



Upper Stage Engine Subscale Diffuser Test: Four Subscale Diffuser tests were successfully conducted on May 29. The objective was to gather performance data related to replacing the conical section at the end of the diffuser with a shorter, straight section. Preliminary results indicate adequate diffuser performance might be achieved with the shorter, straight section. More in-depth data analysis is in work.



Subscale Diffuser testing with short, straight diffuser discharge pipe

Recent activities specific to the Elements include:

- **First Stage (FS)**
 - **Solid Rocket Booster (SRB) Kennedy Space Center (KSC) Facilities Post-2010:** A face-to-face working meeting was held on May 28 with Marshall Space Flight Center (MSFC) Ares FS, KSC Constellation, ATK, and USA Solid Rocket Booster Element (SRBE) participants. The focus of the meeting was to review the list of facilities currently used by SRB personnel and compare that to the listing of facilities that KSC Constellation had included to pick up Operation and Maintenance (O&M) costs post-2010. A listing of KSC facilities was also reviewed for candidates for SRB storage for the Ares Projects. Hangar M Annex on the Air Force side, was identified as a building that should be added to the KSC O&M list post-2010. A tour of the forensic laboratory facility and the office space located in M Annex was conducted, as well as, a walk-through of Hangar S. KSC agreed to add M Annex to their post-2010 budget. Upon FS management concurrence, a request was submitted to obtain Hangar S for long-term storage. A follow-on face-to-face meeting will be held in June to discuss recommendations for the responsibilities and time lines for SRB Ground Support



Equipment (GSE) post-2010. KSC Constellation and the FS Transition Manager also implemented a weekly tag-up to discuss issues relative to FS and Ground Operations.

- ***Shuttle Transition Quarterly Program Management Review (TOPMR):*** The Ares FS Transition Manager attended the TOPMR held at Stennis Space Center (SSC) on May 14–15. FS was able to establish contacts with the NASA Headquarters Exploration Systems Mission Directorate (ESMD) Transition Manager and support team. Future TOPMRs will have further participation by ESMD and the Constellation Program and Ares Elements working with the Space Operations Mission Directorate (SOMD), ESMD, and Shuttle Transition Managers to effectively fly out Shuttle and transfer heritage property (hardware, Ground Support Equipment (GSE), records, facilities, etc.) to the Ares Projects.
- **Upper Stage Engine (USE)**
 - ***Powerpack Assembly 1A (PPA-1A) Removal at SSC:*** J-2X PPA-1A testing was successfully completed May 8. PPA-1A consists of heritage J-2 turbomachinery and gas generator. Removal of PPA-1A from SSC Test Stand A-1 was approved following post-test data analyses and hardware inspections. PPA-1A was moved to SSC Building 9101 on May 28, where components are being removed and prepared for shipping. Test Stand A-2 is being secured and preparations for Powerpack Assembly 2 (PPA-2) testing are in work; PPA-2 consists of J-2X turbomachinery and gas generator.



Removal of PPA-1A from Test Stand A-1 at SSC



- **Flight and Integrated Test Office (FITO) and Ares I-X**
 - **Ares I-X Avionics Integrated Product Team (IPT) Ascent Thrust Vector Controller (ATVC) Testing:** The Ares I-X Avionics IPT began testing of the ATVC qualification unit. Initial Acceptance Testing (IAT) has begun at Honeywell International in Clearwater, FL. The following tests have been successfully completed: workmanship functional, MIL-STD1553 Remote Terminal (RT) validation, power reverse voltage, and 11 one-time electrical characterizations. The first full functional test was completed June 4 and thermal cycling is planned for June 8.



Ares I-X ATVC qualification unit has begun IAT

The Ares Project looks forward to the many element PDR and CDR Kickoffs, Boards, and Readiness Reviews in June and July.

...and as of this Ares Projects Weekly Summary, there are only 313 days until the first Ares I test flight, Ares I-X!!!