

# KIC 005462649

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005462649-01	OBS	No	2.786912	132.976571	74.4	7.107	12.3	13.0	4.07	6341	5.43	11118.39

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005462649-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

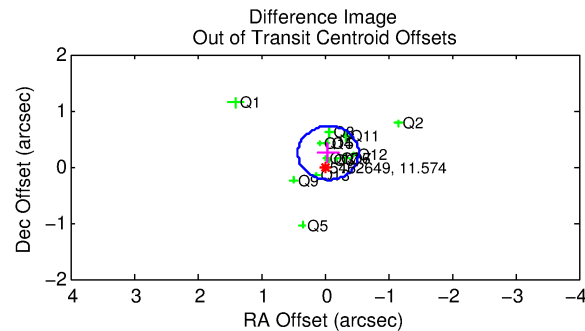
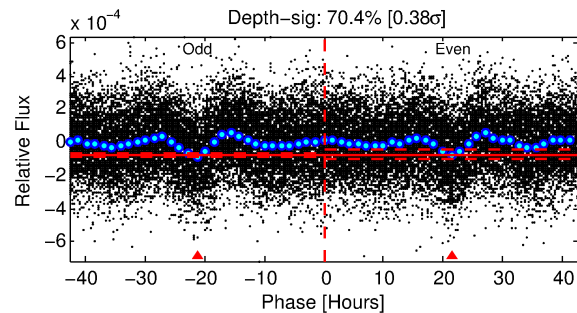
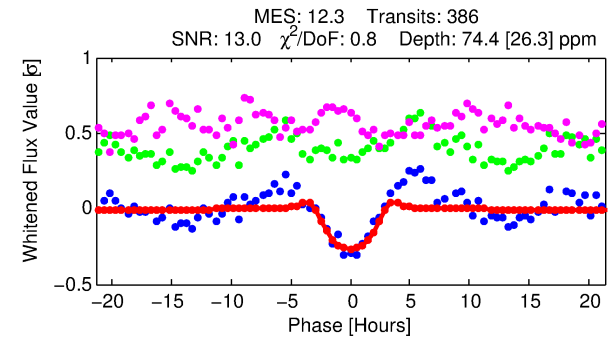
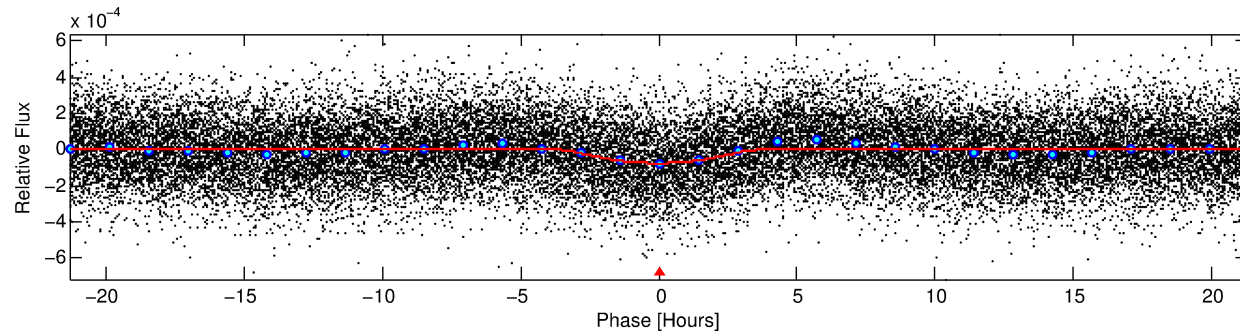
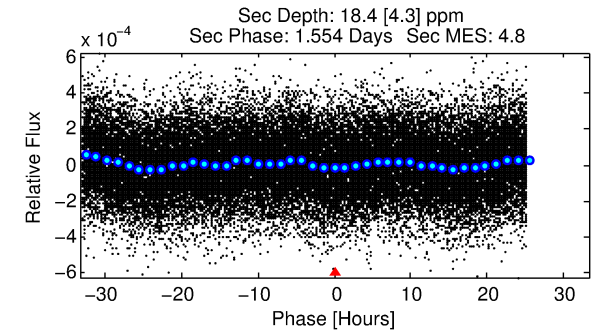
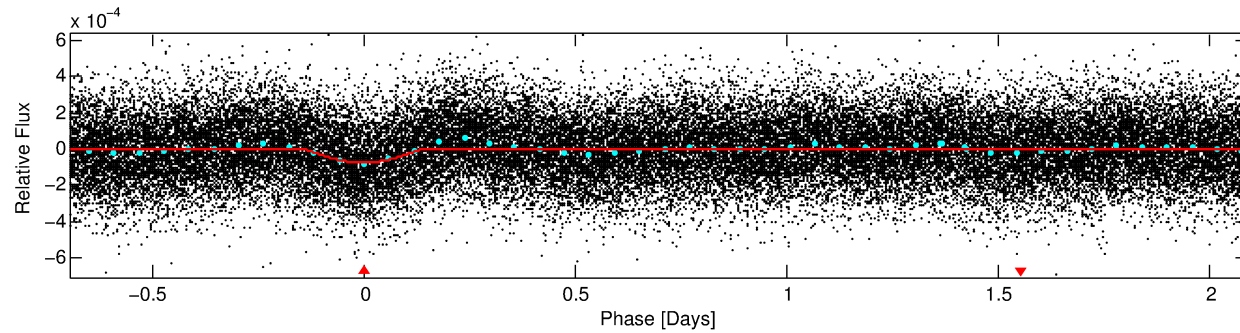
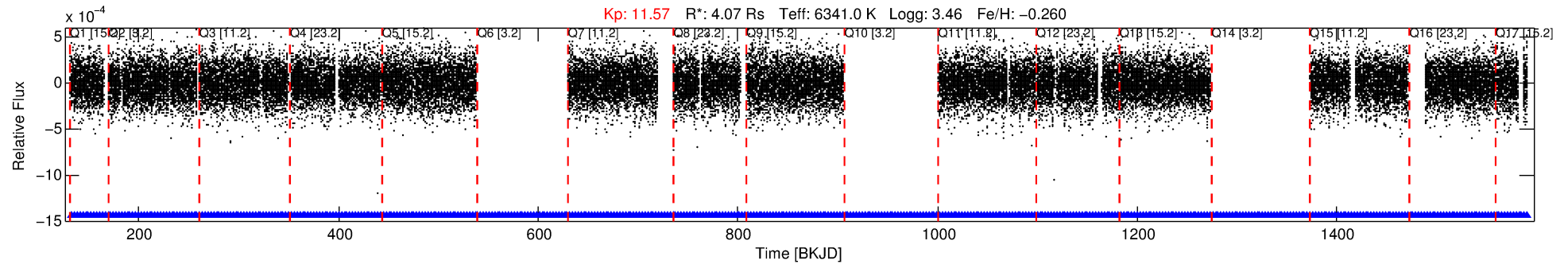
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005462649-01

No Significant Match Found

# DV One-Page Summary

KIC: 5462649 Candidate: 1 of 1 Period: 2.787 d



## DV Fit Results:

Period = 2.78691 [0.00003] d  
Epoch = 132.9766 [0.0088] BKJD  
Rp/R\* = 0.0122 [0.0051]  
a/R\* = 1.16 [0.06]  
b = 0.99 [0.01]  
Seff = 11118.39 [7190.76]  
Teq = 2618 [423] K  
Rp = 5.43 [3.15] Re  
a = 0.0465 [0.0184] AU  
Ag = 0.74 [0.80] [-0.32σ]  
Teffp = 3757 [820] K [1.23σ]

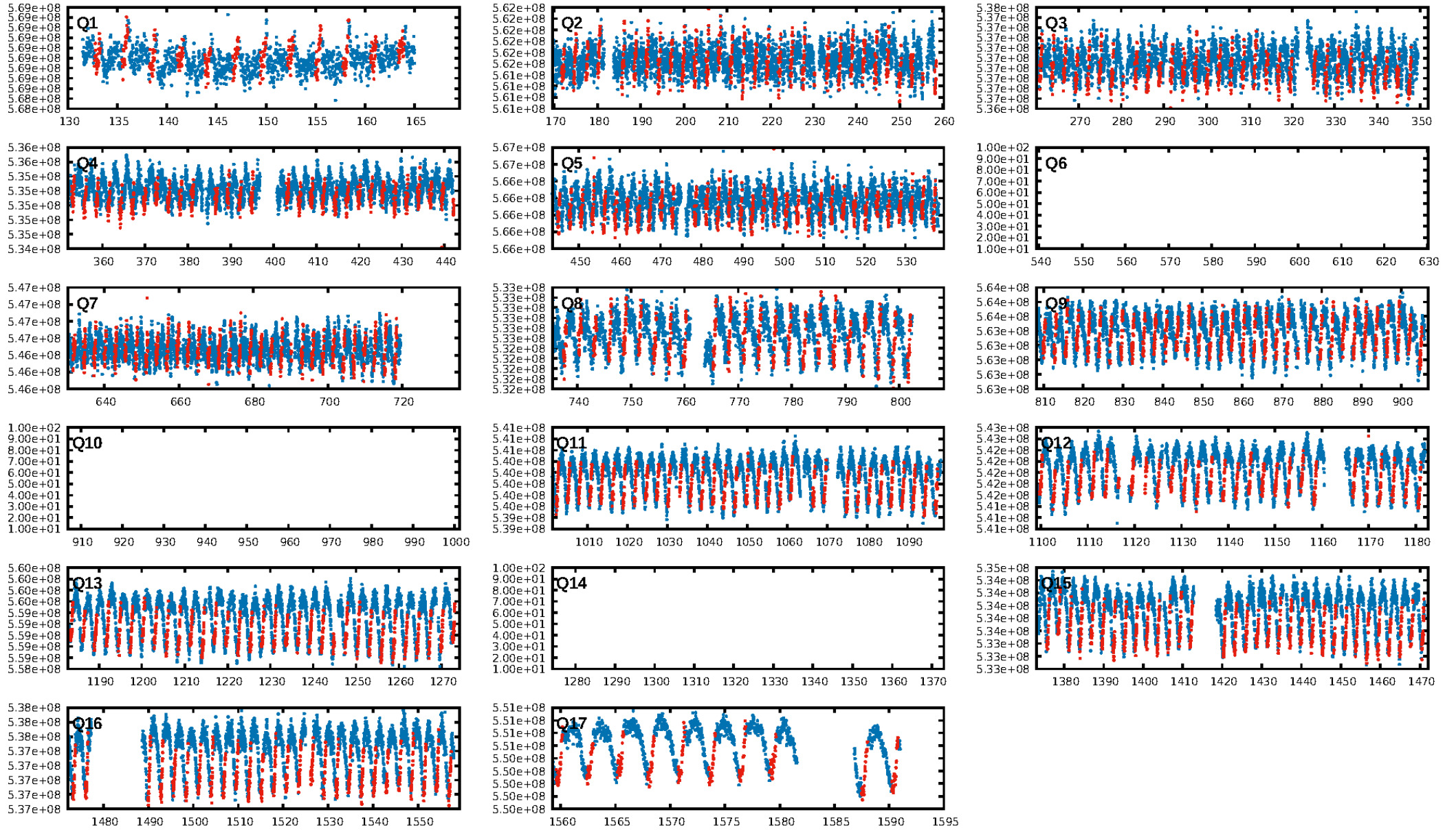
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.51e-25  
RollingBand-fgt: 1.00 [364/364]  
GhostDiagnostic-chr: 1.616  
Centroid-sig: 0.4%  
Centroid-so: 0.351 arcsec [1.75σ]  
OotOffset-rm: 0.251 arcsec [1.57σ]  
KicOffset-rm: 0.371 arcsec [2.44σ]  
OotOffset-st: 1/4/4/5 [14]  
KicOffset-st: 1/4/4/5 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

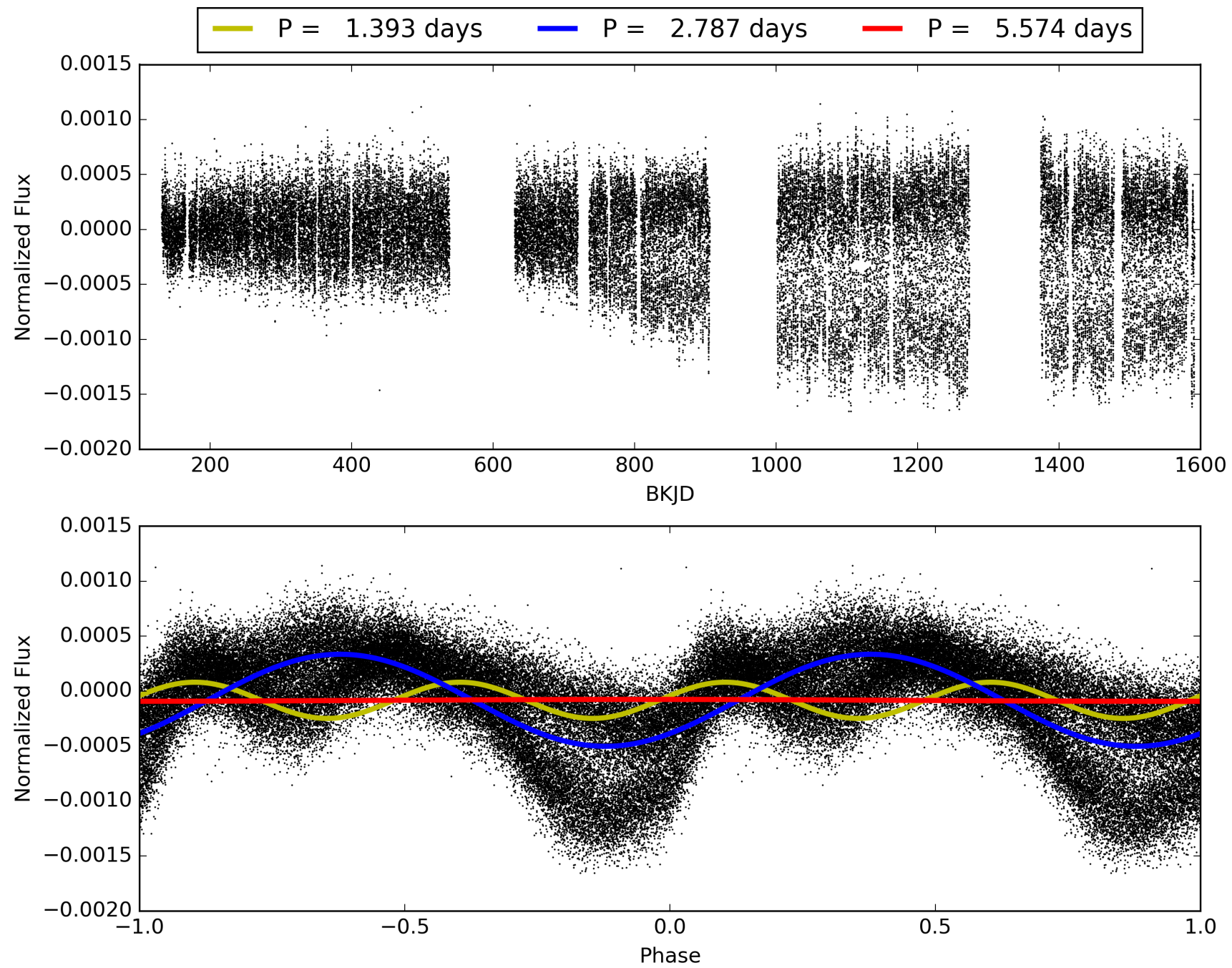
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:10:39 Z

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

# TCE 005462649-01, PDC Light Curves

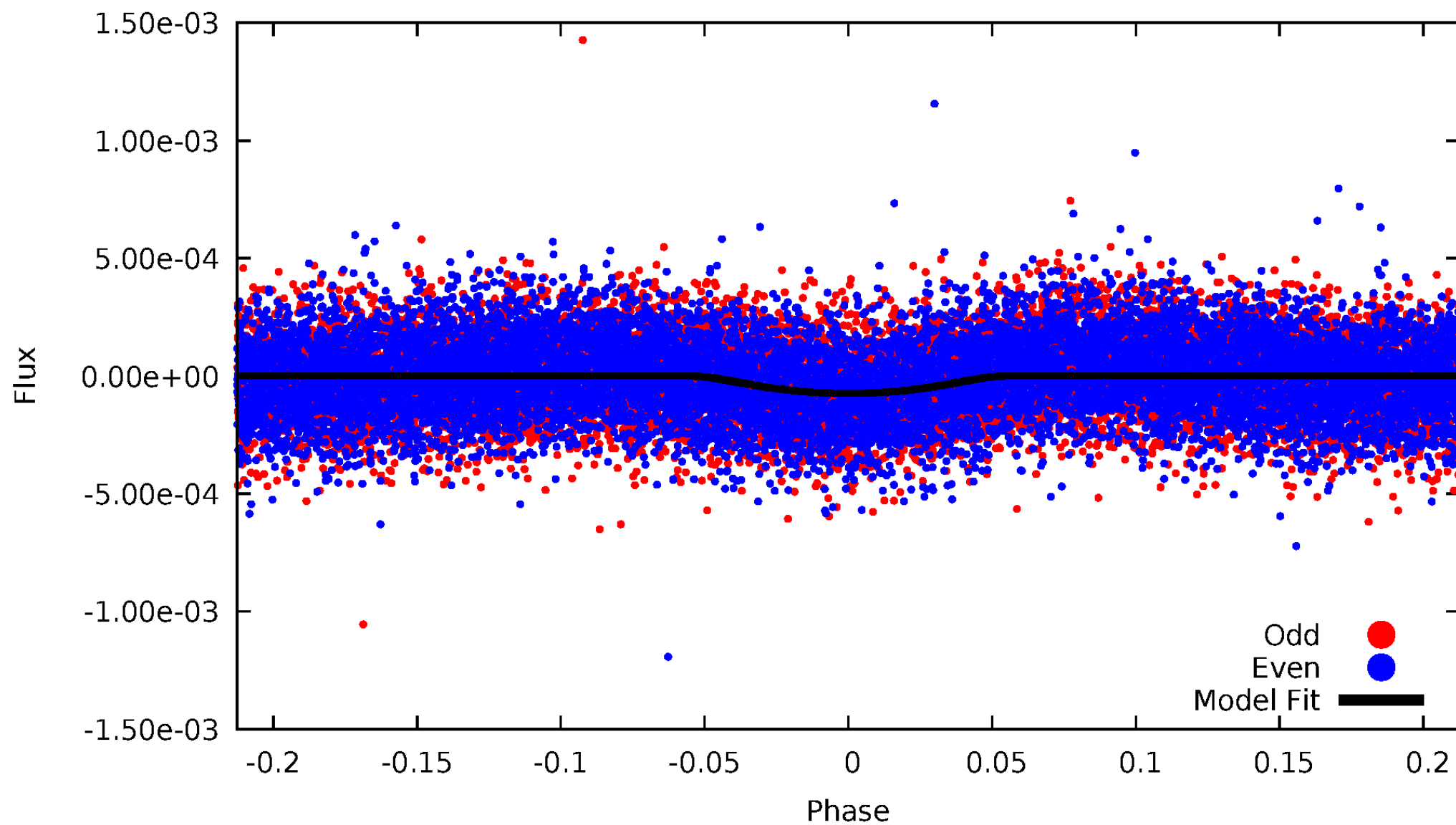


TCE 005462649-01



# DV Odd/Even

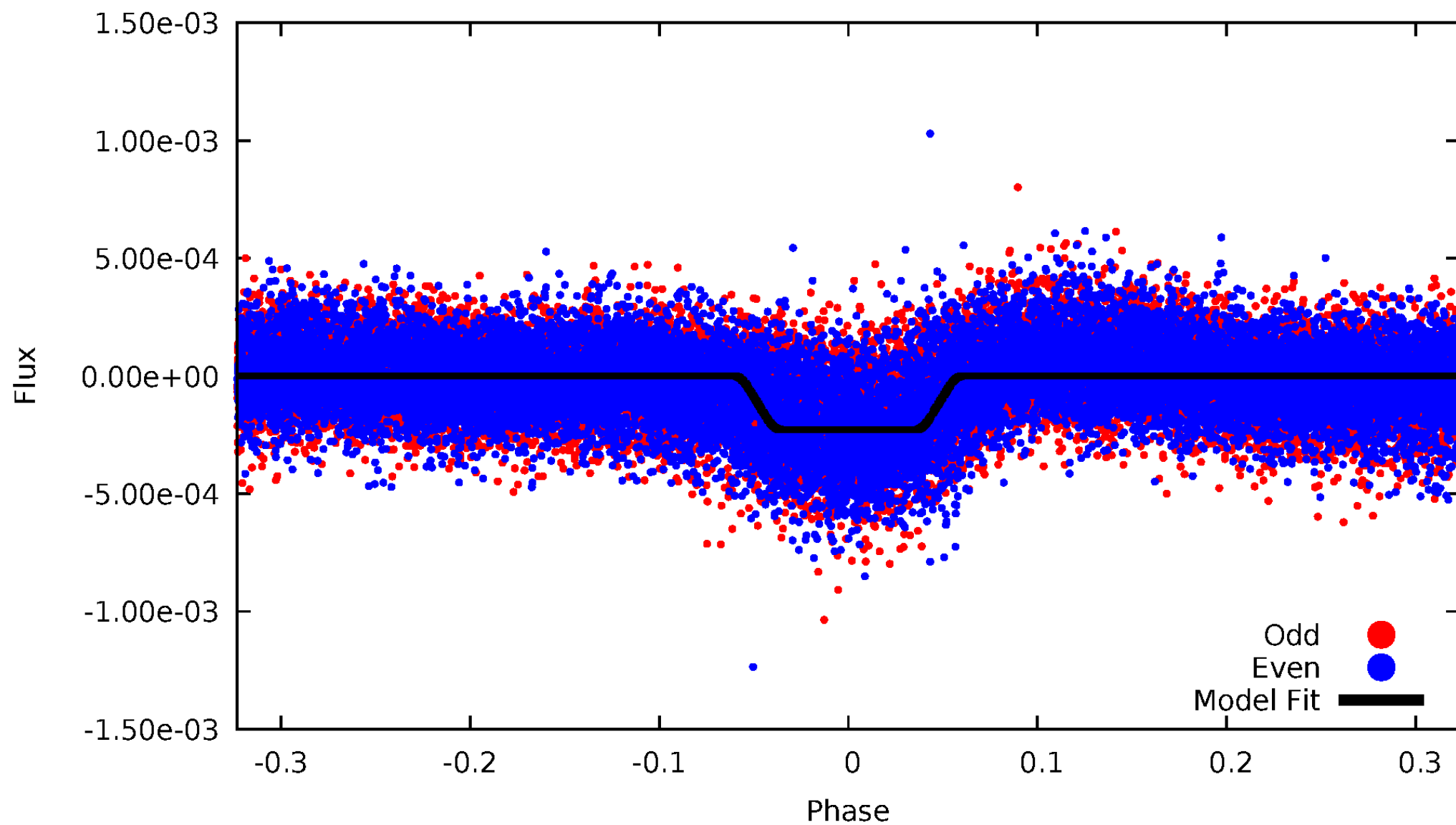
TCE 005462649-01





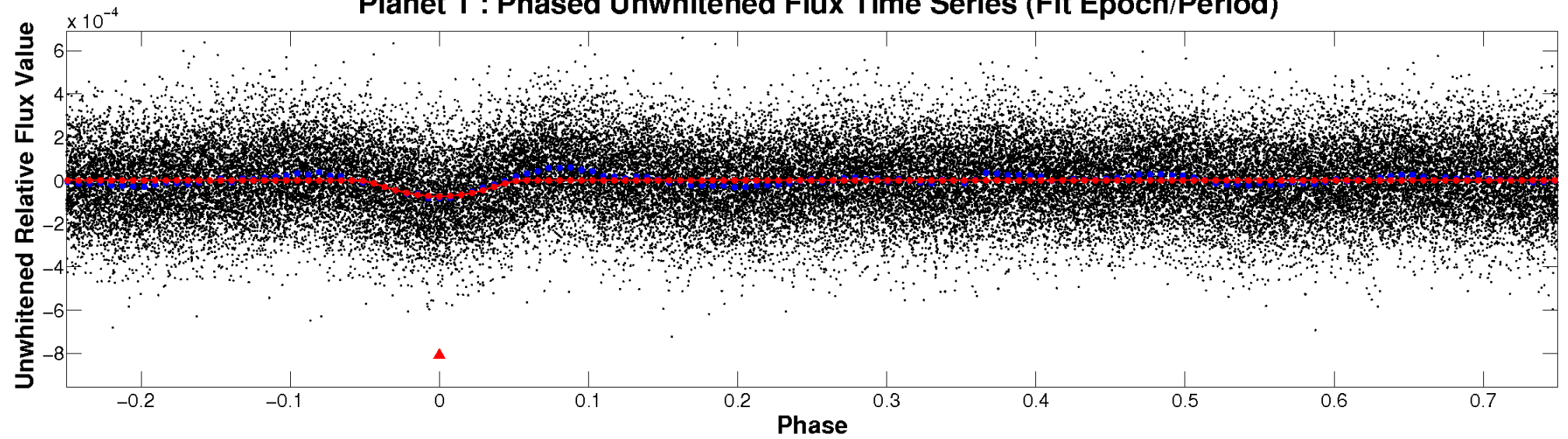
# ALT Odd/Even

TCE 005462649-01

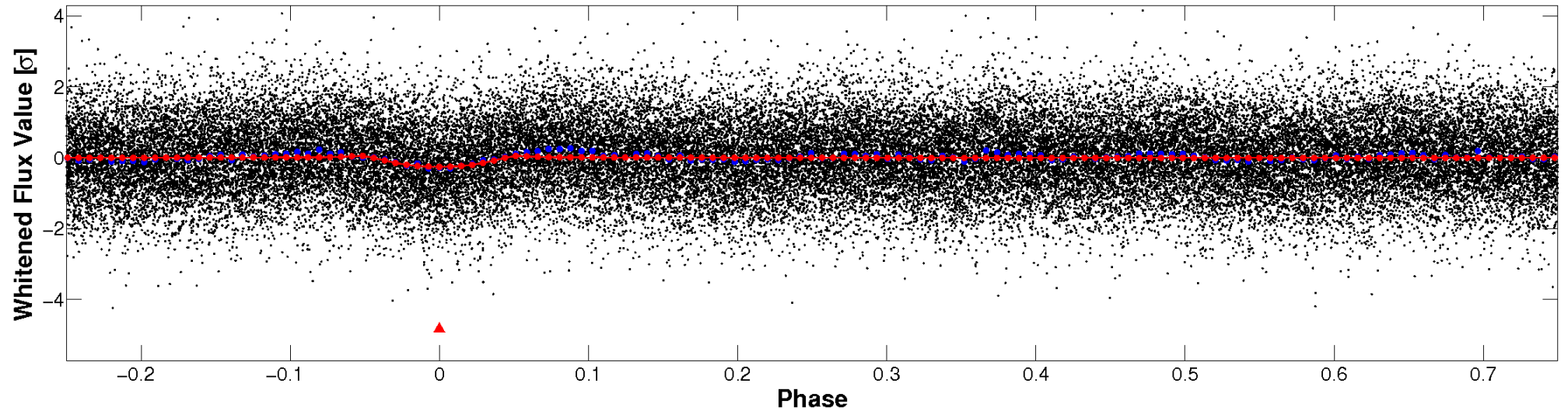


# Non-Whitened Vs. Whitened Light Curve

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

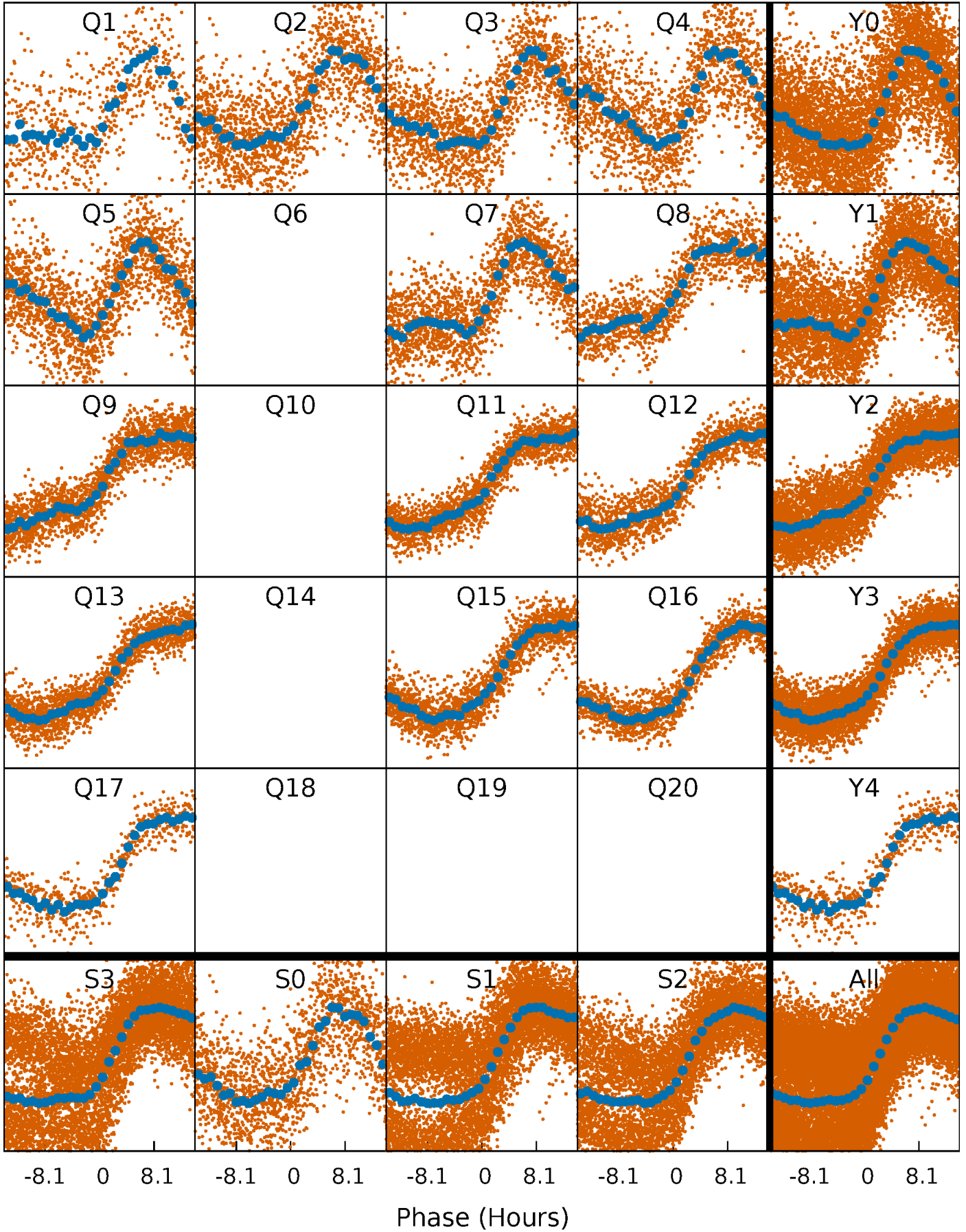


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

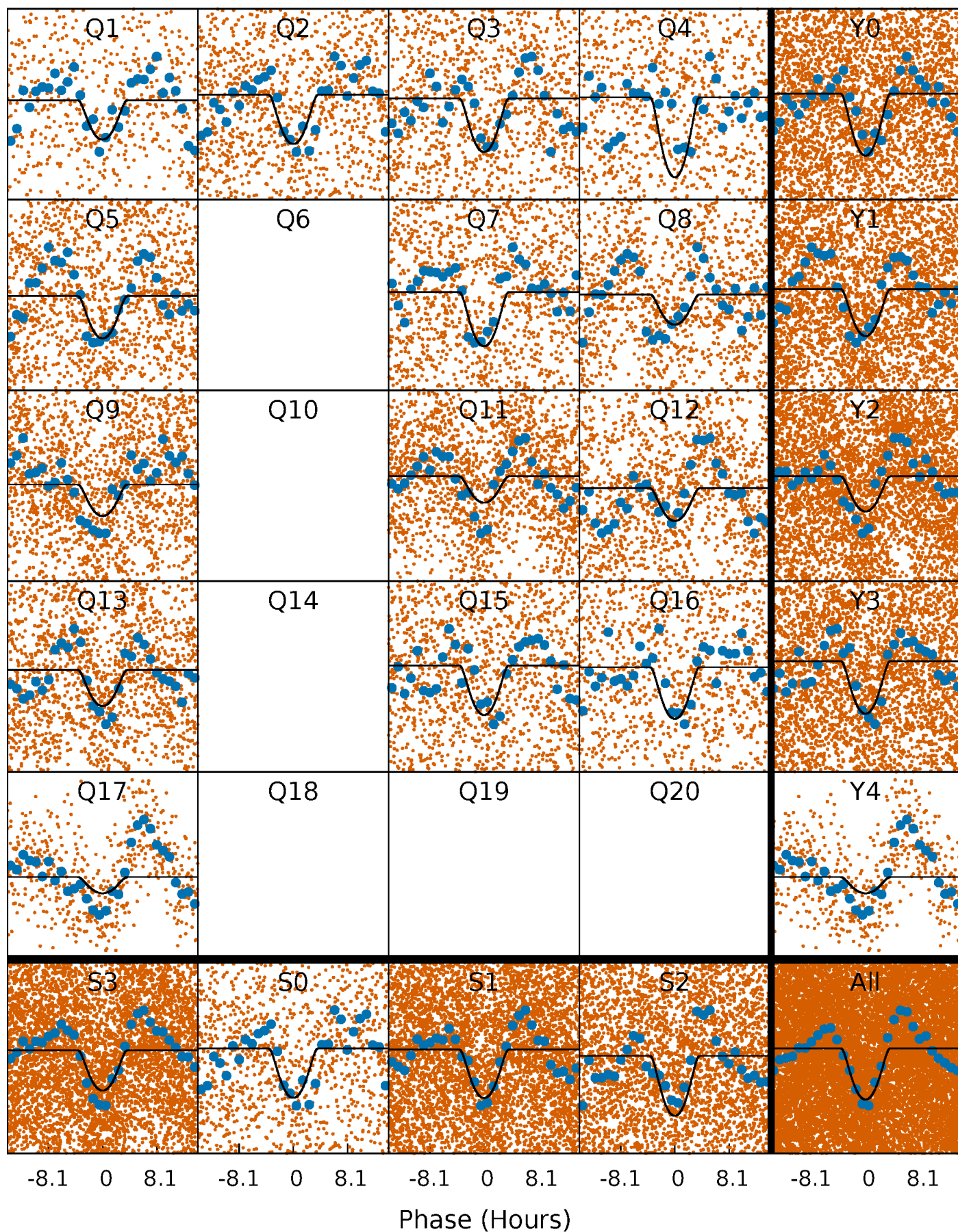
TCE 005462649-01   P= 2.786912 Days    $T_0=132.976571$  (BKJD)





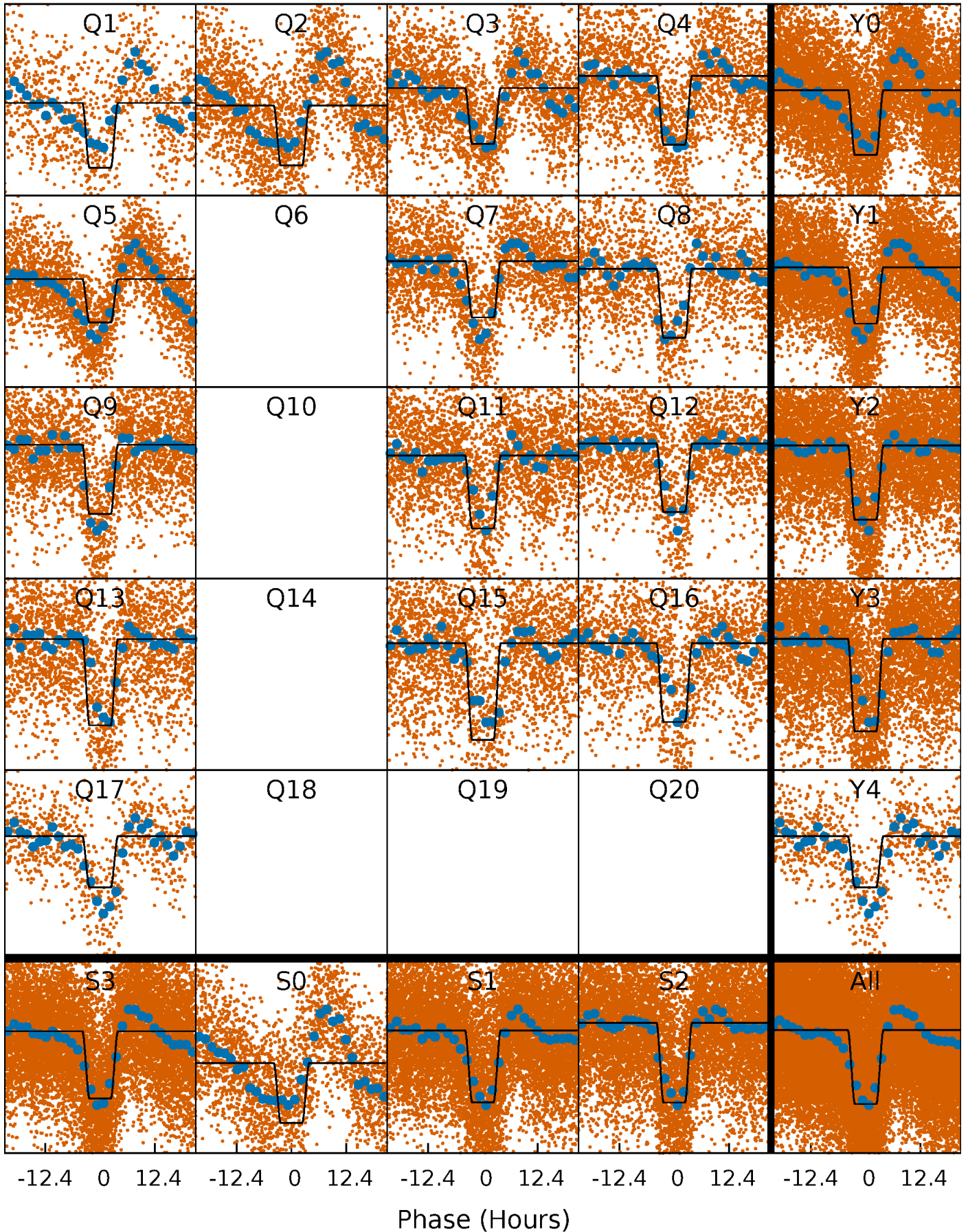
# DV Quarter-Phased Transit Curves

TCE 005462649-01   P= 2.786912 Days    $T_0=132.976571$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

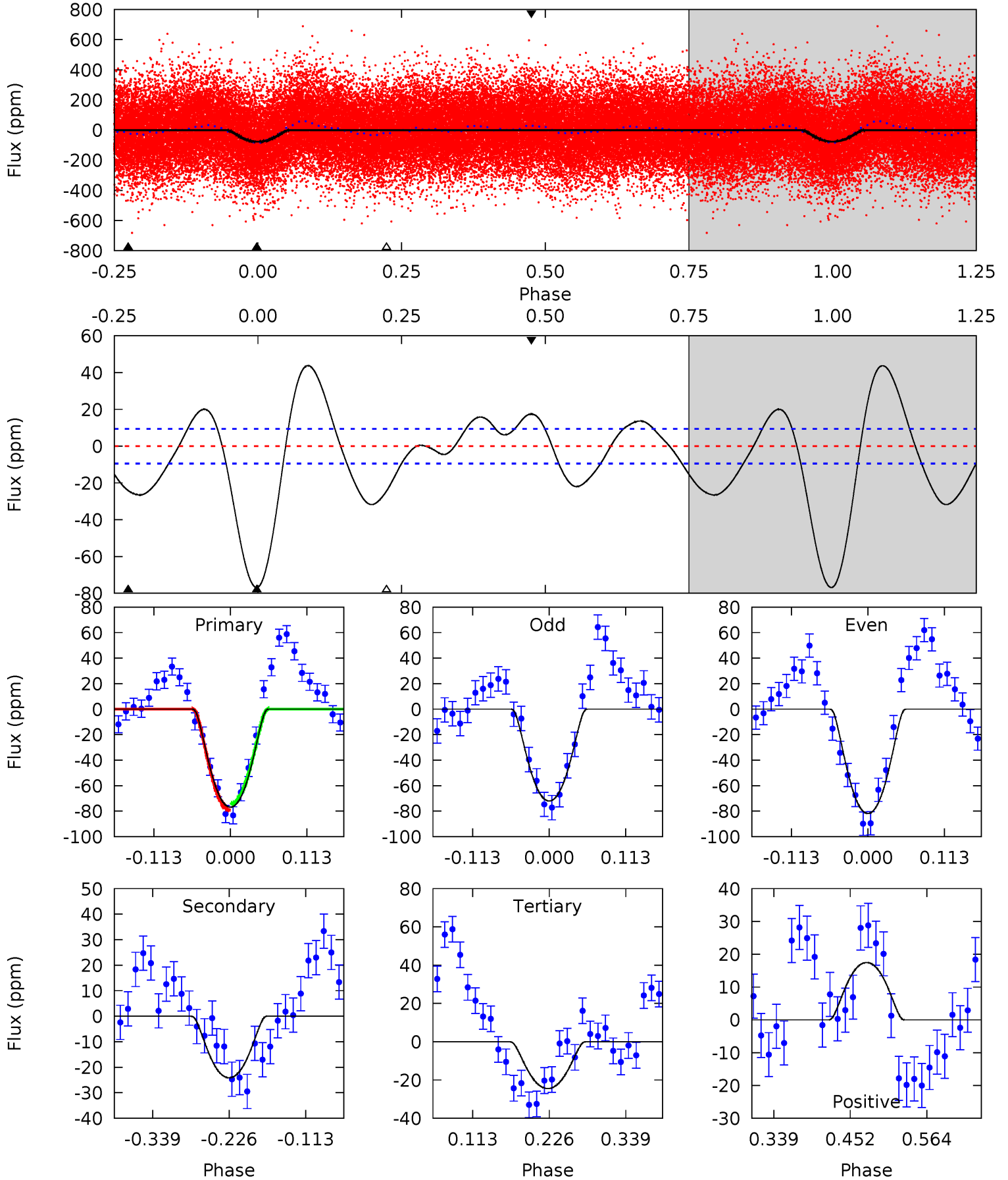
TCE 005462649-01 P= 2.786881 Days  $T_0=132.945436$  (BKJD)



# DV Model-Shift Uniqueness Test

005462649-01, P = 2.786912 Days, E = 130.189659 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
37.0	11.6	11.7	8.41	4.54	1.59	6.79	25.2	28.6	-0.14	3.20	2.35	0.83	0.36	1.14

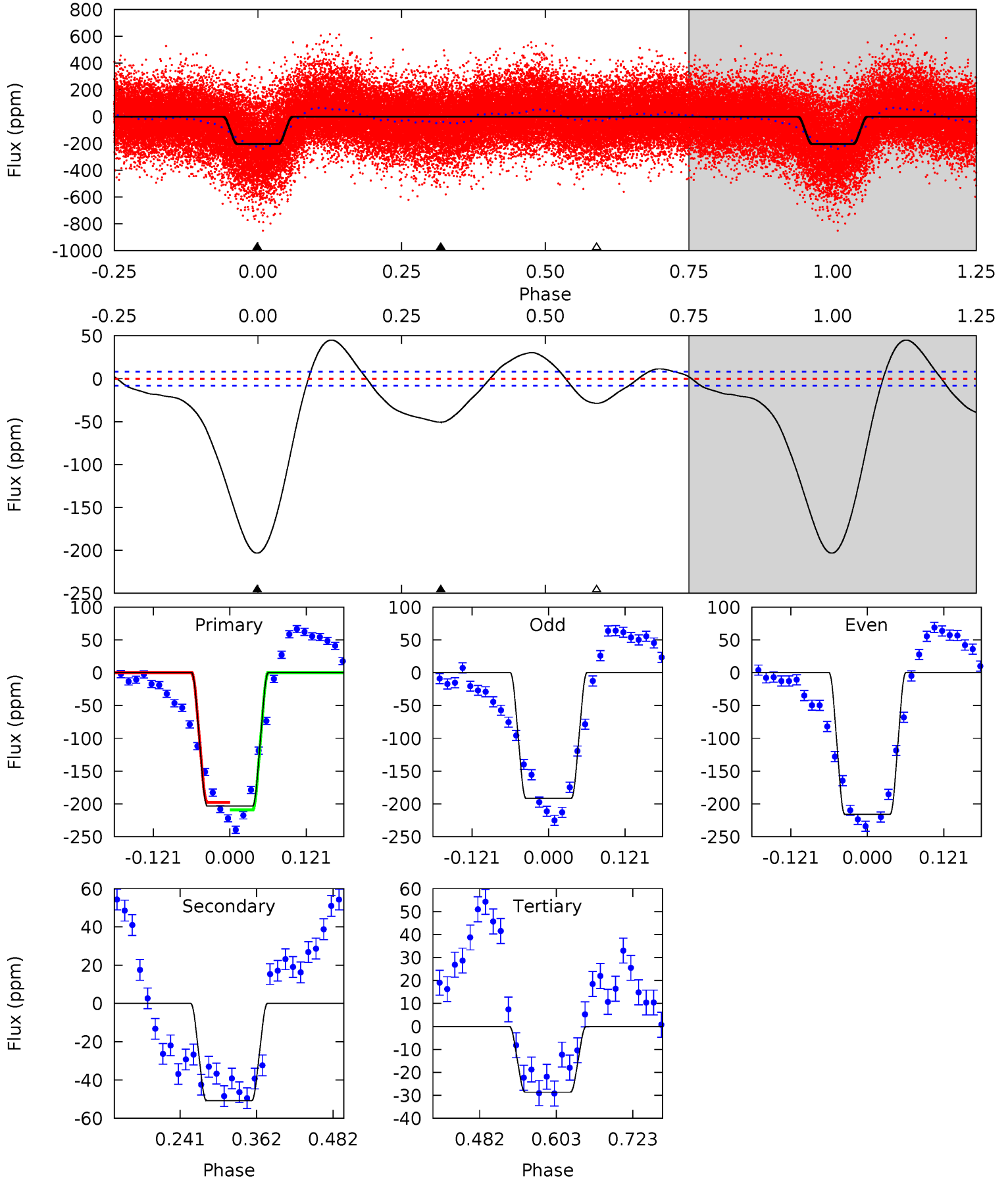




# Alt Model-Shift Uniqueness Test

005462649-01, P = 2.786881 Days, E = 130.158555 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
113.1	28.2	15.9	0	4.53	1.55	11.4	97.2	113.1	12.3	28.2	6.77	0.99	0.18	3.09



### Stellar Parameters For KIC 005462649

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6341^{+160}_{-176}$	$3.455^{+0.376}_{-0.094}$	$-0.260^{+0.350}_{-0.300}$	$4.074^{+0.589}_{-1.649}$	$1.726^{+0.183}_{-0.428}$	$0.036^{+0.115}_{-0.011}$
	+3%/-3%	+11%/-3%	+135%/-115%	+14%/-40%	+11%/-25%	+321%/-31%
Source	PHO1	FLK73	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 005462649-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-24 \pm 2$	$5.02^{+2.45}_{-2.22}$	$3591^{+208}_{-399}$	$3996^{+1249}_{-704}$	$1.109^{+2.643}_{-0.584}$
Alt.	$-51 \pm 2$	$6.25^{+2.60}_{-2.38}$	$3578^{+224}_{-379}$	$4330^{+988}_{-616}$	$1.561^{+2.436}_{-0.788}$

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



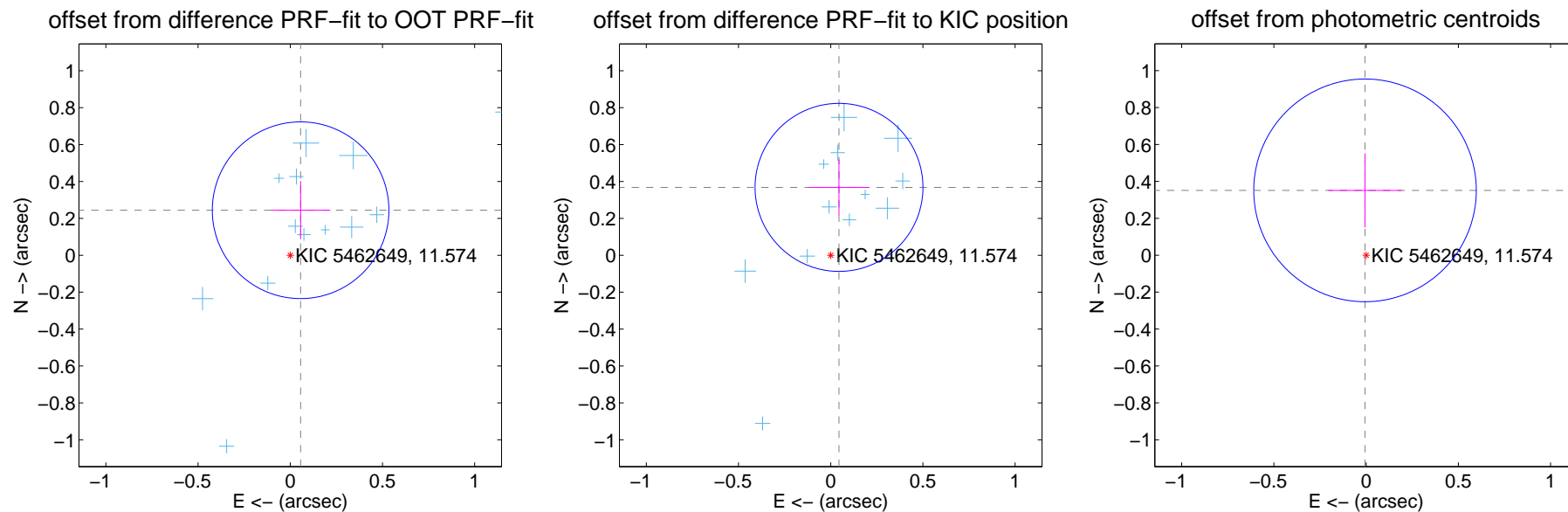
## DV Centroid Data

Supplemental centroid analysis for 005462649-01. **Kepler magnitude: 11.57.** Transit SNR 12.97

There are 14 quarters with good PRF difference image offsets

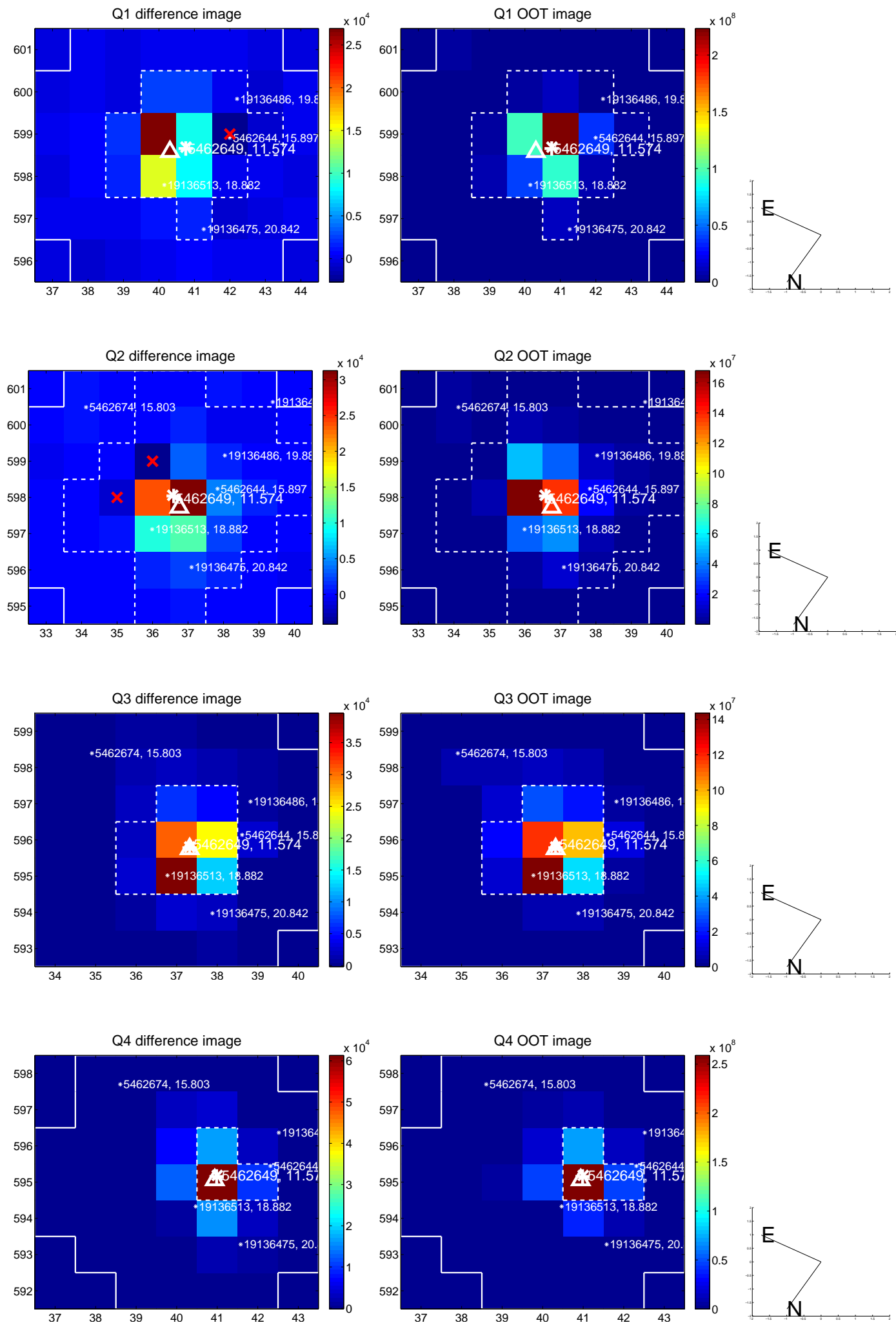
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.251 \pm 0.160$	1.57	$-0.056 \pm 0.161$	$0.244 \pm 0.157$
PRF-fit source offset from KIC position	$0.371 \pm 0.152$	2.44	$-0.045 \pm 0.163$	$0.368 \pm 0.150$
photometric centroid source offset	$0.35 \pm 0.20$	1.75	$0.01 \pm 0.20$	$0.35 \pm 0.20$

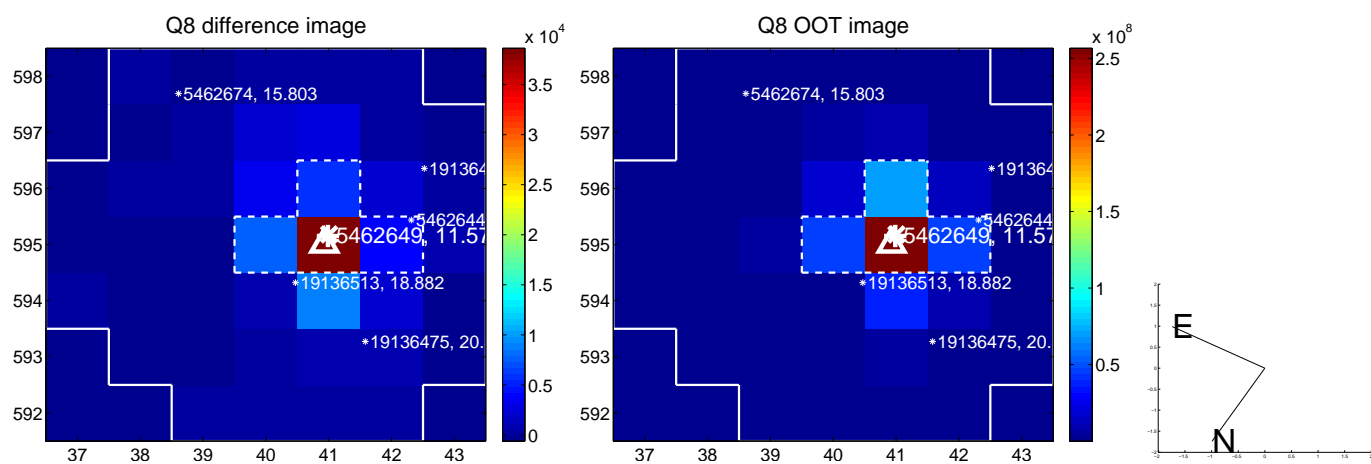
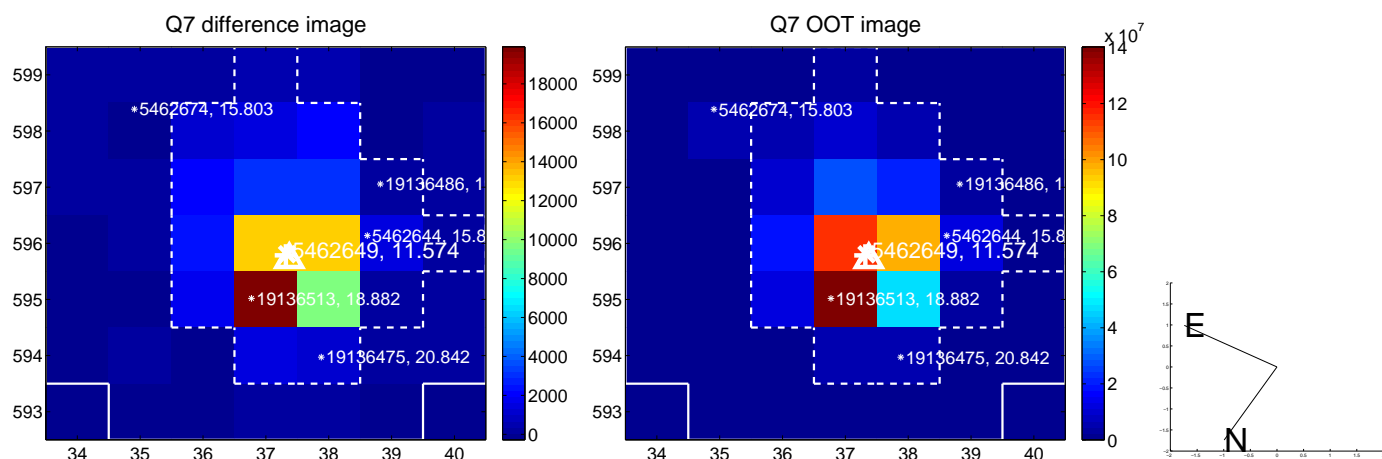
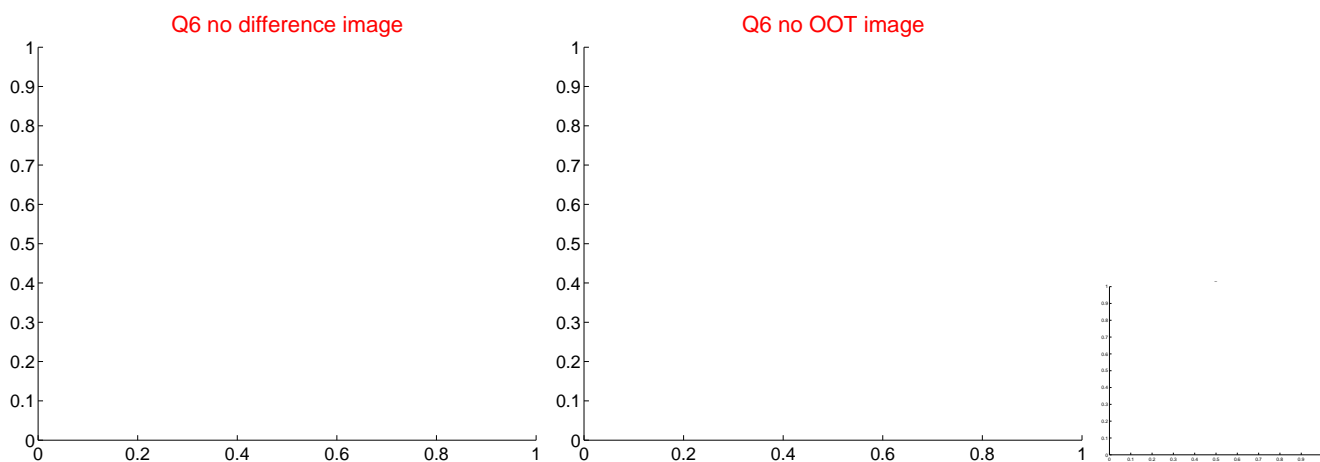
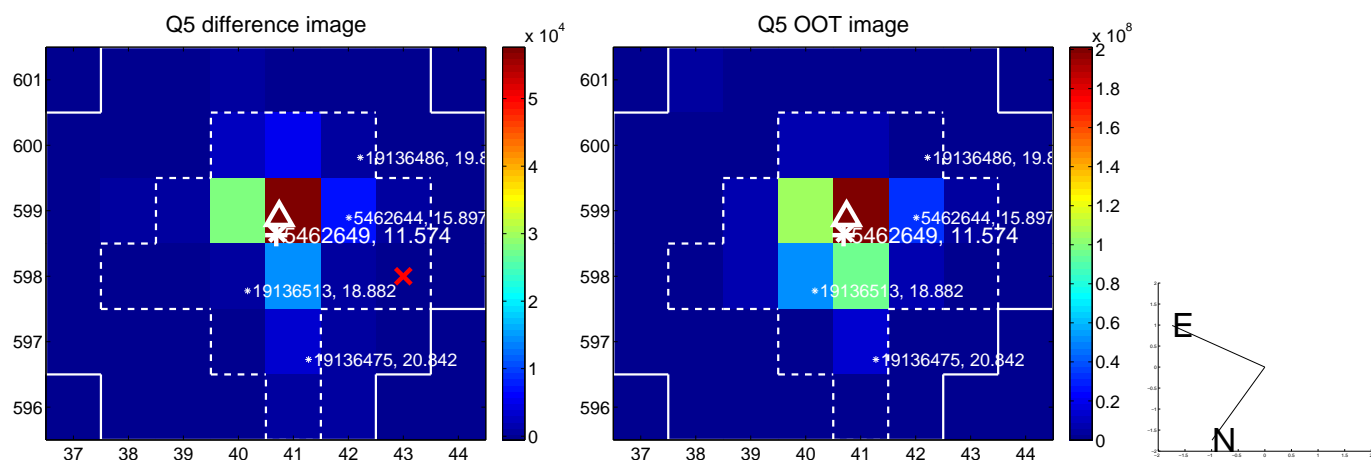


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

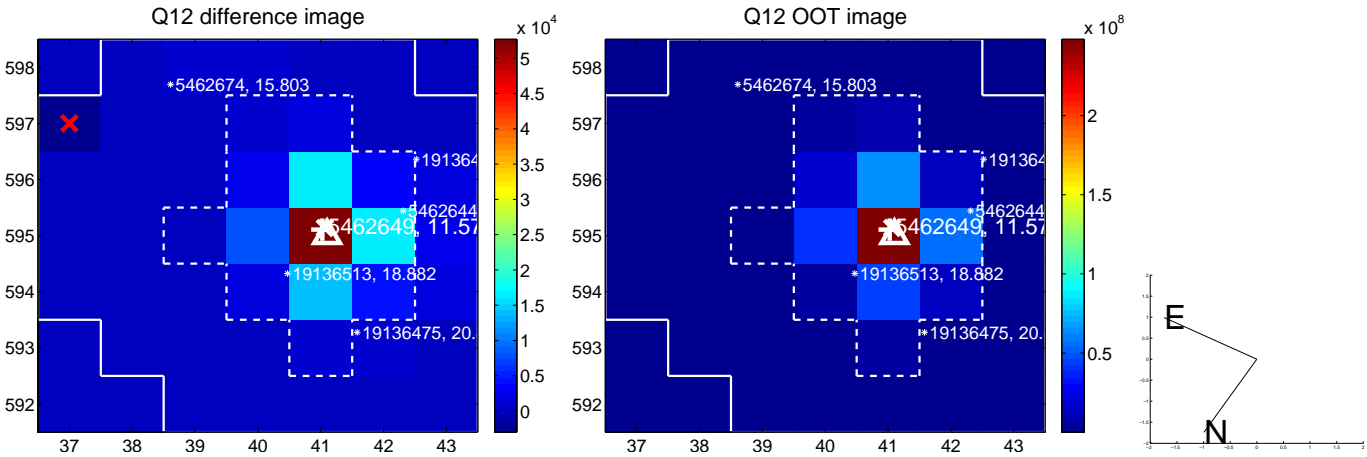
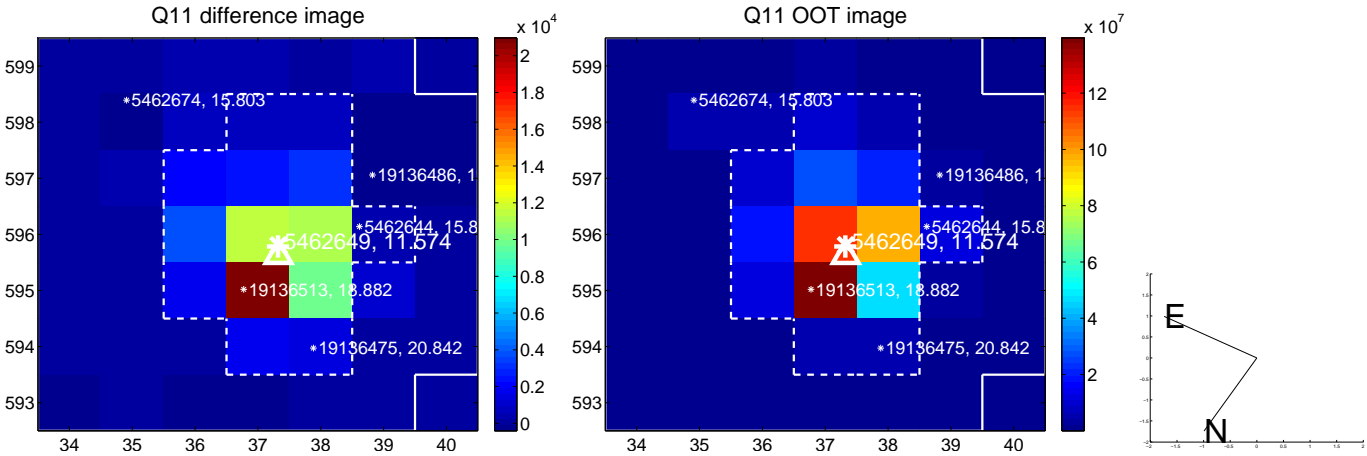
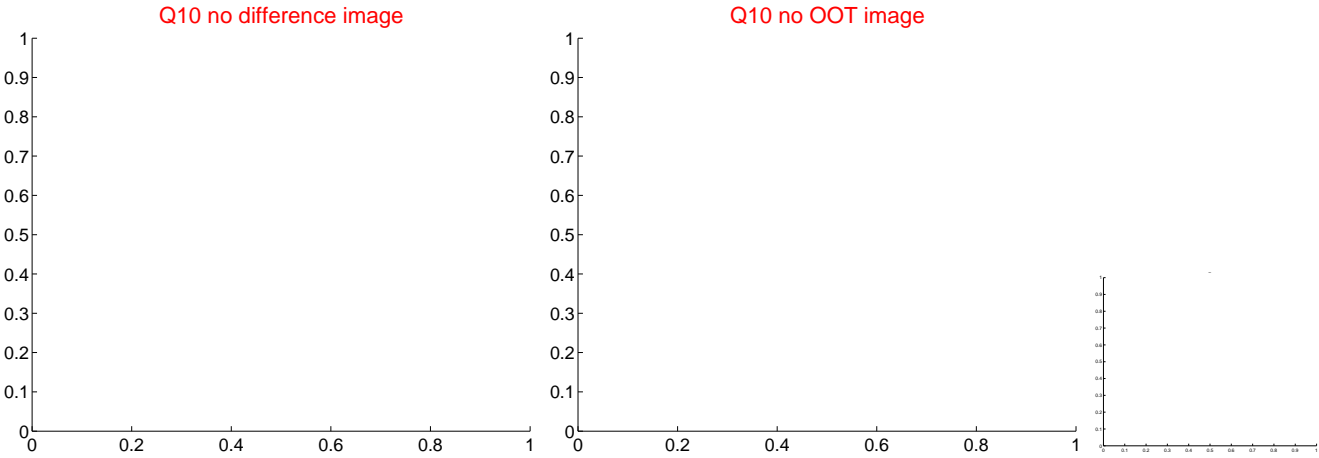
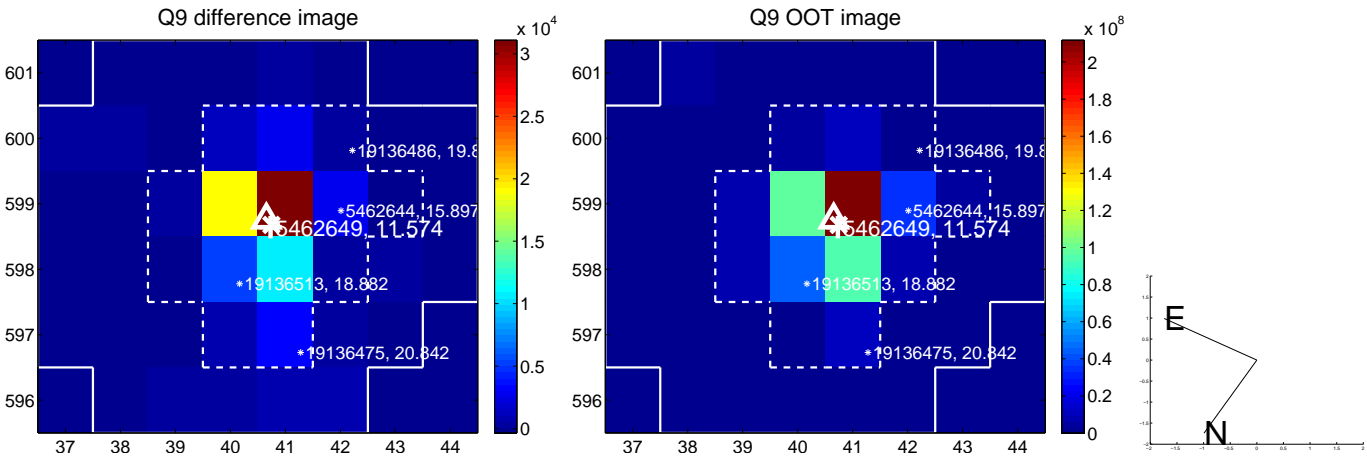
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



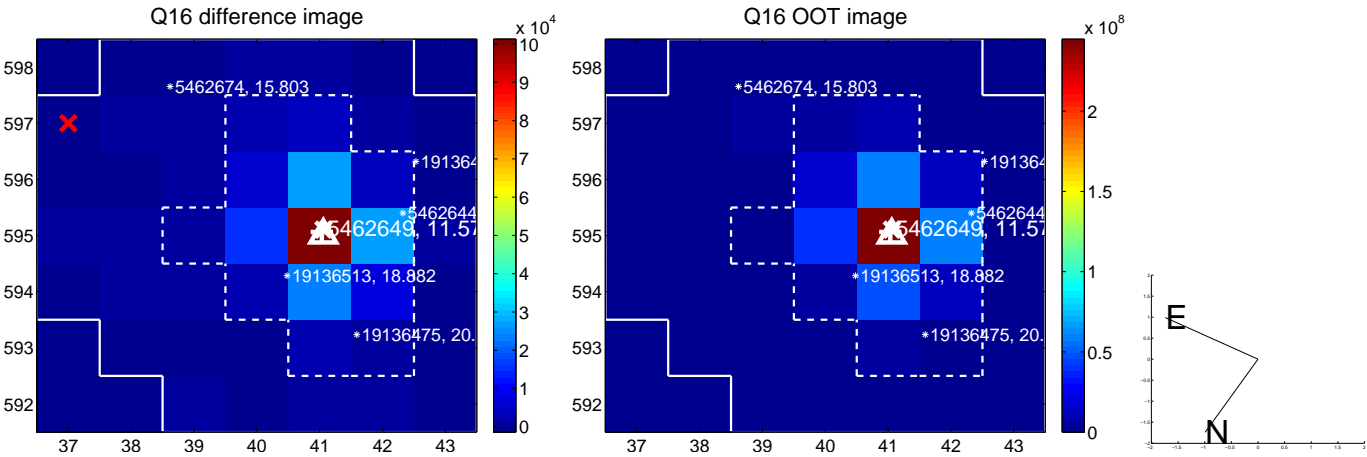
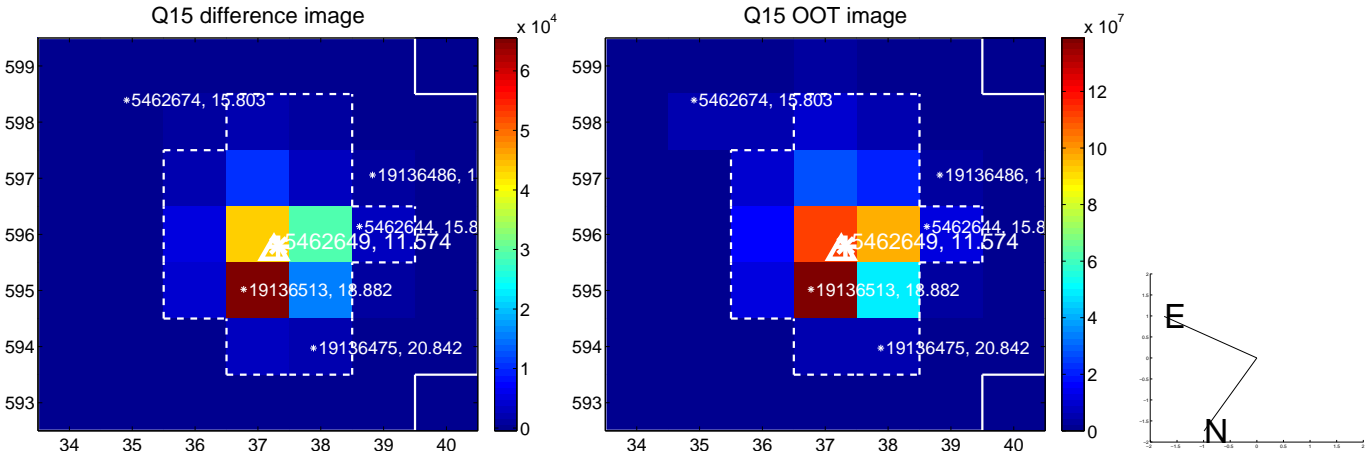
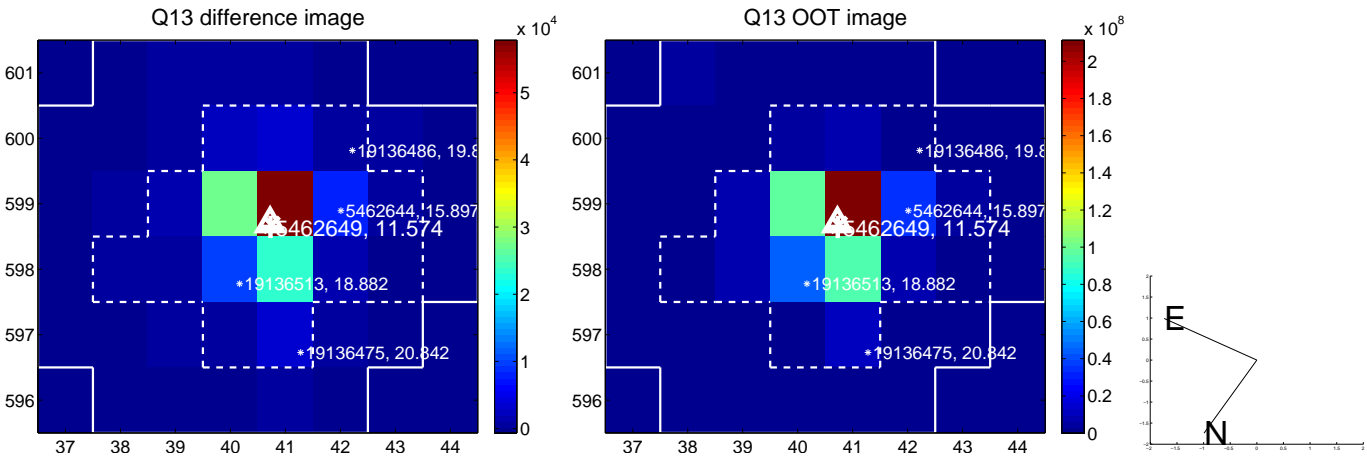
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

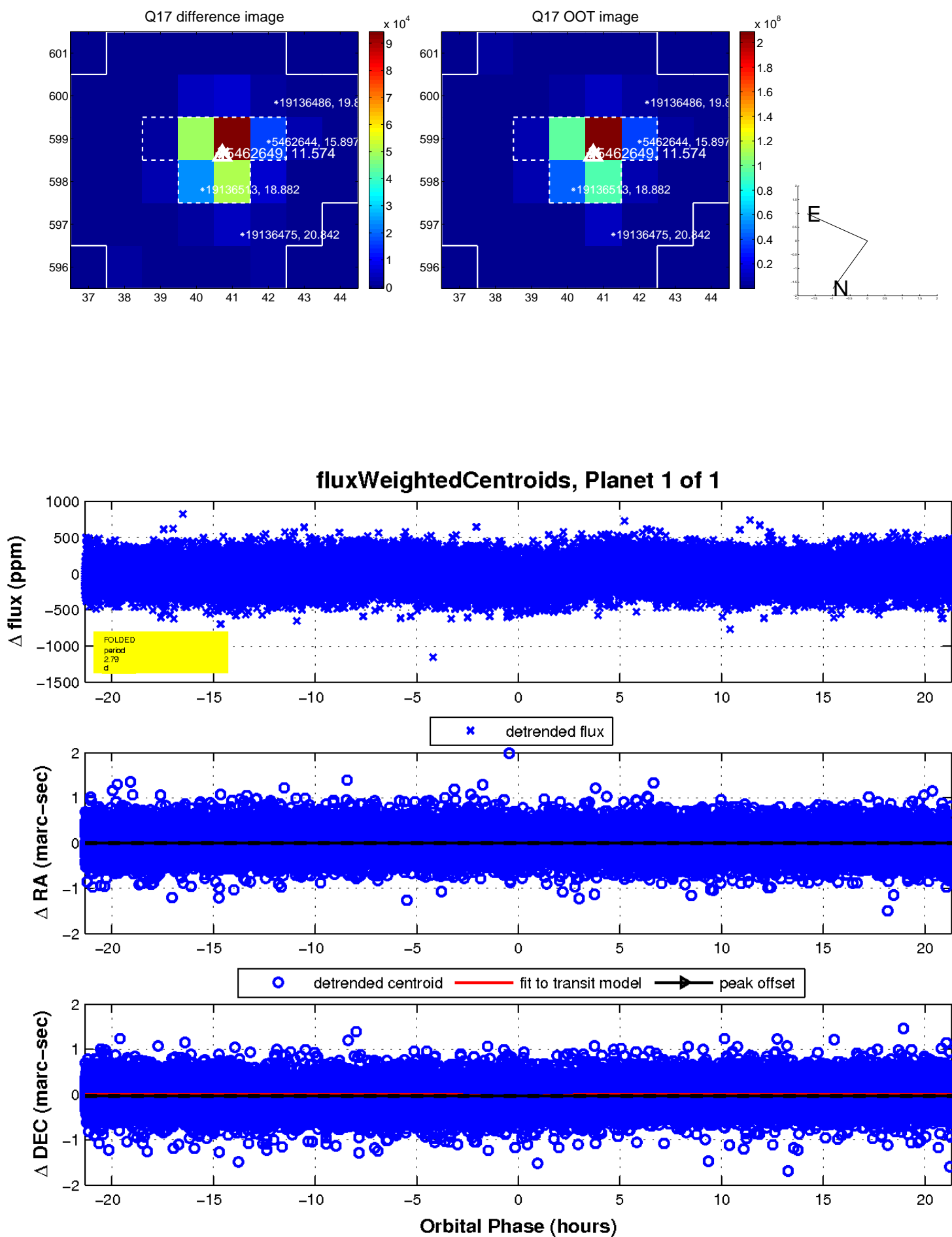


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

