BG 32s AND BG 512s

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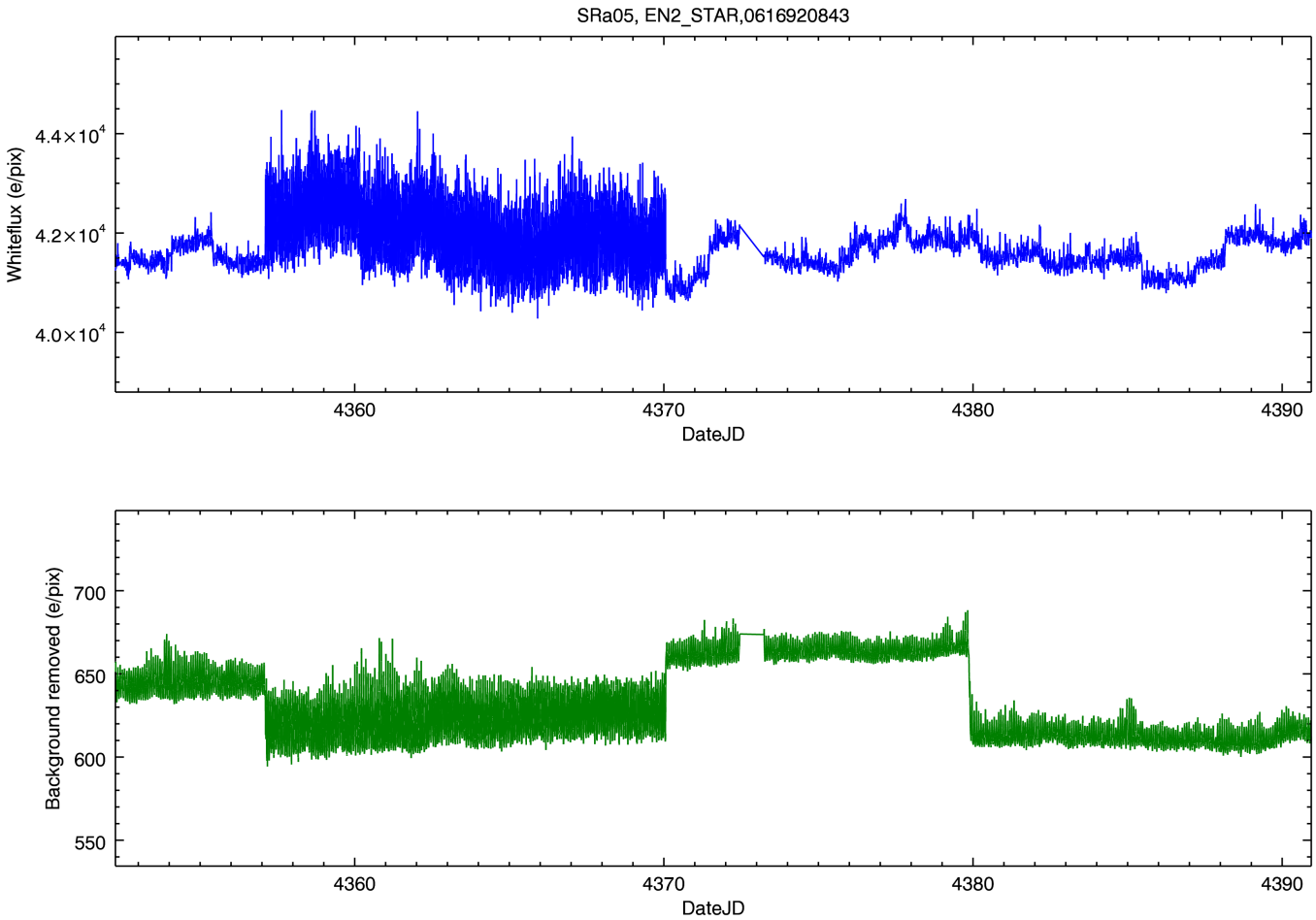
Problematic

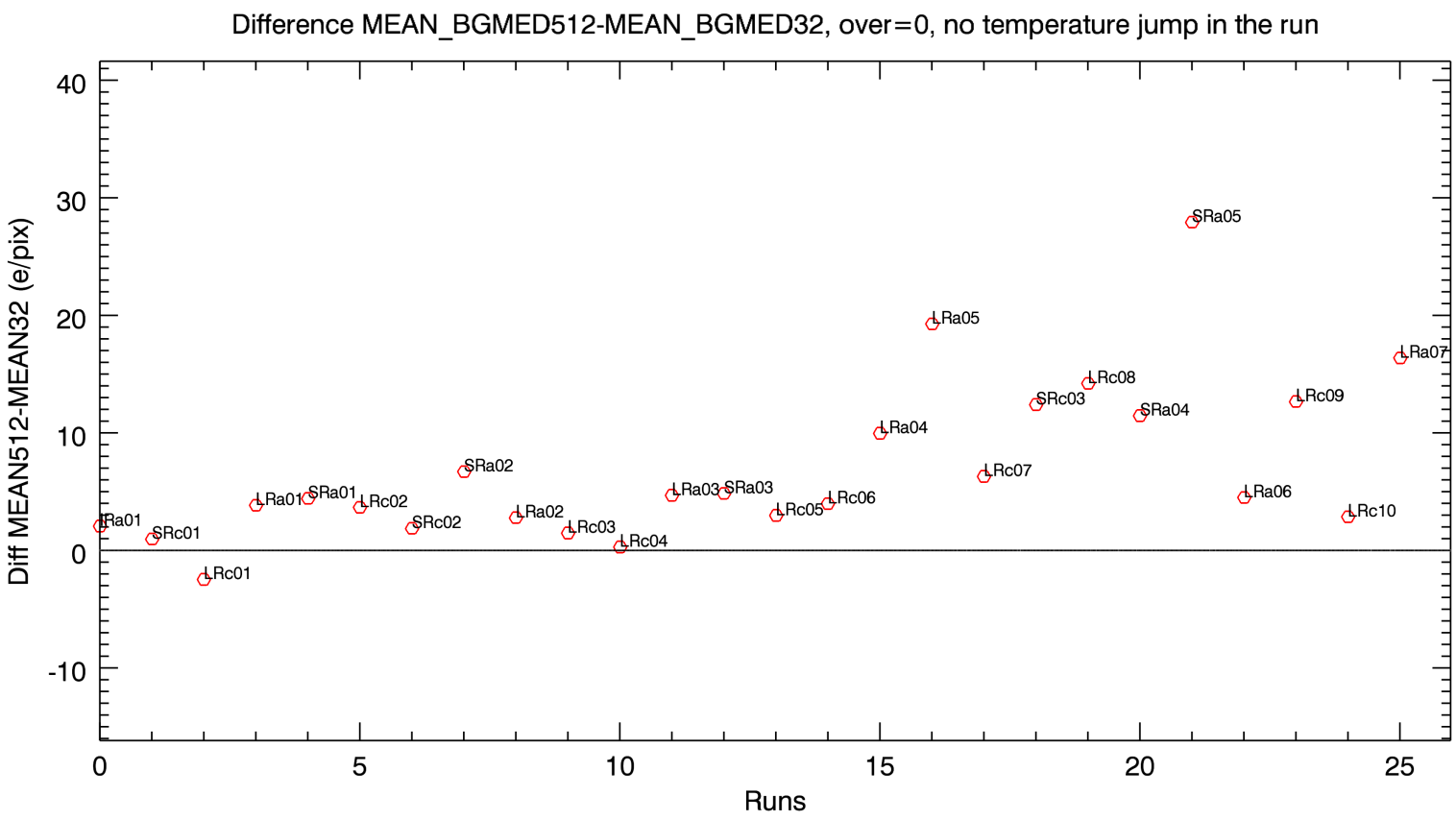
- Difference of EN2 mean flux between 2 sampling of the same star. (also visible on the background).
- Does the difference in fluxes come only from the background ?



Reminder : BKG correction today

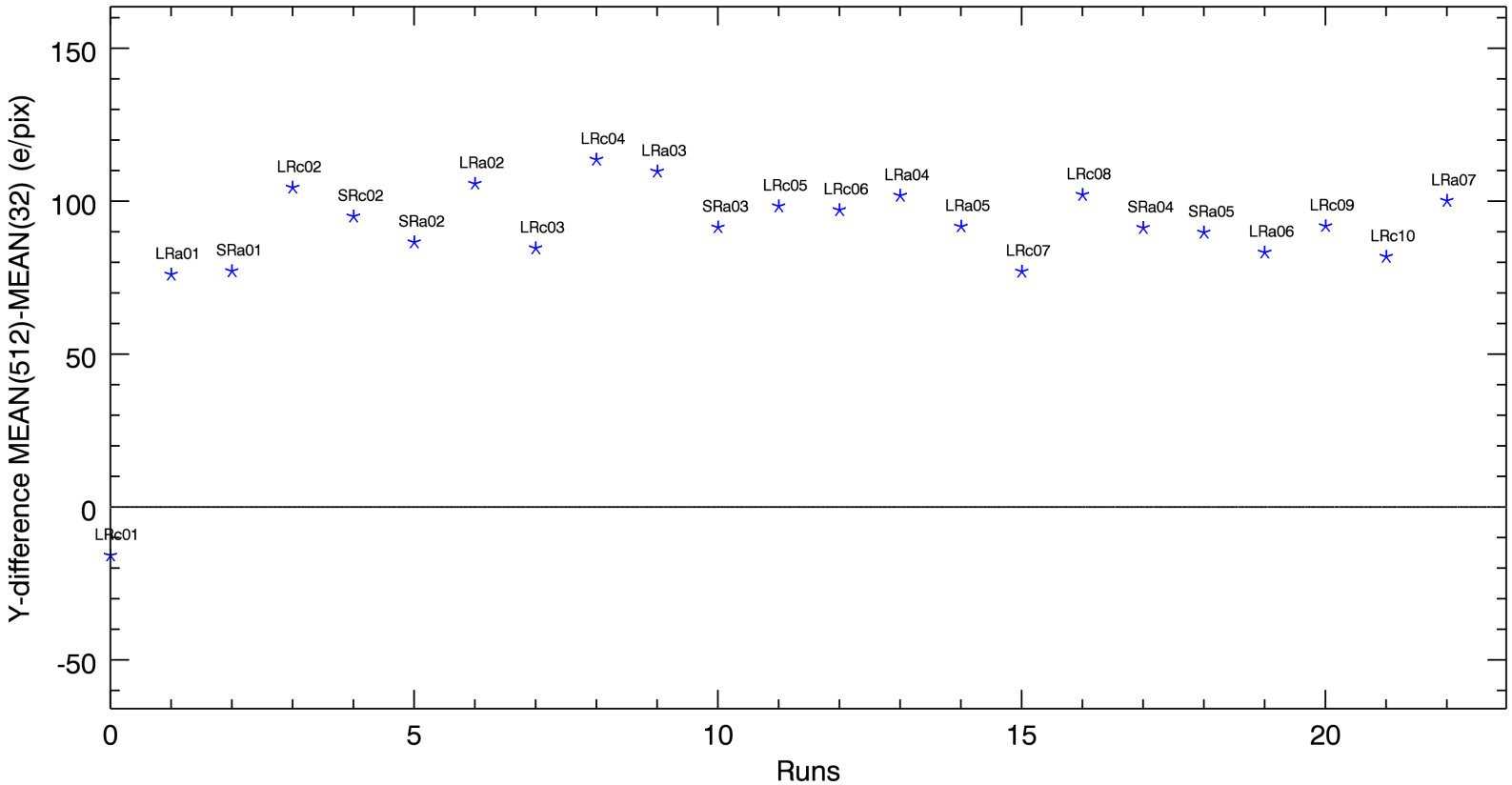
- We calculate separately the median value of the 32s backgrounds windows and of the 512s backgrounds windows.
- We remove the 32s and 512s BGMED from 32s and 512s star respectively.
- We estimate the dark current value depending on y-position and we remove it from the median value.
- A difference between 32s and 512s BGMED implies a difference in N2 star flux corrected.

- Difference between mean BGMED 32s and mean BGMED 512 over each run.



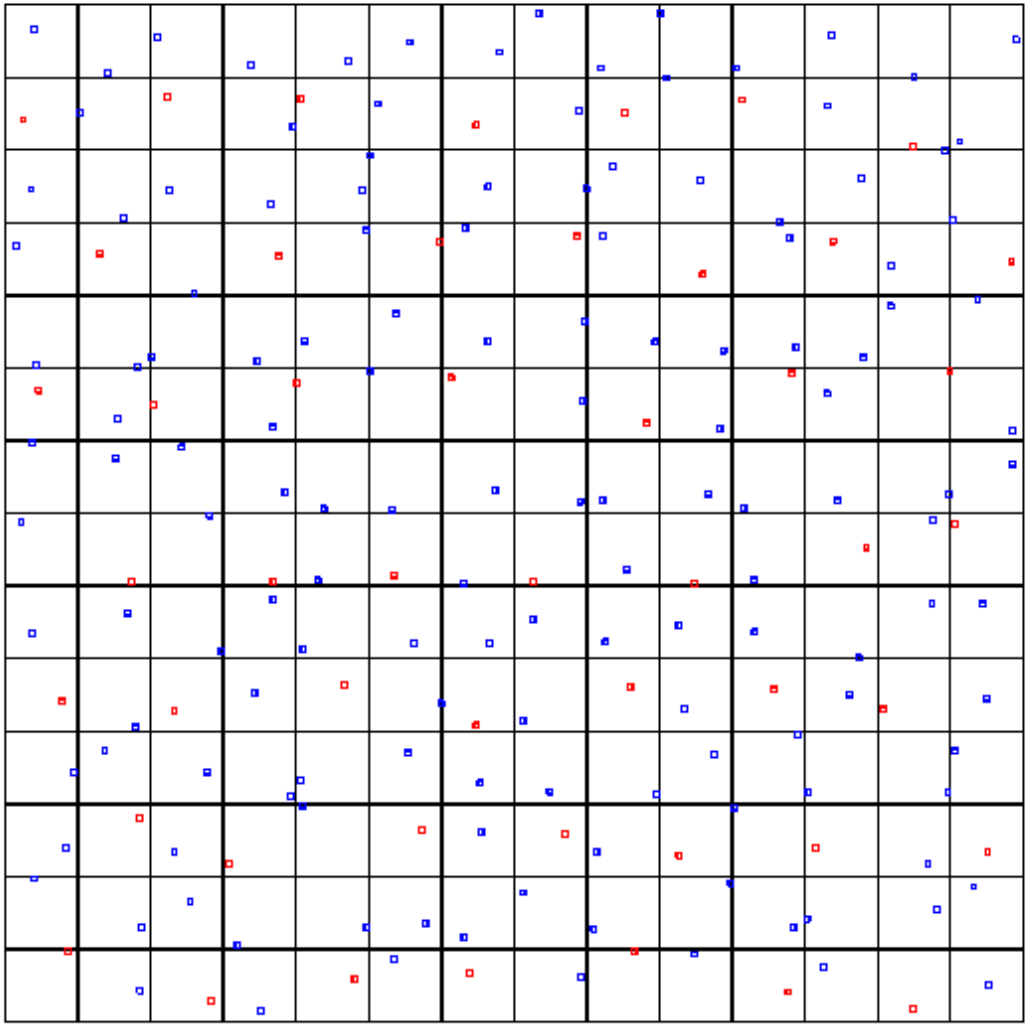
- BGMED 512s systematically above BGMED 32s !

- 32s and 512s background mean position on the CCD.



- BG512 are, on average, placed higher on the CCD.

- CCD BCKG distribution : 14x14 squares. One 32s window, three 512s windows, one 32s window….



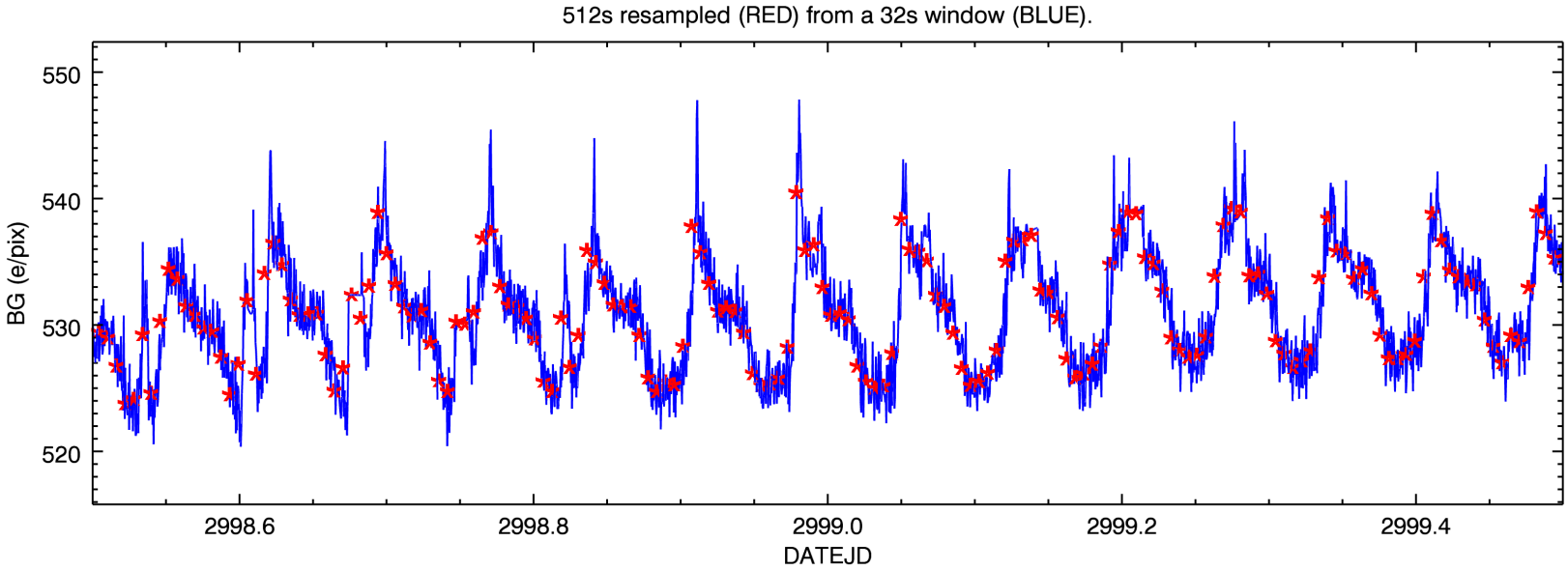
196 windows (49 for 32s and 147 for 512s)

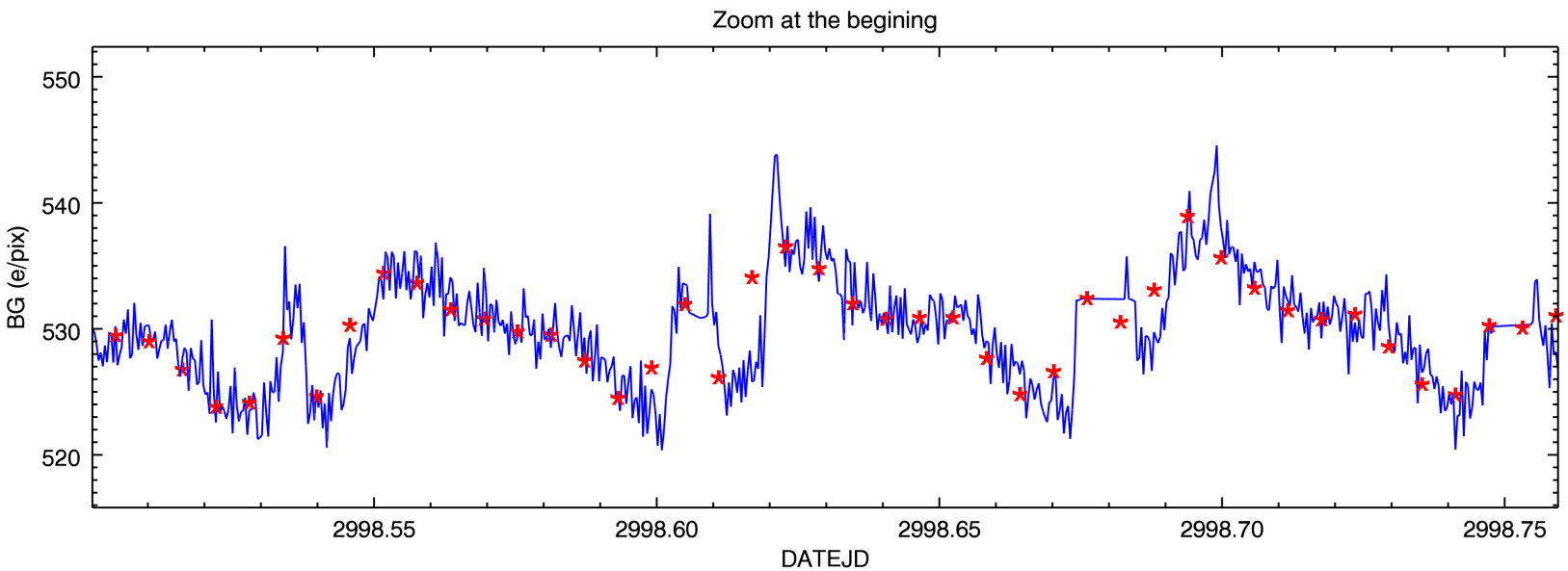
- No 32s windows one line out of two. Bad mapping.
- Background median estimation biased.

Solution?

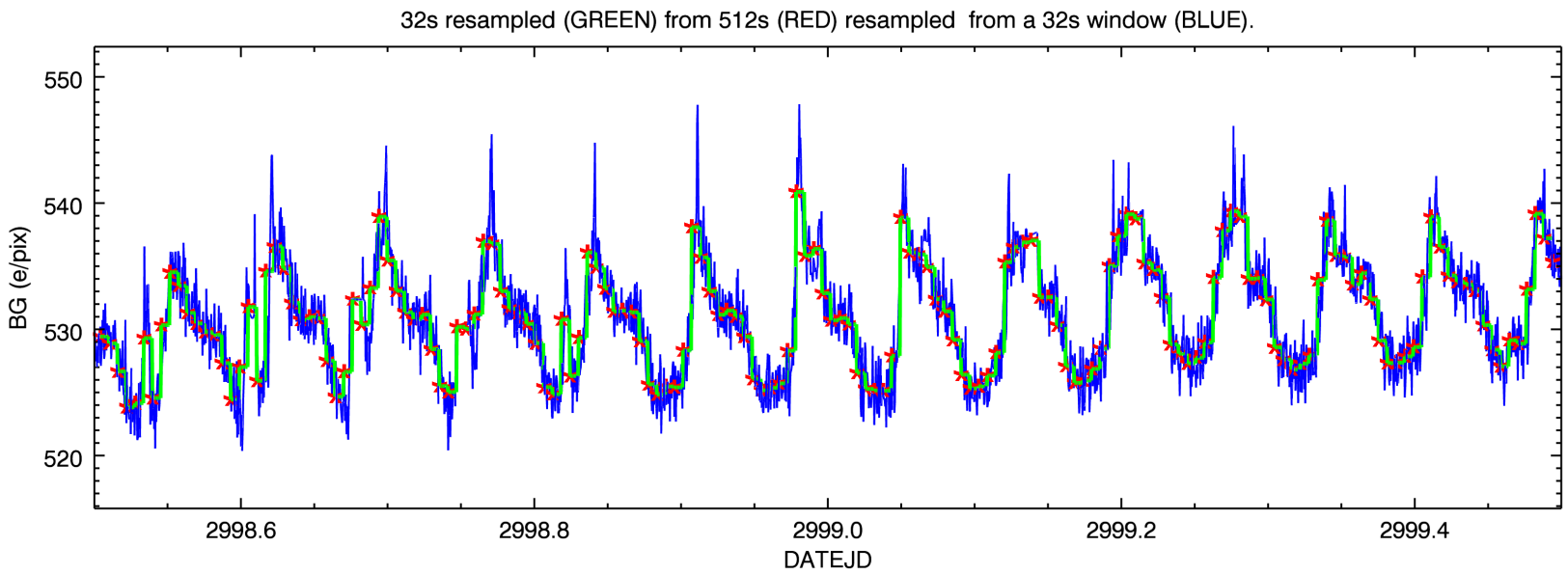
- Use the greatest number of windows.
- Resample the 49 windows at 32s to 512s.
- Use the 49 plus 147 windows at 512s to compute the BGMED (at 512s).
- Use this BGMED, corrected from the y-position, for background correction, for both 32s and 512s stars.
- The resampling from 32s to 512s shouldn't be an issue.
- 512s to 32s?

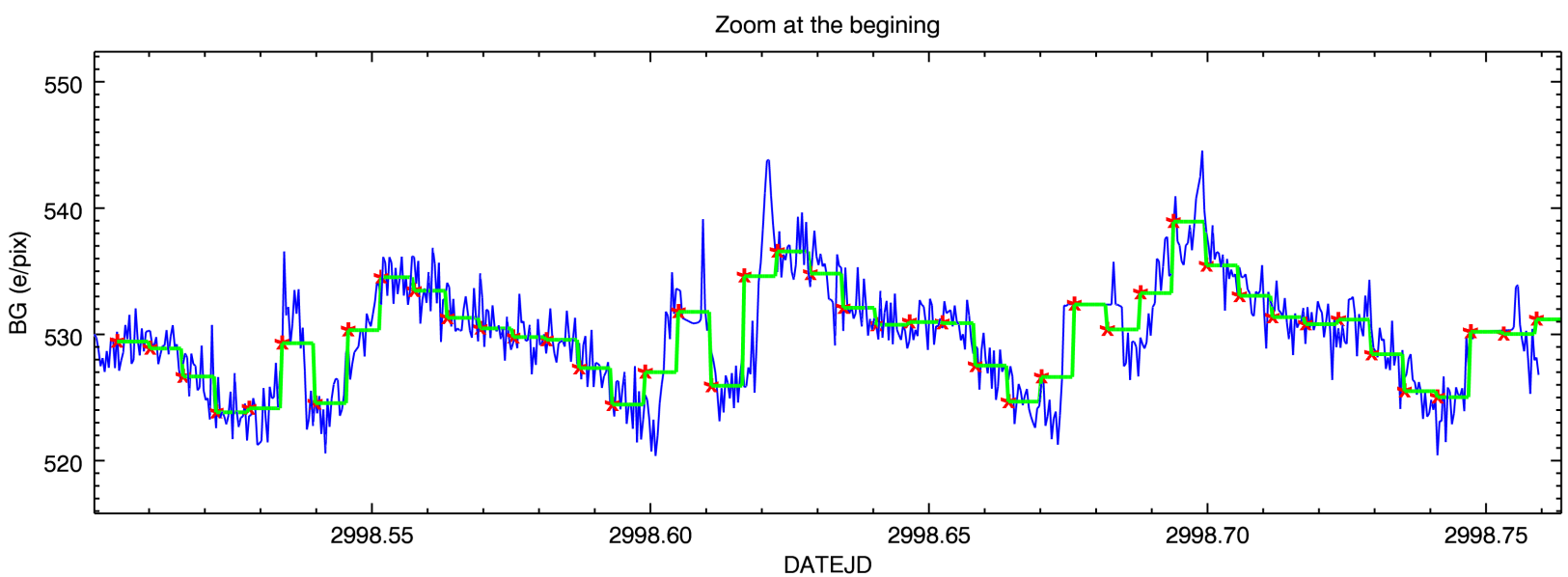
- 32s to 512s resampling. (accumulation of the 16 next points)
- 1 day on SRa01, on a 32s bckg window.



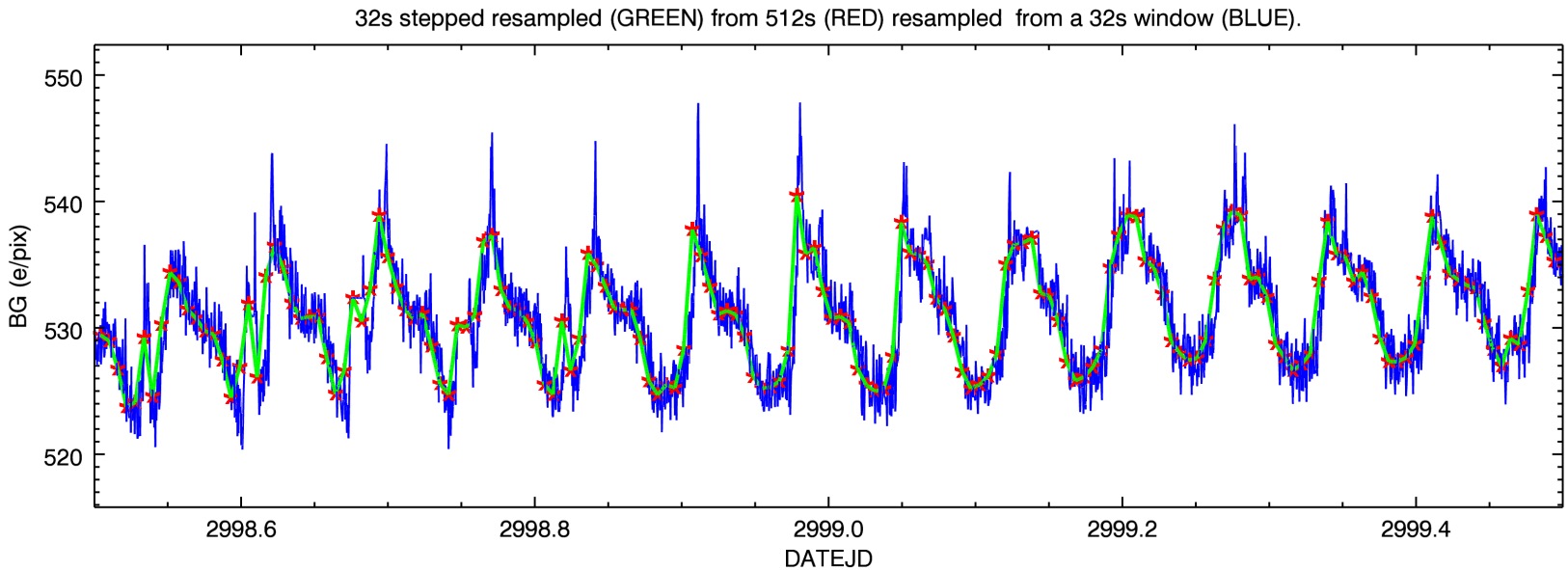


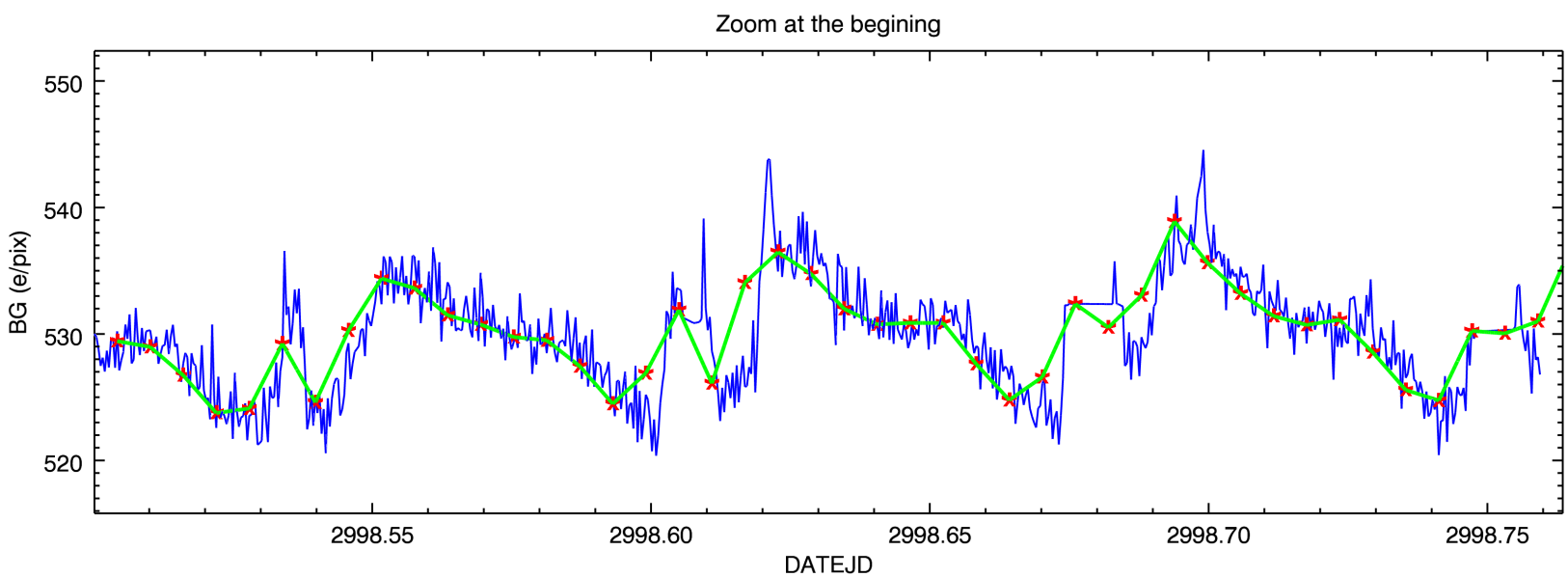
- 32s to 512s to 32s resampling. (step)





- 32s to 512s to 32s resampling. (interpolation : is it better?)

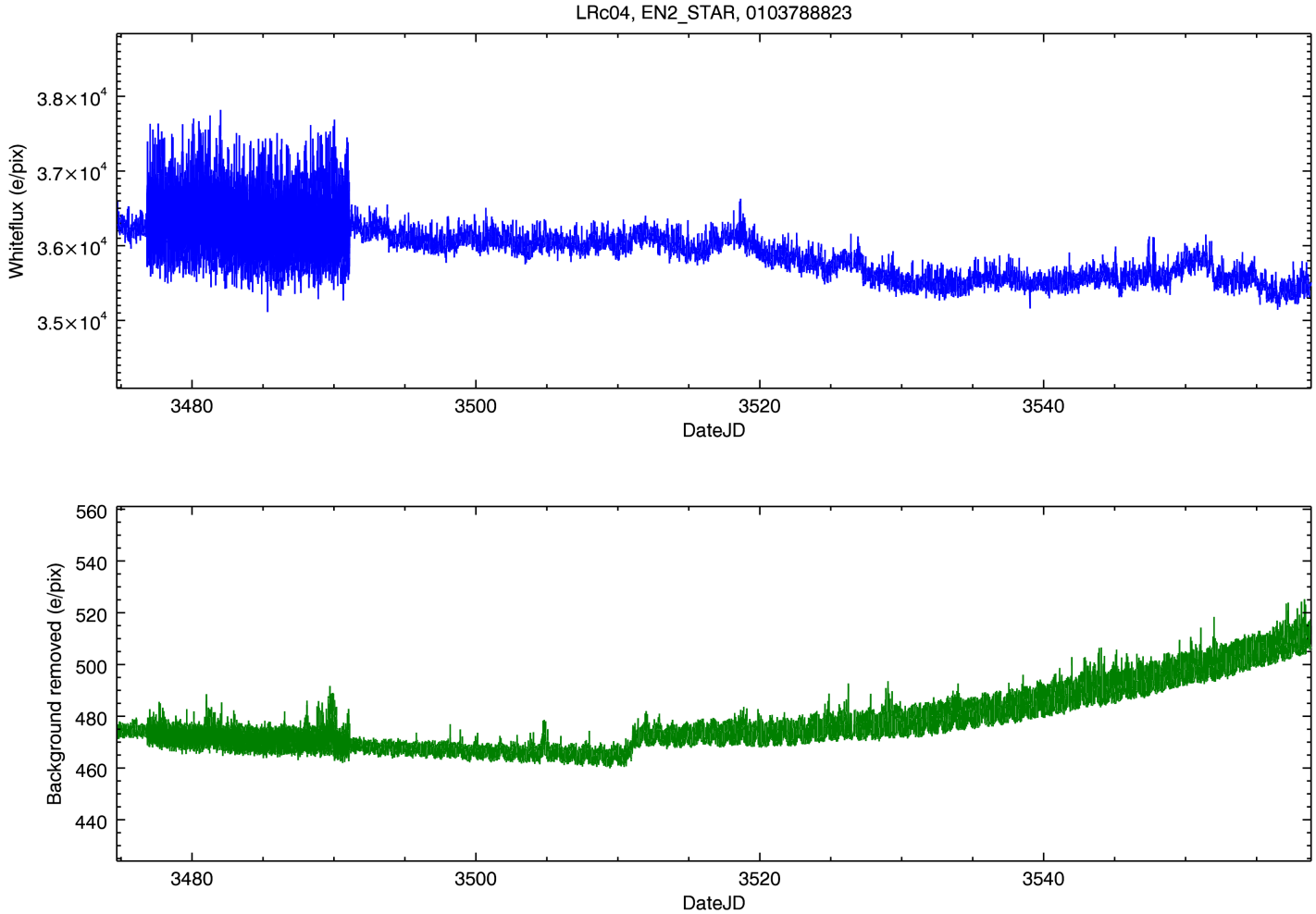




Work to do

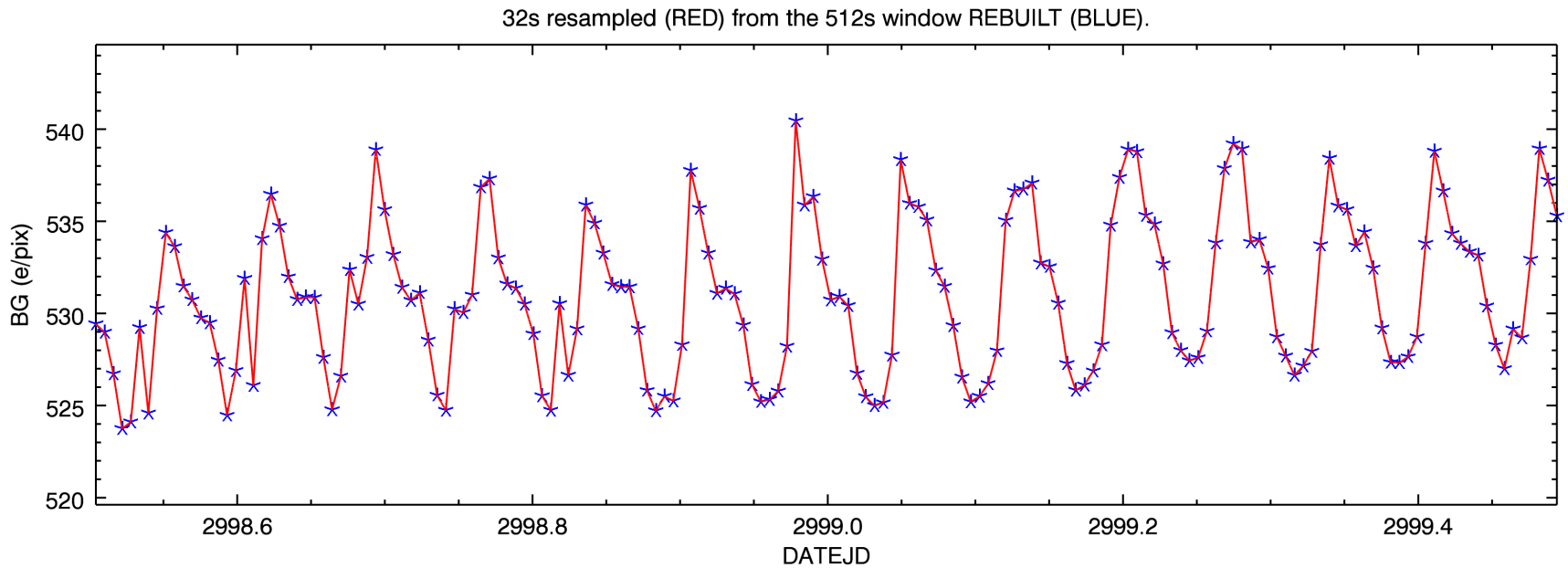
- Test this new BGMED background.
- Implement the new BG computation in bgprocess and new BG correction in exoprocess. (pipe-line)
- Re-compute the backgrounds, the EN1_STAR and EN1_IMAGETTES with the new BGMED for background correction.
- Estimated time…. ~9 months.

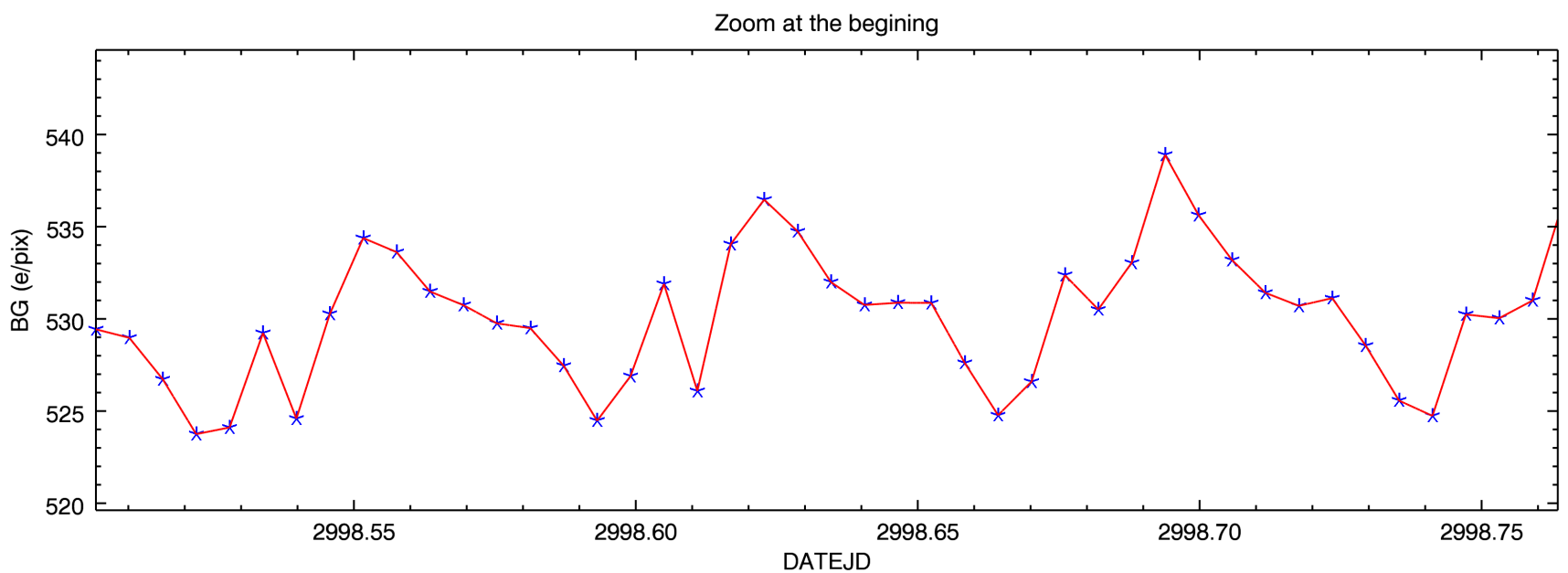
- Let's check other run, with a small BGMED 32s and 512s difference.

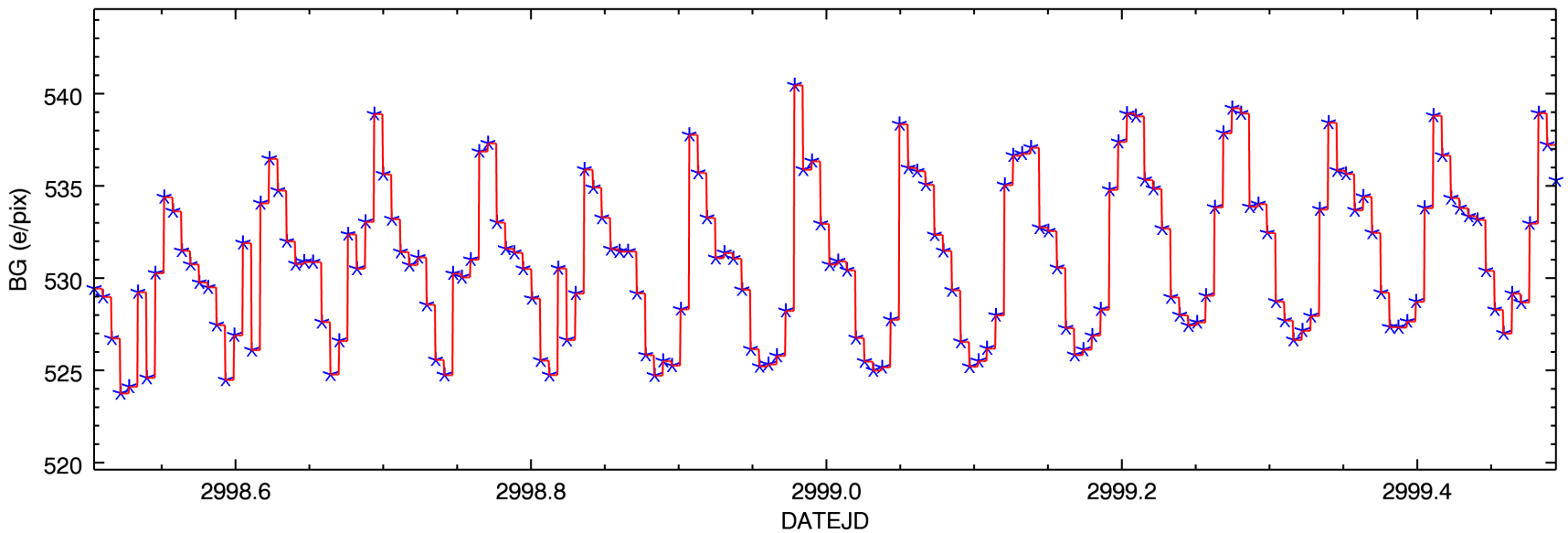


- No problem here, and the difference is very small.

- 512s to 32s resampling. (interpolation)







Zoom at the begining