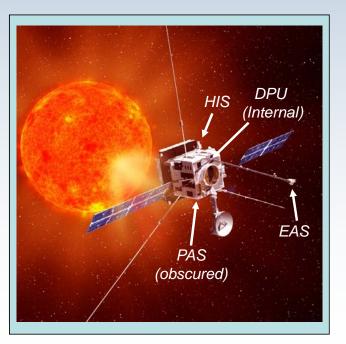


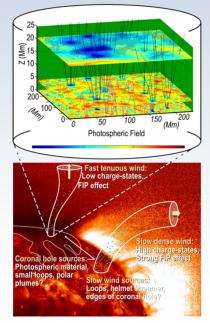




SWA Team Meeting, Online, 26th and 27th May 2020 Aspirations for SWA science planning in cruise phase

Gethyn Lewis







Aspirations for SWA science planning in cruise phase

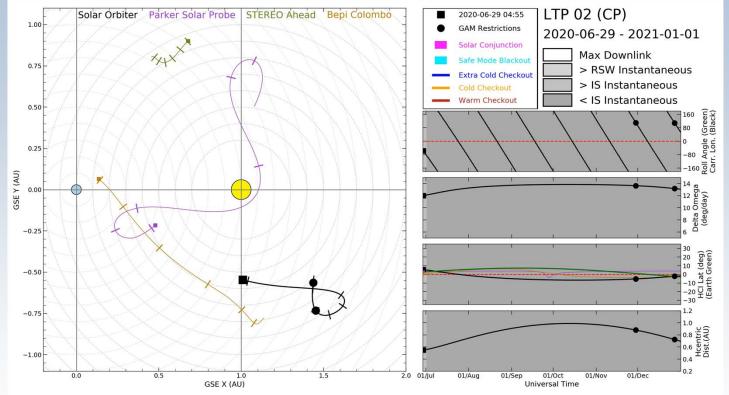
- Brief overview of:
 - Planning cycles;
 - Constraints on operations for SWA;
 - Timescales for inputs to the process;
- Much more detail is available on the SOC planning web pages and in the SOOP kitchen planning tool, for example at:
 - https://issues.cosmos.esa.int/solarorbiterwiki/pages/viewpage.action?pageId=34047195
 - https://solarorbiter.esac.esa.int/soopkitchen/#/planning/plan/LTP02_Jun2020-Dec2020/15



UCL

LTP02

- Venus GAM on 2020-12-27, GAM restriction period expected to run from 2020-11-29 to 2021-01-03;
- PSP perihelion on 27 Sep 2020;
- Large distance from Earth so data downlink capabilty is terrible and instruments will be in 'low-cadence mode for a good part of this period;

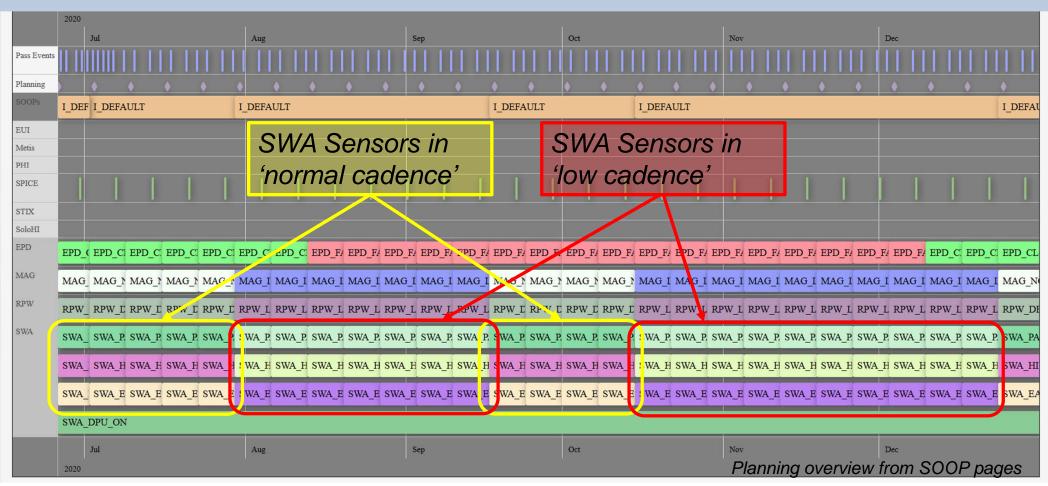


Movie from SOC pages



UCL

SWA Coarse view of observations in LTP2 (July-Dec 2020)



Pass Events Planning SOOPs	2020 VA Coarse vic POV 2020 Jul LLF	A_PAS_NORMAL11_BURST11 20-06-26T00:00:00Z (178)->2020-07-01T23:58 dule: PAS C OBS_IDS: SSWA_020A_IDF_116_7RRN_11A RST_MINS: 5 mins S_COMPRESSION: 7 WER: 4.8 W RM(SCI): 2025.51 b/s 125.156 Mibytes ST(SCI): 16.84 b/s 1.04 Mibytes Flow(HK): 77 b/s 4.758 Mibytes Flow(LL): 46 b/s 2.842 Mibytes RM: 125.156 Mibytes ST: 1.04 Mibytes Flow: 4.758 Mibytes Flow: 4.758 Mibytes How: 2.842 Mibytes A_TAV: 133.796 Mibytes 22.302 Mibytes/Day	SWA_PAS_NORMAL7_BURST7 2020-08-12T23:58:50Z (225)->2020-08-19T23:58:50Z Module: PAS SOC OBS_IDS: SSWA_020A_IDF_112_TM8L_113 BURST_MINS: 5 mins PAS_COMPRESSION: 7 POWER: 4.6 W NORM(SCI): 1291.07 b/s 93.083 Mibytes BRST(SCI): 10.72 b/s 0.773 Mibytes HKFlow(HK): 77 b/s 5.552 Mibytes LLFlow(LL): 46 b/s 3.316 Mibytes BRST: 0.773 Mibytes HKFlow: 5.552 Mibytes LLFlow: 3.316 Mibytes EFA	
EUI Metis PHI SPICE		SWA Sensors in 'normal cadence'	SWA Sensors in 'low cadence'	
STIX				
SoloHI EPD	EPD (EPD CI EPD C. EPD CI EPD (CI EPD CI FT CI EPD F4 EPD F4 EPD F4 EPD F4	EPD_F#	FA EPD FA EPD FA EPD FA EPD C EPD C EPD CL
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	SWA_DIO_ON			
	Jul 2020	Aug Sep	Oct Nov Planning	overview from SOOP pages

Pass Event Planning SOOPS	2020 Modu SOC BURS VA Coarse vie POW NORI 2020 Jul 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	HIS_NORMAL_BURST -07-08T23:58:50Z (190)->2020-0 ile: HIS OBS_IDS: SSWA_020A_IDF_111_ ST_MINS: 5 mins ER: 13.01 W M(SCI): 5271.63 b/s 380.073 Mil (SCI): 181.01 b/s 13.05 Mibytes ow(HK): 54 b/s 3.893 Mibytes M(LL): 4 b/s 0.288 Mibytes M: 380.073 Mibytes T3.05 Mibytes Sow: 3.893 Mibytes W: 0.288 Mibytes TAV: 397.305 Mibytes 56.758 M	:Q1i_112 ytes	Module: HIS SOC OBS_IDs: SSWA_ BURST_MINS: 5 mins POWER: 13.01 W NORM(SCI): 1933.26 fb BRST(SCI): 181.01 b/s HKFlow(HK): 54 b/s 32 LLFlow(LL): 4 b/s 0.2 NORM: 139.384 Mibytes HKFlow: 3.893 Mibytes LLFlow: 0.288 Mibytes	Z (232)->2020-08-26T23:58:50Z (239) 020A_IDF_112_cLSv_114 0/s 139.384 Mibytes s 13.05 Mibytes 3.893 Mibytes 288 Mibytes 28		
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	SWA_DPU_ON						
	Jul	Aug	Sep	Oct	Netile resting		
	2020				Planning ove	erview from SOOP pag	jes

est lace solar other SV Pass Events	VA Coarse viev	SWA_EAS_NOMINAL_BURST 2020-07-15T23:58:50Z (197)->2020-07-22T23:58:50Z (204) Module: EAS SOC OBS_IDs: SSWA_020A_IDF_111_zXft_113 BURST_MINS: 10 mins/day POWER: 10.24 W VDFS(SCI): 2629.29 b/s 189.566 Mibytes BRST(SCI): 910.22 b/s 65.625 Mibytes MOMS(SCI): 790.47 b/s 56.991 Mibytes HKFlow(HK): 168 b/s 12.112 Mibytes LLFlow(LL): 42.7 b/s 3.079 Mibytes VDFS: 189.566 Mibytes BRST: 65.625 Mibytes MOMS: 56.991 Mibytes	Module: EAS SOC OBS_IDs: SSWA_020A_IDF_112_CGop_113 BURST_MINS: 10 mins/day POWER: 10.24 W VDFS(SCI): 657.32 b/s 47.392 Mibytes BRST(SCI): 910.22 b/s 65.625 Mibytes MOMS(SCI): 790.47 b/s 56.991 Mibytes HKFlow(HK): 168 b/s 12.112 Mibytes LLFlow(LL): 42.7 b/s 3.079 Mibytes VDFS: 47.392 Mibytes BRST: 65.625 Mibytes	
Planning		HKFlow: 12.112 Mibytes LLFlow: 3.079 Mibytes	MOMS: 56.991 Mibytes HKFlow: 12.112 Mibytes LLFlow: 3.079 Mibytes	• • • • • •
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PHI		'normal cadence'	'low cadence'	
SPICE		normal cadence	iow caucifice	
STIX				
SoloHI				
EPD	EPD_(EPD_Cl EPD_C. EPD_C. EPD_C	CI EPD_C _ ZPD_CI EPD_F# EPD_F# EPD_F# EPD_F# EPD_F# EPD_F# EPD_F#	F# EPD F# EPD_F# EPD_F# EPD_F# EPD_F# EPD_F# EPD_F#	EPD_F/ EPD_F/ EPD_F/ EPD_C. EPD_C. EPD_CL
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RPW	RPW_ RPW_E RPW_E RPW_E RPW_	C RPW_L RPW_L RPW_L RPW_L RPW_L RPW_L RPW_L	L RF V E RPW_E RPW_E RPW_L RPW_L RPW_L RPW_L RPW_L	RPW_L RPW_L RPW_L RPW_L RPW_D
SWA	SWA_ SWA_P. SWA_P. SWA_P. SWA_	2 : WA_P_SWA_P_SWA_P_SWA_P_SWA_P_SWA_P_SWA	_P_SWA_P_SWA_P_SWA_P_SWA_P_SWA_P_SWA_P_SWA_P_SWA_P_	SWA_P. SWA_P. SWA_P. SWA_P. SWA_P. SWA_PA
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	SWA_DPU_ON			
	Jul 2020	Aug Sep		verview from SOOP pages



UCL

l Angle (Green) rr. Lon. (Black)

160 80

80

-160 20

8 0 1 21
elta Omeg
(deg/day)

Delta

-30

1.2

1.0

0.4 0 7

Hcentric Dist.(AU)

LTP03

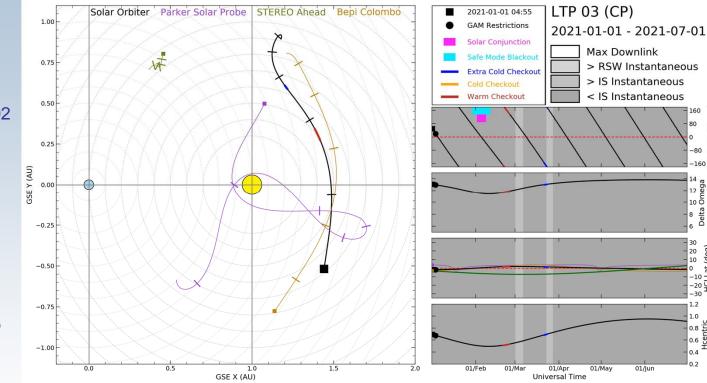
2021-01-01 to 2021-07-01

Superior conjunction from 2021-02-02 to 2021-02-08 There are No GAMs

2 RSCW: #2 2021-02-20 to 2021-02-25 Warm #3 2021-03-21 to 2021-03-24 Extra cold

IS modes: as in SOOP Kitchen plan (confirmed by ISWG of 31 Mar '20 to be adequate)

"The data return is going to be a bit bad, that's true, but there's some stuff you can do as long as the total data volume over the six months is about the same" – A. Walsh.



Movie from SOC pages





SWA Coarse view of observations in LTP3 (Jan-June 2021)

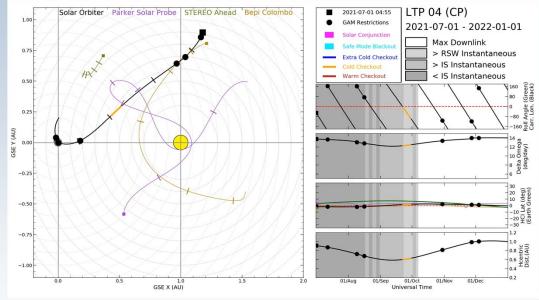
Plan: MLP_Cruise Baseline: 5 Ver	sion: 98 Prime: V	Observations: Nexus_v7.2.0		lence approx', wit	hs of low cadence follow th a few minutes of burst	-		
	2021 Jan	Feb	• We c	ould add more lo	w cadence time in order	to do more high		
Mission Events		con	• We c	cadence close to perihelion.We can tweak how many VDFs or PHA words HIS sends back.				
Other-Events	M		• Or if	 Or if PAS want to tweak their sampling to look into anything specif 				
Pass Events								
Instrument Restrictions and Coordination		RS_(RS					
SOOPs		VA Sabaara	cod	COOI	CIA/A Concerc			
EPD			D_C EPD_C EPD_C EPD_C		SWA Sensors			
MAG	MAG_MAG_MAG_MAG_MAG	w cadence	G MAG MAG M MAG	MAG_ MAG_ MAG_ M	'normal caden			
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	SWA_ SWA_F SWA_F SWA_F SW	A_I SWA_I SWA_I SWA_I SW	A_I SWA_I SWA_I SWA_I SWA_I	SWA_ESWA_ESWA_ESWA_ESV	VA_I SWA_I SWA_I SWA_I SWA_I SV	VA_I SWA_I SWA_I SWA_I SWA_		
SWA_DPU_ON								
	Jan 2021	Feb	Mar	Apr	Planning overview fr	om SOOP pages		



Planning

- Plans for LTP2 (July-Dec 2020) are fixed and we only have the flexibility to vary our operations in the weekly IOR's (refer to Chandra's presentation);
- There will be a 'Virtual' SOWG#16 in July where the final plan for LTP3 will be frozen.
- Thereafter the scheme is for planning to proceed with:
 - Science priority decisions at the SWT in ~Oct/~April;
 - Planning and agreement of the LTP at the SOWG's in January/July (so Jan 2021 for LTP4);
 - Enactment of the LTP for the following period July-Dec/Jan-June.
- There is great detail on mission level planing on the SOC pages, e.g.:

https://issues.cosmos.esa.int/solarorbiterwiki/pages/view page.action?pageId=34047195



Movie from SOC pages

- MSSL is PoC for SWA in this process, so if there are specific opportunities you wish to make use of, then ideally we need to know about them on these kind of timescales:
 - Examples might be the identification of a comet, special campaign/event with another space-/ground-based facility, etc.;
 - Flexibility to react declines at each stage, especially if the required action is not resource neutral!