

# KIC 009574614

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009574614-01	OBS	1745.01	0.982093	131.700106	5161.2	1.372	327.2	325.6	0.74	5472	6.46	1430.69

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009574614-01	OBS	FP	0.00	0	1	0	0	MOD_ODDEVEN_DV—MOD_ODDEVEN_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 009574614-01

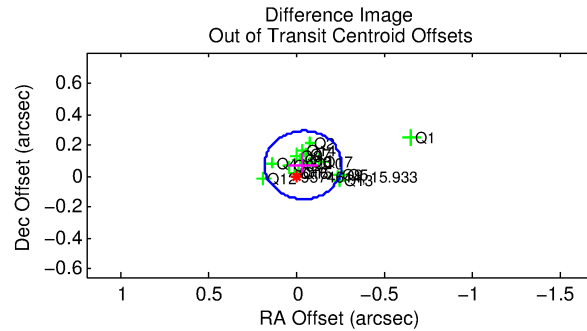
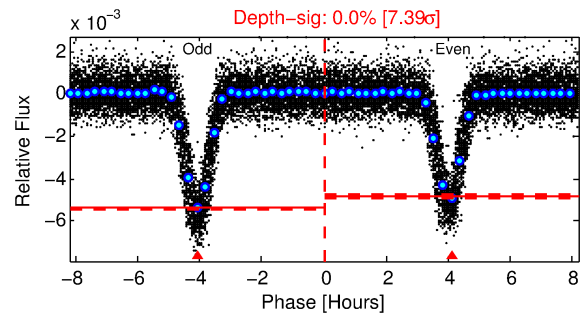
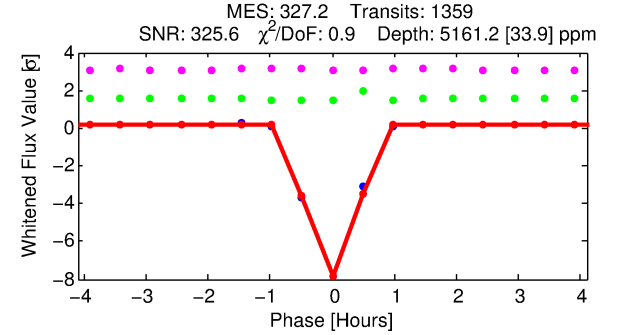
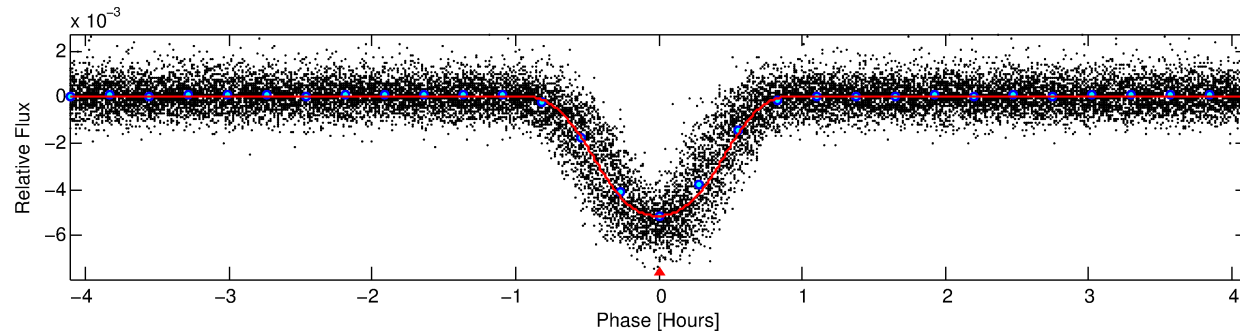
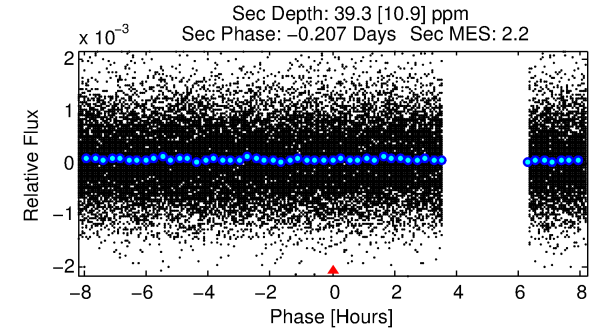
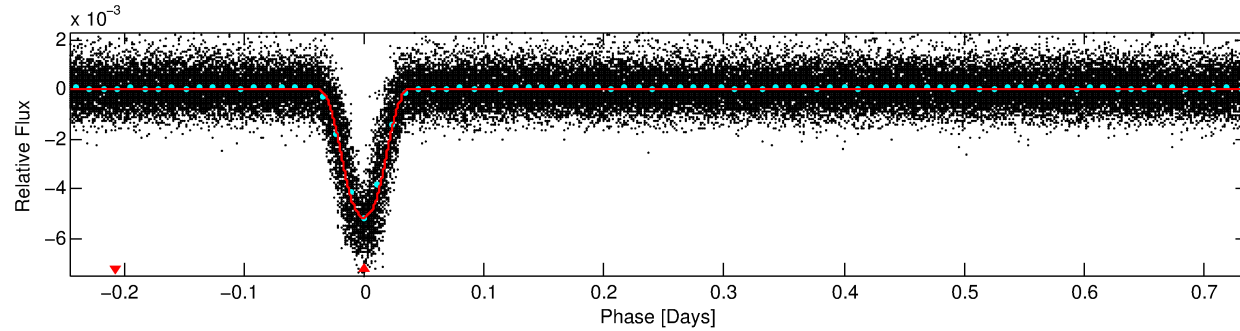
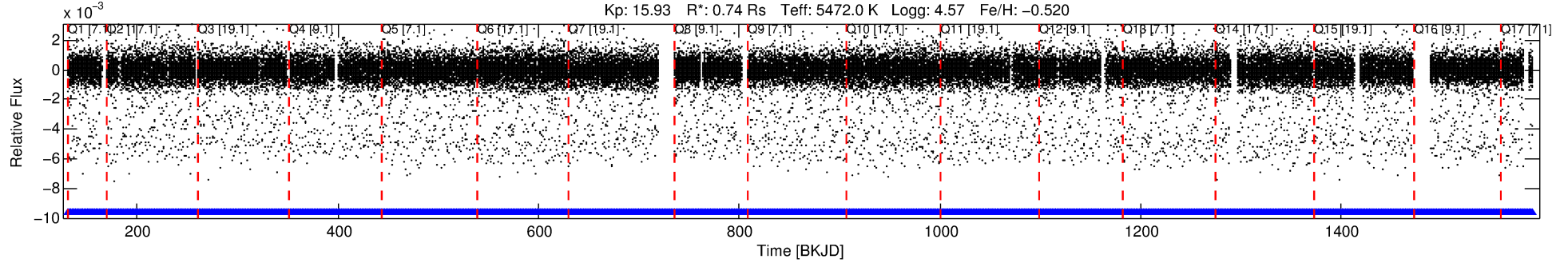
No Significant Match Found

# DV One-Page Summary

KIC: 9574614 Candidate: 1 of 1 Period: 0.982 d

KOI: K01745.01 Corr: 0.947

Kp: 15.93 R\*: 0.74 Rs Teff: 5472.0 K Logg: 4.57 Fe/H: -0.520



## DV Fit Results:

Period = 0.98209 [0.00000] d  
Epoch = 131.7001 [0.0001] BKJD  
Rp/R\* = 0.0797 [0.0007]  
a/R\* = 3.40 [0.07]  
b = 0.90 [0.01]  
Seff = 1430.69 [312.17]  
Teff = 1568 [86] K  
Rp = 6.45 [1.03] Re  
a = 0.0176 [0.0023] AU  
Ag = 0.16 [0.05] [-15.70σ]  
Teffp = 1534 [116] K [-0.24σ]

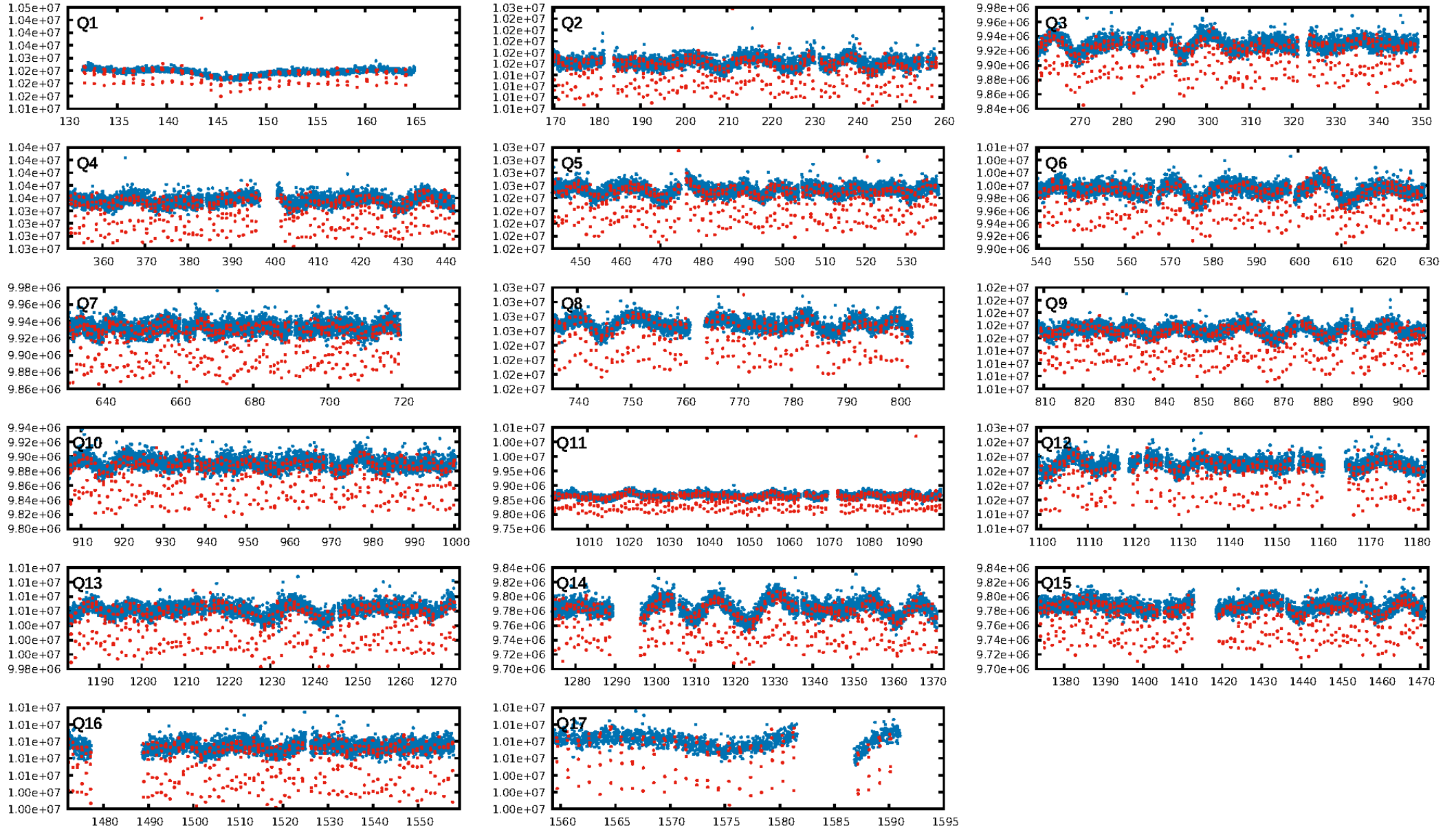
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [1298/1298]  
GhostDiagnostic-chr: 6.542  
Centroid-sig: 0.0%  
Centroid-so: 0.152 arcsec [3.46σ]  
OotOffset-rm: 0.081 arcsec [1.10σ]  
KicOffset-rm: 0.153 arcsec [2.20σ]  
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]

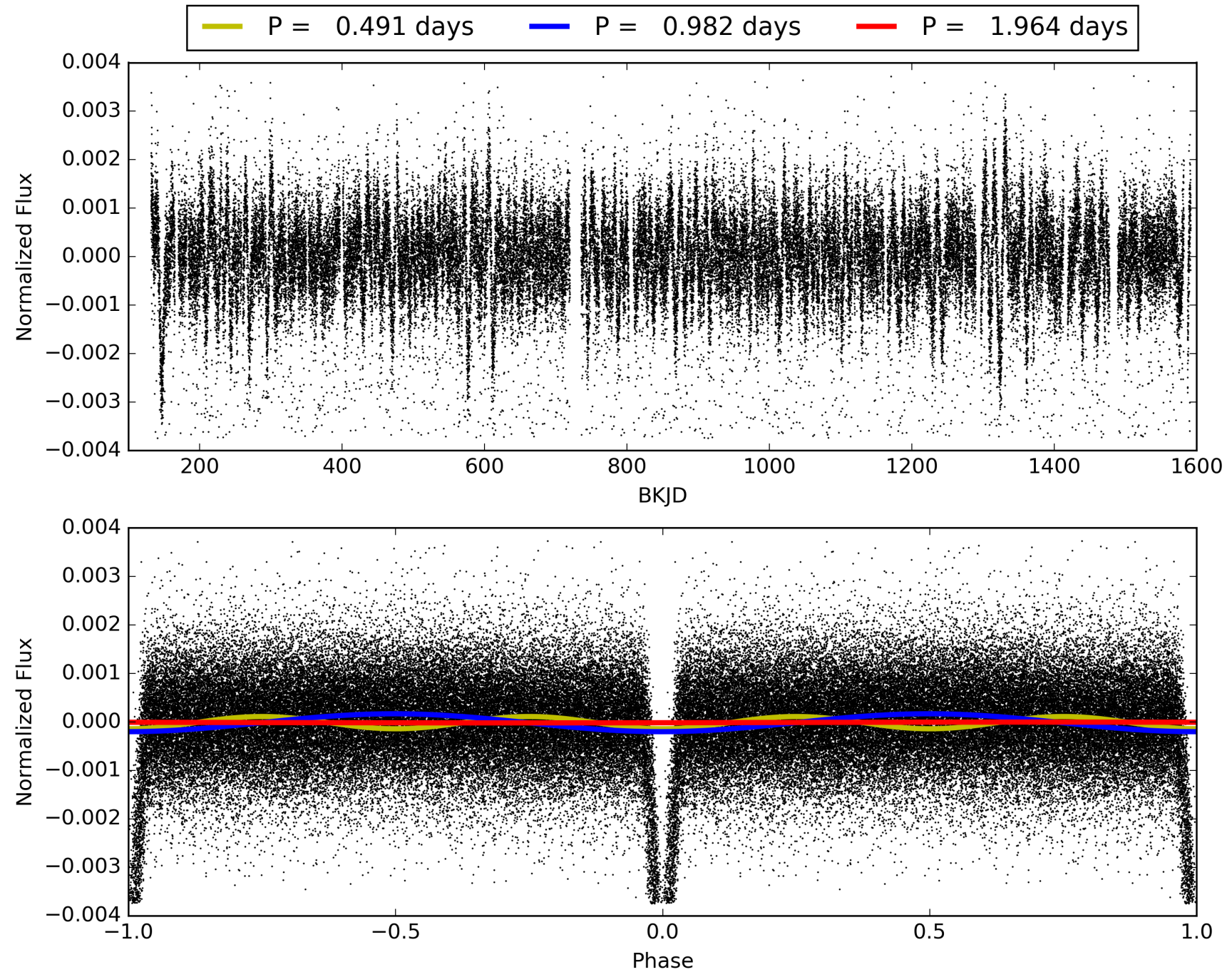
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:47:35 Z

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

# TCE 009574614-01, PDC Light Curves

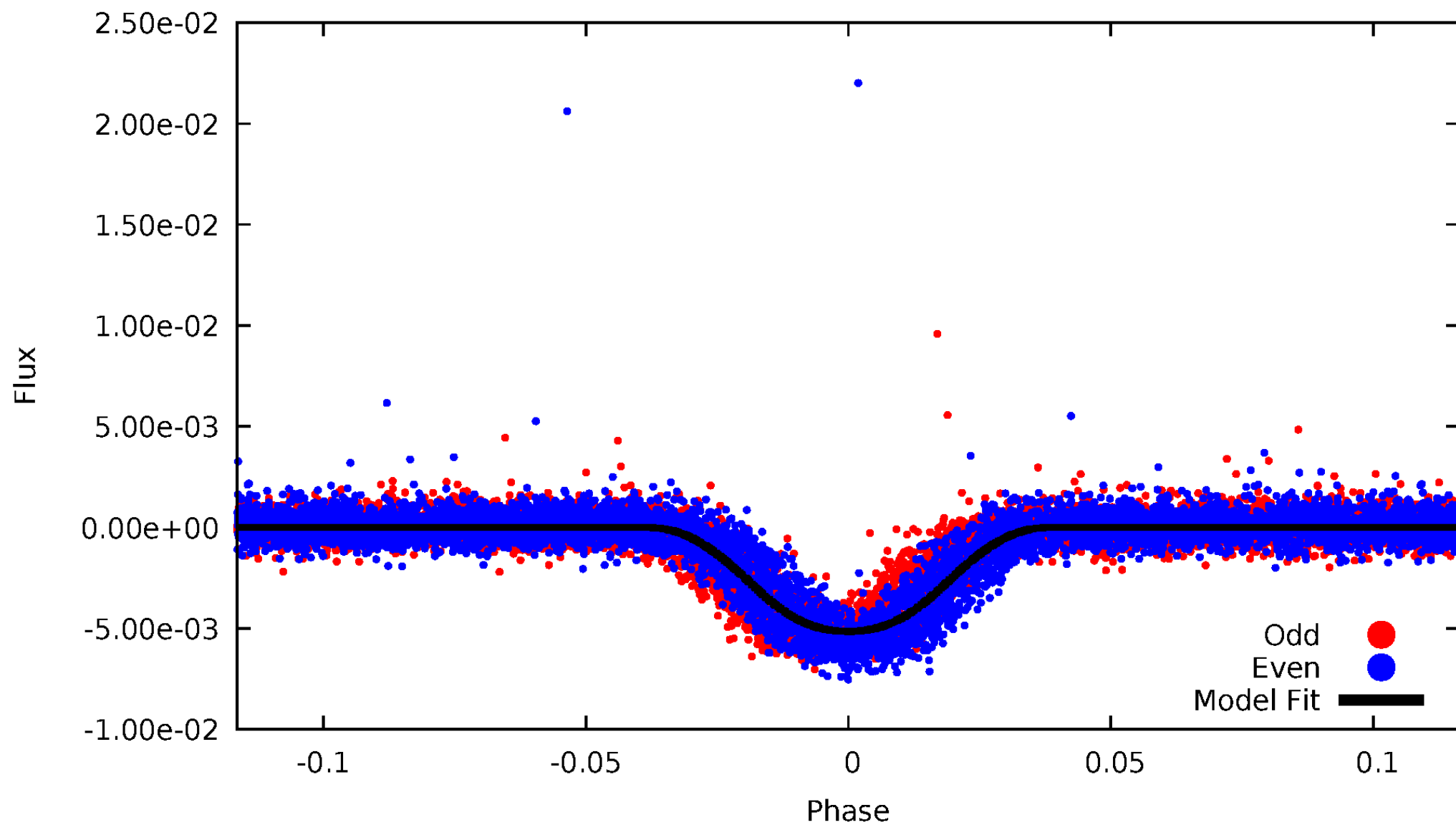


TCE 009574614-01



# DV Odd/Even

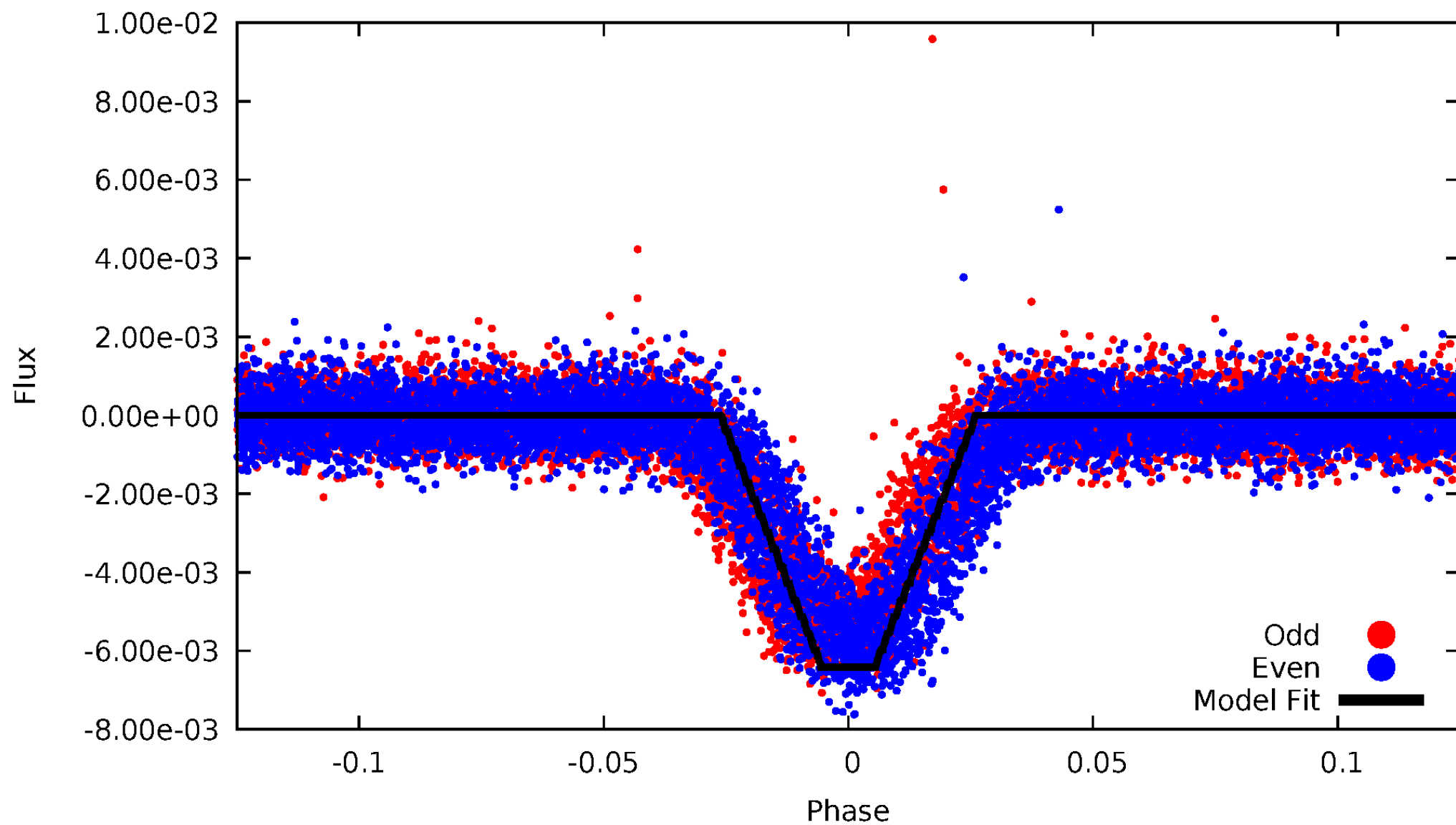
TCE 009574614-01



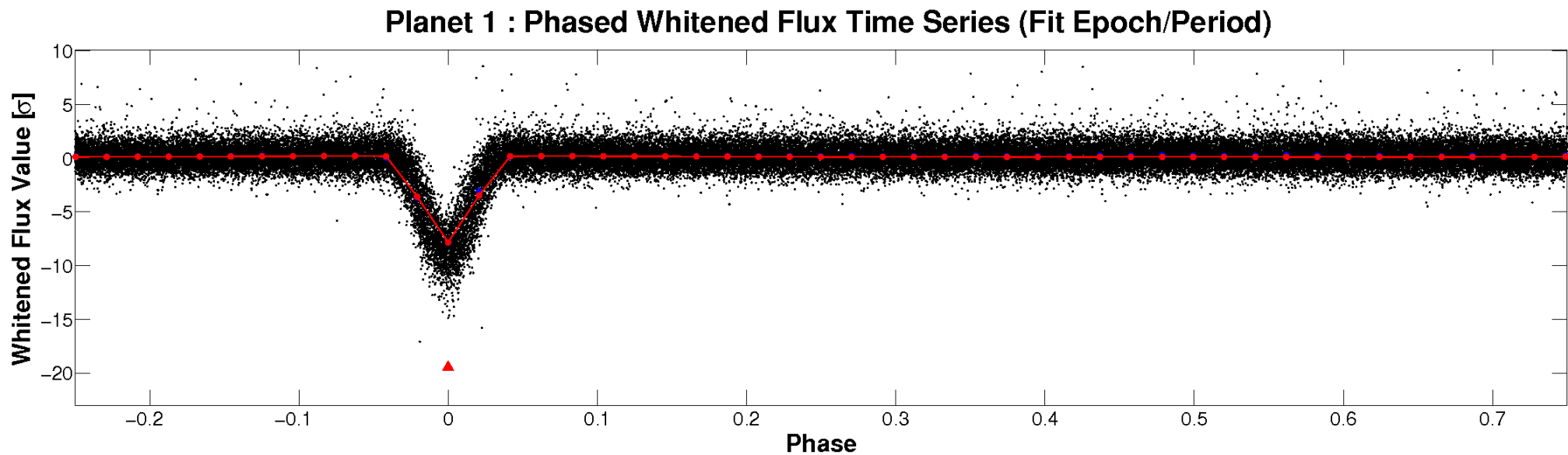
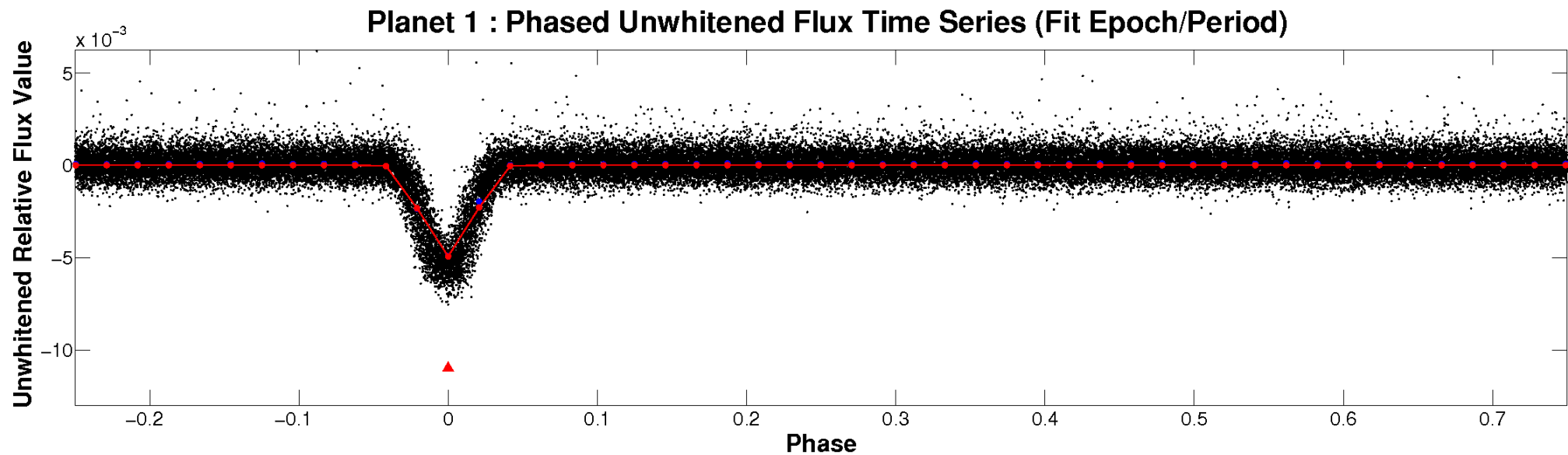


# ALT Odd/Even

TCE 009574614-01

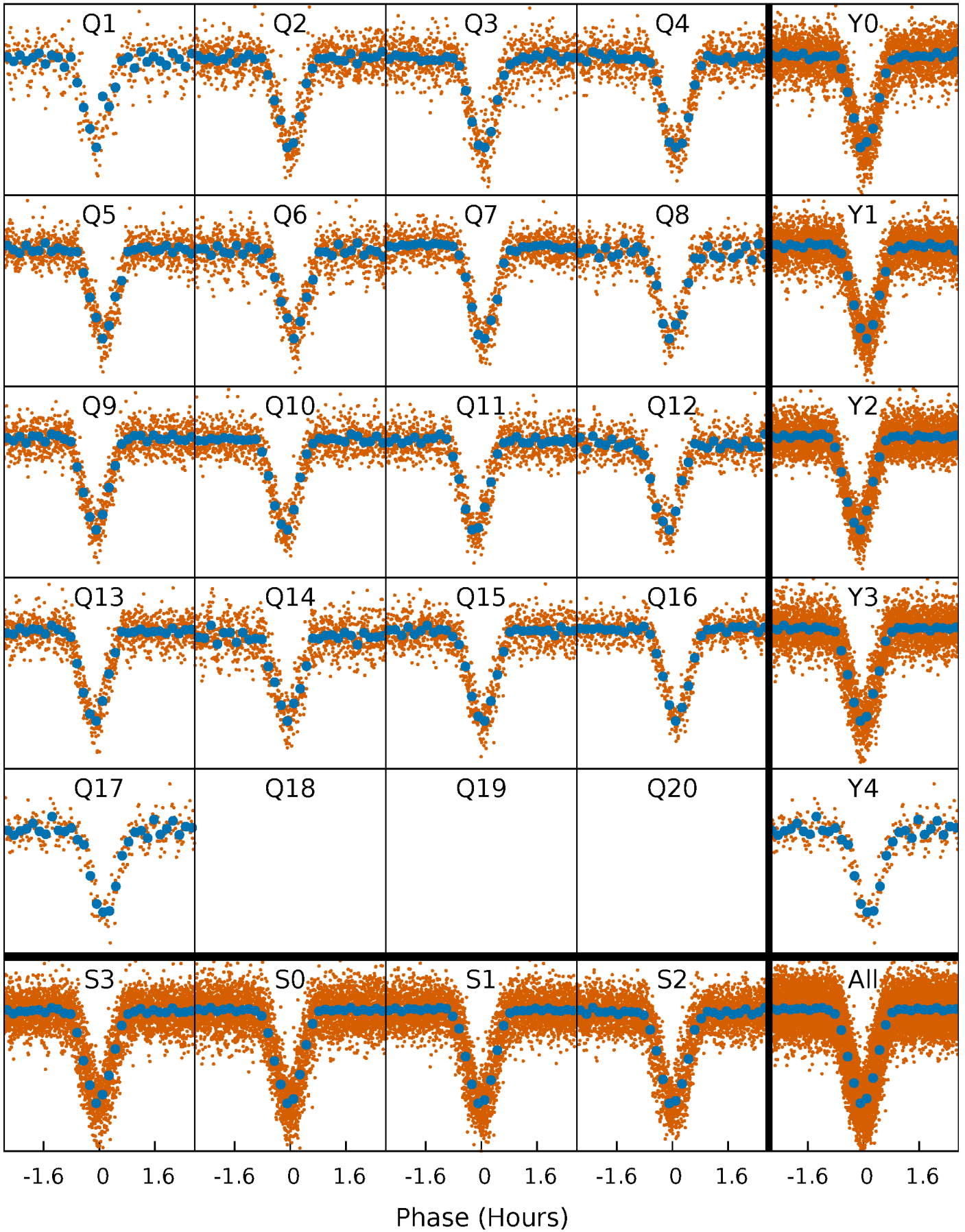


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

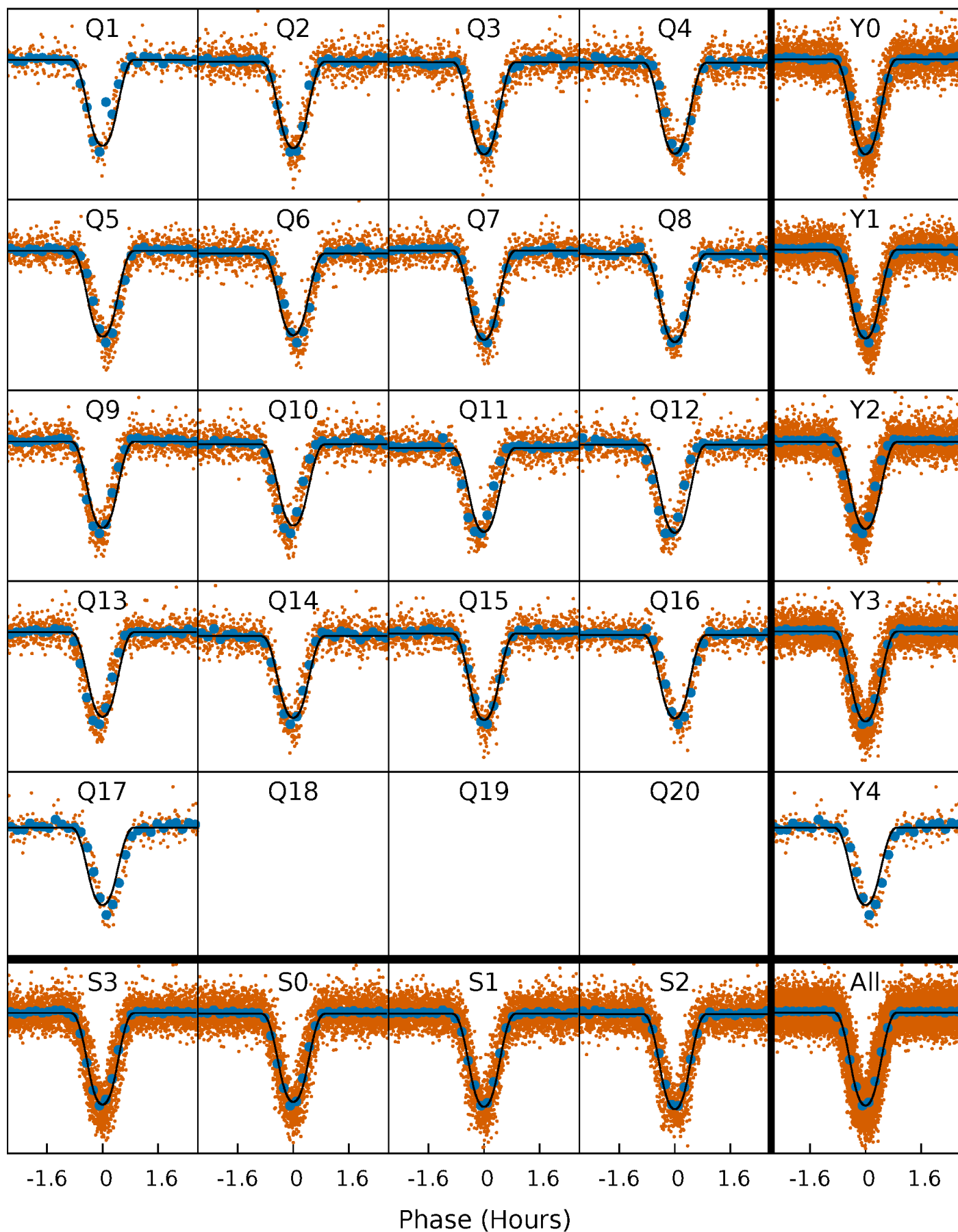
TCE 009574614-01   P= 0.982093 Days    $T_0=131.700106$  (BKJD)





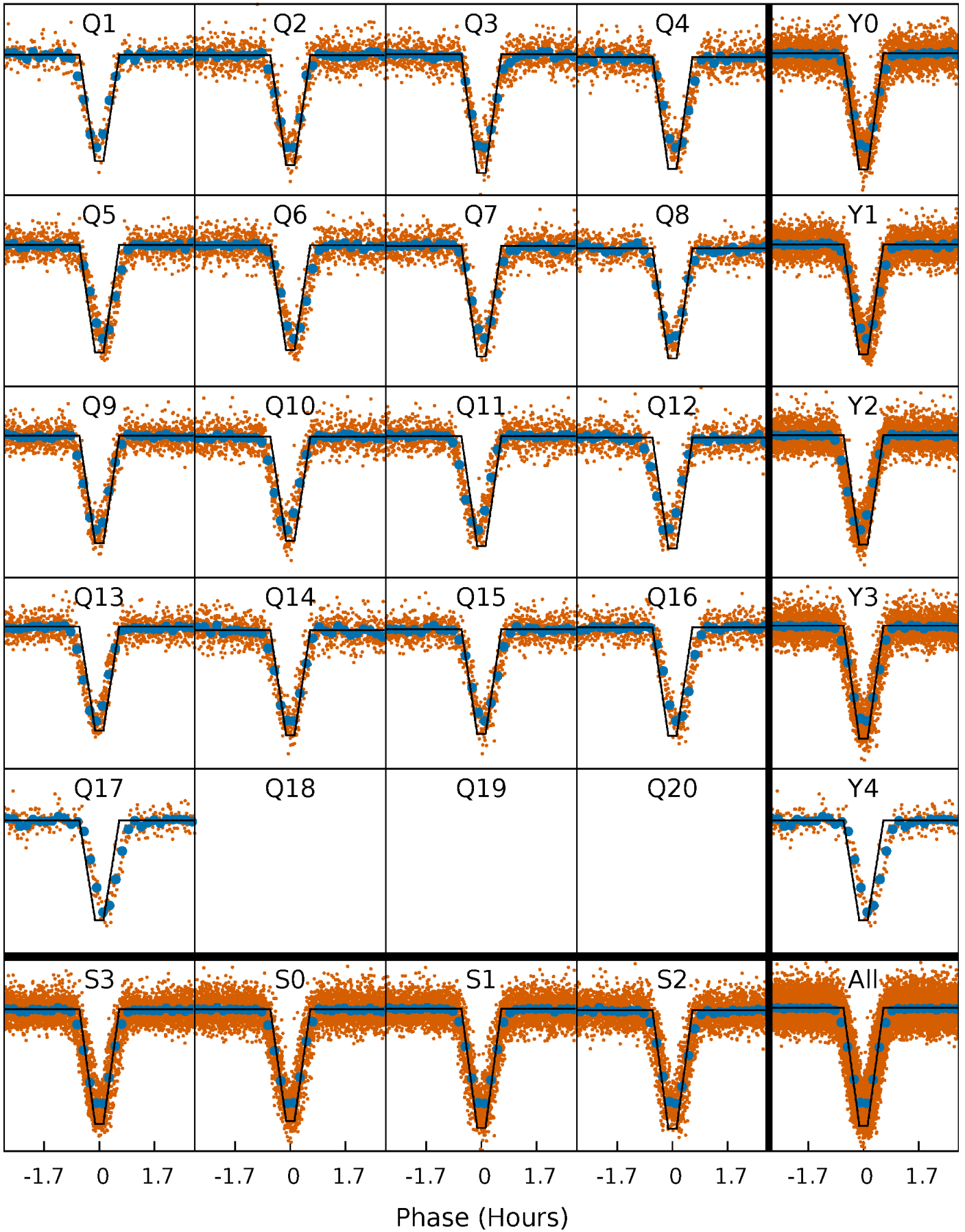
# DV Quarter-Phased Transit Curves

TCE 009574614-01   P= 0.982093 Days    $T_0=131.700106$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

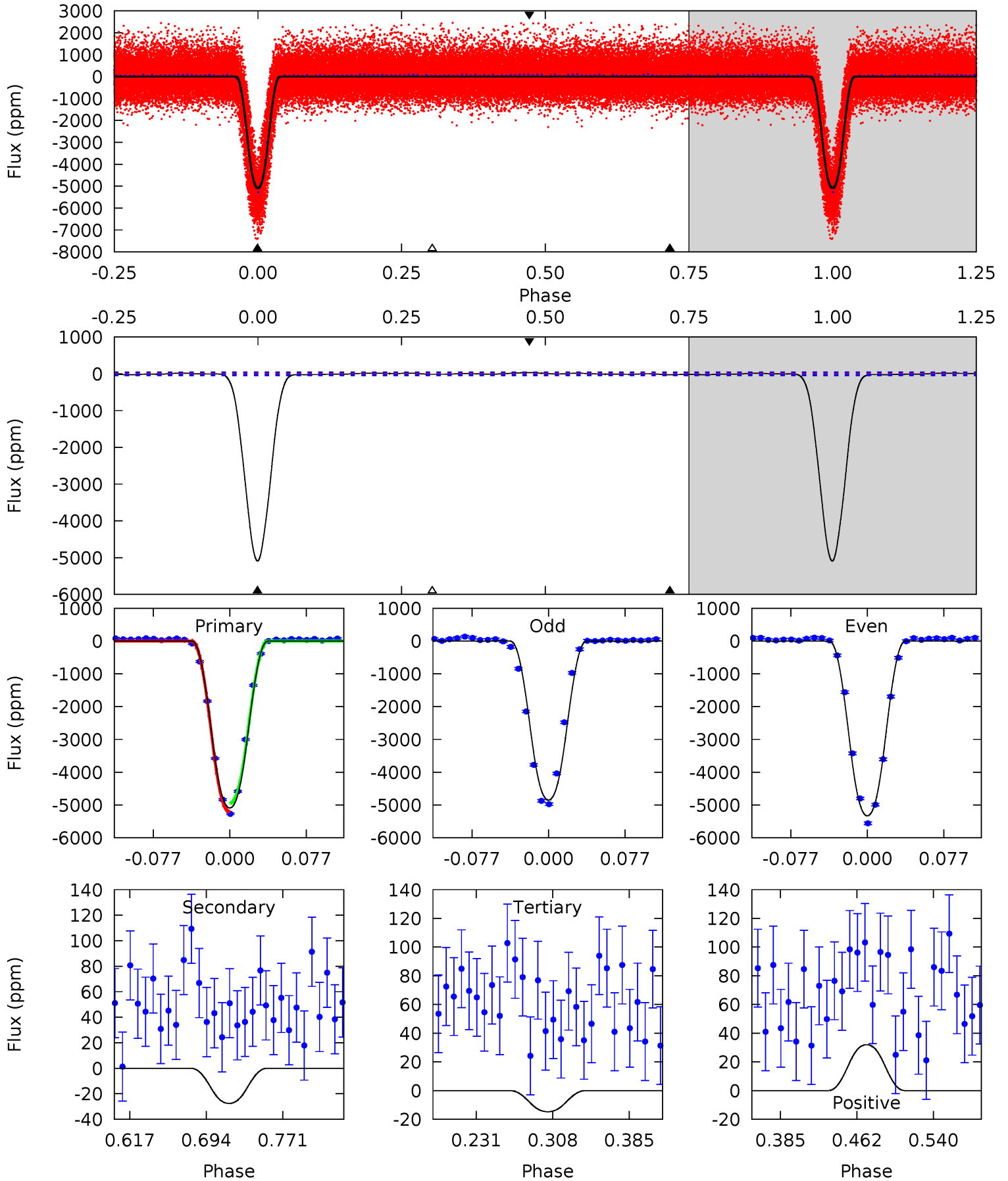
TCE 009574614-01 P= 0.982092 Days  $T_0=131.699970$  (BKJD)



# DV Model-Shift Uniqueness Test

009574614-01, P = 0.982093 Days, E = 130.718013 Days

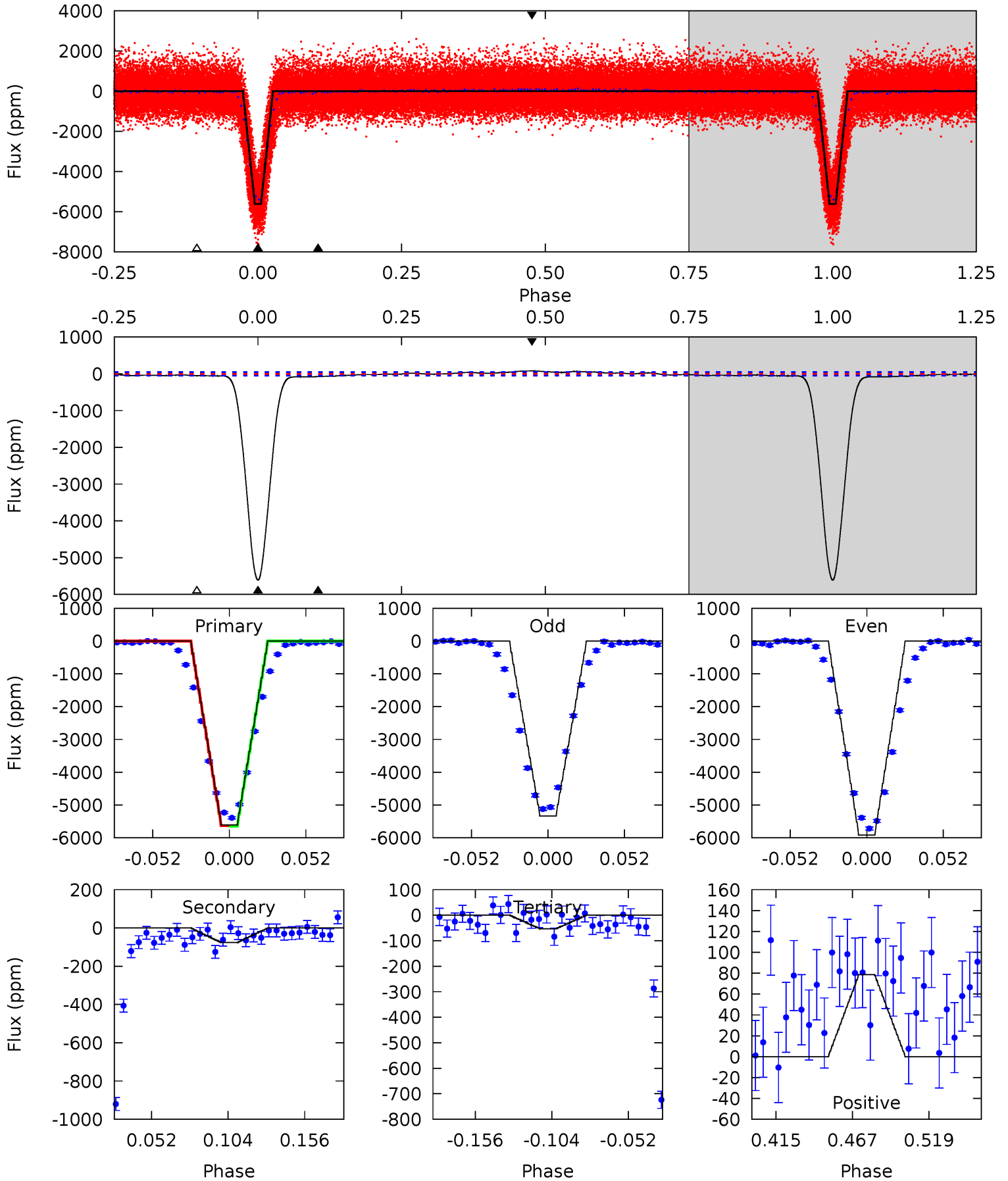
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
599.3	3.24	1.73	3.77	4.62	1.77	1.51	597.6	595.5	1.51	-0.53	28.5	0.99	0.01	15.3



# Alt Model-Shift Uniqueness Test

009574614-01, P = 0.982092 Days, E = 130.717878 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
533.3	7.29	5.05	7.46	4.70	1.94	3.64	528.3	525.9	2.23	-0.18	27.6	1.00	0.01	0.72



### Stellar Parameters For KIC 009574614

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5472^{+163}_{-163}$	$4.573^{+0.060}_{-0.097}$	$-0.520^{+0.300}_{-0.300}$	$0.742^{+0.118}_{-0.069}$	$0.750^{+0.096}_{-0.052}$	$2.589^{+0.697}_{-0.778}$
	+3%/-3%	+1%/-2%	+58%/-58%	+16%/-9%	+13%/-7%	+27%/-30%
Source	PHO1	KIC0	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 009574614-01 / KOI 1745.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-28 \pm 8$	$6.51^{+0.60}_{-0.38}$	$2206^{+99}_{-86}$	$-2482^{+102}_{-85}$	$0.104^{+0.041}_{-0.035}$
Alt.	$-77 \pm 11$	$6.53^{+0.56}_{-0.37}$	$2201^{+97}_{-84}$	$-1375^{+3520}_{-763}$	$0.300^{+0.059}_{-0.052}$

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

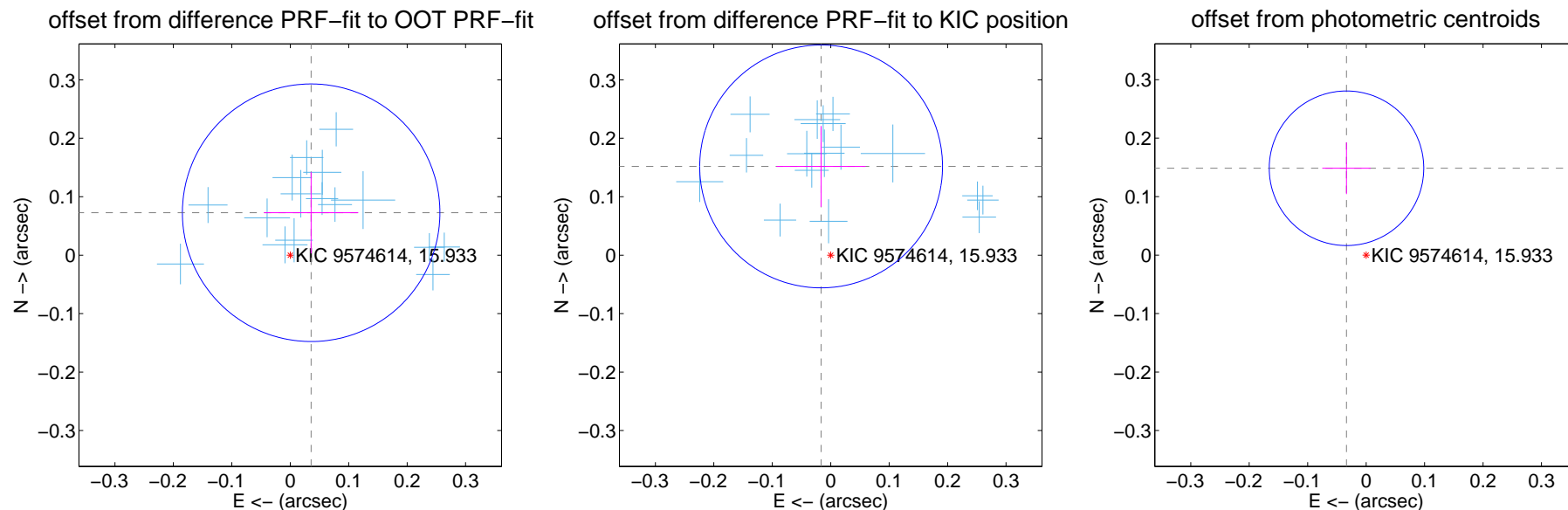
## DV Centroid Data

Supplemental centroid analysis for 009574614-01. Kepler magnitude: 15.93. Transit SNR 325.55

There are 17 quarters with good PRF difference image offsets

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

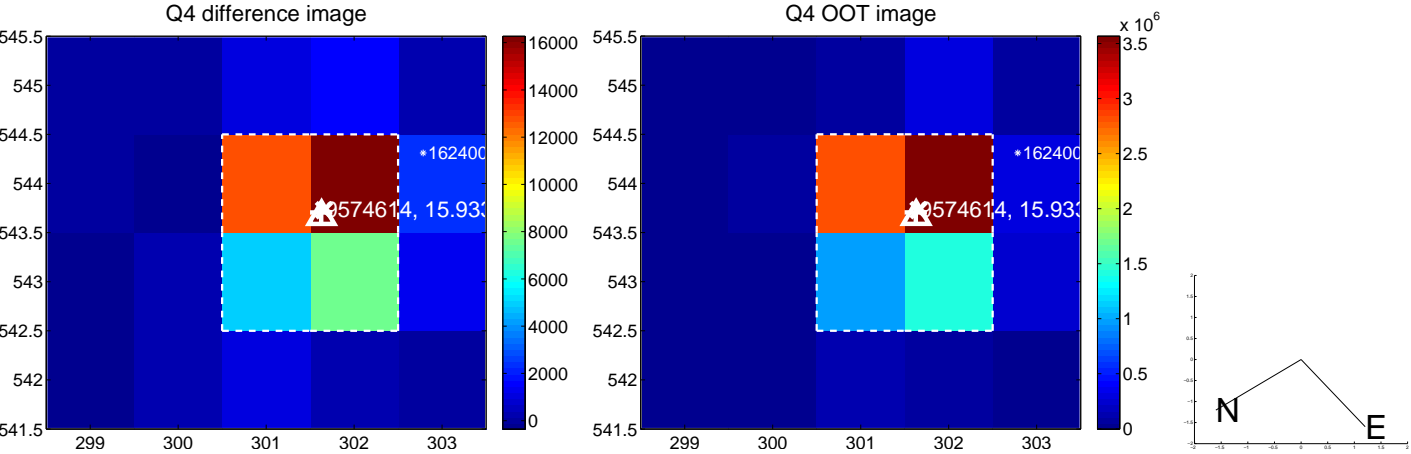
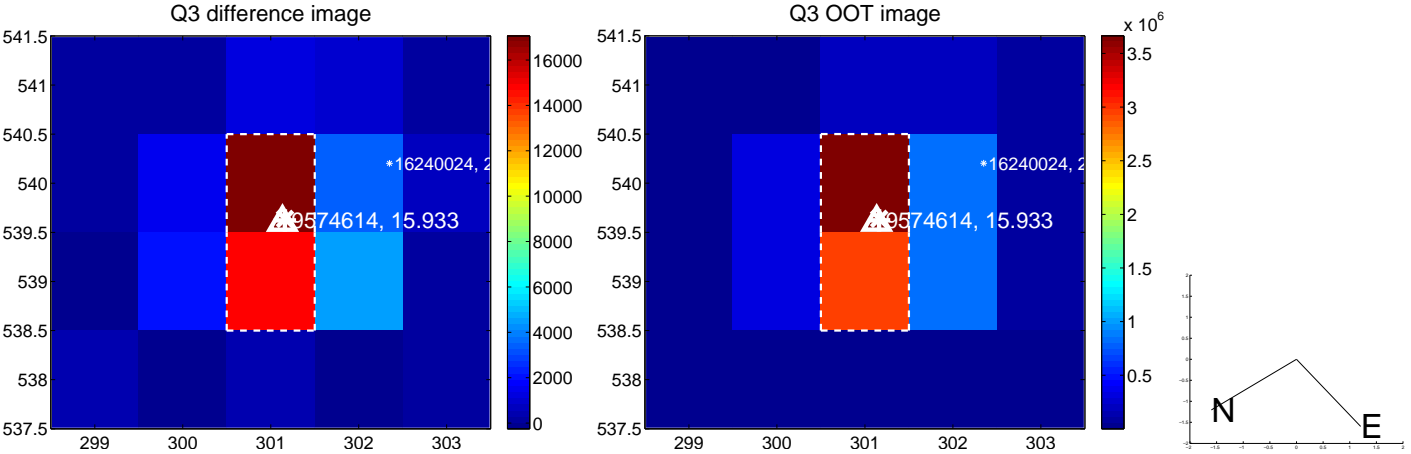
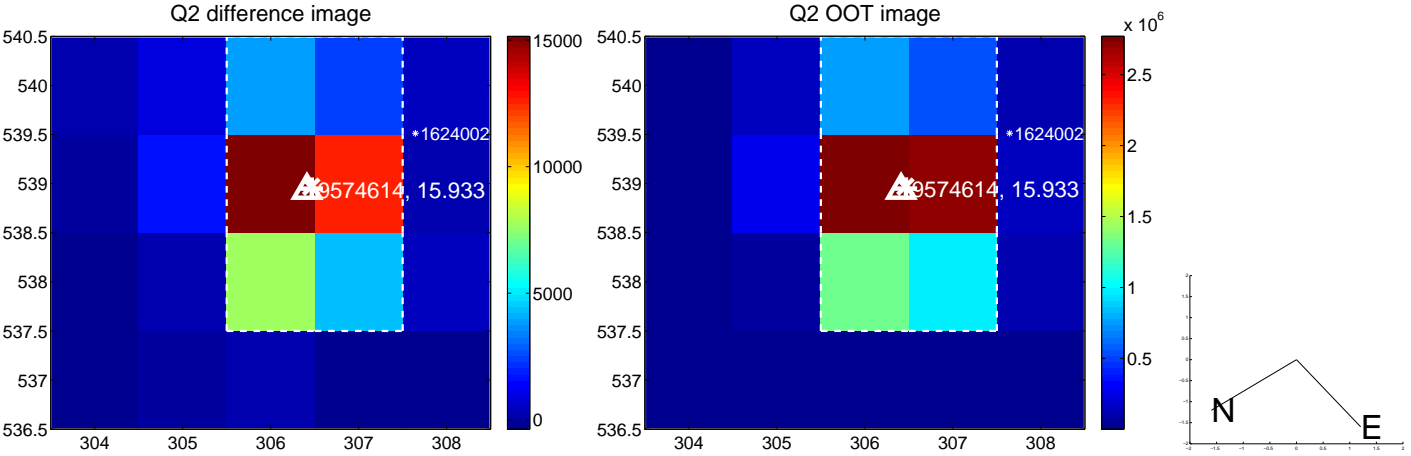
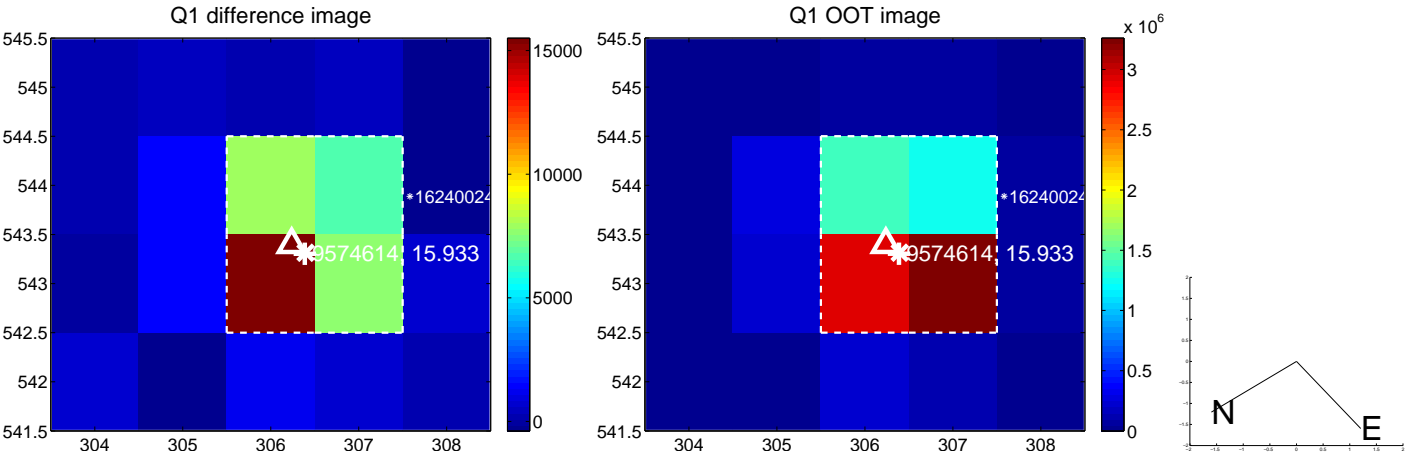
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.081 \pm 0.073$	1.10	$-0.036 \pm 0.081$	$0.073 \pm 0.070$
PRF-fit source offset from KIC position	$0.153 \pm 0.069$	2.20	$0.016 \pm 0.076$	$0.152 \pm 0.069$
photometric centroid source offset	$0.15 \pm 0.04$	3.46	$0.03 \pm 0.04$	$0.15 \pm 0.04$



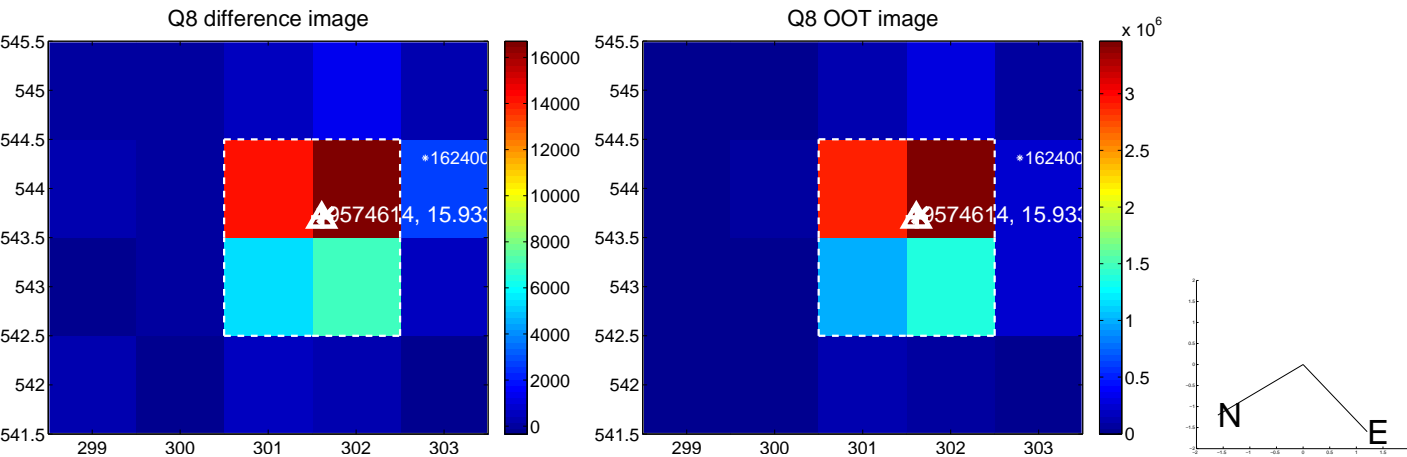
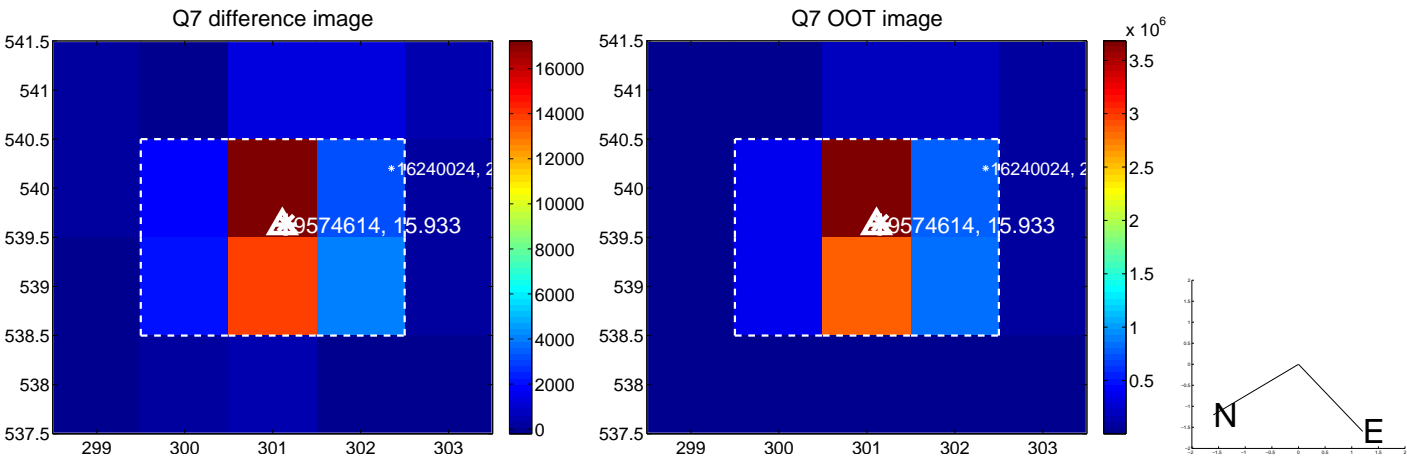
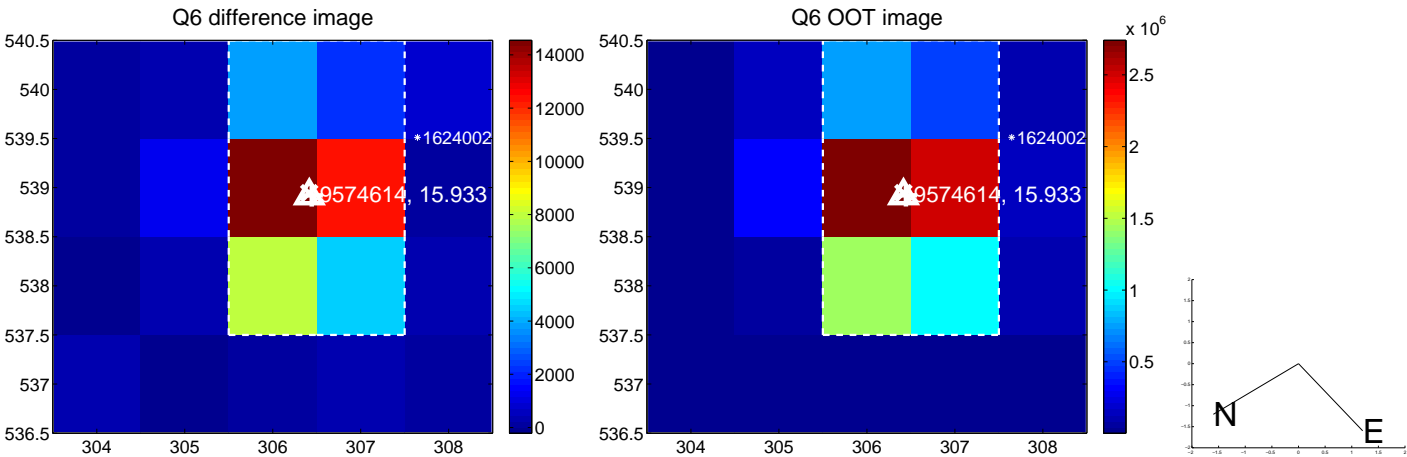
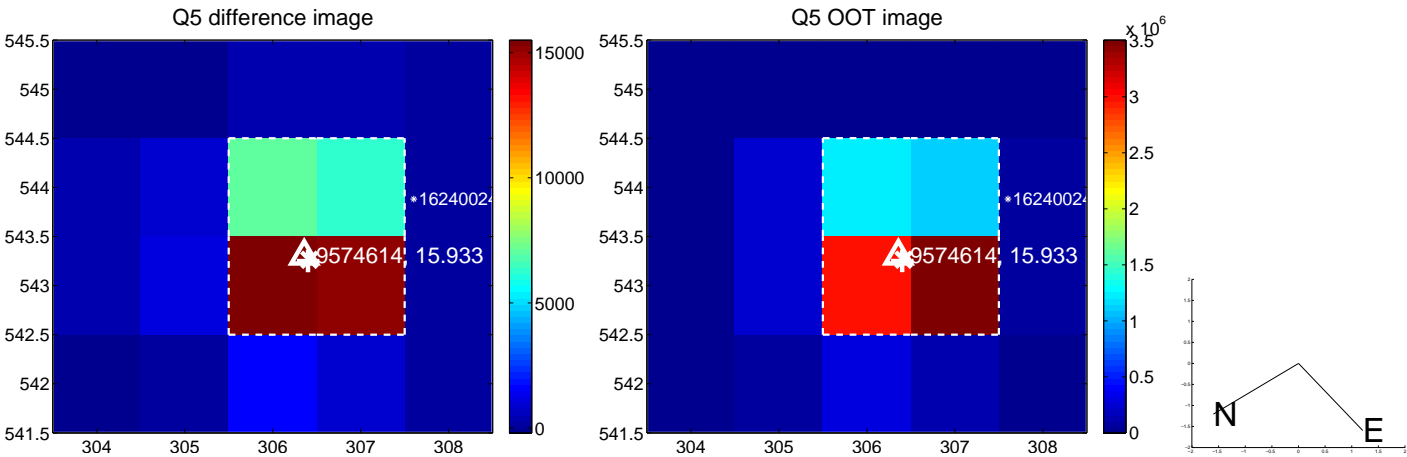
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



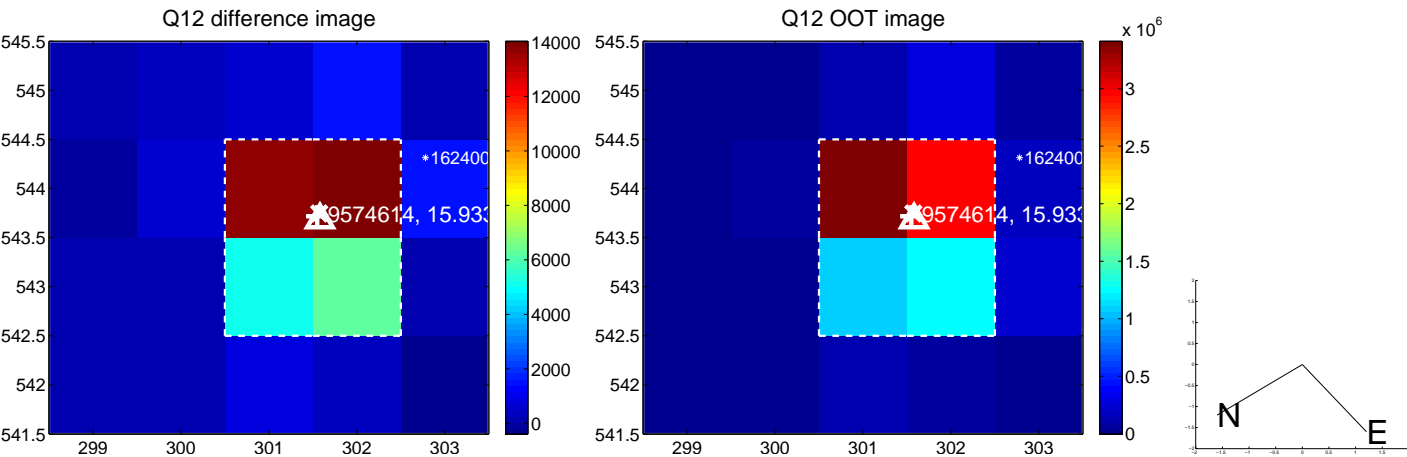
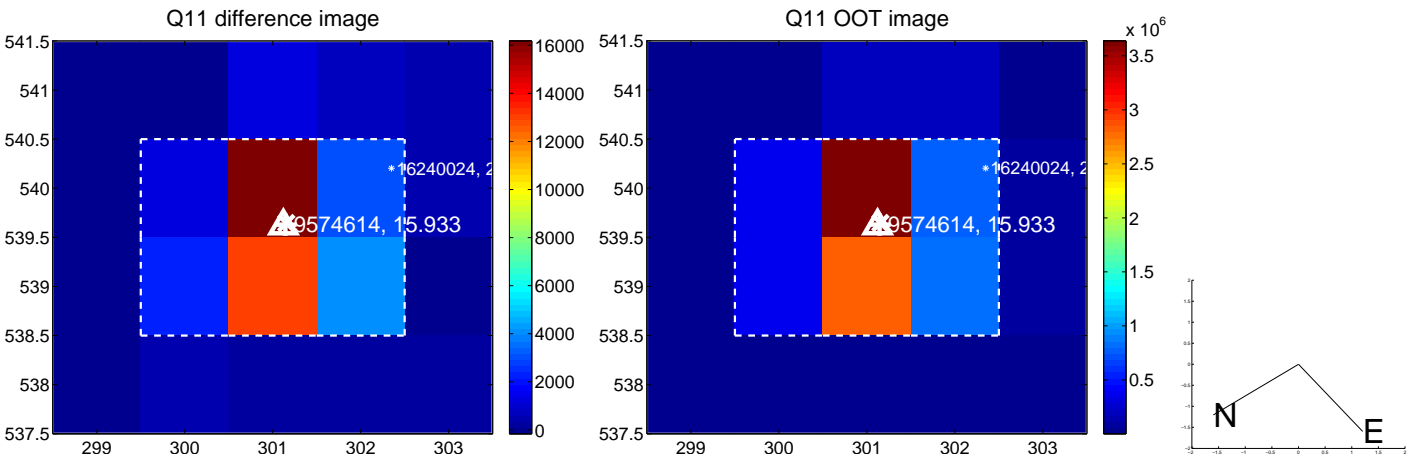
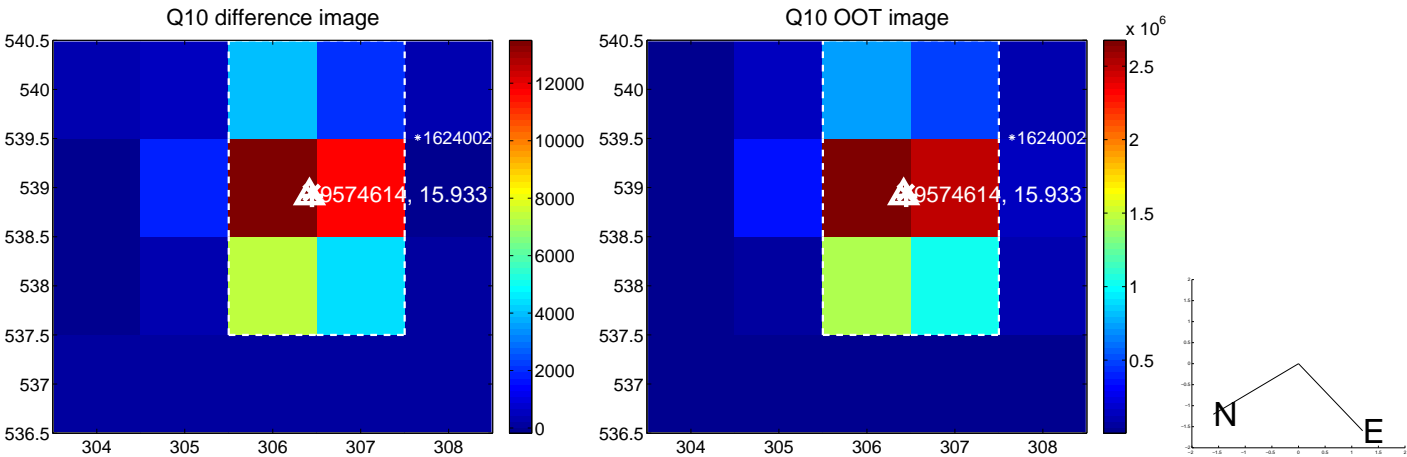
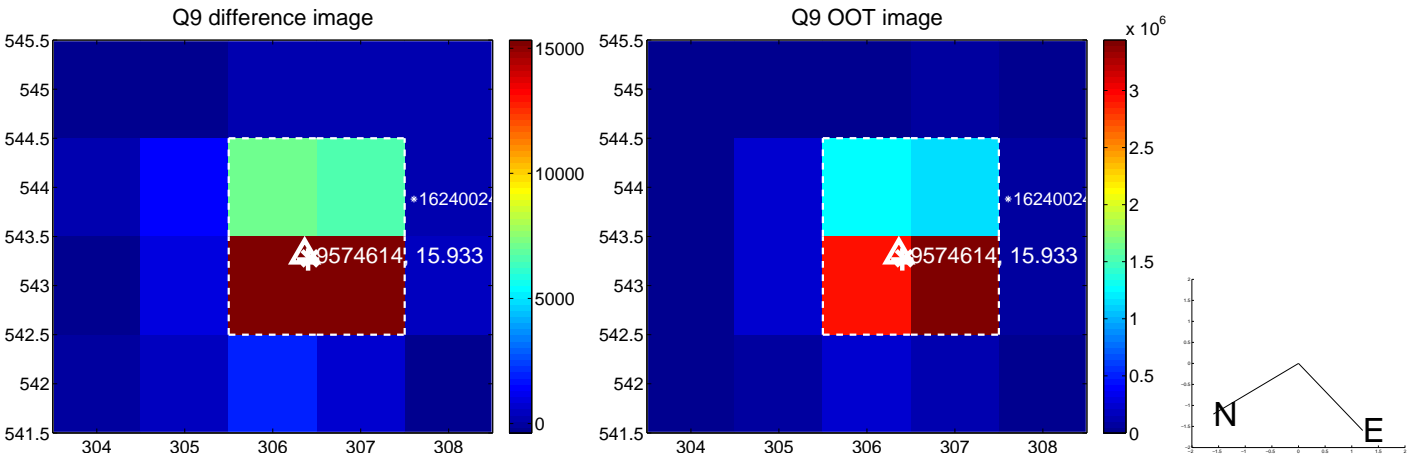
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



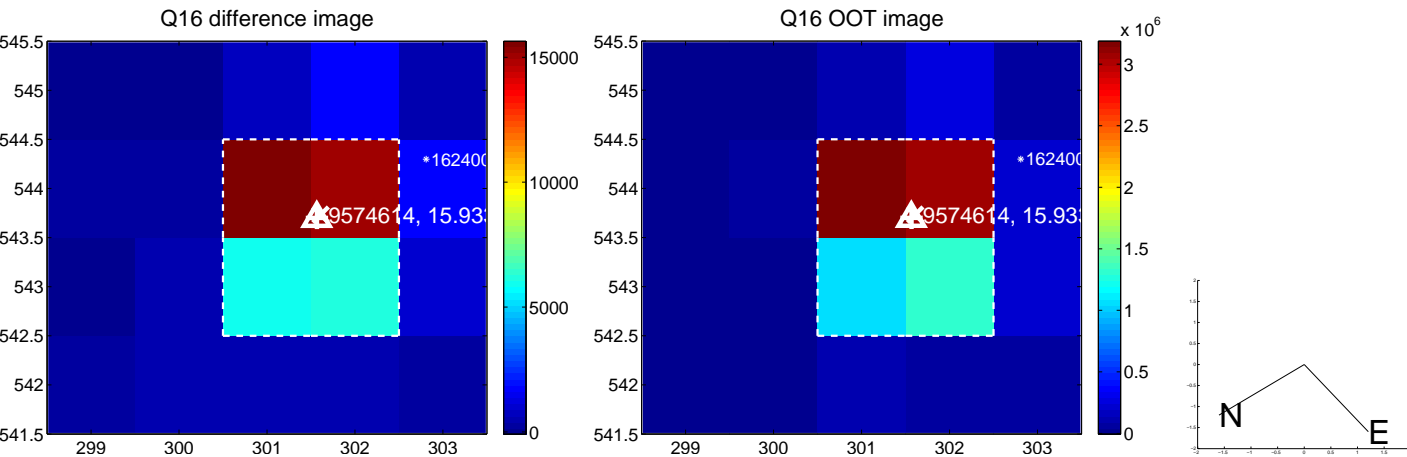
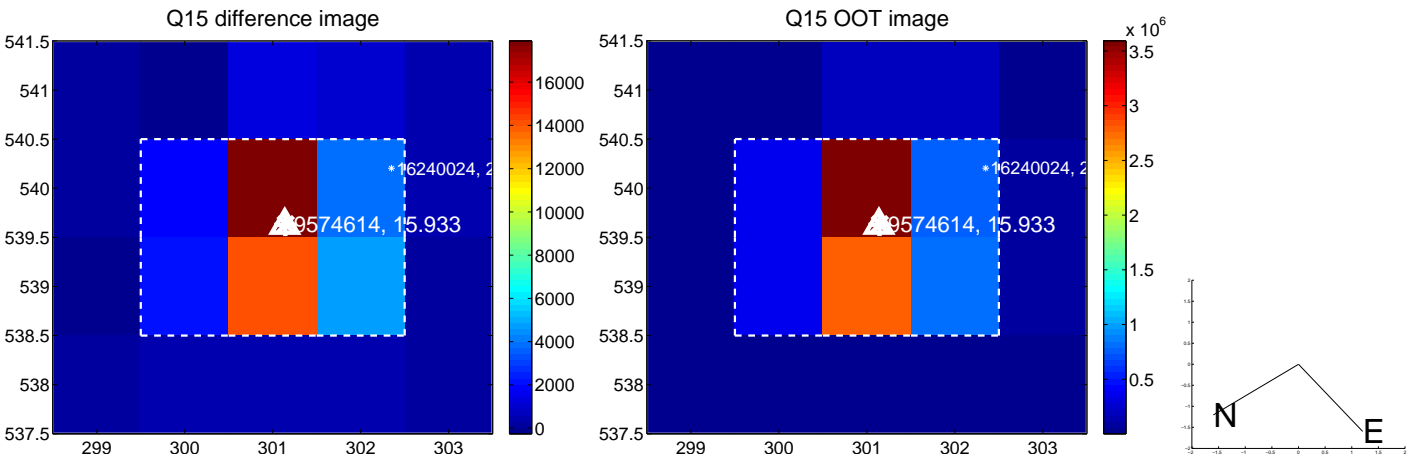
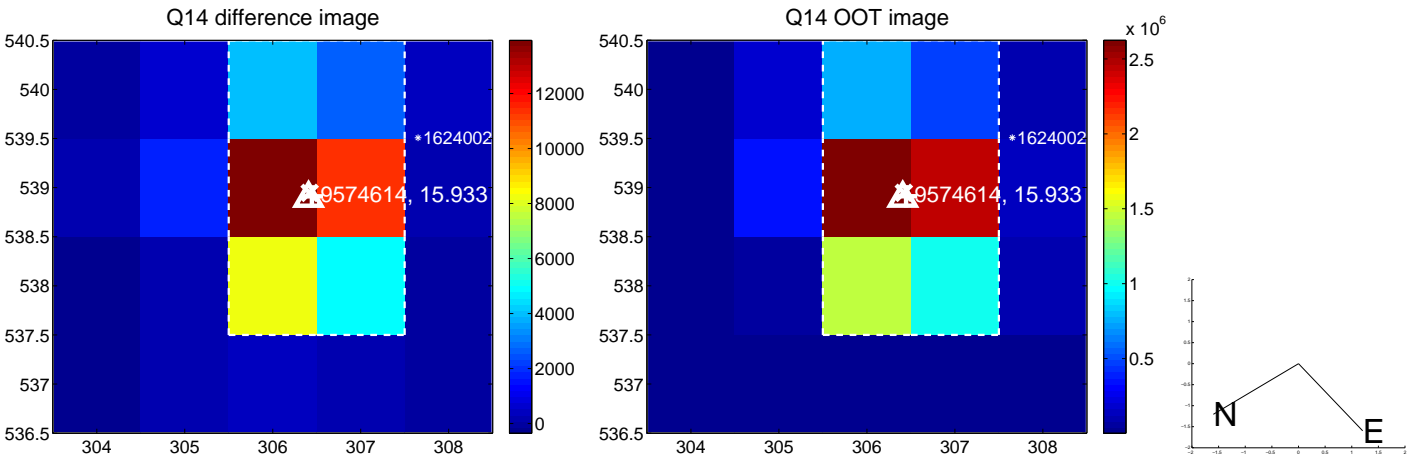
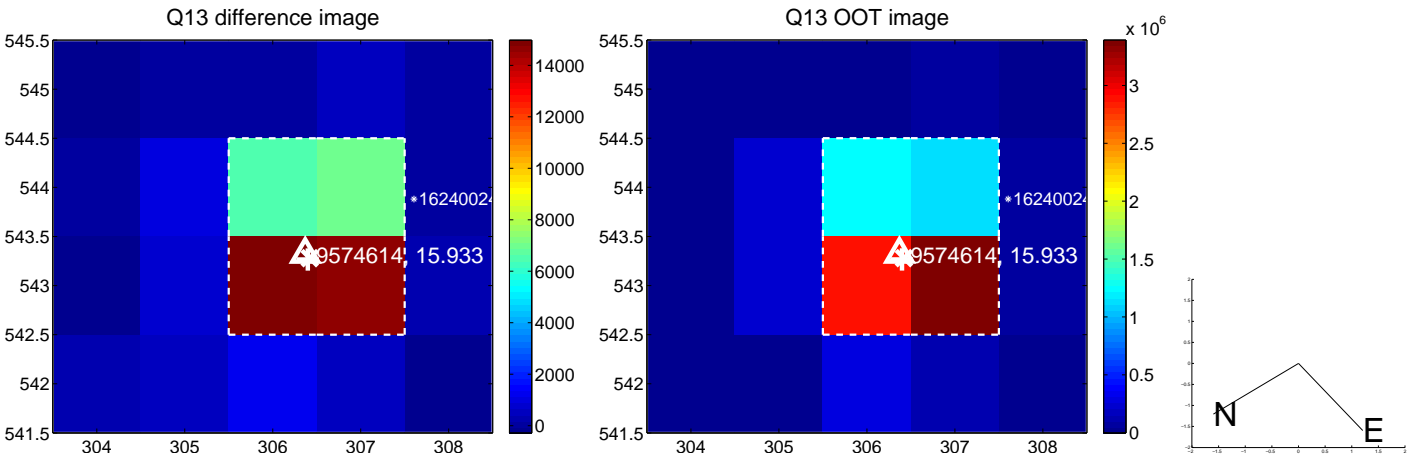
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



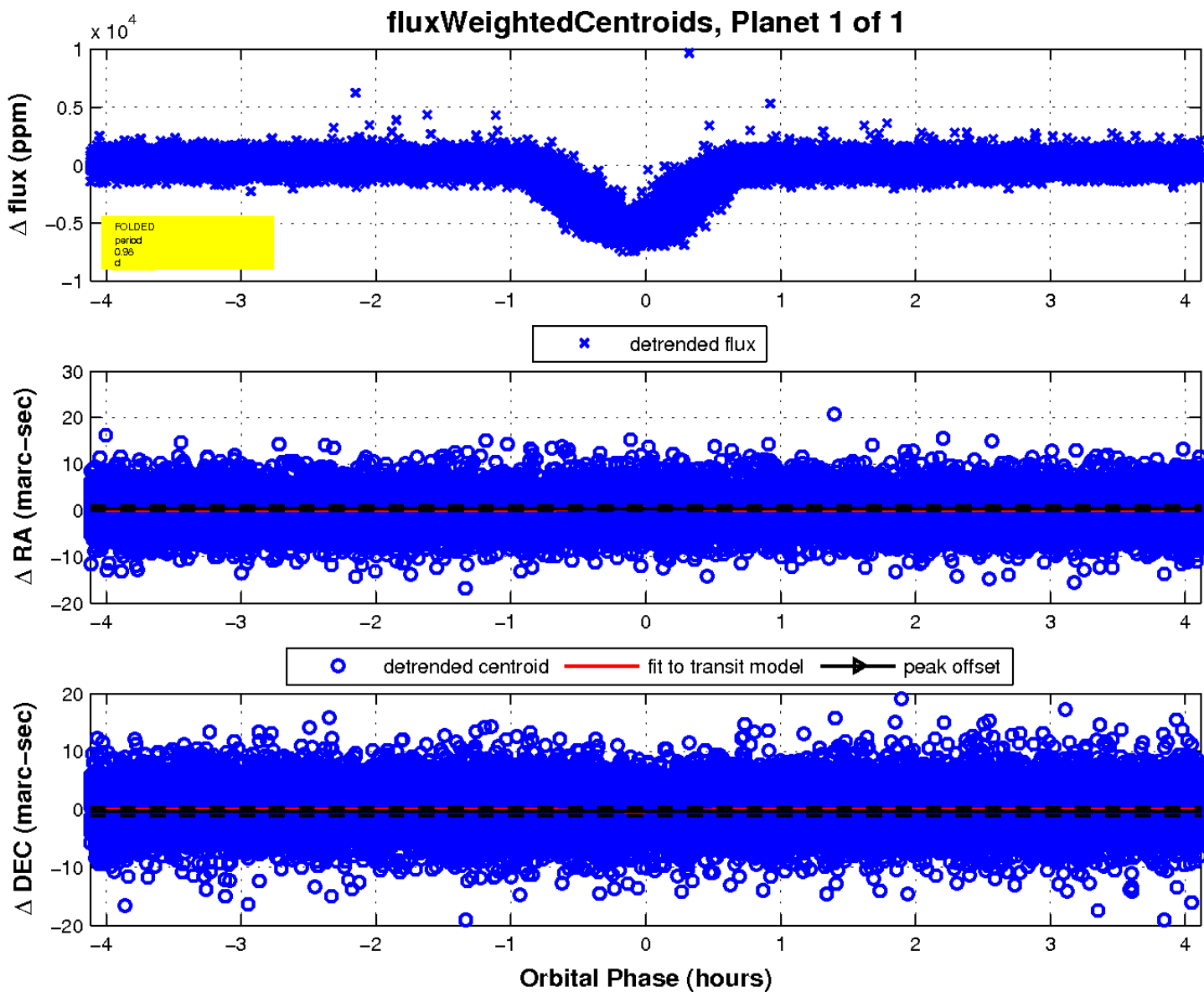
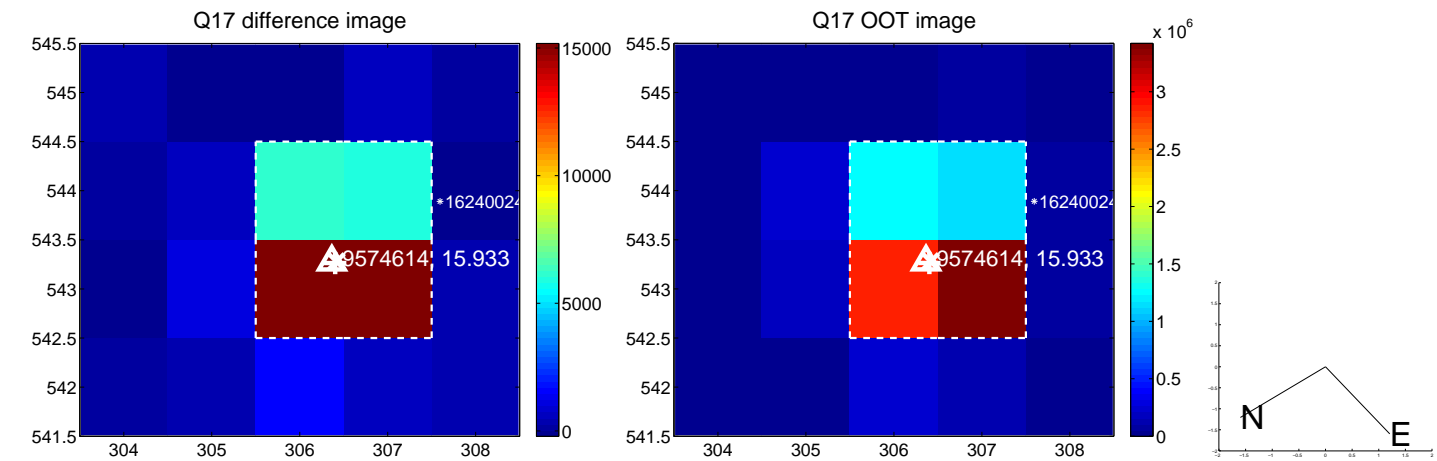
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



# UKIRT Image

Declination

