

# KIC 003642741

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003642741-01	OBS	0242.01	7.258449	138.344796	3739.9	5.798	283.1	283.3	0.92	5638	5.69	141.73

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003642741-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

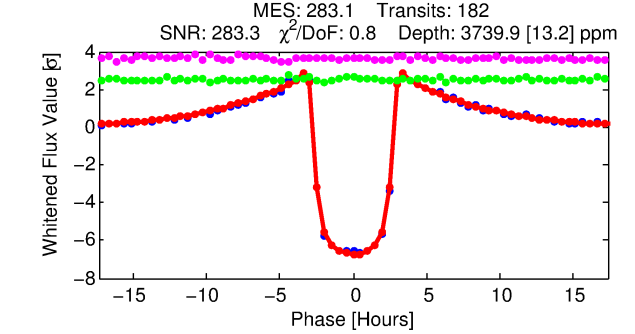
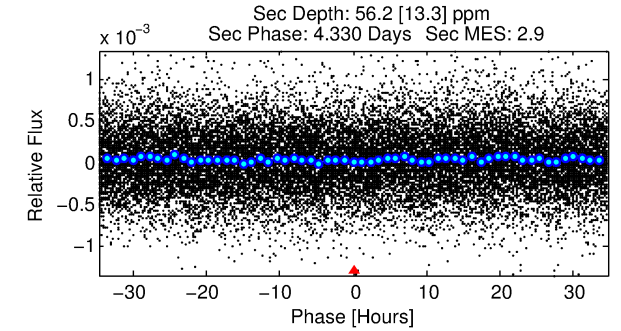
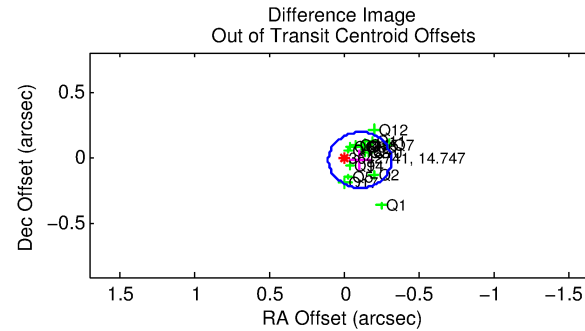
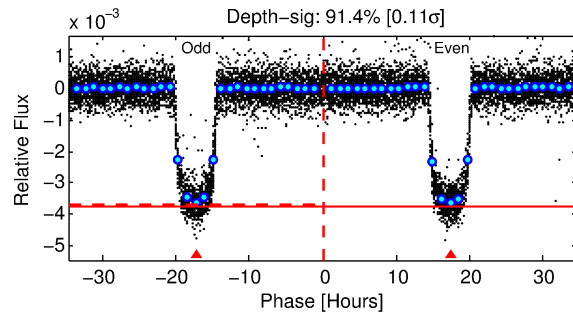
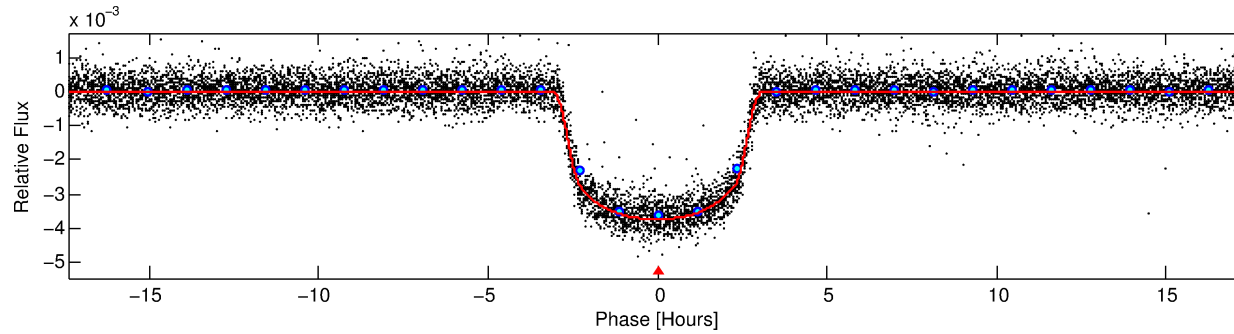
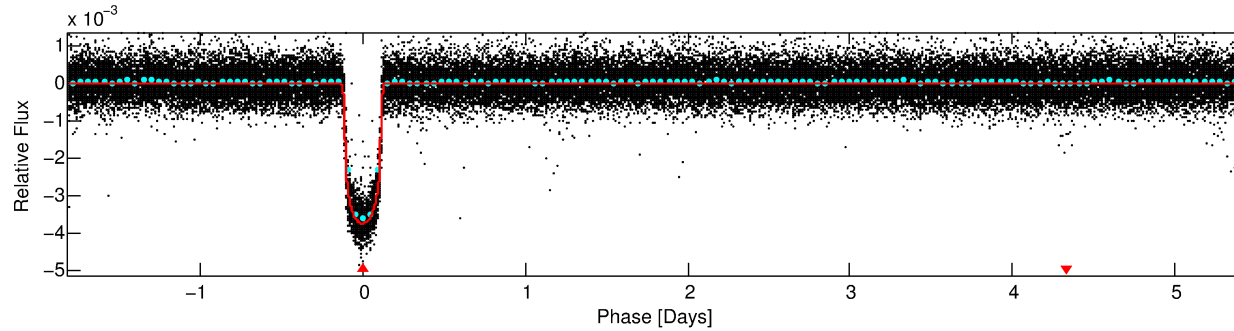
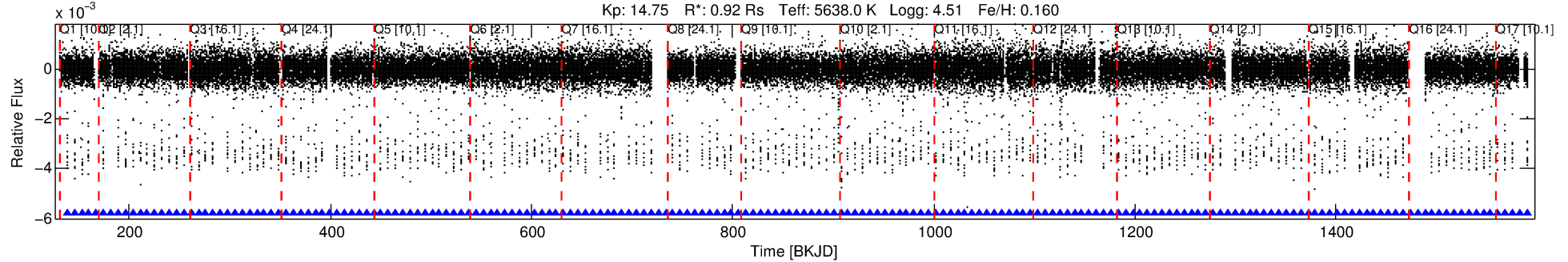
## Ephemeris Match Information For 003642741-01

No Significant Match Found

# DV One-Page Summary

KIC: 3642741 Candidate: 1 of 1 Period: 7.258 d  
KOI: K00242.01 Corr: 0.995

Kp: 14.75 R\*: 0.92 Rs Teff: 5638.0 K Logg: 4.51 Fe/H: 0.160



## DV Fit Results:

Period = 7.25845 [0.00000] d  
Epoch = 138.3448 [0.0003] BKJD  
Rp/R\* = 0.0567 [0.0008]  
a/R\* = 9.17 [0.54]  
b = 0.45 [0.11]  
Seff = 141.73 [54.78]  
Teq = 880 [85] K  
Rp = 5.69 [1.63] Re  
a = 0.0735 [0.0182] AU  
Ag = 5.17 [2.26] [1.84σ]  
Teffp = 2051 [137] K [7.26σ]

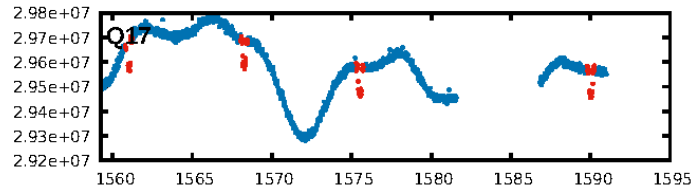
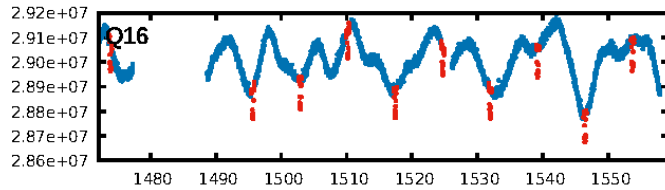
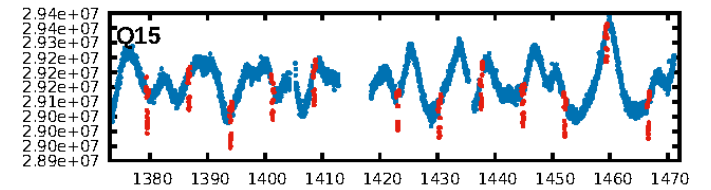
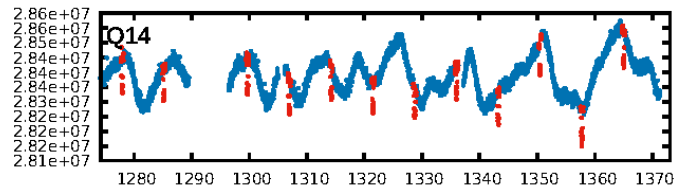
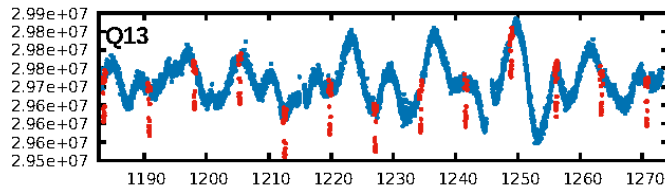
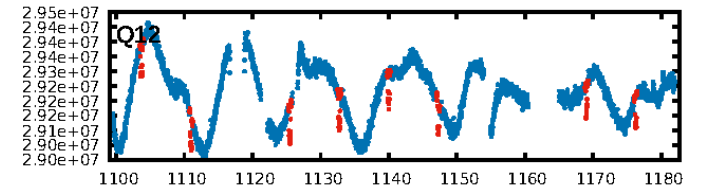
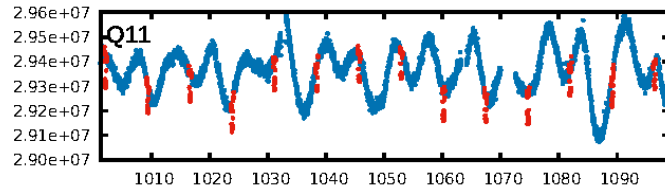
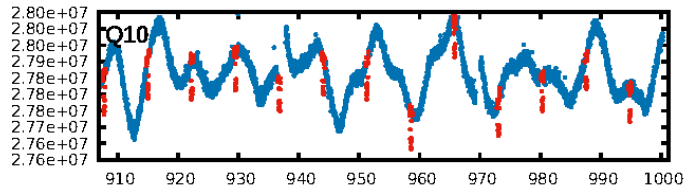
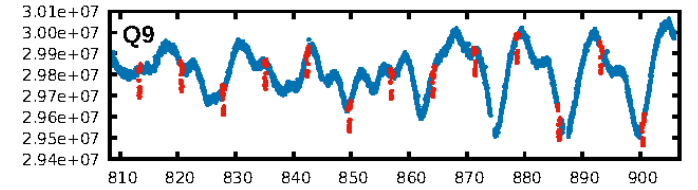
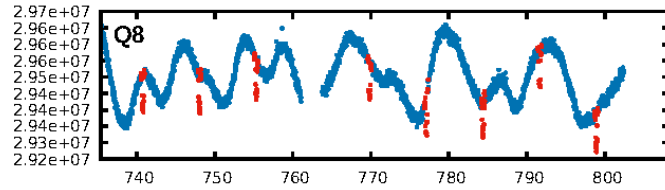
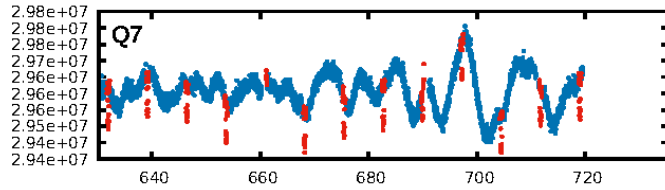
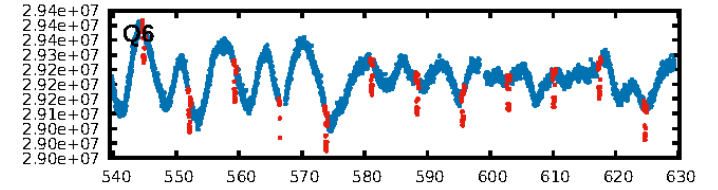
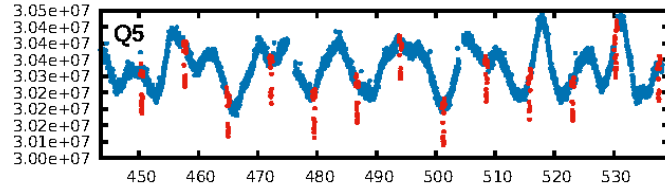
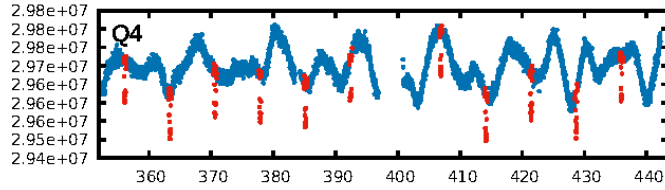
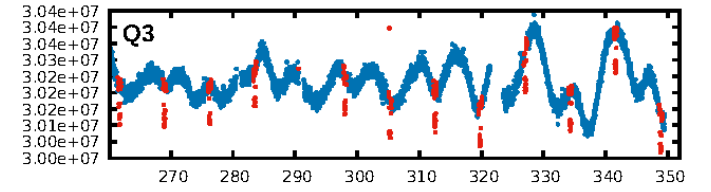
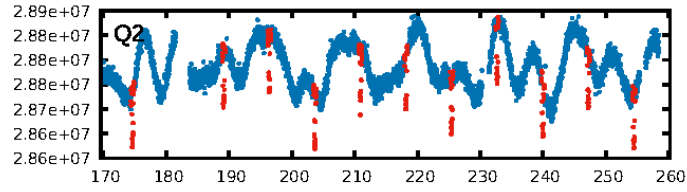
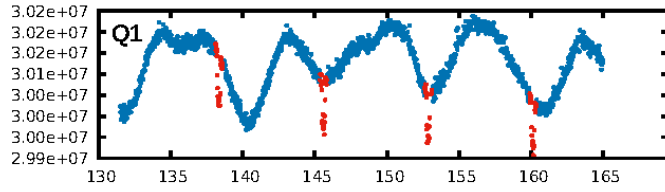
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [174/174]  
GhostDiagnostic-chr: 4.458  
Centroid-sig: 0.0%  
Centroid-so: 0.304 arcsec [7.56σ]  
OotOffset-rm: 0.110 arcsec [1.57σ]  
KicOffset-rm: 0.103 arcsec [1.41σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

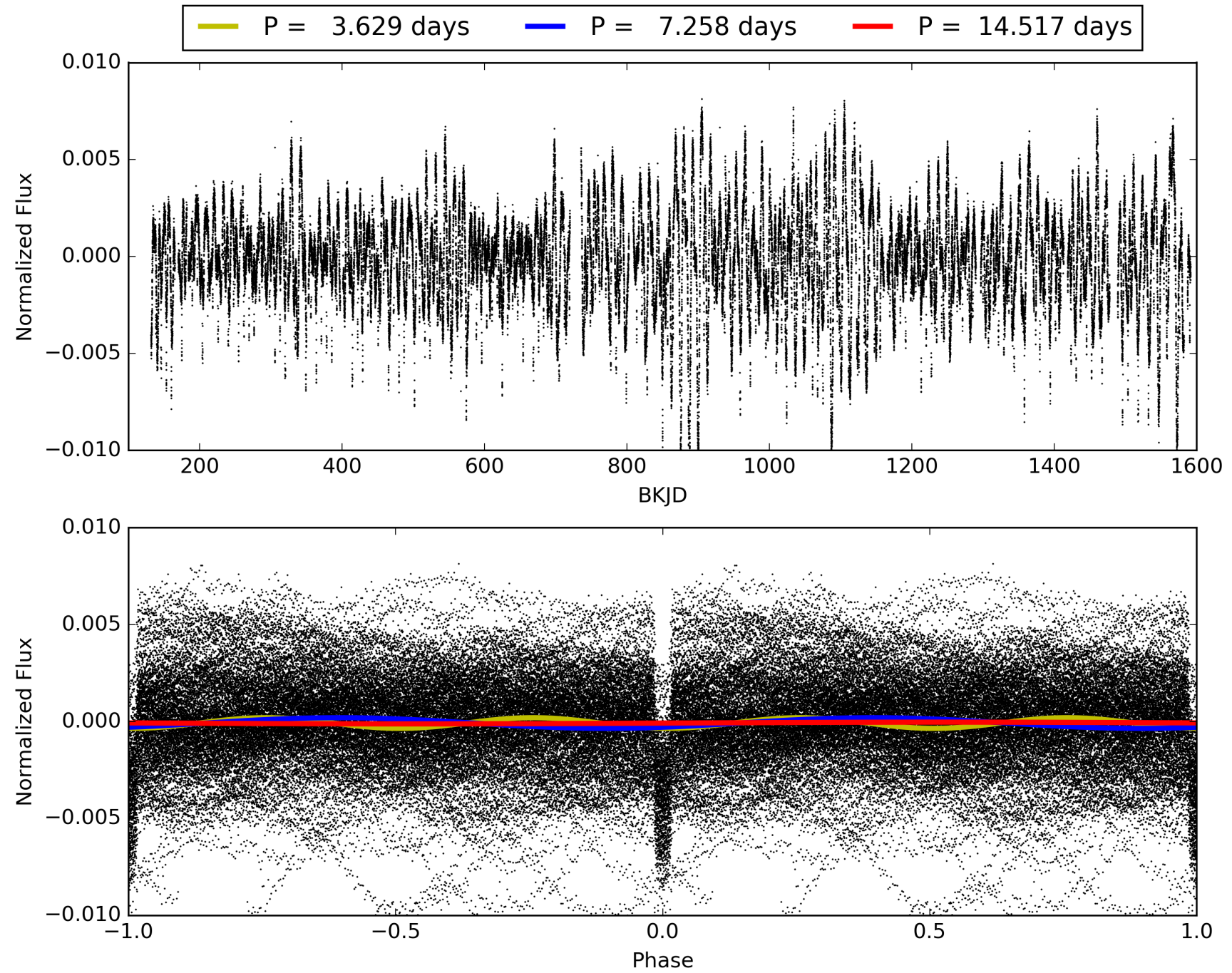
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:01:08 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003642741-01, PDC Light Curves

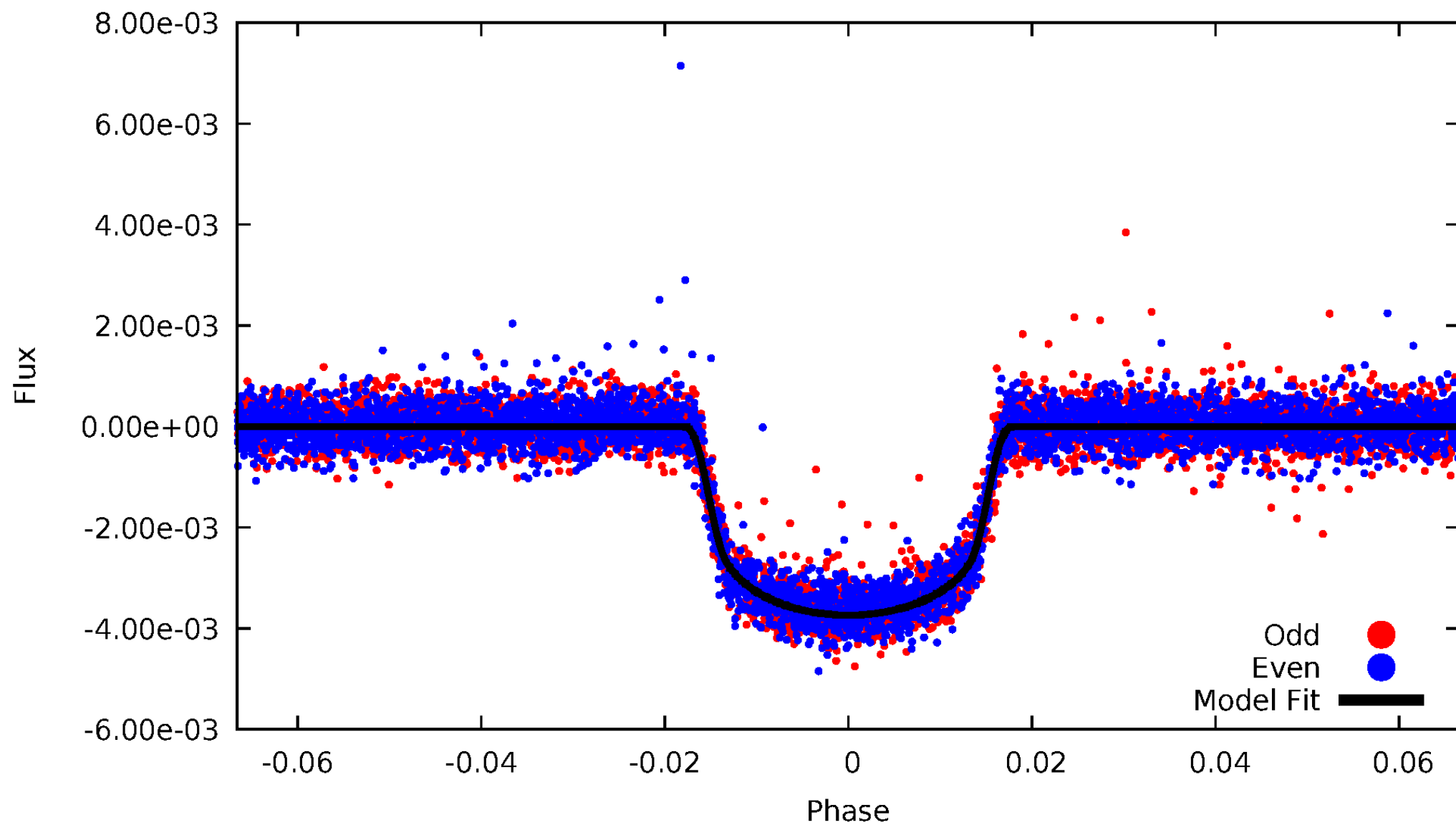


TCE 003642741-01



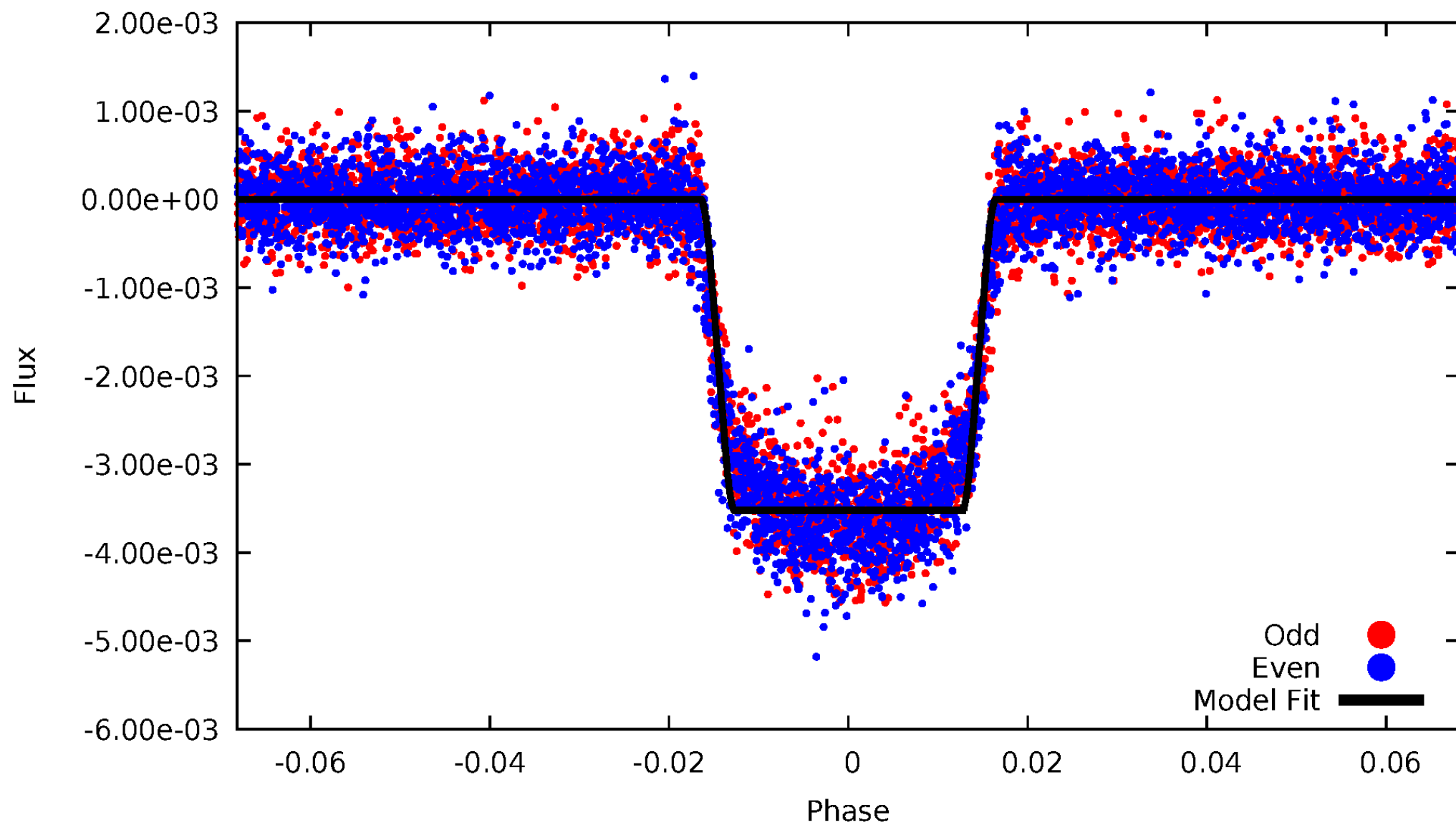
# DV Odd/Even

TCE 003642741-01



# ALT Odd/Even

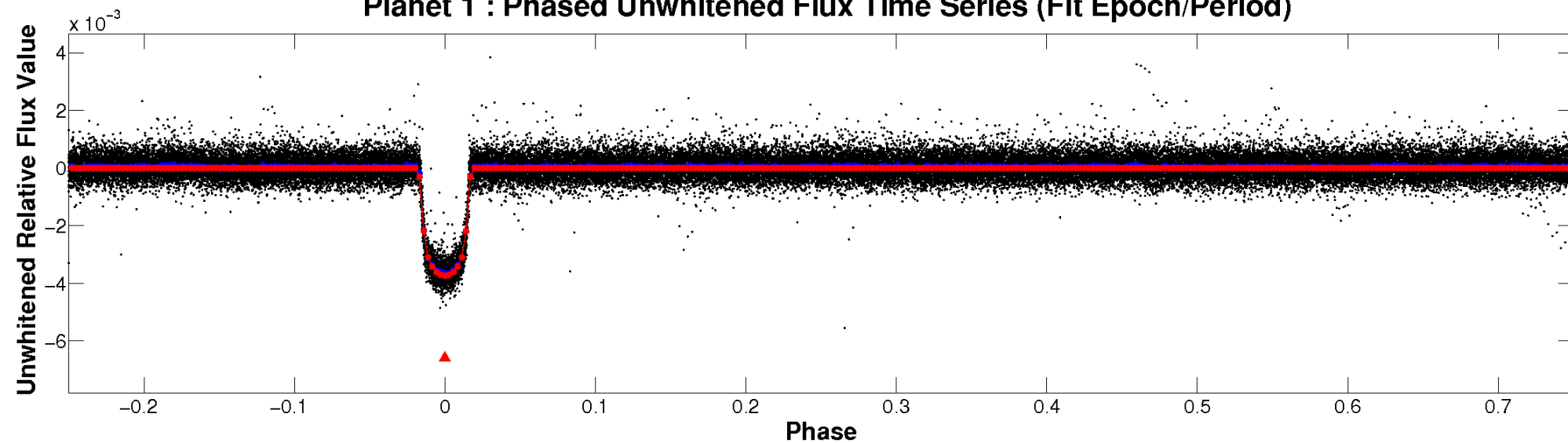
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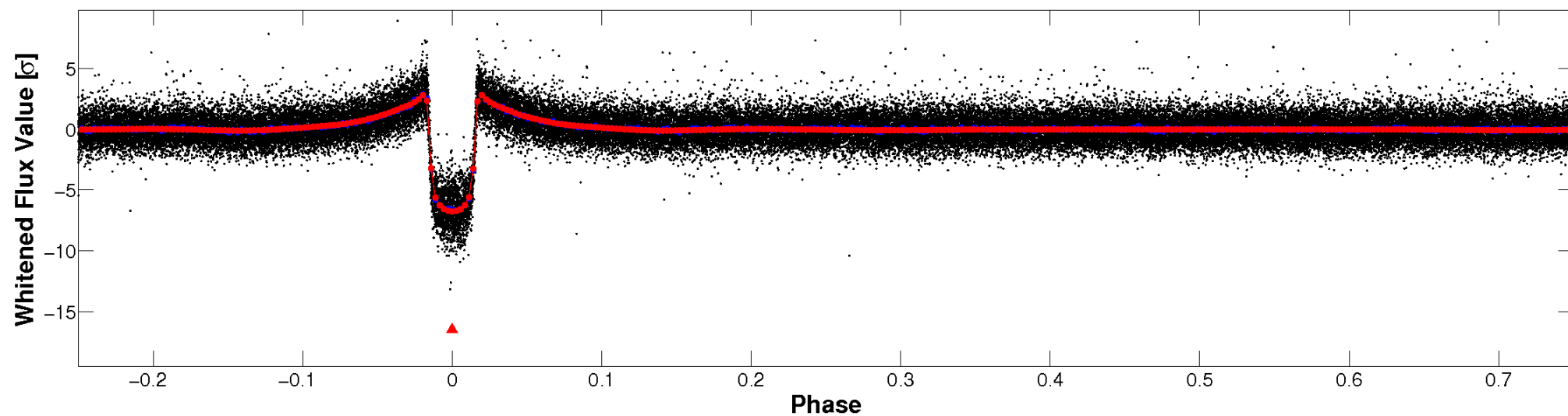


# Non-Whitened Vs. Whitened Light Curve

**Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

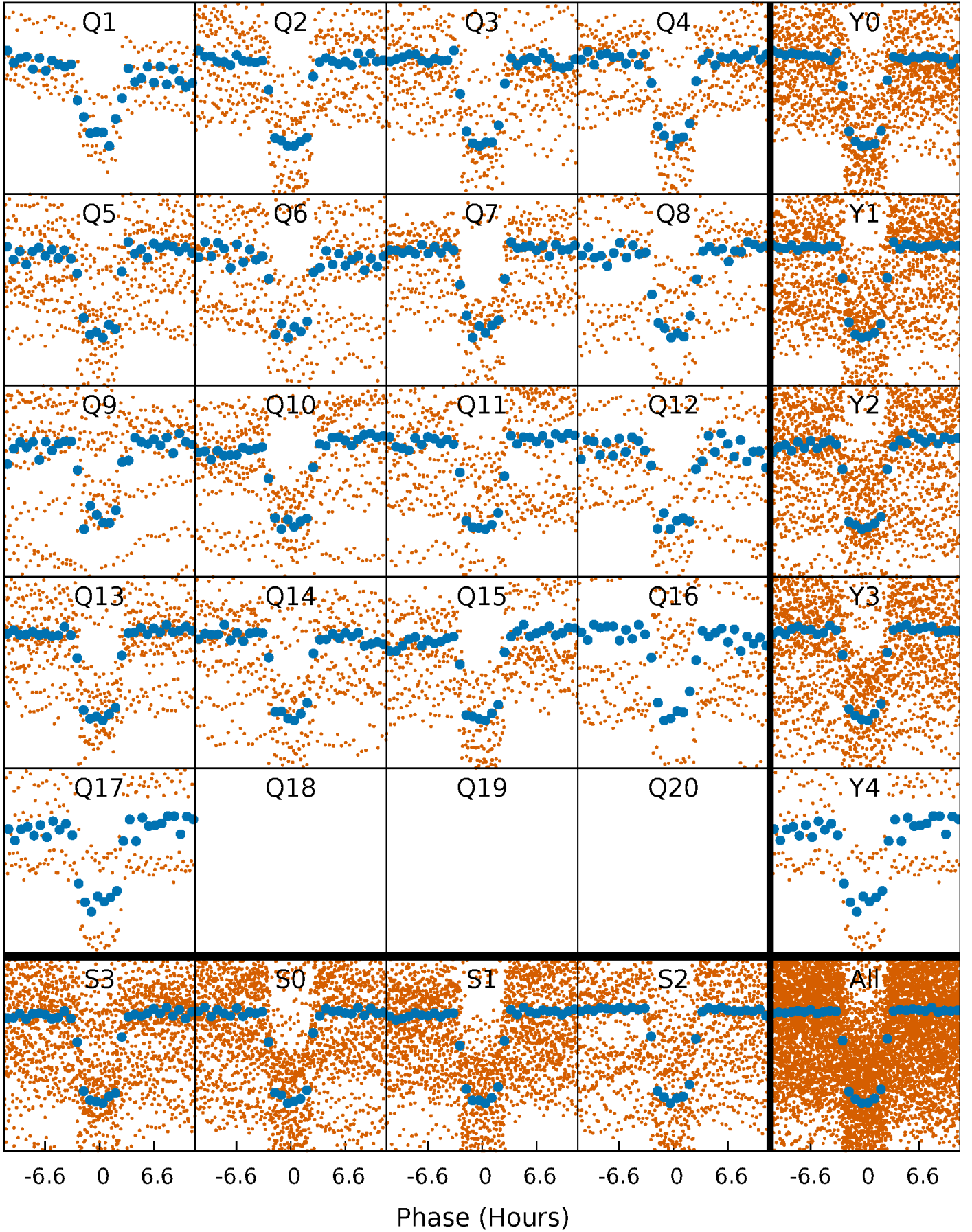


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

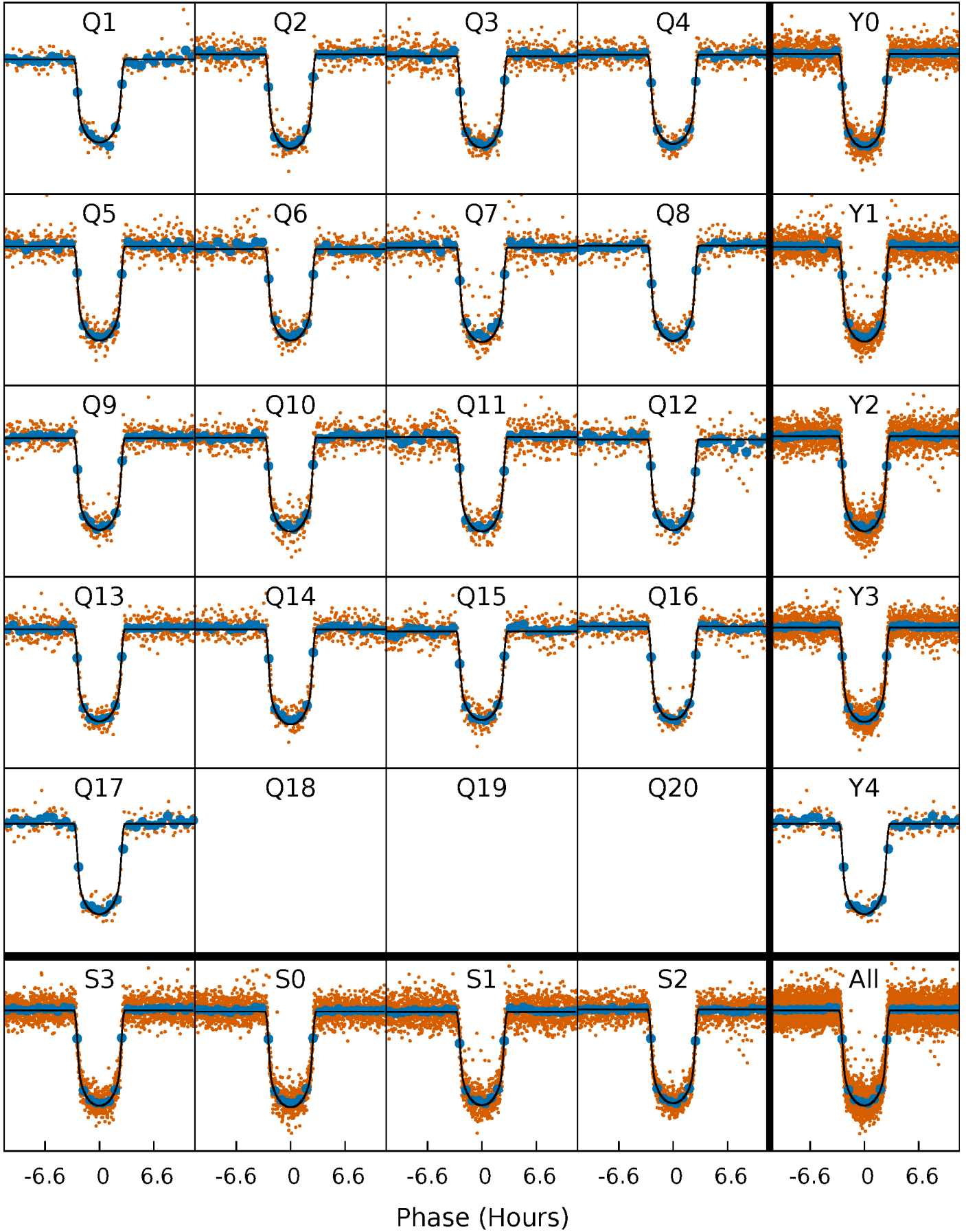
TCE 003642741-01   P= 7.258449 Days    $T_0=138.344796$  (BKJD)





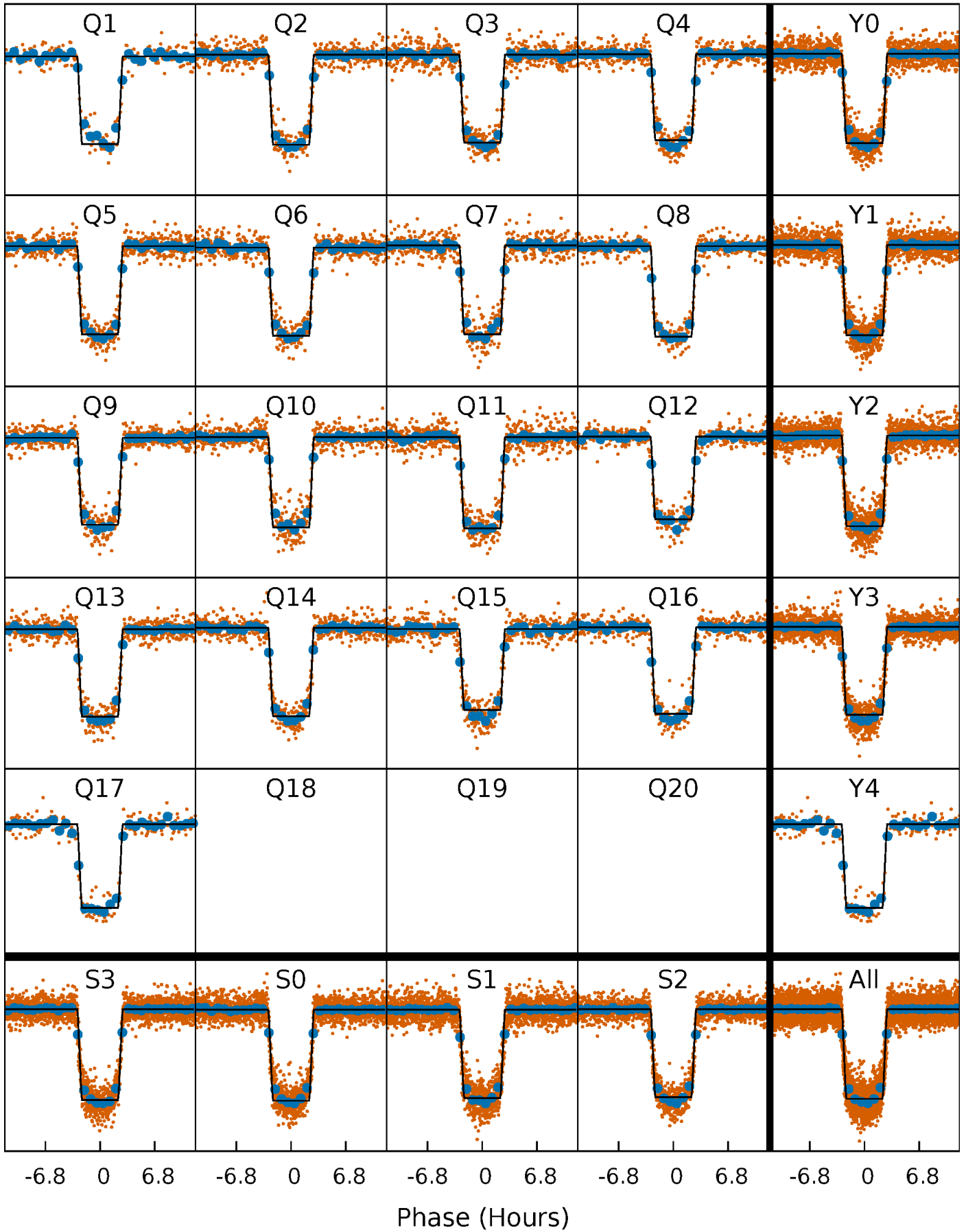
# DV Quarter-Phased Transit Curves

TCE 003642741-01   P= 7.258449 Days    $T_0=138.344796$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

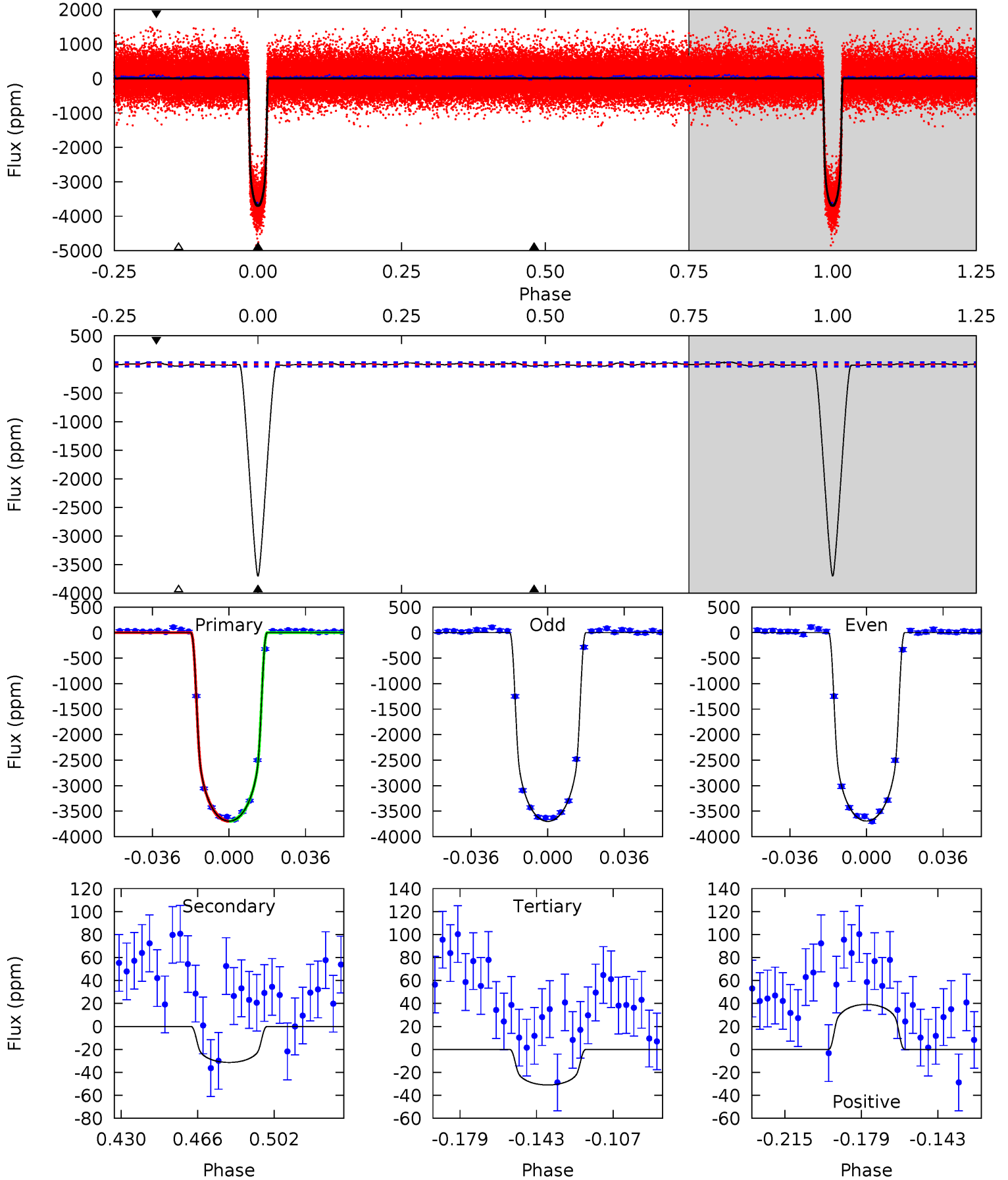
TCE 003642741-01   P= 7.258481 Days    $T_0=138.341742$  (BKJD)



# DV Model-Shift Uniqueness Test

003642741-01, P = 7.258449 Days, E = 131.086347 Days

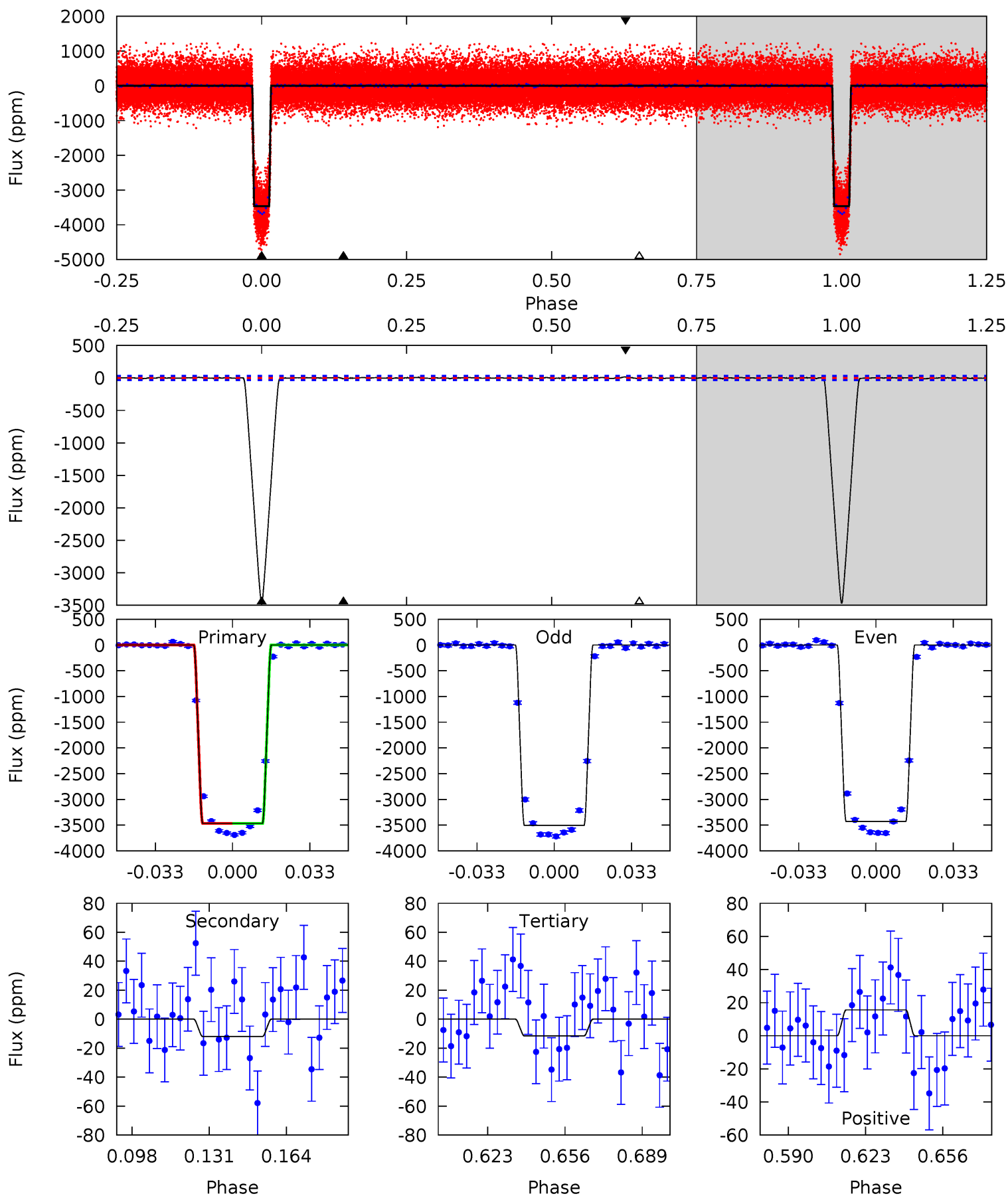
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
492.7	4.18	4.13	5.22	4.78	2.10	1.89	488.6	487.5	0.05	-1.04	0.43	0.99	0.01	0.11



# Alt Model-Shift Uniqueness Test

003642741-01, P = 7.258481 Days, E = 131.083261 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
518.0	1.79	1.72	2.33	4.79	2.13	0.64	516.3	515.7	0.07	-0.54	5.80	1.00	0.00	0.25



### Stellar Parameters For KIC 003642741

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5638^{+154}_{-171}$	$4.513^{+0.048}_{-0.204}$	$0.160^{+0.200}_{-0.300}$	$0.920^{+0.264}_{-0.088}$	$1.006^{+0.090}_{-0.120}$	$1.820^{+0.365}_{-0.950}$
	+3%/-3%	+1%/-5%	+125%/-188%	+29%/-10%	+9%/-12%	+20%/-52%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 003642741-01 / KOI 0242.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-31 \pm 8$	$5.81^{+0.85}_{-0.40}$	$1253^{+83}_{-54}$	$2542^{+96}_{-109}$	$2.591^{+0.822}_{-0.845}$
Alt.	$-12 \pm 7$	$6.14^{+0.94}_{-0.48}$	$1254^{+92}_{-56}$	$2191^{+143}_{-402}$	$0.927^{+0.518}_{-0.550}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$



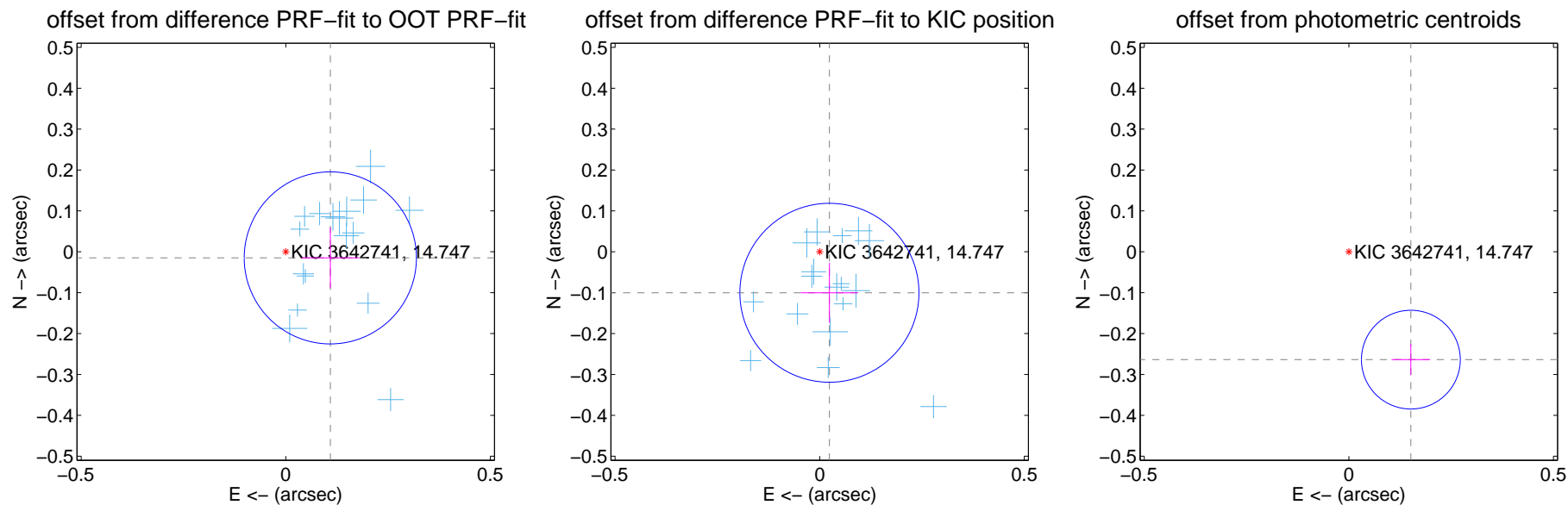
## DV Centroid Data

Supplemental centroid analysis for 003642741-01. Kepler magnitude: 14.75. Transit SNR 283.35

There are 17 quarters with good PRF difference image offsets

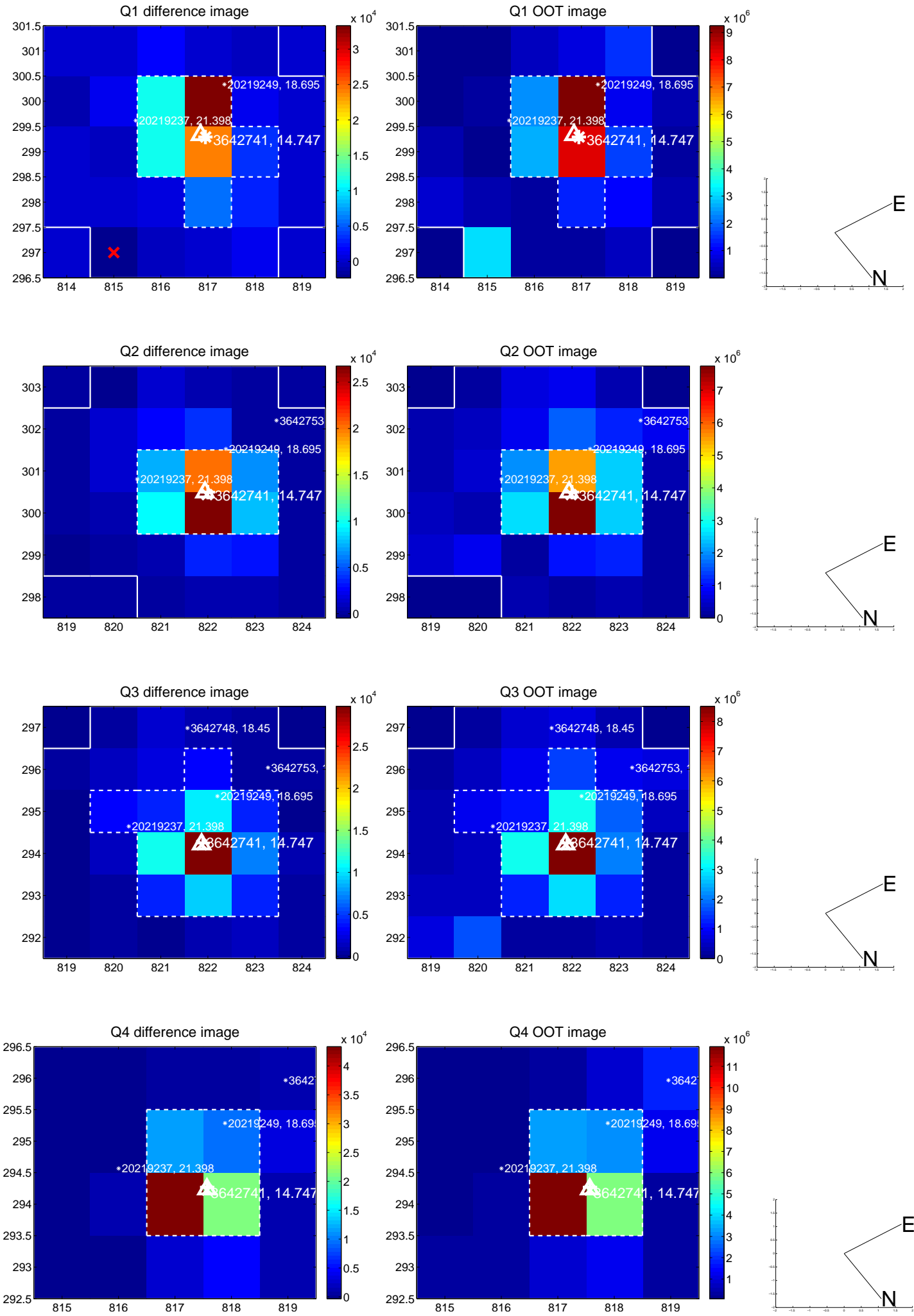
The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.110 \pm 0.070$	1.57	$-0.109 \pm 0.070$	$-0.015 \pm 0.074$
PRF-fit source offset from KIC position	$0.103 \pm 0.073$	1.41	$-0.024 \pm 0.070$	$-0.100 \pm 0.073$
photometric centroid source offset	$0.30 \pm 0.04$	7.56	$-0.15 \pm 0.05$	$-0.26 \pm 0.04$

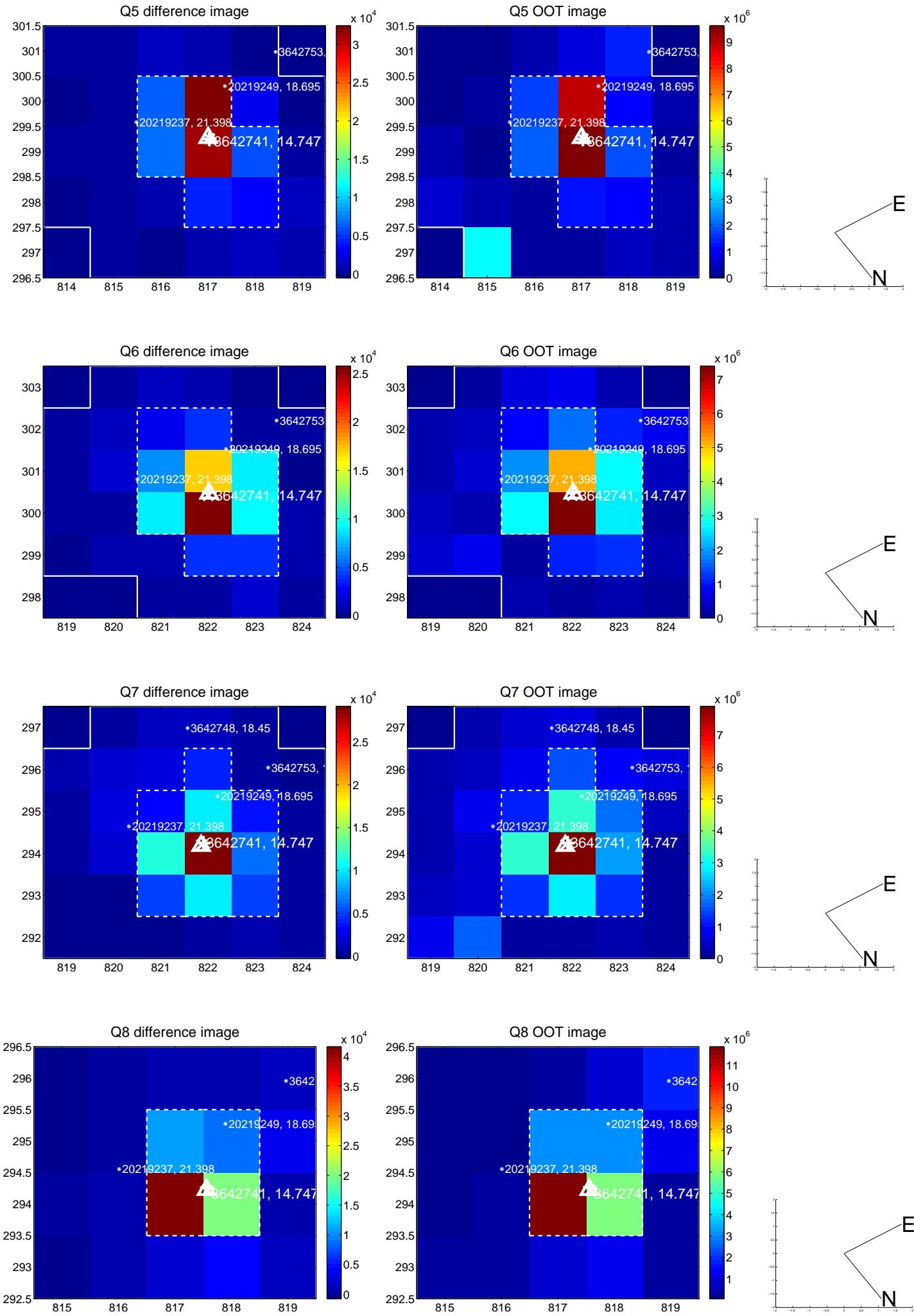


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

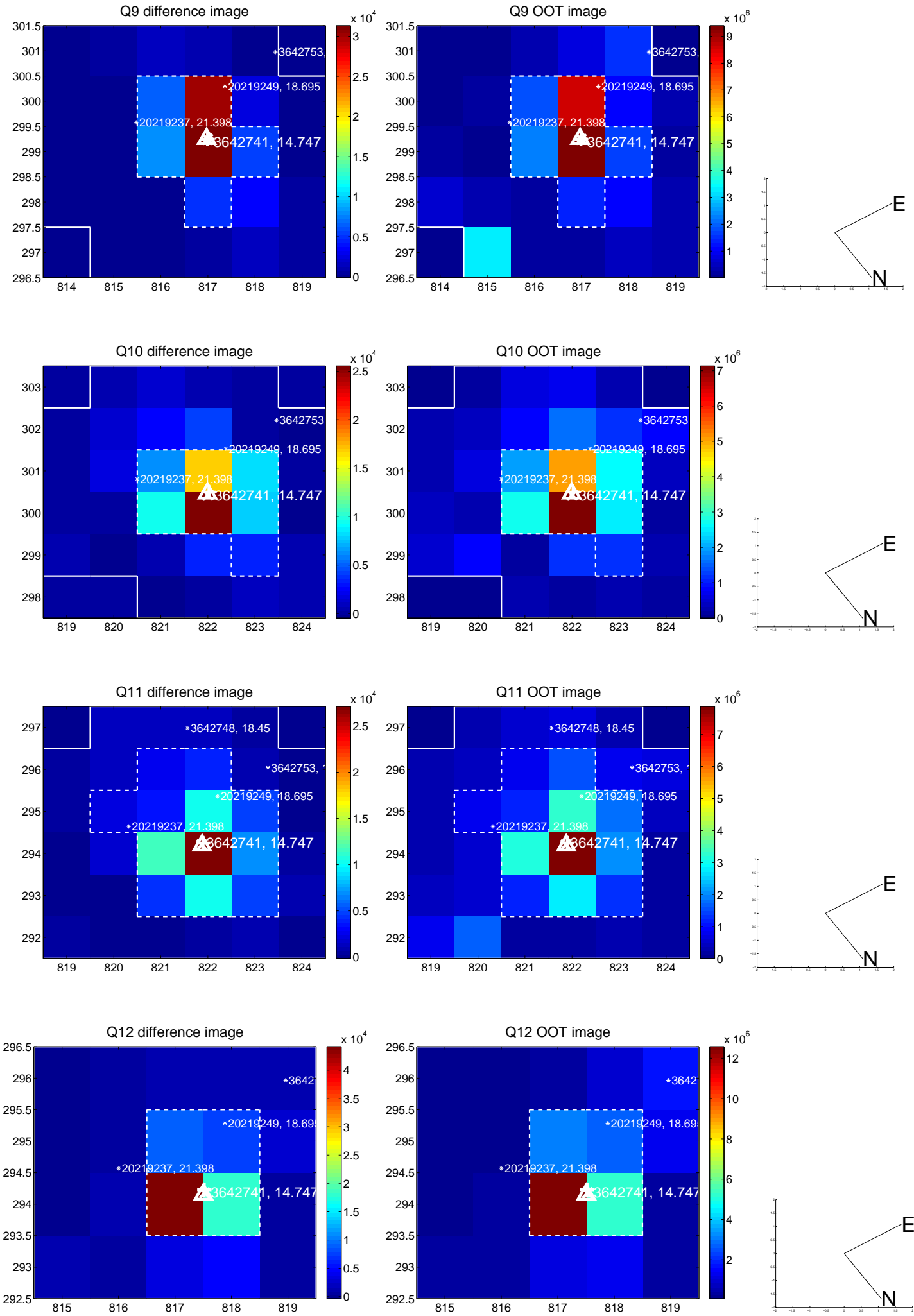
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



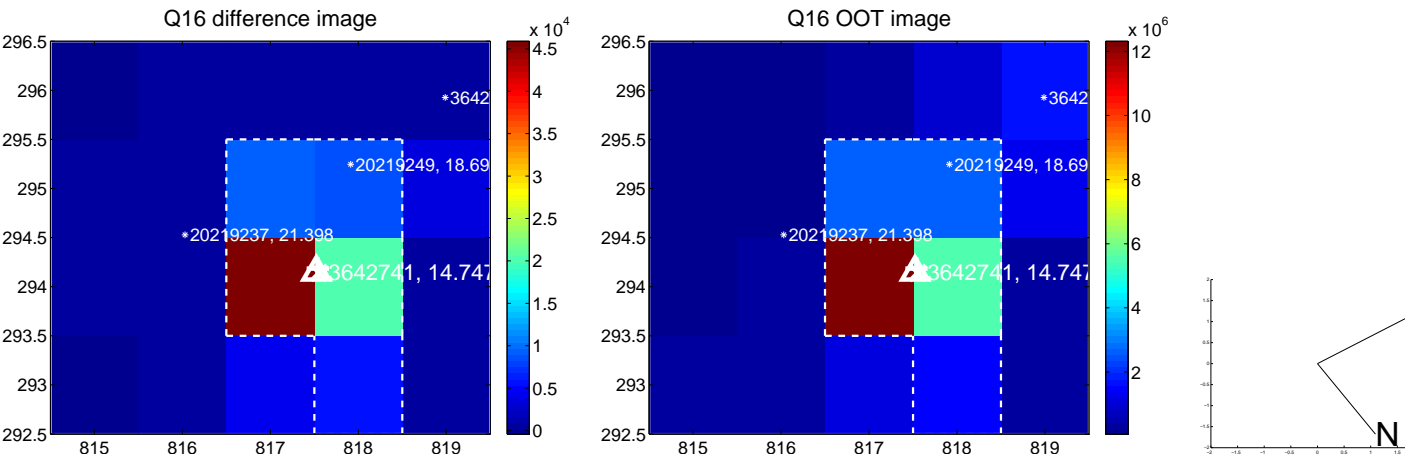
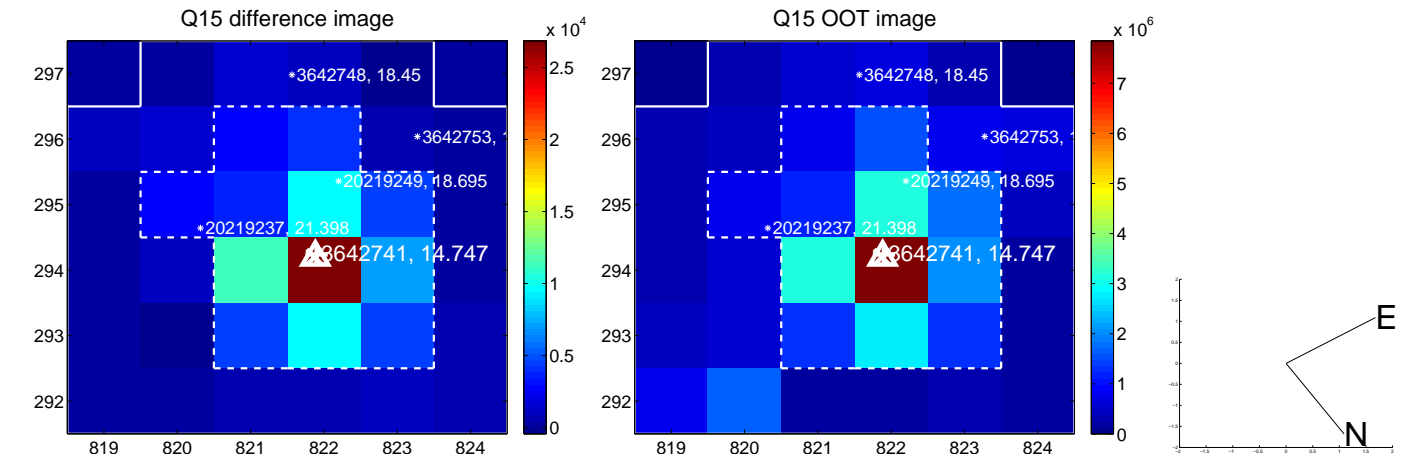
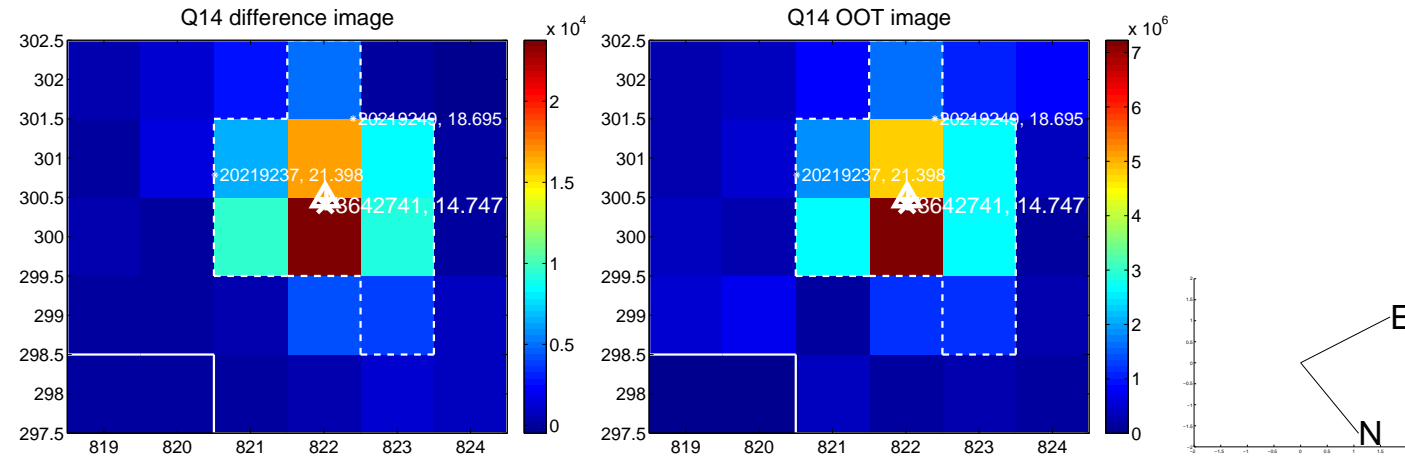
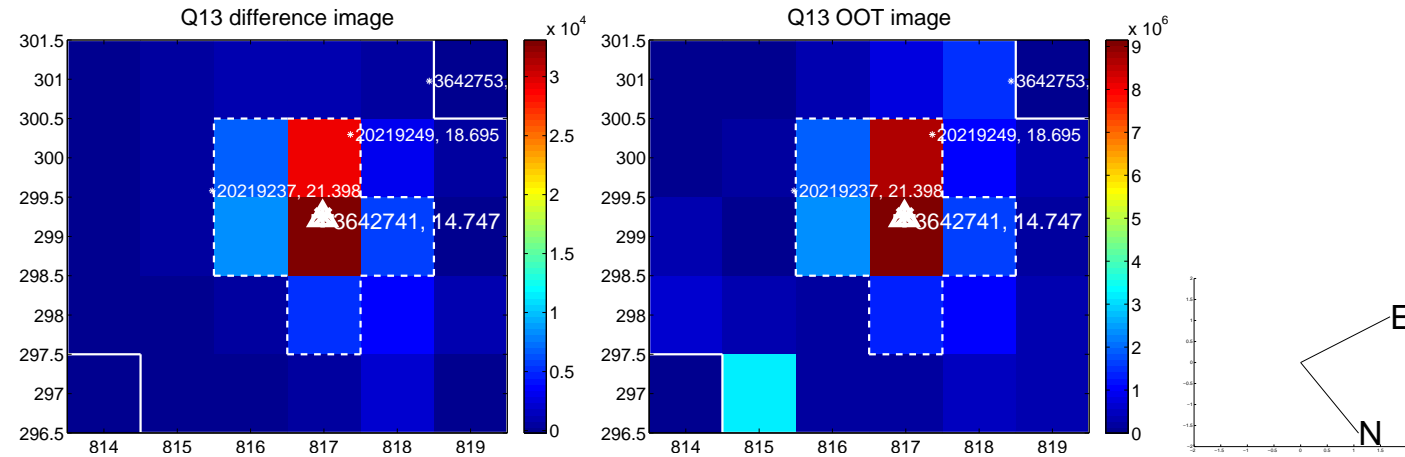
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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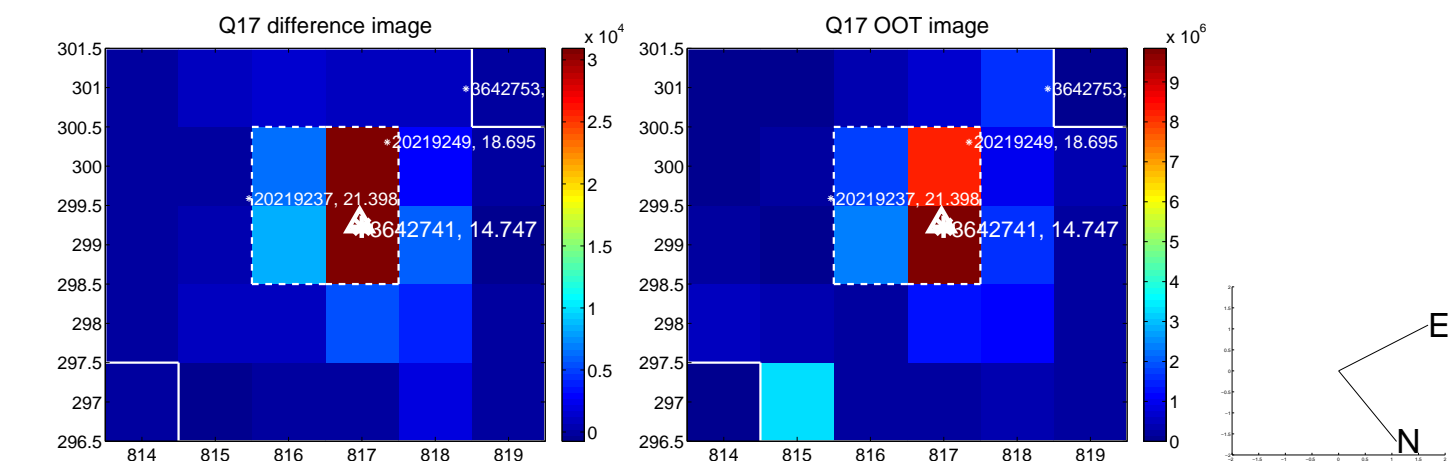


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

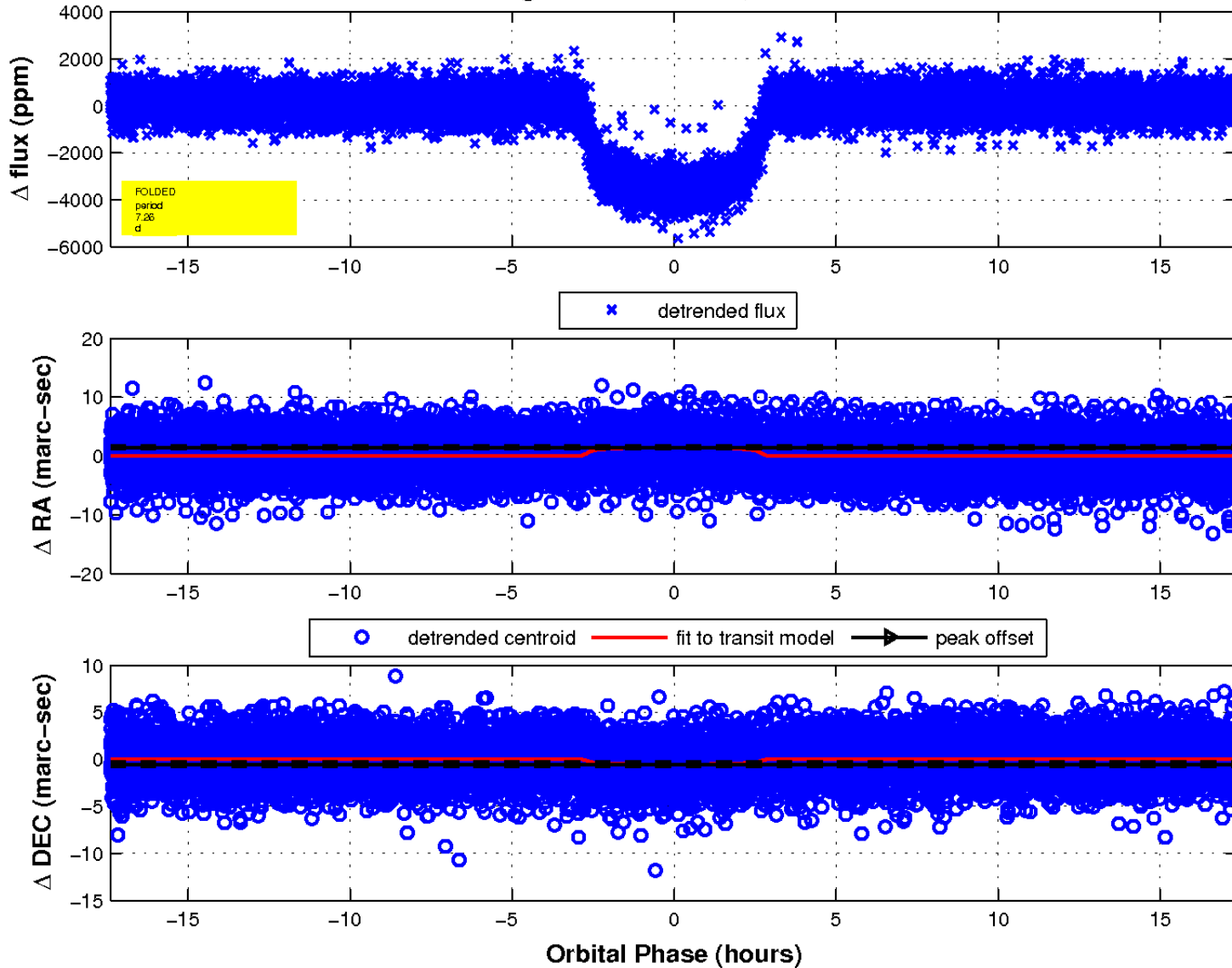




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

