

Instrument Anomalies

Date	Mechanism	Anomaly Description	Notes
7/May/2001	Cryocooler B	Failure of cooler displacer B	- Cooler compressor B set to 82.5%. - Cryocooler A set to higher amplitude to increase cooling capability. - Detectors 1 to 4 (Side B) inoperable.
4/Aug/2001	Chopper 3	Complete failure	- Stopped at open position.
19/Mar/2002	Terra Satellite	Terra went into safe mode	- MOPITT entered safe mode. - MOPITT back to science mode 25/Mar/2002.
6/Apr/2002	Mirror 1	Complete failure.	- On the inoperable (B) side of MOPITT
13/Dec/2002	Cryocooler B	Cooler displacer B hit its end-stop	- Continued to operate normally after re-start.
16/Dec/2003	Terra Satellite	Terra went into safe mode	- MOPITT entered safe mode. - MOPITT back to science mode 29/Dec/2003.
28/Jul/2009	Cryocooler B	Cooler displacer B hit its end-stop	- Cooler compressor B set from 82.5% to 77.5%. - Cooler A settings were unchanged.
3/Oct/2009	Sieve 3	Sieve 3 heater turned off	- pressure in LMCÂ 3 dropped by 3.2Â kPa - Re-activated after MOPITT reset command in Mar/2011.
2/Dec/2010	Sieve 1	Sieve 1 heater turned off	- On the inoperable (B) side of MOPITT - Re-activated after MOPITT reset command in Mar/2011.
18/Feb/2016	Terra Satellite	Terra went into safe mode	- MOPITT entered safe mode. - MOPITT back to science mode 2/Mar/2016.
12/Dec/2017	Sieve 1	Sieve 1 heater turned off	- On the inoperable (B) side of MOPITT - Re-activated after MOPITT reset command in Mar/2018.
27/Sep/2018	Terra Satellite	Terra went into safe mode	- MOPITT entered safe mode. - MOPITT back to science mode 4/Oct/2018.
26/Jul/2019	Sieve 4	Sieve 4 heater turned off	- Caused PMC 2 amplitude to drop from 6.4Â mm to 2.5Â mm. - Re-activated after MOPITT reset command in Aug/2019. - PMC 2 returned to normal operational state.
13/Aug/2019	PMC 2	PMC 2 vibration events began	- PMC 2 caused transient vibrations in the system. - These events have since been occurring randomly since. - When MOPITT telemetry indicates such as event has occurred, the data is flagged and excluded from retrievals. - Nest heater 1 and 2 unexpectedly turned on during MOPITT decontamination.
31/Mar/2021	Dewar Heater	Dewar nest heater 1 and 2	- Both nest heaters were turned off, and the instrument was allowed to warm up naturally. - Future decontamination events allow the detectors to heat up naturally rather than using the heaters.
11/Aug/2024	PMC 2	PMC 2 failure	- The position of the piston of PMC 2 began to oscillate, accompanied by an increase in PMC 2 motor current and temperature. - PMC 2 was turned off. - MOPITT retrievals had to be modified to account for the loss of this data.
27/Dec/2024	Terra Satellite	Power limitations	- Due to a series of solar array shunt failures over the lifetime of the Terra mission, available power is limited. - Required shutting off unused Side B elements (Choppers, Mirrors, Sieves, LMCs, PMC1) to save power.