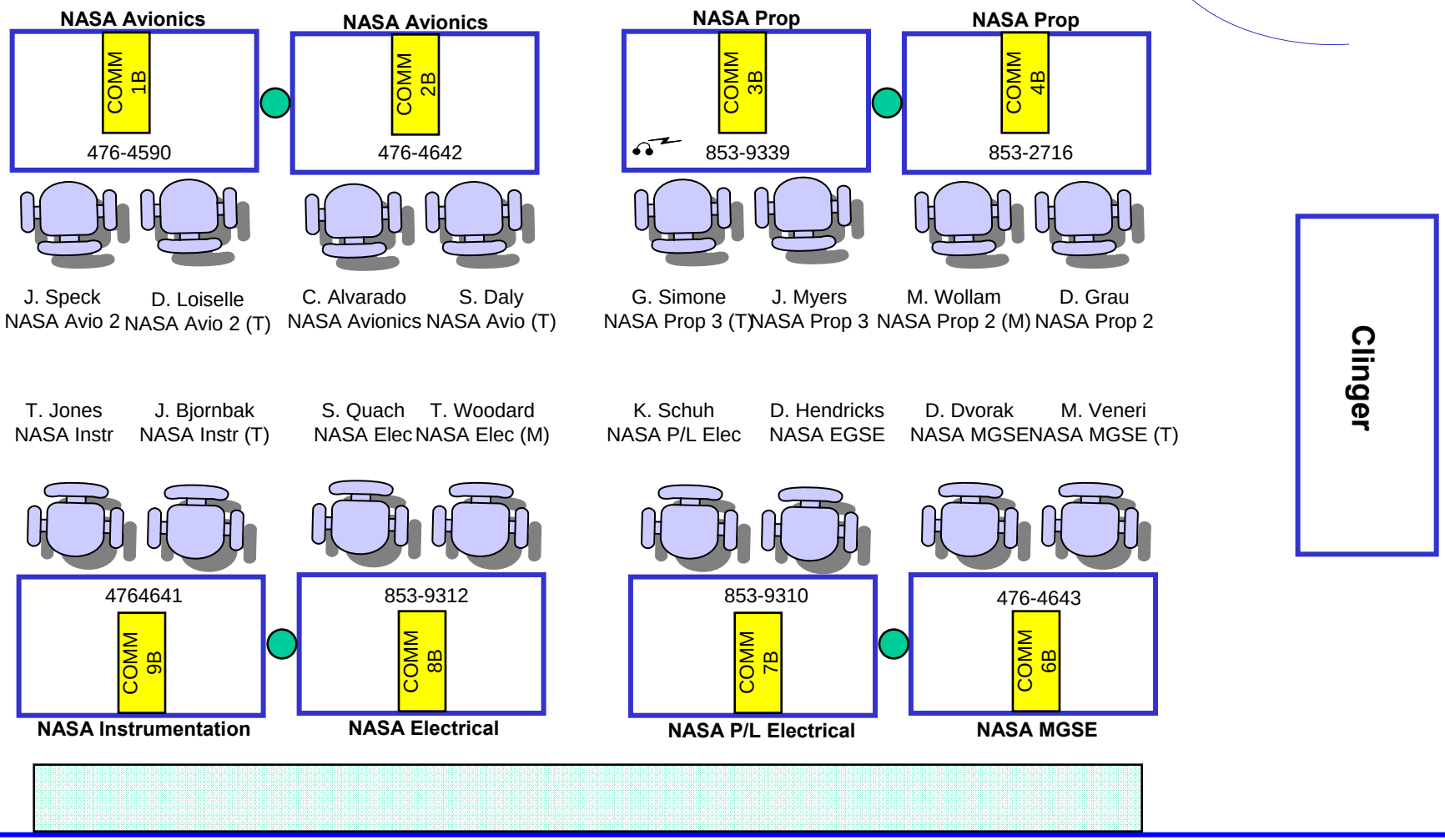
Seating POC: Tracey Post
27 Nov 06

DRAFT 11-28-06

STEREO
NASA Engineering
Hangar AE - TM LAB

AE FAX: 321-853-6461

EXAMPLE FROM STEREO



Seating POC: A. Lawhead
TM Lab, REV. 6, 10/19/06

DRAFT 11-28-06

THEMIS
Voice Channel Assignment Summary

updated from 11/21/06 telecon

CRITICAL VOICE CHANNELS	ASO	UCB	DESCRIPTION
(1) Launch Ops	M	M*	Primary net in which Boeing Launch Team conducts the procedure
(2) B/U Launch Ops & FLT Summary	M	M*	Back-Up in case Launch Ops Net goes down and Plus count sequence of events after T-0
(5) Boeing LV Management			Primary internal Boeing Engineering coordination net
(8) Mission Management			Primary Boeing/NASA Management coordination net
(9) Anomaly	?		Coordination, discussion and resolution of anomalies
MET Net	M	M*	LWO provides Weather briefings and updates
NLM Net			NASA Launch Management net for polling and status
Trouble Net			Net for personnel in HGR AE to call in communications problems
THEMIS Test Ops	T	T	Primary THEMIS Management Coordination net for polling
THEMIS Engineering	T	T	Primary THEMIS Engineering net for Testing and Operations
THEMIS Engineering B/U	T	T*	B/U THEMIS Engineering net for Testing and Operations

*Denotes Telephone Dial-in
Detailed Console Configurations are located in the Voice matrix.

Launch Day
Roles And Responsibilities

DRAFT 11-28-06

Launch Day Roles and Responsibilities

- **NASA Launch Manager (NLM) – Chuck Dovale – MDC**
  - **The NLM is the highest NASA authority for the mission. The NLM is responsible for ensuring that the countdown and launch decision process are properly conducted. This responsibility requires "Go / No-Go" concurrence from the following elements:**
    - » **NASA Chief Engineer (NASA CE) - NASA Engineering and Analysis status of launch vehicle and countdown.**
    - » **Mission Integration Manager (MIM) - Assessment of launch service and spacecraft readiness.**
    - » **Safety & Mission Assurance Manager (SMA) - Quality and Safety assessment of the countdown operations and overall launch decision process.**
    - » **Spacecraft Mission Director (SMD) - Overall assessment of spacecraft readiness.**
    - » **NASA Advisory Manager (NAM) - Consultation / assessment of the launch process and countdown (advisory only).**
  - **The NLM provides NASA's "Go / No-Go" for Launch to the Mission Director.**

Launch Day Roles and Responsibilities (continued)

- **NASA Chief Engineer (NASA CE) – James Wood – LVDC-2**
  - The NASA CE is responsible for advising the NLM of any concerns with status and readiness of the launch vehicle. This status and assessment is obtained from the KSC Engineering Team. The NASA CE provides the NASA Engineering "Go / No-Go" status to the NLM.

- **Mission Integration Manager (MIM) – Garrett Skrobot – MDC**
  - The MIM receives information from the SMD on issues pertaining to overall spacecraft health, status of operational network, and/or progress of spacecraft anomaly resolution. The MIM may provide information to the the SMD on issues pertaining to the progress of countdown operations. The NASA MIM gives a "Go / No-Go" status to the NLM.

Launch Day Roles and Responsibilities (continued)

- **Safety & Mission Assurance Manager (SMA) – Rick Boutin – MDC**
  - **The SMA Manager of the Safety & Mission Assurance Office is responsible for monitoring NASA flight assurance requirements during the launch countdown process and ensuring the countdown is conducted according to proper procedures. This responsibility includes assessments and "Go / No-Go" status to the NLM utilizing inputs from the KSC Flight Assurance Specialist. The SMA Manager also serves as the integrator of both launch vehicle and spacecraft independent assessments, and as such represents NASA Headquarters Chief of Safety & Mission Assurance Office in the launch process.**

Launch Day Roles and Responsibilities (continued)

- **Spacecraft Mission Director (SMD) – Frank Snow – MDC**
  - **The SMD is responsible for the overall assessment of the THEMIS Spacecraft. The SMD has the responsibility on launch day for the THEMIS Spacecraft. The SMD will receive spacecraft status and recommendations from the THEMIS launch support team and is responsible for the following:**
    - » **Overseeing the spacecraft launch countdown**
    - » **Providing the NLM with scrub or hold direction for spacecraft anomalies**
    - » **Informing the NLM of spacecraft status**
    - » **Informing the NLM of network status**
    - » **Concurring that countdown anomalies are satisfactorily resolved**
    - » **Providing to the NLM concurrence for continuation of countdown operations**
    - » **Providing the NLM with a final THEMIS Spacecraft "Go / No-Go"**

Launch Day Roles and Responsibilities (continued)

- **NASA Advisory Manager (NAM) – Joe Lackovich – MDC**
  - The NAM leads a team composed of NASA personnel who are experienced in launch operations. The Advisory Team provides an assessment of launch countdown and launch team performance, and assures that the launch decision process is properly executed. The team consists of:
    - » Steve Francois — KSC LSP Program Manager (KPM)
    - » Jim Kennedy — KSC Center Director (KCD)
    - » Oscar Toledo — KSC Senior Advisor (KSA)

Launch Day Roles and Responsibilities (continued)

- **NASA Spacecraft Coordinator (NSC) – Bill Van Dyke – OB**
  - **The NASA Spacecraft Coordinator is a member of the NASA/KSC Launch Manager's staff.**
    - » **During the countdown, the NSC is positioned at the spacecraft control console in the 1 SLS Operations Building.**
    - » **The NSC is responsible for monitoring all satellite operations required by the countdown manual.**
    - » **The NSC coordinates status with the Spacecraft Test Conductor located in LVDC-3 and reports status to the LCDR.**

Launch Day Roles and Responsibilities (continued)

- **Mission Director (MD) – Rich Murphy – MDC**
  - **The MD is the highest Boeing authority for the mission. The MD is responsible for ensuring that the launch countdown and launch decision processes are properly conducted. The MD "Go / No-Go" assessment for launch comes from the following elements:**
    - » **NASA Launch Manager (NLM) - provides NASA's "Go / No-Go" to launch**
    - » **Boeing Director of Engineering (DE) - provides launch vehicle technical "Go / No-Go"**
    - » **Operations Integrator (OI) - provides status of remote instrumentation sites/aircraft during launch countdown**
    - » **MDC Operations Director (MOD) - provides communications and telemetry lab "Go / No-Go"**
    - » **Air Force Site Director (AFSD) - provides 45SW/1SLS "Go / No-Go" for SLC17 resource protection**
    - » **Boeing's Launch Director (LD) - provides launch vehicle and countdown status from the OB***
  - **Following the launch poll, the MD receives final authorization to launch from the Space Lift Commander (SLCC) and then provides final authorization to launch to the LD.**

* only for SLCC poll

Status Checks and Protocol

DRAFT 11-28-06

Deep Impact
Launch Windows

UPDATE WITH WINDOWS WHEN THEY BECOME AVAILABLE

Launch Date	1st Attempt (95° Flt Az) (hh:mm:ss)		2nd Attempt (101° Flt Az) (hh:mm:ss)		Δt between attempts (hh:mm:ss)
	UTC	EST	UTC	EST	
12-Jan-05	Not Available		18:47:08	13:47:08	N/A
13-Jan-05	17:59:32	12:59:32	18:39:11	13:39:11	0:39:39
14-Jan-05	17:51:29	12:51:29	18:31:10	13:31:10	0:39:41
15-Jan-05	17:43:23	12:43:23	18:23:12	13:23:12	0:39:49
16-Jan-05	17:35:24	12:35:24	18:15:15	13:15:15	0:39:51
17-Jan-05	17:27:25	12:27:25	18:07:19	13:07:19	0:39:54
18-Jan-05	17:19:30	12:19:30	17:59:24	12:59:24	0:39:54
19-Jan-05	17:11:33	12:11:33	17:51:32	12:51:32	0:39:59

Deep Impact
Countdown Status Checks

UPDATE BASED UPON WINDOWS

Based on an 12 January 2005 launch, 101 deg Flight Azimuth, and target T-0 of 13:47:08 EST

DECISION	NLM POLL	MD POLL	LCDR POLL
Terminal Count Readiness	T-150 / L-197 10:30 EST	T-150 / L-193 10:34 EST	T-150 / L-191 10:36 EST
Ready for Cryo Tanking	T-87 / L-117 11:50 EST	T-85 / L-115 11:52 EST	T-80 / L-110 11:57 EST
Ready to Proceed with Terminal Count	T-20 / L-38 13:09 EST	T-20 / L-36 13:11 EST	T-20 / L-34 13:13 EST
Ready to Proceed with Terminal Count – FINAL Launch Poll	T-4 / L-11 13:36 EST	T-4 / L-8 13:39 EST	T-4 / L-5 13:42 EST

Instantaneous Launch Window: 13:47:08 EST, +/-1 sec

Protocol for Calling Holds

- **Prior to T-4 minutes and counting**
  - **Problems or concerns encountered during this time will be discussed with the NASA Launch Manager (NLM) on NASA Launch Manager Channel (NLM Net)**
  - **The NASA Launch Manager (NLM) will advise the Boeing Mission Director (MD) of any problems or concerns being worked**
  - **If it is determined the problem or concern can not be resolved, the count will not be resumed at T-4 minutes**

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Protocol for Calling Holds (continued)

- **After resuming the count at T-4 minutes**
  - **Subsequent to T-4 minutes and counting, personnel observing a condition which exceeds a launch constraint will use the communications system to call for a hold on the Launch Ops Channel. Such announcements should be as follows**
    - » **"*Hold! Hold! Hold!* Called by (console or title) for (reason)"**
    - » **Example: "*Hold! Hold! Hold!* Called by Spacecraft Mission Director for Spacecraft Redline" in section 12 of Console Notebook**
  - **The Launch Conductor will respond by stopping the clock and immediately recycling back to T-4 minutes and holding; and then will ask for further explanation**
  - **The word *"hold"* is not to be used for any reason except to stop the launch**

Weather Constraints and Collision Avoidance

DRAFT 11-28-06

Weather Constraints

UPDATE BASED UPON WINDS MEMO

- **MST Removal**
  - **Ground winds must be less than 39 knots as measured at the 90 foot elevation on tower 002**

- **Launch**
  - **Standard ELV weather launch commit criteria**
    - » **As documented in Section 14 of console notebook**
  - **Ground winds**
    - » **Within 4 minutes of Launch (allowable peak winds)**
    - » **Constraint #5 in Section 14 of console notebook**

Collision Avoidance (COLA)

- Collision Avoidance refers to "Inhabited/Non-inhabited Manned" and "Mission Assurance (M.A.) " conjunctions
  - Manned objects (conjunctions) include: Shuttle, ISS, and Shenzhou
    - »Manned conjunctions are a mandatory avoidance for safety (a range requirement, not waiverable)
    - »The range receives the data direct from CMOC (Cheyenne Mt. Operations Center) at L-4 hrs (also at L-48 hrs and L-24 hrs in support of launch day)
    - »The range is responsible for evaluating the data and providing the final manned conjunctions to the Boeing/NASA launch team at approximately L-3 hrs
  - Mission assurance includes: active & inactive satellites
    - »Mission assurance conjunctions are a mandatory avoidance
    - »NASA receives the data at L-8 hrs (also at L-48 hrs and L-24 hrs)
    - »NASA is responsible for evaluating the data and providing a final M.A. COLA decision to Boeing at L-6 hrs

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Recycle Requirements and Mandatory Constraints/Assets

DRAFT 11-28-06

Launch Vehicle
Mission Recycle Requirements

- **Delta II Recycle Requirements**
  - **Same day recycle**
    - » **Capability exists to recycle within the 19 minute window if problem is resolved and sufficient window time remains.**
  - **24 hour recycle**
    - » **Standard Delta launch vehicle requirements allow 24 hour recycle. For specific 24 hour turnaround, see Delta Operations section of FRR package.**
  - **48 hour recycle**
    - » **Standard Delta requirements allow 48 hours recycle.**
  - **Multiple scrub limits**
    - » **Multiple launch attempts available less consideration for crew rest, hardware expiration dates, and battery life.**

THEMIS
Mission Recycle Requirements

- THEMIS Spacecraft Recycle Requirements
  - Same day recycle
    - » Spacecraft will remain on internal power
  - 24 hour recycle
    - » Return to external power
    - » Recharge Batteries – Remotely (Does Not Require Fairing Access)
  - 48 hour recycle
    - » Same as 24 hour recycle
  - Multiple scrub limits
    - » Same as 24 hour recycle
    - » If extended delay
    - » Continue to Recharge Batteries – Remotely (Does Not Require Fairing Access)

updated from 11/21/06 telecon

Launch Mandatory Constraints

- According to NASA Policy, mandatory constraints / assets are not to be waived after initiation of the terminal count at L-180 / T-150 minutes.

- In the terminal count,
  - LV assets defined as Required can be waived by the MD with concurrence from the NLM.
  - S/C assets defined as Required can be waived by the SMD with concurrence from the NLM.
  - Integrated constraints defined as Required can be waived with concurrence from the MD, SMD, and NLM (Mission Management Team)

- After T-4 minutes, a hold for loss of Required asset shall not be called, unless pre-coordinated by the Mission Management Team.

LV Mandatory Assets for Launch
(Excluding Range Safety)

EXAMPLE FROM STEREO

Launch will not occur unless all mandatory assets, including any notes, are satisfied.

ID	Asset	Asset Type	Purpose	OPR
M-1	Upper Level Winds Analysis	1) Data (Sonde, Instrumentation) 2) Data Comm (ER/Boeing-HB/LCC) 3) DEC Computers	1) Measure winds aloft 2) Transmit winds data/load relief data file 3) Winds processing	DE
M-2	Launch Base Comm	1) Voice Comm: OB 2) Voice Comm: AE 3) Voice Comm: ROCC 4) Interfacility Voice Comm, OB, AE, ROCC 5) Interfacility Data Comm LC-17, LCC	Voice: Launch Coordination Vehicle Telemetry to LCC Command from LCC to LC-17	1) CLCDR 2) MOD 3) RCO 4) RCO 5) CLCDR
M-3	Network Communications	1) Voice: ROC/Tel-4, ANT 2) Voice: OI/Mandatory Stations *	Flight Coordination	1) ROC 2) OI
M-4	Tel-4	Eastern Range Tracking Station	Receive & Record LV telemetry during powered flight utilizing the primary propulsion system prior to spacecraft separation	RCO
M-5	Antigua	Eastern Range Tracking Station	Receive & Record LV telemetry during powered flight utilizing the primary propulsion system prior to spacecraft separation	RCO
M-6	Cape Verde (OTB)	Remote Tracking Station	Receive & Record LV telemetry during powered flight utilizing the primary propulsion system prior to spacecraft separation	OI

The OPR shall not call a "HOLD" for loss of a mandatory asset after T-3 seconds

S/C Mandatory Assets for Launch
(Excluding Range Safety)

Launch will not occur unless all mandatory assets, including any notes, are satisfied.

ID	Asset	Asset Type	Purpose	OPR
SM-1	Berkeley MOC	1) Command, acquire & process TLM; navigation and voice comm	1) S/C Acquisition and Operations	SMD
SM-2	Ground Stations: BGS, WLP, MILA, HBK, AGO (any 2 of 5)	1) Primary and Back-Up Antenna	1) S/C Acquisition and Operations	SMD

updated from 11/21/06 telecon

THEMIS Launch Commit Criteria contained in GSFC Doc (TBD) dated TBD

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LV Required Assets for Launch
(Excluding Range Safety)

EXAMPLE FROM STEREO

Launch management must decide whether to waive any unavailable Required asset.

ID	Asset	Asset Type	Purpose	OPR
R-1	Tel-4	1) Data Comm: Eastern Range / AE / OB	1) Real-time relay LV Telemetry	RCO
R-2	JDTMA	1) Data Comm: Eastern Range / AE / OB	1) Receive, Record, Real-Time Relay LV telemetry during powered flight utilizing the primariy propulstion system prior to spacecraft separation	RCO
R-3	Antigua	1) Data Comm: Eastern Range / AE / OB	1) Real-time relay LV Telemetry	RCO
R-4	Cape Verde (OTB)	1) Data Comm: OTB/NSS-7/AE	1) Real-time relay LV Telemetry	OI
R-5	Sao Tome (COAL)	1) Remote Tracking Station 2) Data Comm: COAL/NSS-7/AE	1) Receive & Record LV Telemetry during SV separation 2) Real-time relay LV Telemetry	OI
R-6	Guam (GTS)	1) Remote Tracking Station 2) Data Comm: RTS/EVCF/AE	1) Receive & Record LV Telemetry during depletion burns utilizing the primary propulsion system 2) Real-time relay LV Telemetry	OI
R-7	AAM	1) Data Comm: AE/HB 2) SAMM	Generation and real-time relay of acquisition assistance messages	OI
R-8	Imaging	1) Patrick DOAMS 2) Playalinda Beach DOAMS 3) KTM at UCS 19 & UCS-26 4) MOTS at CX-21 5) ATOTS at UCS-1 & UCS-3 6) Cine at LOCC, UCS-19 & UCS-26	Engineering imaging of LV ascent	RC

The OPR shall not call a hold for loss of Required asset after T-4 (unless pre-coordinated by the Mission Management Team)

S/C Required Assets for Launch
(Excluding Range Safety)

Launch management must decide whether to waive any unavailable Required asset.

ID	Asset	Asset Type	Purpose	OPR
SR-1	ASO or HGR AE Control	1) Command, acquire & process TLM; navigation and voice comm	1) S/C Operational Status 2) S/C Power Control	SMD
SR-2	TDRSS	1) Data Relay	1) Record PCA Separation Event Telemetry	SMD
SR-3	AFSCN Station	1) Acquire, Record & Process Third Stage TLM	1) Verification of Separartion Event Status	SMD
SR-4	AFSCN Comm	1) Voice Comm or TLM between HGR AE and AFSCN	1) Communication of Separation Event Status	SMD

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Mission Rehearsal Details

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Mission Rehearsal Agenda

EXAMPLE FROM DEEP IMPACT

10:00 a.m.	Introduction	Kennard/ Murphy
10:05 a.m.	MDC Console Capabilities & Operations	Mikulas
10:15 a.m.	Mission Rehearsal Plan	Kennard
	Console Notebooks	
	Communication Channel Summaries	
	Telephones	
	MDC Count Script	
	Communication Protocol	Godin
10:20 a.m.	Simulation Supervisor In-brief	Post
10:30:29 a.m.	Initiate MR Terminal Count	Godin
12:01:29 p.m.	T - 0	
12:03 p.m.	Acquisition Assistance Messages	
12:05 p.m.	Post-Rehearsal Critique	Kennard/ Post/All

Mission Rehearsal Focus

- MDR objective is to exercise the ability of the Launch Management Team to communicate effectively in a simulated Launch Countdown environment
- MDR will exercise the Anomaly Resolution process through the use of "GREEN CARDS"
- Primary focus will be on Launch Management and Spacecraft Team performance for Integrated Anomaly Resolution

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Mission Rehearsal Process

- GREEN CARDS generated by Rehearsal Assessment Team (RAT) and classified as "RAT EYES ONLY"
- GREEN CARD will be distributed to console operator by member of RAT or will be called into play by a member of the RAT
- MDR will be controlled by Simulation Supervisor (SIM SUP) on Launch Ops NET
- SIM SUP can suspend or stop Anomaly discussion by calling "KINGS X"
- Real World Anomalies/Issues take priority over simulation

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MDC Count Script
STEREO Mission Rehearsal

EXAMPLE FROM STEREO

DIR BY	ACT BY	CHANNEL	OPERATIONS	T-TIME (MIN)	L-TIME (MIN)	L-TIME (HR)	EDT	GMT
OI	MOD		ESTABLISH VOICE CIRCUITS	T-180	L-270	L-4:30:00	9:22:00	13:22:00
OI	MOD		MOD INITIATE COUNTDOWN CLOCKS	T-150H	L-202	L-3:22:00	10:30:00	14:30:00
NAM	KCD	NASA ADV	NASA ADVISORY MANAGER POLL READY	T-150H	L-200	L-3:20:00	10:32:00	14:32:00
	KPM							
	KSA							
NLM	NASA CE	NLM NET	NASA LAUNCH MANAGER POLL READY	T-150H	L-197	L-3:17:00	10:35:00	14:35:00
	NASA MIM							
	SMA							
	SMD							
	NAM							
OI	NETWORK	FLT CRD	LV TRACKING NETWORK POLL READY	T-150H	L-195	L-3:15:00	10:37:00	14:37:00
MD	NLM	OIS 8	MISSION DIRECTOR POLL READY	T-150H	L-193	L-3:13:00	10:39:00	14:39:00
	DE							
	OI							
	MOD							
	AFSD							
MD	LD	OIS 8	READY TO INITIATE TERMINAL COUNT	T-150H	L-191	L-3:11:00	10:41:00	14:41:00
	LCDR	OIS 1	COUNTDOWN INITIATION POLL	T-150H	L-190	L-3:10:00	10:42:00	14:42:00
LCDR	TIM	OIS 1	RELEASE BIH -- INITIATE TERMINAL COUNT	T-150	L-180	L-3:00:00	10:51:00	14:51:00
	LCDR	OIS 1	RECORD LAUNCH WINDOW INTERVAL	T-150	L-180	L-3:00:00	10:52:00	14:52:00
OI	MOD	OIS 1	ADVANCE CLOCKS TO T-97, L-127	T-150	L-180	L-2:38:00	10:52:00	14:52:00
			Two minutes are allocated for the clock advance. The count pickup will occur at:	T-97	L-127	L-1:47:00	10:54:00	14:54:00
	LWO	OIS 20	WEATHER BRIEFING	T-95	L-125	L-2:05:00	10:56:00	14:56:00
DE	MD	OIS 8	WINDS ASSESSMENT BRIEFING	T-90	L-120	L-2:00:00	11:01:00	15:01:00
NAM	KCD	NASA ADV	NASA ADVISORY MANAGER POLL READY	T-90	L-120	L-2:00:00	11:01:00	15:01:00
	KPM							
	KSA							

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John F. Kennedy Space Center

MDC Count Script
STEREO Mission Rehearsal

EXAMPLE FROM STEREO

DIR BY	ACT BY	CHANNEL	OPERATIONS	T-TIME (MIN)	L-TIME (HR)	L-TIME (HR)	EDT	GMT
NLM	NASA CE	NLM NET	NASA LAUNCH MANAGER POLL REA		L-117	L-1:57:00	11:04:00	15:04:00
	NASA MIM							
	SMA							
	SMD							
	NAM							
MD	NLM	OIS 8	MISSION DIRECTOR POLL READY	T-85	L-115	L-1:55:00	11:06:00	15:06:00
	DE							
	OI							
	MOD							
	AFSD							
MD	LD	OIS 8	GO FOR CRYO LOADING	T-82	L-112	L-1:52:00	11:09:00	15:09:00
OI	MOD	OIS 1	ADVANCE CLOCKS TO T-22, L-52	T-82	L-112	L-1:34:00	11:09:00	15:09:00
			Two minutes are allocated for the clock advance.					
			The count pickup will occur at:	T-22	L-52		11:11:00	15:11:00
	LWO	OIS 20	WEATHER UPDATE	T-19	L-49		11:14:00	15:14:00
	TIM	OIS 1	ANNOUNCE 20 MIN BIH	T-15	L-45			
NAM	KCD	NASA ADV	NASA ADVISORY MANAGER POLL READY	T-15H	L-36		11:27:00	15:27:00
	KPM							
	KSA							
NLM	NASA CE	NLM NET	NASA LAUNCH MANAGER POLL READY	T-15H	L-33		11:30:00	15:30:00
	NASA MIM							
	SMA							
	SMD							
	NAM							
MD	NLM	OIS 8	MISSION DIRECTOR STATUS POLL	T-15H	L-31		11:32:00	15:32:00
	DE							
	OI							
	MOD							
	AFSD							
	VSE	OIS 5	LOAD RELIEF FLIGHT PARAMETERS AVAILABLE	T-15H	L-30		11:33:00	15:33:00
	TIM	OIS 1	RELEASE 20 MIN BIH	T-15	L-25			
DE	MD	OIS 8	WINDS ASSESSMENT UPDATE	T-12	L-22		11:41:00	15:41:00
OI	NETWORK	FLT CRD	LV TRACKING NETWORK POLL READY	T-9	L-19		11:44:00	15:44:00
ROC	MD	CC.LCL	CLEAR TO LAUNCH POLL IN 5 MINUTES	T-7	L-17		11:46:00	15:46:00

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MDC Count Script
STEREO Mission Rehearsal

EXAMPLE FROM STEREO

DIR BY	ACT BY	CHANNEL	OPERATIONS	T-TIME (MIN)	L-TIME (MIN)	L-TIME (HR)	EDT	GMT
	TIM	OIS 1	ANNOUNCE 10 MIN BIH	T-4H	L-14		11:49:00	15:49:00
ROC	MD	CC.LCL	VERIFY STANDING BY FOR CLEAR TO LAUNCH POLL	T-4H	L-13		11:50:00	15:50:00
NAM	KCD	NASA ADV	NASA ADVISORY MANAGER POLL READY	T-4H	L-13		11:50:00	15:50:00
	KPM							
	KSA							
SLCC	MD	CC.LCL	REPORT STATUS	T-4H	L-12		11:51:00	15:51:00
MD	SLCC	CC.LCL	SIR, OUR STATUS IS (REPORT ON L/V, S/C, FACILITIES)	T-4H	L-12		11:51:00	15:51:00
NLM	NASA CE	NLM NET	NASA LAUNCH MANAGER POLL READY	T-4H	L-11		11:52:00	15:52:00
	NASA MIM							
	SMA							
	SMD							
	NAM							
DE	MD	OIS 8	WINDS ASSESSMENT (GO FOR LAUNCH)	T-4H	L-9		11:54:00	15:54:00
MD	NLM	OIS 8	MISSION DIRECTOR POLL READY	T-4H	L-8		11:55:00	15:55:00
	DE							
	OI							
	MOD							
	AFSD							
MD	LD	OIS 8	PROCEED WITH TERMINAL COUNT	T-4H	L-6		11:57:00	15:57:00
LD	LCDR	OIS 1	PROCEED WITH TERM. COUNT AT END OF BIH	T-4H	L-5		11:58:00	15:58:00
	TIM	OIS 1	RELEASE 10 MIN BIH	T-4	L-4		11:59:00	15:59:00
NLM	MD	OIS 8	SPACECRAFT READY FOR LAUNCH	T-3	L-3		12:00:00	16:00:00
MD	LD	OIS 8	PERMISSION TO LAUNCH	T-120 SECS	L-2		12:01:00	16:01:00
LD	LCDR	OIS 1	PERMISSION TO LAUNCH	T-80 SECS	L-80 SECS		12:01:40	16:01:40
	FSC	OIS 1	LIFT- OFF	T-0	L-0		12:03:00	16:03:00

Launch Day Script

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MDC Count Script
Deep Impact Launch Day

EXAMPLE FROM DEEP IMPACT

DIR BY	ACT BY	CHANNEL	OPERATIONS	[illegible]	L-TIME (MIN)	L-TIME (HR)
OI	MOD		ESTABLISH VOICE CIRCUIT	T-180	L-270	L-4:30:00
LCDR	TIM	OIS 1	ANNOUNCE 60 MIN BUILD	T-150H	L-240	L-4:00:00
NAM	KCD	NASA ADV	NASA ADVISORY MANAGER POLL READY	T-150H	L-200	L-3:20:00
	KPM					
	HQM					
	KSA					
NLM	NASA CE	NLM NET	NASA LAUNCH MANAGER POLL READY	T-150H	L-197	L-3:17:00
	NASA MIM					
	SMA					
	SMD					
	NAM					
OI	HAE TM	TM CRD	LV TRACKING NETWORK POLL READY	T-150H	L-195	L-3:15:00
	DOD TRK	ER TLM CRD				
	DELTA NOM	TM CRD				
	MESA	TIELINE				
	OTTR	OTTR CRD				
	OTB	FLT CRD				
	HBK	FLT CRD				
MD	NLM	OIS 8	MISSION DIRECTOR POLL READY	T-150H	L-193	L-3:13:00
	DE					
	OI					
	MOD					
	AFSD					
MD	LD	OIS 8	READY TO INITIATE TERMINAL COUNT	T-150H	L-191	L-3:11:00
	LCDR	OIS 1	COUNTDOWN INITIATION POLL	T-150H	L-190	L-3:10:00
LCDR	TIM	OIS 1	RELEASE BIH -- INITIATE TERMINAL COUNT	T-150	L-180	L-3:00:00
	LCDR	OIS 1	RECORD LAUNCH WINDOW INTERVAL	T-150	L-180	L-3:00:00
	LWO	OIS 20	WEATHER BRIEFING	T-95	L-125	L-2:05:00
DE	MD	OIS 8	WINDS ASSESSMENT BRIEFING	T-90	L-120	L-2:00:00
OI	HAE TM	TM CRD	LV TRACKING NETWORK POLL READY	T-90	L-120	L-2:00:00
	DOD TRK	ER TLM CRD				
	DELTA NOM	TM CRD				
	MESA	TIELINE				
	OTTR	OTTR CRD				
	OTB	FLT CRD				
	HBK	FLT CRD				
NAM	KCD	NASA ADV	NASA ADVISORY MANAGER POLL READY	T-90	L-120	L-2:00:00
	KPM					
	HQM					
	KSA					

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MDC Count Script
Deep Impact Launch Day

EXAMPLE FROM DEEP IMPACT

DIR BY	ACT BY	CHANNEL	OPERATIONS	T-TIME (MIN)	L-TIME (MIN)	L-TIME (HR)
NLM	NASA CE	NLM NET	NASA LAUNCH MANAGER POLL READY	T-87	L-117	L-1:57:00
	NASA MIM					
	SMA					
	SMD					
	NAM					
MD	NLM	OIS 8	MISSION DIRECTOR POLL READY	T-85	L-115	L-1:55:00
	DE					
	OI					
	MOD					
	AFSD					
MD	LD	OIS 8	GO FOR CRYO LOADING	T-82	L-112	L-1:52:00
SLCC	OD	CC.LCL	COMMANDERS OPERATIONS BRIEFING	T-75	L-105	
	MD					
LCDR	ATC	OIS 1	BEGIN CRYO LOADING	T-75	L-105	L-1:45:00
DE	MD	OIS 8	WINDS ASSESSMENT UPDATE	T-30	L-60	
LCDR	TIM	OIS 1	ANNOUNCE 20 MIN BIH	T-20H	L-50	
	LWO	OIS 20	WEATHER UPDATE	T-20H	L-49	
OI	HAE TM	TM CRD	LV TRACKING NETWORK POLL READY	T-20H	L-41	
	DOD TRK	ER TLM CRD				
	DELTA NOM	TM CRD				
	MESA	TIELINE				
	OTTR	OTTR CRD				
	OTB	FLT CRD				
	HBK	FLT CRD				
NAM	KCD	NASA ADV	NASA ADVISORY MANAGER POLL READY	T-20H	L-41	
	KPM					
	HQM					
	KSA					
NLM	NASA CE	NLM NET	NASA LAUNCH MANAGER POLL READY	T-20H	L-38	
	NASA MIM					
	SMA					
	SMD					
	NAM					
MD	NLM	OIS 8	MISSION DIRECTOR POLL READY	T-20H	L-36	
	DE					
	OI					
	MOD					
	AFSD					
MD	LD	OIS 8	PROCEED WITH TERMINAL COUNT	T-20H	L-32	
	TIM	OIS 1	RELEASE 20 MIN BIH	T-20	L-30	
LCDR	RCO	OIS 1	REPORT RANGE STATUS	T-15	L-25	
	VSE	OIS 5	LOAD RELIEF FLIGHT PARAMETERS AVAILABLE	T-14	L-24	

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MDC Count Script
Deep Impact Launch Day

EXAMPLE FROM DEEP IMPACT

DIR BY	ACT BY	CHANNEL	OPERATIONS	T-TIME	L-TIME (MIN)	L-TIME (HR)
DE	MD	OIS 8	WINDS ASSESSMENT (UPDATE)	T-12	L-22	
ROC	MD	CC.LCL	CLEAR TO LAUNCH POLL IN 30 MIN	T-7	L-17	
MD	NLM	OIS 8	MISSION DIRECTOR STATUS POLL (PRIOR TO SLCC POLL)	T-6	L-16	
	DE					
	OI					
	MOD					
	AFSD					
	TIM	OIS 1	ANNOUNCE 10 MIN BIH	T-4H	L-14	
ROC	MD	CC.LCL	VERIFY STANDING BY FOR CLEAR TO LAUNCH POLL	T-4H	L-13	
OI	HAE TM	TM CRD	LV TRACKING NETWORK POLL READY	T-4H	L-13	
	DOD TRK	ER TLM CRD				
	DELTA NOM	TM CRD				
	MESA	TIELINE				
	OTTR	OTTR CRD				
	OTB	FLT CRD				
	HBK	FLT CRD				
NAM	KCD	NASA ADV	NASA ADVISORY MANAGER POLL READY	T-4H	L-13	
	KPM					
	HQM					
	KSA					
SLCC	MD	CC.LCL	REPORT STATUS	T-4H	L-12	
MD	SLCC	CC.LCL	SIR, OUR STATUS IS (REPORT ON L/V, S/C, FACILITIES)	T-4H	L-12	
NLM	NASA CE	NLM NET	NASA LAUNCH MANAGER POLL READY	T-4H	L-11	
	NASA MIM					
	SMA					
	SMD					
	NAM					
DE	MD	OIS 8	WINDS ASSESSMENT (GO FOR LAUNCH)	T-4H	L-9	
MD	NLM	OIS 8	MISSION DIRECTOR POLL READY	T-4H	L-8	
	DE					
	OI					
	MOD					
	AFSD					
MD	LD	OIS 8	PROCEED WITH TERMINAL COUNT	T-4H	L-6	
LD	LCDR	OIS 1	PROCEED WITH TERM. COUNT AT END OF BIH	T-4H	L-5	
	TIM	OIS 1	RELEASE 10 MIN BIH	T-4		
NLM	MD	OIS 8	SPACECRAFT READY FOR LAUNCH	T-3		
MD	LD	OIS 8	PERMISSION TO LAUNCH	T-120 SECS		
LD	LCDR	OIS 1	PERMISSION TO LAUNCH	T-80 SECS		
	FSC	OIS 1	LIFT-OFF	T-0		

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Range Calendar and Remaining Meetings

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Eastern Range Operations Schedule

LAUNCH SERVICES PROGRAM

Jan/Feb/Mar 2007

SUN	MON	TUE	WED	THU	FRI	SAT
JANUARY 28	29	30	31	FEBRUARY 1	2	3
4	5	6	7	8	9	10
11	12	13	14	15 Delta II THEMIS	16	17
18	19 HOLIDAY	20	21	22	23	24
25	26	27	28	MARCH 1 Delta II GPS IIR-19	2	3

X *Range Configuration*
\\ *Additional Launch/Landing Attempt(s)*
\ *Configuration Hold*
/ *Range Conflict*
HOLIDAY

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THEMIS
Launch Meetings Schedule

• Pre- Vehicle on Stand (Pre-VOS)	Jan 3, 07 Huntington Beach
• Spacecraft Mission Readiness Review (MRR)	Jan 5 (U/R) GSFC, MD
• Launch Vehicle Readiness Review (LVRR)	Jan 12 O&C Mission Briefing Room
• Safety & Mission Success Review (SMSR)	L- ~30 Days KSC, FL (via Telecon)
• Launch Site Readiness Review (LSRR)	L- ~10 Days CCAFS, FL
• Flight Readiness Review (FRR)	Feb 12, 9:00 AM O&C Mission Briefing Room

THEMIS
Launch Meetings Schedule

• Launch Management Coordination Meeting (LMCM)	Feb 13, 8:30 AM E&O Rm 1118 Conf Room
• Mission Dress Rehearsal (MDR)	Feb 13, 10:00 AM Operational Stations
• Pre-Launch Winds Briefing	Feb 14, 8:00 AM O&C Mission Briefing Room
• Launch Readiness Review (LRR) / Certificate of Flight Readiness (CoFR) Signing	Feb 14, 9:00 AM O&C Mission Briefing Room
• Pre-Launch Press Conference	Feb 14, 1:00 PM KSC News Center
• 45th Wing Launch Readiness Review (Limited Attendance)	Feb 14, TBD PM E&L SLCC Conference Room
• Launch Countdown NASA Management On-Station	Feb 15, ~ TBD PM Operational Stations