

# KIC 001575690

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
001575690-01	OBS	3658.01	1.126199	132.441430	24978.4	1.956	898.2	620.9	0.54	3979	11.64	223.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001575690-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED—CENT_KIC_POS

**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 001575690-01

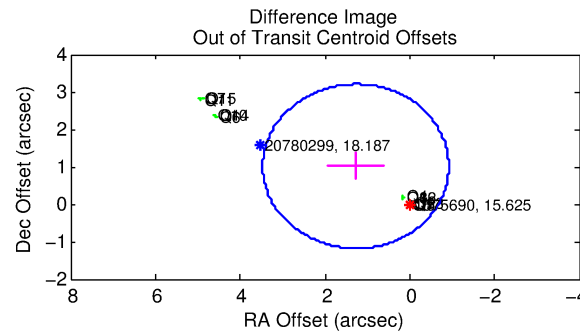
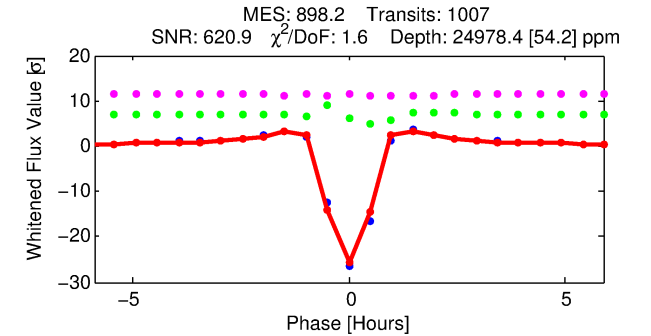
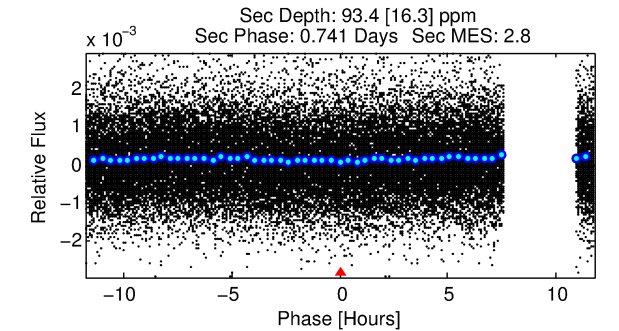
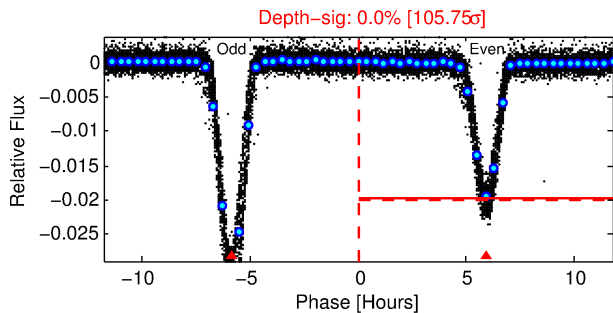
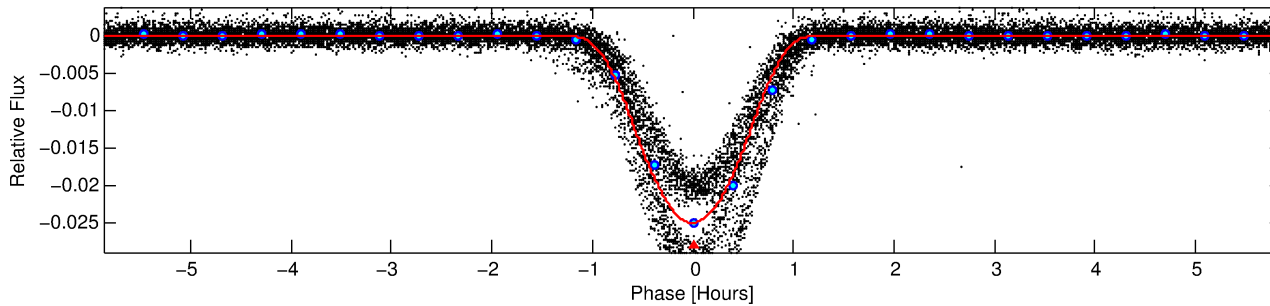
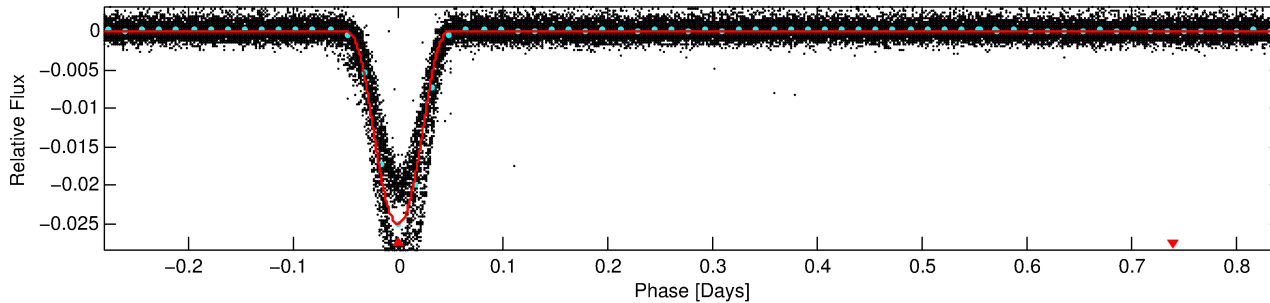
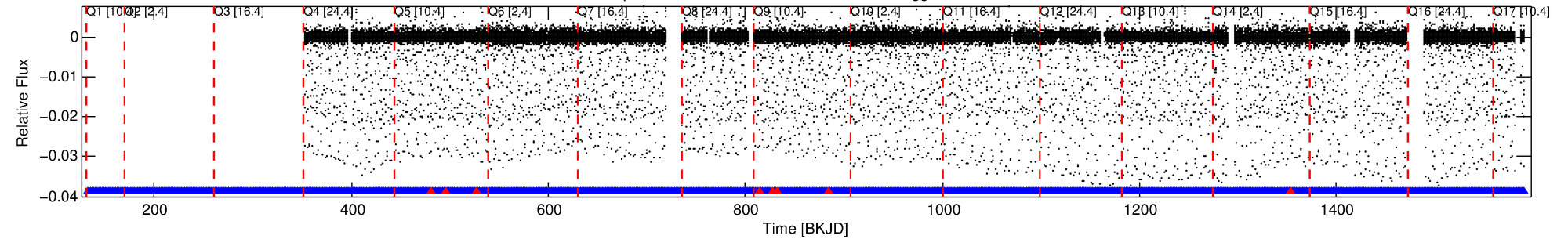
No Significant Match Found

# DV One-Page Summary

KIC: 1575690 Candidate: 1 of 1 Period: 1.126 d

KOI: K03658 Corr: No Ephemeris Match

Kp: 15.62 R\*: 0.54 Rs Teff: 3979.0 K Logg: 4.70 Fe/H: -0.260



## DV Fit Results:

Period = 1.12620 [0.00000] d  
Epoch = 132.4414 [0.0000] BKJD  
Rp/R\* = 0.1961 [0.0060]  
a/R\* = 3.60 [0.02]  
b = 0.90 [0.01]  
Seff = 223.31 [25.21]  
Teq = 986 [28] K  
Rp = 11.64 [0.91] Re  
a = 0.0173 [0.0010] AU  
Ag = 0.11 [0.02] [-38.91σ]  
Teffp = 883 [45] K [-1.95σ]

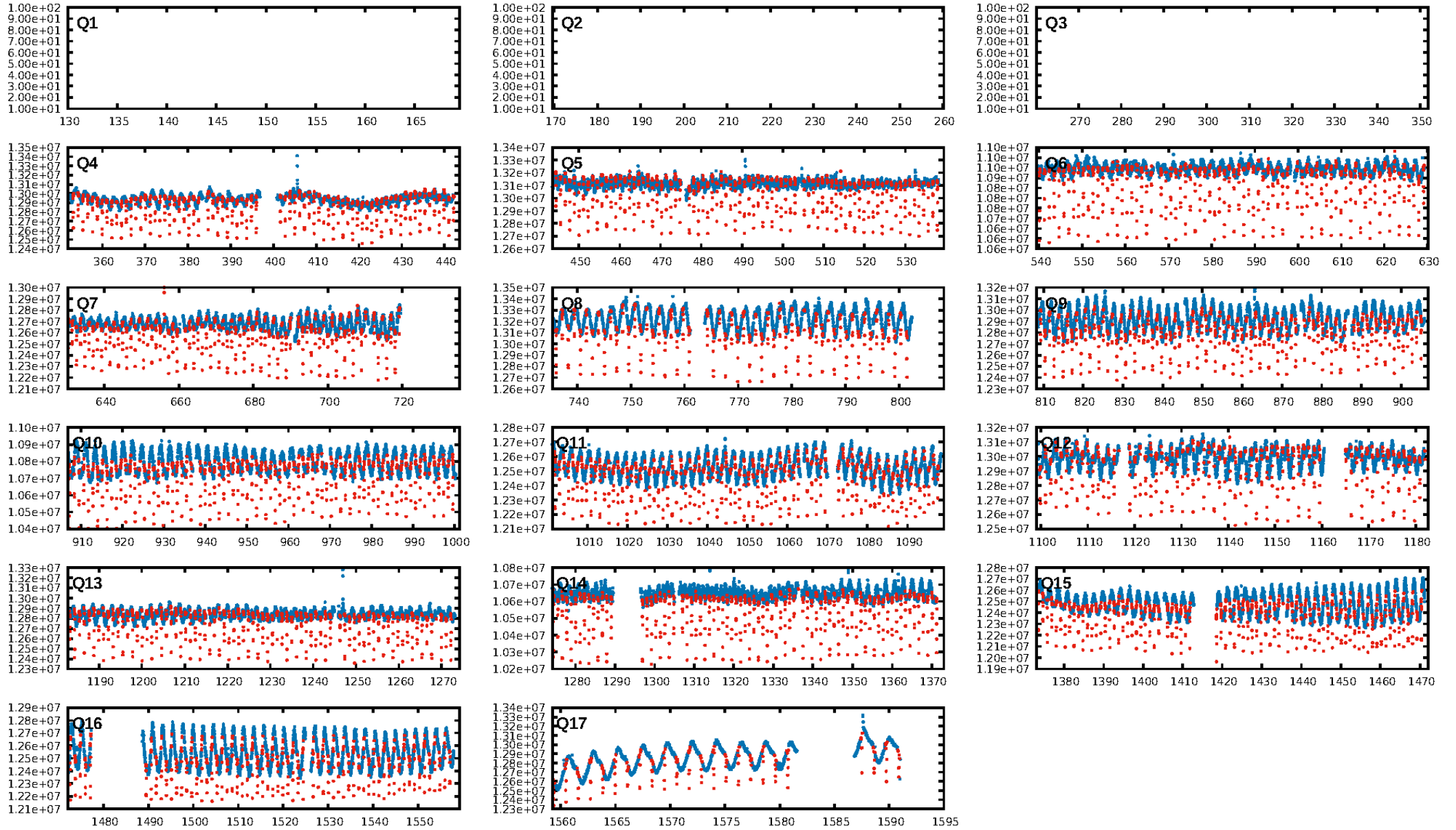
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.99 [975/983]  
GhostDiagnostic-chr: 2.643  
Centroid-sig: 0.0%  
Centroid-so: 1.777 arcsec [219.53σ]  
OotOffset-rm: 1.623 arcsec [2.22σ]  
KicOffset-rm: 0.170 arcsec [2.41σ]  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

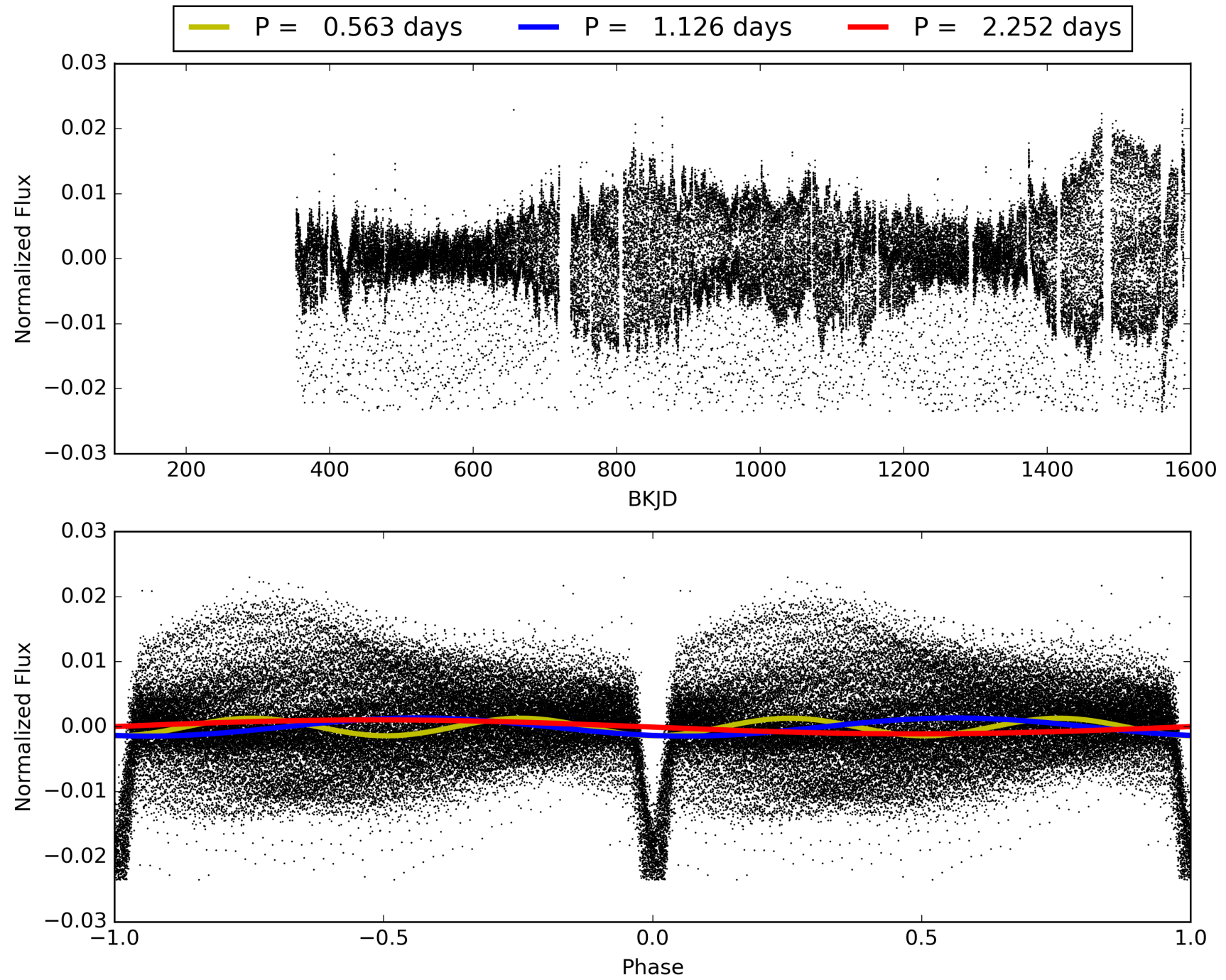
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:19:49 Z

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

# TCE 001575690-01, PDC Light Curves

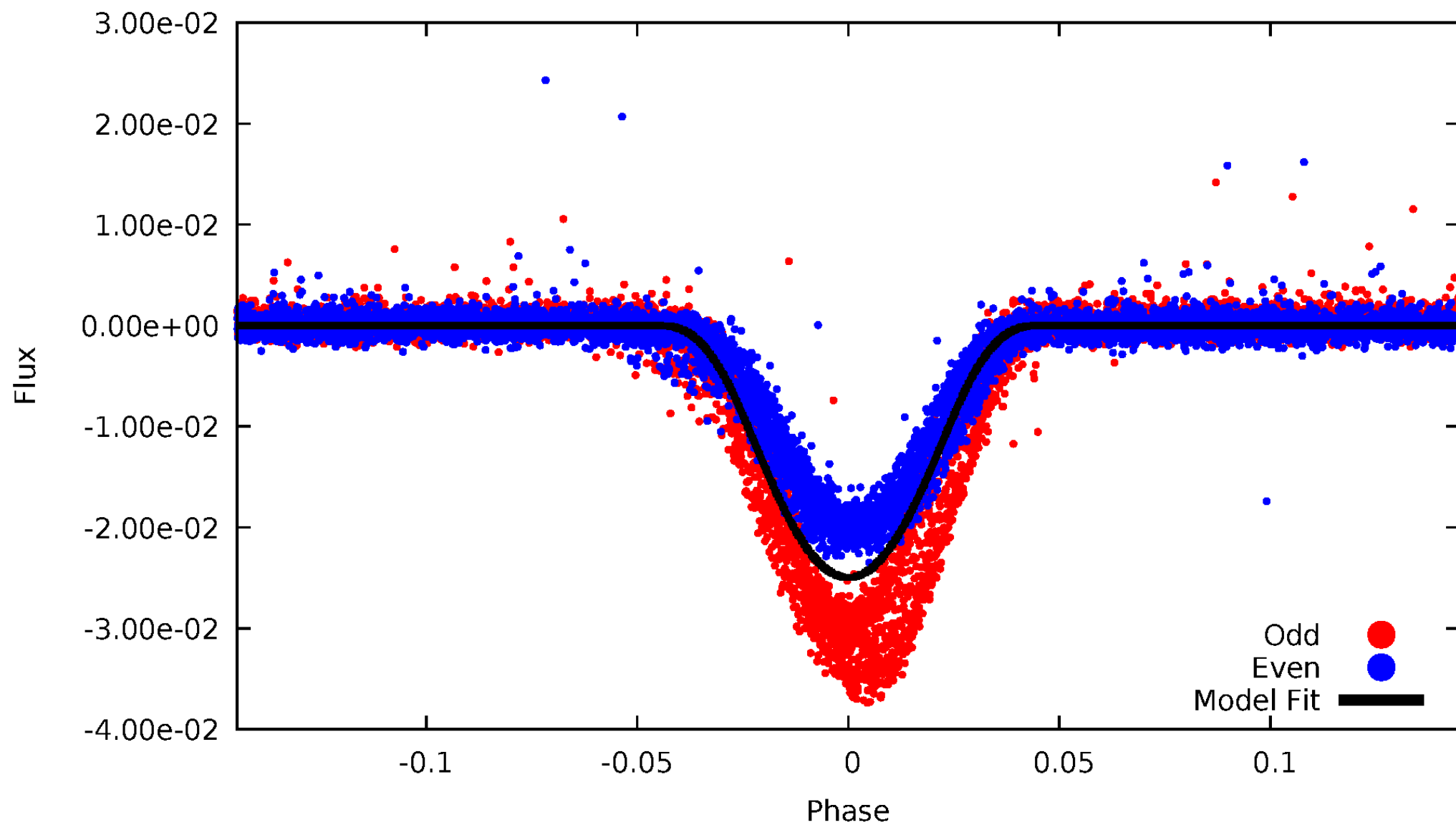


TCE 001575690-01



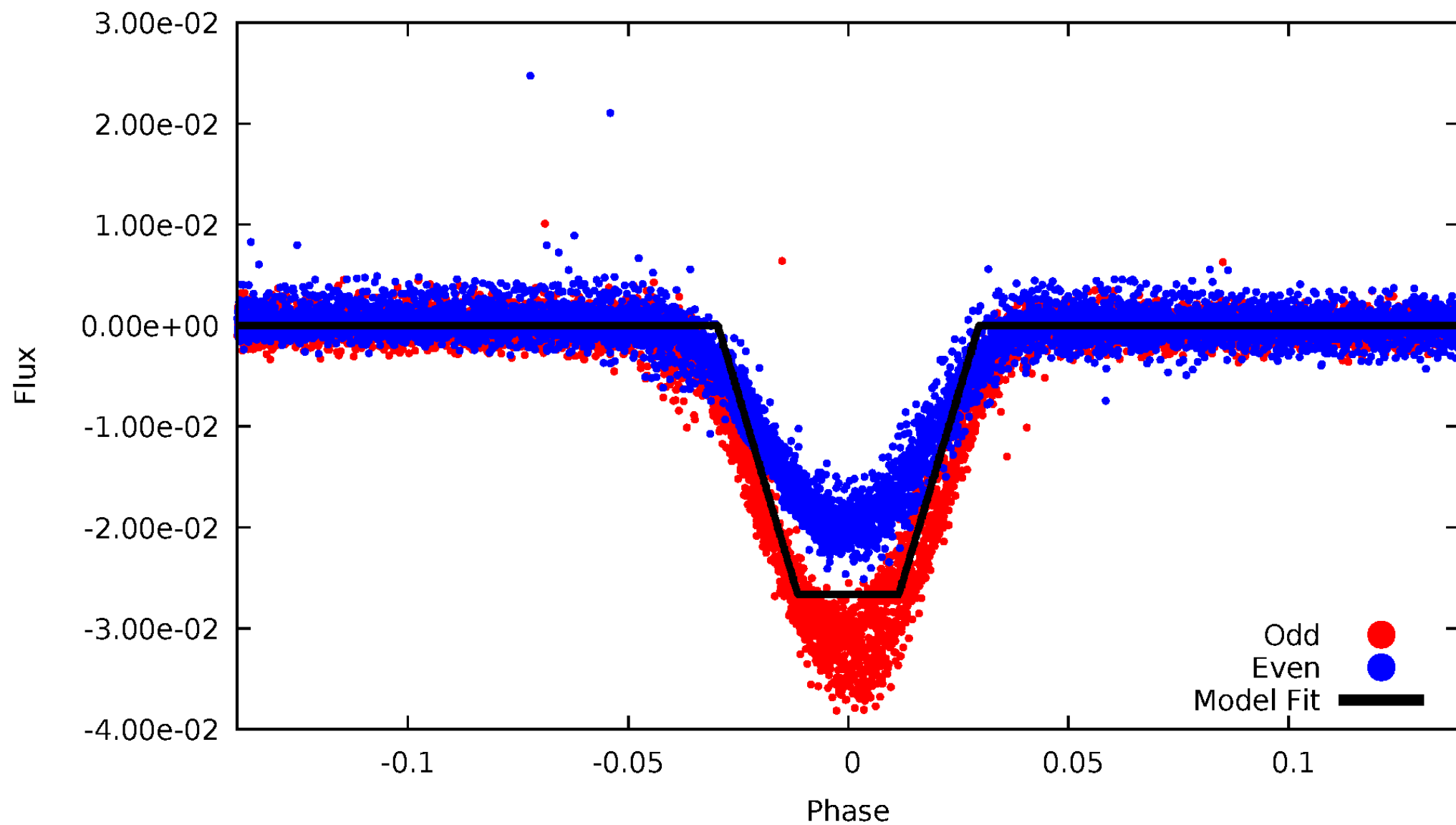
# DV Odd/Even

TCE 001575690-01



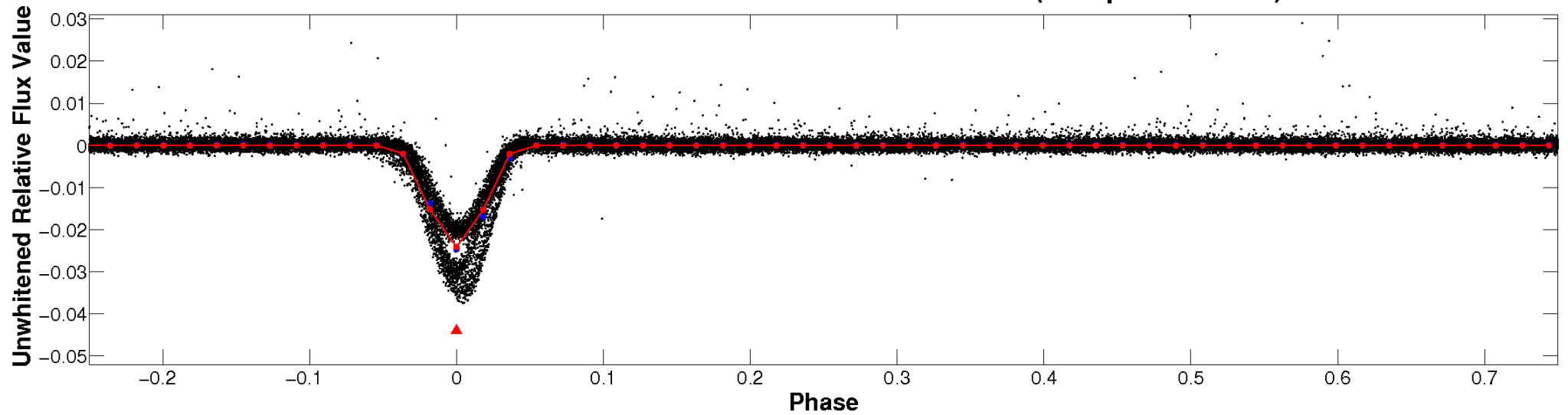
# ALT Odd/Even

TCE 001575690-01

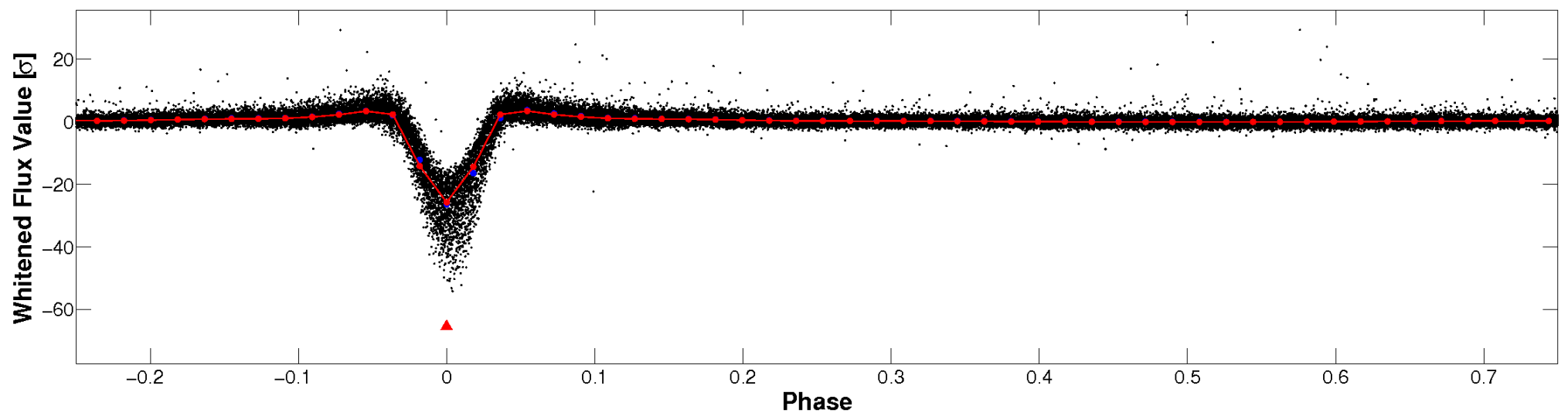


# Non-Whitened Vs. Whitened Light Curve

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



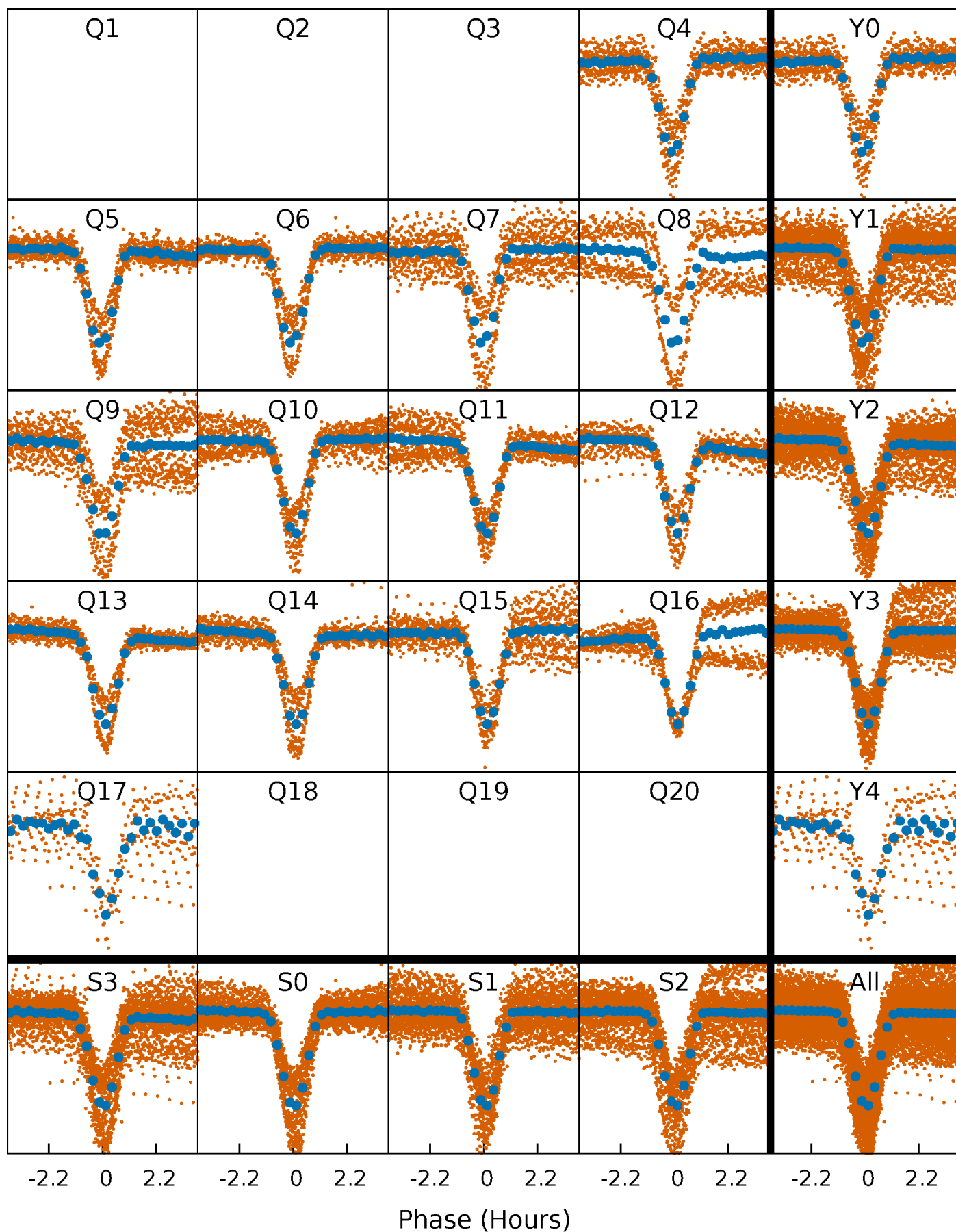
## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

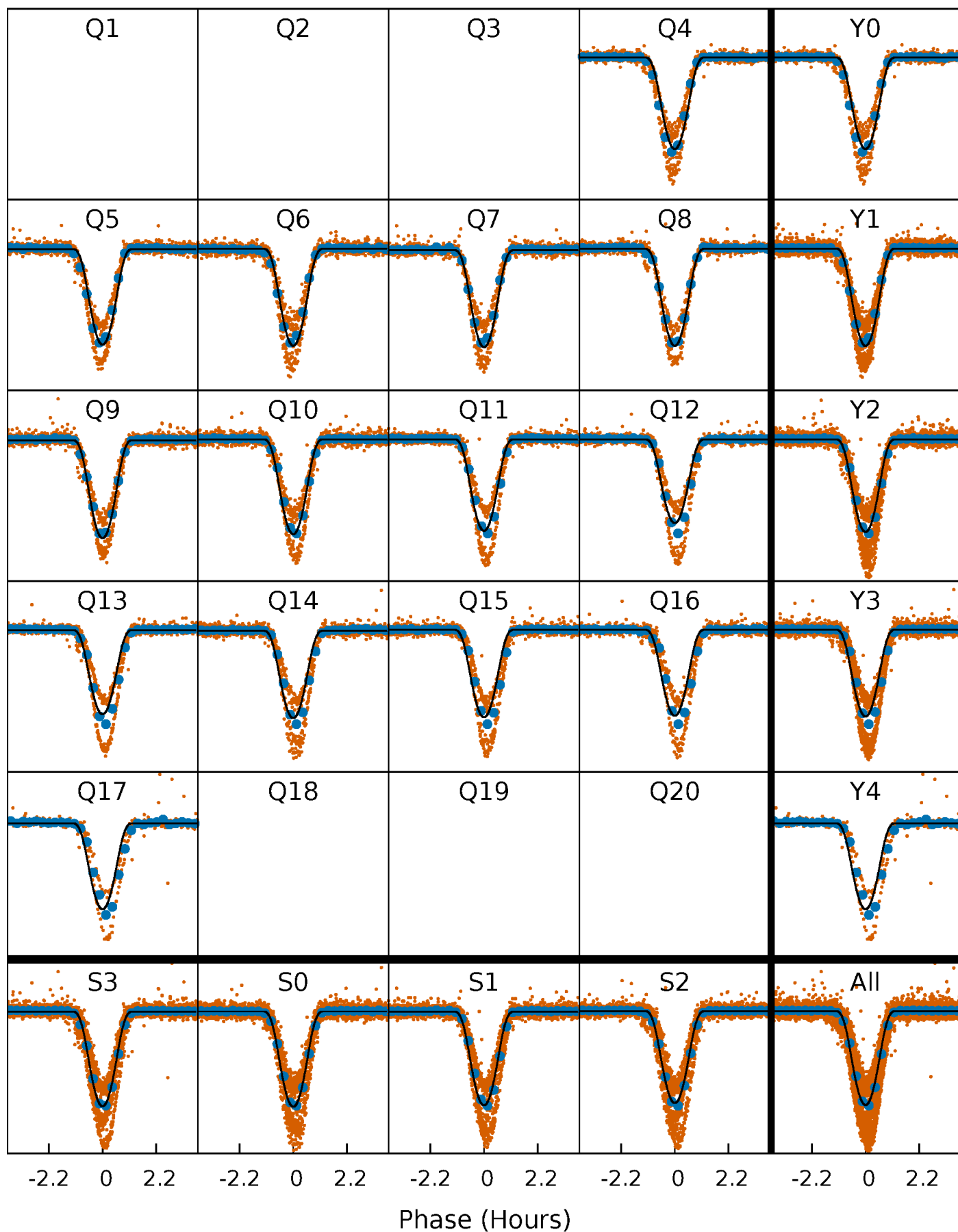
TCE 001575690-01 P= 1.126199 Days  $T_0=132.441430$  (BKJD)





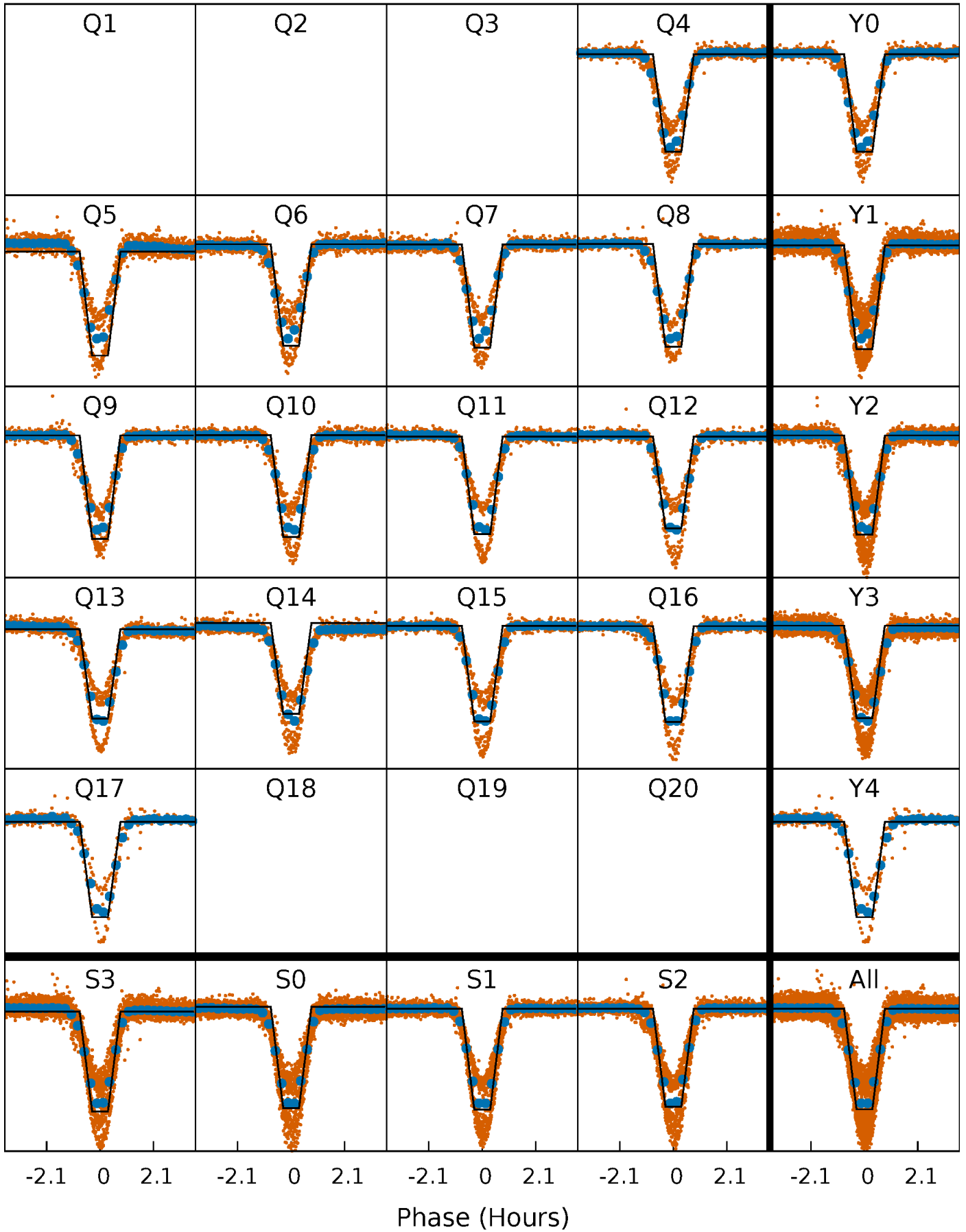
# DV Quarter-Phased Transit Curves

TCE 001575690-01 P= 1.126199 Days  $T_0=132.441430$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

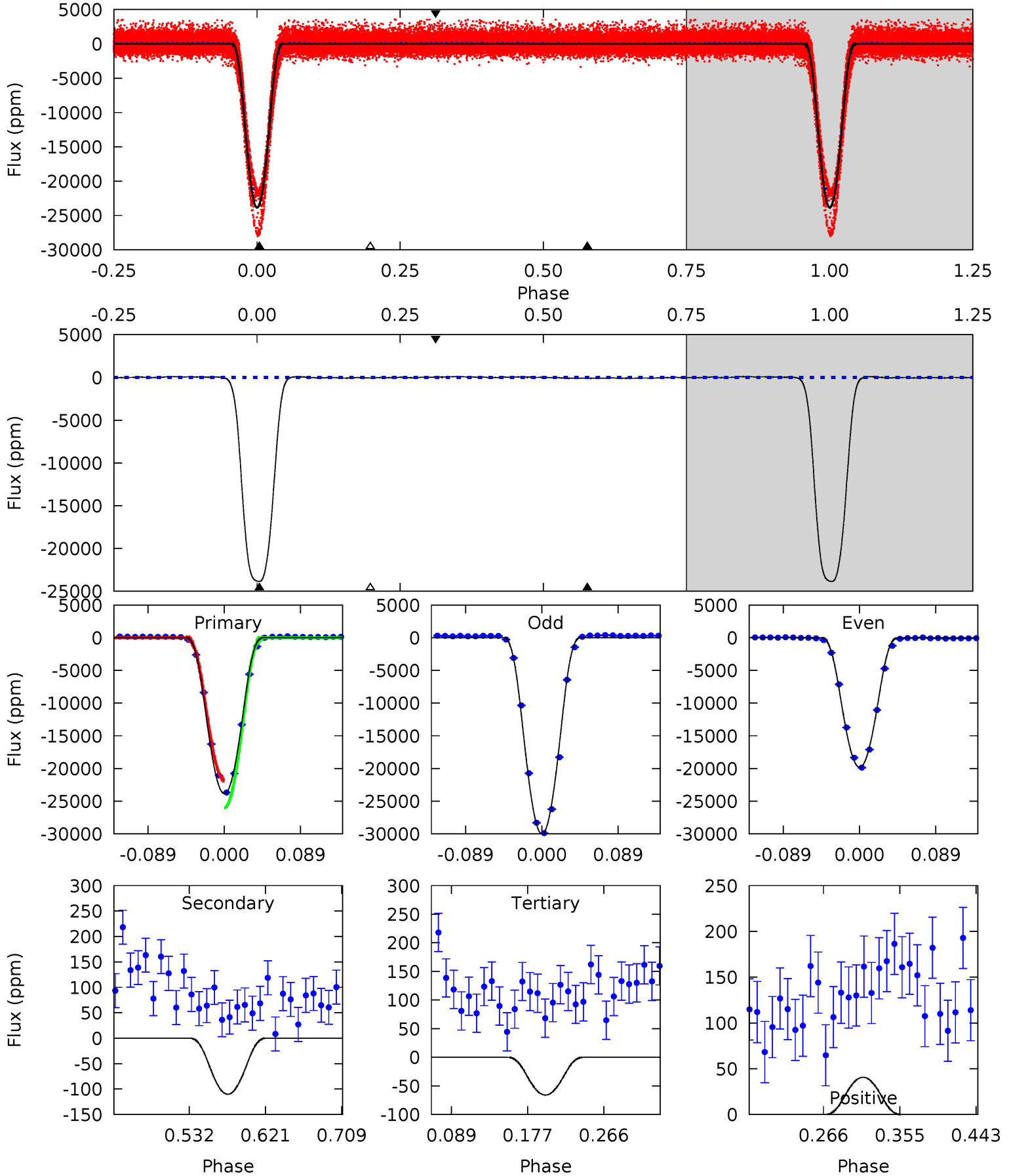
TCE 001575690-01     $P = 1.126205$  Days     $T_0 = 132.439474$  (BKJD)



# DV Model-Shift Uniqueness Test

001575690-01, P = 1.126199 Days, E = 132.441430 Days

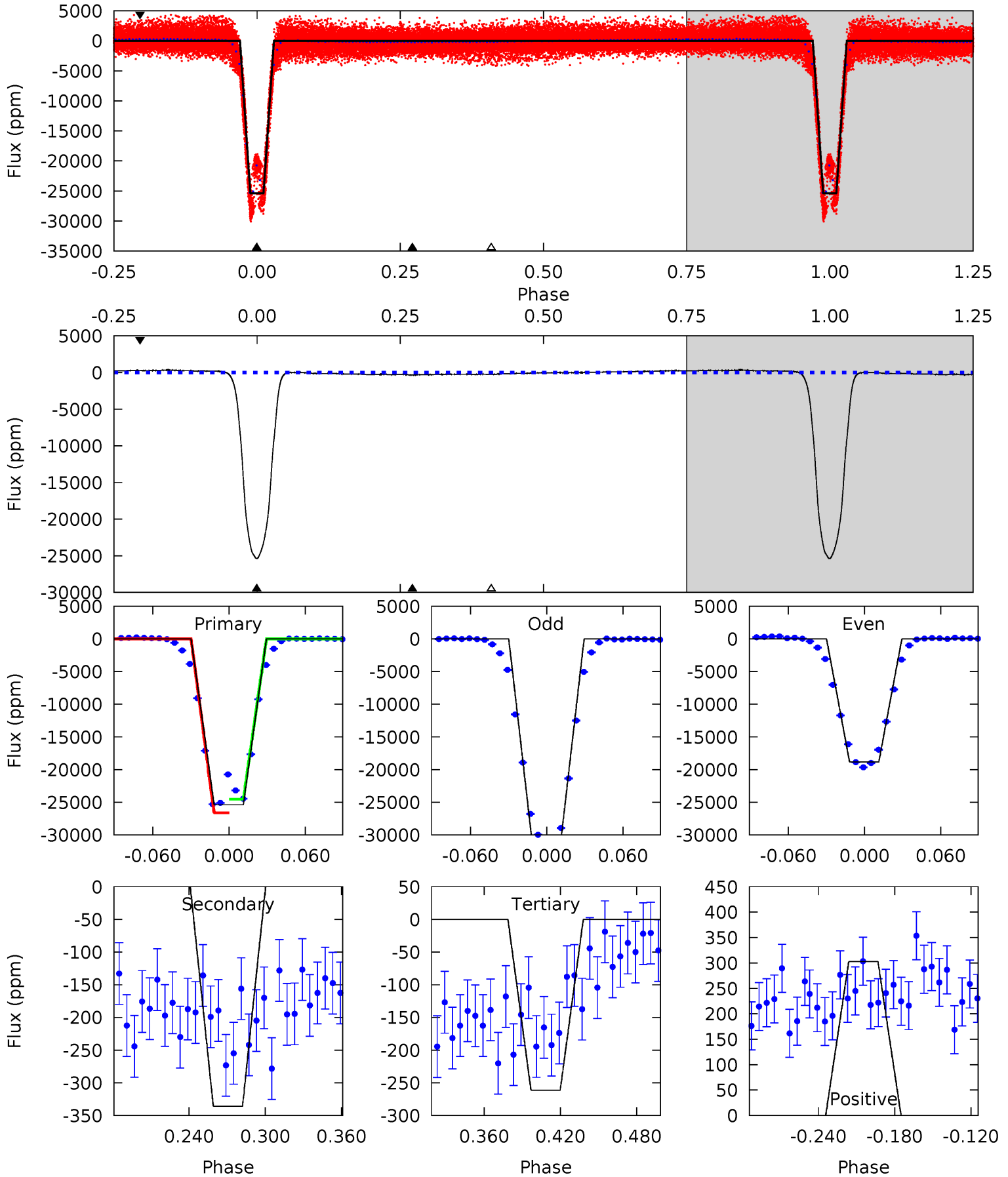
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1563	7.22	4.32	2.67	4.59	1.70	2.81	1559	1560	2.90	4.56	380.7	1.07	0.00	0



# Alt Model-Shift Uniqueness Test

001575690-01, P = 1.126205 Days, E = 132.439474 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
999.7	13.2	10.3	11.9	4.67	1.88	7.56	989.4	987.8	2.94	1.31	297.7	1.00	0.01	40.7



### Stellar Parameters For KIC 001575690

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3979^{+71}_{-79}$	$4.699^{+0.042}_{-0.018}$	$-0.260^{+0.150}_{-0.150}$	$0.544^{+0.026}_{-0.039}$	$0.539^{+0.036}_{-0.029}$	$4.722^{+0.850}_{-0.403}$
	+2%/-2%	+1%/-0%	+58%/-58%	+5%/-7%	+7%/-5%	+18%/-9%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 001575690-01 / KOI 3658.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-110 \pm 15$	$11.61^{+0.50}_{-0.51}$	$1370^{+31}_{-32}$	$-1907^{+36}_{-35}$	$0.136^{+0.020}_{-0.022}$
Alt.	$-336 \pm 25$	$9.62^{+0.51}_{-0.48}$	$1369^{+30}_{-32}$	$2026^{+47}_{-51}$	$0.594^{+0.082}_{-0.061}$

$T_{\text{max}}$  = 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

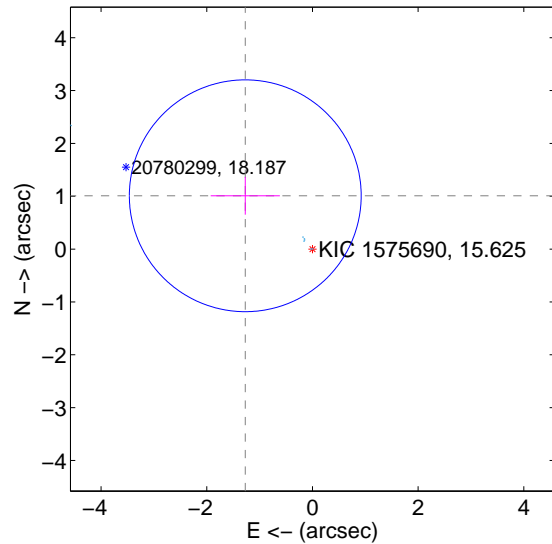
Supplemental centroid analysis for 001575690-01. Kepler magnitude: 15.62. Transit SNR 620.89

There are 14 quarters with good PRF difference image offsets

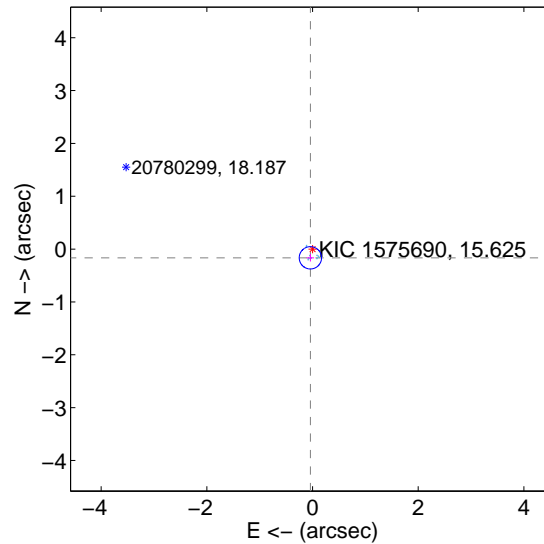
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.623 \pm 0.731$	2.22	$1.271 \pm 0.655$	$1.009 \pm 0.358$
PRF-fit source offset from KIC position	$0.170 \pm 0.070$	2.41	$0.040 \pm 0.070$	$-0.165 \pm 0.071$
photometric centroid source offset	$1.78 \pm 0.01$	219.53	$-0.55 \pm 0.01$	$-1.69 \pm 0.01$

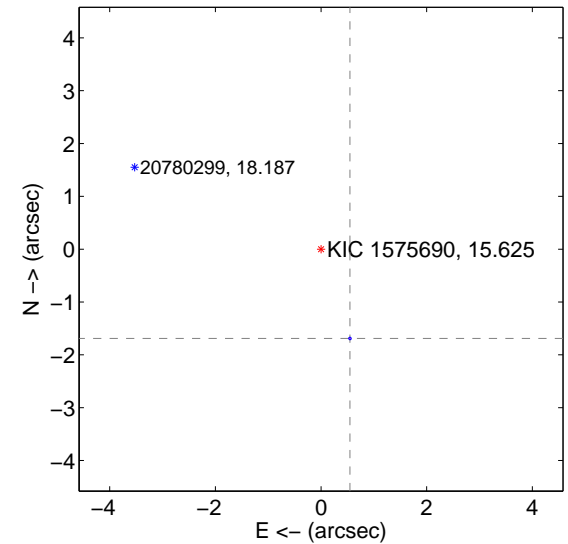
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



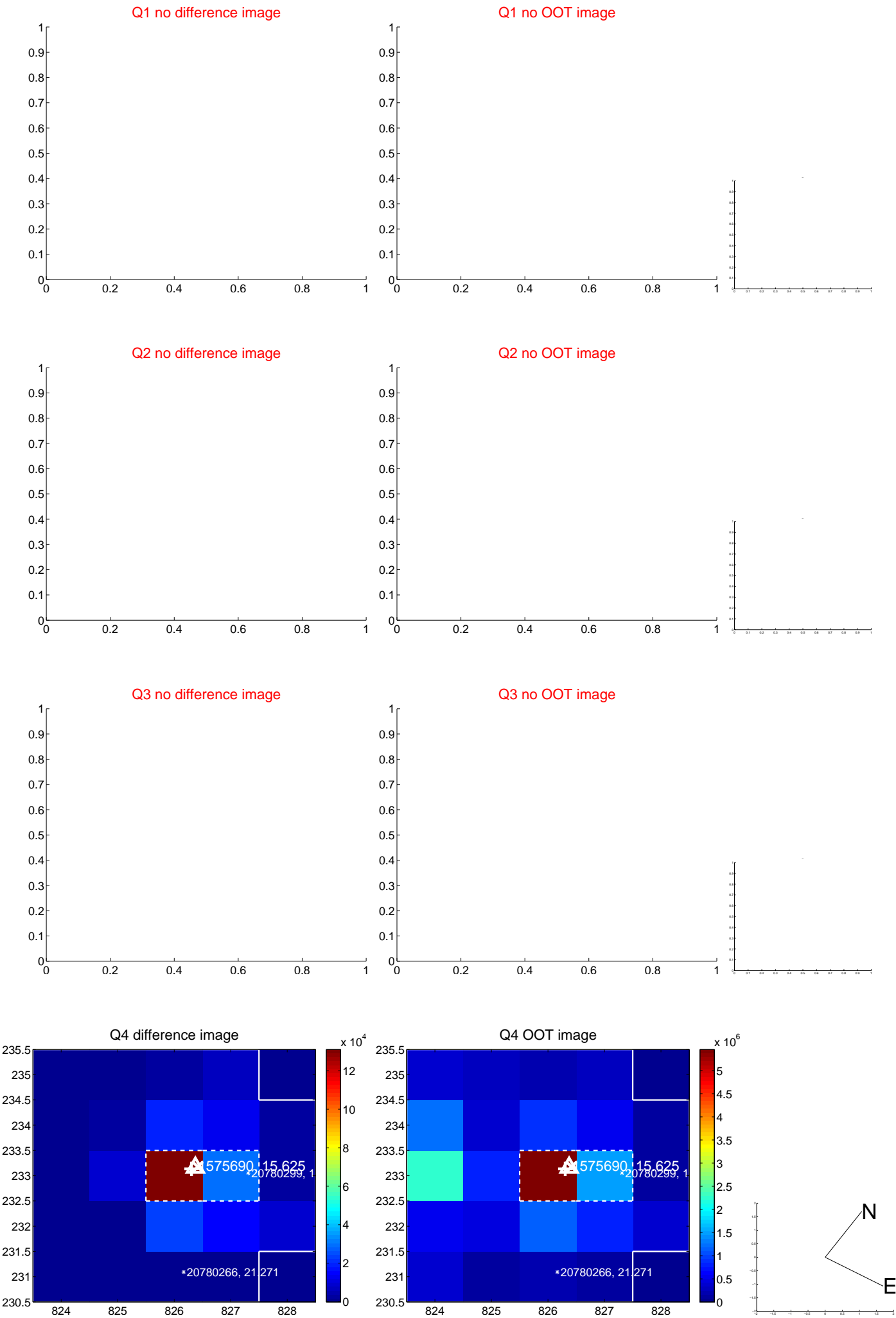
offset from photometric centroids



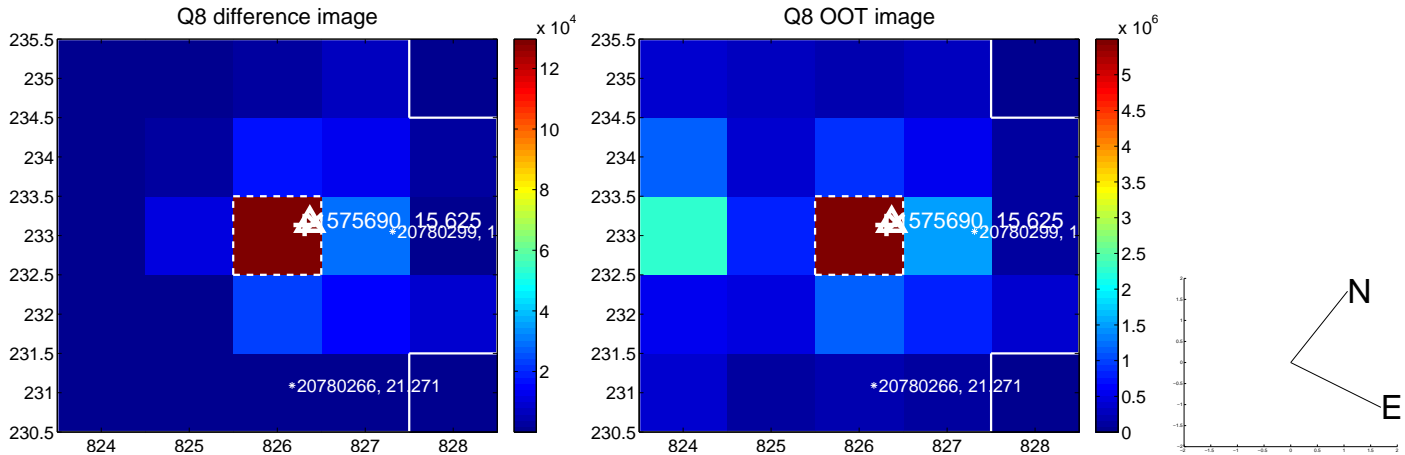
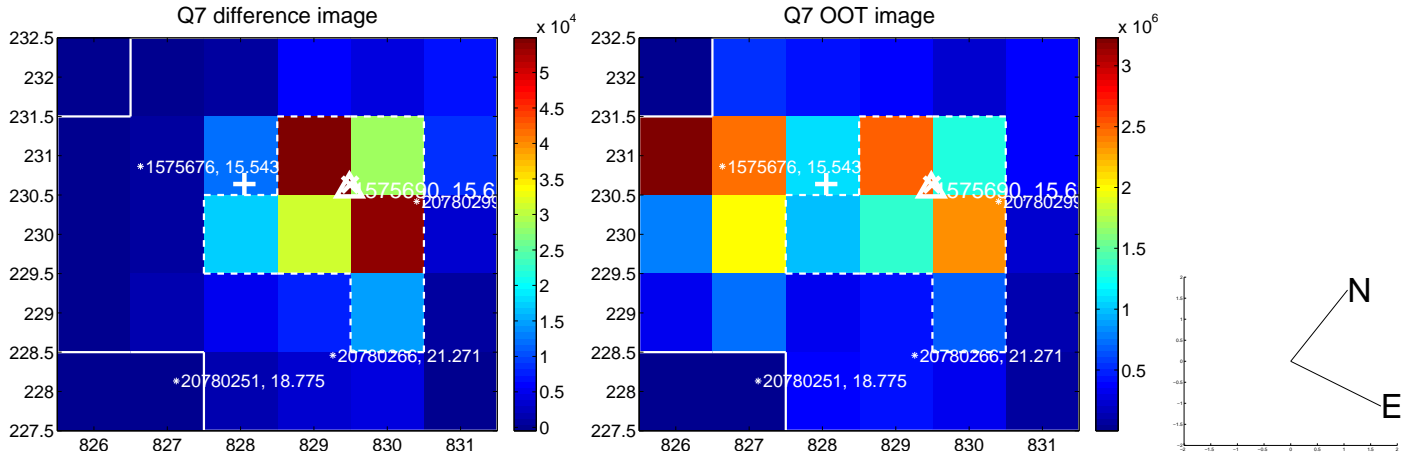
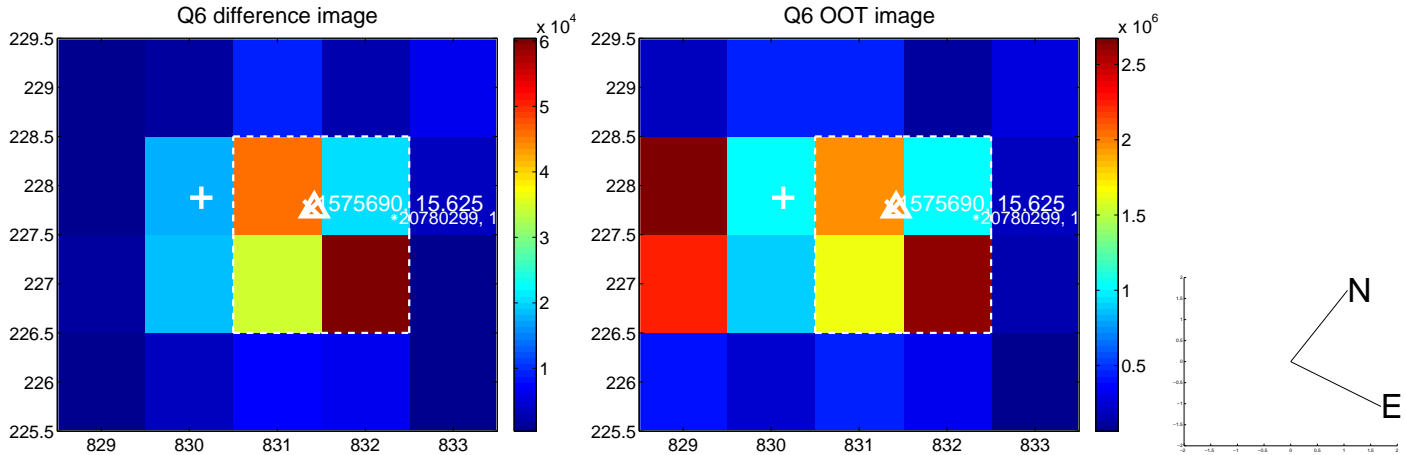
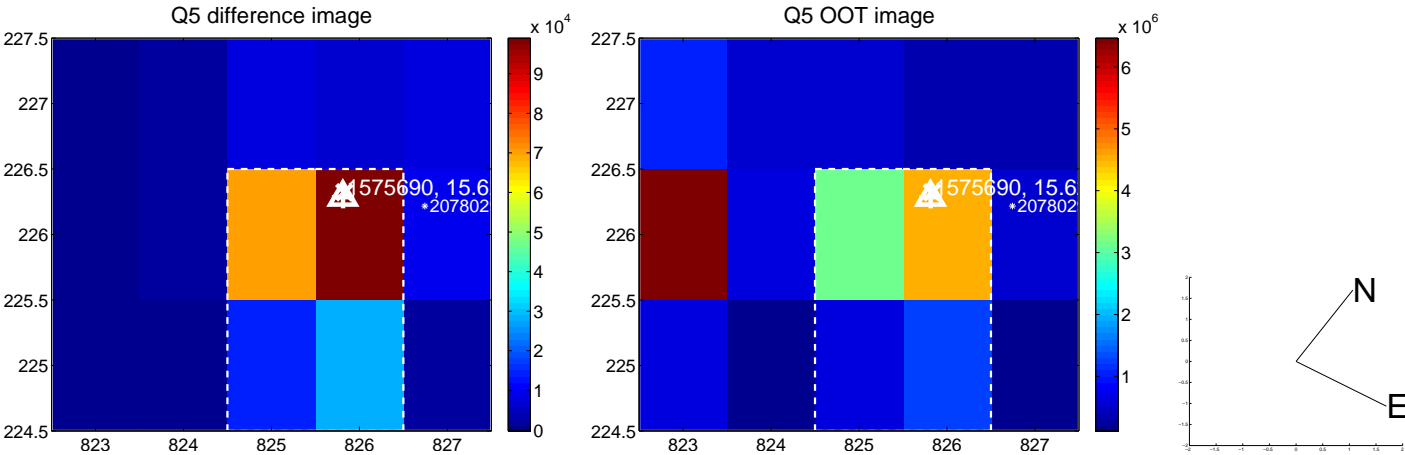
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



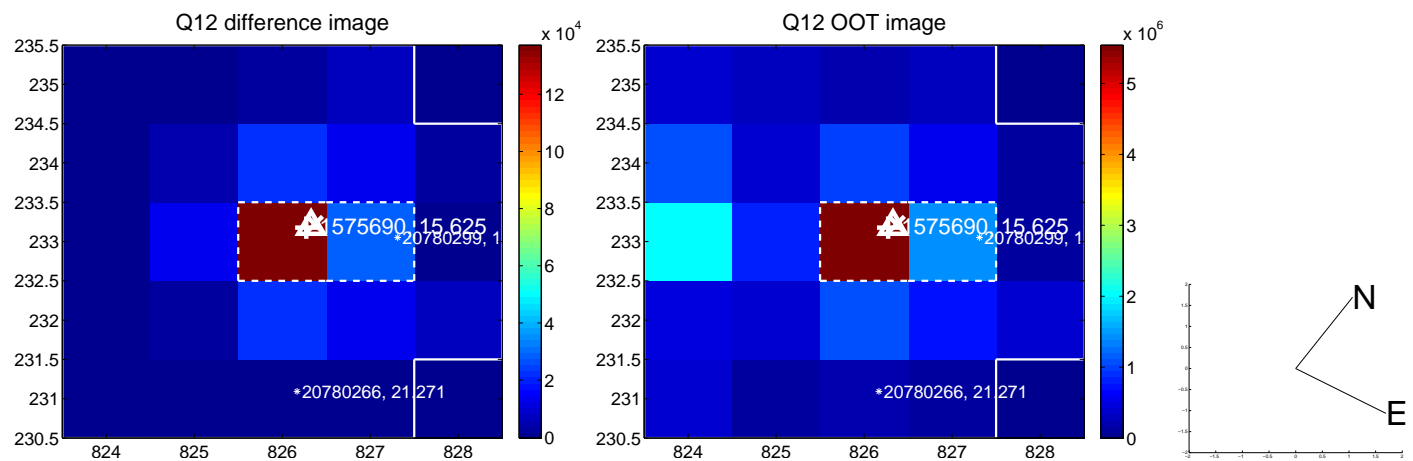
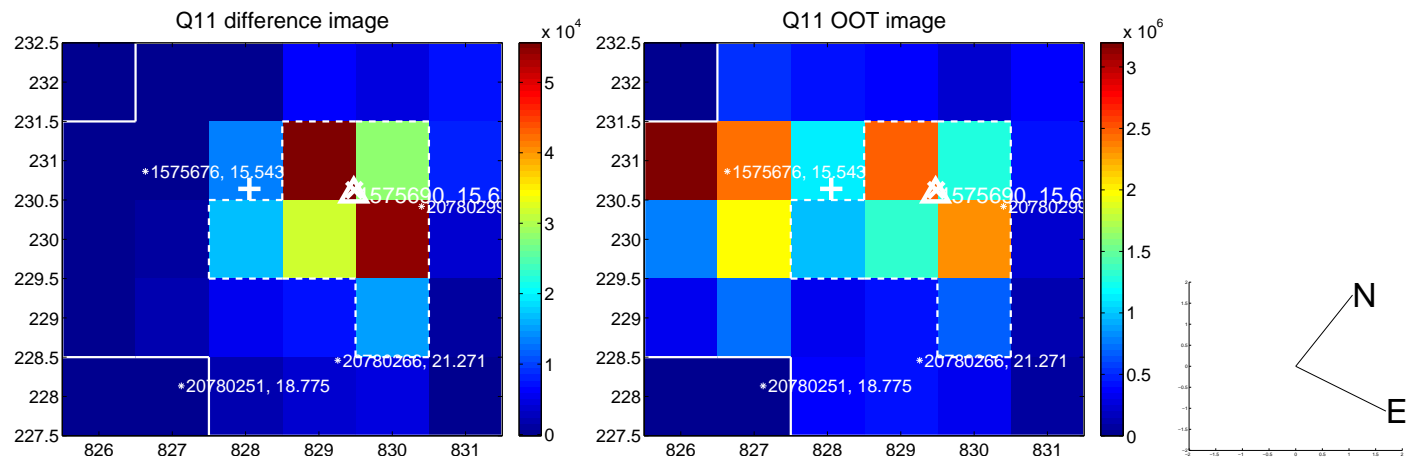
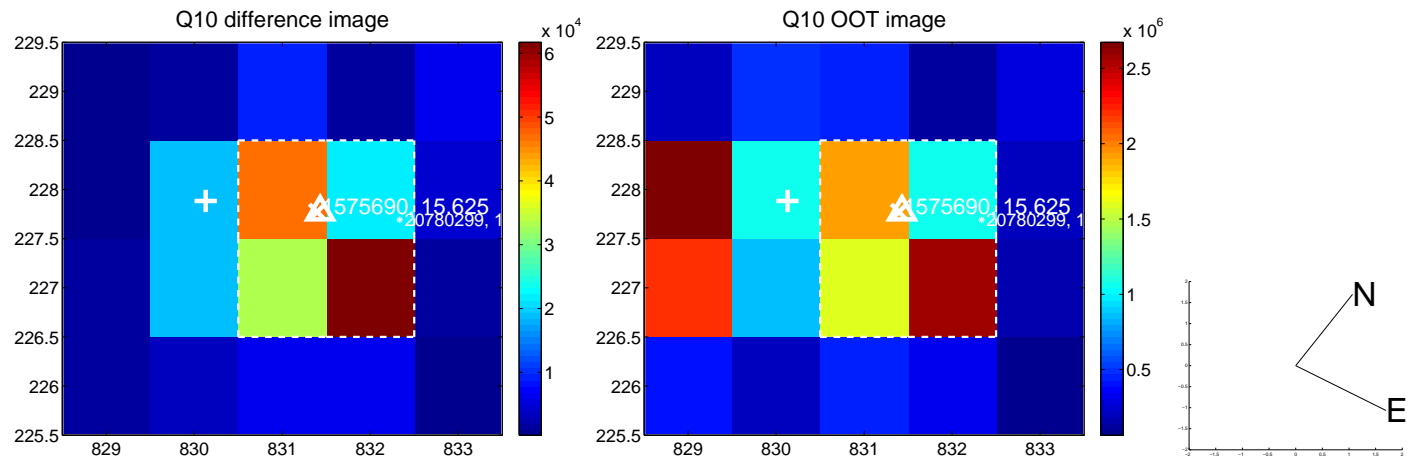
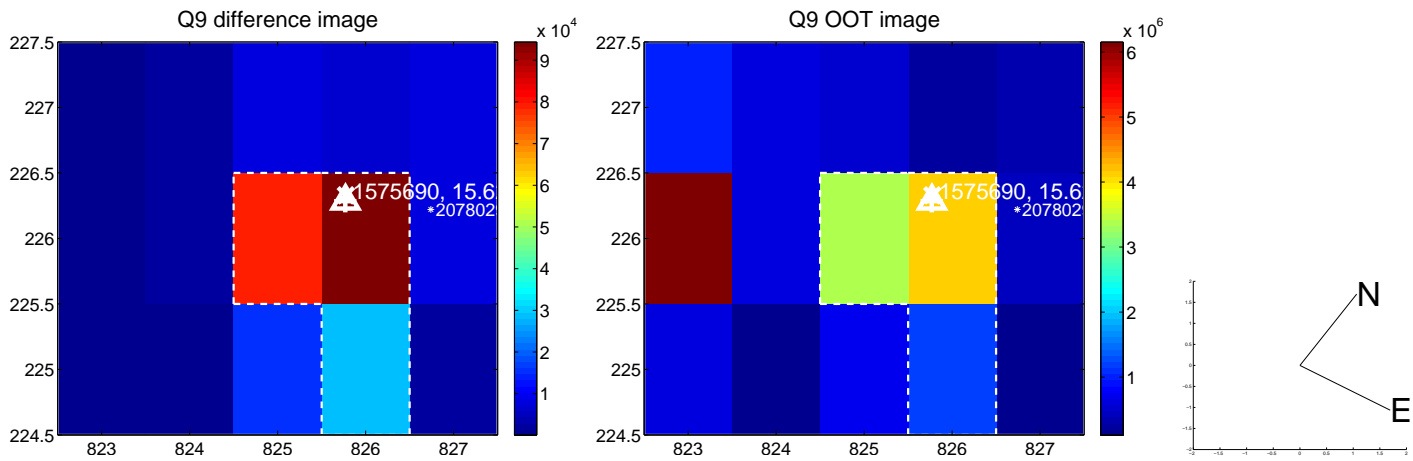
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



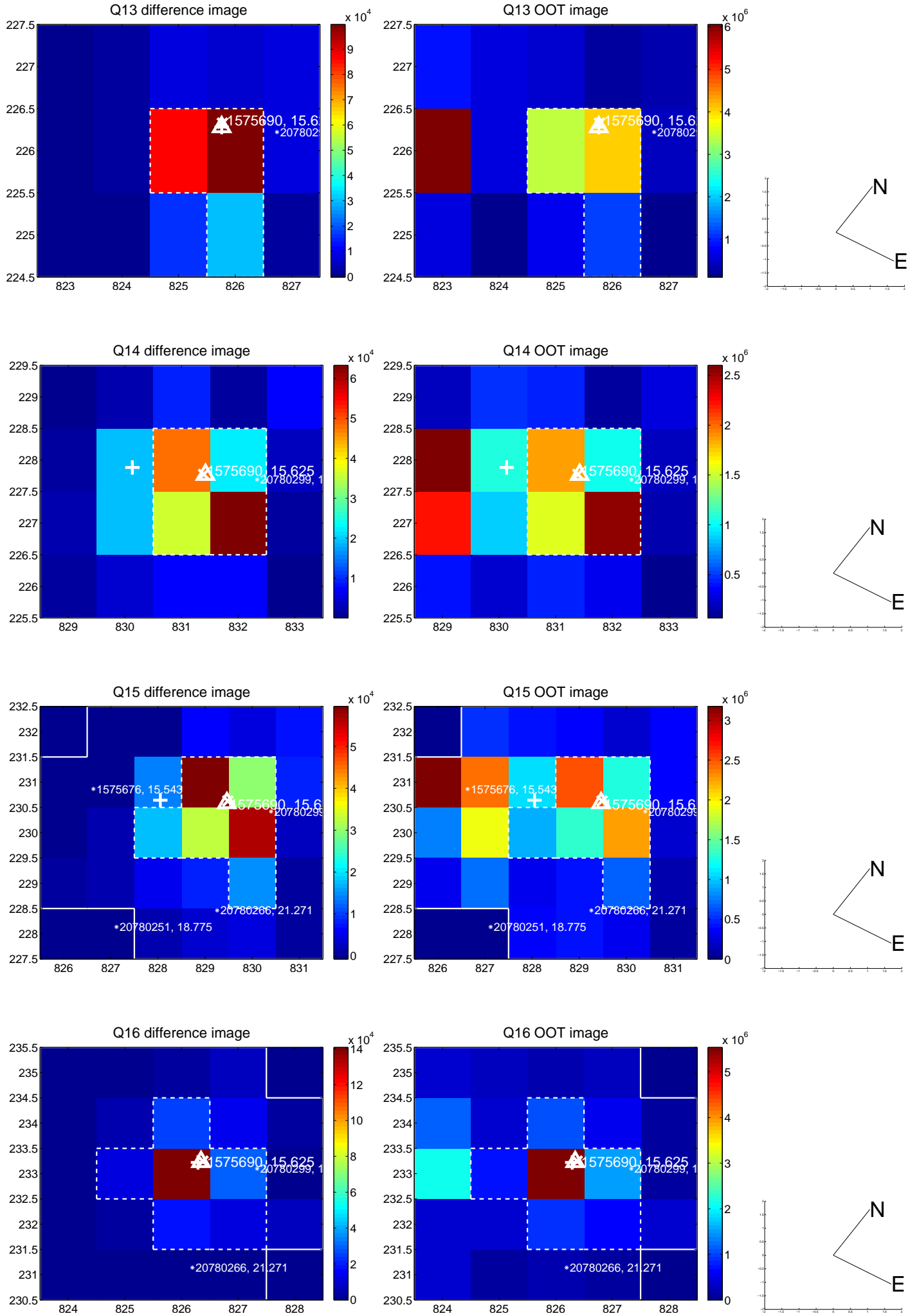
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



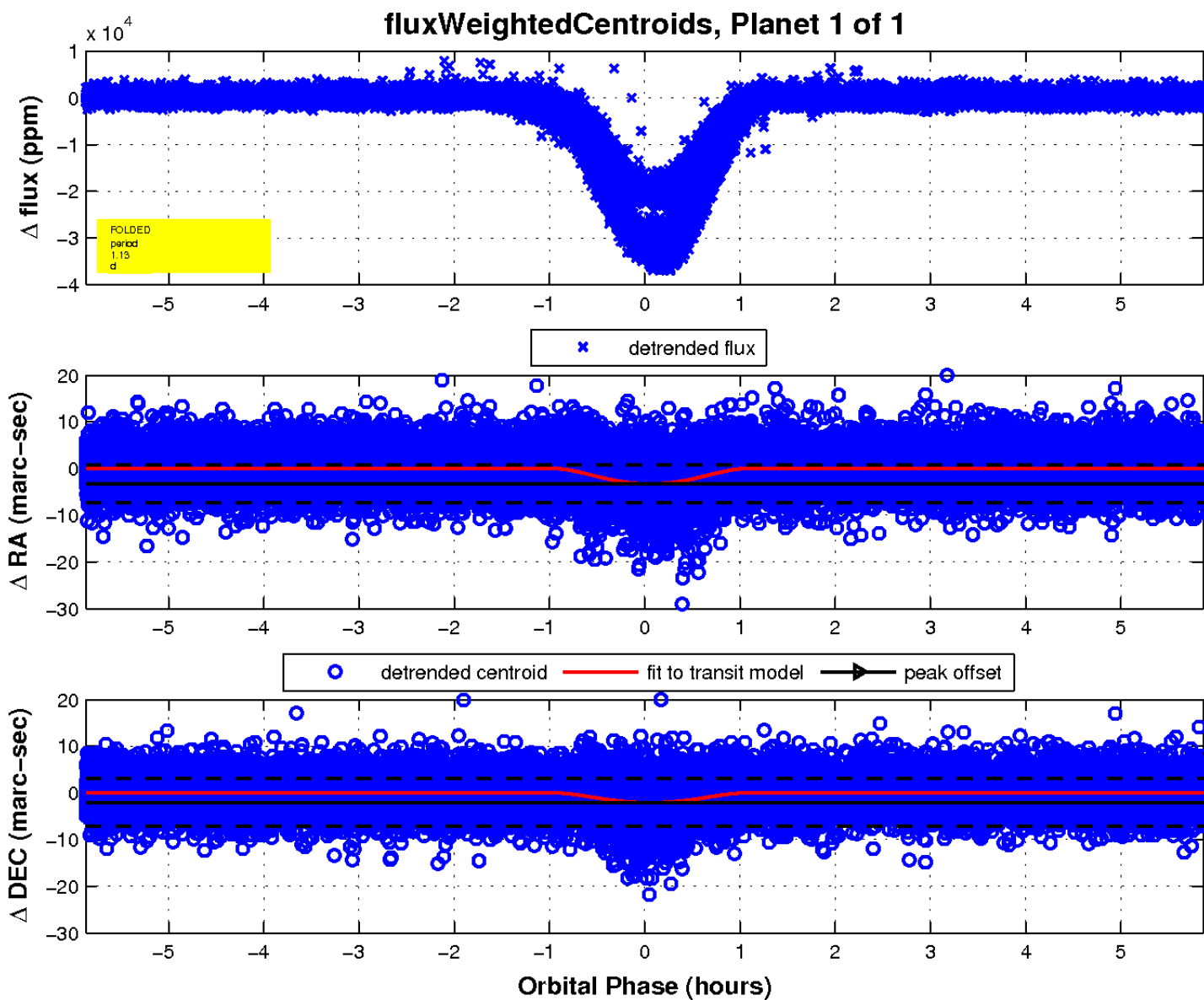
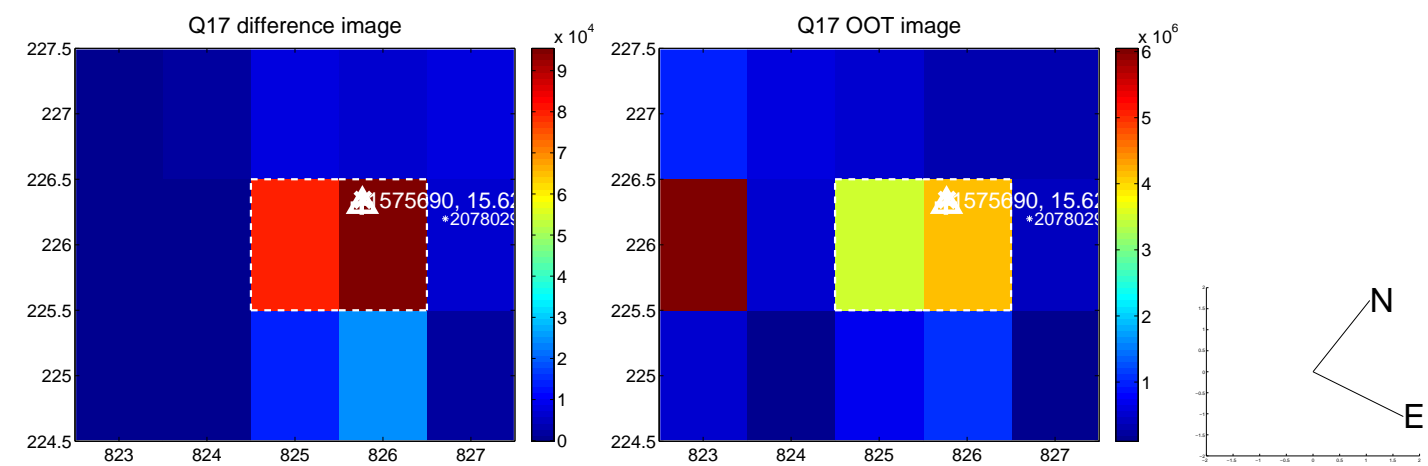
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UKIRT Image

Declination

