

# KIC 005561278

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005561278-01	OBS	1621.01	20.310502	146.824045	163.4	5.470	32.2	34.0	1.88	6065	2.73	178.20

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005561278-01	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 005561278-01

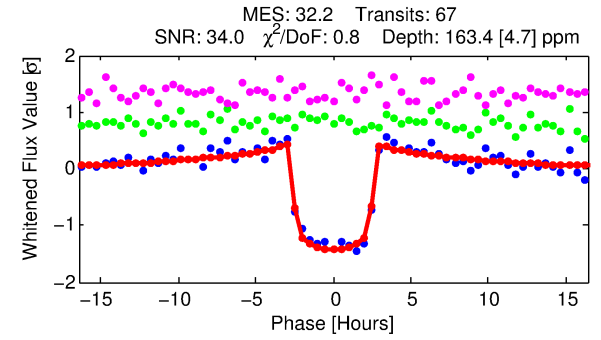
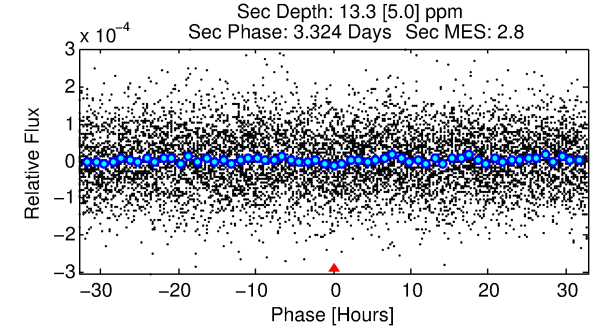
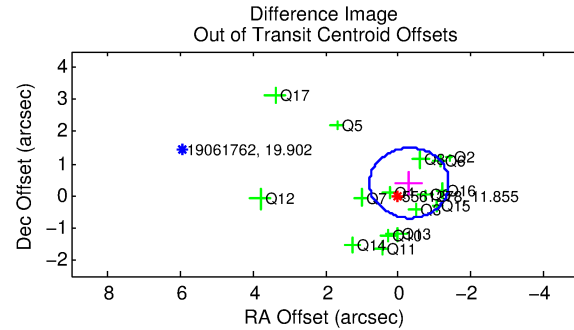
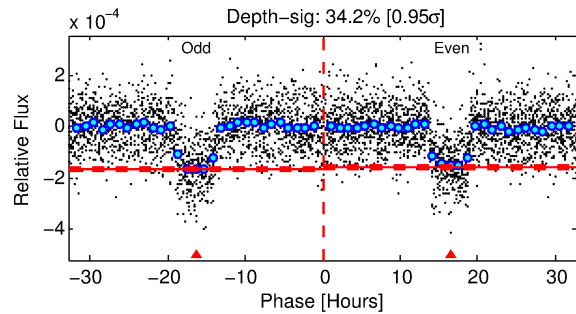
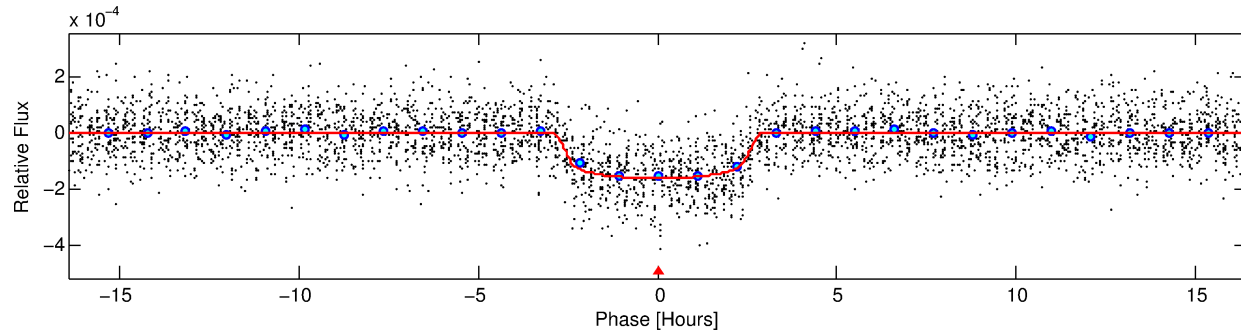
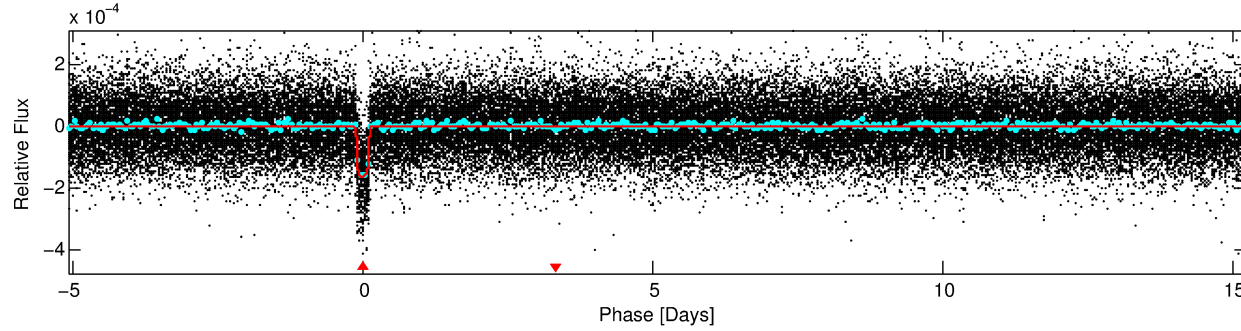
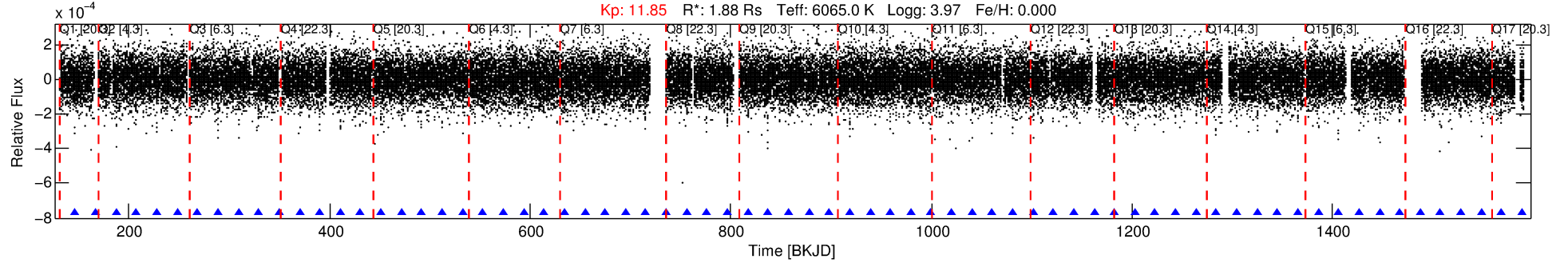
No Significant Match Found

# DV One-Page Summary

KIC: 5561278 Candidate: 1 of 1 Period: 20.311 d

KOI: K01621.01 Corr: 0.990

Kp: 11.85 R\*: 1.88 Rs Teff: 6065.0 K Logg: 3.97 Fe/H: 0.000



## DV Fit Results:

Period = 20.31050 [0.00006] d  
Epoch = 146.8240 [0.0025] BKJD  
Rp/R\* = 0.0133 [0.0013]  
a/R\* = 15.61 [7.70]  
b = 0.85 [0.16]  
Seff = 178.20 [14.45]  
Teq = 932 [19] K  
Rp = 2.73 [0.34] Re  
a = 0.1548 [0.0079] AU  
Ag = 23.54 [10.10] [2.23σ]  
Teffp = 3173 [341] K [6.56σ]

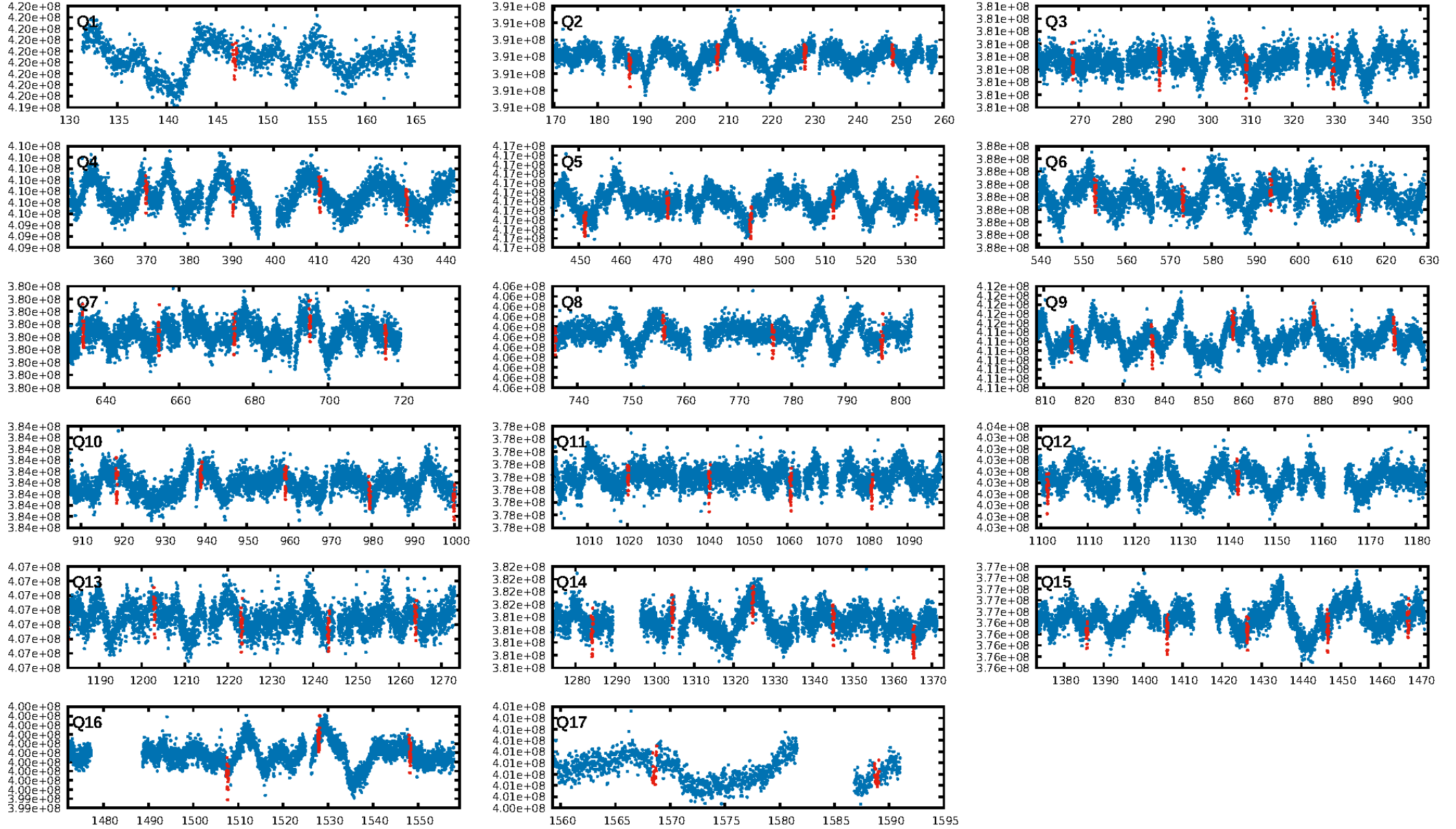
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 67.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 5.50e-223  
RollingBand-fgt: 1.00 [64/64]  
GhostDiagnostic-chr: 11.97  
Centroid-sig: 33.3%  
Centroid-so: 0.550 arcsec [1.46σ]  
OotOffset-rm: 0.499 arcsec [1.37σ]  
KicOffset-rm: 0.495 arcsec [1.36σ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 1.00 [16/16]  
DiffImageOverlap-fno: 1.00 [17/17]

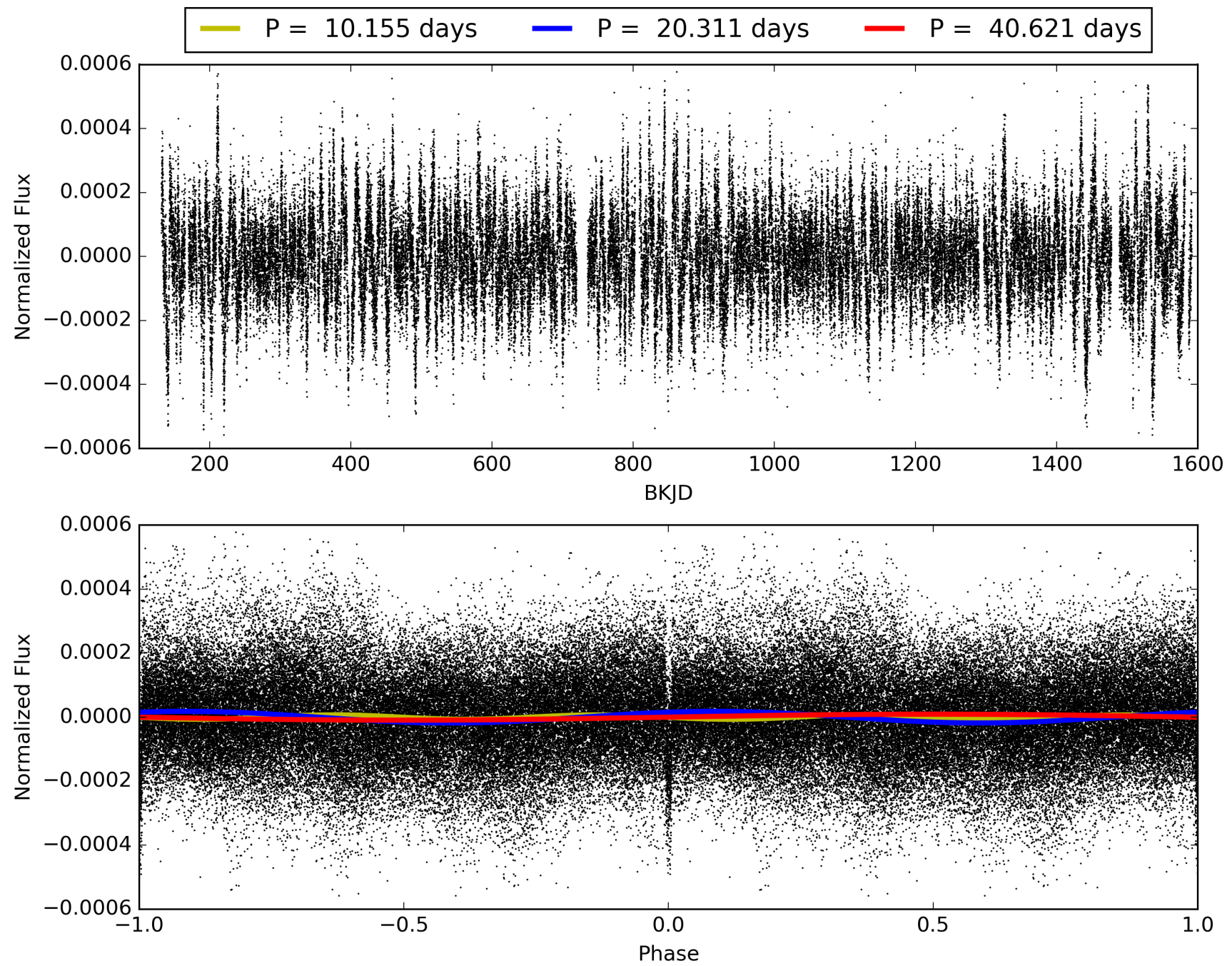
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:23:57 Z

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

# TCE 005561278-01, PDC Light Curves

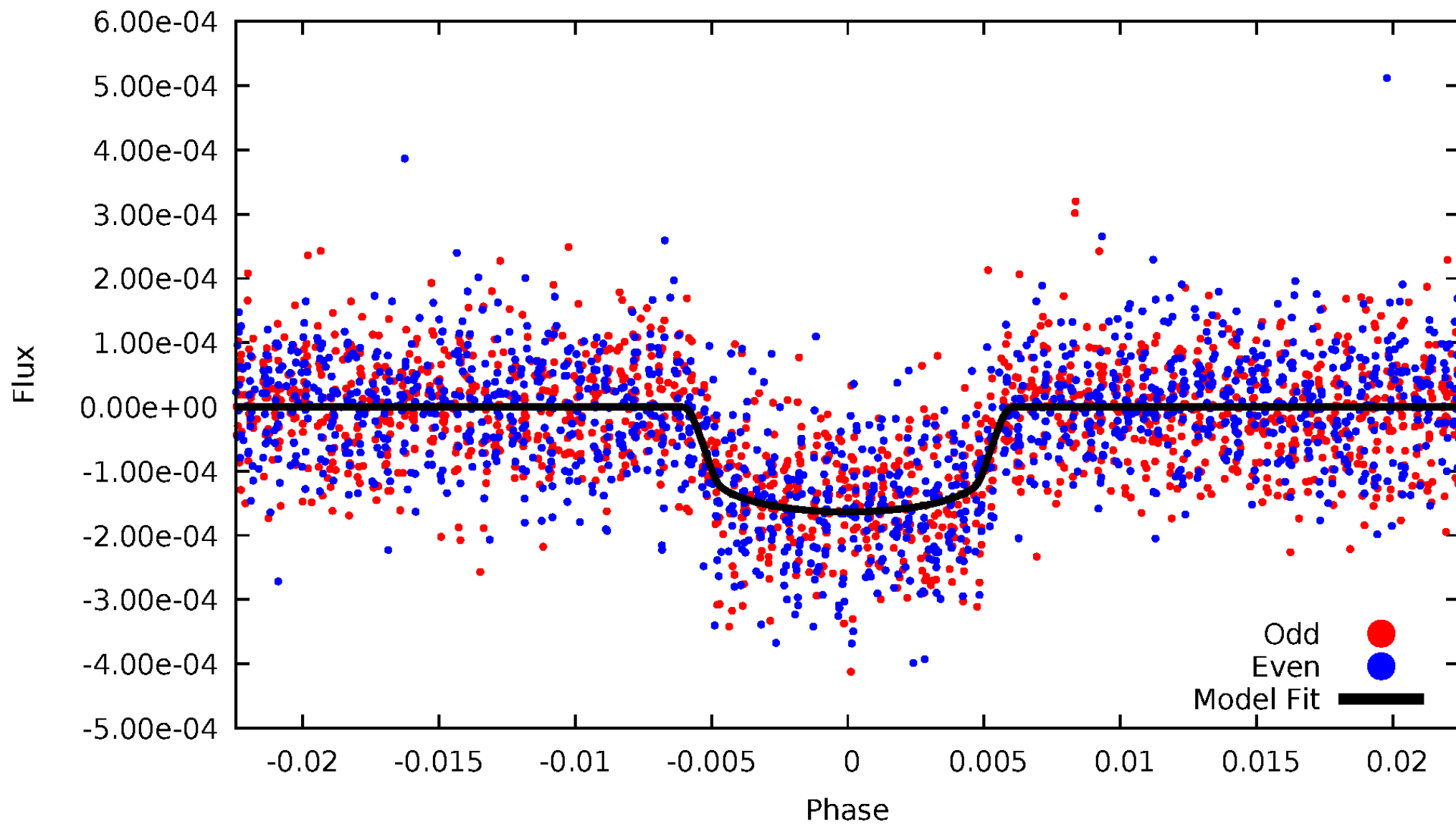


TCE 005561278-01



# DV Odd/Even

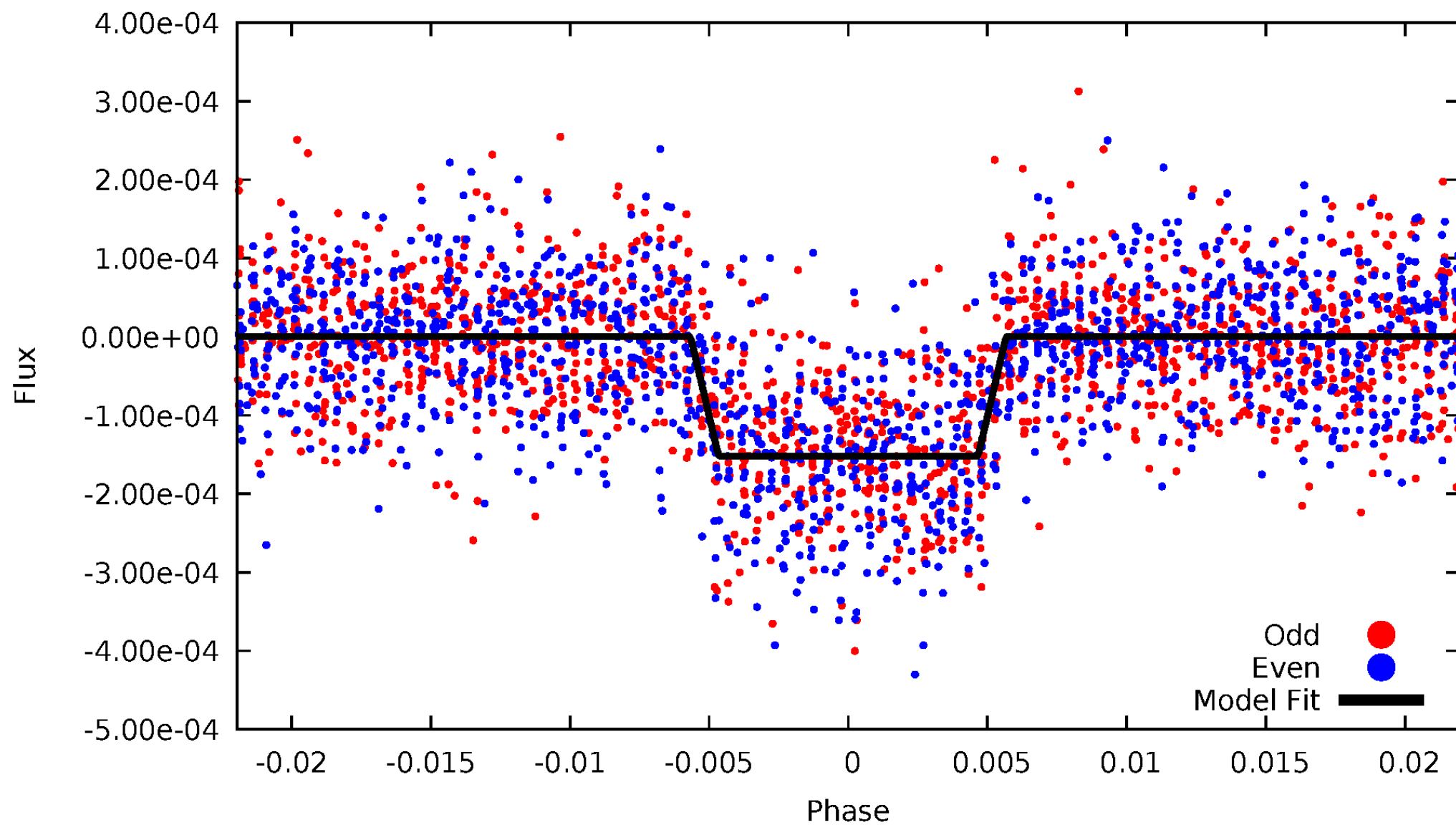
TCE 005561278-01





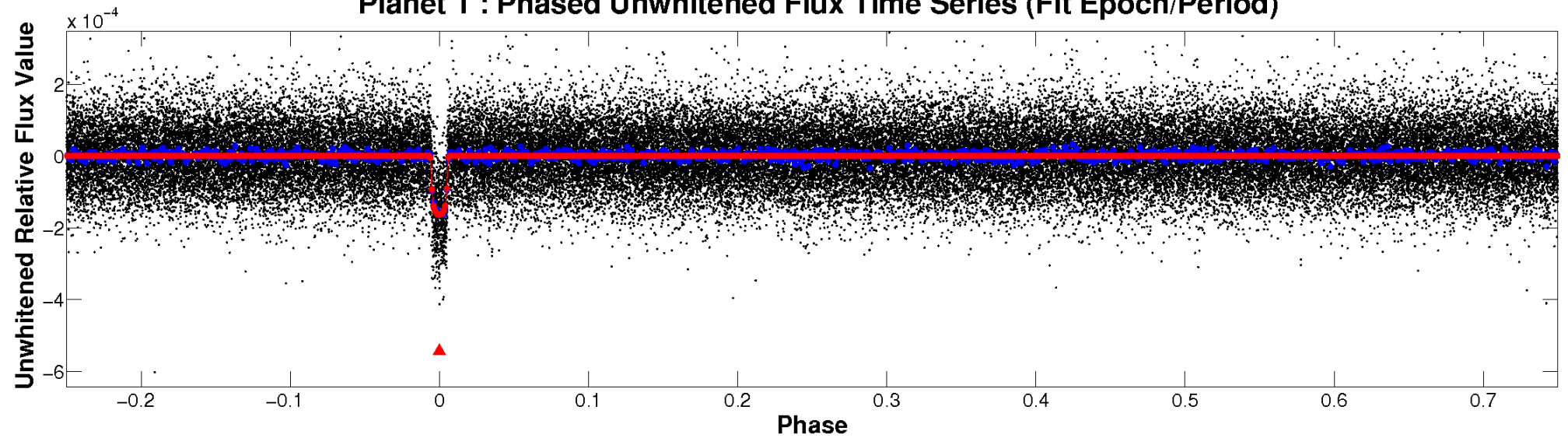
# ALT Odd/Even

TCE 005561278-01

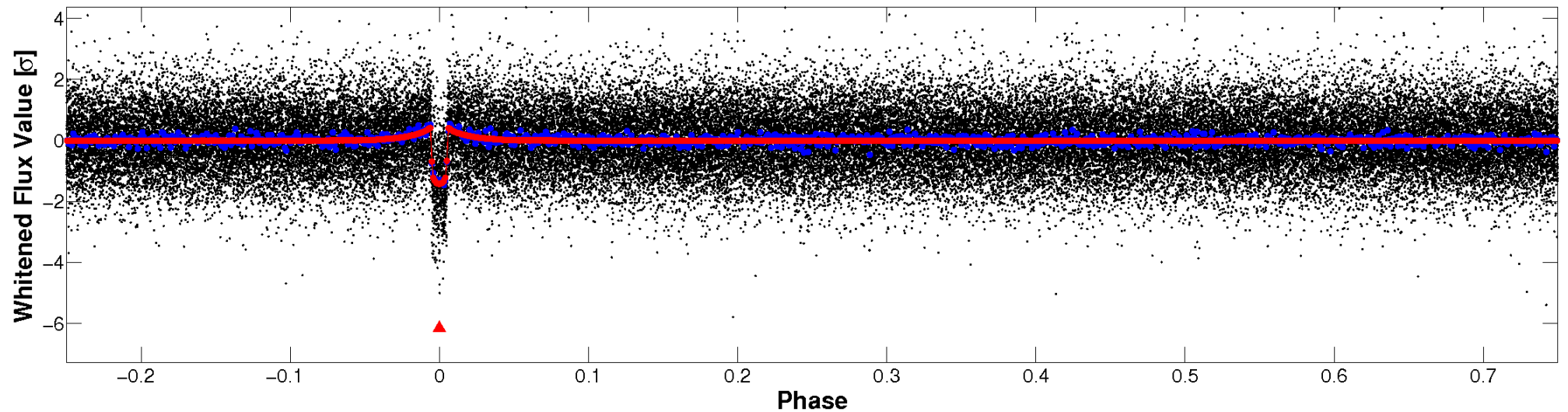


# Non-Whitened Vs. Whitened Light Curve

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

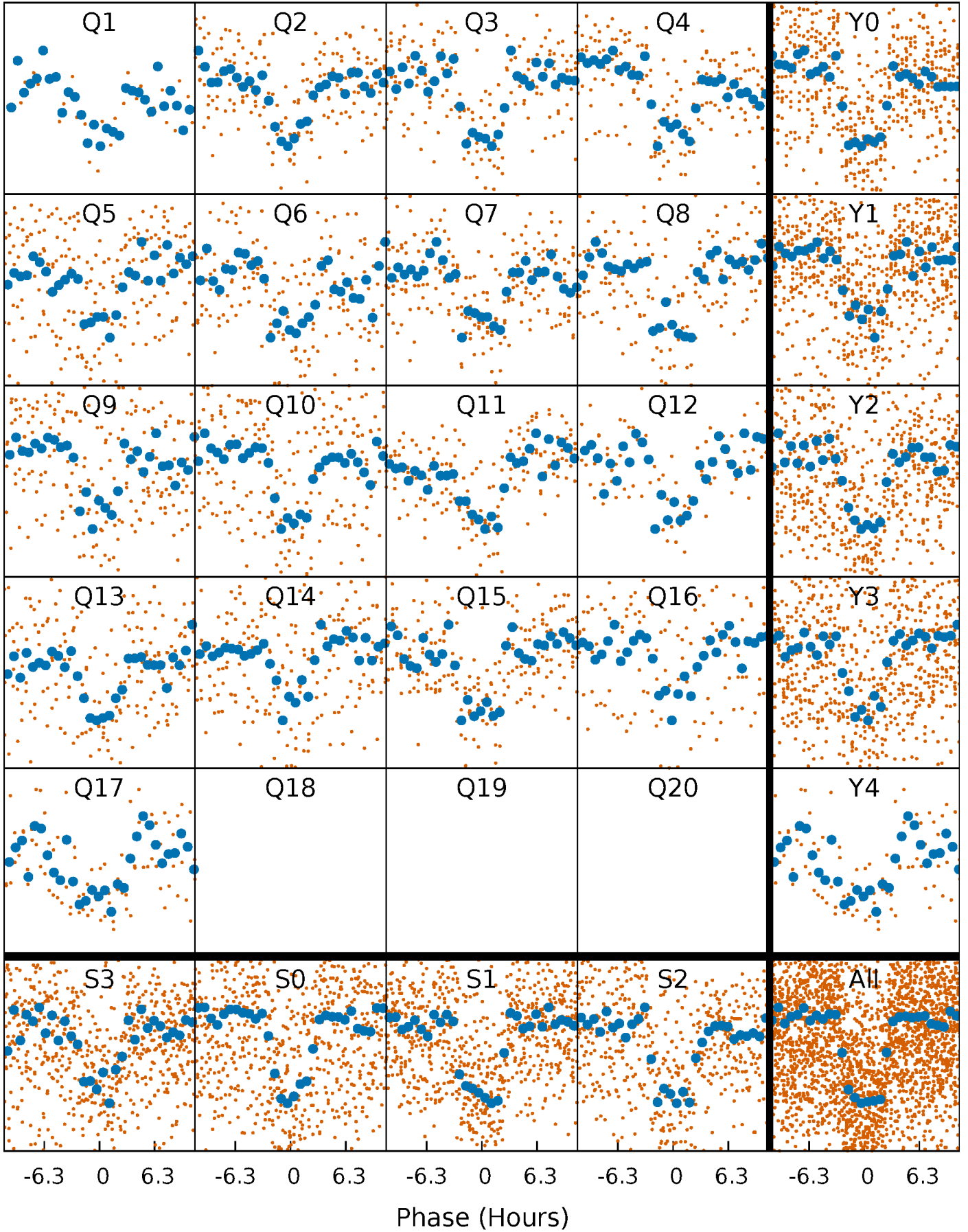


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

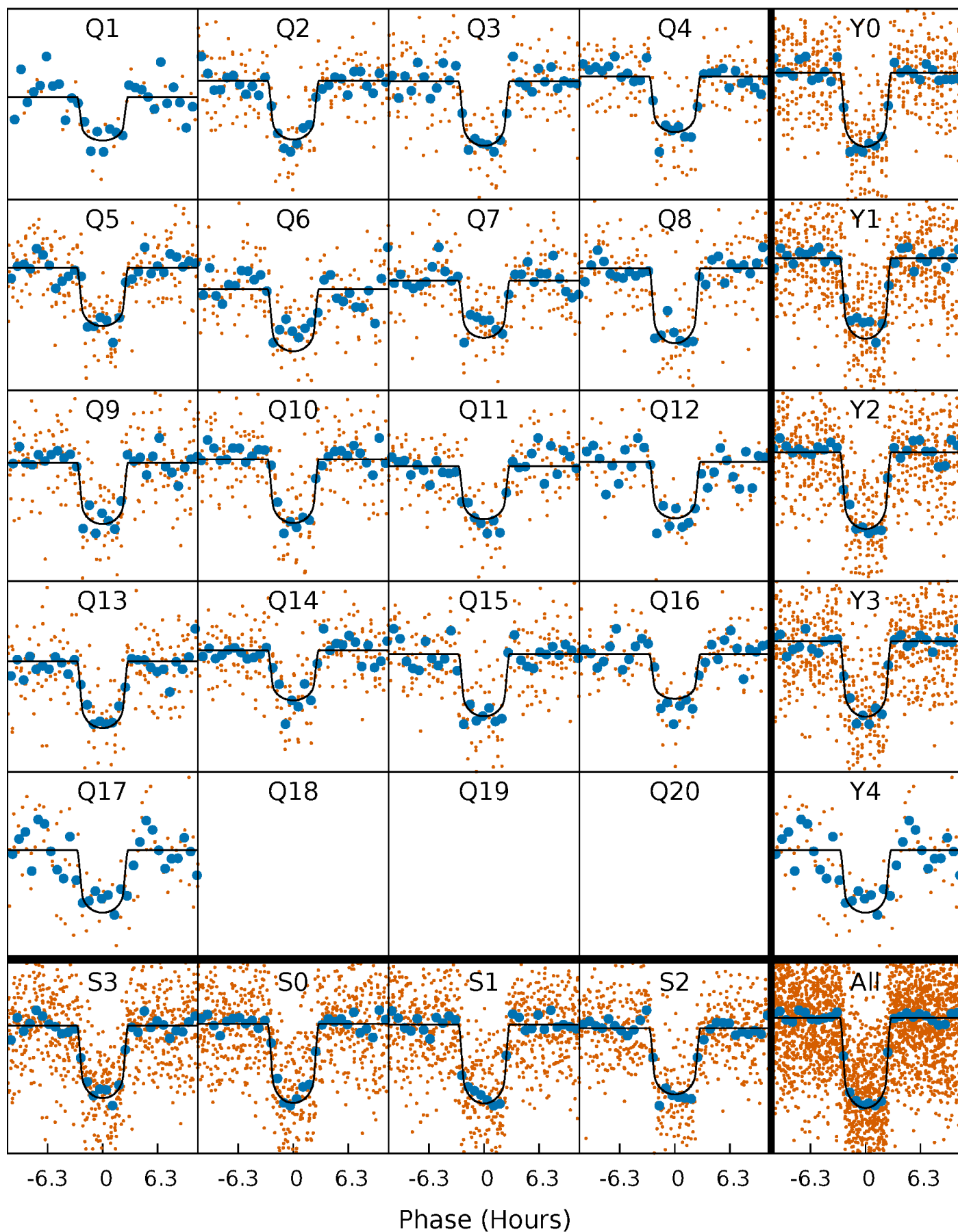
TCE 005561278-01 P= 20.310502 Days  $T_0=146.824045$  (BKJD)





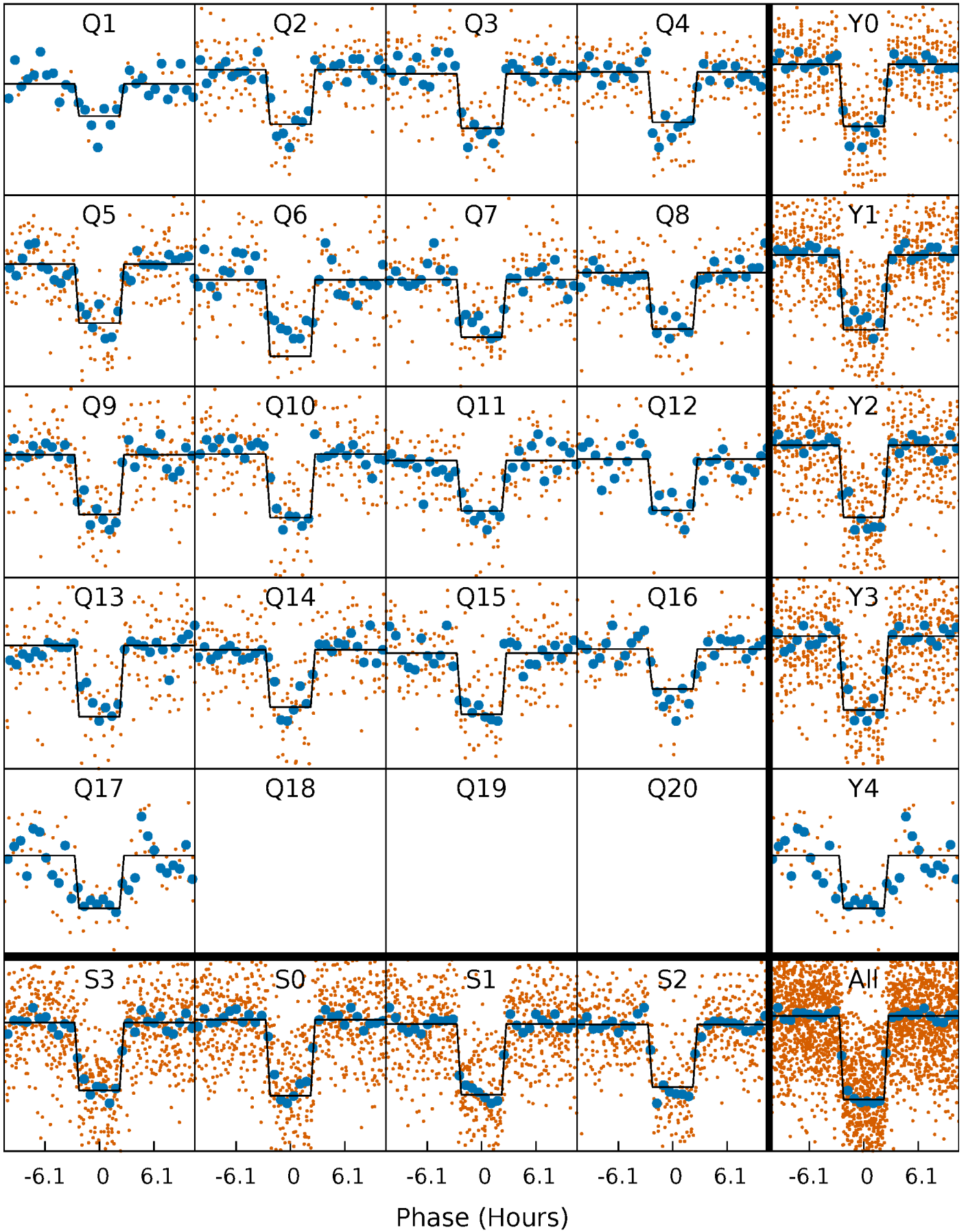
# DV Quarter-Phased Transit Curves

TCE 005561278-01 P= 20.310502 Days  $T_0=146.824045$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

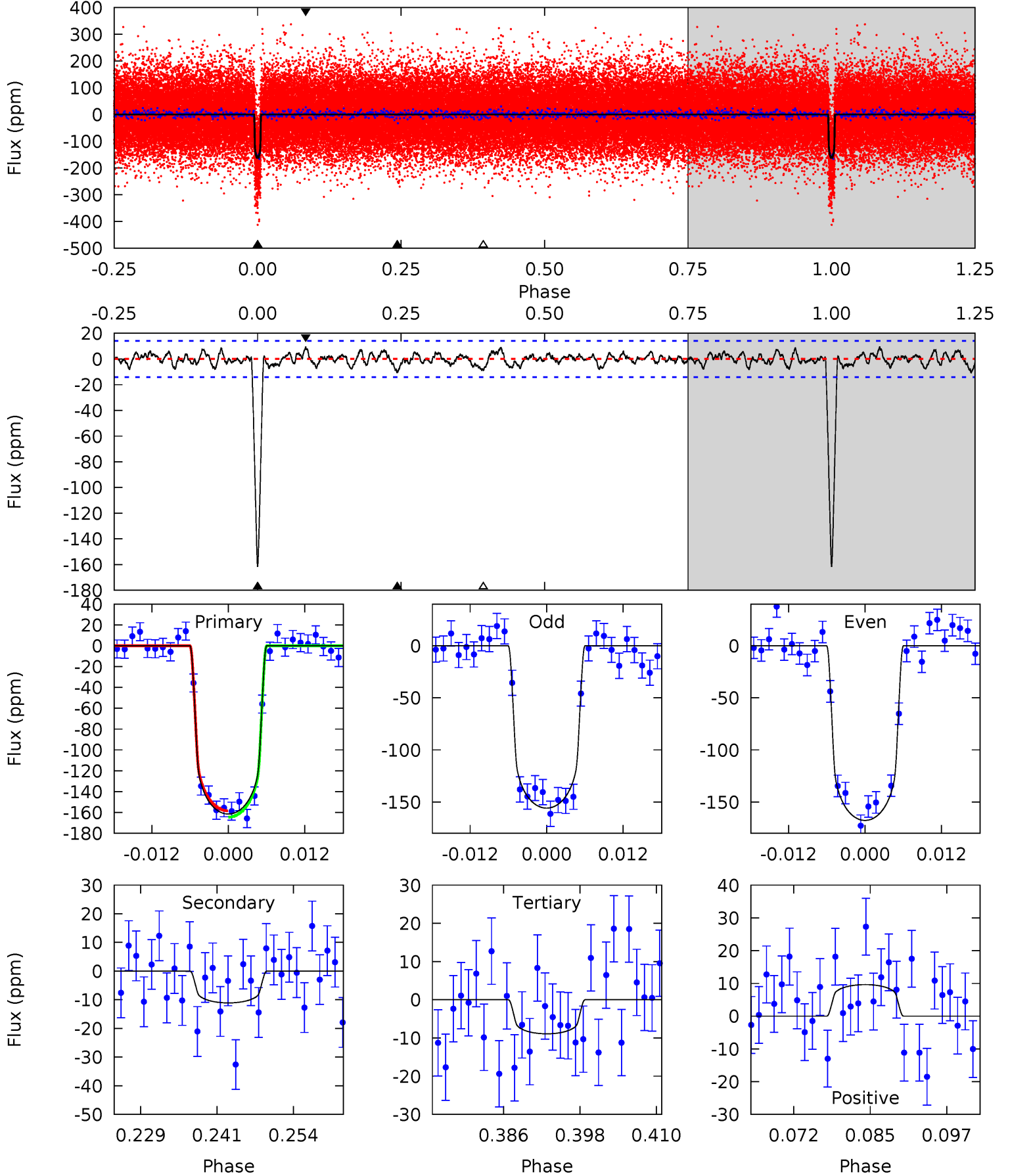
TCE 005561278-01 P= 20.310428 Days  $T_0=146.826635$  (BKJD)



# DV Model-Shift Uniqueness Test

005561278-01, P = 20.310502 Days, E = 126.513543 Days

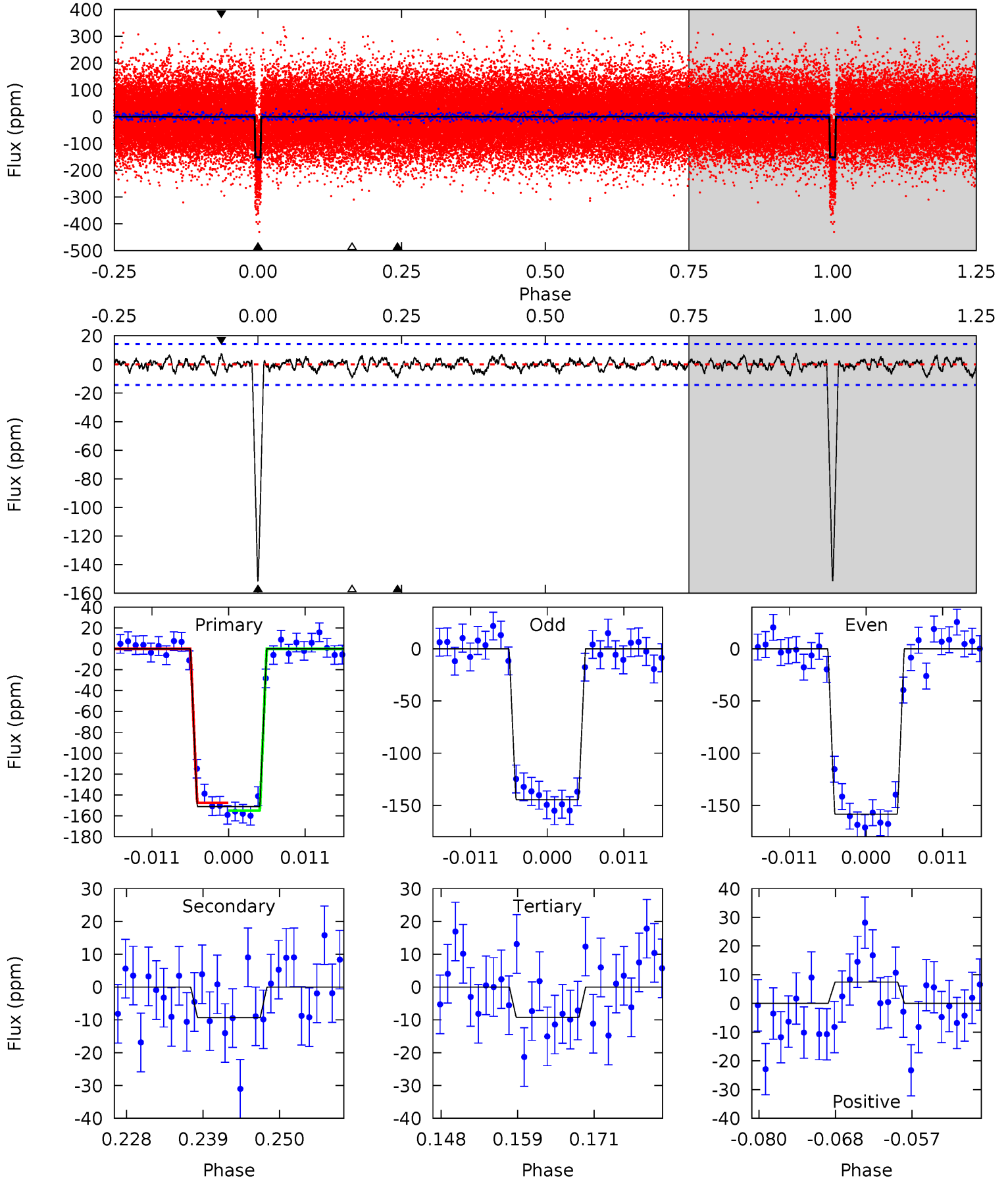
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
57.2	3.92	3.15	3.41	4.99	2.51	1.20	54.0	53.7	0.77	0.52	2.09	0.99	0.06	1.07



# Alt Model-Shift Uniqueness Test

005561278-01, P = 20.310428 Days, E = 126.516207 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
52.6	3.24	3.21	2.59	5.00	2.53	0.96	49.4	50.0	0.03	0.65	2.43	1.01	0.05	1.30



### Stellar Parameters For KIC 005561278

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6065^{+91}_{-72}$	$3.970^{+0.011}_{-0.014}$	$0.000^{+0.150}_{-0.150}$	$1.877^{+0.141}_{-0.071}$	$1.197^{+0.186}_{-0.074}$	$0.255^{+0.015}_{-0.022}$
	+2%/-1%	+0%/-0%	+inf%/-inf%	+8%/-4%	+16%/-6%	+6%/-9%
Source	SPE72	AST8	SPE72	DSEP		

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

### Secondary Eclipse Parameters for KIC 005561278-01 / KOI 1621.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-11 \pm 3$	$2.71^{+0.32}_{-0.26}$	$1304^{+20}_{-20}$	$3511^{+193}_{-181}$	$20^{+7}_{-5}$
Alt.	$-9 \pm 3$	$2.52^{+0.29}_{-0.27}$	$1304^{+21}_{-20}$	$3497^{+223}_{-207}$	$19^{+8}_{-6}$

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



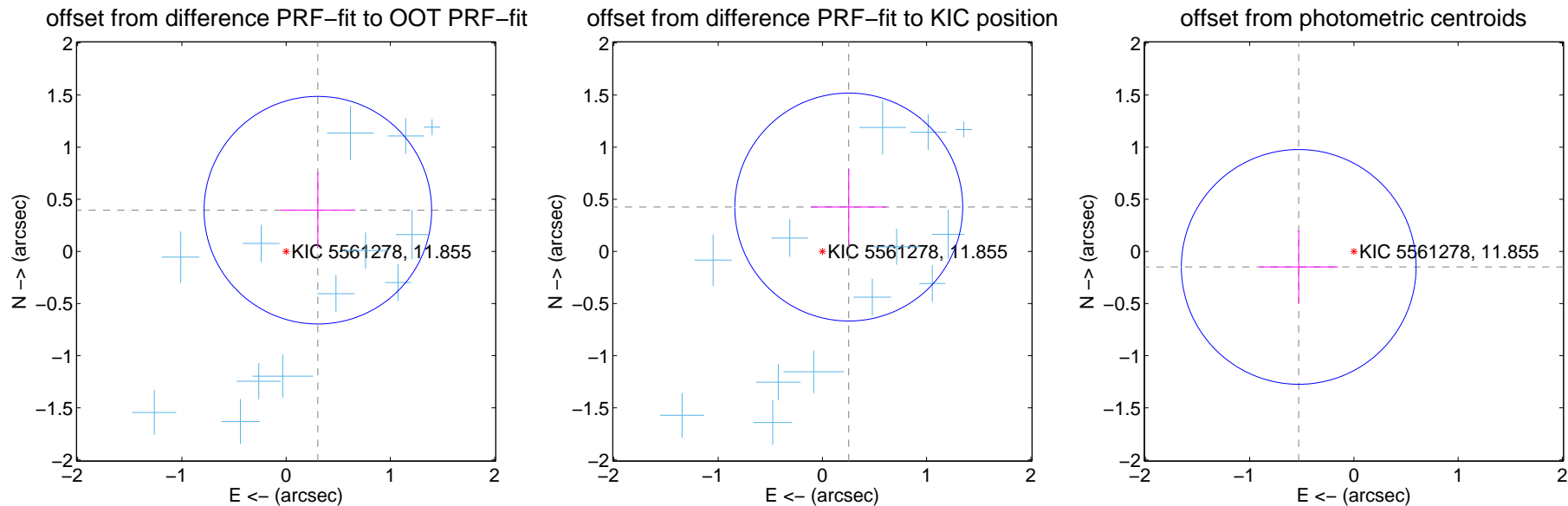
## DV Centroid Data

Supplemental centroid analysis for 005561278-01. **Kepler magnitude: 11.86.** Transit SNR 34.01

There are 16 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

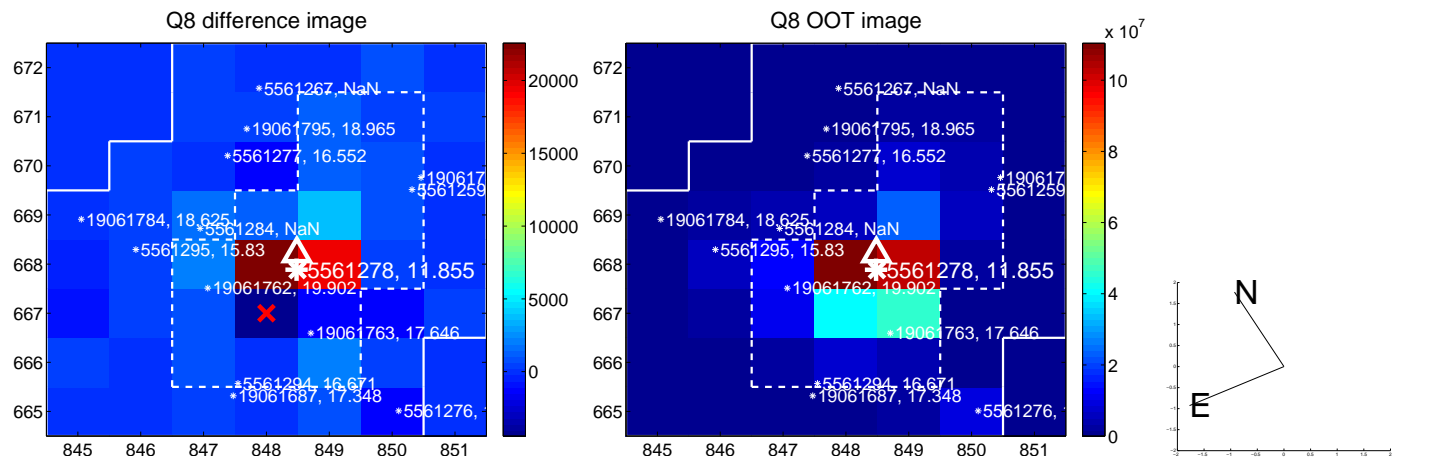
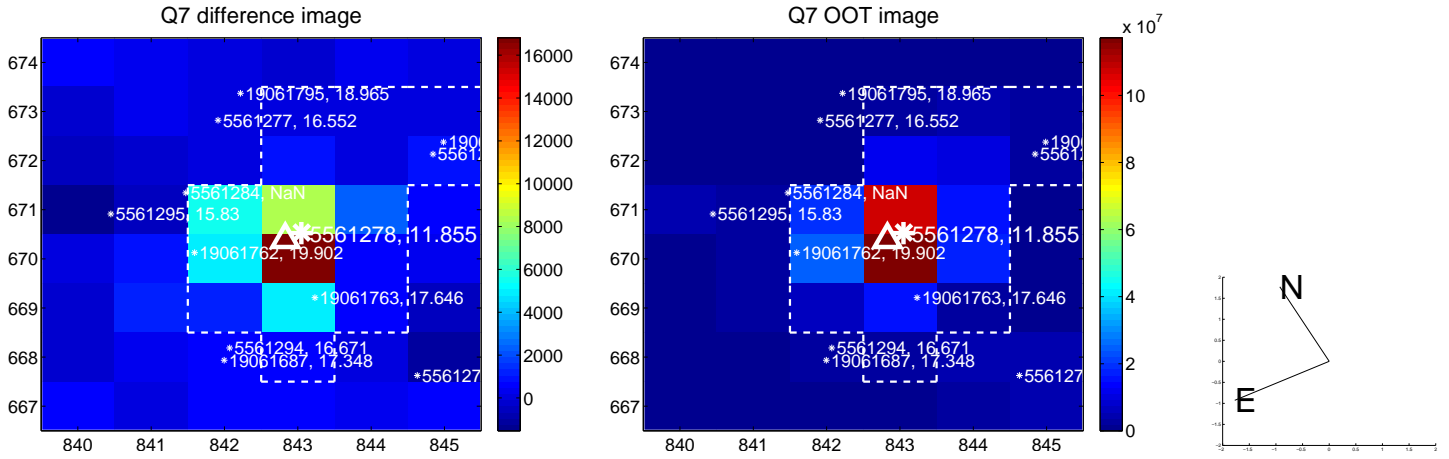
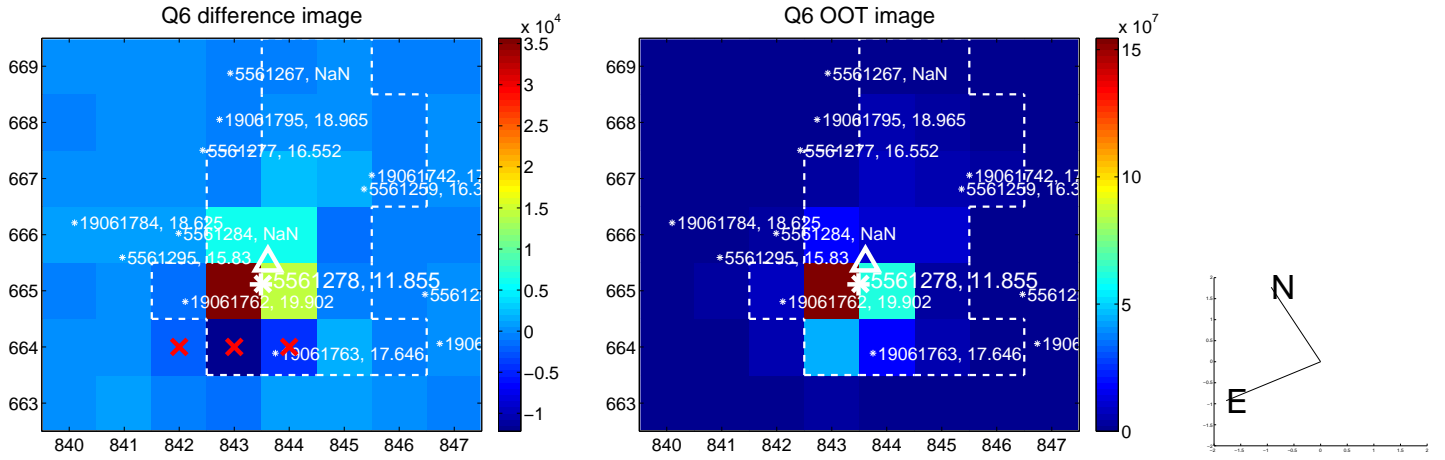
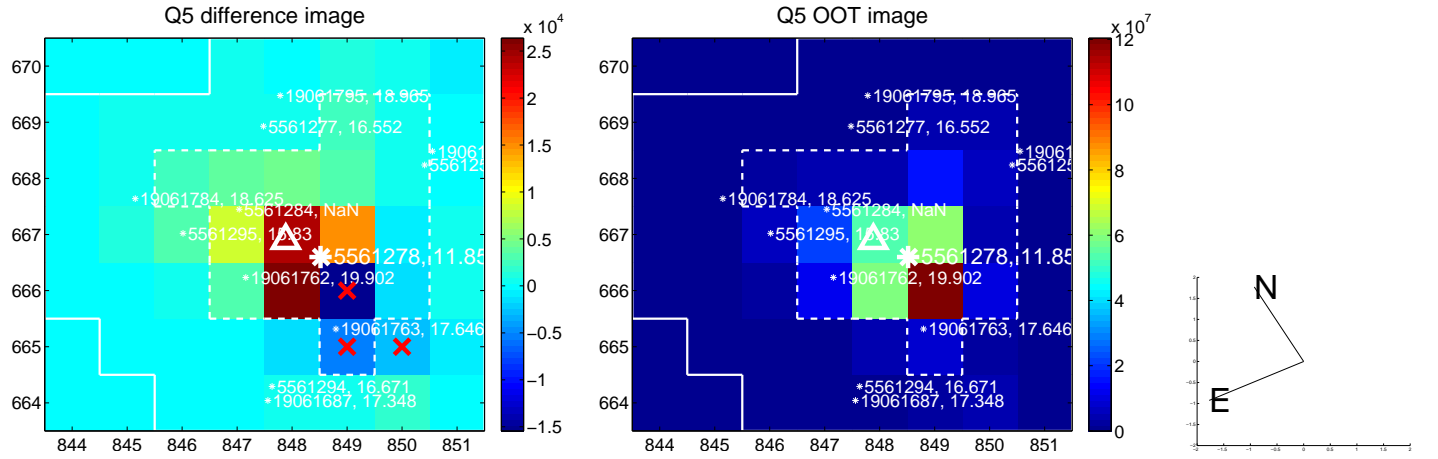
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.499 \pm 0.364$	1.37	$-0.304 \pm 0.360$	$0.395 \pm 0.366$
PRF-fit source offset from KIC position	$0.495 \pm 0.364$	1.36	$-0.253 \pm 0.364$	$0.426 \pm 0.365$
photometric centroid source offset	$0.55 \pm 0.38$	1.46	$0.53 \pm 0.38$	$-0.15 \pm 0.35$



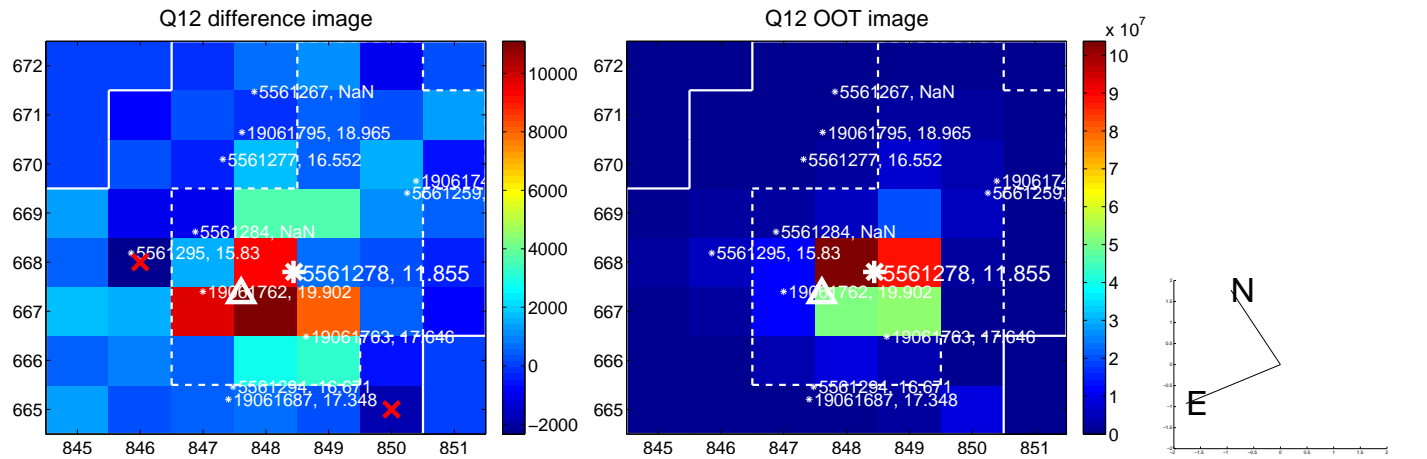
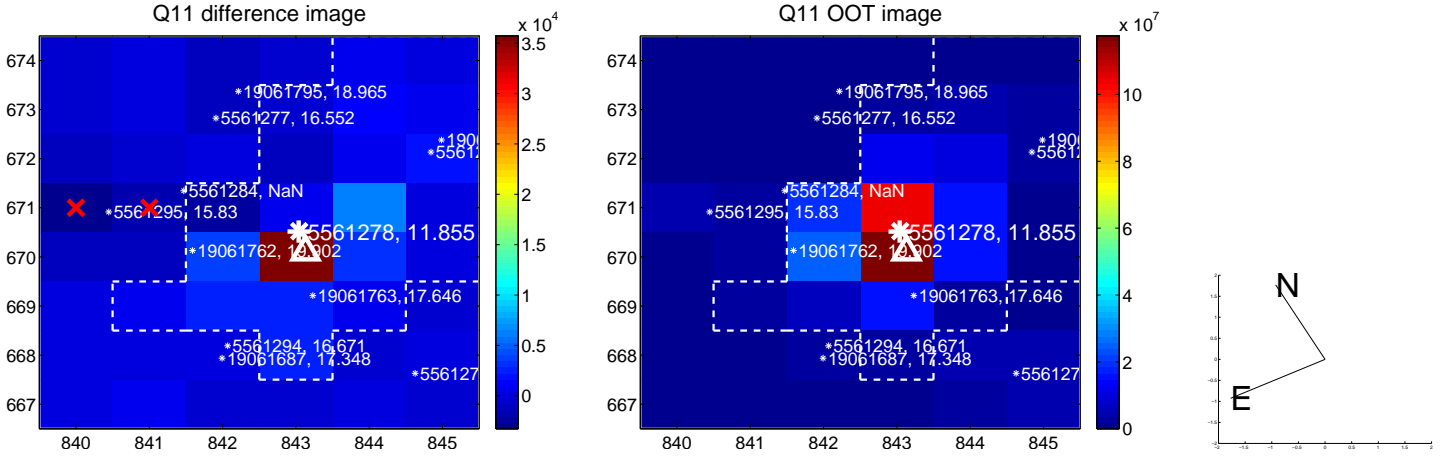
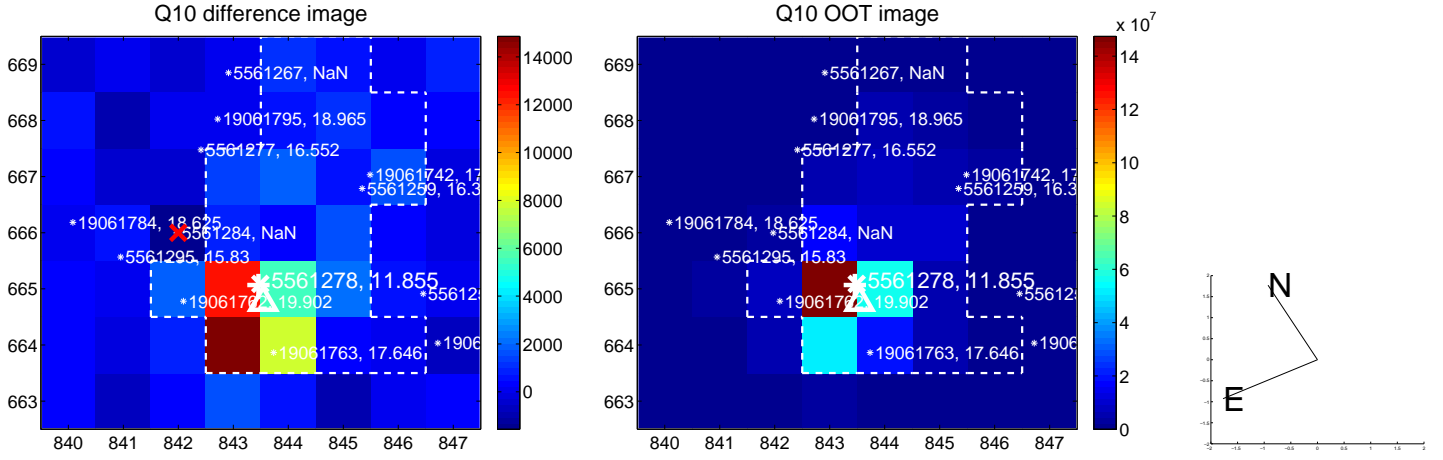
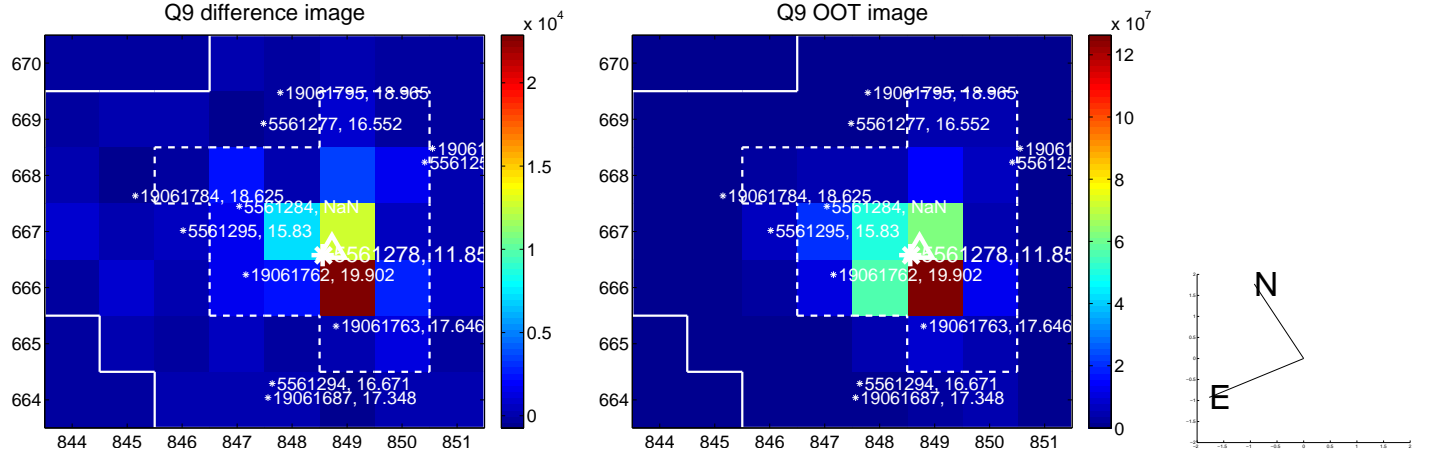
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



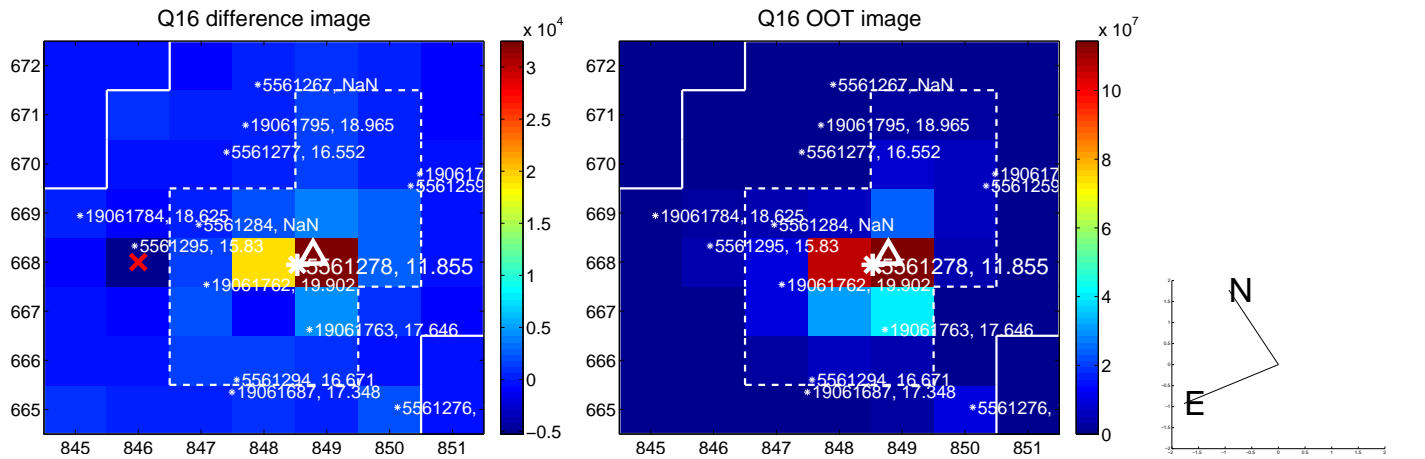
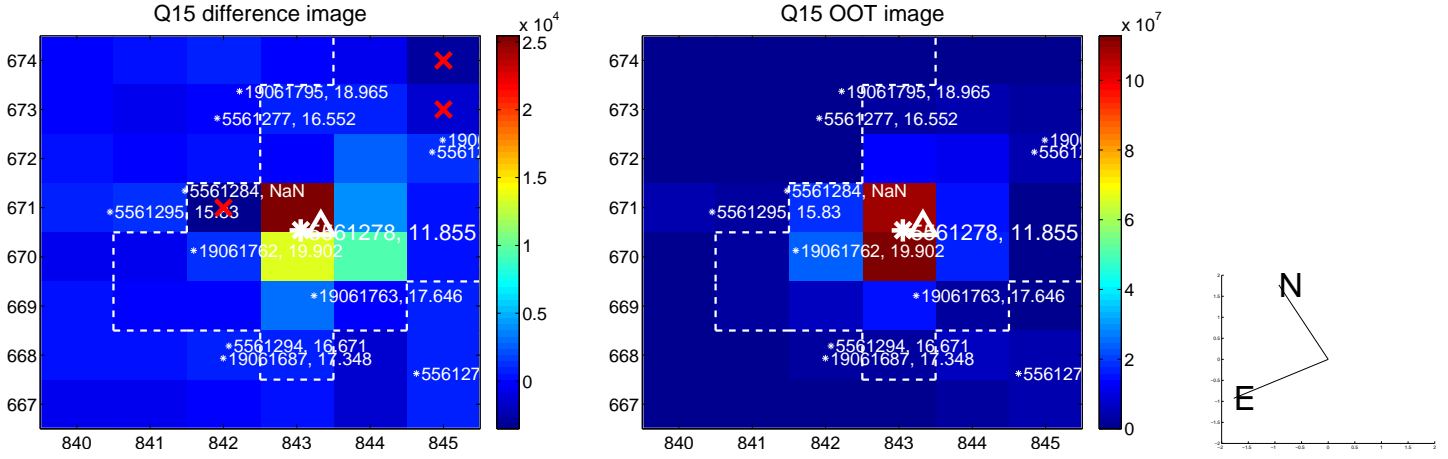
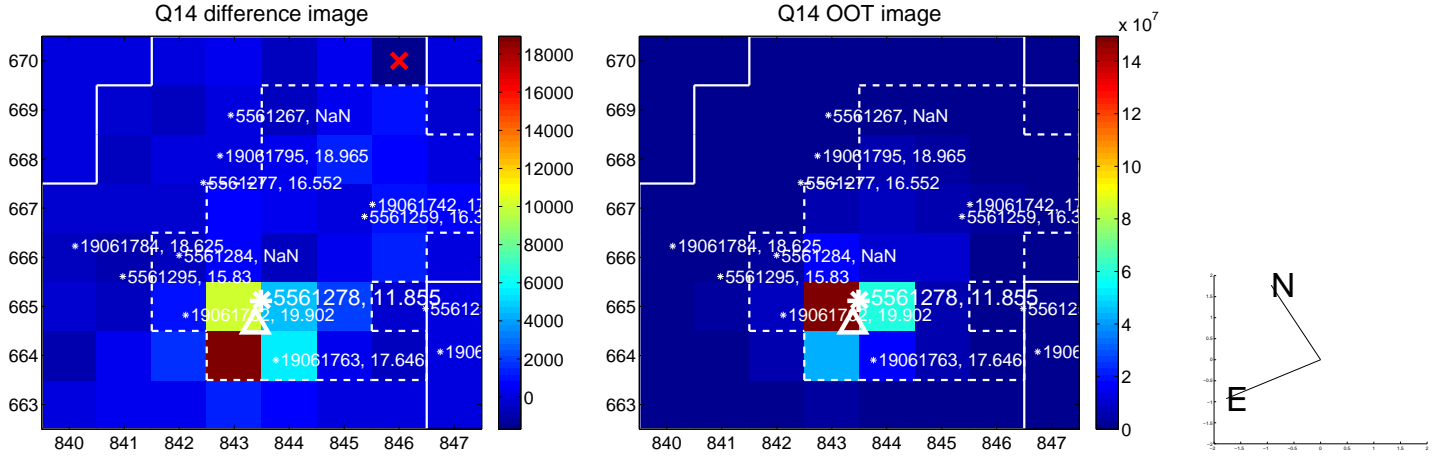
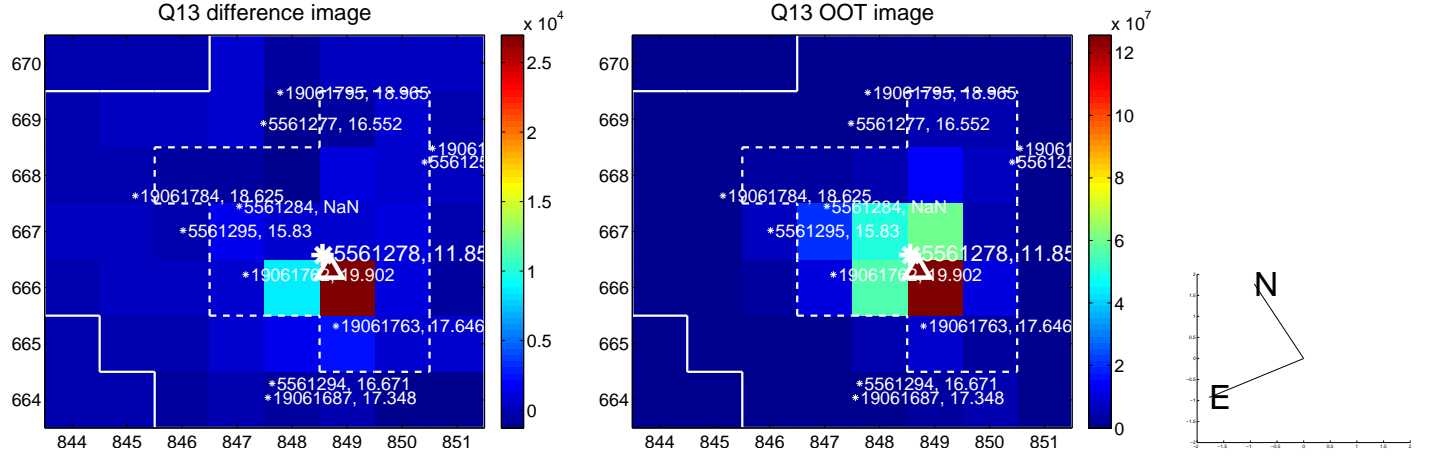
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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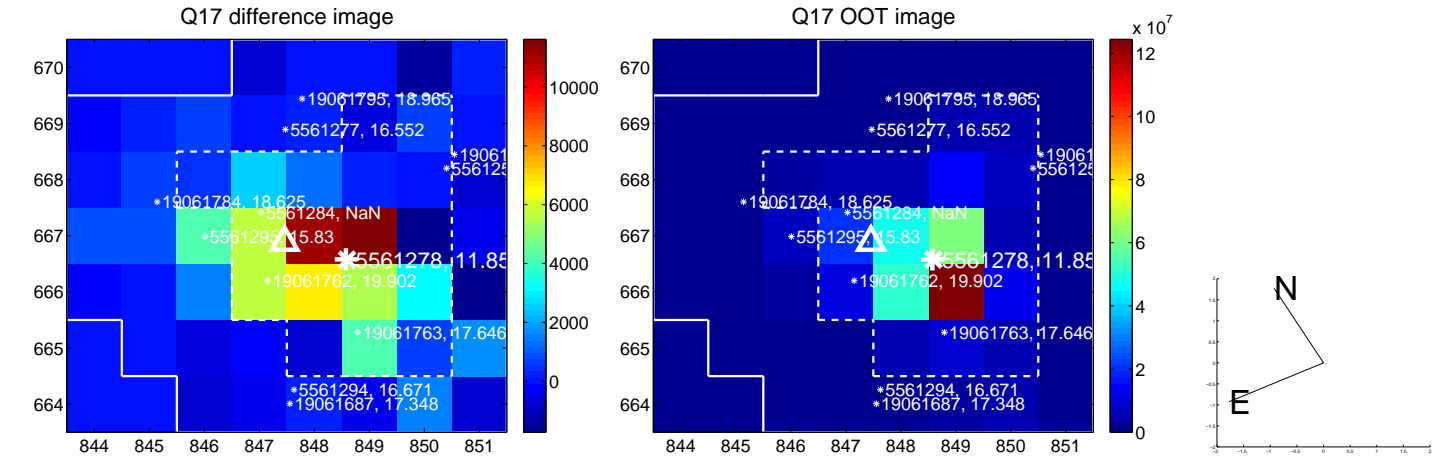


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

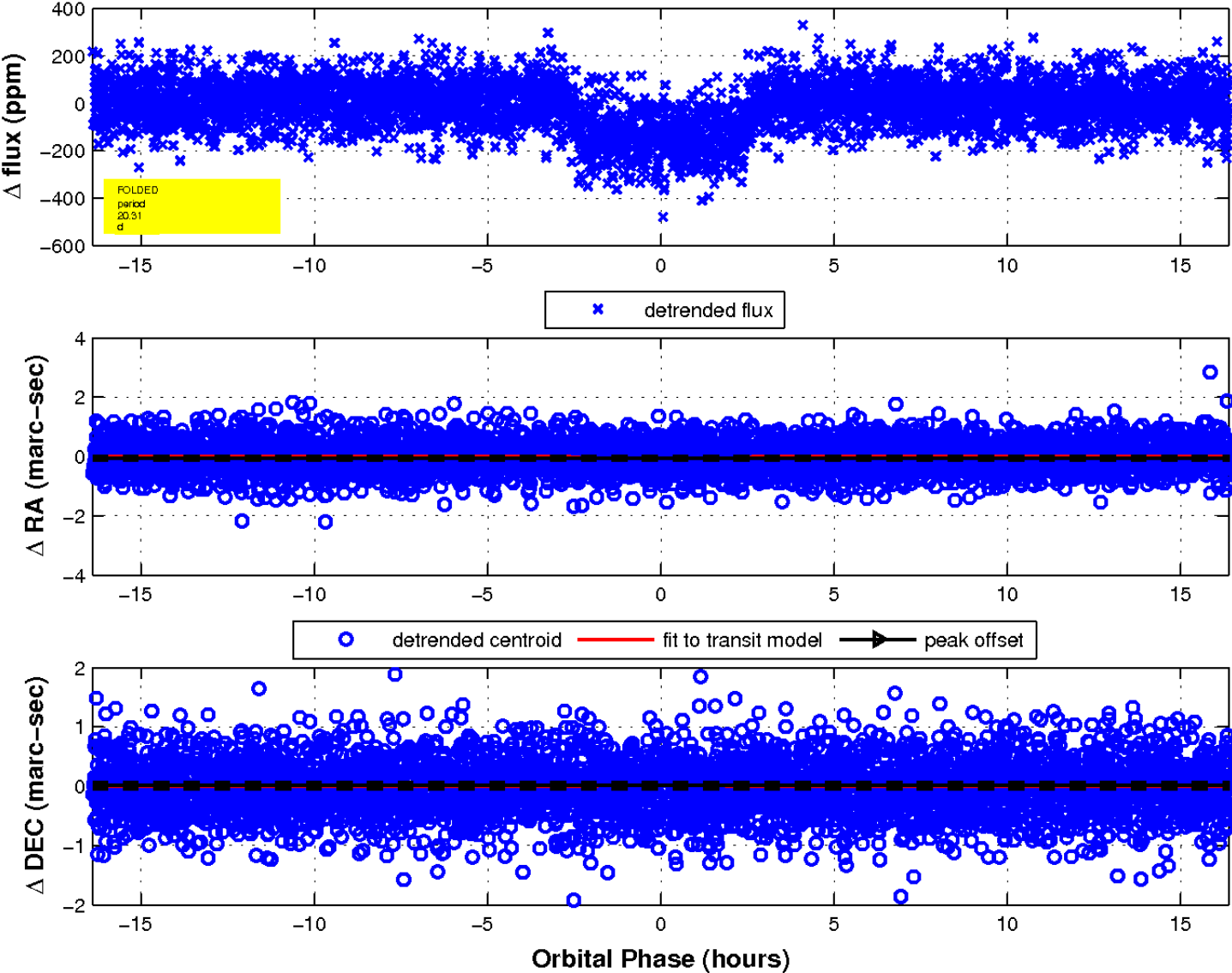




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

