

Inc 47/48 Status

POIWG #40
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Payload Operations Integration Center

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◆ Inc 47/48 So Far

◆ Major Accomplishments

- ◆ OA-6 and SpX-8 missions (resumption of visiting vehicles!)
- ◆ Rodent Research 3
- ◆ NanoRacks CubeSat Deployers #7 and #8
- ◆ MSG: OASIS, RR-3 support, Thermal Exchange, PBRE, 3D Printer, and Heart Cells (ongoing)
- ◆ Fluid Shifts for 45S crew
- ◆ 4 HRP investigations completed with 45S crew (Ocular Health, Cognition, Salivary Markers, Microbiome)
- ◆ BEAM deployment and ingress
- ◆ Meteor installation into WORF
- ◆ Replacement of ER5 PEHB with IPEHG
- ◆ AMO EXPRESS and TReK demonstrations

And a lot more science!





Inc 47/48 So Far (continued)

◆ Major Challenges

- ◆ Delays of all visiting vehicles
- ◆ Facility and systems issues:
 - ✦ ER8 PEHB data throughput limitations
 - ✦ PLMDM command bus hangup due to invalid commands (recovered)
 - ✦ MSG, ER3, and ER8 laptops (recovered)
 - ✦ CIR bent igniters & IPSU hard drive
 - ✦ FIR Main RPC and IPSU hard drive
 - ✦ Limited N2 flow for MSG/PBRE
 - ✦ DDCU LA1A trip (recovered)
 - ✦ ER7 SSPCM
- ◆ Limited crew time in Inc 48 only supports prime, non-deferrable science. Very limited (if any) support for reserve science.
- ◆ Using Russian crew time for Joint Research requires extra coordination and realtime support.





Wrench printed by Manufacturing Device (Made In Space)



Tropical Cyclone NEPARTAK



Cube Sats deployed from NanoRacks CubeSat Deployer.



PBRE Installed in MSG



Tim Peake with NanoRacks Module 51 (PI from King's College London)



"Rick onboard ISS" courtesy of TReK



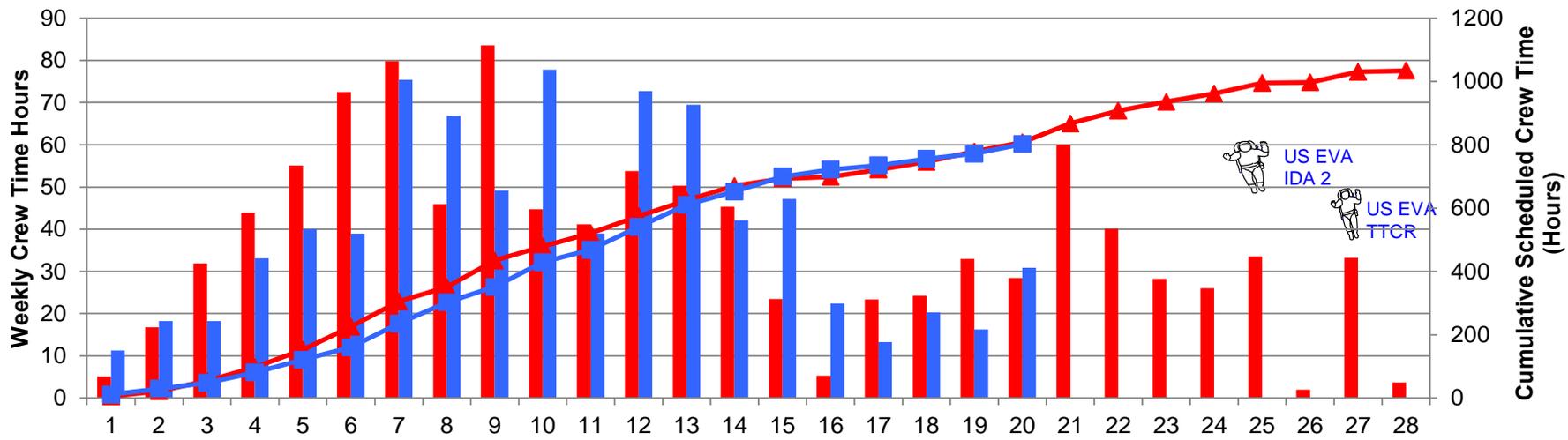
Student Robert Hillan discussing the tool he designed with the crew (printed by Manufacturing Device)



Inc 47 - 48 Utilization Crew Time



■ OOS Planned
 ■ USOS Executed
 ▲ OOS Planned Cumulative
 ■ USOS Cumulative Executed



US EVA IDA 2
 US EVA TTCR

47-3	47-6		48-3	48-6	
47-3	47-6		48-3	48-6	
Inc 48					
March	April	May	June	July	August

OA-6 Berth 3/13/16 Berth 3/26/16 Unberth 5/24/16 Unberth 6/14/16
 SpX-8 Berth 3/22/16 Berth 4/10/16 Unberth 4/21/16 Unberth 5/11/16
 * SpX-9
 Berth 5/9/16 Berth TBD Unberth 6/8/16 Unberth TBD
 Berth 7/10/16 OA-5 Berth August TBD Unberth 8/29/16 Unberth August TBD
 SpX-10
 Moved to Inc 49 Not planned in OOS
 46S Undock 9/7/16

Wk15 data under review Executed through Increment Wk (WLP Week) 20 = 18.6 of 25.8 work weeks 72.09% through the Increment
 USOS IDR Allocation: 1,021.00 hours
 OOS USOS Planned Total: 1,034.33 hours
 USOS Actuals: 802.5 hours
 78.60% through IDR Allocation
 77.59% through OOS Planned Total
 Total USOS Average Per Work Week: 43.15 hours/work week
 Voluntary Science Totals to Date: 0 hours (Not included in the above totals or graph)
 RSA/NASA Joint Utilization to Date: 38 Hours (not included in the above totals or graph)

Color Key:
 Completed
 Final OOS
 FPIP Plan



We are in the home stretch...

- ◆ SpX-9 science
- ◆ SPHERES Zero Robotics competition
- ◆ NREP assembly and installation into JEM-EF
- ◆ Fluid Shifts for 46S and 47S crew
- ◆ OA-5 mission (TBD)

Inc 49 starts September 7, 2016



NASA MSFC
Mission Operations Laboratory

