

# KIC 003337425

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003337425-01	OBS	1114.01	7.047094	132.753465	345.9	2.243	20.8	22.7	1.07	5766	2.39	224.26

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003337425-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

**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.

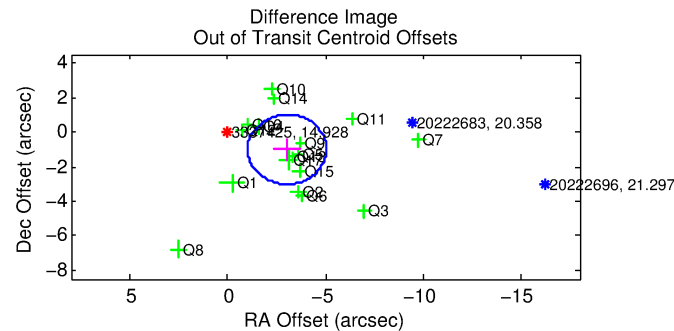
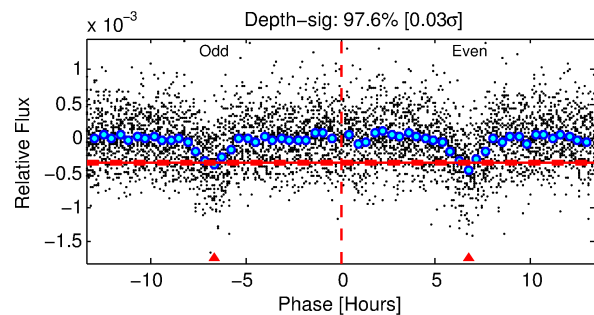
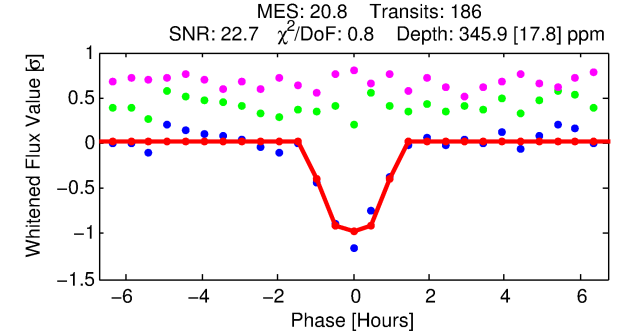
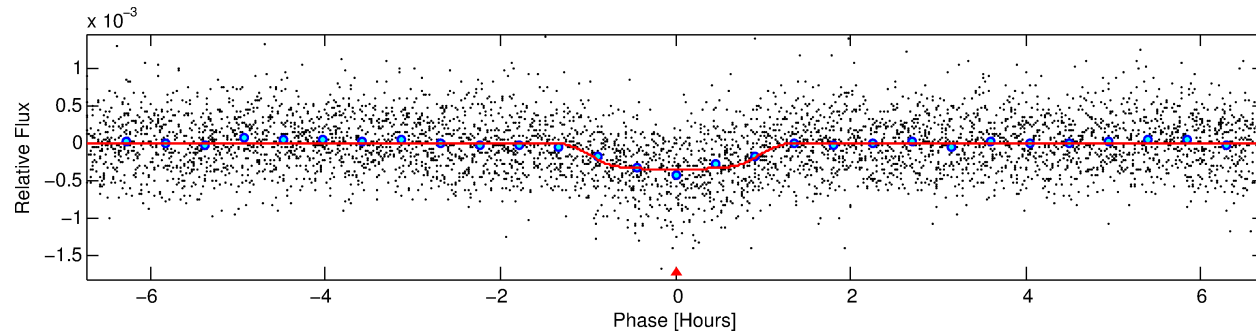
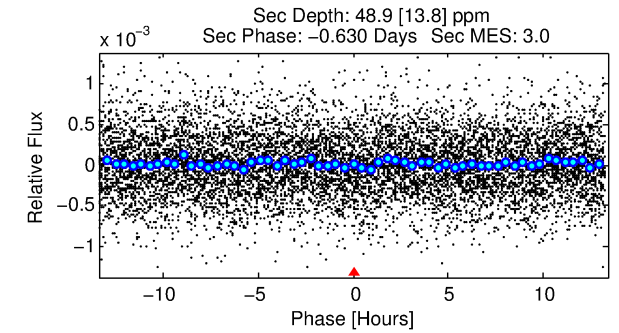
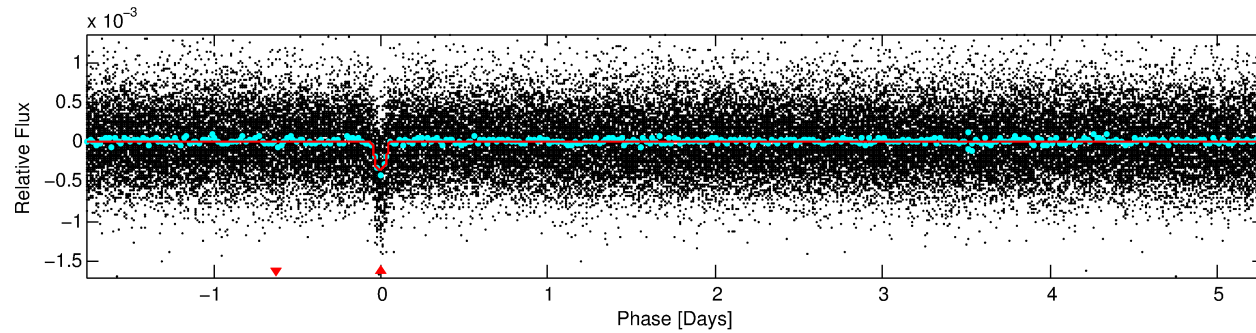
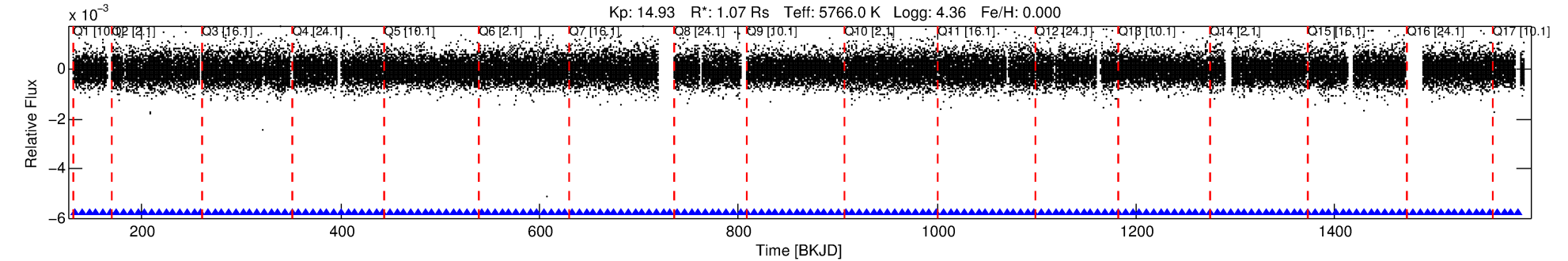
## Ephemeris Match Information For 003337425-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
003337425-01	3337425	6311.01	3230227	1:1	64.9	5	16	9.00	14.93	203.07	Direct-PRF	0	0.08	0.12

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 3337425 Candidate: 1 of 1 Period: 7.047 d  
KOI: K01114.01 Corr: 0.866



## DV Fit Results:

Period = 7.04709 [0.00002] d  
Epoch = 132.7535 [0.0023] BKJD  
Rp/R\* = 0.0205 [0.0046]  
a/R\* = 11.13 [11.58]  
b = 0.91 [0.20]  
Seff = 224.26 [78.87]  
Teff = 987 [87] K  
Rp = 2.39 [0.83] Re  
a = 0.0710 [0.0161] AU  
Ag = 23.73 [14.77] [1.54σ]  
Teffp = 3367 [455] K [5.13σ]

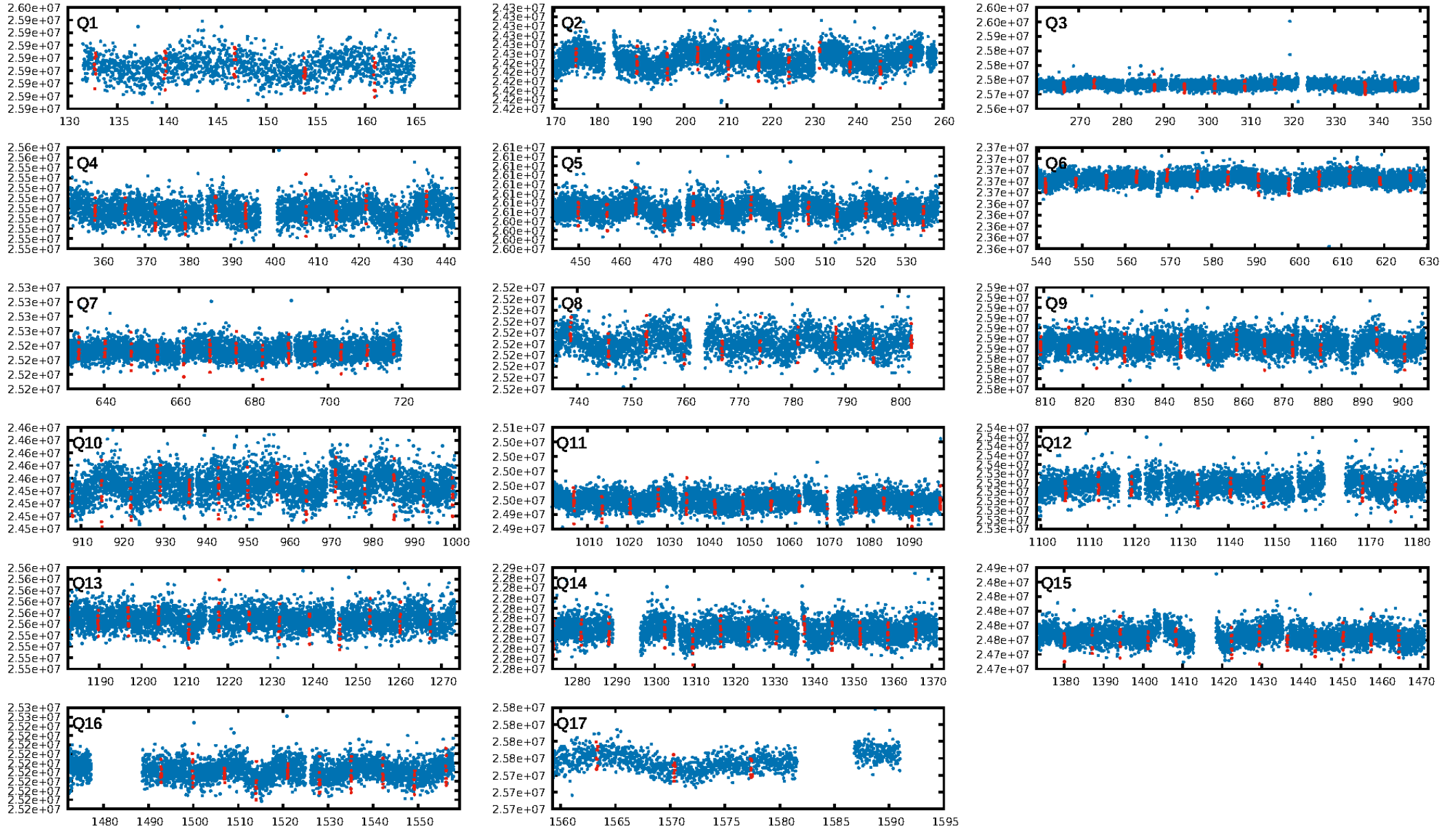
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 90.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.66e-94  
RollingBand-fgt: 1.00 [178/178]  
GhostDiagnostic-chr: 0.1409  
Centroid-sig: 0.1%  
Centroid-so: 1.687 arcsec [2.96σ]  
OotOffset-rm: 3.189 arcsec [4.74σ]  
KicOffset-rm: 3.199 arcsec [5.04σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.00 [0/17]  
DiffImageOverlap-fno: 1.00 [17/17]

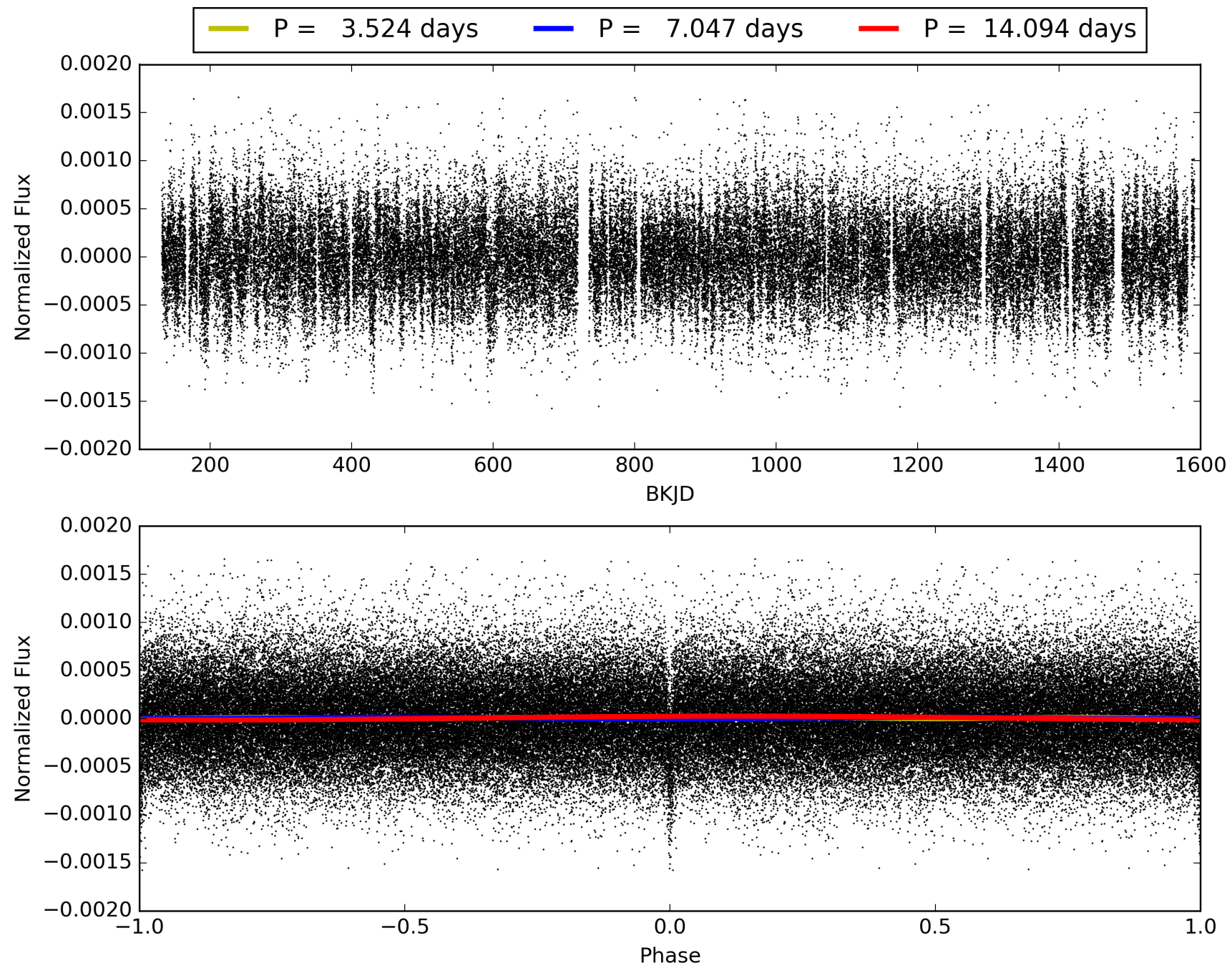
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:45:37 Z

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

# TCE 003337425-01, PDC Light Curves

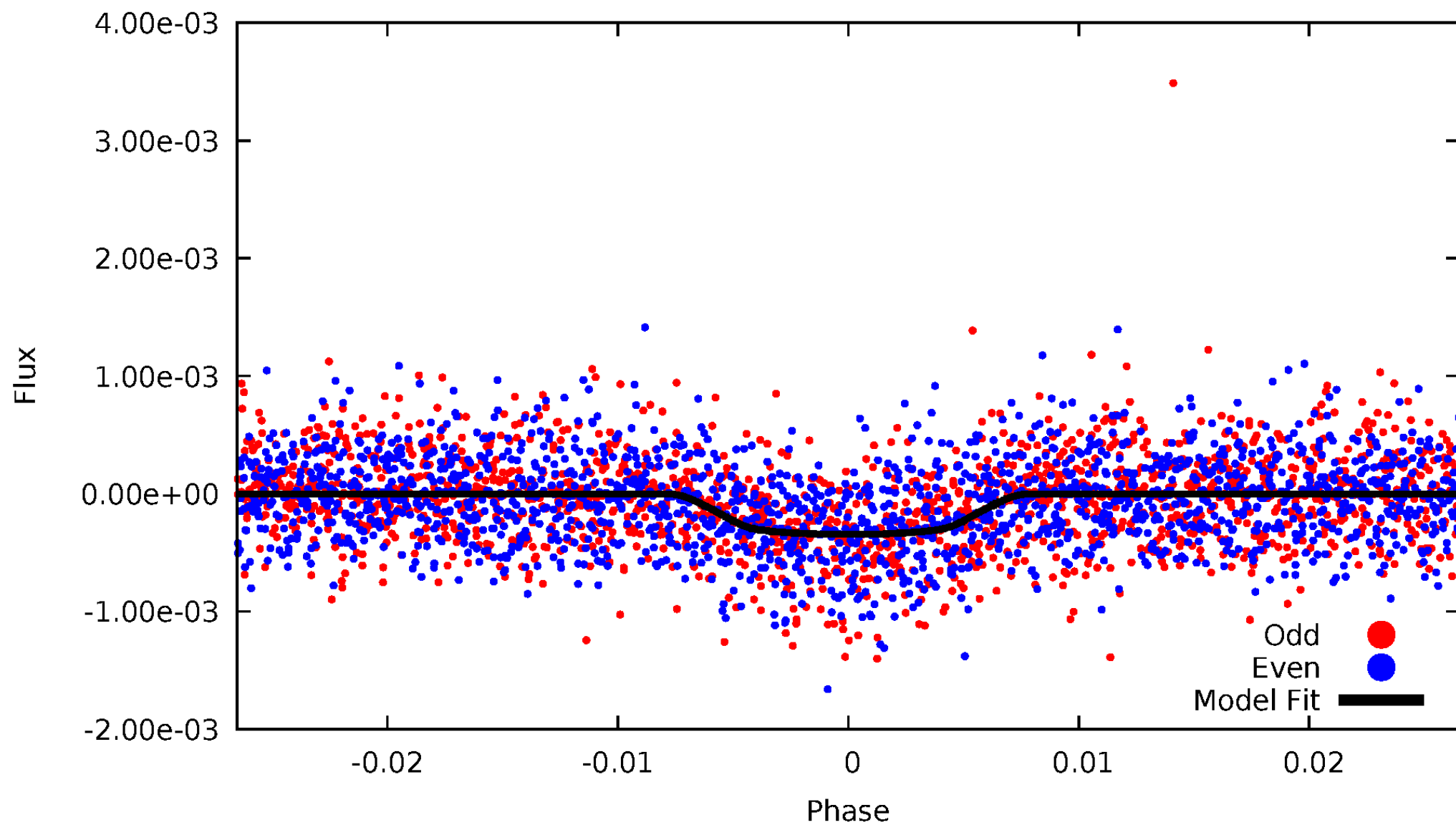


TCE 003337425-01



# DV Odd/Even

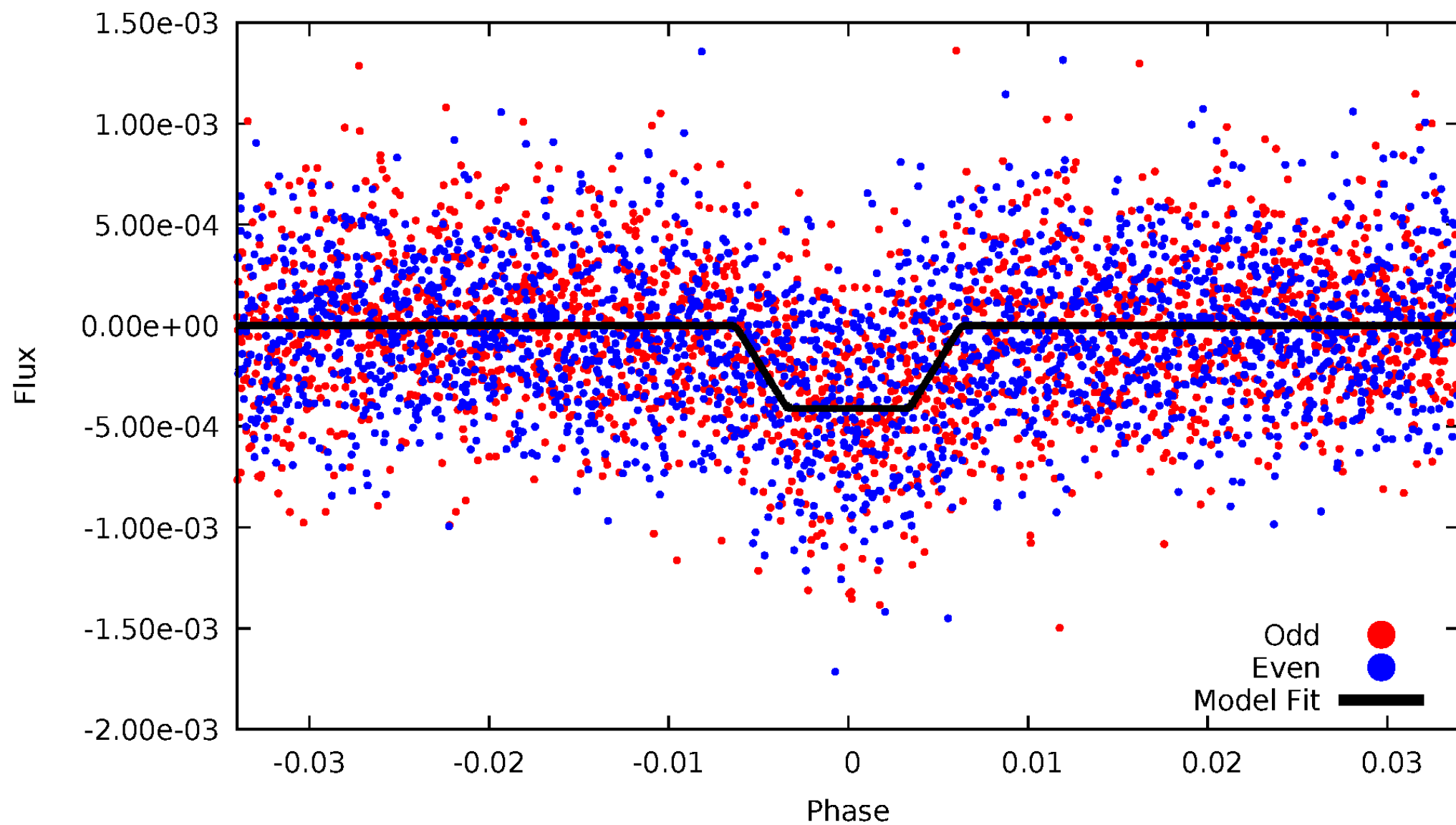
TCE 003337425-01





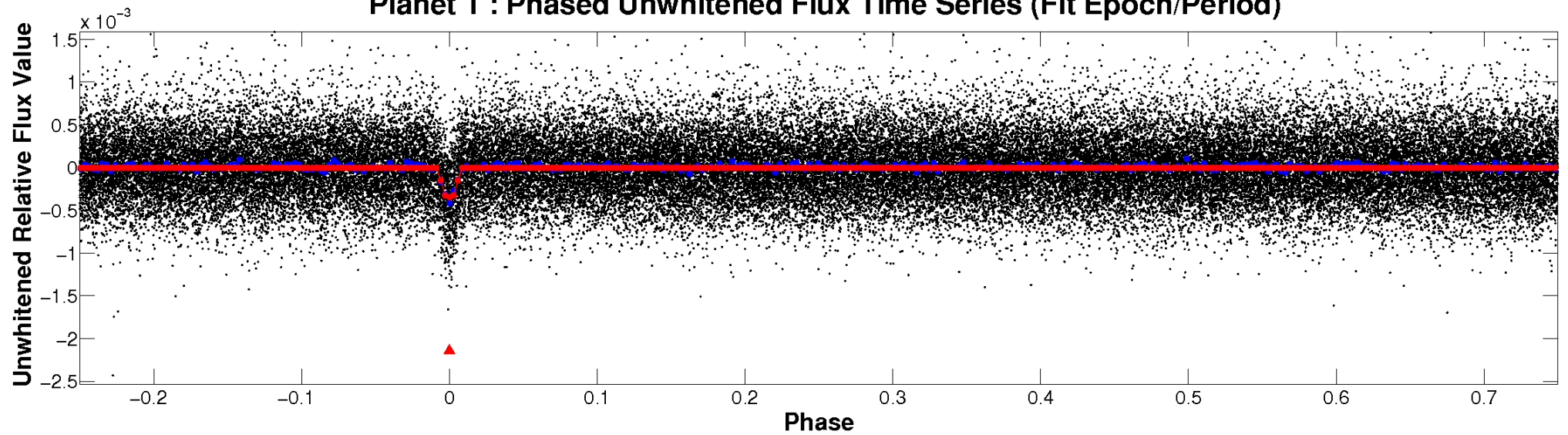
# ALT Odd/Even

TCE 003337425-01

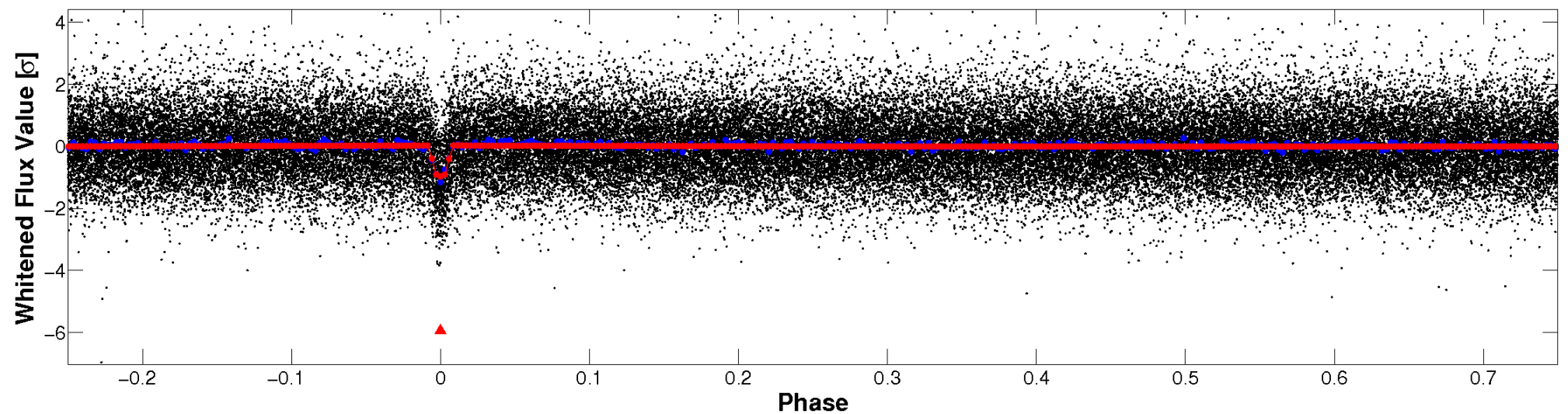


# Non-Whitened Vs. Whitened Light Curve

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

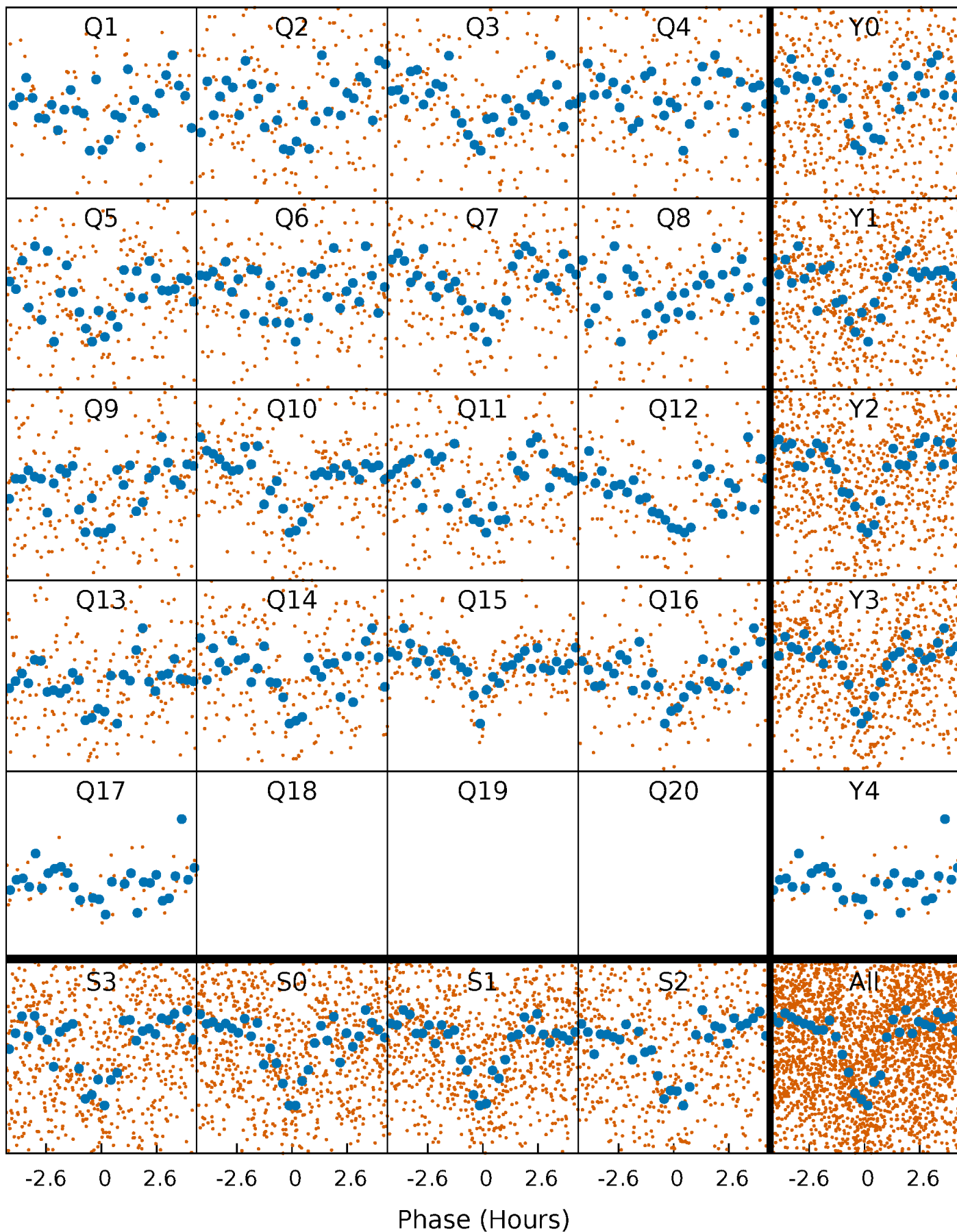


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

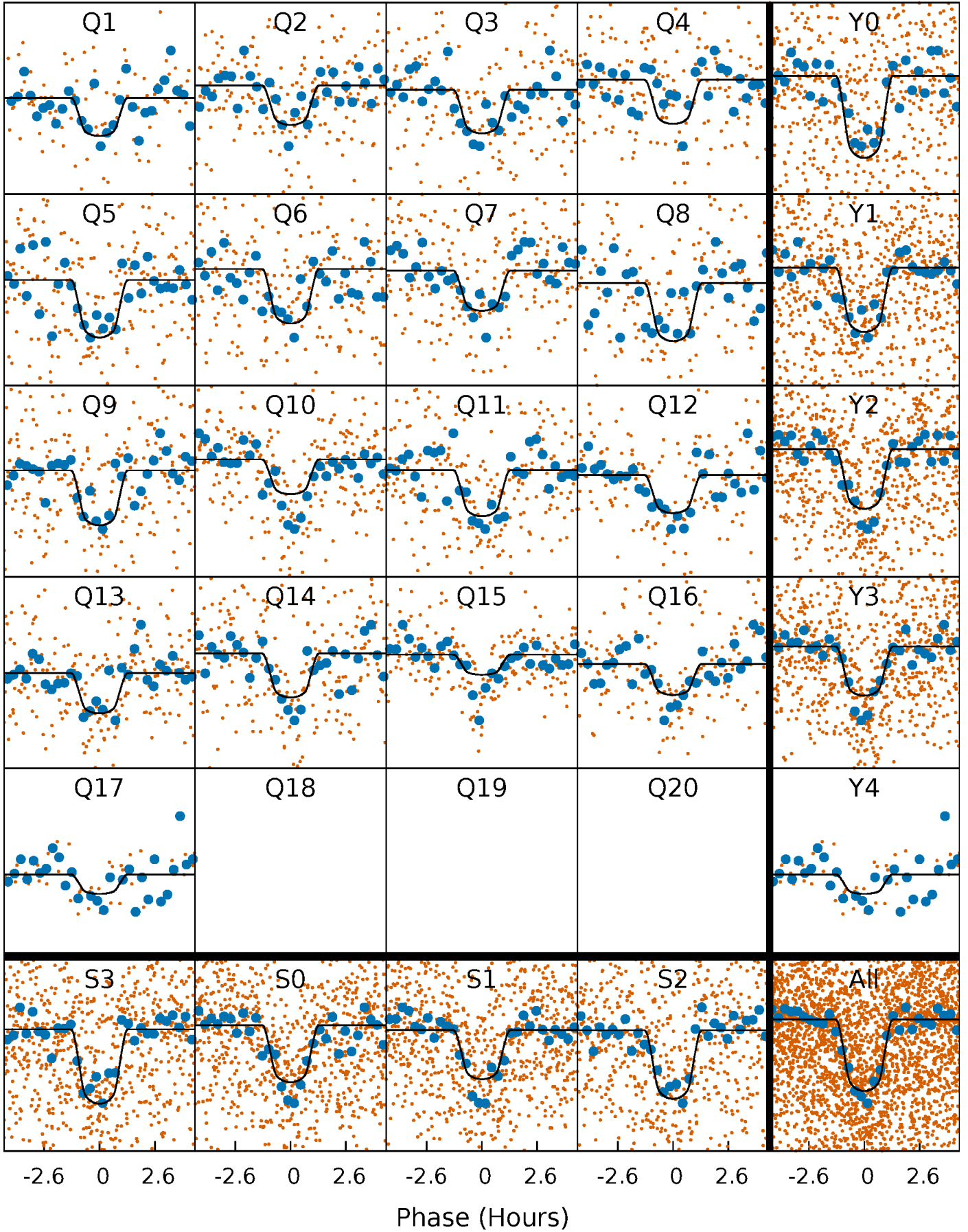
TCE 003337425-01 P= 7.047094 Days  $T_0=132.753465$  (BKJD)





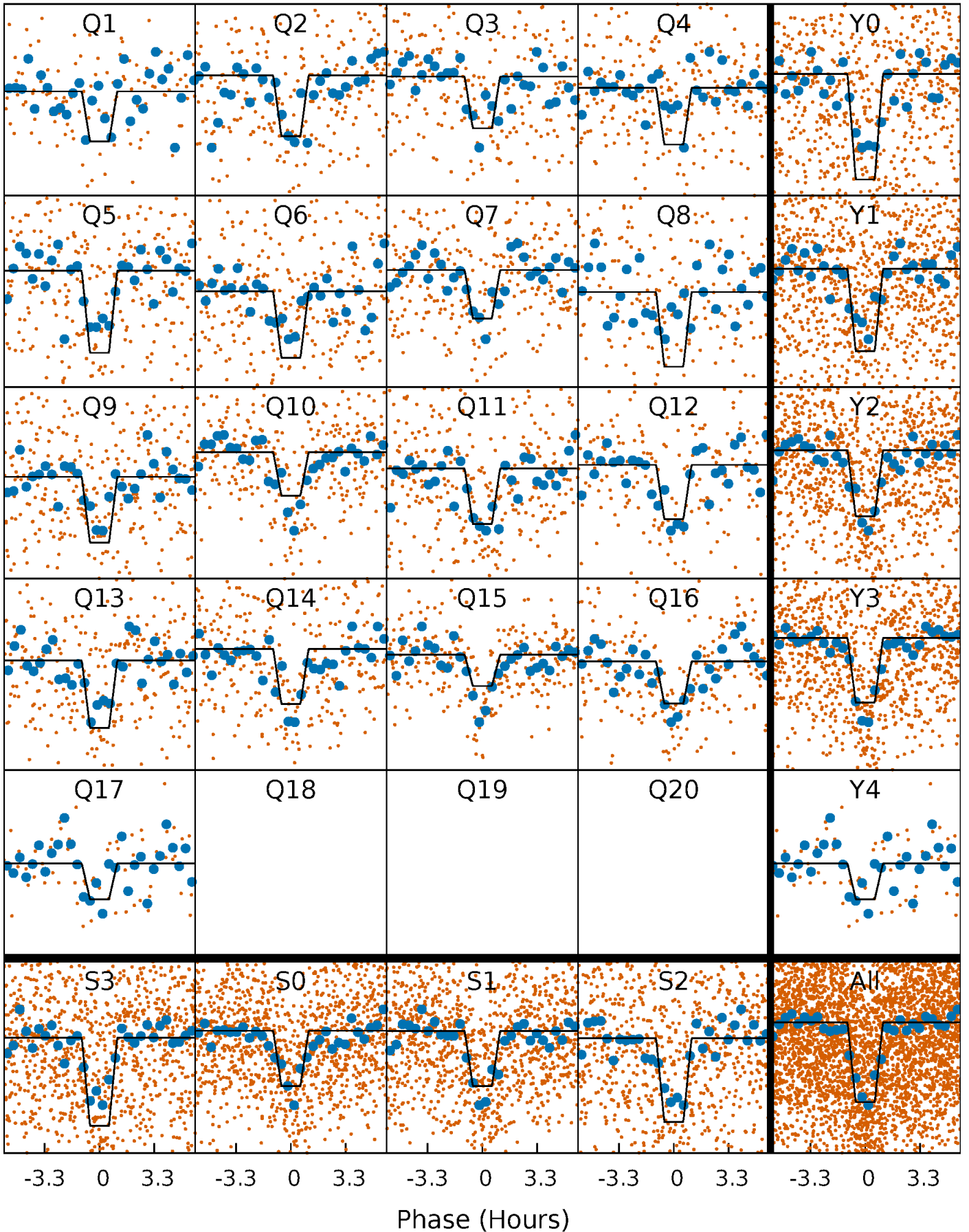
# DV Quarter-Phased Transit Curves

TCE 003337425-01 P= 7.047094 Days  $T_0=132.753465$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

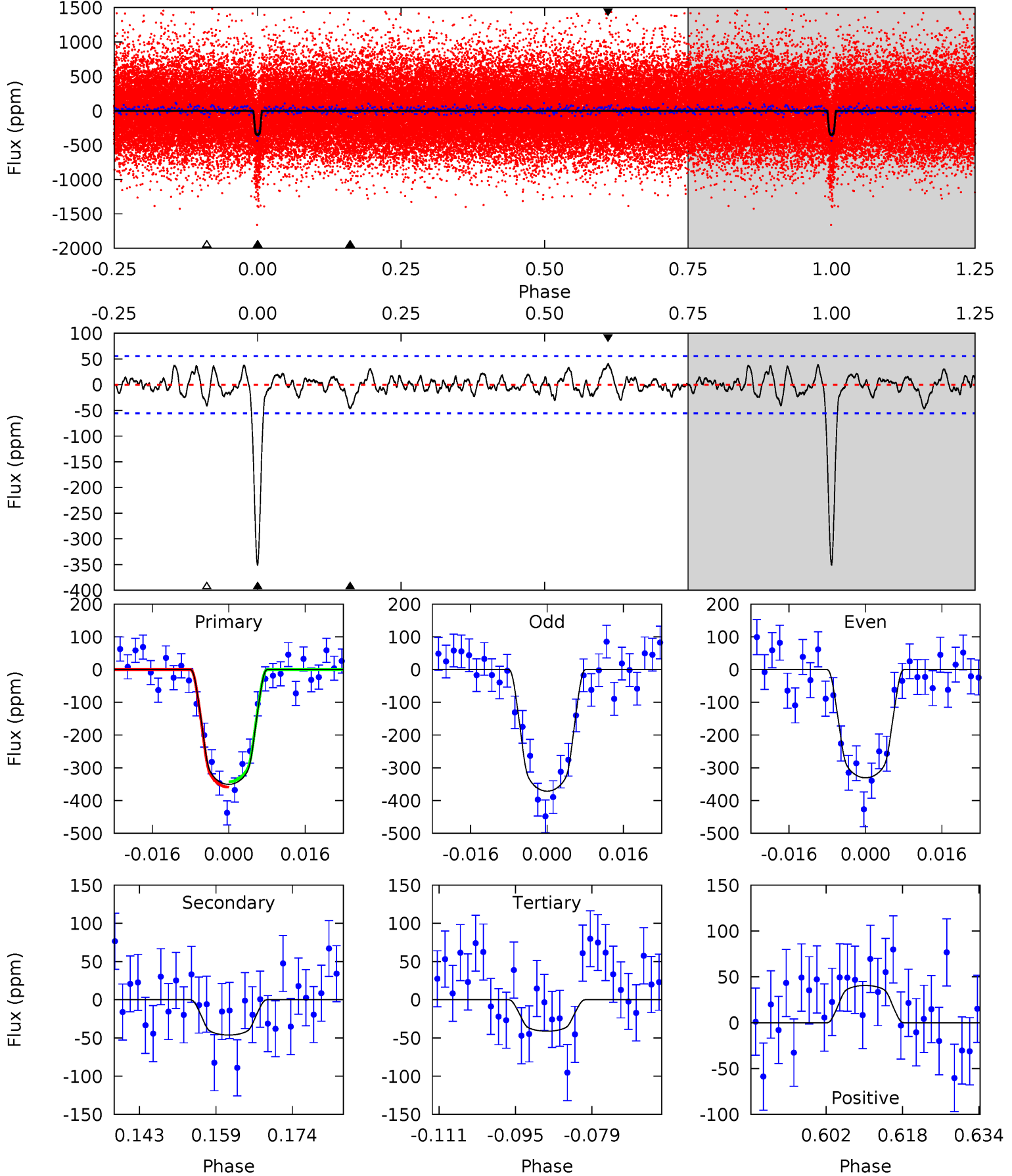
TCE 003337425-01 P= 7.047116 Days  $T_0=132.748308$  (BKJD)



# DV Model-Shift Uniqueness Test

003337425-01, P = 7.047094 Days, E = 125.706371 Days

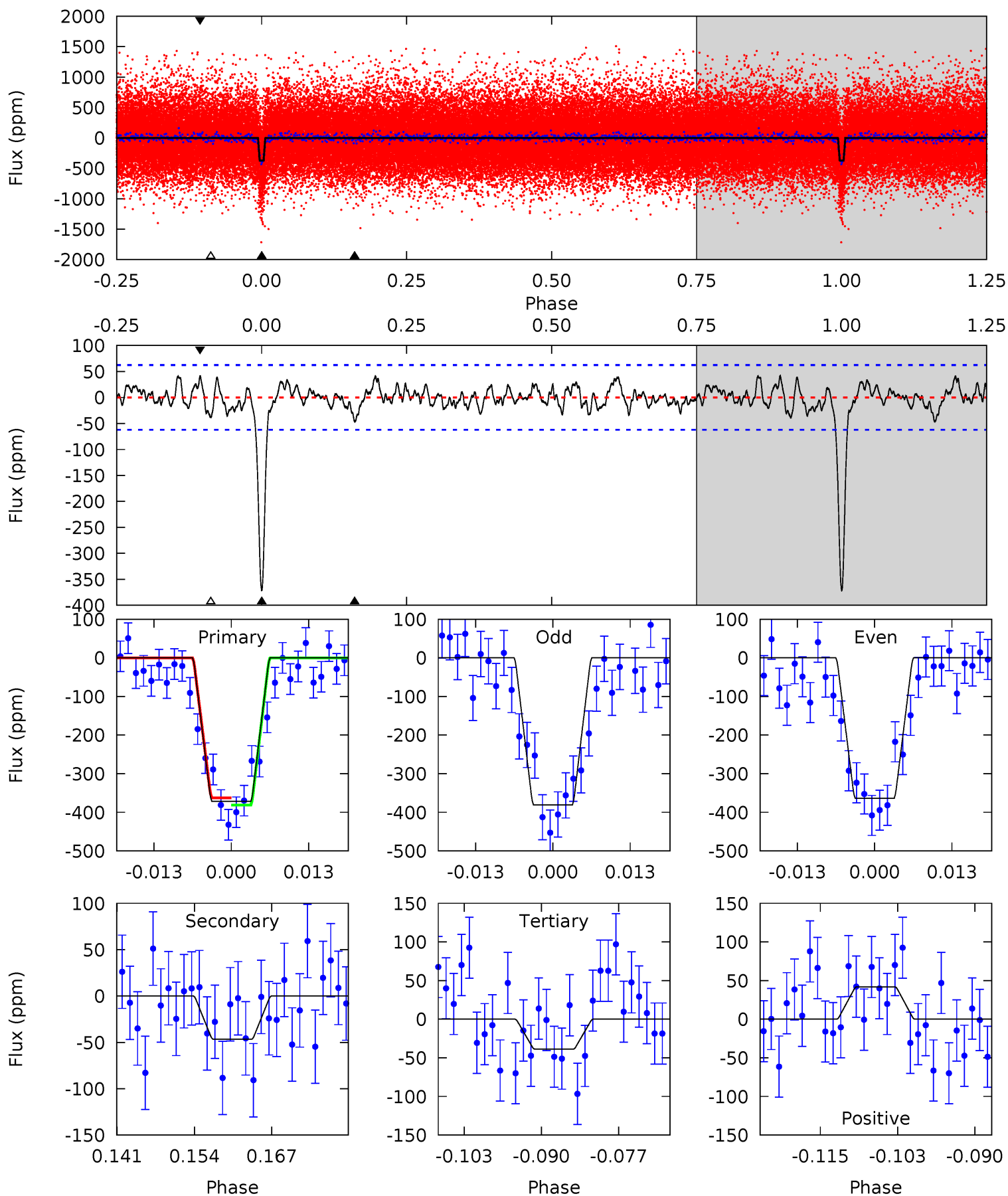
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.1	4.09	3.64	3.60	4.94	2.41	1.22	27.4	27.5	0.44	0.49	1.82	1.04	0.10	0.73



# Alt Model-Shift Uniqueness Test

003337425-01, P = 7.047116 Days, E = 125.701192 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
29.7	3.72	3.10	3.34	4.98	2.49	1.26	26.6	26.3	0.62	0.38	0.67	1.07	0.10	0.75



### Stellar Parameters For KIC 003337425

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5766^{+156}_{-173}$	$4.363^{+0.132}_{-0.181}$	$0.000^{+0.250}_{-0.300}$	$1.068^{+0.287}_{-0.167}$	$0.960^{+0.125}_{-0.102}$	$1.109^{+0.735}_{-0.540}$
	+3%/-3%	+3%/-4%	+inf%/-inf%	+27%/-16%	+13%/-11%	+66%/-49%
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 003337425-01 / KOI 1114.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-46 \pm 11$	$2.44^{+0.72}_{-0.60}$	$1385^{+96}_{-76}$	$3700^{+378}_{-304}$	$22^{+17}_{-10}$
Alt.	$-47 \pm 13$	$2.39^{+0.73}_{-0.57}$	$1383^{+106}_{-74}$	$3705^{+430}_{-307}$	$22^{+19}_{-10}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

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

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

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



## DV Centroid Data

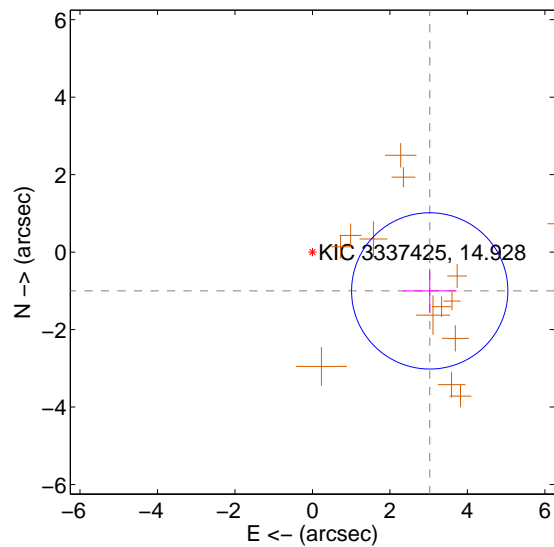
Supplemental centroid analysis for 003337425-01. Kepler magnitude: 14.93. Transit SNR 22.68

There are 0 quarters with good PRF difference image offsets

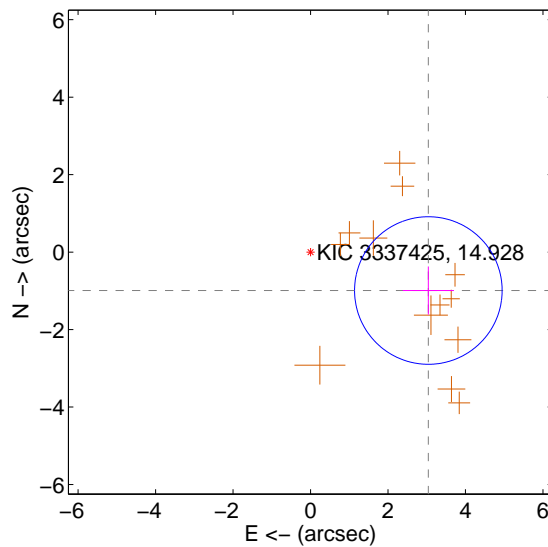
The direct PRF centroid is offset from the target star catalog position by about 0.00 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.189 \pm 0.672$	4.74	$-3.028 \pm 0.697$	$-1.002 \pm 0.571$
PRF-fit source offset from KIC position	$3.199 \pm 0.635$	5.04	$-3.042 \pm 0.660$	$-0.992 \pm 0.620$
photometric centroid source offset	$1.69 \pm 0.57$	2.96	$-1.64 \pm 0.57$	$-0.38 \pm 0.57$

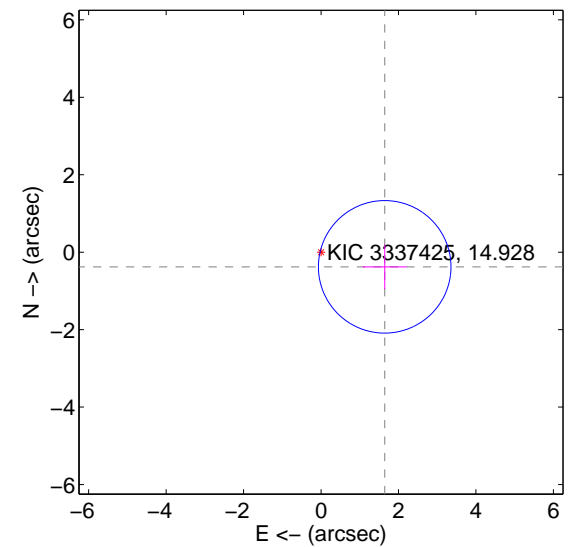
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

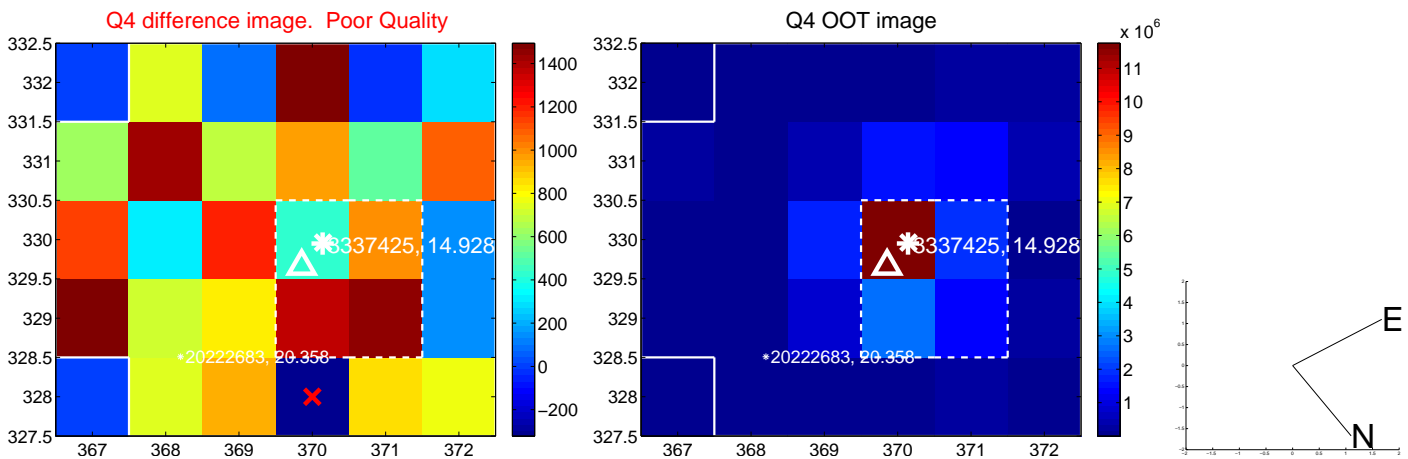
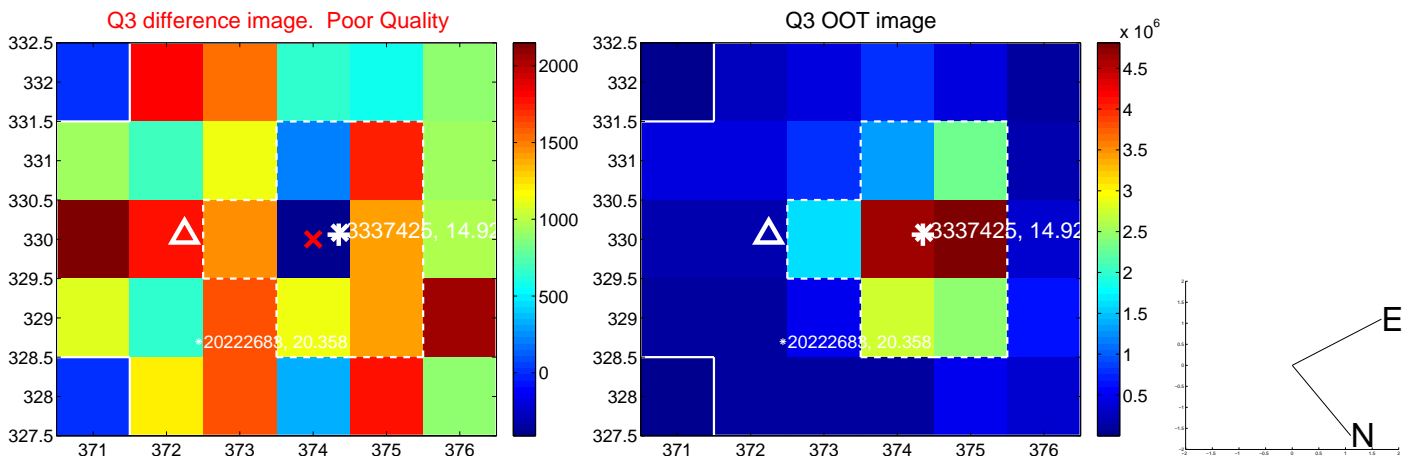
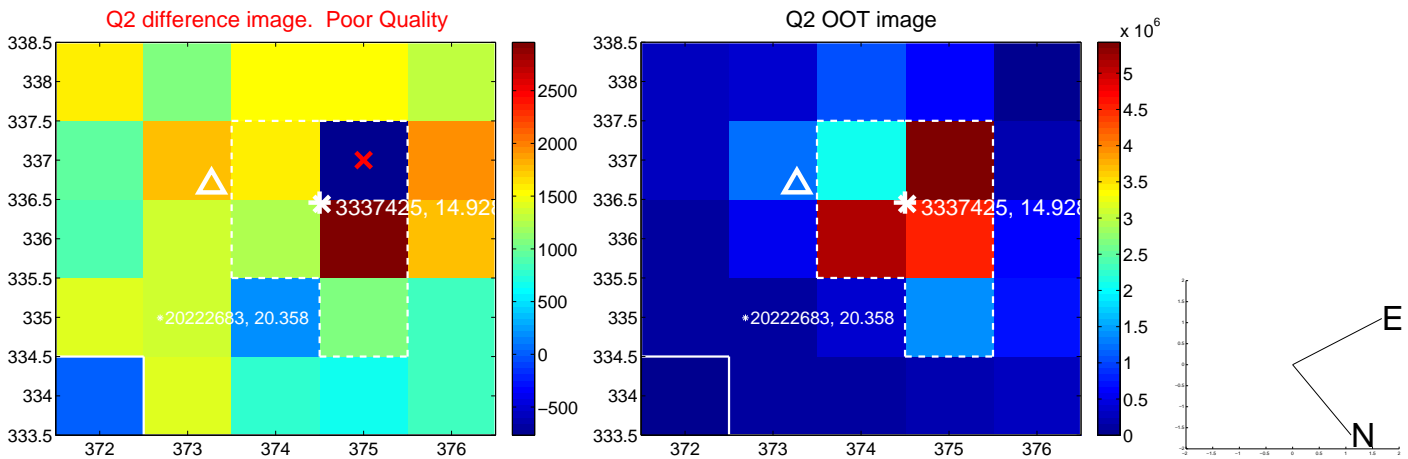
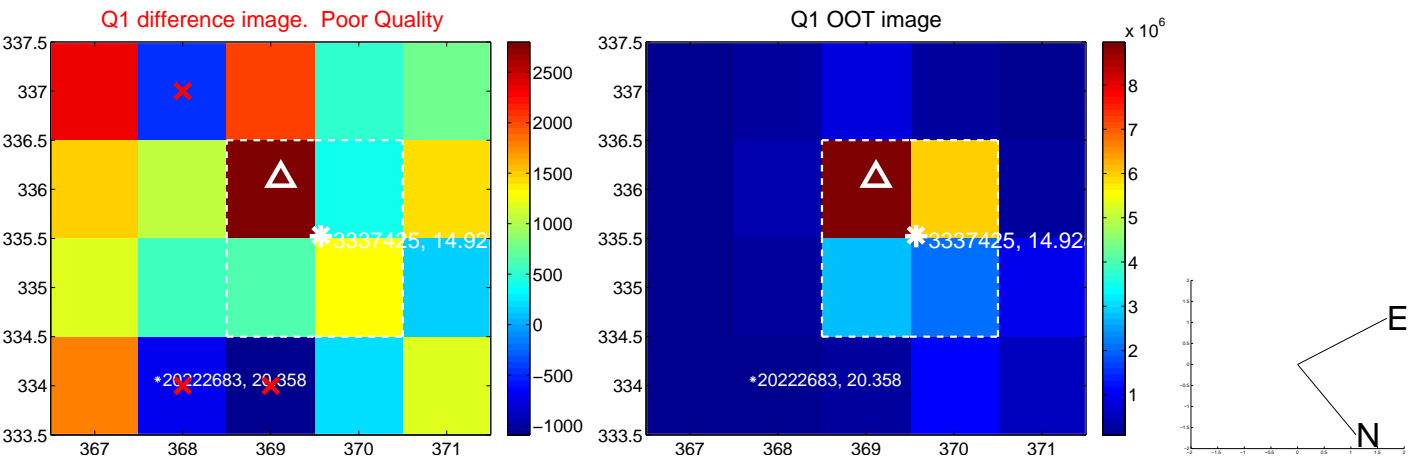


offset from photometric centroids

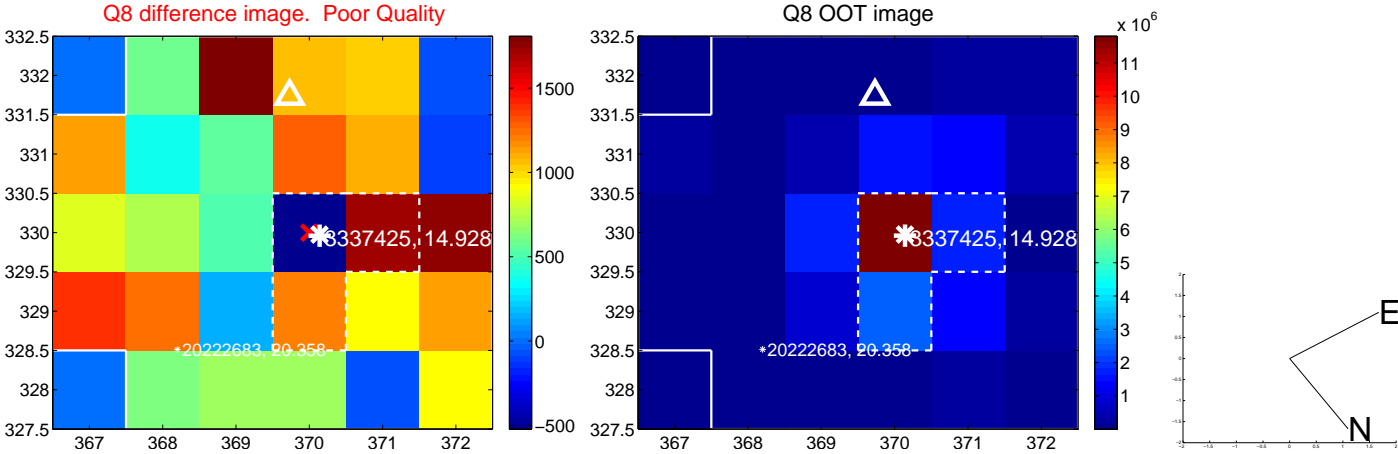
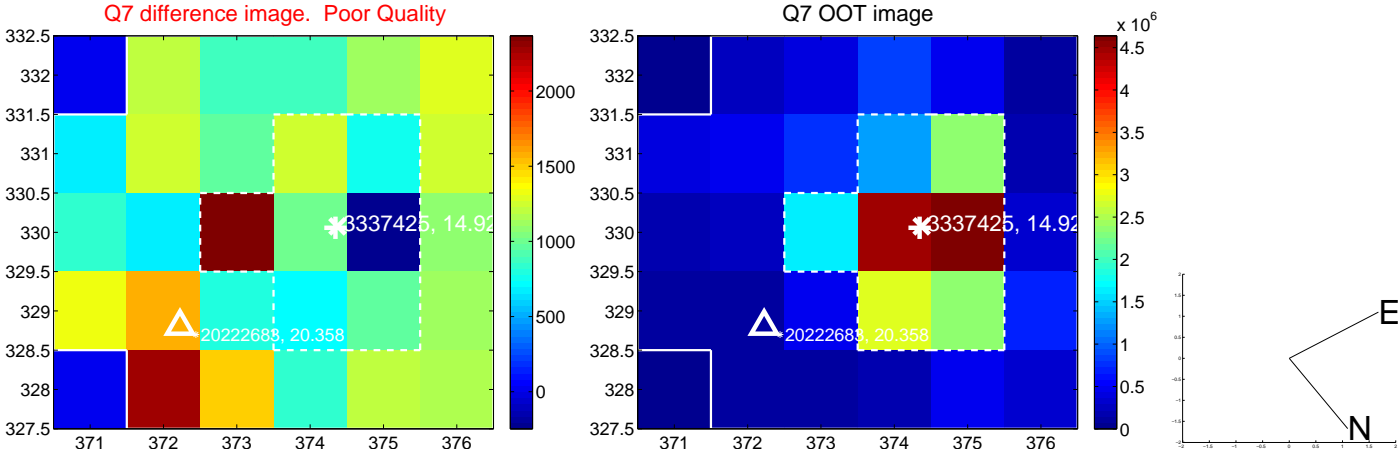
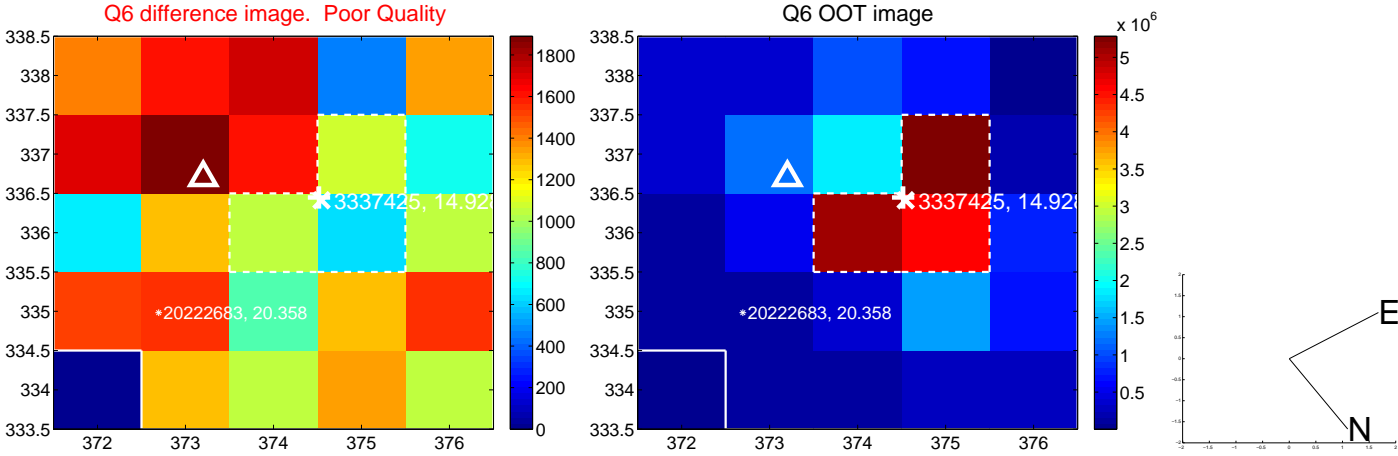
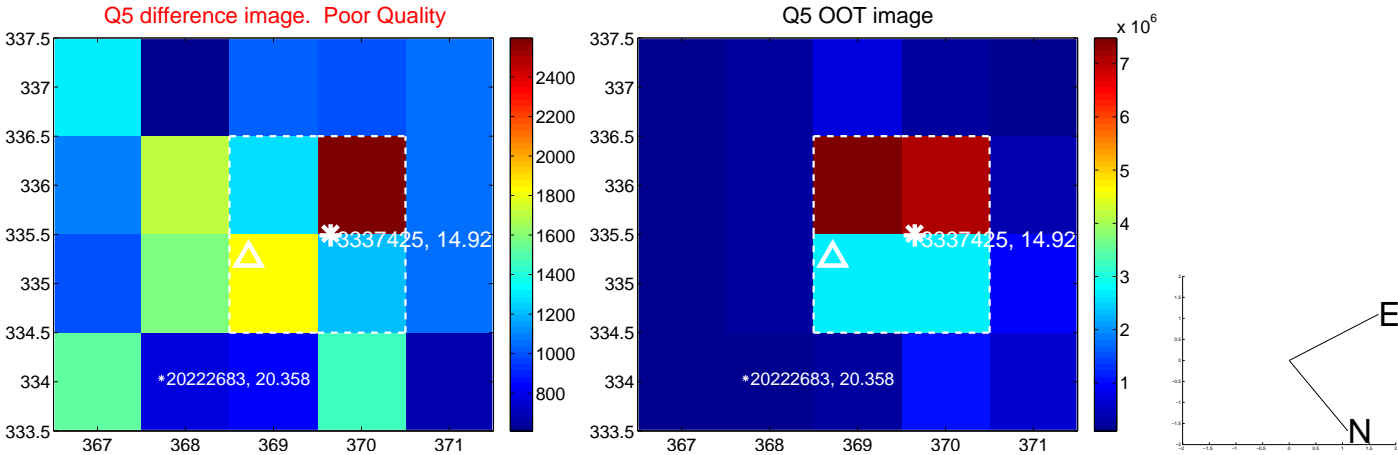


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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.

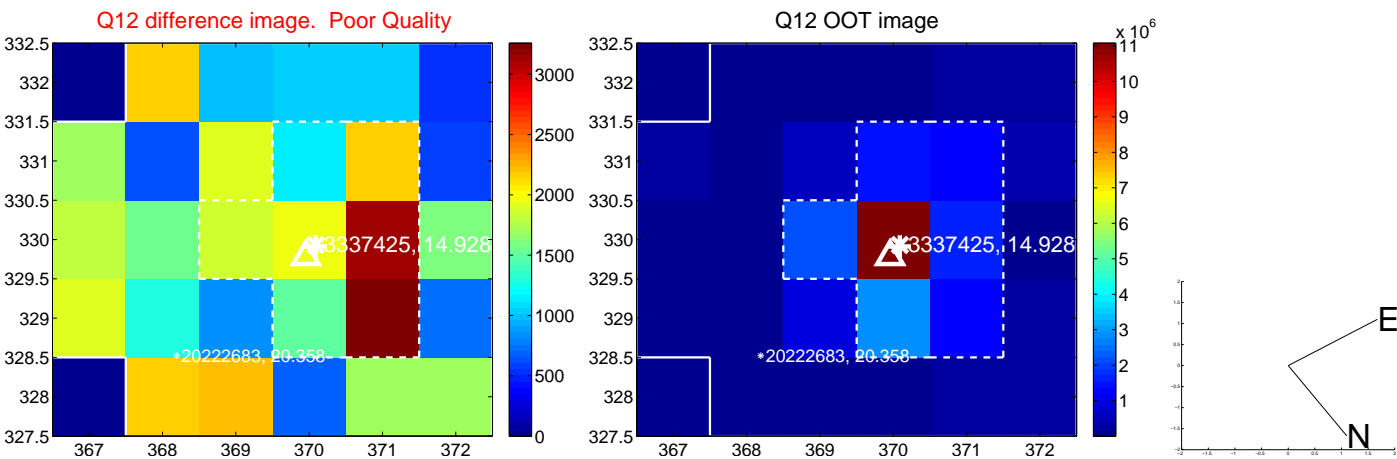
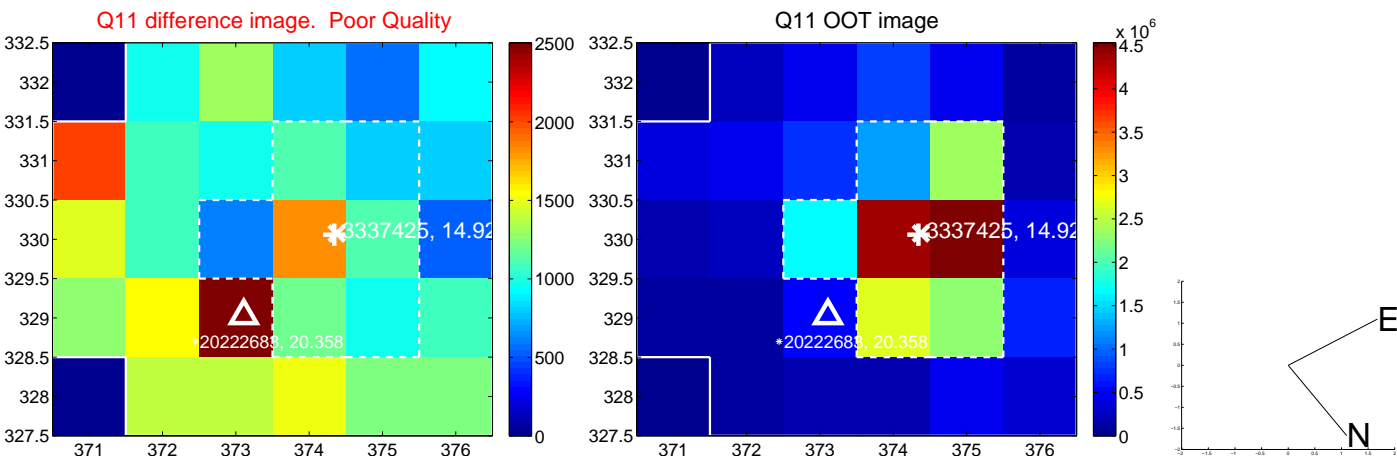
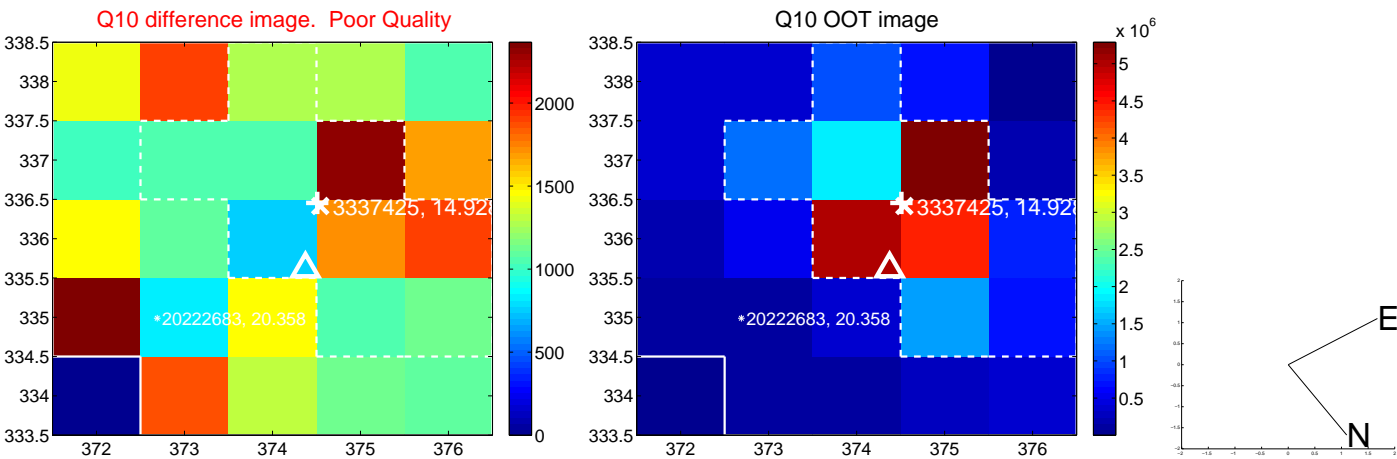
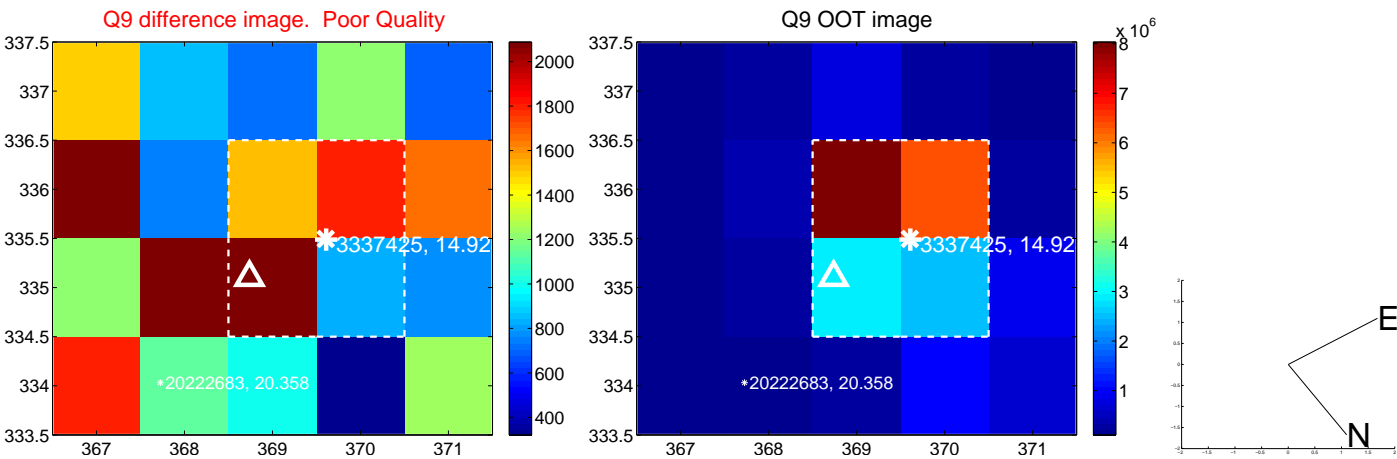
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



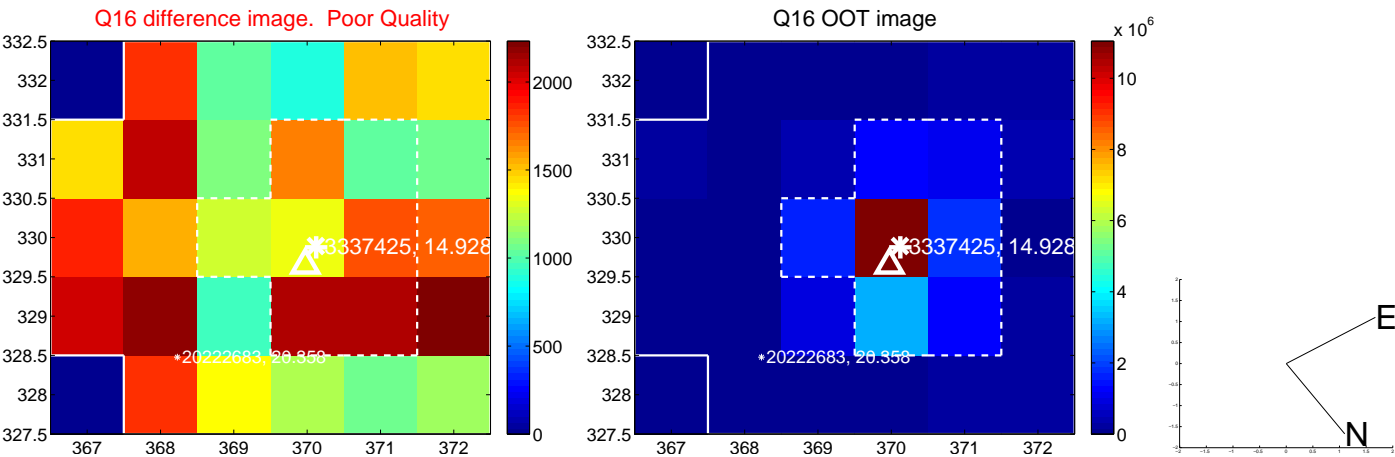
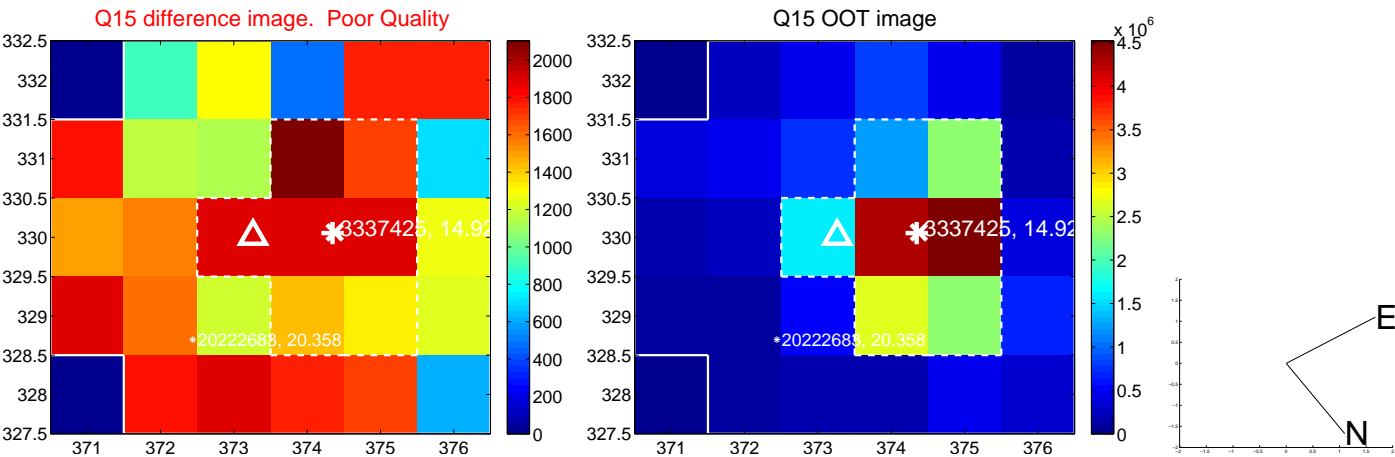
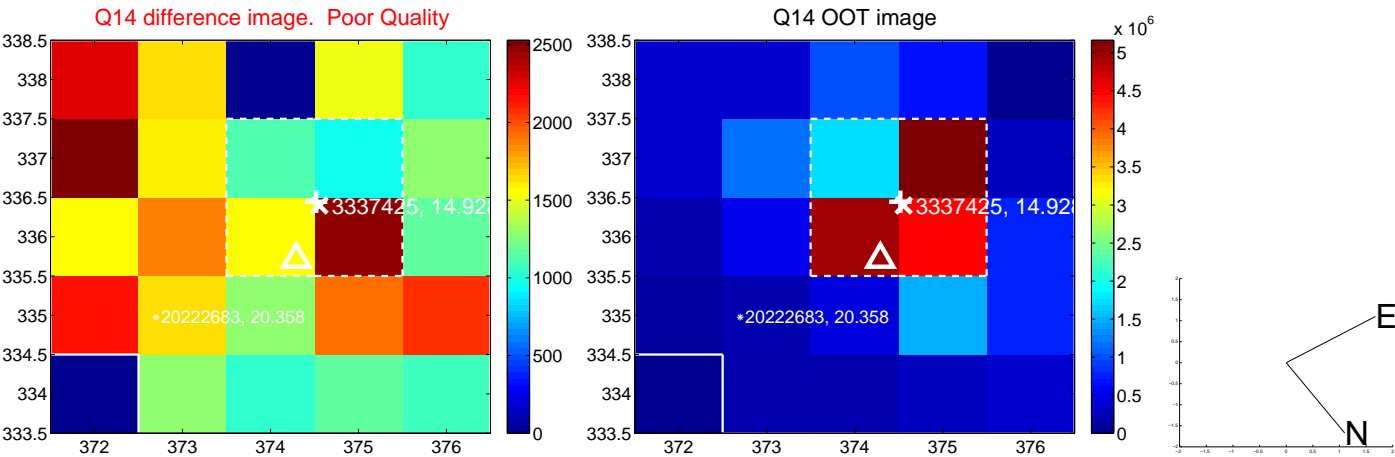
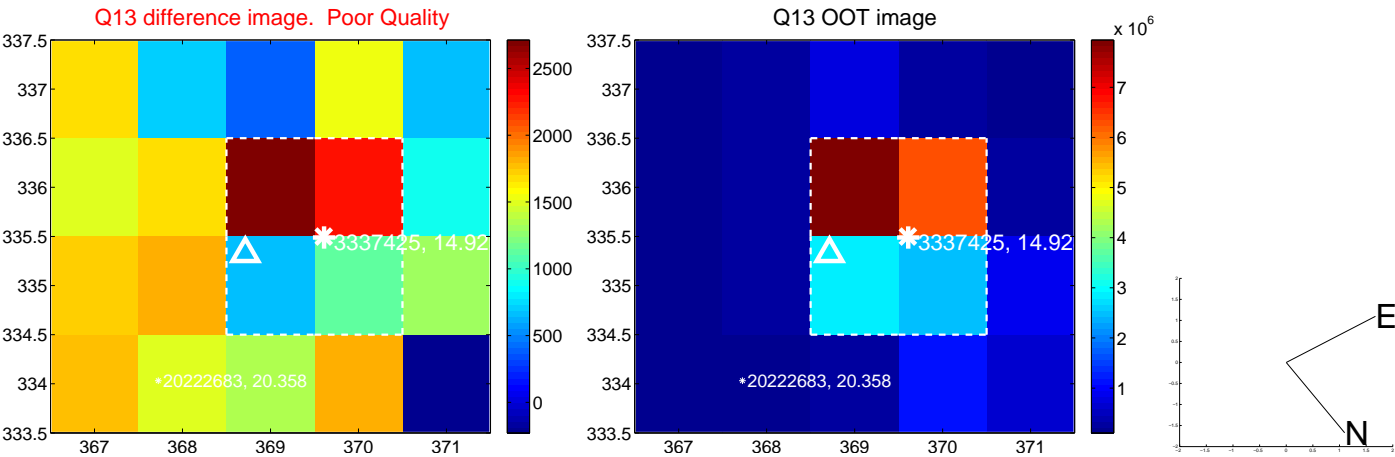
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white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

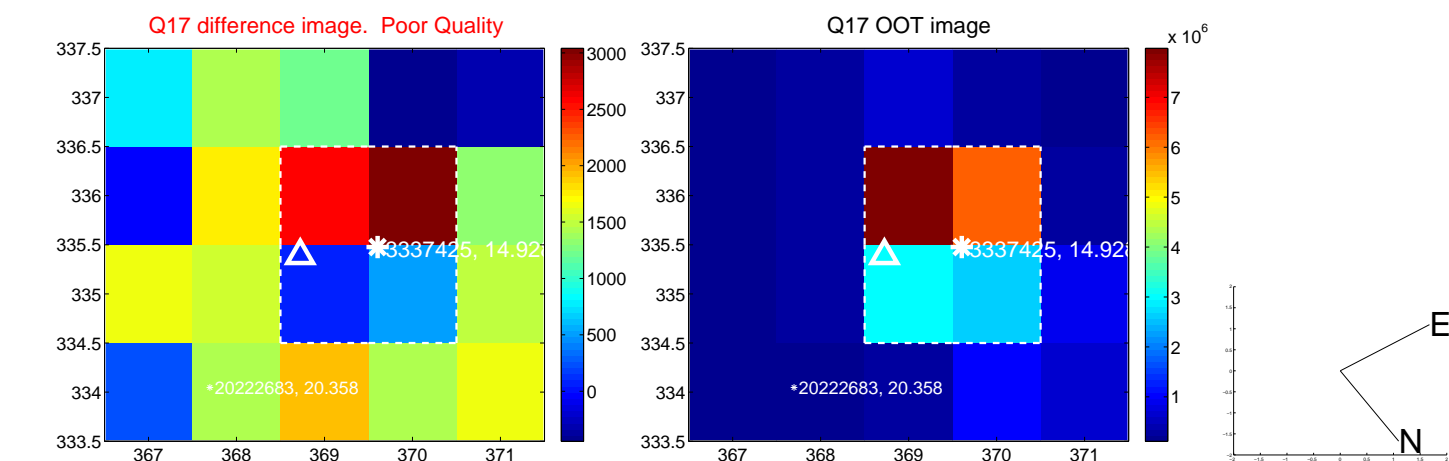


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

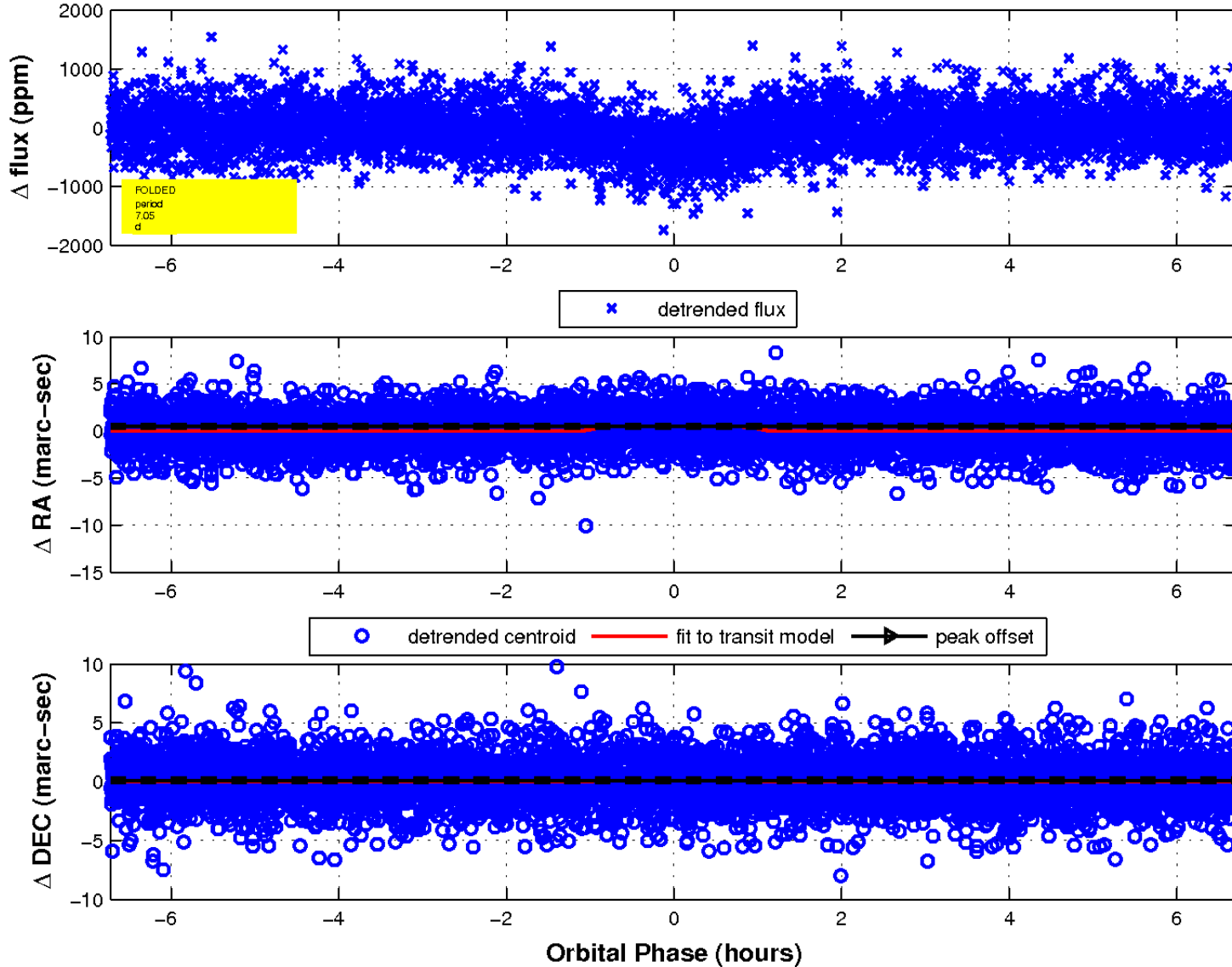




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

