Memo

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Subject: Antares Orb-3 S-Band Telemetry Transmitter Information Summary for STA 0695-EX-ST-2014

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1. The locations of the 3 S-Band telemetry transmitters, and the associated estimated on/off times are provided along with additional related information in the following table. The location of the Link 69 transmitter is the Motor Cone. This is considered to be part of the launch vehicle Interstage located between Stages 1 and 2.

Telemetry Designation	Operational Frequency Band	Transmitter Location	Power Out	ERP	Emission Designator	Transmitter		Method Used for Determining Off Times
						On Time	Off Time	
Link 41	2239.76-2243.24 MHz	Stage 2	5 W.	3.3 W.	3M48F1D	T= L-3.5 hrs.	T = L+1 hr.	battery life estimate
Link 69	2267.76-2271.24 MHz	Motor Cone	5 W.	4.1 W.	3M48F1D	T = L-3.5 hrs.	T = L+16 min.	earth impact estimate
Link 88	2286.76-2290.24 MHz	Stage 1	5 W.	3.4 W.	3M48F1D	T = L-3.5 hrs.	T = L+13 min.	earth impact estimate

L = launch time

2. Transmitter On Time – A sequence of checks involving the transmitters begins on the launch pad approximately 3 hrs 30 minutes before launch time using external power. At about 5 minutes before launch, power is switched to internal (battery), and the transmitters remain on internal power throughout the completion of the mission.

3. Transmitter Off Time – The 3 transmitters are not turned off by command. Rather, they cease to transmit when their battery supply is depleted, or as a result of operational failure during re-entry after a separation event or due to earth impact. Taking a worst case approach, the longest duration of transmission possible is determined, as transmitters off times are estimated using the battery life estimates or earth impact calculations.