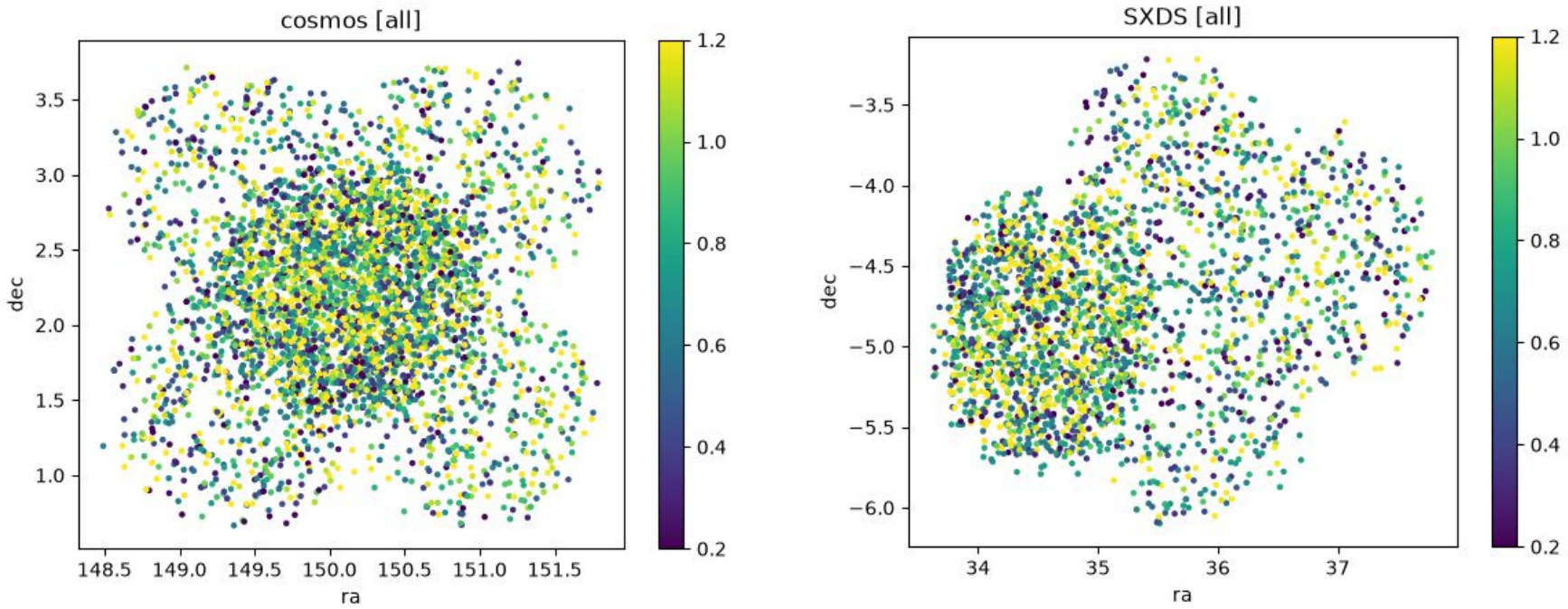
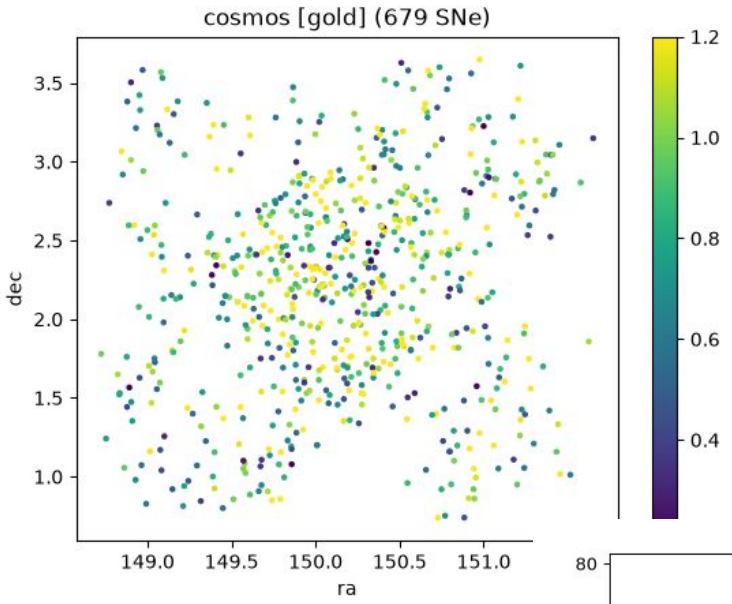
Subaru lightcurves

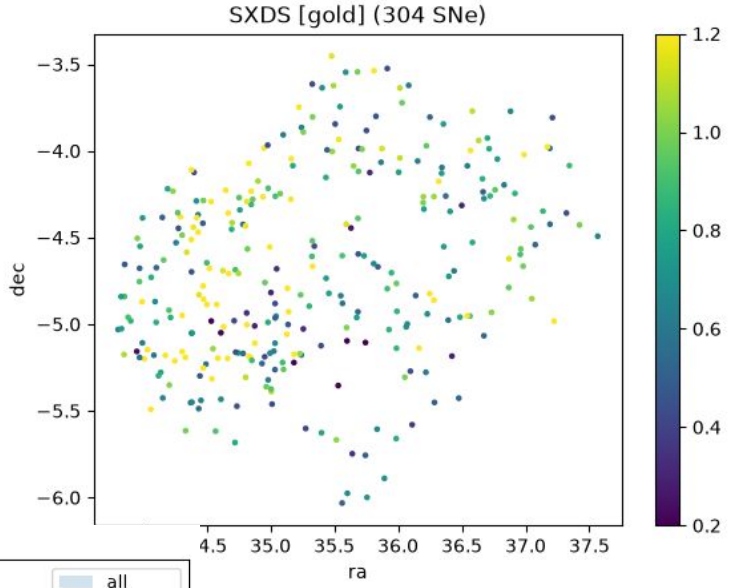
Subaru sample

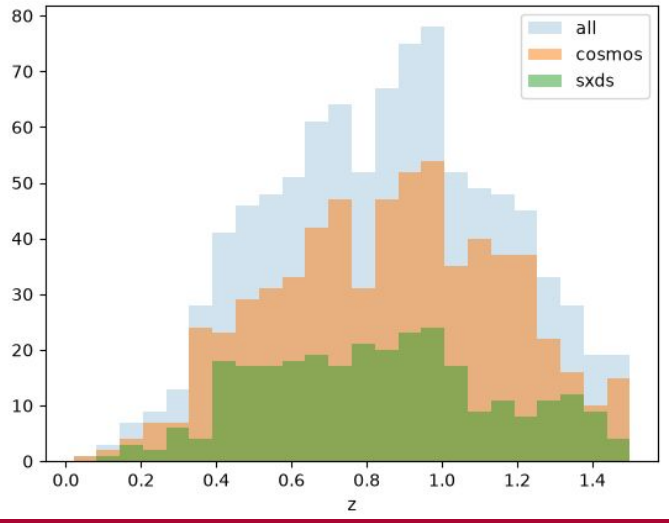


- Spec redshifts from: AAT, DESI + VLT/FORS2, Subaru/Focas

Subaru sample (gold)

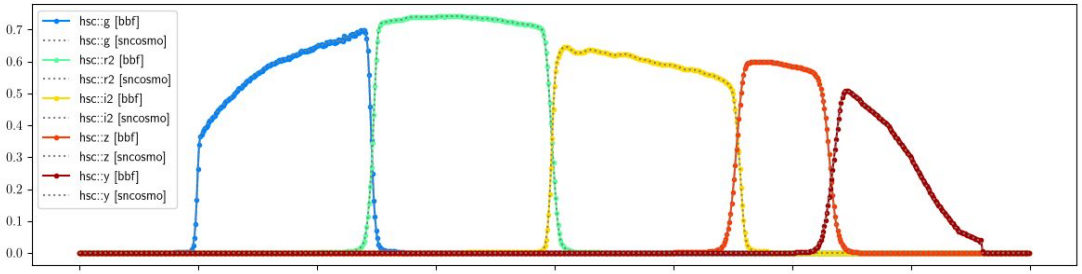


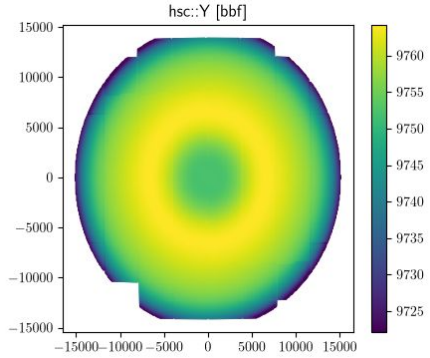


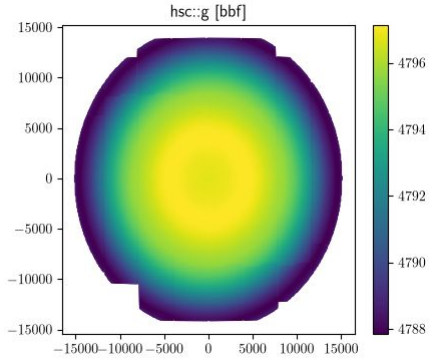


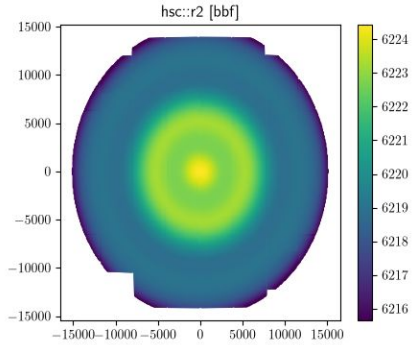
Characterization of HyperSuprimeCam

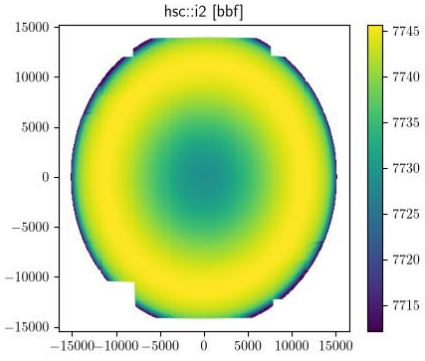
- HyperSuprimeCam is well characterized
  - Filters extensively measured @ NAOJ (Kawanomoto et al, 2018, PASJ, 70, 66.)

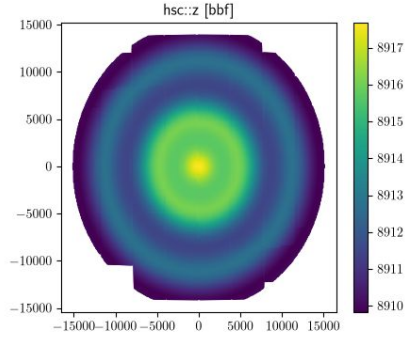






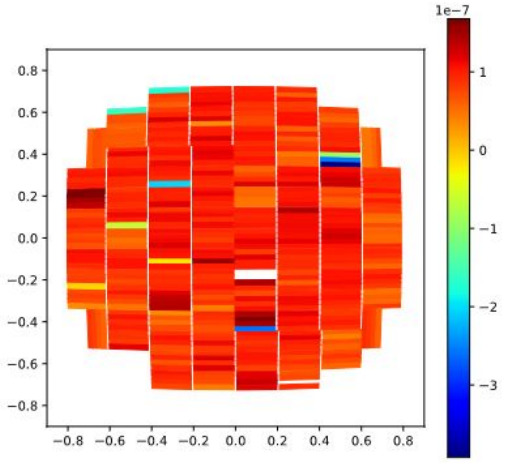


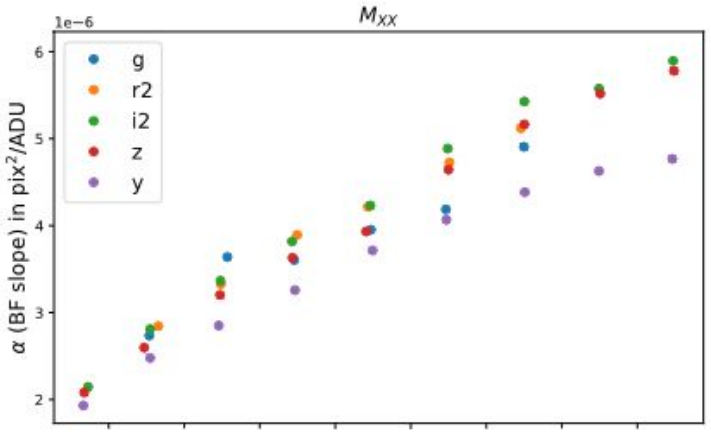




Sensor effects :

- Non-linearities and brighter-fatter
  - Non-linearities remeasured (Yasuda + Astier, 2023)
  - Brighter-Fatter effect extensively characterized (Astier, Regnault, 2023,)





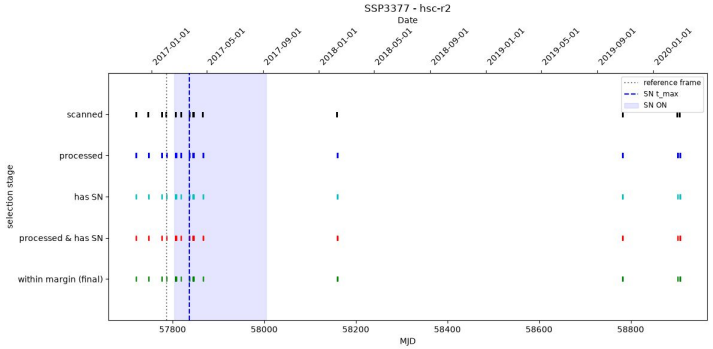
HSC pipeline

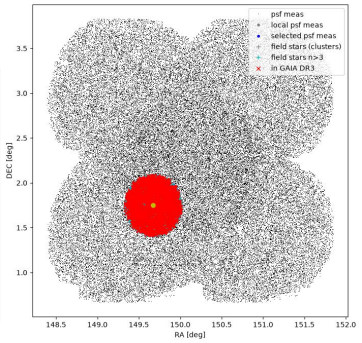
- We have decided to reprocess the full dataset, because
  - New chromatic BF corrections
  - Very complicated pipeline layout (loss of knowledge)
  - New PI & SSP exposures that could be added as OFF images
    - => more light curves in r2 and i2
  - Many y-band light curves were missing
  - We wanted the same pipeline as ZTF
- Project started end of 2025
  - Full ZTF-like pipeline ready in the spring
  - Can process the whole dataset in ~ 2 days (8 hours for the light curves)

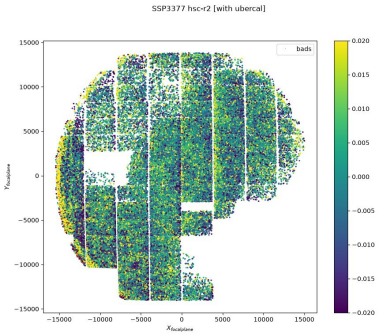
Differences w.r.t ZTF

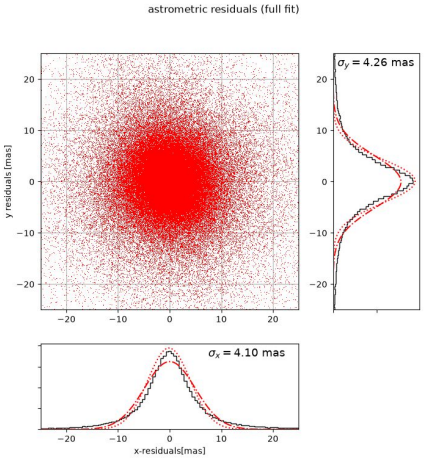
- Very large ditherings
  - The non-uniformity corrections (“uberflats”) need to be accounted for *before* SMP
  - Astrometry is redetermined locally, around each SN
  - Lack of OFF exposures => every image counts
    - Especially in r2 and i2

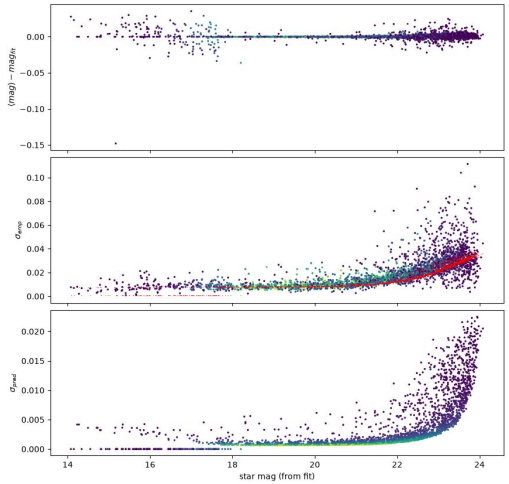
Pipeline internals





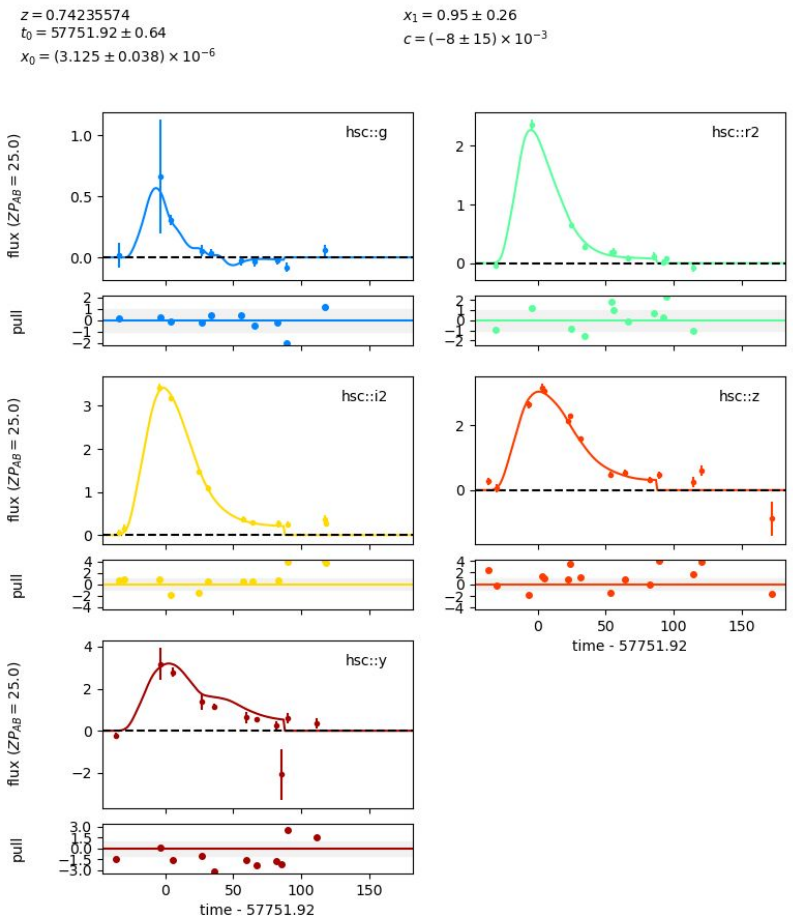


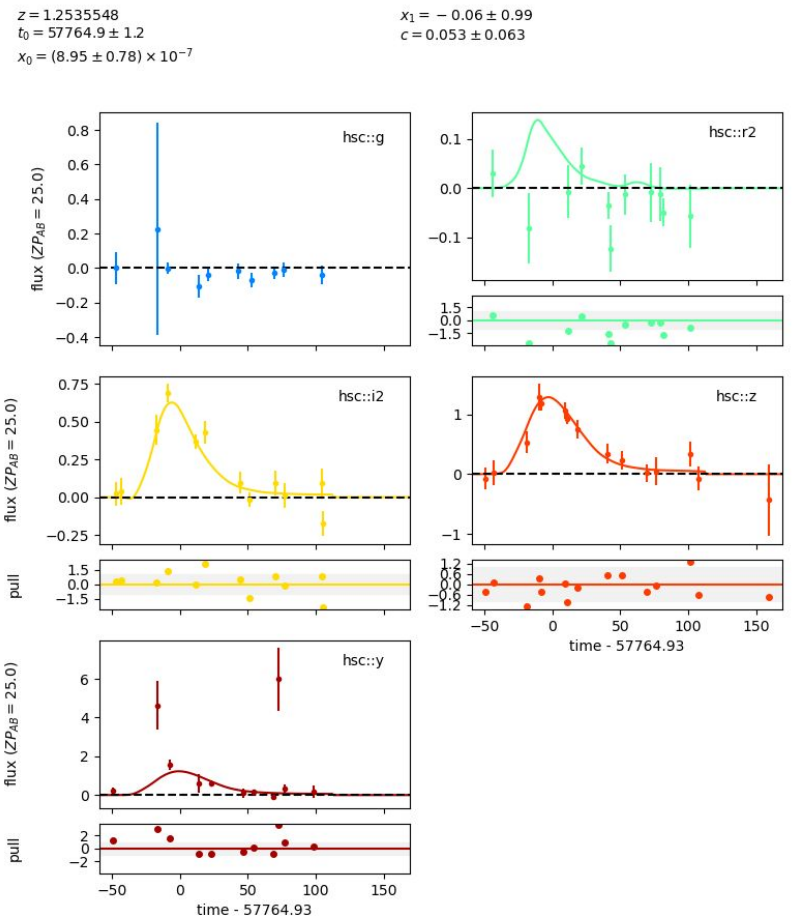






Example light curves





Conclusion

- Great SN sample
  - O(500) SNe in the Hubble diagram
  - Same size as SNLS
  - But significantly deeper, with Y-band data
- Reprocessing nearly over
  - Final OFF exposures are being processed
  - Some more work on the ubercal model
- But 2-3 more iterations will be necessary
  - ~ 1 per week
- Freeze no later than end of october