

# KIC 009842890

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009842890-01	OBS	1479.01	4.988383	133.755754	539.0	8.720	34.1	40.5	0.82	5819	2.37	227.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009842890-01	OBS	FP	0.00	0	0	1	0	CENT_FEW_DIFFS—HALO_GHOST

**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.

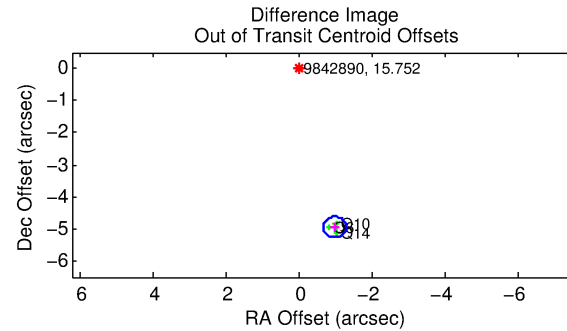
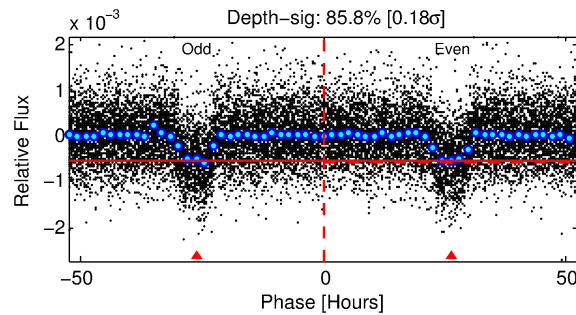
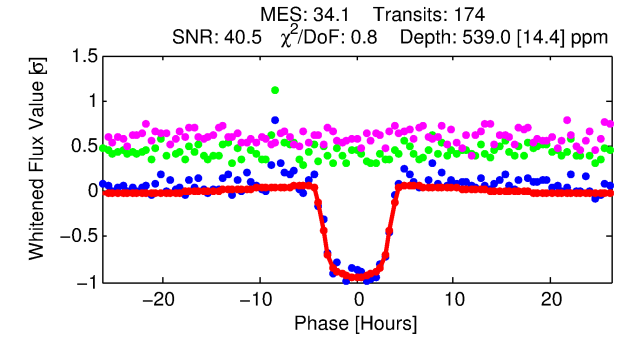
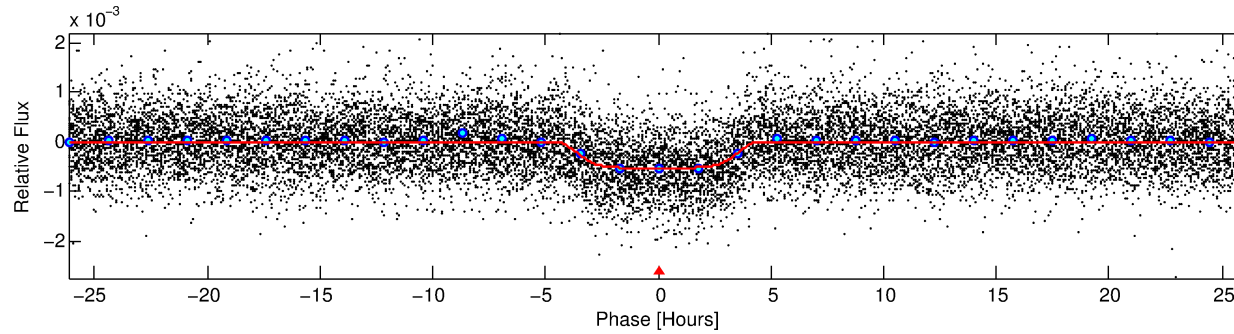
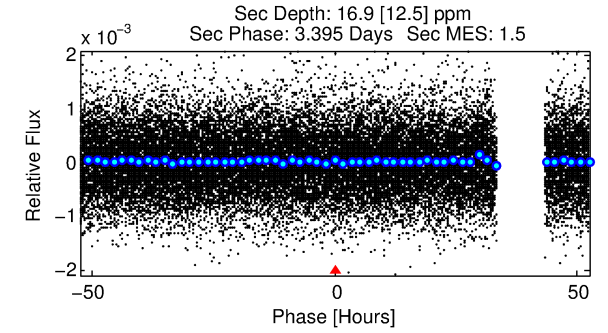
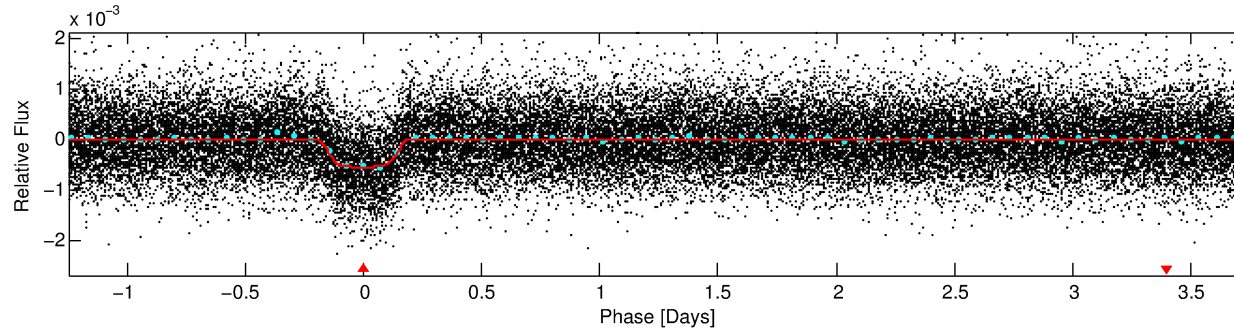
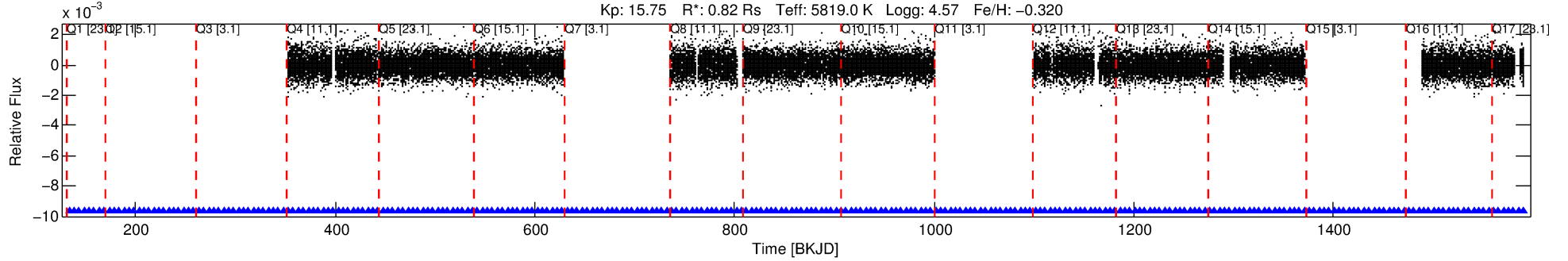
## Ephemeris Match Information For 009842890-01

No Significant Match Found

# DV One-Page Summary

KIC: 9842890 Candidate: 1 of 1 Period: 4.988 d  
KOI: K01479.01 Corr: 0.998

Kp: 15.75 R\*: 0.82 Rs Teff: 5819.0 K Logg: 4.57 Fe/H: -0.320



## DV Fit Results:

Period = 4.98838 [0.00003] d  
Epoch = 133.7558 [0.0052] BKJD  
Rp/R\* = 0.0263 [0.0007]  
a/R\* = 2.05 [0.15]  
b = 0.94 [0.01]  
Seff = 227.30 [83.32]  
Teq = 990 [91] K  
Rp = 2.36 [0.69] Re  
a = 0.0553 [0.0132] AU  
Ag = 5.10 [4.17] [0.98σ]  
Teffp = 2301 [433] K [2.96σ]

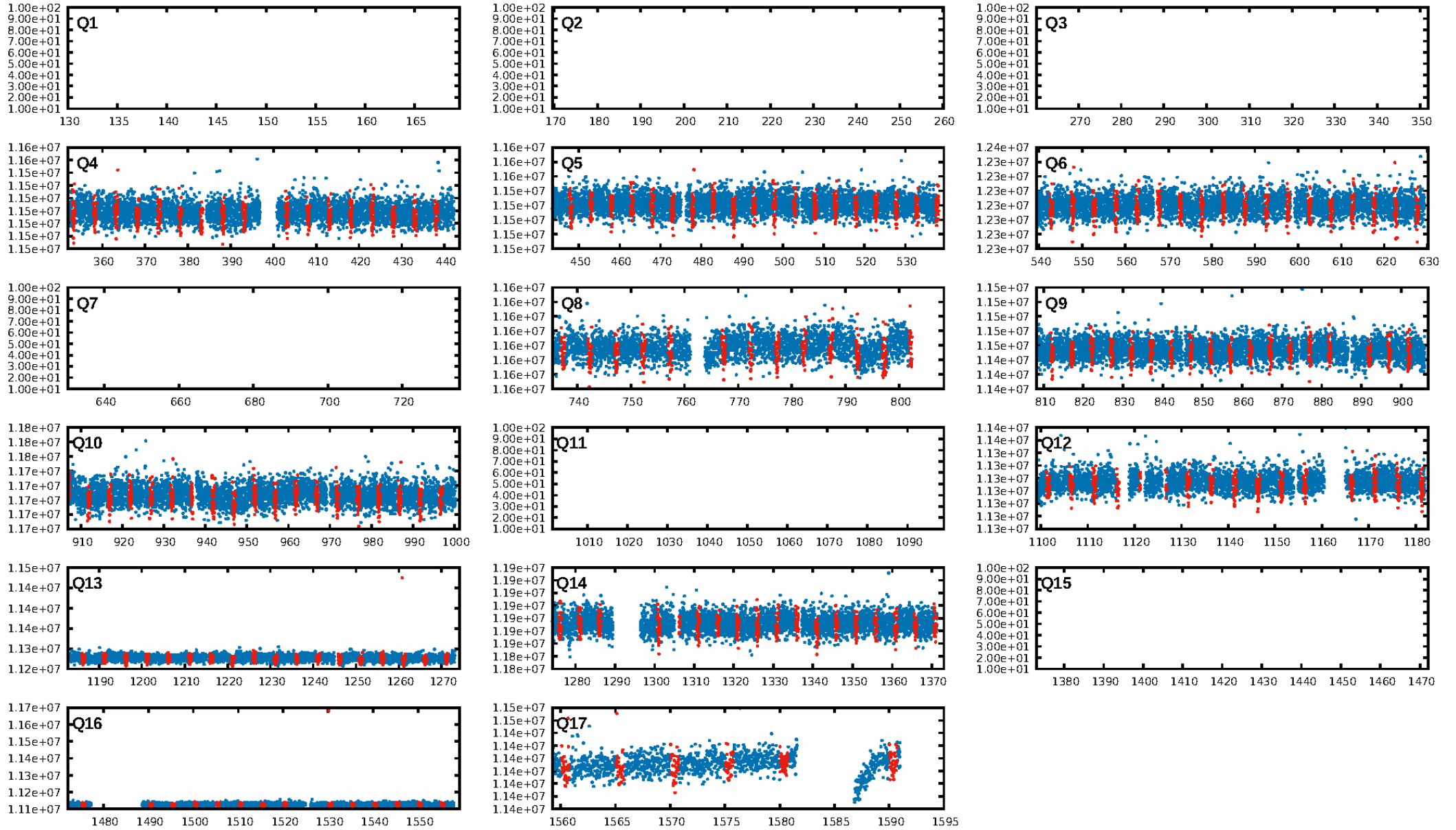
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 63.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.65e-235  
RollingBand-fgt: 1.00 [168/168]  
GhostDiagnostic-chr: 0.1214  
Centroid-sig: 0.0%  
Centroid-so: 2.245 arcsec [10.40σ]  
OotOffset-rm: 5.039 arcsec [47.12σ]  
KicOffset-rm: 3.608 arcsec [6.33σ]  
OotOffset-st: 3/0/0/0 [3]  
KicOffset-st: 3/0/4/4 [11]  
DiffImageQuality-fgm: 0.00 [0/11]  
DiffImageOverlap-fno: 1.00 [11/11]

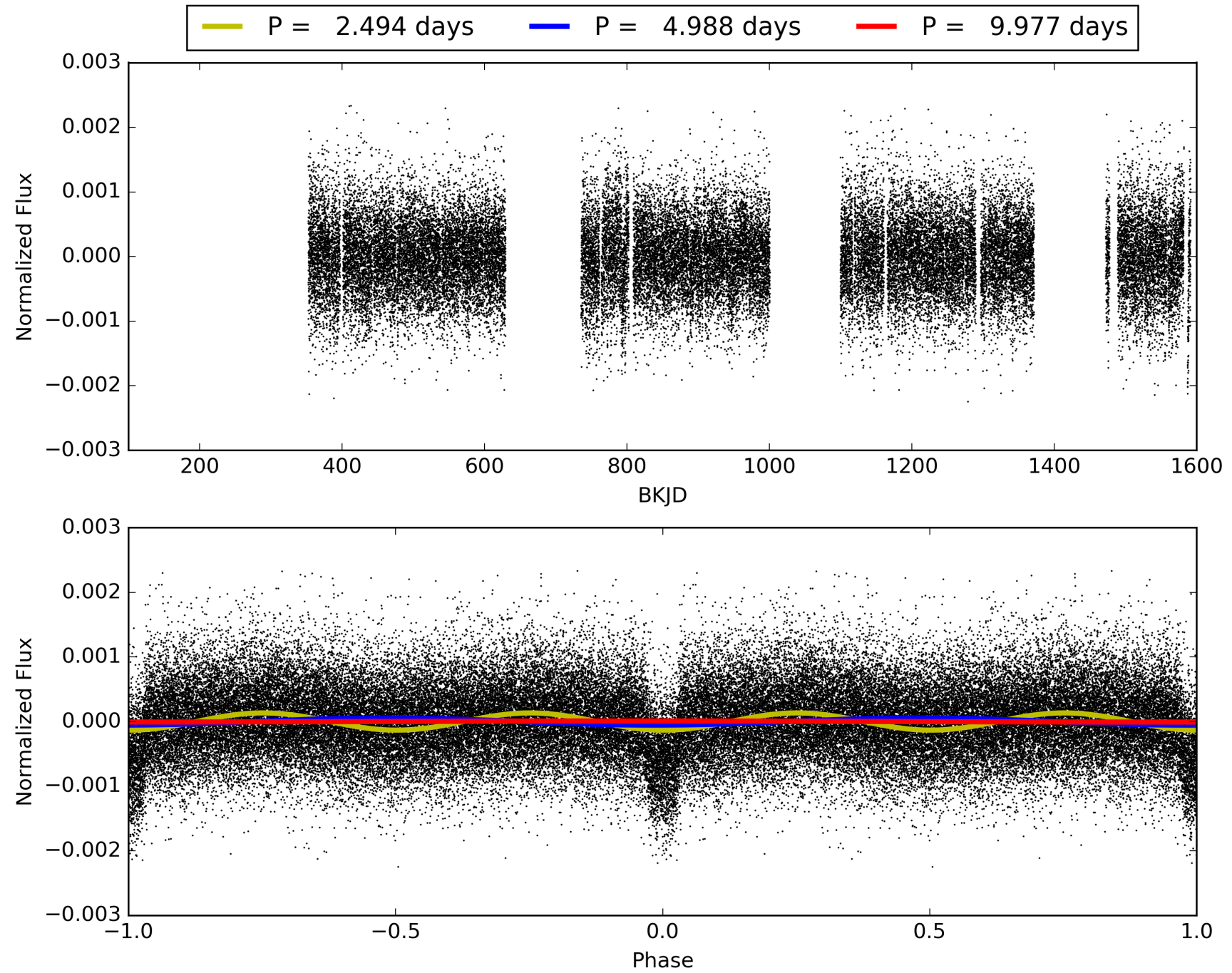
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 12:15:30 Z

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

# TCE 009842890-01, PDC Light Curves

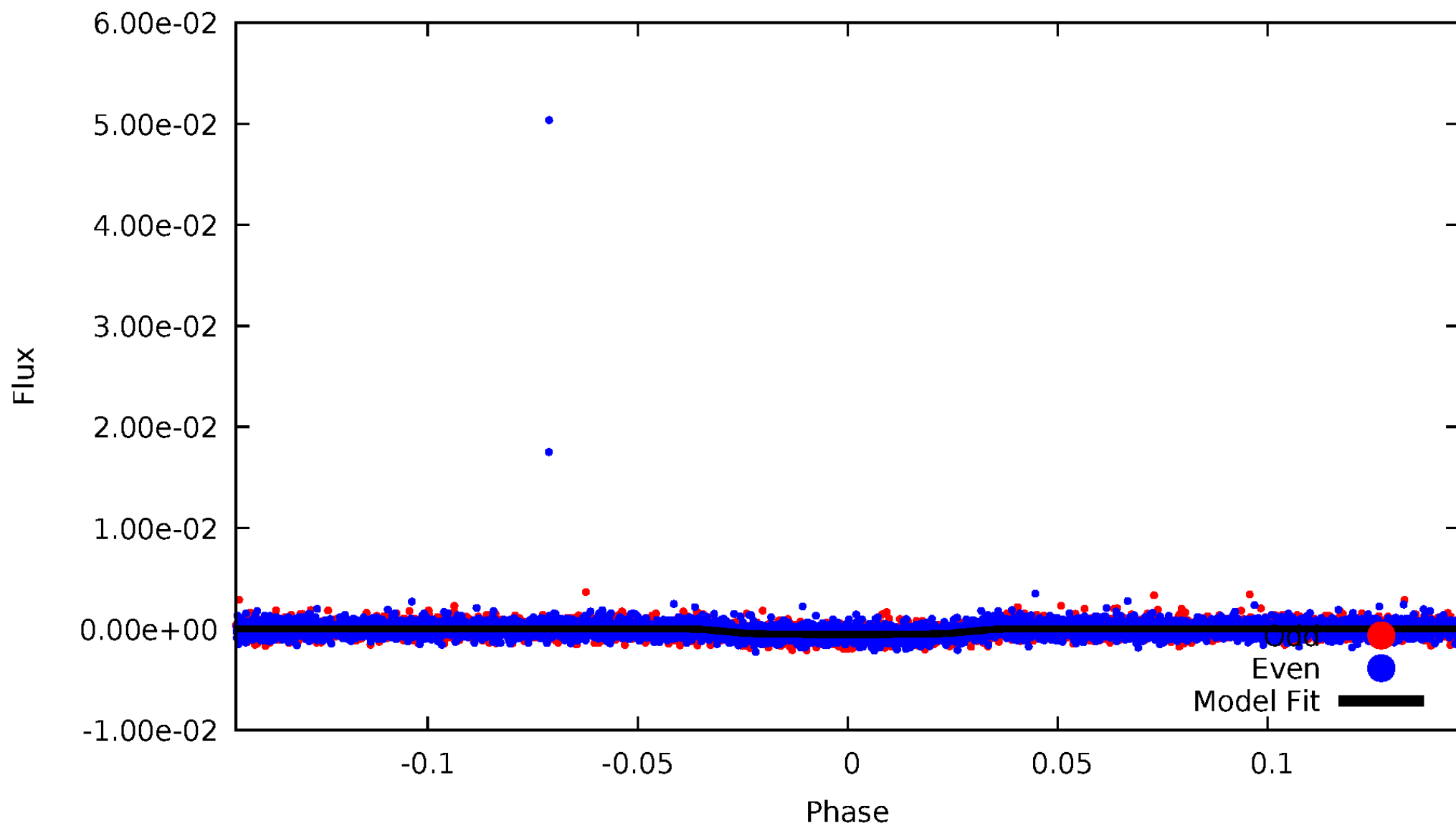


TCE 009842890-01



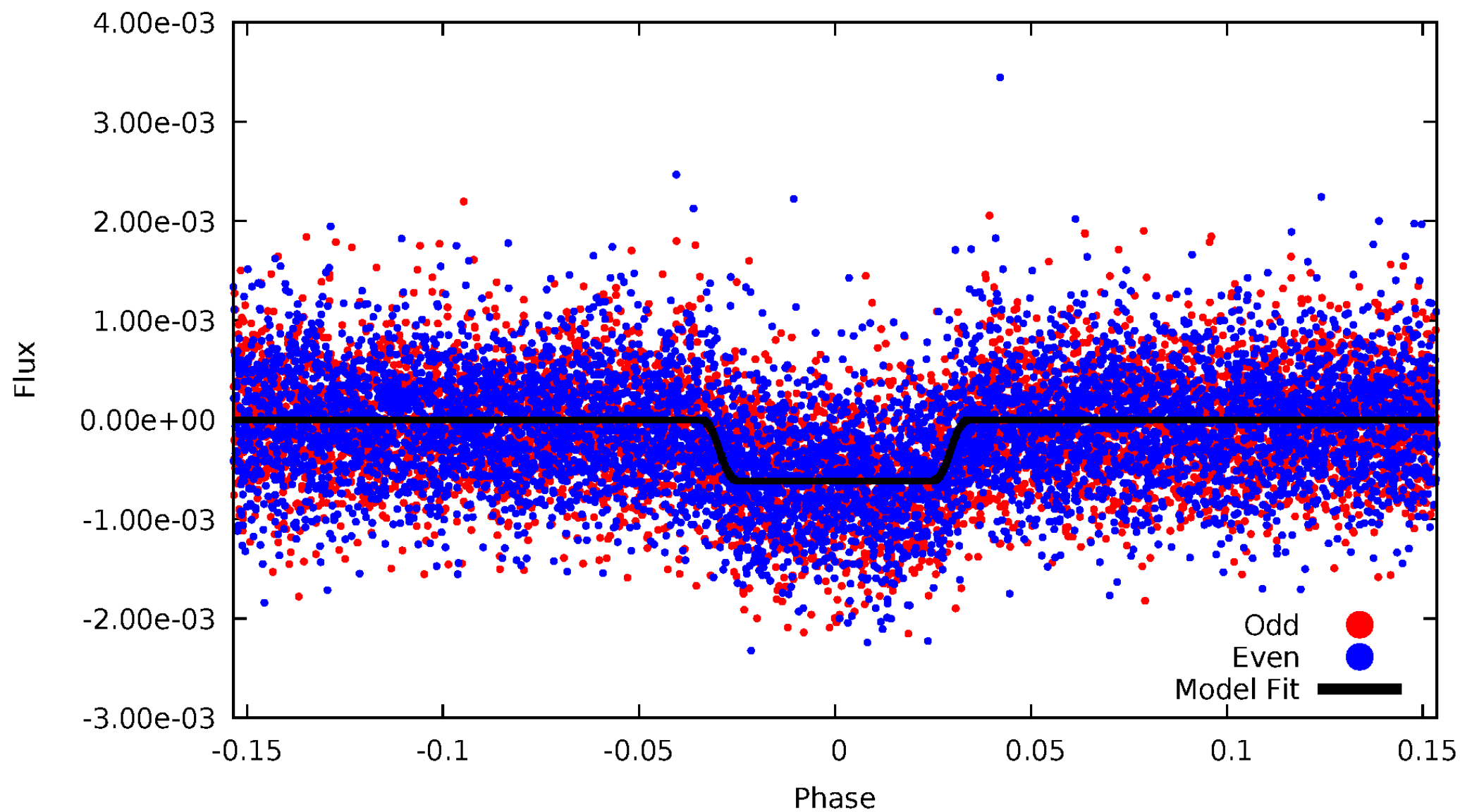
# DV Odd/Even

TCE 009842890-01



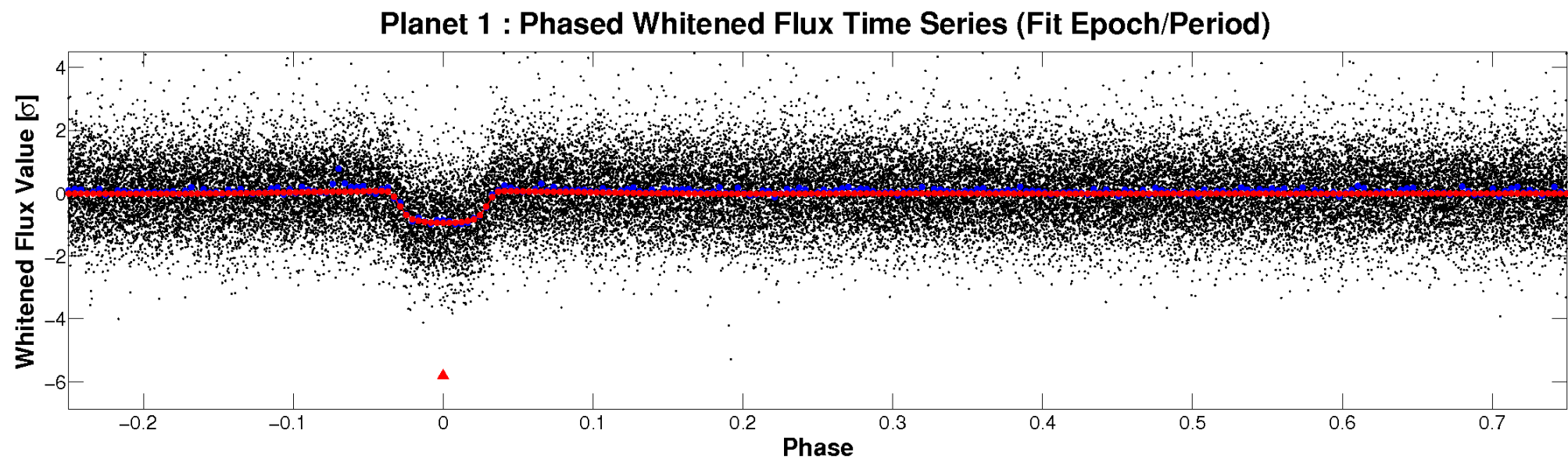
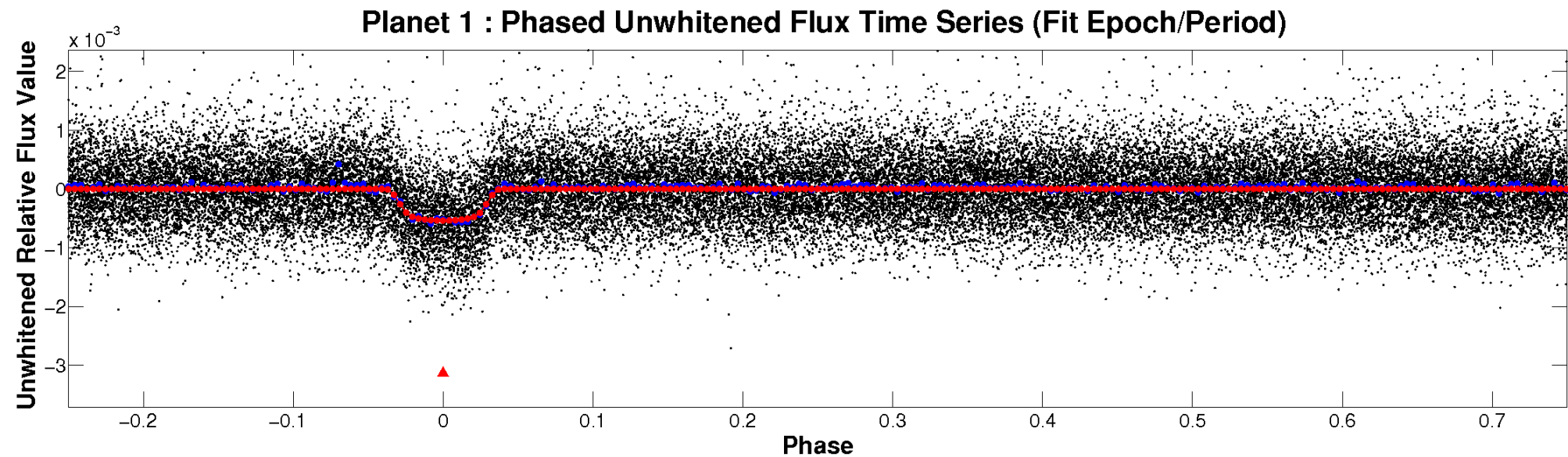
# ALT Odd/Even

TCE 009842890-01



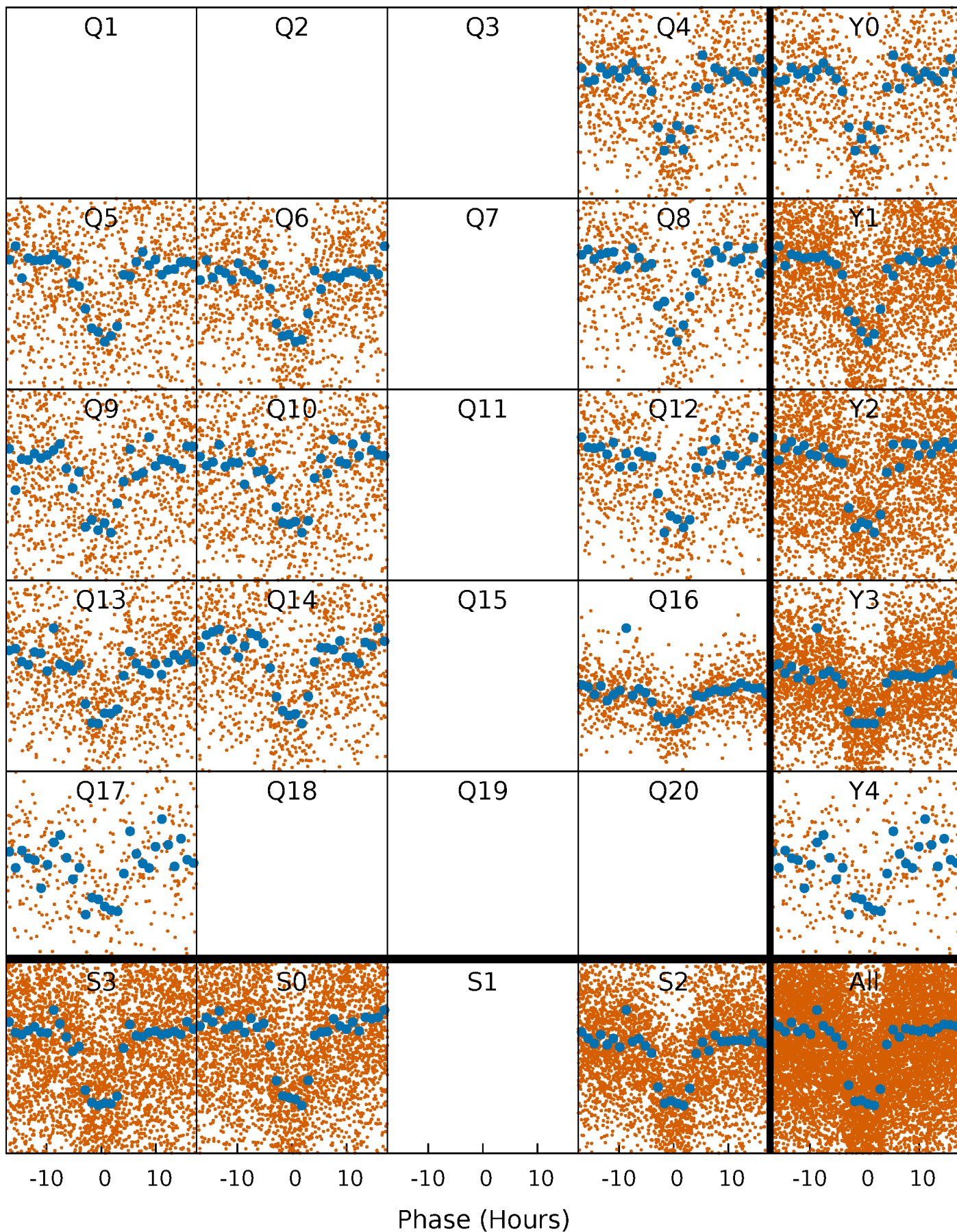


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

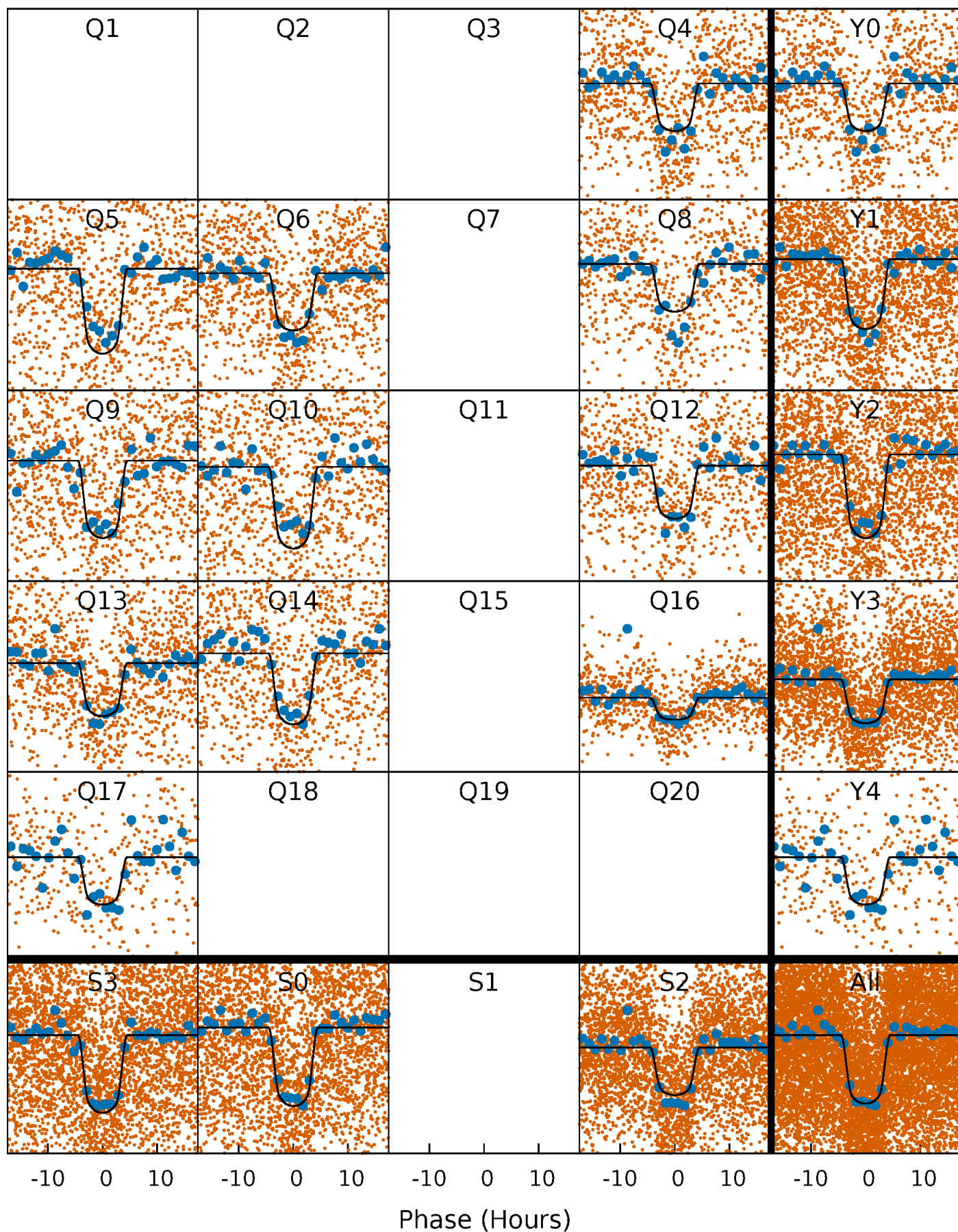
TCE 009842890-01 P= 4.988383 Days  $T_0=133.755754$  (BKJD)





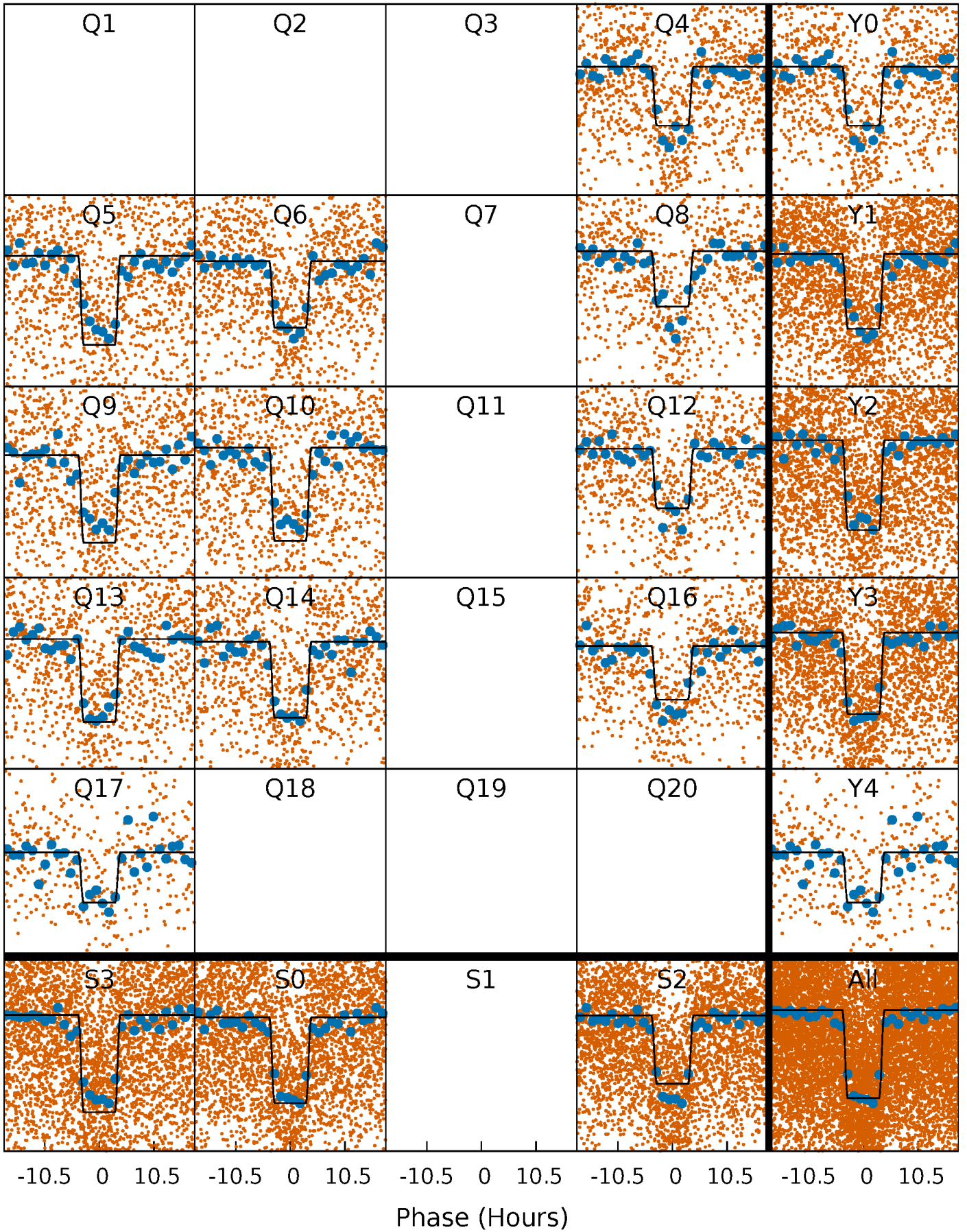
# DV Quarter-Phased Transit Curves

TCE 009842890-01   P= 4.988383 Days    $T_0=133.755754$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

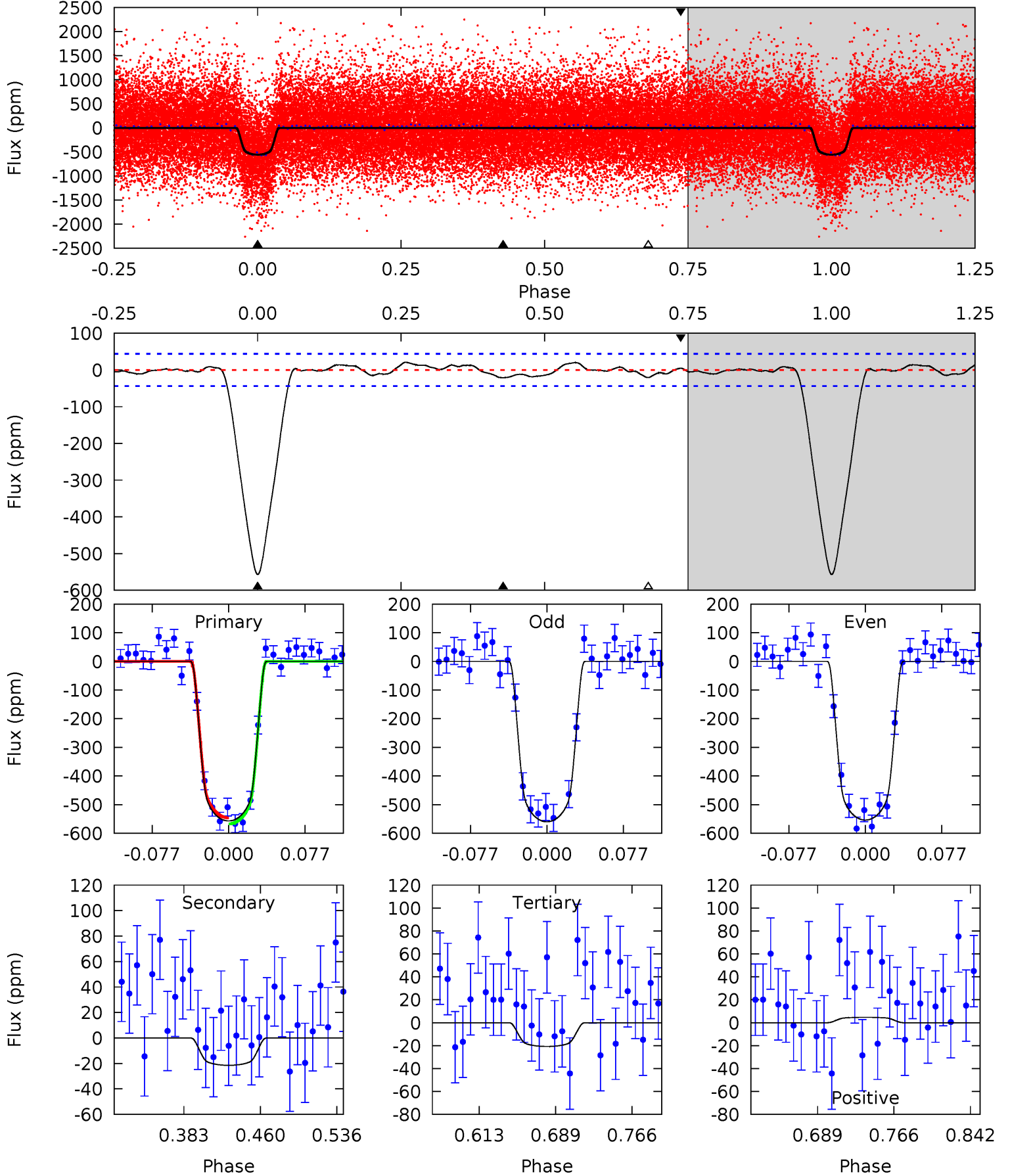
TCE 009842890-01   P= 4.988475 Days    $T_0=133.742210$  (BKJD)



# DV Model-Shift Uniqueness Test

009842890-01, P = 4.988383 Days, E = 133.755754 Days

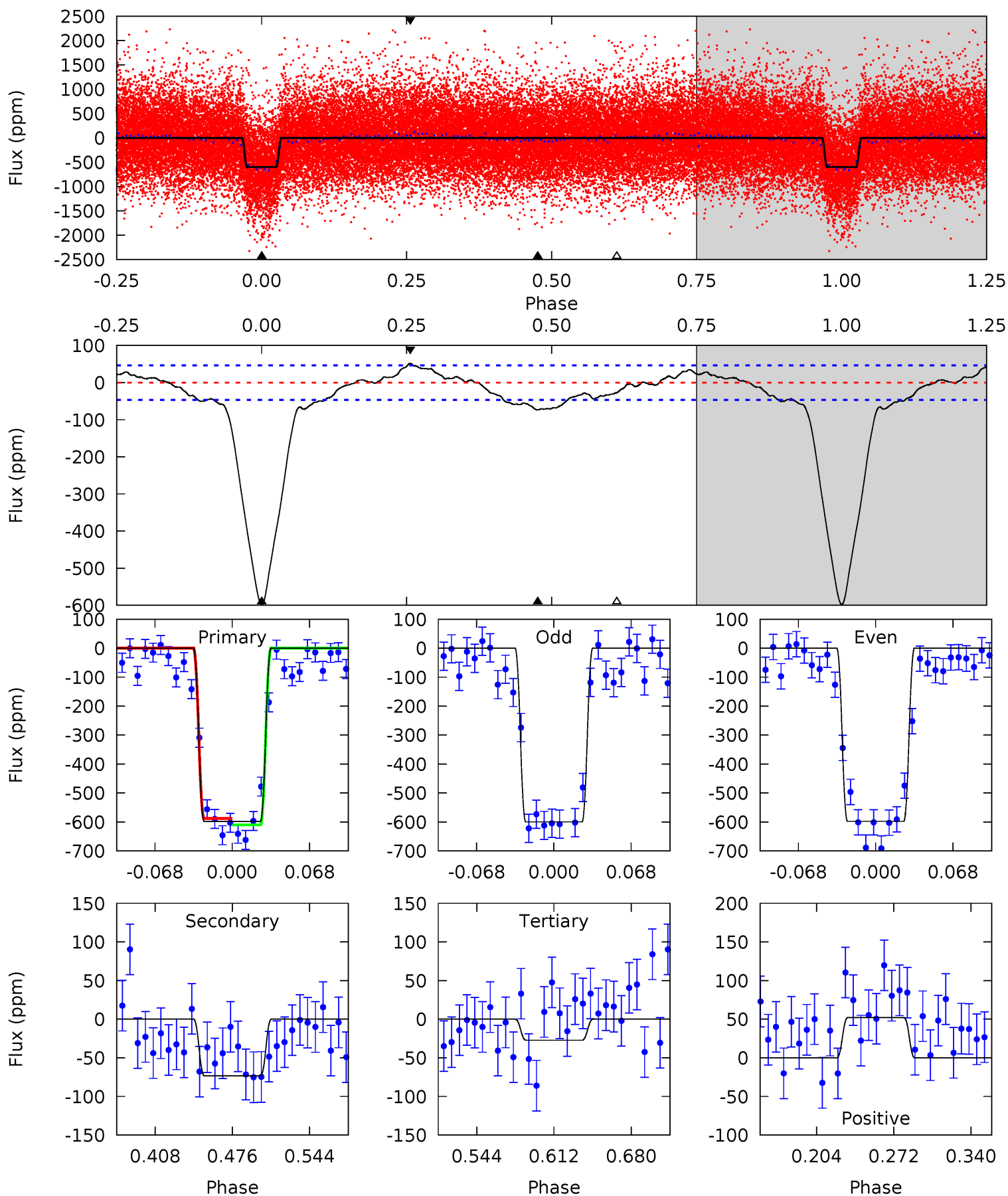
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
58.6	2.26	2.18	0.49	4.62	1.77	0.96	56.4	58.1	0.07	1.76	0.32	1.00	0.04	1.11



# Alt Model-Shift Uniqueness Test

009842890-01, P = 4.988475 Days, E = 133.742210 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
59.7	7.31	2.71	5.21	4.65	1.82	2.81	57.0	54.5	4.59	2.10	0.10	0.99	0.08	1.11





### Stellar Parameters For KIC 009842890

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5819^{+174}_{-192}$	$4.565^{+0.034}_{-0.184}$	$-0.320^{+0.300}_{-0.300}$	$0.823^{+0.238}_{-0.079}$	$0.910^{+0.101}_{-0.111}$	$2.301^{+0.445}_{-1.171}$
	+3%/-3%	+1%/-4%	+94%/-94%	+29%/-10%	+11%/-12%	+19%/-51%
Source	KIC0	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 009842890-01 / KOI 1479.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-21 \pm 10$	$2.45^{+0.39}_{-0.20}$	$1420^{+93}_{-69}$	$3046^{+205}_{-258}$	$5.571^{+2.913}_{-2.655}$
Alt.	$-73 \pm 10$	$2.32^{+0.35}_{-0.20}$	$1422^{+88}_{-71}$	$3791^{+119}_{-143}$	$22^{+5}_{-5}$

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



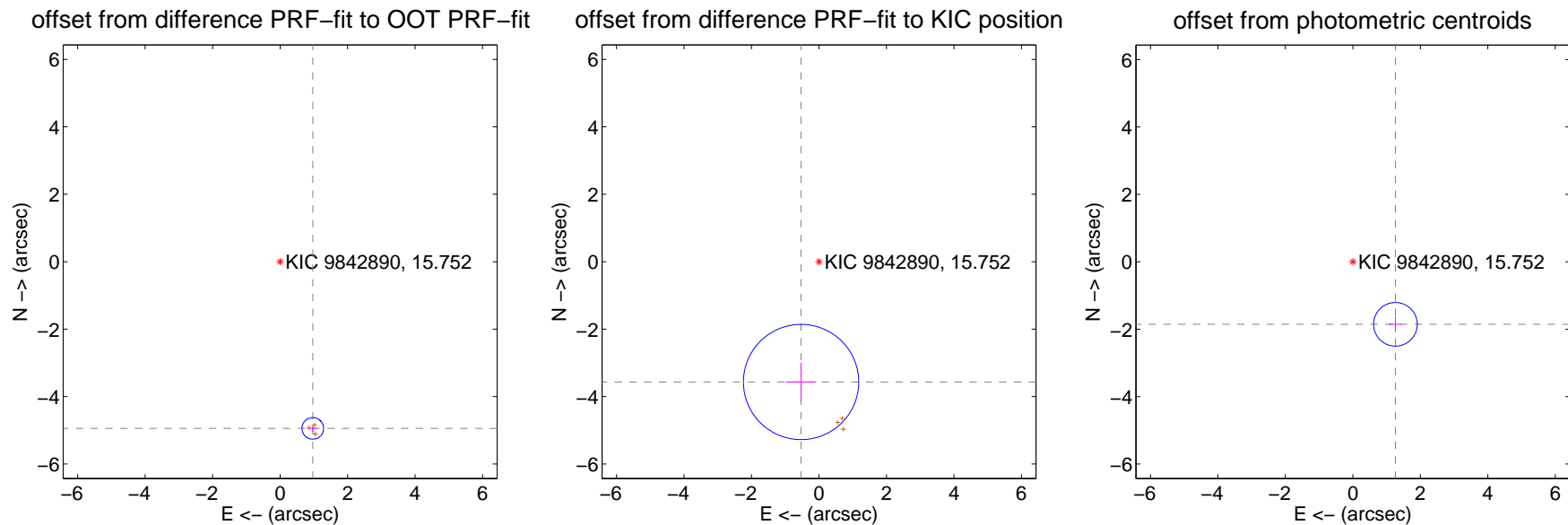
## DV Centroid Data

Supplemental centroid analysis for 009842890-01. Kepler magnitude: 15.75. Transit SNR 40.52

There are 0 quarters with good PRF difference image offsets

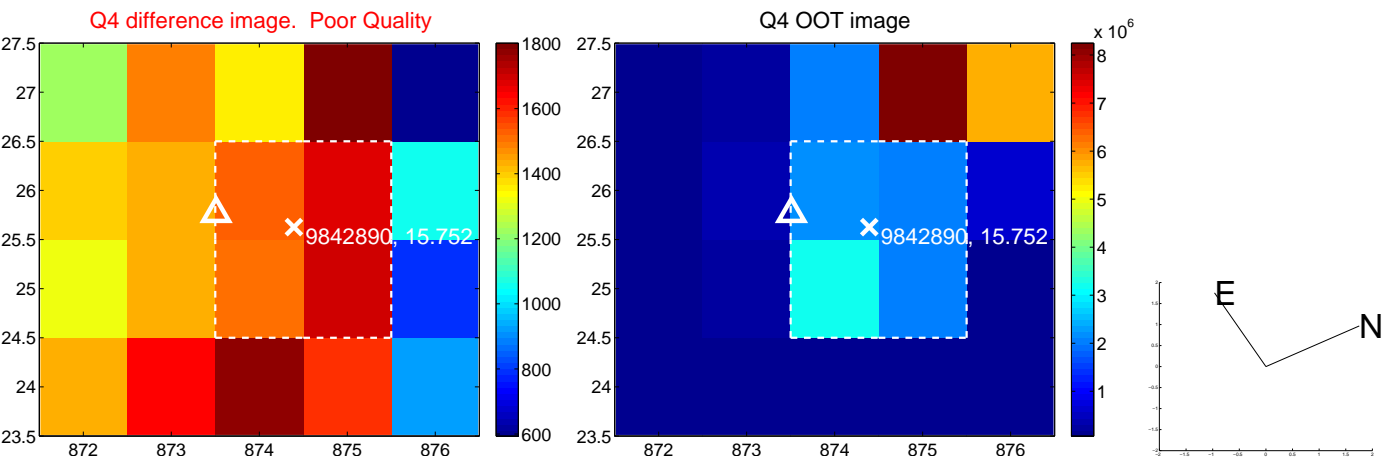
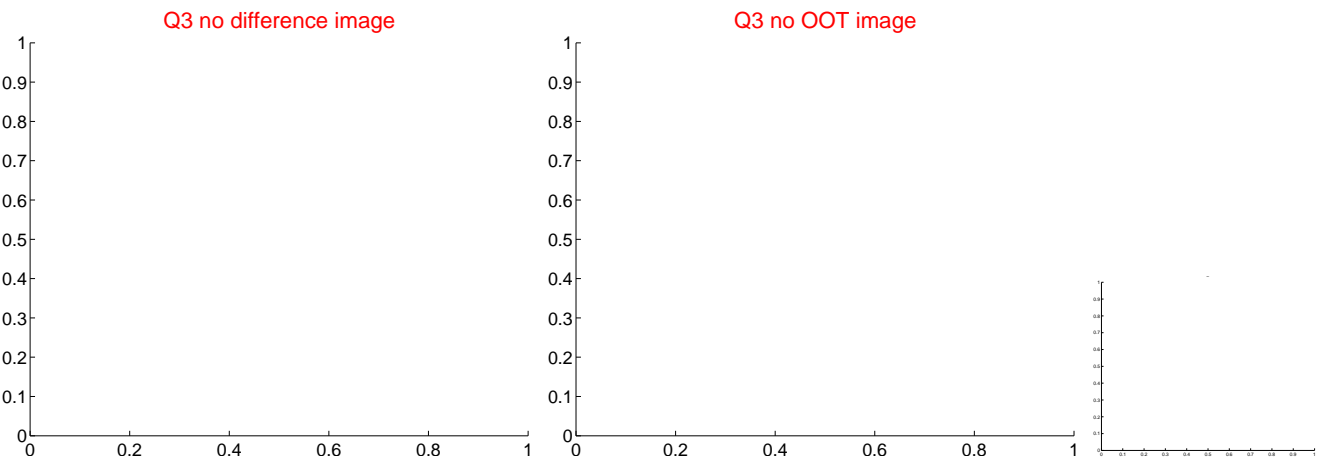
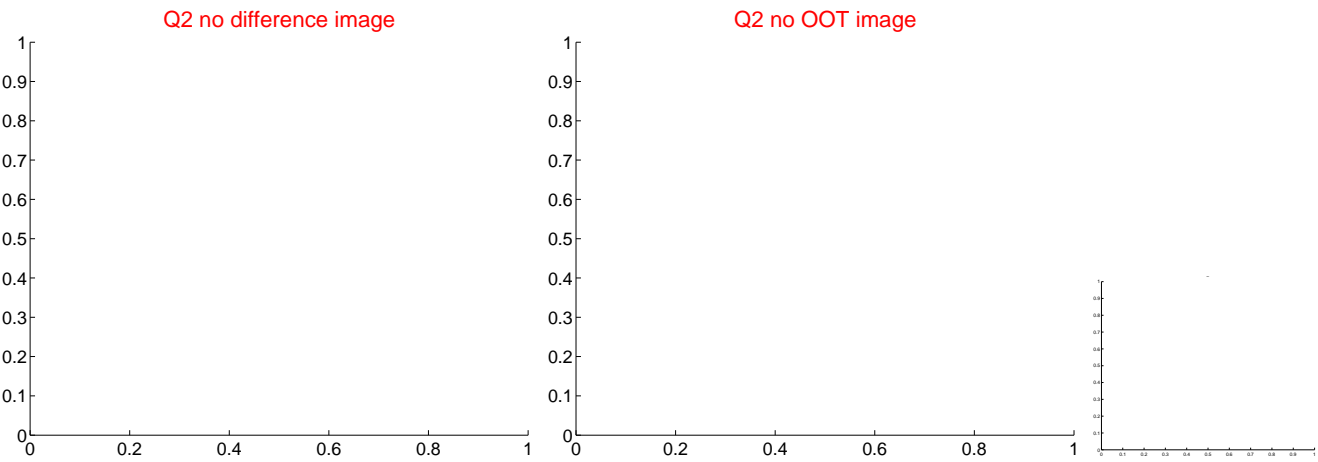
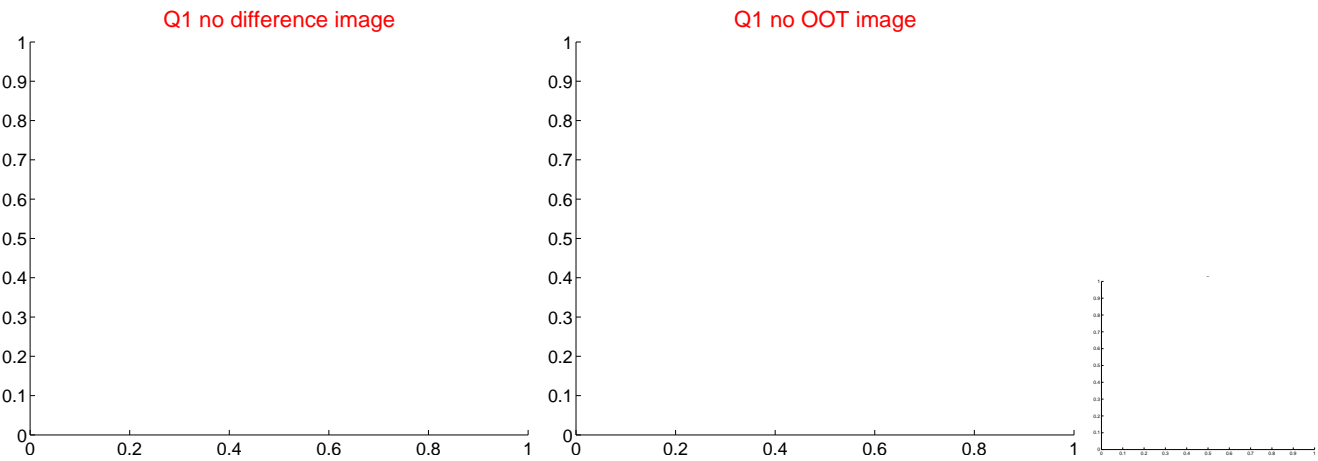
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.039 \pm 0.107$	47.12	$-0.970 \pm 0.106$	$-4.945 \pm 0.107$
PRF-fit source offset from KIC position	$3.608 \pm 0.570$	6.33	$0.531 \pm 0.448$	$-3.569 \pm 0.572$
photometric centroid source offset	$2.24 \pm 0.22$	10.40	$-1.26 \pm 0.20$	$-1.86 \pm 0.22$

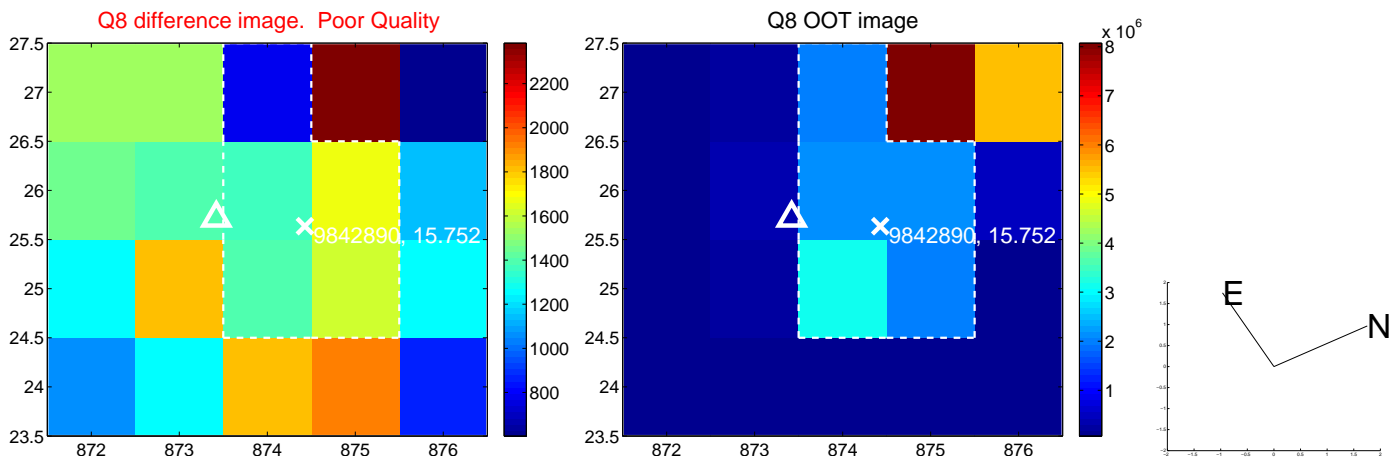
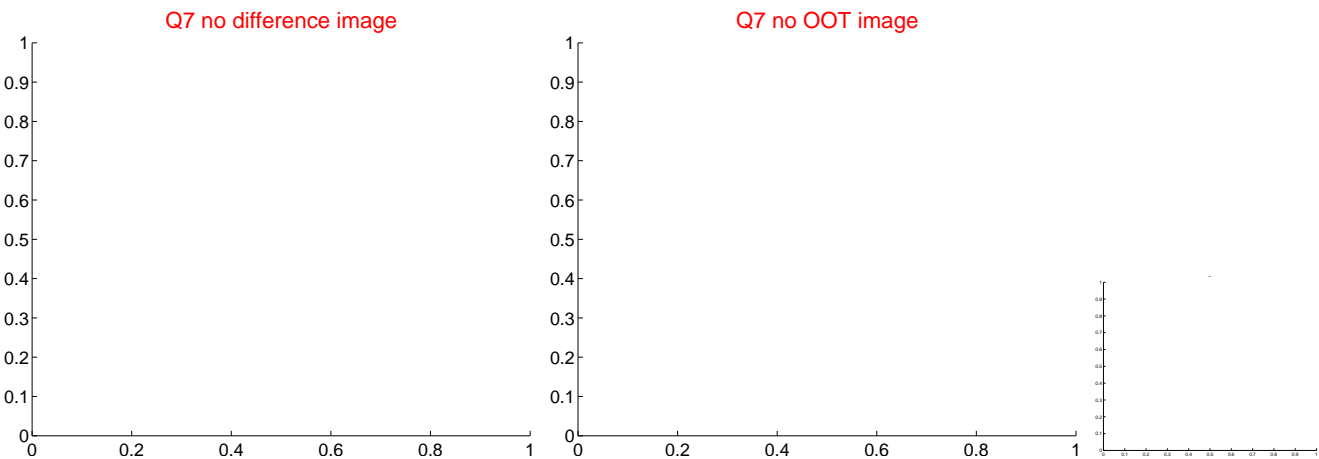
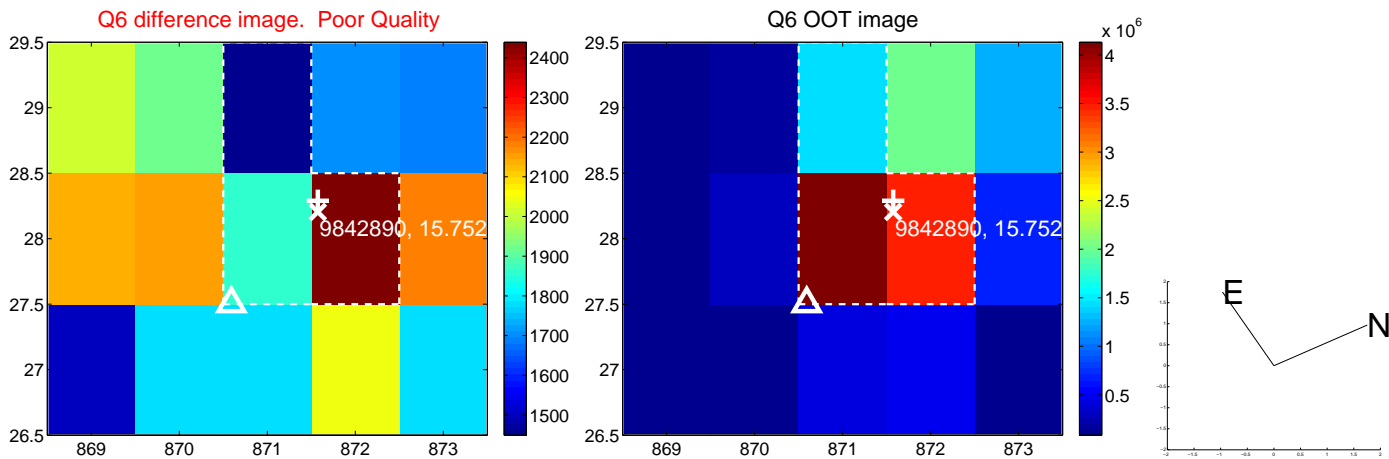
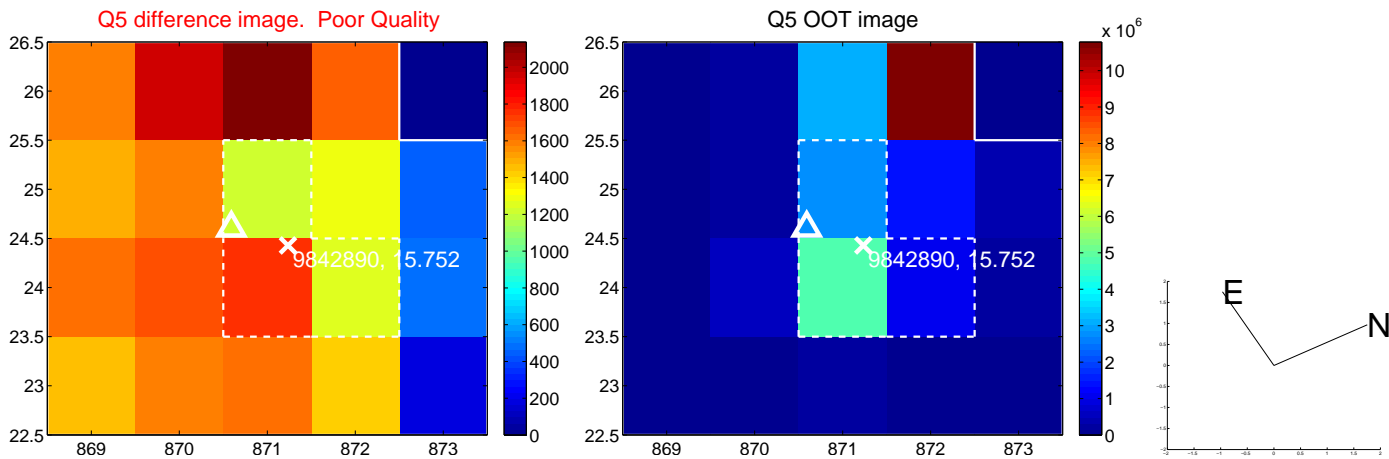


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

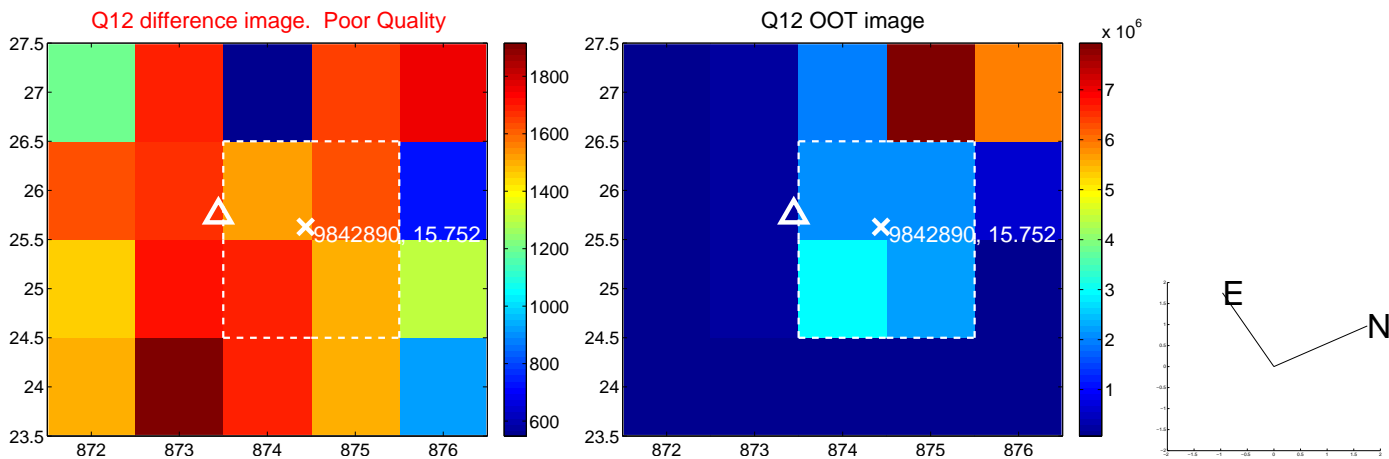
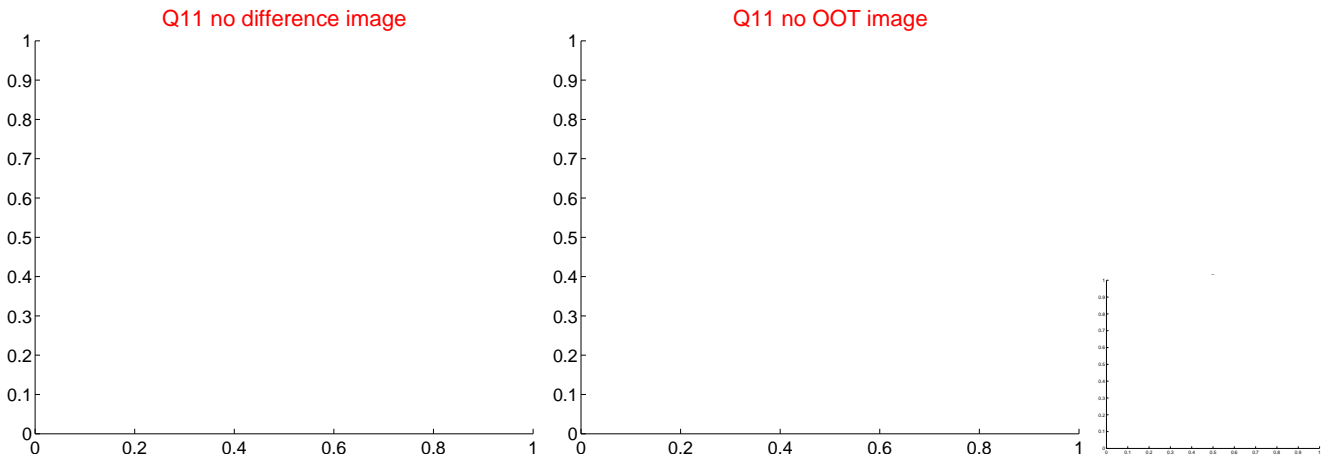
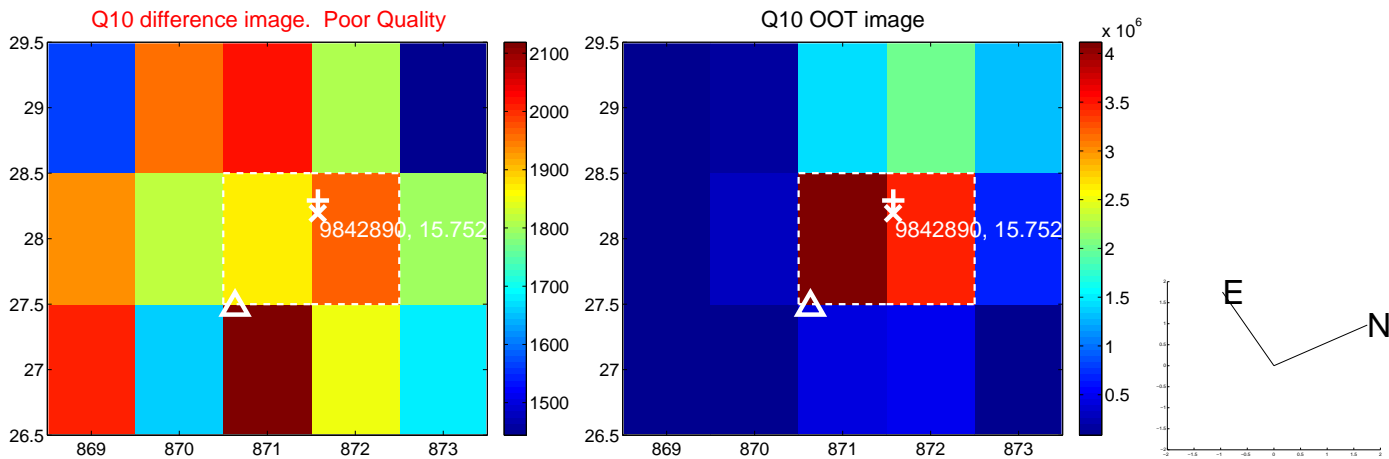
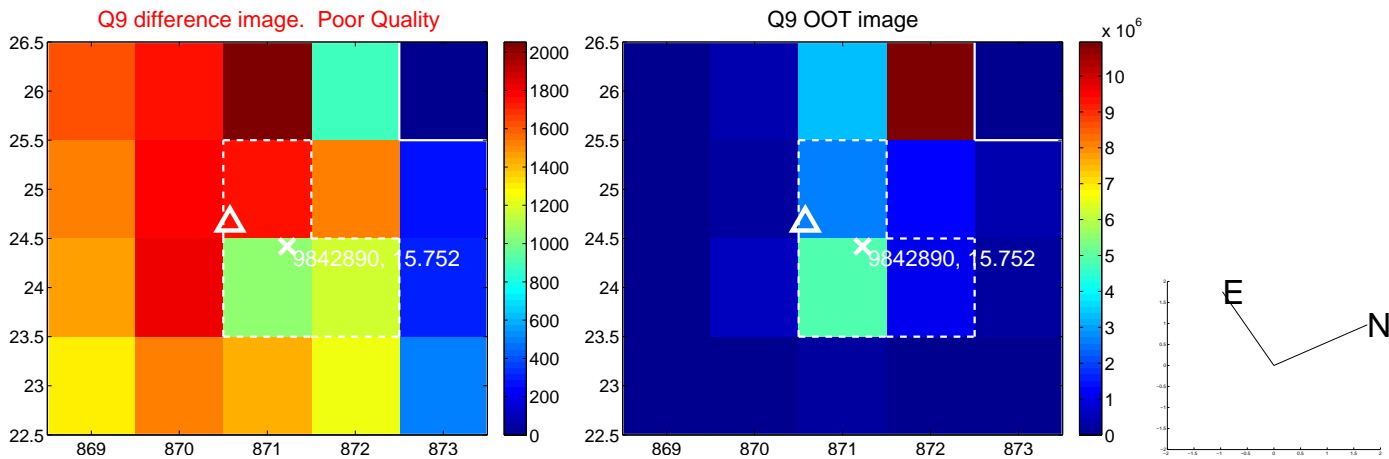
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



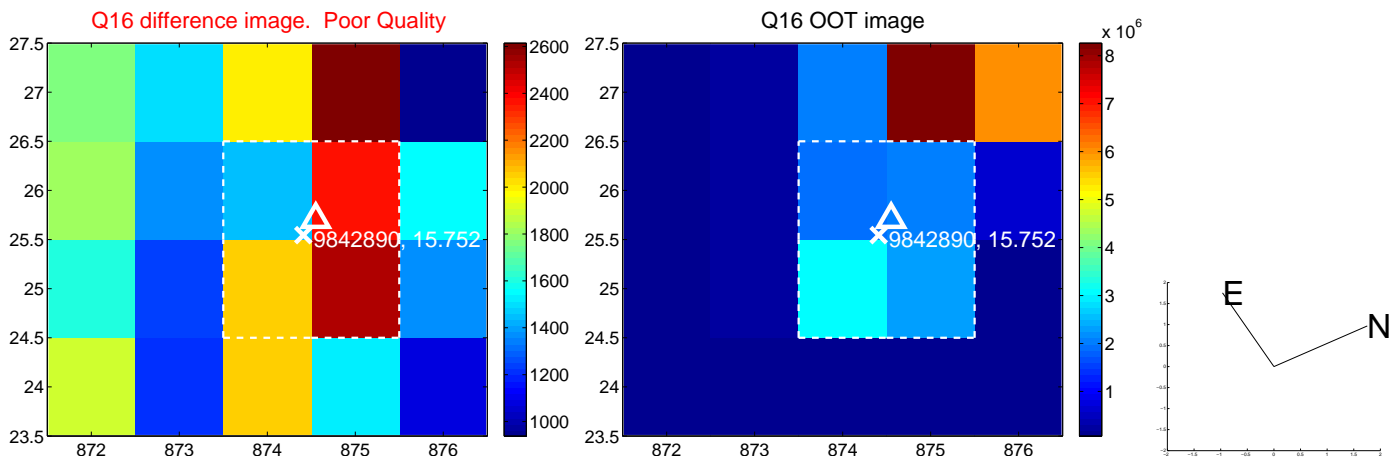
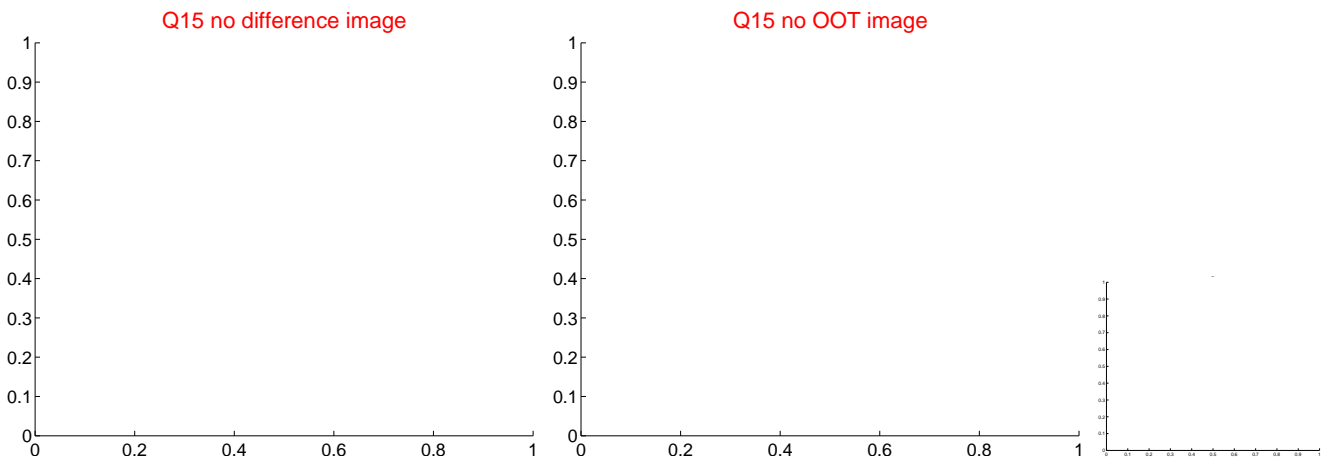
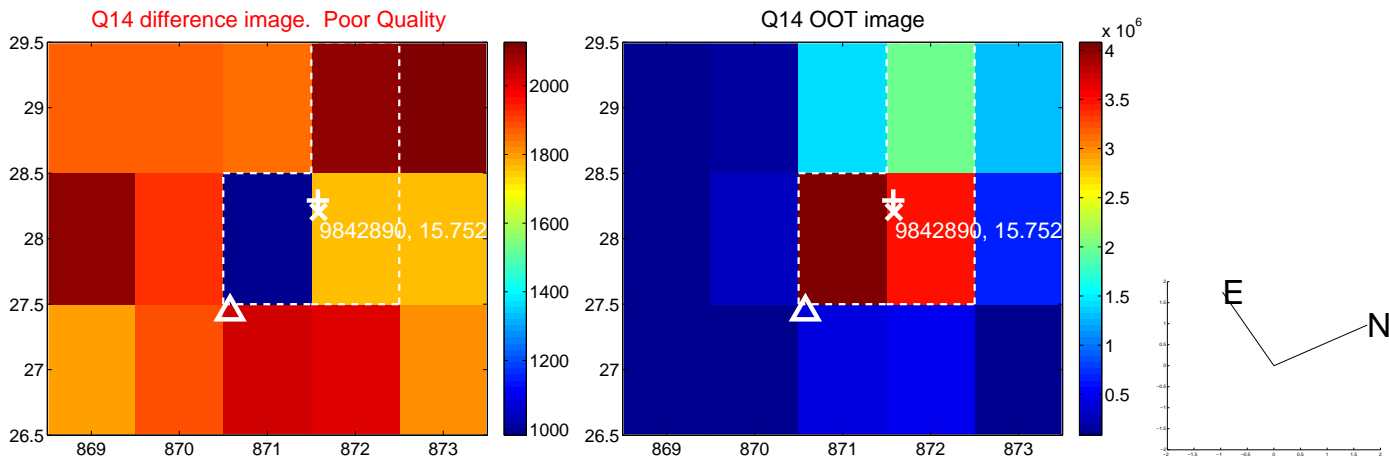
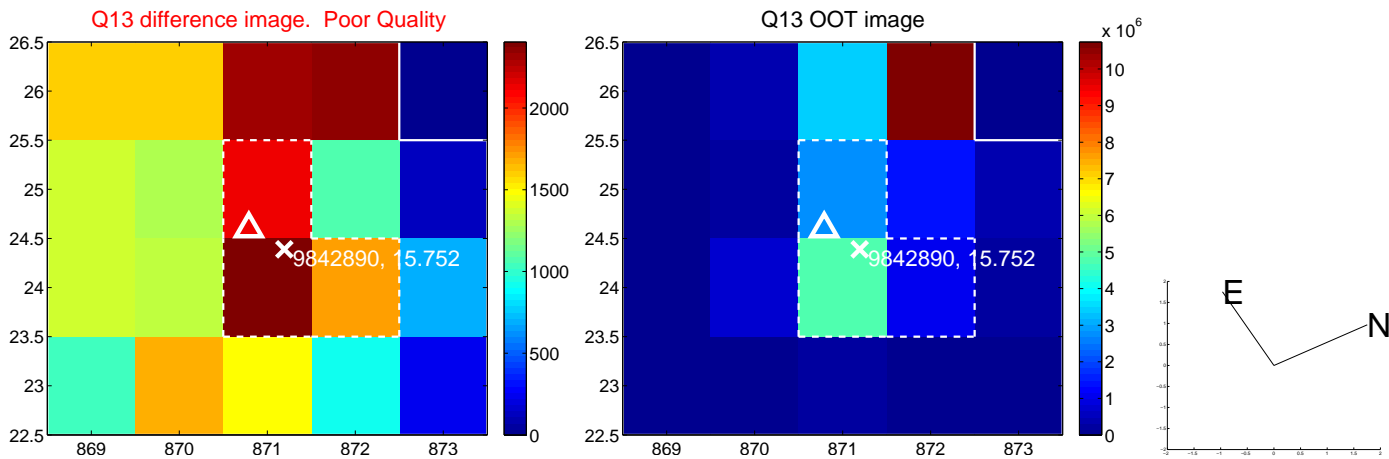
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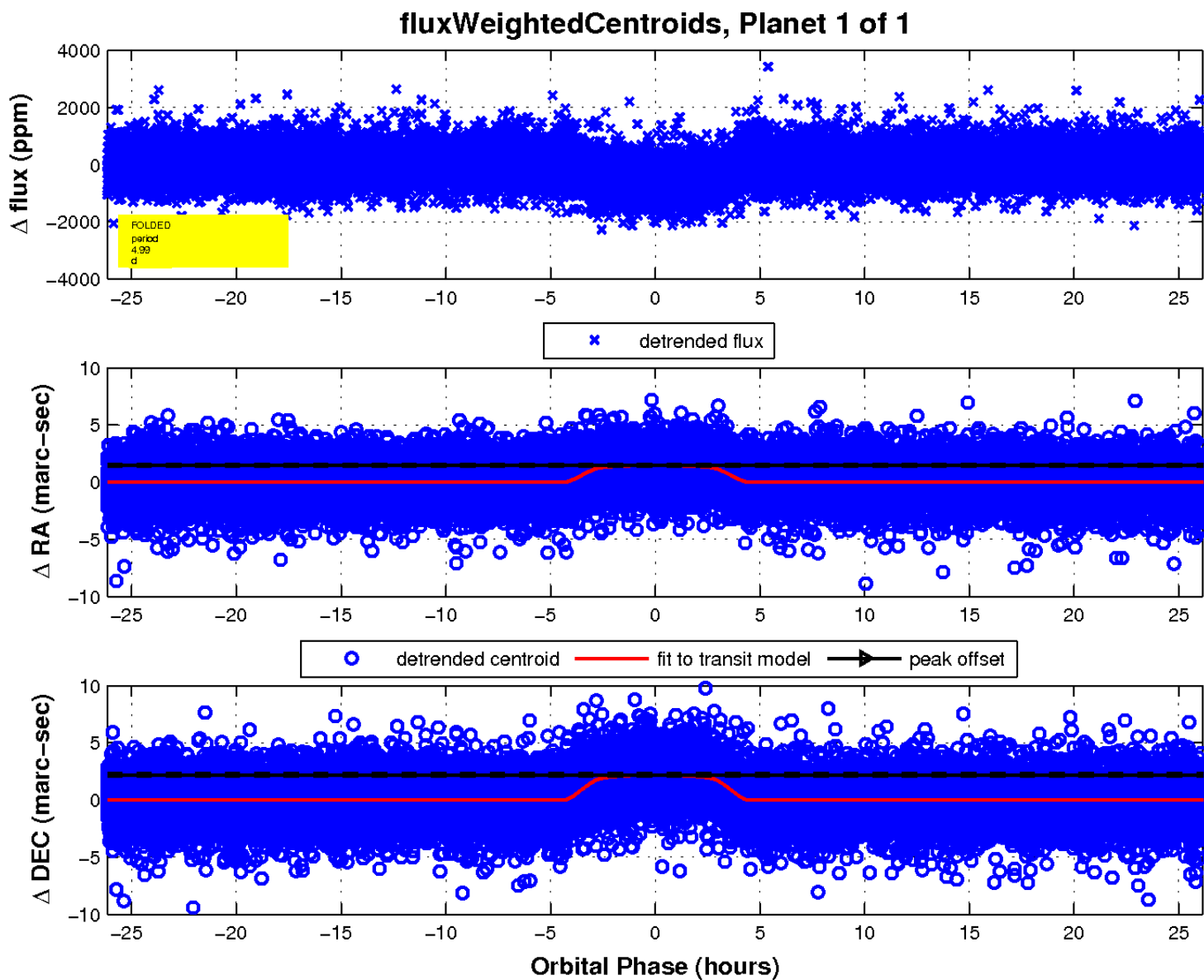
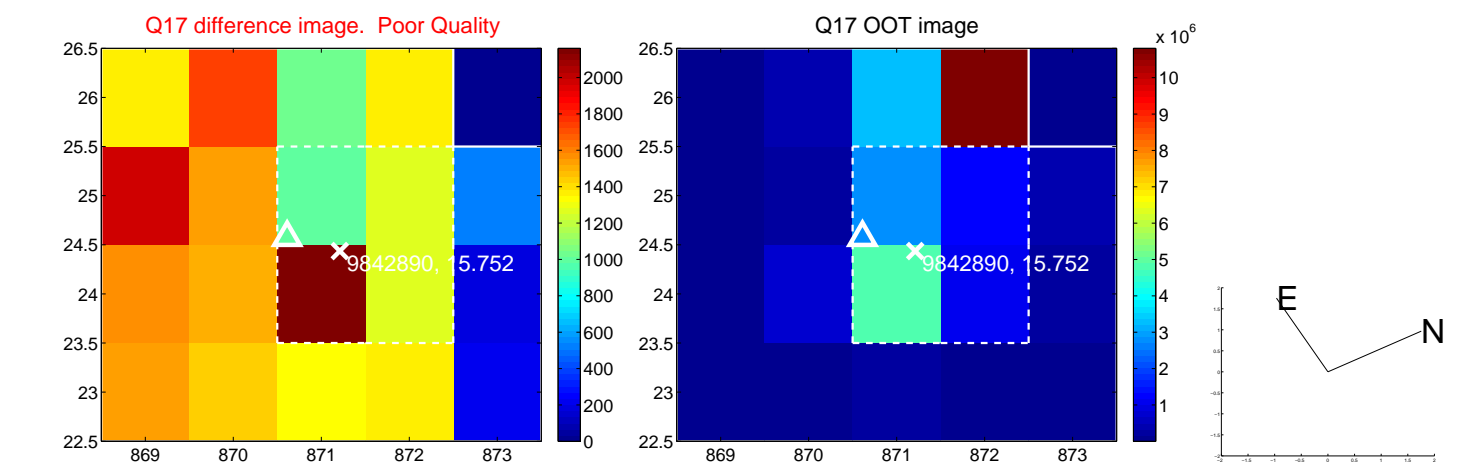


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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UKIRT Image

