

# KIC 008628973

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008628973-01	OBS	0916.01	3.314947	131.534034	1386.8	1.921	106.0	119.6	0.94	5609	4.20	421.81

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008628973-01	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.

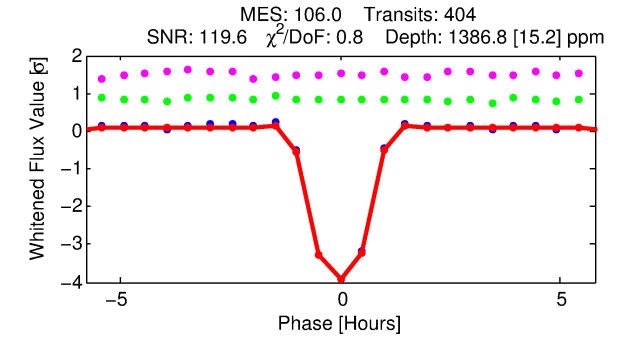
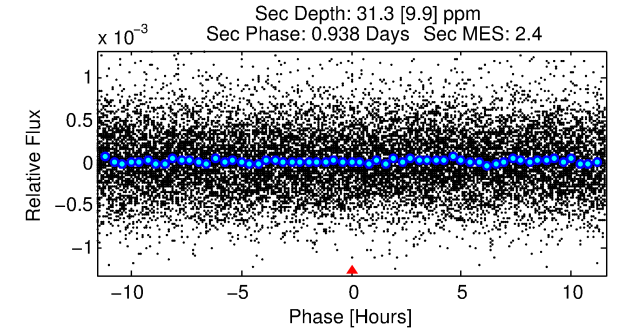
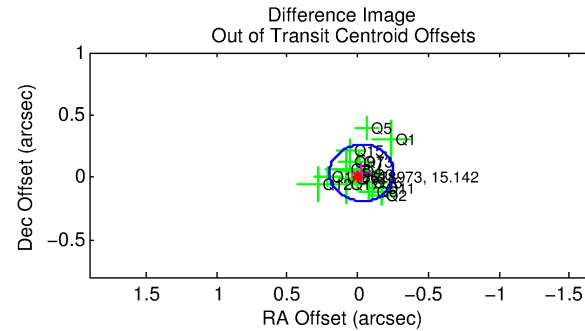
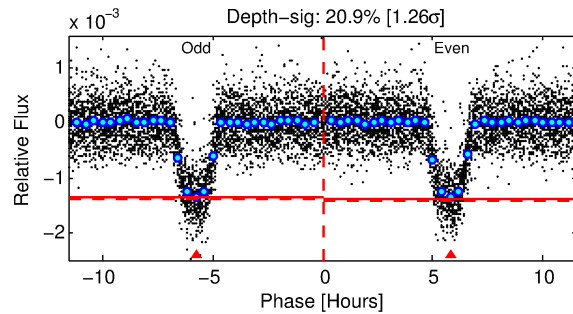
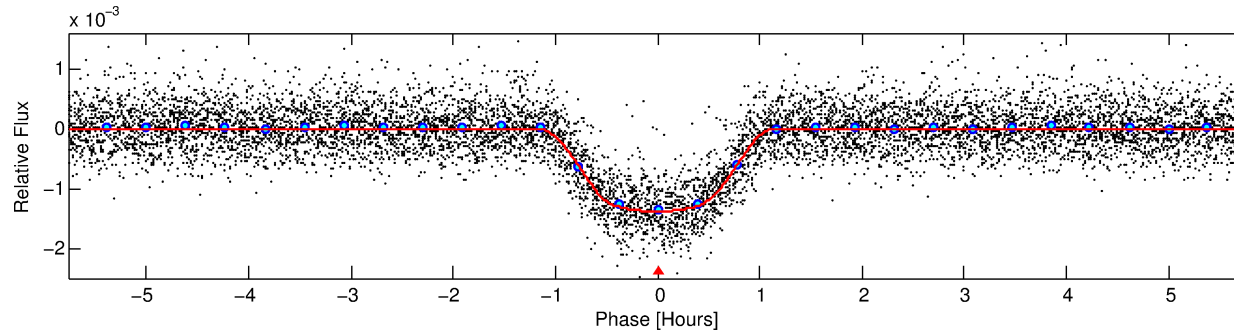
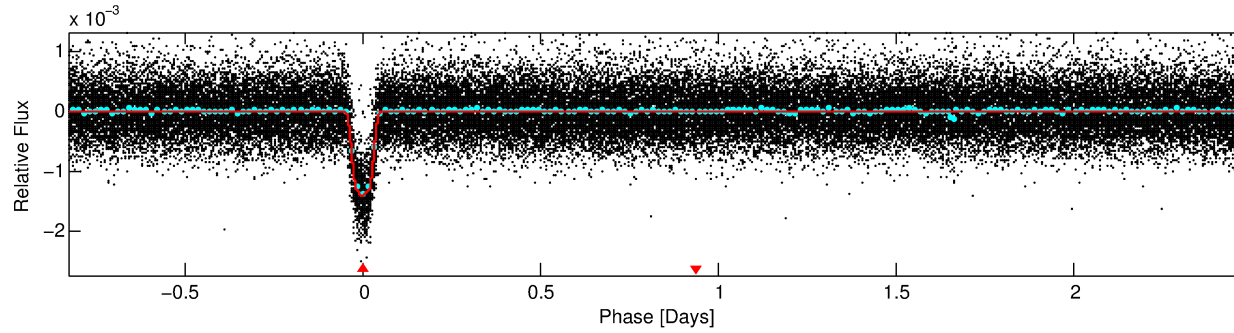
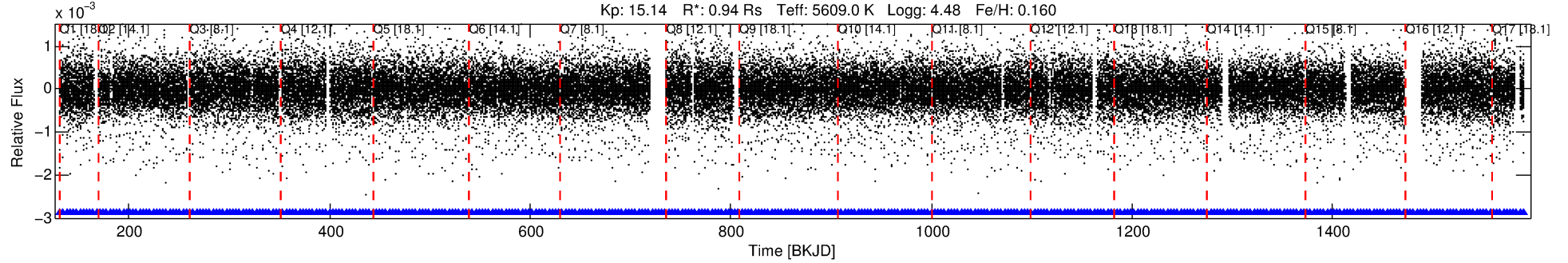
## Ephemeris Match Information For 008628973-01

No Significant Match Found

# DV One-Page Summary

KIC: 8628973 Candidate: 1 of 1 Period: 3.315 d  
KOI: K00916.01 Corr: 0.943

Kp: 15.14 R\*: 0.94 Rs Teff: 5609.0 K Logg: 4.48 Fe/H: 0.160



## DV Fit Results:

Period = 3.31495 [0.00000] d  
Epoch = 131.5340 [0.0003] BKJD  
Rp/R\* = 0.0407 [0.0011]  
a/R\* = 7.12 [0.74]  
b = 0.89 [0.02]  
Seff = 421.81 [153.59]  
Teq = 1156 [105] K  
Rp = 4.19 [1.19] Re  
a = 0.0433 [0.0103] AU  
Ag = 1.83 [0.86] [0.96σ]  
Teffp = 2079 [178] K [4.46σ]

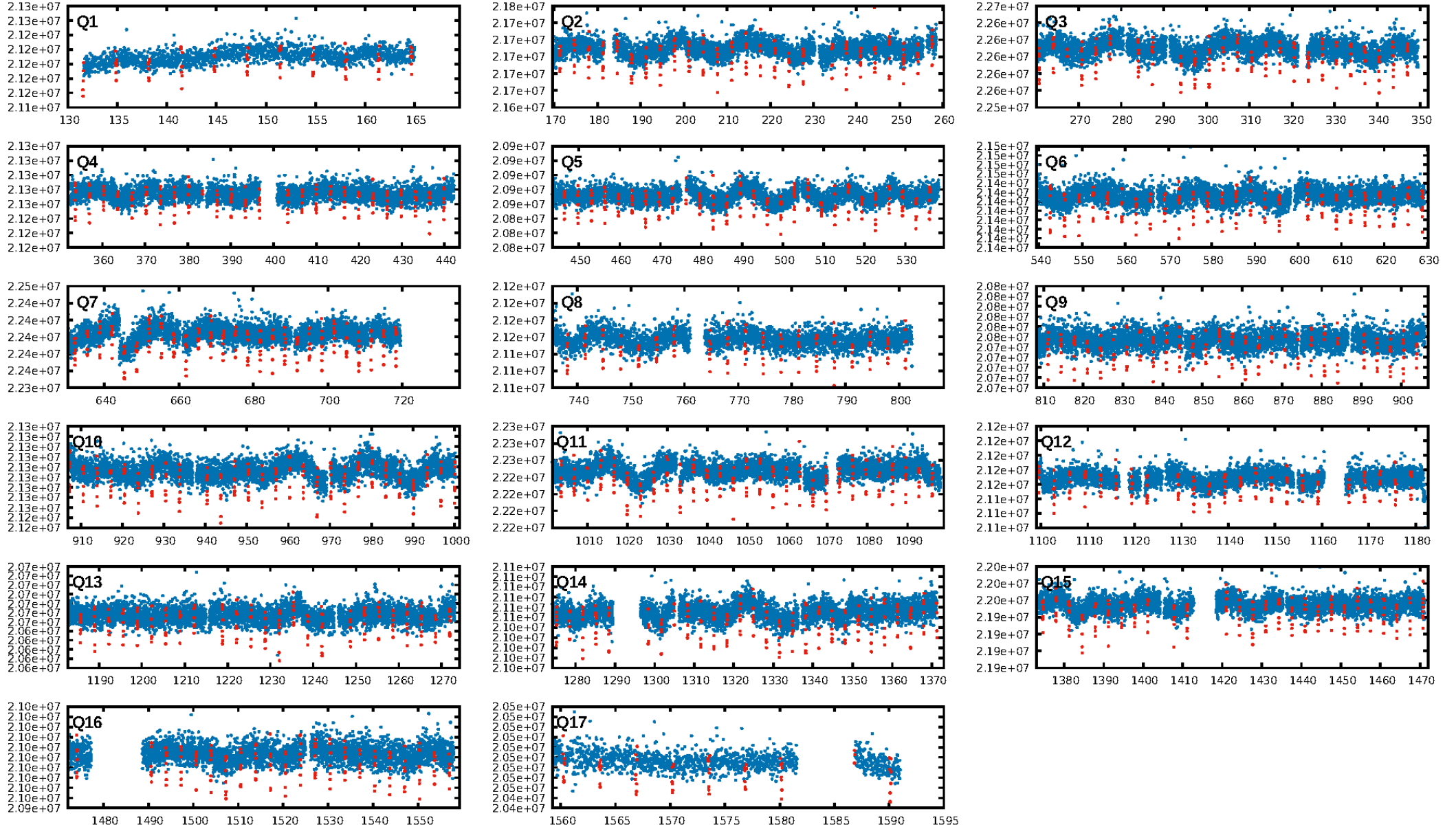
## DV Diagnostic Results:

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 [384/384]  
GhostDiagnostic-chr: 4.821  
Centroid-sig: 14.2%  
Centroid-so: 0.103 arcsec [0.83σ]  
OotOffset-rm: 0.044 arcsec [0.58σ]  
KicOffset-rm: 0.067 arcsec [0.84σ]  
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]

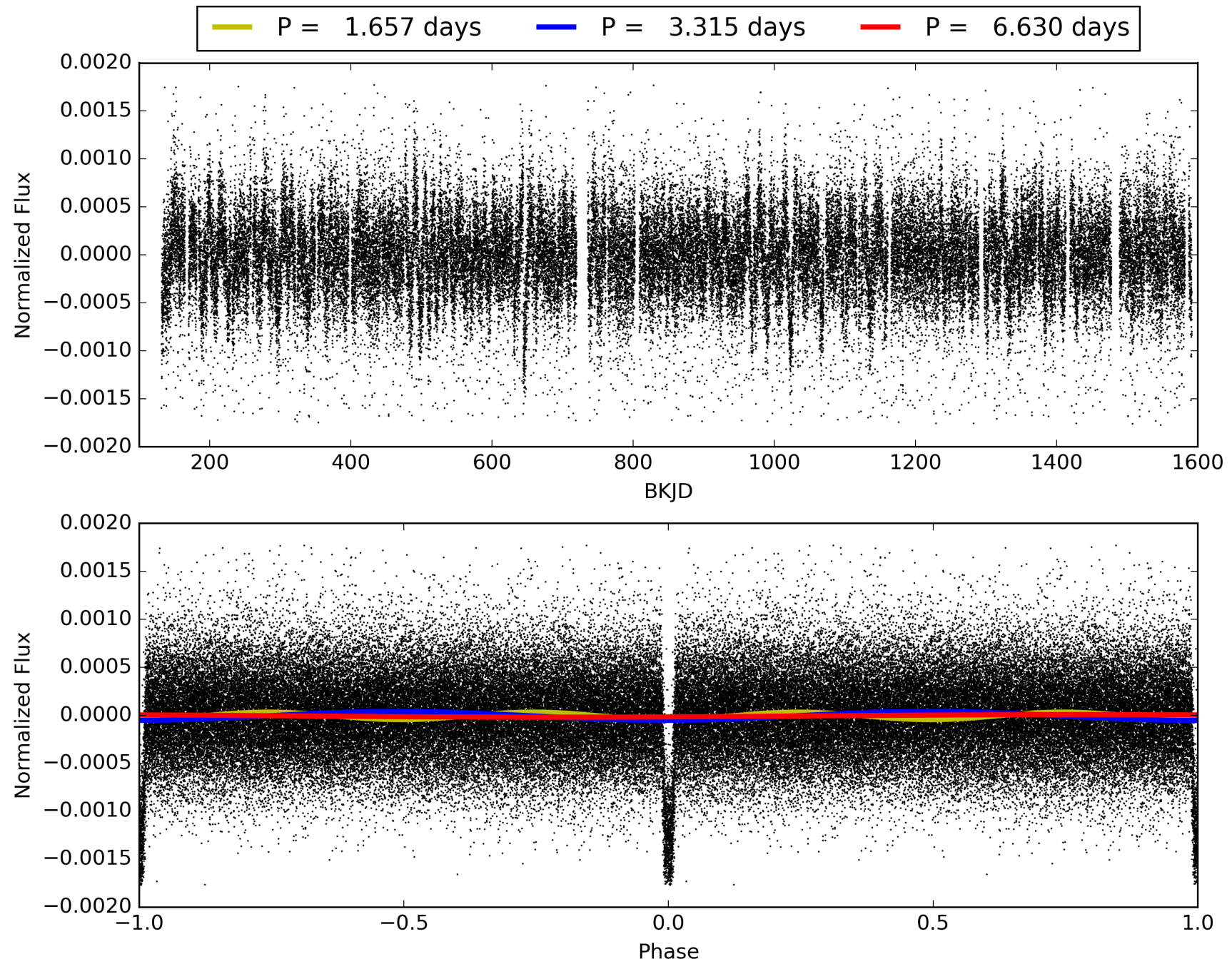
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 17:31:07 Z

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

# TCE 008628973-01, PDC Light Curves



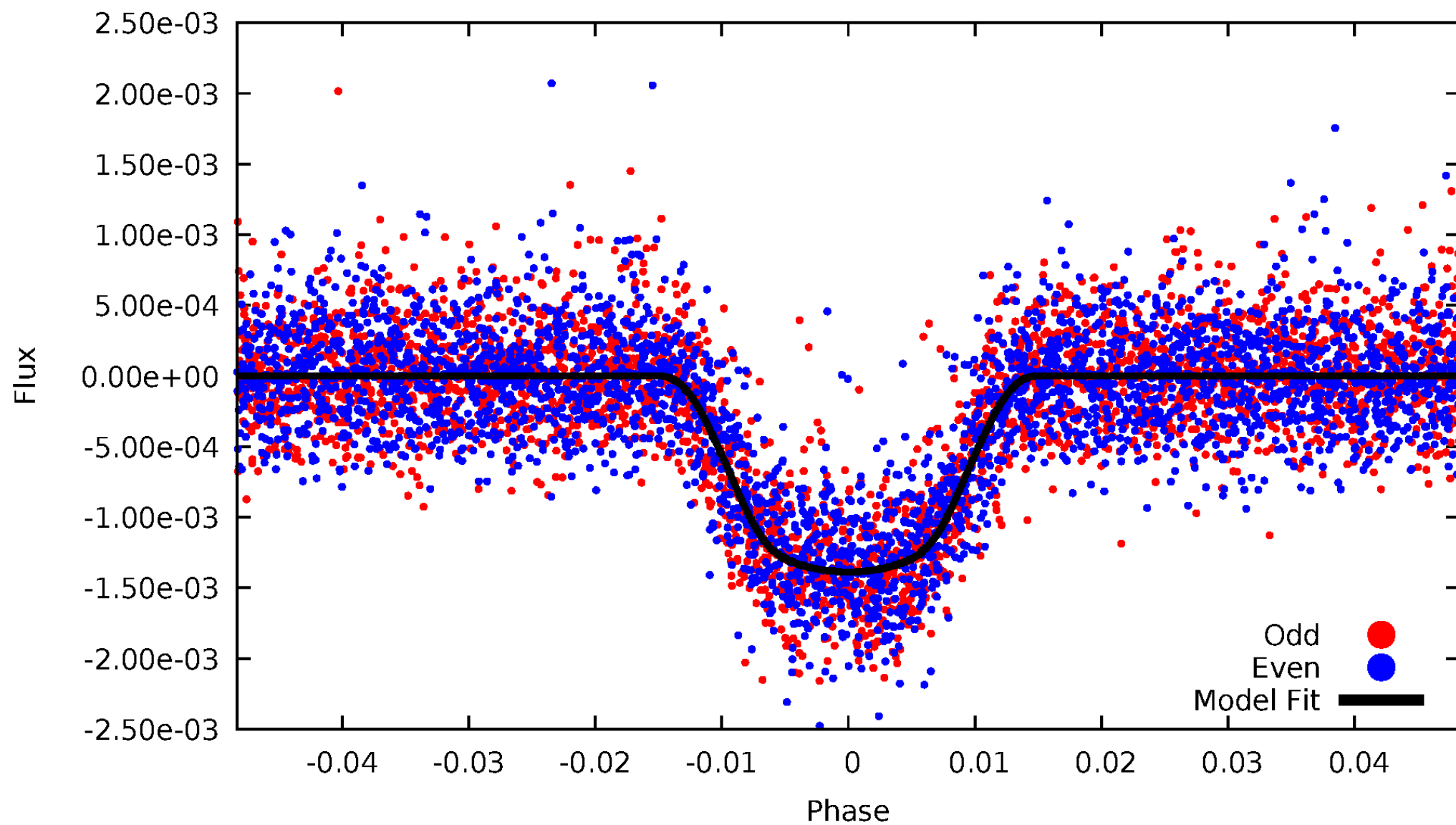
TCE 008628973-01





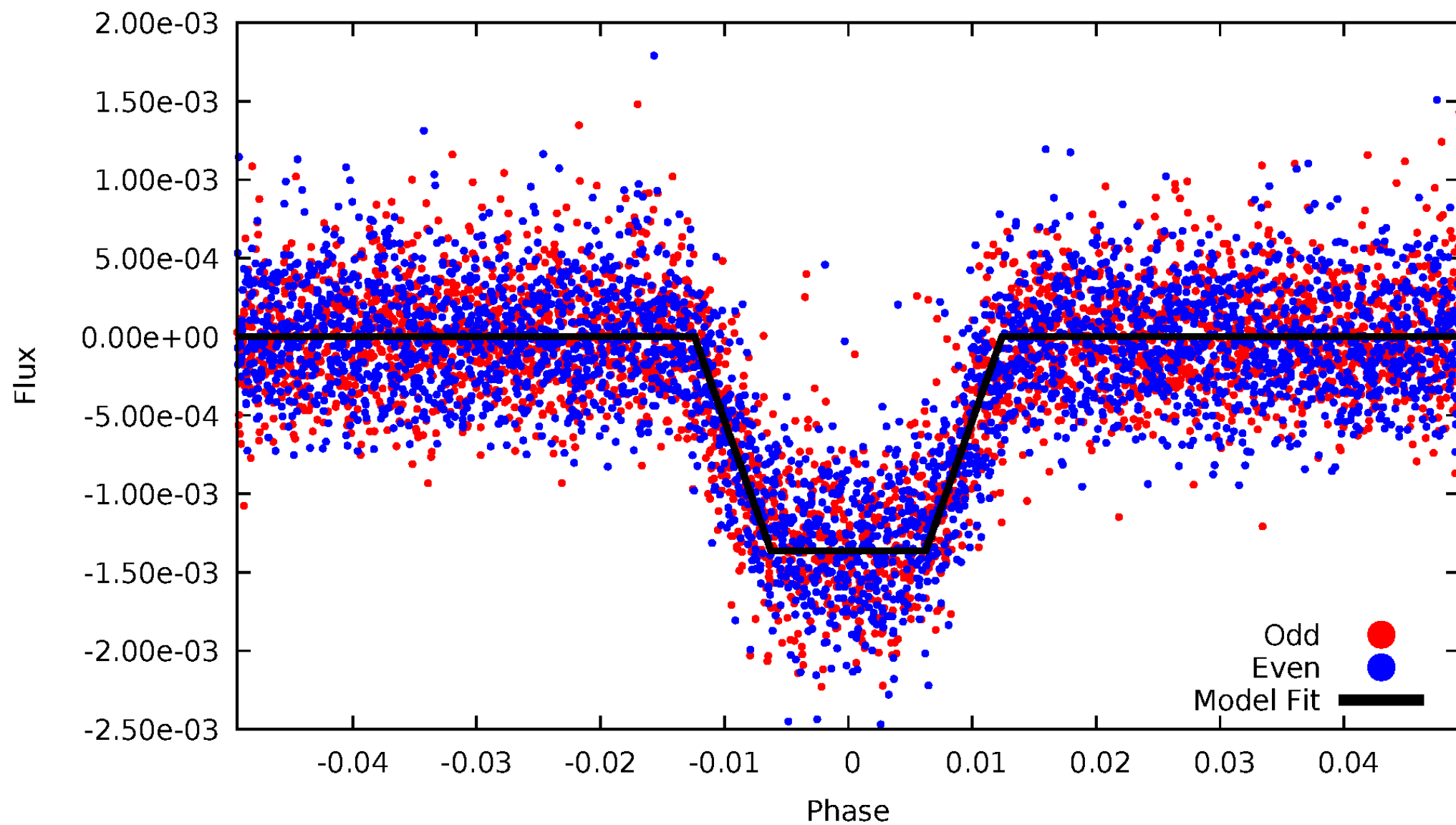
# DV Odd/Even

TCE 008628973-01



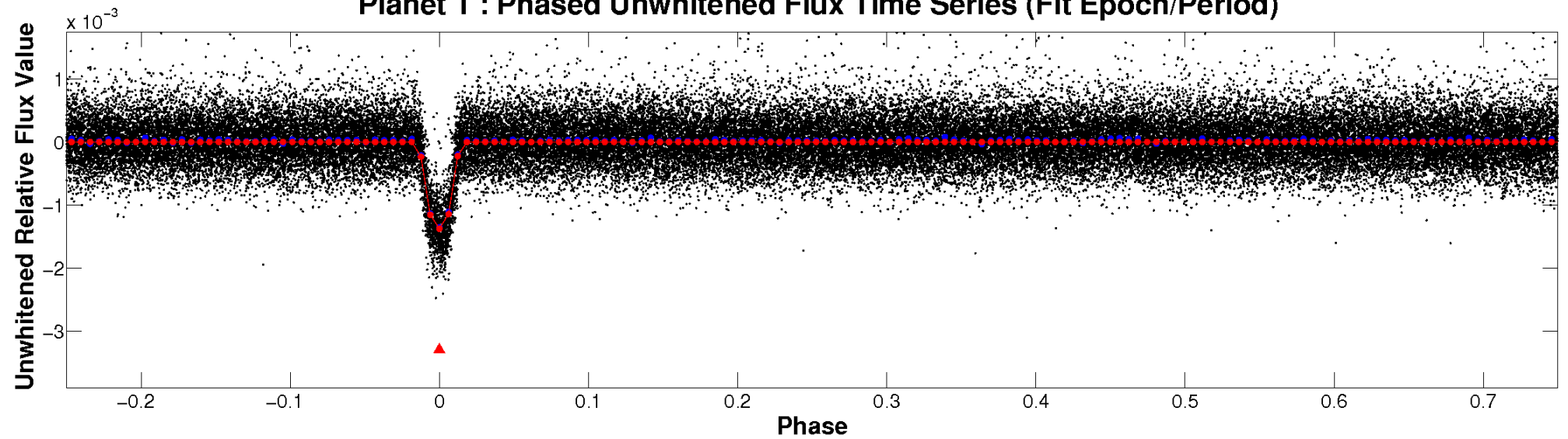
# ALT Odd/Even

TCE 008628973-01

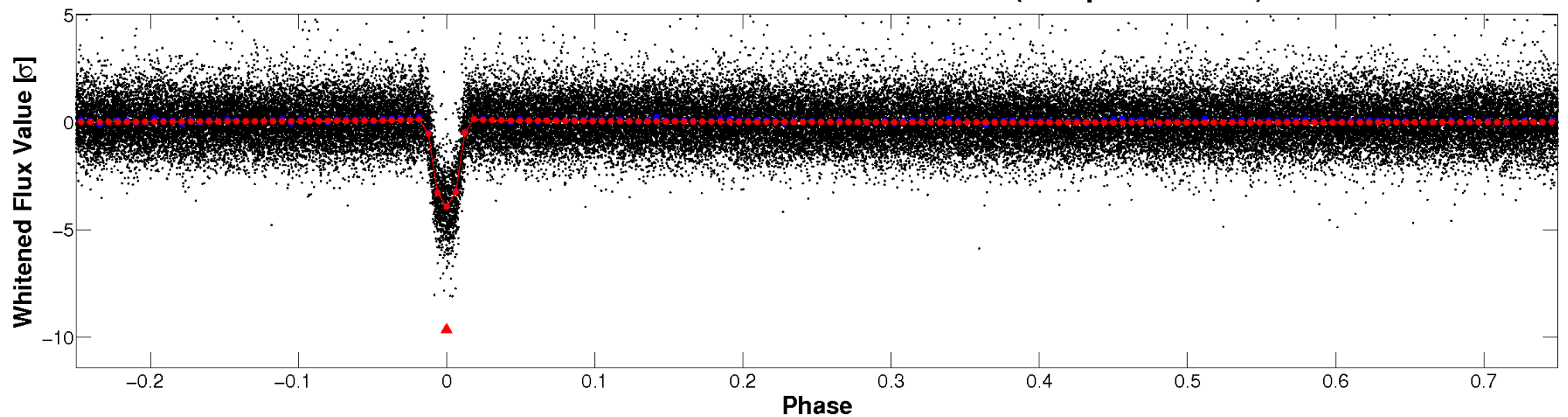


# Non-Whitened Vs. Whitened Light Curve

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

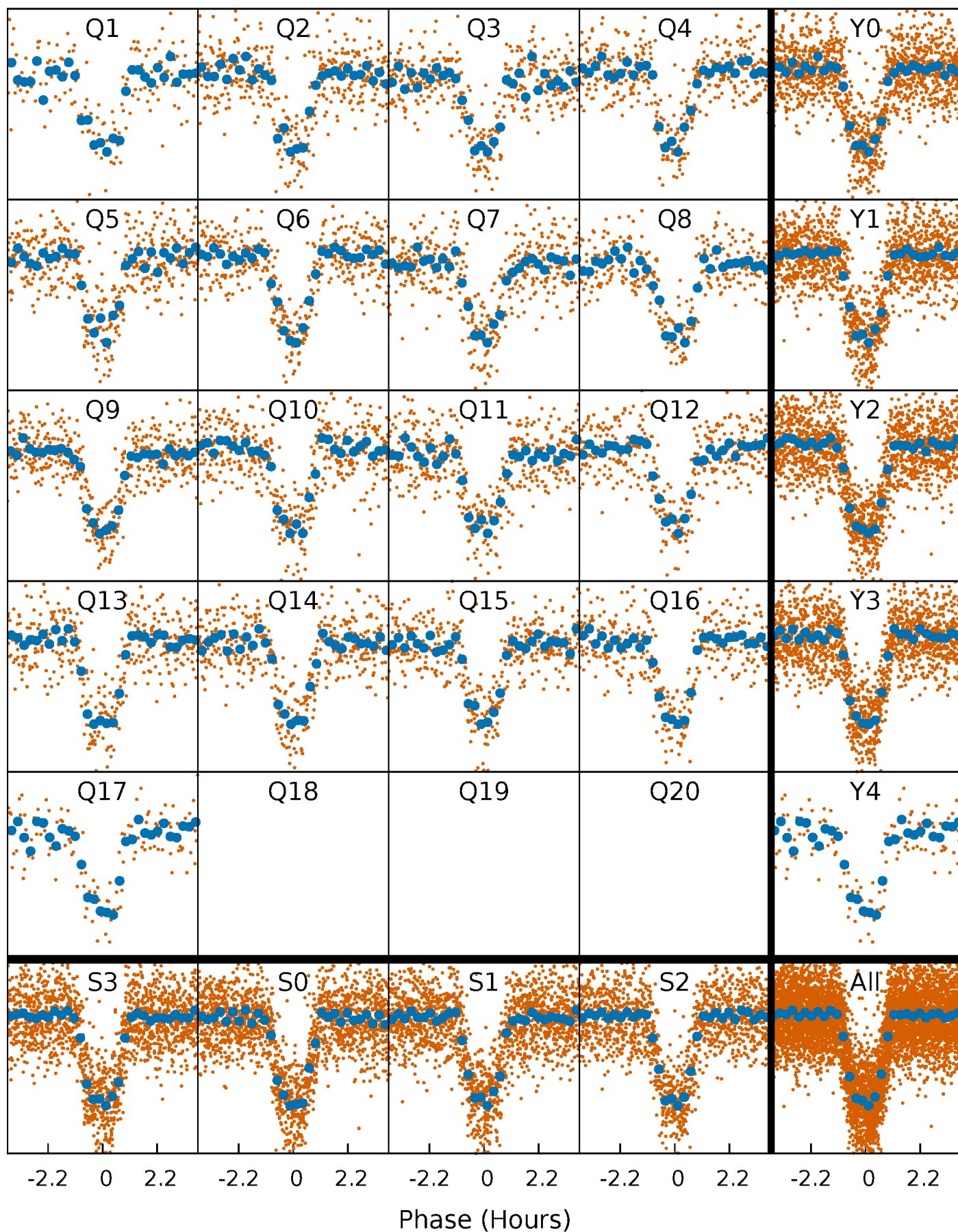


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

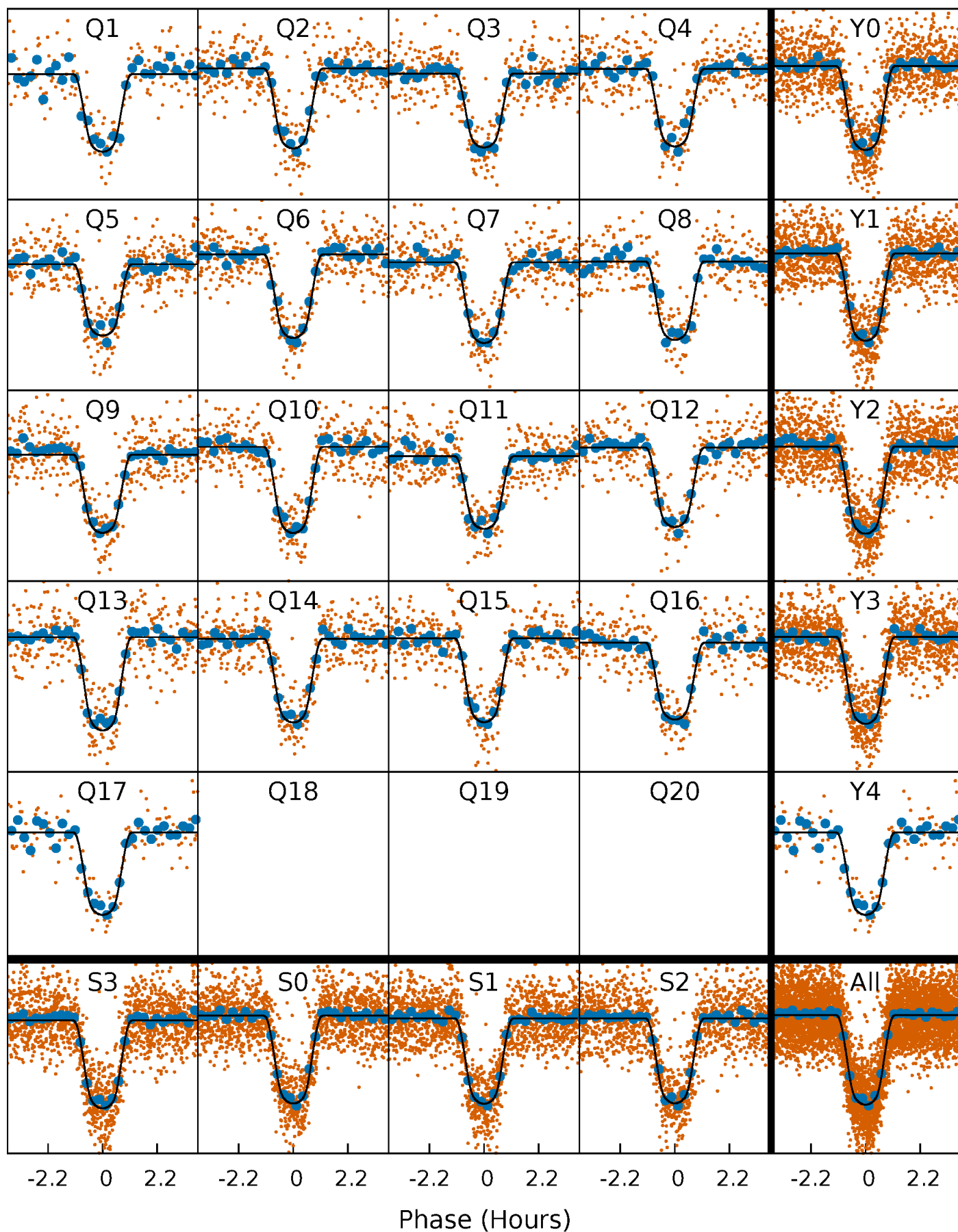
TCE 008628973-01 P= 3.314947 Days  $T_0=131.534034$  (BKJD)





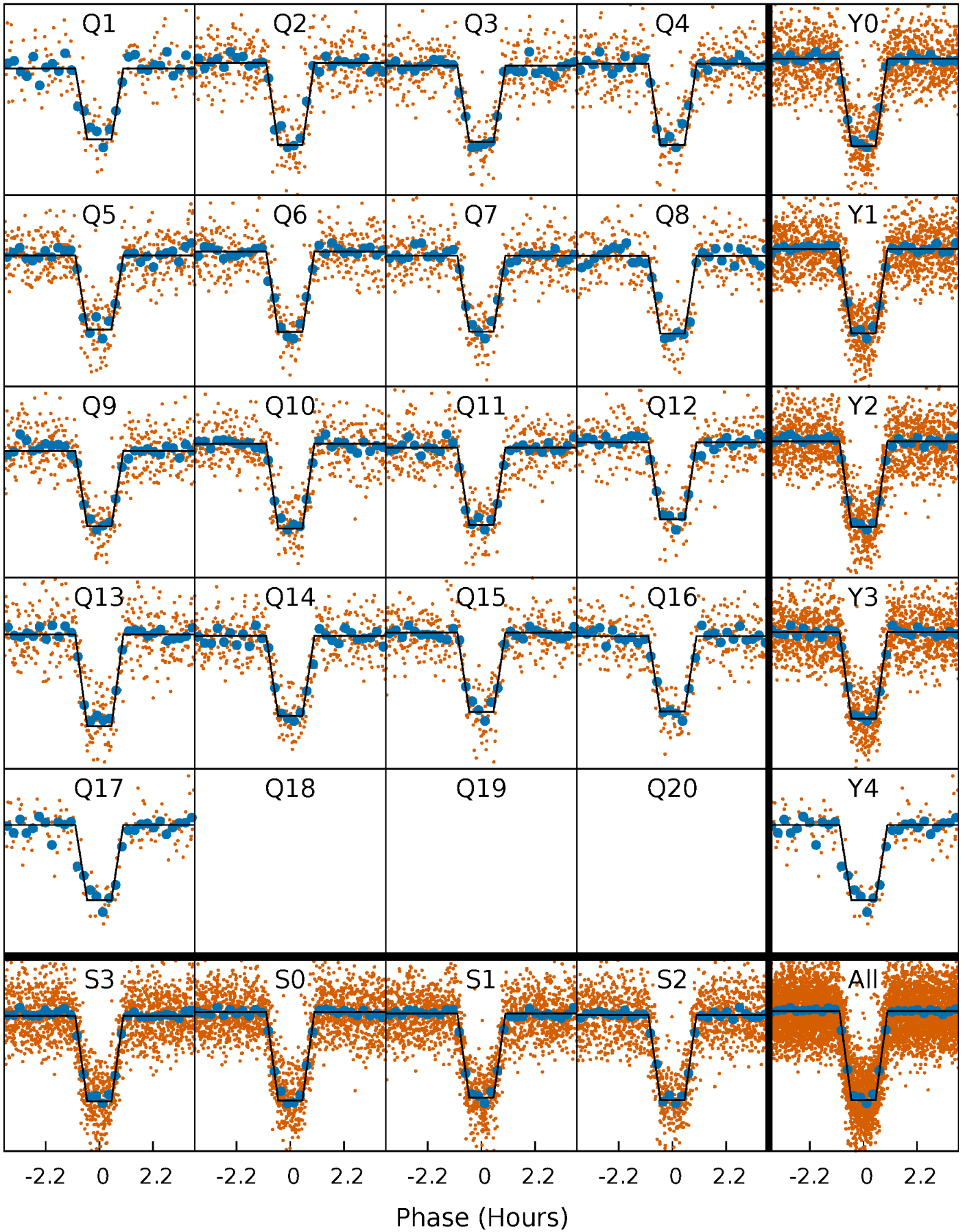
# DV Quarter-Phased Transit Curves

TCE 008628973-01 P= 3.314947 Days  $T_0=131.534034$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

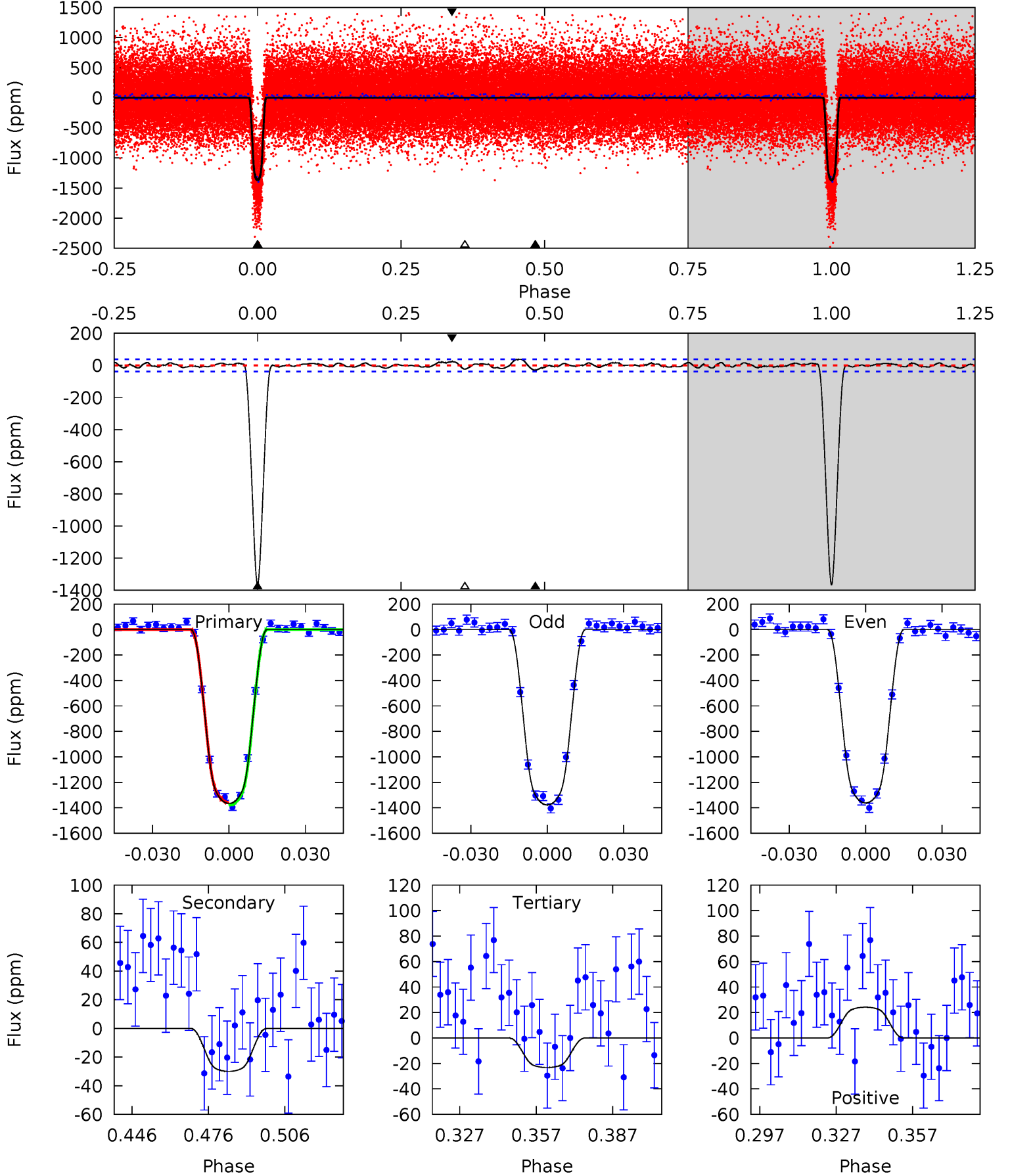
TCE 008628973-01 P= 3.314939 Days  $T_0=131.535573$  (BKJD)



# DV Model-Shift Uniqueness Test

008628973-01, P = 3.314947 Days, E = 128.219087 Days

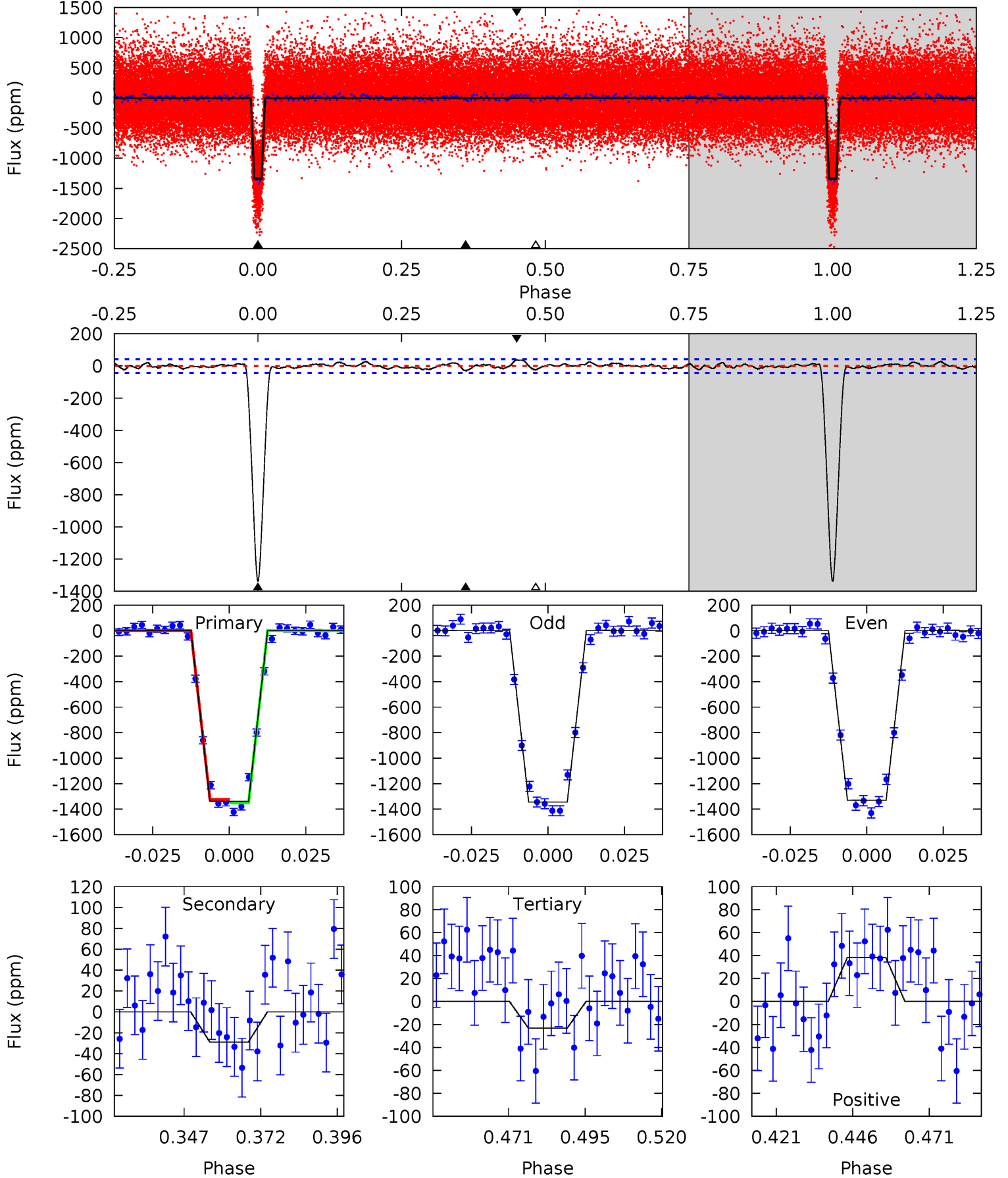
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
172.4	3.79	2.93	3.05	4.81	2.17	1.28	169.5	169.3	0.86	0.74	1.00	0.98	0.03	1.18



# Alt Model-Shift Uniqueness Test

008628973-01, P = 3.314939 Days, E = 128.220634 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
153.3	3.31	2.67	4.37	4.85	2.24	1.34	150.6	148.9	0.63	-1.07	0.75	1.00	0.03	1.68



### Stellar Parameters For KIC 008628973

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5609^{+150}_{-166}$	$4.481^{+0.062}_{-0.188}$	$0.160^{+0.200}_{-0.300}$	$0.944^{+0.266}_{-0.089}$	$0.983^{+0.094}_{-0.105}$	$1.648^{+0.414}_{-0.807}$
	+3%/-3%	+1%/-4%	+125%/-188%	+28%/-9%	+10%/-11%	+25%/-49%
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 008628973-01 / KOI 0916.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-30 \pm 8$	$4.25^{+0.60}_{-0.30}$	$1639^{+111}_{-74}$	$2730^{+117}_{-144}$	$1.664^{+0.518}_{-0.518}$
Alt.	$-29 \pm 9$	$3.86^{+0.59}_{-0.29}$	$1638^{+109}_{-73}$	$2781^{+131}_{-169}$	$1.864^{+0.706}_{-0.644}$

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



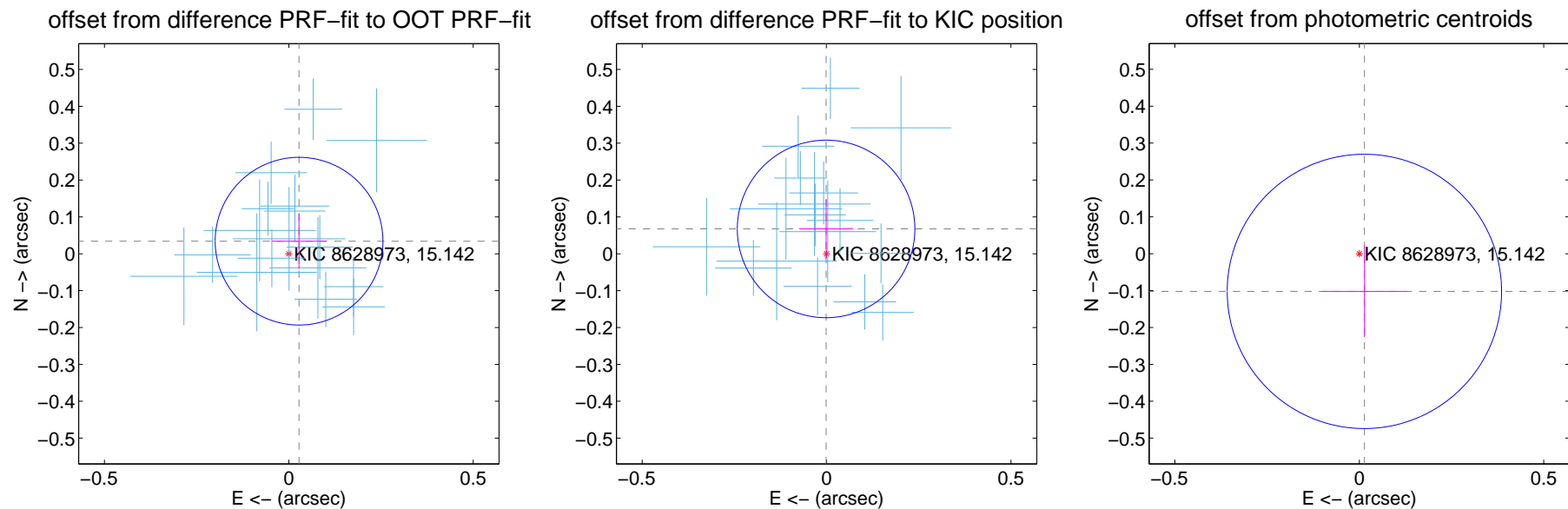
## DV Centroid Data

Supplemental centroid analysis for 008628973-01. Kepler magnitude: 15.14. Transit SNR 119.60

There are 17 quarters with good PRF difference image offsets

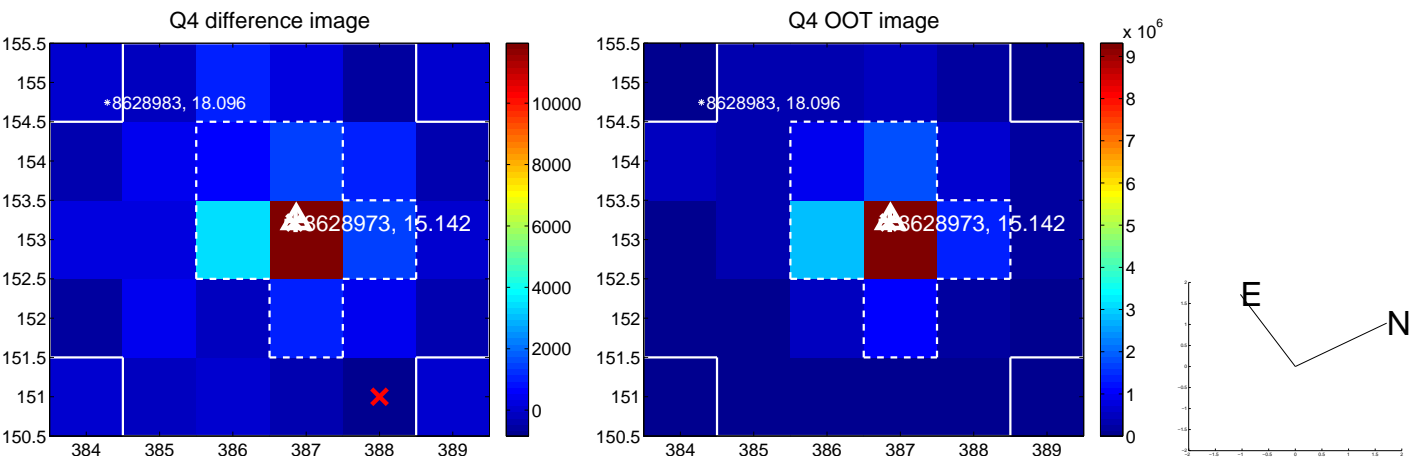
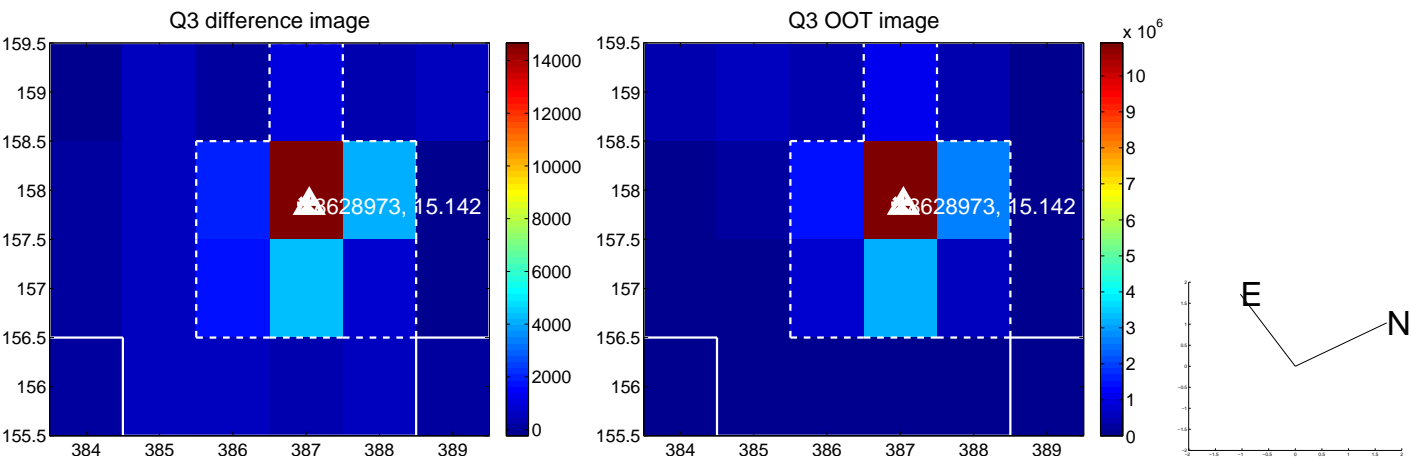
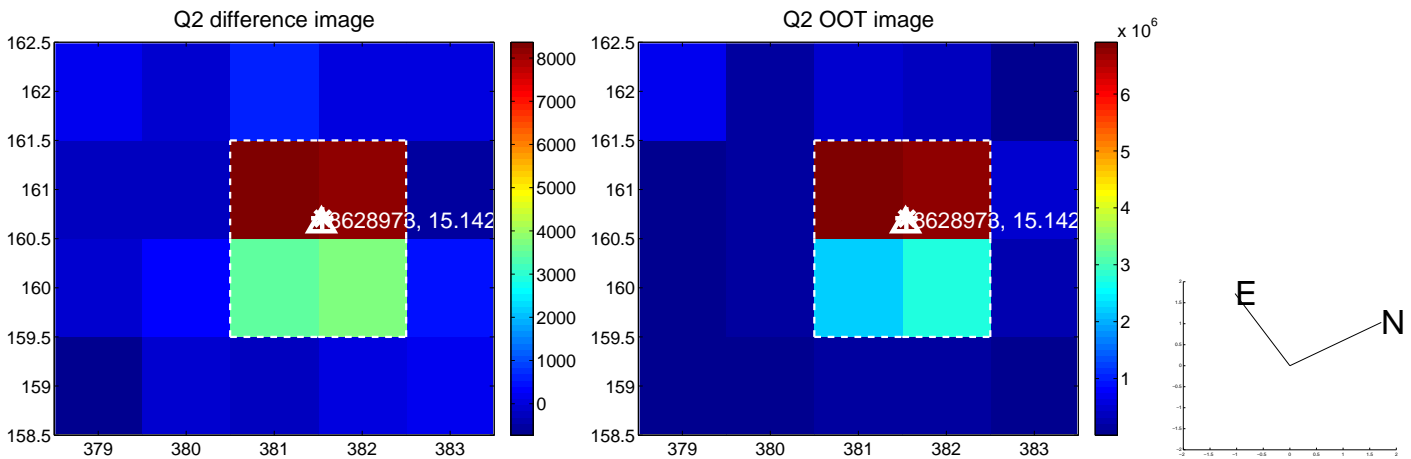
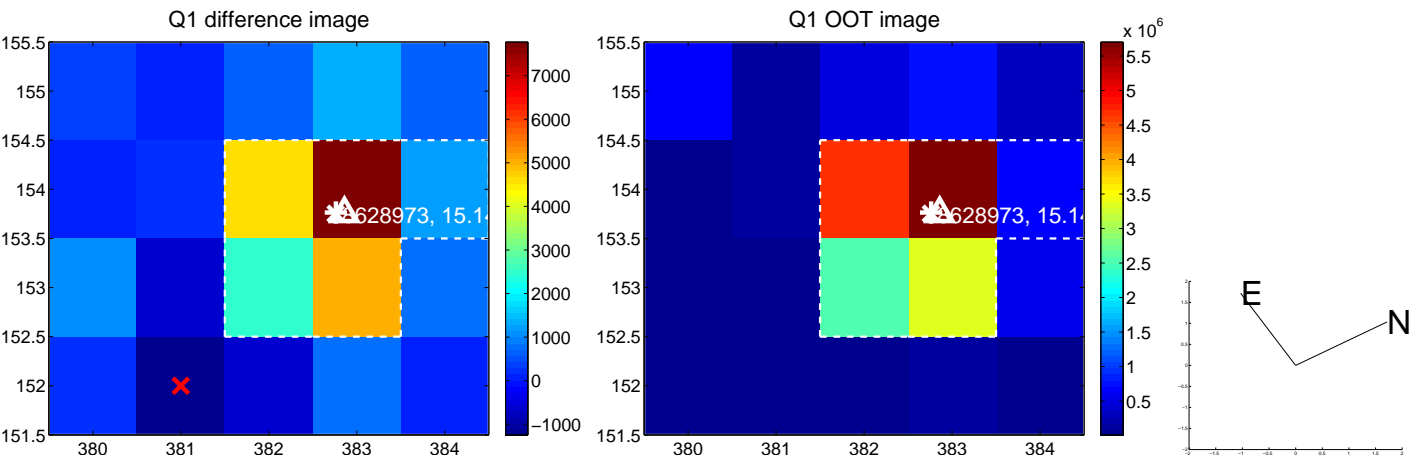
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.044 \pm 0.076$	0.58	$-0.028 \pm 0.074$	$0.034 \pm 0.075$
PRF-fit source offset from KIC position	$0.067 \pm 0.080$	0.84	$0.001 \pm 0.073$	$0.067 \pm 0.080$
photometric centroid source offset	$0.10 \pm 0.12$	0.83	$-0.01 \pm 0.11$	$-0.10 \pm 0.12$

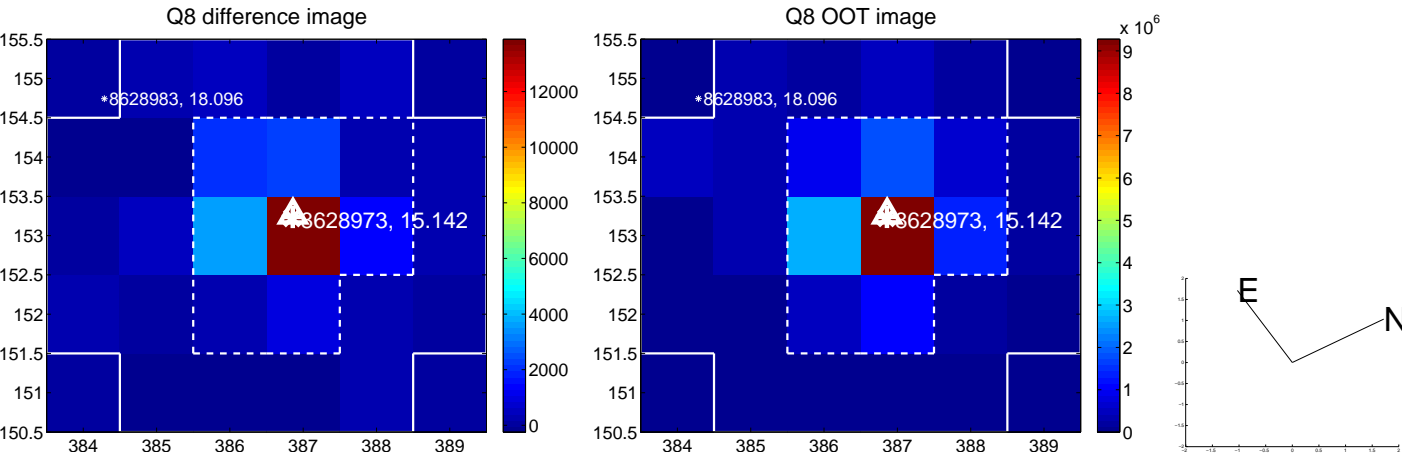
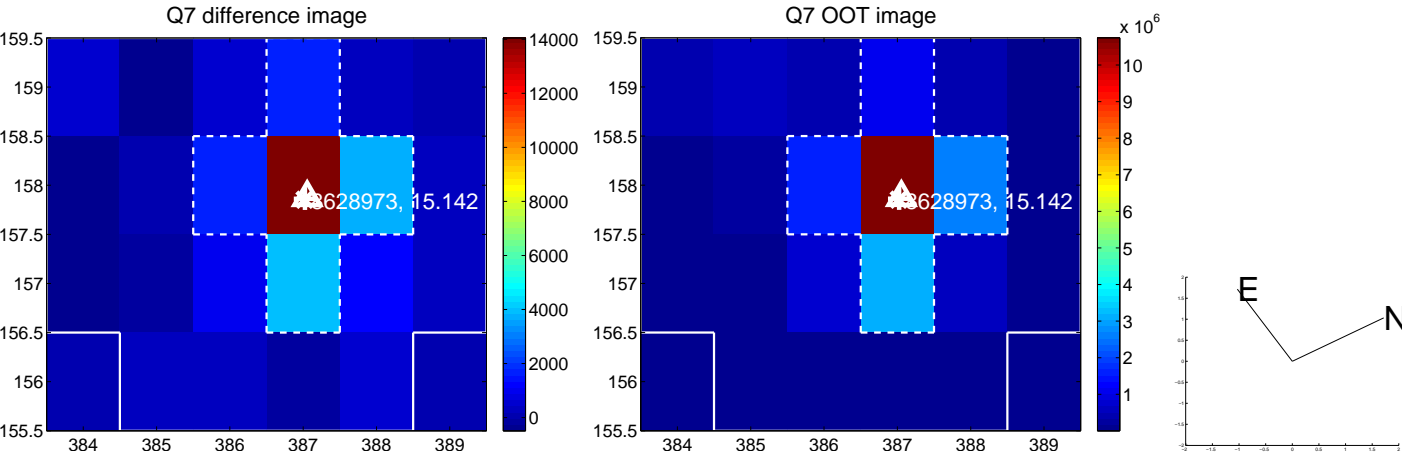
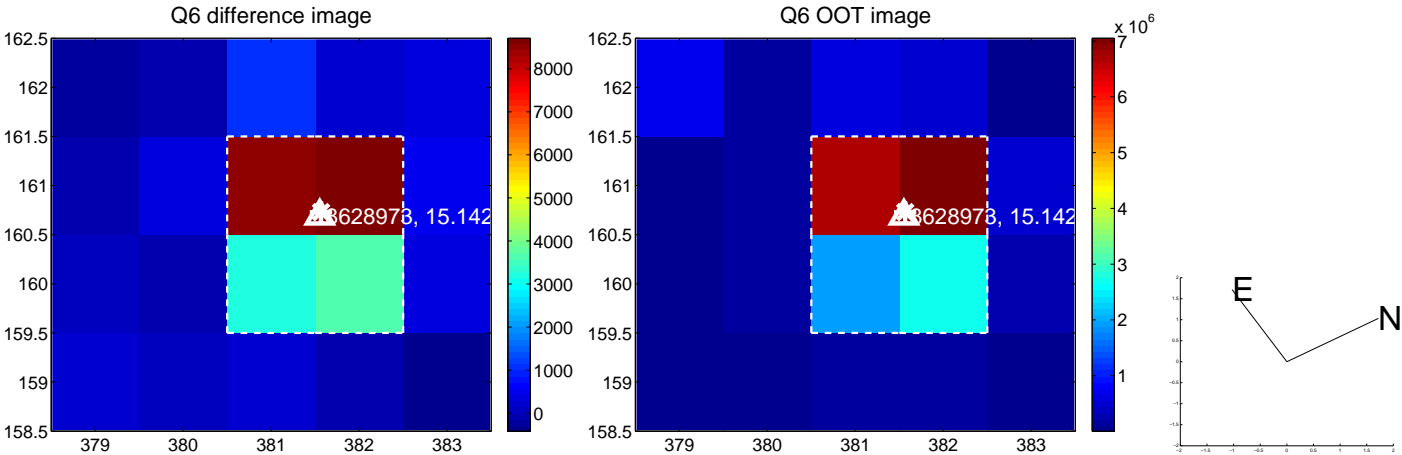
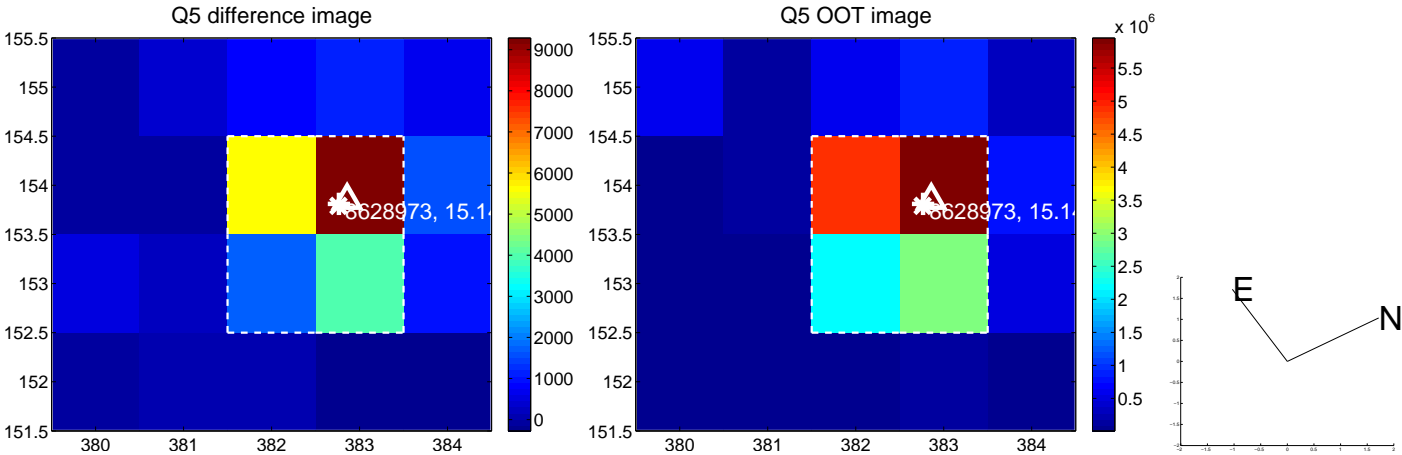


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

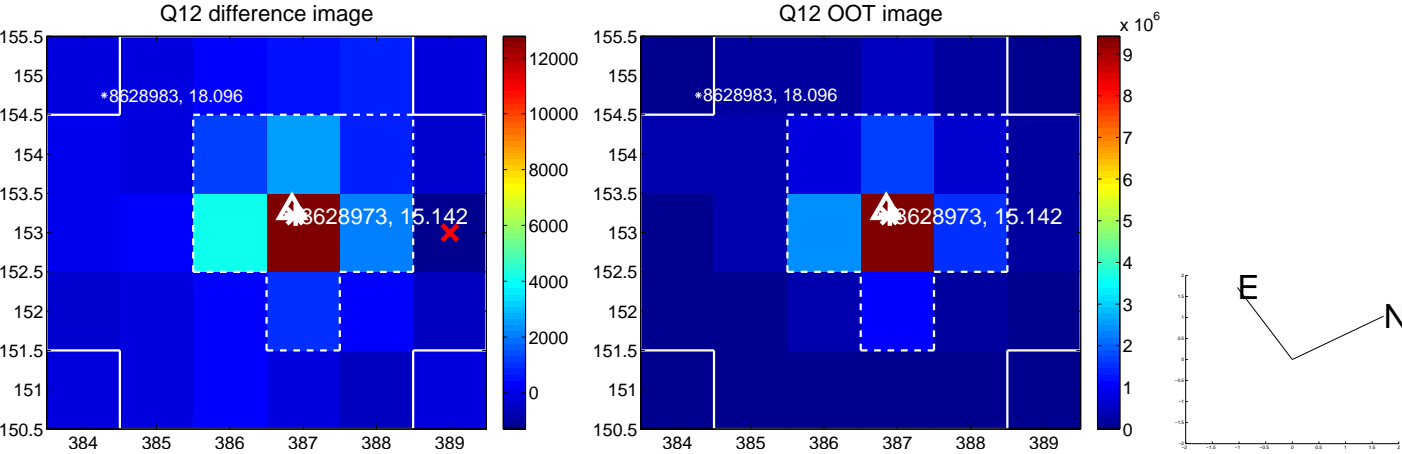
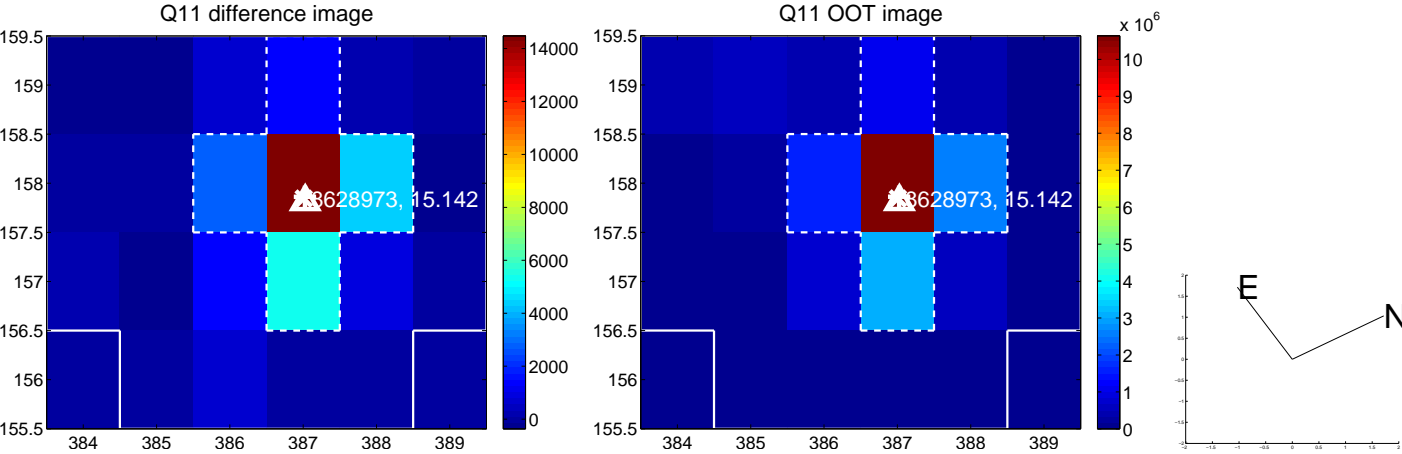
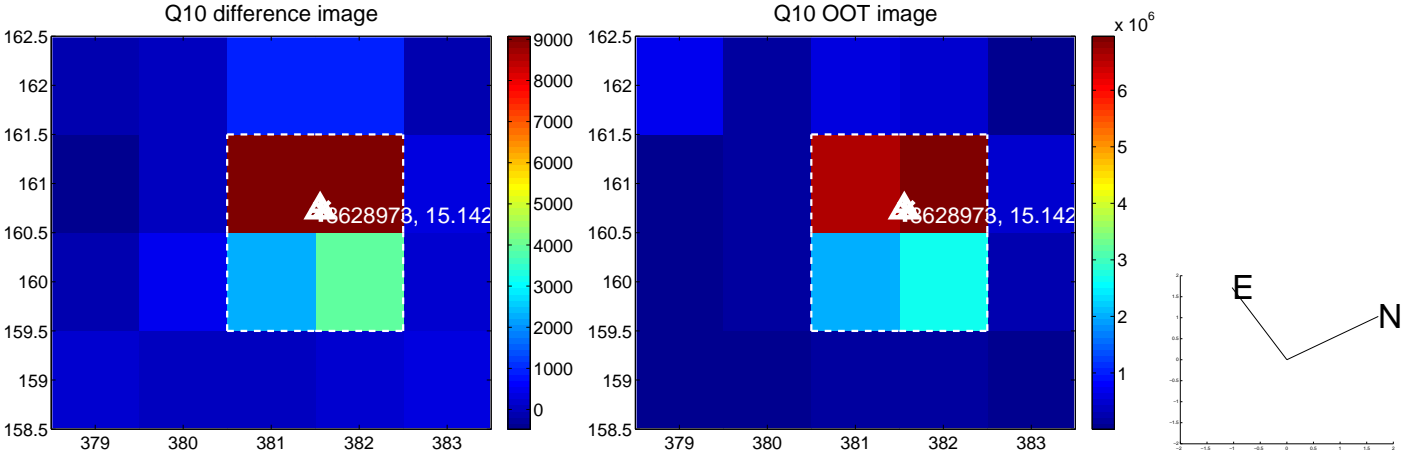
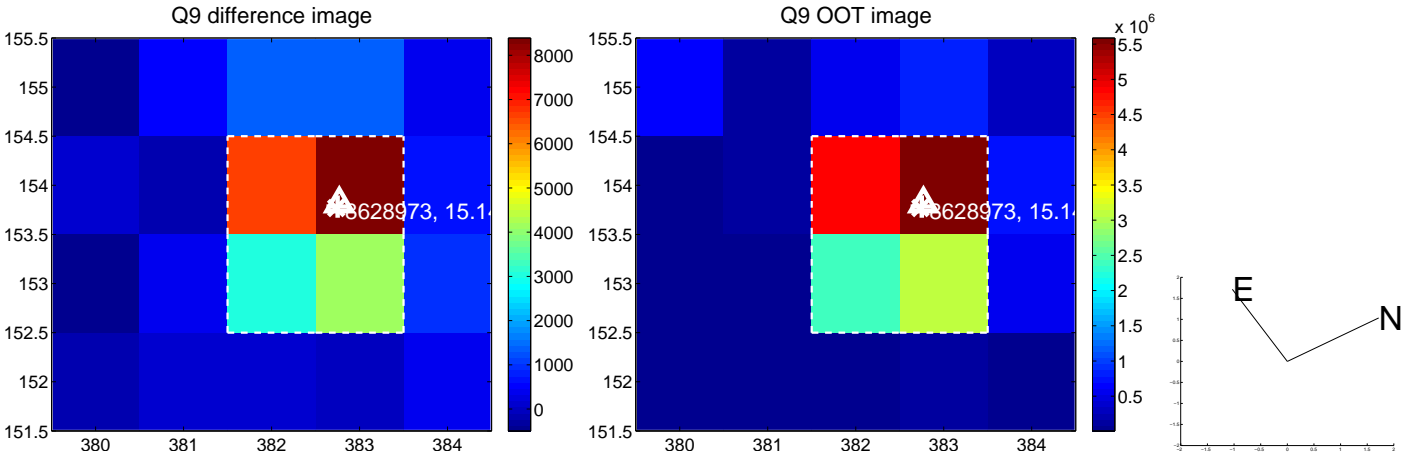
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



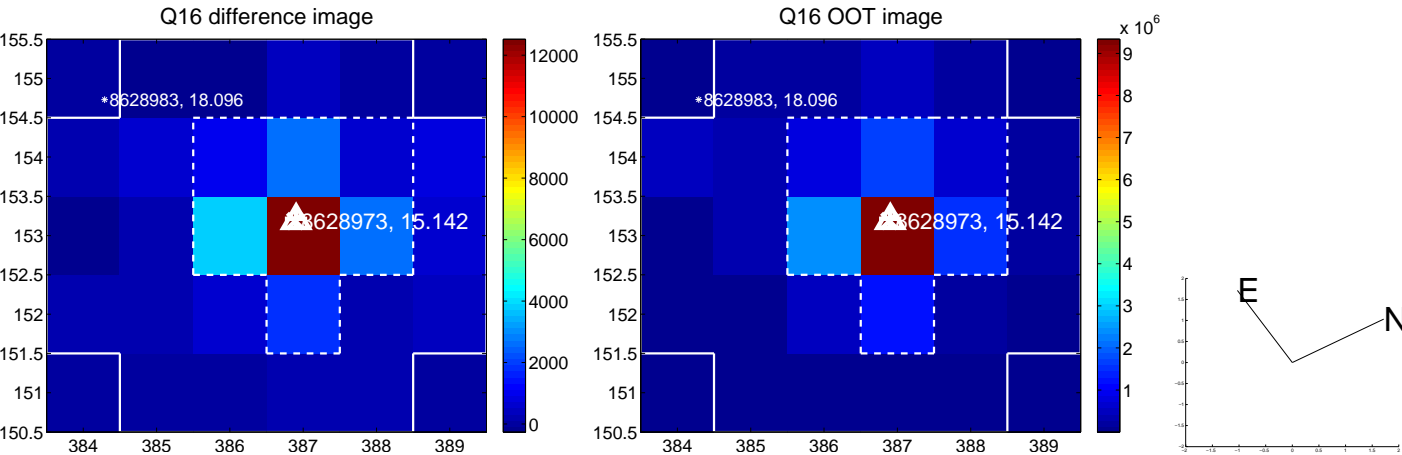
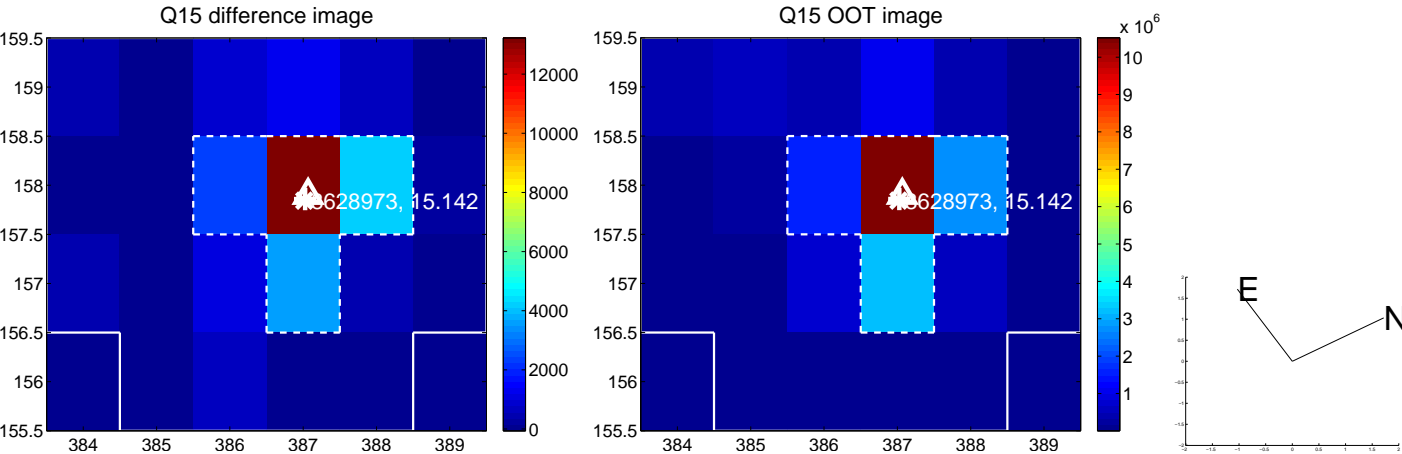
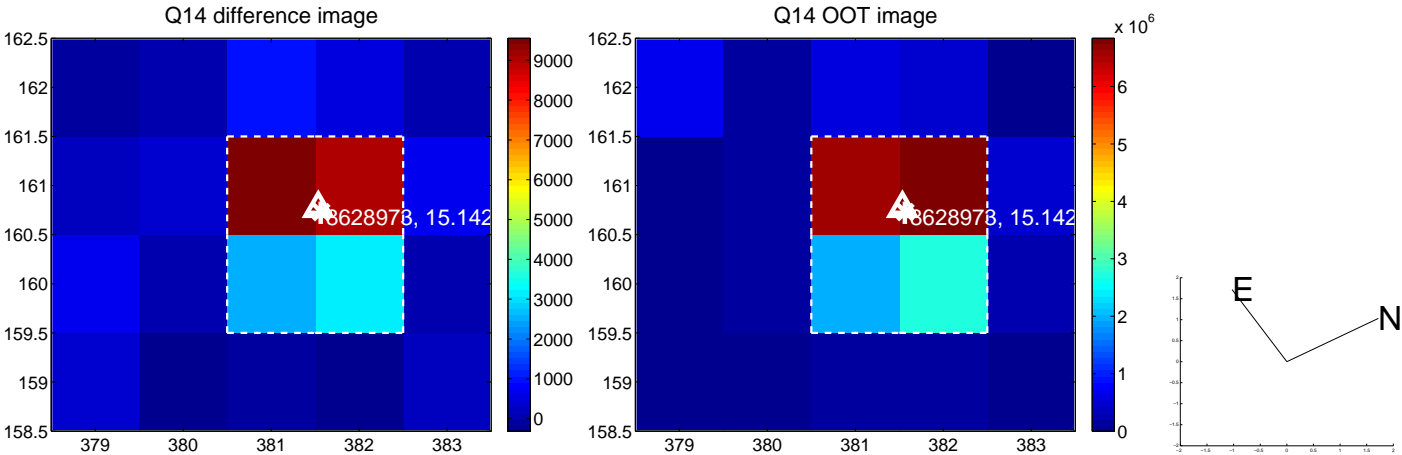
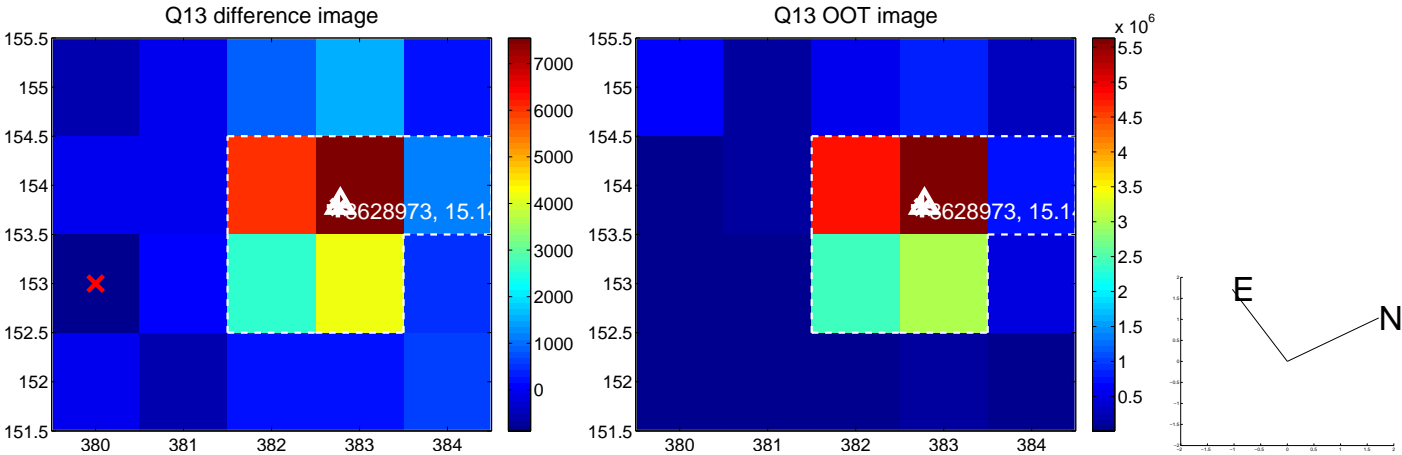
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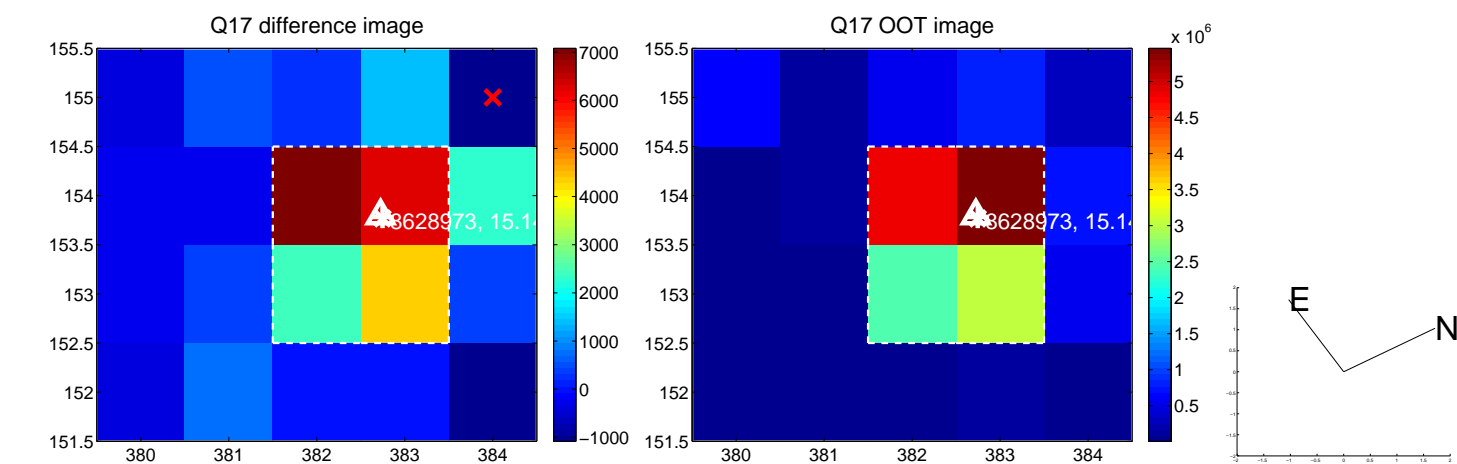


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

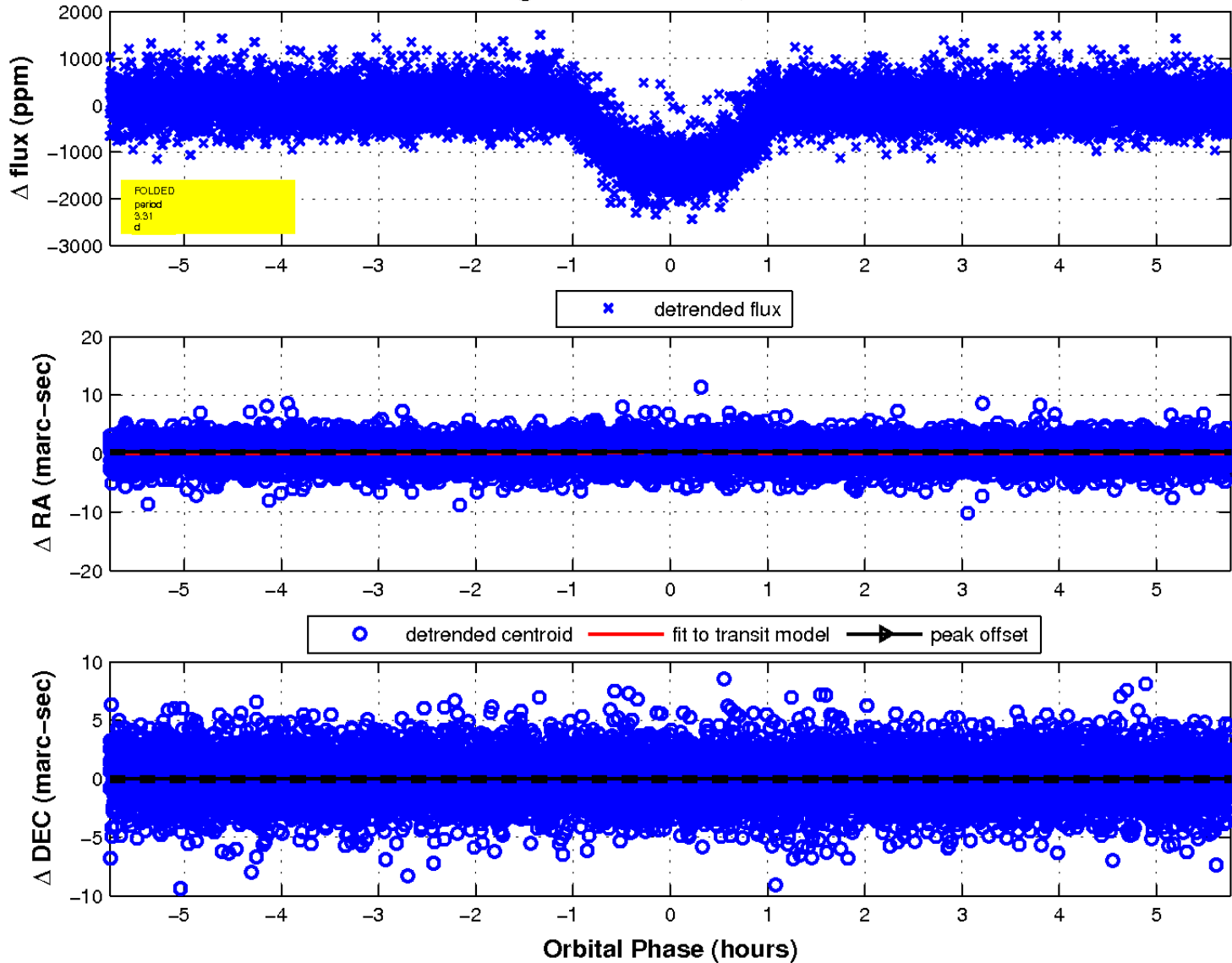




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

