

# KIC 008121586

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008121586-01	OBS	No	1.020767	132.604406	49.0	8.615	12.4	14.3	2.07	7314	1.60	19160.15

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008121586-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_FEW_DIFFS

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

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

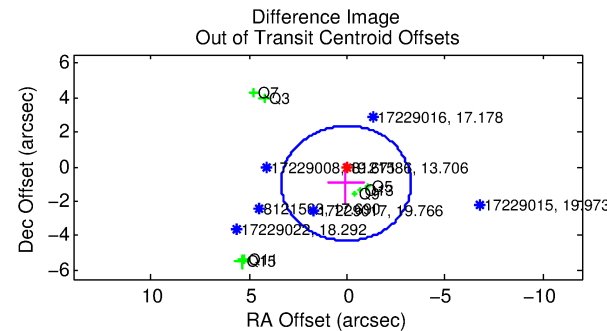
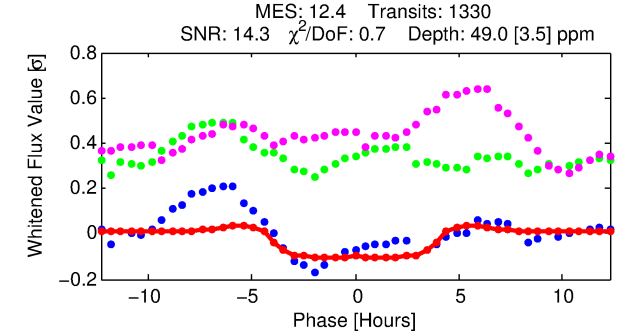
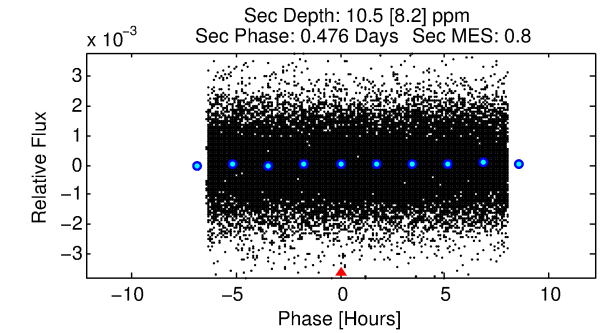
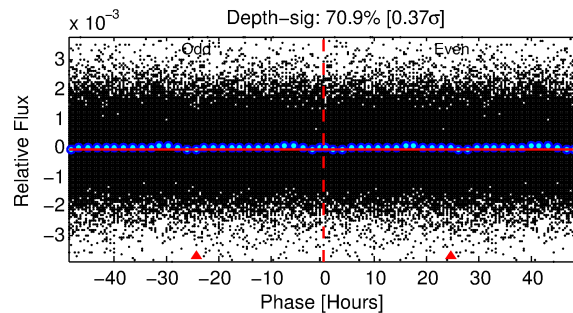
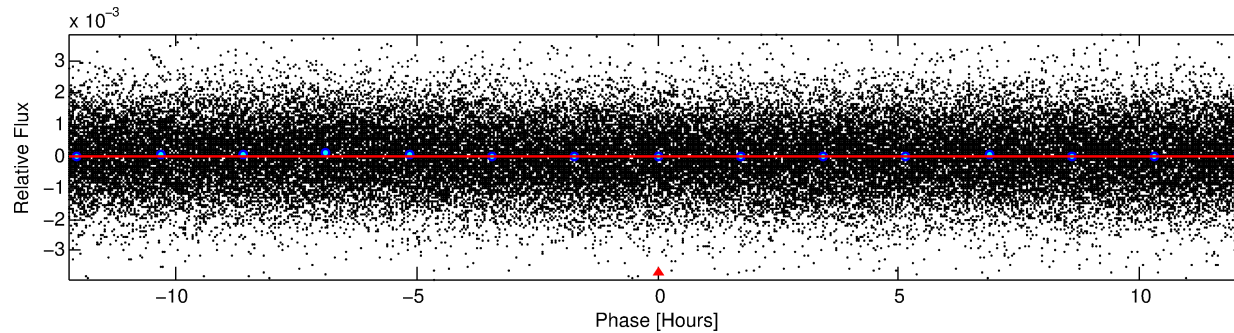
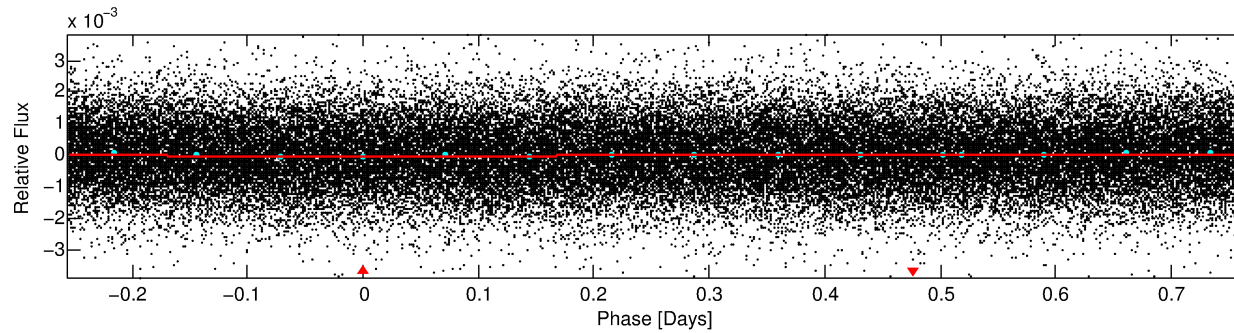
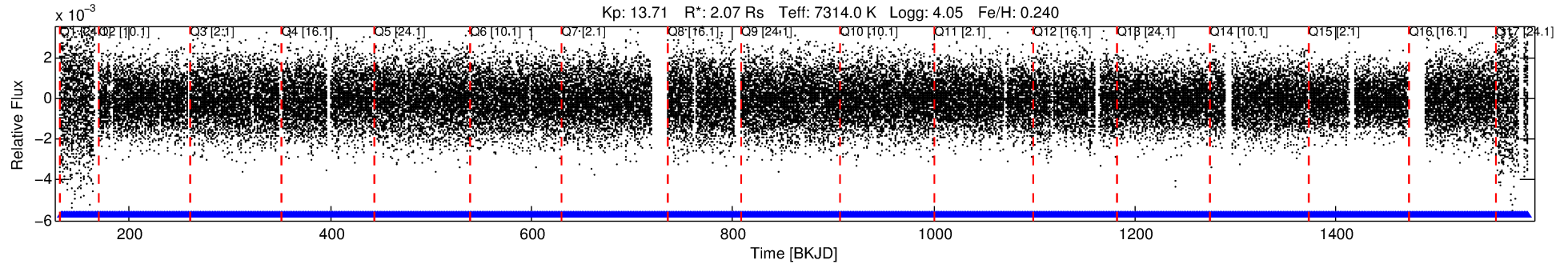
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008121586-01

No Significant Match Found

# DV One-Page Summary

KIC: 8121586 Candidate: 1 of 1 Period: 1.021 d



## DV Fit Results:

Period = 1.02077 [0.00001] d  
Epoch = 132.6044 [0.0065] BKJD  
Rp/R\* = 0.0071 [0.0059]  
a/R\* = 1.05 [0.53]  
b = 0.81 [2.32]  
Seff = 19160.15 [7671.08]  
Teq = 3000 [300] K  
Rp = 1.60 [1.41] Re  
a = 0.0240 [0.0056] AU  
Ag = 1.29 [2.43] [0.12 $\sigma$ ]  
Teff = 4945 [2302] K [0.84 $\sigma$ ]

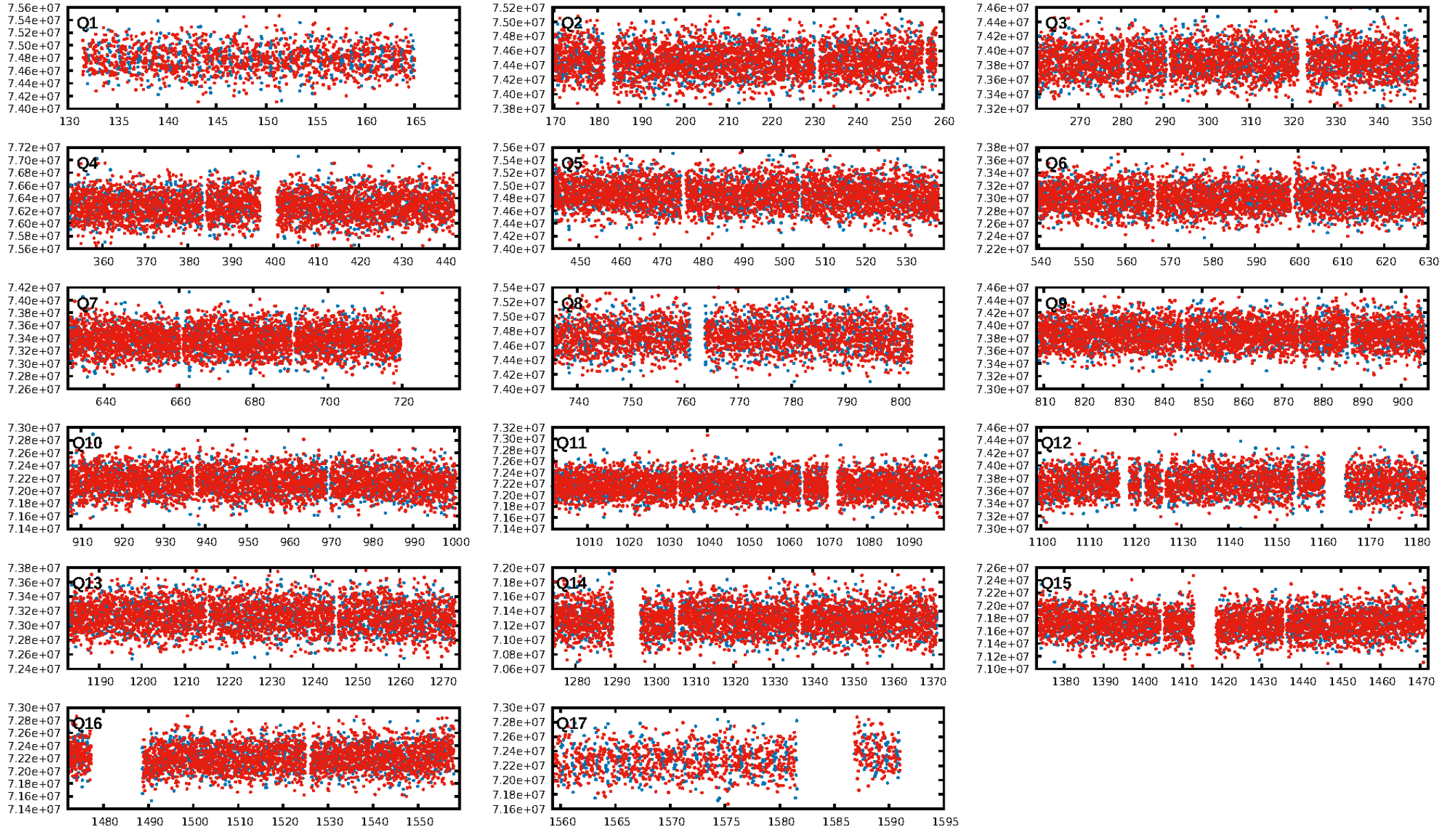
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1271/1271]  
GhostDiagnostic-chr: 3.338  
Centroid-sig: 12.2%  
Centroid-so: 0.550 arcsec [1.19 $\sigma$ ]  
OotOffset-rm: 0.972 arcsec [0.88 $\sigma$ ]  
KicOffset-rm: 0.926 arcsec [0.62 $\sigma$ ]  
OotOffset-st: 0/4/0/3 [7]  
KicOffset-st: 0/4/0/3 [7]  
DiffImageQuality-fgm: 0.43 [3/7]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:13:13 Z

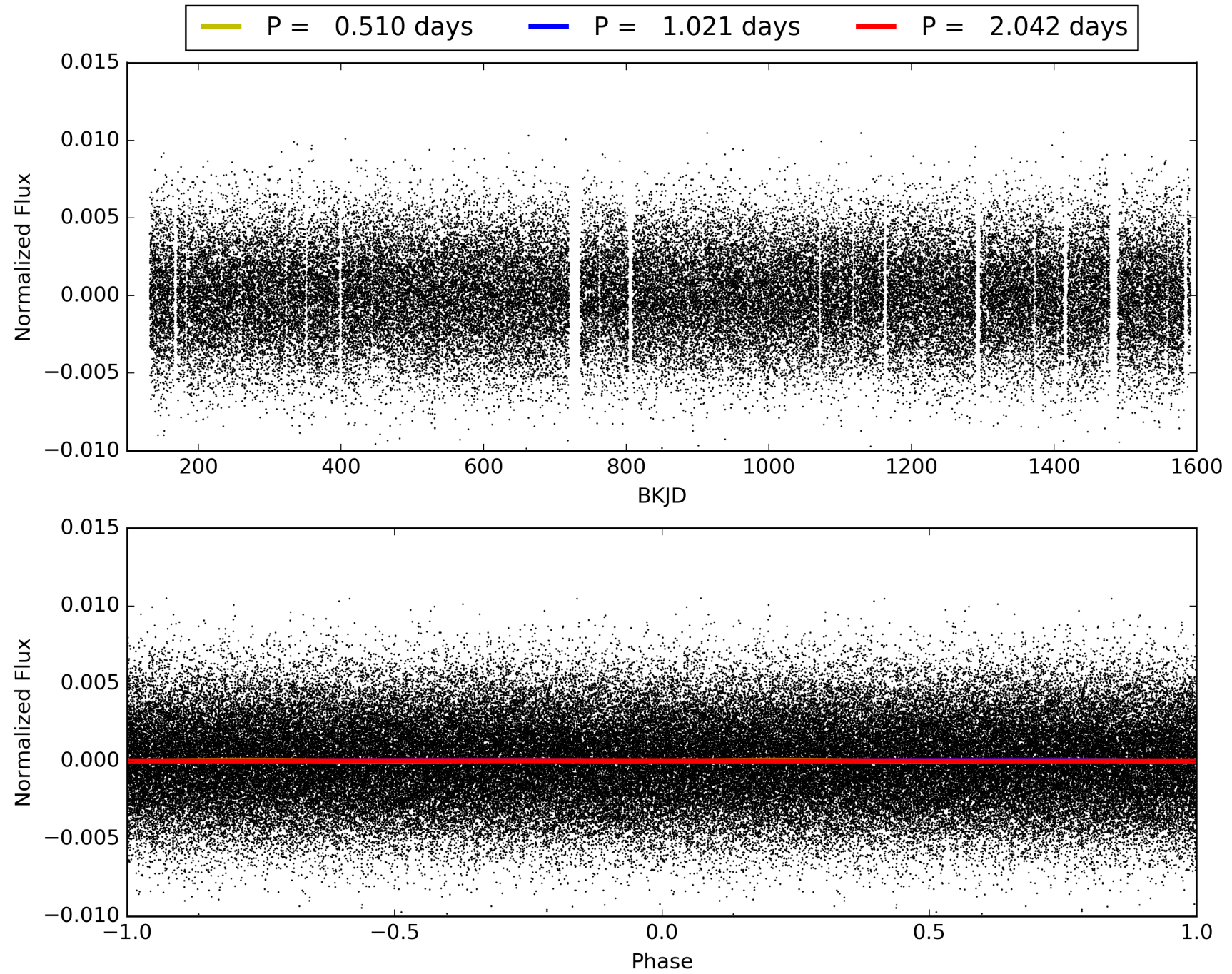
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008121586-01, PDC Light Curves



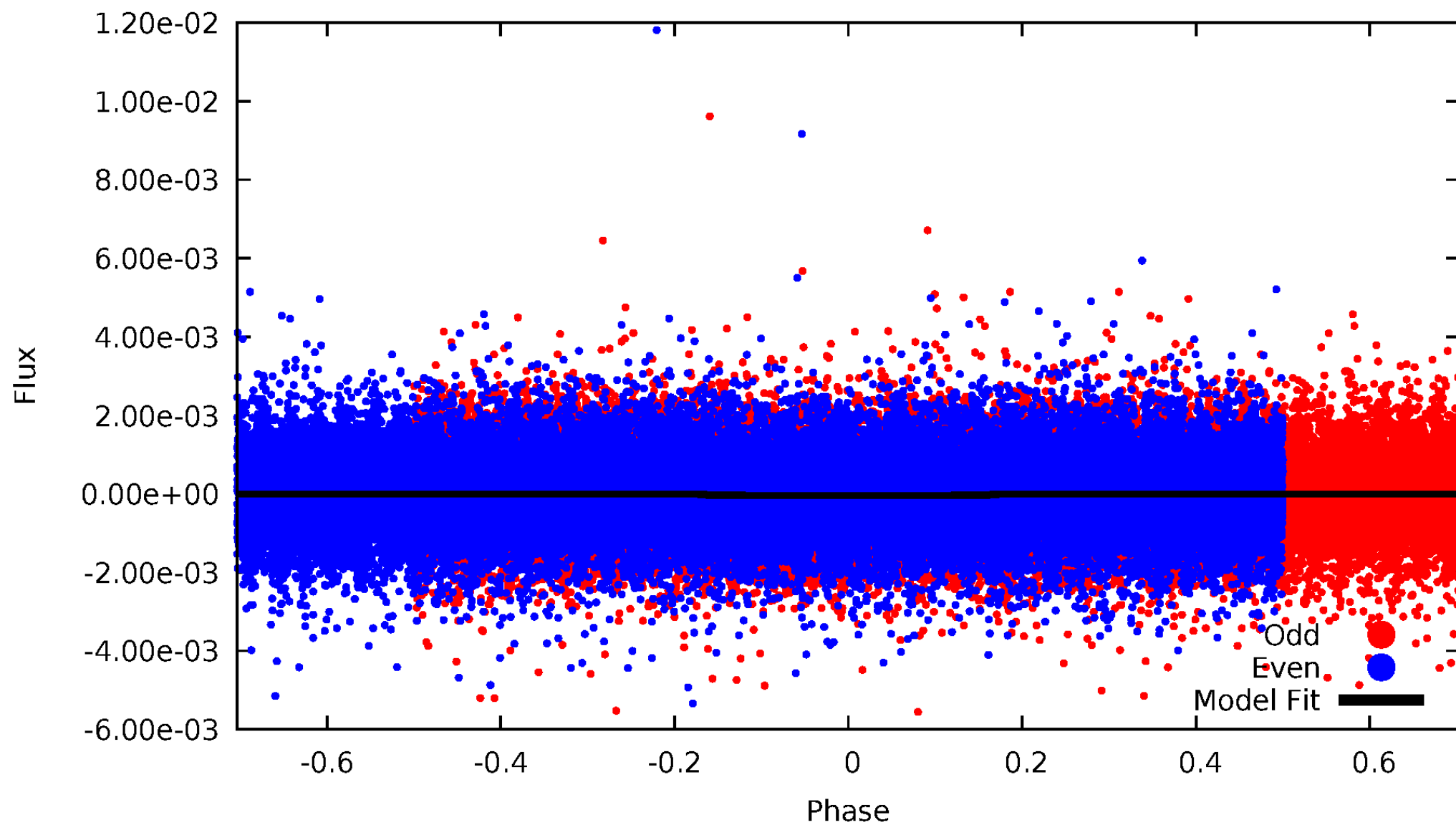


TCE 008121586-01



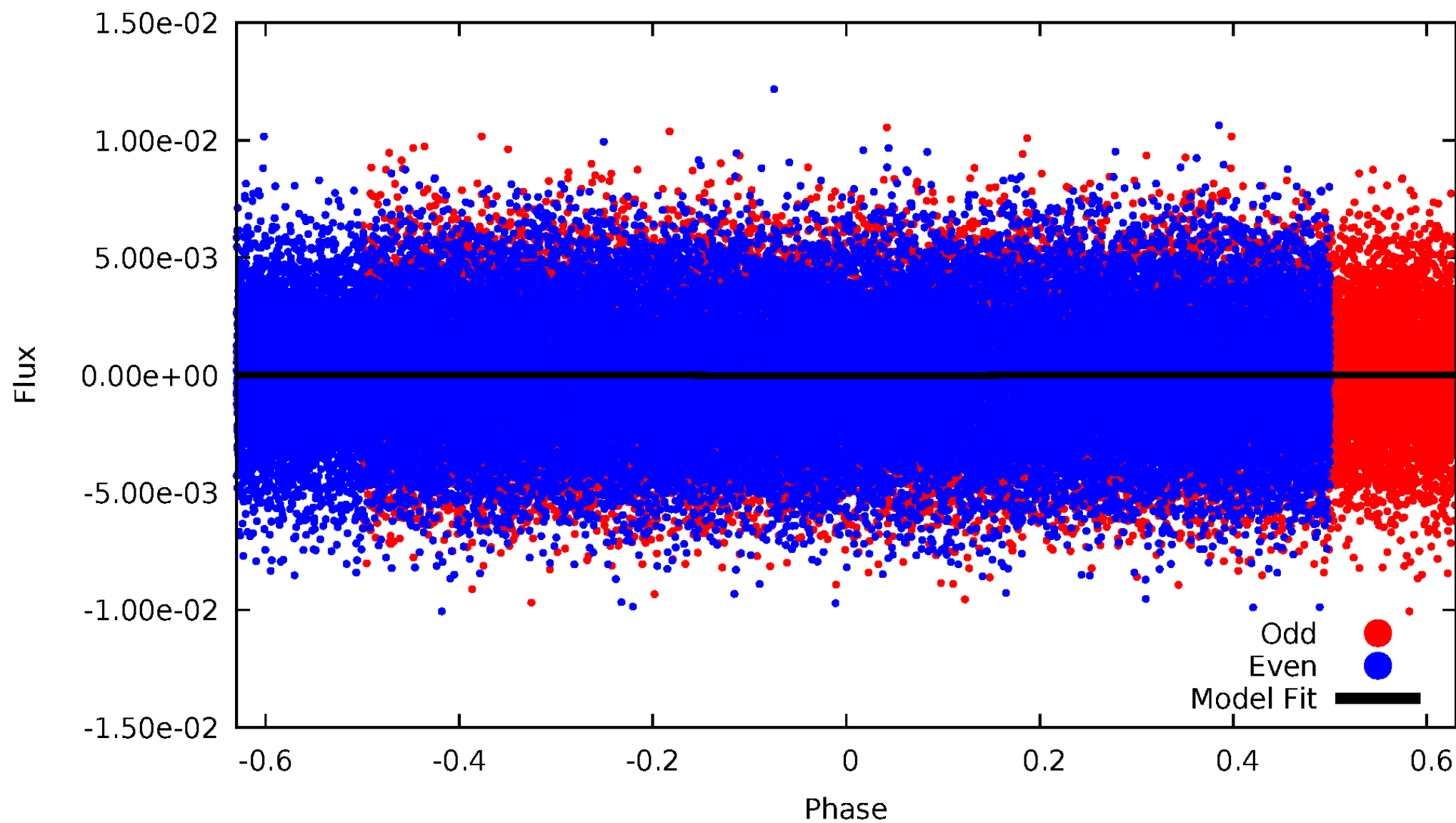
# DV Odd/Even

TCE 008121586-01



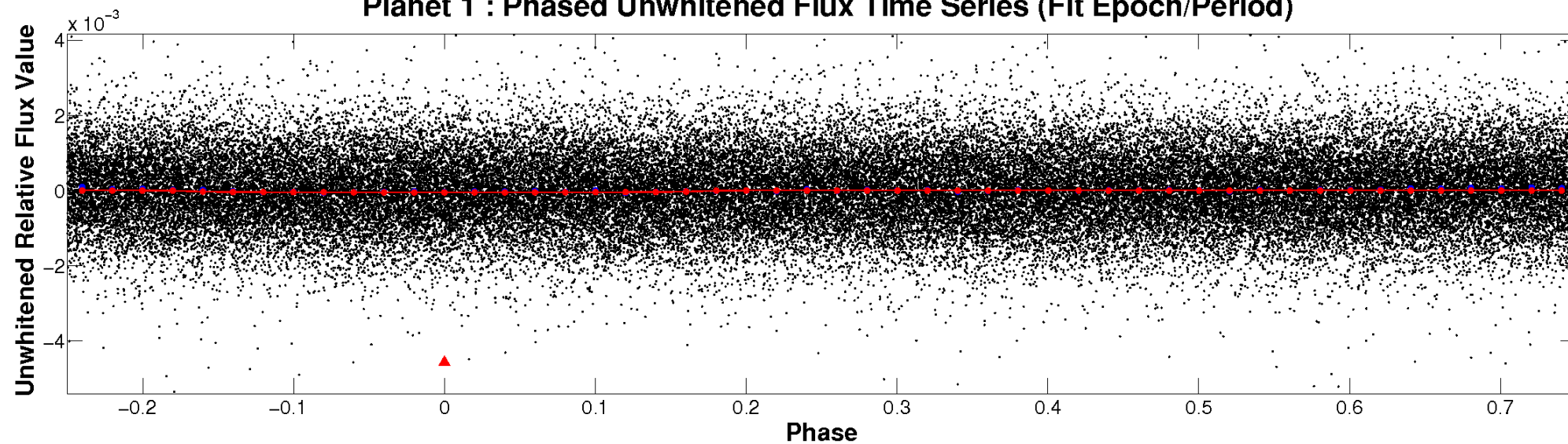
# ALT Odd/Even

TCE 008121586-01

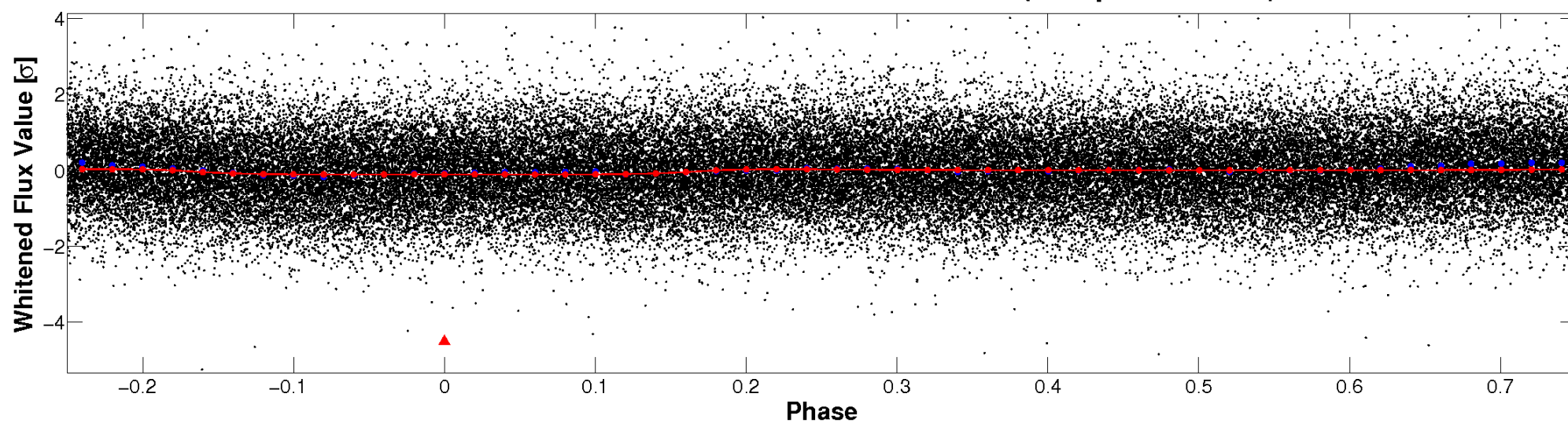


# Non-Whitened Vs. Whitened Light Curve

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



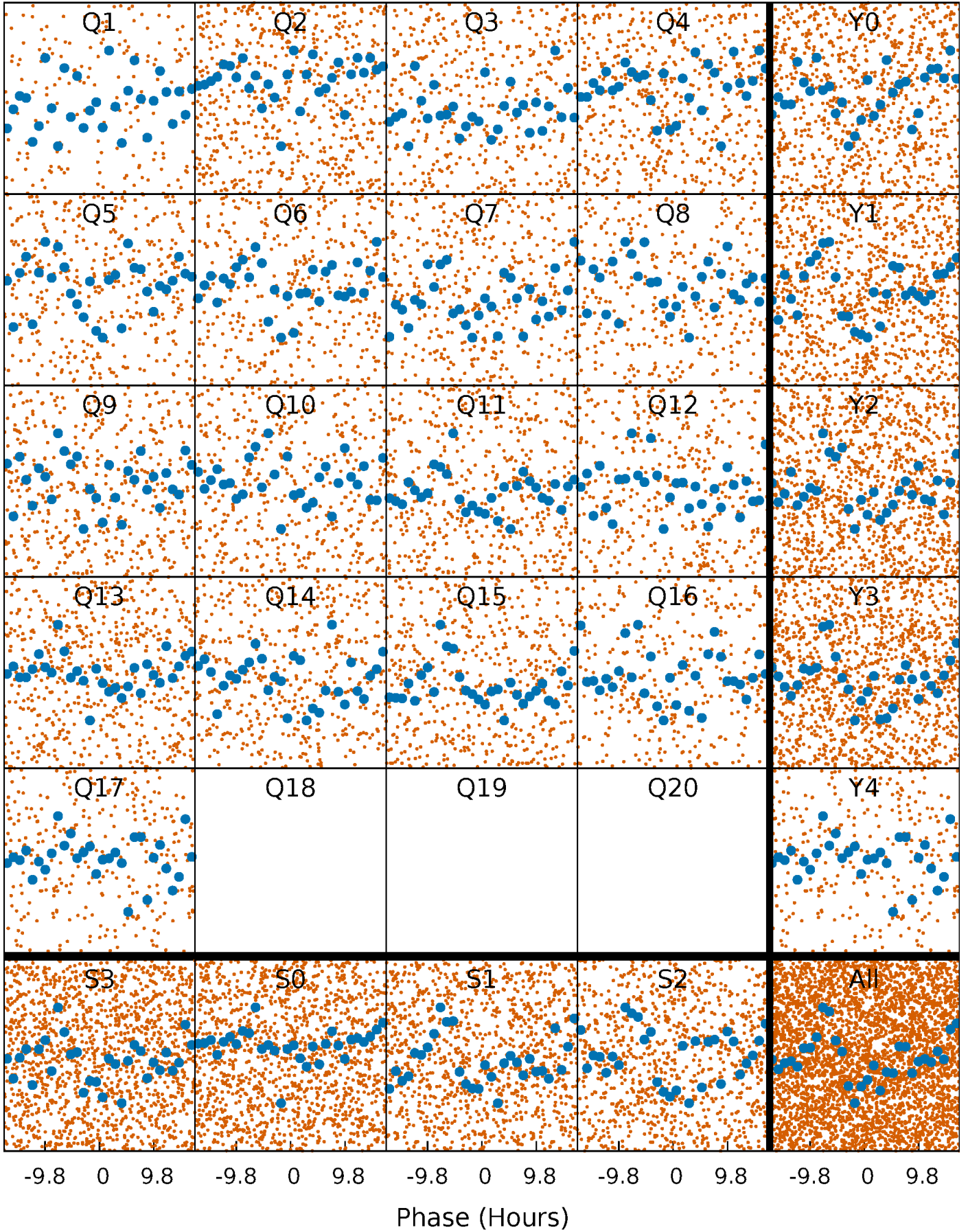
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

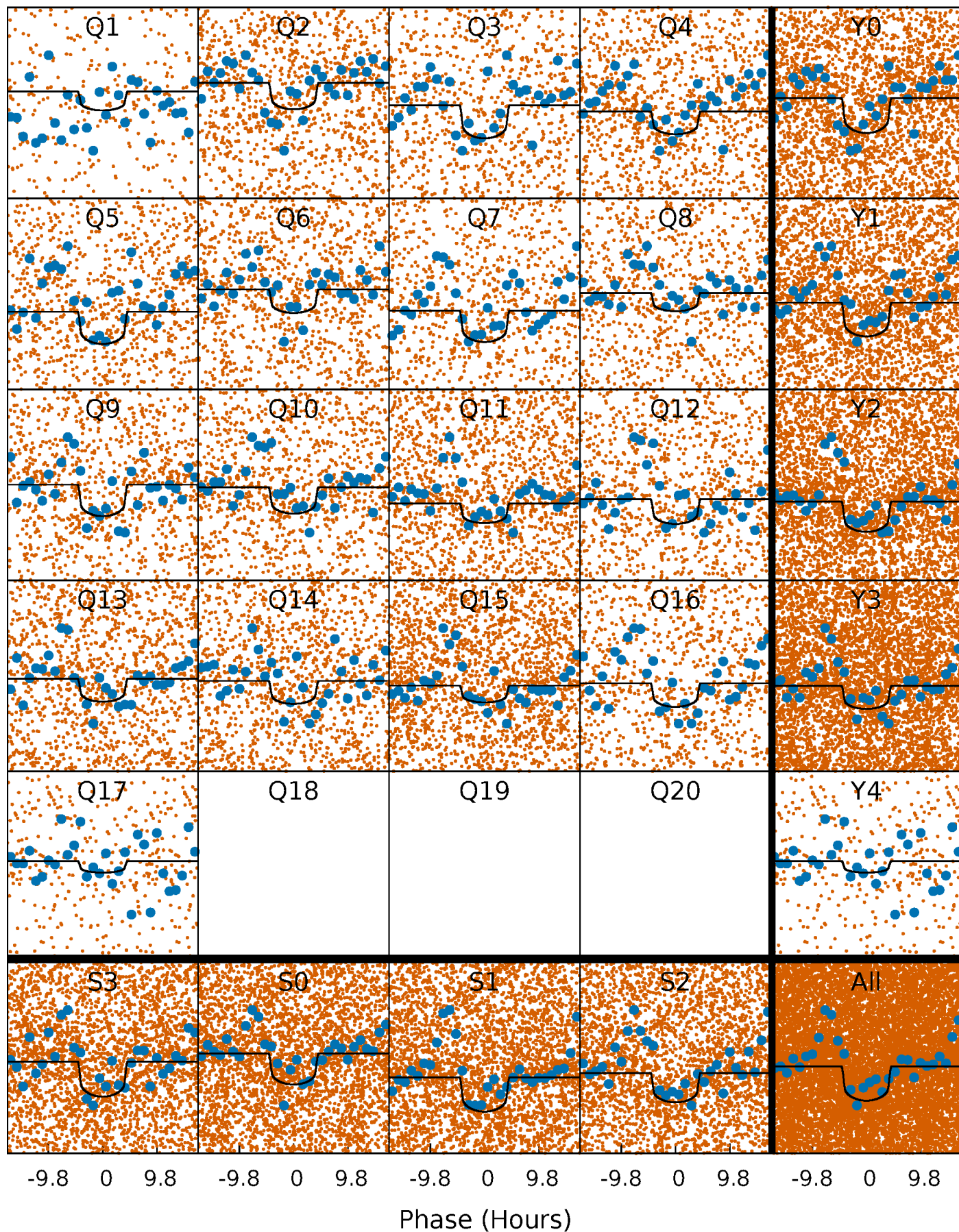
TCE 008121586-01   P= 1.020767 Days    $T_0=132.604406$  (BKJD)





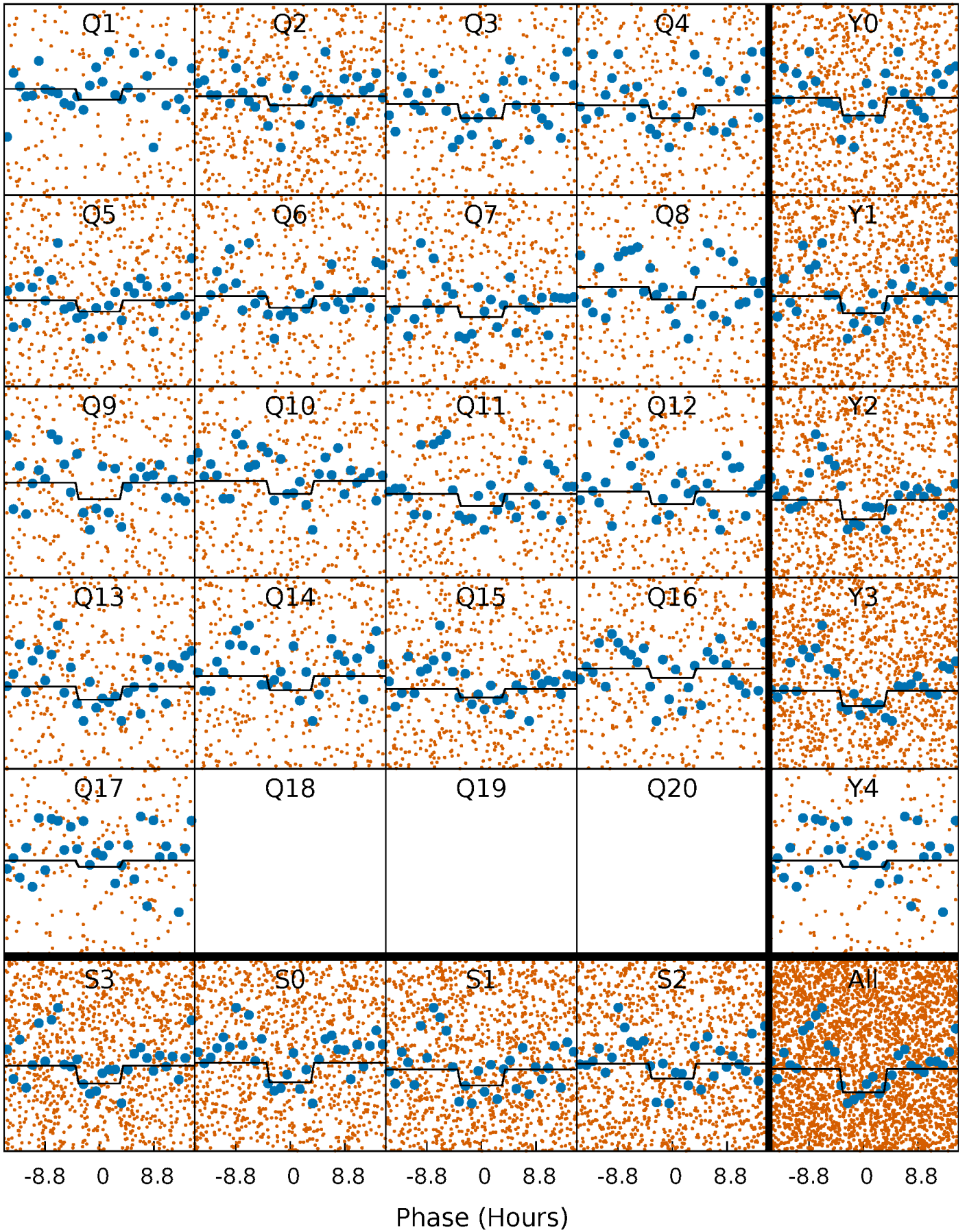
# DV Quarter-Phased Transit Curves

TCE 008121586-01 P= 1.020767 Days  $T_0=132.604406$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

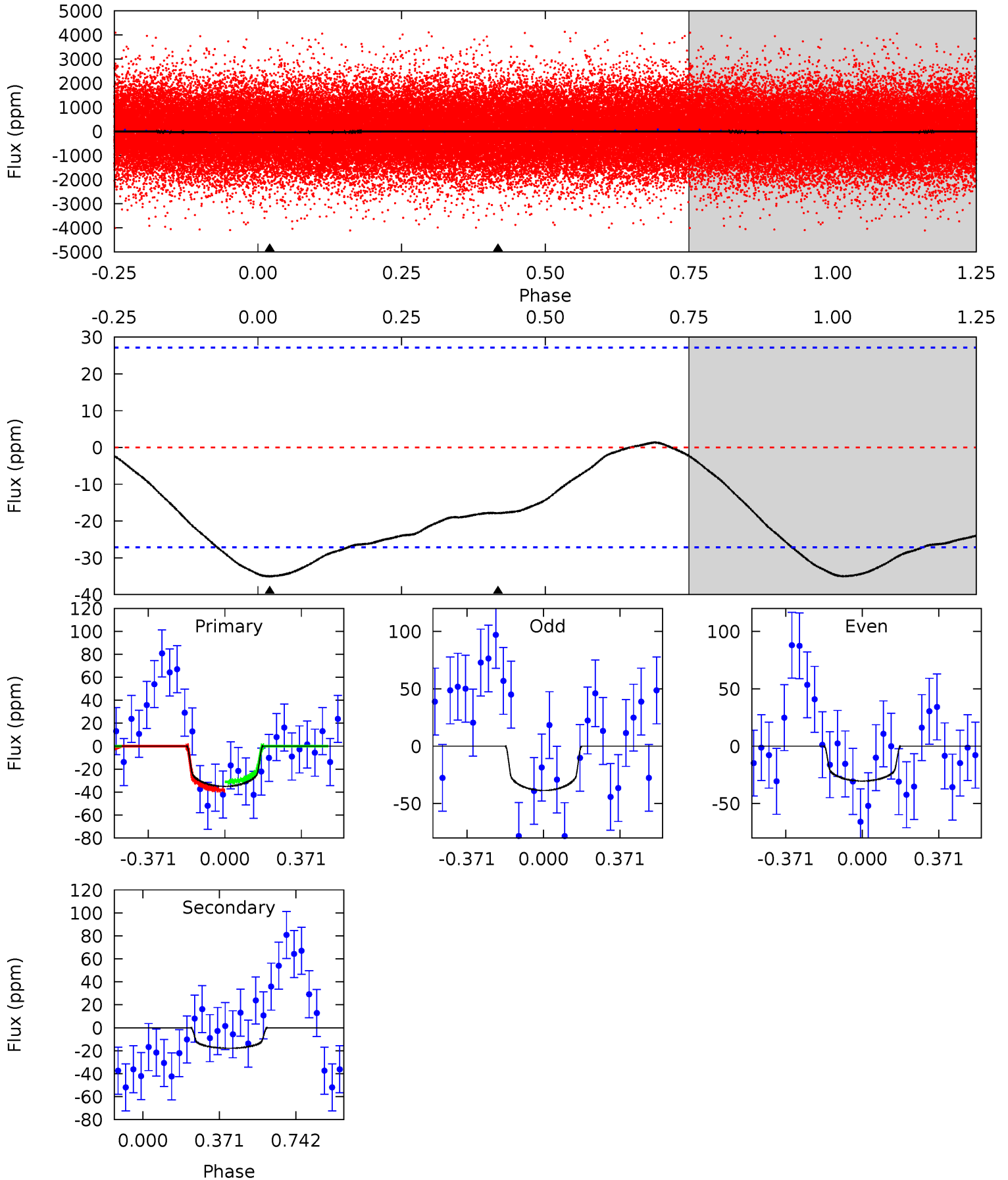
TCE 008121586-01 P= 1.020794 Days  $T_0=132.601137$  (BKJD)



# DV Model-Shift Uniqueness Test

008121586-01, P = 1.020767 Days, E = 130.562872 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
5.52	2.82	0	0	4.28	0.89	0.27	5.52	5.52	2.82	2.82	0.65	0.98	0.04	0.57

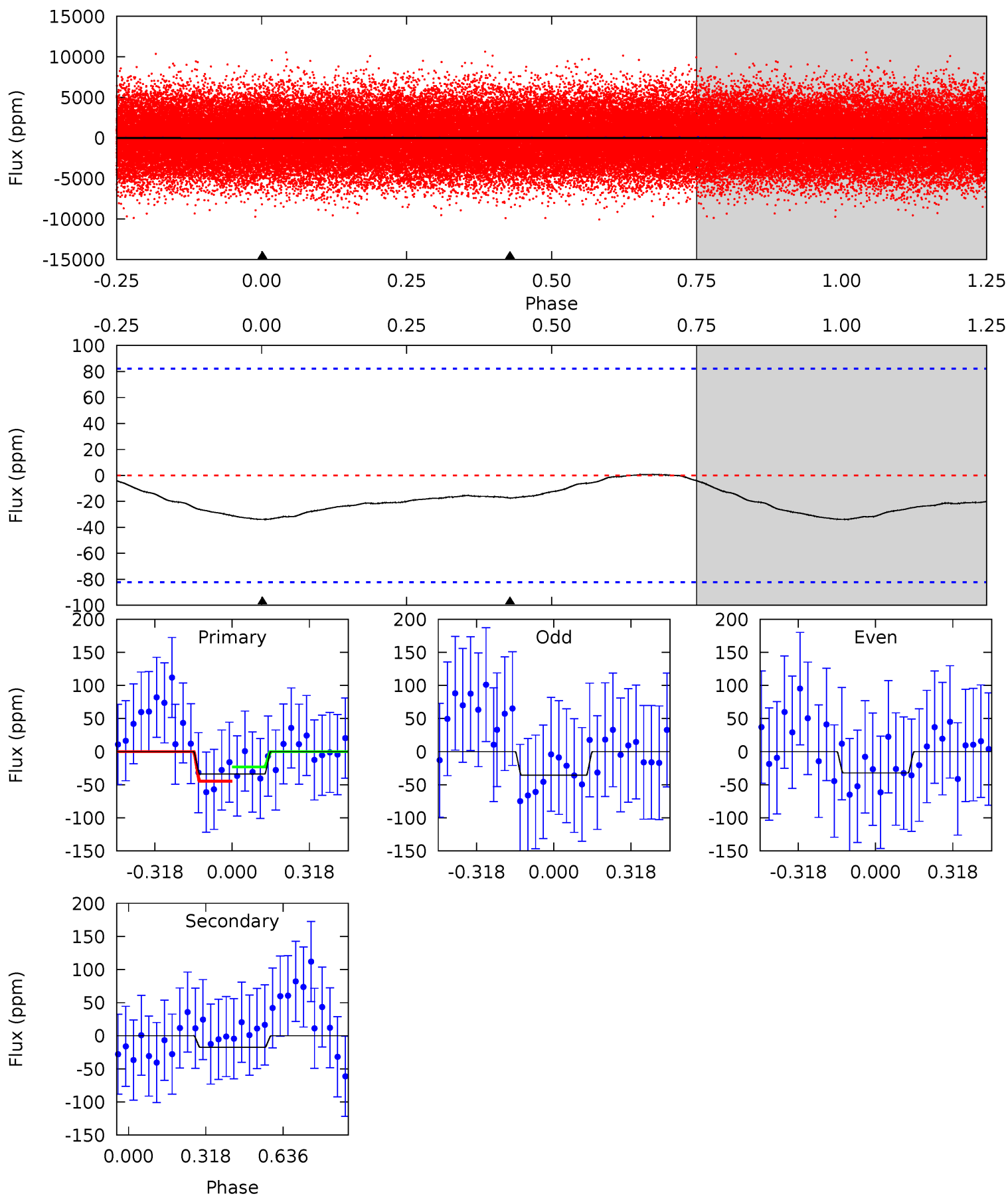




# Alt Model-Shift Uniqueness Test

008121586-01, P = 1.020794 Days, E = 130.559549 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
1.78	0.91	0	0	4.32	1.00	0.11	1.78	1.78	0.91	0.91	0.09	0.96	0.02	0.57





### Stellar Parameters For KIC 008121586

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7314^{+198}_{-397}$	$4.051^{+0.149}_{-0.182}$	$0.240^{+0.150}_{-0.400}$	$2.071^{+0.582}_{-0.476}$	$1.758^{+0.197}_{-0.296}$	$0.279^{+0.216}_{-0.141}$
	+3%/-5%	+4%/-4%	+62%/-167%	+28%/-23%	+11%/-17%	+78%/-51%
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 008121586-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-18 \pm 6$	$1.86^{+1.35}_{-1.10}$	$4174^{+341}_{-299}$	$4916^{+3259}_{-1398}$	$1.552^{+7.886}_{-1.073}$
Alt.	$-17 \pm 19$	$1.64^{+1.12}_{-0.97}$	$4183^{+306}_{-309}$	$4996^{+3668}_{-8758}$	$1.663^{+9.310}_{-1.646}$

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

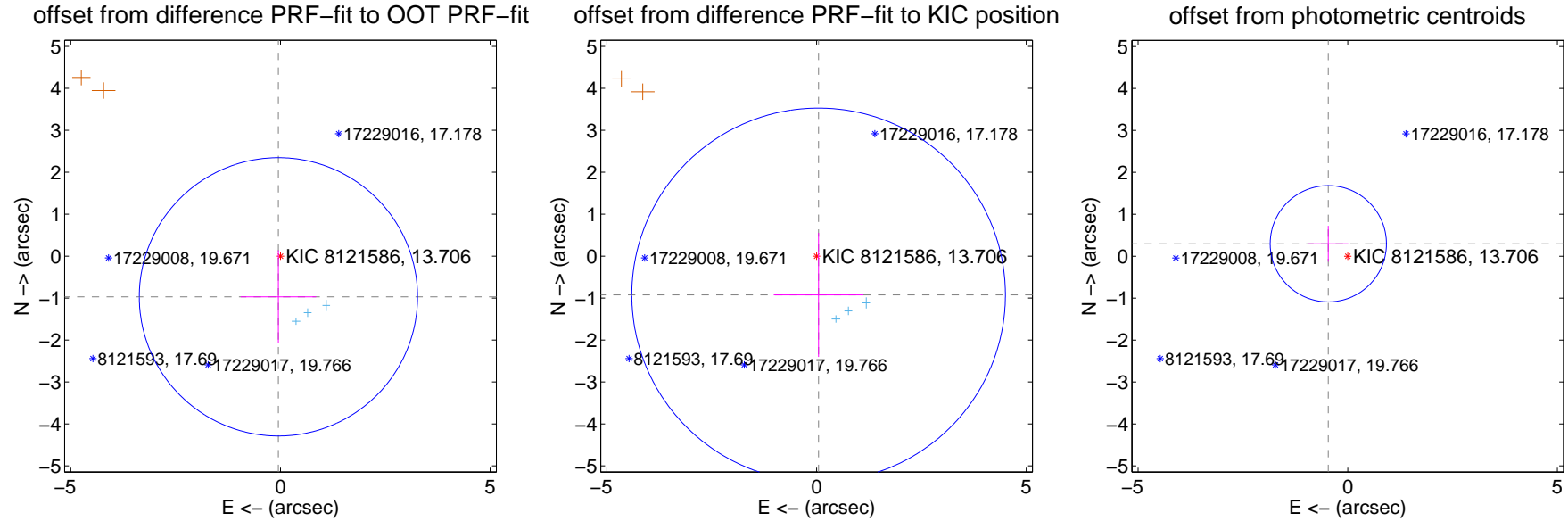
## DV Centroid Data

Supplemental centroid analysis for 008121586-01. Kepler magnitude: 13.71. Transit SNR 14.28

There are 3 quarters with good PRF difference image offsets

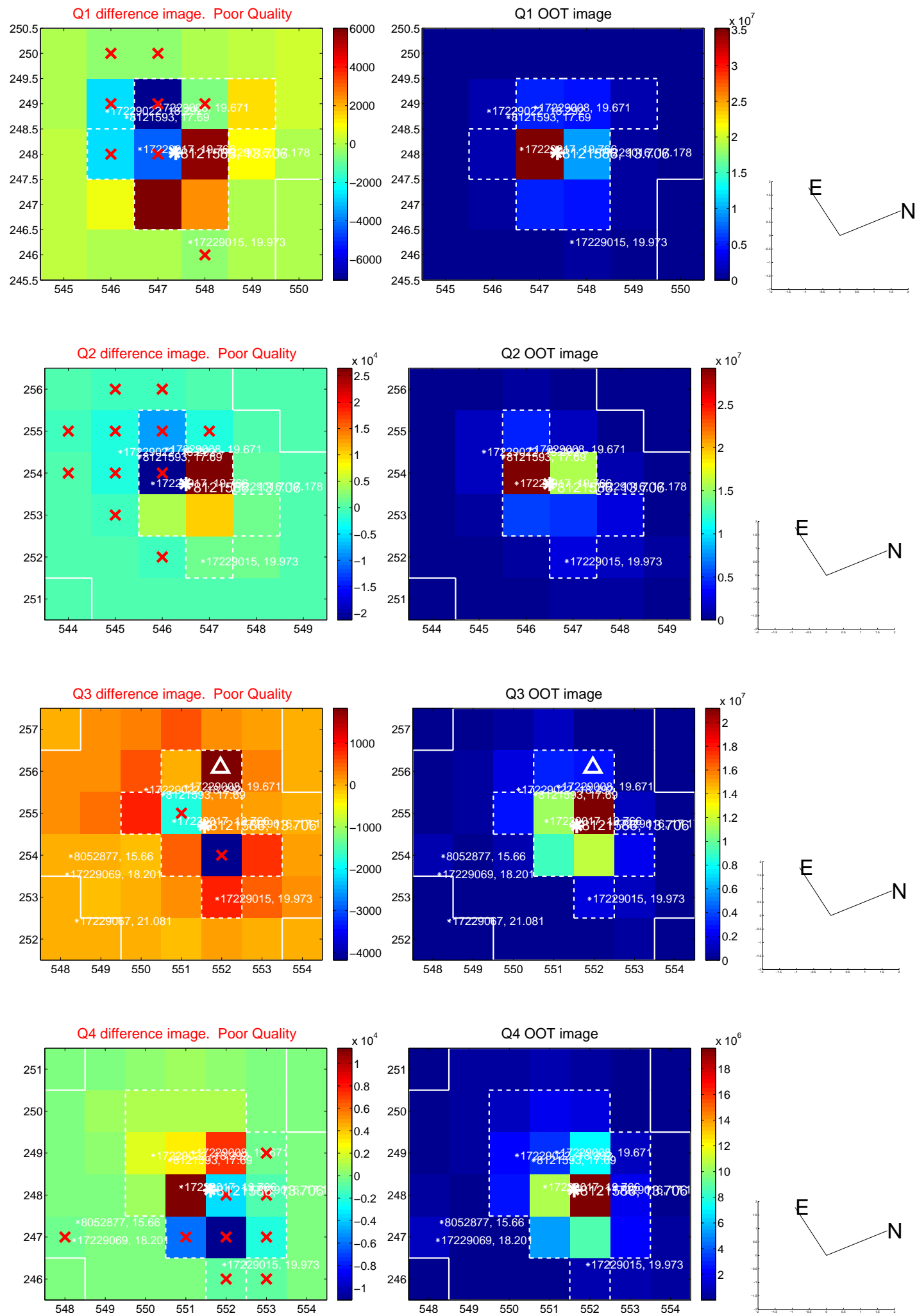
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.972 \pm 1.106$	0.88	$0.049 \pm 0.901$	$-0.971 \pm 1.112$
PRF-fit source offset from KIC position	$0.926 \pm 1.485$	0.62	$-0.048 \pm 1.069$	$-0.925 \pm 1.478$
photometric centroid source offset	$0.55 \pm 0.46$	1.19	$0.46 \pm 0.48$	$0.30 \pm 0.43$

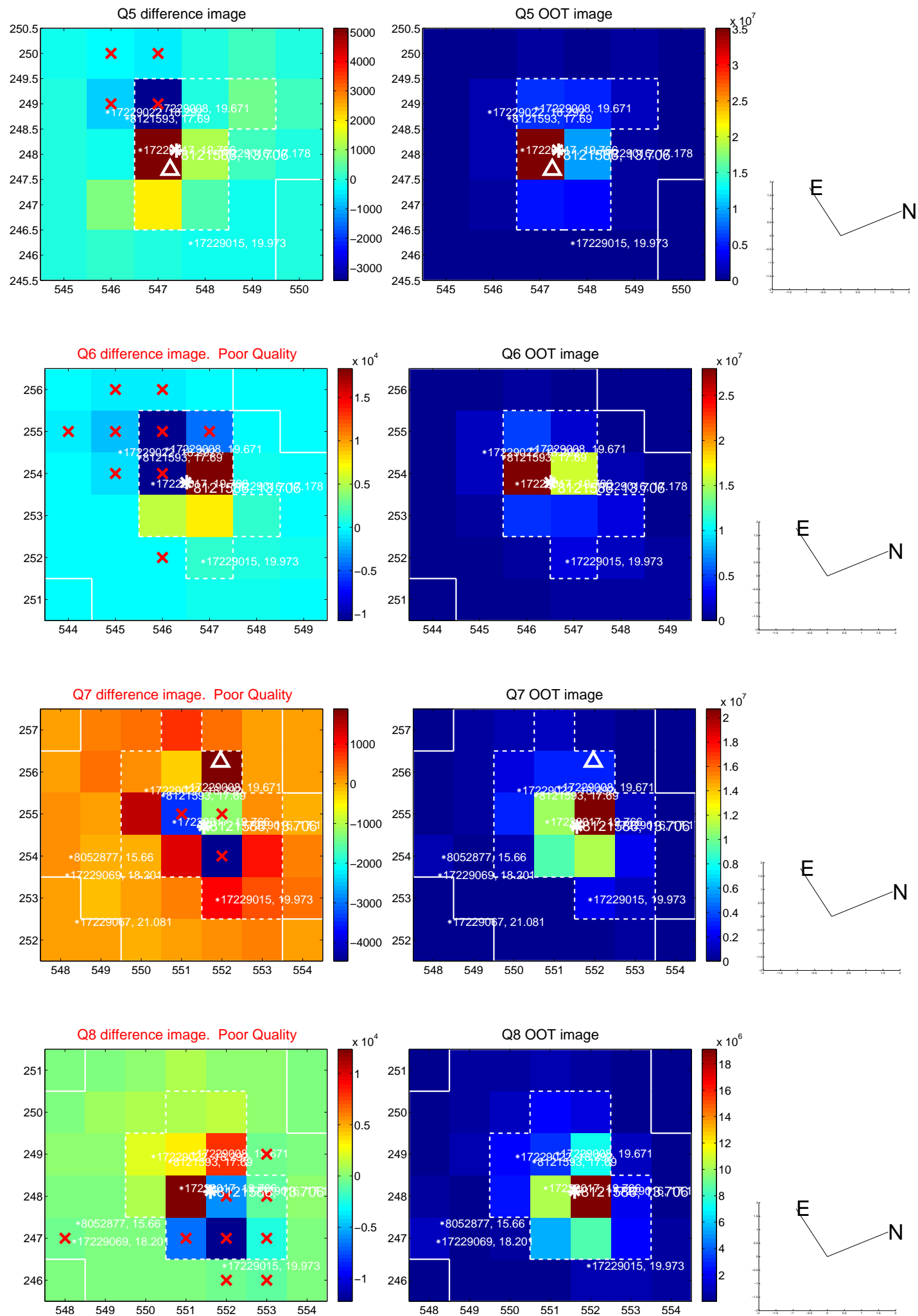


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



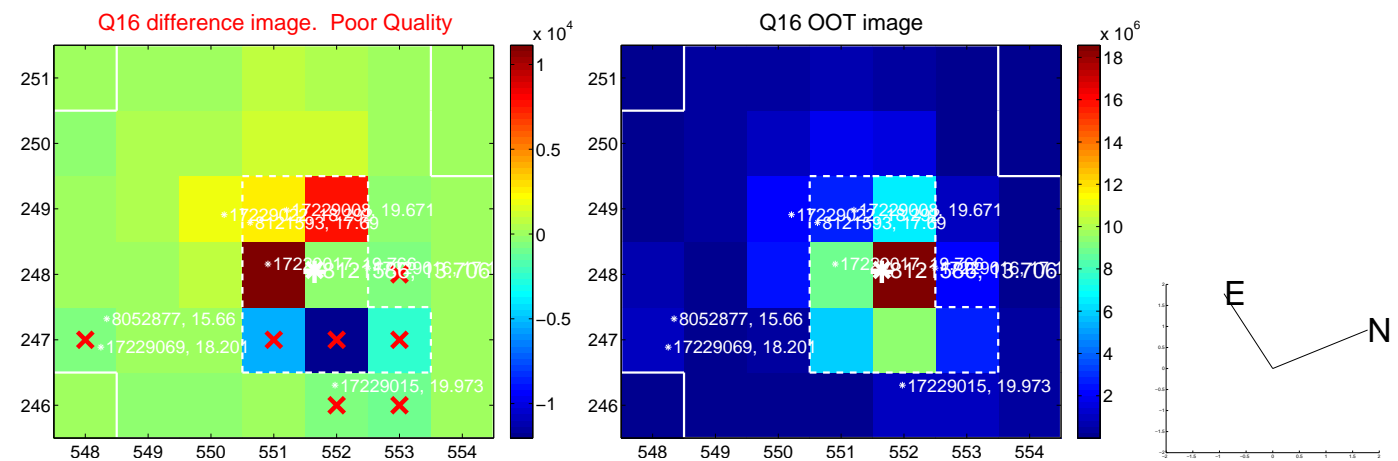
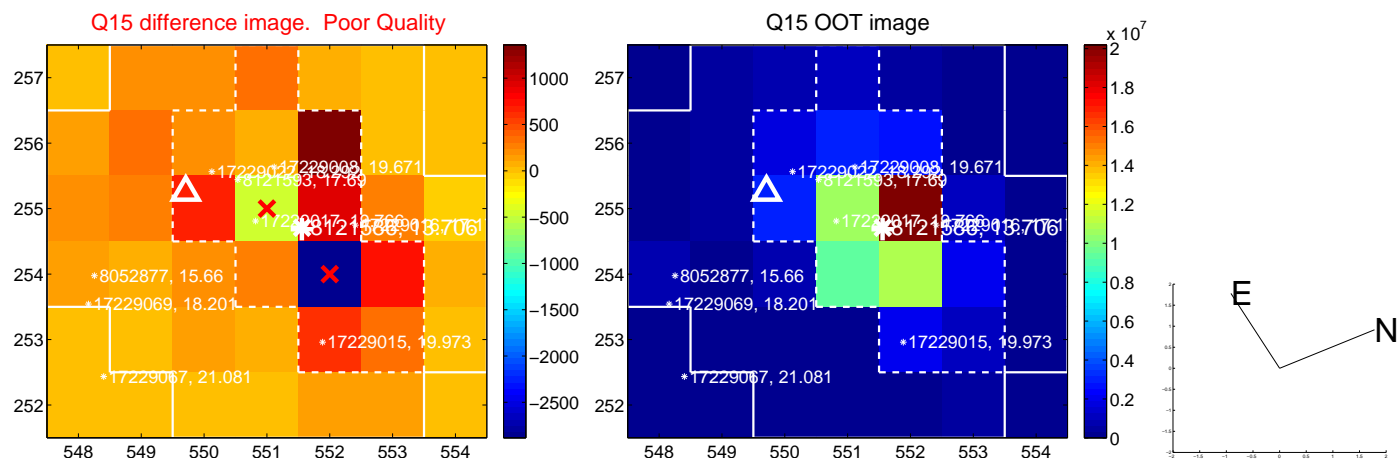
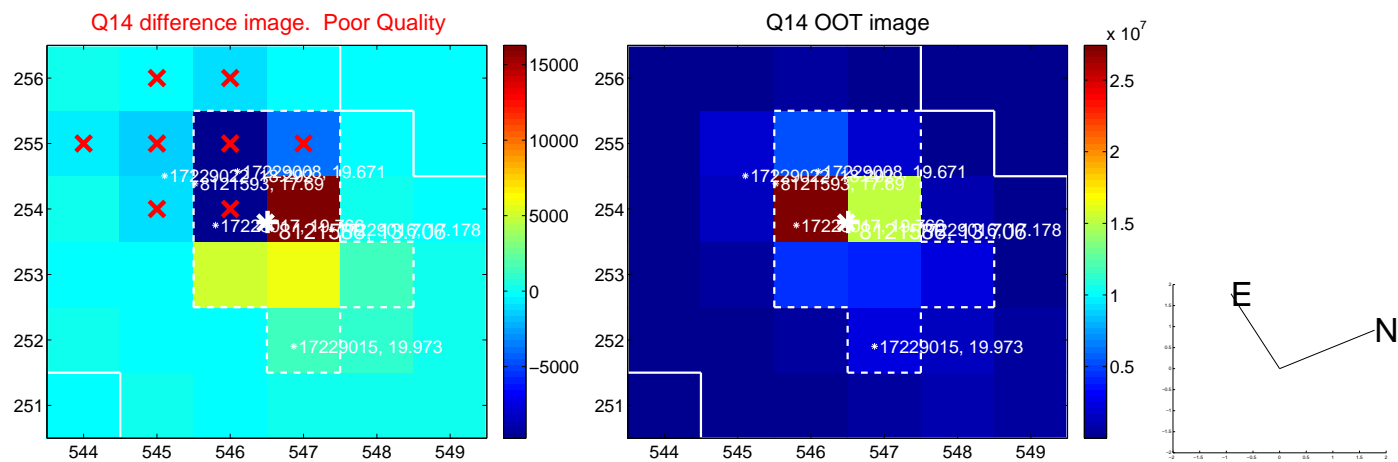
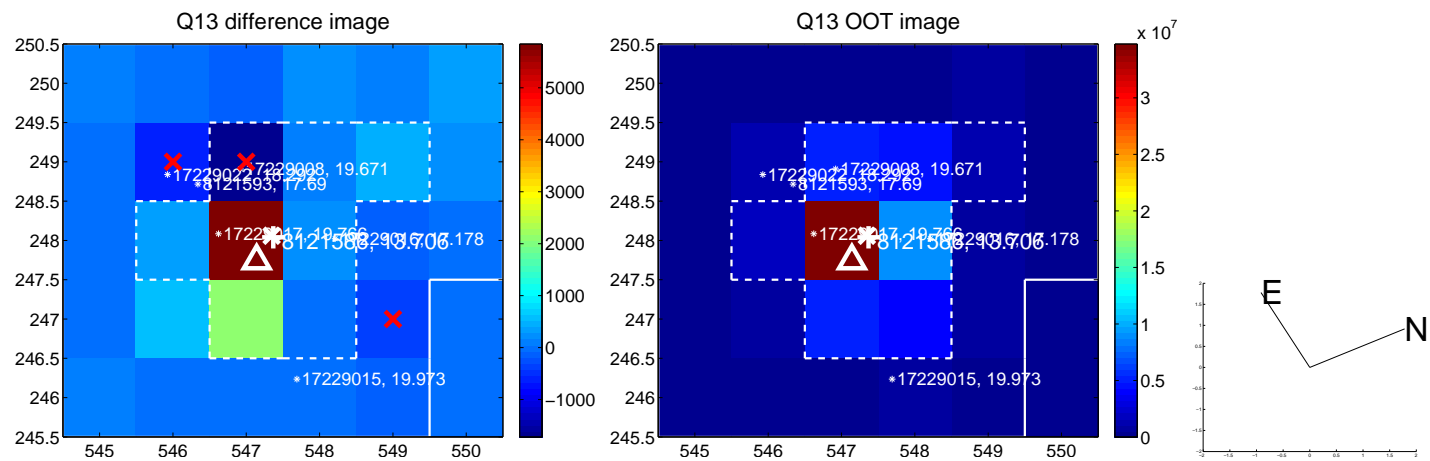
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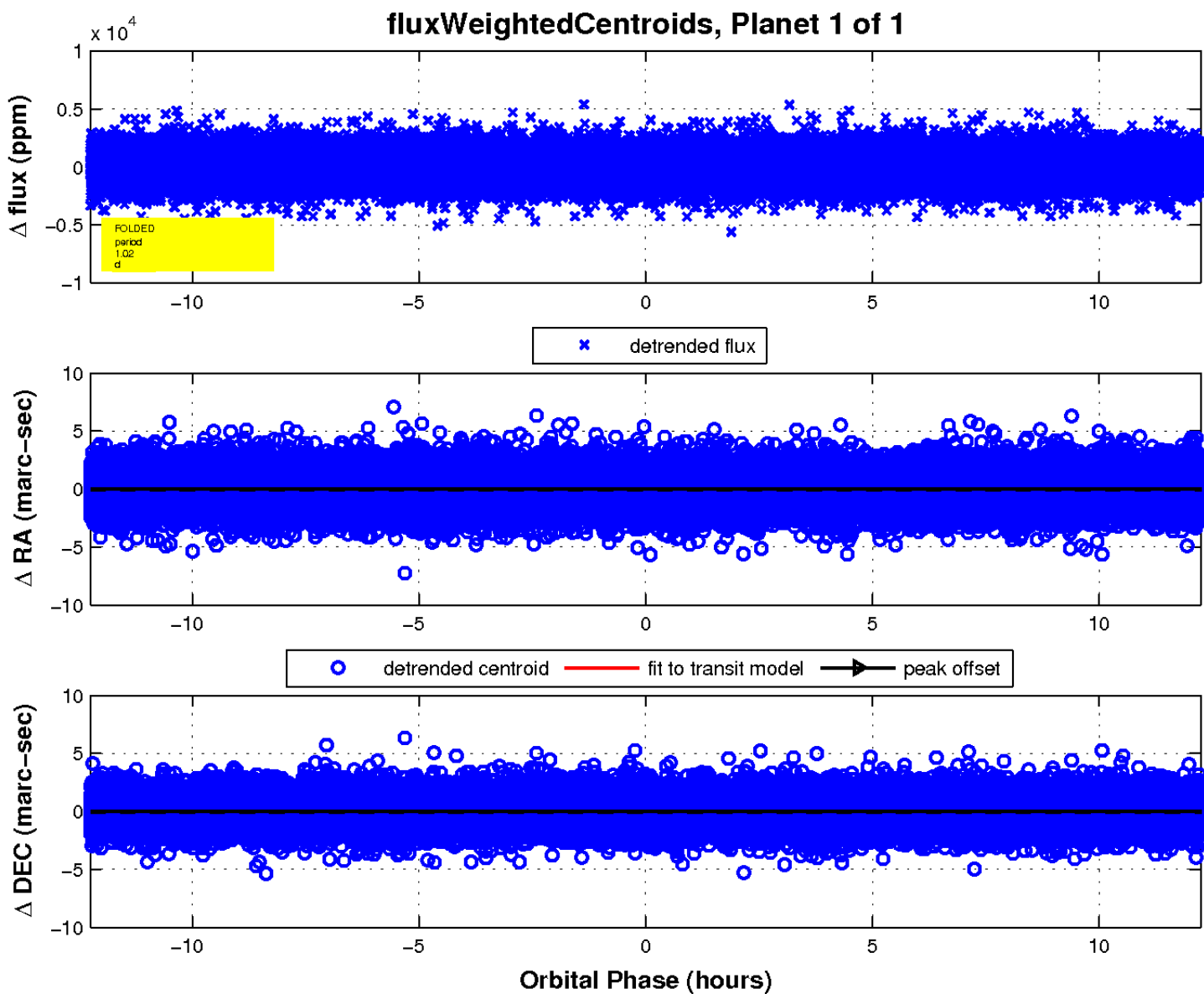
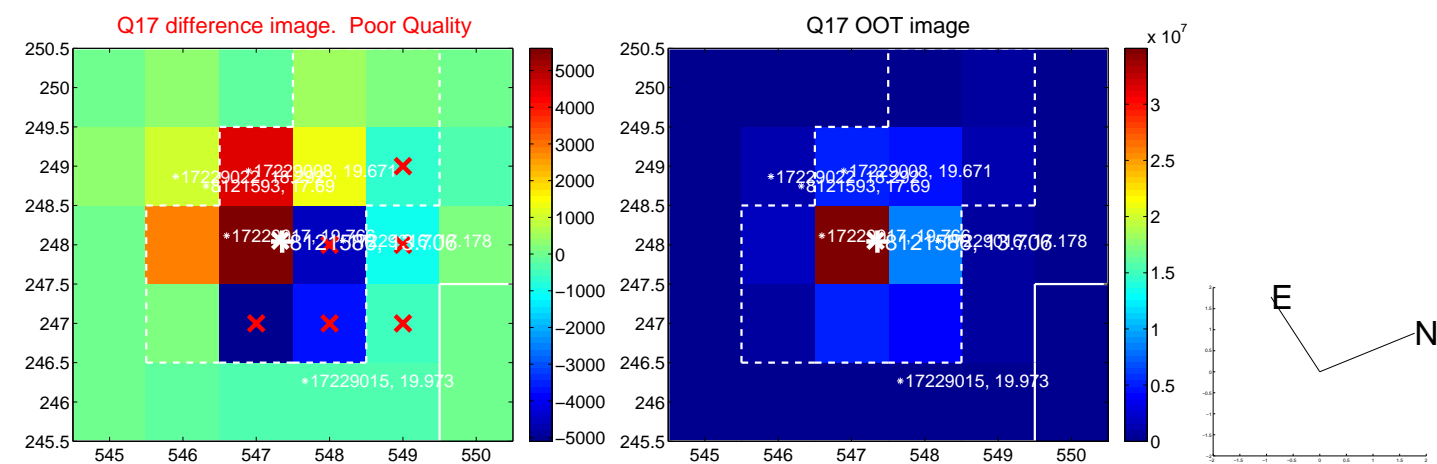




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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UKIRT Image

Declination

