

ZTF Photometry release plan

Conclusions

- 5 main new ingredients in DR2.5
 - **Sensor effects** (critical, validation in progress)
 - **ztfimg** (new detrending framework)
 - **Starflats / uberflats** (code exists, reprocessing in progress)
 - **Bandpasses** (exist, validation in progress)
 - **Calibration chain** (ubercal \leftrightarrow SMP not connected yet)

Main differences w.r.t DR2.2

- Now starting now from raw data
 - More logistics : linearity corrections, master bias & flats
 - Pocket effect correction
- SMP <-> Ubercal integration
 - Done once with DR2.1 in the past
- SMP photometry of fundamental standards
 - Already done after DR2.2
 - Will be redone in DR2.5
- Uniformity corrections in light curve calibrations
 - Not critical, but since we have starflats/uberflats, let's use them

Testing phase

- Before pushing the button, test first
 - Allow to iterate quickly to spot problems and fix them
 - -> reduce the amount of data
- Test dataset
 - 158 contiguous fields, 3 bands, 2018 -> 2022
 - Star flat fields
 - Contain field 600 and 557 (test fields for pocket effect)

Test runs

- **Photometry test runs**
 - Run the SMP pipeline on the test dataset
 - Aperture & PSF photometry
- **Studies**
 - pocket effect validation (fields 600 & 557)
 - Mini-ubercal (all fields)
 - SMP light curves for all SNe in the test dataset
 - Ubercal <-> SMP connection
 - Starflats / uberflats comparison
 - Filter model validation

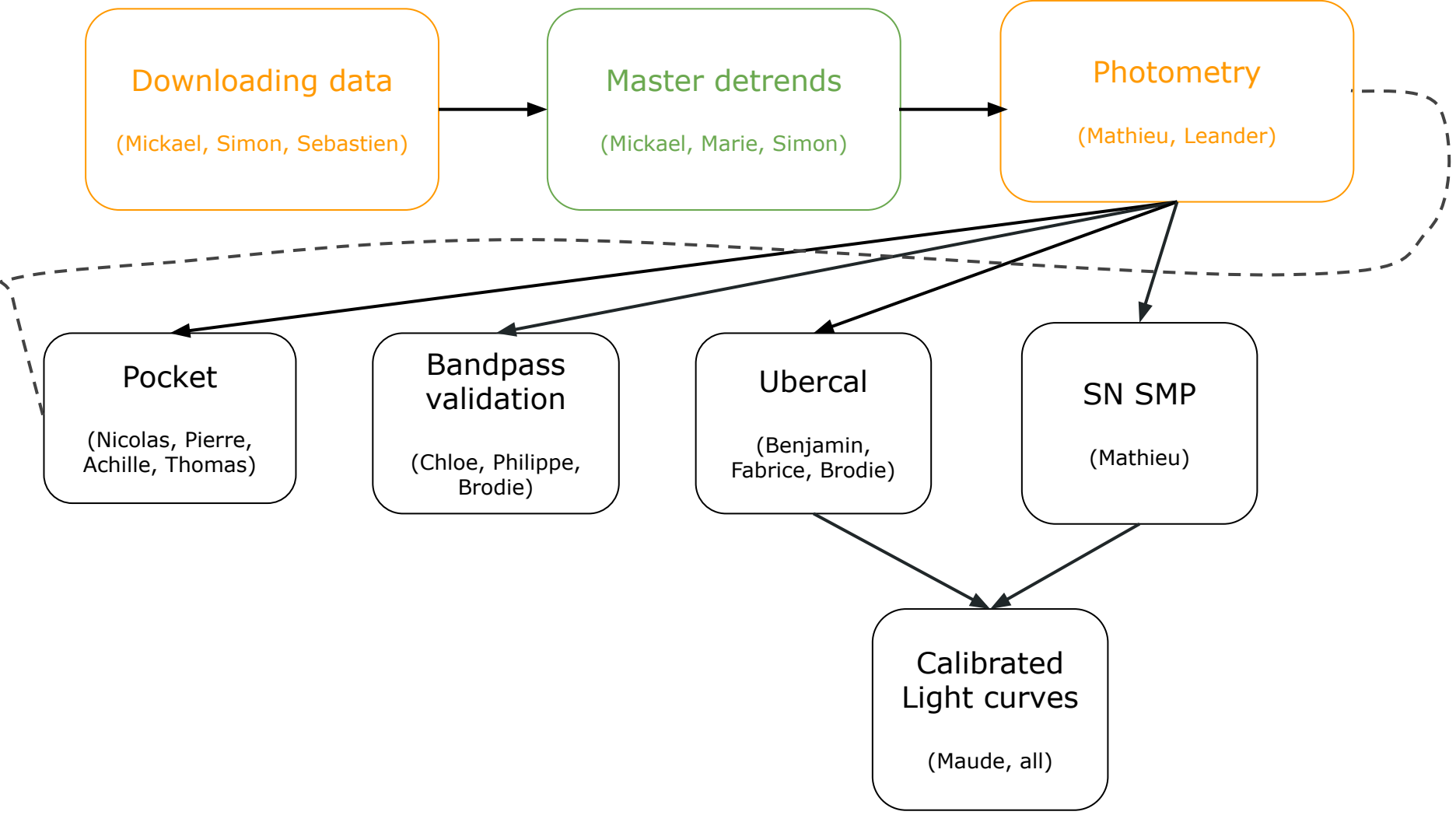
Metrics

- **Pocket effect**
 - Aperture fluxes before / after correction
 - *Goal*: correction must preserve fluxes
 - PSF flux linearity estimated from comparison PSF \leftrightarrow aperture
 - *Goal*: linear at the 0.2-0.3% level
 - Astrometry
 - *Goal*: no detectable flux dependent bias in astrometry
- **Ubercal**
 - Comparison with GAIA / PS1 (uniformity)
 - Comparison with SMP fluxes (flatness & linearity)
 - *Goal*: 0.2-0.3%
 - Comparison full calibration chain with GAIA-based chain
 - *Goal*: 0.2-0.3%

Metrics (cont'd)

- **Bandpasses**
 - Synthetic color terms vs. measured color terms
 - Preferably with telescopes with measured bandpasses
 - PS1
 - MegaCam
 - Predicting ZTF mags with GAIA XP
 - *Goal: 2-3 AA*

Plans for testing phase



Tentative schedule

See Mathieu's talk

- **Photometry**
 - Takes a little longer than expected (pipeline issues)
 - Hopefully completed before the Christmas break
 - Enables validation studies (January)
- **As soon as validation metrics met**
 - We push the button (February ?)
- **Photometry will then go through**
 - Compression
 - Blinding
 - And be available to all (same pages)

