

# KIC 006041511

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006041511-01	OBS	6649.01	0.977016	132.210648	12.1	2.181	7.7	5.1	1.63	6527	0.68	9265.08

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006041511-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

**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.

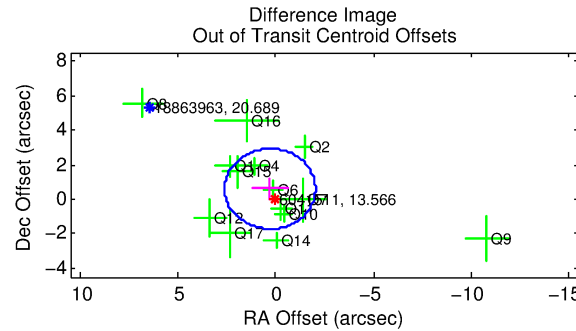
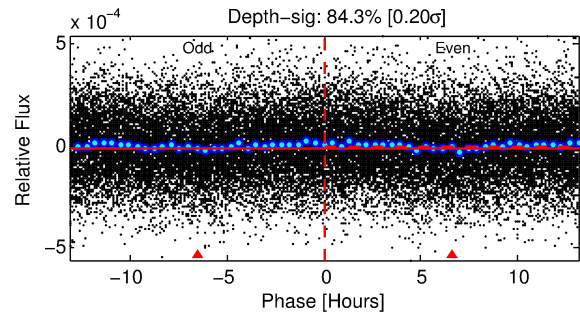
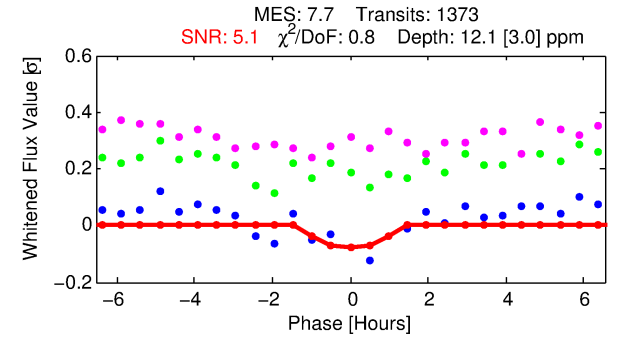
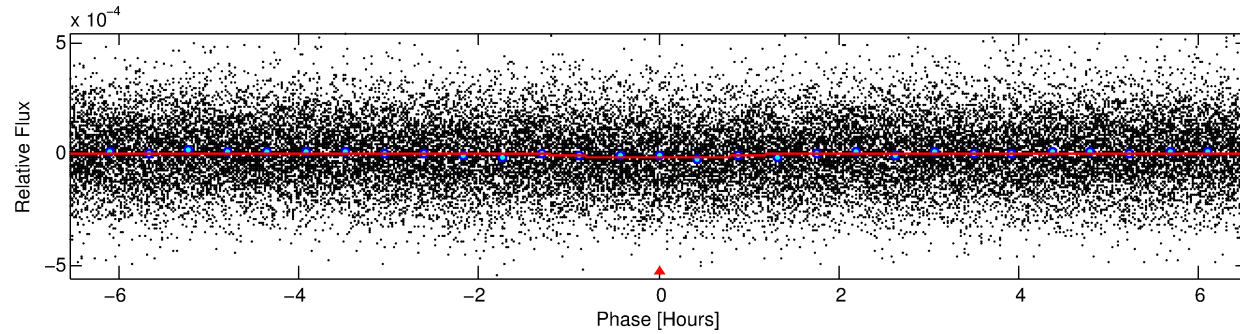
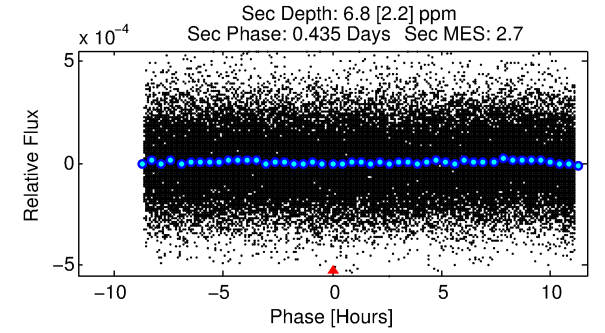
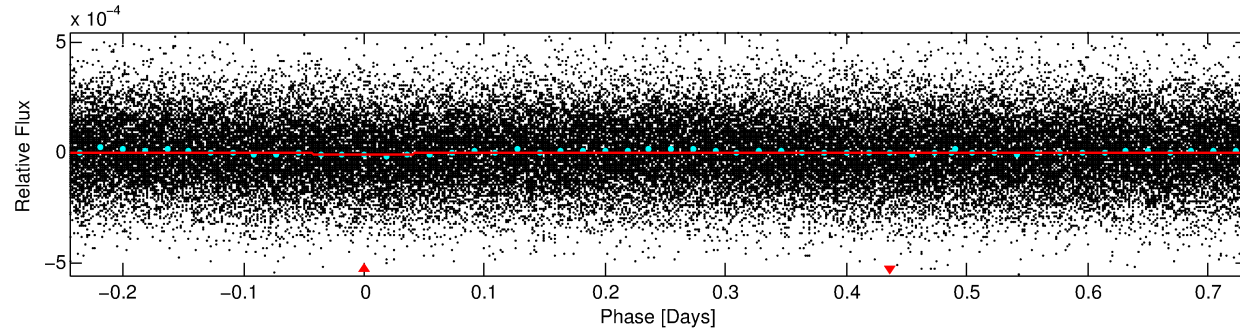
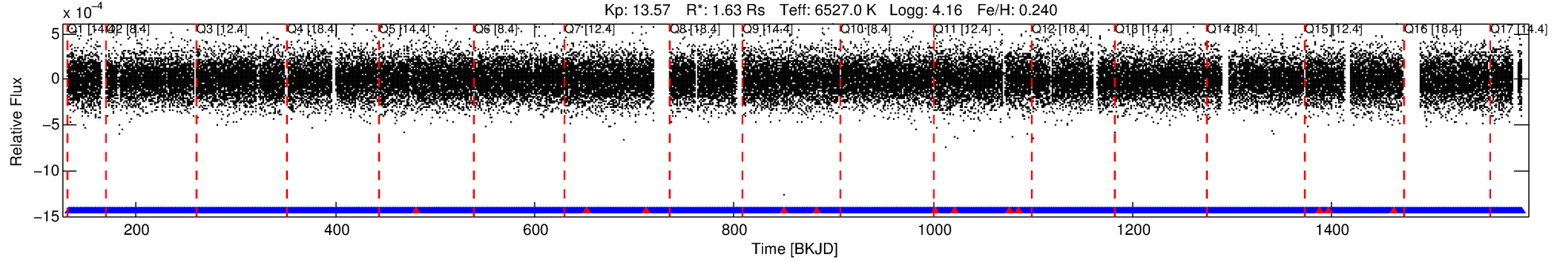
## Ephemeris Match Information For 006041511-01

No Significant Match Found

# DV One-Page Summary

KIC: 6041511 Candidate: 1 of 1 Period: 0.977 d

KOI: K06649 Corr: No Ephemeris Match



## DV Fit Results:

Period = 0.97702 [0.00002] d  
Epoch = 132.2106 [0.0056] BKJD  
Rp/R\* = 0.0038 [0.0024]  
a/R\* = 1.67 [3.87]  
b = 0.92 [0.61]  
Seff = 9265.08 [2032.85]  
Teff = 2502 [137] K  
Rp = 0.68 [0.45] Re  
a = 0.0216 [0.0032] AU  
Ag = 3.83 [5.11] [0.55σ]  
Teffp = 5410 [1785] K [1.62σ]

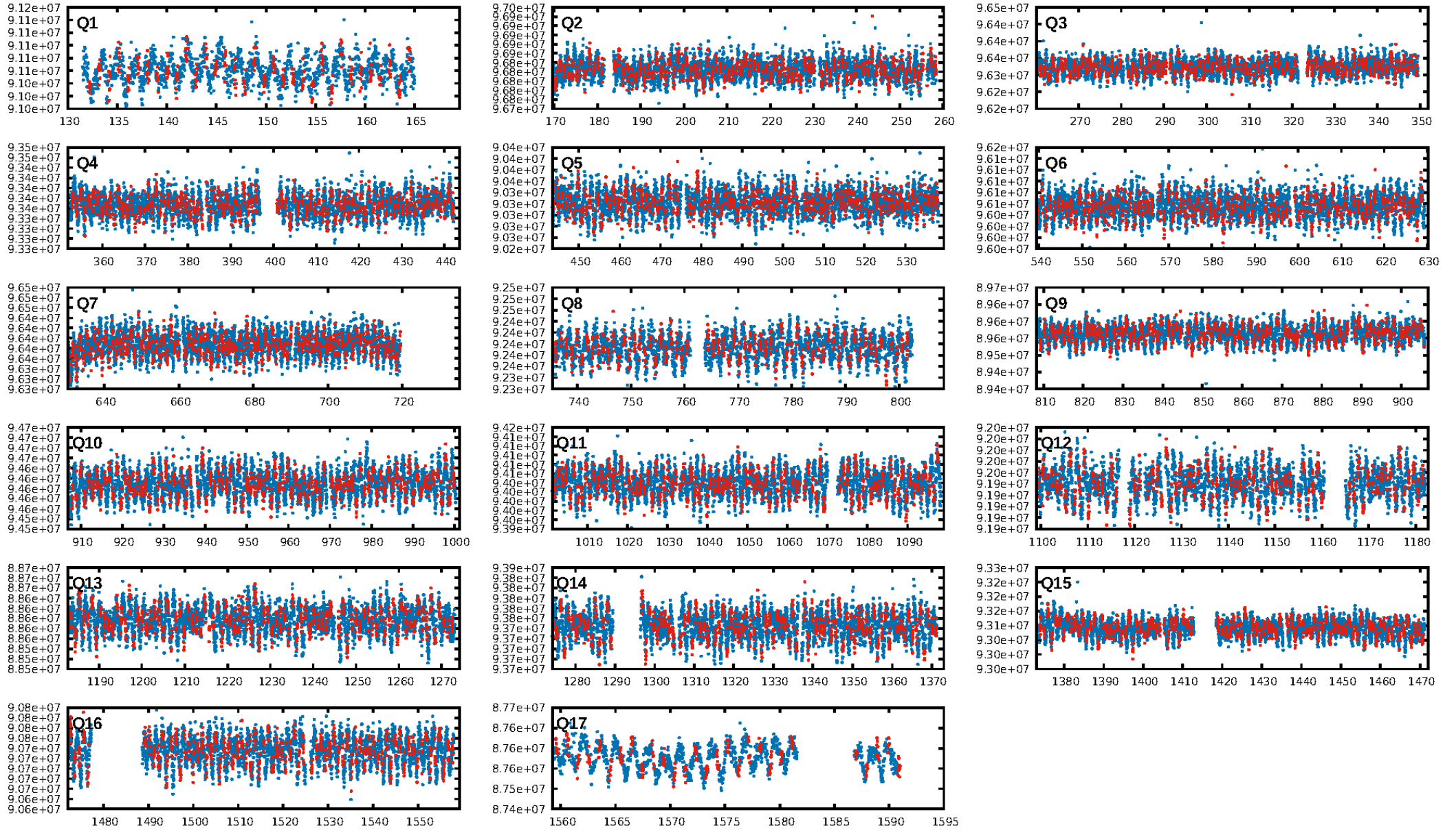
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 6.98e-15  
RollingBand-fgt: 0.99 [1299/1311]  
GhostDiagnostic-chr: -0.2976  
Centroid-sig: 26.7%  
Centroid-so: 2.707 arcsec [1.07σ]  
OotOffset-rm: 0.661 arcsec [0.85σ]  
KicOffset-rm: 0.628 arcsec [0.69σ]  
OotOffset-st: 4/3/4/3 [14]  
KicOffset-st: 4/3/4/3 [14]  
DiffImageQuality-fgm: 0.57 [8/14]  
DiffImageOverlap-fno: 1.00 [17/17]

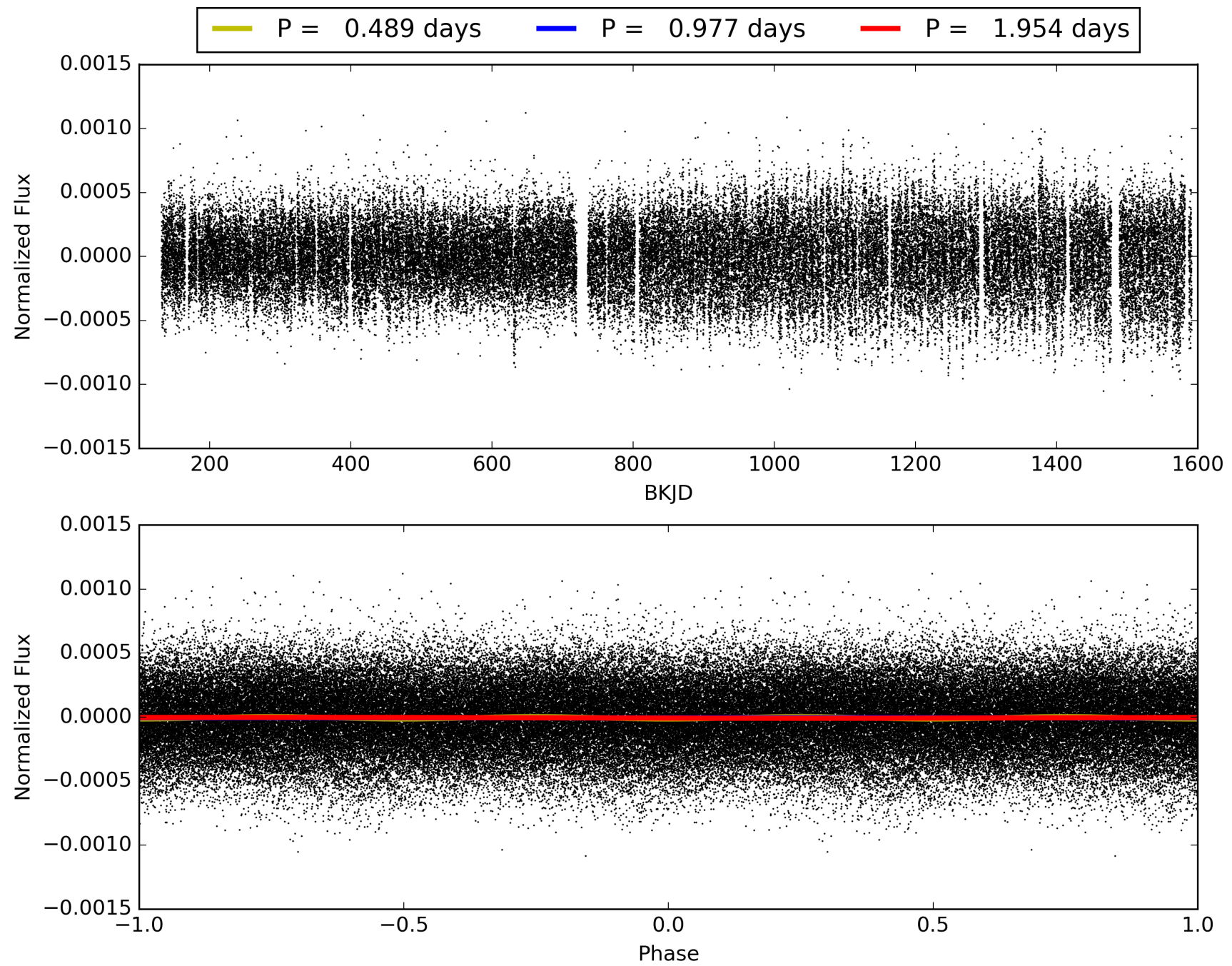
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:45:54 Z

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

# TCE 006041511-01, PDC Light Curves



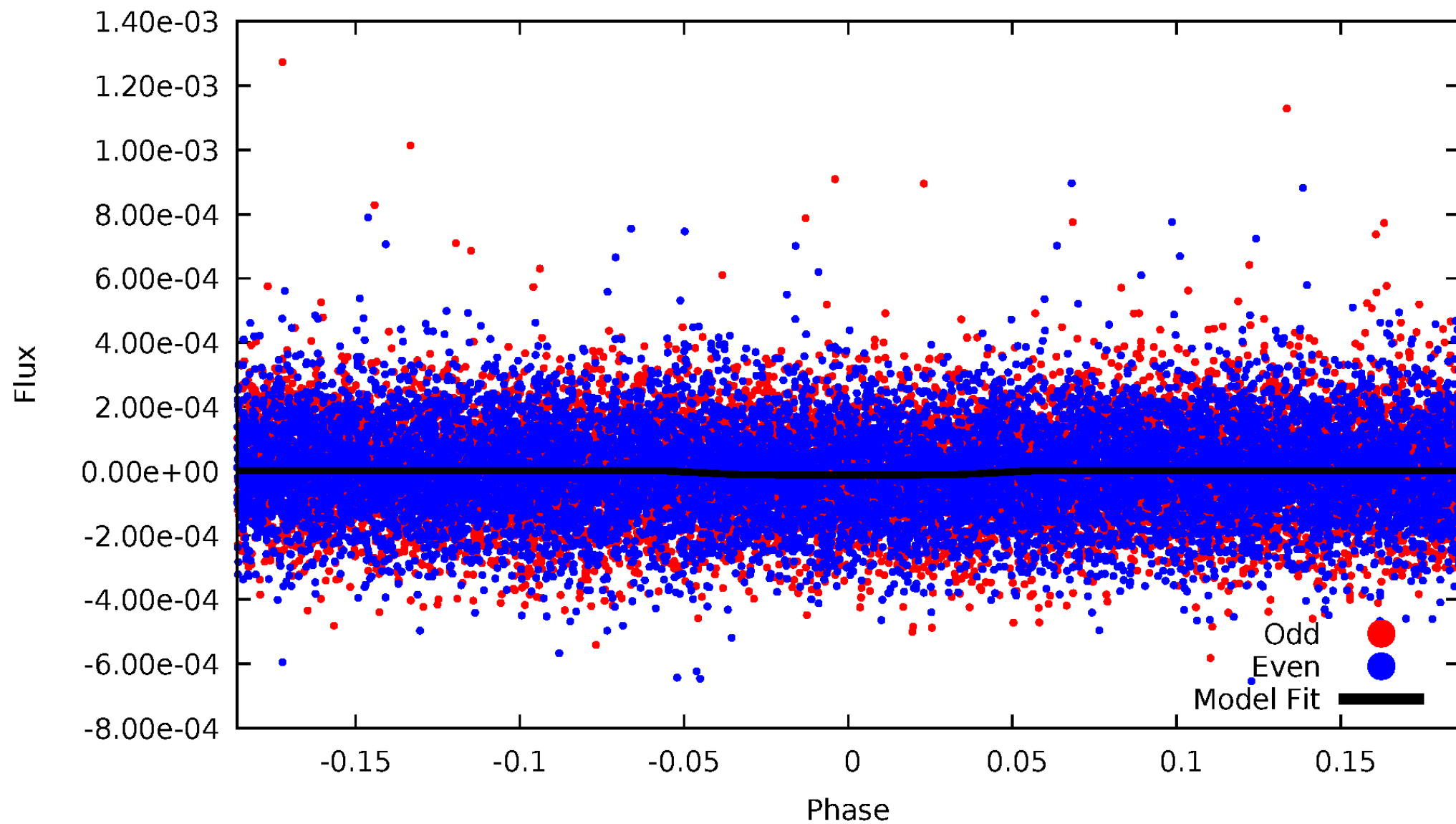
TCE 006041511-01





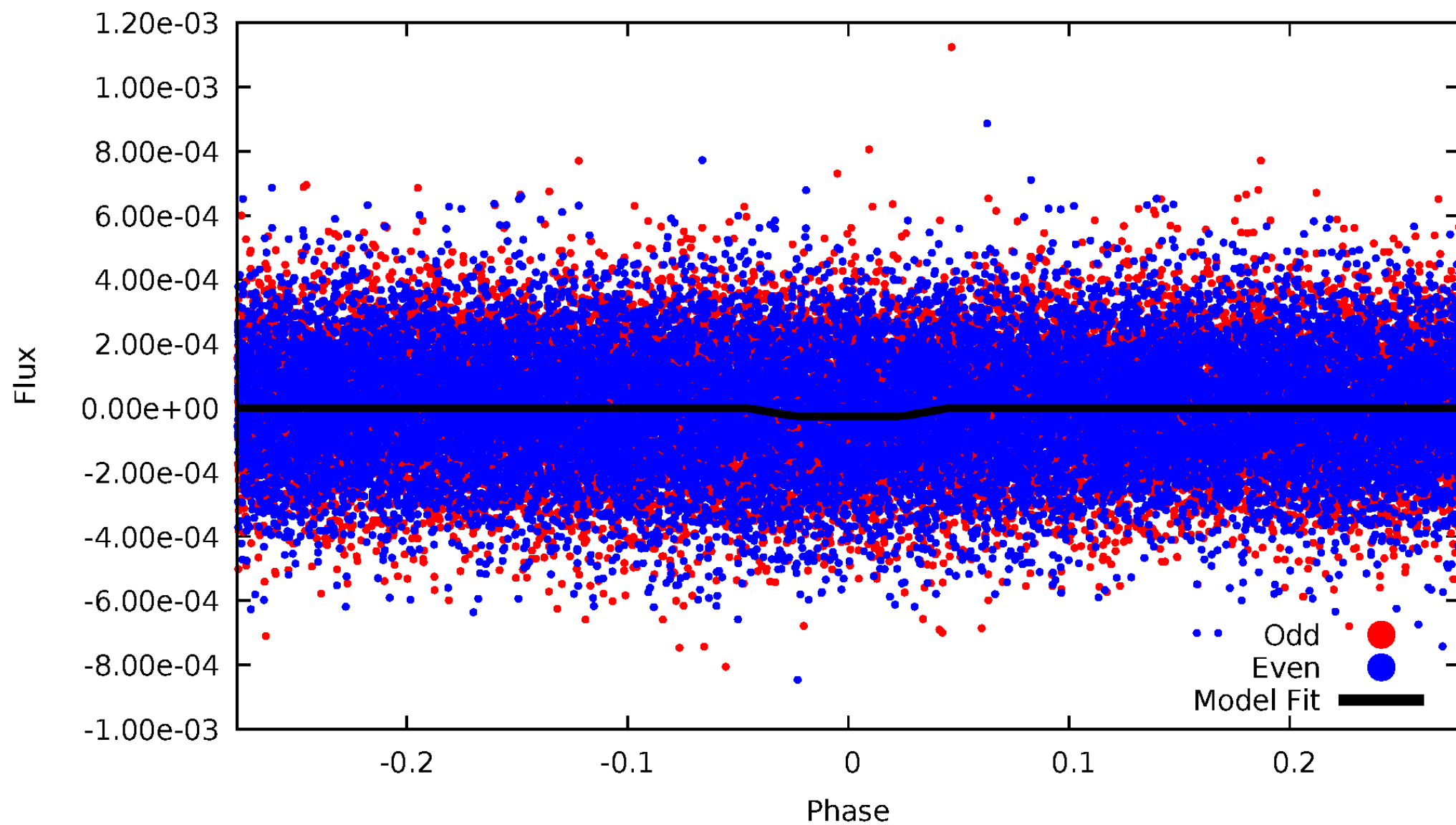
# DV Odd/Even

TCE 006041511-01



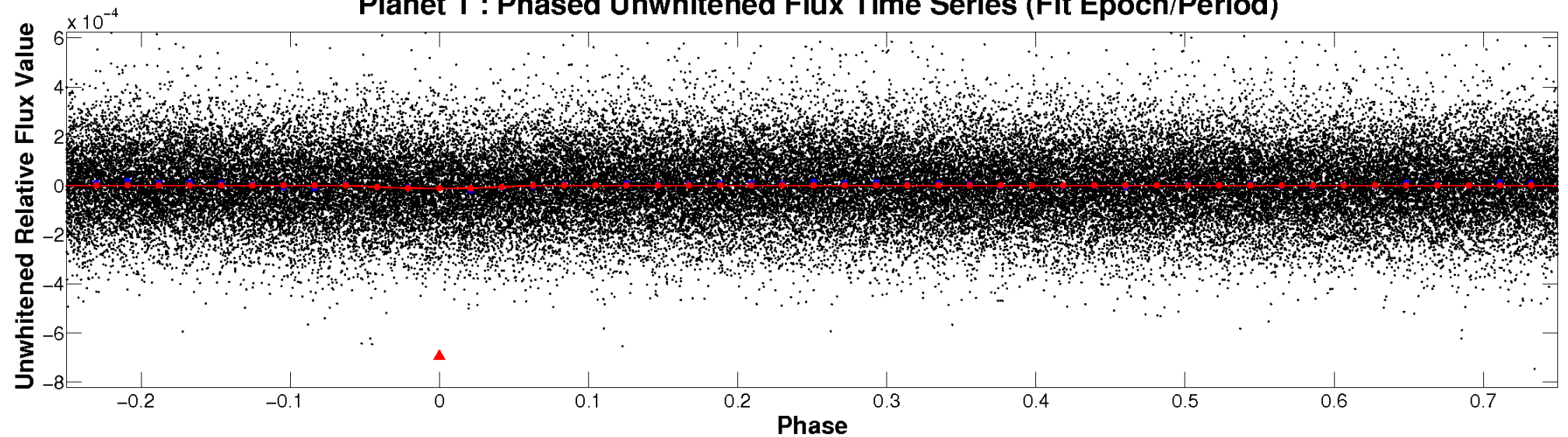
# ALT Odd/Even

TCE 006041511-01

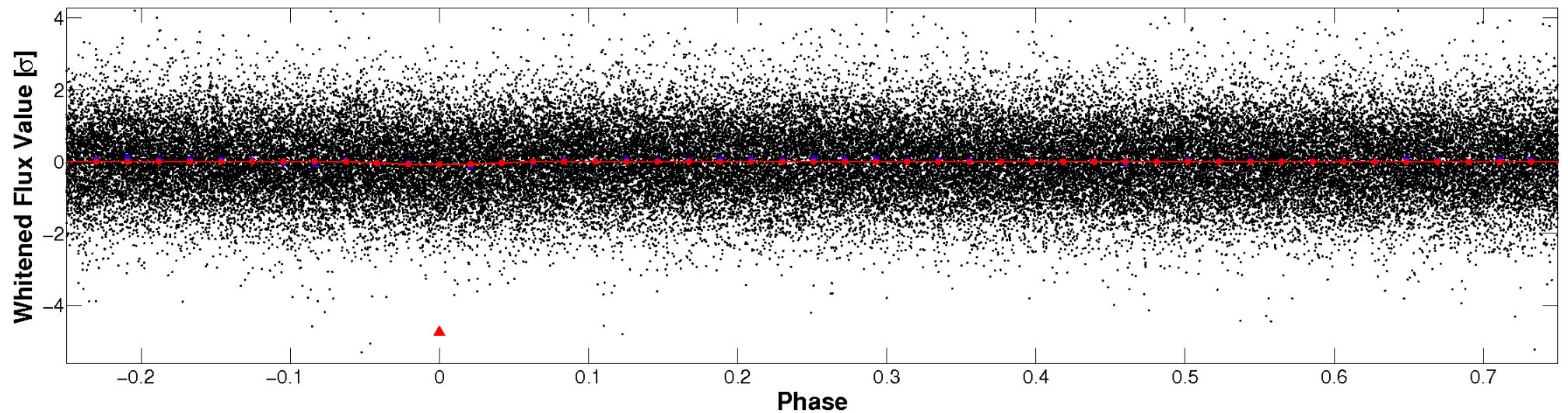


# Non-Whitened Vs. Whitened Light Curve

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

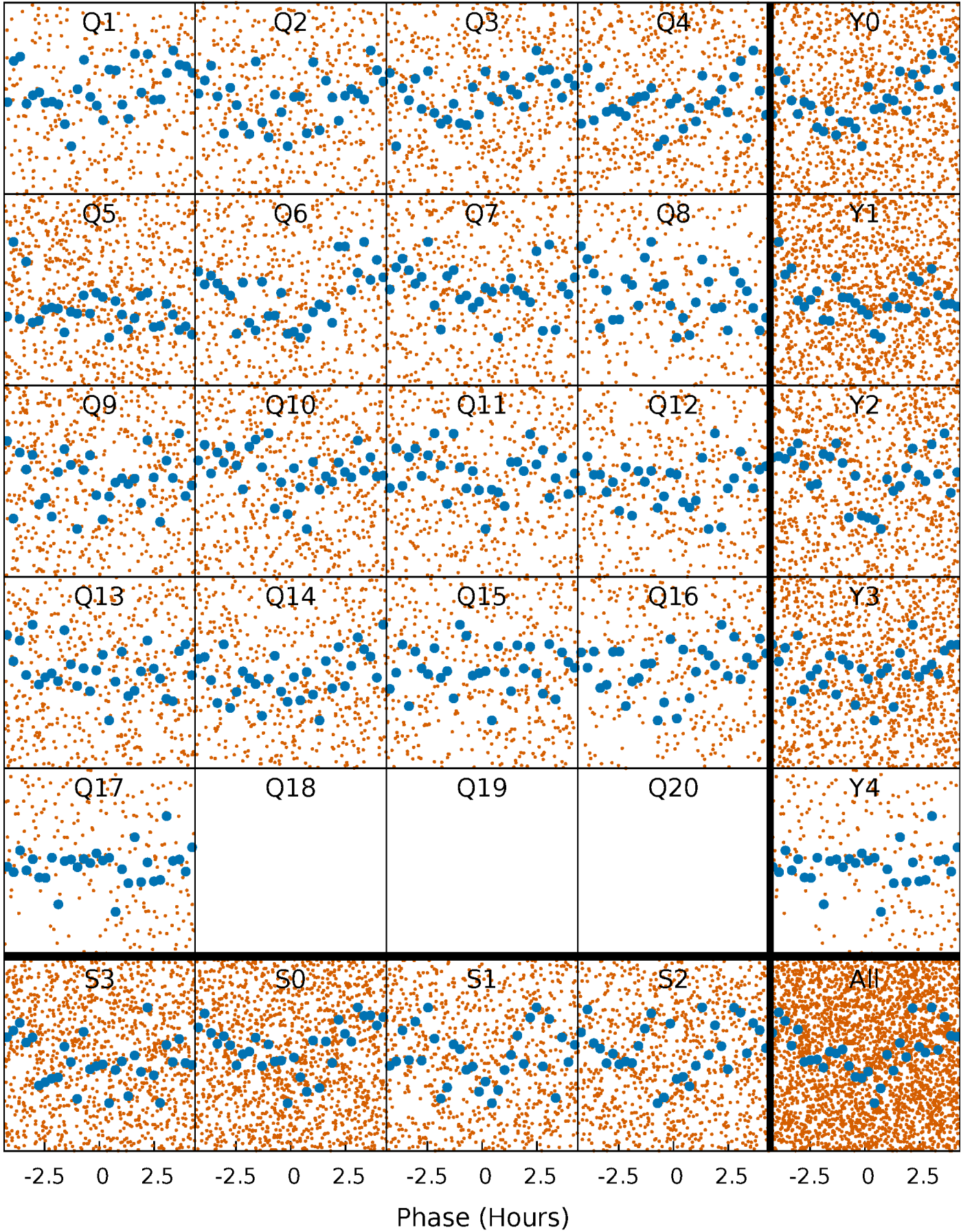


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

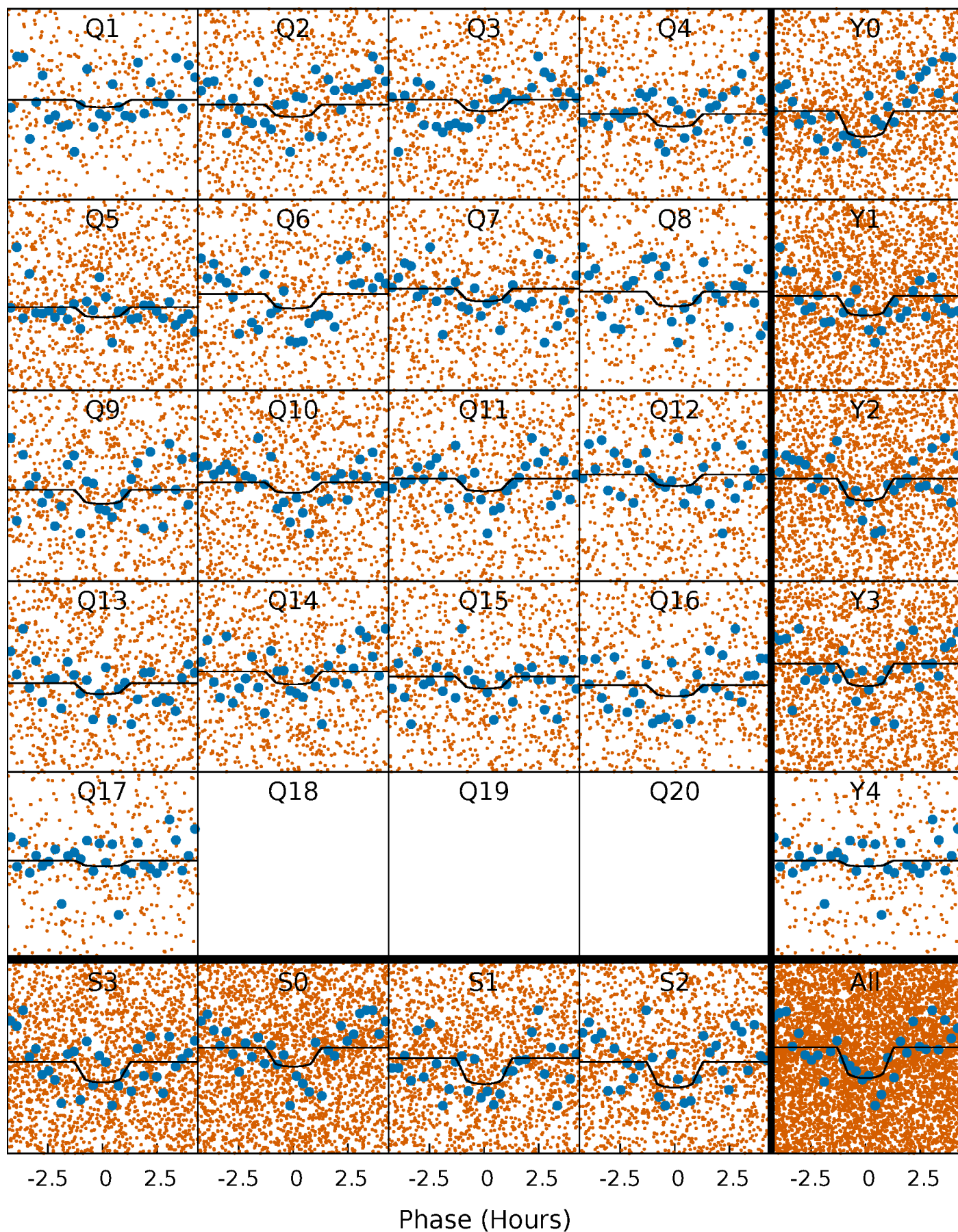
TCE 006041511-01 P= 0.977016 Days  $T_0=132.210648$  (BKJD)





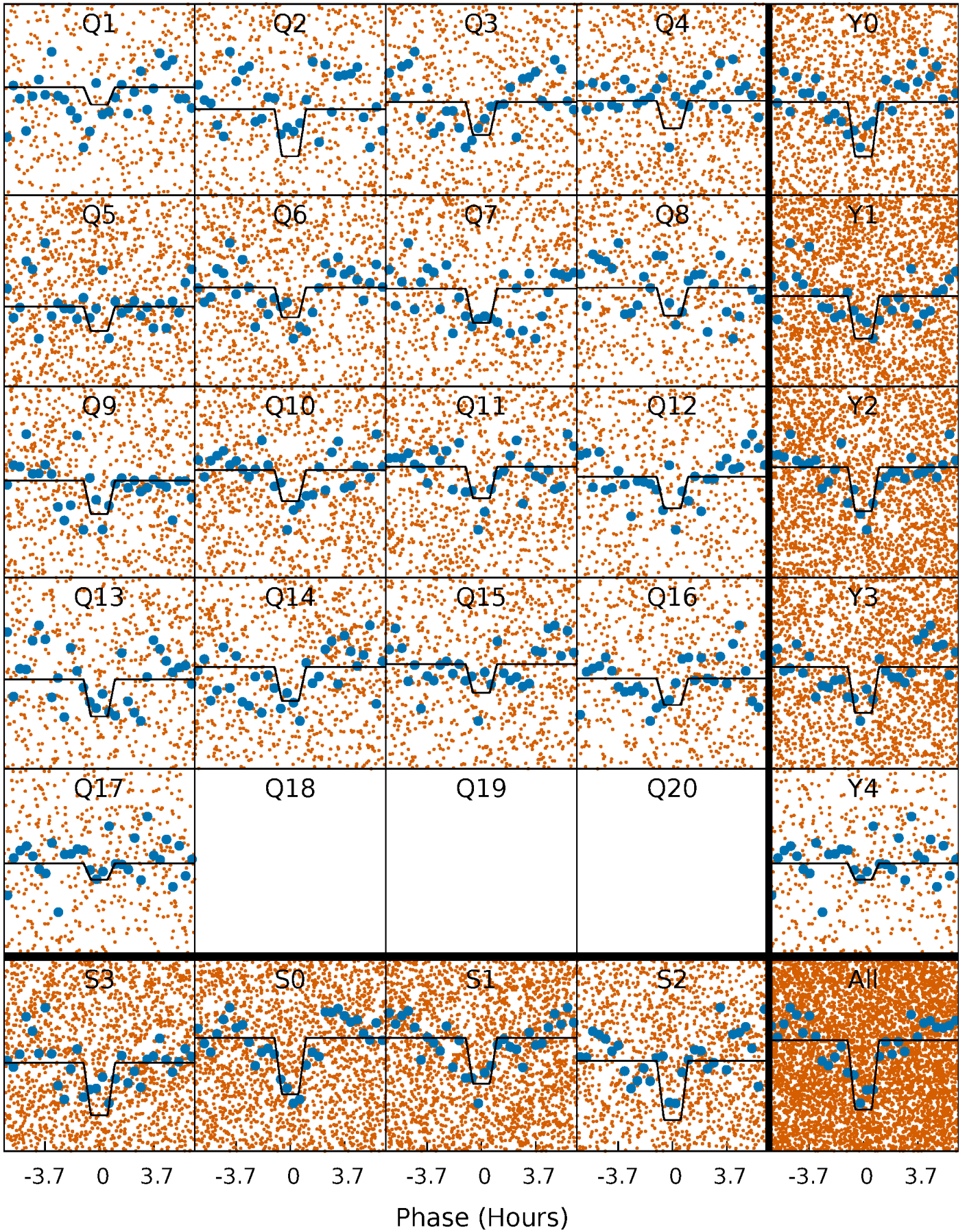
# DV Quarter-Phased Transit Curves

TCE 006041511-01 P= 0.977016 Days  $T_0=132.210648$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

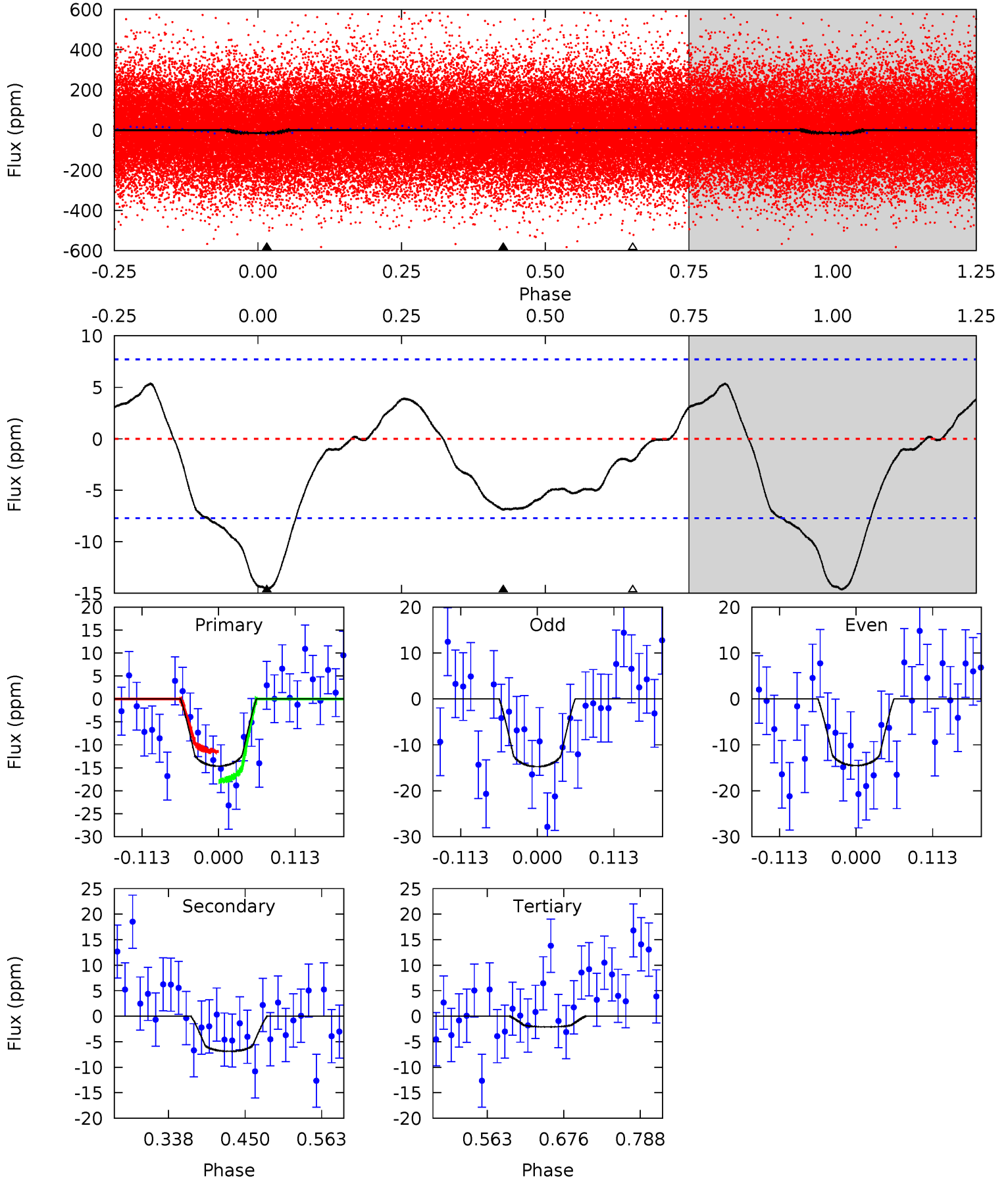
TCE 006041511-01 P= 0.977058 Days  $T_0=132.182535$  (BKJD)



# DV Model-Shift Uniqueness Test

006041511-01, P = 0.977016 Days, E = 131.233632 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
8.61	4.05	1.23	0	4.54	1.59	1.88	7.38	8.61	2.82	4.05	0.06	1.02	0.27	1.88

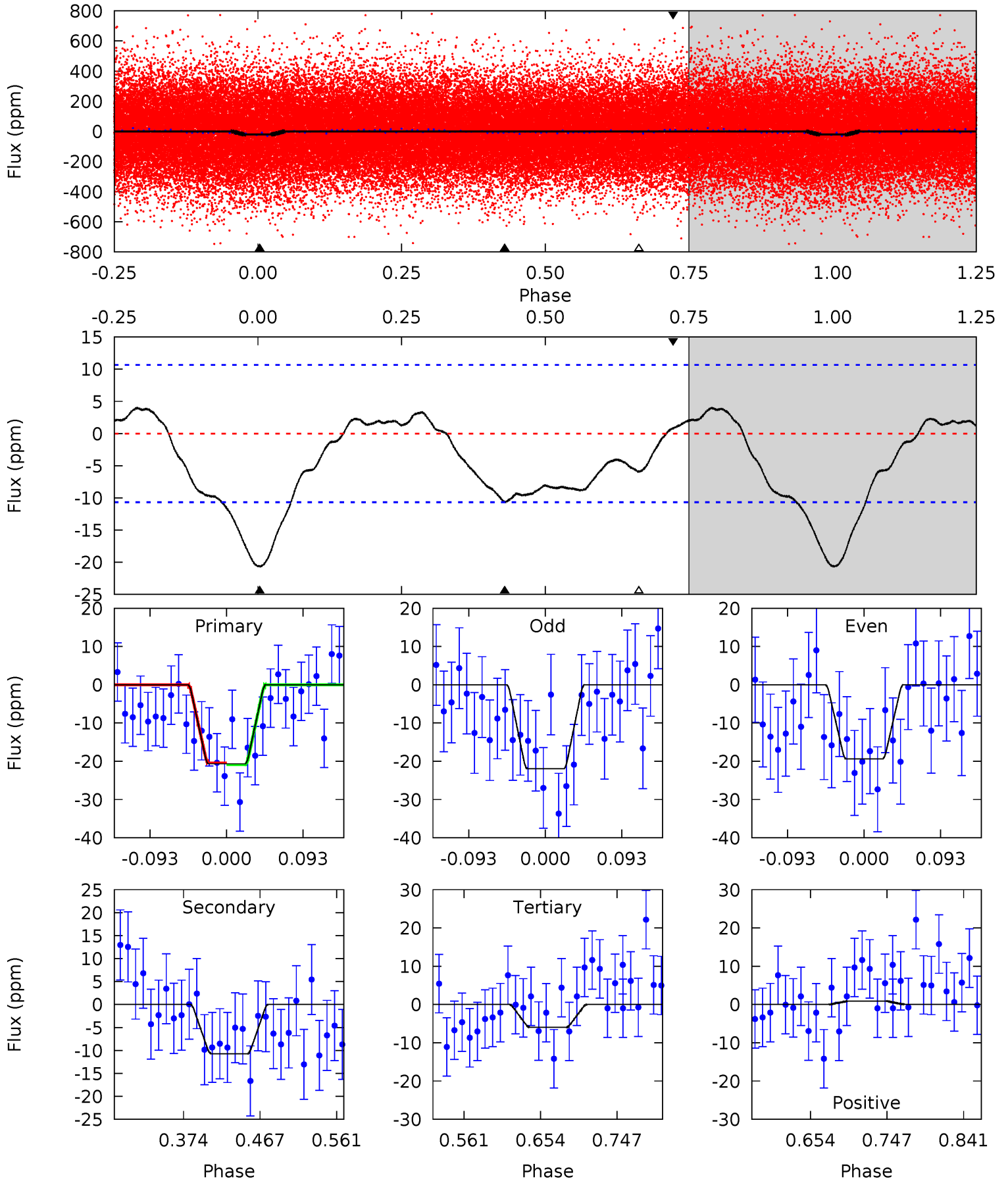




# Alt Model-Shift Uniqueness Test

006041511-01, P = 0.977058 Days, E = 131.205477 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
8.87	4.59	2.55	0.37	4.58	1.68	1.73	6.32	8.50	2.04	4.22	0.55	1.11	0.16	0.10





### Stellar Parameters For KIC 006041511

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6527^{+78}_{-78}$	$4.162^{+0.105}_{-0.116}$	$0.240^{+0.150}_{-0.150}$	$1.631^{+0.291}_{-0.212}$	$1.409^{+0.099}_{-0.099}$	$0.458^{+0.226}_{-0.151}$
	+1%/-1%	+3%/-3%	+62%/-62%	+18%/-13%	+7%/-7%	+49%/-33%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 006041511-01 / KOI 6649.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-7 \pm 2$	$0.74^{+0.45}_{-0.43}$	$3505^{+158}_{-142}$	$5147^{+2860}_{-1099}$	$3.227^{+14.272}_{-2.017}$
Alt.	$-11 \pm 2$	$0.90^{+0.44}_{-0.43}$	$3501^{+158}_{-136}$	$5163^{+2051}_{-893}$	$3.314^{+8.649}_{-1.879}$

$T_{\text{max}}$  = 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  $A_{\text{obs}} \gg 1.0$

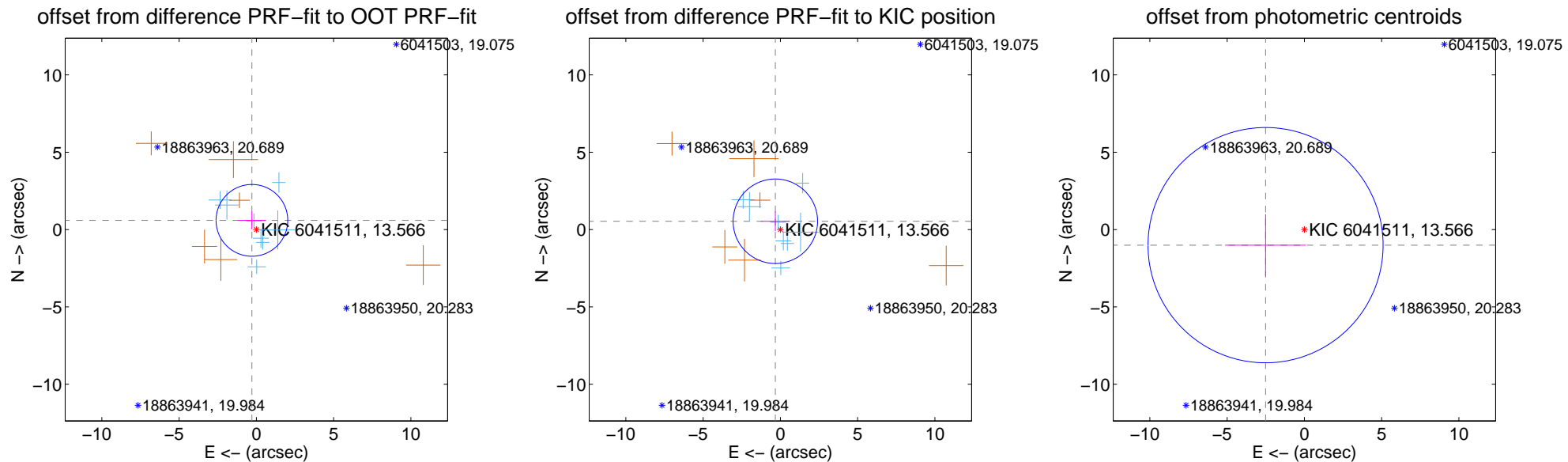
## DV Centroid Data

Supplemental centroid analysis for 006041511-01. Kepler magnitude: 13.57. Transit SNR 5.11

There are 8 quarters with good PRF difference image offsets

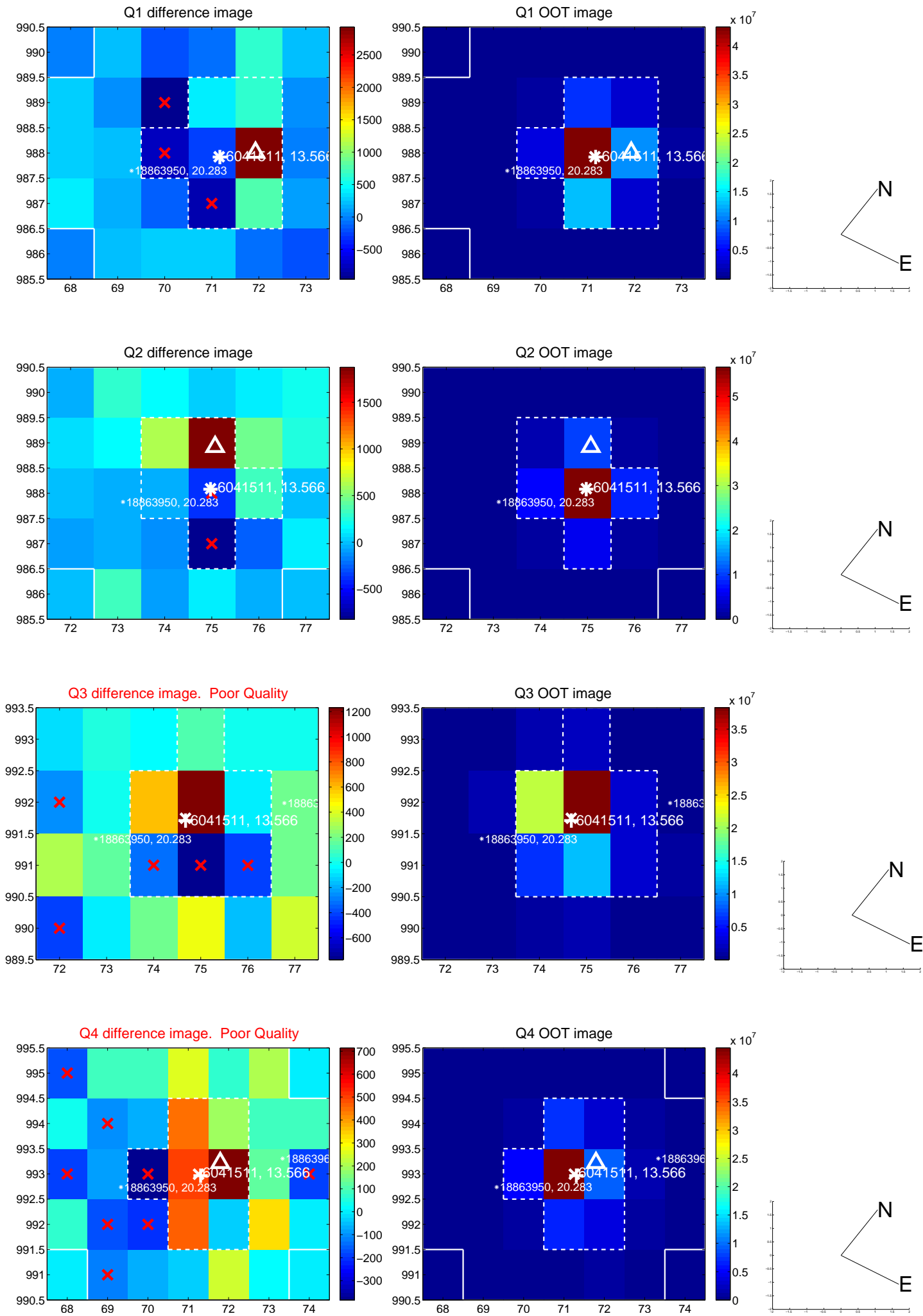
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.661 \pm 0.774$	0.85	$0.289 \pm 0.918$	$0.594 \pm 0.575$
PRF-fit source offset from KIC position	$0.628 \pm 0.911$	0.69	$0.326 \pm 0.936$	$0.536 \pm 0.638$
photometric centroid source offset	$2.71 \pm 2.54$	1.07	$2.51 \pm 2.61$	$-1.01 \pm 2.00$

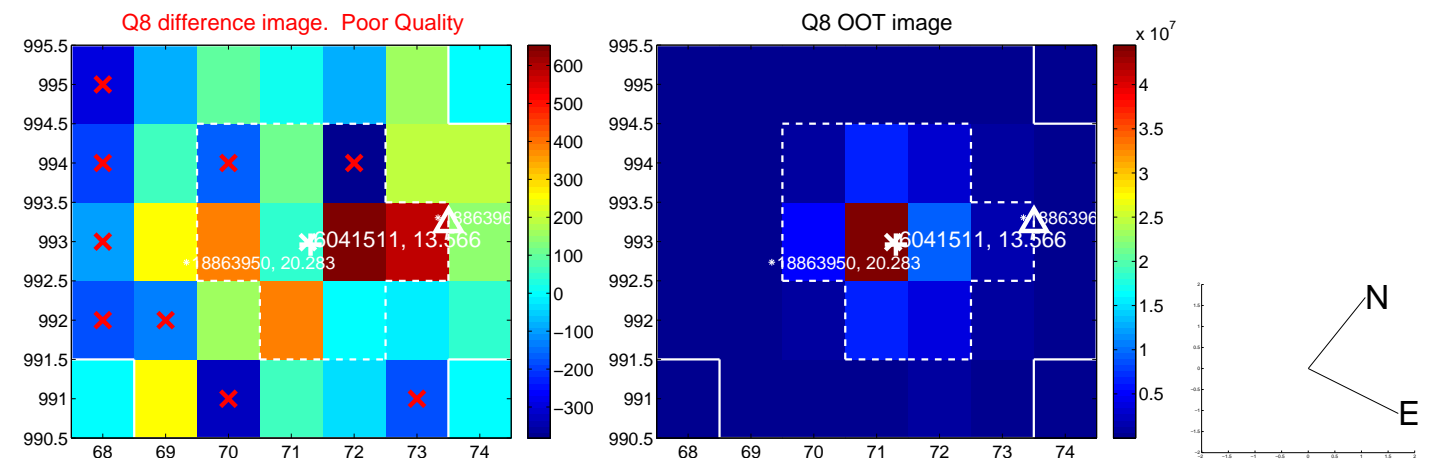
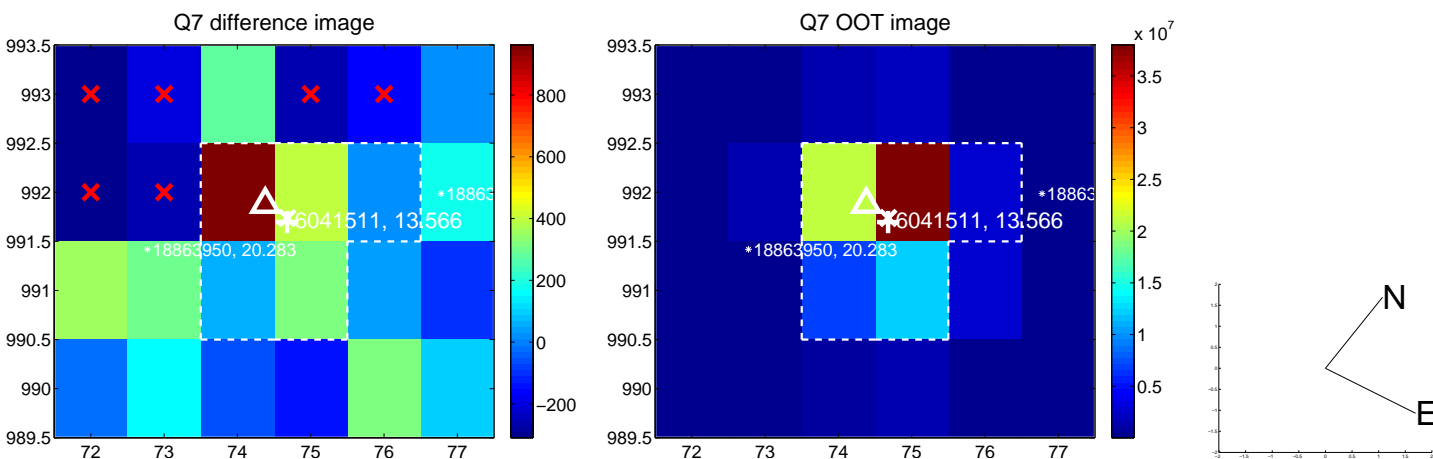
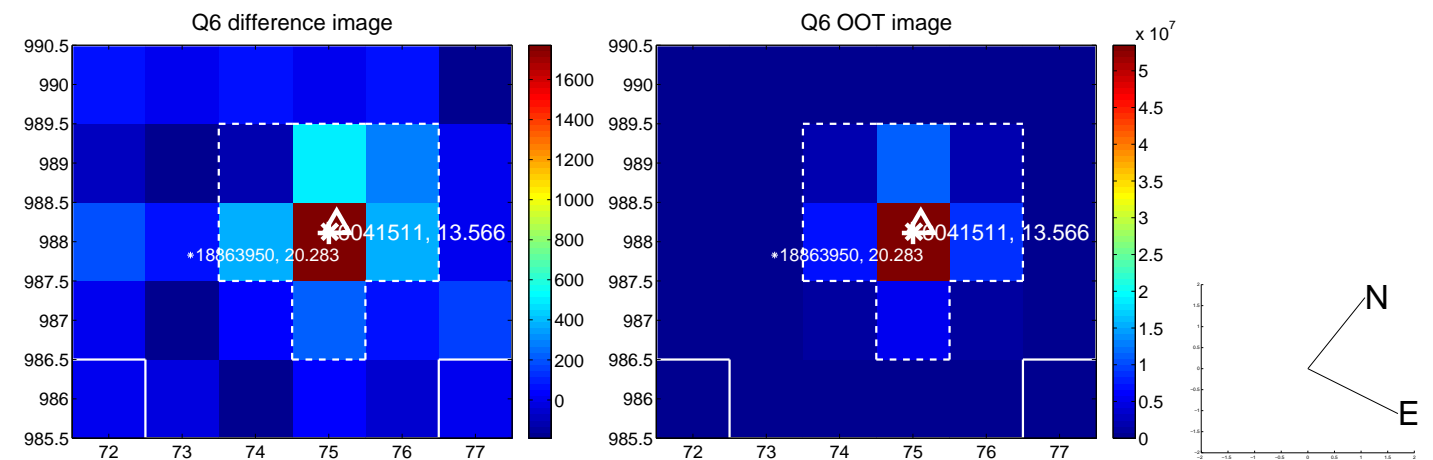
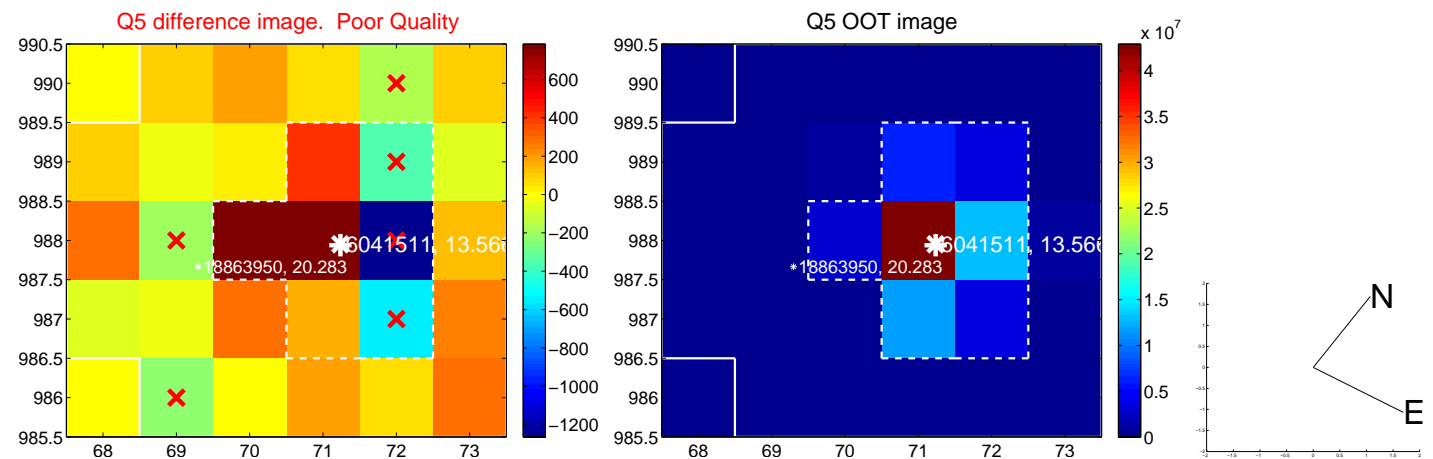


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

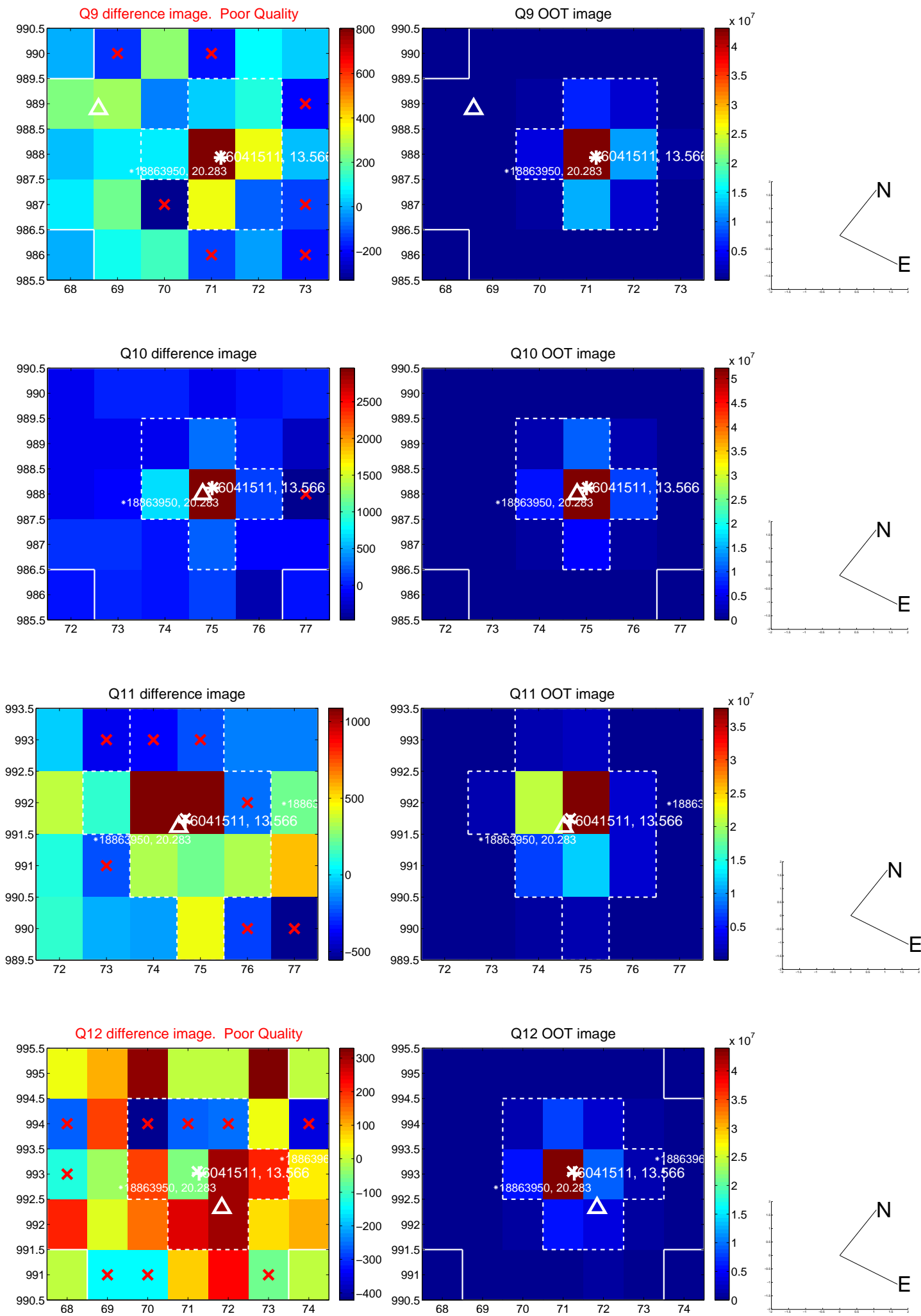


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

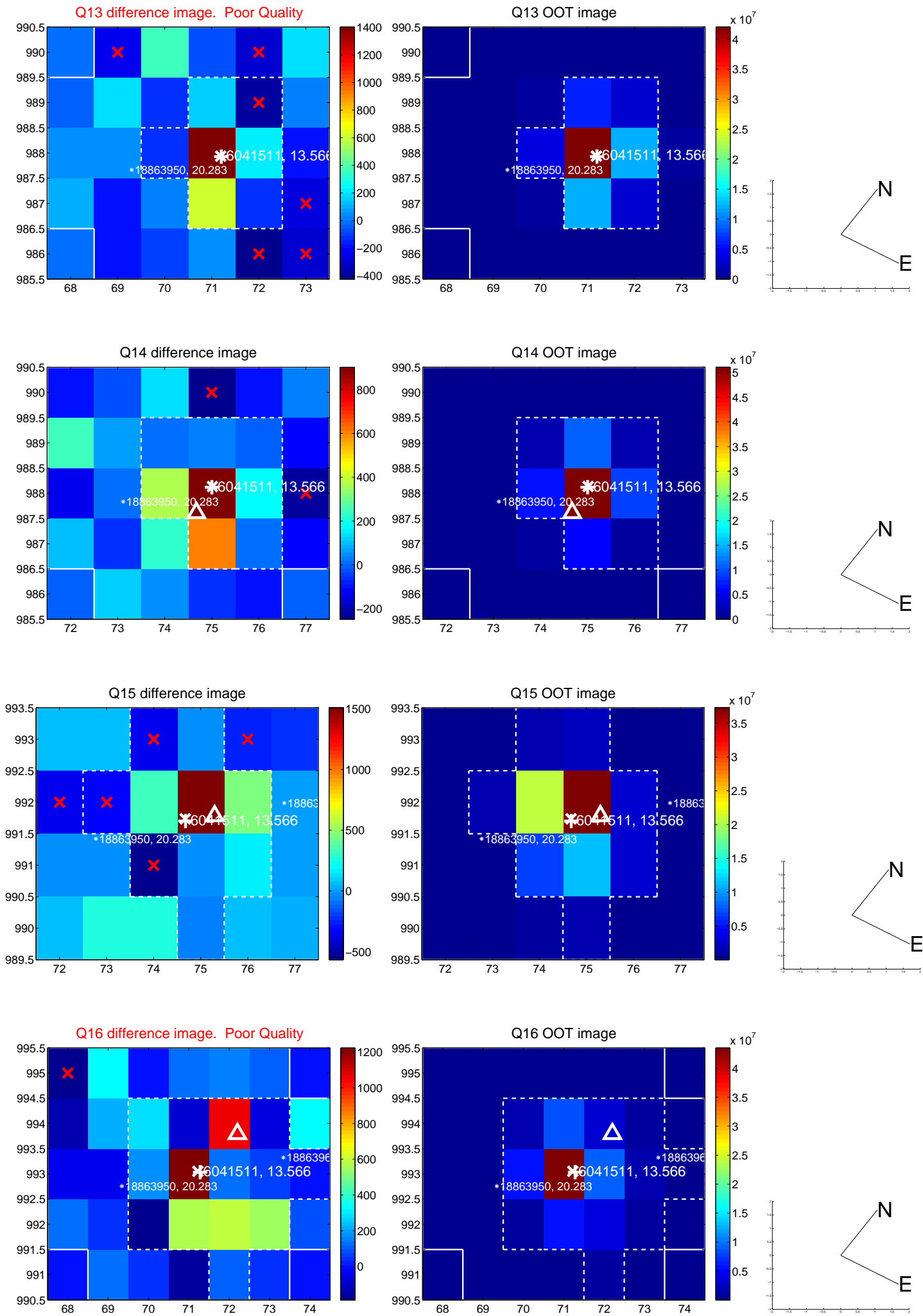




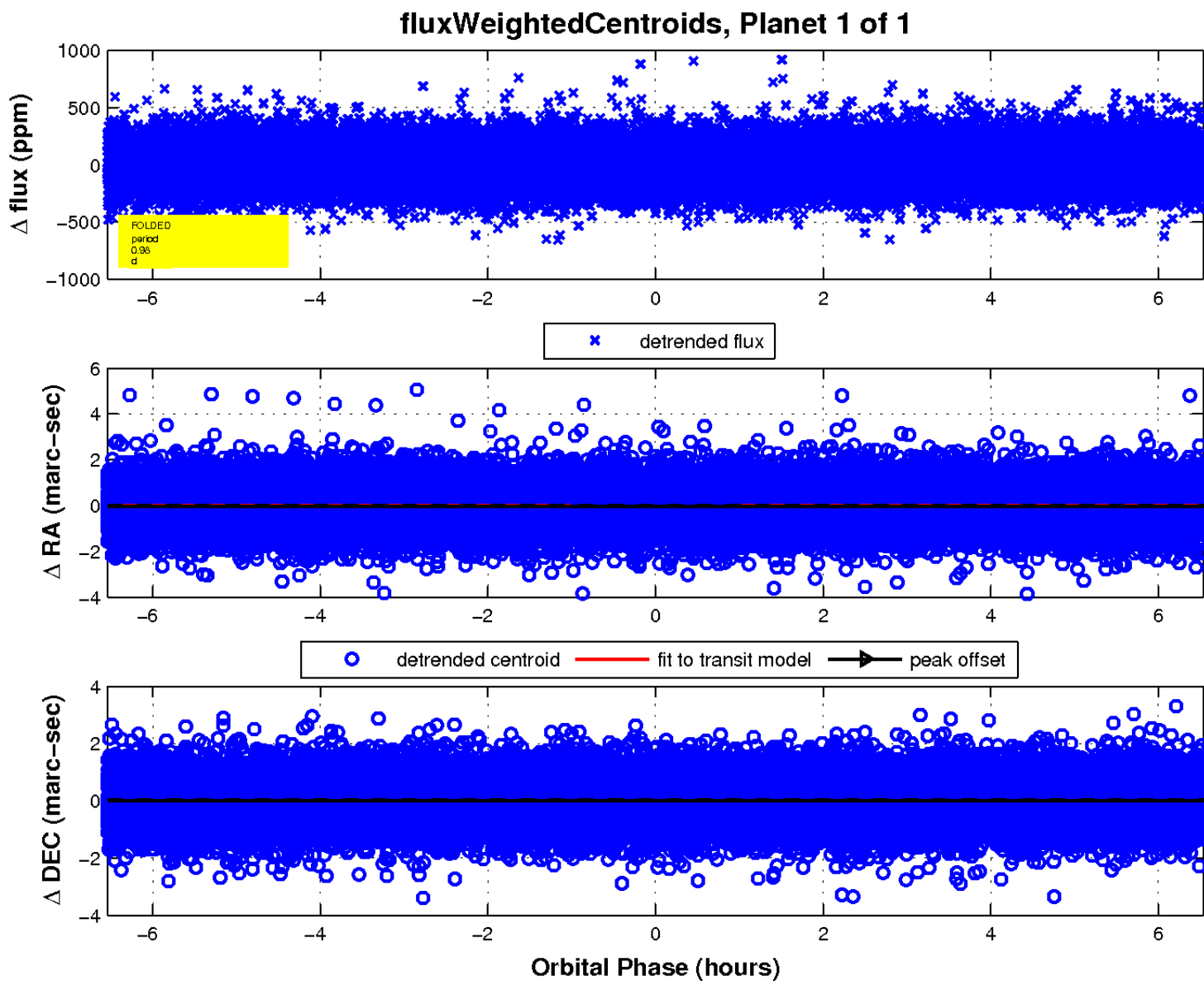
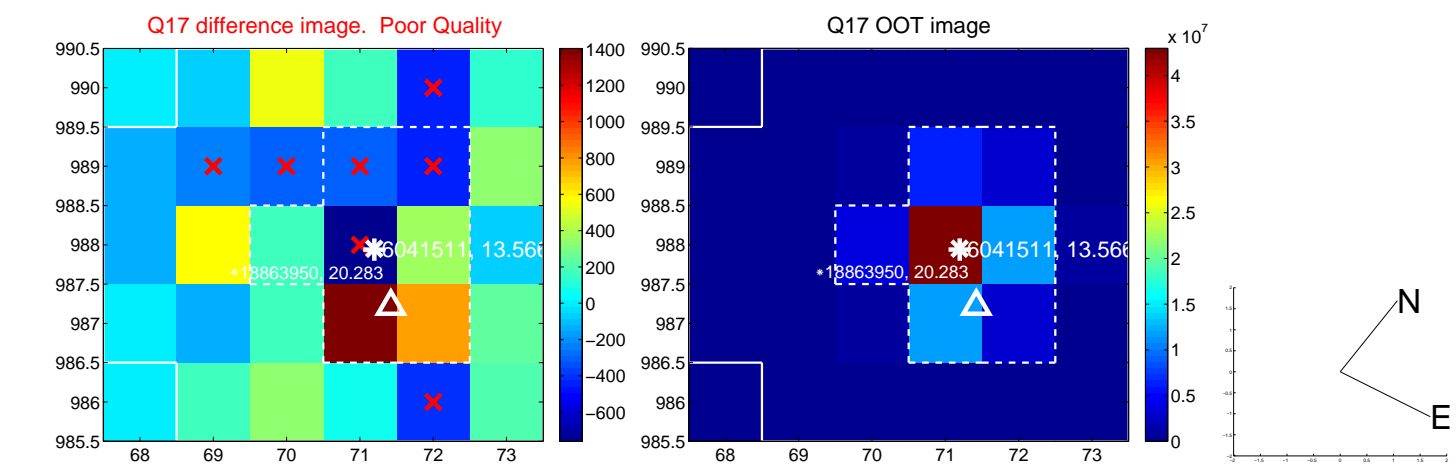
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

