NANORACKS

20 February 2017

Jenny Barna
Spire Global
575 Florida St. Suite 150
San Francisco, CA 94110

Re: OA-7 above station deployment approval

Dear Jenny,

NanoRacks would like to inform you (as demonstrated by the attached minutes) that the Space Station Program is committed to proceeding forward with the intent to deploy no more than four 3U CubeSats from the Orbital ATK 7 Cygnus vehicle after unberthing from the ISS. The post deploy altitude of the CubeSats should be no less than 45 kilometers higher than the ISS orbit. The final payload orbit should be as close to co-elliptic with the ISS as possible.

The ability to accomplish this is dependent upon the completion of the required work to enable certification of flight readiness and the availability of sufficient propulsion capability. The availability of propulsion capability will not be known until after launch and berthing of the OA-7 vehicle; however, if the launch and rendezvous profile are as planned, there should be sufficient margin to accomplish the deployment at higher altitude – this is the baseline plan.

Best regards,

Christopher K. Cummins

# Space Station Program Control Board (SSPCB)

**Final Agenda**

February 07, 2017

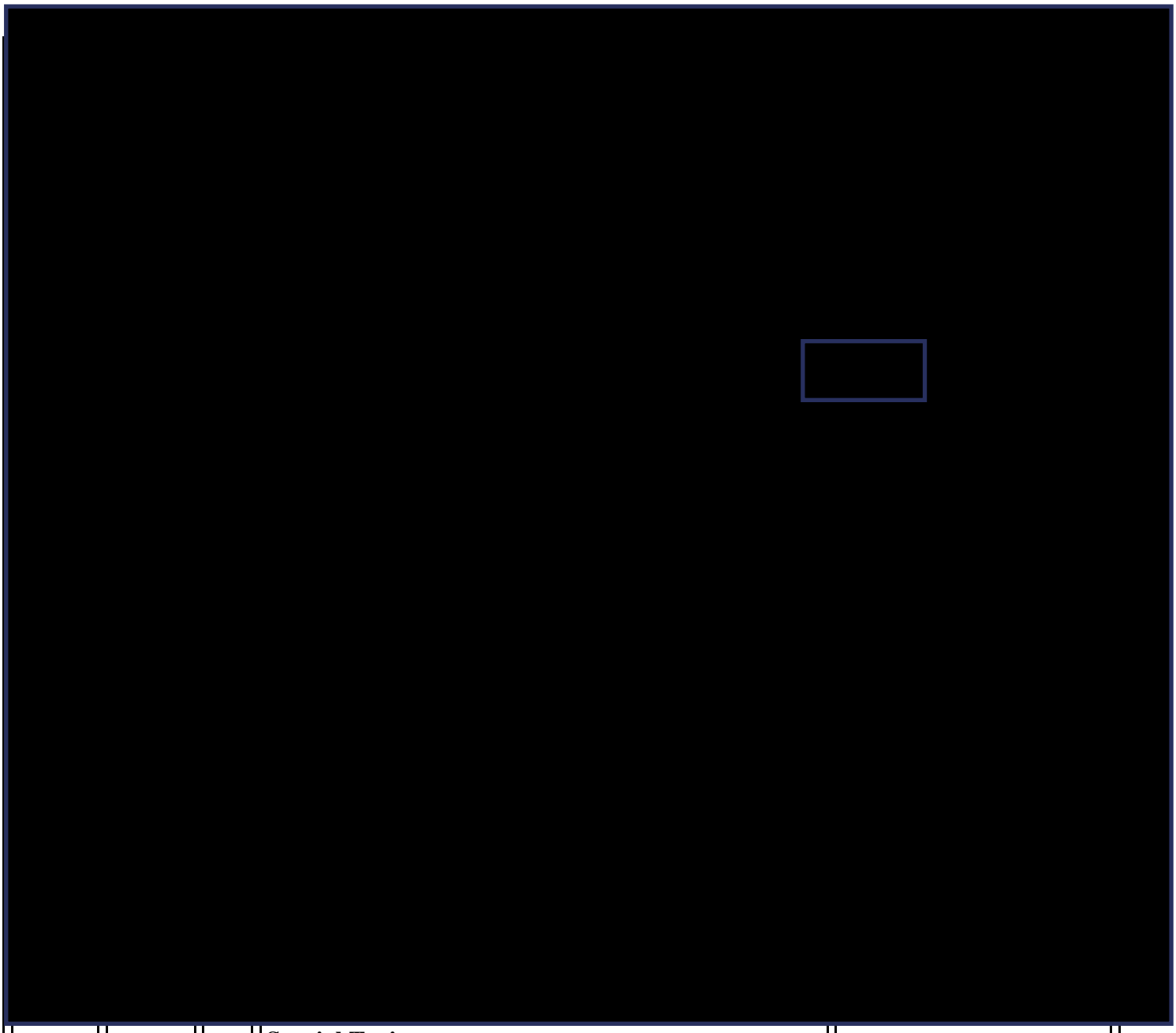
Building 1/511  9:00 A.M. CST

Overflow Room: Building 4S/4800

Board Chair: Kirk Shireman

***Please submit all correspondence to the SSPCB Mailbox at JSC-ISS-SSPCB@mail.nasa.gov***

***SSPCB On-Line Agenda***



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| | | | **Special Topics** | |
| 10:20 | *30 Min* | **D.** | OA7 External NRCSD Deploy Candidates<br>***(Technical Concurrence)***<br><br>***Summary:*** This presentation characterizes the risk to ISS posed by Cubesats to be deployed above ISS during OA7 Cygnus free Flight. NanoRacks has proposed deploying 4 Lemur Cubesats from OA7 while the Cygnus vehicle is in free flight above ISS. Existing analysis performed for the OA5 case is still valid: NASA Orbital Debris Program Office (ODPO) analysis indicates approximately 1% likelihood of ISS DAM per satellite deployed at ISS inclination above ISS (risk per satellite only lasts while they cross ISS altitude range). The baseline plan is to deploy these | Charles Gray/OM |

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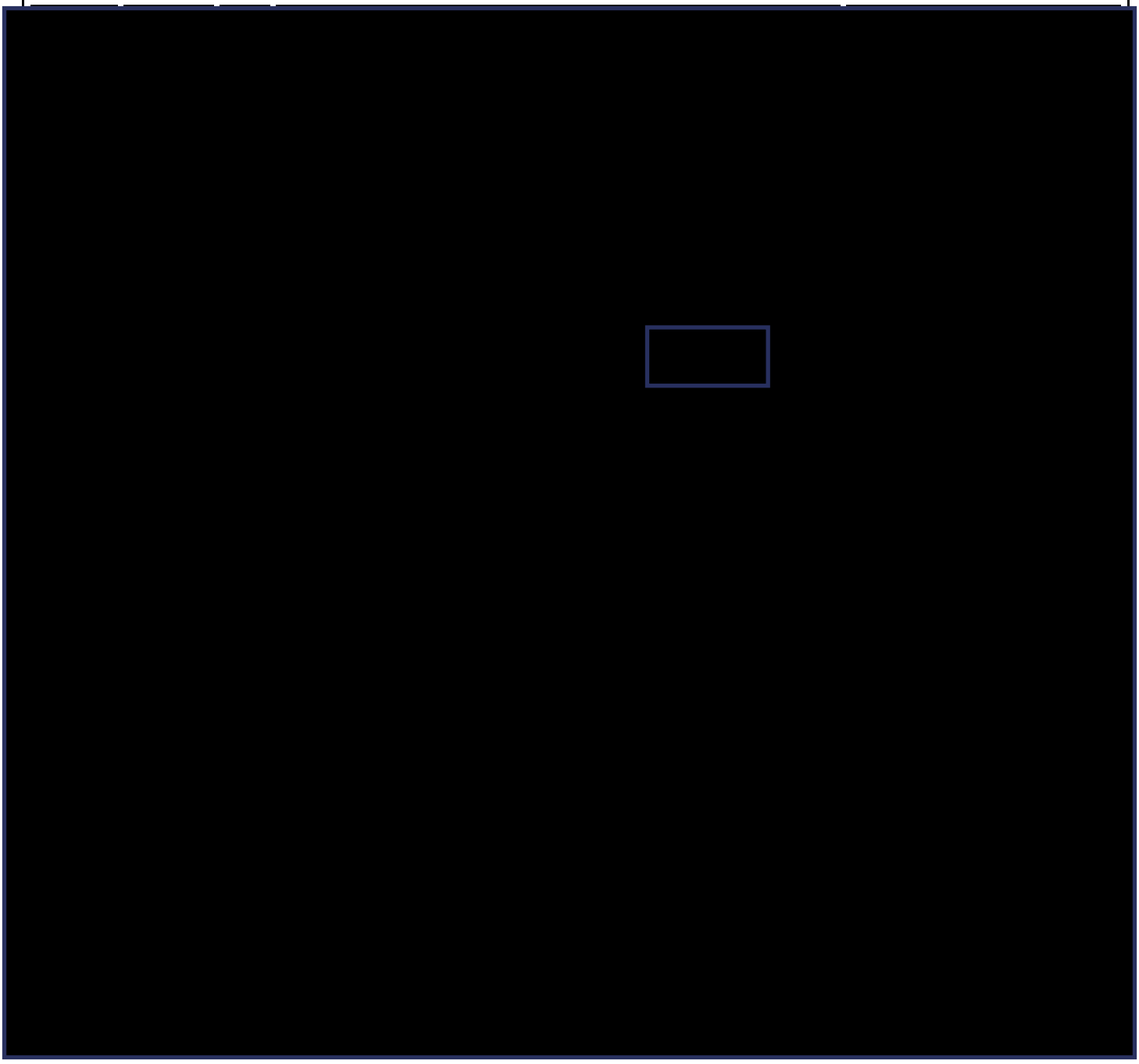
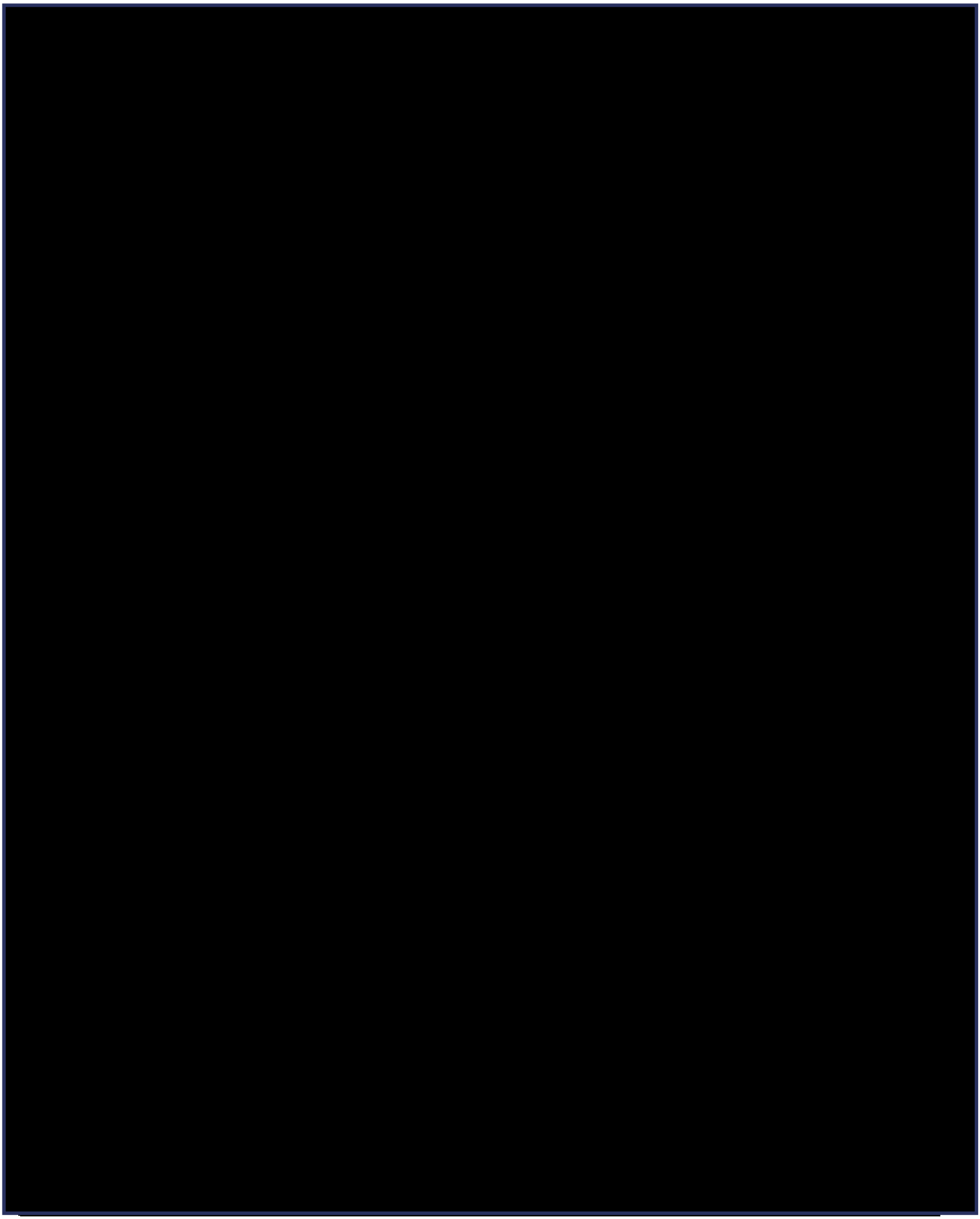
| | | | satellites at 500 km, but is dependent on Cygnus vehicle capability real time. The team provided an overview of the applicable jettison policy requirements, the attitude profile and projected OA7 decay profile. Specifics associated with the deployment and risks are identified in the presentation.<br><br>***Disposition:*** The Board approved the deployment. TOPO TIM is in 2-weeks, the Board recommended the team to plan a roadshow to Hqts and FCC (regulatory agency) for informational purposes. It was noted that since the jettison policy is being met this topic will not be presented at the SSCB, IPs are being notified electronically. | |





***Agenda Last Updated: 02/08/2017 9:47 AM***

**Deferred Items:**

***SSPCB Conference Number: 1-888-530-3405***
***Participant Passcode: SSPCB***

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***To add a topic to the agenda, please use the Agenda Request Form***

POC: Teresa Yunk
281-483-1518