cd nomad-gse
python sinbad-gse.py

TO STOP OBS
Click Send Async

IR TEMPERATURE 1 TC40 → Surge mode

TESTING AIR

MEASUREMENT LOG

0°C

Date/ Time	Channel	COP row(s)	TC(20) Start	TC(20) Stop	Description
14/3/15 13:26	UVIS	242	10	248	50ms integration. 5% ND filter + straylight 260nm. → Nothing Seen!
13:38	UVIS	254	10	256	500ms 10% ND filter → Low signal
13:45	UVIS	254	10	256	500ms No ND filter → Lots of straylight seen ? filter problem
~14:30	shrouds up to -5°C. Survival heaters				
15:04	"	"	10	254	QTH lamp, 5% ND filter → 17 x 2 rows Filter = GG395. → SINBAD error.
15:18	"	242	10	248	QTH 1% ND filter 50ms. → SINBAD error.
16:25	"	242			No light source on 1553 errors at end → SPW All good.
16:38	"	242			QTH lamp Filter = GG395 → SINBAD error
16:41	"	242	"	"	QTH lamp blocked then unblocked. → SINBAD SpW error when lamp unblocked
16:51					QTH lamp blocked → SINBAD no errors all 239 pkts received
16:59					QTH lamp.

WRONG: NO DIFFUSER

→ lots of tests...

MEASUREMENT LOG

14/3/13 (0°C)

Date/ Time	Channel	COP row(s)	TC(20) Start	TC(20) Stop	Description
ND2 = 0.1% transmission					
~17:50	UVIS	245	10	252	ND = 0.1% QTH lamp. Filter = GG395. Int = 110ms
17:59	"	254	10	256	" Int = 500ms
18:09	"	248	10	252	0.1% WG345 Int = 200
18:15	"	248			0-1% KV 537 Int = 200 ms
18:21	"	248			0-1% KV 520 Int 200 ms
18:25	"	"	"	"	0-1% KV 450
18:30					0.1% KV 418
18:36					0.1% KV 370.
18:42					0.1% narrow band 370
18:49					ND = 5%. nB 370

peak approx 12k same as 50ms.

WRONG: NO DIFFUSER

peak = 7000.

Second 255.

LNO Start = 20
LNO Preceding COP = 1
LNO Start Science = 620.

LNO Ref 1 = 0
Ref 2 = 0.

14-15/3/15 (0°C)

MEASUREMENT LOG

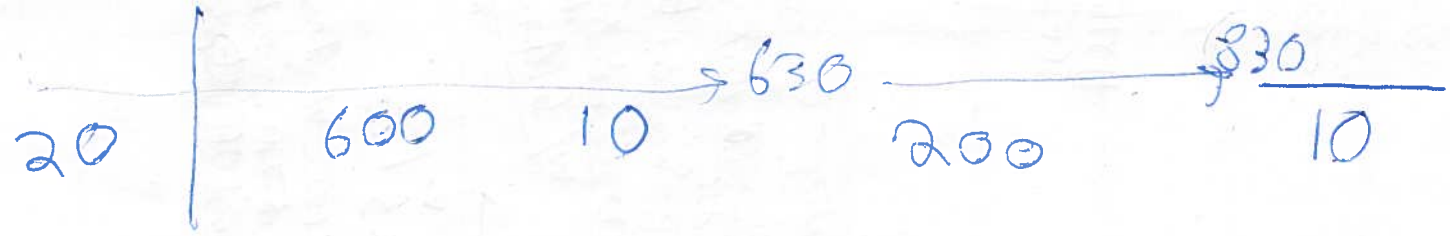
25 → 17
345.
200 s

Date/ Time	Channel	COP row(s)	TC(20) Start	TC(20) Stop	Description
18:54	UVIS	248			ND 5% NB 340
18:59	〃	〃			ND 50% NB 320
19:03	〃	〃			NO ND Filter NB 320
19:09	〃	〃			ND 0.1% NB 399
20:05	@LNO Science COP Table Patch				
21:02	SO	Fixed = 20 Preceding = 1 Scan 1 = 3379			Int time stepping Wtop = 80. 200 x 2ms. Stepped. Works
15/3/15 05:30	LNO	Gen = 195 Pre = 1 Science = 3504/3504	20	920.	Int time = 20ms. Stepping window BB. 16 steps x 16 lines · 300 seconds x 1 sec rhythm w/ Globar
05:55	LNO	〃	20	920.	〃 → CHECK NADIR? →
06:17		〃	〃	〃	GLOBAR. WORKS!
06:36	LNO	Gen = 195 Pre = 1 Science = 3504/3508	20	920	Int time = 20ms. Blackbody 150°C Window Stepping. 16 x 16. 1 sec rhythm. sub stepping Background = ON and OFF
06:52	SINBAD OFF. → 07:40				

WRONG.
NO DIFFUSER
NOTHING SEEN?

UNCLEAR!

WINDOW CENTRE ≃ 144 + 8 = 152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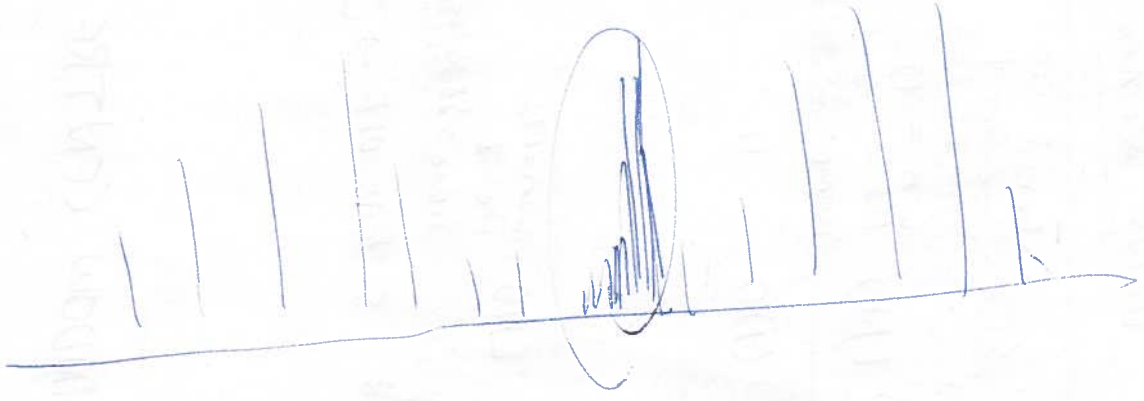
10
630
200
830
10



15/3/23 (0°) # MEASUREMENT LOG

Date/ Time	Channel	COP row(s)	TC(20) Start	TC(20) Stop	Description
07:41		Gen=175 Pre=1 Science=3952/3952	20	2720	CH_4 gas cell.
09:12	LNO	Gen=190 Pre=1 Science=3952	20	2720	" . 15s rhythm.
09:57.	LNO	Gen=160 Pre=1 Science=3908/3908	20	1720	AOTF_IX 4s rhythm binning=5. Windowtop=80.
11:12	SO	COP = 3379/3379 PREC = 1 Gen = 20	20	870	SO Dark Current Detector thermal saturation integration time SO_Intstepping_80-103
13:00	LNO	GEN= 201 PREC = 1 COP = 3538/3538	20	820	LNO thermal sat. p.28 of AER-00011 (PRC-DOC)
13:45 →14:12	LNO	GEN = 160 Prec = 1 COP = 3952/3952	20	1700	LNO Gas cell mini scan LNO_miniscan_CH_4_17830
14:15	LNO	GEN= 160 Prec = 1 COP = 3953/3953	20	1700	" CH_4 – 18340
16:29	LNO	GEN = 160 Prec = 1 COP = 3954/3954	20	1700	" " _CH_4_18850
17:02	LNO	GEN = 160 Prec = 1 COP = 3955/3955	20	1700	" _ CH_4 _19360
17:35	LNO	GEN = 160 Prec = 1 COP = 3956/3956	20	1700	" _ CH_4 - 19870
19:17	SO	GEN = 26 Prec = 1 COP = 3379	20	850	SO Thermal Saturation Tdet = 89 – 85 K. SO_Intstepping_104-127

wait

wait

1.5°

15/3/13 (0°C) # MEASUREMENT LOG

Date/ Time	Channel	COP row(s)	TC(20) Start	TC(20) Stop	Description
19:34	SO	GEN = 32 Pre = 1 COP = 3379	20	850	SO thermal Saturation Tdet = 83-85 K SO_Int stepping - 128 - 151
19:50	SO	GEN = 38 Pre = 1 COP = 3379	20	850	" Tdet = 83-85 K " - 152-175
20:06	SO	GEN = 20 Pre = 1 COP = 3379	20	850	" Tdet = - 80-103
21:00	LNO	Gen=172 Pre=1 COP=3904	20	1720	→Some tests w/covering blackbody 8 sec rhythm, 160ms IT. Window Top=56 (center) LNO_linearity_stepping
21:34	LNO	Gen=190 COP=3904	20	1720	Repeat w/ 15sec integration. Window Top=80 →works, but stopped early.
PATCH		Gen=190			
22:14	LNO	COP=3918	20	2420	15sec rhythm, WTop=80 No.of accum increased to 64 w/patching
16/3/13 00:30	LNO	COPge=201 COP=3538	20	820	Detector lines 8-31 16 x 100ms integration time stepping
00:45	LNO	COPge=202 COP=3538	20	820	iden lines 32-55
01:00	LNO	COPge=203 COP=3538	20	820	iden lines 56-79
01:15	LNO	COPge=204 COP=3538	20	820	iden lines 80-103
01:30	LNO	COPge=205 COP=3538	20	820	iden lines 104-127

15/3/15 0°C

MEASUREMENT LOG

Date/ Time	Channel	COP row(s)	TC(20) Start	TC(20) Stop	Description
02:20	LNO	COP gen = 206 COP = 3538	20	820	idem lines 128-151
02:35	LNO	COP gen = 207 COP = 3538	20	820	idem lines 152-175
02:49	LNO	COP gen = 208 COP = 3538	20	820	idem lines 176-199
03:03	LNO	COP gen = 209 COP = 3538	20	820	idem lines 200-223
03:18	LNO	COP gen = 210 COP = 3538	20	820	idem lines 224-247
04:20	LNO	GEN = 190 COP = 3919	20	2400	LNO_order_stepping_15_320 BB T_{BB} = 150°C
05:01	LNO	GEN = 190 COP = 3920	20	2420	LNO_order_stepping_15-640 DATA NOT CORRECT
05:17	LNO	GEN = 188 COP = 3544	20	820	LNO_stepping_global GLOBAR BLOCKED 1ST HALF OF MEASUREMENT
06:25	LND	GEN = 160 COP = 3911	20	1120	LNO_order_stepping_4-160 gas cell : CH_4
06:44	LNO	GEN = 160 COP = 3911	20	1120	idem gas cell : CO
07:07	LNO	GEN = 160 COP = 3957	20	1720	LNO_minscan_CH4_20380
17/3/15 01:44	LNO	GEN = 190 COP = 3919	20	2420	LNO_order_stepping_15_320 T_{BB} = 120°C → TO COMPLIMENT

PAGE 6

UVLS 16-17/3/15

IR CALIBRATION 2

17/3/15 10°C MEASUREMENT LOG

Date/ Time	Channel	COP row(s)	TC(20) Start	TC(20) Stop	Description
17/3/15 02:00	SHROUDS INCREASED TO +5°C → RUN GAS CELL MINISCANS TO WARM UP NOMAD.				
01:44	LNO	GEN=190 SCI COP=3919	20	2420	LNO_order_stepping_15-320 T_{BB}=120°C BB linearity BAD
02:27 wait	LNO	"	"	"	T_{BB}=150°C. BB linearity BAD.
03:37	LNO	GEN=160 SCI COP=3957	20	1720	C_2H_2 miniscan 1 w/ nitrogen and LNO_miniscan_C_2H_2-20380 C_2H_2 cell in position.
04:11 wait	LNO	GEN=160 SCI COP=3958	20	1720	LNO_miniscan_C_2H_2-20890
05:24	LNO	GEN=160 SCI COP=3959	20	1720	LNO miniscan - C_2H_2 - 21400 NO ABSORPTIONS SEEN?
05:56	LNO	GEN=160 SCIENCE=3960	20	1720	LNO_miniscan - C_2H_2 - 21910 NO ABSORPTIONS SEEN?
06:49	LNO	GEN=160 SCI=3960	20	1720	LNO_miniscan_CO_2_21910 CO_2 Cell in Position
07:21	LNO	GEN=160 SCI=3961	20	1720	LNO miniscan - CO_2_22420 CO_2 Cell in Position,
17/3/15 ~21:10	LNO	GEN=160 SCI=3960	20	1720	LNO_miniscan_CH_4_17830 CH4 CELL IN POSITION. REPEAT TO CHECK IF OLDER DATA WAS CORRECT
21:17	LNO	GEN=160 SCI=3962	20	1720	LNO_miniscan-CO_2-22930 N_2 Purge ON. GAS CELL IN POSITION + GLOBAR ON.

DATA WAS CORRECT / PROCESSING ERROR??

17–18/3/13 (16°C)

MEASUREMENT LOG

Date/ Time	Channel	COP row(s)	TC(20) Start	TC(20) Stop	Description
21:48 wait	LNO	GEN=160 SCI=3963	20	1720	LNB_miniscan_CO2_23440.
23:02	LNO	GEN=160 SCI=3964	20	1720	LNO_miniscan_CO2_23960.
23:34	LNO	GEN=16 SCI=3965	20	1720	LNO_miniscan_CO2_24460.
18/3/13. 00:06 wait.	LNO	GEN=160 COPSCI=3911	20	1120	LNO_order_stepping_4_160 CO_2 cell in position w/ N_2 purge.
01:07	LNO	GEN=190 SCIENCE=3919	20	2420	LNO order_stepping 15_320 Temp=150. COVER ON BB RUN STOPPED
01:27	LNO	GEN=190 SCIENCE=3918	20	2420	LNO_order_stepping 15_320 Temp=150
02:12	LNO	GEN=201 SCI=3538	20	820	LNO_Intstepping_8-31
02:25 wait	LNO	GEN=202 SCI=3538	20	820.	LNO_Intstepping_32-55.
03:30	LNO	GEN=190 SCI=3919	20	2420	LNO_order_stepping 15-320 Temp=130
04:05	SINBAD GSE ~~CRASHED~~ FROZE → FILE STILL GENERATED BUT SCREEN UNRESPONSIVE. FORCE QUITTED → RELAUNCHE TWICE (NOMAD LOADED FROM EEPROM)				
04:19 Wait	LNO	GEN=190 SCI=3919	20	2420	LNO order_stepping_15-320 Temp=110°C

SCREENSHOT OF ERROR SAVED.

18/3/15 10°C

MEASUREMENT LOG

Date/ Time	Channel	COP row(s)	TC(20) Start	TC(20) Stop	Description
05:42	LNO	GEN=160 SCI = 3911	20	1120	LNO_order_stepping 4_160 gas cell #3 : C_2H_2
06:02	LNO	GEN= 160 SCI = 3911	20	1120	LNO_order_stepping 4_160 gas cell #5: CH_4
06:21	LNO	GEN= 160 SCI =3911	20	1120	LNO_order_stepping 4 – 160 gas cell # 4 ! CO
06:43 wait	LNO	GEN = 108 SCI = 3544	20	820	LNO_interstepping_global gas cell #1: N_2
07:35	LNO	GEN = 203 SCI = 3538	20	820	LNO_interstepping_56-79
07:49	LNO	GEN = 204 SCI = 3538	20	820	LNO_interstepping_80-103
08:03	LNO	GEN=205 SCI = 3538	20	820	LNO_interstepping_104-127
08:17 wait	LNO	GEN = 206 SCI = 3538	20	820	LNO_interstepping_128-151
09:19	LNO	GEN = 207 SCI = 3538	20	820	LNO_interstepping_152-175
09:34	LNO	GEN = 208 SCI = 3538	20	820	LNO_interstepping_176-199
09:48	LNO	GEN = 209 SCI = 3538	20	820	LNO_interstepping_200-223

→ 9R.

18/3/13 (10°C)

MEASUREMENT LOG

Date/ Time	Channel	COP row(s)	TC(20) Start	TC(20) Stop	Description
10:02	LNO	GEN = 210 SCI = 3538	20	820	LNO_interstepping_224-247
10:17 wait	SO	GEN = 20 SCI = 3379	20	850	SO_interstepping_80-103
11:24	SO	GEN = 26 SCI = 3379	20	850	SO_interstepping_104-127
11:39	SO	GEN = 32 COPSCI = 3379	20	850	SO_Interstepping_128-151
11:54	SO	GEN = 38 SCI = 3379	20	850	" — 152-175
12:14 wait	LNO	GEN = 160 SCI = 3969	20	1700	LNO_miniscan_CO_26500.
13:49	LNO	GEN = 160 SCI = 3970	20	1700	LNO_miniscan_CO_27010
14:18	LNO	GEN = 160 SCI = 3971	20	1700	LNO_miniscan_CO_27520
14:51 wait	LNO	GEN = 160 SCI = 3972	20	1700	LNO_miniscan_CO_28030 Globar
16:37	LNO	GEN = 205 SCI = 3538	20	820	LNO_intstepping_104-127 ⚠ no bb
17:29	LNO	GEN = 201 SCI = 3538	20	820	" — 8-31

10°C

18/3/13.

MEASUREMENT LOG

Date/ Time	Channel	COP row(s)	TC(20) Start	TC(20) Stop	Description
					32-55 ref=60
					56 - 79
18:33 wait	LNO	GEN=190 SCI=3919	20	2480.	LNO_order_stepping_1s_320_ref. STOPPED AFTER 1ST DATA RCVD.
20:55	LNO	GEN=180 SCI=39199	20	2480	LNO_order_stepping_1s_320_ref_Wtop1 Ref=60, Window Top=0, T_{BB}=150°C STOPPED EARLY
20:15	LNO	GEN=194 SCI=3919	20	2480	" -1s_320_ref Wtop2 Ref=60, Window Top=112. T_{BB}=150°C STOPPED EARLY. HOPPING.
wait	PATCH → INT TIME CHANGED TO 400MS FOR SOME ROWS.				
22:47	LNO	GEN=198 SCI=424	20	2480	LNO longduration Long Obs, Order=173, T_{BB}=150°C.
23:31 wait	LNO	GEN=190 SCI=424	20	2480	LNO_longduration Long Obs, Order=173, T_{BB}=130°C
					patches
CHANGED TO 45°C CALIBRATION					
		TEMPERATURE + TEST OF NEW SOFTWARE			


start = 20
680
2480
20
600
60
1800
0
0
2460.

IR TEMPERATURE 3

ALWAY CHECK THAT FLIP MIRROR IN NADIR POSITION! CHECK NOMAD HK1 PARAMETER NADIR_NOMINAL=ACTIVE

MEASUREMENT LOG

19/3/2015 (-15°C)

~~Date/ Time~~	Channel	COP row(s)	TC(20) Start	TC(20) Stop	Description
ds	"Simsad Script Braun"				
		Patch_RAM_Wait_states_rd_only.bat			
		click droit → 'execute'			⇒ RUN THIS SCRIPT BEFORE EACH OBS. ⇒ NOT JUST ONCE !
15:31	LNO	GEN = 201 COP = 3538	20	840	LNO_interstepping_8-31
15:50	LNO	GEN = 202 COP = 3538	20	840	LNO - interstepping - 32-55
16:05	LNO	GEN = 203 COP = 3538	20	840	LNO - interstepping 56-79
16:20	LNO	GEN = 204 COP = 353A	20	840	LNO. interstepping 80-103
16:36	LNO	GEN 205 COP: 3538	20	840	LNO - interstepping 104-127
16:27	LNO	GEN: 206 COP 3538	20	840	LNO - interstepping 128-151
16:51	LNO	GEN: 207 COP: 3538	20	840	LNO - interstepping 152-175
17:09	LNO	GEN: 208 COP: 3538	20	840	LNO - interstepping 176-199
17:27	LNO	GEN: 209 COP: 3538	20	840	LNO - interstepping 200-223

19-20/3/15 (-15°C)

MEASUREMENT LOG

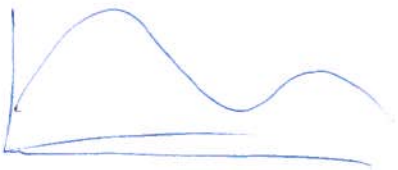
Date/ Time	Channel	COP row(s)	TC(20) Start	TC(20) Stop	Description
19:44	LNO	GEN = 210 COP = 3538	20	840	LNO_Intstepping_224-247
wait 21:10	SO ~~LNO~~	GEN = 20 SCI = 3379	20	870	SO_intstepping_80-103.
21:25	SO	GEN = 26 SCI = 3379	20	870	SO_Int stepping_104-127
21:40	SO	GEN = 32 SCI = 3379	20	870	" _128-151
21:58 wait	SO	GEN = 38 SCI = 3379	20	870	_152-175
23:05	LNO	GEN = 160 SCI = 3958	20	1740	N_2 Cell + purge. LNO_miniscan_N_2-20890
23:36 20/3/15	LNO	GEN= 160 SCI = 3959	20	1740	N_2 Cell + Purge LNO_miniscan_N_2-21400
00:09 wait	LNO	GEN=160. SCI=3960.	20	1740	" LNO_miniscan_N_2-21910
01:28 end.	LNO	GEN=160 SCI=3961	20	1740	" LNO_miniscan_N_2-22420
CALIBRATION STOPPED 01:57 → COOL DOWN TO -20°C.					
20/3/'15 8:19	SO+UV LNO+UV	FT CHECKOUT SCRIPT	20		FUNCTIONAL CHECK @-20°C

MEASUREMENT LOG

20/3/2015 (-15°C)

Date/ Time	Channel	COP row(s)	TC(20) Start	TC(20) Stop	Description
09:15	LNO	GEN = 160 SCI = 3952	20	1740	CH_4 cell LNO_mission_CH_4_1783
09.43	LNO	GEN = 160 SCI = 3953	20	1740	CH_4 cell _CH_4_18340
10:14 — wait.	LNO	GEN = 160 SCI = 3954	20	1740	CH_4 cell _CH_4_18850
12:00	LNO	GEN = 160 SCI = 3955	20	1740	CH_4 cell _CH_4_19360
12:33	LNO	GEN = 160 SCI = 3956	20	1740	C_2H_2 cell _C_2H_2_19870
17:03 — wait.	LNO	GEN = 160 SCI = 3957	20	1740	C_2H_2 cell _C_2H_2_20380
15:01	LNO	GEN = 160 SCI = 3969	20	1740	CO cell BAD _CO_26500 GLOBAR FAILED.
					BAD at the end : temp current down
15:46	LNO	GEN = 130 SCI = 3919	20	2400	Temp = 150 °C LNO_order_stepping_15_320
16:28 — wait	LNO	4	20	2400	Temp = 130 °C _ _ _15_320
18:39	LNO	GEN = 160 SCI = 3970	20	1740	CO cell _CO_27010

88K 15:13
83K 15:22:30
195K 15:47:22
83K 16:27:38
107.2 K 16:28:57
86.7 17:10:26
17:
248.37K 18:40
87.3K 19:08



Start → Patch → TC

Re-open datafile.

-15°C

20-21/3/15

MEASUREMENT LOG

Date/ Time	Channel	COP row(s)	TC(20) Start	TC(20) Stop	Description
19:09	LNO	GEN=160 SCI=3971	20	1740	CO cell LNO_..._CO_27520
19:39 ~~wait~~	LNO	GEN=160 SCI=3969	20	1740	CO cell _ 26500
21:40	LNO	GEN=160 SCI=3911	20	1120	CH_4 cell LNO_order_stepping_4_160.
22:01	LNO	GEN=160 SCI=3911	20	1120	CO cell LNO_order_stepping_4_160.
22:25	LNO	GEN=160 SCI=3911	20	1120	C_2H_2 cell LNO_order_stepping_4_160
22:46	LNO	GEN=160 SCI=3911	20	1120	CO_2 cell LNO_order_stepping_4_160.
23:13 ~~wait.~~	LNO	GEN=108 SCI=3544	20	820	LNO_int_stepping_global
23:35.	GSE	CRASHED → RESTARTED x2 SFS=1.4.0.			
21/3/15 01:00	LNO	GEN=190 SCI=3913	20	2420	LNO_order_stepping_15_320_ref T_{BB} = 110°C.
01:45	LNO	GEN=160 SCI=3963	20	1720	BB CO_2 minorian in air T_{BB}=150°C. LNO_minorian_CO_2_23440.
02:16. ~~wait~~	LNO	GEN=191 SCI=416	20	1280	BB 150C CO_2 order 165 in air LNO_absorption_lines_order165.

97k. 19:10

60144 19:39

85k.

SNR too low

Line seen @ 2386 KHz in BB → order 165 → COP 446.

Start 120k @ 2:19

End 77.30k @ 02:39.

End 91.1k @ 2:15

RECORD TEMP!!

(86.1K@8:02)

(116.9@8:05)

21/3/13 (-150)

MEASUREMENT LOG

Date/ Time	Channel	COP row(s)	TC(20) Start	TC(20) Stop	Description
04:19	LNO	GEN = 160 SCI = 3963	20	1720	Global CO_2 minscan in air LNO minscan_CO_2-23440
04:51	LNO	GEN=191 SCI=416	20	1280	Global CO_2 order 165 in air LNO_absorption_lines_order165
07:21	LNO	GEN=190 SCI=424	20	2480	LNO long duration T_{BB}=150K (BB not in position until frame 5!)
08:05	LNO	GEN=190 SCI=424	20	2480	LNO_long_duration T_{BB}=150K same window Repeat of
~~Wait~~ 10:20	LNO	GEN=160 SCI=3961	20	1720	LNO_minscan_CO_2-22440
10:50	LNO	GEN=160 SCI=3962	20	1720	"_CO_2_22930
~~Wait~~ ~~Wait~~	LNO	GEN=160 SCI=3963	20	1720	" _CO_2-23440
13:23	LNO	GEN=160 SCI=3964	20	1720	"_CO_2-23950
13:53	LNO	GEN=160 SCI=3965	20	1720	_CO_2_24460
14:23	LNO	COP=108 GEN=3544	20	820	LNO_Interlepping_global
14:43	LNO	COP=108 SCI=3540			"_26x30ms

10:21 256.7K

106.8K 10:50

100.52K 11:20

91.5K 11:50

13:23 248.8K

102.4K.

14:24 107K

137K

Wait

Bad pixels due to laser illumination
line = 152, 153 col. 138_139, 137, 140, 138
↳ à répondre 150, 151

-15°C

21/3/15 - 22/3/15

MEASUREMENT LOG

Date/ Time	Channel	COP row(s)	TC(20) Start	TC(20) Stop	Description	
16:33	LNO	207 / 3538	2	840	LNO_Bulkstepping_[illegible] - 16×100ms	255K 16:34
16:50	LNO	//	//	//	//	116.52K 16:51
17:10 wait	LNO	COP = 180 / SCI = 3919	20	2420	LNO_order_stepping_15_320 _ref_WTop2 / T(BB) = 150°C	17:11 144K H:51 84K
19:19	LNO	GEN = 190 / SCI = 3920	20	2460	LNO_order_stepping_15_640 / T(BB) = 150°C	
19:59 wait	LNO	GEN: 180 / SCI = 3920	20	2460	LNO_orderStepping_15_640_WTop2 / TBB = 150°C	106K
22:21	LNO	COP GEN = 194 / SCI = 3913	20	2460	LNO_order_stepping_15_320 _ref_WTop2. / TBB = 150°C	94.1K @23:02
23.07 wait	LNO	GEN COP = 194 / SCI = 3920	20	2460	LNO_order_stepping_15_640_ref_WTop2. TBB = 150°C.	135.2K @23:07.
22/3/15 06:04 wait	LNO	GEN = 191 / SCI = 416	20	1280	Globar CO2 order 165 in air / LNO_absorption_lines_order165 / → Globar scanned 1mm/10secs from +25mm (right) → & up and down to -10mm (left). for 6 minutes then cool down. for 4 mins	
END OF LNO T3.						
22/3/15 UVIS						