

*What's new on the catalogue of the variable stars from the Pi of the Sky data*

magnitude

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0

0.5

1

1.5

2

phase

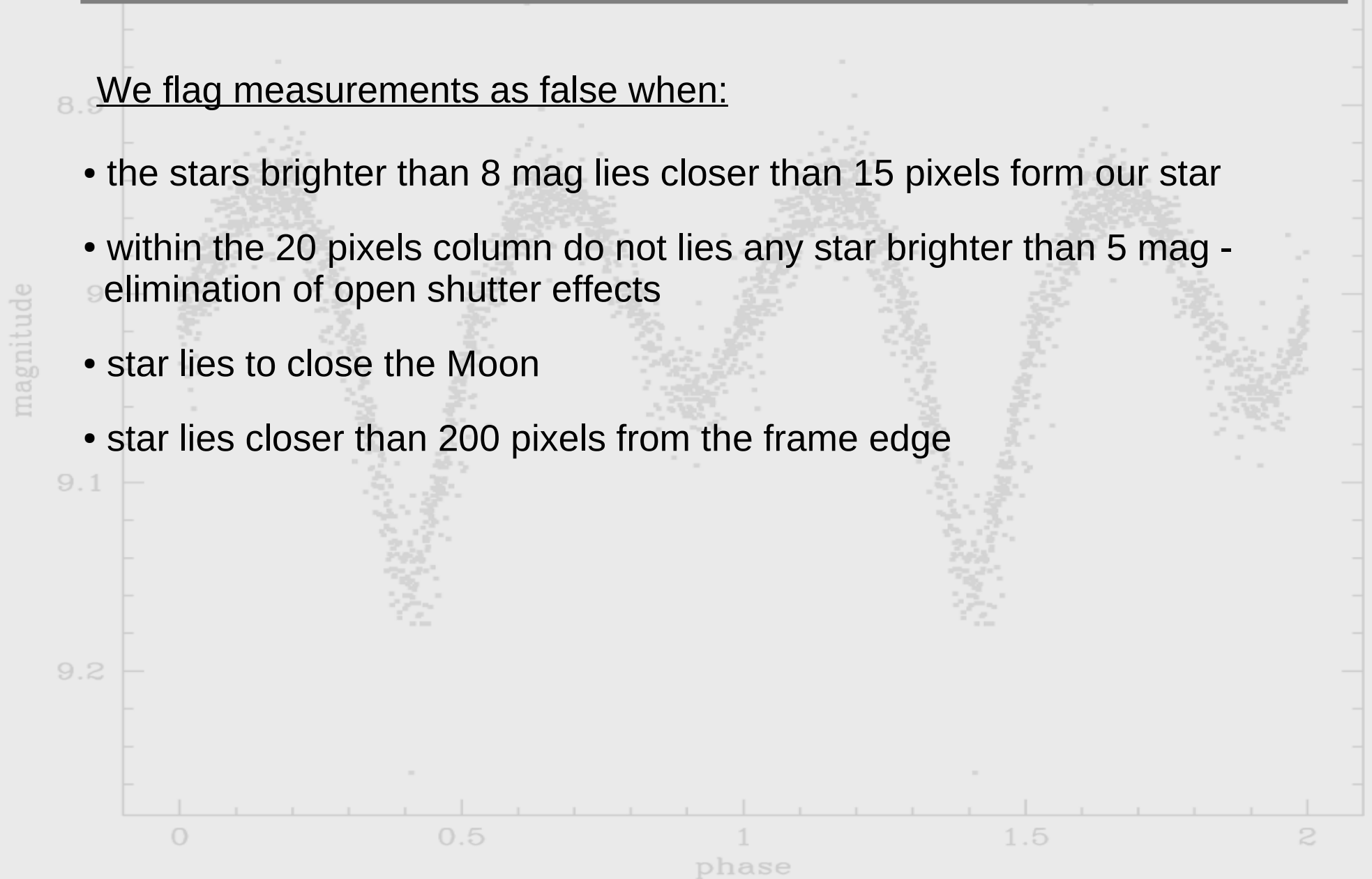
# *Catalogue of the variable stars*

1. We analysed "Pi of the Sky" data from the 2006-2007 period .
2. About 1.5 million stars with at least 200 data points was selected.
3. For these stars we use AoV algorithm to find period of the variability. We assume that star with statistic ( $\Theta$ ) less than 100 is non variable star.
4. By using this criteria we obtained a sample of 30 000 stars to further investigations For these stars we use scripts to reject false measurements or these with unacceptable large error.
5. Such "cleaned" light curves was analysed again to find any periodicity by using AoV algorithm.
6. We looked for periods in the range from 0.1 day to 50 days.
7. 21 000 with the  $\Theta > 150$  was verified and classified by the visual inspection.
8. Finally, a catalogue containing about 1 000 stars was prepared.

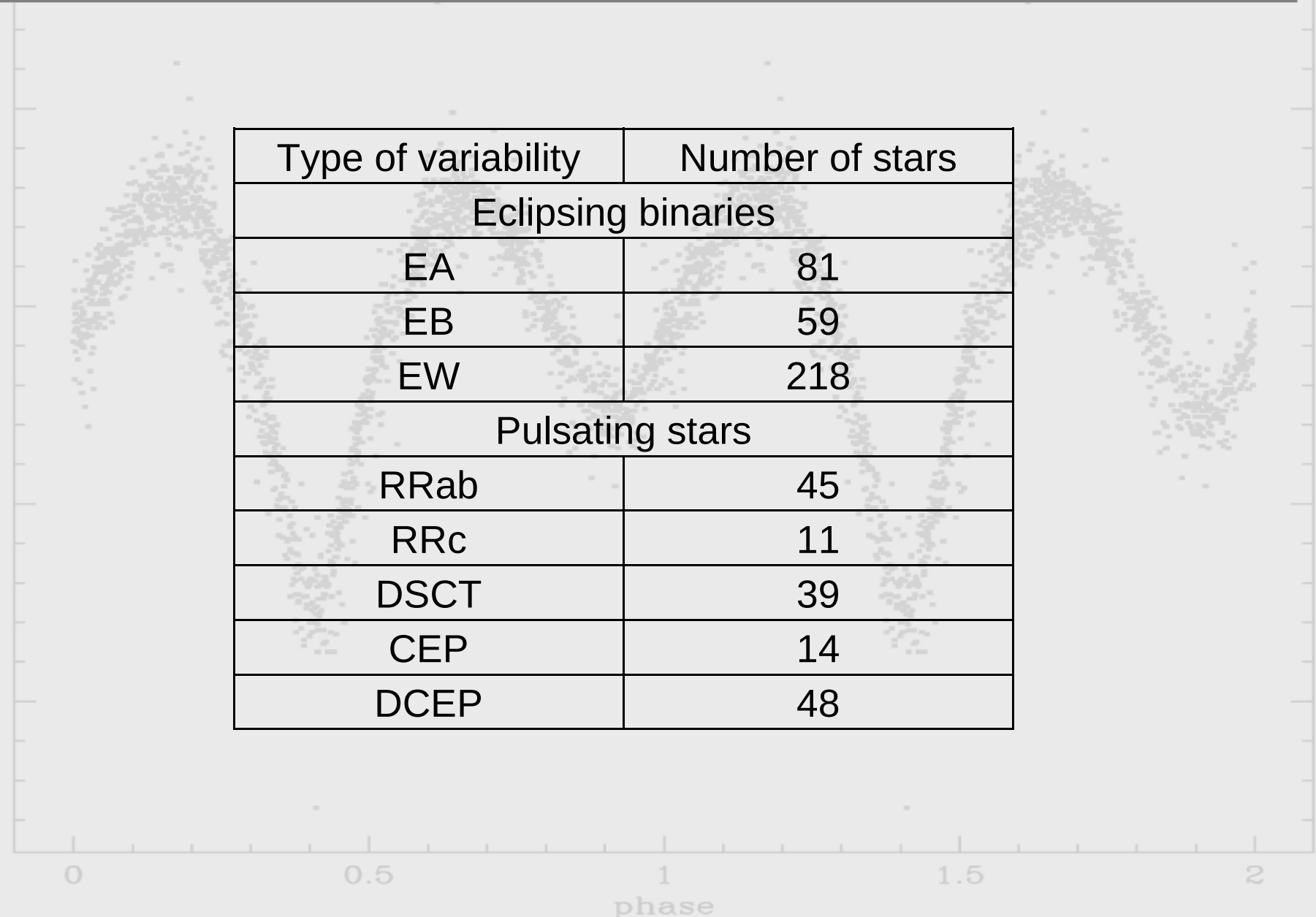
# *Procedure of the light curve cleaning*

We flag measurements as false when:

- the stars brighter than 8 mag lies closer than 15 pixels from our star
- within the 20 pixels column do not lies any star brighter than 5 mag - elimination of open shutter effects
- star lies to close the Moon
- star lies closer than 200 pixels from the frame edge



# *Catalogue of the variable stars - summarising table*



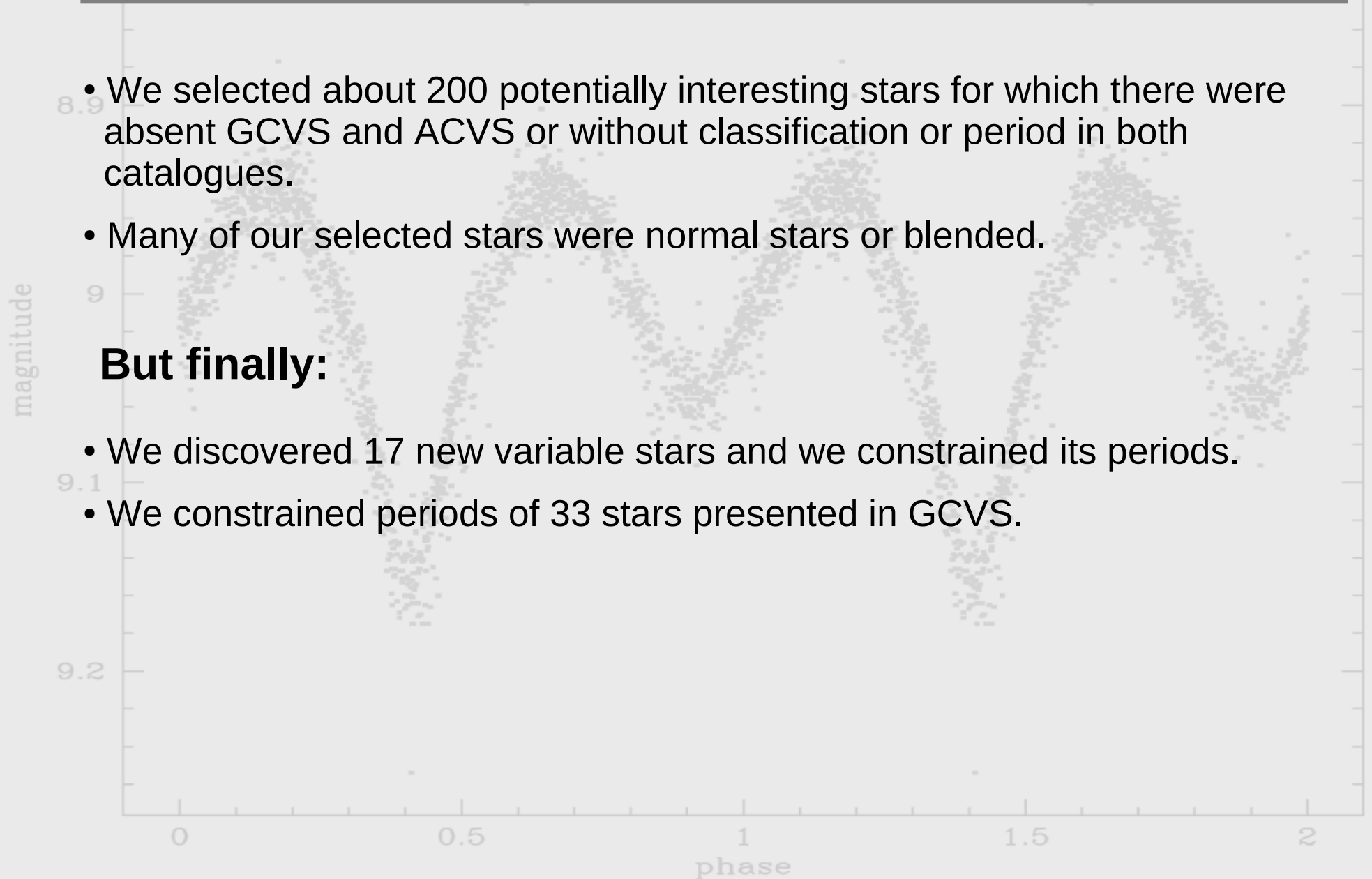
Type of variability	Number of stars
Eclipsing binaries	
EA	81
EB	59
EW	218
Pulsating stars	
RRab	45
RRc	11
DSCT	39
CEP	14
DCEP	48

# *New stars and periods in our catalogue*

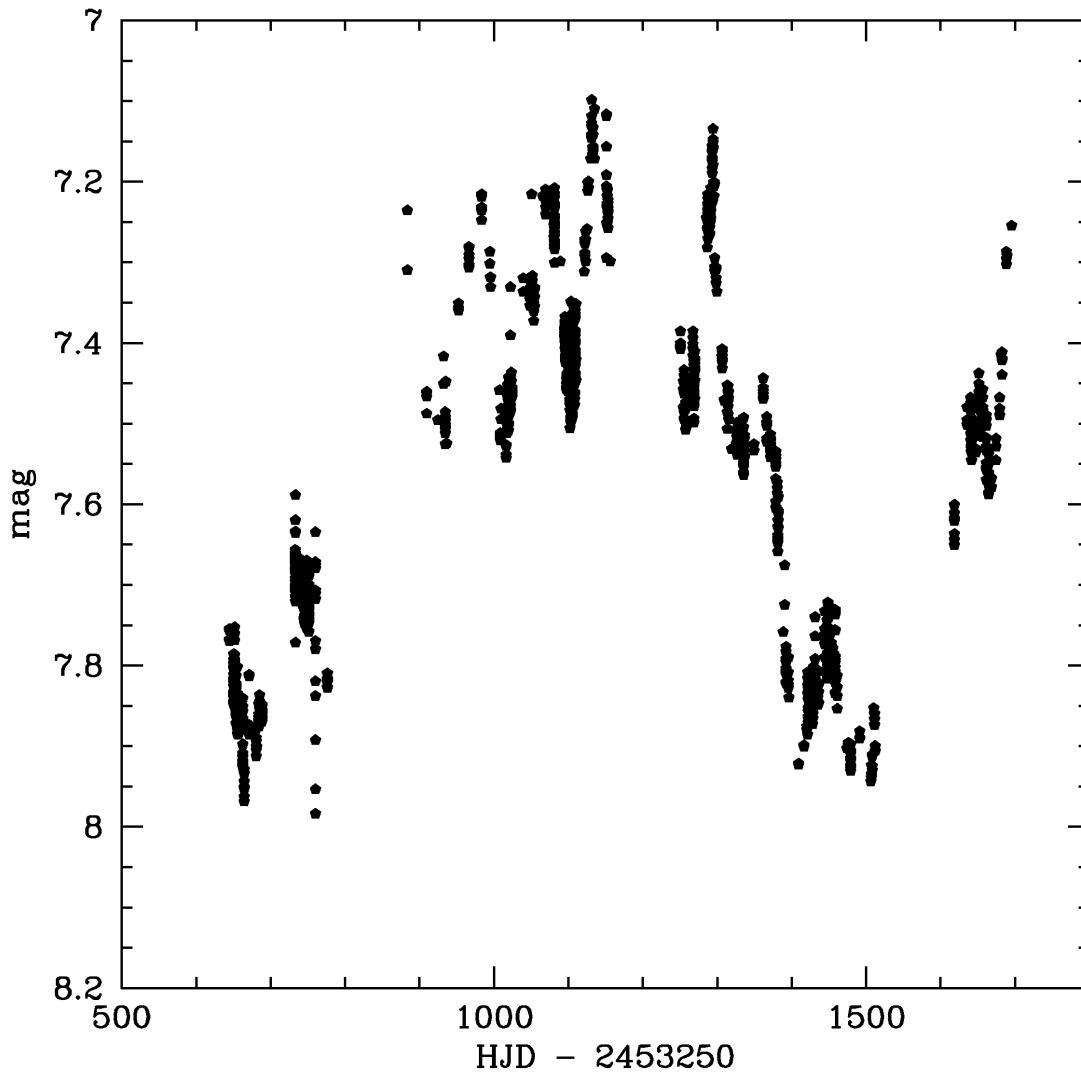
- We selected about 200 potentially interesting stars for which there were absent GCVS and ACVS or without classification or period in both catalogues.
- Many of our selected stars were normal stars or blended.

## **But finally:**

- We discovered 17 new variable stars and we constrained its periods.
- We constrained periods of 33 stars presented in GCVS.

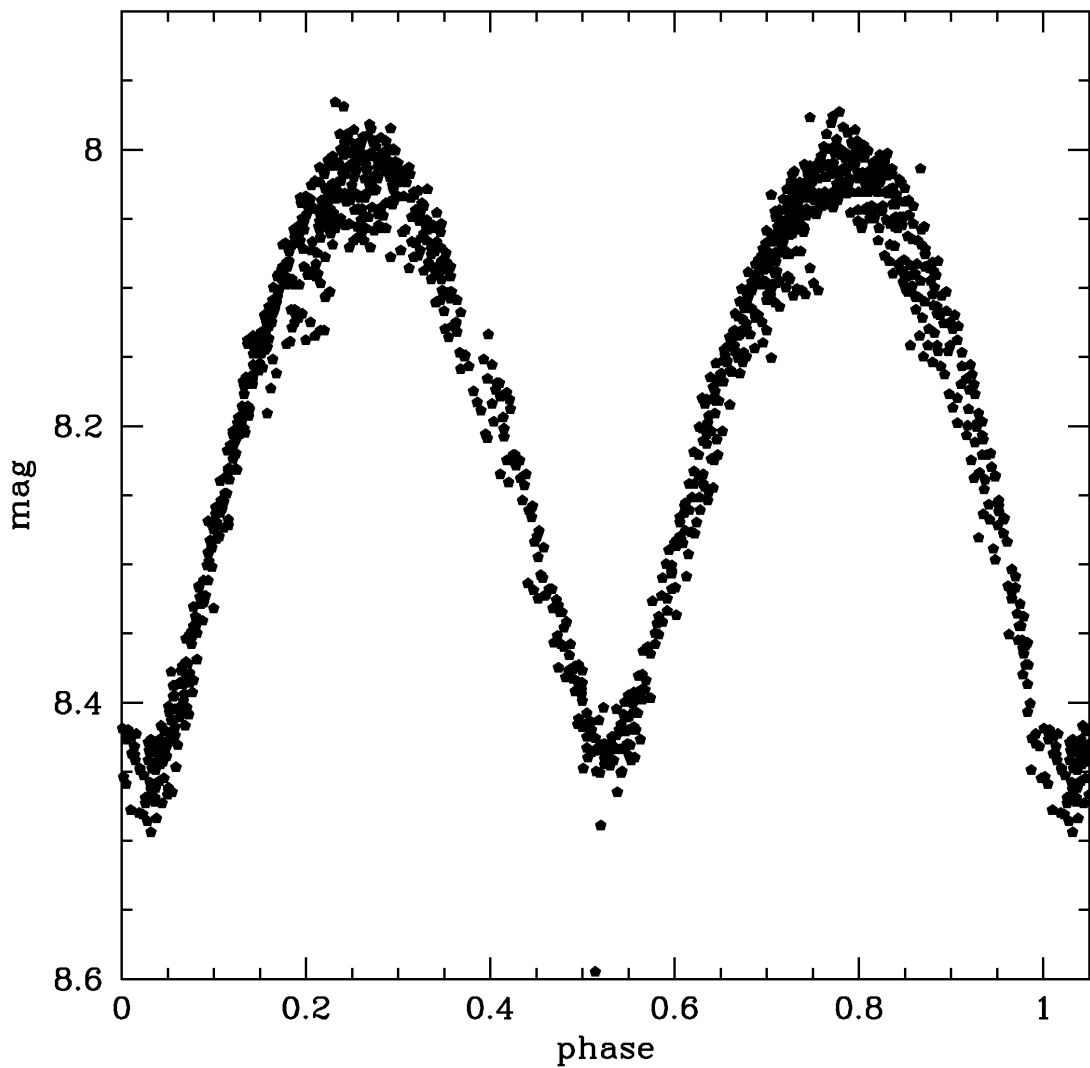


# *NSV 21206*



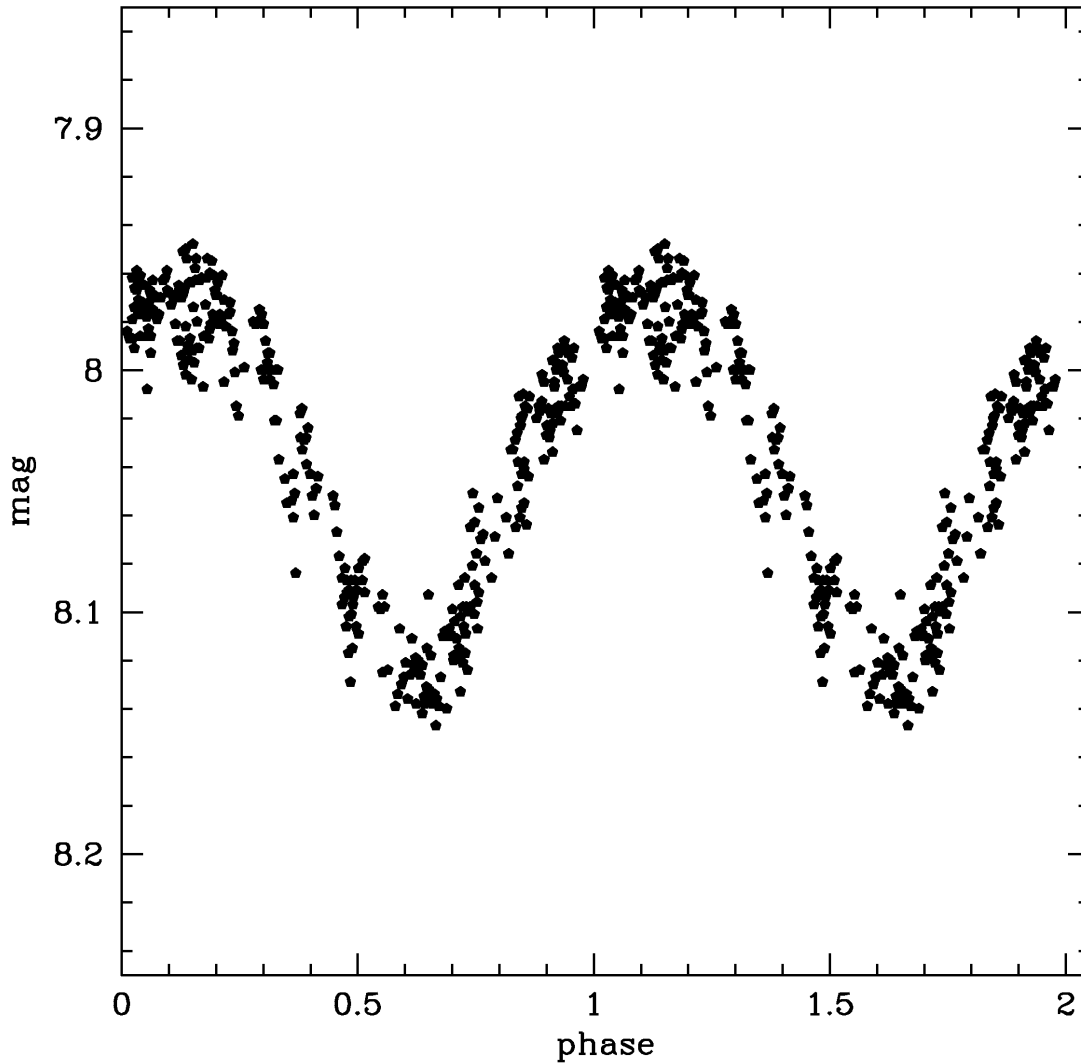
- in the GCVS was classified as New Suspected Variable
- spectral type M3III
- in our catalogue was classified as SRA
- two periods  
755,8704d and ~90 d

# NSV 2851



- in GCVS was classified as New Suspected Variable
- we classified it as EW
- $P=0.661332284$  d

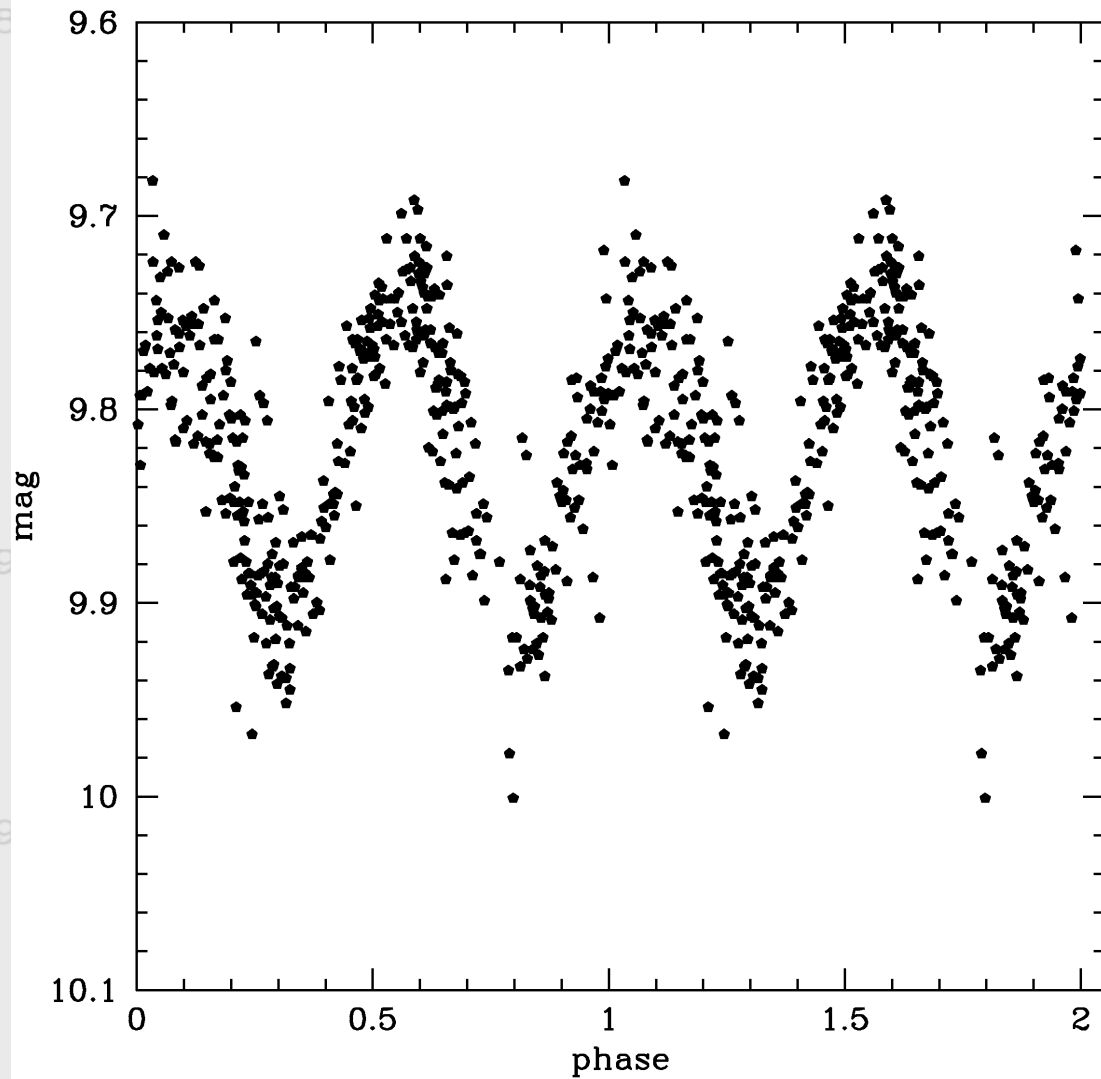
000617-6414.6



- this object is absent as well as in the ASAS catalogue as the GCVS one
- we classified it as DCEP/BCEP star
- $P=0.6761$  d



174022-1318



- absent in the ACVS and GCVS
- in Pi of the Sky catalogue was classified as EW
- $P=0.370673178$  d

# Summary

1. Catalogue containing 1011 stars of various variability types was prepared.
2. We used the same as the GCVS catalogue classification criteria, differ from the ACVS catalogue.
3. We discovered 17 new variable stars and we constrained its periods.
4. We constrained periods of 33 stars presented in GCVS.
5. In our catalogue there is a very strong selection effect because of observational strategy and limiting magnitude (12 mag).
6. For these reasons our catalogue is very far from completeness.

