

**HERSCHEL
FLIGHT OPERATIONS PLAN**

**VOLUME 4
COP Related Nominal Flight Control Procedures**

Payload FCP's

SPIRE
H_COP_SPI_SCAC to H_COP_SPI_SPSH

PT-HMOC-OPS-FOP-6001-OPS-OAH

Issue 3.1

05/09/11



DOCUMENT APPROVAL

The Approval Page for all Volumes of the FOP can be found in Volume 1.



DISTRIBUTION LIST

The Distribution List for all Volumes of the FOP can be found in Volume 1.

CHANGE SUMMARY

Date	FOP Issue	Version	Modification Description	Author	SPR Ref
27/04/2009	2.3	1	Created	mvoegele-hp	
06/05/2009	2.4	2	Updated change history for Issue 2.4	mvoegele-hp	
08/10/2009	2.5	3	Updated change history for Issue 2.5	dbleakle-hp	
13/10/2009		4	corrected typo in title	mvoegele-hp	
13/04/2010	3.0	5	Updated change control history for issue 3.0	mvoegele-hp	
05/09/2011	3.1	6	Updated change control history for issue 3.1	mvoegele-hp	

CHANGE RECORD SHEET

Change No.	Type of Change	Date of Issue	Section Affected	
1	1.0	06/08/08	All	
			Updated:	
			Added:	H_COP_PAC_A001, H_COP_PAC_A002, H_COP_PAC_G001, H_COP_PAC_G002, H_COP_PAC_G003, H_COP_PAC_X001, H_COP_PAC_X002, H_COP_PAC_X003
			Deleted:	
2	2.0	02/02/09	All – Complete re-print for Issue 2.0	
			Updated:	H_COP_PAC_A001, H_COP_PAC_A002, H_COP_PAC_G001, H_COP_PAC_G002, H_COP_PAC_G003, H_COP_PAC_X001, H_COP_PAC_X002, H_COP_PAC_X003
			Added:	H_COP_HIF_CFHR, H_COP_HIF_CFWB, H_COP_HIF_NCRT, H_COP_HIF_NFF1, H_COP_HIF_NFF2, H_COP_HIF_NFF3, H_COP_HIF_NFF4, H_COP_HIF_NFF5, H_COP_HIF_NFF6, H_COP_HIF_NFF7, H_COP_HIF_NFF8, H_COP_HIF_NFL1, H_COP_HIF_NFL2, H_COP_HIF_NFL3, H_COP_HIF_NFL4, H_COP_HIF_NFL5, H_COP_HIF_NFL6, H_COP_HIF_NFL7, H_COP_HIF_NFL8, H_COP_HIF_NFL9, H_COP_HIF_NFLA, H_COP_HIF_NFLB, H_COP_HIF_NFLC, H_COP_HIF_NFLD, H_COP_HIF_NFLE, H_COP_HIF_NIF1, H_COP_HIF_NIF2, H_COP_HIF_NIF3, H_COP_HIF_NIF4, H_COP_HIF_NIF5, H_COP_HIF_NIF6, H_COP_HIF_NIF7, H_COP_HIF_RCRT, H_COP_HIF_RFL1, H_COP_HIF_RFL2, H_COP_HIF_RFL3, H_COP_HIF_RFL4, H_COP_HIF_RFL5, H_COP_HIF_RFL6, H_COP_HIF_RFL7, H_COP_HIF_RFL8, H_COP_HIF_RFL9, H_COP_HIF_RFLA, H_COP_HIF_RFLB, H_COP_HIF_RFLC, H_COP_HIF_RFLD, H_COP_HIF_RFLE, H_COP_PAC_A003, H_COP_PAC_C101, H_COP_PAC_C102, H_COP_PAC_C103, H_COP_PAC_C201, H_COP_PAC_C202, H_COP_PAC_C203, H_COP_PAC_C204, H_COP_PAC_CX01, H_COP_PAC_CX02, H_COP_PAC_CX03, H_COP_PAC_CX04, H_COP_PAC_CX05, H_COP_PAC_D000, H_COP_PAC_D001, H_COP_PAC_D002, H_COP_PAC_D003, H_COP_PAC_D100, H_COP_PAC_D101, H_COP_PAC_D102, H_COP_PAC_D103, H_COP_PAC_D200, H_COP_PAC_D201, H_COP_PAC_D202, H_COP_PAC_D203, H_COP_PAC_D204, H_COP_PAC_D300, H_COP_PAC_D301, H_COP_PAC_D302, H_COP_PAC_D303, H_COP_PAC_D304, H_COP_PAC_D305, H_COP_PAC_D306, H_COP_PAC_D307, H_COP_PAC_F000,

			<p>H_COP_PAC_F001, H_COP_PAC_F002, H_COP_PAC_F003, H_COP_PAC_F100, H_COP_PAC_F101, H_COP_PAC_F102, H_COP_PAC_F103, H_COP_PAC_F104, H_COP_PAC_FDIR, H_COP_PAC_G000, H_COP_PAC_G101, H_COP_PAC_G201, H_COP_PAC_G202, H_COP_PAC_G203, H_COP_PAC_G204, H_COP_PAC_GX01, H_COP_PAC_GX02, H_COP_PAC_GX03, H_COP_PAC_GX04, H_COP_PAC_GX07, H_COP_PAC_GX08, H_COP_PAC_GX09, H_COP_PAC_GX10, H_COP_PAC_GX11, H_COP_PAC_L001, H_COP_PAC_LLOP, H_COP_PAC_SFTC, H_COP_PAC_SX01, H_COP_PAC_X004, H_COP_PAC_X005, H_COP_PAC_X006, H_COP_PAC_X007, H_COP_PAC_X008, H_COP_PAC_X009, H_COP_PAC_X010, H_COP_PAC_X011, H_COP_PAC_X012, H_COP_SPI_BS03, H_COP_SPI_BS06, H_COP_SPI_BS5A, H_COP_SPI_BS5B, H_COP_SPI_BSMF, H_COP_SPI_BSMI, H_COP_SPI_BSSC, H_COP_SPI_DCPN, H_COP_SPI_DCSC, H_COP_SPI_DCSN, H_COP_SPI_DPIC, H_COP_SPI_DPNC, H_COP_SPI_DPPS, H_COP_SPI_DRCN, H_COP_SPI_DSIC, H_COP_SPI_DSPS, H_COP_SPI_MCSC, H_COP_SPI_MCUF, H_COP_SPI_MCUN, H_COP_SPI_PCAC, H_COP_SPI_PHOF, H_COP_SPI_PHVT, H_COP_SPI_REDY, H_COP_SPI_SC2P, H_COP_SPI_SC4P, H_COP_SPI_SCAC, H_COP_SPI_SCAT, H_COP_SPI_SCDT, H_COP_SPI_SCSC, H_COP_SPI_SMCP, H_COP_SPI_SMCS, H_COP_SPI_SMEP, H_COP_SPI_SMER, H_COP_SPI_SMFP, H_COP_SPI_SMFR, H_COP_SPI_SMIP, H_COP_SPI_SMIR, H_COP_SPI_SMLP, H_COP_SPI_SMLR, H_COP_SPI_SMOF, H_COP_SPI_SMOL, H_COP_SPI_SMOS, H_COP_SPI_SMPP, H_COP_SPI_SMPR, H_COP_SPI_SOHC, H_COP_SPI_SPNO, H_COP_SPI_SPOF, H_COP_SPI_SPVT</p>
			Deleted:
3	2.1	06/03/09	<p>All – Complete re-print for Issue 2.1. Payload FCP's divided into 4 books. New book added SPIRE FCP's</p>
			<p>Updated: H_COP_SPI_REDY, H_COP_SPI_SC2P, H_COP_SPI_SC4P</p>
			<p>Added: H_COP_SPI_CFT1, H_COP_SPI_CFT2, H_COP_SPI_CFT3, H_COP_SPI_CFT4, H_COP_SPI_CFT5, H_COP_SPI_CFT6, H_COP_SPI_CFT7, H_COP_SPI_MREC, H_COP_SPI_NSON, H_COP_SPI_RSON, H_COP_SPI_SC2R, H_COP_SPI_SC4R, H_COP_SPI_SMLV, H_COP_SPI_SPPD, H_COP_SPI_SWON</p>
			Deleted:

4	2.2	26/03/09	Front Page, Change Summary, Change Record Sheet and List of Procedures replaced.	
			Updated:	H_COP_SPI_BS03, H_COP_SPI_BS06, H_COP_SPI_BS5A, H_COP_SPI_BS5B, H_COP_SPI_BSSC, H_COP_SPI_DCPN, H_COP_SPI_DCSC, H_COP_SPI_DCSN, H_COP_SPI_DPIC, H_COP_SPI_DPNC, H_COP_SPI_DRCN, H_COP_SPI_DSIC, H_COP_SPI_MCSC, H_COP_SPI_PCAC, H_COP_SPI_PHVT, H_COP_SPI_SC2P, H_COP_SPI_SC2R, H_COP_SPI_SC4P, H_COP_SPI_SC4R, H_COP_SPI_SCAC, H_COP_SPI_SCAT, H_COP_SPI_SCDT, H_COP_SPI_SCSC, H_COP_SPI_SMCP, H_COP_SPI_SMCS, H_COP_SPI_SMEP, H_COP_SPI_SMER, H_COP_SPI_SMFP, H_COP_SPI_SMFR, H_COP_SPI_SMLP, H_COP_SPI_SMLR, H_COP_SPI_SMOF, H_COP_SPI_SMOL, H_COP_SPI_SMOS, H_COP_SPI_SMPP, H_COP_SPI_SMPR, H_COP_SPI_SOHC, H_COP_SPI_SPNO, H_COP_SPI_SPOF, H_COP_SPI_SPVT
			Added:	H_COP_SPI_DRCR
			Deleted:	
5	2.3	23/04/09	All – New Book added. Vol4 Payload SPIRE FCPs divided into 4 books as follows: H_COP_SPI_APDS to H_COP_SPI_MSPN H_COP_SPI_NSON to H_COP_SPI_SC4R H_COP_SPI_SCAC to H_COP_SPI_SPSH H_COP_SPI_SPU1 to H_COP_SPI_SWON	
			Updated:	H_COP_SPI_SCAC, H_COP_SPI_SCAT, H_COP_SPI_SCDT, H_COP_SPI_SCSC, H_COP_SPI_SMCS, H_COP_SPI_SMLP, H_COP_SPI_SMOL, H_COP_SPI_SMOS, H_COP_SPI_SOHC, H_COP_SPI_SPOF
			Added:	H_COP_SPI_SCUF, H_COP_SPI_SETF, H_COP_SPI_SLW1, H_COP_SPI_SLW2, H_COP_SPI_SLW8, H_COP_SPI_SLWC, H_COP_SPI_SLWL, H_COP_SPI_SLWN, H_COP_SPI_SLWV, H_COP_SPI_SMCR, H_COP_SPI_SPDG, H_COP_SPI_SPDL, H_COP_SPI_SPPH, H_COP_SPI_SPSH,
			Deleted:	
6	2.4	06/05/09	Front Page, Change Summary, Change Record Sheet and List of Procedures replaced.	
			Updated:	H_COP_SPI_SCAC, H_COP_SPI_SCAT, H_COP_SPI_SCDT, H_COP_SPI_SCSC, H_COP_SPI_SCUF, H_COP_SPI_SETF, H_COP_SPI_SLW1, H_COP_SPI_SLW2, H_COP_SPI_SLW8, H_COP_SPI_SLWC, H_COP_SPI_SLWL, H_COP_SPI_SLWN, H_COP_SPI_SLWV, H_COP_SPI_SMCS, H_COP_SPI_SMFR, H_COP_SPI_SMOL, H_COP_SPI_SMOS, H_COP_SPI_SPDG, H_COP_SPI_SPOF, H_COP_SPI_SPSH
			Added:	
			Deleted:	






































7	2.5	07/10/09	Front Page, Change Summary, Change Record Sheet and List of Procedures replaced.	
			Updated:	H_COP_SPI_SLWN
			Added:	H_COP_SPI_SETB
			Deleted:	
8	3.0	13/04/10	Complete re-print	
			Updated:	
			Added:	
			Deleted:	
9	3.1	05/09/11	Front Page, Change Summary, Change Record Sheet and List of Procedures replaced.	
			Updated:	
			Added:	H_COP_SPI_SMLN
			Deleted:	



Introduction

Chapter 3 Payload Flight Control Procedures




3.6 SPIRE Flight Control Procedures

	H_COP_SPI_SCAC	Mode_SCALFunc01 SCAL Characterisation Test	2	05/05/2009
	H_COP_SPI_SCAT	Mode_ScuFunc06 SCU AC Thermometry Check	2	05/05/2009
	H_COP_SPI_SCDT	Mode_ScuFunc03 SCU DC Thermometry Check	2	05/05/2009
	H_COP_SPI_SCSC	Mode_ScuFunc02 SCU Nominal Sci Contents	2	05/05/2009
	H_COP_SPI_SCUF	SPIRE_SCU_OFF Switch OFF SCU Thermometry	2	05/05/2009
	H_COP_SPI_SETB	SPIRE_CP_FUNC_NHK Set Basic HK rate pre Funct Tests	1	06/06/2009
	H_COP_SPI_SETF	SPIRE_CP_FUNC_NHK Set Nominal HK rate pre Funct Tests	3	05/05/2009
	H_COP_SPI_SLW1	SPIRE-CP-FUNC-13-SLW160 Dark Curves	2	05/05/2009
	H_COP_SPI_SLW2	SPIRE-CP-FUNC-13-SLW240 Dark Curves	2	05/05/2009
	H_COP_SPI_SLW8	SPIRE-CP-FUNC-13-SLW80 Dark Load Curves	2	05/05/2009
	H_COP_SPI_SLWC	SPIRE-CP-FUNC-DCU-13-SLW SLW BDAs Integrity Check	2	05/05/2009
	H_COP_SPI_SLWL	SPIRE-CP-FUNC-DCU-14-SLW SLW BDAs noise check	2	05/05/2009
	H_COP_SPI_SLWN	Mode_DcuFunc11_SLW SLW BDA Switch ON check	3	06/06/2009
	H_COP_SPI_SLWV	SPIRE-CP-SLW-VSS SPEC SLW JFET Source Voltage Test	2	05/05/2009
	H_COP_SPI_SMCP	Mode_SMECFunc04b Open Loop Position Check	2	24/03/2009
	H_COP_SPI_SMCR	SMEC Scans Cryocover	1	21/04/2009
	H_COP_SPI_SMCS	Mode_SMECFunc07 Closed Loop Scan Check	4	05/05/2009
	H_COP_SPI_SMEP	Mode_SMECFunc03 SMEC Encoder Levels Check	2	24/03/2009
	H_COP_SPI_SMER	Mode_SMECFunc03 (RED) SMEC Encoder Levels Check	2	24/03/2009
	H_COP_SPI_SMFP	Mode_SMECFuncFFOffset Open Loop FeedForward Offset Test	2	24/03/2009
	H_COP_SPI_SMFR	Mode_SMECFuncFFOffset (RED) Open Loop FeedForward Test	2	05/05/2009
	H_COP_SPI_SMIP	SPIRE-CP-SMEC-INIT-P	2	28/01/2009
	H_COP_SPI_SMIR	SMEC_INIT	2	28/01/2009
	H_COP_SPI_SMLN	SpireEngSmeclLedLvdT Switch on SMEC LED and LVDT	2	16/07/2010
	H_COP_SPI_SMLP	Mode_SMECFunc01 Encoder and LVDT Check	2	21/04/2009
	H_COP_SPI_SMLR	Mode_SMECFunc01 (RED) Encoder and LVDT Check	2	24/03/2009
	H_COP_SPI_SMLV	SMEC LVDT Back-up Mode Test.	1	27/02/2009
	H_COP_SPI_SMOF	SMEC_OFF	3	23/03/2009
	H_COP_SPI_SMOL	Mode_SMECFunc02a SMEC Open Launch Latch	4	05/05/2009
	H_COP_SPI_SMOS	Mode_SMECFunc09 SMEC Open Loop Scan Check	4	05/05/2009
	H_COP_SPI_SMPP	Mode_SMECFunc04a SMEC Open Loop Positioning Test	2	24/03/2009
	H_COP_SPI_SMPR	Mode_SMECFunc04a (RED) SMEC Open Positioning Test	2	24/03/2009
	H_COP_SPI_SOHC	Mode_ScuFunc07 Sorption Heater Cooler Check	2	21/04/2009
	H_COP_SPI_SPDG	SPIRE-CP-START-SPEC-DATA	2	05/05/2009
	H_COP_SPI_SPDL	SPEC Dark Loads	1	21/04/2009
	H_COP_SPI_SPNO	Mode_ILT_PERF_DNA_S Spec BDA Noise Check	2	24/03/2009
	H_COP_SPI_SPOF	SDET_OFF Spec BDA Switch Off	4	05/05/2009



HERSCHEL FOP
VOLUME 4: Payload FCP's

Document No : PT-HMOC-OPS-FOP-6001-OPS-OAH
Issue/Rev. No : 3.1
Date : 05/09/11
Page : 3

	H_COP_SPI_SPPD	SPEC SCAL PID Tuning Tests	1	27/02/2009
	H_COP_SPI_SPPH	SPEC Phase Ups	1	21/04/2009
	H_COP_SPI_SPSH	SPIRE-CP-SPEC-PCAL-FLASH SPEC Flash	2	05/05/2009