PRINCETON UNIVERSITY

SDC PDS KEM K5 Review

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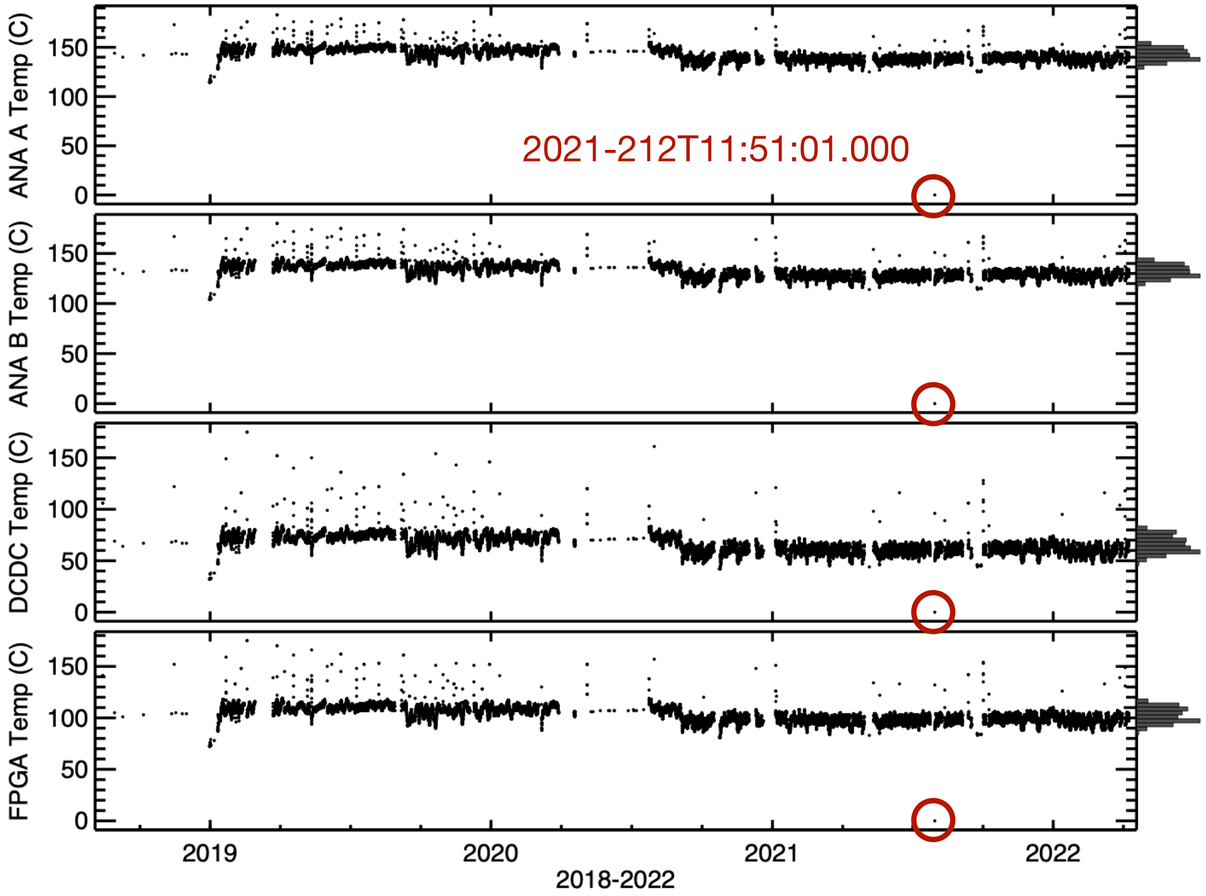
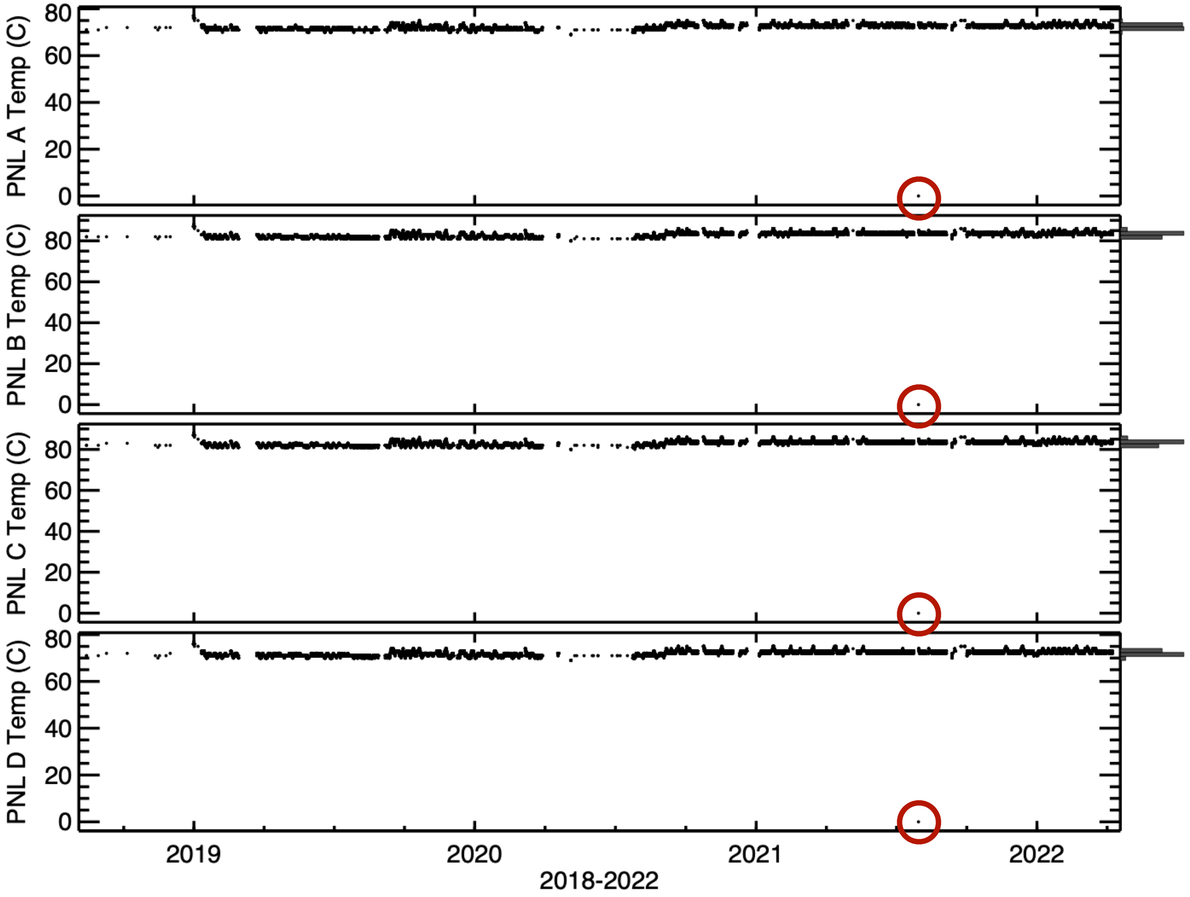
Overview

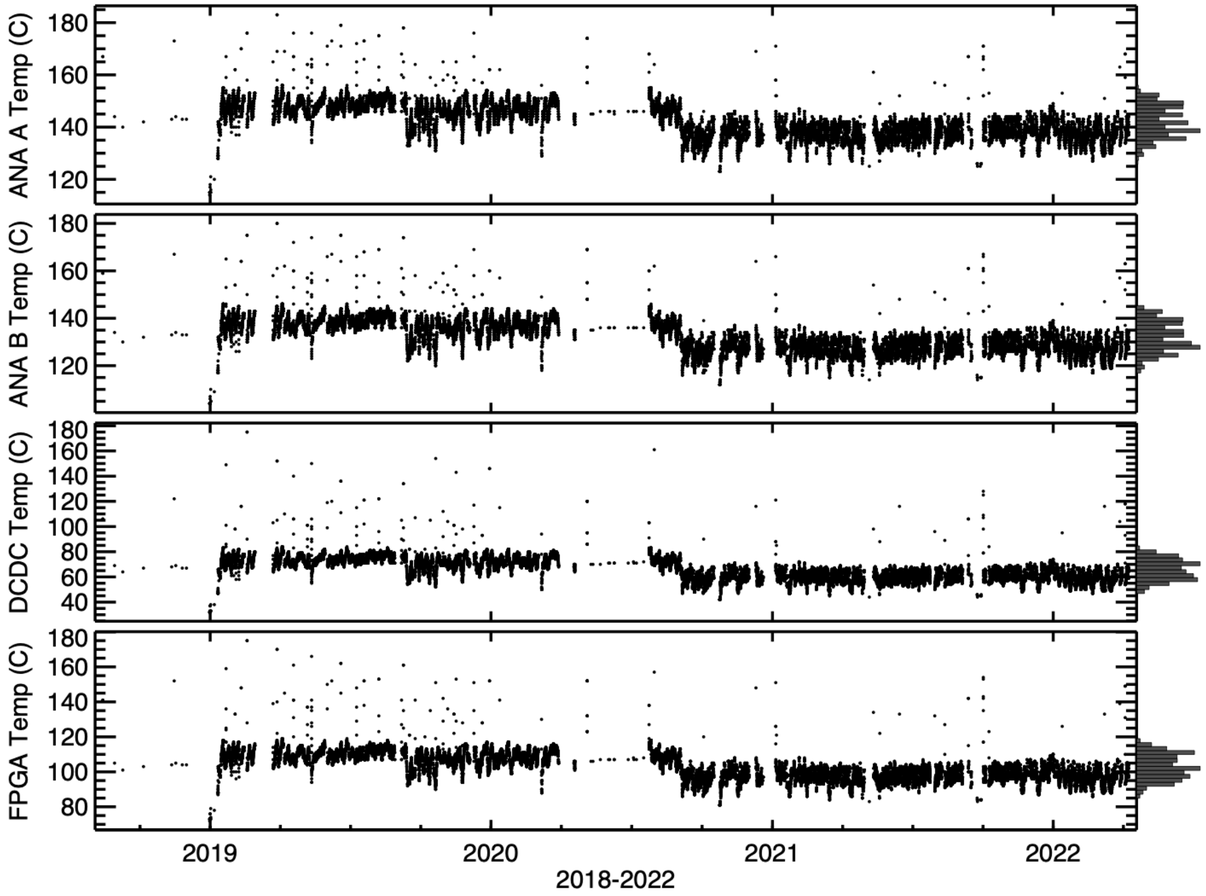
- Read Level 2 data: nh-a-sdc-2-kem1-v6.0
  - Plotted and assessed subset of temperatures
- Read Level 3 data: nh-a-sdc-3-kem1-v6.0
  - Plotted and assessed event amplitude distributions

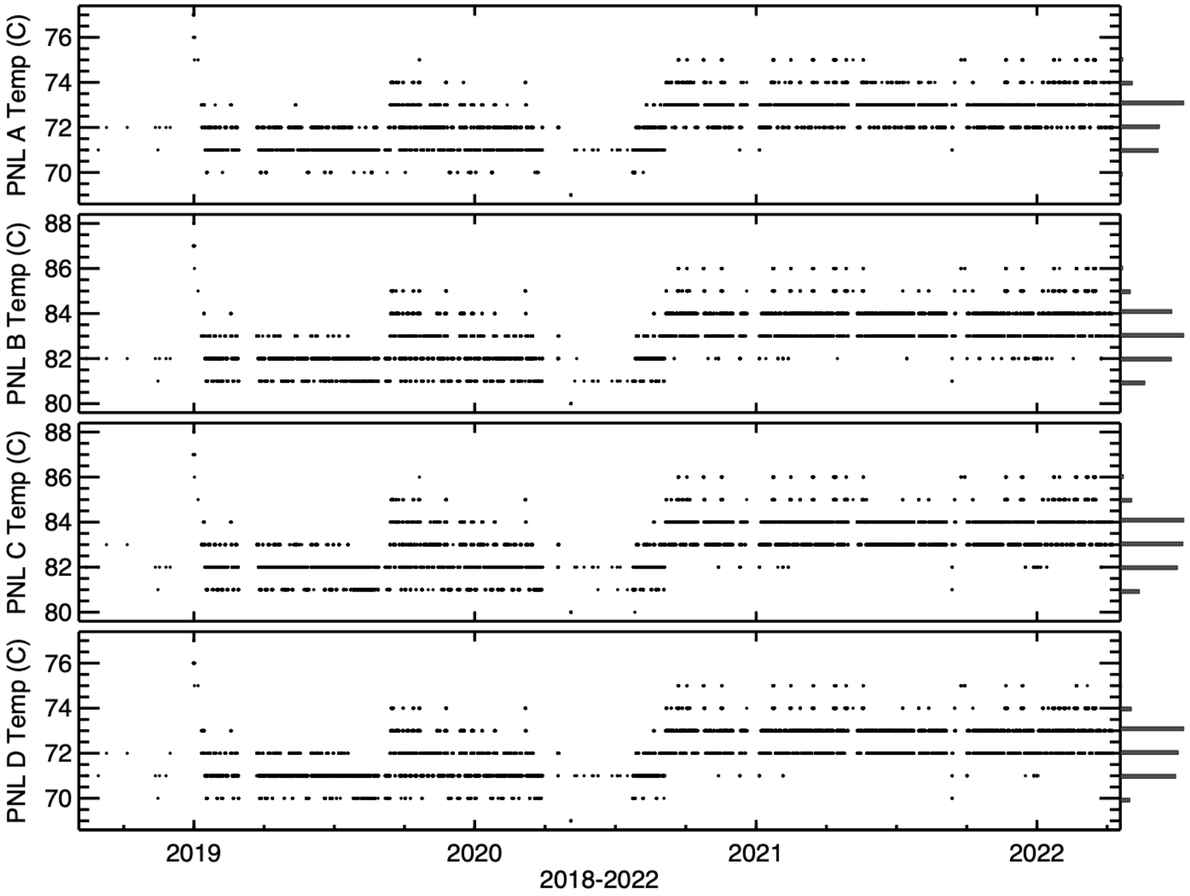
Level 2 Data w/ zero value





Level 2 Data w/o zero value

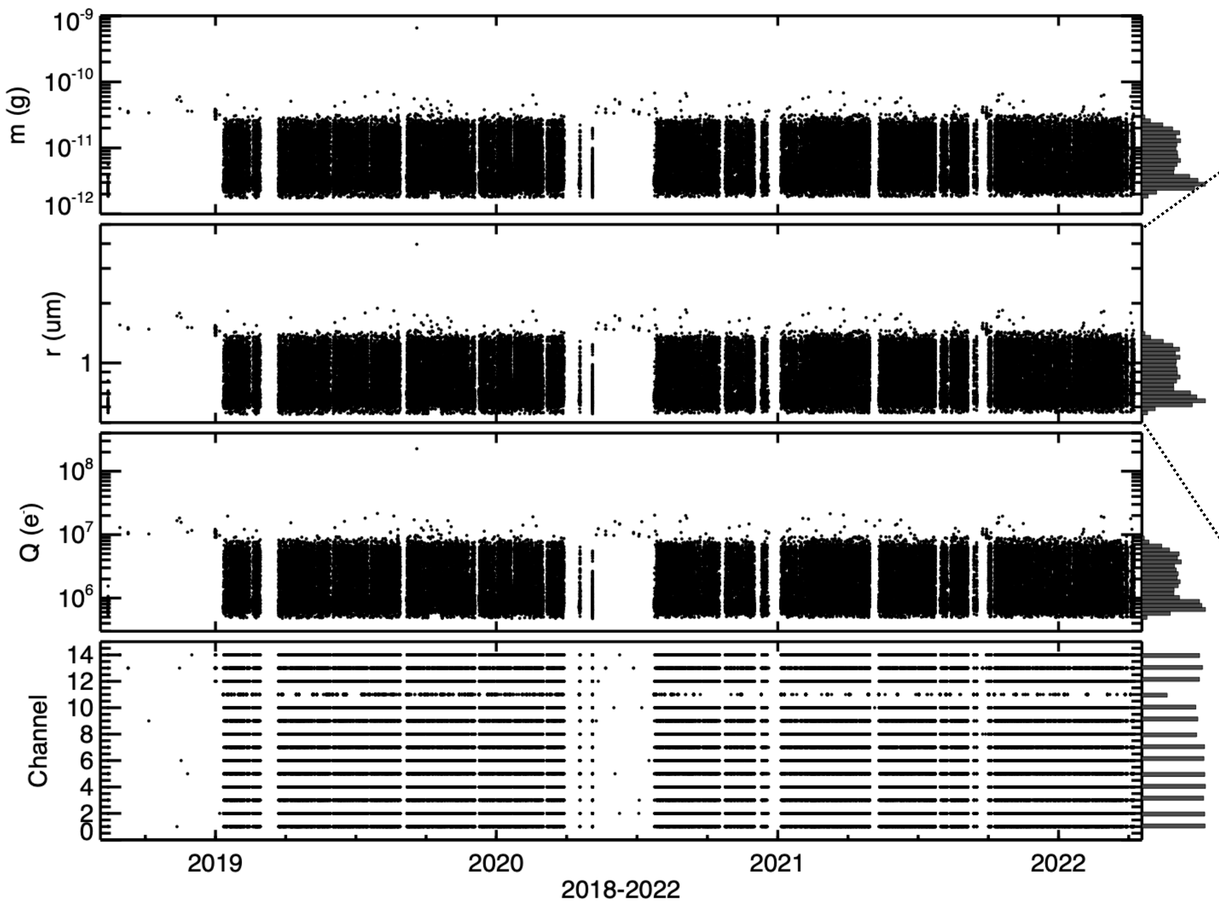


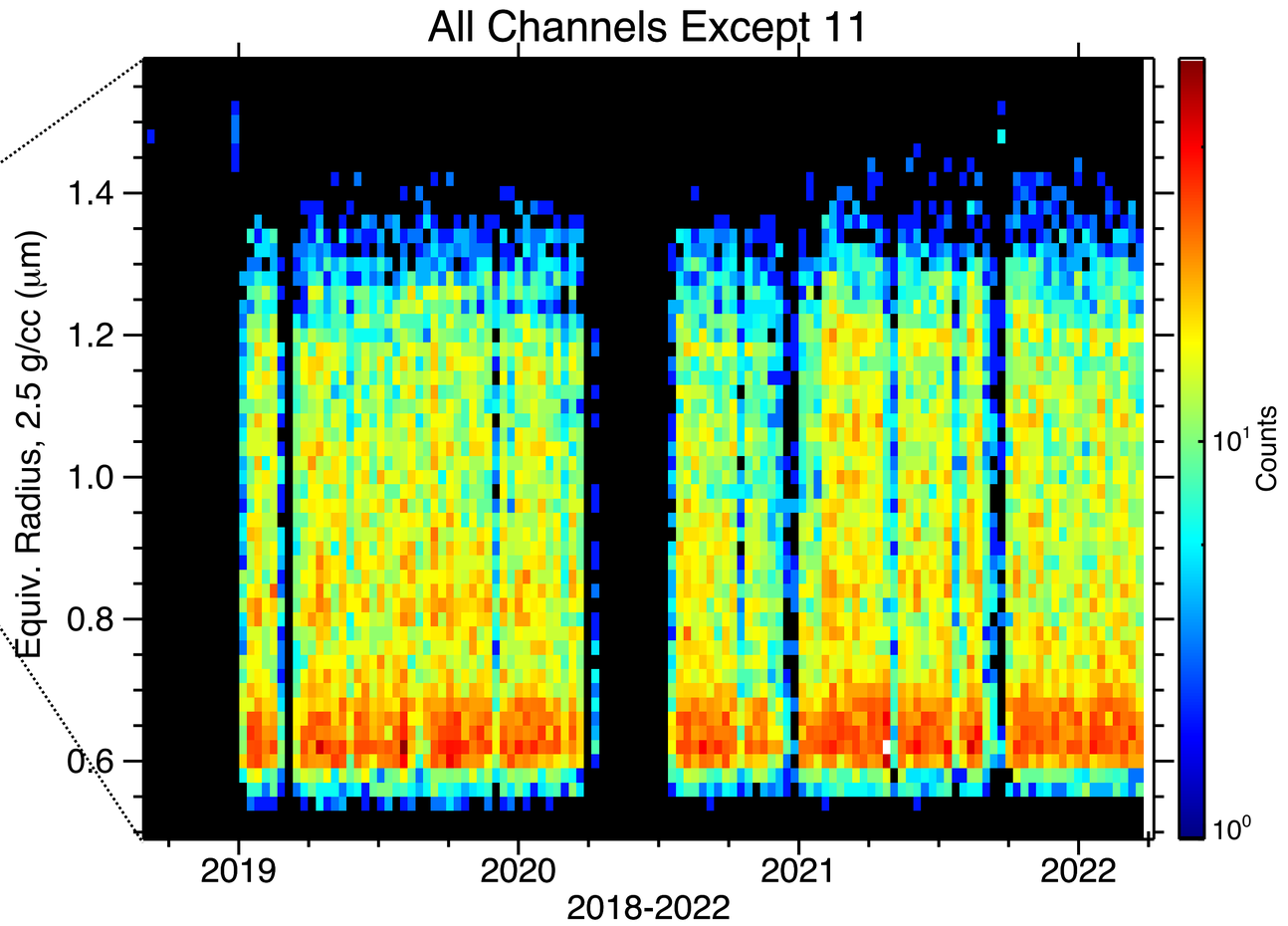


Assessment of Level 3 Data

- Read Level 2 data: nh-a-sdc-2-kem1-v5.0
- Temperatures and voltages mostly nominal
  - One set of telemetry values = 0 at 2021-212T11:51:01.000
- Level 2 Channel_IDs all matched Level 3 Channels
  - 1-1 mapping L2 → L3
- No discrepancies observed between Level 2 and Level 3 data

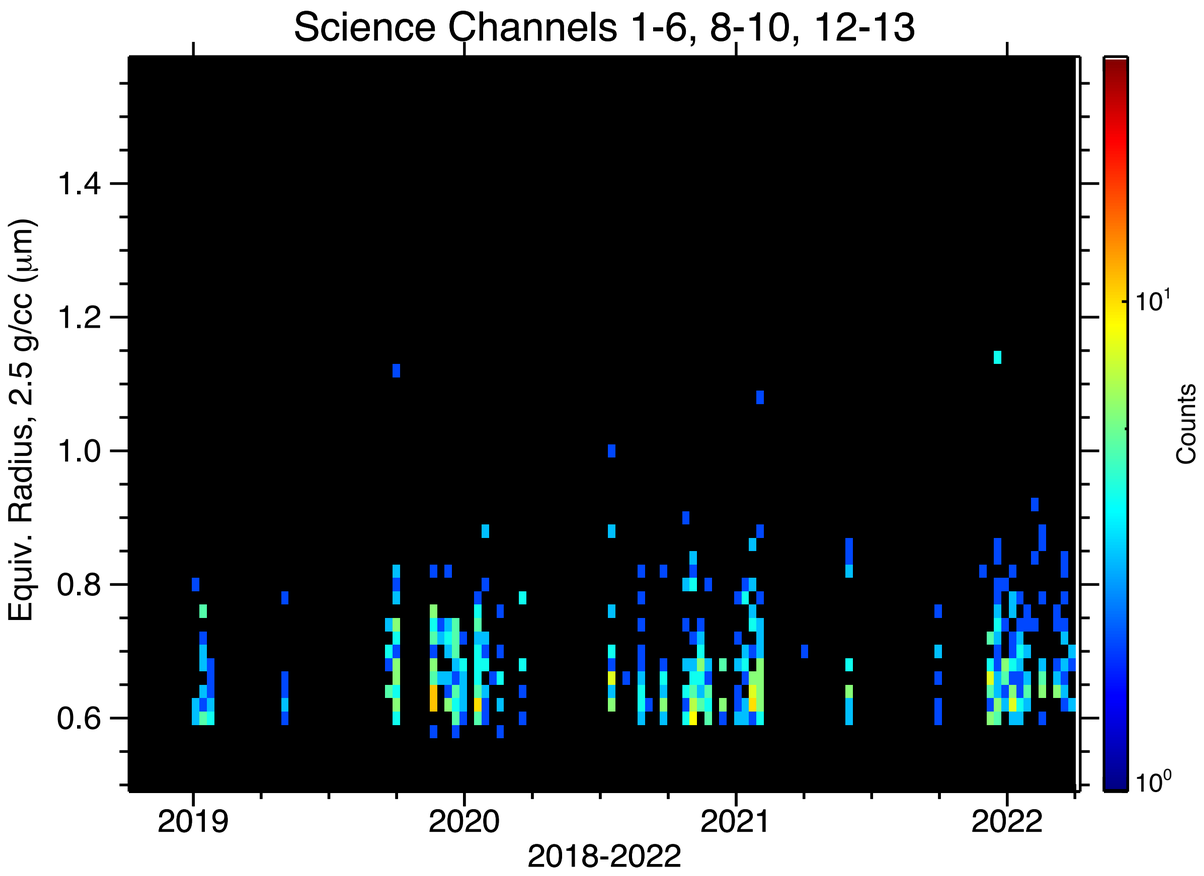
Level 3 Data: All events

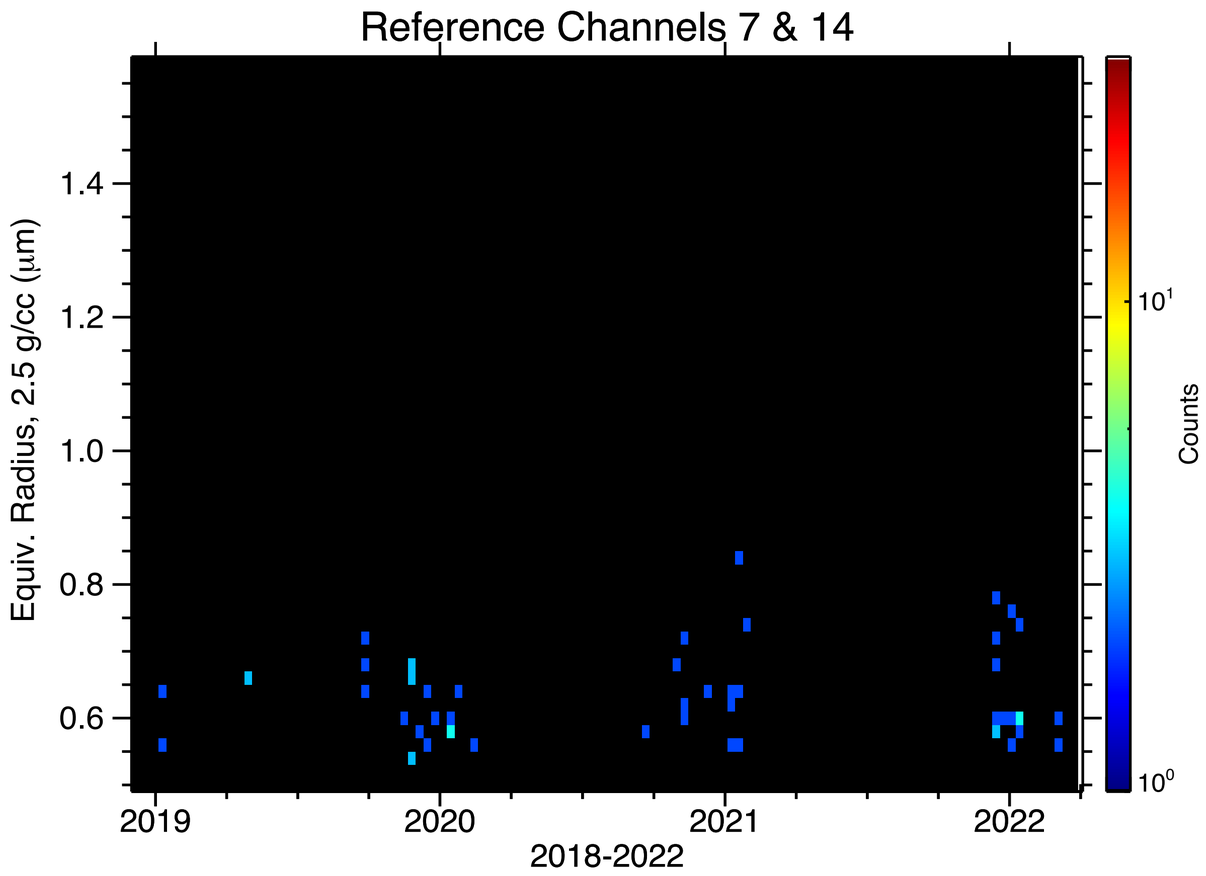




*All spectrograms have thruster firing events removed

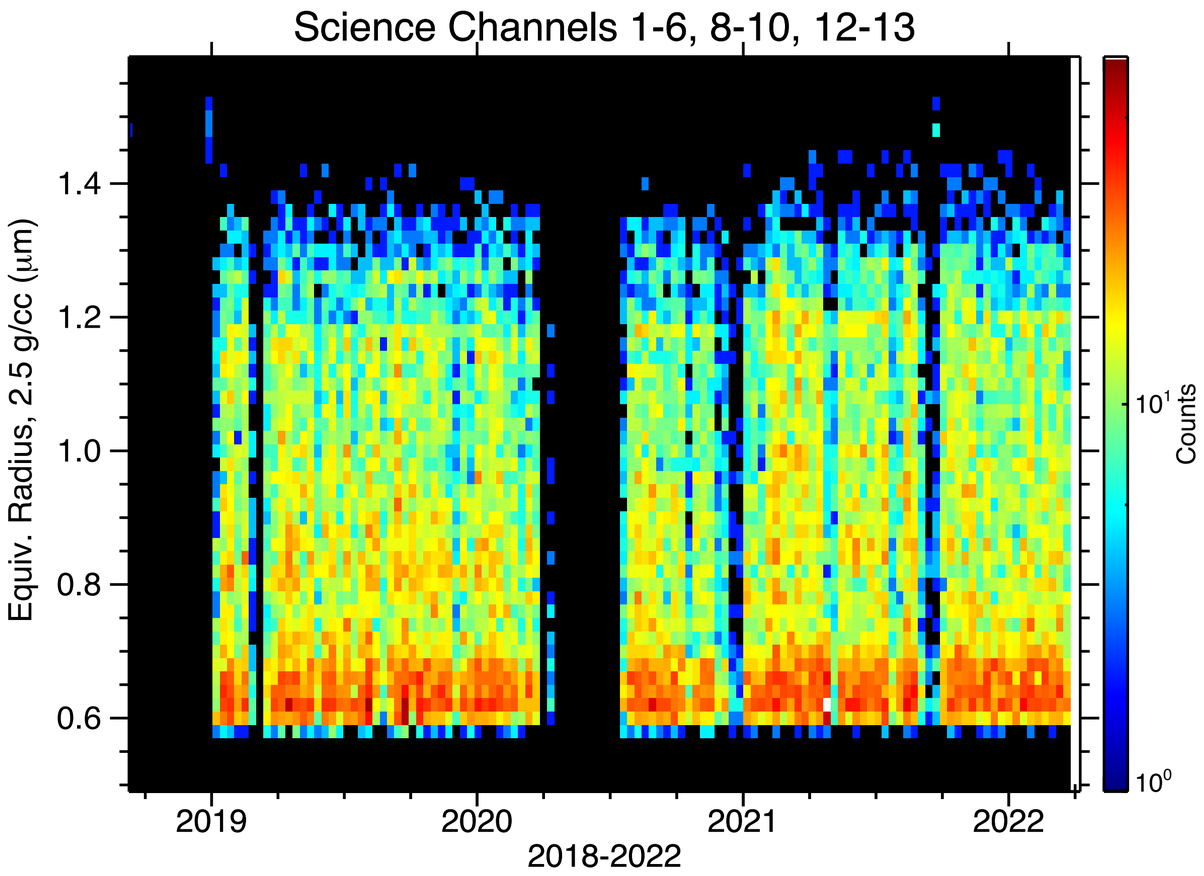
Level 3 Data: Science vs. Reference Channels

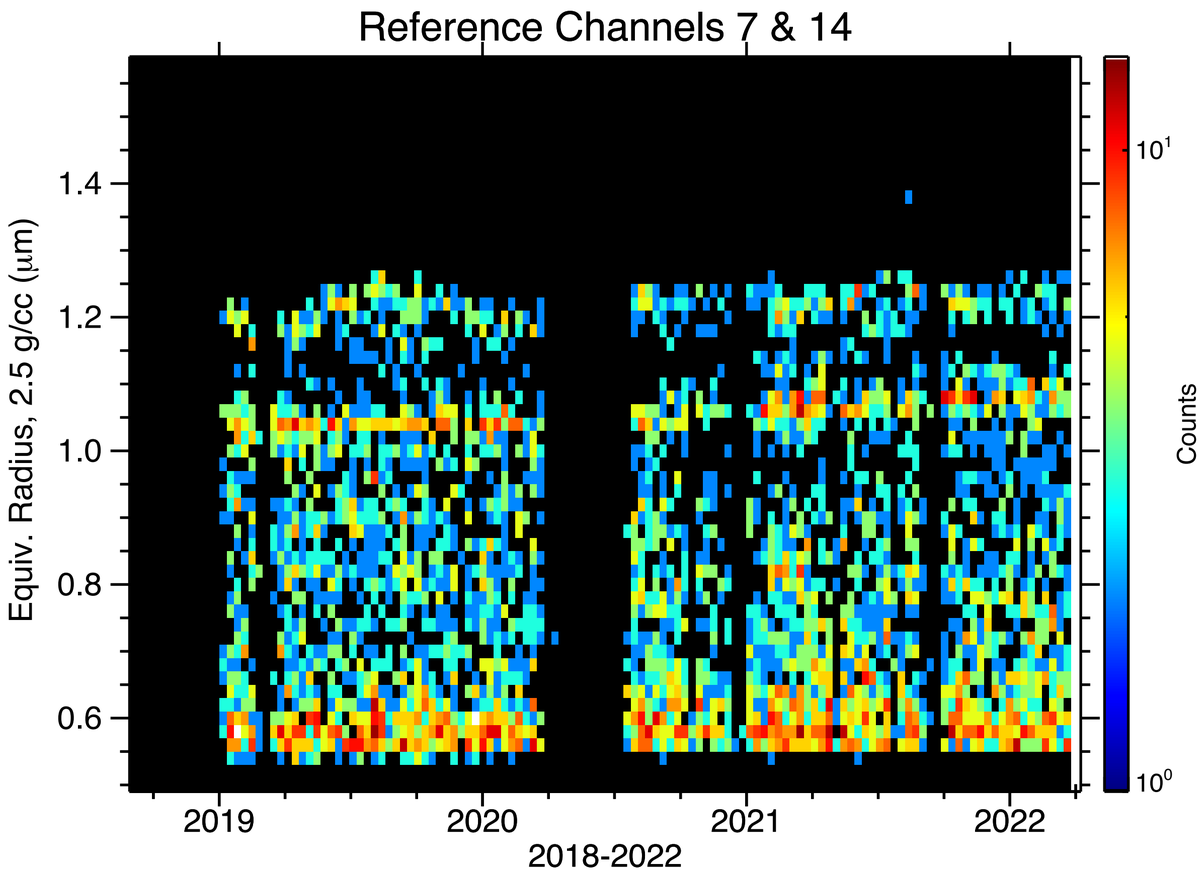




Thruster firing and coincident events removed

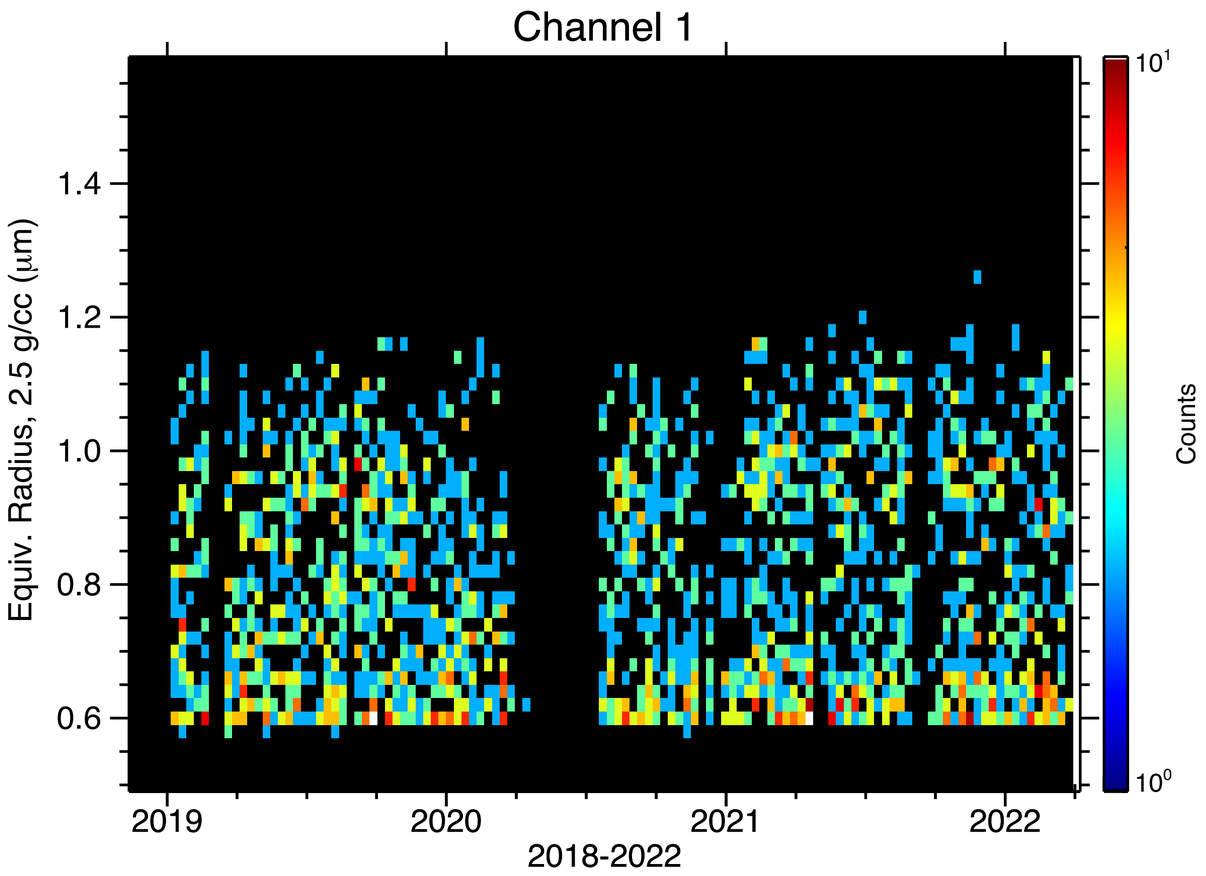
Level 3 Data: Science vs. Reference Channels

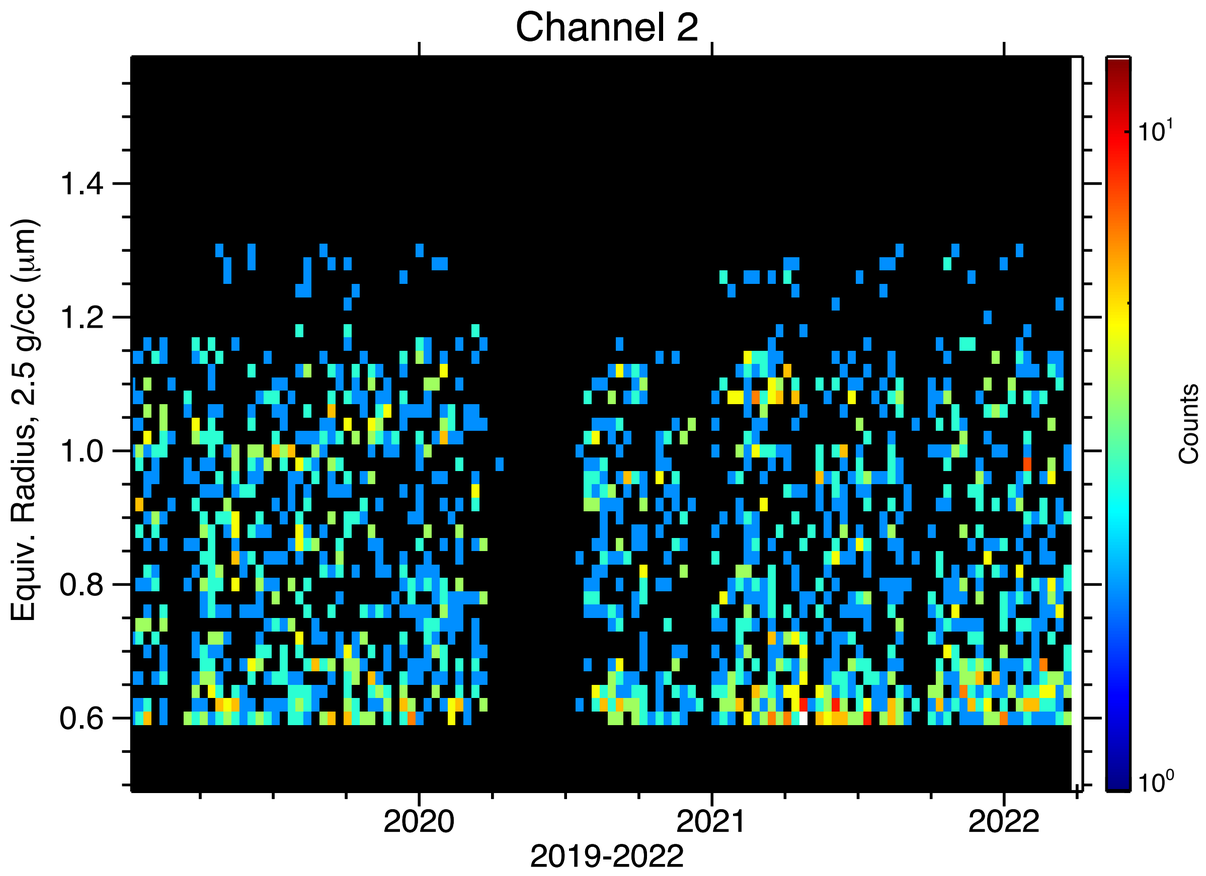




Thruster firing events removed

Level 3 Data: Individual Channels





Thruster firing events removed

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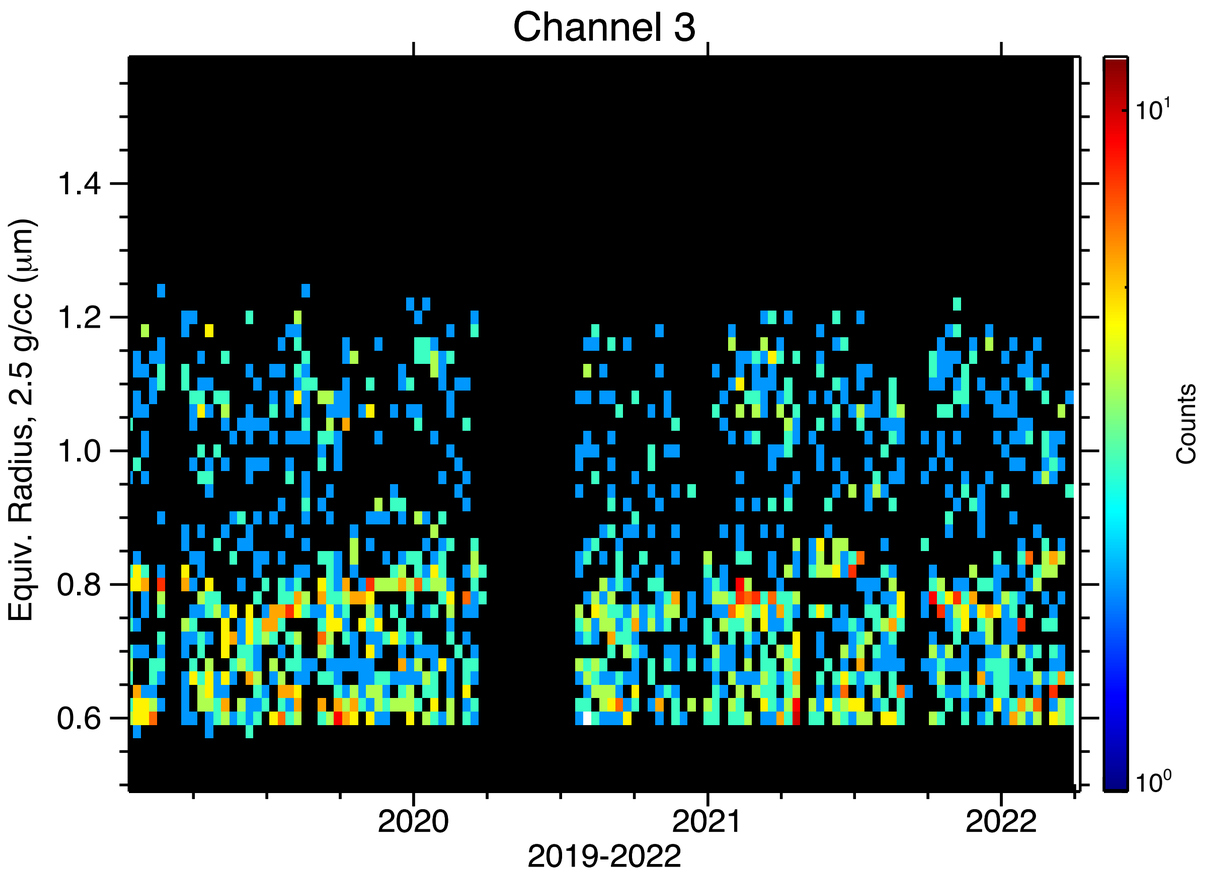

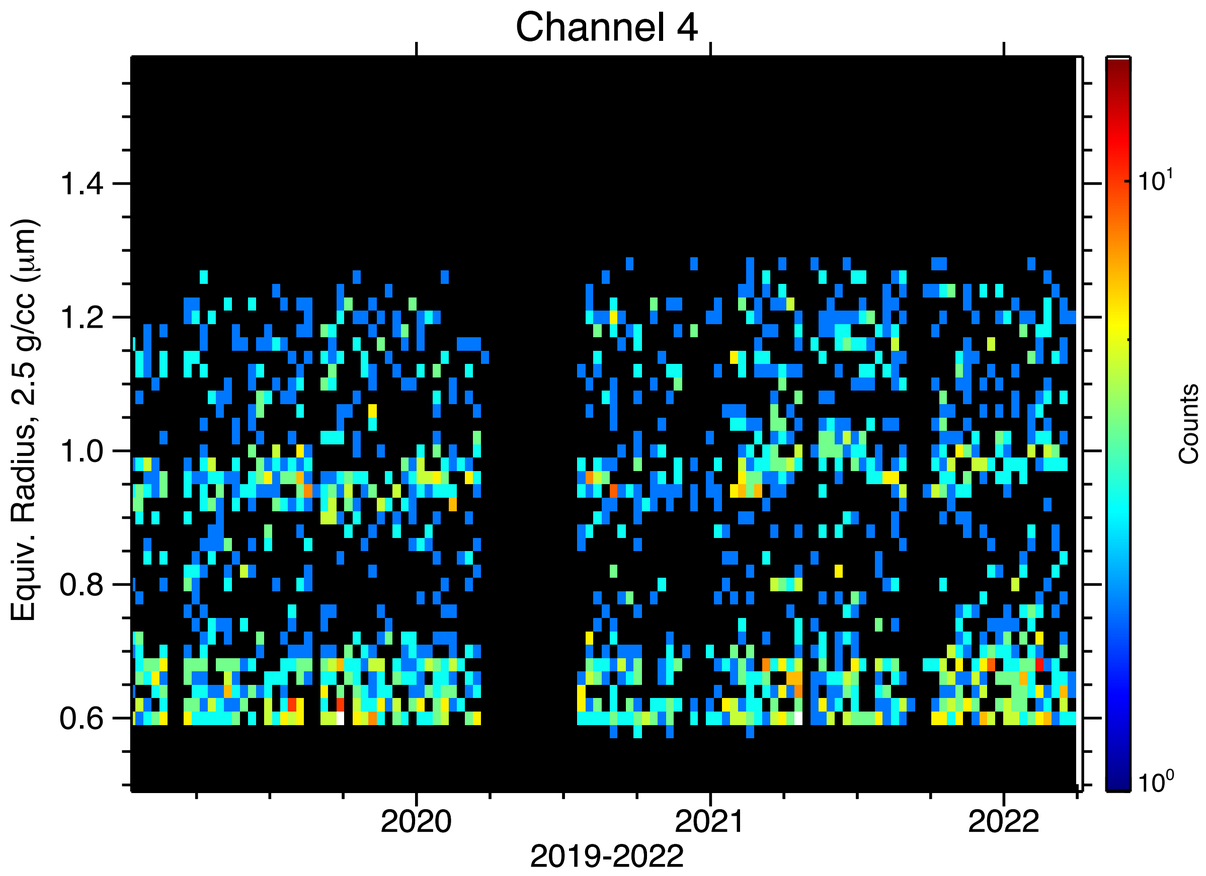

Thruster firing events removed

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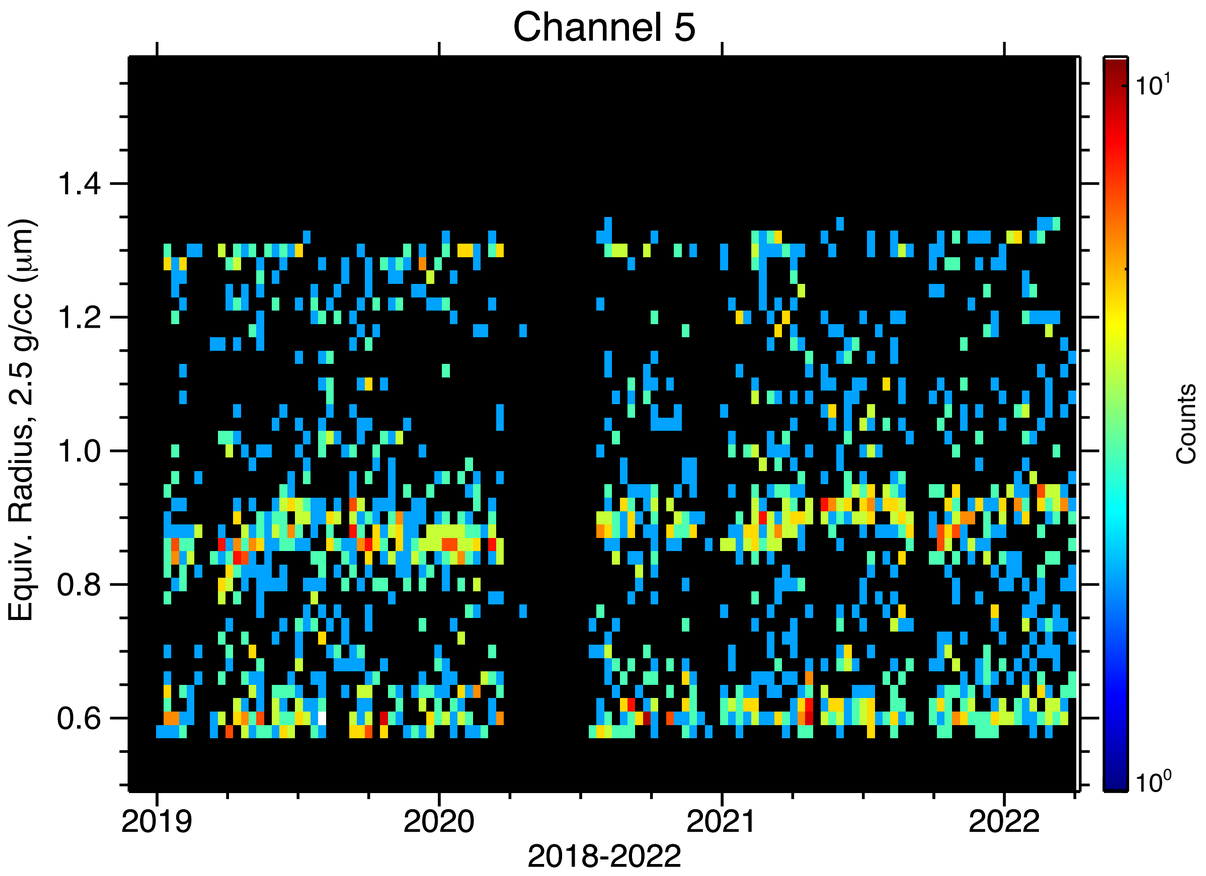

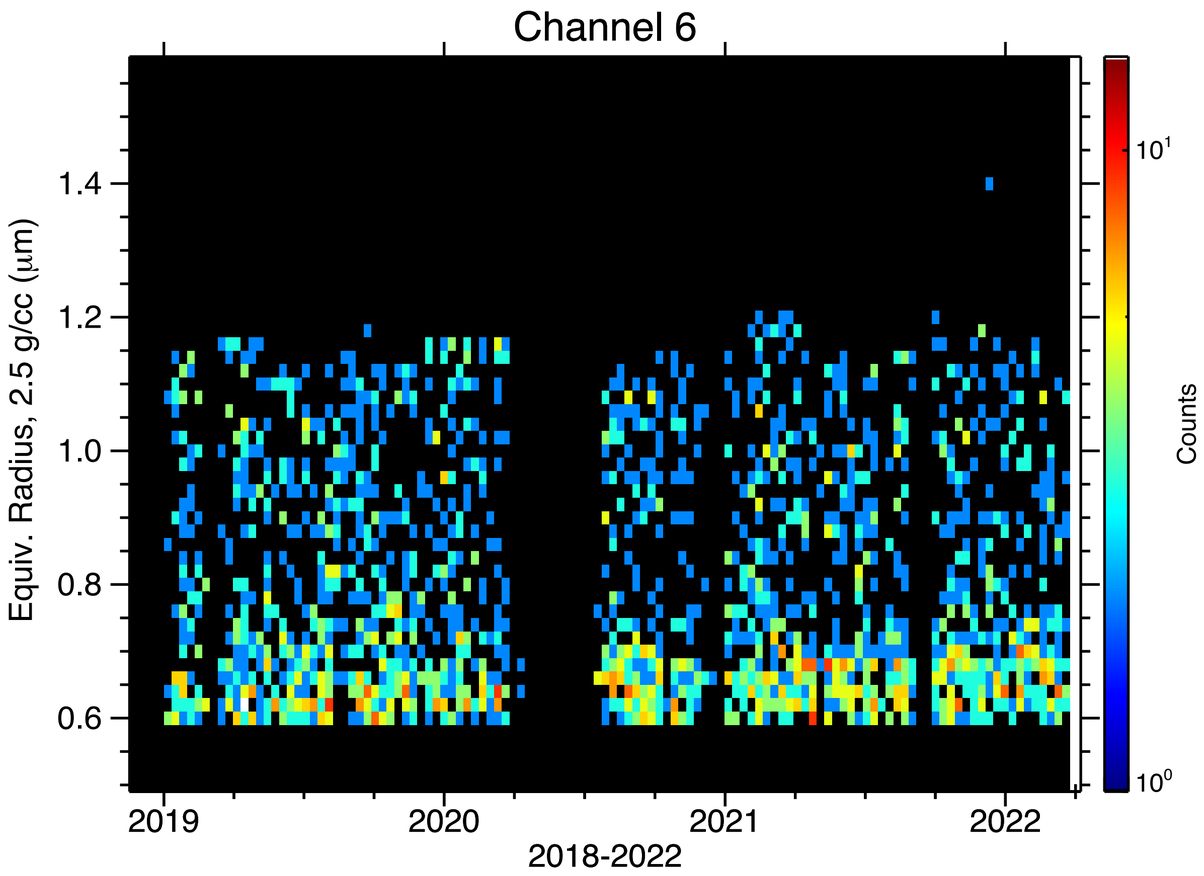

Thruster firing events removed

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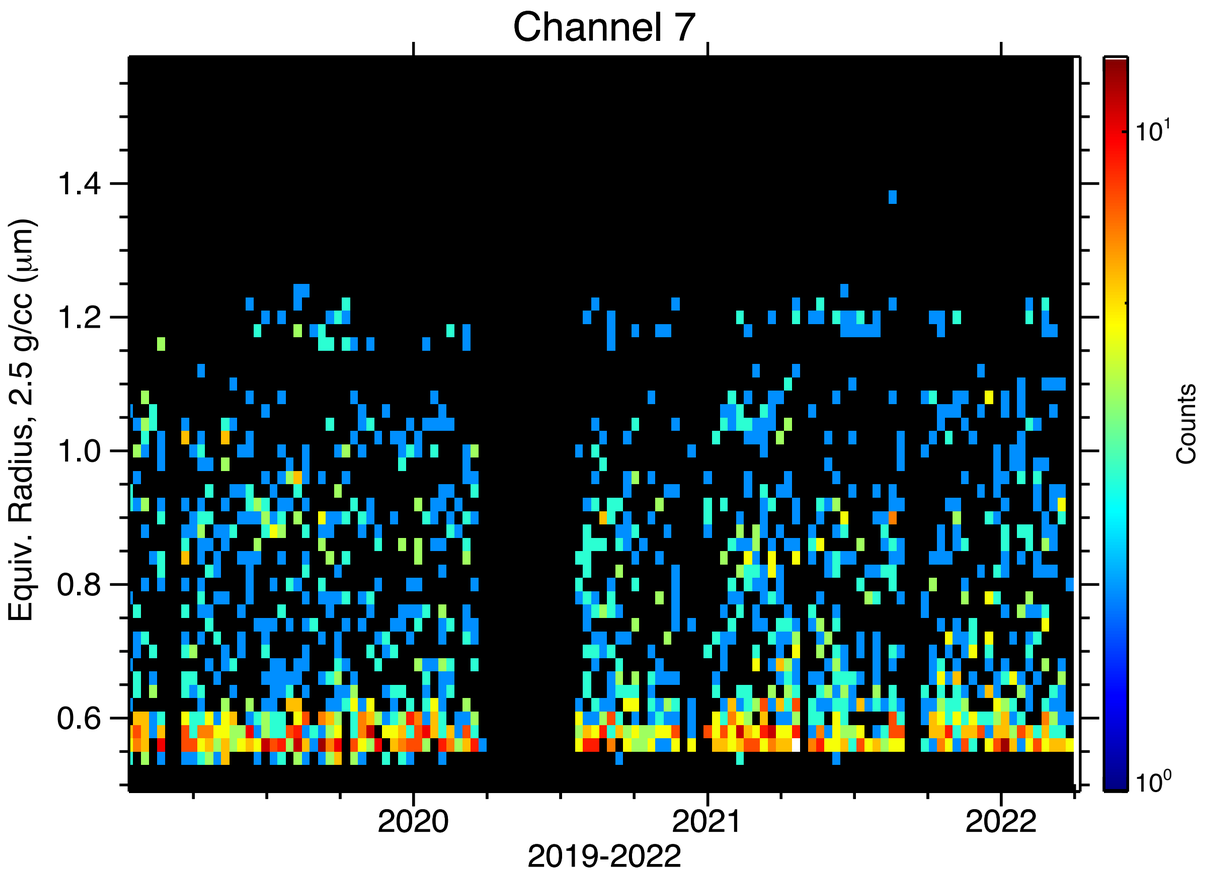

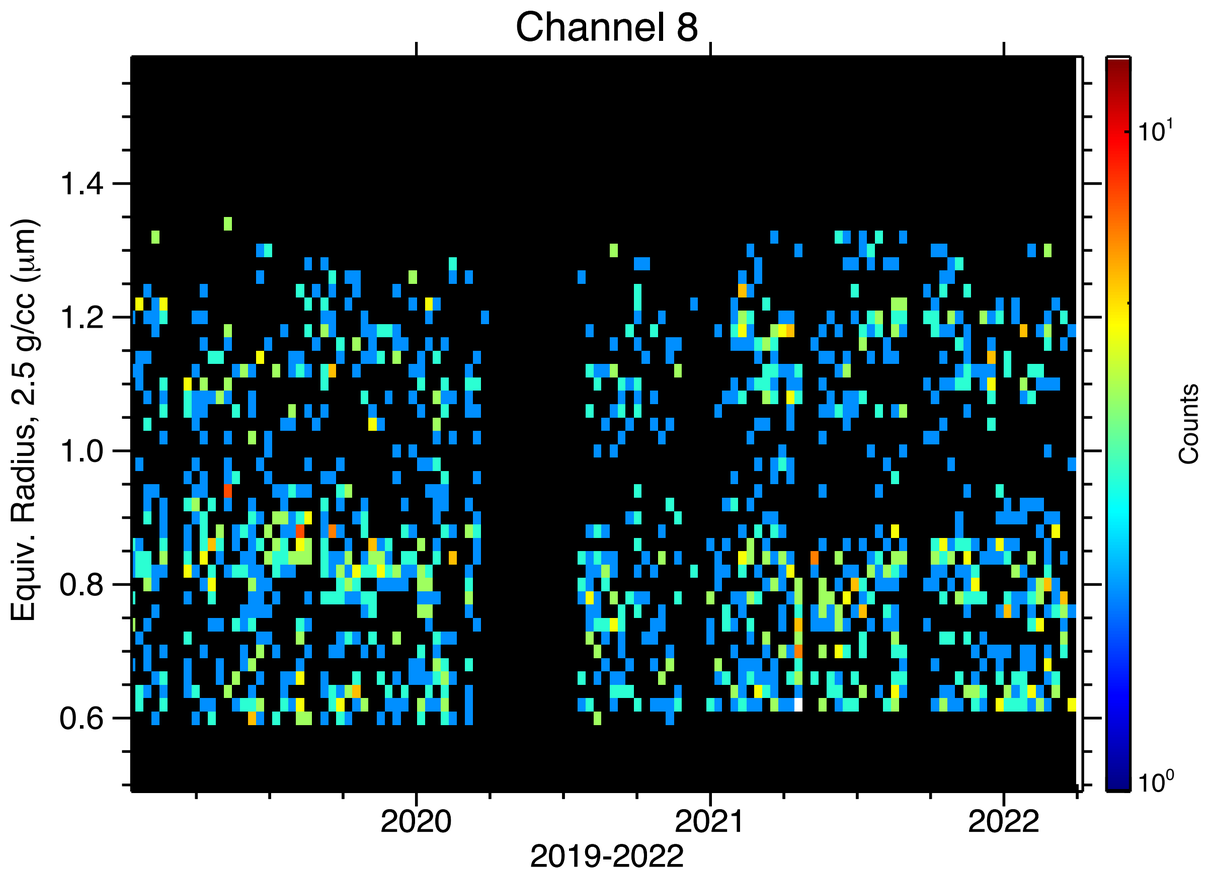

Thruster firing events removed

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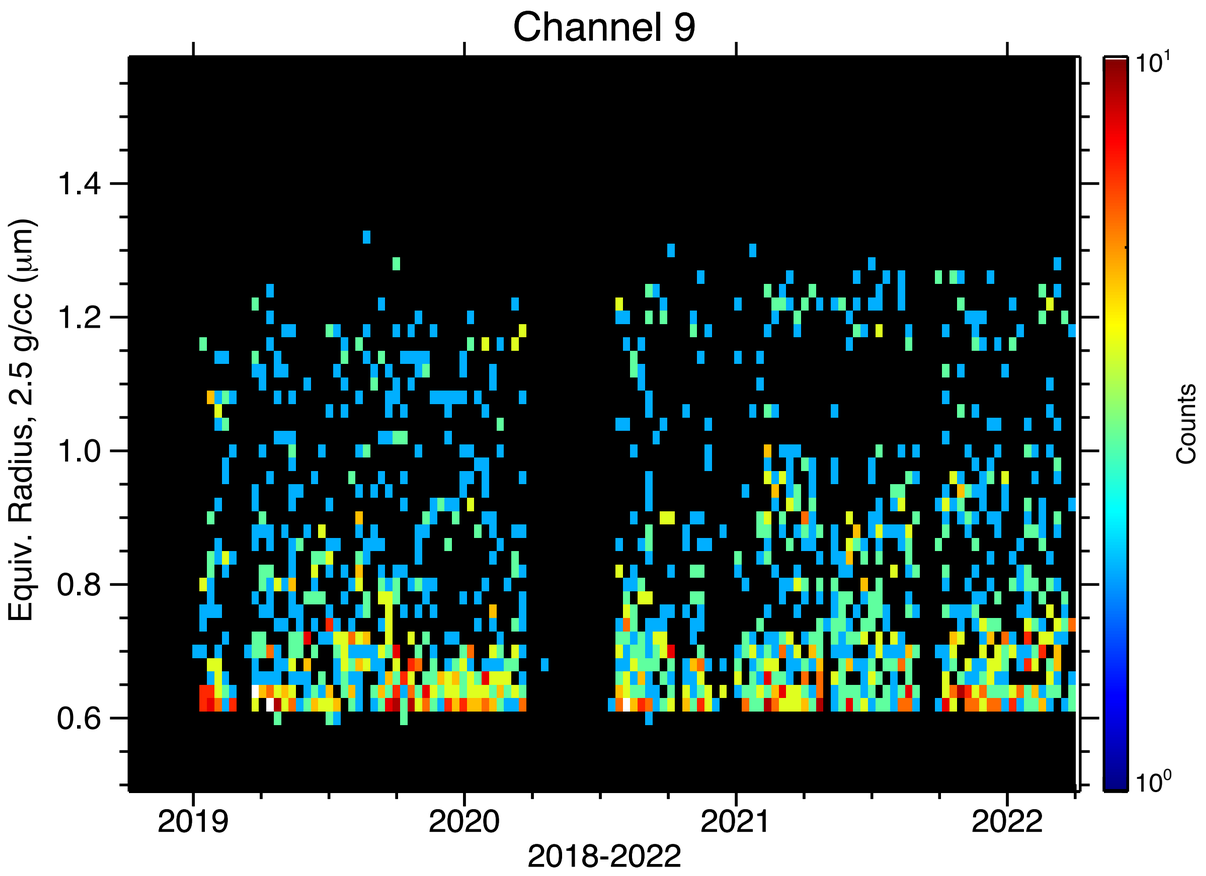
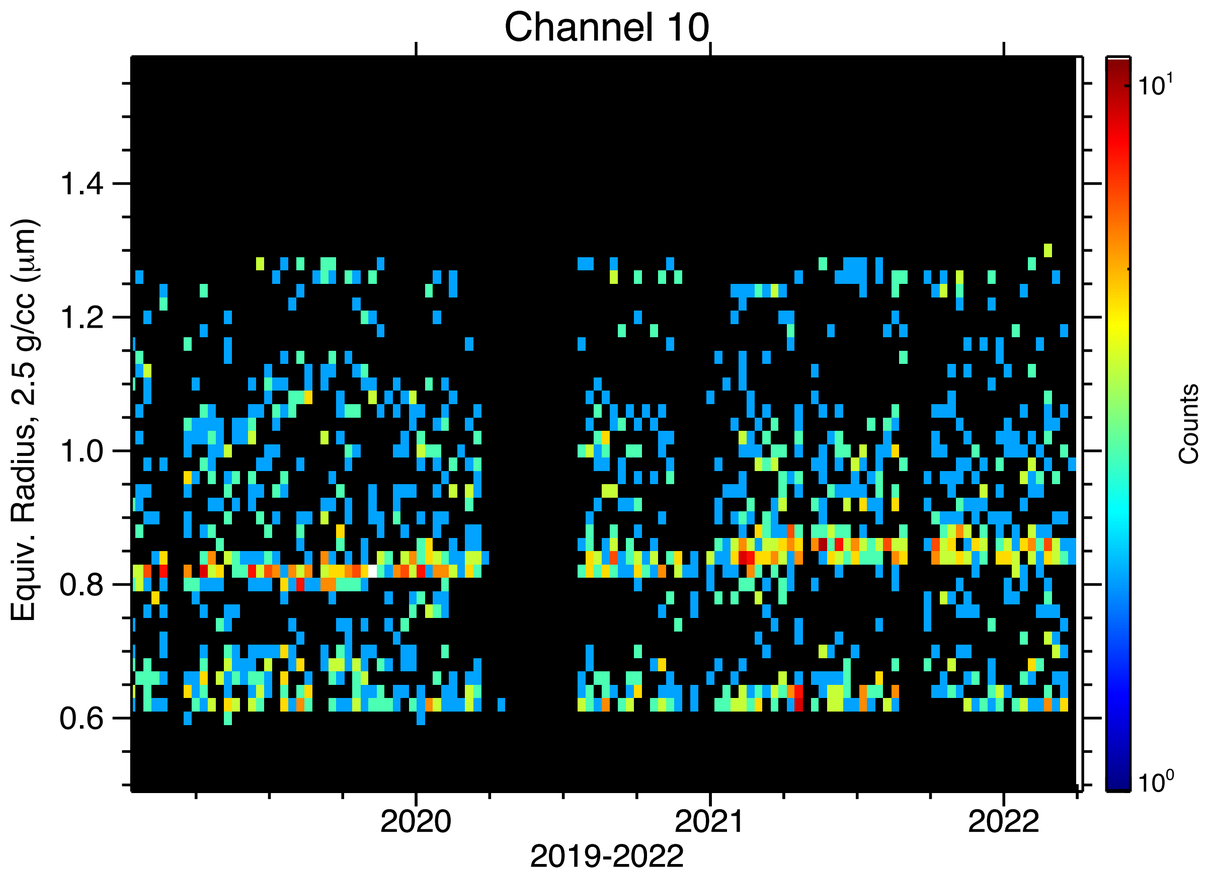
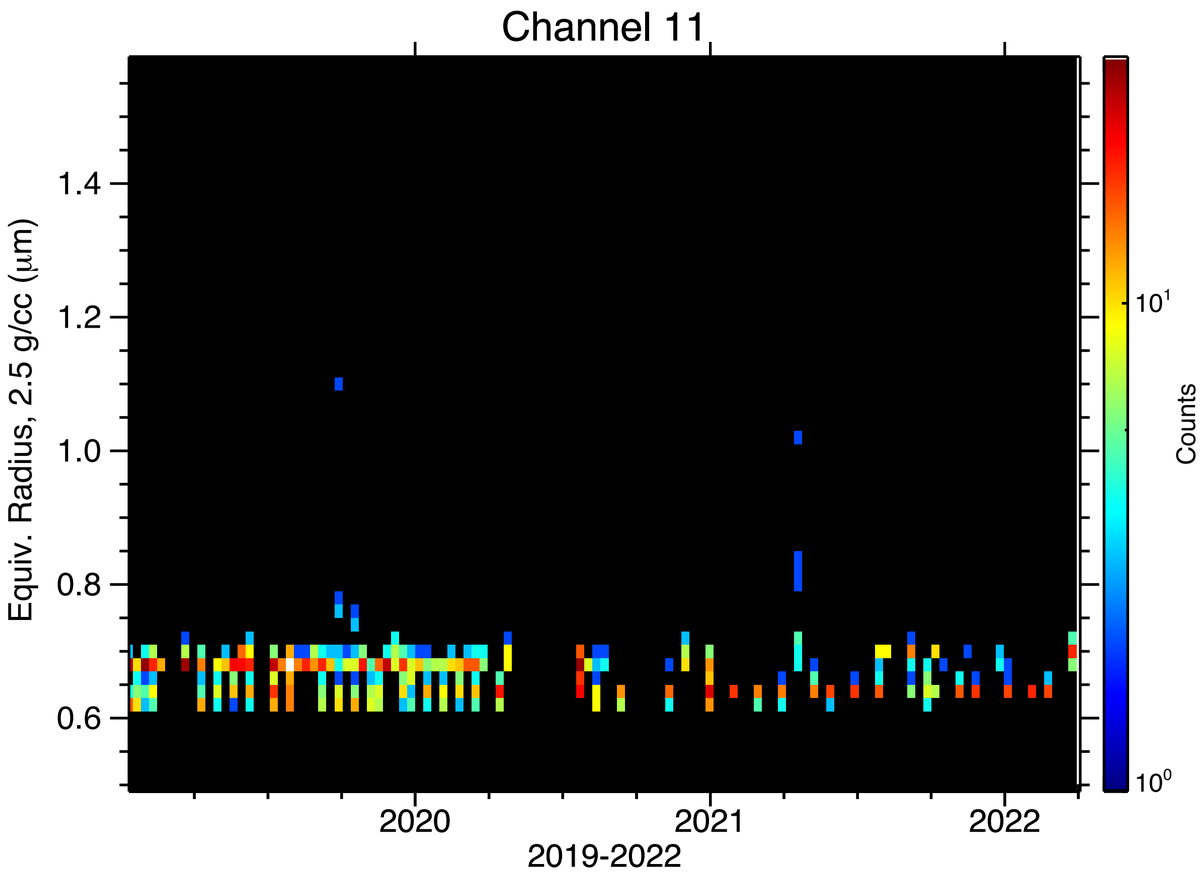
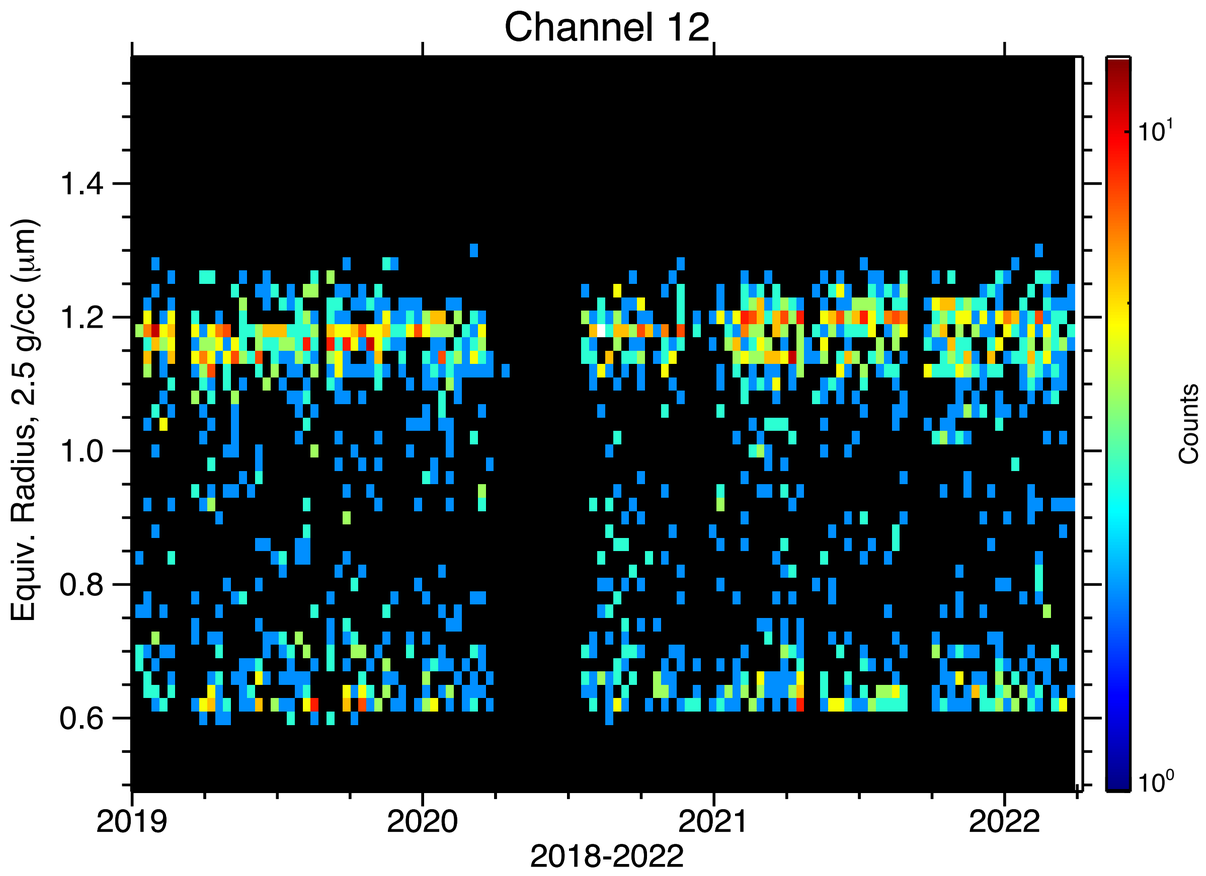




Thruster firing events removed

Level 3 Data: Individual Channels





Thruster firing events removed

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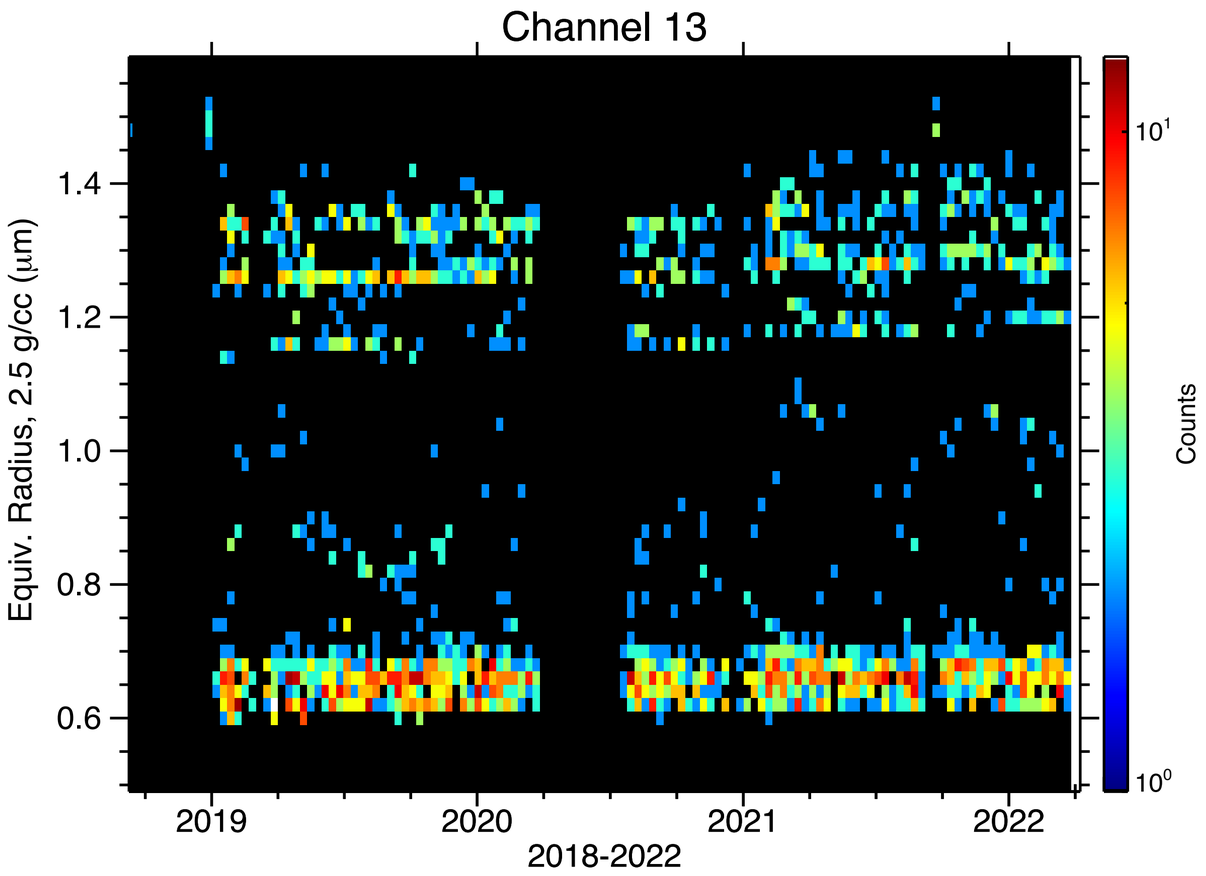
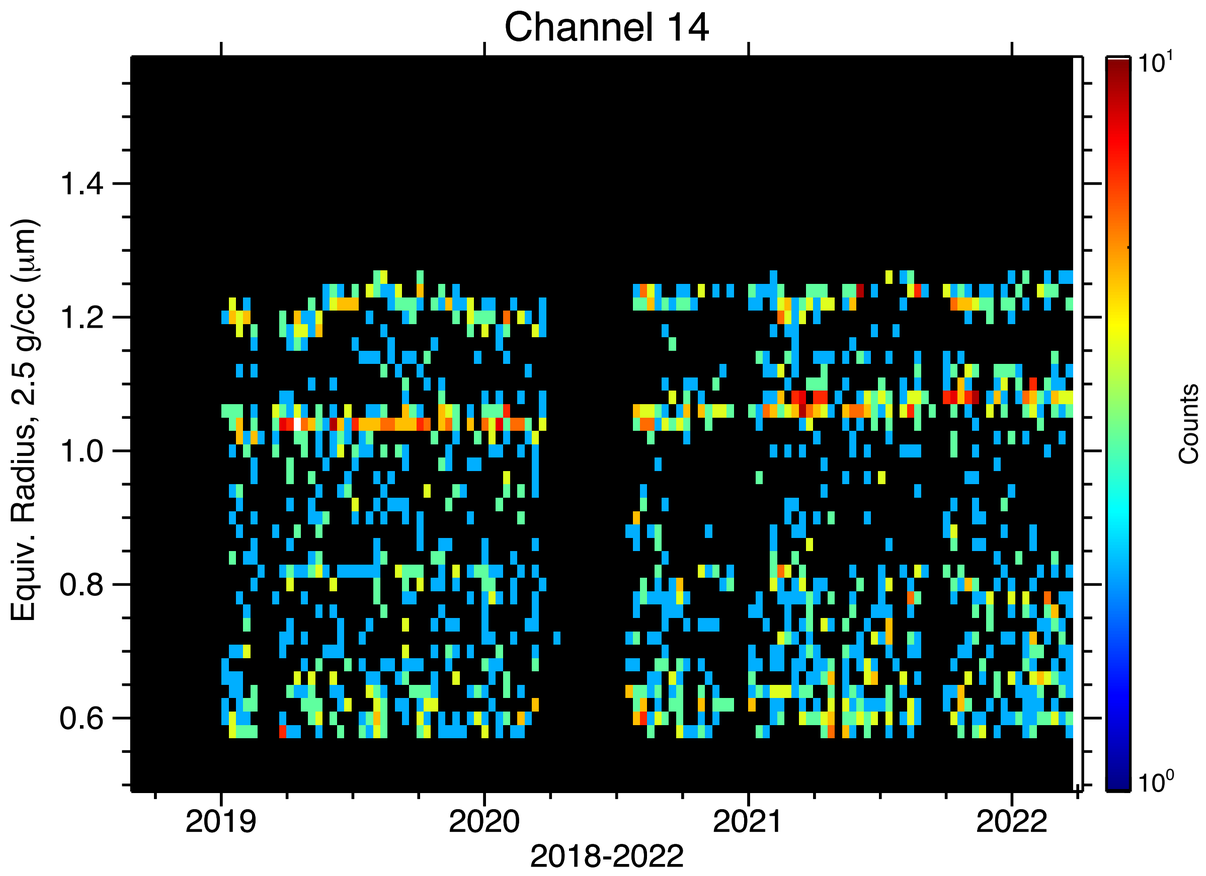
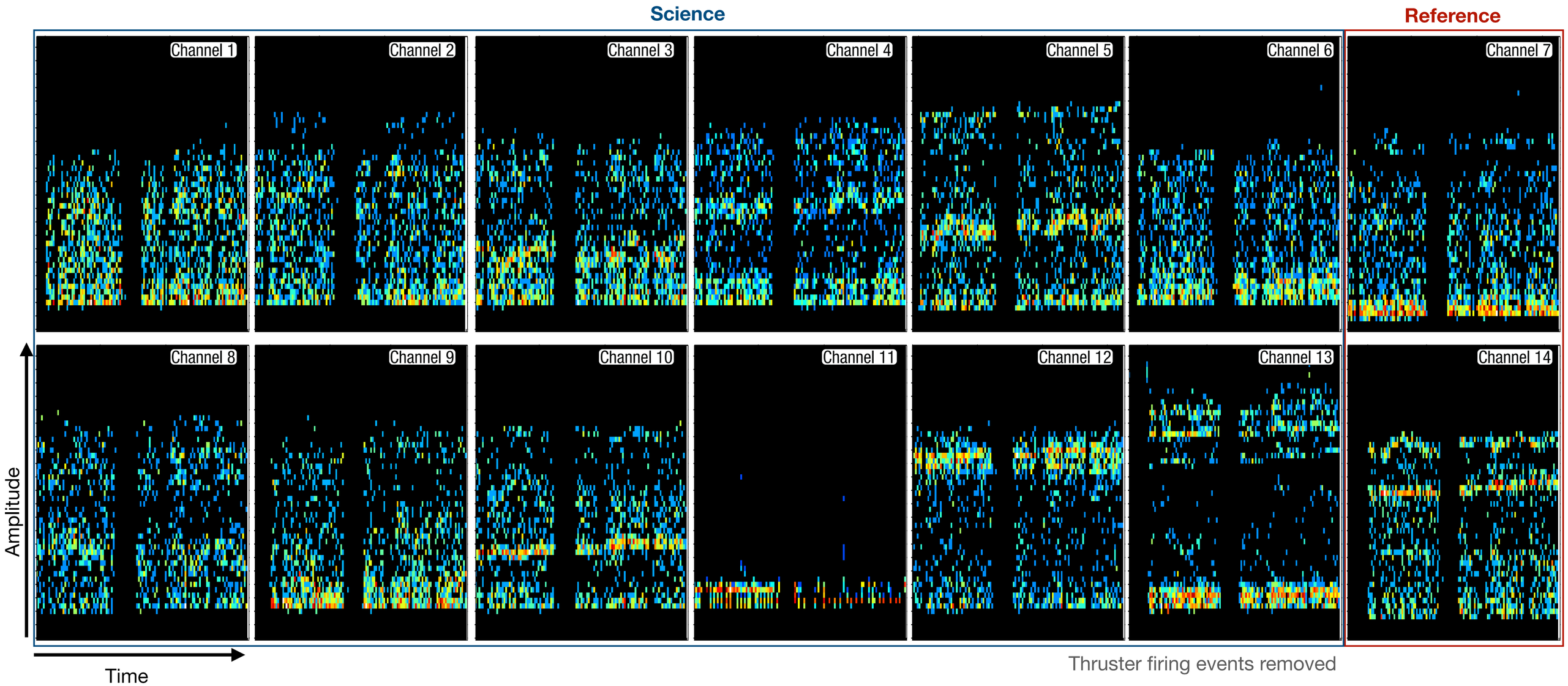


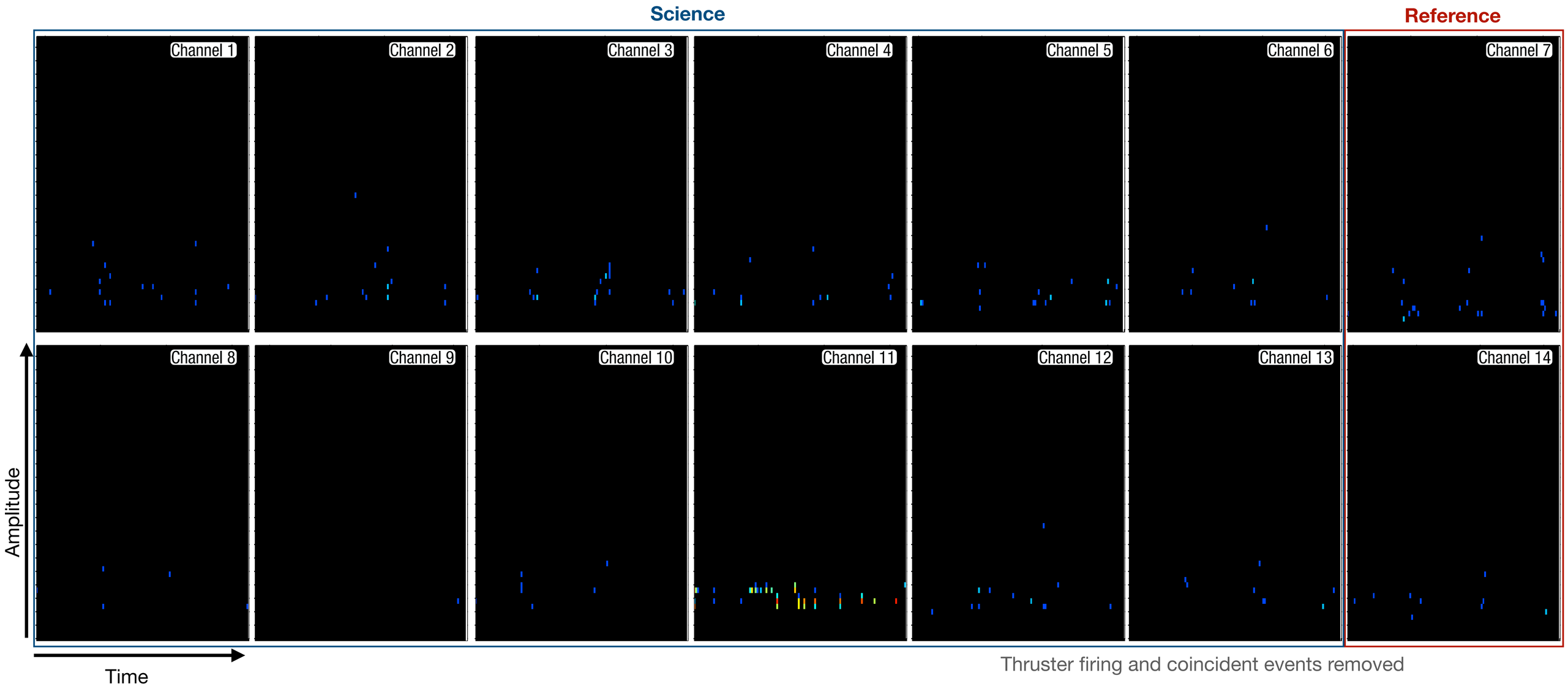


Thruster firing events removed

Level 3 Data: All Channels



Level 3 Data: All Channels



Thruster firing and coincident events removed

Assessment of Level 3 Data

- Read Level 3 data: nh-a-sdc-3-kem1-v5.0
  - Covers 2018-216T21:08 to 2022-109T19:49
- On/off times located in //document/sdc_on_off_times_v0851.tab
  - Provides sufficient information to calculate fluxes
- Channels exhibit different amplitude distributions as a function of time
  - Non-power-law distribution in charge/size from coincident events.
  - Non-monotonic peaks in amplitudes at different amplitudes across different channels