Experience from the installation of the FRAM at CTA-S

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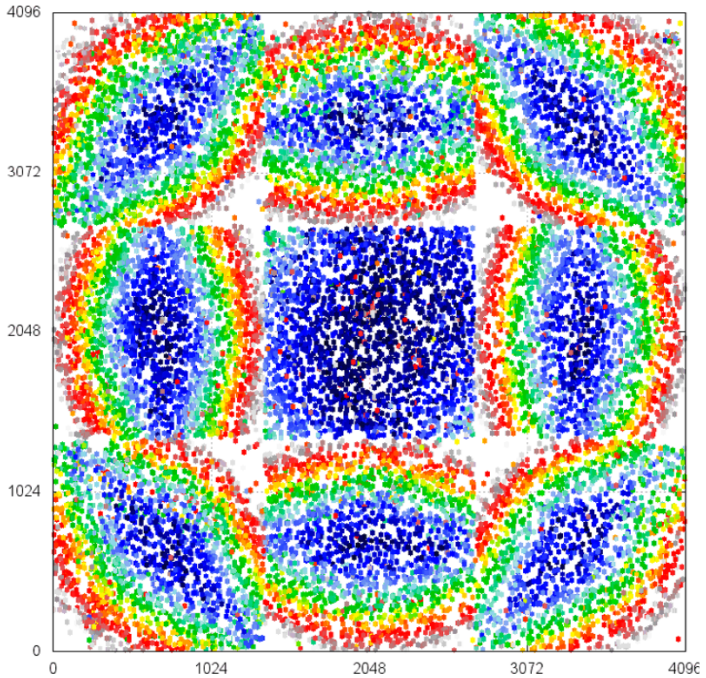
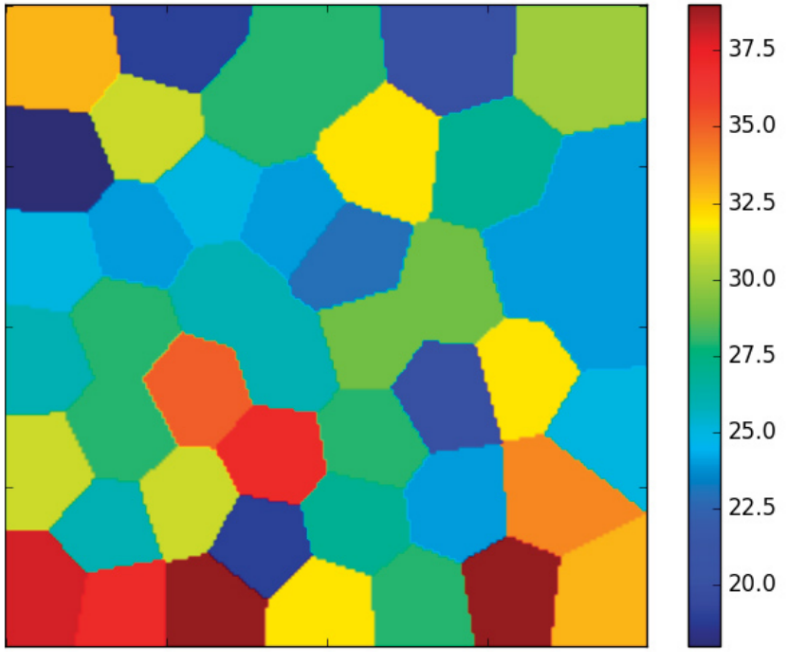
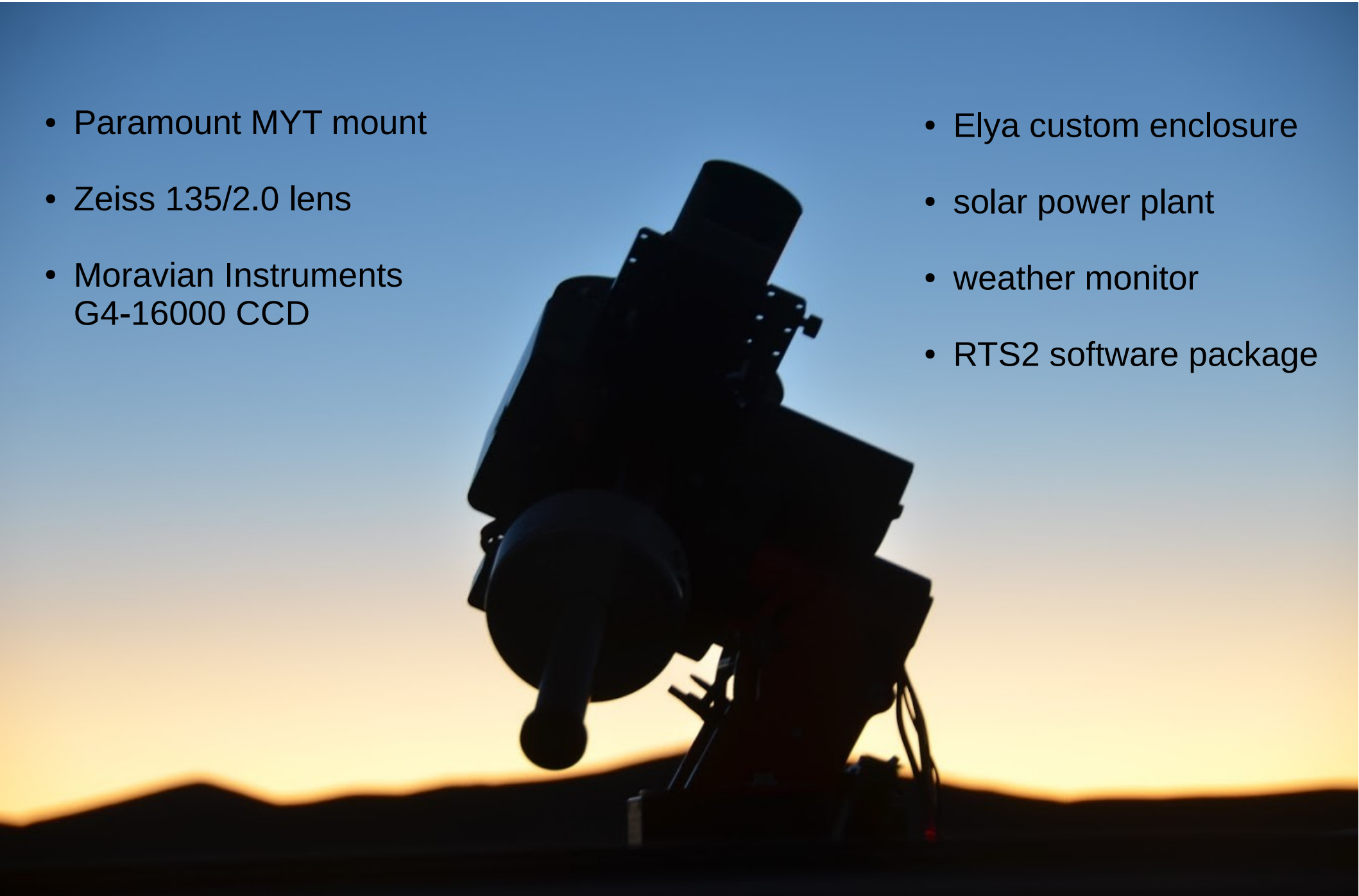
The FRAM telescope

- Measures integral aerosol optical depth (AOD) from stellar photometry
- AOD maps in fixed FOV (15°x15°), altitude scans for calibrations
- A prototype was installed in Prague from February 2016 to April 2017 → extensively tested and data processing algorithms were developed
- Details on data processing methods: Janecek et al. EPJ Web of Conferences **144**, 01012 (2017)





The FRAM telescope: setup



- Paramount MYT mount
- Zeiss 135/2.0 lens
- Moravian Instruments G4-16000 CCD

- Elya custom enclosure
- solar power plant
- weather monitor
- RTS2 software package

The FRAM telescope: construction

- Installed during the first two weeks of August at CTA-S
- Close to the CTA Atmoscope site in order to use its connection to the ESO network
  - The link Atmoscope site ↔ Paranal very weak (downloading speed ~ 20-50 kB/s → one image - 13 min, data from one night – 150 hours …)
  - But there is an upgrade of the link in progress.
- Construction based on upgraded CTAO-ESO Atmoscope agreement (2013)
- Negotiation with Andreas Kaufer (ESO, Director of Operations)
- The container with parts of the telescope was delivered at the Paranal
- ESO allowed us to use a storage to keep all telescope parts and stuff
- There are available facilities including workshops (workers were very helpful, lent us a lot of gear and allowed us to use all machines)
- The telescope was installed on a temporary wooden platform fixed into the ground with metal ground screws → there was no need for building permissions

ESO facilities at Cerro Paranal

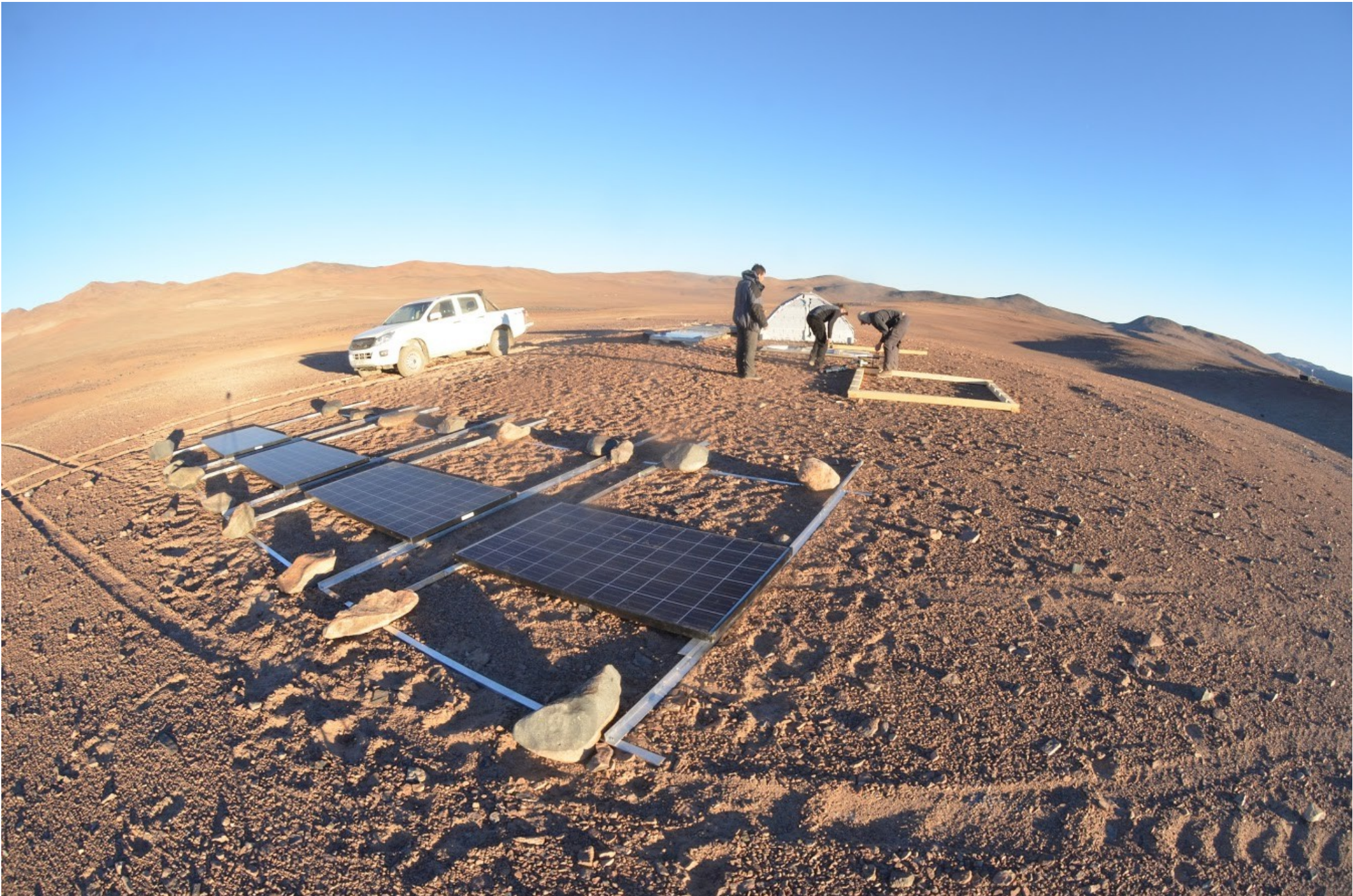
Storage

Storage

Workshop

ESO hotel

Preparation of the site

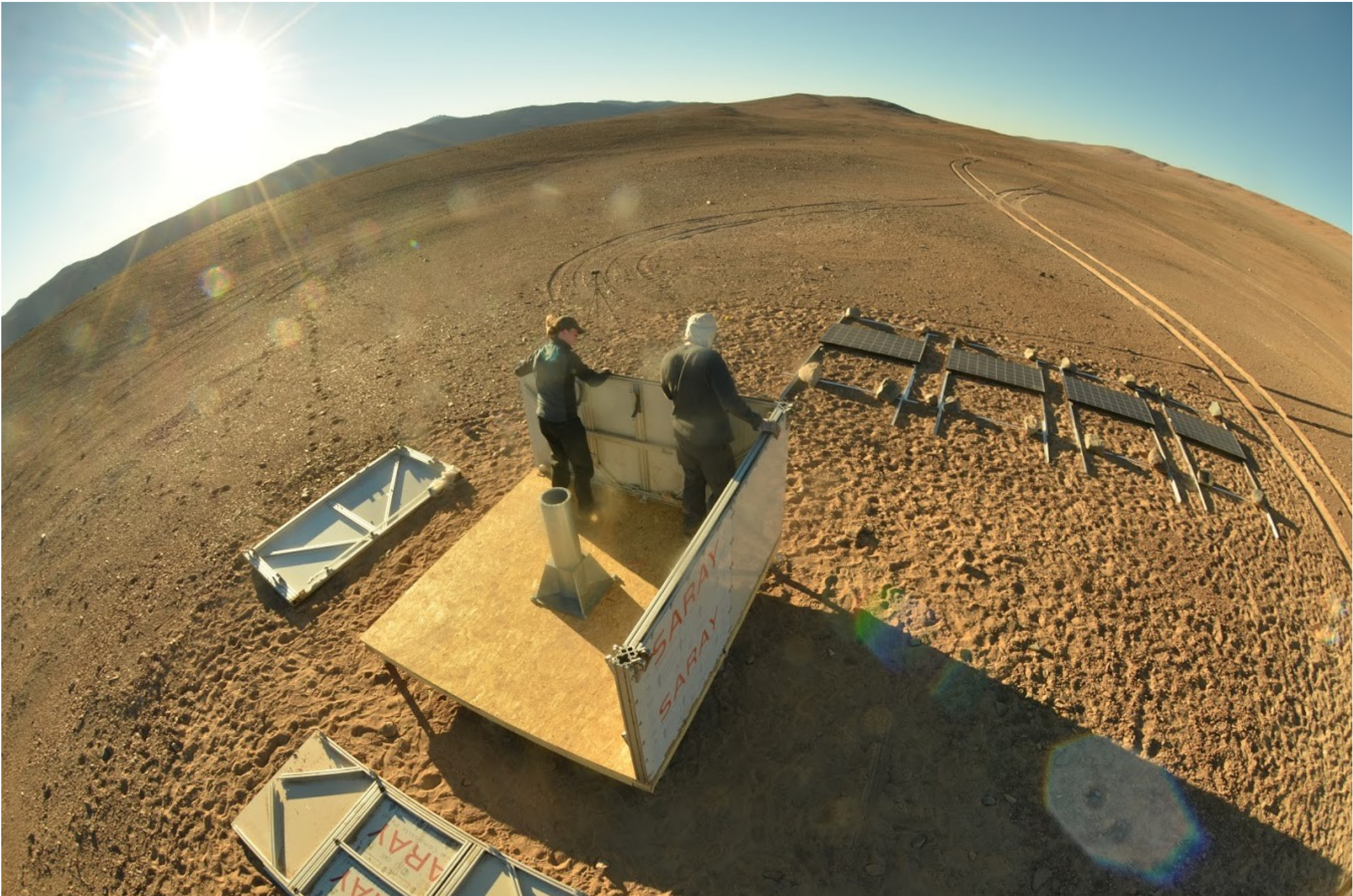


Preparation of the site

Wooden platform

Wooden platform and telescope column

Installation of the dome

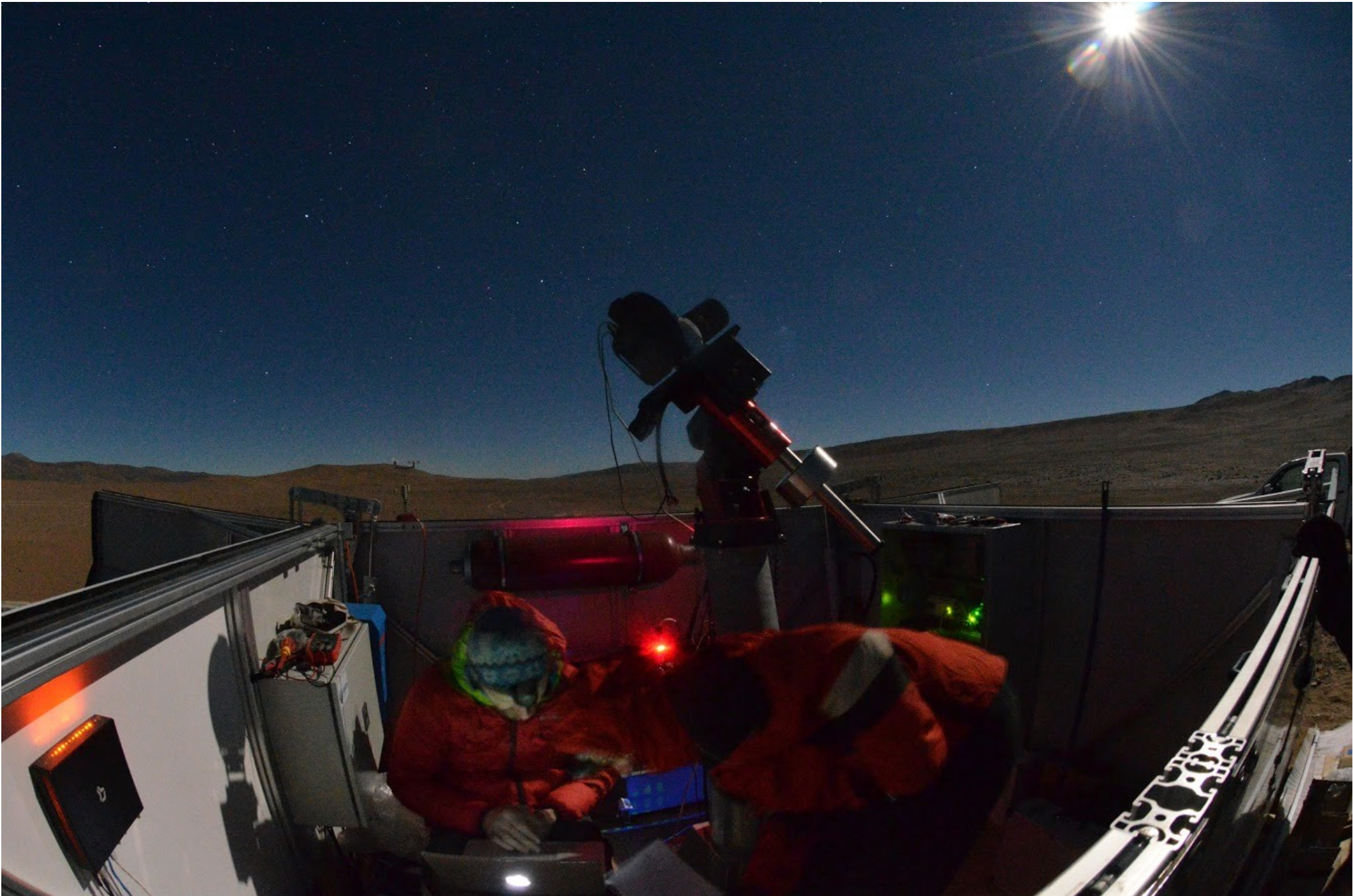


Installation of the dome

The dome and the photometer

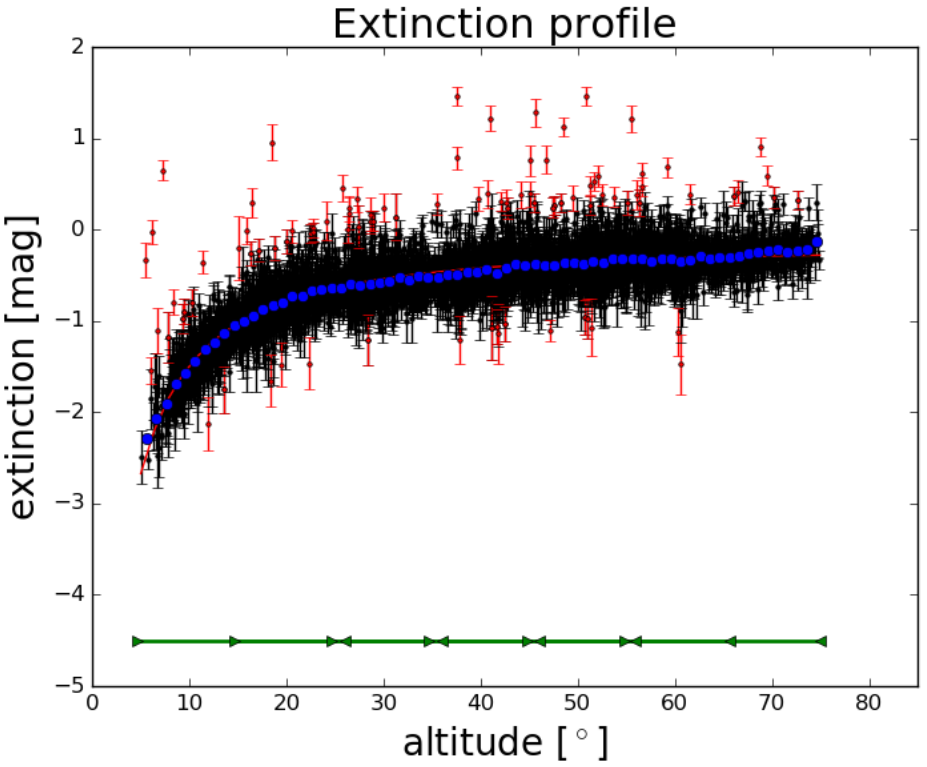
Completed dome, solar panels, weather station

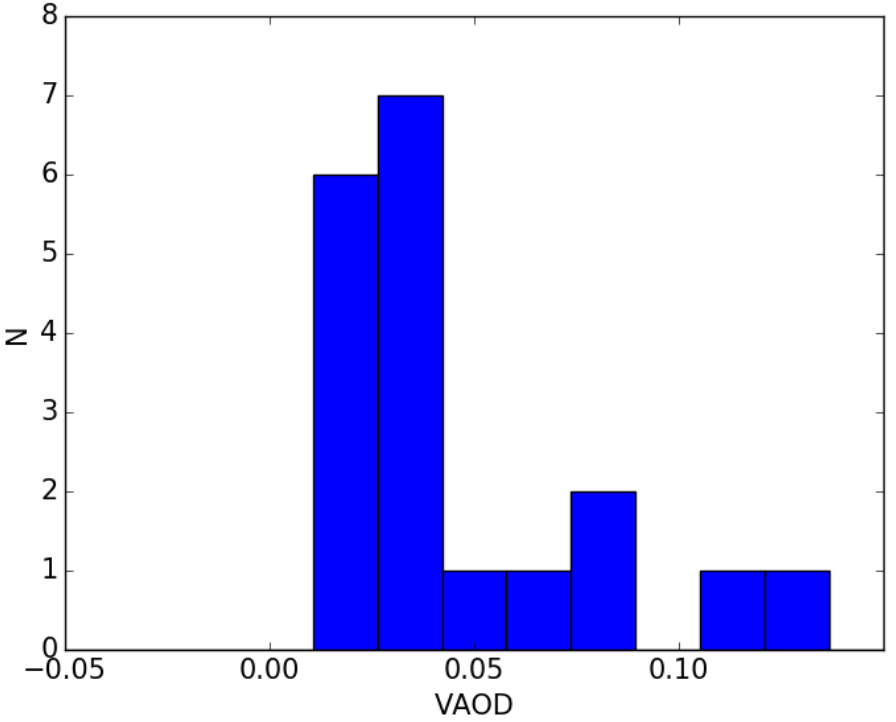
First tests



First VAOD

- 5.0 GB downloaded → 30 altitude scans in photometric filter B, 19 of them satisfied our criteria






The very first light:
Center of the Milky Way