



## Evolution of the pipe-line of correction

1. *Discontinuity of the change of mask*
2. *Parasite frequencies and the jitter*

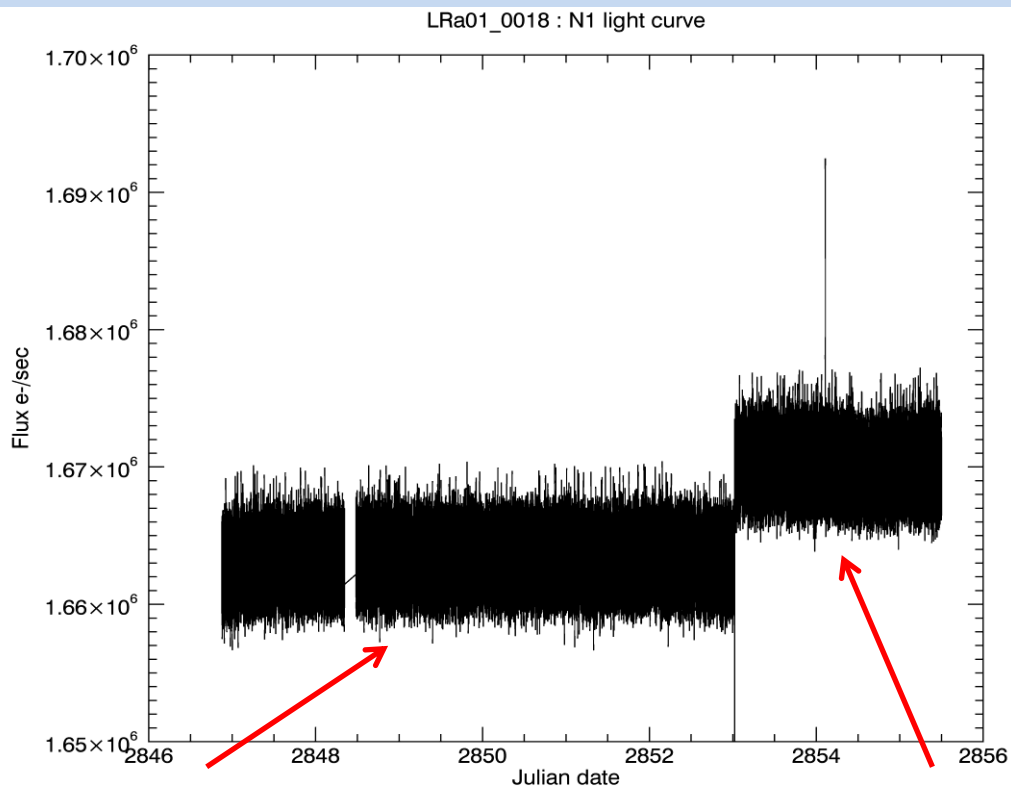
Alexis Deru-Denise  
Sylviane Chaintreuil  
Marc Olivier

- Discontinuity of the change of mask :*

Origin :

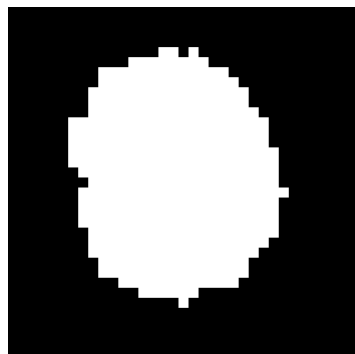
A discontinuity cause by the difference of pixels in the 2 mask :

- Mask VIA : 412 pixels
- Mask OBS : 551 pixels

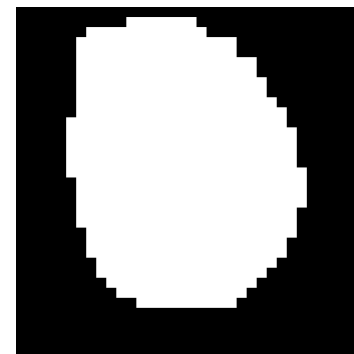


*Run : LRa01  
Corot ID : 18*

*AN1 light curve  
SAA filtered  
10 first days*



Mask VIA

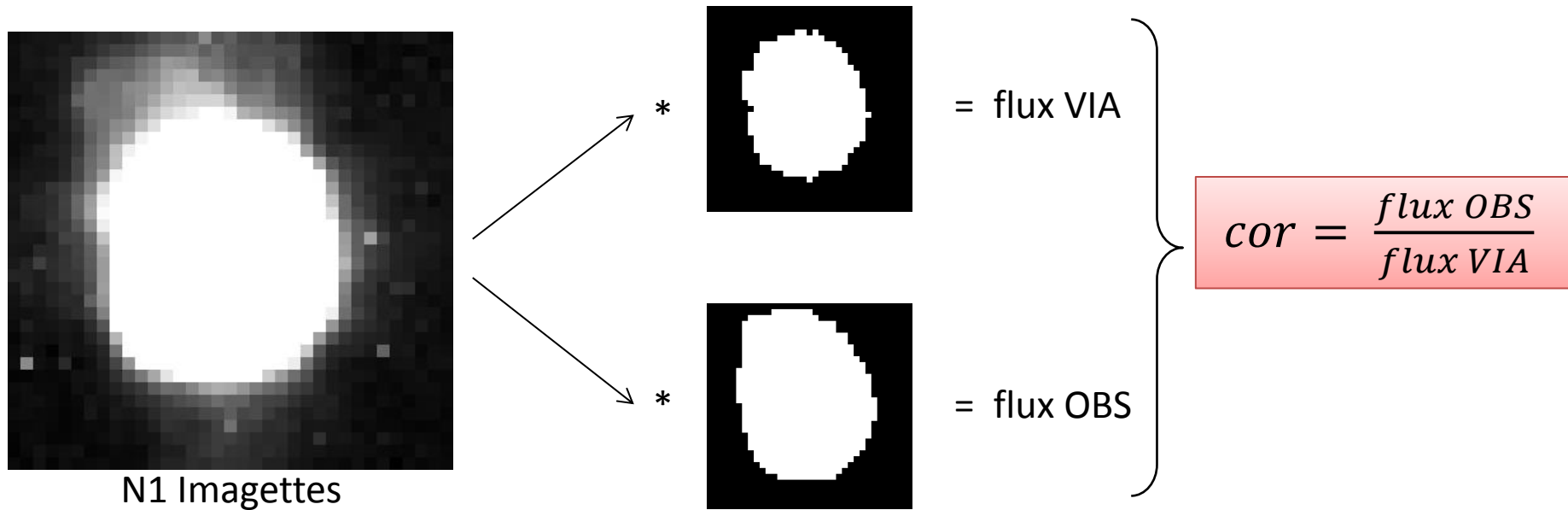


Mask OBS

- *Discontinuity of the change of mask :*

From imagerettes N1 :

- we re-compute 2 flux with the 2 mask (OBS and VIA)
- the ratio of these flux give us the correction factor

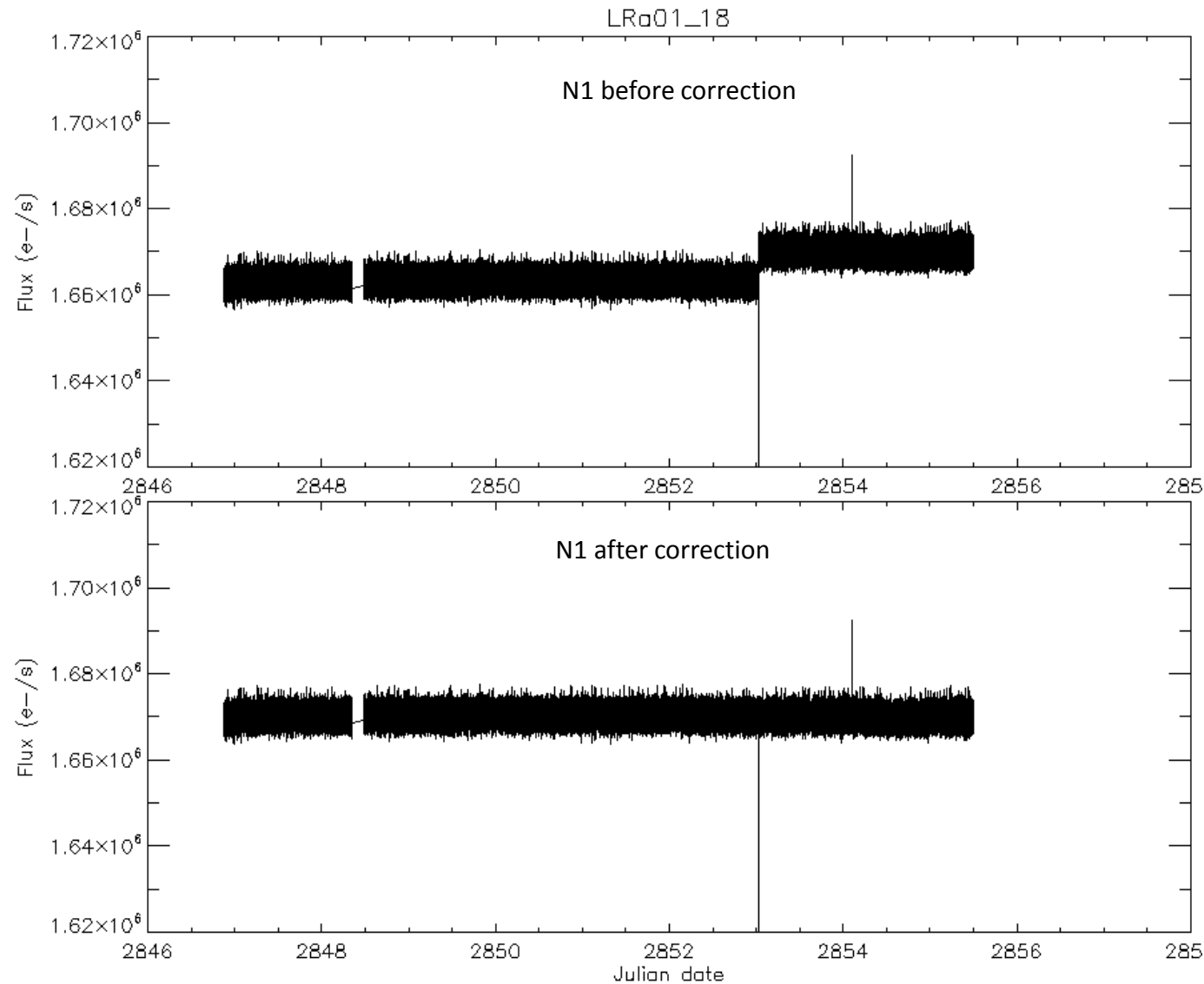


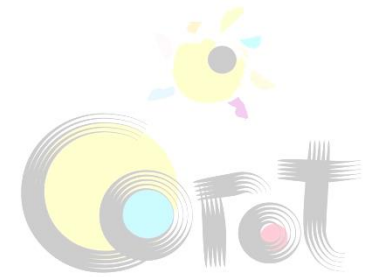
- Discontinuity of the change of mask :*

### Correction result :

Only 8 stars on 155 are poorly corrected, others are perfectly processed.

This correction will be implement in the N1 to N2 pipe-line, before the end of November





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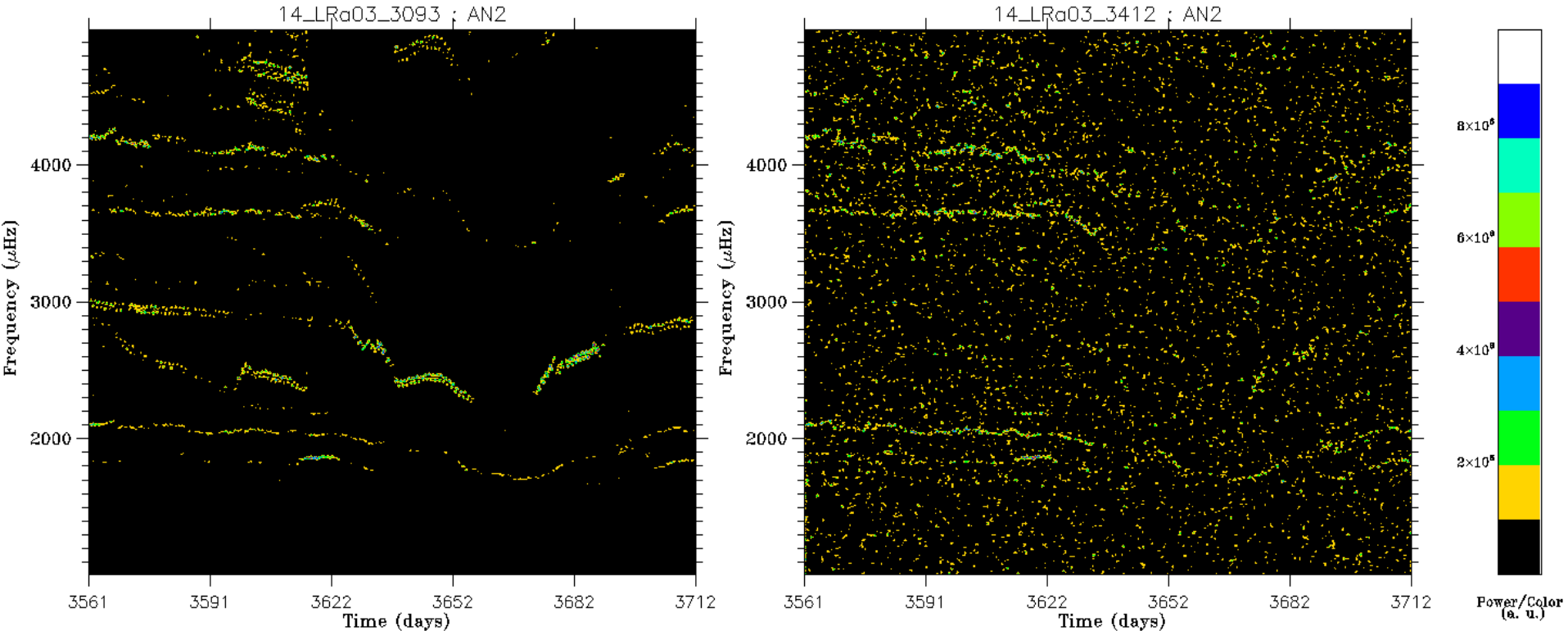
1. *Correction of the sequence change*
2. *Parasite frequencies and the jitter*

Alexis Deru-Denise  
Sylviane Chaintreuil  
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- Parasite Frequencies : case of LRa03*

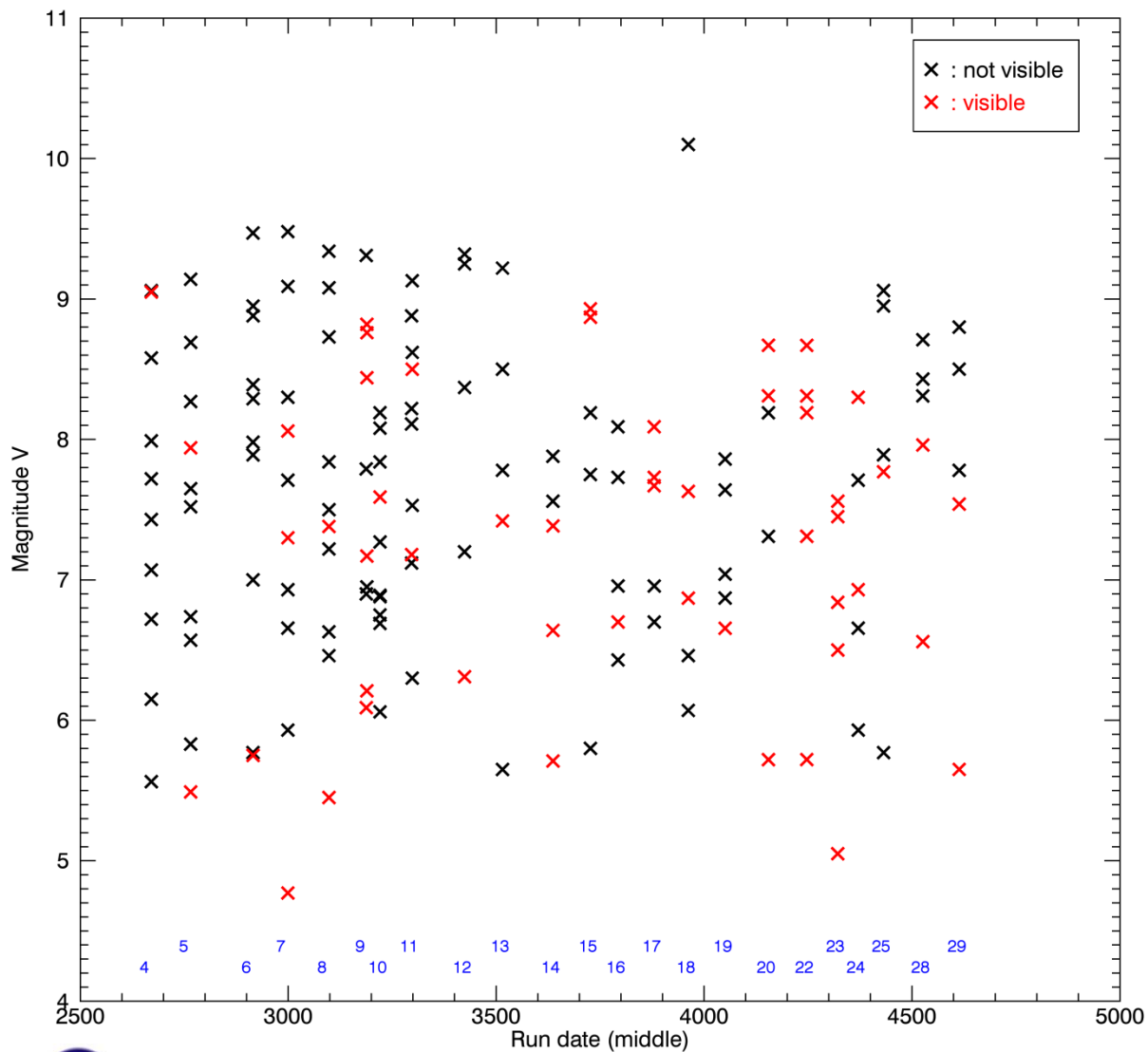
P.Boumier and F.Baudin :

- Wavelet analysis on AN2 stars of LRa03.
- Some artefacts visible for 3 of the 5 stars.
- Around 2000  $\mu\text{Hz}$  and 4000  $\mu\text{Hz}$  (around 8 min and 4 min)



- Parasite Frequencies : Global study*

Visibility of artefacts in AN2 stars

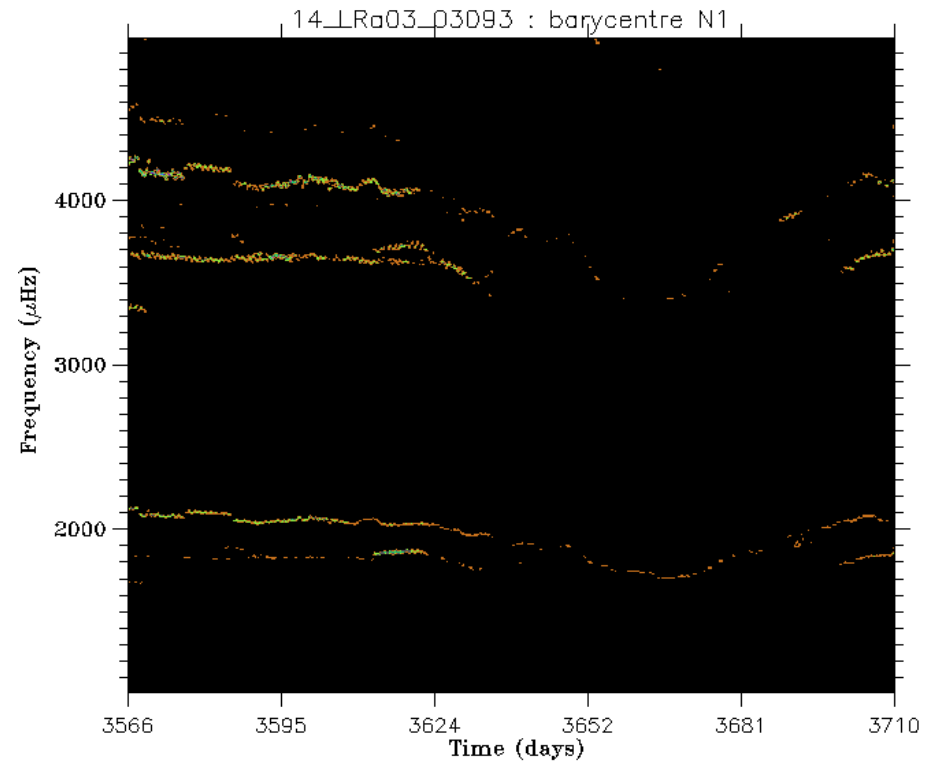
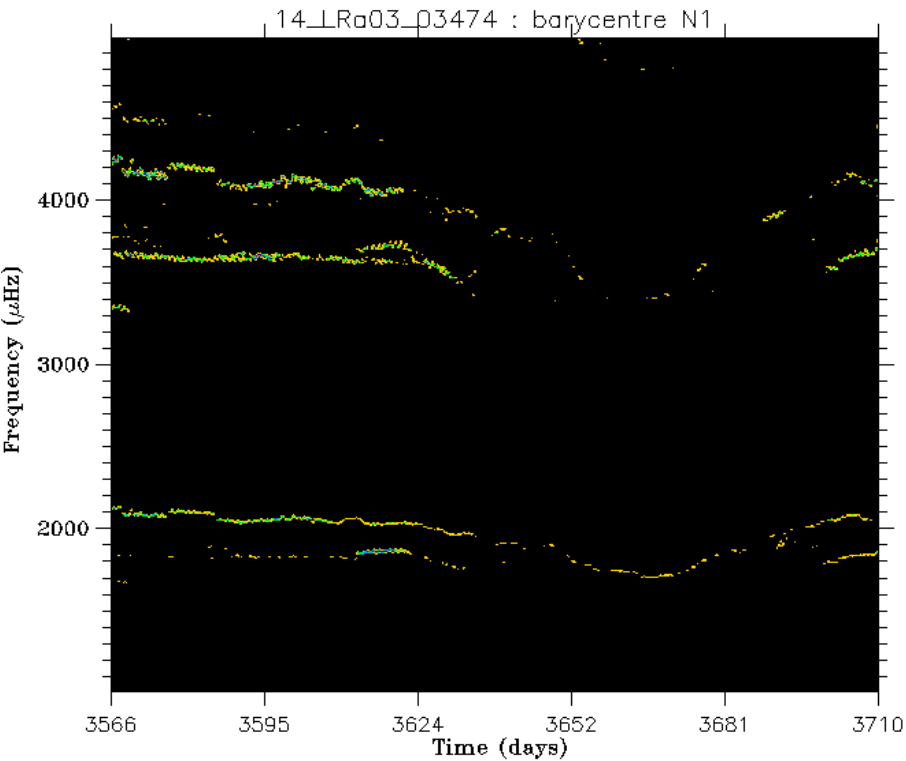


- 155 stars  
51 affected
- All range of magnitude are affected
- Proportion of affected stars is more important at the end of the mission

→ **Not a local anomaly**

- Parasite Frequencies : Barycentre*

$$R_{barycenter} = \sqrt{(x^2 + y^2)}$$



**For each run, all barycentre show exactly the same structure.  
Even for the stars not affected at N2 level !**

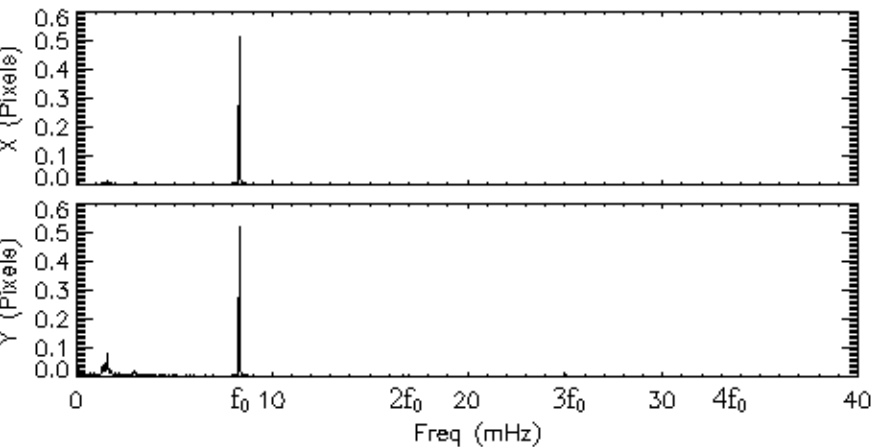


- Parasite Frequencies : Relation to jitter

F.Fialho et al, A&A 2007, 'Jitter correction algorithms'

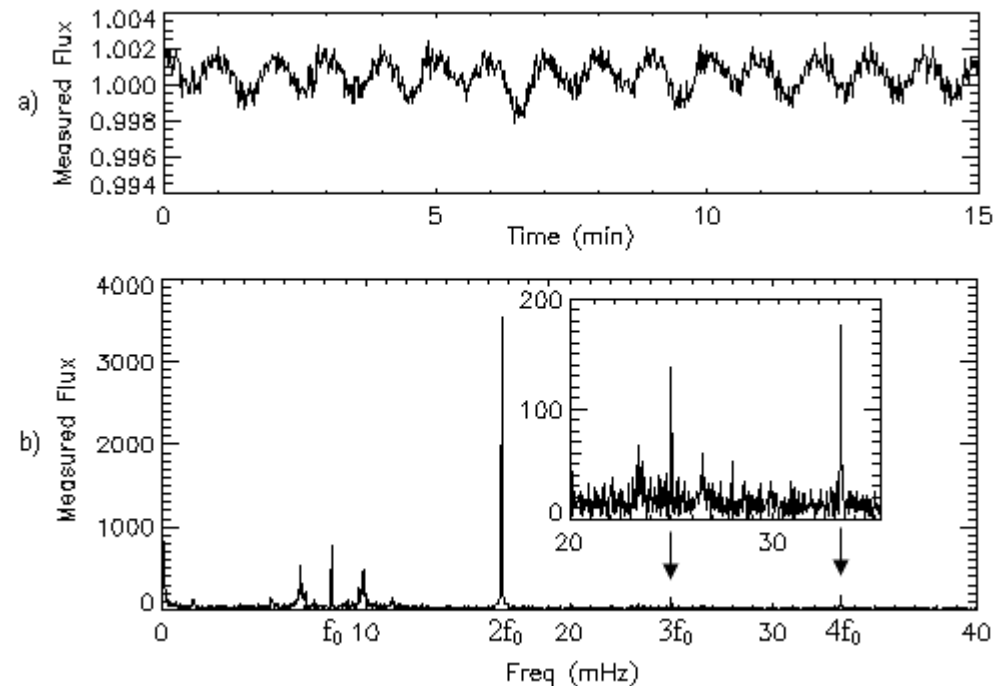
Computed jitter : sinus wave with a period

$$T_0 = 2 \text{ min} \rightarrow f_0 = 8,3 \text{ mHz}$$



Spectra of computed jitter on X and Y axis

Light curve (a) and its spectrum (b)

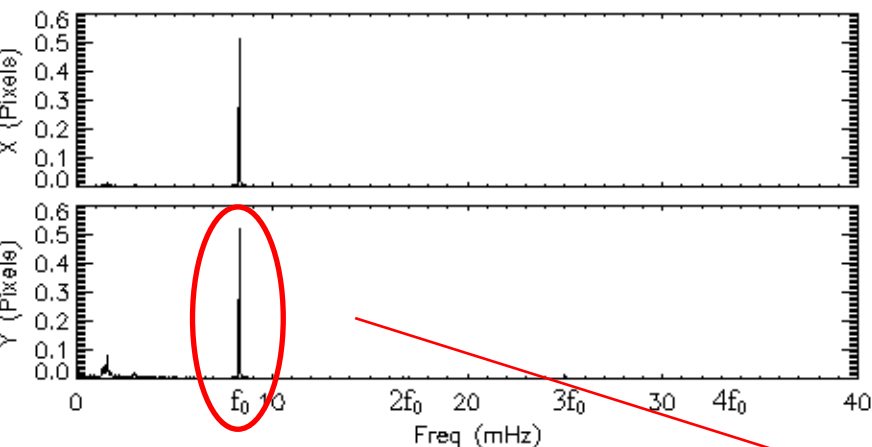


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Computed jitter : sinus wave with a period

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Spectra of computed jitter on X and Y axis

A jitter with a  $f_0$  frequency cause a perturbation at  $f_0$  and  $2.f_0$  on the light curve spectrum.

Light curve (a) and its spectrum (b)

