

# Science operations of OmegaCAM

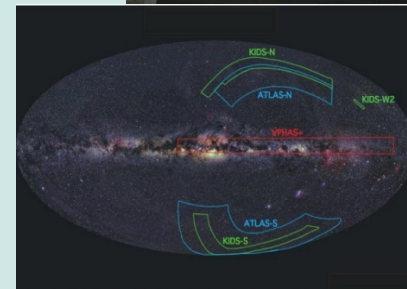
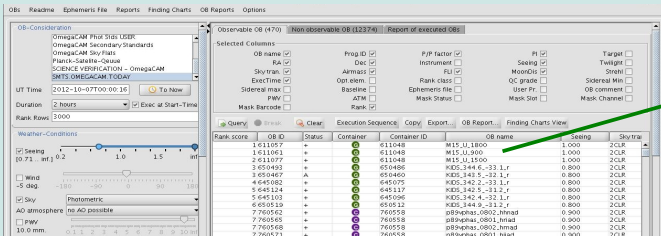
Steffen Mieske (ESO) on behalf of the OmegaCAM IOT

<http://www.eso.org/sci/facilities/paranal/instruments/omegacam/iot.html>

**OmegaCAM @ VST images a 1x1 degree FOV with 32 2kx4k CCDs (0.21" pixel). The VST is located at ESO's Paranal Observatory and has a mirror diameter of 2.6m. OmegaCAM started service mode operations on October 15<sup>th</sup>, 2011. Observations focus on three public surveys: KIDS, ATLAS, VPHAS+. 10% of the time is for GTO, 10% for Chilean PIs.**

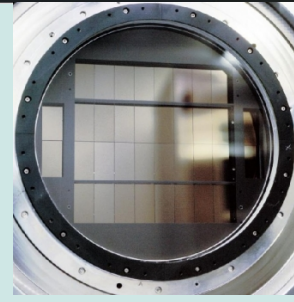
## 1. Short-term scheduling

Observations with OmegaCAM (and also VIRCAM) are performed by telescope operators, without a night astronomer. The OBs are scheduled automatically, using a program called 'Observing Tool' (OT). A ranking among observable OBs is calculated in real time, to best match the current conditions with the user-requested constraints.



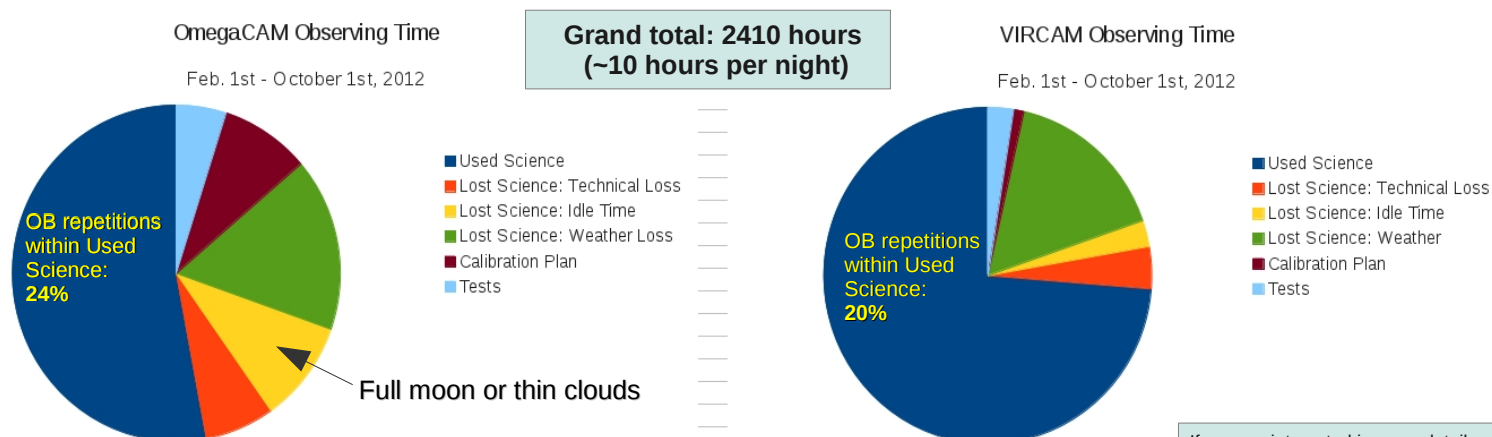
## 2. Real-time quality control

A strict real-time quality control ("QC0") is performed by the telescope operators, based on the OmegaCAM pipeline output. In order for an observation to be considered as successfully executed, the average FWHM across the FOV needs to be  $< 1.1 * (\text{requested seeing})$ , the FWHM variation across the FOV must be below 25% ('flat focal plane'), and the mean ellipticity of stellar images must be below 0.15. **These three combined QC0 criteria guarantee a high data quality.** The OB re-execution fraction is 24%, mainly caused by degradation of atmospheric conditions during execution, and focal plane drift in open loop (no IA; sequence of short integrations with large offsets).



## 3. Comparison OmegaCAM / VIRCAM between Feb-Oct. 2012

Exclude period of OmegaCAM operations ramp up between October 2011 and January 2012.



If you are interested in more details, please come and see me

## Time usage breakdown during 'Used Science'

|                              | OmegaCAM                          | VIRCAM                        |
|------------------------------|-----------------------------------|-------------------------------|
| Shutter-open time:           | 44%                               | 48%                           |
| Aquisition time (preset, AO) | 28% (130 sec / OB, avg OB = 480s) | 13% (90s / OB, avg OB = 740s) |
| Rest                         | 28% (mostly readout)              | 39% (readout and offset)      |