

Description of the CÆLIS alarm system

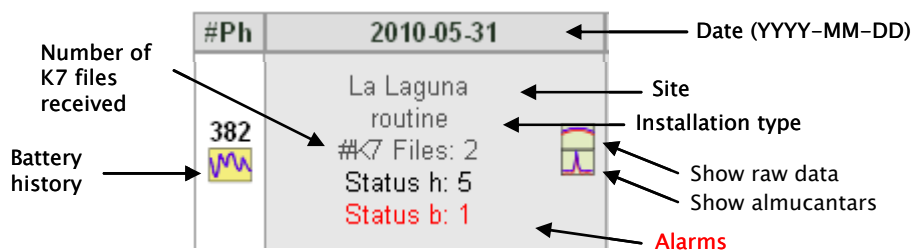
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The [CÆLIS](#) web site provides a set of alarms and information about the instruments to help the network management. It follows some ideas of the AERONET [instrument status](#), and also from the PHOTONS management system, and proposes some new ones.

Note that this system is still under development, not all features are complete yet, and some failures may not be properly detected. Please contact with the development equipment if some issue is detected (webmaster@goa.uva.es). For fully operational alarms, please use the AERONET [instrument status](#).

The alarms displayed are calculated in **real-time** and are updated as soon as new data are received.

For each photometer, denoted by its AERONET number (column ‘PH’), a row is displayed with the last 6 days:



If there are no flags, a green “Ok!” is displayed. Initially the current date is set, but the user can select any desired date in the corresponding box (“Select date”).

Installation types:

- Routine: routine operation for standard measurements in a field site.
- Calibration: the instrument is being calibrated.
- Master: the instrument is a master for intercalibration.
- Lab: the instrument is in maintenance or sphere calibration.
- Box: the instrument is on travel.
- Test: test measurements.
- Repair: the instrument is sent to Cimel for reparation.

Alarm description:

Daily flags:

- **No data:** flag if no data are received and the installation type expects data
- **Header only:** flag if only Cimel headers are received (only for instruments connected via satellite).
- **Only status:** flag if only status scenarios of any kind are received.

- Error status (with count of occurrences):
 - o **Status b**: robot errors
 - o **Status s**: filter wheel error
 - o **Status r**: reset error
 - o **Status “?”**: other error (e.g. parity error).
 - o **Status h**: humidity sensor activated (it is not an error, therefore not displayed in red, just for info).
- **Temperature jumps**: flag if jump is larger than 30°C/min, indicating error in the temperature sensor.
- **Time shift**: flag if there is more than 4 seconds difference between PC time and photometer time in the K7 file (only for new Cimels). The difference (in sec) is also indicated.
- **Low internal battery**: flag if any value is <5V.
- **Low external battery**: flag if any value is <11.5V
- **Internal battery trend**: flag if battery drops more than 0.4V/week
- **External battery trend**: only calculated if there is no valid information on the internal battery. Flag if battery drops more than 0.5V/week
- **Constant internal battery**: flag if the battery voltage does not change during the whole day (displayed in grey).
- **Bad Temperature**: flag if temperature is larger than 50°C or smaller than -30°C.
- **Direct sun saturation**: flag if any direct sun data saturates.
- **No sun counts**: flag if no direct sun observation is larger than 5 counts for the whole day.
- **No sky counts**: flag if more than 4 sky observations are 0.
- **High Black current**: flag if any BLACK measurement is in absolute value >500 counts (cimel versions 5.x) or >18 counts (version 4.x) in any sun or sky channel.
- **Constant humidity status**: flag if more than 200 status h in the last 7 days
- **Shifted Almucantars**: flag if almucantars are asymmetric so that aureole radiances only increase or only decrease in the range -6° to +6°. The number of such almucantars along the day is also provided.
- **Incomplete almucantars**: indicates the number of almucantars that were not received completely (missing channels or incomplete right-left pairs).
- **A/K discrepancy**: flag if difference between aureole and sky at 6° exceeds 10% in clear sky conditions and SZA>30°.

We thank AERONET and PHOTONS for their ideas and support to build this page.