Maneuver Acceptance Committee : Pre- Apogee Delta-V 2 Checklist

C. Reno

Last Update 6/14/11

Attendees :

Approved	By	Parameter	Info on Page	Limits	Value
	HPS/ Steve Green	ADV1 Performance Assessment (change in tank pressure & propellant consumption, observed vs predicted)	9		94.79%
	FDG	ADV1 Performance Assessment (% hot/cold) based on OD	9		91.99%
	FDG	Thrust Efficiency Scale Factor	9		0.9685
	FDG	Current OD Uncertainty	8	Within ground station FOV for post spin-up passes	16km apogee 19km perigee
	FDG	Target Orbit Period Uncertainty (Napoleon plot)	10-11, 28	No >4h eclipses	
	FDG	Orbit Period	17, 22		
	FDG	No Additional Delta-V Burn Trajectory	29	Just for comparison	
	FDG	No ADV2 Burn Trajectories	30,	Decide on backup plan	
	FDG	Helionose Progression	18, 23	Clockwise	
	FDG	Apogee Radius	19, 24	Always <= 55Re geoc.	
	FDG	Perigee Radius	20, 25	Always >= 3Re geoc.	
	FDG	Quicklook Communications Analysis - only if there is a major difference in perigee profiles	N/A	Miss 3dB link margin for >1 perigee in a row for 10 years	
	FDG	Apogee & Perigee Times	13-14, 51	N/A	
	FDG	Crossing Times	52-67	N/A	
	FDG	Viewperiods Report	68-70	Contacts Still Valid	
	MOC	SAP		Contacts Still Valid	
	MOC	USN Coverage for ADV2		N/A	
	MOC	USN Coverage for ADV3		Available at time of MAC	
	MOM	Time of ADV2 (6/16 1900 UTC)	31	In viable viewperiod	
	FDG	Duration of ADV2 Burn (600s)	31	600s - no tolerance	
	MOM	Time of ADV3 (6/17 1100 UTC)	31	In viable viewperiod	

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	FDG	Duration of ADV3 Burn (580 s)	11, 31	Up to 600s	
	MOC	ADV2 & ADV3 ATS		N/A	
	SYS, ACS, MOC, MOM, PM, ISOC, FDG	Approved ADV2 & ADV3 ATS (prior to MAC)		N/A	
	SYS, MOC, MOM, PM, ISOC, FDG	Approved Contact ATS (prior to MAC)		Command Limit Contraints not violated (<240 commands)	
	SYS	ACS TLM (from contact before MAC)	34,48-50	GREEN	
	SYS	HPS TLM (from contact before MAC)	35-40	GREEN	
	SYS	EPS TLM (from contact before MAC)	43-47	GREEN	
	SYS	SCB TLM (from contact before MAC)	33,41-42	GREEN	

S/C State as of pass prior to MAC:

Sun Angle Range _15.7 – 25.1_ Expected Sun Angle _____ tol +/- 1 degree (quaternions) - provide running plot of sun pointing angle
Spin Rate _22.48 rpm_ Expected Spin Rate _22____ tol. +/- 1 rpm

ADV1 Maneuver Success Criteria :

Correct Polarity	___Y____	
Maneuver Completed at Specified Time	___Y____	Maneuver duration: 600 sec
End of burn pressure within limits	___Y____	
Cat bed heaters 5N & 22N on & off	___Y____	
Nutation damping pulses	___N____	
Spin down pulses	___N____	

SCB State __Housekeeping____
CEU Mode __Off____
FC Mode __Mission____
ACE Mode __High Rate____
EPS Mode __Normal____

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Star Tracker __Off____
ACS Low Rate Sensor _Accel_____
Fuel used Table : Grey boxes do not have meaningful values - leave blank * Minimal accuracy

Immediately before/after maneuver	Tank 1 Pres (SYS) psi		Tank 1 Temp (SYS) °C		Tank 2 Pressure (SYS) psi		Tank 2 Temp (SYS) °C		Delta-V (FDG) m/s			Fuel Use (SYS, FDG, MT) kg		Fuel Remaining (SYS, FDG, MT) kg	
	Est	Obs	Est	Obs	Est	Obs	Est	Obs	Est	Recon	OD	Recon	OD*	Est	Obs
Pre-Repointing		173.43		18.82		173.14		20.05							16.41
Post-Repointing	173.43	172..85	18.82	18.33	173.14	172.75	20.05	19.31				0.004		16.41	16.514
Pre-Spin Up	173.43	172..85	18.82	18.33	173.14	172.75	20.05	19.31						16.41	16.514
Post-Spin Up MT - top **JG - bottom**	171.66	 172.55 **172.7**	18.82	 18.9 **19.07**	171.35	 172.55 **172.41**	20.05	 20.7 **21.29**				0.197		16.21	 16.408 **16.27**
Pre-ADV1 MT - top **JG - bottom**	 172.18 **172.70**	 **171.75**	 18.585 **19.07**	 **17.93**	 171.88 **172.41**	 **171.47**	 19.696 **21.29**	 **18.98**						 16.403 **16.27**	 **16.31**
Post-ADV1 MT - top **JG - bottom**	 **140.28**	 142.21 **142.09**	 **18.82**	 18.47 **17.95**	 **140.28**	 **141.83**	 **20.05**	 19.25 **18.58**	 97.93 **103.1**			 3.975 **4.17**		 12.43 **12.04**	 12.43 **12.30**
Pre-ADV2 MT - top **JG - bottom**	 142.21 **142.09**		 18.47 **17.95**		 142.21 **141.83**		 19.25 **18.58**							 12.43 **12.30**	
Post-ADV2 MT	 121.24		 18.82		 121.24		 20.05		 94.16			 3.67		 8.37	
Pre-ADV3 MT	 121.24		 18.82		 121.24		 20.05							 8.37	
Post-ADV3 MT	 111.0		 18.82		 111.0		 20.05		 67.62			 2.52		 5.85	
Pre-Spin Down	111.0		18.82		111.0		20.05							5.85	
Post-Spin Down	110.01		18.82		110.01		20.05					0.197		5.65	
Pre-Repointing	110.01		18.82		110.01		20.05							5.65	
Post-Repointing	110.0		18.82		110.0		20.05					0.006		5.65	

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Table Change History (date, person, change):

6/13, JG Input pre-ADV1 observed pressure, temperature, fuel remaining (average over 159:19:43:05 – 159:19:59:59)
Input post-ADV1 observed pressure, temperature, fuel remaining (average over 160:05:01:24 – 160:05:59:56)
Input pre-ADV2 estimated pressure, temperature, fuel remaining

Approvals By :

_____ Dave McComas
_____ John Scherrer
_____ Nathan Schwadron
_____ Chelle Reno
_____ Mark Tapley
_____ Robert Lockwood
_____ Ryan Tyler
_____ Bret Hautamaki
_____ Jim Bobbett
_____ Jeff Godward
_____ Tim Perry
_____ Sheral Wesley
_____ John Carrico
_____ Lisa Policastri
_____ Ryan Lebois
_____ Marissa Intelisano