

# KIC 004952259

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004952259-01	OBS	No	3.786595	134.505518	6.2	27.025	9.6	2.8	2.86	6765	0.78	5293.91

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004952259-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

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

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

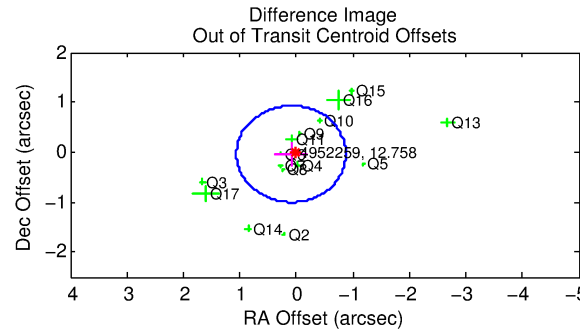
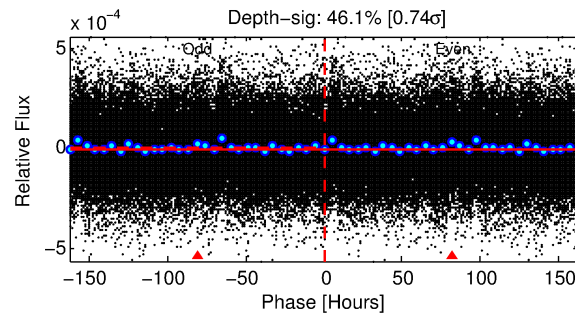
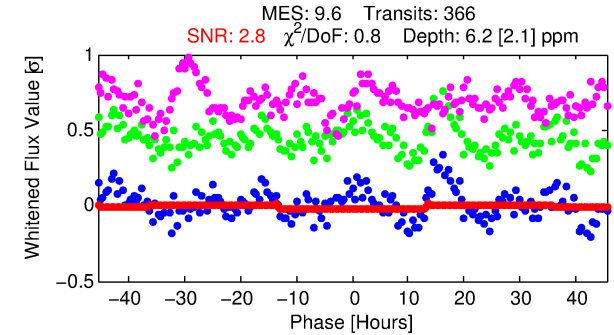
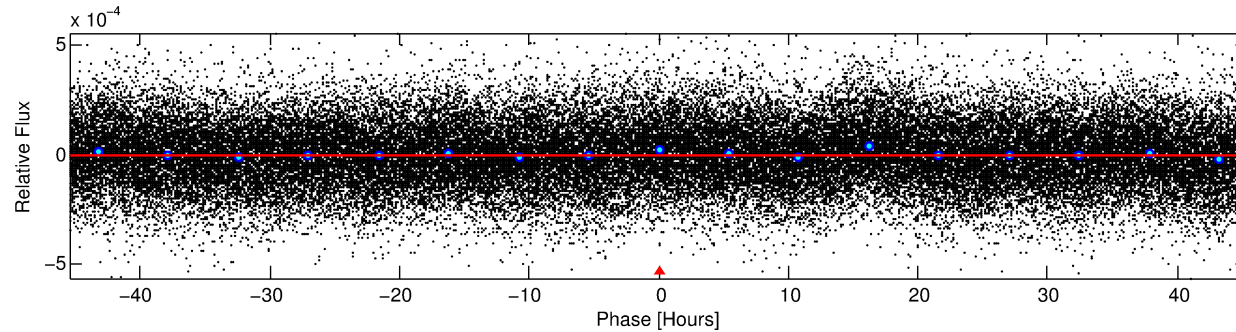
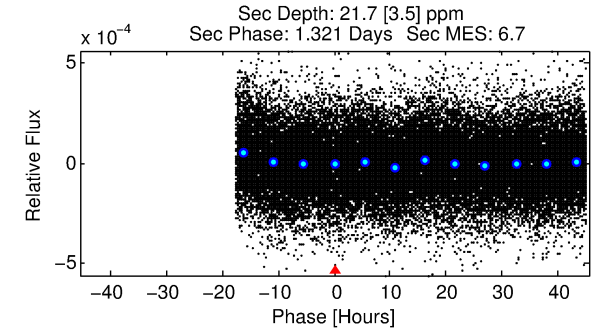
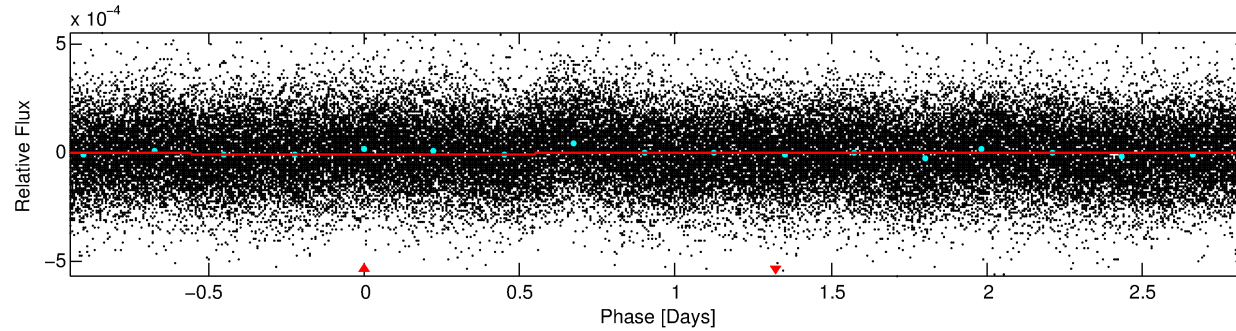
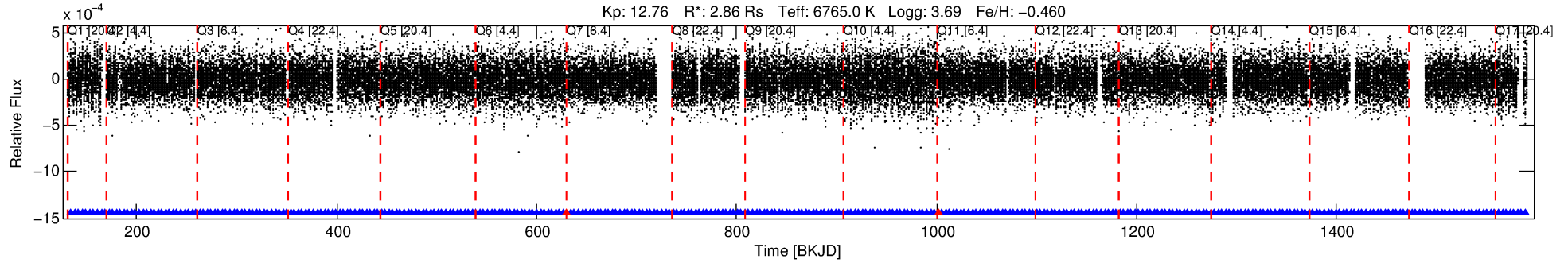
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004952259-01

No Significant Match Found

# DV One-Page Summary

KIC: 4952259 Candidate: 1 of 1 Period: 3.787 d



## DV Fit Results:

Period = 3.78660 [0.00022] d  
Epoch = 134.5055 [0.0380] BKJD  
Rp/R\* = 0.0025 [0.0020]  
a/R\* = 1.11 [0.99]  
b = 0.77 [2.52]  
Seff = 5293.91 [2842.91]  
Teq = 2175 [292] K  
Rp = 0.78 [0.69] Re  
a = 0.0538 [0.0180] AU  
Ag = 57.45 [98.59] [0.57σ]  
Teffp = 9258 [3797] K [1.86σ]

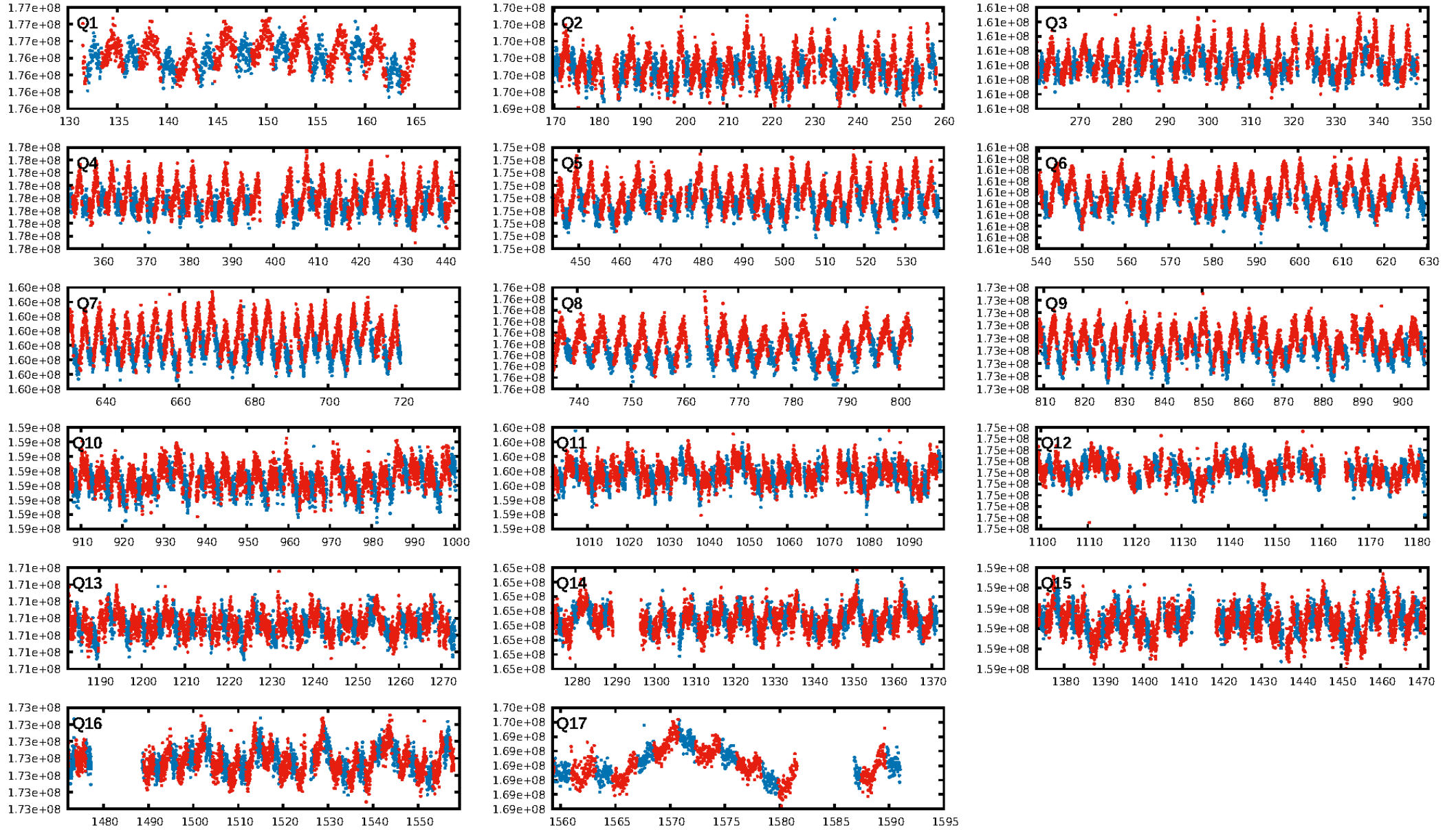
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.99 [348/350]  
GhostDiagnostic-chr: -0.507  
Centroid-sig: 87.8%  
Centroid-so: 0.483 arcsec [0.19σ]  
OotOffset-rm: 0.100 arcsec [0.31σ]  
OotOffset-st: 4/4/3/4 [15]  
KicOffset-rm: 0.154 arcsec [0.62σ]  
KicOffset-st: 4/4/3/4 [15]  
DiffImageQuality-fgm: 0.27 [4/15]  
DiffImageOverlap-fno: 1.00 [17/17]

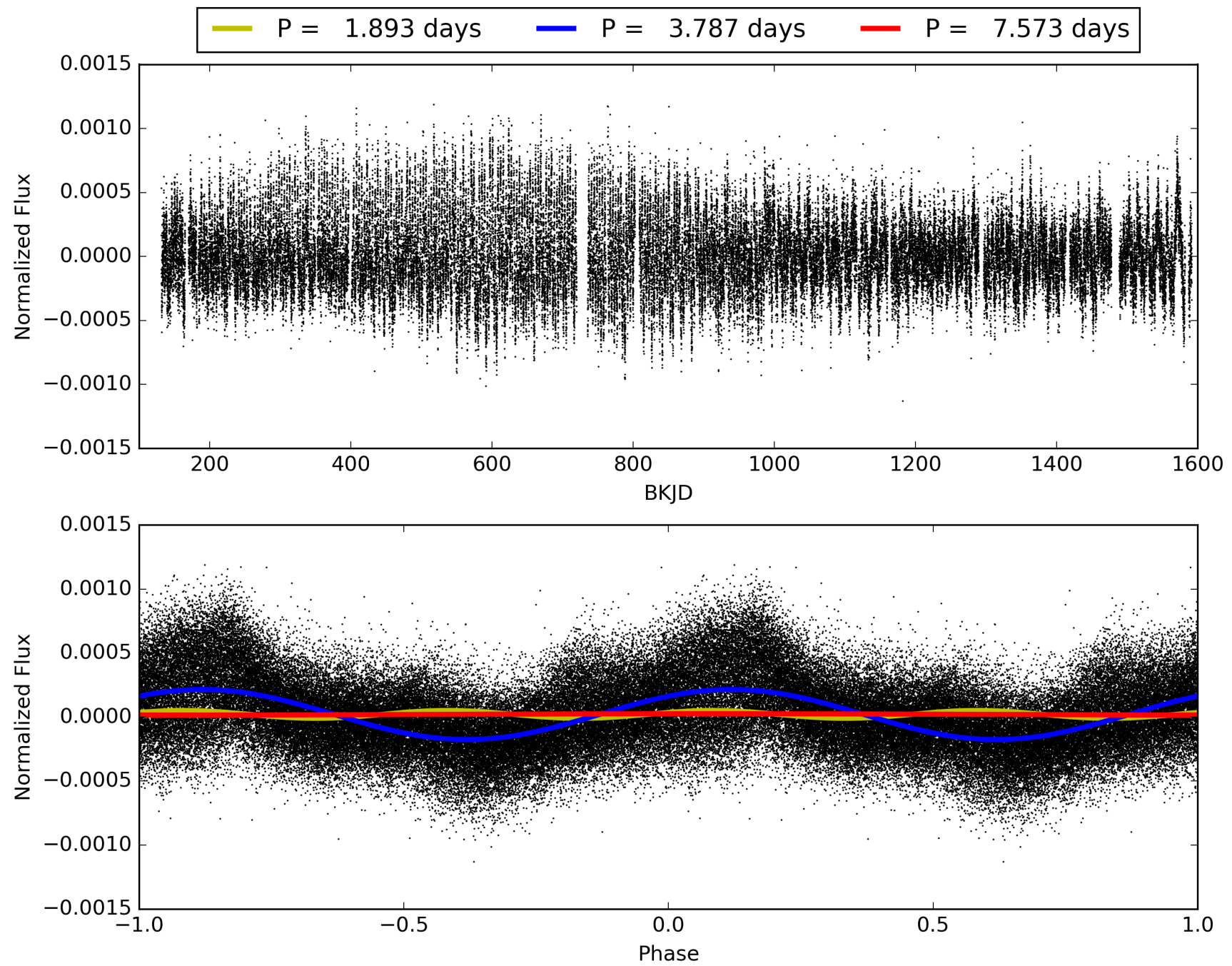
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 07:29:46 Z

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

# TCE 004952259-01, PDC Light Curves

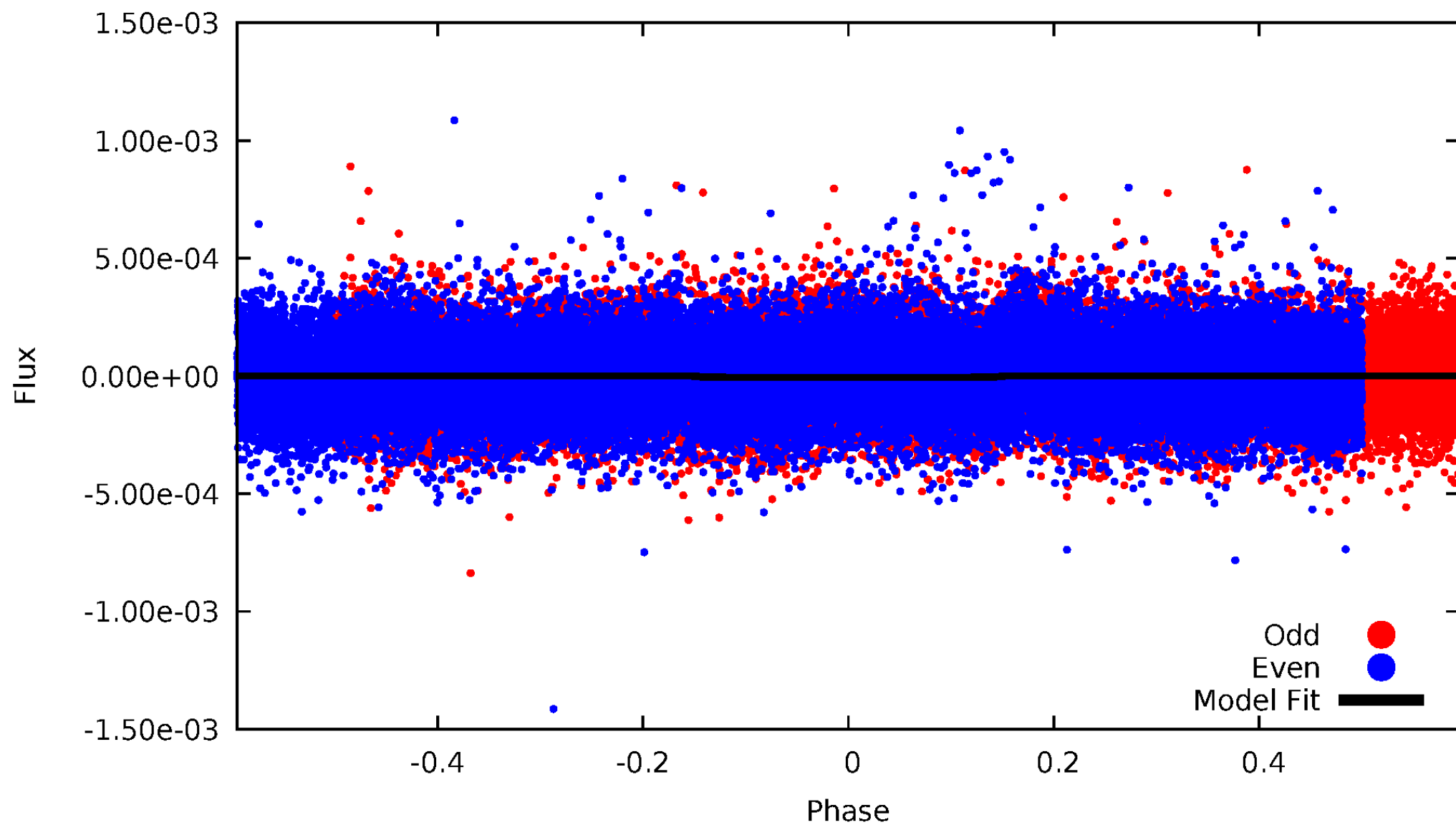


TCE 004952259-01



DV Odd/Even

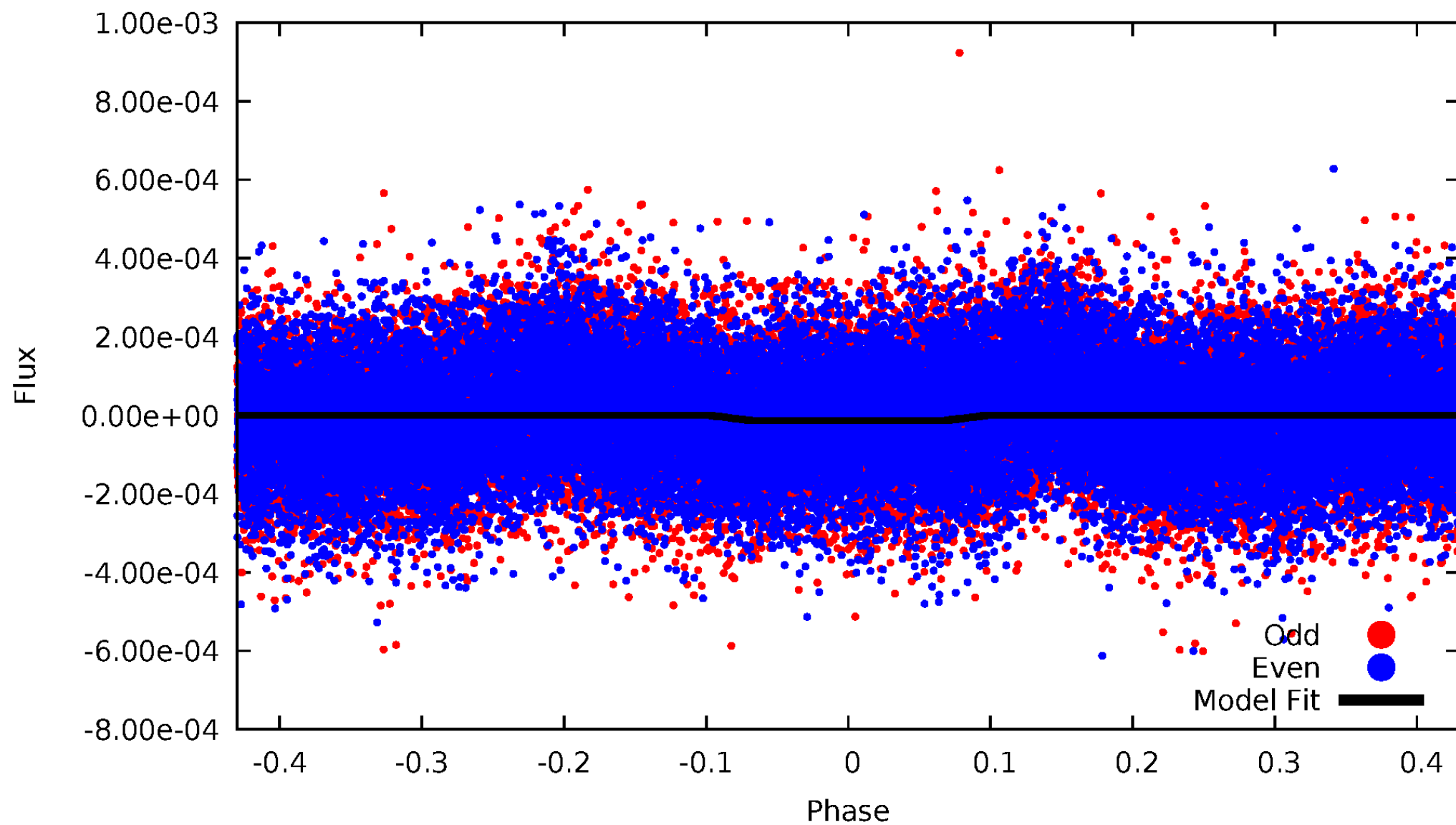
TCE 004952259-01





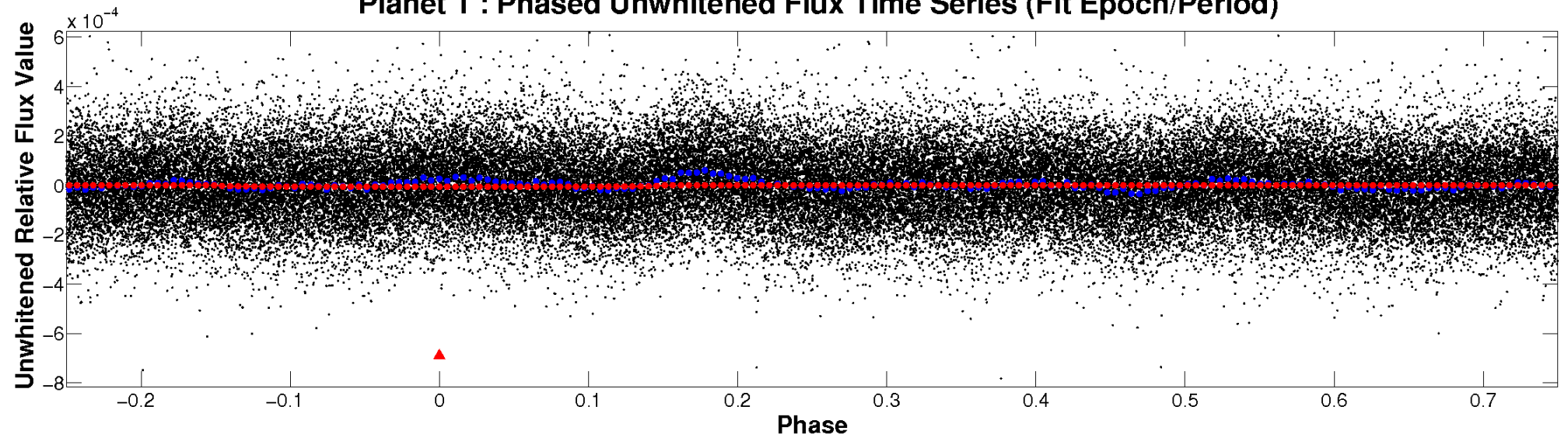
# ALT Odd/Even

TCE 004952259-01

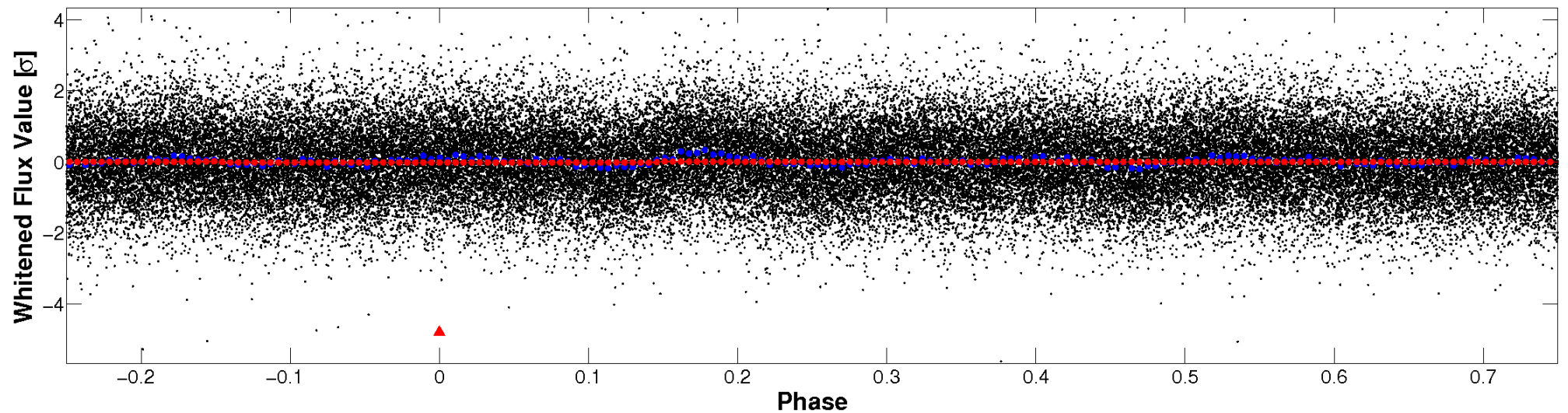


# Non-Whitened Vs. Whitened Light Curve

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

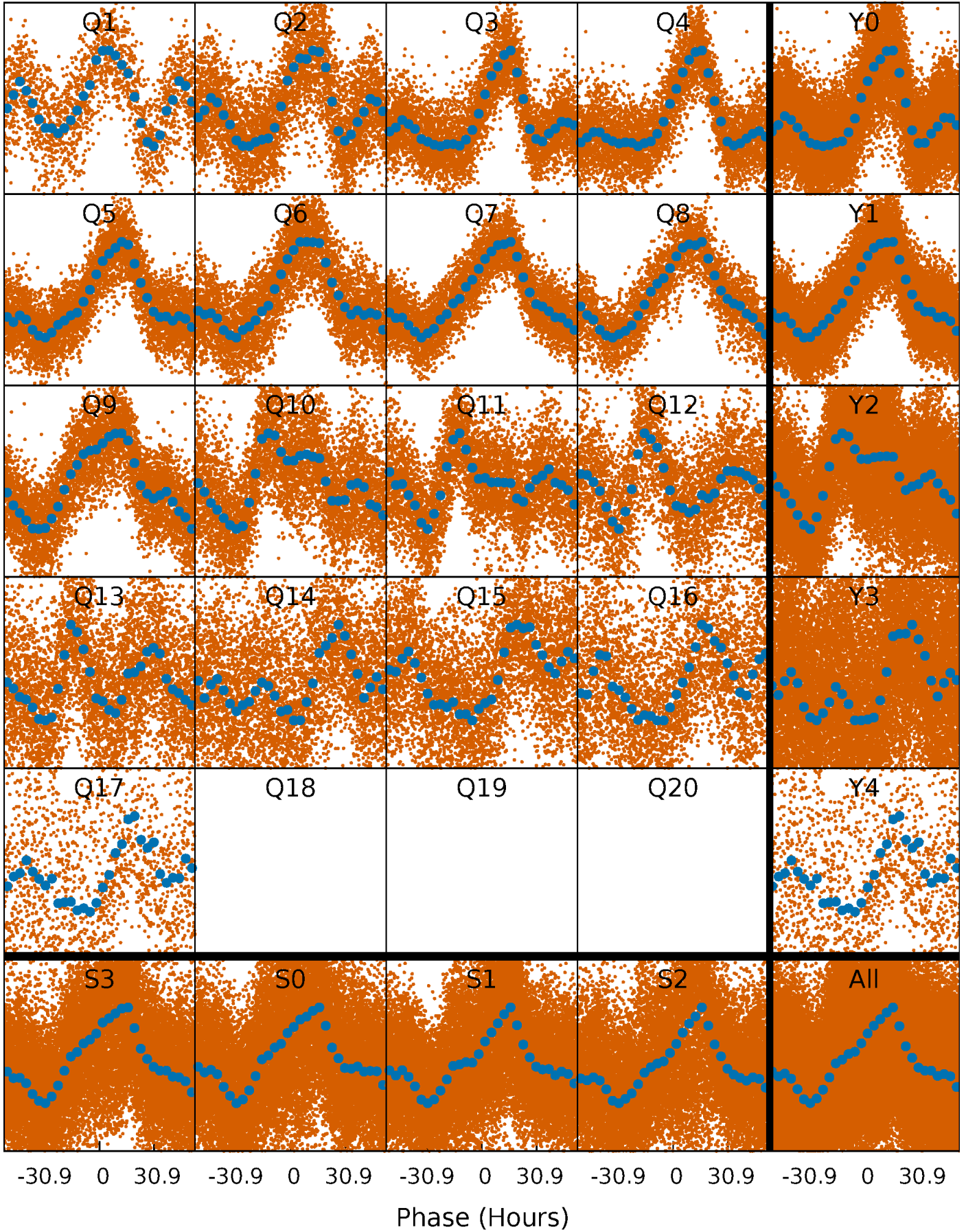


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

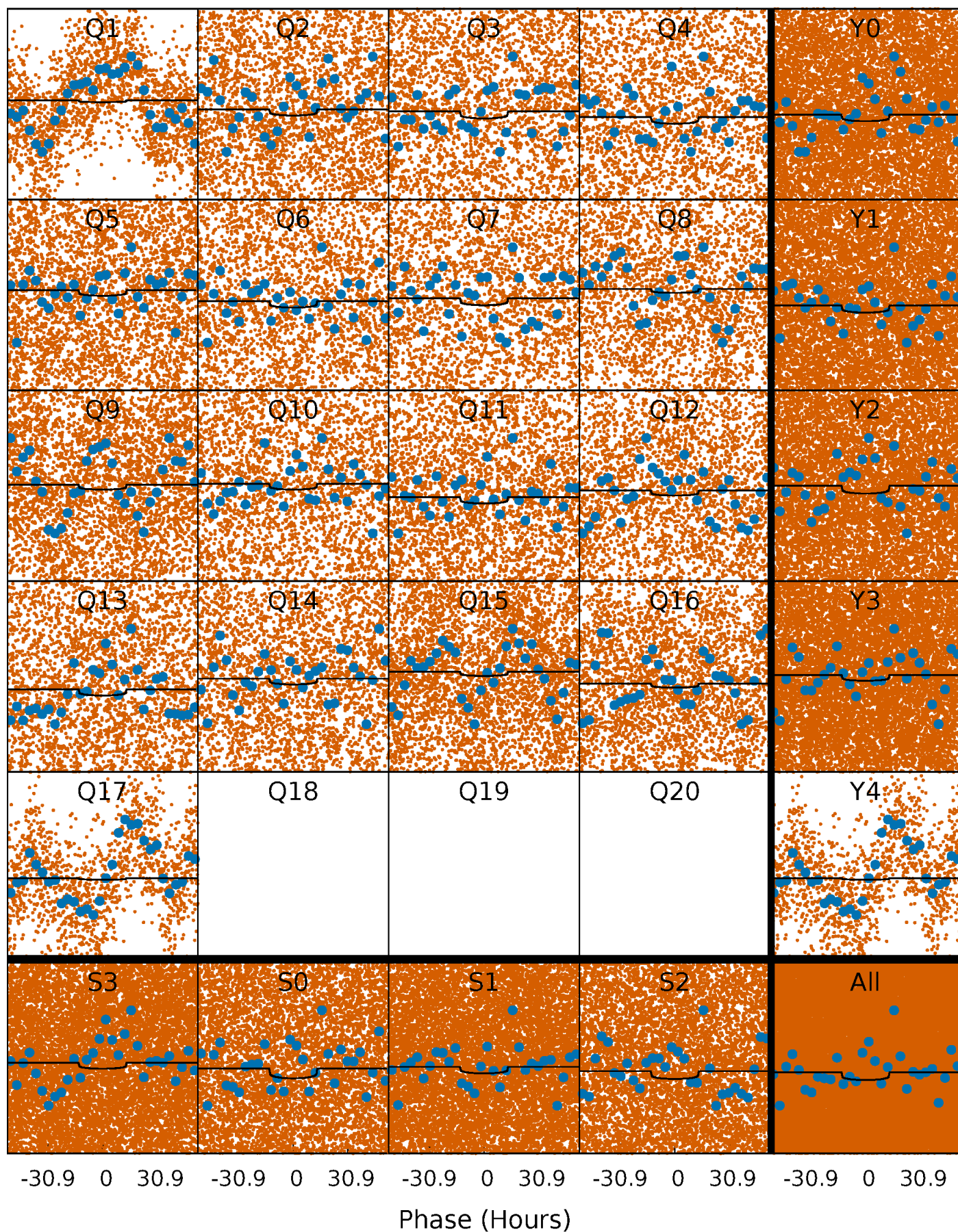
TCE 004952259-01   P= 3.786595 Days    $T_0=134.505518$  (BKJD)





# DV Quarter-Phased Transit Curves

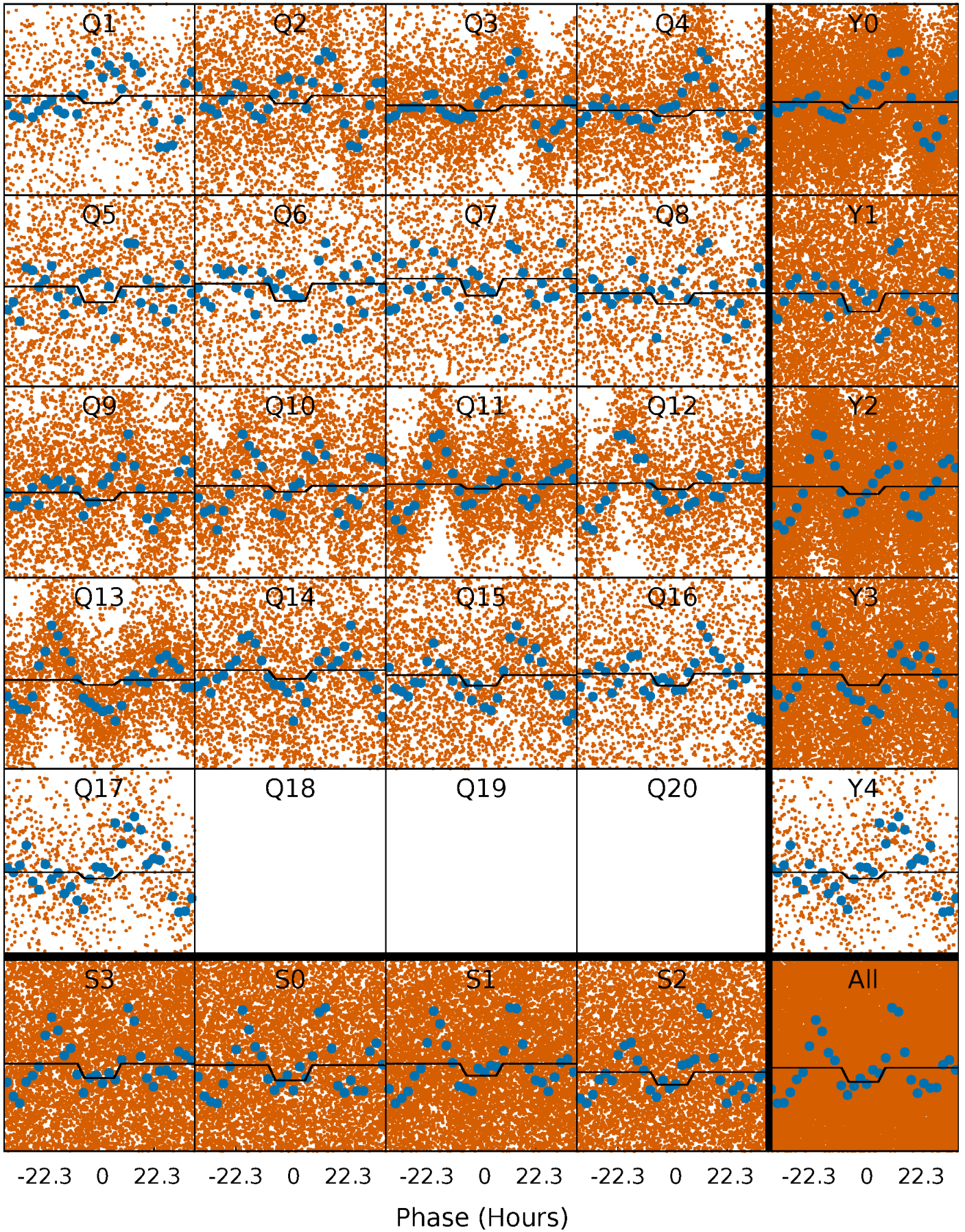
TCE 004952259-01   P= 3.786595 Days    $T_0=134.505518$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

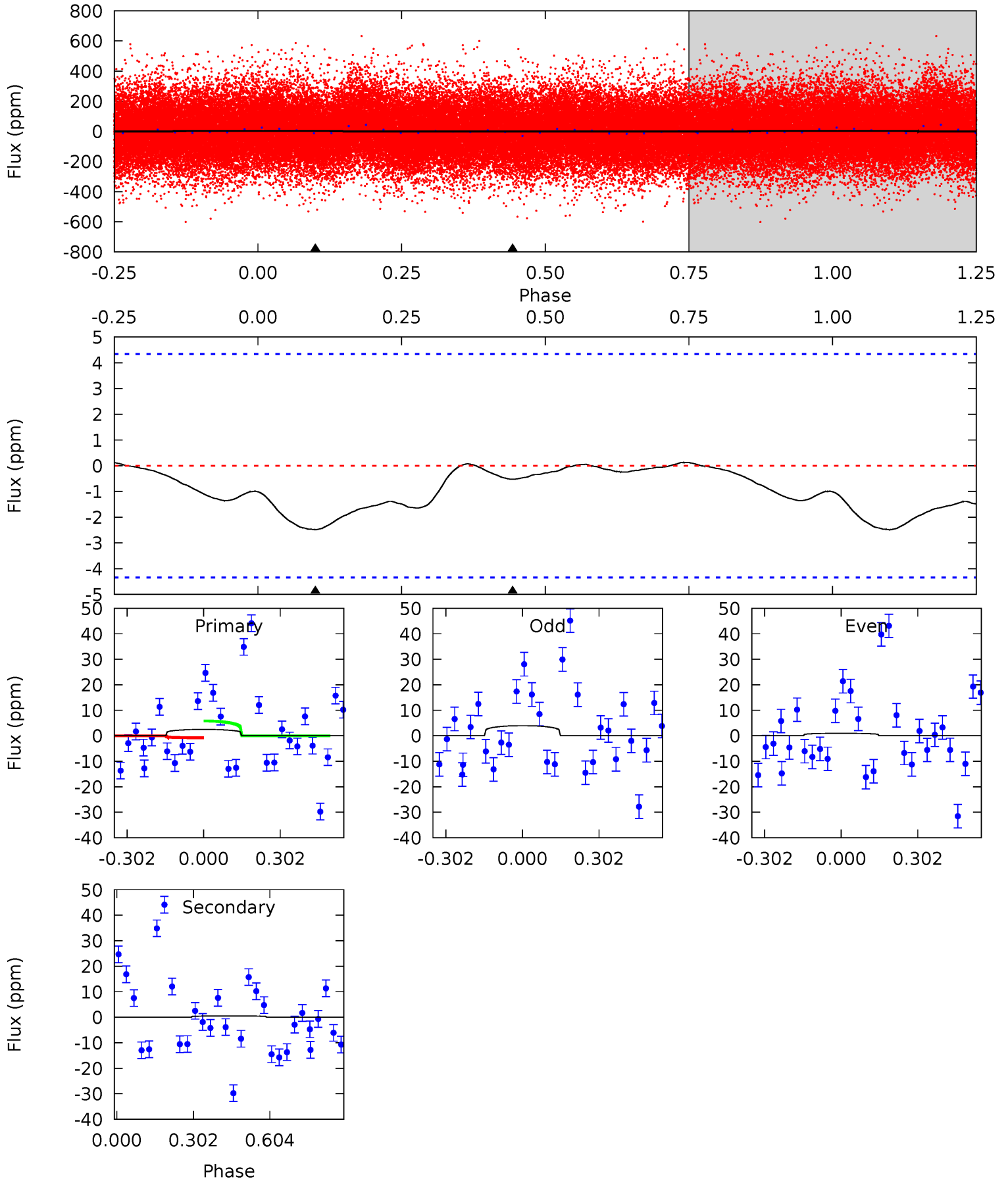
TCE 004952259-01 P= 3.786705 Days  $T_0=134.612108$  (BKJD)



# DV Model-Shift Uniqueness Test

004952259-01, P = 3.786595 Days, E = 130.718923 Days

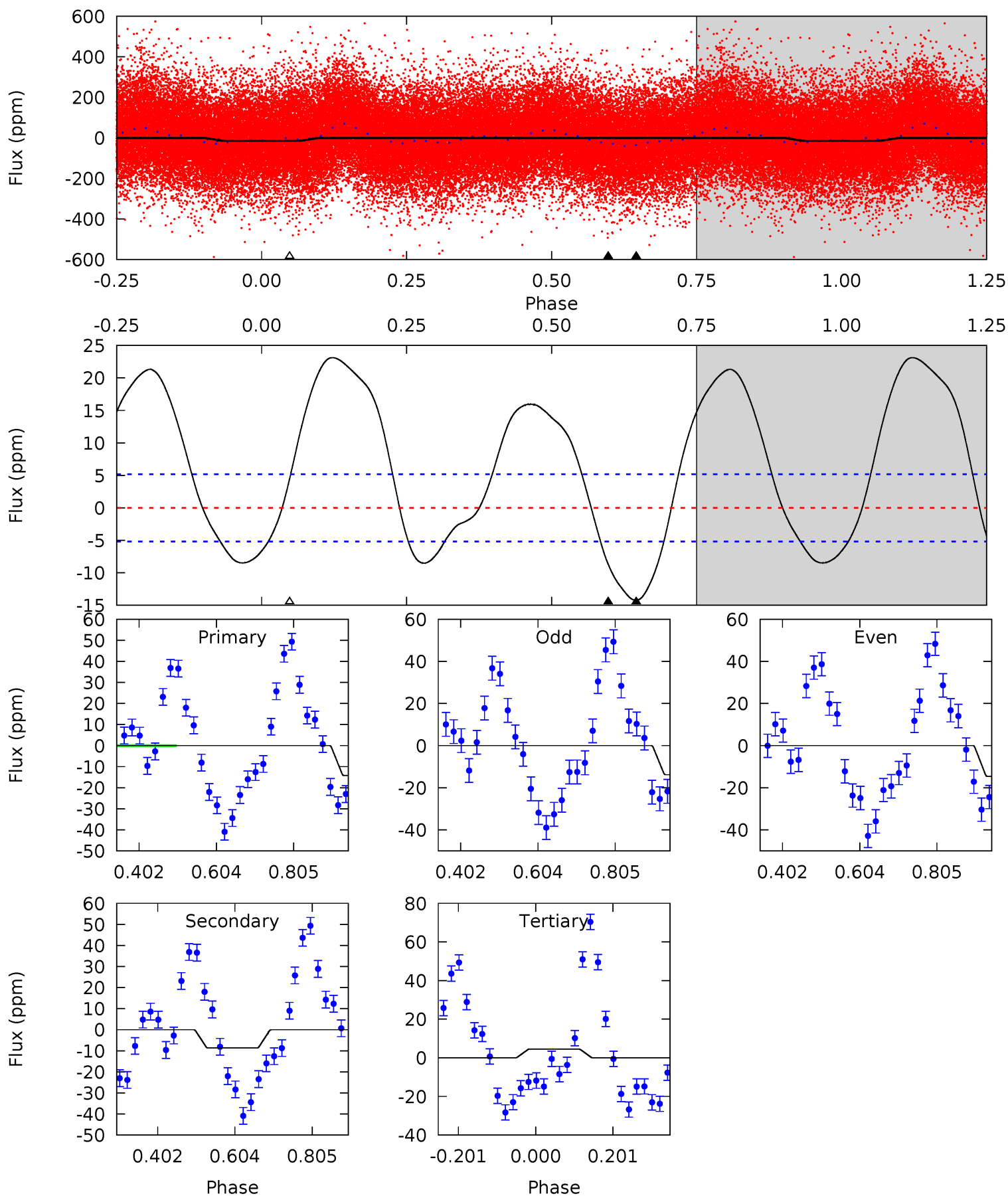
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.48	0.52	0	0	4.33	1.03	0.11	2.48	2.48	0.52	0.52	1.50	3.60	0.05	2.47



# Alt Model-Shift Uniqueness Test

004952259-01, P = 3.786705 Days, E = 130.825403 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
12.1	7.39	-3.84	0	4.42	1.28	9.15	16.0	12.1	11.2	7.39	0.35	1.38	0.62	4.35





### Stellar Parameters For KIC 004952259

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6765^{+183}_{-223}$	$3.687^{+0.300}_{-0.100}$	$-0.460^{+0.350}_{-0.250}$	$2.859^{+0.446}_{-1.041}$	$1.449^{+0.245}_{-0.299}$	$0.087^{+0.192}_{-0.029}$
	+3%/-3%	+8%/-3%	+76%/-54%	+16%/-36%	+17%/-21%	+220%/-33%
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 004952259-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-1 \pm 1$	$0.84^{+0.60}_{-0.51}$	$2992^{+181}_{-269}$	$3416^{+2010}_{-7177}$	$0.959^{+6.529}_{-1.836}$
Alt.	$-9 \pm 1$	$1.15^{+0.69}_{-0.61}$	$2990^{+185}_{-258}$	$5879^{+2895}_{-1106}$	$11^{+37}_{-6}$

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

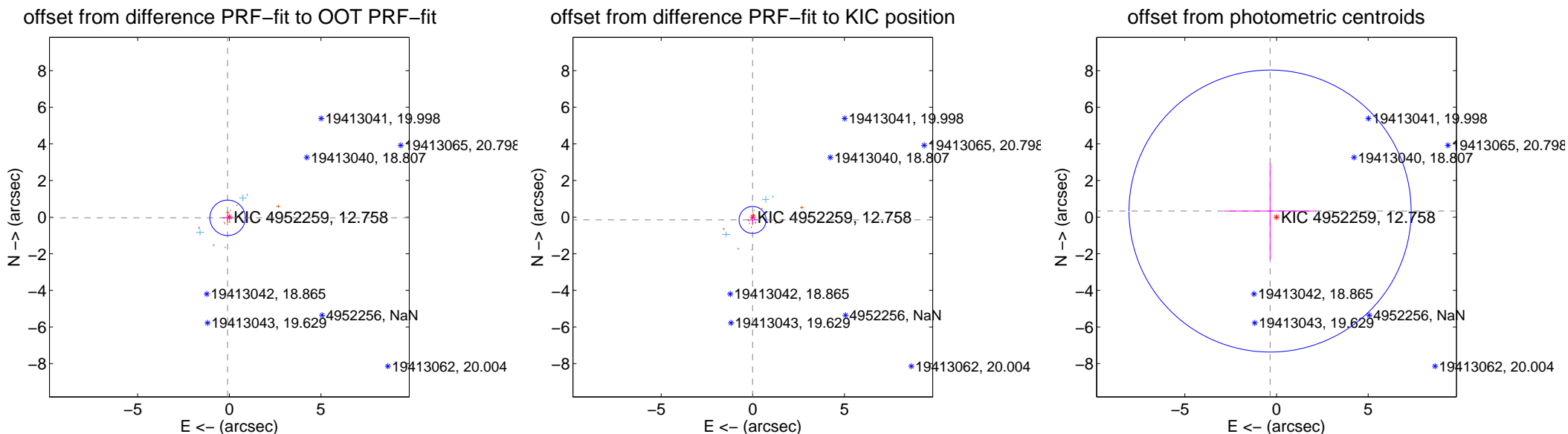
## DV Centroid Data

Supplemental centroid analysis for 004952259-01. Kepler magnitude: 12.76. Transit SNR 2.81

There are 4 quarters with good PRF difference image offsets

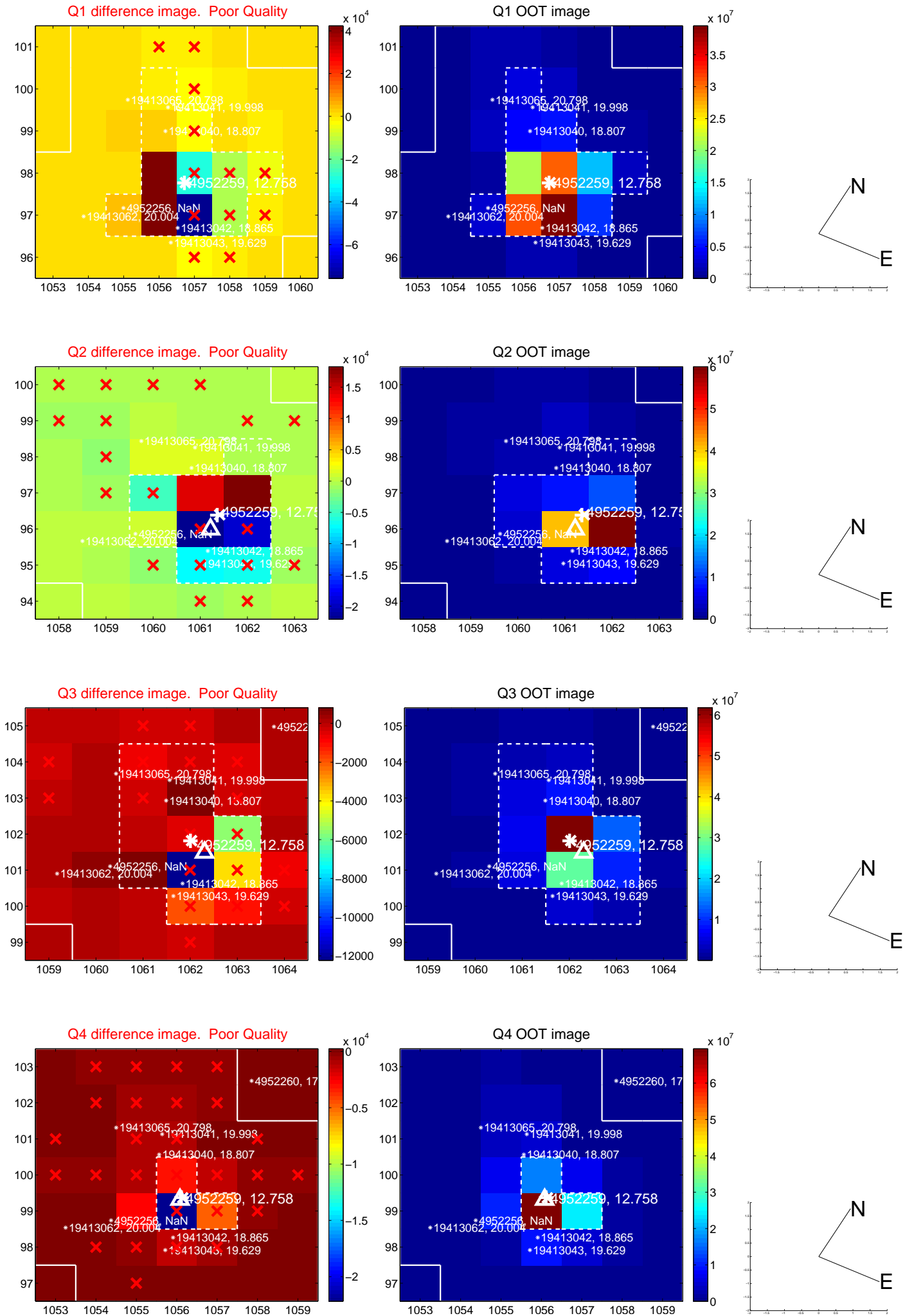
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.100 \pm 0.322$	0.31	$0.093 \pm 0.289$	$-0.037 \pm 0.219$
PRF-fit source offset from KIC position	$0.154 \pm 0.246$	0.62	$0.011 \pm 0.291$	$-0.153 \pm 0.236$
photometric centroid source offset	$0.48 \pm 2.57$	0.19	$0.35 \pm 2.52$	$0.33 \pm 2.62$

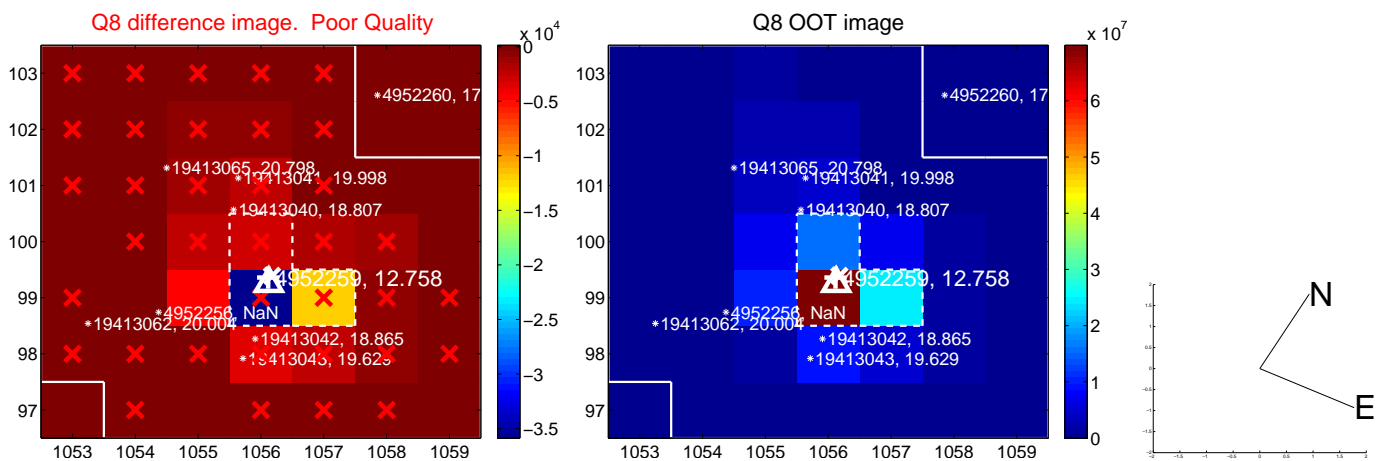
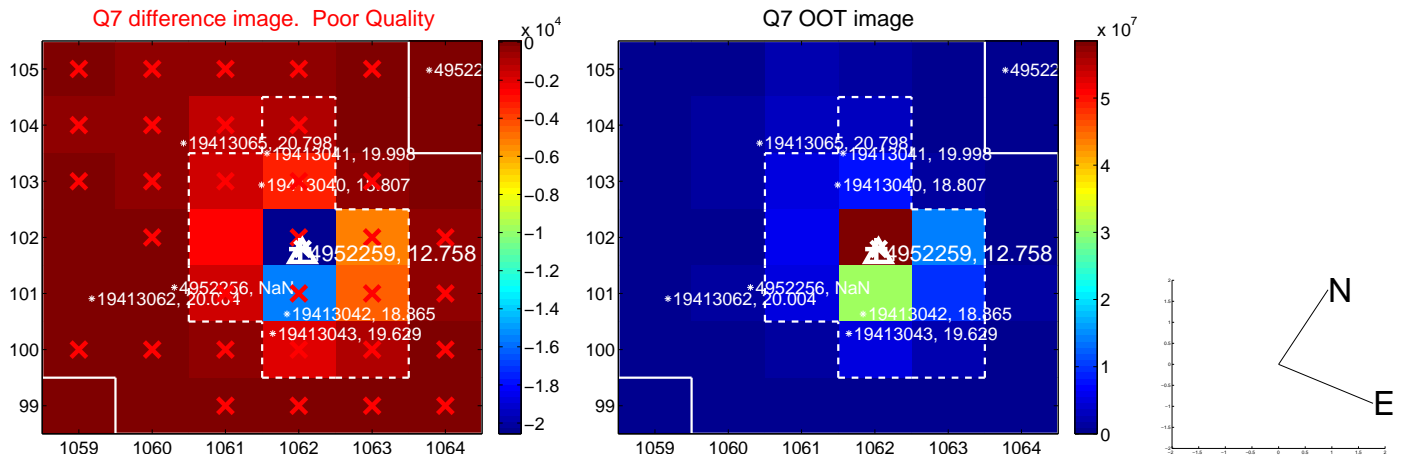
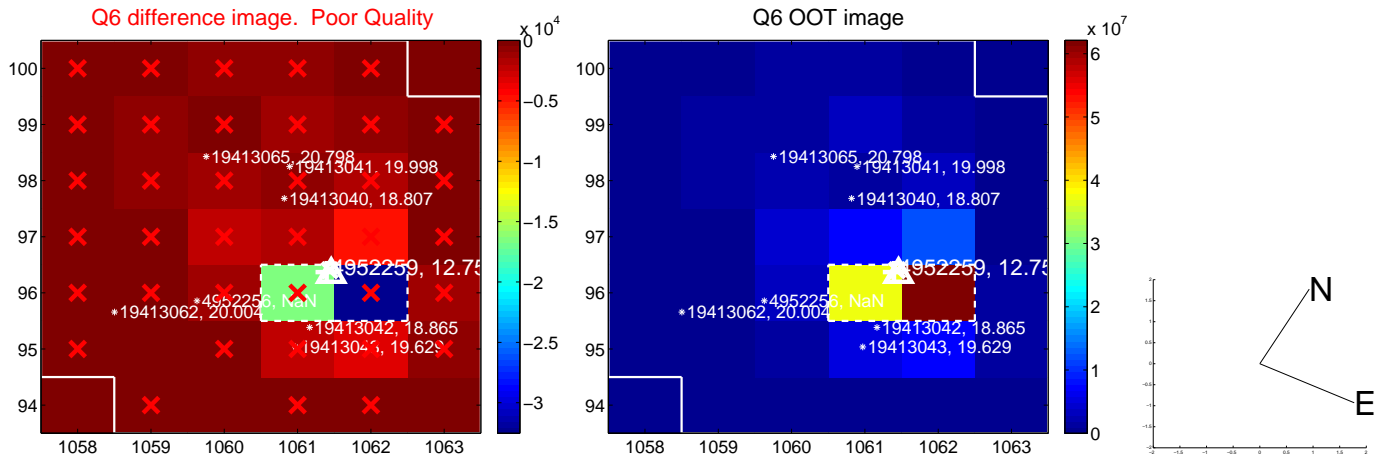
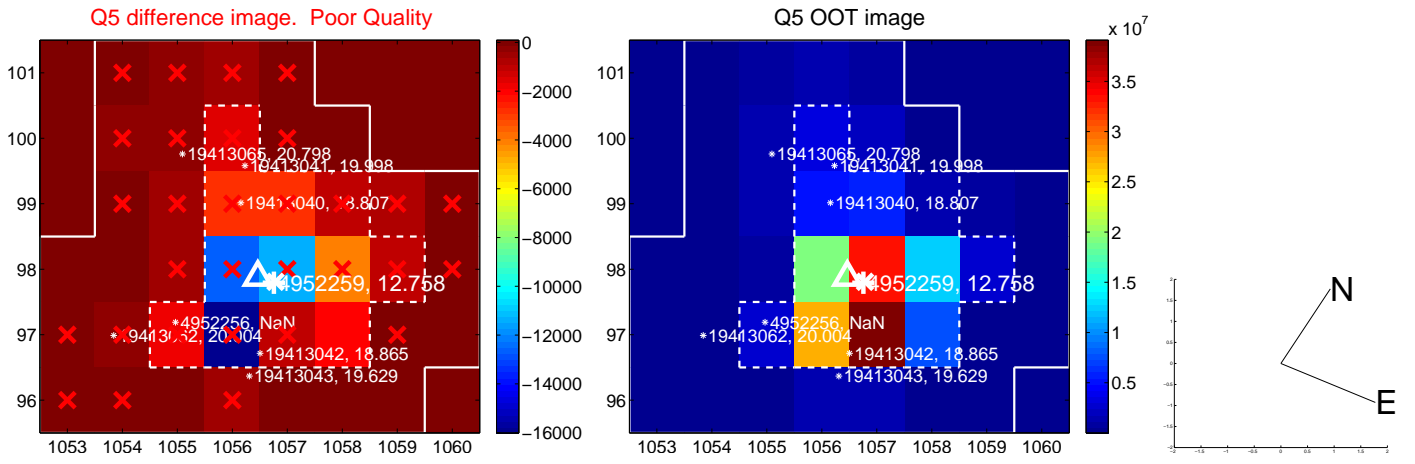


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

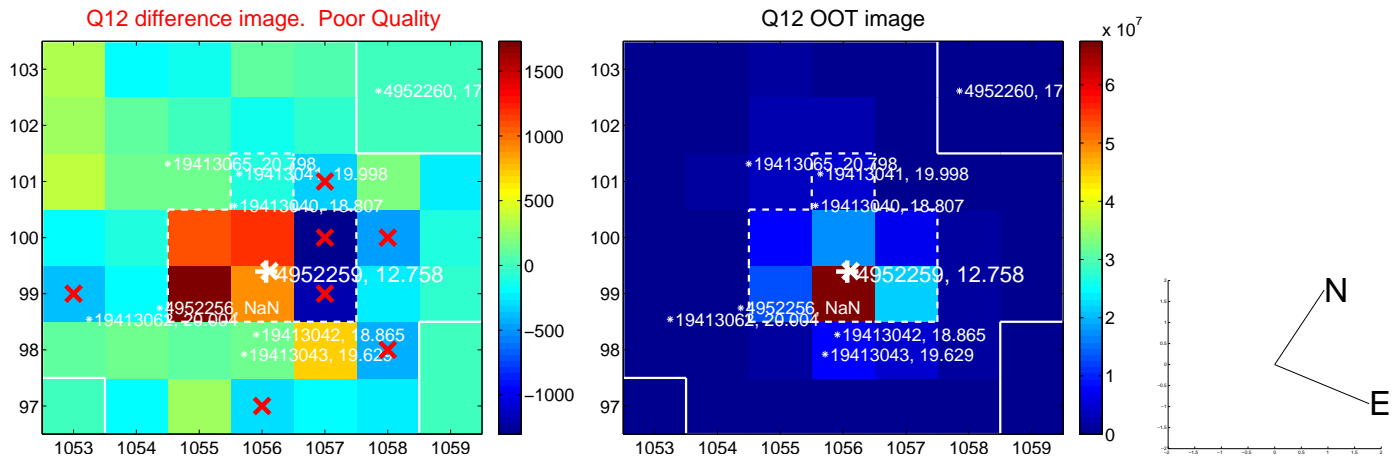
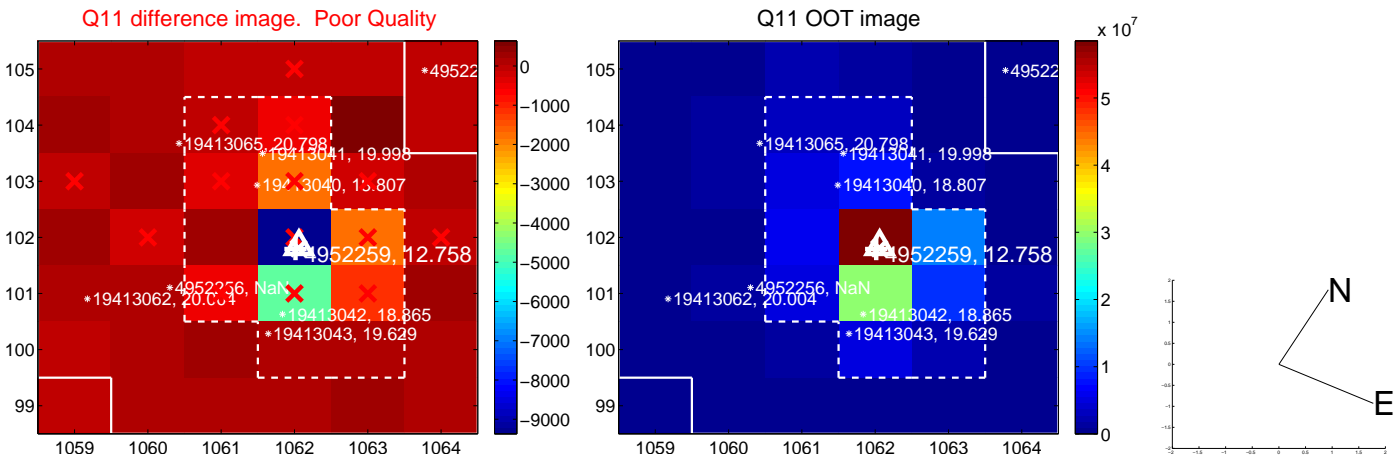
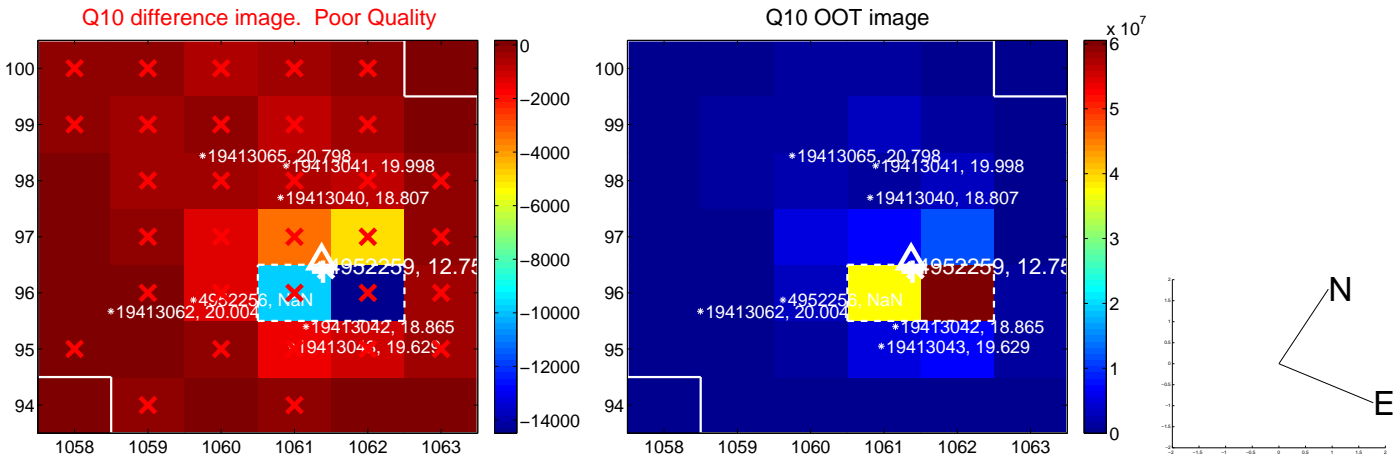
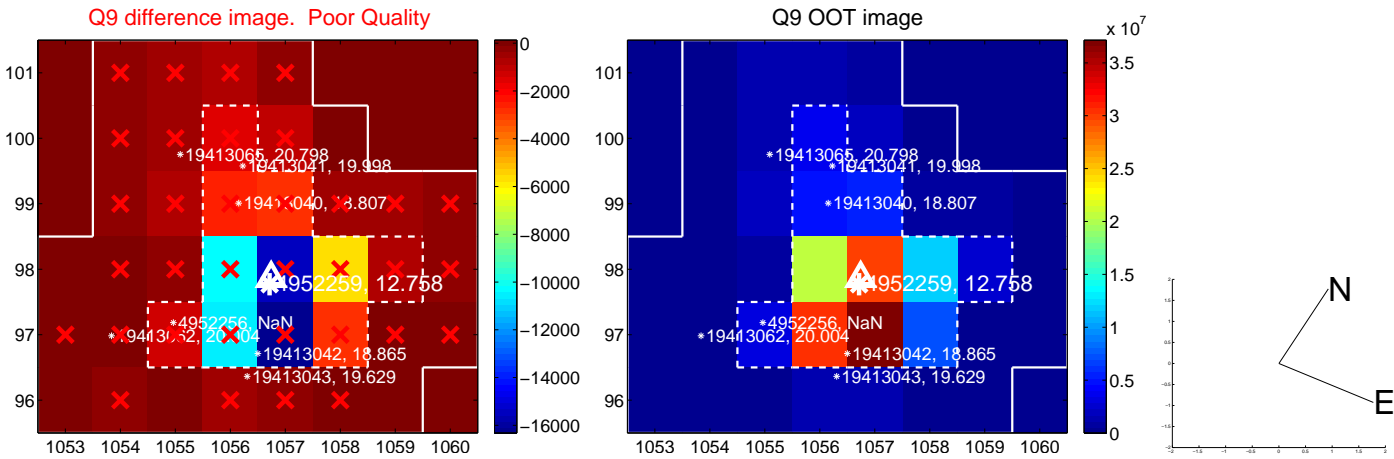


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

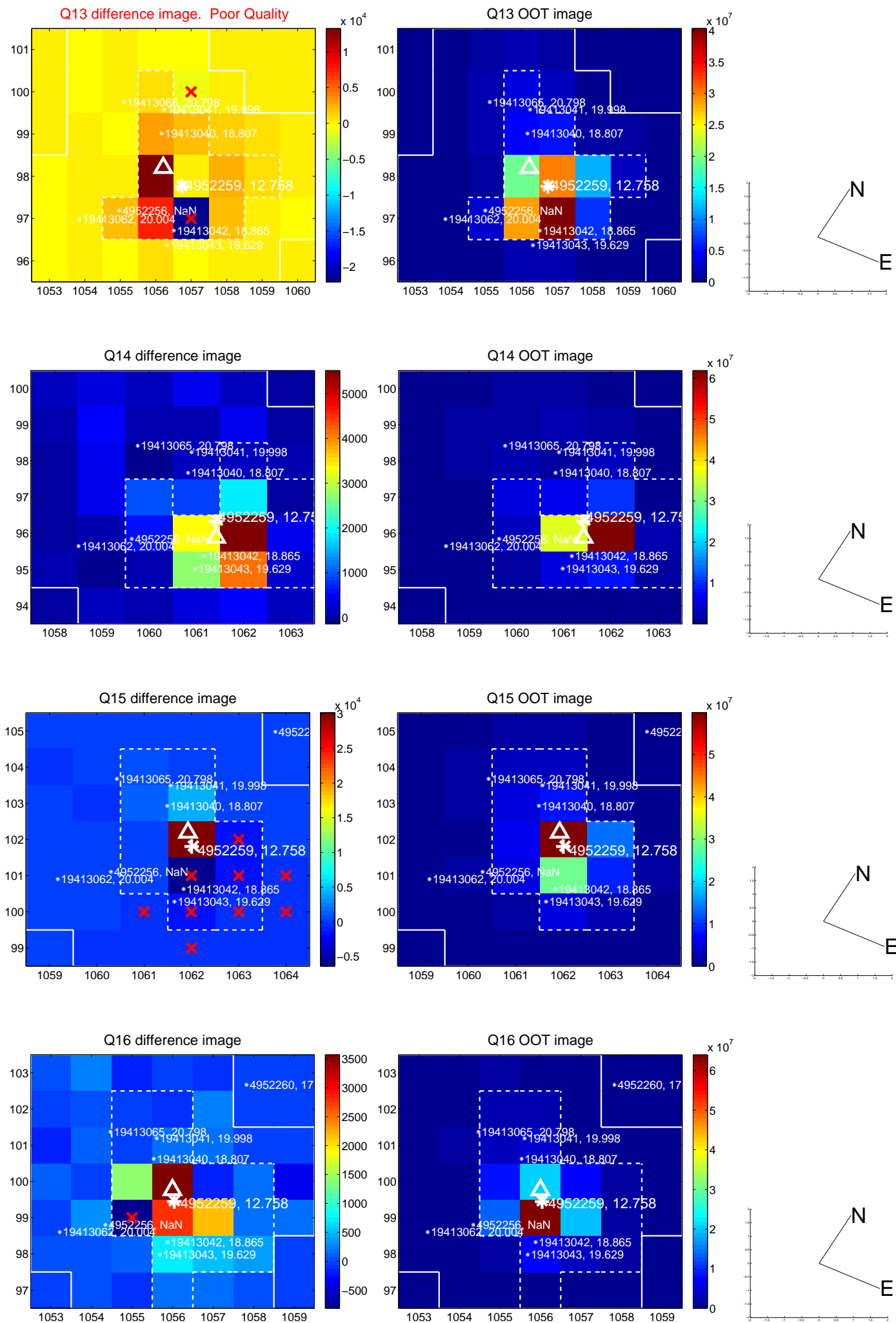




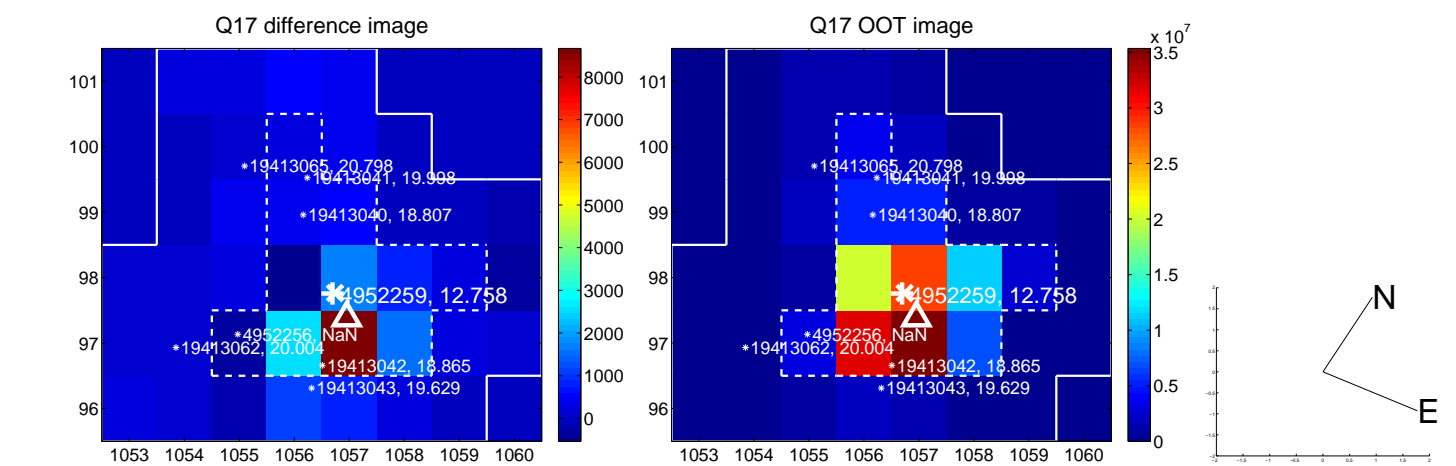
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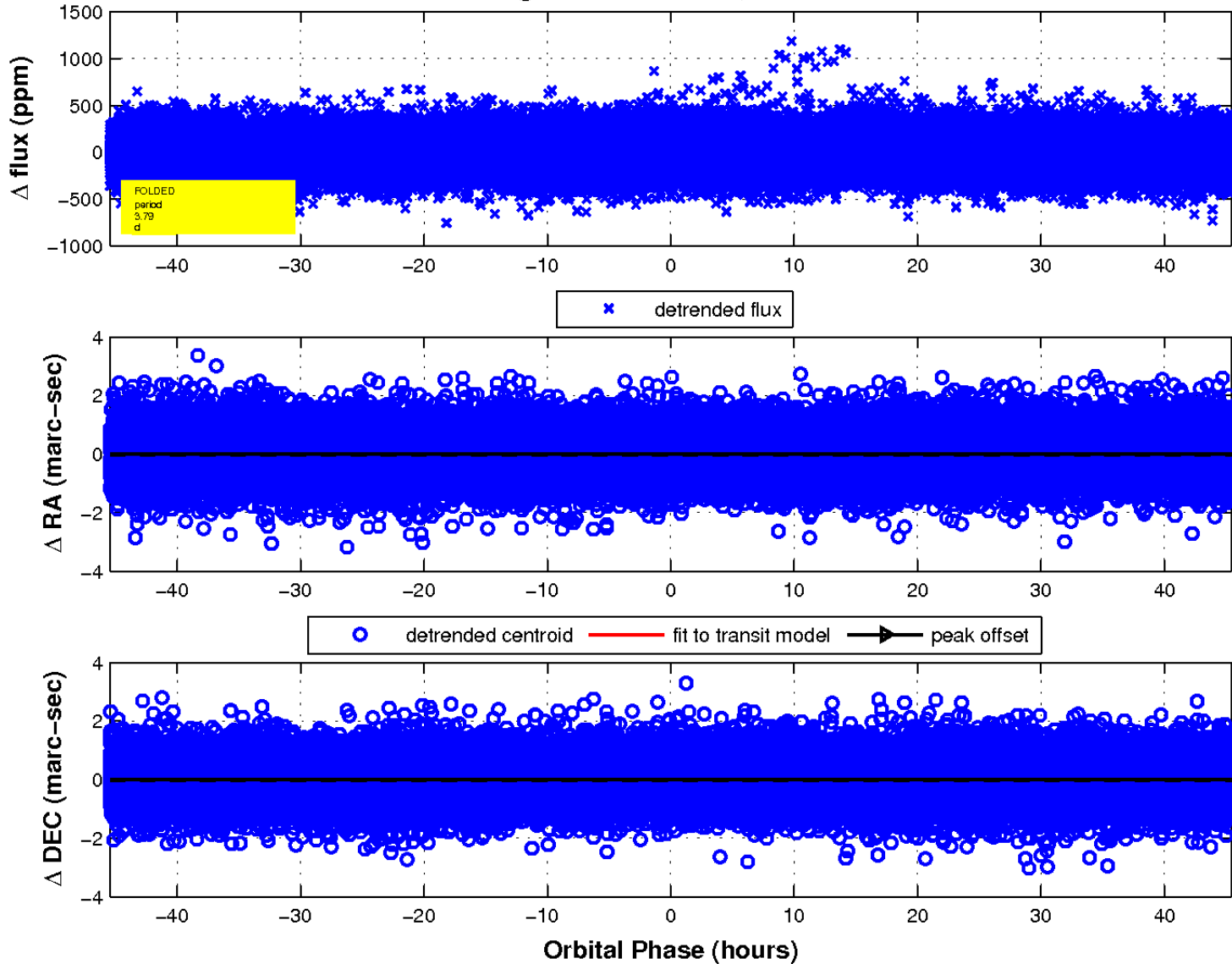
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

