

# KIC 007021124

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007021124-01	OBS	No	0.622465	131.903802	14161.4	7.470	378.2	7.0	3.41	6235	45.80	0.00

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007021124-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—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.

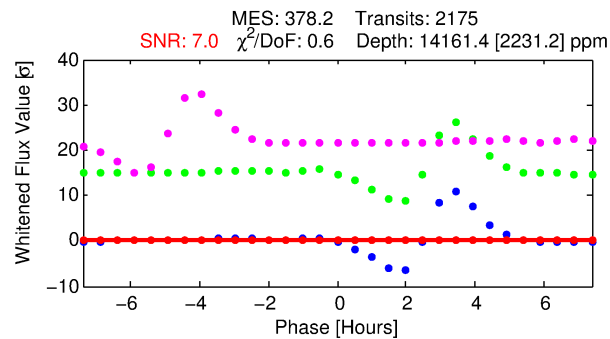
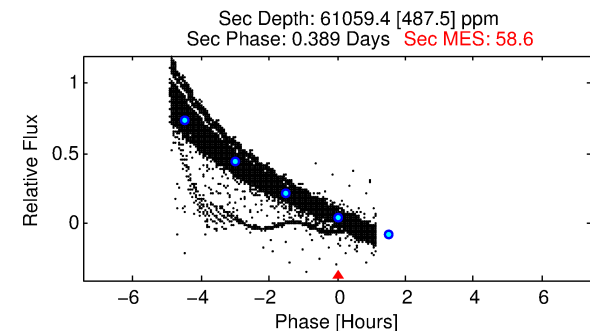
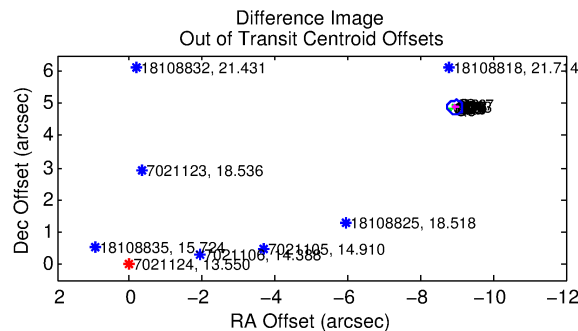
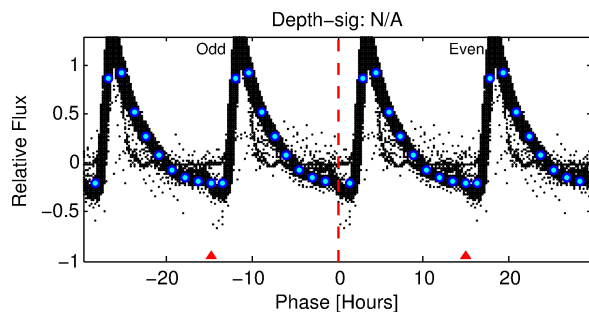
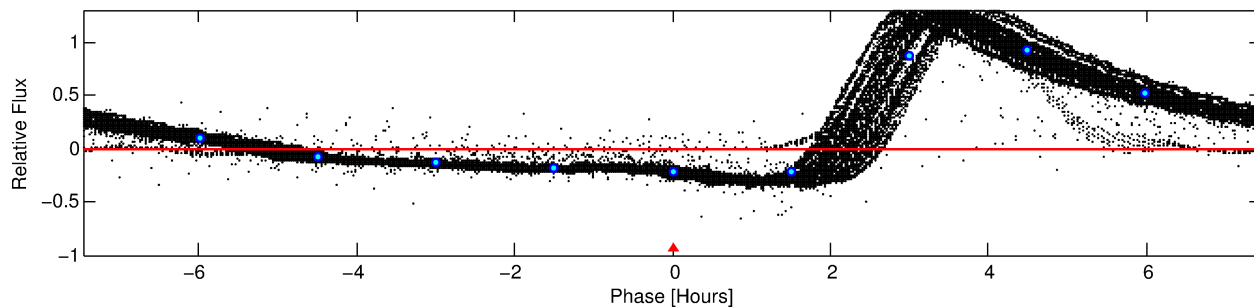
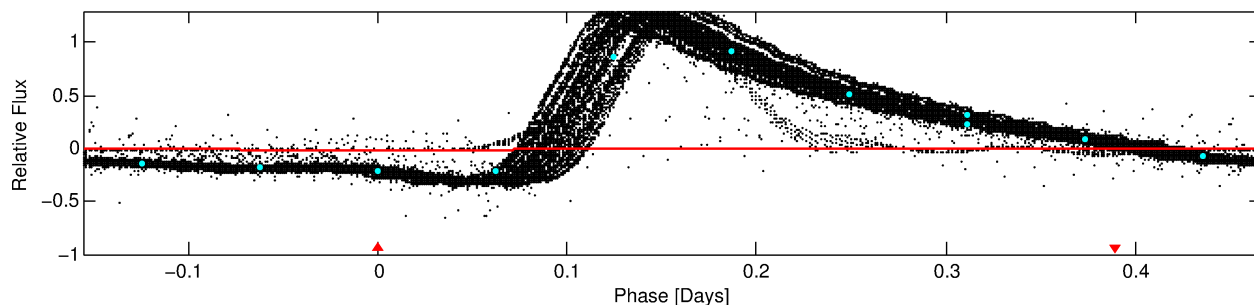
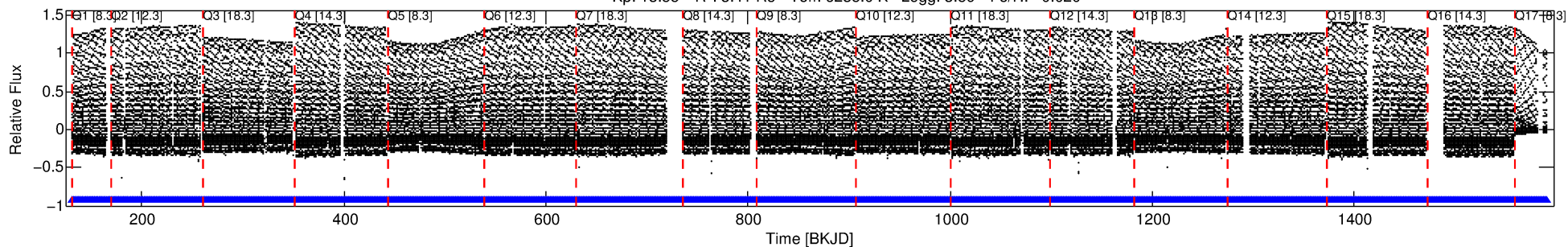
## Ephemeris Match Information For 007021124-01

No Significant Match Found

# DV One-Page Summary

KIC: 7021124 Candidate: 1 of 1 Period: 0.622 d

Kp: 13.55 R\*: 3.41 Rs Teff: 6235.0 K Logg: 3.59 Fe/H: -0.020



## DV Fit Results:

Period = 0.62247 [0.00001] d  
Epoch = 131.9038 [0.0045] BKJD  
Rp/R\* = 0.1232 [0.0095]  
a/R\* = 1.08 [0.01]  
b = 0.83 [0.03]  
Seff = N/A  
Teq = N/A  
Rp = 45.80 [28.79] Re  
a = N/A  
Ag = N/A  
Teff = N/A

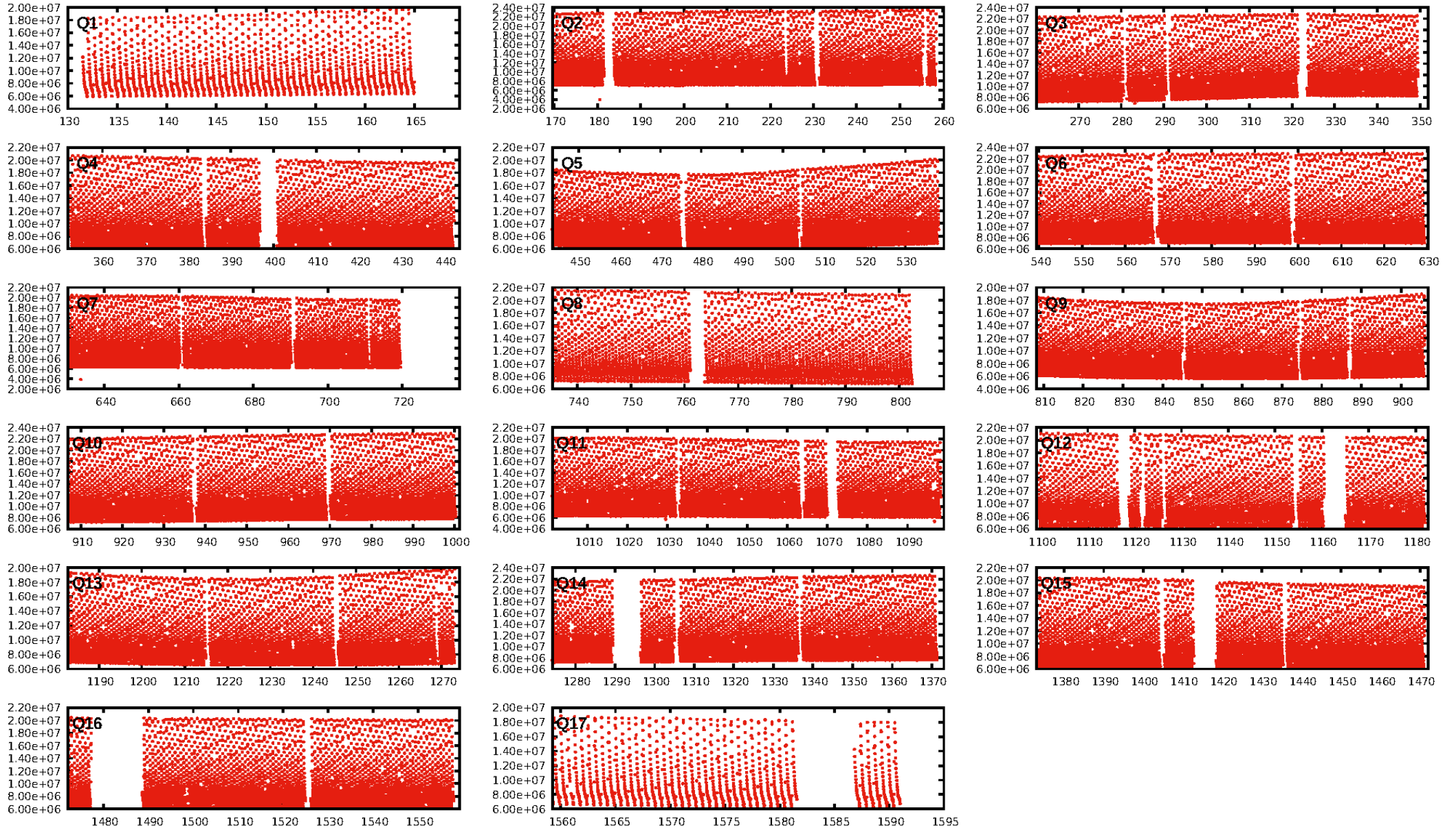
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2077/2077]  
GhostDiagnostic-chr: 1.724  
Centroid-sig: N/A  
Centroid-so: 8.250 arcsec [81.18σ]  
OotOffset-rm: 10.197 arcsec [141.32σ]  
KicOffset-rm: 1.167 arcsec [16.45σ]  
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]

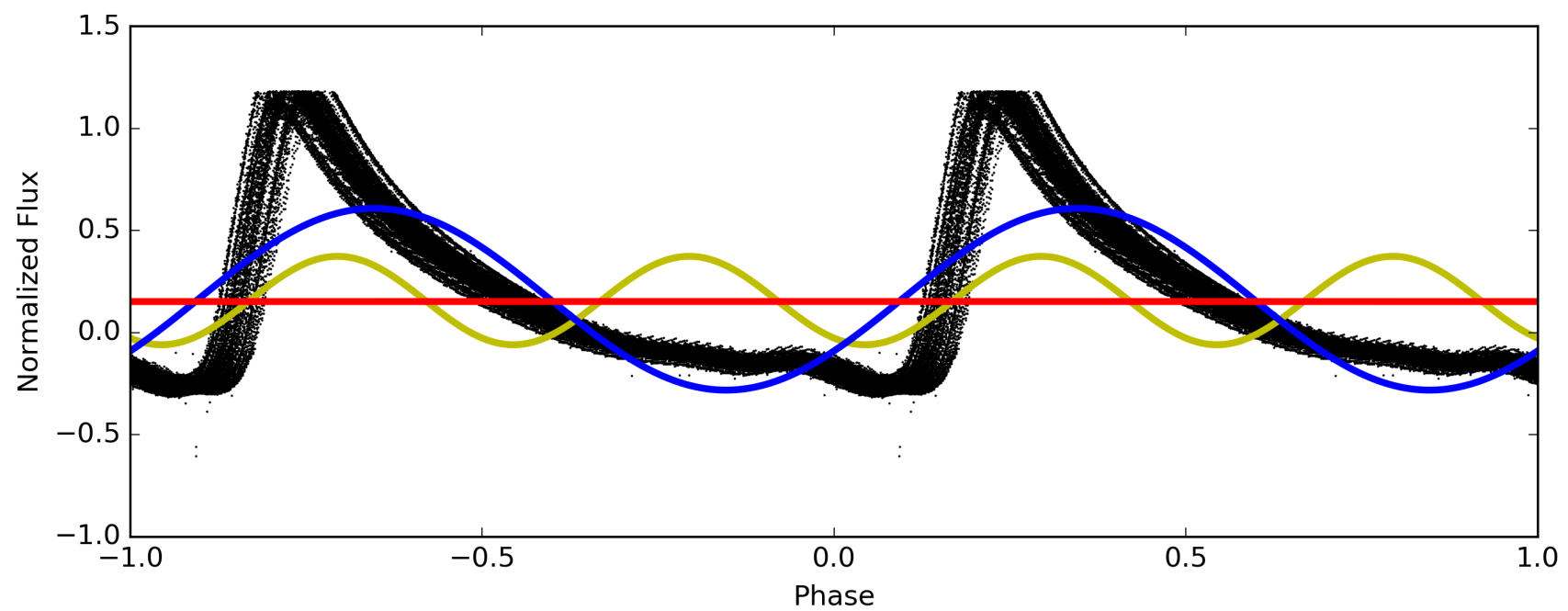
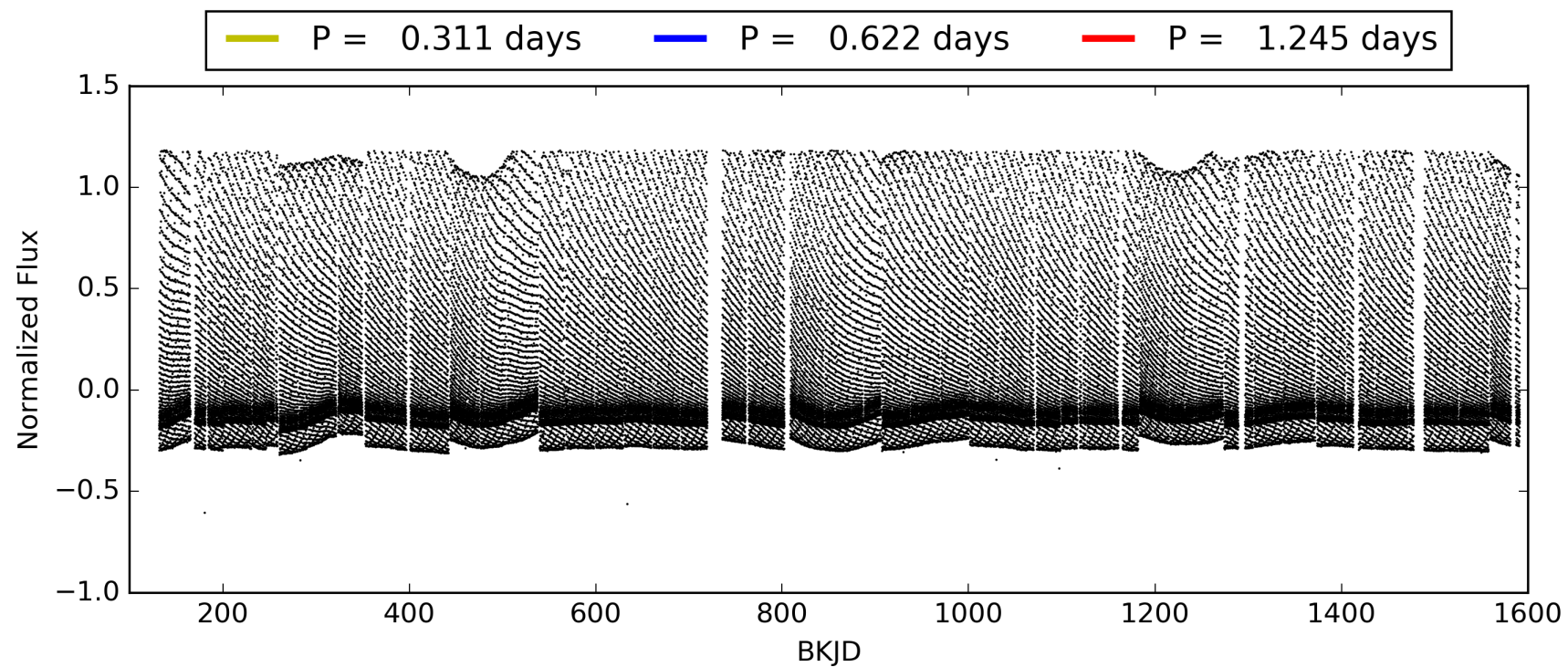
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 03:09:09 Z

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

# TCE 007021124-01, PDC Light Curves

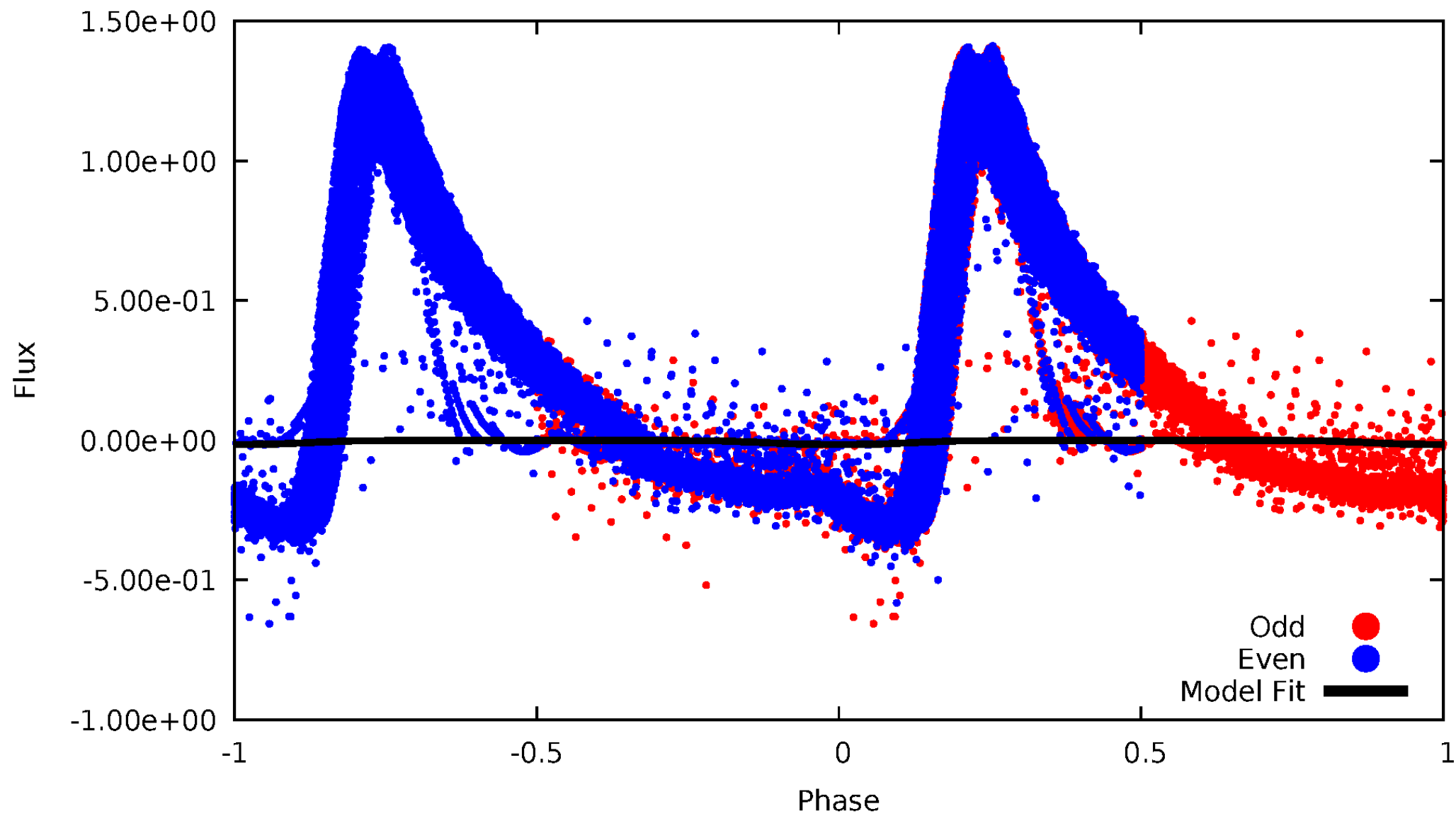


TCE 007021124-01



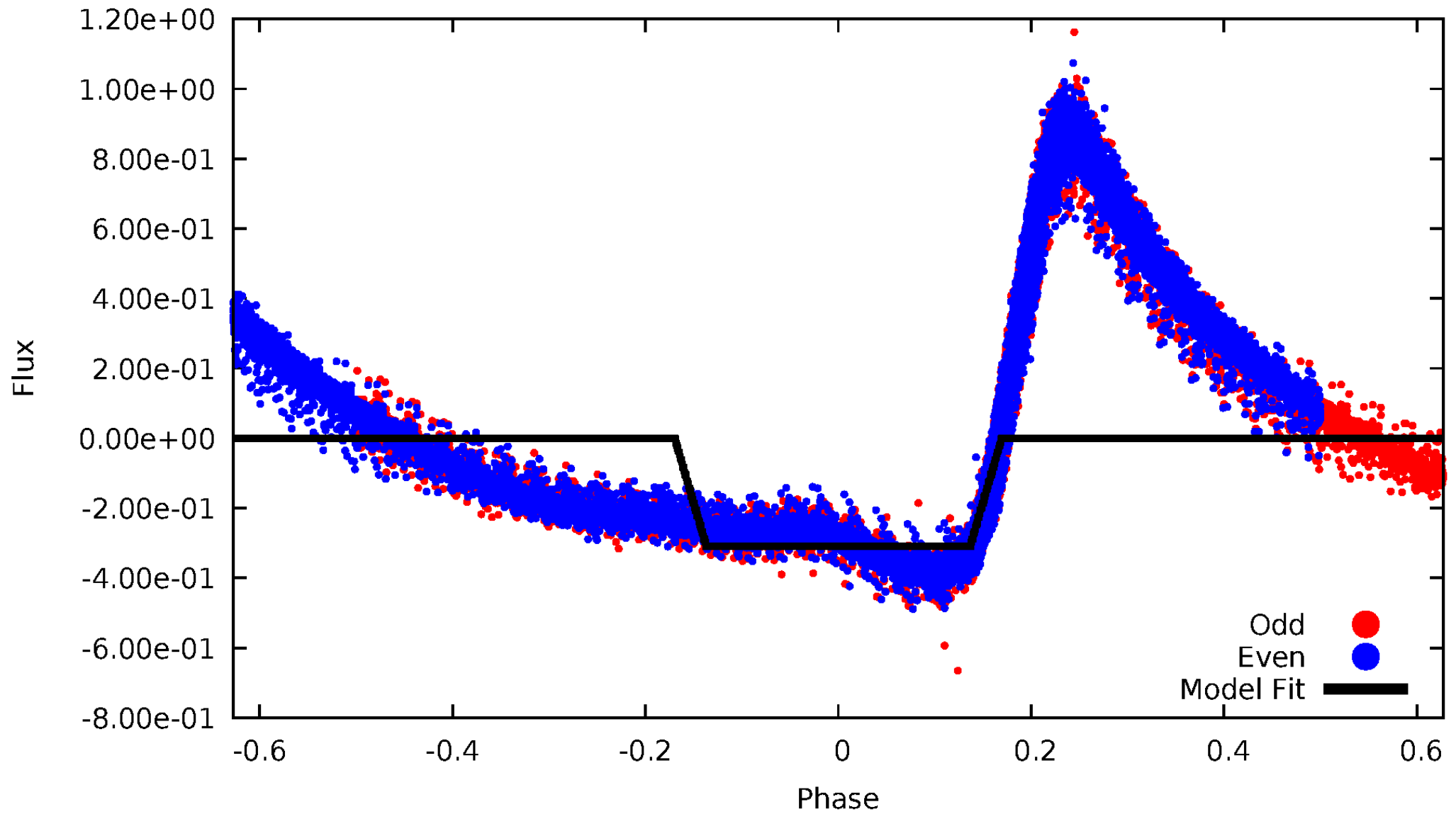
# DV Odd/Even

TCE 007021124-01



# ALT Odd/Even

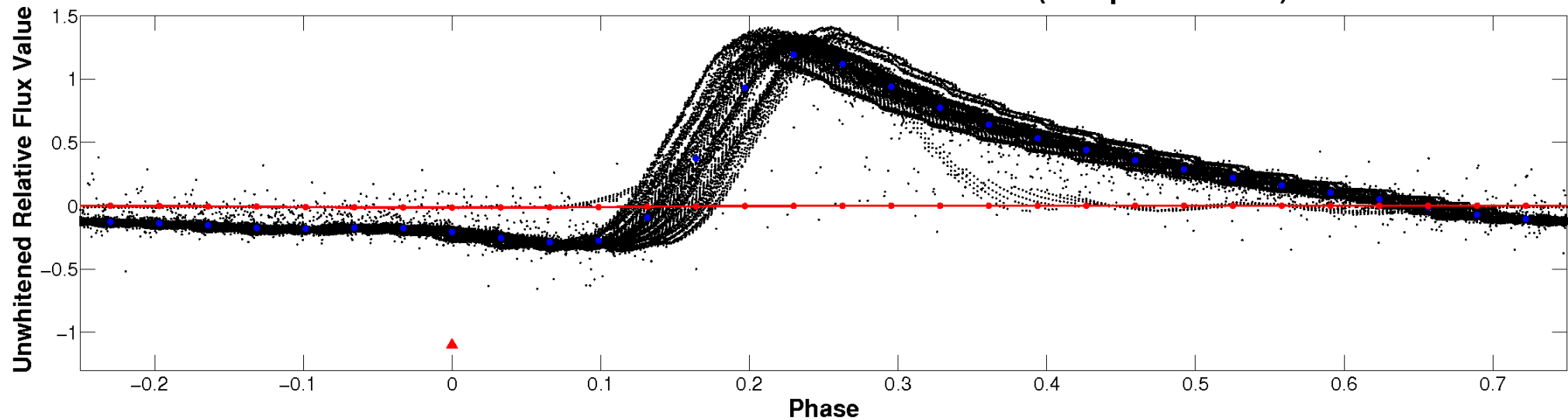
TCE 007021124-01



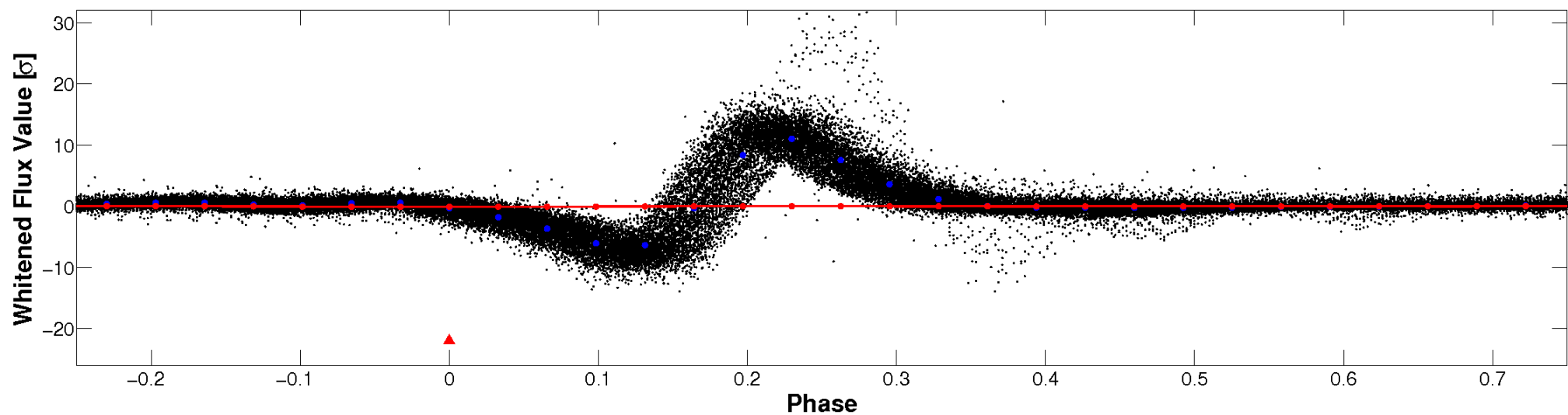


# Non-Whitened Vs. Whitened Light Curve

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

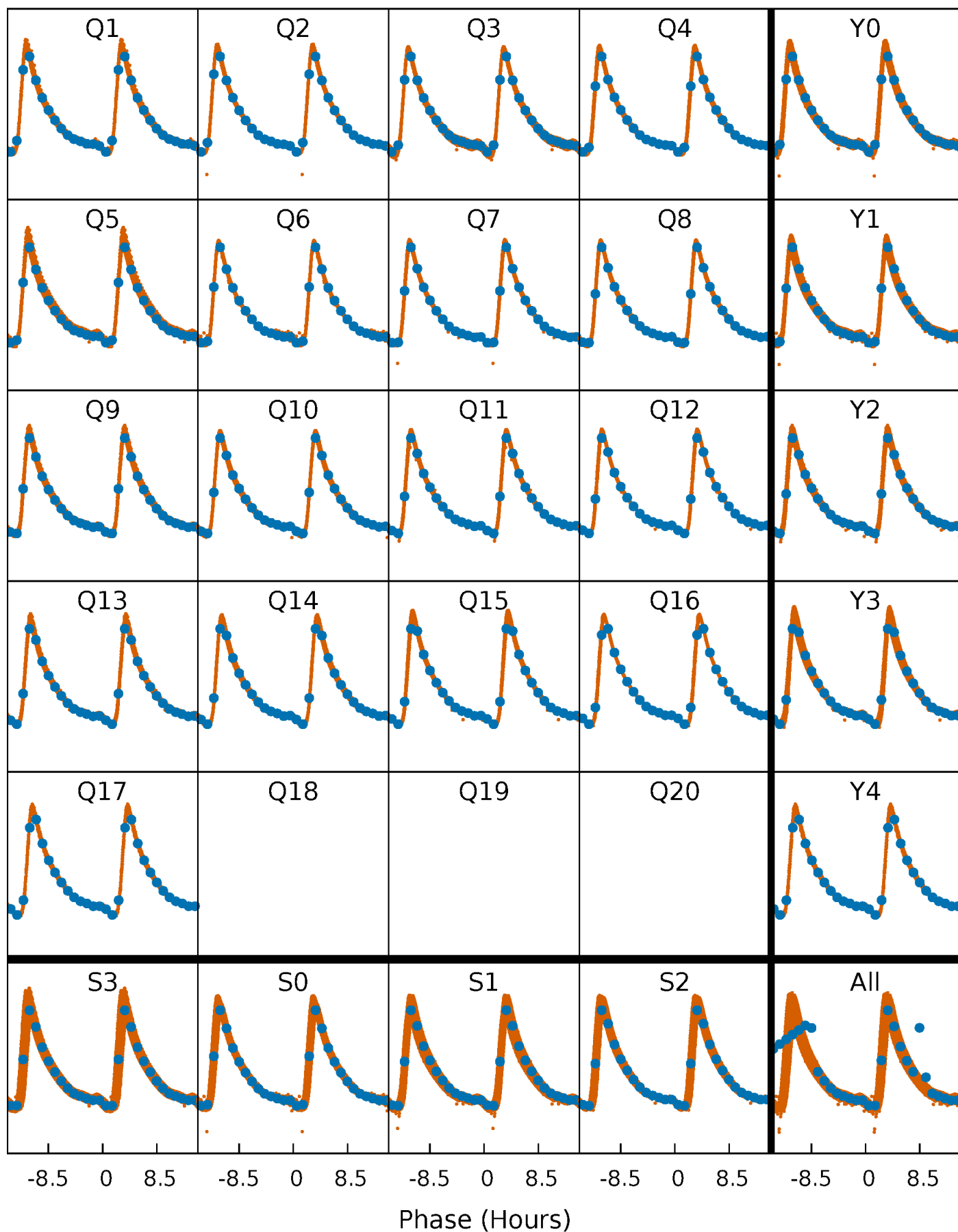


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

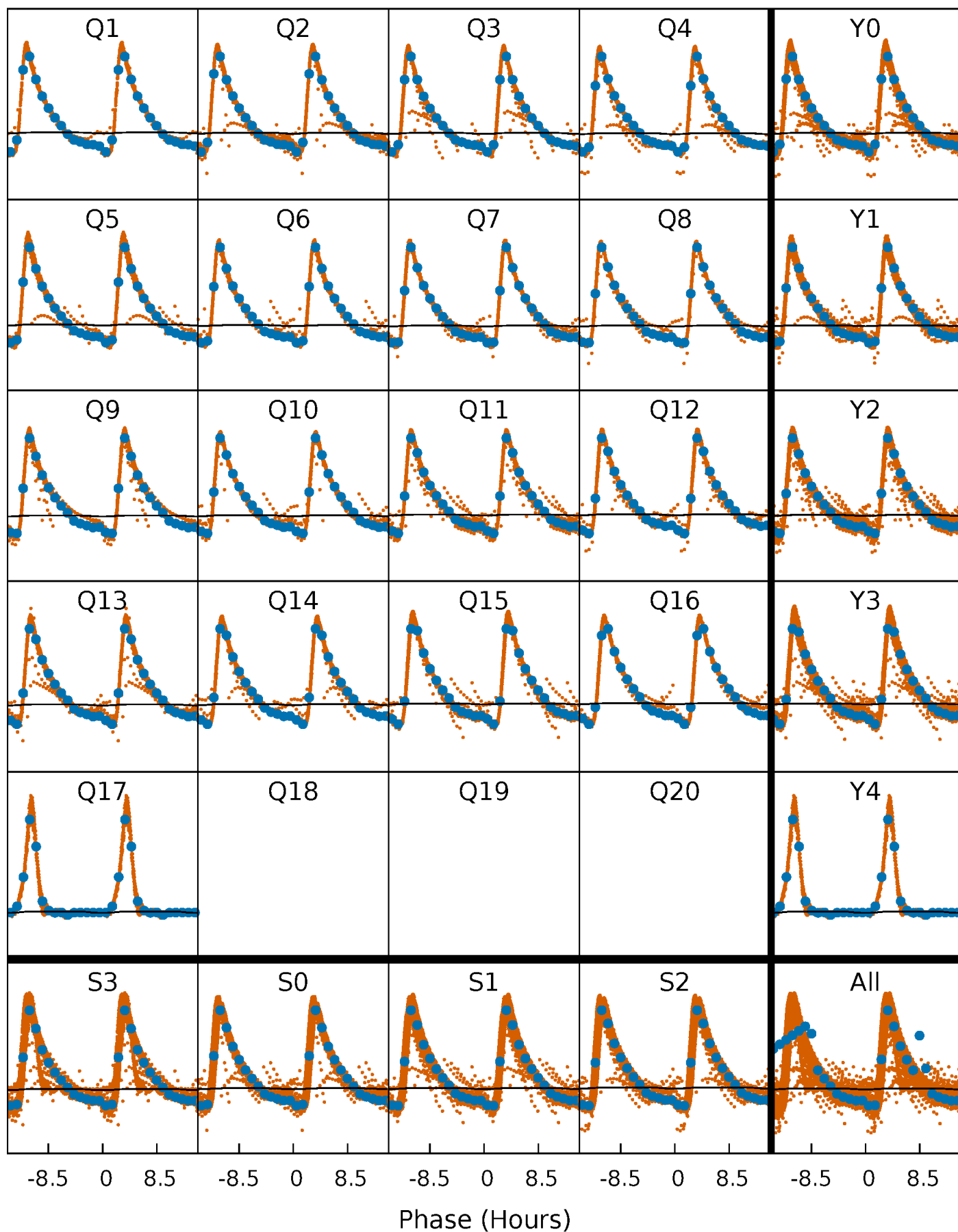
TCE 007021124-01 P= 0.622465 Days  $T_0=131.903802$  (BKJD)





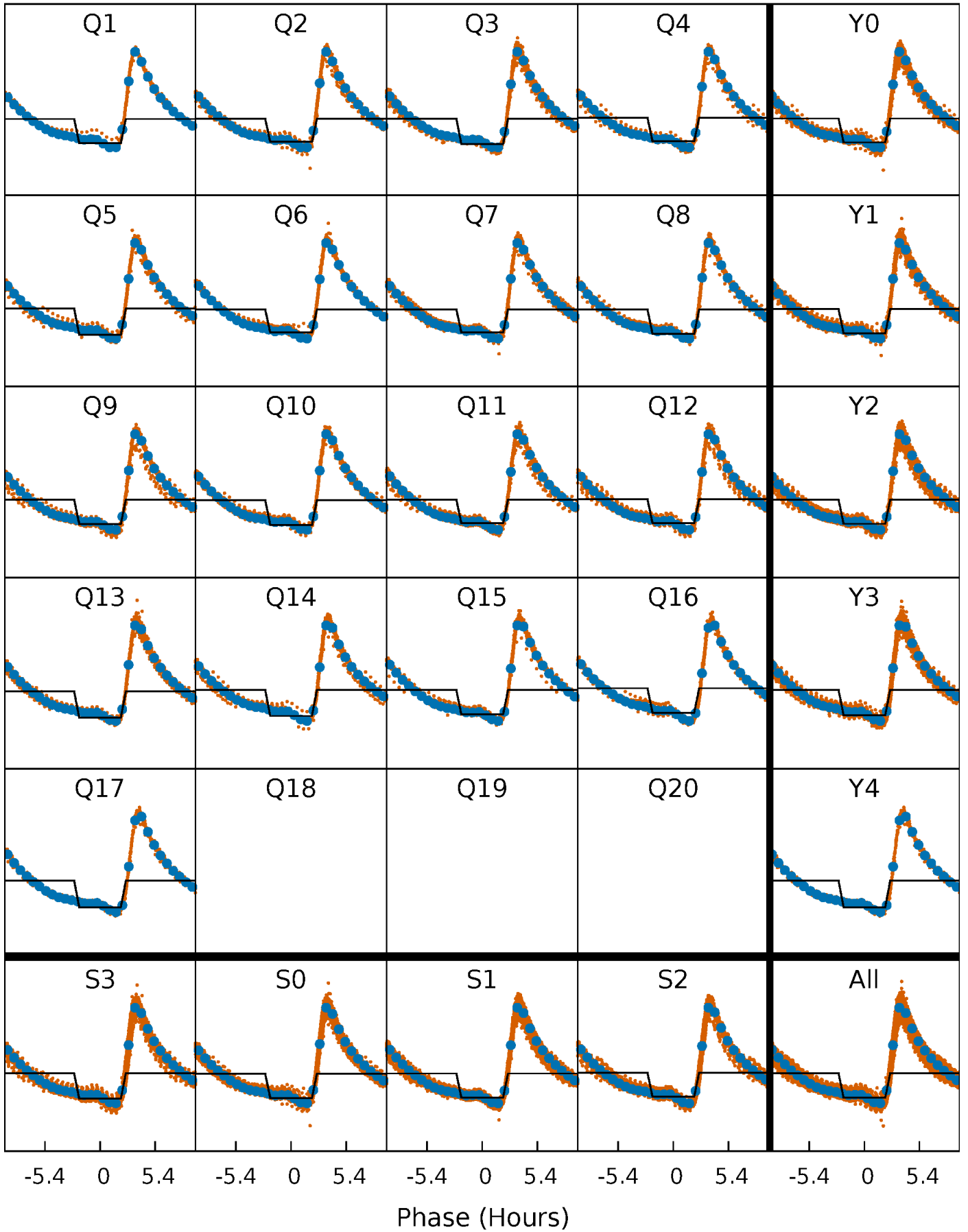
# DV Quarter-Phased Transit Curves

TCE 007021124-01   P= 0.622465 Days    $T_0=131.903802$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

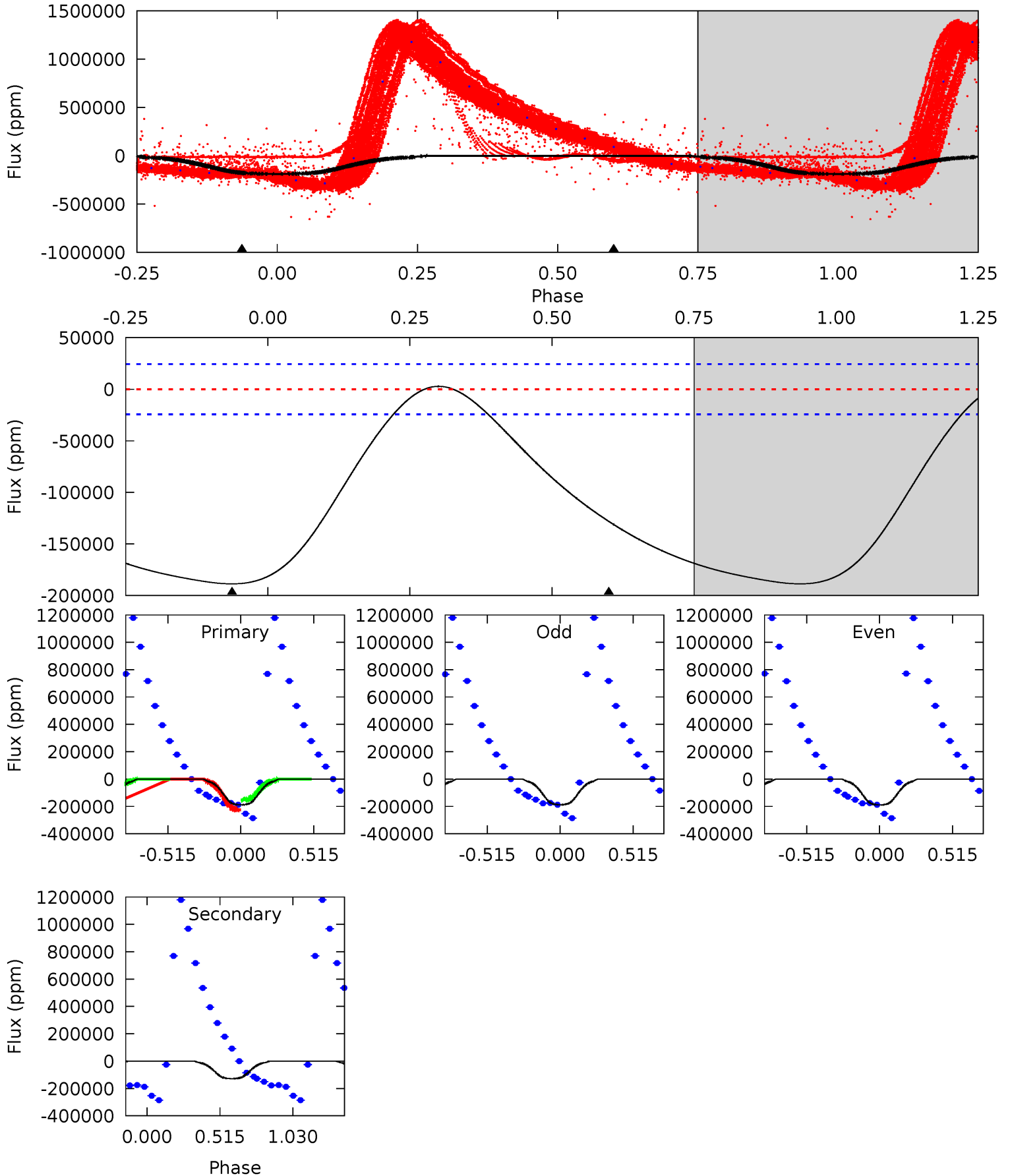
TCE 007021124-01 P= 0.622478 Days  $T_0=131.883304$  (BKJD)



# DV Model-Shift Uniqueness Test

007021124-01, P = 0.622465 Days, E = 131.281337 Days

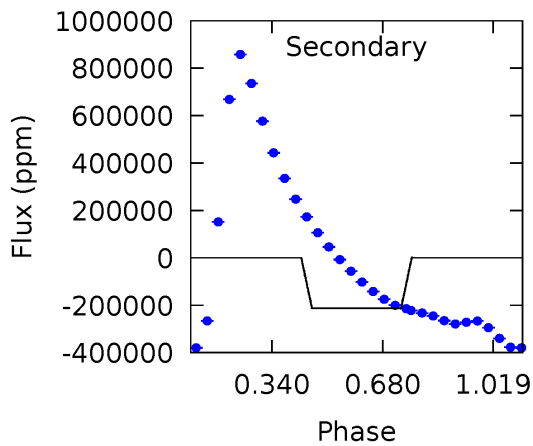
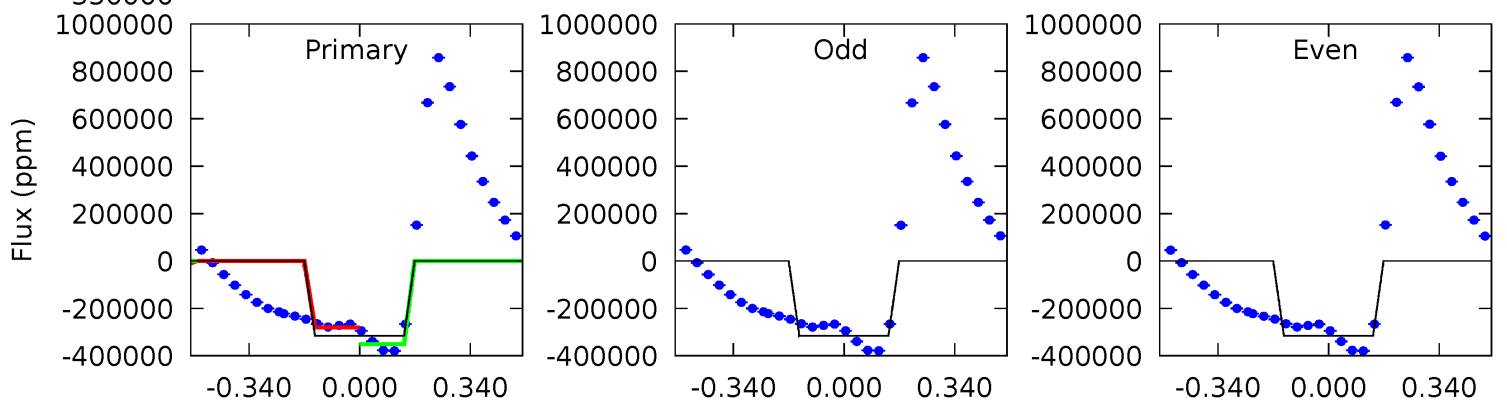
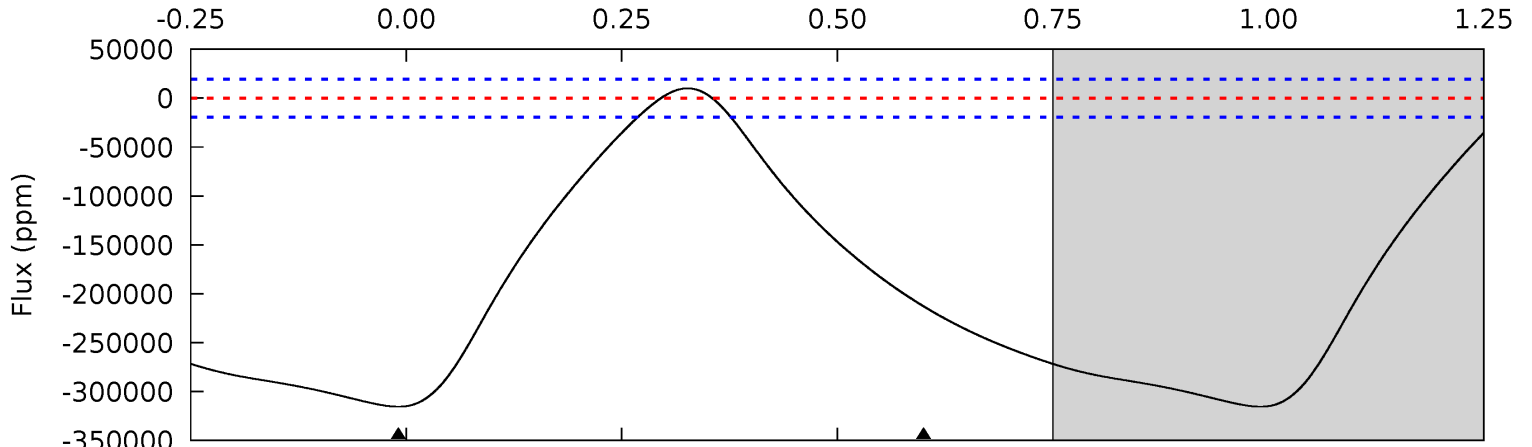
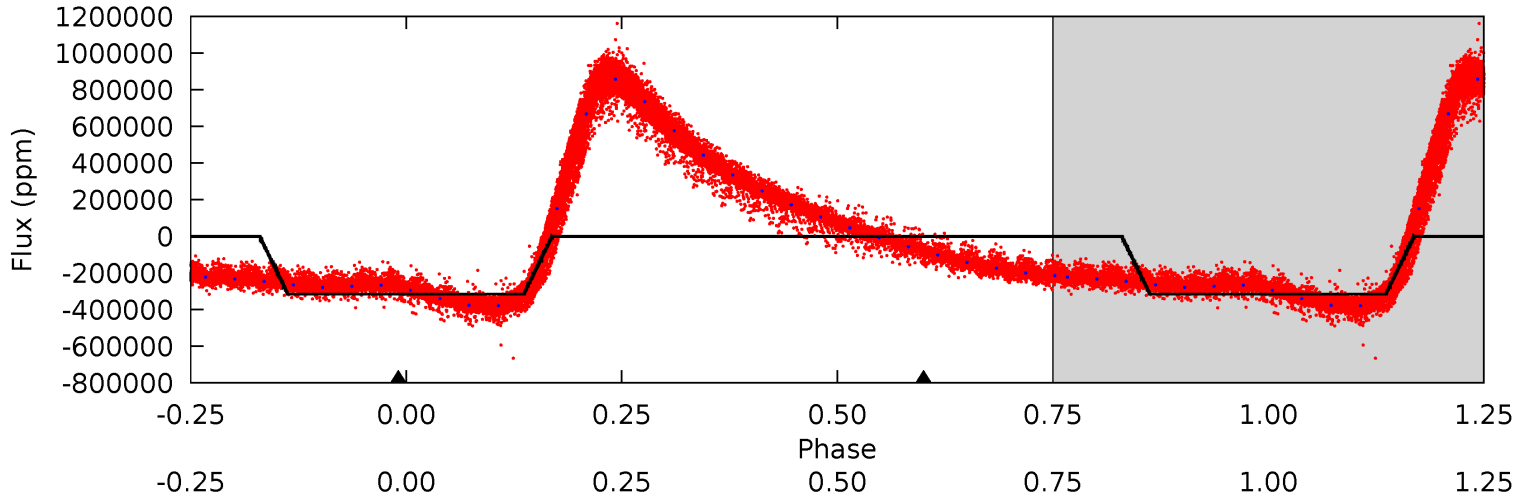
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.6	22.2	0	0	4.21	0.65	1.20	32.6	32.6	22.2	22.2	0.10	0.66	0.01	8.15



# Alt Model-Shift Uniqueness Test

007021124-01, P = 0.622478 Days, E = 131.260826 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
70.2	47.3	0	0	4.30	0.95	3.51	70.2	70.2	47.3	47.3	0.02	0.99	0.03	33.3



### Stellar Parameters For KIC 007021124

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6235^{+195}_{-217}$	$3.587^{+0.646}_{-0.114}$	$-0.020^{+0.300}_{-0.250}$	$3.406^{+0.500}_{-2.125}$	$1.636^{+0.179}_{-0.500}$	$0.058^{+0.579}_{-0.018}$
	+3%/-3%	+18%/-3%	+1500%/-1250%	+15%/-62%	+11%/-31%	+993%/-32%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 007021124-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	-128151±5784	$43.44^{+7.19}_{-14.36}$	$5311^{+416}_{-878}$	$13147^{+1288}_{-1121}$	$12^{+12}_{-3}$
Alt.	-212760±4494	$204.96^{+22.27}_{-70.01}$	$5328^{+423}_{-827}$	$5567^{+270}_{-238}$	$1.038^{+1.033}_{-0.218}$

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

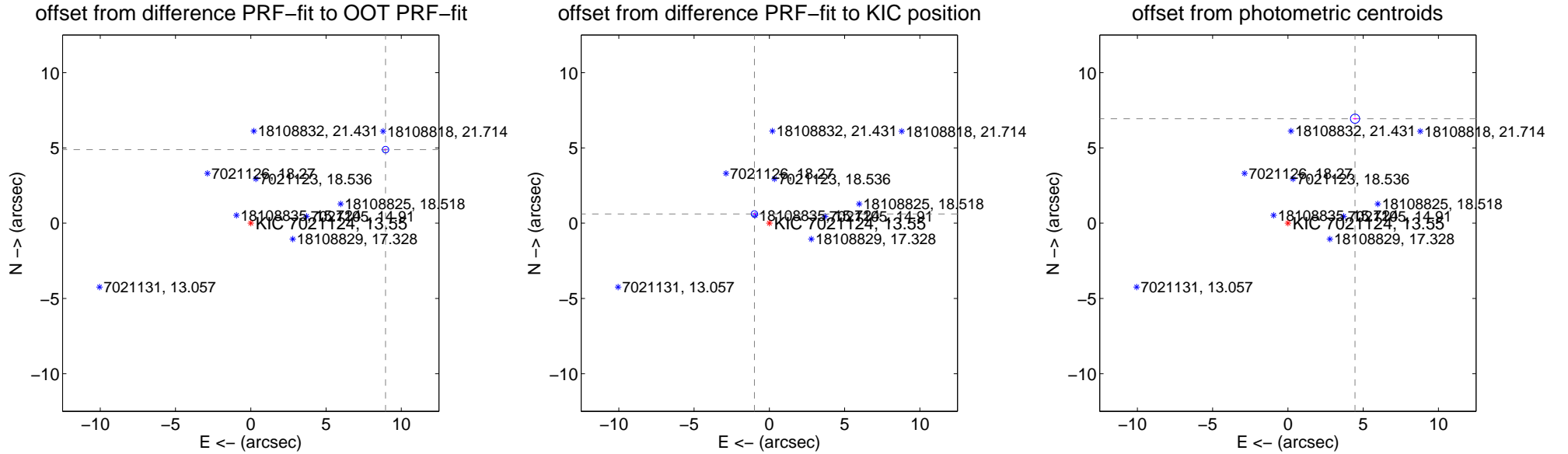
## DV Centroid Data

Supplemental centroid analysis for 007021124-01. Kepler magnitude: 13.55. Transit SNR 7.00

There are 17 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 10.85 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

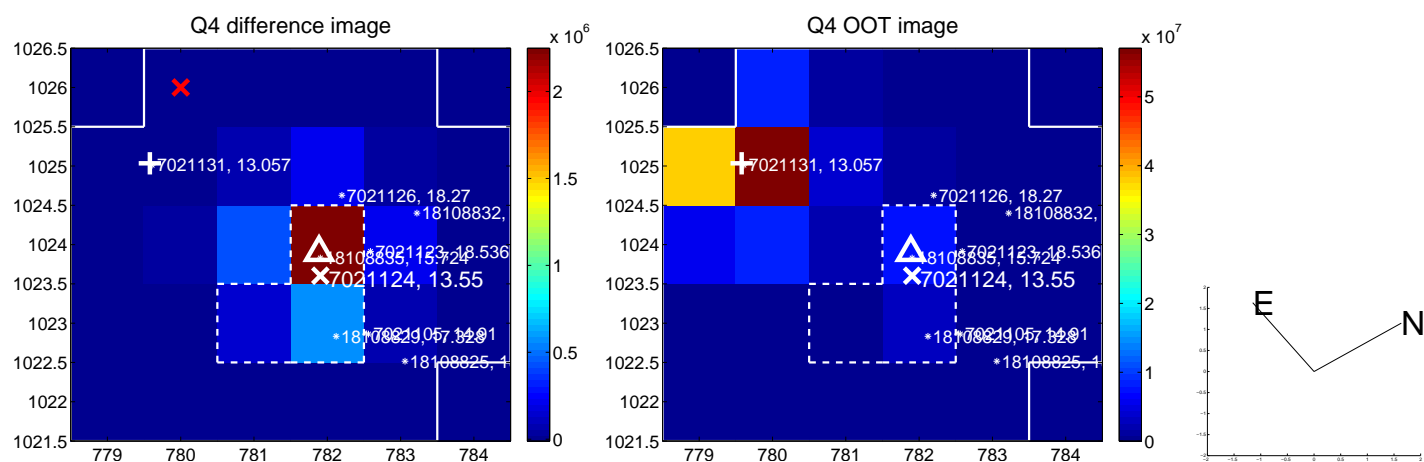
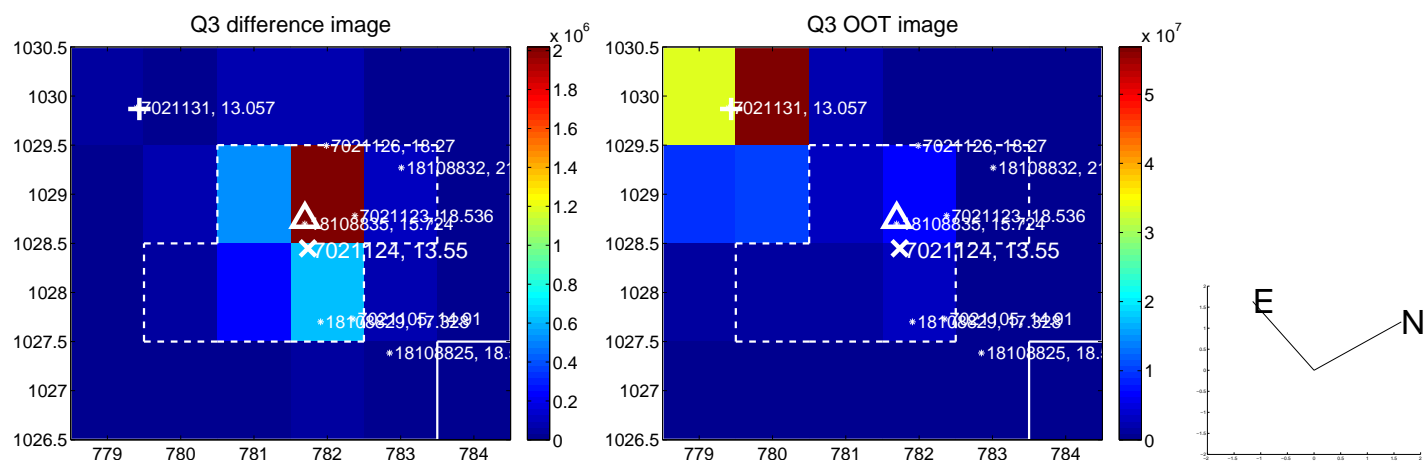
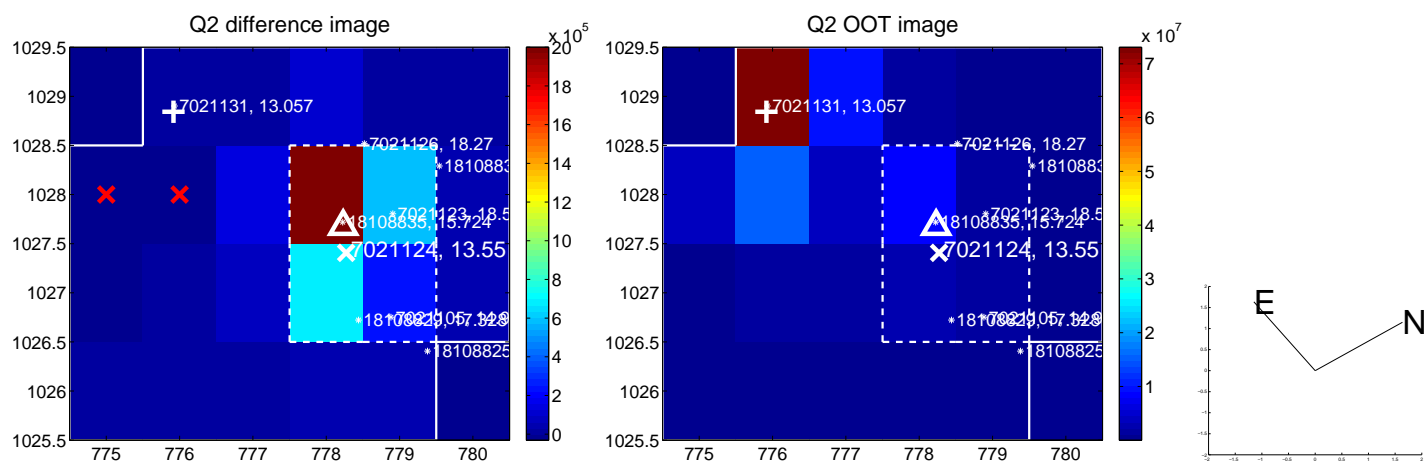
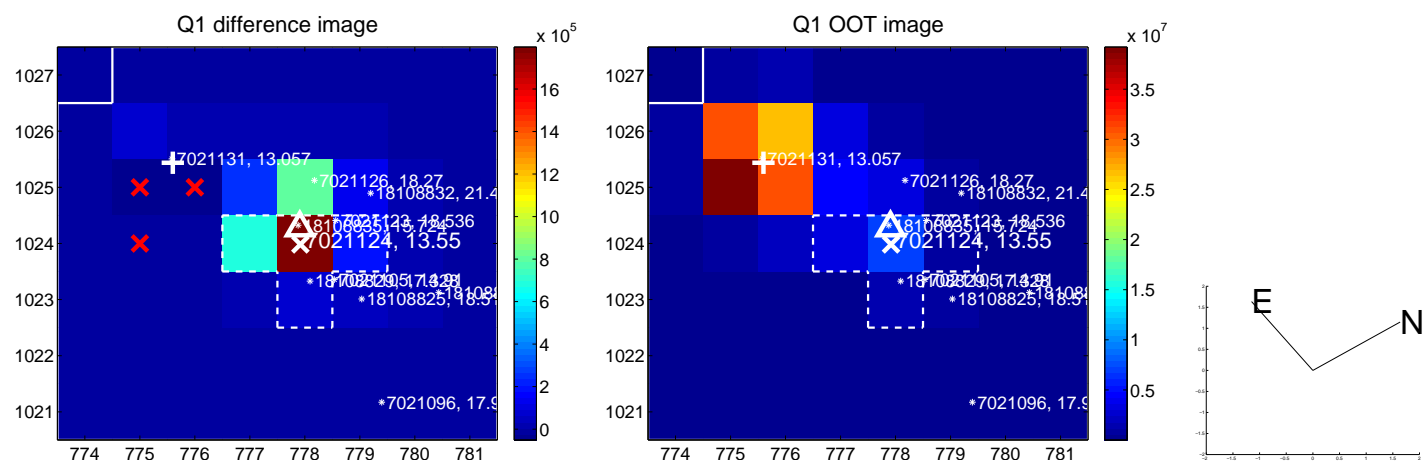
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$10.197 \pm 0.072$	141.32	$-8.951 \pm 0.072$	$4.885 \pm 0.068$
PRF-fit source offset from KIC position	$1.167 \pm 0.071$	16.45	$0.992 \pm 0.071$	$0.614 \pm 0.070$
photometric centroid source offset	$8.25 \pm 0.10$	81.18	$-4.46 \pm 0.15$	$6.94 \pm 0.07$



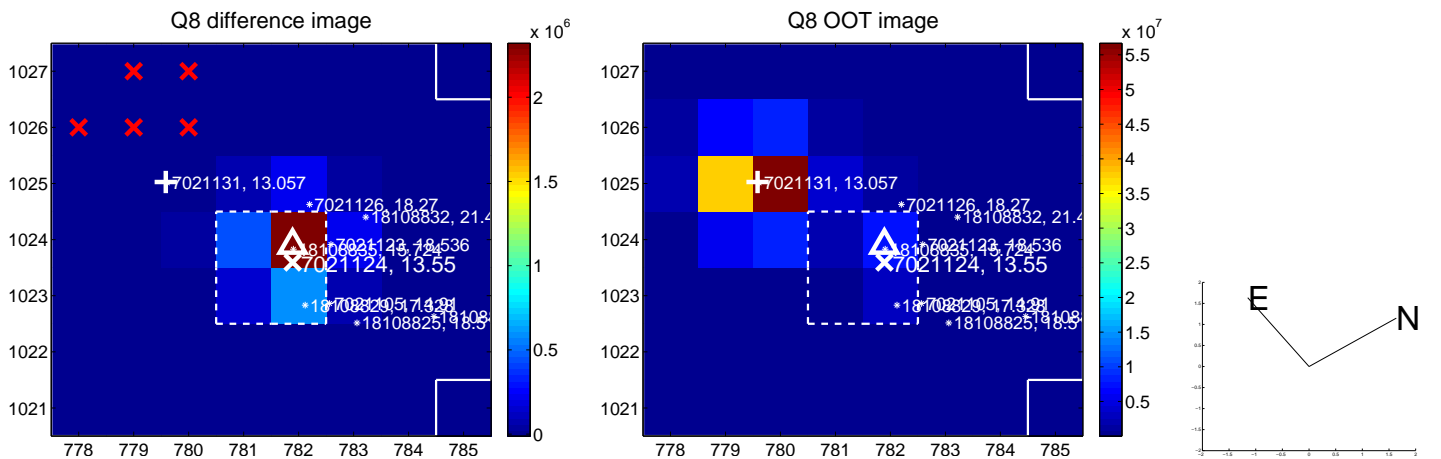
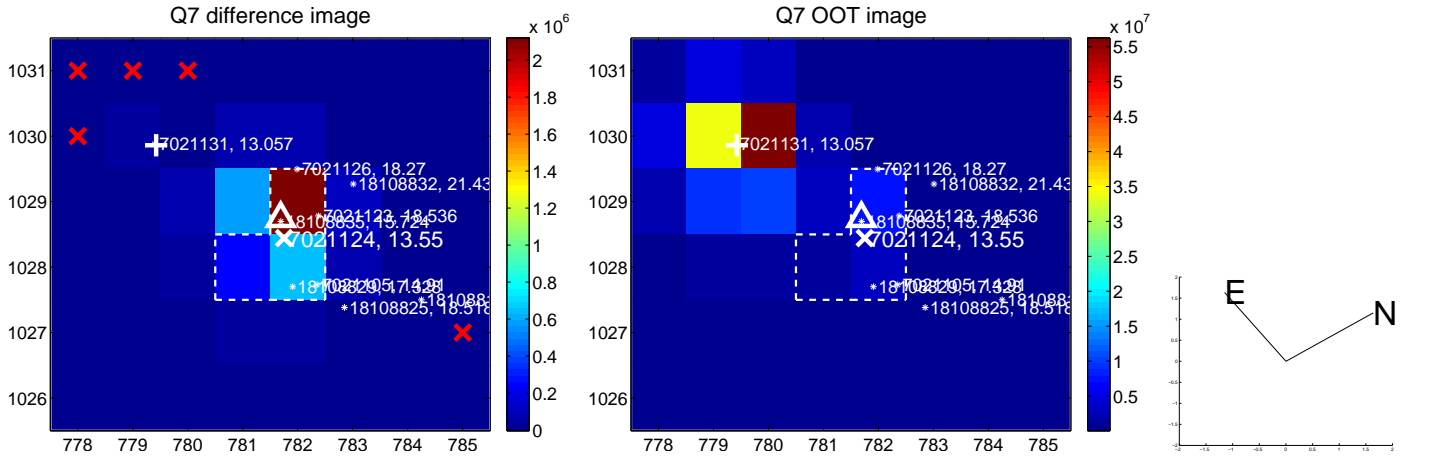
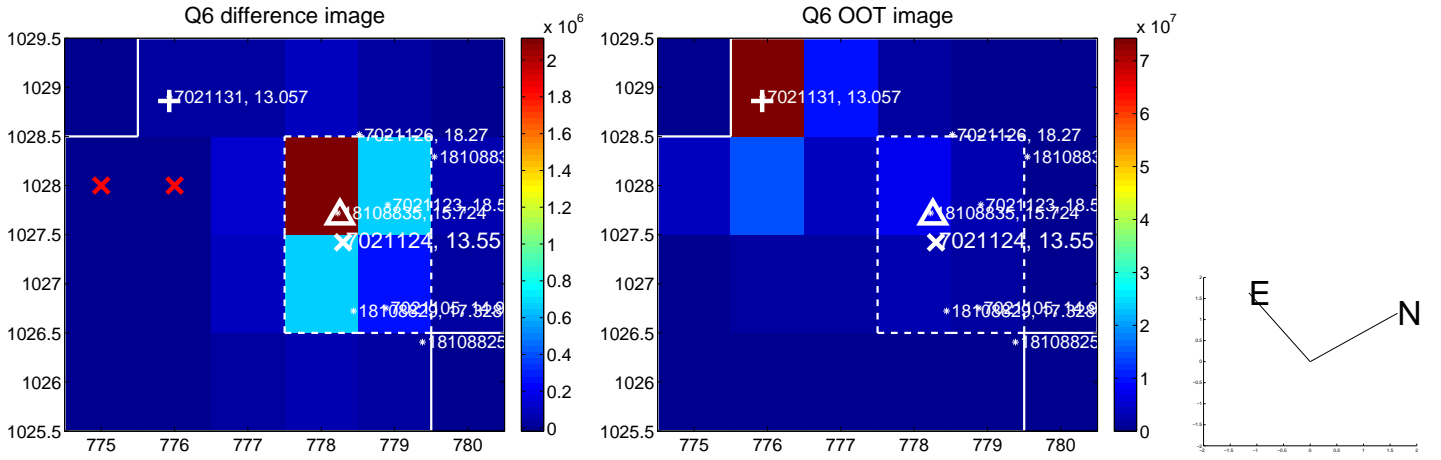
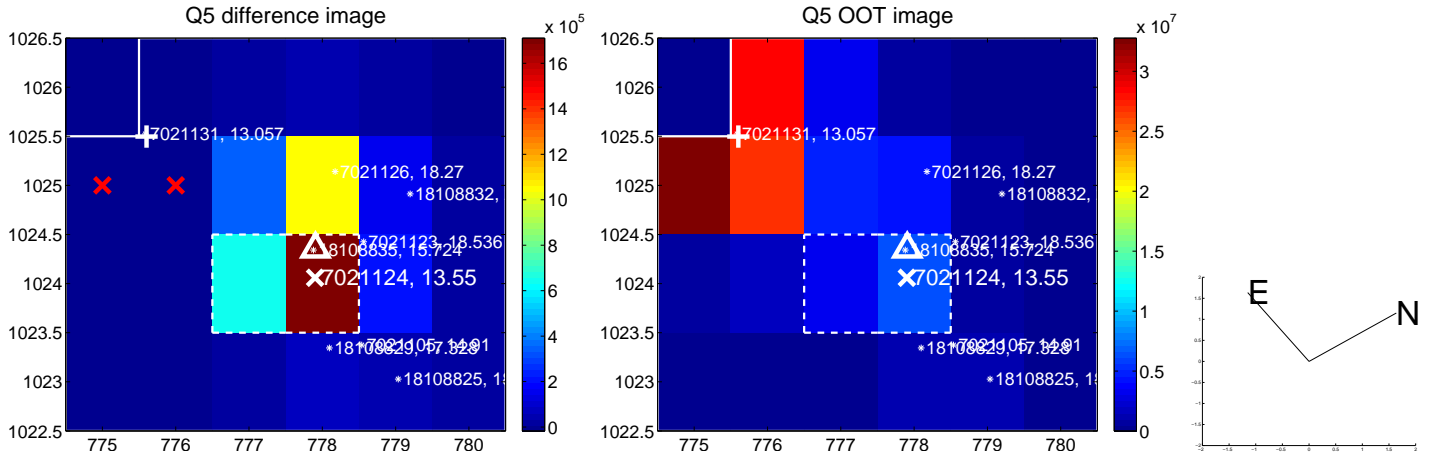
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



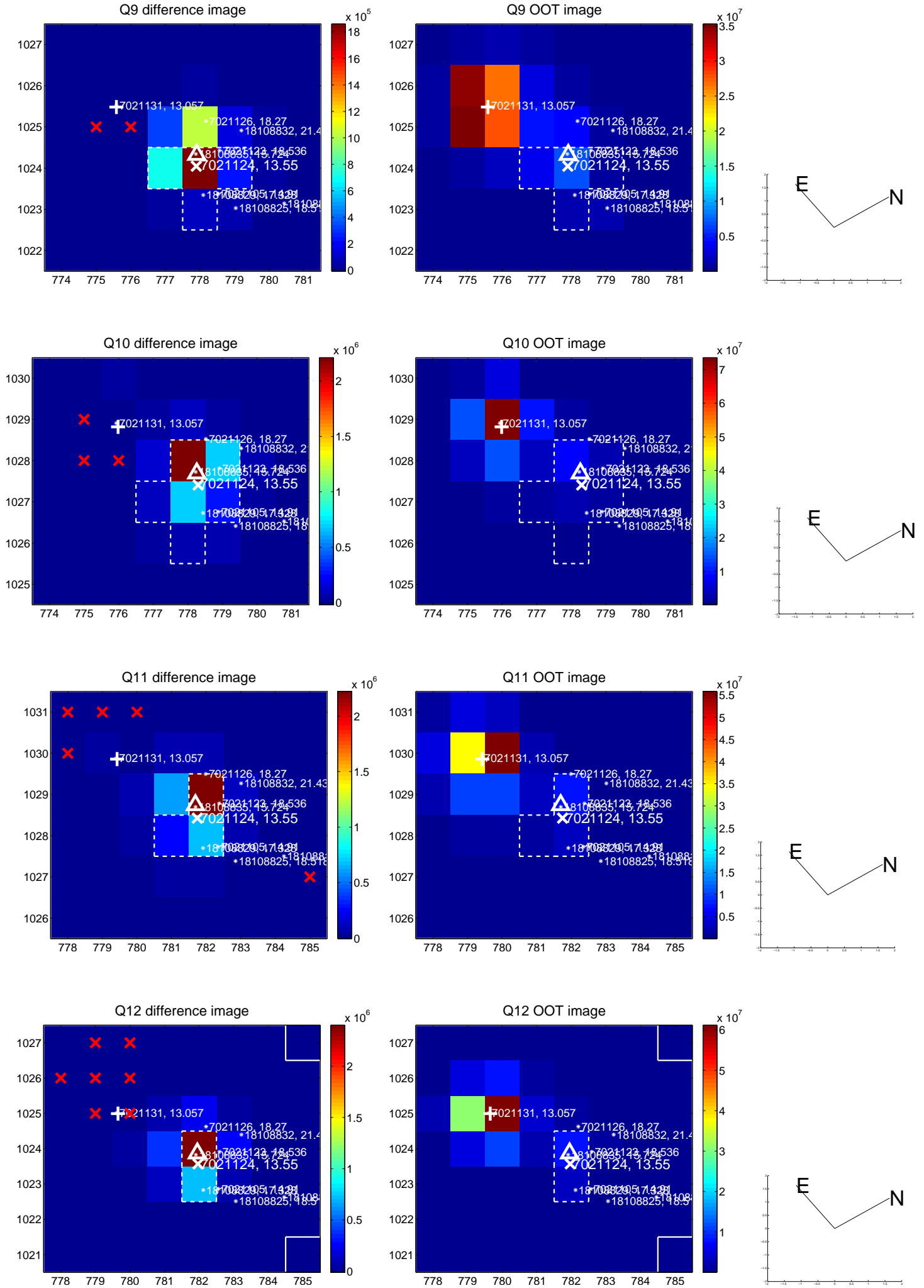
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



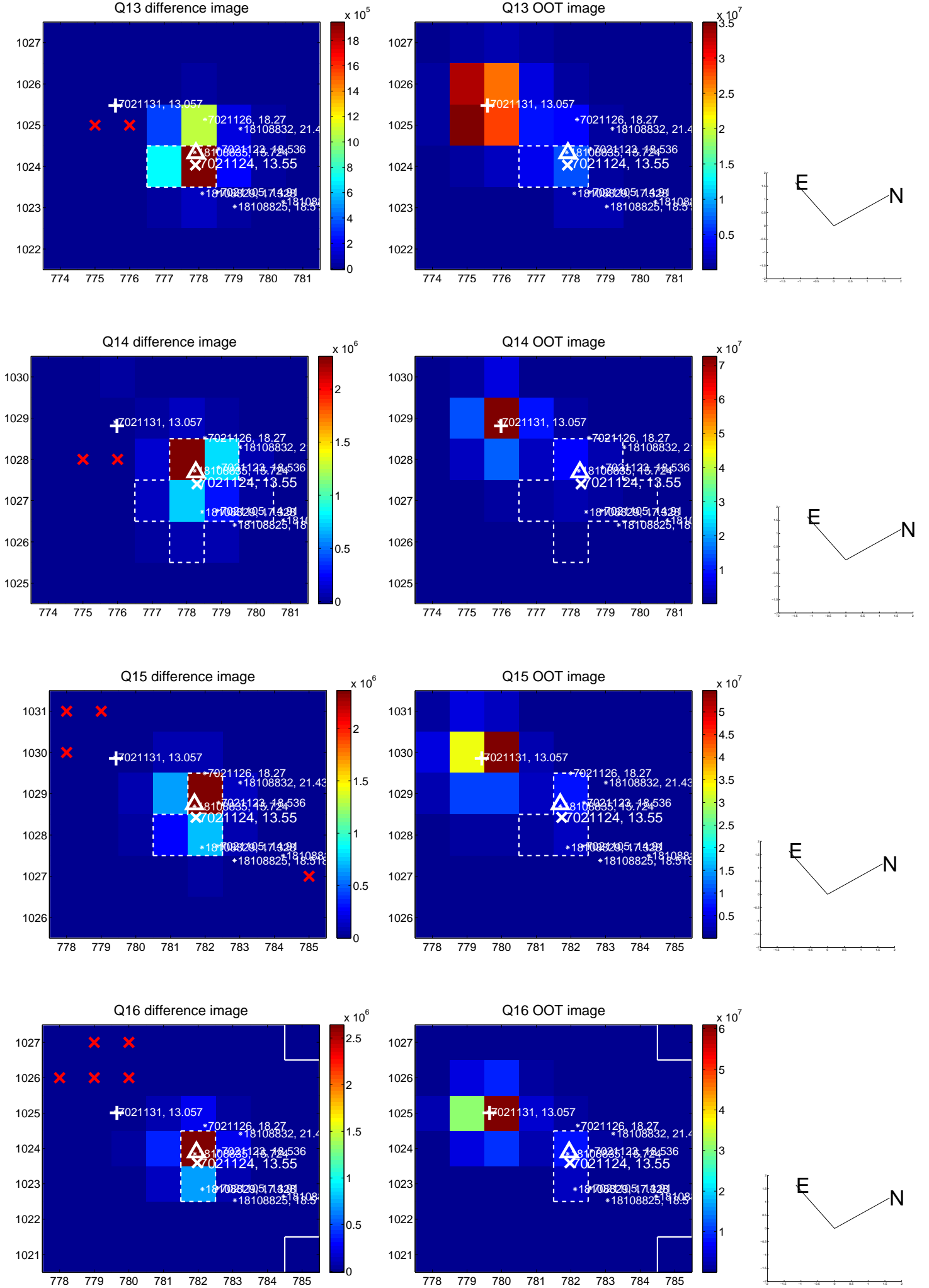
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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





UKIRT Image

