

# XRT Timeline to be uploaded on 2009/12/29

Period: 2009/12/29 11:25:00 - 2010/01/05 09:48:00

\* \* \* \* \*

**Normal mode**

\* \* \* \* \*

NOT USED

\* \* \* \* \*

**Flare mode**

\* \* \* \* \*

NOT USED

\* \* \* \* \*

**Active Region Search**

\* \* \* \* \*

NOT USED

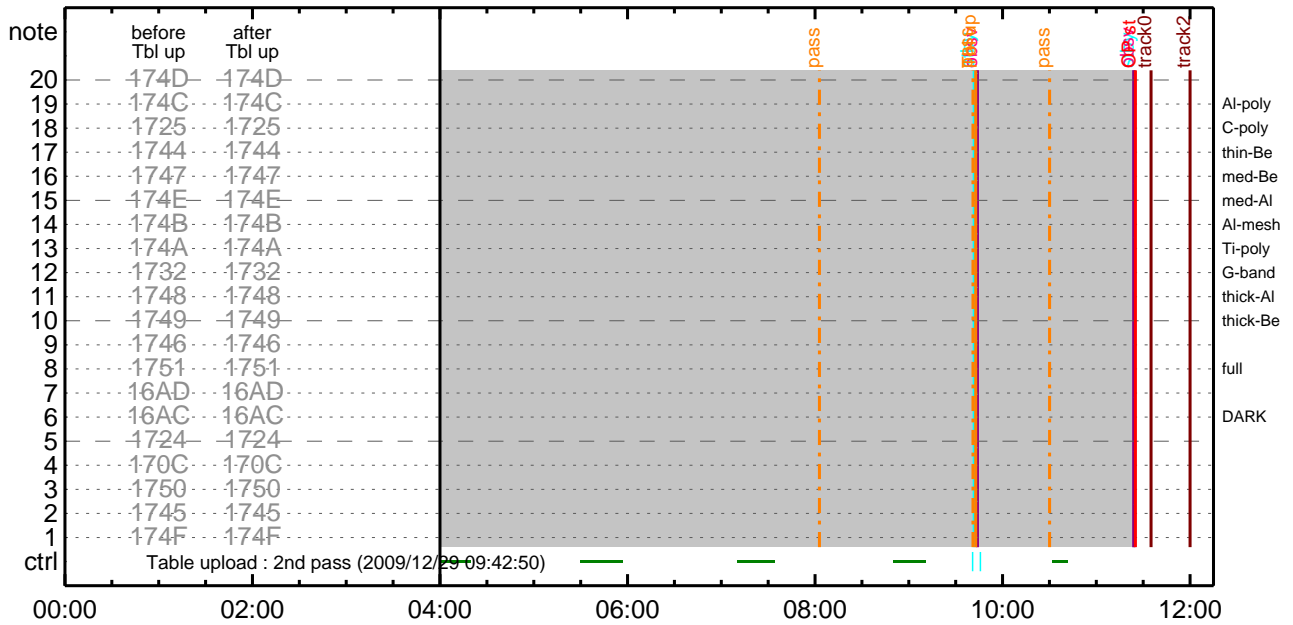
\* \* \* \* \*

**Flare Detection**

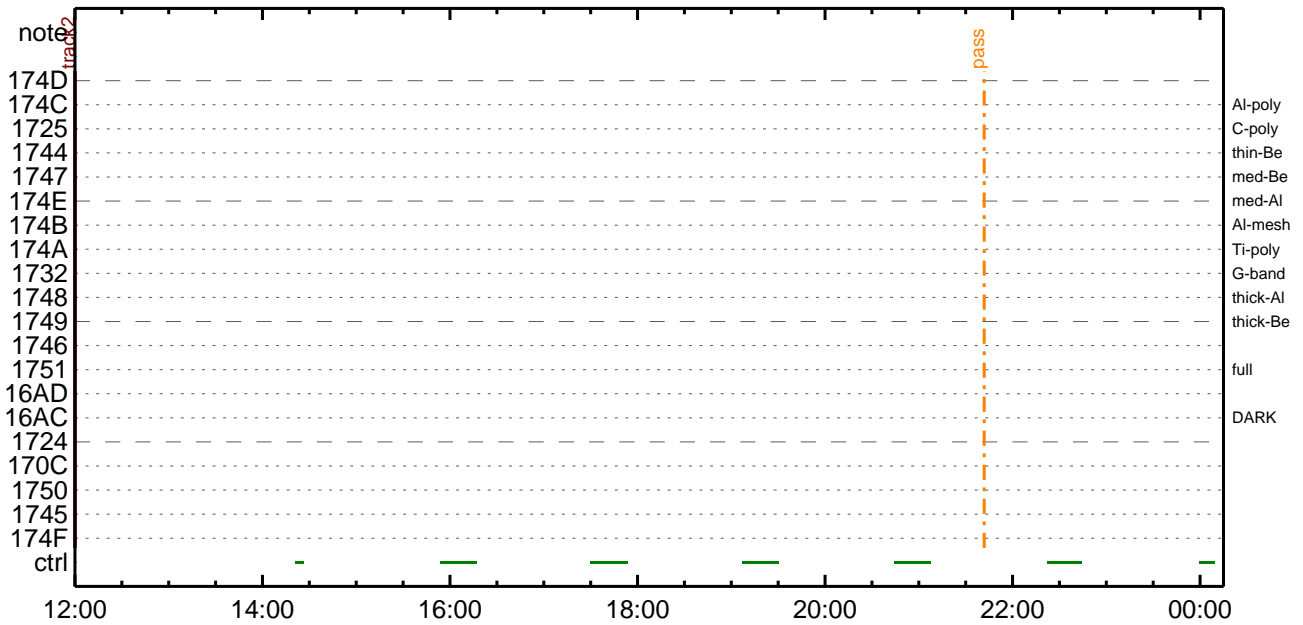
\* \* \* \* \*

NOT USED

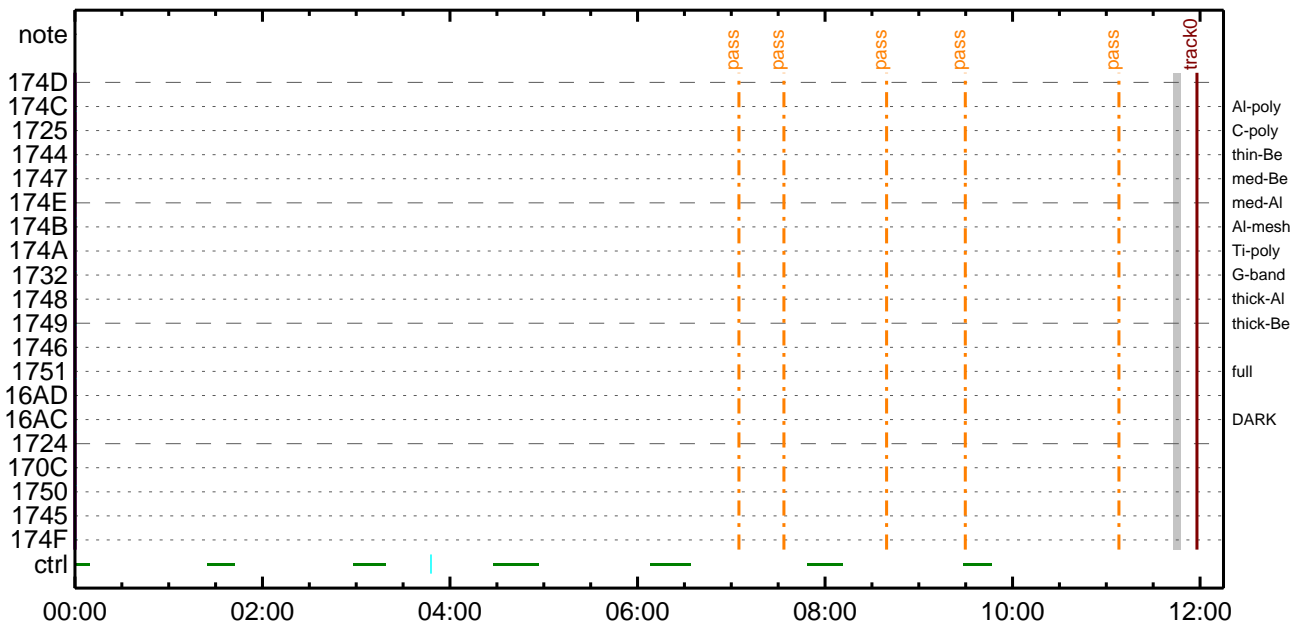
### CMDI #0993 2009/12/29



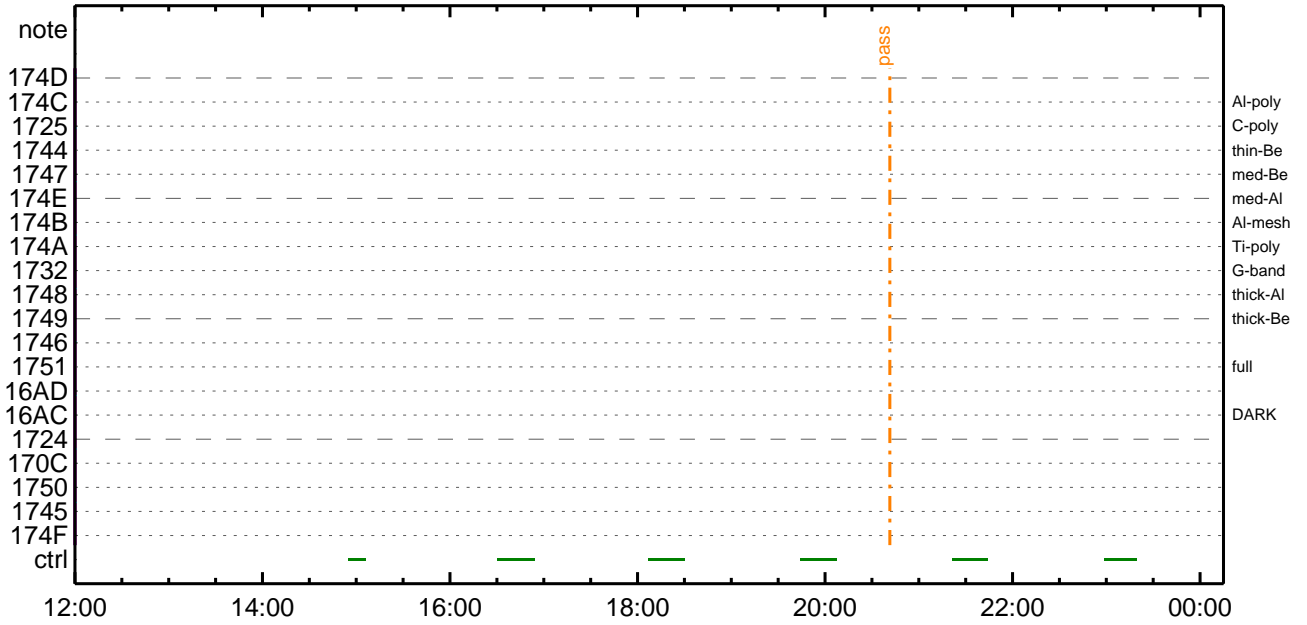
### CMDI #0993 2009/12/29



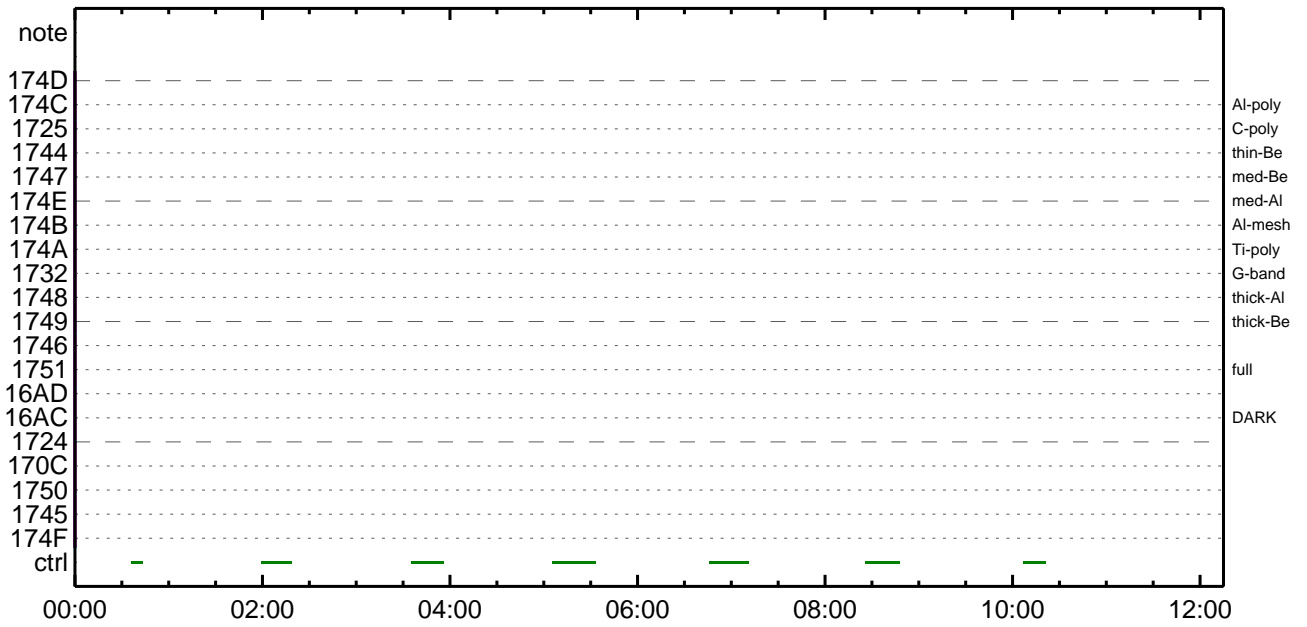
### CMDI #0993 2009/12/30



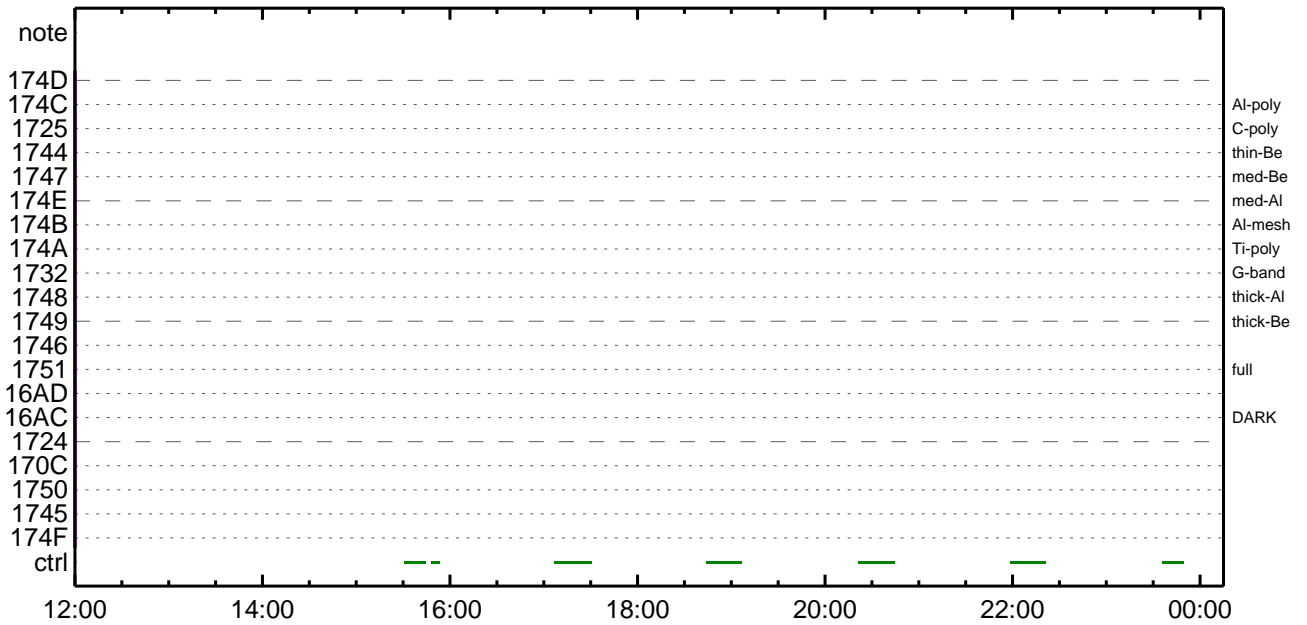
CMDI #0993 2009/12/30



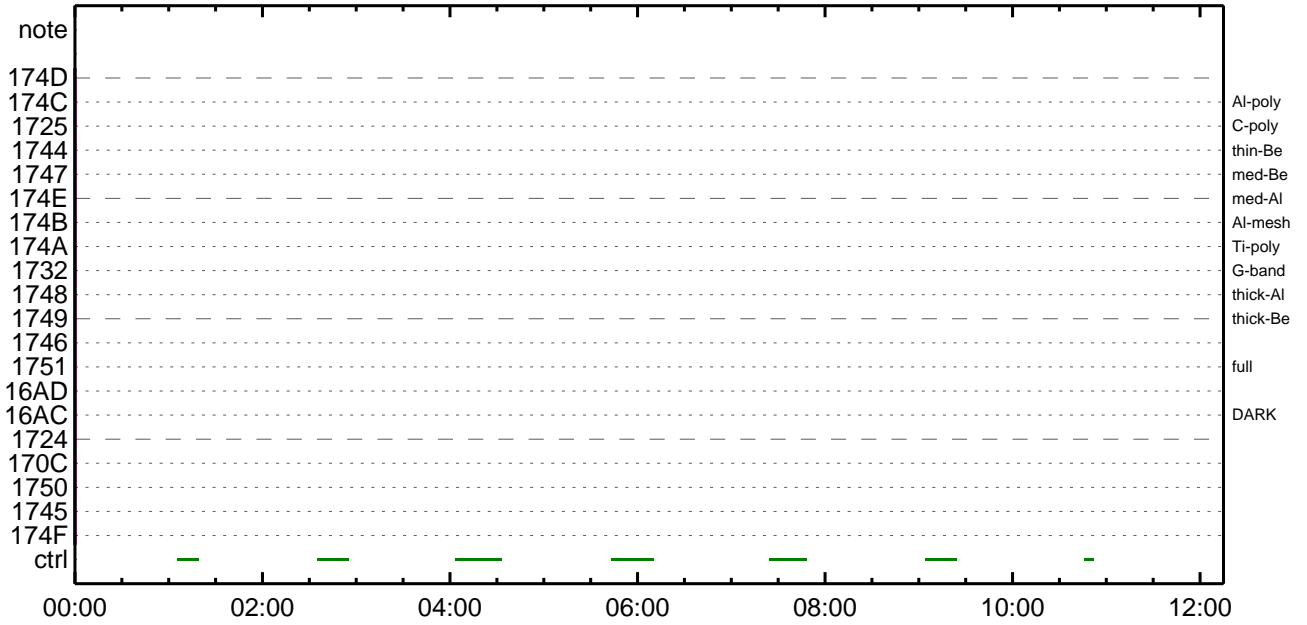
CMDI #0993 2009/12/31



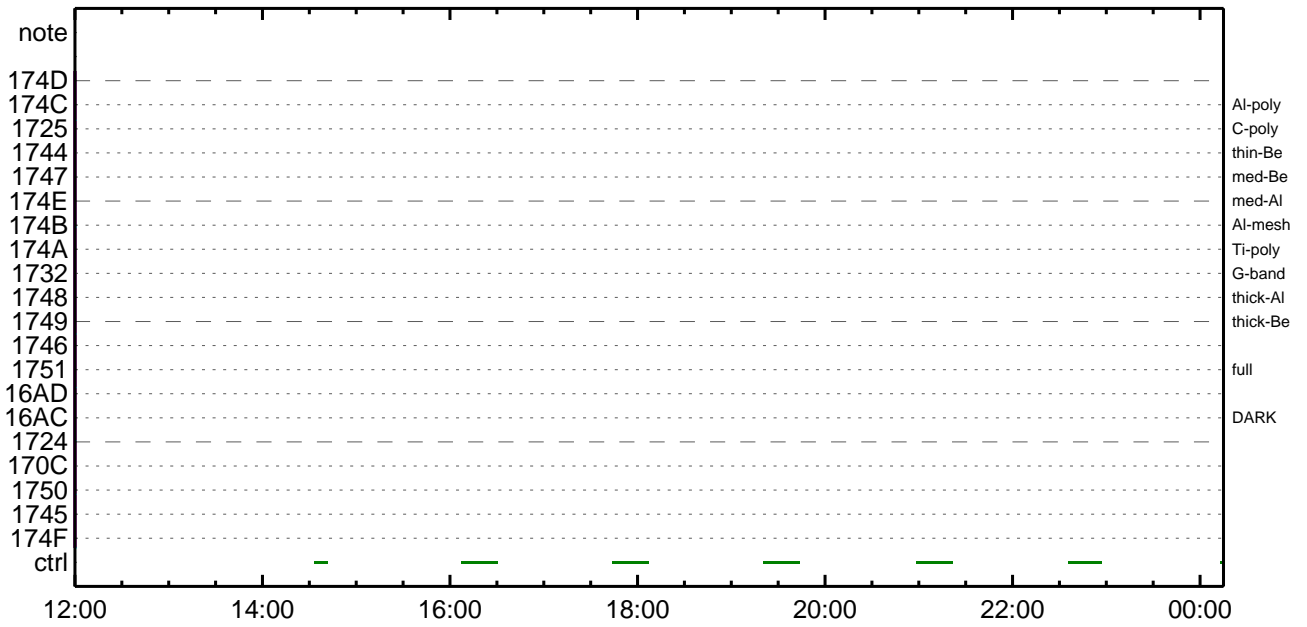
CMDI #0993 2009/12/31



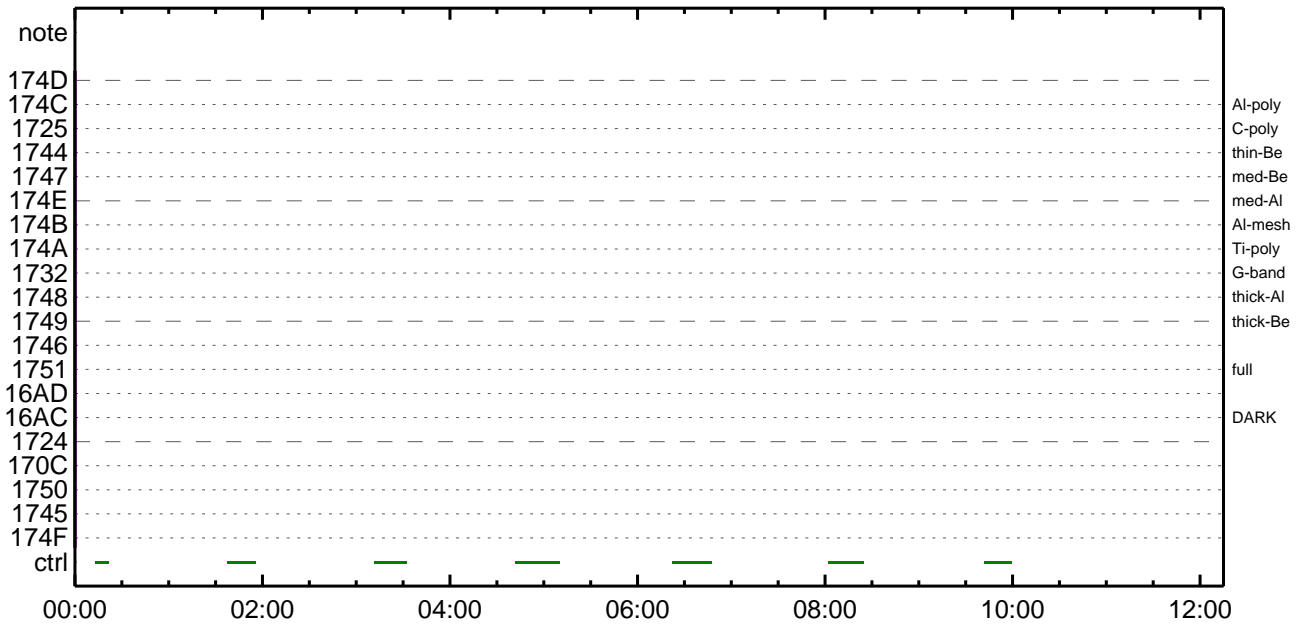
CMDI #0993 2010/01/01



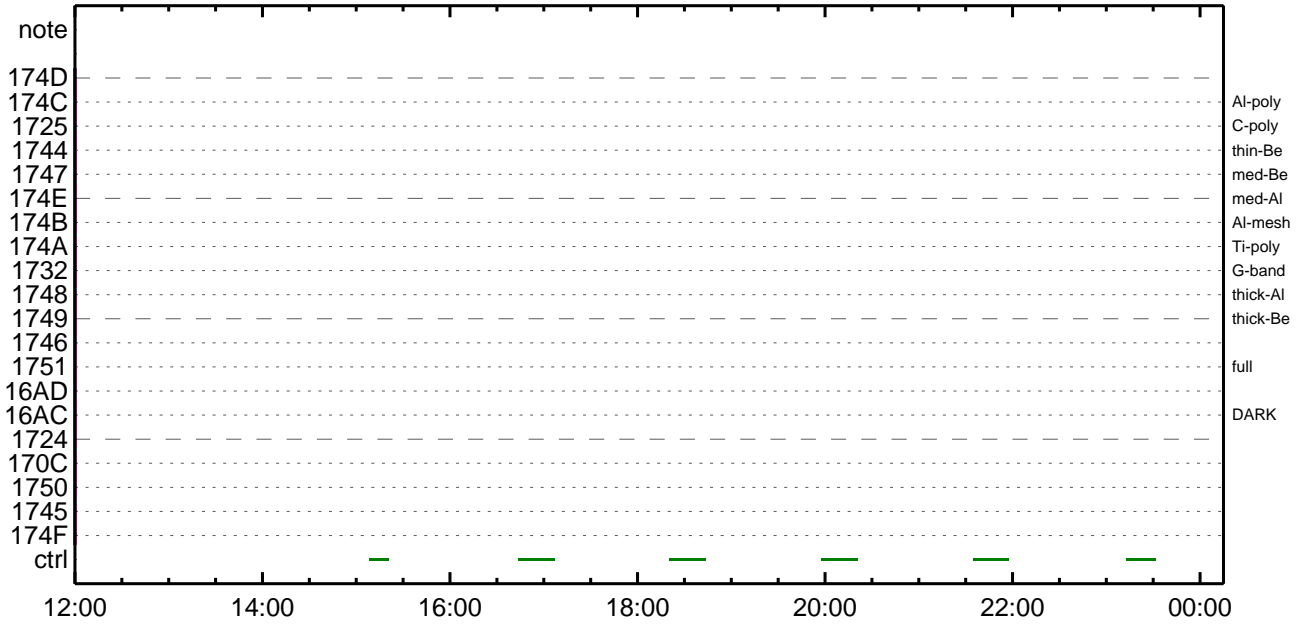
CMDI #0993 2010/01/01



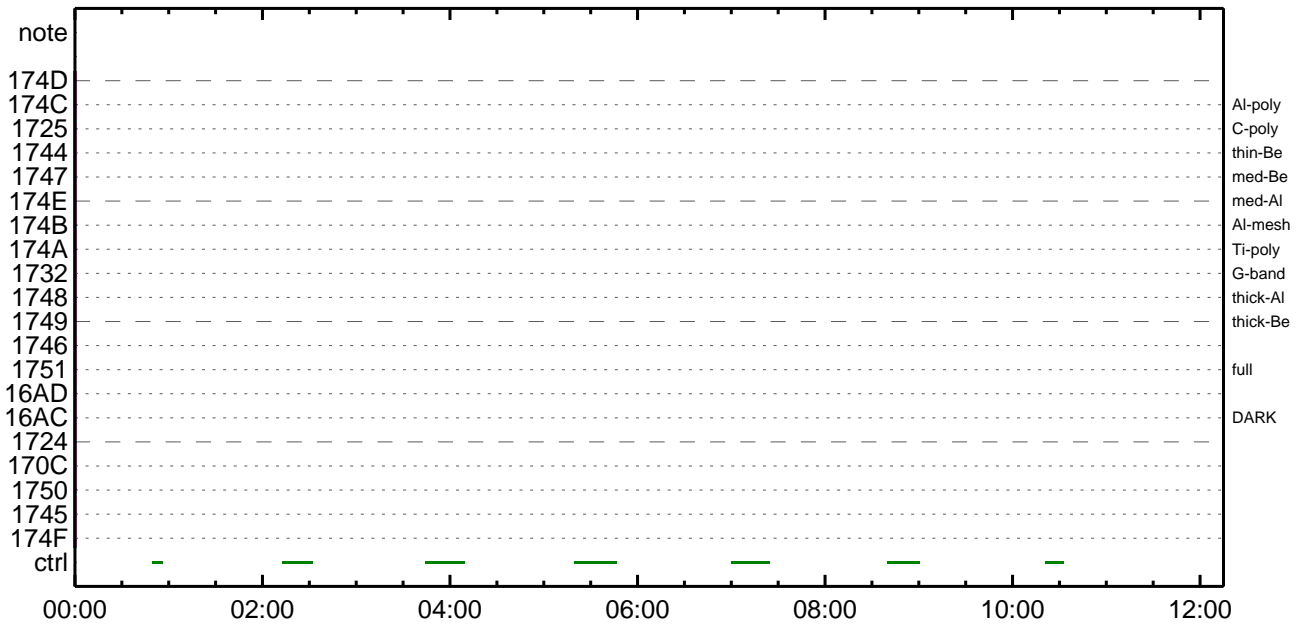
CMDI #0993 2010/01/02



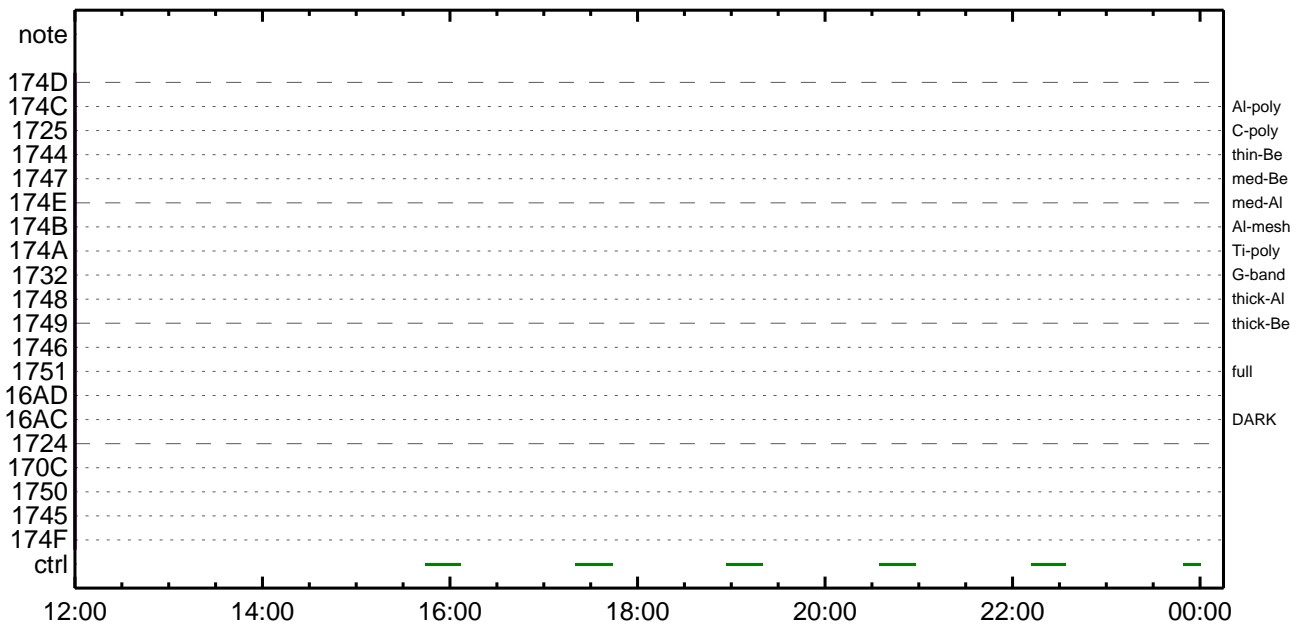
CMDI #0993 2010/01/02



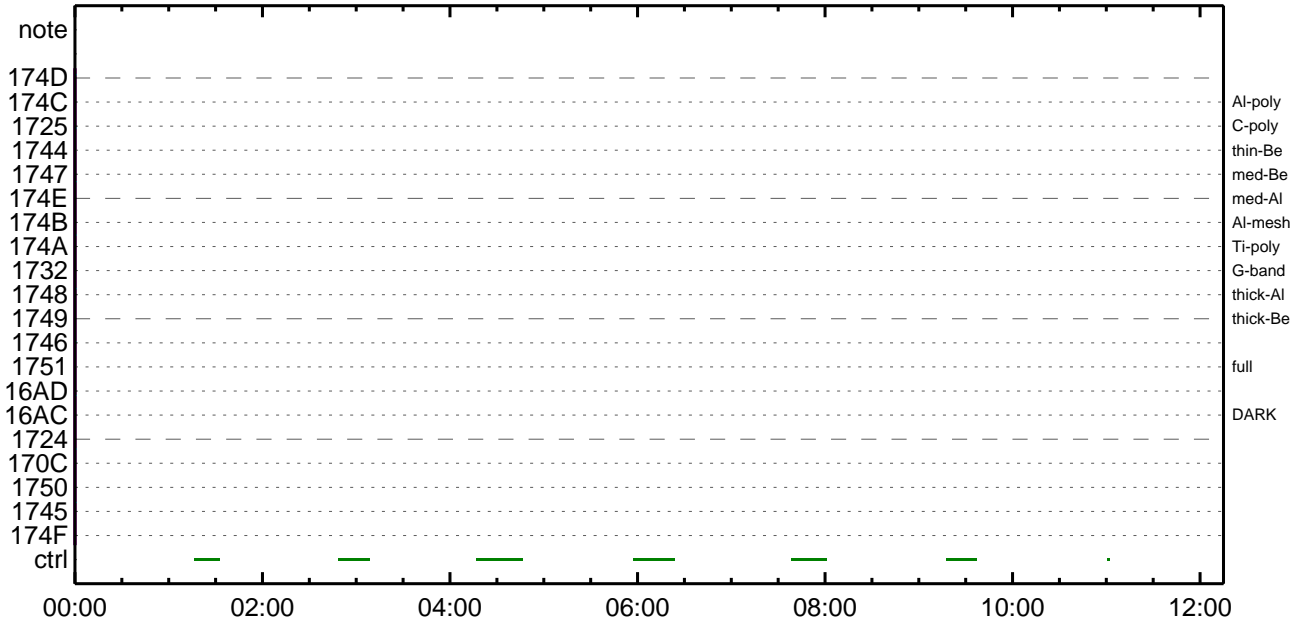
CMDI #0993 2010/01/03



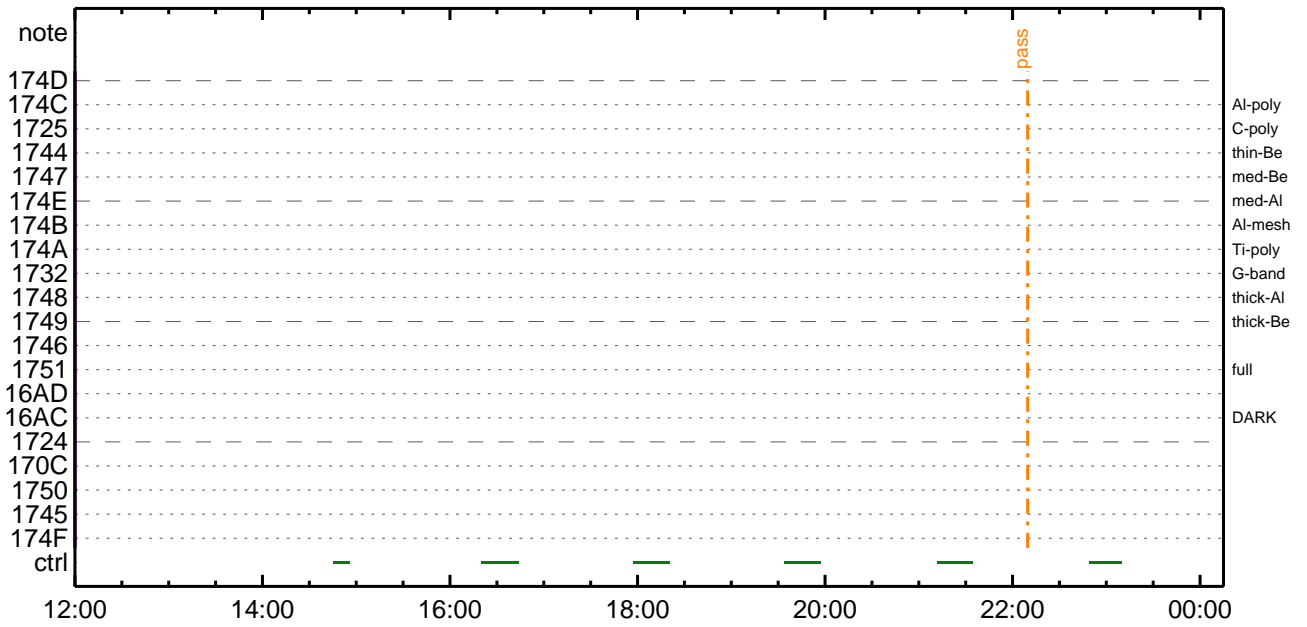
CMDI #0993 2010/01/03



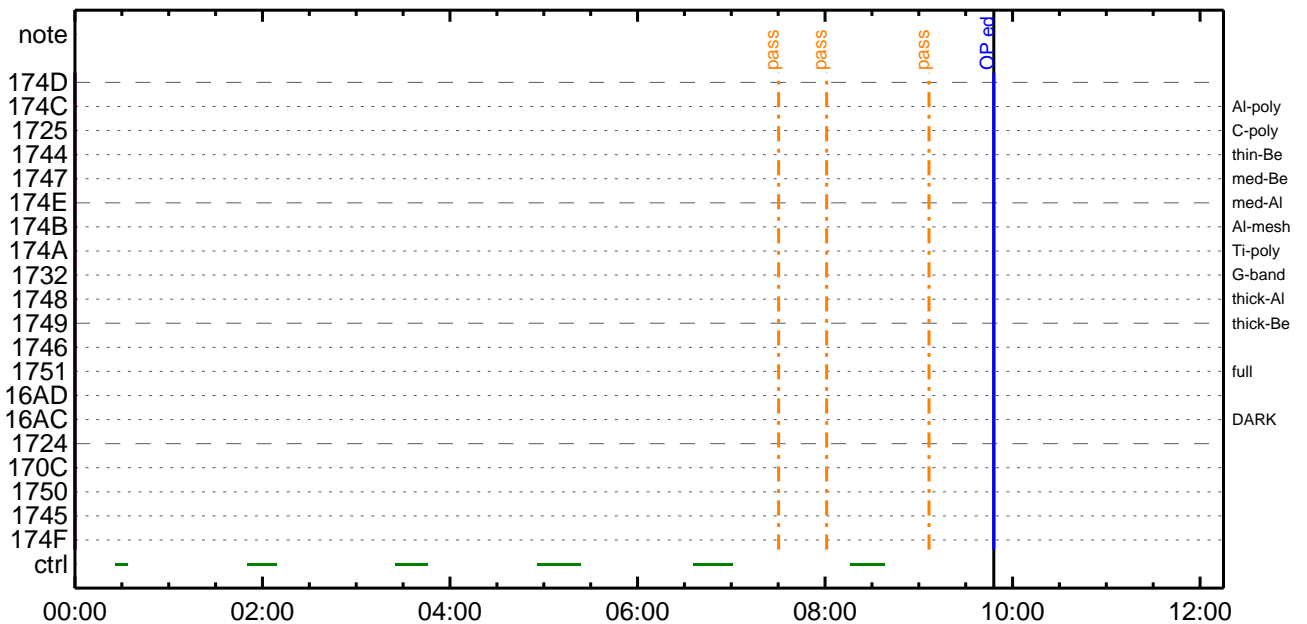
CMDI #0993 2010/01/04



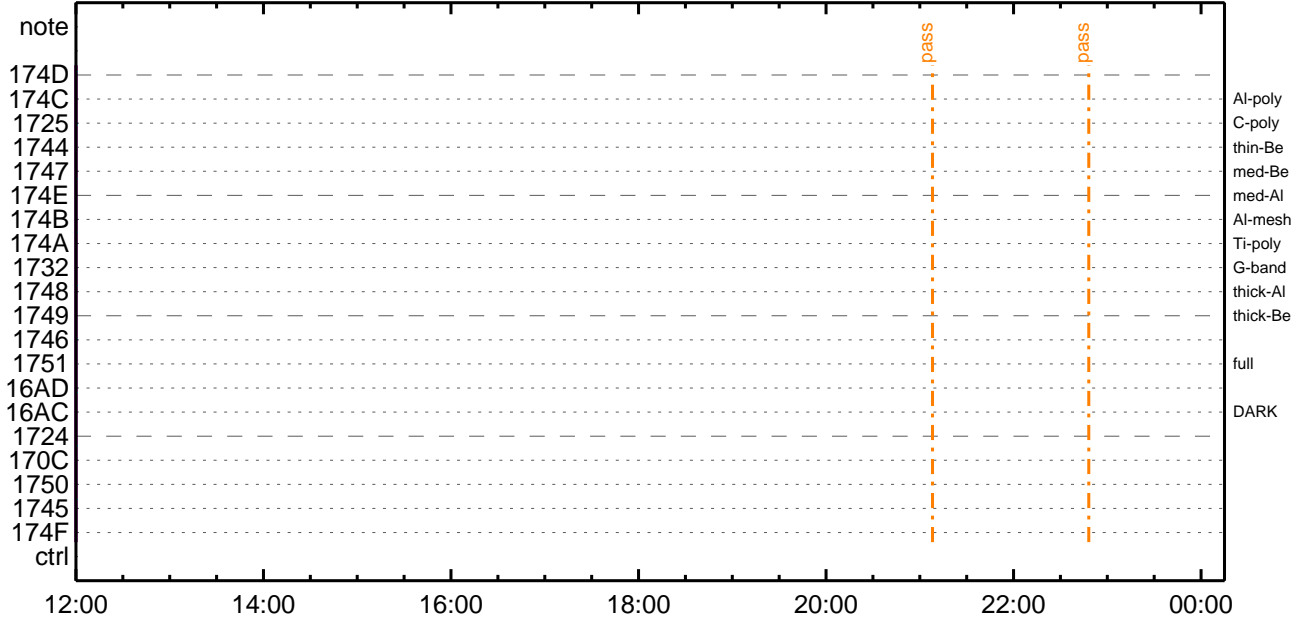
CMDI #0993 2010/01/04



CMDI #0993 2010/01/05



CMDI #0993 2010/01/05







0096 C.  
0097 C.  
0098 C. \*\*\*\*\*  
0099 C. OP/OGY1;4YE;ã | YAYOYx  
0100 C. \*\*\*\*\*  
0101 C.  
0102 . C. ;ãOP/OGY1;4YE;ã  
0103 . S. OP op-075:OP  
0104 ( )  
0105 . S. OG og-075:OG  
0106 ( )  
0107 C.  
0108 . C. ;ãNMOG&OPfî°èYAYOYx;ã  
0109 C. NMOG(0x200000-0x207FFF;§ 32 kbyte)  
0110 +. DC 01-23 DHU\_DMA\_DMP\_PRM\_SET  
0111 BC (20 00 7f 01 02)  
0112 C. çç[HK1\_DMP\_TOP\_ADRS\_1] EQ 40  
0113 C. çç[HK1\_DMP\_TOP\_ADRS\_0] EQ 0  
0114 C. çç[HK1\_DMP\_BLOCK\_NUM] EQ 127  
0115 C. çç[HK1\_DMP\_REPEAT\_NUM] EQ 0  
0116 C. çç[HK1\_DMA\_DMP\_PIM] EQ DHU  
0117 +. DC 01-22 DHU\_MODE\_CHNG  
0118 BC (07 0b f8)  
0119 C. çç[HK1\_PKT\_FORM\_NO] EQ 7  
0120 C. çç[HK1\_PKT\_GEN\_TIME] EQ 0.25 s  
0121 C. çç[HK1\_S\_TLM\_BIT\_RATE] EQ 32k  
0122 C. çç[HK1\_X\_TLM\_BIT\_RATE] EQ 4M  
0123 C. çç[HK1\_DMP\_CHK\_FLG] EQ EXEC  
0124 . C. YAYOYx½ª î»ò³ îÇ§  
0125 C. çç[HK1\_DMP\_CHK\_FLG] EQ NON  
0126 . C. RAM ID=NMOGªî½ª¹ç•è² îOKªò³ îÇ§  
0127 C.  
0128 C. NMOG(0x208000-0x20FFFF;§ 32 kbyte)  
0129 +. DC 01-23 DHU\_DMA\_DMP\_PRM\_SET  
0130 BC (20 80 7f 01 02)  
0131 C. çç[HK1\_DMP\_TOP\_ADRS\_1] EQ 41  
0132 C. çç[HK1\_DMP\_TOP\_ADRS\_0] EQ 0  
0133 C. çç[HK1\_DMP\_BLOCK\_NUM] EQ 127  
0134 C. çç[HK1\_DMP\_REPEAT\_NUM] EQ 0  
0135 C. çç[HK1\_DMA\_DMP\_PIM] EQ DHU  
0136 +. DC 01-22 DHU\_MODE\_CHNG  
0137 BC (07 0b f8)  
0138 C. çç[HK1\_PKT\_FORM\_NO] EQ 7  
0139 C. çç[HK1\_PKT\_GEN\_TIME] EQ 0.25 s  
0140 C. çç[HK1\_S\_TLM\_BIT\_RATE] EQ 32k  
0141 C. çç[HK1\_X\_TLM\_BIT\_RATE] EQ 4M  
0142 C. çç[HK1\_DMP\_CHK\_FLG] EQ EXEC  
0143 . C. YAYOYx½ª î»ò³ îÇ§  
0144 C. çç[HK1\_DMP\_CHK\_FLG] EQ NON  
0145 . C. RAM ID=NMOGªî½ª¹ç•è² îOKªò³ îÇ§  
0146 C.  
0147 C. NMOG(0x210000-0x2100FF;§ 256byte)+OP(0x210100-0x2141FF: 16.25kbyte)  
0148 +. DC 01-23 DHU\_DMA\_DMP\_PRM\_SET  
0149 BC (21 00 41 01 02)  
0150 C. çç[HK1\_DMP\_TOP\_ADRS\_1] EQ 42  
0151 C. çç[HK1\_DMP\_TOP\_ADRS\_0] EQ 0  
0152 C. çç[HK1\_DMP\_BLOCK\_NUM] EQ 65  
0153 C. çç[HK1\_DMP\_REPEAT\_NUM] EQ 0  
0154 C. çç[HK1\_DMA\_DMP\_PIM] EQ DHU  
0155 +. DC 01-22 DHU\_MODE\_CHNG  
0156 BC (07 0b f8)  
0157 C. çç[HK1\_PKT\_FORM\_NO] EQ 7  
0158 C. çç[HK1\_PKT\_GEN\_TIME] EQ 0.25 s  
0159 C. çç[HK1\_S\_TLM\_BIT\_RATE] EQ 32k  
0160 C. çç[HK1\_X\_TLM\_BIT\_RATE] EQ 4M  
0161 C. çç[HK1\_DMP\_CHK\_FLG] EQ EXEC  
0162 . C. YAYOYx½ª î»ò³ îÇ§  
0163 C. çç[HK1\_DMP\_CHK\_FLG] EQ NON  
0164 . C. RAM ID=NMOG, RAM ID=OPªî½ª¹ç•è² îOKªò³ îÇ§  
0165 C.  
0166 . C. \*\*\*\*\* °ê²¼ª î½ª¹ç•è² îOKªò³ îÇ§ \*\*\*\*\*  
0167 C. DHUYâ;4YE;ã | YAYOYx½ª î»ò³ îÇ§  
0168 +. DC 01-22 DHU\_MODE\_CHNG  
0169 BC (02 0a f8)  
0170 C. çç[HK1\_PKT\_FORM\_NO] EQ 2  
0171 C. çç[HK1\_PKT\_GEN\_TIME] EQ 0.5S  
0172 C. çç[HK1\_S\_TLM\_BIT\_RATE] EQ 32K  
0173 C. çç[HK1\_X\_TLM\_BIT\_RATE] EQ 4M  
0174 C.  
0175 C. \*\*\*\*\*  
0176 C. TI-CMD SET (OPOG STOP/COPY/START)  
0177 C. \*\*\*\*\*  
0178 C.  
0179 . C. NOTICE ; § OPOG UPLOADª-Á÷ç@NGªî½ª¹ç•è² îOKªò³ îÇ§ \*\*\*\*\*  
0180 C. çç[HK1\_TI\_CMD\_NUM] EQ 1COUNTUP  
0181 C.  
0182 . C. TIY³YpYóYÉªò³ îÇ§ (UT)  
0183 +. TI 2009-12-29 11:20:00.0  
0184 DC 01-B3 DHU\_OP\_STOP  
0185 C. çç[HK1\_TI\_CMD\_NUM] EQ 1COUNTUP  
0186 C.  
0187 +. TI 2009-12-29 11:20:01.0  
0188 DC 01-B4 DHU\_OP\_COPY  
0189 C. çç[HK1\_TI\_CMD\_NUM] EQ 1COUNTUP  
0190 C.  
0191 +. TI 2009-12-29 11:20:01.0  
0192 DC 01-B5 DHU\_OPOG\_COPY  
0193 C. çç[HK1\_TI\_CMD\_NUM] EQ 1COUNTUP



(a) Spacecraft Operation Procedure (real-commands)

```
main-076 2009-12-29 12:27:28 236 33 SOLAR-B MAIN //
0001 C.
0002 . C. ***** AOS *****
0003 C.
0004 . C. ;ãAOSYÁYŞYÁY-¼Á»Û;ã
0005 C.
0006 C. YÀYß;¼Y³YÞYÓYÉÁ+ç®
0007 +. DC 00-00 NULL_DUMMY_CMD
0008 C.
0009 . C. ***** AOCs : Reload orbital element (send every contact) *****
0010 C. Áí;Ëççãâ•µ°Æ»Í×ÁÇçÍYçYÁY×YÍ;¼YÉ;ËÈÈµ•ííË;Ë°È¼°ÇÖã•çç¼í¹ççí;çÀ®, ùã¹ãèããççÁ+ç®ã•ãèãããççÈ;ç
0011 +. DC 02-8E AOCU_ORB_UPD
0012 C.
0013 C.
0014 . C. *****
0015 C. XÁ+ççµ;ON
0016 C. *****
0017 C. ç" °ÆÀ, Í×ËYçãâLOSããççãí»ç" Öãð¹íí, ç•; çÉÖÍ×ãÈXÁÖONãí¹ÖãÈçãèãããççÈ;ç
0018 C.
0019 +. DC 03-B4 TCIA_XPA_ON/HI
0020 M. WAIT_SEC 1
0021 + DC 03-84 TCIA_XMOD_ON
0022 M. WAIT_SEC 1
0023 + DC 03-95 TCIA_XMOD_QPSK
0024 C. çç[HK1_XPA_ON/OFF] EQ ON
0025 C. çç[HK1_XPA_PWR_HI/LO] EQ HI
0026 C. çç[HK1_XMOD_ON/OFF] EQ ON
0027 C. çç[HK1_XMOD_QPSK/PM] EQ QPSK
0028 C.
0029 . C. XYDÝÓYÉYÍYÁY-¾ÖÁÖã-°ÁÁèã•ççç; ç°È²¼ççí°ÆÀ, ¼è¼çççç¼Á¹Öççççç;ç
0030 C.
0031 . C. *****
0032 C. DR PT1 Áí¼í°ÆÀ,
0033 C. *****
0034 C. ç" RESTART;ËPT1;Ëã•çççç¼í¹ççí; ç°È²¼ççí°ÆÀ¹Öççççç; çDCBC-150çççççÈççççç;ç
0035 C.
0036 . C. ;ãPT1°ÆÀ, ³«»í;ã
0037 +. DC 01-29 DHU_S/X_VC4_OFF
0038 + DC 06-C8 DR_PT1_REP_SEL
0039 BC (01 00)
0040 + DC 06-B3 DR_REP_START
0041 + DC 01-32 DHU_X_VC4_ON
0042 C. çç[HK1_REP_PT_1/2] EQ PT1 (¼Á¹Ö, ;¼Ú)
0043 C. çç[HK1_REP_STA/STP] EQ START (¼Á¹Ö, ;¼Ú)
0044 C. çç[HK1_X_VC4_ON/OFF] EQ ON (¼Á¹Ö, ;¼Ú)
0045 C.
0046 . C. ;ãYçYçYÉYÉÁÛÁÖ;ËÁ•Á°²óÈð;Ë, áãí°ÆÀ, °Æ³«;ã
0047 +. DC 06-B3 DR_REP_START
0048 + DC 01-32 DHU_X_VC4_ON
0049 C. çç[HK1_REP_PT_1/2] EQ PT1 (¼Á¹Ö, ;¼Ú)
0050 C. çç[HK1_REP_STA/STP] EQ START (¼Á¹Ö, ;¼Ú)
0051 C. çç[HK1_X_VC4_ON/OFF] EQ ON (¼Á¹Ö, ;¼Ú)
0052 C.
0053 C.
0054 . C. PT1°ÆÀ, ç-¼«Æ°Áá»ßã•ççç, á; ç°È²¼ççç¼Á¹Öççççç;ç
0055 C. YçYçYÉYÉÁÛÁÖçççççÁ•Á°²óÈðççççç¼í¹ççí°ÆÀ¹Öçççççãã;ç
0056 C.
0057 . C. *****
0058 C. DR PT2 Áí¼í°ÆÀ,
0059 C. *****
0060 C. ç" RESTART;ËPT2;Ëã•çççç¼í¹ççí; ç°È²¼çççí°ÆÀ¹Öççççç; çDCBC-151çççççÈççççç;ç
0061 C.
0062 . C. ;ãPT2°ÆÀ, ³«»í;ã
0063 +. DC 01-29 DHU_S/X_VC4_OFF
0064 + DC 06-C8 DR_PT2_REP_SEL
0065 BC (02 00)
0066 + DC 06-B3 DR_REP_START
0067 + DC 01-32 DHU_X_VC4_ON
0068 C. çç[HK1_REP_PT_1/2] EQ PT2 (¼Á¹Ö, ;¼Ú)
0069 C. çç[HK1_REP_STA/STP] EQ START (¼Á¹Ö, ;¼Ú)
0070 C. çç[HK1_X_VC4_ON/OFF] EQ ON (¼Á¹Ö, ;¼Ú)
0071 C.
0072 . C. ;ãYçYçYÉYÉÁÛÁÖ;ËÁ•Á°²óÈð;Ë, áãí°ÆÀ, °Æ³«;ã
0073 +. DC 06-B3 DR_REP_START
0074 + DC 01-32 DHU_X_VC4_ON
0075 C. çç[HK1_REP_PT_1/2] EQ PT2 (¼Á¹Ö, ;¼Ú)
0076 C. çç[HK1_REP_STA/STP] EQ START (¼Á¹Ö, ;¼Ú)
0077 C. çç[HK1_X_VC4_ON/OFF] EQ ON (¼Á¹Ö, ;¼Ú)
0078 C.
0079 . C. *****
0080 C. DR°ÆÀ, Áá»ß;çXÁ+ççµ;OFF
0081 C. *****
0082 C.
0083 . C. ;ãDR°ÆÀ, Áá»ß;ã
0084 +. DC 06-B4 DR_REP_STOP
0085 + DC 01-29 DHU_S/X_VC4_OFF
0086 C. çç[HK1_REP_STA/STP] EQ STOP
0087 C. çç[HK1_S_VC4_ON/OFF] EQ OFF
0088 C. çç[HK1_X_VC4_ON/OFF] EQ OFF
0089 C.
0090 . C. ;ãXÁ+ççµ;OFF;ã
0091 +. DC 03-85 TCIA_XMOD_OFF
0092 M. WAIT_SEC 1
0093 + DC 03-B5 TCIA_XPA_OFF
0094 C. çç[HK1_XMOD_ON/OFF] EQ OFF
0095 C. çç[HK1_XPA_ON/OFF] EQ OFF
```

```

0096 C.
0097 C.
0098 . C. ***** AOCs Commands (Tracking Curve Upload) *****
0099 C. Upload the Orbit Element and the Target Attitude
0100 C. RAM-ID:TARGET_ATT
0101 . S. RAM ram-150:TARGET_ATT
0102 ( )
0103 C.
0104 C.
0105 C. Set the dump memory area of TARGET_ATT
0106 +. DC 02-48 AOCU_DUMP_SET
0107 BC (07 00 00 00 18 00)
0108 C.
0109 C. <A_STS1>[MEMORY OPERATE STATUS] ADRS = 070000 [ ]
0110 C.
0111 C.
0112 C. Change the TLMFormatNo for the AOCs Dump Format
0113 +. DC 01-22 DHU_MODE_CHNG
0114 BC (04 0b f8)
0115 C.
0116 C. Wait for AOCSDUMP to end
0117 C.
0118 . C. Check the dump memory
0119 C.
0120 C. Result = OK [ ]
0121 C.
0122 +. DC 01-22 DHU_MODE_CHNG
0123 BC (02 0a f8)
0124 C.
0125 C. <A_***>[TLM STS] FMT = 2 [ ]
0126 C.
0127 +. DC 02-8E AOCU_ORB_UPD
0128 . C.
0129 . C. ***** AOCs Commands (Orbital Element Update) *****
0130 C. Update the orbital element
0131 +. DC 02-50 AOCU_ORB_PRPGT_START
0132 BC (16)
0133 + DC 02-8E AOCU_ORB_UPD
0134 C.
0135 C. <A_ORB>[ORBIT] EPC = 2038892.1 +- 1.0 (s) [ ]
0136 C.
0137 . C.
0138 C.
0139 C. ***** XRT START *****
0140 C.
0141 +. DC 07-F0 MDP_XRT_CTRL_MANU
0142 BC (c1)
0143 + DC 07-F0 MDP_XRT_MODE_STBY
0144 BC (c3)
0145 . C. ----- Success Verify ? OK / NG_____
0146 C.
0147 C. XRT Obs. Table Upload
0148 . S. RAM ram-291:MDP_OBS_X
0149 ( )
0150 C.
0151 +. DC 07-F0 MDP_DUMP_XRTTBL
0152 BC (84 07 00 00 00 3a d4)
0153 . C. ----- Comparison Check ? OK / ERR _____
0154 C.
0155 C.
0156 +. DC 07-F0 MDP_XRT_ROI_SET
0157 BC (cd 01 b1 b1 04 04)
0158 + DC 07-F0 MDP_XRT_ROI_SET
0159 BC (cd 02 b1 b1 08 08)
0160 + DC 07-F0 MDP_XRT_ROI_SET
0161 BC (cd 03 b1 b1 08 08)
0162 + DC 07-F0 MDP_XRT_ROI_SET
0163 BC (cd 04 b1 b1 06 06)
0164 + DC 07-F0 MDP_XRT_ROI_SET
0165 BC (cd 0f 80 80 06 06)
0166 + DC 07-F0 MDP_XRT_ROI_SET
0167 BC (cd 10 80 80 04 04)
0168 + DC 07-F0 MDP_XRT_AEC_RESET
0169 BC (d0)
0170 . C. ----- Success Verify ? OK / NG _____
0171 C.
0172 C.
0173 . C. All OK? Yes--> Please Proceed. / No --> Stop here.
0174 C.
0175 +. DC 07-F0 MDP_XRT_MODE_OBSV
0176 BC (c2)
0177 +. TI 2009-12-29 11:24:02.0
0178 DC 07-F0 MDP_XRT_MODE_OBSV
0179 BC (c2)
0180 . C. ----- Success Verify ? OK / NG _____
0181 C.
0182 C. ***** XRT END *****
0183 . C. Load OBSTBL, dump OBSTBL, enable EIS mode changes
0184 +. DC 07-FC EIS_MODE_MANU
0185 BC (21 02)
0186 . C. Verify EIS in MANUAL mode
0187 . C. Estimated OBSTBL upload time is 24s
0188 C. *****
0189 C. EIS START OBSTBL LOAD
0190 C. *****
0191 . S. RAM ram-820:EIS_OBSTBL
0192 ( )
0193 +. DC 07-FC EIS_DUMP_OBSTBL

```

```
0194 BC (07 07 07 00 00 70 00)
0195 C.
0196 C. Execute, after the success of OBSTBL upload.
0197 C. Set EIS TI-commands
0198 +. TI 2009-12-29 11:24:50.0
0199 DC 07-FC EIS_MODE_CHG_ENA
0200 BC (20)
0201 . C. [ ] [HK1_TI_CMD_NUM] EQ 1 COUNTUP
0202 C. *****
0203 C. EIS END OBSTBL LOAD
0204 C. *****
0205 C. *****
0206 C. START of XRT_CCD_HEATER_ON operation
0207 C. *****
0208 C.
0209 +. DC 07-F0 MDP_XRT_CTRL_MANU
0210 BC (c1)
0211 C. ----- Success Verify ? OK / NG;
0212 C.
0213 +. DC 04-BC TCIB_XRT_S_HTR_A_ENA
0214 C. ----- Success Verify ? OK / NG;
0215 C.
0216 C. -----
0217 C. If anomalous situation appeared, execute TCIB_XRT_S_HTR_A_DIS using DCBC-441 (line 24)
0218 C. -----
0219 C. *****
0220 C. END of XRT_CCD_HEATER_ON operation
0221 C.
0222 . C. ***** MDP `uãîñî»ö¼ÿñèÄñ¹ñèDCBC•x²è *****
0223 C. (¼ã°îÿÓÿÄÿÈÿÞÿËÿáÿçÿèñ¼çñ¼Ä»Ûñ¹ñè)
0224 . S. DC-BC dcbc-402:DCBC
0225 (MDP_known_event)
0226 C.
0227 C.
0228 . C. ***** ÿDÿ¹·Ï Daily±;îÑñÈ'Øñ¹ñèDCBC•x²è *****
0229 . S. DC-BC dcbc-153:DCBC
0230 (SPECIAL-CMD_DAILY_OPERATIN_DCB)
0231 C.
0232 C.
0233 . C. ;ãLOSÿÁÿSÿÿÄÿ-¼Ä»Û;ã
0234 C.
0235 . C. ***** LOS *****
0236 C.
```



\*\*\* OP Sequence for XRT \*\*\*

2009/12/29	11:35:00.0	AOCS_ORe-point_Start_1_OG [0x097]							
		AOCU_NM	5	02-76	00	00	00	00	00
2009/12/29	12:00:00.0	AOCS_ORe-point_Start_2_OG [0x098]							
		AOCU_NM	5	02-76	02	00	00	00	00
2009/12/30	03:47:50.0	XRT_CTRL_MANU_419_OG [0x1a3]							
		MDP_XRT_CTRL_MANU	1	07-F0	c1				
2009/12/30	03:47:52.0	XRT_TCIB_XRT_S_HTR_A_DIS_431_OG [0x1af]							
		TCIB_XRT_S_HTR_A_DIS	0	04-C0					
2009/12/30	11:58:00.0	AOCS_ORe-point_Start_1_OG [0x097]							
		AOCU_NM	5	02-76	00	00	00	00	00