CAP CHANDRA

Command Action Procedure

CAP #	1554	**Originator:**	D. Patnaude
Date:	10/18/2020	**Commands Checked By:**	K. Gage
Participants	HRC/OC		
Required for Execution:	CC	**Time of CAP execution:**	

Title:
Manual Enable of SCS 91 for HRC-I checkout observation of Cas A

Description/Rationale:
As part of returning to normal operations for the HRC, the HRC team wants to observe the detector commanding in real time. Except for enabling of SCS 91, which controls auto ramp up of the detector HV, all commanding for an HRC-I observation of Cas A (obsid 24840) will be in the OCT1920 loads. This CAP is to enable SCS 91 before the start of obsid 24840, during a real time comm pass which begins on DOY 292:21:50UT

Restrictions/Warnings/Notes:

- Except for enabling of SCS 91, all commanding for obsid 24840 will be done via daily loads.
- SCS 91 is activated at 2020:292:22:24:36.853 . The CAP needs to be executed before this.

Yes ☐ **No** ☒ **CAP requires enabling of a disabled command? If yes, provide a list of Disabled Commands**

CARD Items:

Schedule Requirements/Load Interaction:

CAP execution window: __292:21:50UT_____ to _____292:22:20UT_____
CAP duration: ___5 min_____
CAP verified against ___OCT1920____ daily loads if applicable: N/A ☐

Yes ☒ **No** ☐ Daily load commands exist during execution window of CAP
Yes ☒ **No** ☐ CAP requires specific DSN comm. or timing requirements
Yes ☐ **No** ☒ CAP will be run concurrently with another CAP
Yes ☒ **No** ☐ CAP requires commanding in the load to be executed to ensure success
Yes ☒ **No** ☐ Daily load requires the CAP to be completed to ensure success
Yes ☐ **No** ☒ CAP uses SCS slots. If yes, performs SCS cleanup

Comments:

- SCS 91 must be disabled in the loads prior to CAP execution
- SCS 89 must be enabled by the loads prior to the observation. This should be accomplished as part of normal RADEXIT commanding
- The CAP will be executed during the comm pass at 292:21:50z
- Commanding for the HRC-I observation should begin at least 20 min after the start of comm
- The CAP interacts with commanding in the daily loads to execute obsid 24840

Initial Conditions/Spacecraft Configuration:

- The CAP requires that commanding for observation of Cas A be in the daily loads.
- SCS 87 and SCS 89 must both be enabled
- SCS 91 must be disabled

CAP depends upon or changes the state of:

☐ Telemetry Format	☐ SIM Table Position
☐ Safing Monitor En\Dis State (inc. RadMon)	☐ Grating Positions
☐ OBSID	☐ SI Mode
☐ Momentum State	☐ ACIS Parameter Blocks
☐ Attitude	☐ HRC Configuration
☐ PCAD Mode	☒ SCS States or Contents
☐ S/C Unit Configuration (H/W or S/W)	☐ Dither State
☐ Ground System Configuration/Settings	☐ FSW Element
☐ S/C Clock (VCDU)	

Comments:

- The CAP enables SCS 91

Risk/Comm. Loss/Worst Case Scenario:

What happens if comm. is lost during CAP execution?
If comm is lost during CAP execution, then the HRC-I HV may not be brought up via SCS 89. In this case, the detector will not collect science data.
What is the worst case scenario for CAP execution? (Assuming the CAP is executed correctly)
If the CAP is executed correctly, the worst case scenario is that SCS 89 does not execute properly.

Required Products (Scripts, Displays, SOPs, etc.):

Product Name	Version	On-Console
O_PROT_SCSCTRL	3.2	☐
F_MAIN.dec (GRETA display)	2.74	☐
I_HRC_SOH.dsp (EHS display)	3.10	☐
F_HRC_ALL.dec (GRETA display)	2.1	☐

Command Load Name	Checksum (if applicable)	In ODB

		☐

Instructions:

1. Verify that **SCS 87** is **enabled**
2. Verify that **SCS 89** is **enabled**
3. Verify that **SCS 91** is **disabled**
4. On HRC go, use script **O_PROT_SCSCTRL** to enable **SCS 91**
5. HRC verifies proper start to **OBSID 24840**
6. (**OPTIONAL**) **Contingency commanding**

   At the direction of HRC, use script **O_PROT_SCSCTRL** to activate **SCS 87**

SOT Manager/Lead: S. Wolk (verbal)		**Mission Planning Manager:** J. Scott (verbal)	
OC or Ops Manager: F. Shackart (verbal)		**FOM:** S. Hurley (verbal)	
Sys. Engineer: P. Viens (verbal)		**Flight Director:**	