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| SPIRE | Project Document | Ref | SPIRE-RAL-PRJ-0001079 |
| | | Issue | 7.0 |
| | Non-conformance Reports Status Report | Date | 26th January 2005 |
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SPIRE

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| SUBJECT: | Non-Conformance Reports Status Report | |
| PREPARED BY: | E A Clark | |
| DOCUMENT No: | SPIRE-RAL-PRJ-0001079 | |
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| APPROVED BY: | Name | Signature & Date |
| Project Manager | K.J. King | |
| Instrument Development Manager | E. Sawyer | |
| Product Assurance Manager | Eric Clark | |

Distribution

Live Link



List of RAL Non-Conformances

PRODUCT ASSURANCE
SPACE SCIENCE DEPARTMENT
Rutherford Appleton Laboratory

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|------------------------------|----------------------------------|
| Spacecraft/Project: Herschel | Originator: RAL/SSTD/PA |
| Instrument: SPIRE | Document No PIRE-RAL-PRJ-0001079 |
| Model: All | Issue : 7 |
| Subsystems: | Date: 26-Jan-05 |

| NCR Serial No. | Level | Subsystem Assembly/ Part | Model | NCR Title | Issue Date | Disposition/Corrective Actions | References | Close Out Date |
|------------------------------|-------|--------------------------|--------------------------|--|------------|---|------------|----------------|
| (ATC) SPI-BSM-NCR-17 | Major | BSM | STM | None (Mirror spotting water marks) | 14-Oct-02 | See NCR | | 01-Nov-02 |
| (ATC) SPI-BSM-NCR-34 | Major | BSM | PFM | None (Fail safe rest position) | 19-Jan-04 | See NCR Rfw SPI-BSM-NOT-730 is applicable | | 01-Jul-04 |
| (ATC) SPI-BSM-NCR-39 | Major | BSM | PFM | None (Chop fails settling time) | 23-Jun-04 | See NCR | | 01-Jul-04 |
| (CEA) LAM.QUA.SPI.AN 20067 | Minor | Mirrors CM5 | STM | Undersize Mirror | 25-Nov-02 | Use as is Width of the Mirrors too short by 1mm (160mm instead of 161mm). The mirror remains symmetrical with respect to the Mechanical interface. | | 03-Jan-03 |
| (CEA) LAM.QUA.SPI.NC 30017.1 | Major | D-Tool | SSW Spectrometer Channel | Discrepancy on the distance between the two dowel pins at the I/F with Spire optical bench | 12-Feb-03 | See NCR | | 10-Jan-03 |
| (CEA) LAM.QUA.SPI.NC 30038.1 | Major | SMEC | STM | Diameter of the SMEC attachment points | 19-Mar-03 | See NCR | | 14-Nov-03 |
| (CEA) LAM.QUA.SPI.NC 30038.2 | Major | SMEC | STM | Diameter of the SMEC attachment points | 19-Mar-03 | See NCR | | 14-Nov-03 |

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| (CEA) LAM.QUA.SPI.NC 30045.1 | Major | CM3 mirror | STM STM STM | iscrepancy on CM3 optical surface orientation with respect to spigot axis | 25-Apr-03 | See NCR | | 14-Nov-03 |
| (CEA) LAM.QUA.SPI.NC 30047.1 | Major | SM7 Mirror M | STM STM STM | Orientation of the SM7 Mirror | 14-Jul-03 | See NCR HR-SP-MSSL-ECR-002 raised but Not Implemented MSSL referenced NCR and modified drawing (issue 3) accordingly | | 07-Oct-03 |
| (CEA) LAM.QUA.SPI.NC 30048.1 | Major | SM8_a Mirror | STM STM STM | SM8 Mirror Orientation | 11-Sep-03 | See NCR HR-SP-MSSL-ECR-001 raised but Not Implemented MSSL referenced NCR and modified drawing (issue 3) accordingly | | 07-Oct-03 |
| (CEA) NCR_DCU_ 104 | Major | Warm FCU/MCU | QM1 | MCU QM0 J01/J39 position swapped | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 105 | Major | Warm FCU/MCU | QM1 | MCU QM0 Board position and connector position not representative of flight model | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 109 | Major | Warm DCU Backplane | QM1 | DCU photometer and spectrometer supplies merged | 27-Aug-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 110 | Major | Warm DCU | QM1 | DCU photometer and spectrometer noise allocation | 27-Aug-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 118 | Major | Warm FCU/SCU CCHK | QM1 | J03 pin out not consistant with DRCU ICD | 10-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |

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| (CEA) NCR_DCU_ 121 | Major | Warm DCU BIAS | QM1 | Transients to FPU at power on | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 122 | Major | Warm FCU/MCU | QM1 | MCU QM0 command to response timing exceeds specification | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 123 | Major | Warm FCU/MCU | QM1 | MCU QM0 drains excessive current on MCU_P15 at power on | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 124 | Major | Warm DCU BIAS | QM1 | "Temperature Readout" Bias channel: Amplitude Non-conformance | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP: May be related to NCR 155 | | 04-Nov-04 |
| (CEA) NCR_DCU_ 125 | Major | Warm DCU | QM1 | Missing Supply voltage HK channels on all DCU issing supply voltage HK channels on all DCU | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 126 | Major | Warm DCU BIAS | QM1 | Missing temperature probe on BIAS board | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 127 | Major | Warm DCU BIAS | QM1 | Vdd1 for bias spectro not found | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 128 | Major | Warm FCU/SCU TEMP | QM1 | SCU QM1 "ScuTHTref" HK channel not functional | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |

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| (CEA) NCR_DCU_ 129 | Major | Warm DCU LIAS | QM1 | 6 DCU LIAS channels show none reproducible behaviour | 15-Sep- 03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov- 04 |
| (CEA) NCR_DCU_ 130 | Major | Warm FCU/SCU CCHK-IF | QM1 | Position of the parameters in the telemetry data frame | 15-Sep- 03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov- 04 |
| (CEA) NCR_DCU_ 132 | Major | Warm DCU | QM1 | DCU J03 Connector missing pin 13 | 16-Sep- 03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov- 04 |
| (CEA) NCR_DCU_ 134 | Major | Warm DCU Bias | QM1 | Heater PMW2 channel not functional | 24-Sep- 03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov- 04 |
| (CEA) NCR_DCU_ 138 | Major | Warm FCU/SCU CCHK-IF | QM1 | TC_heater voltage, inconsistency between Sap & SEDI measurements | 24-Sep- 03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov- 04 |
| (CEA) NCR_DCU_ 147 | Major | Warm DCU LIAP | QM1 | LIAP No 5 Shows bad gain on channel 30 | 29-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov- 04 |
| (CEA) NCR_DCU_ 148 | Major | Warm DCU LIAP | QM1 | LIAP No 6 Shows bad gain on channel 9 | 29-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov- 04 |
| (CEA) NCR_DCU_ 149 | Major | Warm DCU LIAS | QM1 | LIAS cut-off frequency non-conformance | 29-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov- 04 |

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| (CEA) NCR_DCU_150 | Major | Warm DCU LIAP | QM1 | LIAP cut-off frequency non-conformance | 29-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_151 | Major | Warm DCU BIAS | QM1 | BIAS amplitude depends on frequency | 28-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_152 | Major | Warm DCU LIAS | QM1 | LIAS no 1 shows bad gain on Channels 13, 19, 23 | 29-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_153 | Major | Warm DCU LIAS | QM1 | LIAS no 2 shows bad gain on Channels 1, 5, 9, 12, 20, 21, 24 | 29-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_154 | Major | Warm DCU LIAS | QM1 | LIAS no 3 shows bad gain on Channels 8, 9, 10, 11, 21, 24 | 29-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_155 | Major | Warm DCU BIAS | QM1 | Bolometer Bias Max. amplitude is 200mVpp instead of 200mVrms | 29-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR-DPU-CGS-B-24 | Minor | DPU | EM | A spike on the read signal of the FIFOs occurs in correspondence with a write cycle on Board DPU-EM-210.00-0 S/N 01&02 | 23-Jan-04 | See NCR Copy of NCR received by RAL PA Section Mon 07/06/2004 | | |
| (CEA) NCR-DPU-CGS-B-25 | Minor | DPU | EM | Loss of communication on 1355 | 23-Jan-04 | See NCR Copy of NCR received by RAL PA Section Mon 07/06/2004 | | |

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| (CEA) NCR-DPU-CGS-B-27 | Minor | DPU | EM | Misalignment of the bytes composing the words read from the FIFOs on board DPU-EM-210.00.0 S/N 05 & 06 | 26-Jan-04 | See NCR Copy of NCR received by RAL PA Section Mon 07/06/2004 | | |
| (CEA) NCR-DPU-CGS-B-28 | Minor | DPU | EM | DPU Boot failure | 18-Feb-04 | See NCR Copy of NCR received by RAL PA Section Mon 07/06/2004 | | |
| HP-153300-ASED-NC-210 | Major | DPU SN 153300 | PACS | PACS DPU anomalous behaviour during first test at ASED | 06-Apr-04 | See NCR NCR from ESTEC | | |
| HP-2-SEN-NC-6 | Minor | Optical Bench Plate | PFM EQM | out of position holes mismatch FPU to OBP | 30-Jun-04 | Use as is NCR Accepted and agreed by Spire Email sent 30 July 04 | | 30-Jul-04 |
| HP-2-SEN-NC-7 | Minor | Optical Bench Plate | EQM | | 30-Jun-04 | Use as is NCR Accepted and agreed by Spire Email sent 30 July 04 | | 30-Jul-04 |
| HR-SP-AS-NCR-1 | Minor | AS Cryostat | GSE | Flange Change | 13-Dec-02 | Adaptor Flange made and fitted Abingdon Scientific Cryostat Manufacturer | | 13-Dec-02 |
| HR-SP-IFSI-NCR-1 | Minor | IFSI DPU | AVM | RANDOM ERRORS IN FAST SERIAL DATA LINKS RECEPTION | 12-Nov-03 | See NCR Introduction of integrating capacitances on the READ pins of the receiving FIFOs has highly mitigated the error rate, but still not completely removed the source of | | 03-Nov-04 |
| HR-SP-JPL-NCR-5 | Minor | JFET's Sn 001-008 | CQM | JFET Incoming inspection | 08-Oct-03 | See NCR JPL to complet cause of NCR section ref SPIRE-RAL-REP-001829 incoming inspection report. | | |

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| HR-SP-JPL-NCR-1 | Minor | JPL RF Filter Mod | CQM | RF Filters over Max Mass Limit | 14-Aug-03 | Use as Delivered re-allocated Mass budget. NCR Closed Action 1 JPL Note Should be added to the EIDP Regarding the increased Mass allowance as of 3/2/2003. Action 2 JPL Request for Waiver should be submitted, to | | 14-May-04 |
| HR-SP-JPL-NCR-2 | Minor | JPL PLWBDA PLW Filter | CQM | PLW FILTER BOWING | 03-Sep-03 | Use as is deos not affect detector performance. UWC to comment and complete Cause & Action sections of NCR form | | 14-May-04 |
| HR-SP-JPL-NCR-3 | Minor | JPL PLW BD. SL | CQM | Array Process Change | 06-Oct-03 | Recommend 'Use as is' for the P/LW on CQM only S/LW Recommend 'Use as is' for the P/LW on CQM only S/LW use on PFM 1 build - NOT SUITABLE FOR FLIGHT – review situation for flight spare | | 18-Oct-04 |
| HR-SP-JPL-NCR-4 | Minor | JPL | CQM | Performance criteria not met | 06-Oct-03 | See NCR | | 18-Oct-04 |
| HR-SP-MSSL-NCR-1 | Minor | Structure | GSE | Gold Plating | 25-Mar-03 | see NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001717 | | 17-Jun-03 |
| HR-SP-RAL-NCR-1 | Minor | EGSE | GSE | Double Click Error | 27-Sep-01 | Complete the removal. Whole packets are now displayed via the log file display. Awaiting Acceptance test before closing | | 14-Feb-03 |
| HR-SP-RAL-NCR-2 | Minor | EGSE | GSE | Astrium Buslist Error | 27-Sep-01 | Corrected during Acceptance Test. Circulate correction sheet for users to amend their software release 0.6 installation. | | 14-Feb-03 |
| HR-SP-RAL-NCR-3 | Minor | EGSE | GSE | Master Time error | 27-Sep-01 | Corrected during Acceptance Test. AAdd brackets to software text. Corrected during acceptance test Correct in version 0.7. See DDC.CPP Change Record Attached. (October 1st) Awaiting next | | 14-Feb-03 |

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| Instrument: CDMS-Sim | Document No PIRE-RAL-PRJ-0001079 |
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| HR-SP-RAL-NCR-4 | Minor | EGSE | GSE | DDC Bus Message log | 27-Sep-01 | Use Programme MTZDISK.EXE instead of ACE windows Menue.Check test plan instruction changed to reflect above instruction. | | 14-Feb-03 |
| HR-SP-RAL-NCR-5 | Minor | EGSE | GSE | TMRReq message timing | 27-Sep-01 | See DDC.CPP Change Record attached (October 10th Fix)Awaiting acceptance test results before closing NCR | | 14-Feb-03 |
| HR-SP-RAL-NCR-6 | Minor | EGSE | GSE | RT implementation of Flow Control flags | 27-Sep-01 | The Instrument Simulator has been modified to set the FLOW CONTROL bits to indicate whether or not there is a telemetry packet awaiting transfer.Awaiting acceptance | | 14-Feb-03 |
| HR-SP-RAL-NCR-7 | Minor | OGSE for Telescope Si Mirror M2, Telescope | GSE | Focal length out-of-spec | 30-Nov-01 | see NCR Assess impact on M2 imaging performances / Marc Ferlet 30/11/2001 | | 17-Dec-01 |
| HR-SP-RAL-NCR-8 | Minor | Calibration Cryoharness Connectors | GSE | Crimp contacts with tails in wrong end | 21-Jun-02 | Glenair to provide replacement MIL Spec contacts Glenair to provide replacement contacts with solder leads crimped in correct end. | | 21-Jun-02 |
| HR-SP-RAL-NCR-9 | Minor | JFET 6 JFET assy | SM | Out of tolerance thermal straps (6 JFET assy) | 30-Sep-02 | Use as is (see NCR) Closed at NCR MRB Number SPIRE-RAL-MoM-001863; IF extra such items are ordered for STM, consider swapping to keep best ones for flight. | | 14-Nov-03 |
| HR-SP-RAL-NCR-10 | Minor | MGSE Rear Frame a | GSE | Spire MGSE rear frame assy | 26-Sep-02 | Return to manufacturer for re-work Manufacturer corrected problem but other holes found missing corrected in house | | 07-May-03 |
| HR-SP-RAL-NCR-10.1 | Minor | MGSE Rear Frame a | GSE | Spire MGSE rear frame assy | 26-Sep-02 | Return to manufacturer for re-work Reworked by manufacturer when returned holes were found to be missing corrected in house Use as is | | 09-May-03 |

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| HR-SP-RAL-NCR-11 | Minor | MGSE Support Fram Frame Parts | GSE | Aluchrome Finish on support rails | 23-Sep-02 | Components to be cleaned to remove bead blasting residue and re-aluchromed to DEF 1200 Reworked finish still poor USE As IS. | | 09-May-03 |
| HR-SP-RAL-NCR-12 | Minor | MGSE Trolley Bridge rails | GSE | Mismatch on Rail Cross Section | 23-Sep-02 | TBD Closed at NCR MRB Number SPIRE-RAL-MoM-001863; | | 14-Nov-03 |
| HR-SP-RAL-NCR-13 | Minor | HDPE Windo | GSE | Surface finish | 30-Sep-02 | Use as is, Has been found to be leak tight during cold test NCR closed re SPIRE-RAL-MoM-002013 | | 14-May-04 |
| HR-SP-RAL-NCR-14 | Minor | MGSE | GSE | Hob Plate material to soft | 09-Oct-02 | Have new plate made from harder material Use exist Existing plate will be used for the Cryostat cold tests and MGSE fit checks | | 23-Oct-02 |
| HR-SP-RAL-NCR-15 | Minor | MGSE Support Fram | GSE | MGSE Support Frame Dimension incorrect | 10-Oct-02 | Dimensions were checked against the drawings and were found to be correct. Therefore there is no problem NCR can be closed without further action | | 23-Oct-02 |
| HR-SP-RAL-NCR-16 | Minor | MGSE Trolley | GSE | MGSE Trolley Tolerance stack up | 10-Oct-02 | see NCR | | 23-Oct-02 |
| HR-SP-RAL-NCR-17 | Minor | MGSE Hob Plate | GSE | HOB Plate | 10-Oct-02 | MSSL to Advise THIS NCR IS CLOSED and superceded by updated version 017v1 below | | 18-Mar-03 |
| HR-SP-RAL-NCR-17.1 | Minor | MGSE Hob Plate HOB-SIM_Ch | GSE | HOB Plate | 18-Mar-03 | MSSL to Advise Use as is Closed at NCR MRB Number SPIRE-RAL-MoM-001717 USE As Is | | 17-Jun-03 |

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| HR-SP-RAL-NCR-18 | Minor | MGSE Hob Plate HOB-SIM_Ch | GSE | HOB Plate | 07-Jan-03 | Drawings to be ammended before ordering 2nd Hob PI Drawings to be ammended before ordering 2nd Hob Plate | | 09-May-03 |
| HR-SP-RAL-NCR-19 | Minor | JFET racks | SM | Feet Don't seat down properly | 10-Jan-03 | see NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863 with Manufacturer (SENAR) REPLY attached to NCR | | 14-Nov-03 |
| HR-SP-RAL-NCR-20 | Minor | MGSE Cryostat Chamber | GSE | Initial pump-down test failure. | 14-Jan-03 | see NCR | | 09-May-03 |
| HR-SP-RAL-NCR-21 | Minor | GSE Cryostat Cold Harness | GSE | SPIRE TF Cryoharness Labelling | 25-Feb-03 | See NCR Defines the Harness connector labeling without ambiguities. Superceded by v.1 | | 07-May-03 |
| HR-SP-RAL-NCR-21.1 | Minor | GSE Cryostat Cold Harness | GSE | SPIRE TF Cryoharness Labelling | 25-Feb-03 | See NCR Superseded by v2connector designator coloums corrected | | 14-Nov-03 |
| HR-SP-RAL-NCR-21.2 | Minor | GSE Cryostat Cold Harness | GSE | SPIRE TF Cryoharness Labelling | 25-Feb-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; connector designator coloums corrected | | 14-Nov-03 |
| HR-SP-RAL-NCR-22 | Minor | MGSE Cryostat HOB_SIM HA | GSE | HOB Simulator-B Hole Dimensions | 05-Mar-03 | MSSL to Advize Use as is Closed at NCR MRB Number SPIRE-RAL-MoM-001717 | | 17-Jun-03 |
| HR-SP-RAL-NCR-23 | Minor | MGSE Cryostat Foot Rail | GSE | Cryostat Rail Dimension incorrect | 18-Mar-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; Rail should have been 1,000mm long instead was 970mm datum hole therefore incorrectly positioned | | 14-Nov-03 |

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| HR-SP-RAL-NCR-24 | Minor | MGSE Test Cryostat Main burst dis | GSE | Leak in Cryostat Drop Plate | 28-Mar-03 | See NCR 1. Inspect flange for flatness. If flange is not flat then plate cannot be used as it is. 2. Remount plate and carefully tighten bolts ensuring | | 10-Jun-03 |
| HR-SP-RAL-NCR-25 | Minor | MGSE HOB Simulato | GSE | Surface Damage to HOB simulator | 28-Mar-03 | Assess level of damage when removed from bake-out. If possible make minor repairs and measure flatness of damaged/repared area If possible make minor repairs and measure flatness of | | 10-Jun-03 |
| HR-SP-RAL-NCR-26 | Minor | J-FET Rack fe | All | Not Thermally Isolated enough. | 11-Apr-03 | "Modifications have been implemented Problem resolved" NCR Closed. Ref NRB SPIRE-RAL-MoM-002013 | | 14-May-04 |
| HR-SP-RAL-NCR-27 | Minor | FPU Spectrometer | SM | SM11b interferes with the optics bench | 30-Apr-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001717- On the STM the rib was modified by hand. The PFM rib to be modified. It is suggested that a 45degree chamfer | | 17-Jun-03 |
| HR-SP-RAL-NCR-28 | Minor | Structure RF Filter box | SM | Mechanical interference of the FR filter box | 30-Apr-03 | See NCR | | 03-Jul-03 |
| HR-SP-RAL-NCR-28.2 | Minor | Structure RF Filter box | SM | Mechanical interference of the FR filter box | 30-Apr-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; | | 07-May-04 |
| HR-SP-RAL-NCR-29 | Minor | alignment cub | SM | STM Alignment cube | 30-Apr-03 | The cubes fit the HOB simulator but not the SOB NCR Closed Ref HR-SP-RAL-NCR-035 | | 09-Jun-03 |
| HR-SP-RAL-NCR-30 | Minor | LAM FPU CM3 | AM | CM3 interferes with the sub optics bench at its lower edge. | 30-Apr-03 | Drawing of sub bench A1 5264 305 12 has been updated STM mirror may need to be removed and the mount modified accordingly | | 14-May-04 |

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|-----------------------|--------------|--|--------------|---|-------------------|--|-------------------|-----------------------|
| HR-SP-RAL-NCR-31 | Minor | Detector FPU | SM | Screw Sheared off in Detector Housing | 05-Jun-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; MSSL to investigate and report back, MSSL corrected problem see NCR fo details. | | 14-Nov-03 |
| HR-SP-RAL-NCR-32 | Minor | JFET racks | SM | Backharness 37way backshells do not fit 6 module rack metalwork | 06-Jun-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; Parts corrected Dwg upissued | | 14-Nov-03 |
| HR-SP-RAL-NCR-33 | Minor | DPU HSDPU | AM | Not possible to load OBS via telecommands | 29-Apr-03 | See NCR Reset CPU Before booting with new Image. IFSI To implement Firmware Change on future models to allow software to reset CPU, thus allowing it to operate | | 14-Nov-03 |
| HR-SP-RAL-NCR-34 | Minor | DPU HSDPU | AM | DPU Power interface discrepancy | 29-Apr-03 | NRB MoM's No SPIRE-RAL-MoM-001616 Reclassified as Major at in depth PA meeting 13/14th April 2004 at Ral NRB MoM's No SPIRE-RAL-MoM-001616 - | | 14-Apr-04 |
| HR-SP-RAL-NCR-34.1 | Major | DPU HSDPU | AM | DPU Power interface discrepancy | 14-Apr-04 | See NCR Awaiting Closure from ESA: Harness Definition Document: SPIRE-RAL-PRJ-000608 issue 1.2 corrects this. NCR Closed ref SPIRE-RAL-MoM-002250 NCR | | 20-Dec-04 |
| HR-SP-RAL-NCR-35 | Major | Structure & Alignment Cu | SM | Non compliant interface (mounting holes pattern) between SOB and alignment cube | 30-Apr-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; NCR 029 closed ref this NCR | | 14-Nov-03 |
| HR-SP-RAL-NCR-36 | Major | Structure | SM | SPIRE Optical Bench BSM I/F Location | 02-May-03 | See NCR Can be Closed ref NCR MRB Number SPIRE-RAL-MoM-001863; ATC ICD is reissued is attached | | 12-Jul-04 |
| HR-SP-RAL-NCR-37 | Major | MGSE Flexible Pipe Co-Axial heat | Cryostat | Solder on co-axial heater melted | 02-May-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; NCR copied to AS for comment | | 14-Nov-03 |

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|-----------------------|--------------|------------------------------------|--------------|---|-------------------|---|-------------------|-----------------------|
| HR-SP-RAL-NCR-38 | Minor | Structure 300mK Strap Photometer S | SM | 300-mK Thermal Short during STM Programme | 06-May-03 | See NCR Supersceded by 038v2 | | 21-May-03 |
| HR-SP-RAL-NCR-38.2 | Minor | Structure 300mK Strap Photometer S | SM | 300-mK Thermal Short during STM Programme | 21-May-03 | Item 1-Doug to issue a check list to cover Key integration See note in blue on NCR. Items 2 & 3 no longer valid Delete. NCR Closed | | 14-May-04 |
| HR-SP-RAL-NCR-39 | Minor | BSM position senso | | BSM Jiggle Frame Clipping | 29-May-03 | Design change by ATC NCR closed Optical study by RAL not required as ATC implemented a design change | | 04-Jun-03 |
| HR-SP-RAL-NCR-40 | Minor | FPU Spectrometer | SM STM | SM11a interferes with the optics bench. | 17-Jun-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001717 | | 17-Apr-03 |
| HR-SP-RAL-NCR-41 | Minor | MGSE Pumping Syst | Cryostat | Cryostat Pumping system shutdown | 07-Jul-03 | Superceded By 41v1 | | 07-Jul-03 |
| HR-SP-RAL-NCR-41.1 | Minor | MGSE Pumping Syst | Cryostat | Cryostat Pumping system shutdown | 30-Sep-03 | No re-occurrence NCR Closed. Under investigatiog Suspected Glitch on Mains supply Mains Filter will be used in future.Mains Filter fitted(in place for shutdown 25/09/04) | | 14-May-04 |
| HR-SP-RAL-NCR-42 | Minor | FPU CM3 | SM / CQM | CM3 Mirror Damage | 30-Jul-03 | See NCR USE AS IS. LAM comments and sign off of the NCR added to the NCR | | 08-Oct-03 |
| HR-SP-RAL-NCR-43 | Minor | MGSE Cold Blackbod | Cryostat | Cold-BlackBody Dimensions | 02-Sep-03 | All Actions completed Cold Black Body Modified NCR clos Design of Cold Black Body does not match the cryostat ICD | | 14-May-04 |

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|--------------------|-------|--------------------------------------|----------|--|------------|--|------------|----------------|
| HR-SP-RAL-NCR-44 | Minor | Test Harness | SM SM | Connector Plating Flaking Off | 20-Oct-03 | See NCR Superseded By 44v1 | | 22-Oct-03 |
| HR-SP-RAL-NCR-44.1 | Minor | GSE Test Cryoharn | SM | Connector Plating Flaking Off | 20-Oct-03 | See NCR Use as is but remove lose plating and vacuum connectors before Mating.MRB SPIRE-RAL-MoM-1846 referers | | 05-Nov-03 |
| HR-SP-RAL-NCR-45 | Minor | Spectrometer SMEC Harness Clam | CQM | SMEC harness clamp interference with Structure webbing | 28-Oct-03 | Remove Lower Harness clamp back webbing Closed at NCR MRB Number SPIRE-RAL-MoM-001863; | | 14-Nov-03 |
| HR-SP-RAL-NCR-46 | Minor | DPU | AVM | JTAG fouls adjacent circuit board | 12-Nov-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; JTAG connectors will not be implemented on any other models of the DPU so the problem will not be | | 14-Nov-03 |
| HR-SP-RAL-NCR-47 | Minor | 2K Photomete PFIL 3 & cold | CQM | 2K Photometer box filter dowel pin fouling | 04-Nov-03 | Sort term remove dowel pin. Long term replace with Closed at NCR MRB Number SPIRE-RAL-MoM-001863; Ral Corrected item | | 14-Nov-03 |
| HR-SP-RAL-NCR-48 | Minor | S-Cal Connectors | CQM | CQM S-Cal Connector Orientation | 20-Nov-03 | SCAL-ICD-000 issue C Flight Model Shows correct orient Remove S-Cal from FPU • Check that the Prime Connector is wired to the active sources • Re-assemble S-Cal so that the prime and redundant connectors are | | 14-May-04 |
| HR-SP-RAL-NCR-49 | Minor | Structure FPU Connector Jac | CQM | RF Filter Connector Jack post thread length | 20-Nov-03 | Half returned for rework when done some still had to be re Half the Items returned to Taylor Embex for rework the remainder will be reworked at RAL | | 14-May-04 |
| HR-SP-RAL-NCR-50 | Minor | Structure pectrometer C | All | Harnes slot missing on Spectrometer cover baffle. | 05-Dec-03 | Flight Model Drawings updated NCR Closed | | 14-May-04 |

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|-----------------------|--------------|---------------------------------|--------------|---|-------------------|--|-------------------|-----------------------|
| HR-SP-RAL-NCR-51 | Minor | GSE. Cold Harness | GSE | Pins Bent on GSE Harness | 22-Dec-03 | Returned to Manufacturer for correction Ok when returned A pin straightening jig could be made. If the pin does not maintain the hermetic seal, the pins can be cut off or removed as they are both redundant ground pins. To be | | 14-May-04 |
| HR-SP-RAL-NCR-52 | Minor | GSE Warm Test Ha | GSE | Grounding Problems Warm test Harness | 22-Dec-03 | Harness will need modification Harness returned to Manufacturer for modification (hardware now consistent with Documentation that was correct) NCR closed. Ref SPIRE-RAL-MoM-002013 | | 14-May-04 |
| HR-SP-RAL-NCR-53 | Minor | Calibration MGSE Support Fram | GSE | Brass Wheels Worn on MGSE Frame | 07-Jan-04 | Wheels changed to Delrin Brass wheels replaced with Delrin wheels. The frame now moves on the cryostat rails more freely. | | 15-Jan-04 |
| HR-SP-RAL-NCR-54 | Minor | Tekdata SLW PFM Incoming insp | PFM/FS | PFM SLW Harness different to FS on inspection Rep | 07-Jan-04 | See NCR SLW FS Harness correct but incoming inspection report indicates SLW PFM is incorrect: Error on incoming inspection Report | | 18-Mar-04 |
| HR-SP-RAL-NCR-55 | Minor | CEA Sap DCU Connectors | QM1 | Pins incorrectly inserted | 08-Jan-04 | TBD Awaiting completion of NCR | | 26-Jan-04 |
| HR-SP-RAL-NCR-55.2 | Minor | CEA Sap DCU Connectors | QM1 | Pins incorrectly inserted | 08-Jan-04 | See NCR Corrective actions specified on NCR Repaired at RAL NCR Closed | | 04-Feb-04 |
| HR-SP-RAL-NCR-56 | Minor | Detector chan | CQM | Detector Channels do not follow ICD | 12-Jan-04 | Raised in error NCR Closed Raised in error all OK Close NCR no further Action Required ref SPIRE-RAL-MoM-002013 | | 14-May-04 |
| HR-SP-RAL-NCR-57 | Minor | BDA | CQM | Anomalous warm behavior of Detector System | 12-Jan-04 | None Known feture before delivery No Action required Known feature before delivery see EIDP NCR Closed | | 14-May-04 |

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| NCR Serial No. | Level | Subsystem Assembly/ Part | Model | NCR Title | Issue Date | Disposition/Corrective Actions | References | Close Out Date |
|--------------------|-------|-------------------------------------|-------|--|------------|--|------------|----------------|
| HR-SP-RAL-NCR-58 | Major | DRCU | CQM | MCU switch on over current | 16-Jan-04 | This unit not built to Flight design QM1 et seq will be ok. N LAM to investigate why 14 V is applied continuously to Launch Latch coils – there is a fault in the MCU QM0 unit. Use as is for CQM testing with harness connector | | 14-May-04 |
| HR-SP-RAL-NCR-59 | Minor | Cryostat FPU DCU J28 | GSE | Ground Short on DCU J28 LIA-5 connector | 21-Jan-04 | See NCR Investigation completed but inconclusive check at next cold Test. | | |
| HR-SP-RAL-NCR-60 | Minor | Cryoharnesses FPU Faraday socket S5 | GSE | Open circuit on FPU Faraday Shield Link Jumper on S5 | 22-Jan-04 | See NCR Further investigation when Cryostat is opened at end of CQM testing | | |
| HR-SP-RAL-NCR-61 | Minor | DRCU | CQM | DRCU accepting an unknown command | 17-Feb-04 | Close NCR Reclassify as SPR Sunil to do. raised as an NCR but should have been an Software Problem report (SPR) | | 14-May-04 |
| HR-SP-RAL-NCR-61.1 | Minor | DRCU | CQM | DRCU accepting an unknown command | 17-Feb-04 | This is a feature of the MCU operation – it does not flag in This was originally thought to be a SPR but later proved to be an NCR so the NCR was Up issued accordingly Ref SPIRE-RAL-MoM-002013 | | 01-Dec-04 |
| HR-SP-RAL-NCR-62 | Minor | Cooler SCO Evaporator H | CQM | Response time of SPIRE CQM Evaporator Heat Switch | 19-Feb-04 | See NCR The NCR has been raised to report and track the issue. A slow switch would be troublesome in flight. The performance of the switch will be monitored during the | | 02-Nov-04 |
| HR-SP-RAL-NCR-62.1 | Minor | Cooler SCO Evaporator H | CQM | Response time of SPIRE CQM Evaporator Heat Switch | 19-Feb-04 | See NCR The NCR has been raised to report and track the issue. A slow switch would be troublesome in flight. The performance of the switch will be monitored during the | | 02-Nov-04 |
| HR-SP-RAL-NCR-63 | Minor | Cooler, FPU Evaporator H | CQM | Evaporator HS & Pump HS commands reversed. | 19-Feb-04 | See NCR When the instrument is removed from the cryostat after the end of the initial CQM cool down, the EGSE, DPU, SCU and cryoharness will be tested to see if there | | 28-May-04 |

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|-----------------------|--------------|--|--------------|---|-------------------|--|-------------------|-----------------------|
| HR-SP-RAL-NCR-63.1 | Minor | Cooler, FPU Evaporator H E, S, DRCU, | CQM | Evaporator HS & Pump HS commands reversed. | 28-May-04 | Check when removed from Cryostat Tests need to be carried out on the Cooler and FPU F16 and F17 to determine if the fault lies in either of these two components | | 15-Jun-04 |
| HR-SP-RAL-NCR-63.2 | Minor | Cooler, FPU Evaporator H E, S, DRCU, | CQM | Evaporator HS & Pump HS commands reversed. | 19-Feb-04 | Update Harness definition The cooler ICD should remain the same, as any change would propagate to the PACS instrument. The Harness Definition Document Issue 1.1 and the DRCU / DPU | | 02-Nov-04 |
| HR-SP-RAL-NCR-63.3 | Minor | Cooler, FPU Evaporator H E, S, DRCU, | CQM | Evaporator HS & Pump HS commands reversed. | 19-Feb-04 | See NCR See NCR | | 02-Nov-04 |
| HR-SP-RAL-NCR-64 | Minor | SCAL Prime 4% sou | CQM | Apparent failure of CQM S-Cal 4% source | 19-Feb-04 | See NCR Superseded by issue of HR-SP-RAL-NCR-064v1 | | 13-May-04 |
| HR-SP-RAL-NCR-64.1 | Minor | SCAL Prime 4% sou | CQM | Apparent failure of CQM S-Cal 4% source | 09-Mar-04 | Review instrument commanding and telemetry streams to Superseded by issue of HR-SP-RAL-NCR-064v2 HSO-CDF-RP-065 attached report from P Hargrave. | | 18-Jun-04 |
| HR-SP-RAL-NCR-64.2 | Minor | SCAL Prime 4% sou | CQM | Apparent failure of CQM S-Cal 4% source | 18-Jun-04 | See NCR | | 02-Nov-04 |
| HR-SP-RAL-NCR-65 | Minor | Cryostat | GSE | FIR optical loading of detectors from room background | 19-Feb-04 | Action 1 done Action 2 N/A Note On rechecking the DATA Loading is as expected | | 14-May-04 |
| HR-SP-RAL-NCR-66 | Minor | SCAL | CQM CQM | SCAL Interface Mismatch | 16-Mar-04 | See NCR 1. For CQM only, use 0.5mm washers to space SCAL from box. 2. For PFM and FS chamfer mounting ring of SCAL box to ensure flush mounting | | 12-Jul-04 |

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|-----------------------|--------------|-----------------------------------|--------------|--|-------------------|--|-------------------|-----------------------|
| HR-SP-RAL-NCR-67 | Minor | FPU | PFM | Hole Miss-alignment | 07-Apr-04 | As yet undetermined Awaiting more information MSSL informed | | |
| HR-SP-RAL-NCR-68 | Minor | JFET JFET feet Torlon Washe | CQM | Torlon Insulating washer upside down on JFET foot assembly | 07-May-04 | None required, washers are bonded into place so should | | 02-Nov-04 |
| HR-SP-RAL-NCR-69 | Minor | RF Filter | CQM | Screw from filter unit support fallen out | 12-May-04 | Incorporate a specific reminder to stake the screw with Sc The updated document with the reminder is "SPIRE Final Integration Checklist - SPIRE-RAL-NOT-002088 Issue 1.0" | | 02-Nov-04 |
| HR-SP-RAL-NCR-70 | Minor | SMEC Bushes | CQM | Possible chaffing/wear marks on SMEC bushes | 12-May-04 | See NCR This mechanism is designed to give similar dynamic performance to the FM. To achieve this, non flight -like bushes are used. Some movement of these bushes is | | 02-Nov-04 |
| HR-SP-RAL-NCR-71 | Minor | FPU Harnesses | CQM | Piece of Kapton found between webbing on filter side | 12-May-04 | Incorporate a specific reminder for this in the document b | | 02-Nov-04 |
| HR-SP-RAL-NCR-72 | Minor | Filters | CQM | Damage on photometer detector box filters | 12-May-04 | See NCR Inspection by Peter Hargrave from Cardiff. He reported that this type of appearance of a hot pressed filter is not unusual. This is not a damaged filter. Close NCR | | 02-Nov-04 |
| HR-SP-RAL-NCR-73 | Minor | BDA-JFET M | CQM | Cracking of elastomer in BDA-JFET MDM 51S connector | 12-May-04 | see remarks The seal is not necessary in SPIRE and is to be removed. It is noted that the same seal is present also in the following connectors and is to be removed. PFM JFP | | 05-Nov-04 |
| HR-SP-RAL-NCR-74 | Minor | JFET Back harness | CQM | Heat Shrink on JFET back Harnesses | 12-May-04 | See NCR The all existing Kynar heat shrink is to be removed from the Backharness. Adhesive Kapton tape is to be used to substitute the Heat Shrink. (Note. The braid is | | 02-Nov-04 |

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| HR-SP-RAL-NCR-75 | Major | Instrument | CQM | During Cold vibration test the sine test went to 200Hz | 12-May-04 | See NCR Closed Ref SPIRE CQM DRB Ref (H-P-ASP-MN-5613) | | 12-Oct-04 |
| HR-SP-RAL-NCR-76 | Major | FPU Phot Detector | PFM | Poor Alachrome on photometer Detector box | 10-Jun-04 | See NCR Alachrome cleaned off and unit made clean to flight standard. Closed ref 076v1 Use as is for current alignment integration activities. | | 20-Sep-04 |
| HR-SP-RAL-NCR-76.1 | Major | Phot Detector | PFM | Poor Alachrome on photometer Detector box | 10-Jun-04 | See NCR Closed ref SPIRE-RAL-MoM-002131 NRB MoM's | | 23-Sep-04 |
| HR-SP-RAL-NCR-77 | Minor | MSSL FPU Belville washe | PFM | Two sizes of Belville washers with the same assembly number | 11-Jun-04 | Checks will be made during the bagging of the fixings to e Walton plating (not the original company). They think that some agent has attacked the alocrom! This is due to the fact that it was patchy. | | 23-Sep-04 |
| HR-SP-RAL-NCR-78 | Minor | BSMOGSE | OGSE | Modifications to BSM OGSE | 17-Jun-04 | See NCR | | |
| HR-SP-RAL-NCR-79 | Minor | FPU 300mk strap | CQM CQM | Minimal clearence between Spect Det Box SLB and 300mk split clamp | 01-Jul-04 | Examine a copy of the drawings and the assembled compo Reference ECR 075 | | 02-Nov-04 |
| HR-SP-RAL-NCR-80 | Minor | Beam splitter i | PFM | Beam Splitter /Mount Interface | 11-Aug-04 | MSSL to remachine and update drawings Upissued drawing attached to NCR Closed ref SPIRE-RAL-MoM-002131 NRB MoM's | | 15-Sep-04 |
| HR-SP-RAL-NCR-81 | Major | JFP I/F Carbon Fibre | CQM 2 | Electrical Short on JFP I/F | 20-Aug-04 | See NCR HR-SP-RAL-ECR-079 raised to track changes: NCR Re classified as Major 3rd Nov 2004 | | 03-Nov-04 |

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|-----------------------|--------------|---------------------------------|--------------|---|-------------------|--|-------------------|-----------------------|
| HR-SP-RAL-NCR-82 | Minor | | CQM 2 | Electrical Short on Cooler Strap | 20-Aug-04 | The Joint Integrity is to be monitored as per existing SPIR Precise cause unknown. Possibly the screw preload caused the short? The joint was assembled using a single layer of thin Dacron. The PFM design and | | 25-Oct-04 |
| HR-SP-RAL-NCR-83 | Minor | Detector Box Feet | PFM CQM | Electrical Short on Photometer Detector Box Feet | 06-Sep-04 | See NCR The Kapton was removed from all detector box mounts and a 200um layer of PCB board material (possibly a glass reinforced Kapton) was inserted between the | | 25-Oct-04 |
| HR-SP-RAL-NCR-84 | Minor | Cryostat Thermal Strap Heaters | GSE | Heater failures on Thermal Straps during cool down. | 08-Sep-04 | Investigate fault when spire is removed from cryostat. uperseded by HR-SP-RAL-NCR-084v1 | | 21-Dec-04 |
| HR-SP-RAL-NCR-84.1 | Minor | Cryostat Thermal Strap | GSE | Facility Heater failure on L0 Thermal Straps during cool down | 21-Dec-04 | | | |
| HR-SP-RAL-NCR-85 | Minor | Cryostat PUMP | GSE | Pump Failure during cool down | 08-Sep-04 | ACKNOWLEDGE ERROR MESSAGE..REBOOT PUMPI uperseded by HR-SP-RAL-NCR-085v1 | | 21-Dec-04 |
| HR-SP-RAL-NCR-85.1 | Minor | Cryostat PUMP | GSE | Facility Vacuum Pump Failure during cool down | 21-Dec-04 | Monitor the vacuum pressure closely when filling the cryo | | |
| HR-SP-RAL-NCR-86 | Minor | Cryostat Temp sensors | GSE | Temp sensor failures | 08-Sep-04 | uperseded by HR-SP-RAL-NCR-086v1 | | 21-Dec-04 |
| HR-SP-RAL-NCR-86.1 | Minor | Cryostat Temp sensors | GSE | Temp sensor failure During cool down | 21-Dec-04 | | | |

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|-----------------------|--------------|---------------------------------|--------------|--|-------------------|---|-------------------|-----------------------|
| HR-SP-RAL-NCR-87 | Major | JFET's | CQM | One JFET Turned on one did not during 2nd cold test. | 18-Oct-04 | TBD To Be Investigated | | |
| HR-SP-RAL-NCR-88 | Major | 300mk strap | CQM | 300-mK strap clearance at cooler cold-tip | 14-Sep-04 | See NCR 1mm was removed from each of the straps to increase the clearance between the components to enable CQM-II testing to proceed. This needs to be formally reviewed | | 25-Oct-04 |
| HR-SP-RAL-NCR-89 | Minor | Cryostat | GSE | Cooler hold time anomaly | 21-Oct-04 | TBD | | |
| HR-SP-RAL-NCR-90 | Minor | Cryostat Harness | GSE | Electrical Short on SPIRE Cryostat Harness | 18-Oct-04 | Update master procedure for PFM-I test to monitor ground | | |
| HR-SP-RAL-NCR-91 | Minor | FPU PCAL | CQM | Drive shorted to shield in FPU | 10-Nov-04 | See Remarks or NCR If, as assumed, this was always the case for the CQM it has no effect on the PCAL operation as the shield wire is not connected to chassis at any point in the system. We | | |
| HR-SP-RAL-NCR-92 | Minor | FPU/JFP/JFS | EQM | SPIRE EQM Electrical Interface Bench Test Anomalies | 30-Nov-04 | Closed by HR-SP-RAL-NCR-92v2. ref SPIRE-RAL-MoM-002304 | | 12-Jan-05 |
| HR-SP-RAL-NCR-92.2 | Major | FPU/JFP/JFS | CQM | SPIRE EQM Electrical Interface Bench Test Anomalies | 12-Jan-05 | Open for PFM | | |
| HR-SP-RAL-NCR-93 | Minor | S-CAL Box | PFM | S-Cal Box Blacking behind SM8B" | 30-Nov-04 | Use as is note disposition on PFM ABCIDL | | |

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|-----------------------|--------------|-------------------------------------|--------------|---|-------------------|--|-------------------|-----------------------|
| HR-SP-RAL-NCR-94 | Major | 300mk Busbar | CQM | Large temperature drop along CQM 300 mK busbar | 01-Dec-04 | PFM bus-bar made from 5N annealed copper – see MSS | | |
| HR-SP-RAL-NCR-95 | Minor | OGSE | CQM | Misalignment between SPIRE and OGSE | 01-Dec-04 | Add optical alignment procedure to the PFM1 Cold Test M | | |
| HR-SP-RAL-NCR-96 | Major | FPU | CQM | L1 electrical short | 13-Dec-04 | The cause of the short to be investigated. | | |
| HR-SP-RAL-NCR-97 | Minor | | PFM | SFIL COLD STOP insert came out of Housing | 20-Dec-04 | Refit Insert | | |
| HR-SP-RAL-NCR-98 | Minor | | PFM | LOCATION DIAMETER TO SMALL | 20-Dec-04 | Open bores out to 25.00mm | | |
| HR-SP-RAL-NCR-99 | Minor | | PFM | Bores on the photometer harness connector plate need re-machining | 22-Dec-04 | TBD Allocated to Alan Pearce | | |
| HR-SP-RAL-NCR-100 | Minor | BDA | PFM | Damage to PFM SSW BDA J06 and PFM F14 P06 | 25-Jan-05 | For PFM-I test campaign – Temporary fix as per Figure 4 | | |
| HR-SP-UCF-NCR-1 | Minor | FPU 300mk parts Cooler Spec b | CQM | Cooler to Spectrometer Bus-Bar incorrect | 08-Aug-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; Attempt to reform second Bus Bar supplied for correct functionality for CQM if OK reform CQM Bus-Bar | | 14-Nov-03 |

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|-----------------------|--------------|---------------------------------|--------------|--|-------------------|--|-------------------|-----------------------|
| HR-SP-UCF-NCR-2 | Major | SCAL | PFM | Prime & redundant connectors soldering not to ESA standard | 20-Aug-04 | Rework of the connectors by an ESA Qualified operator, a Corrected at Cardiff and Photo's inspected at RAL SCAL Can be accepted. | | 04-Nov-04 |
| MSSL-NCR-1 | Major | Structure Photometer c | CQM | Baffel panel damaged | 13-Aug-02 | implement recovery procedure once it has been appr ITEM Scrapped due to other damage NCR closed | | 17-Apr-03 |

END OF LIST



List of RAL Non-Conformances

PRODUCT ASSURANCE
SPACE SCIENCE DEPARTMENT
Rutherford Appleton Laboratory

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| NCR Serial No. | Level | Subsystem Assembly/ Part | Model | NCR Title | Issue Date | Disposition/Corrective Actions | References | Close Out Date |
|------------------------------|-------|--------------------------|--------------------------|--|------------|---|------------|----------------|
| (ATC) SPI-BSM-NCR-17 | Major | BSM | STM | None (Mirror spotting water marks) | 14-Oct-02 | See NCR | | 01-Nov-02 |
| (ATC) SPI-BSM-NCR-34 | Major | BSM | PFM | None (Fail safe rest position) | 19-Jan-04 | See NCR RFW SPI-BSM-NOT-730 is applicable | | 01-Jul-04 |
| (ATC) SPI-BSM-NCR-39 | Major | BSM | PFM | None (Chop fails settling time) | 23-Jun-04 | See NCR | | 01-Jul-04 |
| (CEA) LAM.QUA.SPI.AN 20067 | Minor | Mirrors CM5 | STM | Undersize Mirror | 25-Nov-02 | Use as is Width of the Mirrors too short by 1mm (160mm instead of 161mm). The mirror remains symmetrical with respect to the Mechanical interface. | | 03-Jan-03 |
| (CEA) LAM.QUA.SPI.NC 30017.1 | Major | D-Tool | SSW Spectrometer Channel | Discrepancy on the distance between the two dowel pins at the I/F with Spire optical bench | 12-Feb-03 | See NCR | | 10-Jan-03 |
| (CEA) LAM.QUA.SPI.NC 30038.1 | Major | SMEC | STM | Diameter of the SMEC attachment points | 19-Mar-03 | See NCR | | 14-Nov-03 |
| (CEA) LAM.QUA.SPI.NC 30038.2 | Major | SMEC | STM | Diameter of the SMEC attachment points | 19-Mar-03 | See NCR | | 14-Nov-03 |

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|------------------------------------|--------------|---------------------------------|-------------------|--|-------------------|--|-------------------|-----------------------|
| (CEA) LAM.QUA.SPI.NC 30045.1 | Major | CM3 mirror | STM STM STM | iscrepancy on CM3 optical surface orientation with respect to spigot axis | 25-Apr-03 | See NCR | | 14-Nov-03 |
| (CEA) LAM.QUA.SPI.NC 30047.1 | Major | SM7 Mirror M | STM STM STM | Orientation of the SM7 Mirror | 14-Jul-03 | See NCR HR-SP-MSSL-ECR-002 raised but Not Implemented MSSL referenced NCR and modified drawing (issue 3) accordingly | | 07-Oct-03 |
| (CEA) LAM.QUA.SPI.NC 30048.1 | Major | SM8_a Mirror | STM STM STM | SM8 Mirror Orientation | 11-Sep-03 | See NCR HR-SP-MSSL-ECR-001 raised but Not Implemented MSSL referenced NCR and modified drawing (issue 3) accordingly | | 07-Oct-03 |
| (CEA) NCR_DCU_ 104 | Major | Warm FCU/MCU | QM1 | MCU QM0 J01/J39 position swapped | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 105 | Major | Warm FCU/MCU | QM1 | MCU QM0 Board position and connector position not representative of flight model | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 109 | Major | Warm DCU Backplane | QM1 | DCU photometer and spectrometer supplies merged | 27-Aug-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 110 | Major | Warm DCU | QM1 | DCU photometer and spectrometer noise allocation | 27-Aug-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 118 | Major | Warm FCU/SCU CCHK | QM1 | J03 pin out not consistant with DRCU ICD | 10-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |

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|--------------------------|--------------|--------------------------------|--------------|---|-------------------|---|-------------------|-----------------------|
| (CEA) NCR_DCU_ 121 | Major | Warm DCU BIAS | QM1 | Transients to FPU at power on | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 122 | Major | Warm FCU/MCU | QM1 | MCU QM0 command to response timing exceeds specification | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 123 | Major | Warm FCU/MCU | QM1 | MCU QM0 drains excessive current on MCU_P15 at power on | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 124 | Major | Warm DCU BIAS | QM1 | "Temperature Readout" Bias channel: Amplitude Non-conformance | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP: May be related to NCR 155 | | 04-Nov-04 |
| (CEA) NCR_DCU_ 125 | Major | Warm DCU | QM1 | Missing Supply voltage HK channels on all DCU issing supply voltage HK channels on all DCU | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 126 | Major | Warm DCU BIAS | QM1 | Missing temperature probe on BIAS board | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 127 | Major | Warm DCU BIAS | QM1 | Vdd1 for bias spectro not found | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_ 128 | Major | Warm FCU/SCU TEMP | QM1 | SCU QM1 "ScuTHTref" HK channel not functional | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |

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|-----------------------|--------------|---------------------------------|--------------|--|-------------------|--|-------------------|-----------------------|
| (CEA) NCR_DCU_129 | Major | Warm DCU LIAS | QM1 | 6 DCU LIAS channels show none reproducible behaviour | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_130 | Major | Warm FCU/SCU CCHK-IF | QM1 | Position of the parameters in the telemetry data frame | 15-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_132 | Major | Warm DCU | QM1 | DCU J03 Connector missing pin 13 | 16-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_134 | Major | Warm DCU Bias | QM1 | Heater PMW2 channel not functional | 24-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_138 | Major | Warm FCU/SCU CCHK-IF | QM1 | TC_heater voltage, inconsistency between Sap & SEDI measurements | 24-Sep-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_147 | Major | Warm DCU LIAP | QM1 | LIAP No 5 Shows bad gain on channel 30 | 29-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_148 | Major | Warm DCU LIAP | QM1 | LIAP No 6 Shows bad gain on channel 9 | 29-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_149 | Major | Warm DCU LIAS | QM1 | LIAS cut-off frequency non-conformance | 29-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |

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|------------------------|--------------|---------------------------------|--------------|--|-------------------|--|-------------------|-----------------------|
| (CEA) NCR_DCU_150 | Major | Warm DCU LIAP | QM1 | LIAP cut-off frequency non-conformance | 29-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_151 | Major | Warm DCU BIAS | QM1 | BIAS amplitude depends on frequency | 28-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_152 | Major | Warm DCU LIAS | QM1 | LIAS no 1 shows bad gain on Channels 13, 19, 23 | 29-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_153 | Major | Warm DCU LIAS | QM1 | LIAS no 2 shows bad gain on Channels 1, 5, 9, 12, 20, 21, 24 | 29-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_154 | Major | Warm DCU LIAS | QM1 | LIAS no 3 shows bad gain on Channels 8, 9, 10, 11, 21, 24 | 29-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR_DCU_155 | Major | Warm DCU BIAS | QM1 | Bolometer Bias Max. amplitude is 200mVpp instead of 200mVrms | 29-Oct-03 | See NCR Supplied as part of the Warm Electronics EIDP. | | 04-Nov-04 |
| (CEA) NCR-DPU-CGS-B-24 | Minor | DPU | EM | A spike on the read signal of the FIFOs occurs in correspondence with a write cycle on Board DPU-EM-210.00-0 S/N 01&02 | 23-Jan-04 | See NCR Copy of NCR received by RAL PA Section Mon 07/06/2004 | | |
| (CEA) NCR-DPU-CGS-B-25 | Minor | DPU | EM | Loss of communication on 1355 | 23-Jan-04 | See NCR Copy of NCR received by RAL PA Section Mon 07/06/2004 | | |

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|------------------------|-------|--------------------------|---------|--|------------|---|------------|----------------|
| (CEA) NCR-DPU-CGS-B-27 | Minor | DPU | EM | Misalignment of the bytes composing the words read from the FIFOs on board DPU-EM-210.00.0 S/N 05 & 06 | 26-Jan-04 | See NCR Copy of NCR received by RAL PA Section Mon 07/06/2004 | | |
| (CEA) NCR-DPU-CGS-B-28 | Minor | DPU | EM | DPU Boot failure | 18-Feb-04 | See NCR Copy of NCR received by RAL PA Section Mon 07/06/2004 | | |
| HP-153300-ASED-NC-210 | Major | DPU SN 153300 | PACS | PACS DPU anomalous behaviour during first test at ASED | 06-Apr-04 | See NCR NCR from ESTEC | | |
| HP-2-SEN-NC-6 | Minor | Optical Bench Plate | PFM EQM | out of position holes mismatch FPU to OBP | 30-Jun-04 | Use as is NCR Accepted and agreed by Spire Email sent 30 July 04 | | 30-Jul-04 |
| HP-2-SEN-NC-7 | Minor | Optical Bench Plate | EQM | | 30-Jun-04 | Use as is NCR Accepted and agreed by Spire Email sent 30 July 04 | | 30-Jul-04 |
| HR-SP-AS-NCR-1 | Minor | AS Cryostat | GSE | Flange Change | 13-Dec-02 | Adaptor Flange made and fitted Abingdon Scientific Cryostat Manufacturer | | 13-Dec-02 |
| HR-SP-IFSI-NCR-1 | Minor | IFSI DPU | AVM | RANDOM ERRORS IN FAST SERIAL DATA LINKS RECEPTION | 12-Nov-03 | See NCR Introduction of integrating capacitances on the READ pins of the receiving FIFOs has highly mitigated the error rate, but still not completely removed the source of | | 03-Nov-04 |
| HR-SP-JPL-NCR-5 | Minor | JFET's Sn 001-008 | CQM | JFET Incoming inspection | 08-Oct-03 | See NCR JPL to complet cause of NCR section ref SPIRE-RAL-REP-001829 incoming inspection report. | | |

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|------------------------|-------|-----------------------------|-------|--------------------------------|------------|---|------------|----------------|
| HR-SP-JPL-NCR-NCR 1 | Minor | JPL RF Filter Mod | CQM | RF Filters over Max Mass Limit | 14-Aug-03 | Use as Delivered re-allocated Mass budget. NCR Closed Action 1 JPL Note Should be added to the EIDP Regarding the increased Mass allowance as of 3/2/2003. Action 2 JPL Request for Waiver should be submitted, to | | 14-May-04 |
| HR-SP-JPL-NCR-NCR 2 | Minor | JPL PLWBDA PLW Filter | CQM | PLW FILTER BOWING | 03-Sep-03 | Use as is deos not affect detector performance. UWC to comment and complete Cause & Action sections of NCR form | | 14-May-04 |
| HR-SP-JPL-NCR-NCR 3 | Minor | JPL PLW BD. SL | CQM | Array Process Change | 06-Oct-03 | Recommend 'Use as is' for the P/LW on CQM only S/LW Recommend 'Use as is' for the P/LW on CQM only S/LW use on PFM 1 build - NOT SUITABLE FOR FLIGHT – review situation for flight spare | | 18-Oct-04 |
| HR-SP-JPL-NCR-NCR 4 | Minor | JPL | CQM | Performance criteria not met | 06-Oct-03 | See NCR | | 18-Oct-04 |
| HR-SP-MSSL-NCR- 1 | Minor | Structure | GSE | Gold Plating | 25-Mar-03 | see NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001717 | | 17-Jun-03 |
| HR-SP-RAL-NCR- 1 | Minor | EGSE | GSE | Double Click Error | 27-Sep-01 | Complete the removal. Whole packets are now displayed via the log file display. Awaiting Acceptance test before closing | | 14-Feb-03 |
| HR-SP-RAL-NCR- 2 | Minor | EGSE | GSE | Astrium Buslist Error | 27-Sep-01 | Corrected during Acceptance Test. Circulate correction sheet for users to amend their software release 0.6 installation. | | 14-Feb-03 |
| HR-SP-RAL-NCR- 3 | Minor | EGSE | GSE | Master Time error | 27-Sep-01 | Corrected during Acceptance Test. AAdd brackets to software text. Corrected during acceptance test Correct in version 0.7. See DDC.CPP Change Record Attached. (October 1st) Awaiting next | | 14-Feb-03 |

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| Instrument: CDMS-Sim | Document No PIRE-RAL-PRJ-0001079 |
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|--------------------|-------|--|-------|---|------------|--|------------|----------------|
| HR-SP-RAL-NCR-4 | Minor | EGSE | GSE | DDC Bus Message log | 27-Sep-01 | Use Programme MTZDISK.EXE instead of ACE windows Menue.Check test plan instruction changed to reflect above instruction. | | 14-Feb-03 |
| HR-SP-RAL-NCR-5 | Minor | EGSE | GSE | TMRReq message timing | 27-Sep-01 | See DDC.CPP Change Record attached (October 10th Fix)Awaiting acceptance test results before closing NCR | | 14-Feb-03 |
| HR-SP-RAL-NCR-6 | Minor | EGSE | GSE | RT implementation of Flow Control flags | 27-Sep-01 | The Instrument Simulator has been modified to set the FLOW CONTROL bits to indicate whether or not there is a telemetry packet awaiting transfer.Awaiting acceptance | | 14-Feb-03 |
| HR-SP-RAL-NCR-7 | Minor | OGSE for Telescope Si Mirror M2, Telescope | GSE | Focal length out-of-spec | 30-Nov-01 | see NCR Assess impact on M2 imaging performances / Marc Ferlet 30/11/2001 | | 17-Dec-01 |
| HR-SP-RAL-NCR-8 | Minor | Calibration Cryoharness Connectors | GSE | Crimp contacts with tails in wrong end | 21-Jun-02 | Glenair to provide replacement MIL Spec contacts Glenair to provide replacement contacts with solder leads crimped in correct end. | | 21-Jun-02 |
| HR-SP-RAL-NCR-9 | Minor | JFET 6 JFET assy | SM | Out of tolerance thermal straps (6 JFET assy) | 30-Sep-02 | Use as is (see NCR) Closed at NCR MRB Number SPIRE-RAL-MoM-001863; IF extra such items are ordered for STM, consider swapping to keep best ones for flight. | | 14-Nov-03 |
| HR-SP-RAL-NCR-10 | Minor | MGSE Rear Frame a | GSE | Spire MGSE rear frame assy | 26-Sep-02 | Return to manufacturer for re-work Manufacturer corrected problem but other holes found missing corrected in house | | 07-May-03 |
| HR-SP-RAL-NCR-10.1 | Minor | MGSE Rear Frame a | GSE | Spire MGSE rear frame assy | 26-Sep-02 | Return to manufacturer for re-work Reworked by manufacturer when returned holes were found to be missing corrected in house Use as is | | 09-May-03 |

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|-----------------------|--------------|---------------------------------|--------------|--|-------------------|---|-------------------|-----------------------|
| HR-SP-RAL-NCR-11 | Minor | MGSE Support Fram Frame Parts | GSE | Aluchrome Finish on support rails | 23-Sep-02 | Components to be cleaned to remove bead blasting residue and re-aluchromed to DEF 1200 Reworked finish still poor USE As IS. | | 09-May-03 |
| HR-SP-RAL-NCR-12 | Minor | MGSE Trolley Bridge rails | GSE | Mismatch on Rail Cross Section | 23-Sep-02 | TBD Closed at NCR MRB Number SPIRE-RAL-MoM-001863; | | 14-Nov-03 |
| HR-SP-RAL-NCR-13 | Minor | HDPE Windo | GSE | Surface finish | 30-Sep-02 | Use as is, Has been found to be leak tight during cold test NCR closed re SPIRE-RAL-MoM-002013 | | 14-May-04 |
| HR-SP-RAL-NCR-14 | Minor | MGSE | GSE | Hob Plate material to soft | 09-Oct-02 | Have new plate made from harder material Use exist Existing plate will be used for the Cryostat cold tests and MGSE fit checks | | 23-Oct-02 |
| HR-SP-RAL-NCR-15 | Minor | MGSE Support Fram | GSE | MGSE Support Frame Dimension incorrect | 10-Oct-02 | Dimensions were checked against the drawings and were found to be correct. Therefore there is no problem NCR can be closed without further action | | 23-Oct-02 |
| HR-SP-RAL-NCR-16 | Minor | MGSE Trolley | GSE | MGSE Trolley Tolerance stack up | 10-Oct-02 | see NCR | | 23-Oct-02 |
| HR-SP-RAL-NCR-17 | Minor | MGSE Hob Plate | GSE | HOB Plate | 10-Oct-02 | MSSL to Advise THIS NCR IS CLOSED and superceded by updated version 017v1 below | | 18-Mar-03 |
| HR-SP-RAL-NCR-17.1 | Minor | MGSE Hob Plate HOB-SIM_Ch | GSE | HOB Plate | 18-Mar-03 | MSSL to Advise Use as is Closed at NCR MRB Number SPIRE-RAL-MoM-001717 USE As Is | | 17-Jun-03 |

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|-----------------------|--------------|---------------------------------|--------------|-----------------------------------|-------------------|--|-------------------|-----------------------|
| HR-SP-RAL-NCR-18 | Minor | MGSE Hob Plate HOB-SIM_Ch | GSE | HOB Plate | 07-Jan-03 | Drawings to be ammended before ordering 2nd Hob PI Drawings to be ammended before ordering 2nd Hob Plate | | 09-May-03 |
| HR-SP-RAL-NCR-19 | Minor | JFET racks | SM | Feet Don't seat down properly | 10-Jan-03 | see NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863 with Manufacturer (SENAR) REPLY attached to NCR | | 14-Nov-03 |
| HR-SP-RAL-NCR-20 | Minor | MGSE Cryostat Chamber | GSE | Initial pump-down test failure. | 14-Jan-03 | see NCR | | 09-May-03 |
| HR-SP-RAL-NCR-21 | Minor | GSE Cryostat Cold Harness | GSE | SPIRE TF Cryoharness Labelling | 25-Feb-03 | See NCR Defines the Harness connector labeling without ambiguities. Superceded by v.1 | | 07-May-03 |
| HR-SP-RAL-NCR-21.1 | Minor | GSE Cryostat Cold Harness | GSE | SPIRE TF Cryoharness Labelling | 25-Feb-03 | See NCR Superseded by v2connector designator coloums corrected | | 14-Nov-03 |
| HR-SP-RAL-NCR-21.2 | Minor | GSE Cryostat Cold Harness | GSE | SPIRE TF Cryoharness Labelling | 25-Feb-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; connector designator coloums corrected | | 14-Nov-03 |
| HR-SP-RAL-NCR-22 | Minor | MGSE Cryostat HOB_SIM HA | GSE | HOB Simulator-B Hole Dimensions | 05-Mar-03 | MSSL to Advize Use as is Closed at NCR MRB Number SPIRE-RAL-MoM-001717 | | 17-Jun-03 |
| HR-SP-RAL-NCR-23 | Minor | MGSE Cryostat Foot Rail | GSE | Cryostat Rail Dimension incorrect | 18-Mar-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; Rail should have been 1,000mm long instead was 970mm datum hole therefore incorrectly positioned | | 14-Nov-03 |

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| Instrument: SPIRE | Document No PIRE-RAL-PRJ-0001079 |
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|-----------------------|--------------|-----------------------------------|--------------|---|-------------------|---|-------------------|-----------------------|
| HR-SP-RAL-NCR-24 | Minor | MGSE Test Cryostat Main burst dis | GSE | Leak in Cryostat Drop Plate | 28-Mar-03 | See NCR 1. Inspect flange for flatness. If flange is not flat then plate cannot be used as it is. 2. Remount plate and carefully tighten bolts ensuring | | 10-Jun-03 |
| HR-SP-RAL-NCR-25 | Minor | MGSE HOB Simulato | GSE | Surface Damage to HOB simulator | 28-Mar-03 | Assess level of damage when removed from bake-out. If possible make minor repairs and measure flatness of damaged/repared area If possible make minor repairs and measure flatness of | | 10-Jun-03 |
| HR-SP-RAL-NCR-26 | Minor | J-FET Rack fe | All | Not Thermally Isolated enough. | 11-Apr-03 | "Modifications have been implemented Problem resolved" NCR Closed. Ref NRB SPIRE-RAL-MoM-002013 | | 14-May-04 |
| HR-SP-RAL-NCR-27 | Minor | FPU Spectrometer | SM | SM11b interferes with the optics bench | 30-Apr-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001717- On the STM the rib was modified by hand. The PFM rib to be modified. It is suggested that a 45degree chamfer | | 17-Jun-03 |
| HR-SP-RAL-NCR-28 | Minor | Structure RF Filter box | SM | Mechanical interference of the FR filter box | 30-Apr-03 | See NCR | | 03-Jul-03 |
| HR-SP-RAL-NCR-28.2 | Minor | Structure RF Filter box | SM | Mechanical interference of the FR filter box | 30-Apr-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; | | 07-May-04 |
| HR-SP-RAL-NCR-29 | Minor | alignment cub | SM | STM Alignment cube | 30-Apr-03 | The cubes fit the HOB simulator but not the SOB NCR Closed Ref HR-SP-RAL-NCR-035 | | 09-Jun-03 |
| HR-SP-RAL-NCR-30 | Minor | LAM FPU CM3 | AM | CM3 interferes with the sub optics bench at its lower edge. | 30-Apr-03 | Drawing of sub bench A1 5264 305 12 has been updated STM mirror may need to be removed and the mount modified accordingly | | 14-May-04 |

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| Instrument: SPIRE | Document No PIRE-RAL-PRJ-0001079 |
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| NCR Serial No. | Level | Subsystem Assembly/ Part | Model | NCR Title | Issue Date | Disposition/Corrective Actions | References | Close Out Date |
|--------------------|-------|----------------------------------|----------|---|------------|--|------------|----------------|
| HR-SP-RAL-NCR-31 | Minor | Detector FPU | SM | Screw Sheared off in Detector Housing | 05-Jun-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; MSSL to investigate and report back, MSSL corrected problem see NCR fo details. | | 14-Nov-03 |
| HR-SP-RAL-NCR-32 | Minor | JFET racks | SM | Backharness 37way backshells do not fit 6 module rack metalwork | 06-Jun-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; Parts corrected Dwg upissued | | 14-Nov-03 |
| HR-SP-RAL-NCR-33 | Minor | DPU HSDPU | AM | Not possible to load OBS via telecommands | 29-Apr-03 | See NCR Reset CPU Before booting with new Image. IFSI To implement Firmware Change on future models to allow software to reset CPU, thus allowing it to operate | | 14-Nov-03 |
| HR-SP-RAL-NCR-34 | Minor | DPU HSDPU | AM | DPU Power interface discrepancy | 29-Apr-03 | NRB MoM's No SPIRE-RAL-MoM-001616 Reclassified as Major at in depth PA meeting 13/14th April 2004 at Ral NRB MoM's No SPIRE-RAL-MoM-001616 - | | 14-Apr-04 |
| HR-SP-RAL-NCR-34.1 | Major | DPU HSDPU | AM | DPU Power interface discrepancy | 14-Apr-04 | See NCR Awaiting Closure from ESA: Harness Definition Document: SPIRE-RAL-PRJ-000608 issue 1.2 corrects this. NCR Closed ref SPIRE-RAL-MoM-002250 NCR | | 20-Dec-04 |
| HR-SP-RAL-NCR-35 | Major | Structure & Alignment Cu | SM | Non compliant interface (mounting holes pattern) between SOB and alignment cube | 30-Apr-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; NCR 029 closed ref this NCR | | 14-Nov-03 |
| HR-SP-RAL-NCR-36 | Major | Structure | SM | SPIRE Optical Bench BSM I/F Location | 02-May-03 | See NCR Can be Closed ref NCR MRB Number SPIRE-RAL-MoM-001863; ATC ICD is reissued is attached | | 12-Jul-04 |
| HR-SP-RAL-NCR-37 | Major | MGSE Flexible Pipe Co-Axial heat | Cryostat | Solder on co-axial heater melted | 02-May-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; NCR copied to AS for comment | | 14-Nov-03 |

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|-----------------------|--------------|------------------------------------|--------------|---|-------------------|---|-------------------|-----------------------|
| HR-SP-RAL-NCR-38 | Minor | Structure 300mK Strap Photometer S | SM | 300-mK Thermal Short during STM Programme | 06-May-03 | See NCR Supersceded by 038v2 | | 21-May-03 |
| HR-SP-RAL-NCR-38.2 | Minor | Structure 300mK Strap Photometer S | SM | 300-mK Thermal Short during STM Programme | 21-May-03 | Item 1-Doug to issue a check list to cover Key integration See note in blue on NCR. Items 2 & 3 no longer valid Delete. NCR Closed | | 14-May-04 |
| HR-SP-RAL-NCR-39 | Minor | BSM position senso | | BSM Jiggle Frame Clipping | 29-May-03 | Design change by ATC NCR closed Optical study by RAL not required as ATC implemented a design change | | 04-Jun-03 |
| HR-SP-RAL-NCR-40 | Minor | FPU Spectrometer | SM STM | SM11a interferes with the optics bench. | 17-Jun-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001717 | | 17-Apr-03 |
| HR-SP-RAL-NCR-41 | Minor | MGSE Pumping Syst | Cryostat | Cryostat Pumping system shutdown | 07-Jul-03 | Superceded By 41v1 | | 07-Jul-03 |
| HR-SP-RAL-NCR-41.1 | Minor | MGSE Pumping Syst | Cryostat | Cryostat Pumping system shutdown | 30-Sep-03 | No re-occurrence NCR Closed. Under investigatiog Suspected Glitch on Mains supply Mains Filter will be used in future.Mains Filter fitted(in place for shutdown 25/09/04) | | 14-May-04 |
| HR-SP-RAL-NCR-42 | Minor | FPU CM3 | SM / CQM | CM3 Mirror Damage | 30-Jul-03 | See NCR USE AS IS. LAM comments and sign off of the NCR added to the NCR | | 08-Oct-03 |
| HR-SP-RAL-NCR-43 | Minor | MGSE Cold Blackbod | Cryostat | Cold-BlackBody Dimensions | 02-Sep-03 | All Actions completed Cold Black Body Modified NCR clos Design of Cold Black Body does not match the cryostat ICD | | 14-May-04 |

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|--------------------|-------|--------------------------------------|----------|--|------------|--|------------|----------------|
| HR-SP-RAL-NCR-44 | Minor | Test Harness | SM SM | Connector Plating Flaking Off | 20-Oct-03 | See NCR Superseded By 44v1 | | 22-Oct-03 |
| HR-SP-RAL-NCR-44.1 | Minor | GSE Test Cryoharn | SM | Connector Plating Flaking Off | 20-Oct-03 | See NCR Use as is but remove lose plating and vacuum connectors before Mating.MRB SPIRE-RAL-MoM-1846 referers | | 05-Nov-03 |
| HR-SP-RAL-NCR-45 | Minor | Spectrometer SMEC Harness Clam | CQM | SMEC harness clamp interference with Structure webbing | 28-Oct-03 | Remove Lower Harness clamp back webbing Closed at NCR MRB Number SPIRE-RAL-MoM-001863; | | 14-Nov-03 |
| HR-SP-RAL-NCR-46 | Minor | DPU | AVM | JTAG fouls adjacent circuit board | 12-Nov-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; JTAG connectors will not be implemented on any other models of the DPU so the problem will not be | | 14-Nov-03 |
| HR-SP-RAL-NCR-47 | Minor | 2K Photomete PFIL 3 & cold | CQM | 2K Photometer box filter dowel pin fouling | 04-Nov-03 | Sort term remove dowel pin. Long term replace with Closed at NCR MRB Number SPIRE-RAL-MoM-001863; Ral Corrected item | | 14-Nov-03 |
| HR-SP-RAL-NCR-48 | Minor | S-Cal Connectors | CQM | CQM S-Cal Connector Orientation | 20-Nov-03 | SCAL-ICD-000 issue C Flight Model Shows correct orient Remove S-Cal from FPU • Check that the Prime Connector is wired to the active sources • Re-assemble S-Cal so that the prime and redundant connectors are | | 14-May-04 |
| HR-SP-RAL-NCR-49 | Minor | Structure FPU Connector Jac | CQM | RF Filter Connector Jack post thread length | 20-Nov-03 | Half returned for rework when done some still had to be re Half the Items returned to Taylor Embex for rework the remainder will be reworked at RAL | | 14-May-04 |
| HR-SP-RAL-NCR-50 | Minor | Structure pectrometer C | All | Harnes slot missing on Spectrometer cover baffle. | 05-Dec-03 | Flight Model Drawings updated NCR Closed | | 14-May-04 |

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| NCR Serial No. | Level | Subsystem Assembly/ Part | Model | NCR Title | Issue Date | Disposition/Corrective Actions | References | Close Out Date |
|--------------------|-------|-------------------------------|--------|---|------------|--|------------|----------------|
| HR-SP-RAL-NCR-51 | Minor | GSE. Cold Harness | GSE | Pins Bent on GSE Harness | 22-Dec-03 | Returned to Manufacturer for correction Ok when returned A pin straightening jig could be made. If the pin does not maintain the hermetic seal, the pins can be cut off or removed as they are both redundant ground pins. To be | | 14-May-04 |
| HR-SP-RAL-NCR-52 | Minor | GSE Warm Test Ha | GSE | Grounding Problems Warm test Harness | 22-Dec-03 | Harness will need modification Harness returned to Manufacturer for modification (hardware now consistent with Documentation that was correct) NCR closed. Ref SPIRE-RAL-MoM-002013 | | 14-May-04 |
| HR-SP-RAL-NCR-53 | Minor | Calibration MGSE Support Fram | GSE | Brass Wheels Worn on MGSE Frame | 07-Jan-04 | Wheels changed to Delrin Brass wheels replaced with Delrin wheels. The frame now moves on the cryostat rails more freely. | | 15-Jan-04 |
| HR-SP-RAL-NCR-54 | Minor | Tekdata SLW PFM Incoming insp | PFM/FS | PFM SLW Harness different to FS on inspection Rep | 07-Jan-04 | See NCR SLW FS Harness correct but incoming inspection report indicates SLW PFM is incorrect: Error on incoming inspection Report | | 18-Mar-04 |
| HR-SP-RAL-NCR-55 | Minor | CEA Sap DCU Connectors | QM1 | Pins incorrectly inserted | 08-Jan-04 | TBD Awaiting completion of NCR | | 26-Jan-04 |
| HR-SP-RAL-NCR-55.2 | Minor | CEA Sap DCU Connectors | QM1 | Pins incorrectly inserted | 08-Jan-04 | See NCR Corrective actions specified on NCR Repaired at RAL NCR Closed | | 04-Feb-04 |
| HR-SP-RAL-NCR-56 | Minor | Detector chan | CQM | Detector Channels do not follow ICD | 12-Jan-04 | Raised in error NCR Closed Raised in error all OK Close NCR no further Action Required ref SPIRE-RAL-MoM-002013 | | 14-May-04 |
| HR-SP-RAL-NCR-57 | Minor | BDA | CQM | Anomalous warm behavior of Detector System | 12-Jan-04 | None Known feture before delivery No Action required Known feature before delivery see EIDP NCR Closed | | 14-May-04 |

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|--------------------|-------|-------------------------------------|-------|--|------------|--|------------|----------------|
| HR-SP-RAL-NCR-58 | Major | DRCU | CQM | MCU switch on over current | 16-Jan-04 | This unit not built to Flight design QM1 et seq will be ok. N LAM to investigate why 14 V is applied continuously to Launch Latch coils – there is a fault in the MCU QM0 unit. Use as is for CQM testing with harness connector | | 14-May-04 |
| HR-SP-RAL-NCR-59 | Minor | Cryostat FPU DCU J28 | GSE | Ground Short on DCU J28 LIA-5 connector | 21-Jan-04 | See NCR Investigation completed but inconclusive check at next cold Test. | | |
| HR-SP-RAL-NCR-60 | Minor | Cryoharnesses FPU Faraday socket S5 | GSE | Open circuit on FPU Faraday Shield Link Jumper on S5 | 22-Jan-04 | See NCR Further investigation when Cryostat is opened at end of CQM testing | | |
| HR-SP-RAL-NCR-61 | Minor | DRCU | CQM | DRCU accepting an unknown command | 17-Feb-04 | Close NCR Reclassify as SPR Sunil to do. raised as an NCR but should have been an Software Problem report (SPR) | | 14-May-04 |
| HR-SP-RAL-NCR-61.1 | Minor | DRCU | CQM | DRCU accepting an unknown command | 17-Feb-04 | This is a feature of the MCU operation – it does not flag in This was originally thought to be a SPR but later proved to be an NCR so the NCR was Up issued accordingly Ref SPIRE-RAL-MoM-002013 | | 01-Dec-04 |
| HR-SP-RAL-NCR-62 | Minor | Cooler SCO Evaporator H | CQM | Response time of SPIRE CQM Evaporator Heat Switch | 19-Feb-04 | See NCR The NCR has been raised to report and track the issue. A slow switch would be troublesome in flight. The performance of the switch will be monitored during the | | 02-Nov-04 |
| HR-SP-RAL-NCR-62.1 | Minor | Cooler SCO Evaporator H | CQM | Response time of SPIRE CQM Evaporator Heat Switch | 19-Feb-04 | See NCR The NCR has been raised to report and track the issue. A slow switch would be troublesome in flight. The performance of the switch will be monitored during the | | 02-Nov-04 |
| HR-SP-RAL-NCR-63 | Minor | Cooler, FPU Evaporator H | CQM | Evaporator HS & Pump HS commands reversed. | 19-Feb-04 | See NCR When the instrument is removed from the cryostat after the end of the initial CQM cool down, the EGSE, DPU, SCU and cryoharness will be tested to see if there | | 28-May-04 |

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|-----------------------|--------------|--|--------------|---|-------------------|--|-------------------|-----------------------|
| HR-SP-RAL-NCR-63.1 | Minor | Cooler, FPU Evaporator H E, S, DRCU, | CQM | Evaporator HS & Pump HS commands reversed. | 28-May-04 | Check when removed from Cryostat Tests need to be carried out on the Cooler and FPU F16 and F17 to determine if the fault lies in either of these two components | | 15-Jun-04 |
| HR-SP-RAL-NCR-63.2 | Minor | Cooler, FPU Evaporator H E, S, DRCU, | CQM | Evaporator HS & Pump HS commands reversed. | 19-Feb-04 | Update Harness definition The cooler ICD should remain the same, as any change would propagate to the PACS instrument. The Harness Definition Document Issue 1.1 and the DRCU / DPU | | 02-Nov-04 |
| HR-SP-RAL-NCR-63.3 | Minor | Cooler, FPU Evaporator H E, S, DRCU, | CQM | Evaporator HS & Pump HS commands reversed. | 19-Feb-04 | See NCR See NCR | | 02-Nov-04 |
| HR-SP-RAL-NCR-64 | Minor | SCAL Prime 4% sou | CQM | Apparent failure of CQM S-Cal 4% source | 19-Feb-04 | See NCR Superseded by issue of HR-SP-RAL-NCR-064v1 | | 13-May-04 |
| HR-SP-RAL-NCR-64.1 | Minor | SCAL Prime 4% sou | CQM | Apparent failure of CQM S-Cal 4% source | 09-Mar-04 | Review instrument commanding and telemetry streams to Superseded by issue of HR-SP-RAL-NCR-064v2 HSO-CDF-RP-065 attached report from P Hargrave. | | 18-Jun-04 |
| HR-SP-RAL-NCR-64.2 | Minor | SCAL Prime 4% sou | CQM | Apparent failure of CQM S-Cal 4% source | 18-Jun-04 | See NCR | | 02-Nov-04 |
| HR-SP-RAL-NCR-65 | Minor | Cryostat | GSE | FIR optical loading of detectors from room background | 19-Feb-04 | Action 1 done Action 2 N/A Note On rechecking the DATA Loading is as expected | | 14-May-04 |
| HR-SP-RAL-NCR-66 | Minor | SCAL | CQM CQM | SCAL Interface Mismatch | 16-Mar-04 | See NCR 1. For CQM only, use 0.5mm washers to space SCAL from box. 2. For PFM and FS chamfer mounting ring of SCAL box to ensure flush mounting | | 12-Jul-04 |

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|-----------------------|--------------|-----------------------------------|--------------|--|-------------------|--|-------------------|-----------------------|
| HR-SP-RAL-NCR-67 | Minor | FPU | PFM | Hole Miss-alignment | 07-Apr-04 | As yet undetermined Awaiting more information MSSL informed | | |
| HR-SP-RAL-NCR-68 | Minor | JFET JFET feet Torlon Washe | CQM | Torlon Insulating washer upside down on JFET foot assembly | 07-May-04 | None required, washers are bonded into place so should | | 02-Nov-04 |
| HR-SP-RAL-NCR-69 | Minor | RF Filter | CQM | Screw from filter unit support fallen out | 12-May-04 | Incorporate a specific reminder to stake the screw with Sc The updated document with the reminder is "SPIRE Final Integration Checklist - SPIRE-RAL-NOT-002088 Issue 1.0" | | 02-Nov-04 |
| HR-SP-RAL-NCR-70 | Minor | SMEC Bushes | CQM | Possible chaffing/wear marks on SMEC bushes | 12-May-04 | See NCR This mechanism is designed to give similar dynamic performance to the FM. To achieve this, non flight -like bushes are used. Some movement of these bushes is | | 02-Nov-04 |
| HR-SP-RAL-NCR-71 | Minor | FPU Harnesses | CQM | Piece of Kapton found between webbing on filter side | 12-May-04 | Incorporate a specific reminder for this in the document b | | 02-Nov-04 |
| HR-SP-RAL-NCR-72 | Minor | Filters | CQM | Damage on photometer detector box filters | 12-May-04 | See NCR Inspection by Peter Hargrave from Cardiff. He reported that this type of appearance of a hot pressed filter is not unusual. This is not a damaged filter. Close NCR | | 02-Nov-04 |
| HR-SP-RAL-NCR-73 | Minor | BDA-JFET M | CQM | Cracking of elastomer in BDA-JFET MDM 51S connector | 12-May-04 | see remarks The seal is not necessary in SPIRE and is to be removed. It is noted that the same seal is present also in the following connectors and is to be removed. PFM JFP | | 05-Nov-04 |
| HR-SP-RAL-NCR-74 | Minor | JFET Back harness | CQM | Heat Shrink on JFET back Harnesses | 12-May-04 | See NCR The all existing Kynar heat shrink is to be removed from the Backharness. Adhesive Kapton tape is to be used to substitute the Heat Shrink. (Note. The braid is | | 02-Nov-04 |

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| HR-SP-RAL-NCR-75 | Major | Instrument | CQM | During Cold vibration test the sine test went to 200Hz | 12-May-04 | See NCR Closed Ref SPIRE CQM DRB Ref (H-P-ASP-MN-5613) | | 12-Oct-04 |
| HR-SP-RAL-NCR-76 | Major | FPU Phot Detector | PFM | Poor Alachrome on photometer Detector box | 10-Jun-04 | See NCR Alachrome cleaned off and unit made clean to flight standard. Closed ref 076v1 Use as is for current alignment integration activities. | | 20-Sep-04 |
| HR-SP-RAL-NCR-76.1 | Major | Phot Detector | PFM | Poor Alachrome on photometer Detector box | 10-Jun-04 | See NCR Closed ref SPIRE-RAL-MoM-002131 NRB MoM's | | 23-Sep-04 |
| HR-SP-RAL-NCR-77 | Minor | MSSL FPU Belville washe | PFM | Two sizes of Belville washers with the same assembly number | 11-Jun-04 | Checks will be made during the bagging of the fixings to e Walton plating (not the original company). They think that some agent has attacked the alocrom! This is due to the fact that it was patchy. | | 23-Sep-04 |
| HR-SP-RAL-NCR-78 | Minor | BSMOGSE | OGSE | Modifications to BSM OGSE | 17-Jun-04 | See NCR | | |
| HR-SP-RAL-NCR-79 | Minor | FPU 300mk strap | CQM CQM | Minimal clearence between Spect Det Box SLB and 300mk split clamp | 01-Jul-04 | Examine a copy of the drawings and the assembled compo Reference ECR 075 | | 02-Nov-04 |
| HR-SP-RAL-NCR-80 | Minor | Beam splitter i | PFM | Beam Splitter /Mount Interface | 11-Aug-04 | MSSL to remachine and update drawings Upissued drawing attached to NCR Closed ref SPIRE-RAL-MoM-002131 NRB MoM's | | 15-Sep-04 |
| HR-SP-RAL-NCR-81 | Major | JFP I/F Carbon Fibre | CQM 2 | Electrical Short on JFP I/F | 20-Aug-04 | See NCR HR-SP-RAL-ECR-079 raised to track changes: NCR Re classified as Major 3rd Nov 2004 | | 03-Nov-04 |

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| Model: All | Issue : 7 |
| Subsystems: | Date: 26-Jan-05 |

| <i>NCR Serial No.</i> | <i>Level</i> | <i>Subsystem Assembly/ Part</i> | <i>Model</i> | <i>NCR Title</i> | <i>Issue Date</i> | <i>Disposition/Corrective Actions</i> | <i>References</i> | <i>Close Out Date</i> |
|-----------------------|--------------|---------------------------------|--------------|---|-------------------|--|-------------------|-----------------------|
| HR-SP-RAL-NCR-82 | Minor | | CQM 2 | Electrical Short on Cooler Strap | 20-Aug-04 | The Joint Integrity is to be monitored as per existing SPIR Precise cause unknown. Possibly the screw preload caused the short? The joint was assembled using a single layer of thin Dacron. The PFM design and | | 25-Oct-04 |
| HR-SP-RAL-NCR-83 | Minor | Detector Box Feet | PFM CQM | Electrical Short on Photometer Detector Box Feet | 06-Sep-04 | See NCR The Kapton was removed from all detector box mounts and a 200um layer of PCB board material (possibly a glass reinforced Kapton) was inserted between the | | 25-Oct-04 |
| HR-SP-RAL-NCR-84 | Minor | Cryostat Thermal Strap Heaters | GSE | Heater failures on Thermal Straps during cool down. | 08-Sep-04 | Investigate fault when spire is removed from cryostat. uperseded by HR-SP-RAL-NCR-084v1 | | 21-Dec-04 |
| HR-SP-RAL-NCR-84.1 | Minor | Cryostat Thermal Strap | GSE | Facility Heater failure on L0 Thermal Straps during cool down | 21-Dec-04 | | | |
| HR-SP-RAL-NCR-85 | Minor | Cryostat PUMP | GSE | Pump Failure during cool down | 08-Sep-04 | ACKNOWLEDGE ERROR MESSAGE..REBOOT PUMPI uperseded by HR-SP-RAL-NCR-085v1 | | 21-Dec-04 |
| HR-SP-RAL-NCR-85.1 | Minor | Cryostat PUMP | GSE | Facility Vacuum Pump Failure during cool down | 21-Dec-04 | Monitor the vacuum pressure closely when filling the cryo | | |
| HR-SP-RAL-NCR-86 | Minor | Cryostat Temp sensors | GSE | Temp sensor failures | 08-Sep-04 | uperseded by HR-SP-RAL-NCR-086v1 | | 21-Dec-04 |
| HR-SP-RAL-NCR-86.1 | Minor | Cryostat Temp sensors | GSE | Temp sensor failure During cool down | 21-Dec-04 | | | |

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|-----------------------|--------------|---------------------------------|--------------|--|-------------------|---|-------------------|-----------------------|
| HR-SP-RAL-NCR-87 | Major | JFET's | CQM | One JFET Turned on one did not during 2nd cold test. | 18-Oct-04 | TBD To Be Investigated | | |
| HR-SP-RAL-NCR-88 | Major | 300mk strap | CQM | 300-mK strap clearance at cooler cold-tip | 14-Sep-04 | See NCR 1mm was removed from each of the straps to increase the clearance between the components to enable CQM-II testing to proceed. This needs to be formally reviewed | | 25-Oct-04 |
| HR-SP-RAL-NCR-89 | Minor | Cryostat | GSE | Cooler hold time anomaly | 21-Oct-04 | TBD | | |
| HR-SP-RAL-NCR-90 | Minor | Cryostat Harness | GSE | Electrical Short on SPIRE Cryostat Harness | 18-Oct-04 | Update master procedure for PFM-I test to monitor ground | | |
| HR-SP-RAL-NCR-91 | Minor | FPU PCAL | CQM | Drive shorted to shield in FPU | 10-Nov-04 | See Remarks or NCR If, as assumed, this was always the case for the CQM it has no effect on the PCAL operation as the shield wire is not connected to chassis at any point in the system. We | | |
| HR-SP-RAL-NCR-92 | Minor | FPU/JFP/JFS | EQM | SPIRE EQM Electrical Interface Bench Test Anomalies | 30-Nov-04 | Closed by HR-SP-RAL-NCR-92v2. ref SPIRE-RAL-MoM-002304 | | 12-Jan-05 |
| HR-SP-RAL-NCR-92.2 | Major | FPU/JFP/JFS | CQM | SPIRE EQM Electrical Interface Bench Test Anomalies | 12-Jan-05 | Open for PFM | | |
| HR-SP-RAL-NCR-93 | Minor | S-CAL Box | PFM | S-Cal Box Blacking behind SM8B" | 30-Nov-04 | Use as is note disposition on PFM ABCIDL | | |

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|-----------------------|--------------|-------------------------------------|--------------|---|-------------------|--|-------------------|-----------------------|
| HR-SP-RAL-NCR-94 | Major | 300mk Busbar | CQM | Large temperature drop along CQM 300 mK busbar | 01-Dec-04 | PFM bus-bar made from 5N annealed copper – see MSS | | |
| HR-SP-RAL-NCR-95 | Minor | OGSE | CQM | Misalignment between SPIRE and OGSE | 01-Dec-04 | Add optical alignment procedure to the PFM1 Cold Test M | | |
| HR-SP-RAL-NCR-96 | Major | FPU | CQM | L1 electrical short | 13-Dec-04 | The cause of the short to be investigated. | | |
| HR-SP-RAL-NCR-97 | Minor | | PFM | SFIL COLD STOP insert came out of Housing | 20-Dec-04 | Refit Insert | | |
| HR-SP-RAL-NCR-98 | Minor | | PFM | LOCATION DIAMETER TO SMALL | 20-Dec-04 | Open bores out to 25.00mm | | |
| HR-SP-RAL-NCR-99 | Minor | | PFM | Bores on the photometer harness connector plate need re-machining | 22-Dec-04 | TBD Allocated to Alan Pearce | | |
| HR-SP-RAL-NCR-100 | Minor | BDA | PFM | Damage to PFM SSW BDA J06 and PFM F14 P06 | 25-Jan-05 | For PFM-I test campaign – Temporary fix as per Figure 4 | | |
| HR-SP-UCF-NCR-1 | Minor | FPU 300mk parts Cooler Spec b | CQM | Cooler to Spectrometer Bus-Bar incorrect | 08-Aug-03 | See NCR Closed at NCR MRB Number SPIRE-RAL-MoM-001863; Attempt to reform second Bus Bar supplied for correct functionality for CQM if OK reform CQM Bus-Bar | | 14-Nov-03 |

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|-------------------------|--------------|---|--------------|--|-----------------------|--|-------------------|-------------------------------|
| HR-SP-UCF- NCR- 2 | Major | SCAL | PFM | Prime & redundant connectors soldering not to ESA standard | 20-Aug-04 | Rework of the connectors by an ESA Qualified operator, a Corrected at Cardiff and Photo's inspected at RAL SCAL Can be accepted. | | 04-Nov-04 |
| MSSL-NCR- 1 | Major | Structure Photometer c | CQM | Baffel panel damaged | 13-Aug-02 | implement recovery procedure once it has been appr ITEM Scrapped due to other damage NCR closed | | 17-Apr-03 |

END OF LIST