

# Alerts

Alerts are messages generated during mining that often serve as a notice or warning that a certain threshold or event occurred. Each alert contains a severity, a time, and a specific message.

## MOMA Alerts

### General Error Check

- **Alert ID:** 1
- **Severity:** Notice
- **Description:** Grep message log for "Error"

### MAIF APV Comm

- **Alert ID:** 2
- **Severity:** Warning
- **Description:** Grep message log for "Idi: error"

### Spacewire Comm Error

- **Alert ID:** 3
- **Severity:** Warning/Notice
- **Description:** Spacewire Parity (HK 522) > 0 or Spacewire Disconnect (HK 523) > 0 after 30sec

### MOMA Safe Event

- **Alert ID:** 4
- **Severity:** Notice
- **Description:** HK 507 MAX, MOMA\_STATUS\_SAFE > 0 at any time during a TID

### WRP Too Fast

- **Alert ID:** 5
- **Severity:** Notice
- **Description:** PWM Speed - HK 832 MAX > 103000

### WRP Failed To Start

- **Alert ID:** 6

- **Severity:** Warning
- **Description:** PWM Speed - HK 832, MAX > 1000 and < 99000 RPM

## WRP Pressure Spike

- **Alert ID:** 7
- **Severity:** Warning
- **Description:** HK 830, MOT\_SUP\_IMON, MAX > 1.1A

## Dark Counts

- **Alert ID:** 8
- **Severity:** Warning
- **Description:** HK 252 SCAN\_TELEM\_DAC\_ID = 20000 AND HK 253 SCAN\_TELEM\_DAC\_VAL > 5

## Laser Burst Energy Variation

- **Alert ID:** 9
- **Severity:** Info
- **Description:** Std. Dev. of burst pulse energy is > 5.0

## Laser Pulses Mismatch

- **Alert ID:** 10
- **Severity:** Notice
- **Description:** Main Pulses != # of Pulses in Burst

## Unknown SEB sequences

- **Alert ID:** 11
- **Severity:** Notice
- **Description:** Scan type is LDI or EI, and SEB packet sequence count == 0

## Filament VMON Pegged

- **Alert ID:** 12
- **Severity:** Warning
- **Description:** Anytime Filament VMON HK is > 4.9

## Expected Pulse Count Mismatch

- **Alert ID:** 13
- **Severity:** Warning
- **Description:** HKID 1050 (PLS\_SUBPKT\_CNT) != (pkt.length() - 4 / 16)

# Gap in Scans

- **Alert ID:** 14
- **Severity:** Warning
- **Description:** Bin Delta between Science packets is > 100

# Old Packet Format

- **Alert ID:** 15
- **Severity:** Info
- **Description:** Scan Packet Version Number != 2 (c\_scan.science\_data\_pkt\_version())

# Missing Scan Status Packets

- **Alert ID:** 16
- **Severity:** Warning
- **Description:** Number of Scan Status Packets != Number of Scans in Summed Packet | Disable for Dark Counts

# Dropped Packets

- **Alert ID:** 17
- **Severity:** Warning
- **Description:** Dropped packets are detected by gaps in the packets' sequence numbers.

# Both EMs On

- **Alert ID:** 18
- **Severity:** Warning
- **Description:** Both Electron Multipliers are on at the same time

# Sub-system Communication Errors

- **Alert ID:** 19
- **Severity:** Warning
- **Description:** Communication errors between any of the sub-systems (MAIF, SEB, GC, LASER) as reported by the CDH/FSW.

# WRP Instantaneous High Current

- **Alert ID:** 20
- **Severity:** Warning
- **Description:** The instantaneous WRP Current exceeded a threshold.

Mass Flow	WRP Back Pressure	Instant WRP Current
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MP_PRESS < 0.5	4 Torr	0.55 A
MP_PRESS < 0.5	6 Torr	0.65 A
MP_PRESS < 0.5	8 Torr	0.75 A
MP_PRESS > 0.5	4 Torr	0.70 A
MP_PRESS > 0.5	6 Torr	0.80 A
MP_PRESS > 0.5	8 Torr	0.90 A

## WRP 1-Min Average High Current

- **Alert ID:** 21
- **Severity:** Warning
- **Description:** The 1-Min Avg WRP Current exceeded a threshold.

Mass Flow	WRP Back Pressure	1-Min Avg WRP Current
MP_PRESS < 0.5	4 Torr	0.45 A
MP_PRESS < 0.5	6 Torr	0.55 A
MP_PRESS < 0.5	8 Torr	0.65 A
MP_PRESS > 0.5	4 Torr	0.60 A
MP_PRESS > 0.5	6 Torr	0.70 A
MP_PRESS > 0.5	8 Torr	0.80 A

Revision #4

Created 22 March 2023 17:31:31 by Nick Dobson

Updated 21 May 2025 14:04:24 by Bradley Tse