

# KIC 005525755

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005525755-01	OBS	No	0.974038	131.880384	78.4	2.806	7.4	7.7	0.91	6029	0.94	2861.05

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005525755-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_KIC_POS

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

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

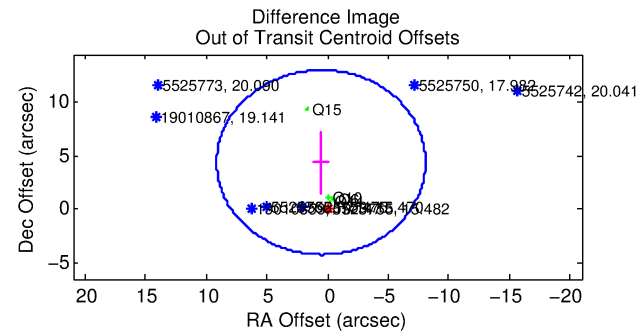
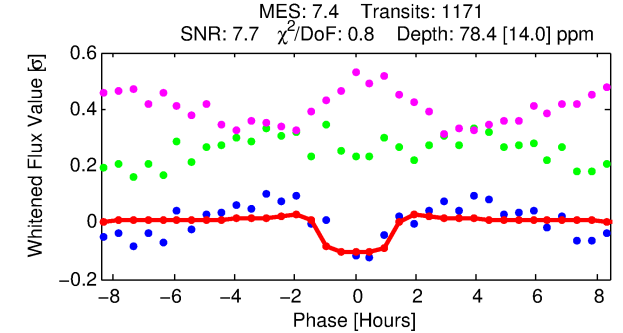
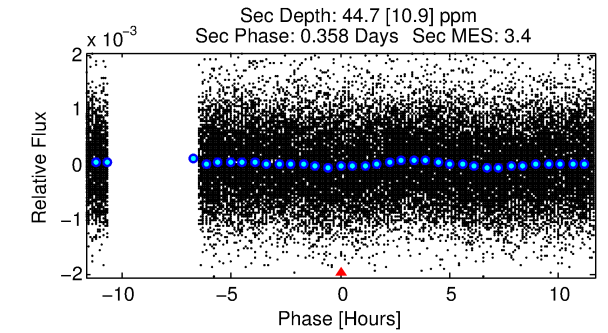
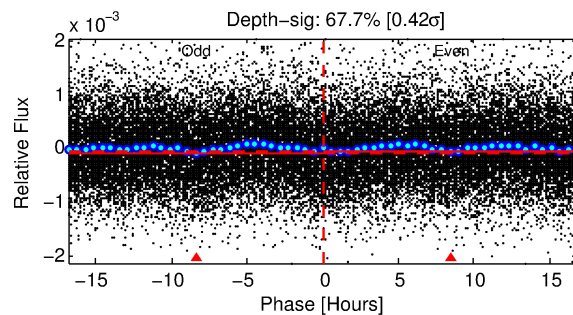
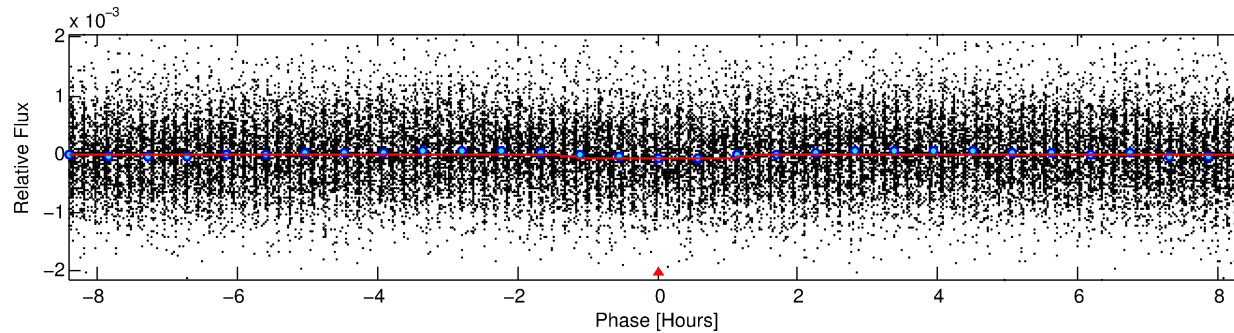
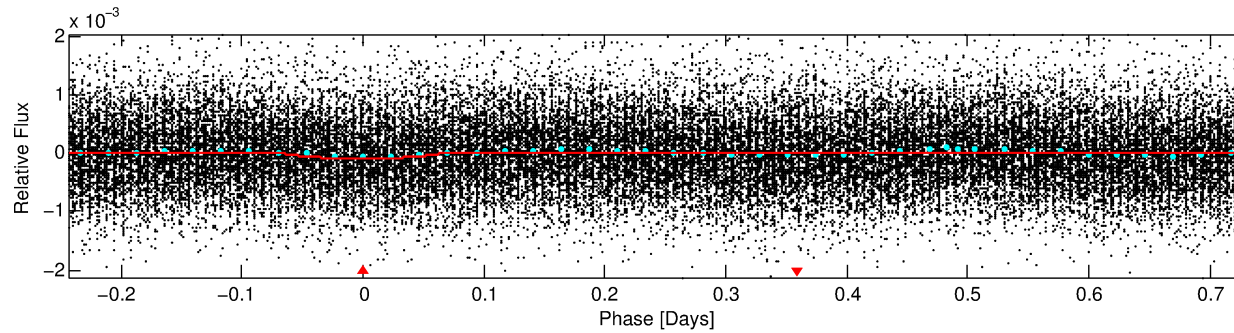
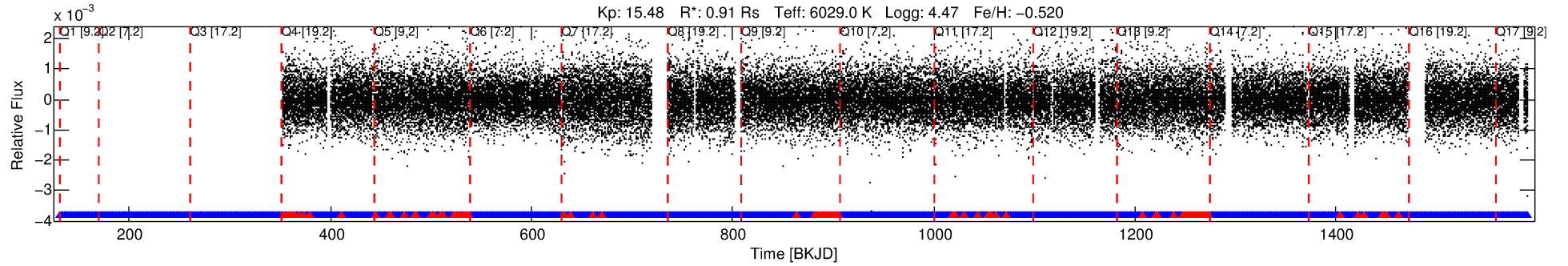
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005525755-01

No Significant Match Found

# DV One-Page Summary

KIC: 5525755 Candidate: 1 of 1 Period: 0.974 d



## DV Fit Results:

Period = 0.97404 [0.00001] d  
Epoch = 131.8804 [0.0036] BKJD  
Rp/R\* = 0.0095 [0.0061]  
a/R\* = 1.53 [3.08]  
b = 0.90 [0.75]  
Seff = 2861.06 [1067.36]  
Teq = 1865 [174] K  
Rp = 0.94 [0.66] Re  
a = 0.0184 [0.0043] AU  
Ag = 9.42 [12.72] [0.66σ]  
Teffp = 5051 [1659] K [1.91σ]

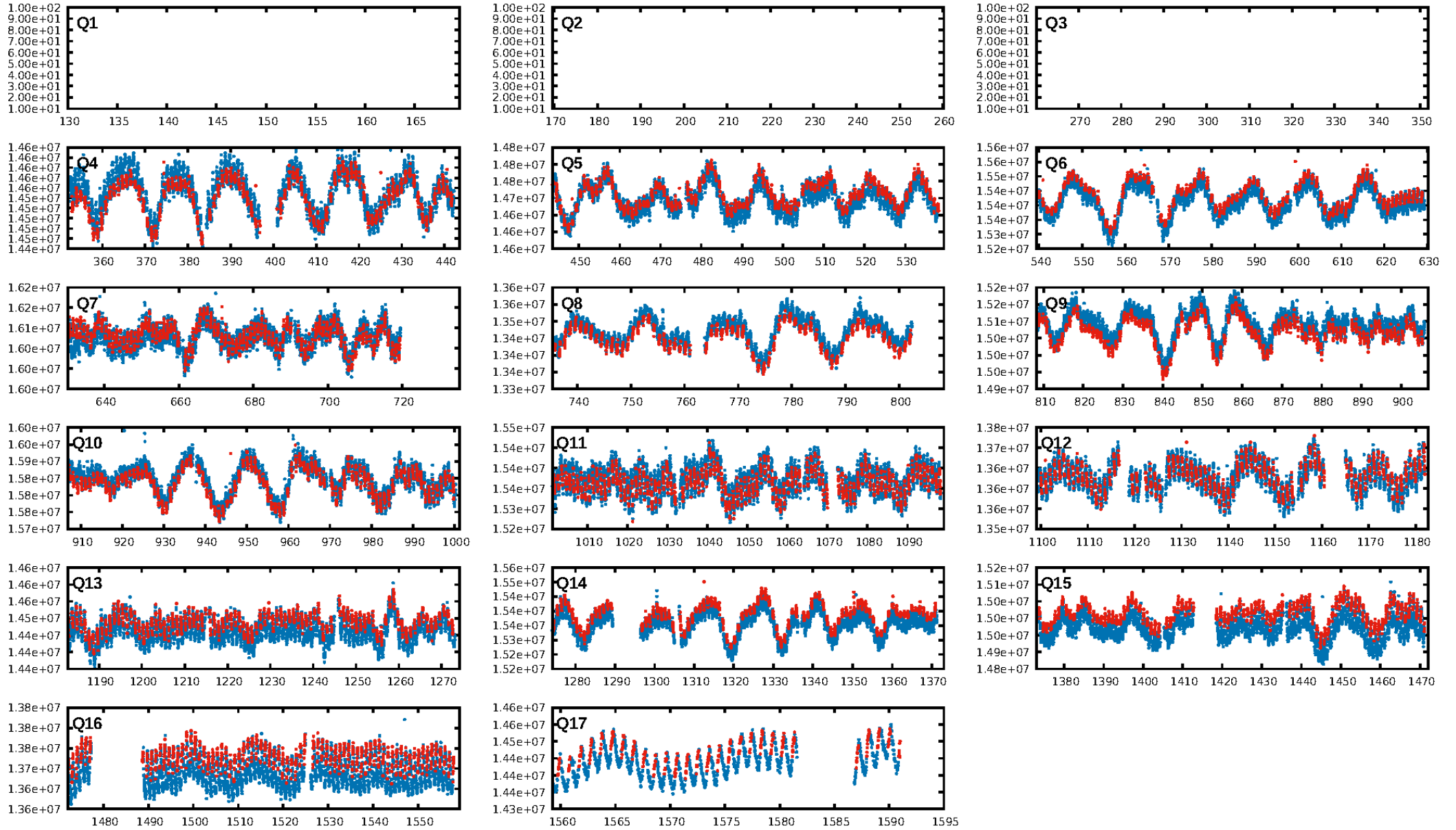
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
**Bootstrap-pfa: 1.80e-12**  
RollingBand-fgt: 0.90 [1034/1143]  
GhostDiagnostic-chr: -1.267  
Centroid-sig: 24.8%  
**Centroid-so: 3.568 arcsec [3.61σ]**  
OotOffset-rm: 4.426 arcsec [1.54σ]  
**KicOffset-rm: 0.271 arcsec [3.19σ]**  
OotOffset-st: 3/1/0/0 [4]  
KicOffset-st: 3/1/3/3 [10]  
DiffImageQuality-fgm: 0.40 [4/10]  
DiffImageOverlap-fno: 1.00 [14/14]

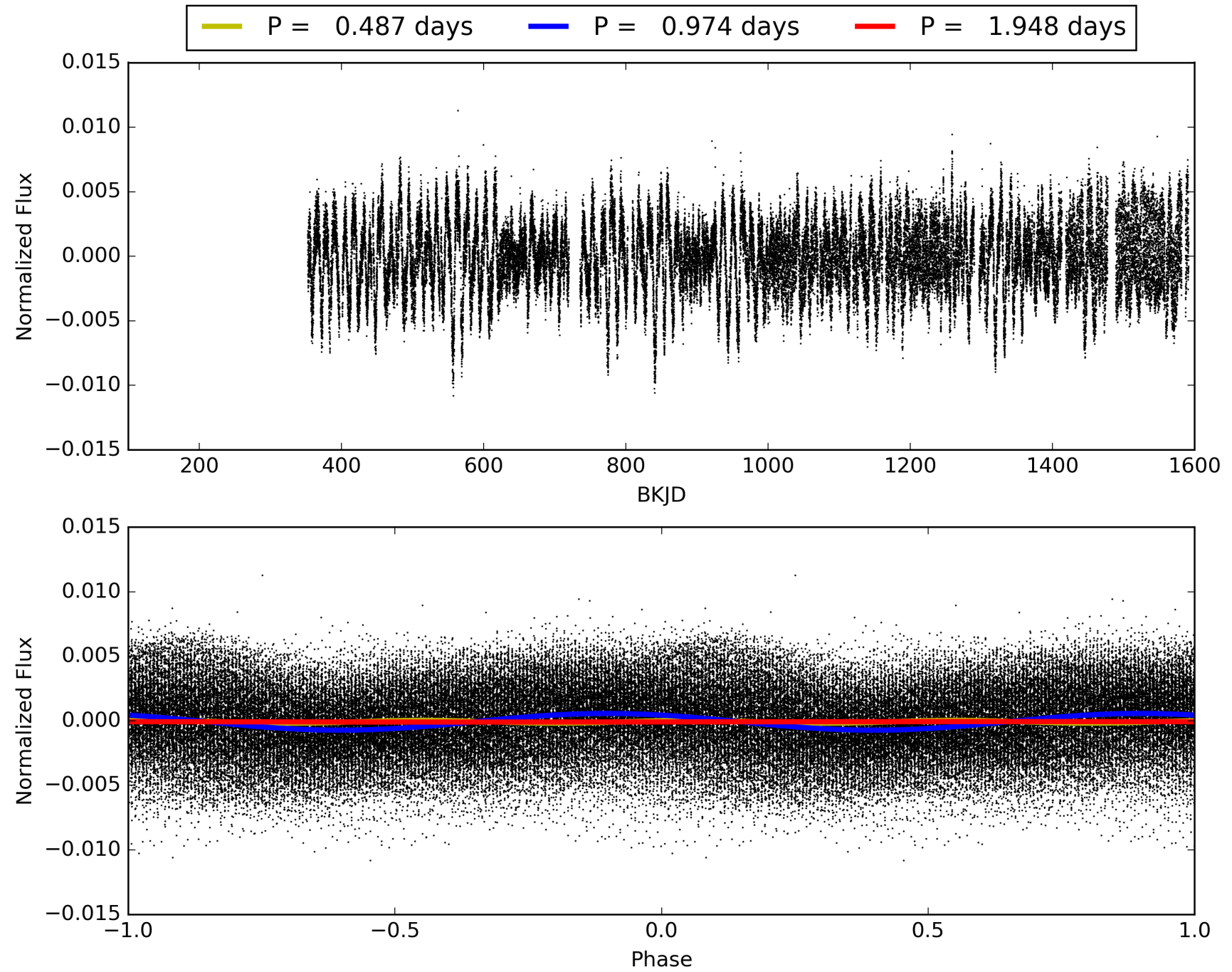
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 20:34:03 Z

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

# TCE 005525755-01, PDC Light Curves

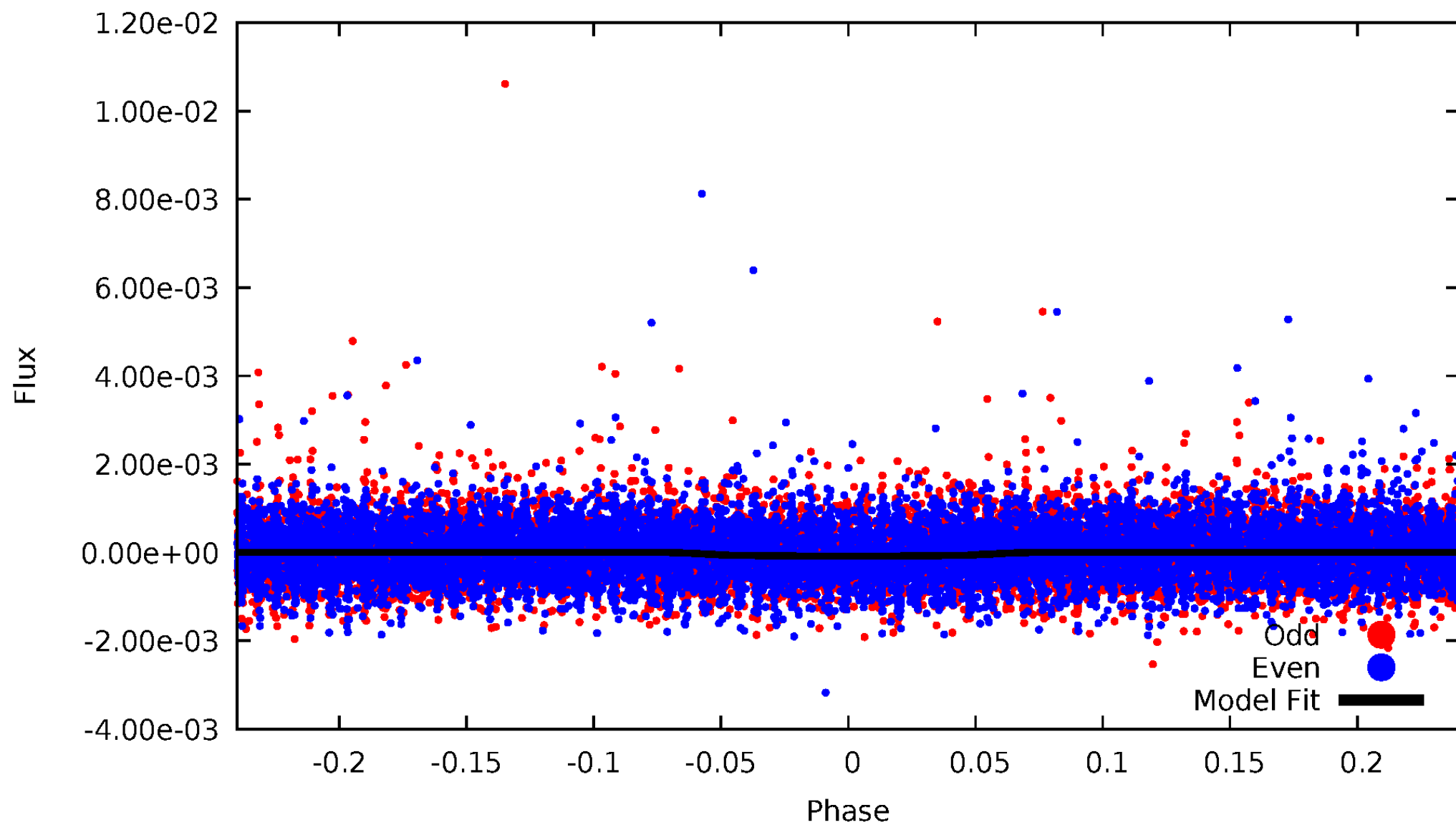


# TCE 005525755-01



# DV Odd/Even

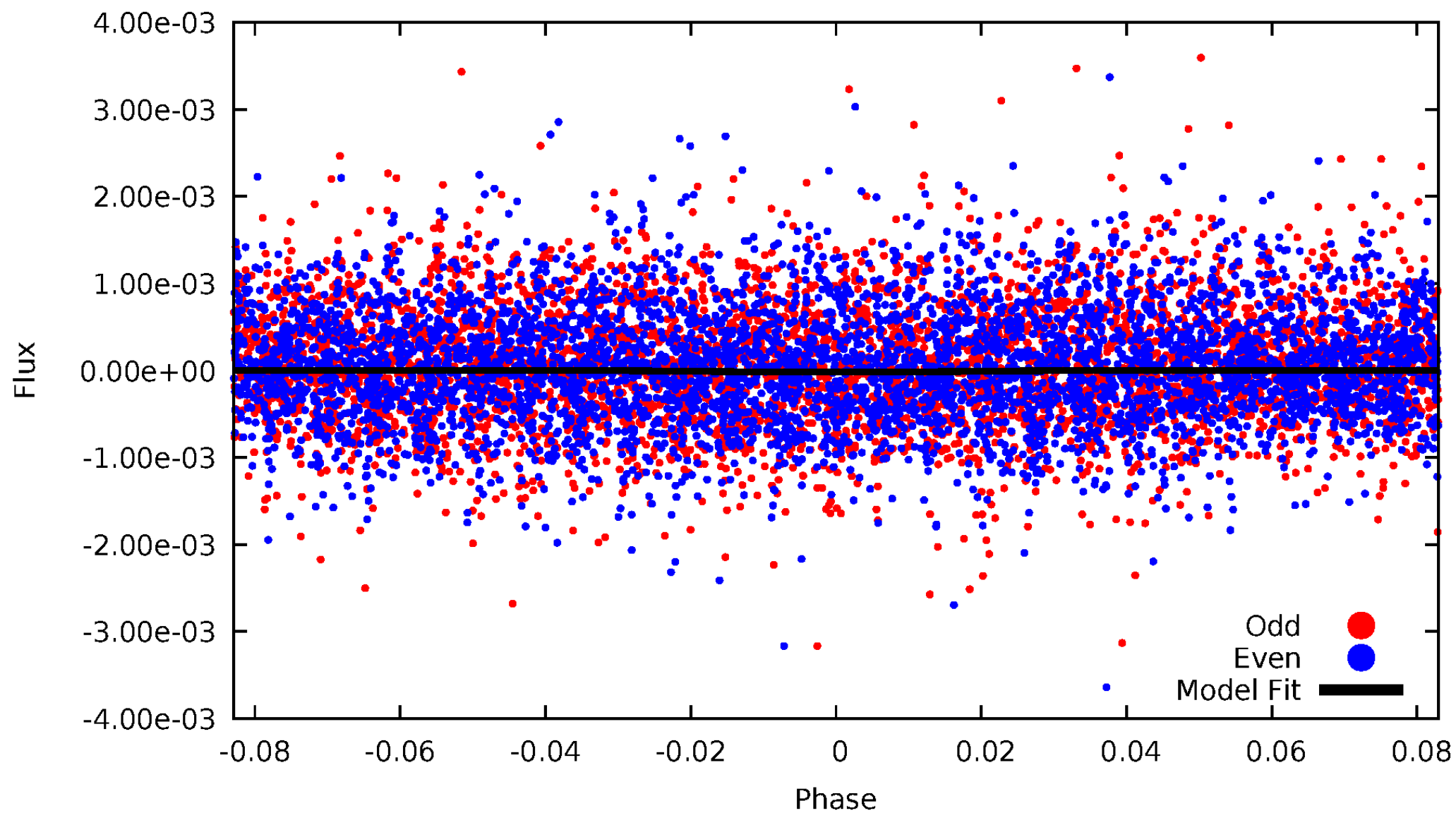
TCE 005525755-01





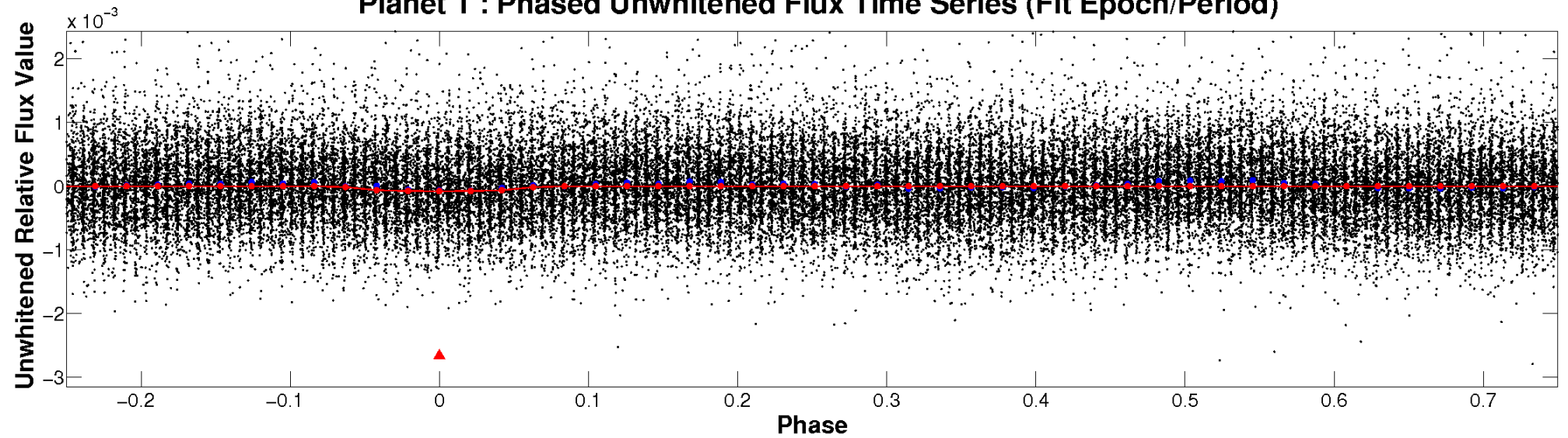
# ALT Odd/Even

TCE 005525755-01

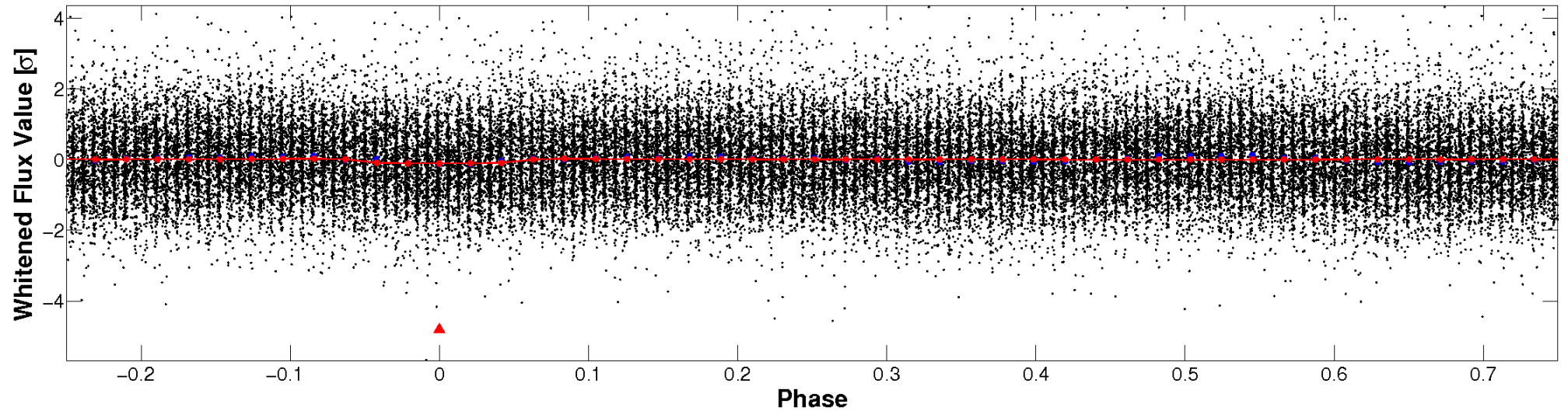


# Non-Whitened Vs. Whitened Light Curve

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

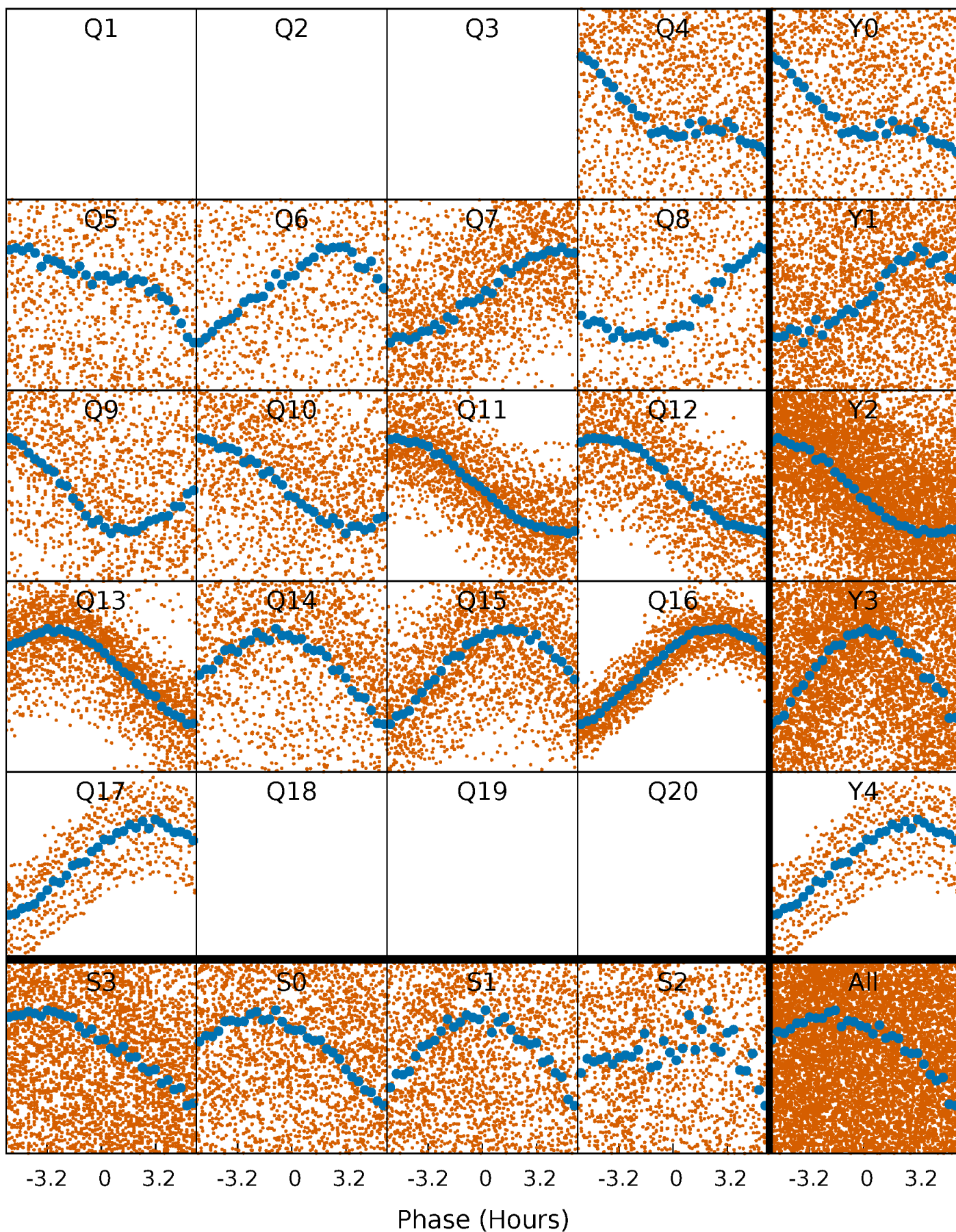


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

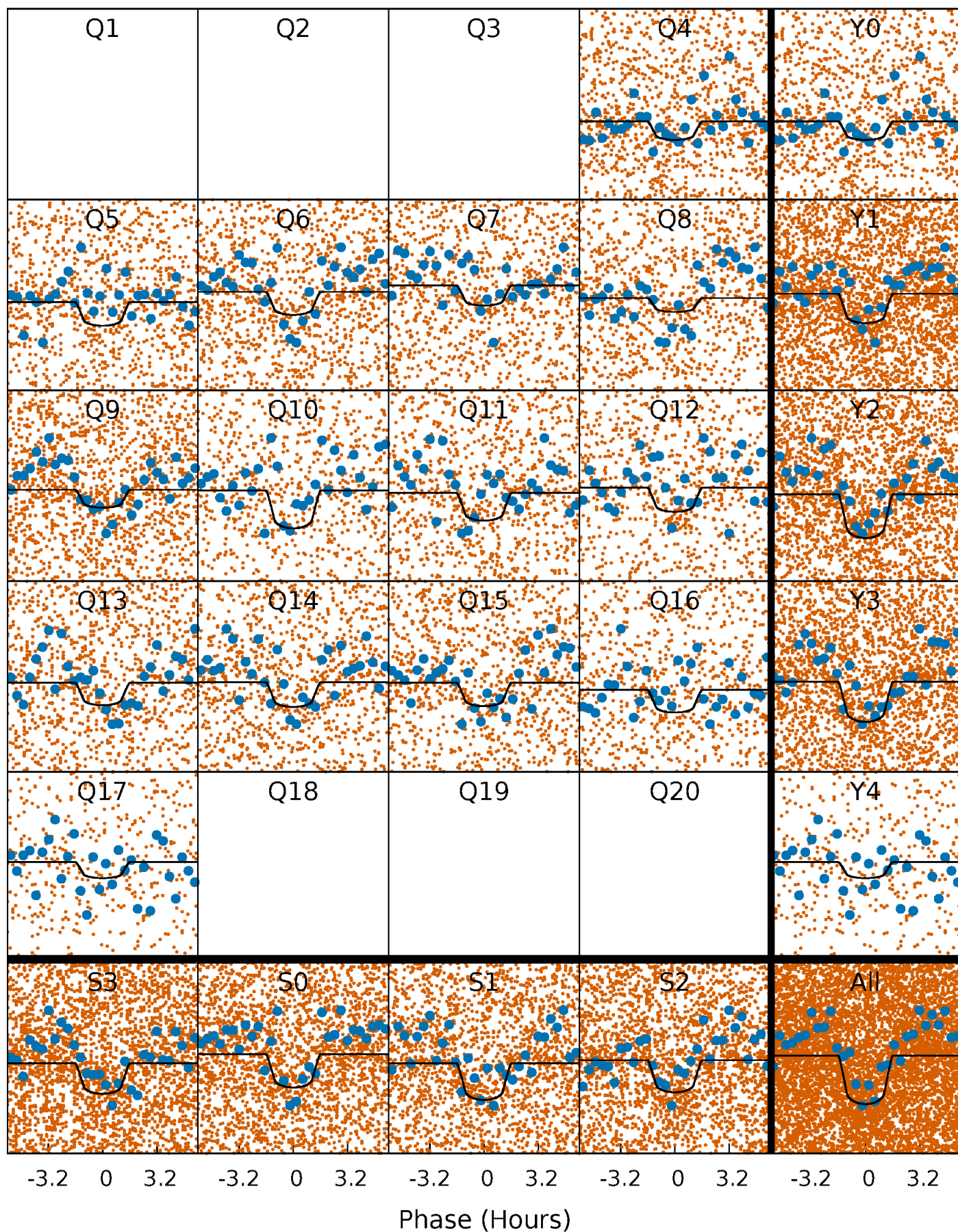
TCE 005525755-01 P= 0.974038 Days  $T_0=131.880384$  (BKJD)





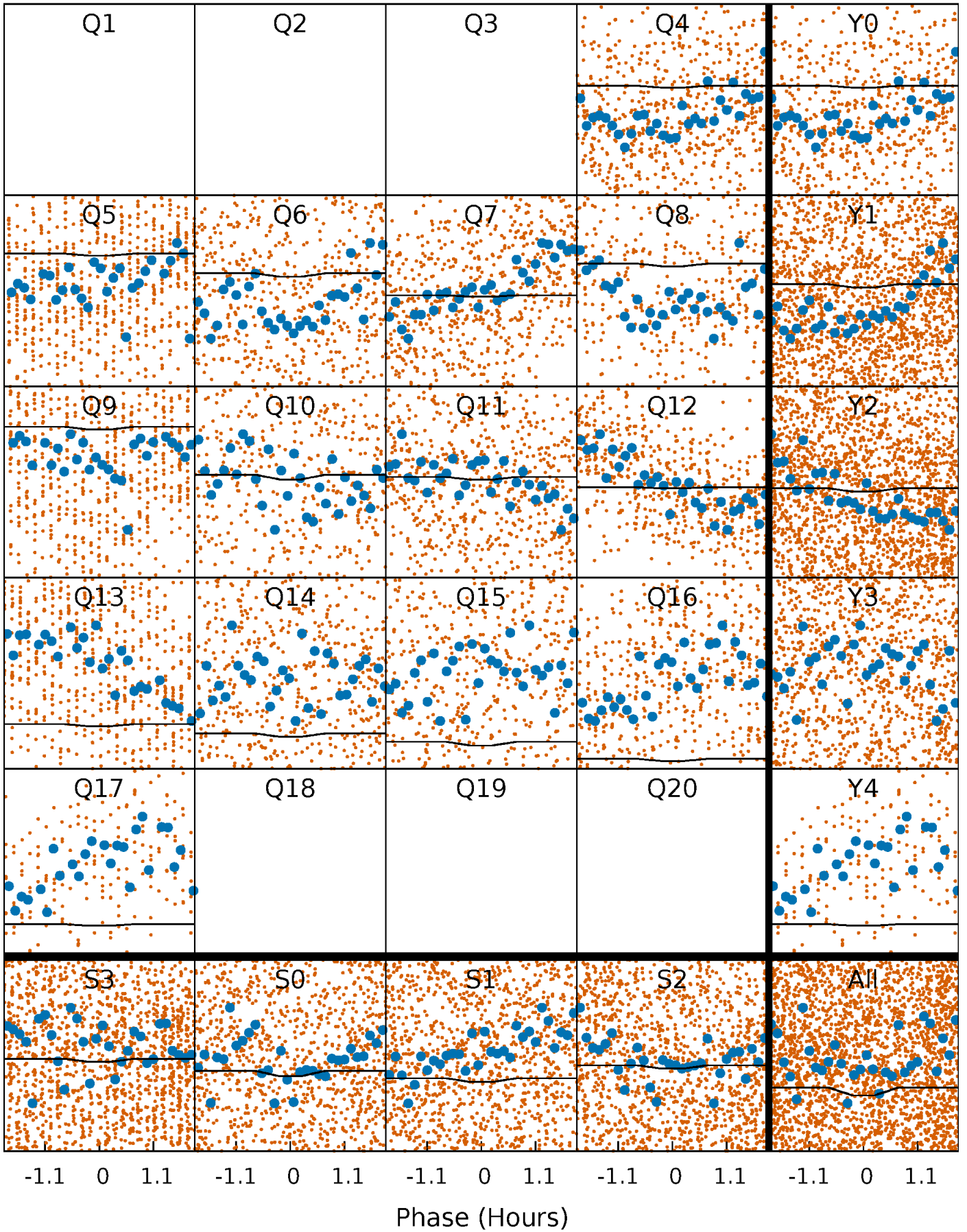
# DV Quarter-Phased Transit Curves

TCE 005525755-01 P= 0.974038 Days  $T_0=131.880384$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

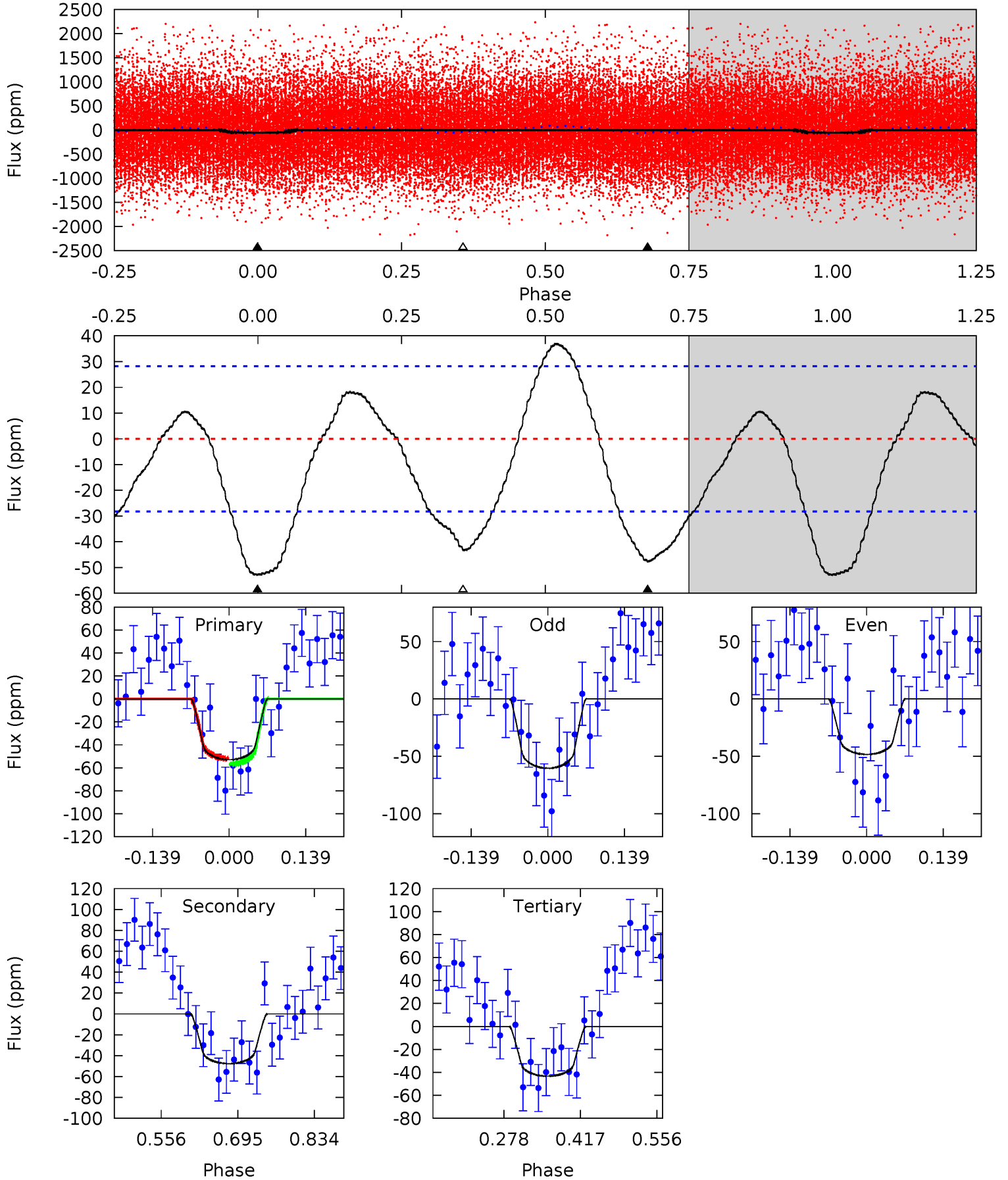
TCE 005525755-01 P= 0.974052 Days  $T_0=131.869703$  (BKJD)



# DV Model-Shift Uniqueness Test

005525755-01, P = 0.974038 Days, E = 131.880384 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
8.44	7.60	6.90	0	4.50	1.48	3.81	1.54	8.44	0.70	7.60	0.97	0.88	0.41	0.38

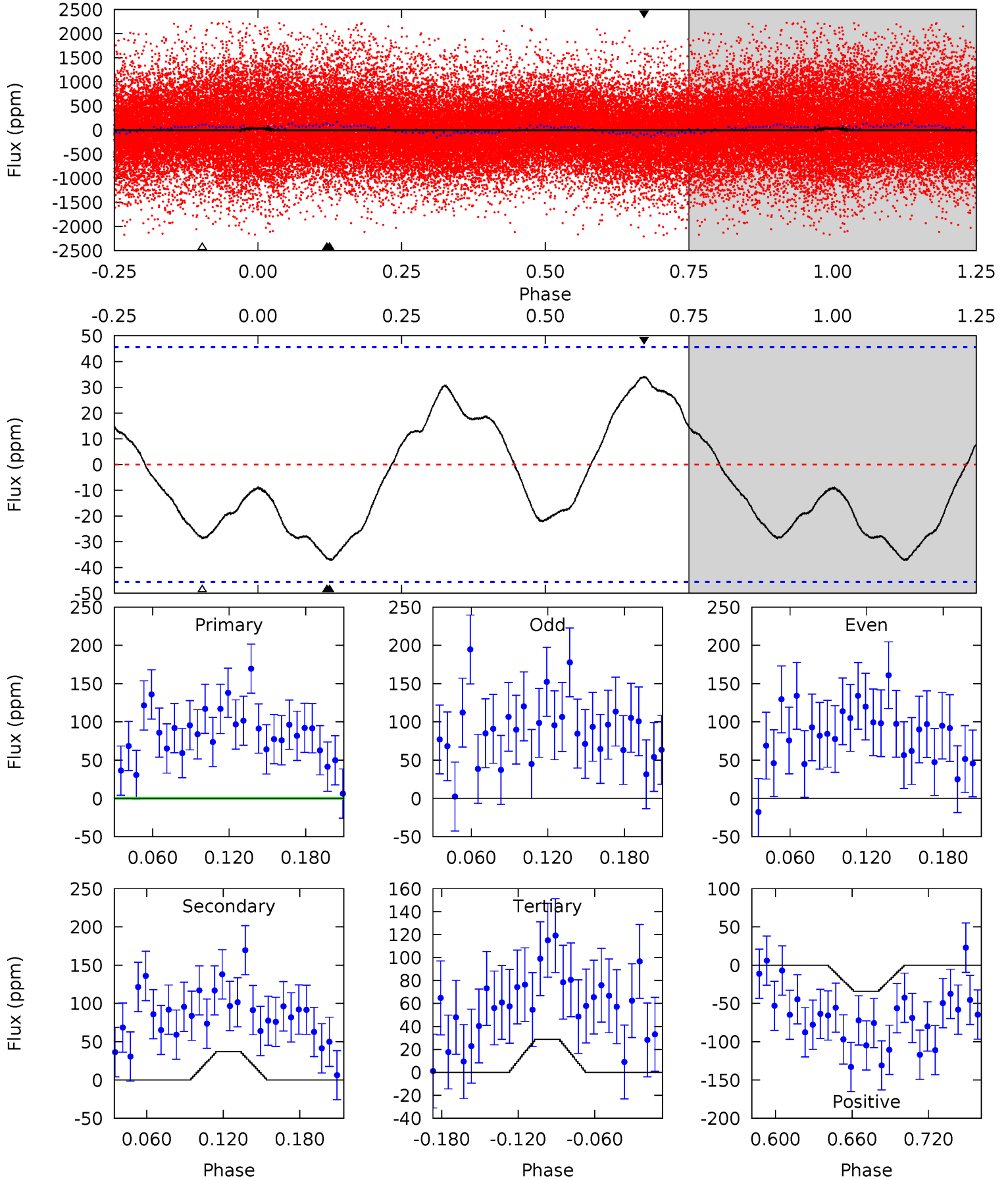




# Alt Model-Shift Uniqueness Test

005525755-01, P = 0.974052 Days, E = 131.869703 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
3.75	3.81	2.95	3.50	4.67	1.88	1.91	0.80	0.24	0.86	0.31	0.43	1.30	0.48	0.87





### Stellar Parameters For KIC 005525755

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6029^{+197}_{-215}$	$4.468^{+0.094}_{-0.189}$	$-0.520^{+0.300}_{-0.300}$	$0.906^{+0.253}_{-0.108}$	$0.879^{+0.108}_{-0.079}$	$1.667^{+0.692}_{-0.793}$
	+3%/-4%	+2%/-4%	+58%/-58%	+28%/-12%	+12%/-9%	+41%/-48%
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 005525755-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-48 \pm 6$	$1.02^{+0.62}_{-0.57}$	$2641^{+171}_{-158}$	$5086^{+2633}_{-961}$	$8.736^{+34.501}_{-5.433}$
Alt.	$-37 \pm 10$	$0.62^{+0.54}_{-0.41}$	$2627^{+187}_{-131}$	$5949^{+6101}_{-1527}$	$18^{+147}_{-13}$

$T_{\text{max}}$  = 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

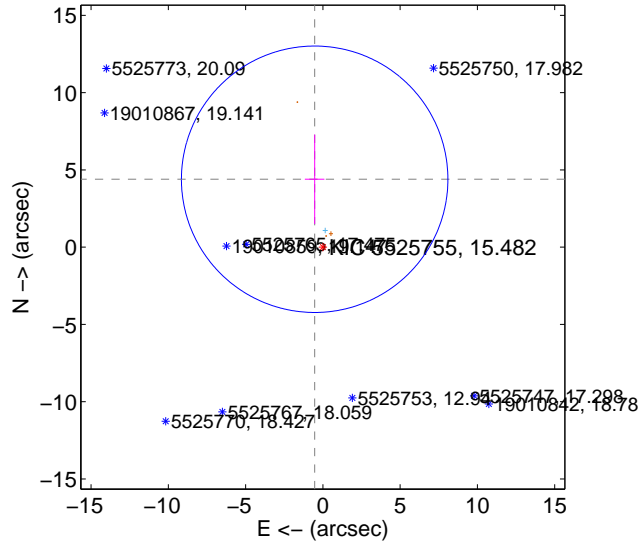
Supplemental centroid analysis for 005525755-01. Kepler magnitude: 15.48. Transit SNR 7.74

There are 4 quarters with good PRF difference image offsets

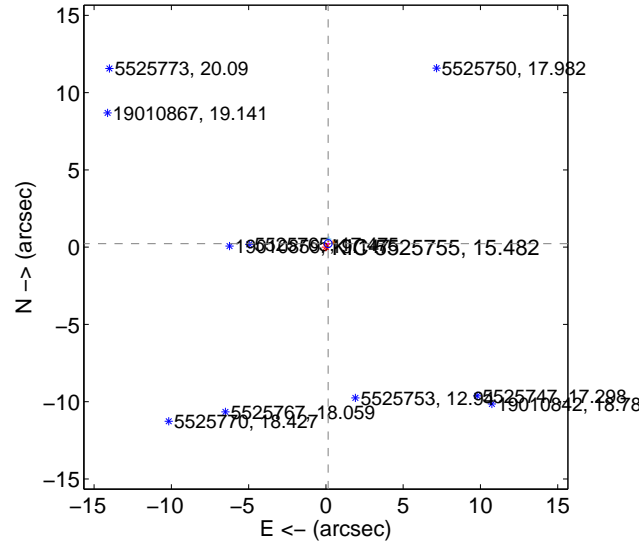
The OOT PRF centroid is offset from the target star catalog position by about 9.20 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.426 \pm 2.873$	1.54	$0.531 \pm 0.634$	$4.394 \pm 2.893$
PRF-fit source offset from KIC position	$0.271 \pm 0.085$	3.19	$-0.146 \pm 0.076$	$0.229 \pm 0.082$
photometric centroid source offset	$3.57 \pm 0.99$	3.61	$-1.48 \pm 0.59$	$-3.25 \pm 1.05$

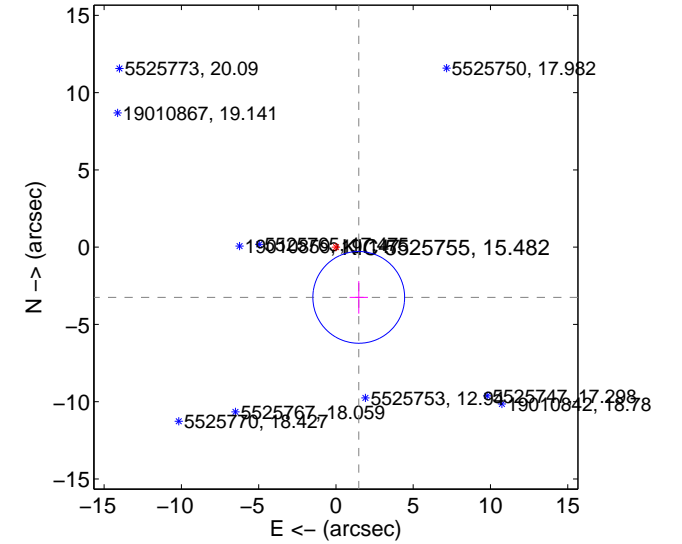
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

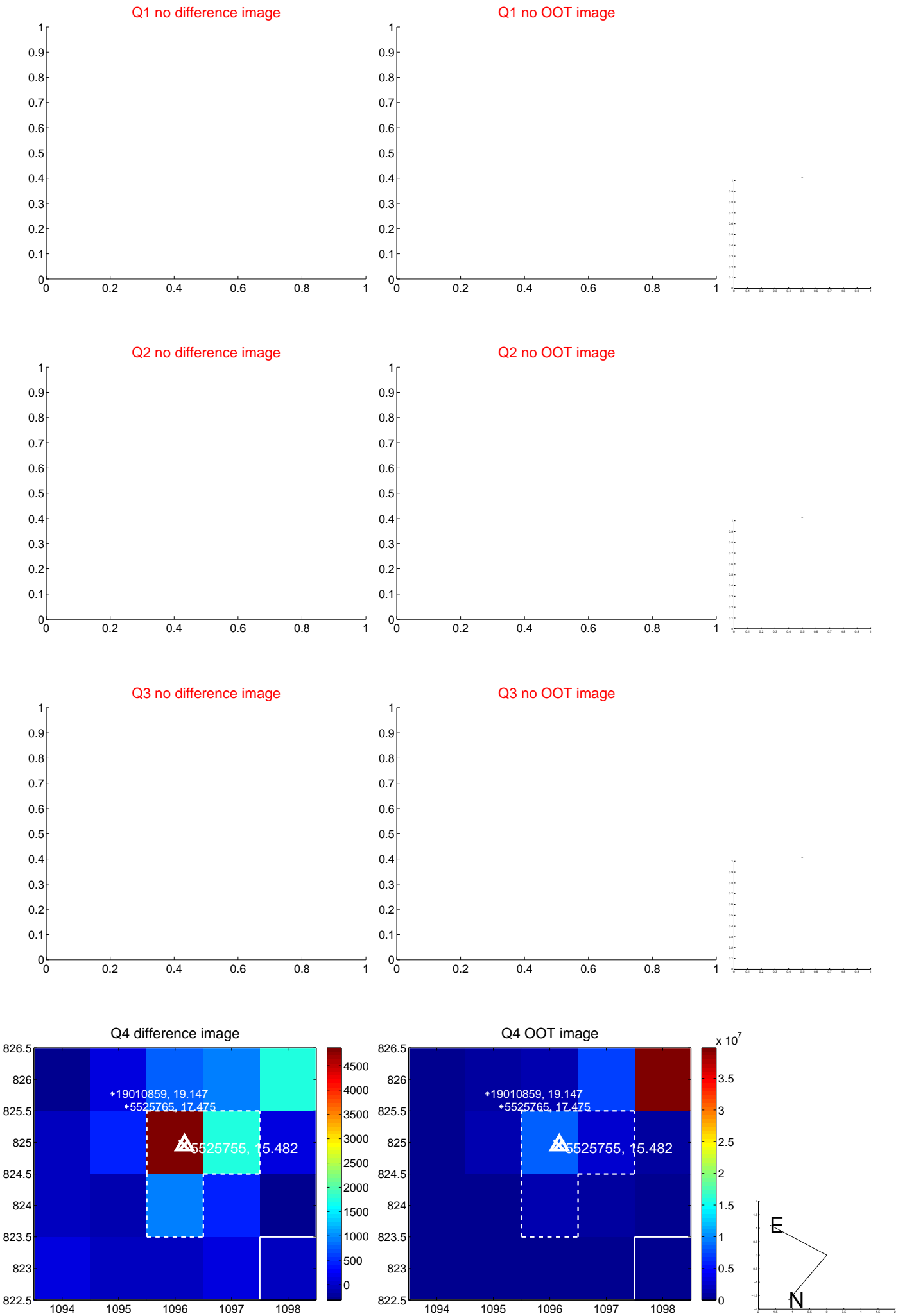


offset from photometric centroids

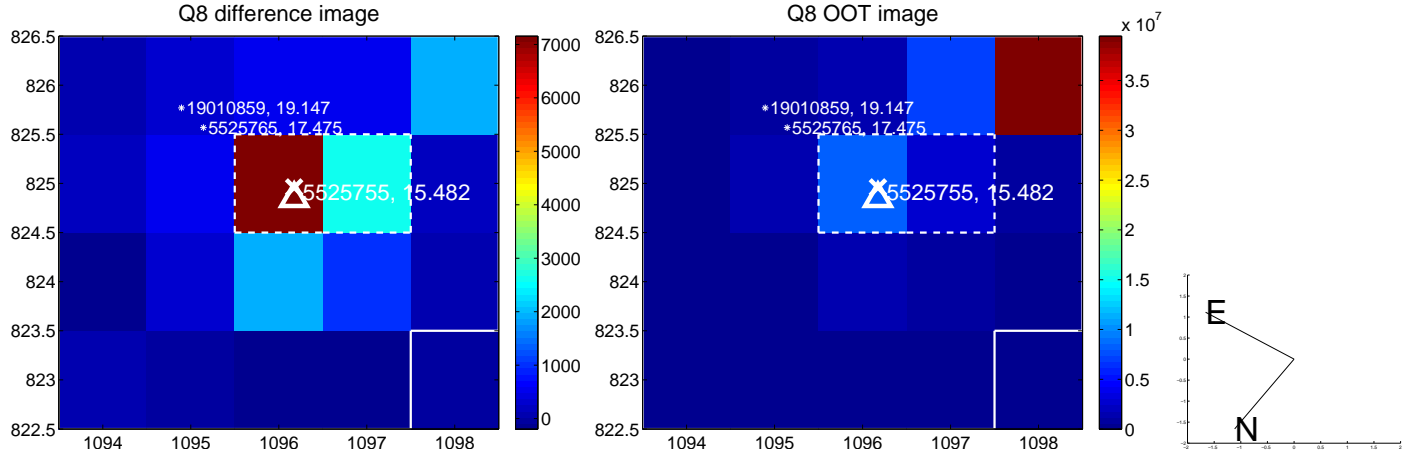
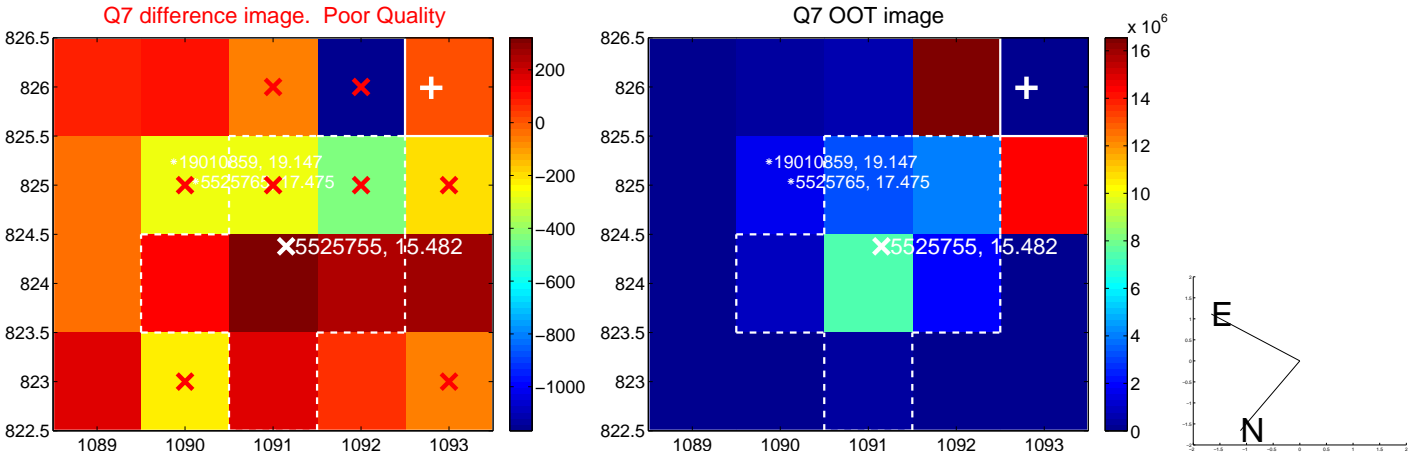
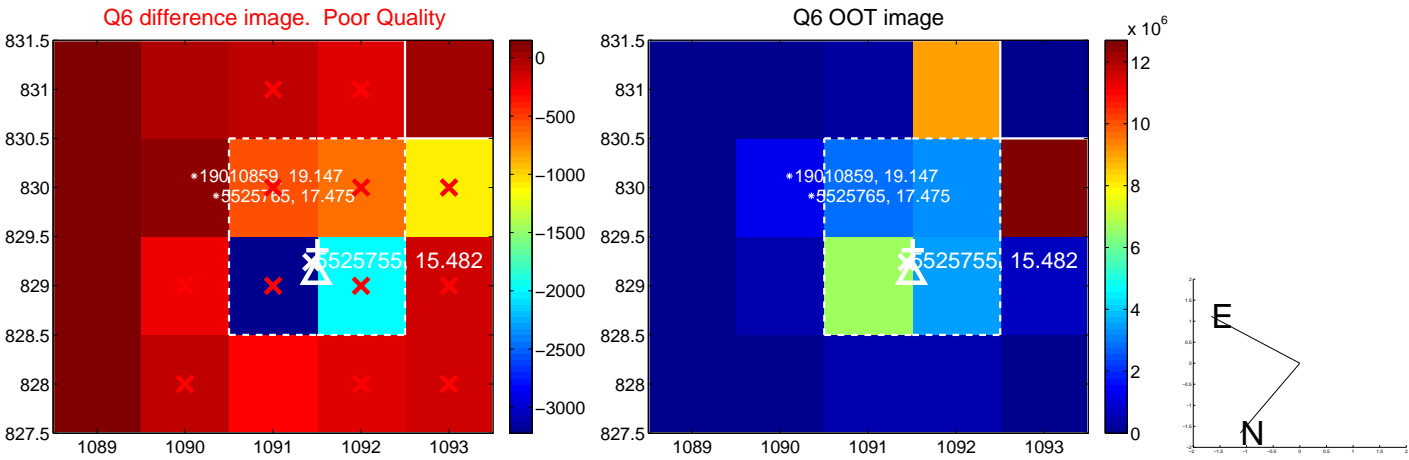
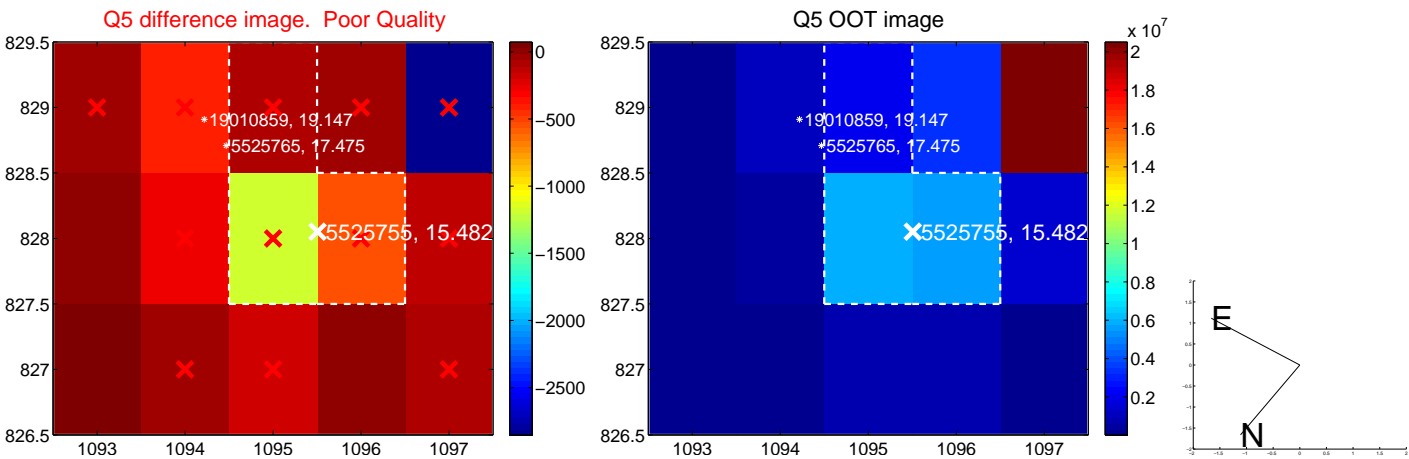


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

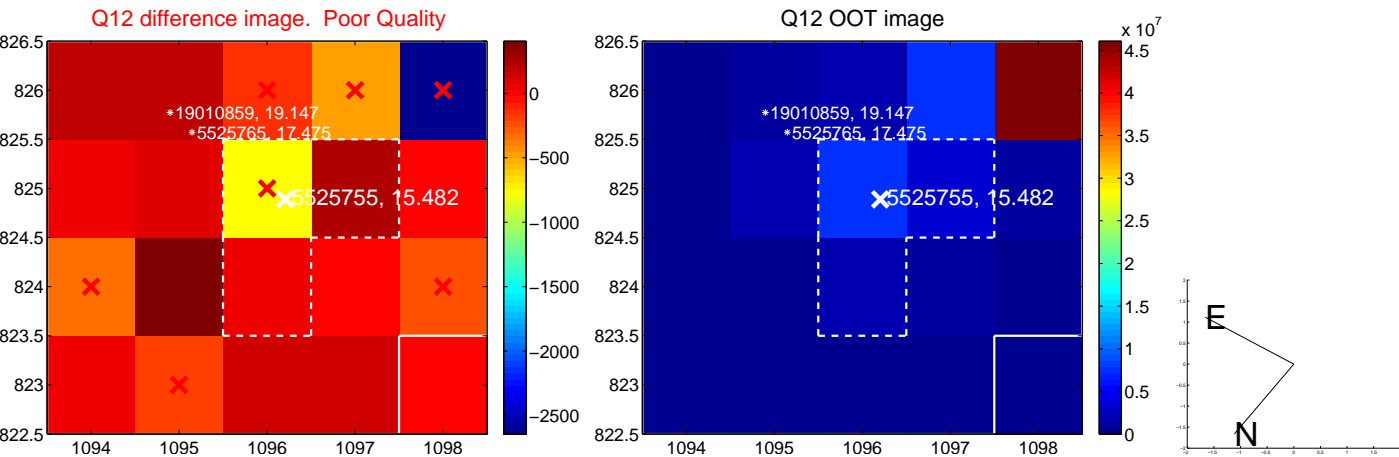
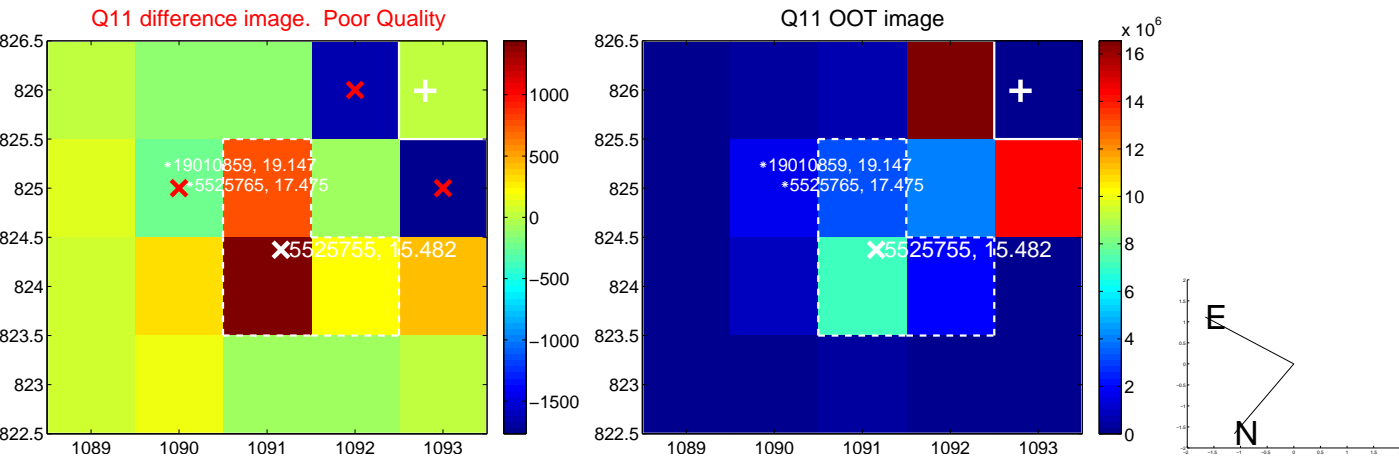
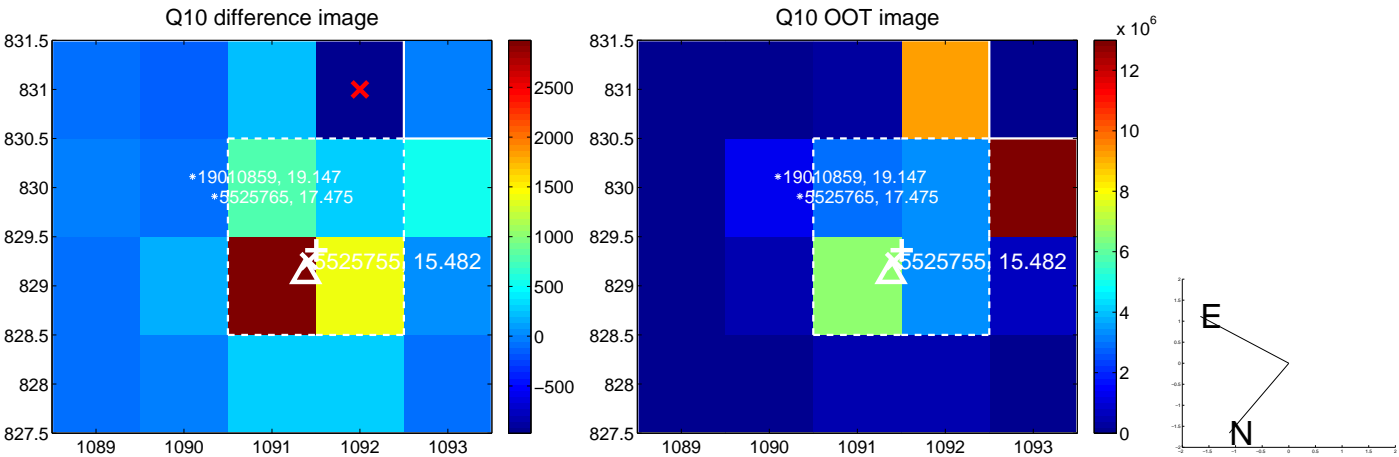
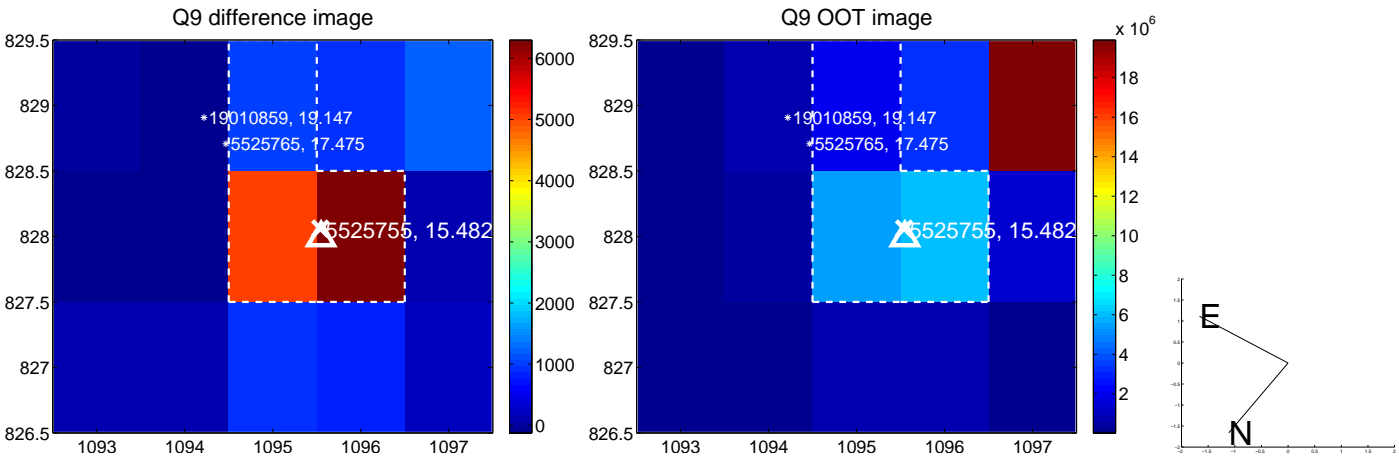


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

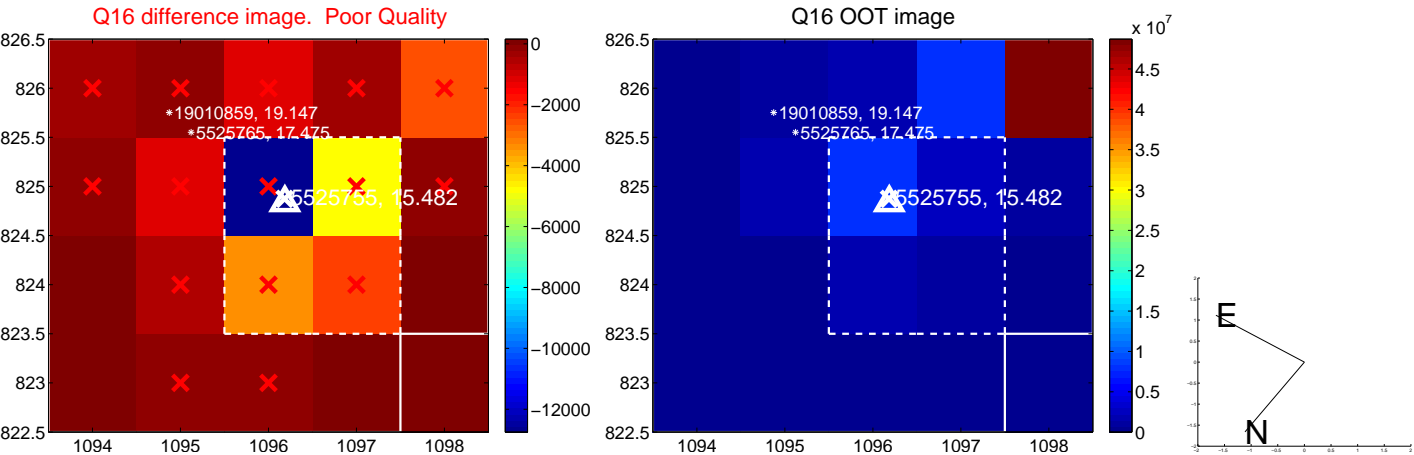
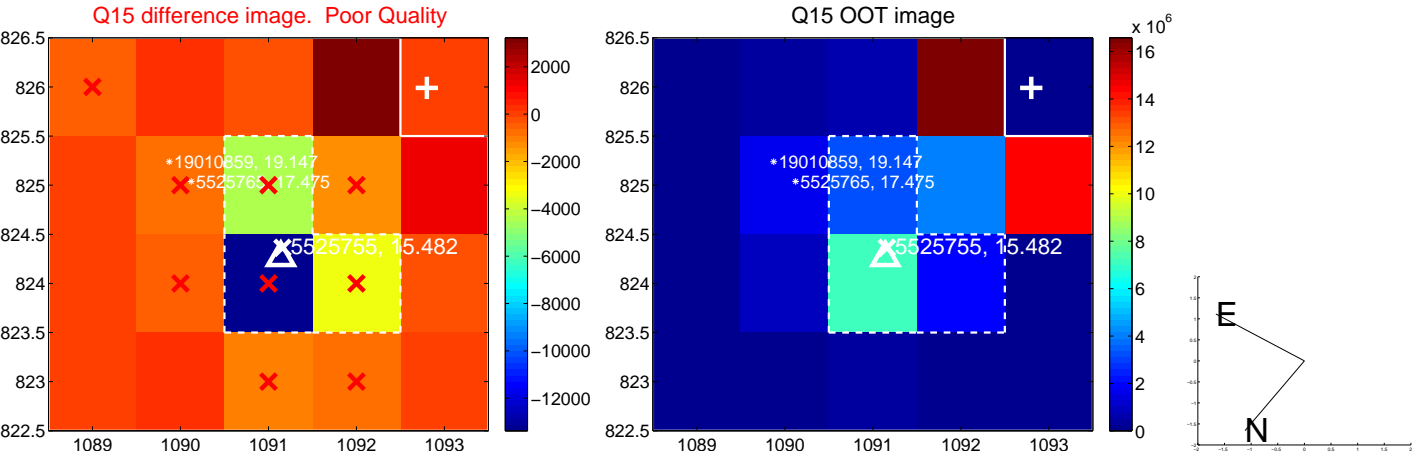
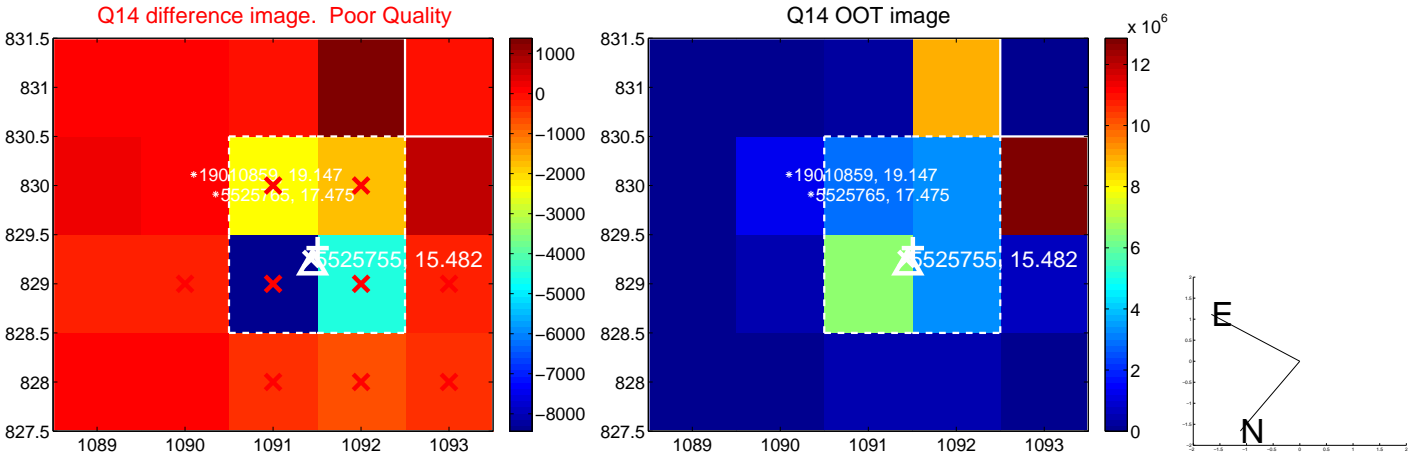
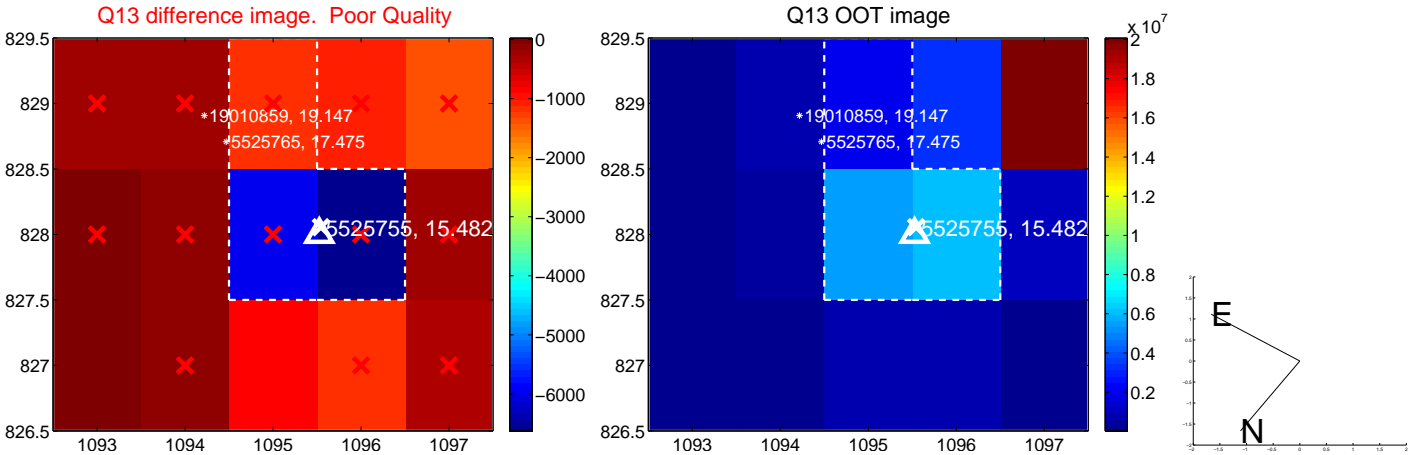




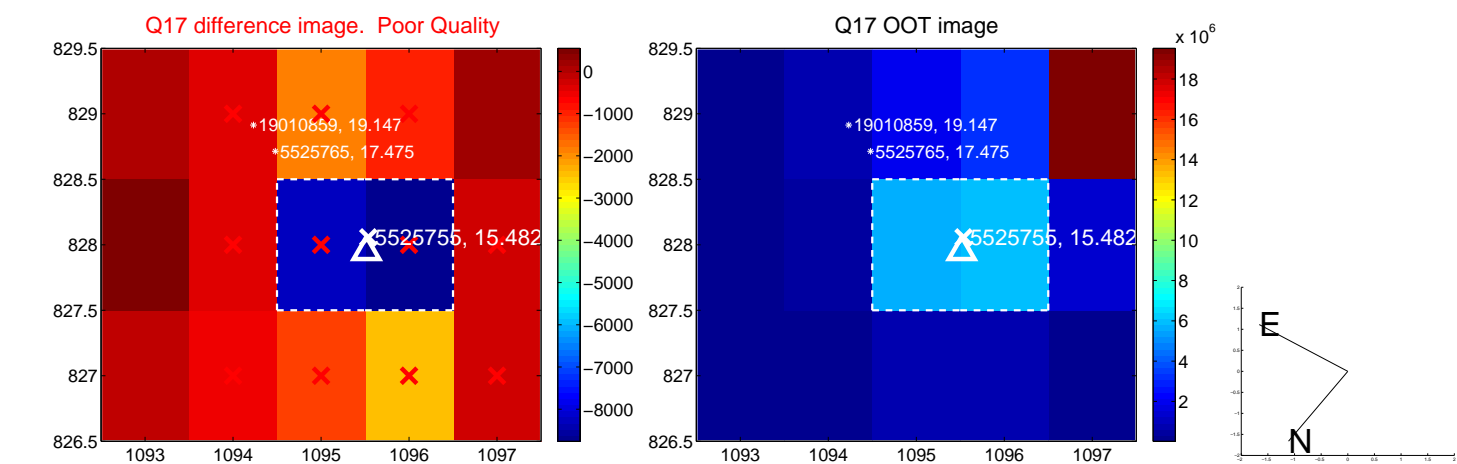
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



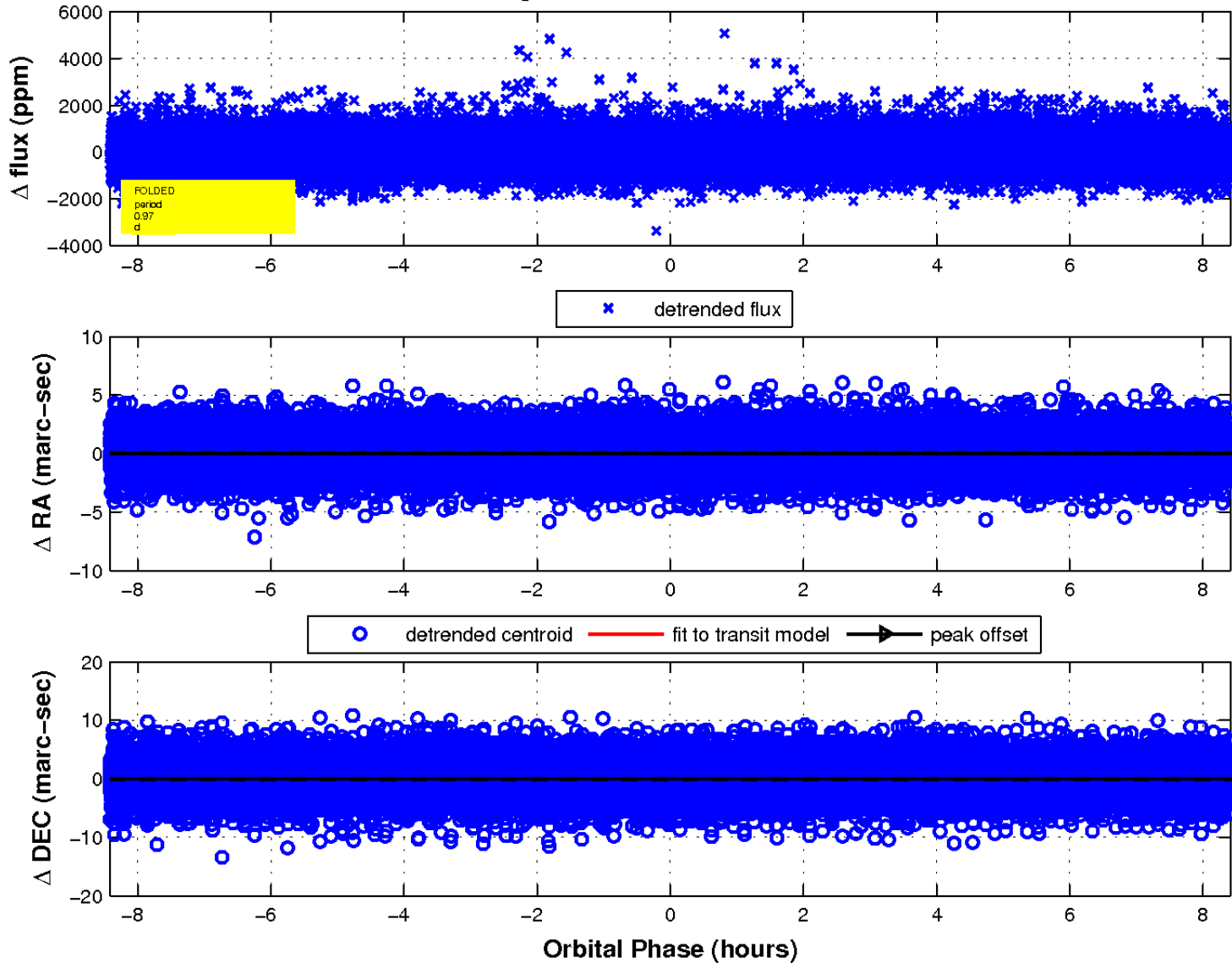
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

