

Inflight Log for Project: 08_0038 PI: David Neufeld

German Receiver for Astronomy at Terahertz frequencies

This Project was observed on 5 flights

1 2021-07-24_GR_F760

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| turn | 04:57 – 04:58 38340 | G29P96-0P02 raw-cli-commands | 38 kft |
| 04:57 | 38340 | Leg 5 started | |
| leg 5 | 04:59 – 06:00 38341 – 38359 | G29P96-0P02 raw-cli-commands | 38– 39 kft |
| 05:48 | 38357 | Altitude Difference during scan: 114.0 ft. Final altitude at end of scan 38142.0 ft | |
| 05:54 | 38359 | Altitude Difference during scan: 1035.0 ft. Final altitude at end of scan 39068.0 ft | |
| leg 6 | 06:06 – 06:47 38361 – 38373 | G45P07+0P13 raw-cli-commands | 39– 40 kft |
| 06:08 | 38363 | Altitude Difference during scan: 201.0 ft. Final altitude at end of scan 39267.0 ft | |
| 06:14 | 38364 | Altitude Difference during scan: 103.0 ft. Final altitude at end of scan 39403.0 ft | |
| 06:16 | 38365 | Altitude Difference during scan: 348.0 ft. Final altitude at end of scan 39858.0 ft | |
| turn | 08:10 – 08:10 38399 | I16060-5146 raw-cli-commands | 41 kft |
| turn | 10:17 – 10:17 38434 | NGC6334_I raw-cli-commands | 43 kft |

2 2021-07-27_GR_F762

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| leg 4 | 04:40 – 04:43 38629 – 38630 | G29P96-0P02 raw-cli-commands | 36 kft |
| leg 5 | 04:55 – 05:21 38631 – 38638 | G29P96-0P02 singlepoint_chopped inpar_singlepoint_chopped_G29P96-0P02_4G | 36– 39 kft |
| 04:55 | | Problems kalibrating the HFA, no data. Scans 38632/34. OI has no priority for this project, so keep on integrating. | |
| 05:02 | 38634 | Altitude Difference during scan: 1969.0 ft. Final altitude at end of scan 37984.0 ft | |
| 05:04 | | SOFIA Cabin Temp 3: 19.3 C | |
| 05:08 | | climb from FL360 to FL380 strongly affected power levels in all channels except 4G4, which is too noisy. May require advanced calibration scheme | |

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| 05:14 | | SOFIA Cabin Temp 3: 19.3 C | |
| 05:16 | 38638 | Altitude Difference during scan: 1031.0 ft. Final altitude at end of scan 39046.0 ft | |
| 05:19 | | climb to FL390 again affected powers. Attempt to climb out or the cirrus was not successful | |
| leg 5 | 05:32 – 05:53 38639 – 38645 | G29P9_M15 singlepoint_chopped inpar_singlepoint_chopped_G29P9_M15_4G | 39 kft |
| 05:34 | | SOFIA Cabin Temp 3: 19.7 C | |
| 05:44 | | SOFIA Cabin Temp 3: 20.0 C | |
| leg 6 | 05:57 – 06:53 38646 – 38662 | G32P80+0P19 singlepoint_chopped inpar_singlepoint_chopped_G32P80+0P19_4G | 39– 40 kft |
| 06:14 | | SOFIA Cabin Temp 3: 20.1 C | |
| 06:34 | 38658 | Altitude Difference during scan: 724.0 ft. Final altitude at end of scan 39728.0 ft | |
| 06:44 | | SOFIA Cabin Temp 3: 19.9 C | |
| leg 6 | 06:57 – 07:38 38663 – 38674 | G32P80_P15 singlepoint_chopped inpar_singlepoint_chopped_G32P80_P15_4G | 40– 41 kft |
| 07:14 | | SOFIA Cabin Temp 3: 19.7 C | |
| 07:25 | 38672 | Altitude Difference during scan: 852.0 ft. Final altitude at end of scan 41008.0 ft | |
| 07:34 | | SOFIA Cabin Temp 3: 19.7 C | |
| leg 6 | 07:40 – 08:00 38675 – 38680 | G32P80_M15 singlepoint_chopped inpar_singlepoint_chopped_G32P80_M15_4G | 41– 42 kft |
| 07:41 | 38676 | Altitude Difference during scan: 987.0 ft. Final altitude at end of scan 41990.0 ft | |
| 07:44 | | SOFIA Cabin Temp 3: 19.6 C | |
| leg 7 | 08:09 – 08:09 38681 | I16164-5046 raw-cli-commands | 42 kft |
| leg 7 | 08:10 – 08:22 38682 – 38684 | I16164-5046 singlepoint_chopped inpar_singlepoint_chopped_I16164-5046_4G_-x | 42 kft |
| 08:14 | | SOFIA Cabin Temp 3: 19.4 C | |
| leg 7 | 08:23 – 08:50 38685 – 38692 | I16164-5046 singlepoint_chopped inpar_singlepoint_chopped_I16164-5046_4G | 42– 43 kft |
| 08:34 | | SOFIA Cabin Temp 3: 19.4 C | |
| 08:38 | 38690 | Altitude Difference during scan: 1027.0 ft. Final altitude at end of scan 43005.0 ft | |
| leg 7 | 08:54 – 09:37 38693 – 38706 | I16164_P15 singlepoint_chopped inpar_singlepoint_chopped_I16164_P15_4G | 43 kft |
| 09:04 | | SOFIA Cabin Temp 3: 19.0 C | |
| 09:34 | | SOFIA Cabin Temp 3: 19.0 C | |
| leg 7 | 09:40 – 10:09 38707 – 38716 | I16164_M15 singlepoint_chopped inpar_singlepoint_chopped_I16164_M15_4G | 43 kft |
| 09:44 | | SOFIA Cabin Temp 3: 18.9 C | |
| 09:54 | | SOFIA Cabin Temp 3: 18.8 C | |
| 10:04 | | SOFIA Cabin Temp 3: 18.7 C | |
| leg 8 | 10:16 – 10:16 38717 | NGC6334I_M15 raw-cli-commands | 43 kft |

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| leg 8 | 10:23 – 10:49 38718 – 38725 | NGC6334I_M15 singlepoint_chopped inpar_singlepoint_chopped_NGC6334I_M15_4G | 43 kft |
| | 10:24 | SOFIA Cabin Temp 3: 18.6 C | |
| | 10:34 | SOFIA Cabin Temp 3: 18.5 C | |
| | 10:44 | SOFIA Cabin Temp 3: 18.5 C | |
| leg 8 | 10:52 – 11:04 38726 – 38729 | NGC6334_I singlepoint_chopped inpar_singlepoint_chopped_NGC6334_I_4G | 43 kft |
| | 10:54 | SOFIA Cabin Temp 3: 18.4 C | |
| | 11:04 | SOFIA Cabin Temp 3: 18.4 C | |
| leg 8 | 11:07 – 11:17 38730 – 38733 | NGC6334I_P15 singlepoint_chopped inpar_singlepoint_chopped_NGC6334I_P15_4G | 43 kft |

3 2021-08-08_GR_F767

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| leg 6 | 05:58 – 05:58 39236 | G32P80+0P19 raw-cli-commands | 39 kft |
| leg 6 | 06:00 – 06:27 39237 – 39244 | G32P80+0P19 singlepoint_chopped inpar_singlepoint_chopped_G32P80+0P19_CH | 39 kft |
| | 06:04 | SOFIA Cabin Temp 3: 18.5 C | |
| | 06:24 | SOFIA Cabin Temp 3: 18.4 C | |
| leg 6 | 06:31 – 06:31 39245 | G32P80+0P19 raw-cli-commands | 40 kft |
| leg 6 | 06:33 – 07:10 39246 – 39257 | G32P80+0P19 singlepoint_chopped inpar_singlepoint_chopped_G32P80+0P19_CII | 40 kft |
| | 06:34 | SOFIA Cabin Temp 3: 18.4 C | |
| | 06:44 | SOFIA Cabin Temp 3: 18.3 C | |
| | 07:04 | SOFIA Cabin Temp 3: 18.2 C | |
| leg 8 | 08:29 – 08:29 39280 | I16060-5146 raw-cli-commands | 42 kft |
| | 08:29 | 39280 Altitude Difference during scan: 251.0 ft. Final altitude at end of scan 41673.0 ft | |
| leg 8 | 08:32 – 09:43 39281 – 39302 | I16060-5146 singlepoint_chopped inpar_singlepoint_chopped_I16060-5146_CII | 42– 43 kft |
| | 08:34 | SOFIA Cabin Temp 3: 17.9 C | |
| | 08:36 | 39282 -h | |
| | 08:44 | SOFIA Cabin Temp 3: 17.8 C | |
| | 08:54 | SOFIA Cabin Temp 3: 17.8 C | |
| | 09:04 | SOFIA Cabin Temp 3: 17.8 C | |
| | 09:14 | SOFIA Cabin Temp 3: 17.8 C | |
| | 09:21 | 39296 Altitude Difference during scan: 791.0 ft. Final altitude at end of scan 42798.0 ft | |
| | 09:24 | SOFIA Cabin Temp 3: 17.8 C | |
| leg 9 | 09:47 – 09:48 39303 | NGC6334_I raw-cli-commands | 43 kft |

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| leg 9 | 09:50 – 10:22 39304 – 39313 | NGC6334_I singlepoint_chopped inpar_singlepoint_chopped_NGC6334_I.CH | 43 kft |
| 09:54 | | SOFIA Cabin Temp 3: 17.5 C | |
| 10:04 | | SOFIA Cabin Temp 3: 17.4 C | |
| 10:14 | | SOFIA Cabin Temp 3: 17.4 C | |
| leg 9 | 10:26 – 11:02 39314 – 39325 | NGC6334_I singlepoint_chopped inpar_singlepoint_chopped_NGC6334_I.CII | 43 kft |
| 10:34 | | SOFIA Cabin Temp 3: 17.4 C | |
| 10:44 | | SOFIA Cabin Temp 3: 17.3 C | |

4 2021-08-12_GR_F770

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| leg 6 | 05:46 – 05:46 39624 | G45P07+0P13 raw-cli-commands | 40 kft |
| leg 6 | 05:55 – 06:30 39625 – 39634 | G45P07+0P13 singlepoint_chopped inpar_singlepoint_chopped_G45P07+0P13.CH | 40– 40 kft |
| 05:59 | | SOFIA Cabin Temp 3: 18.5 C | |
| 06:19 | | SOFIA Cabin Temp 3: 18.5 C | |
| 06:24 | 39634 | Altitude Difference during scan: 494.0 ft. Final altitude at end of scan 40009.0 ft | |
| 06:29 | | SOFIA Cabin Temp 3: 18.7 C | |
| 06:30 | | paused file of CH to change tune to CII setting | |
| leg 6 | 06:38 – 06:38 39635 | G45P07+0P13 raw-cli-commands | 40 kft |
| leg 6 | 06:39 – 07:02 39636 – 39643 | G45P07+0P13 singlepoint_chopped inpar_singlepoint_chopped_G45P07+0P13.CII | 40 kft |
| 06:39 | | SOFIA Cabin Temp 3: 18.8 C | |
| 06:39 | | Feature request: tuning_run.sh should check that it receives a line_inpar file and not an inpar file. we had a issue where observer was using the regular inpar and not the line_inpar. | |
| 06:39 | | Ed's user error delayed change of tuning | |
| 06:40 | | Changed HFA IF manually to 1600 MHz as per request by Helmut, load 39635 correction: did not work this time. IF 1600 is active since load 39638 instead | |
| 06:47 | | script paused to allow HFA offset to be manually set by hardware team | |
| 06:49 | | SOFIA Cabin Temp 3: 18.9 C | |
| 06:59 | | SOFIA Cabin Temp 3: 19.0 C | |
| turn | 09:26 – 09:26 39686 | G10P47+0P03 raw-cli-commands | 43 kft |
| 09:26 | 39686 | Altitude Difference during scan: 318.0 ft. Final altitude at end of scan 42828.0 ft | |
| leg 9 | 09:33 – 10:42 39687 – 39706 | G10P47+0P03 singlepoint_chopped inpar_singlepoint_chopped_G10P47+0P03.CII | 43 kft |
| 09:39 | | SOFIA Cabin Temp 3: 17.3 C | |
| 09:49 | | SOFIA Cabin Temp 3: 17.2 C | |

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| 09:57 | large increase in noise for a single subscan in HFAV around 09:57, no evidence of an issue in XFFTS total and raw fits. looks like an issue with the kalibrate atm fitting, water vapor shot up at the same time |
| 09:59 | SOFIA Cabin Temp 3: 17.2 C |
| 10:09 | SOFIA Cabin Temp 3: 17.3 C |
| 10:19 | SOFIA Cabin Temp 3: 17.3 C |
| 10:29 | SOFIA Cabin Temp 3: 17.3 C |
| 10:39 | SOFIA Cabin Temp 3: 17.2 C |

5 2021-08-14_GR_F772

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| turn | 05:24 – 05:24 39870 | G29P96-0P02 raw-cli-commands | 38 kft |
| leg 5 | 05:31 – 05:58 39871 – 39878 | G29P96-0P02 singlepoint_chopped inpar_singlepoint_chopped_G29P96-0P02_CH | 39 kft |
| 05:35 | | SOFIA Cabin Temp 3: 18.4 C | |
| 05:45 | | SOFIA Cabin Temp 3: 18.3 C | |
| 05:55 | | Changed the CII line_inpar file for G29 to have a IF of 2000 for OI; that way the combined OI spectrum covers a larger range | |
| 05:55 | | SOFIA Cabin Temp 3: 18.3 C | |
| leg 5 | 05:59 – 06:08 39879 – 39882 | G29P96-0P02 singlepoint_chopped inpar_singlepoint_chopped_G29P96-0P02_CH_-X.5 | 39 kft |
| 06:05 | | SOFIA Cabin Temp 3: 18.3 C | |
| leg 5 | 06:11 – 06:11 39883 | G29P96-0P02 raw-cli-commands | 39 kft |
| leg 5 | 06:12 – 06:25 39884 – 39886 | G29P96-0P02 singlepoint_chopped inpar_singlepoint_chopped_G29P96-0P02_CII_-x | 39 kft |
| 06:15 | | SOFIA Cabin Temp 3: 18.2 C | |
| leg 5 | 06:26 – 06:39 39887 – 39890 | G29P96-0P02 singlepoint_chopped inpar_singlepoint_chopped_G29P96-0P02_CII | 39 kft |
| 06:28 | | Manually on the receiver side the IF for the HFA was set to 2.2GHz for the script just started (last 10 cycles) | |
| 06:35 | | SOFIA Cabin Temp 3: 18.3 C | |