

# KIC 001575873

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
001575873-01	OBS	4359.01	0.628996	131.565701	13.1	1.500	10.5	11.1	2.06	6739	0.82	30726.76

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
001575873-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED

**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.

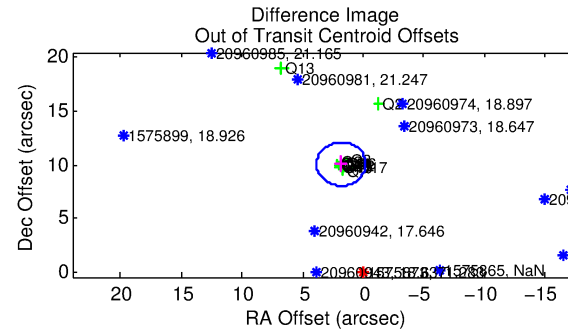
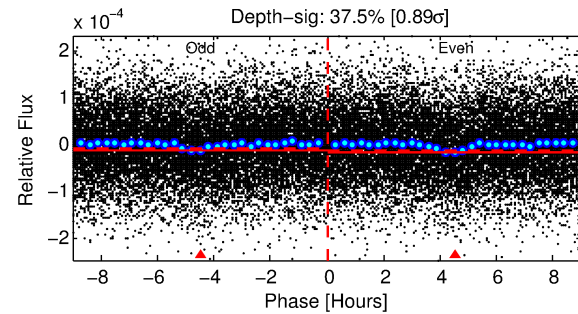
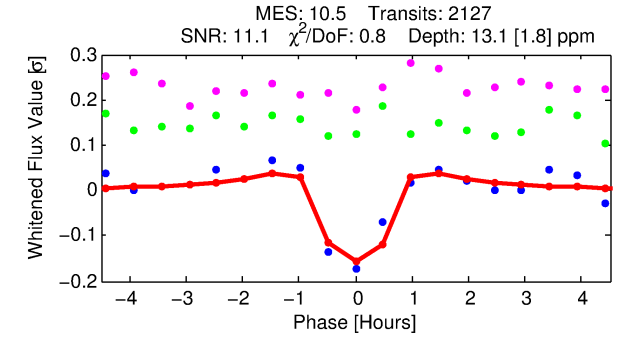
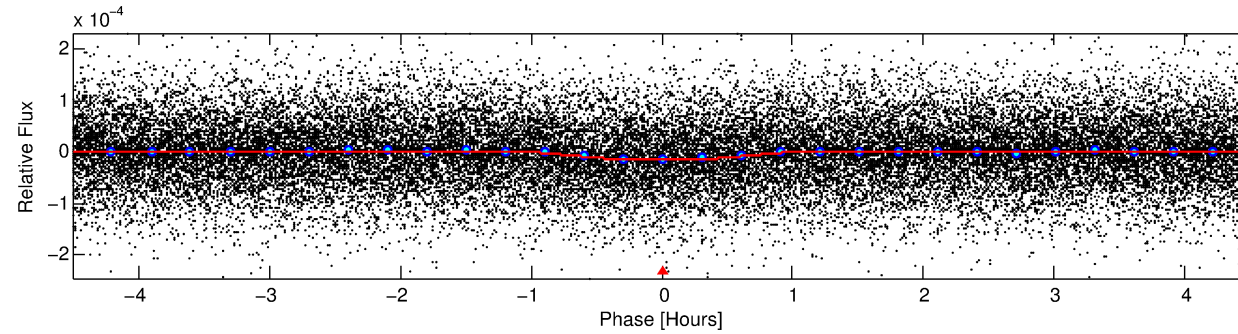
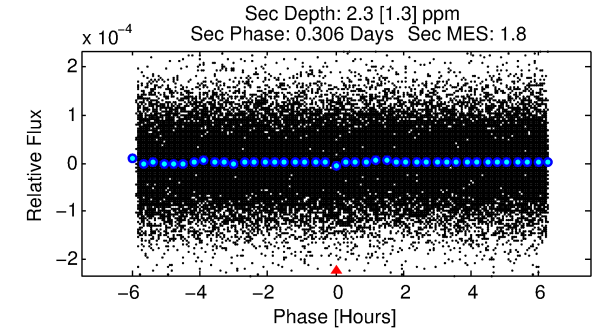
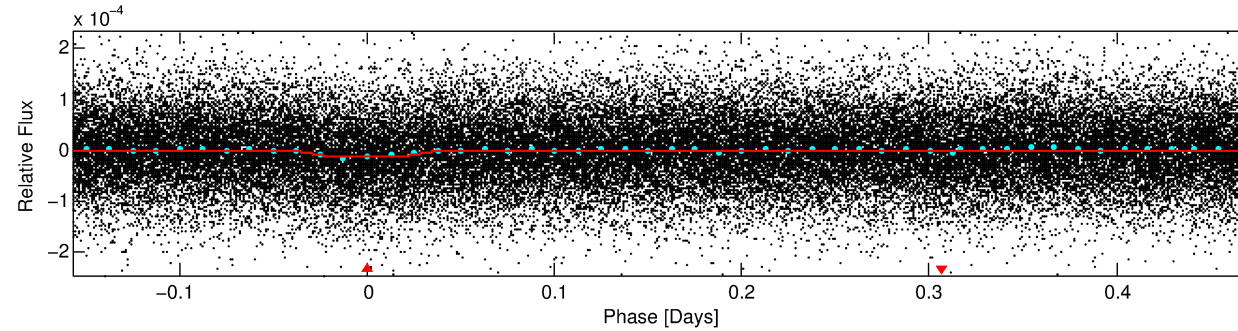
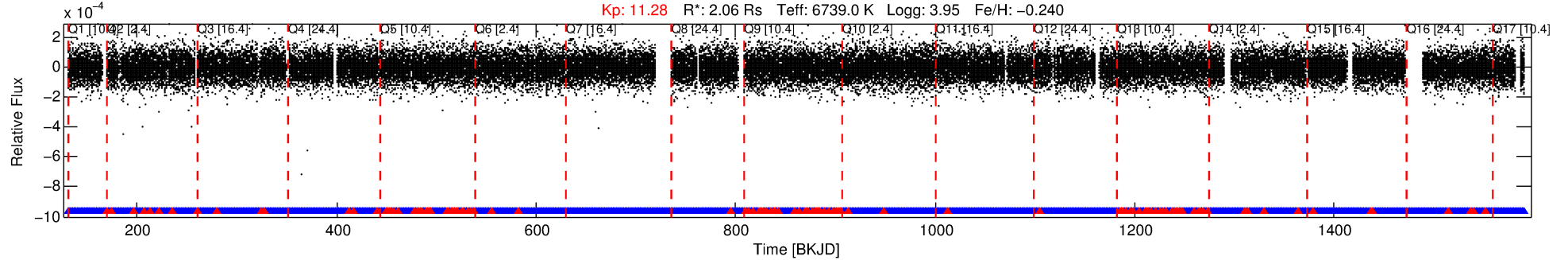
## Ephemeris Match Information For 001575873-01

No Significant Match Found

# DV One-Page Summary

KIC: 1575873 Candidate: 1 of 1 Period: 0.629 d  
KOI: K04359.01 Corr: 0.944

Kp: 11.28 R\*: 2.06 Rs Teff: 6739.0 K Logg: 3.95 Fe/H: -0.240



## DV Fit Results:

Period = 0.62900 [0.00001] d  
Epoch = 131.5657 [0.0016] BKJD  
Rp/R\* = 0.0036 [0.0004]  
a/R\* = 2.21 [0.98]  
b = 0.78 [0.29]  
Seff = 30726.76 [14103.91]  
Teq = 3376 [387] K  
Rp = 0.82 [0.26] Re  
a = 0.0160 [0.0045] AU  
Ag = 0.47 [0.36] [-1.48σ]  
Teff = 4332 [667] K [1.24σ]

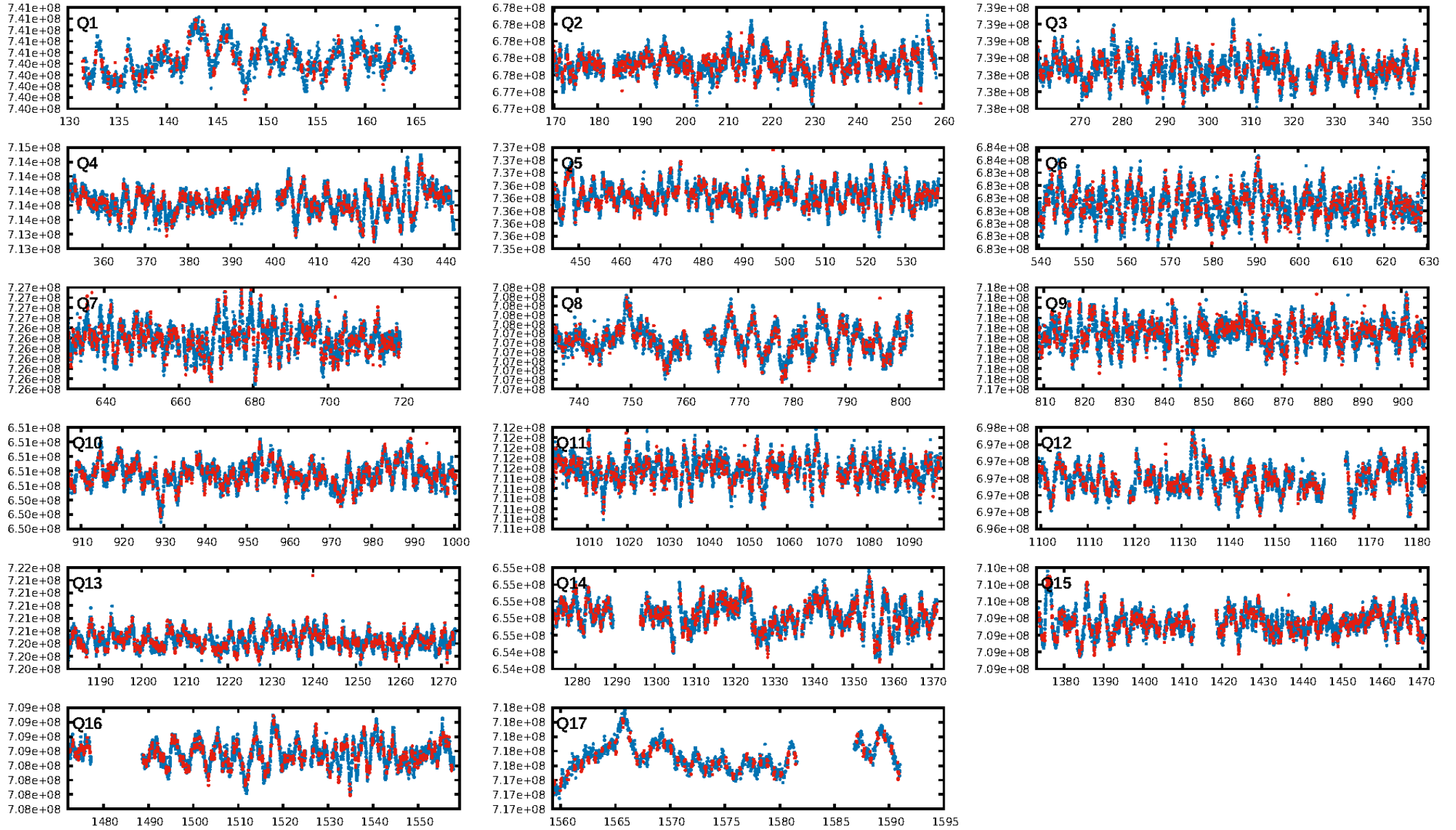
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.41e-24  
RollingBand-fgt: 0.94 [1902/2030]  
GhostDiagnostic-chr: 0.411  
Centroid-sig: 0.0%  
Centroid-so: 11.539 arcsec [12.43σ]  
OotOffset-rm: 10.231 arcsec [15.14σ]  
KicOffset-rm: 10.104 arcsec [13.72σ]  
OotOffset-st: 4/4/3/4 [15]  
KicOffset-st: 4/4/3/4 [15]  
DiffImageQuality-fgm: 0.40 [6/15]  
DiffImageOverlap-fno: 1.00 [17/17]

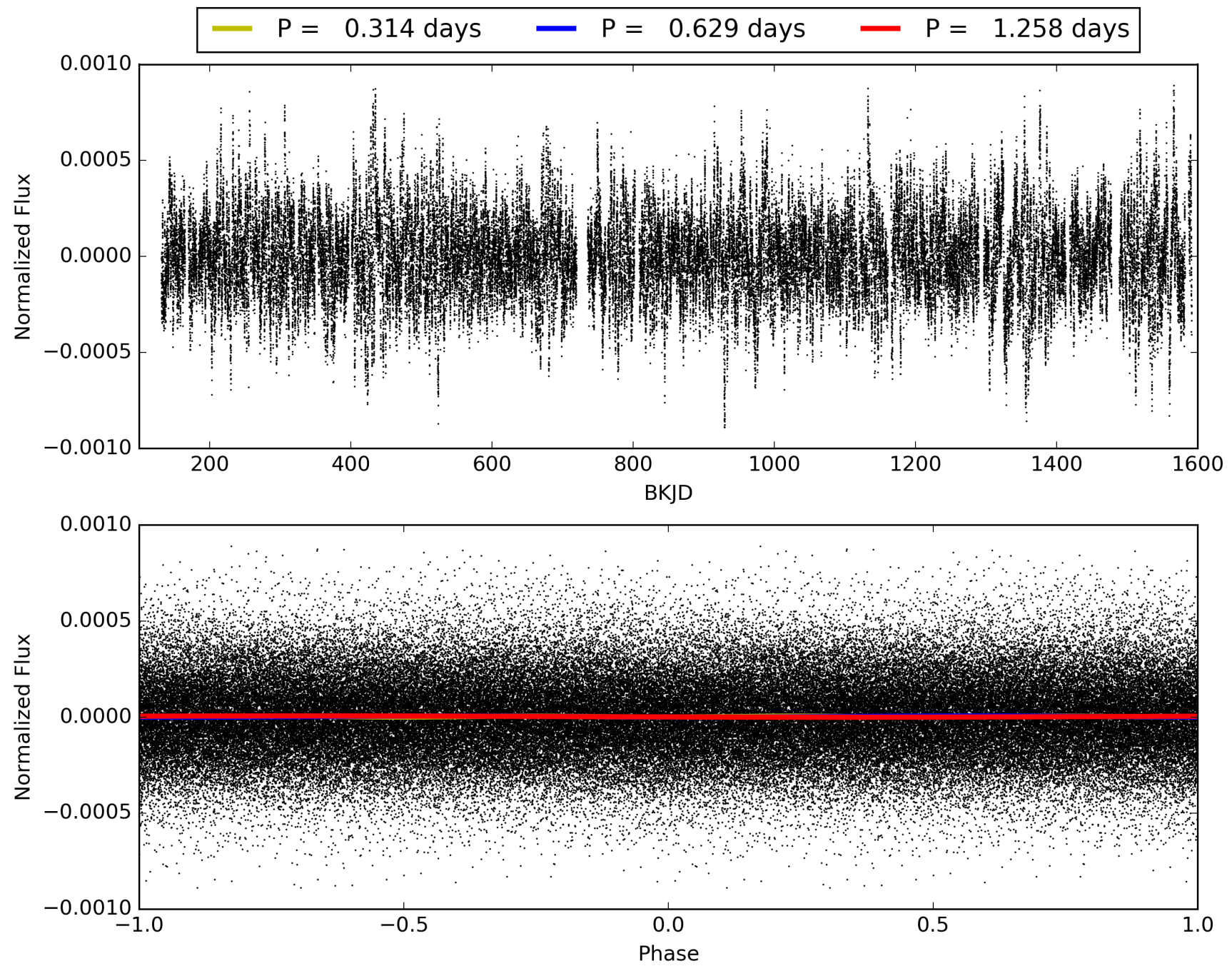
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:17:21 Z

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

# TCE 001575873-01, PDC Light Curves



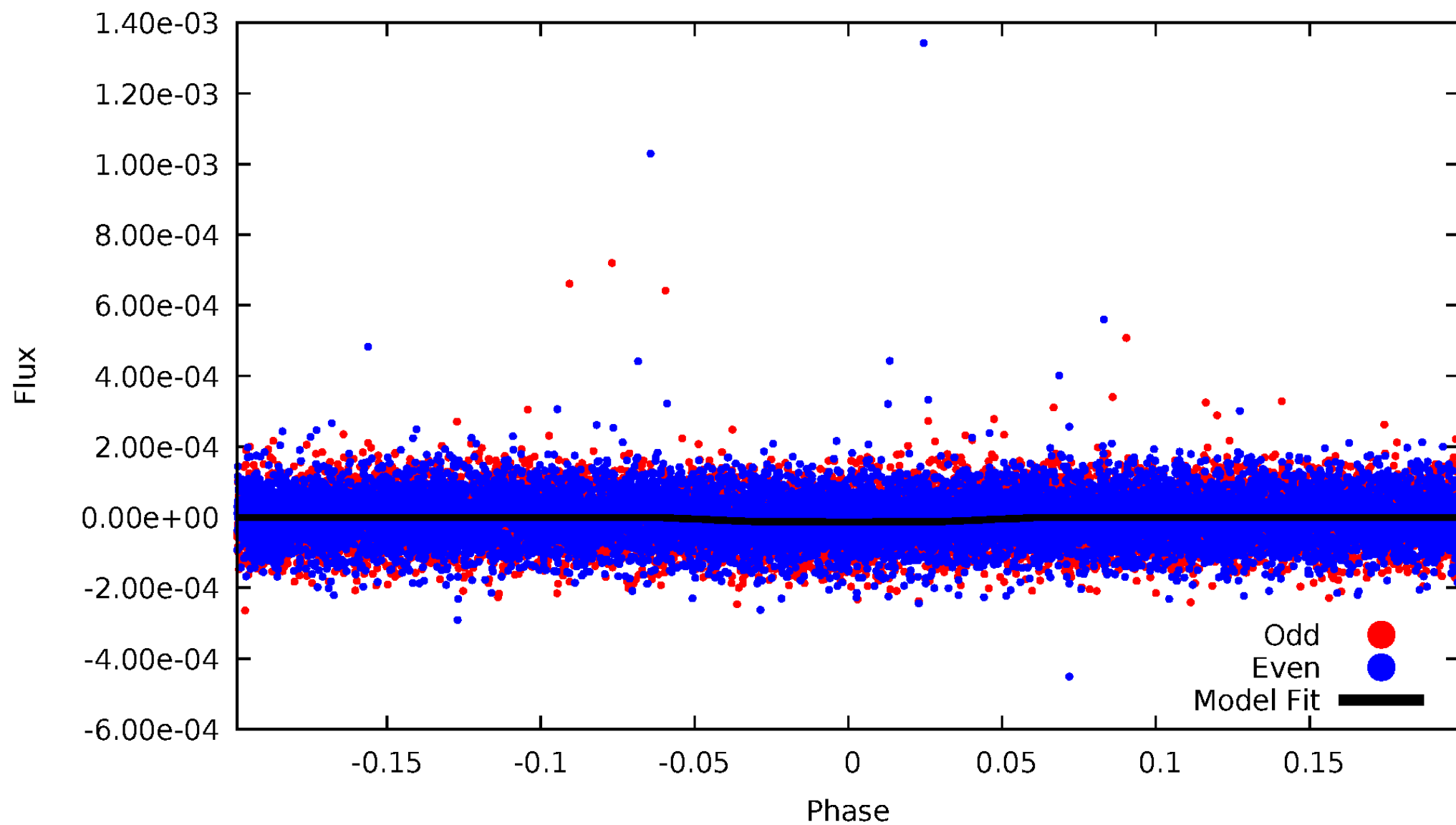
TCE 001575873-01





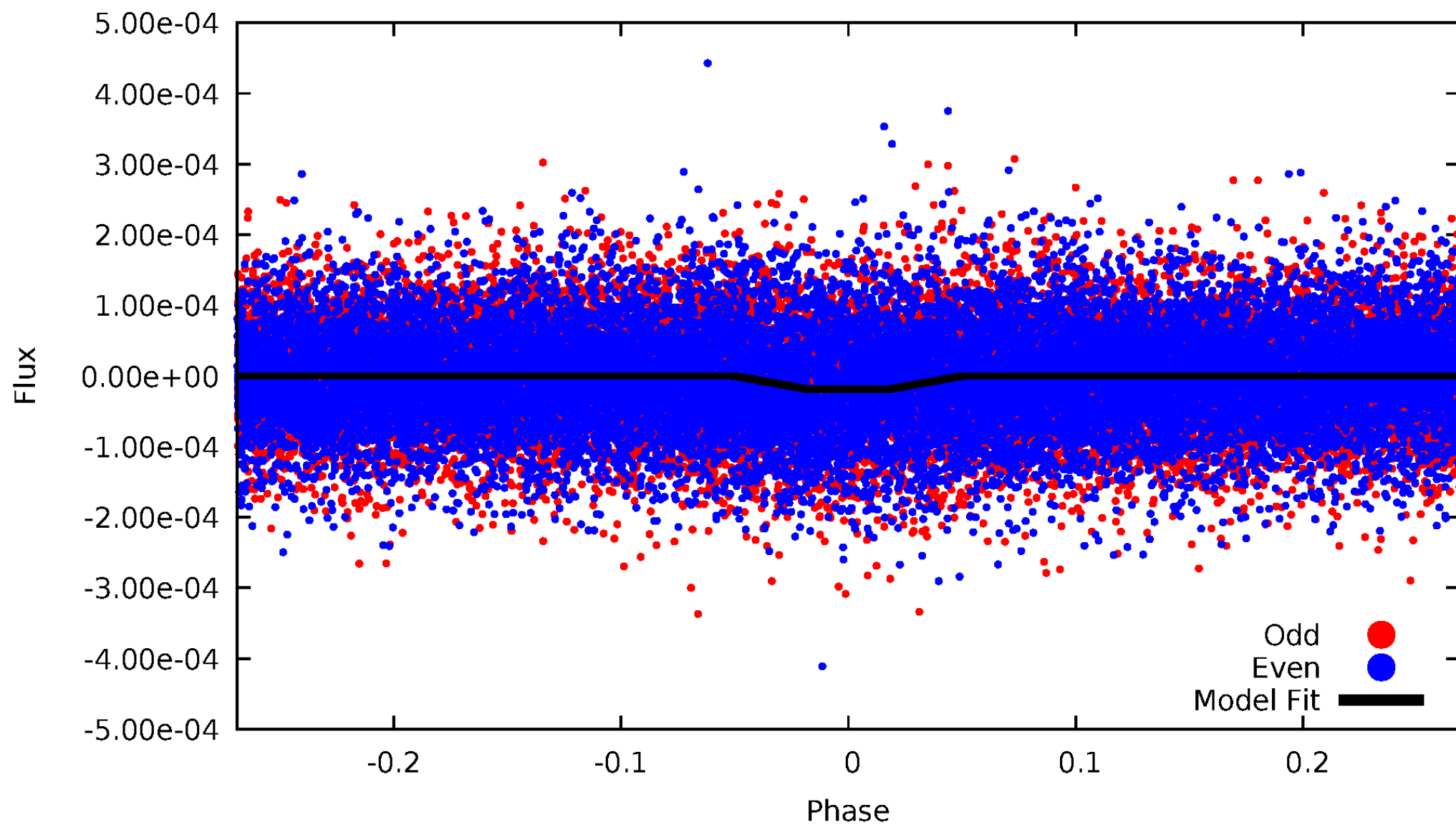
# DV Odd/Even

TCE 001575873-01

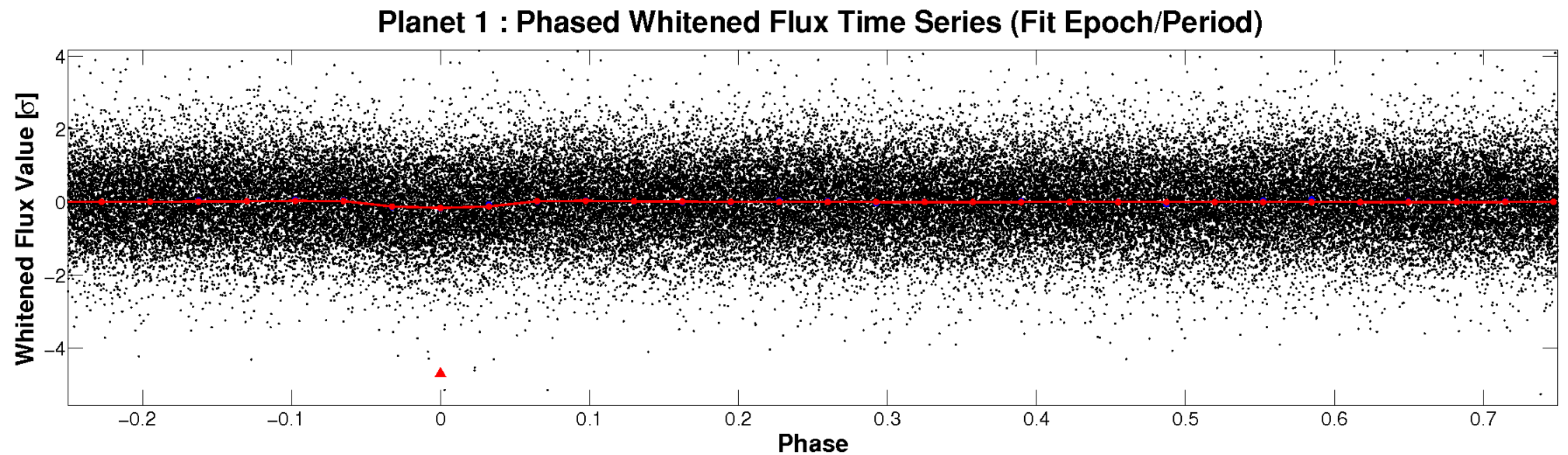
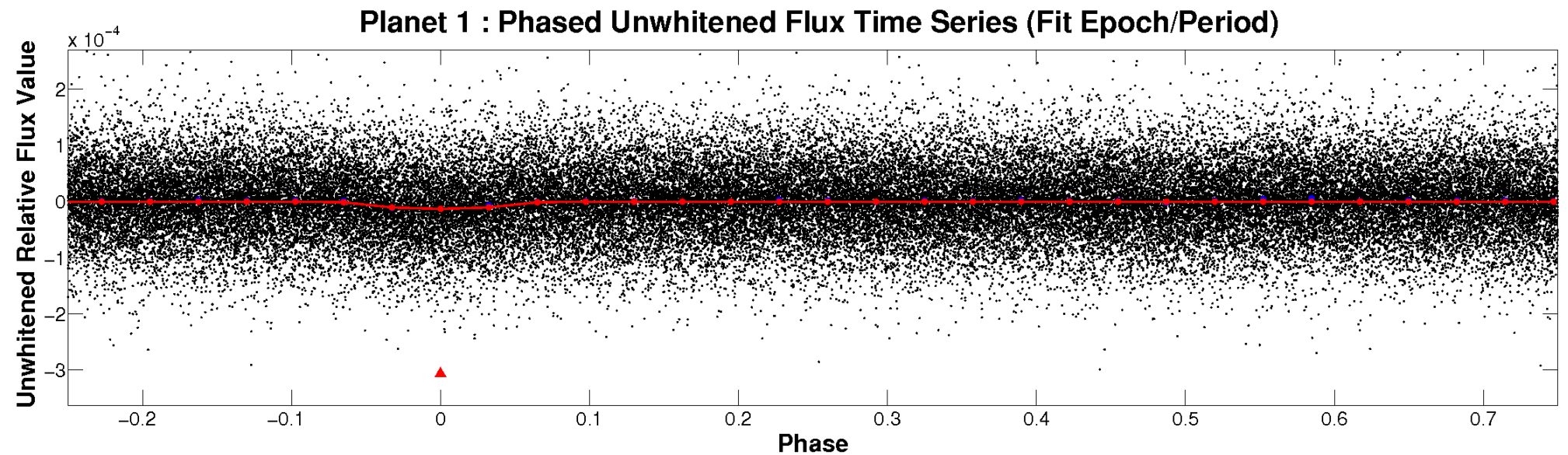


# ALT Odd/Even

TCE 001575873-01

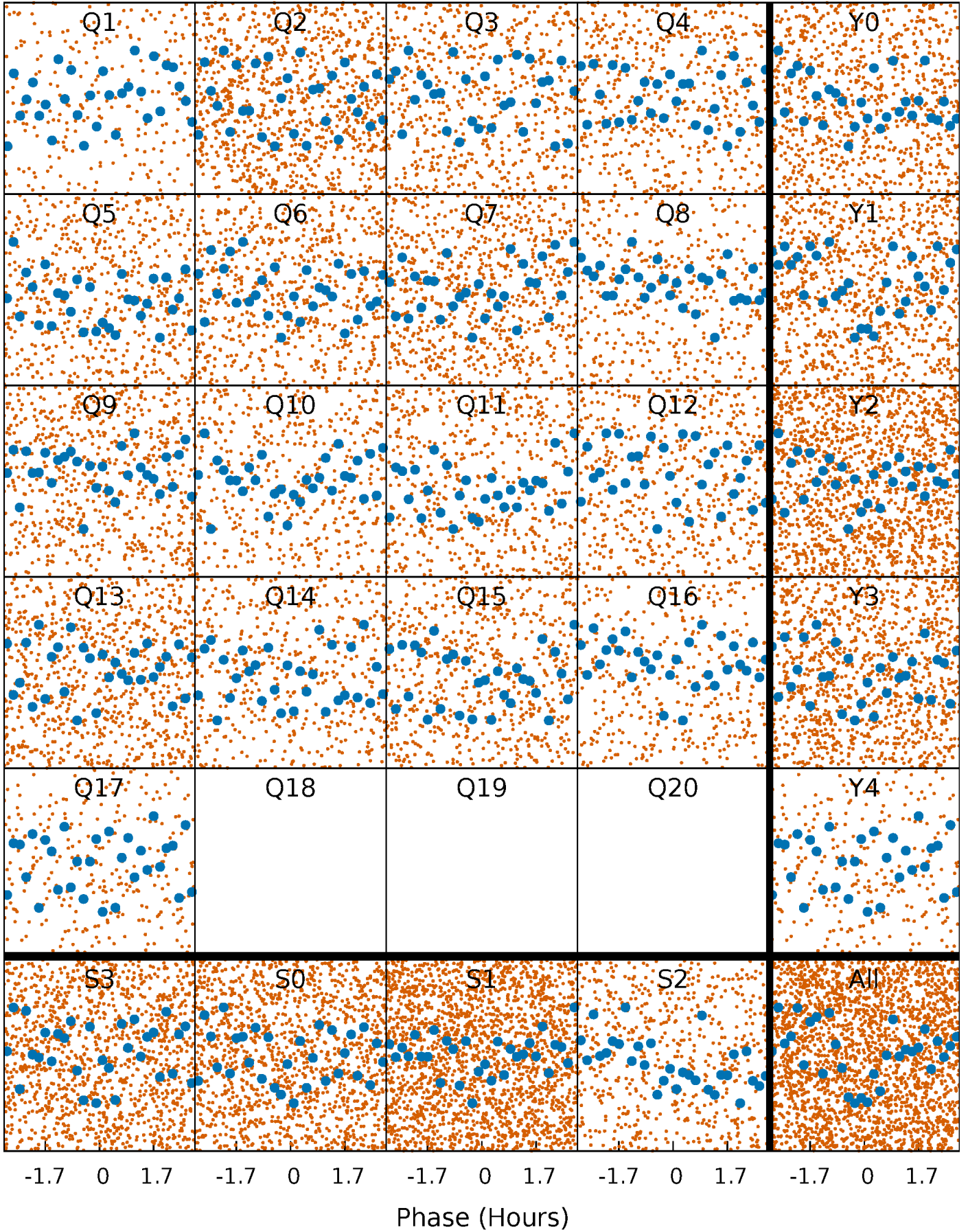


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

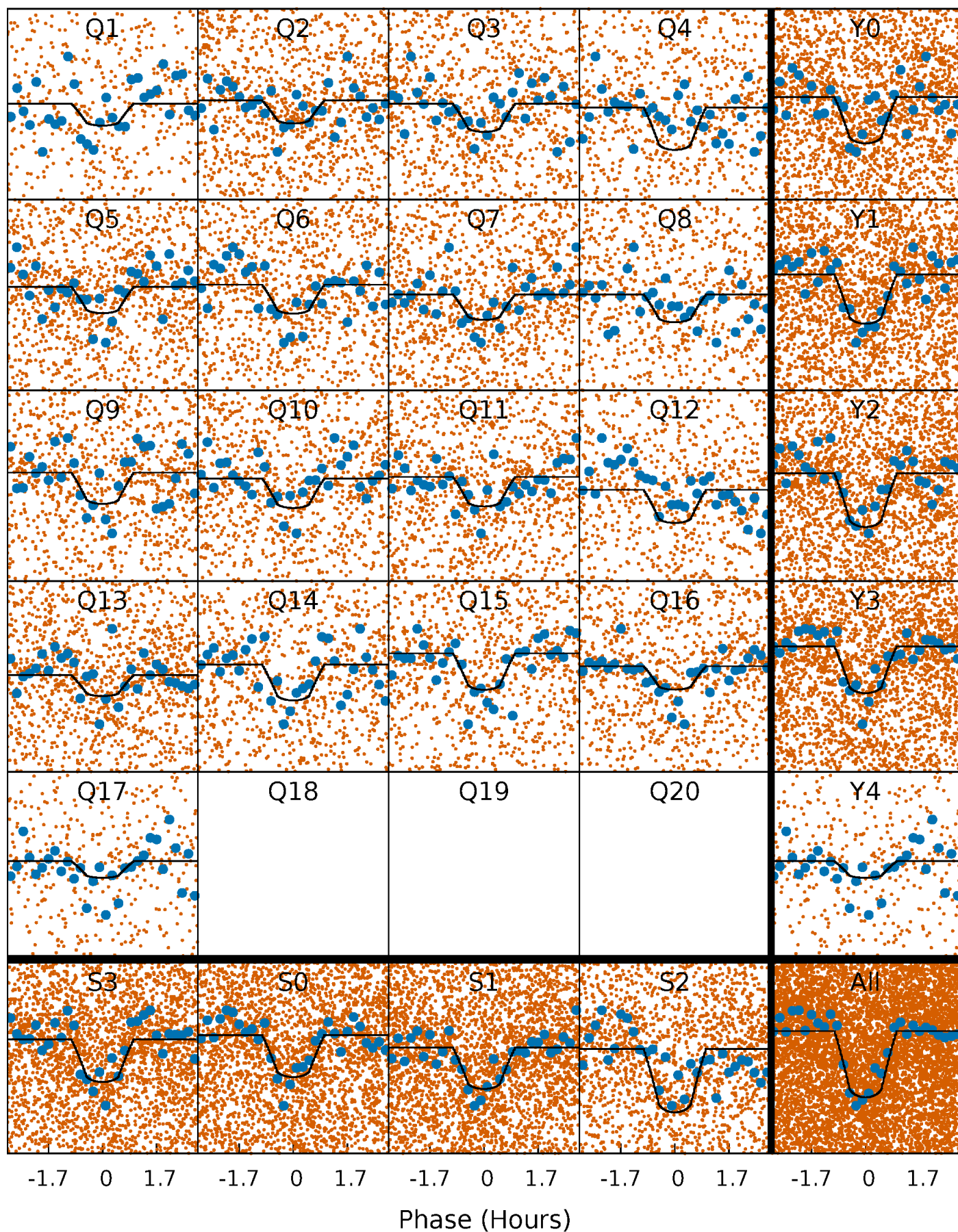
TCE 001575873-01   P= 0.628996 Days    $T_0=131.565701$  (BKJD)





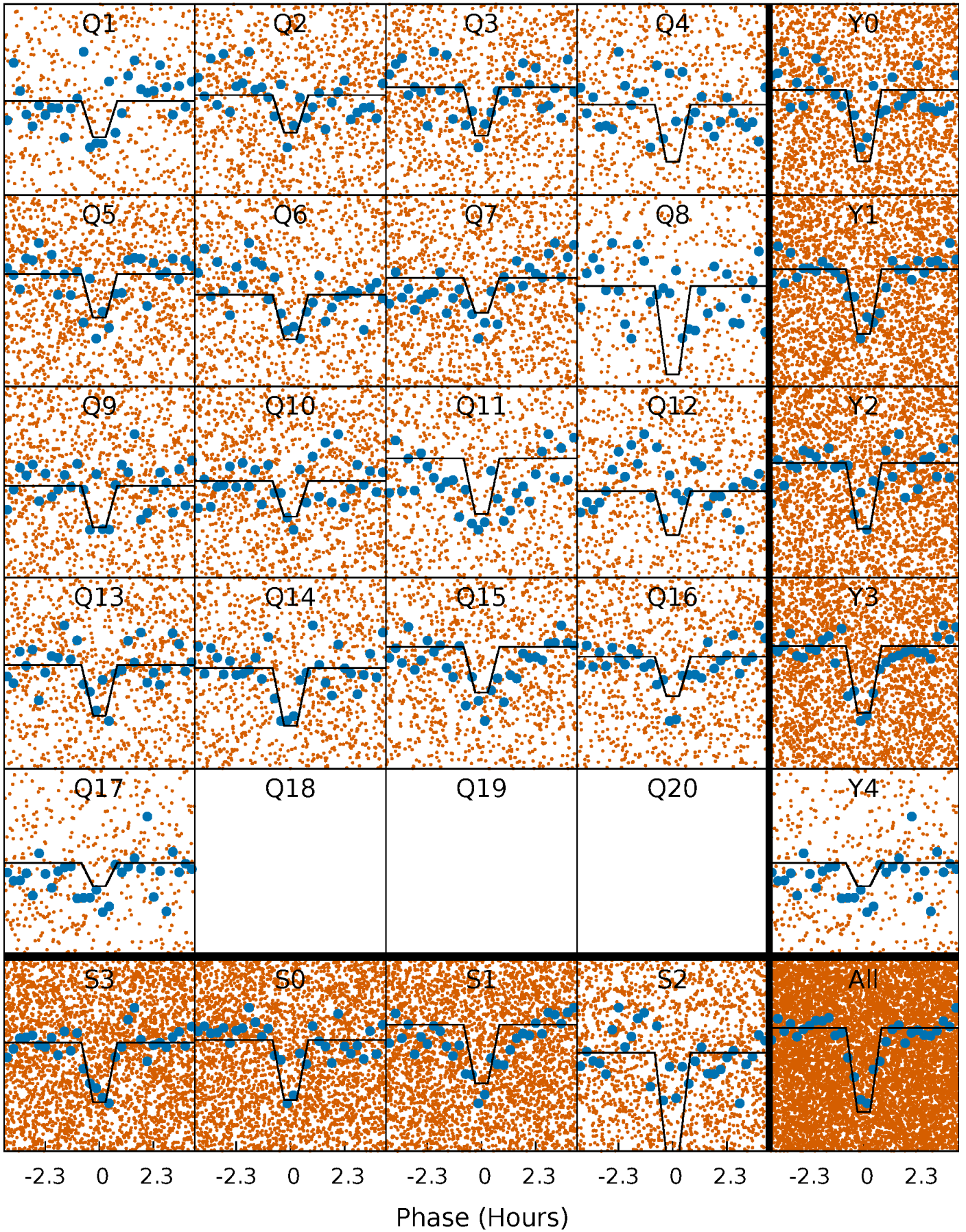
# DV Quarter-Phased Transit Curves

TCE 001575873-01   P= 0.628996 Days    $T_0=131.565701$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 001575873-01 P= 0.629003 Days  $T_0=131.553543$  (BKJD)

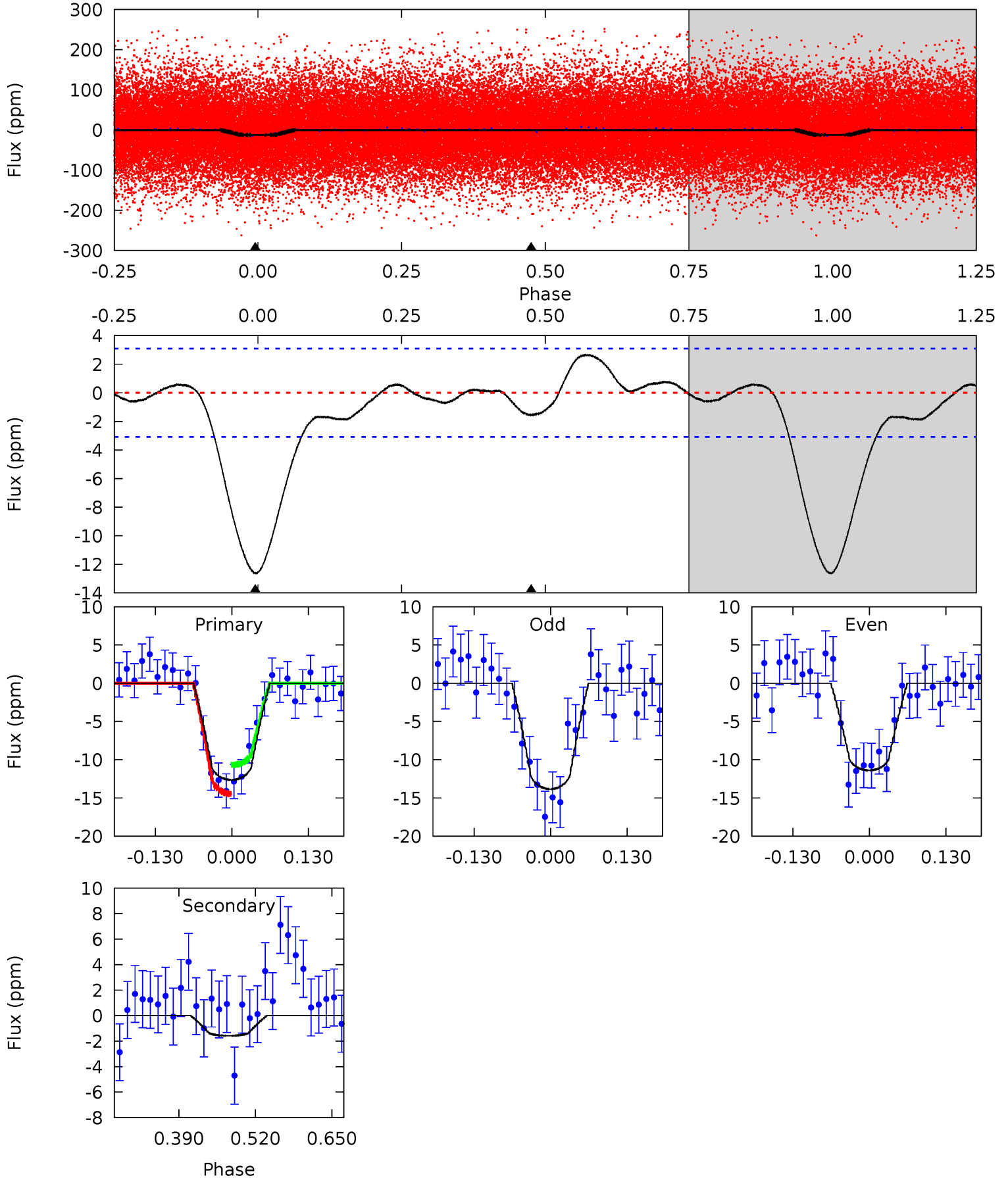




# DV Model-Shift Uniqueness Test

001575873-01, P = 0.628996 Days, E = 130.936705 Days

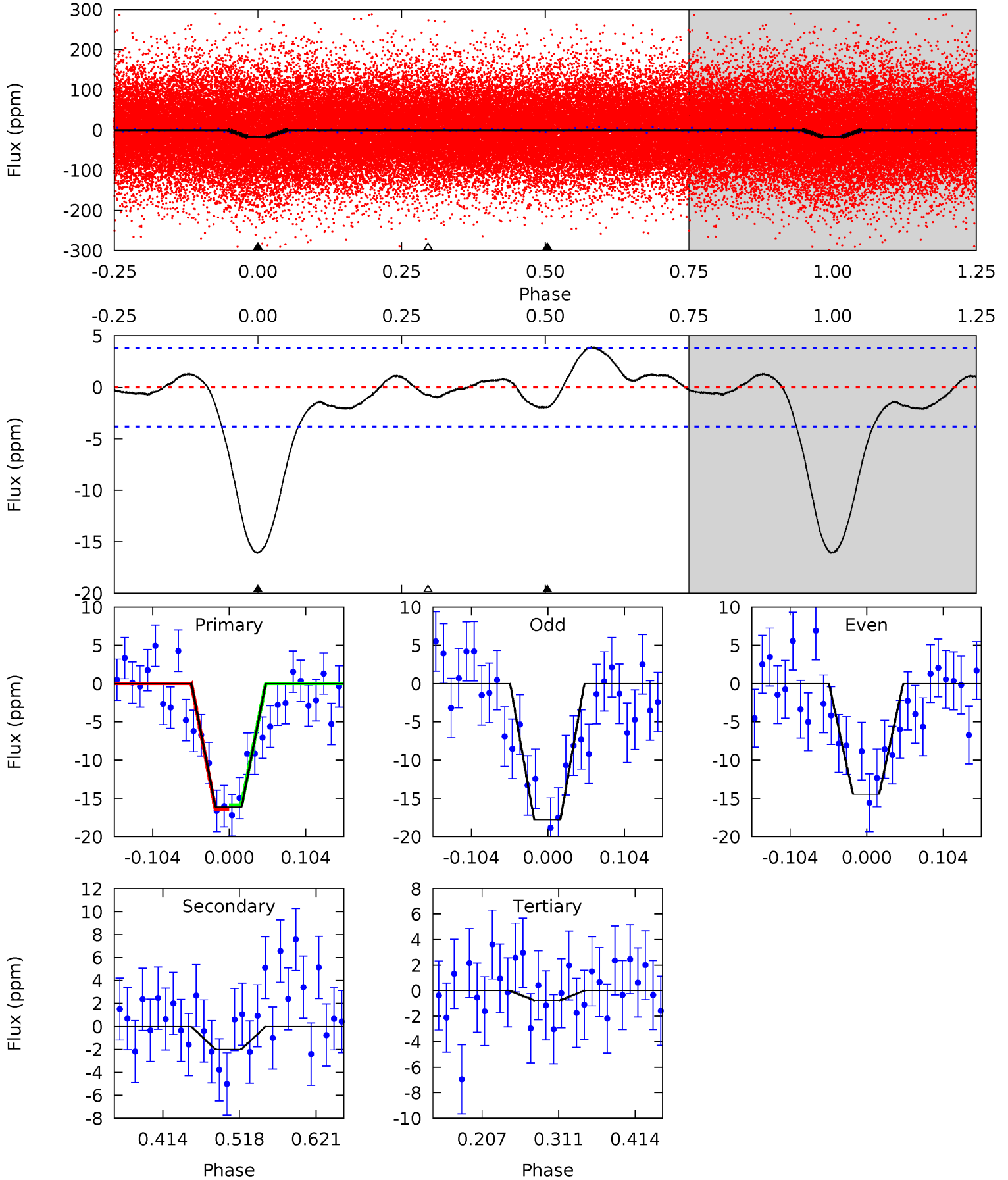
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.4	2.30	0	0	4.51	1.51	1.13	18.4	18.4	2.30	2.30	1.78	0.96	0.17	2.77



# Alt Model-Shift Uniqueness Test

001575873-01, P = 0.629003 Days, E = 130.924540 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
19.2	2.38	0.91	0	4.56	1.63	1.28	18.3	19.2	1.47	2.38	1.99	1.04	0.20	0.37





### Stellar Parameters For KIC 001575873

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6739^{+161}_{-202}$	$3.948^{+0.259}_{-0.111}$	$-0.240^{+0.300}_{-0.250}$	$2.059^{+0.439}_{-0.604}$	$1.375^{+0.196}_{-0.239}$	$0.222^{+0.340}_{-0.088}$
	+2%/-3%	+7%/-3%	+125%/-104%	+21%/-29%	+14%/-17%	+153%/-40%
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 001575873-01 / KOI 4359.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-2 \pm 1$	$0.78^{+0.15}_{-0.15}$	$4626^{+281}_{-367}$	$3142^{+859}_{-6686}$	$0.362^{+0.256}_{-0.186}$
Alt.	$-2 \pm 1$	$0.93^{+0.17}_{-0.15}$	$4634^{+301}_{-376}$	$2827^{+952}_{-6381}$	$0.330^{+0.197}_{-0.144}$

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

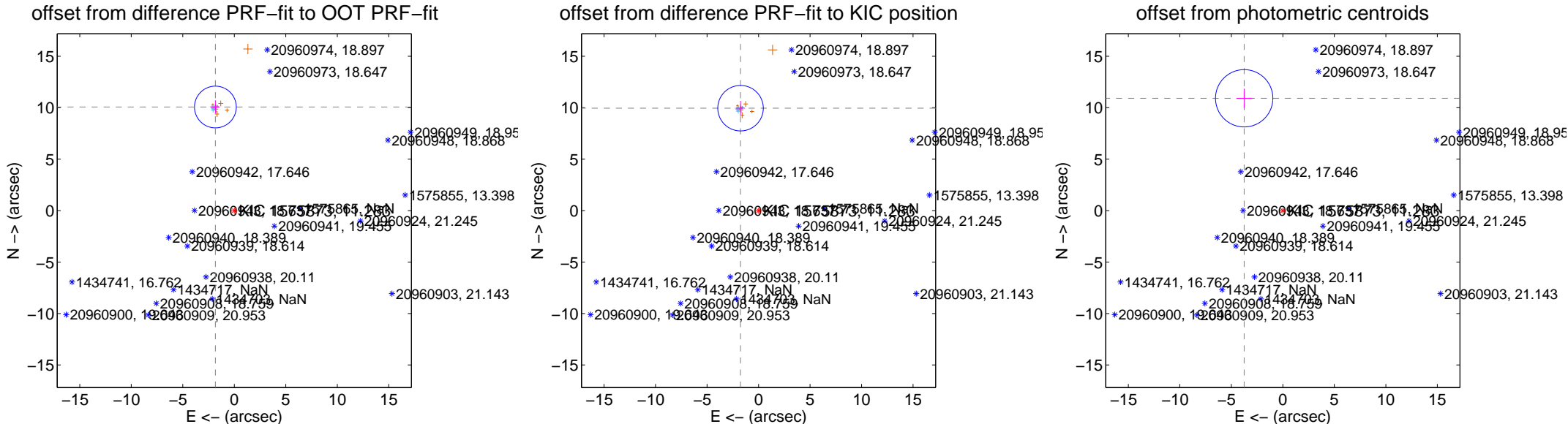
## DV Centroid Data

Supplemental centroid analysis for 001575873-01. **Kepler magnitude: 11.28.** Transit SNR 11.10

There are 6 quarters with good PRF difference image offsets

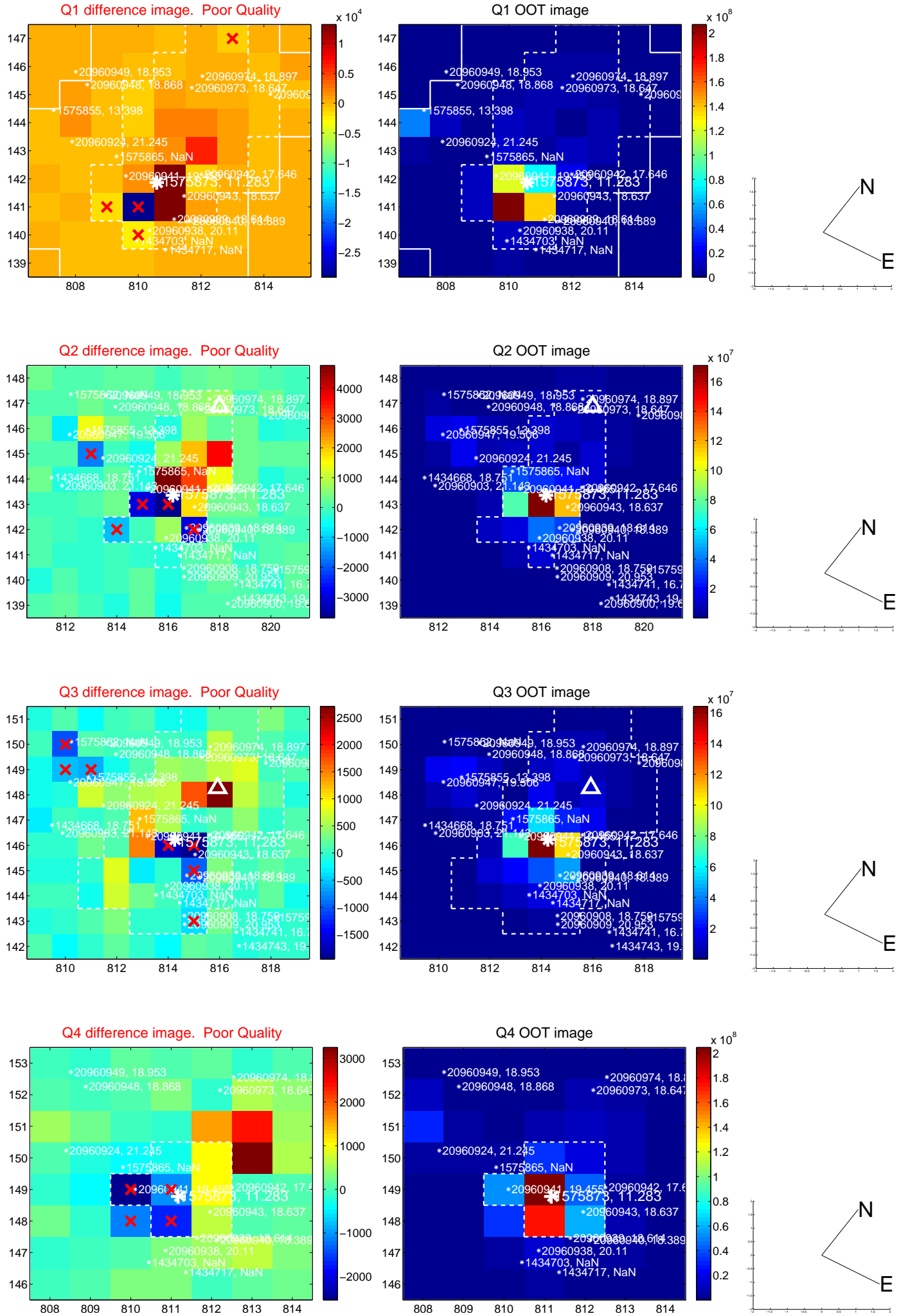
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>10.231 <math>\pm</math> 0.676</b>	<b>15.14</b>	$1.834 \pm 0.426$	$10.065 \pm 0.653$
PRF-fit source offset from KIC position	<b>10.104 <math>\pm</math> 0.736</b>	<b>13.72</b>	$1.749 \pm 0.433$	$9.952 \pm 0.706$
photometric centroid source offset	<b>11.54 <math>\pm</math> 0.93</b>	<b>12.43</b>	$3.75 \pm 0.76$	$10.91 \pm 0.95$

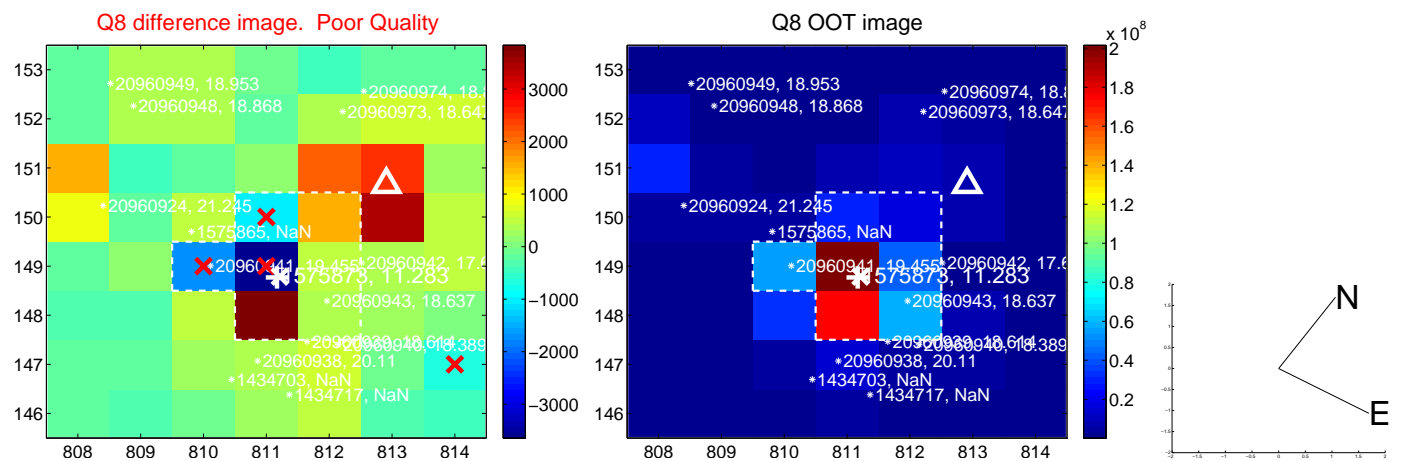
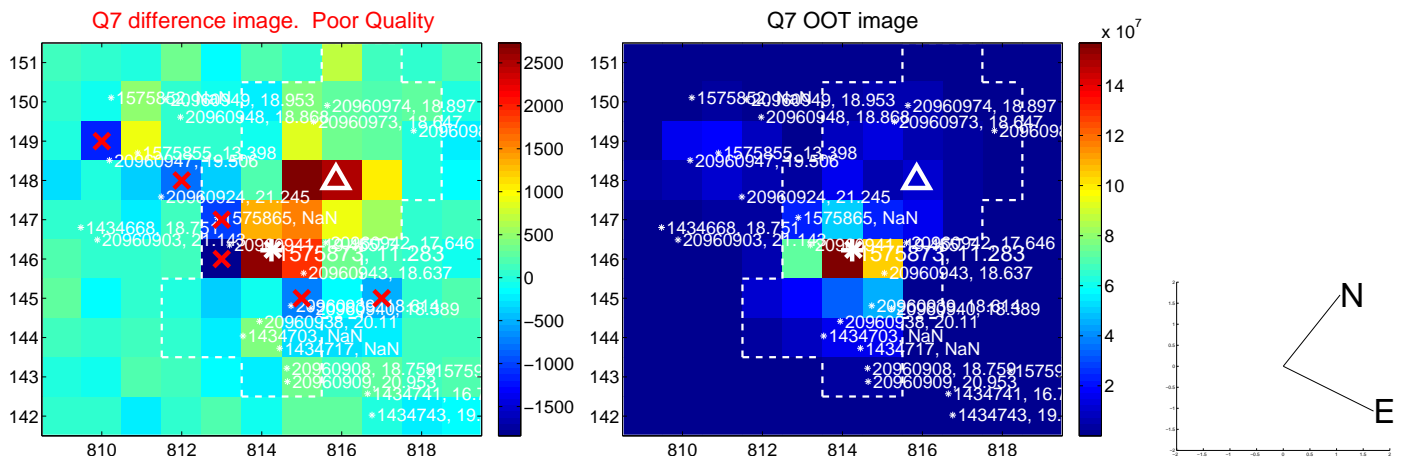
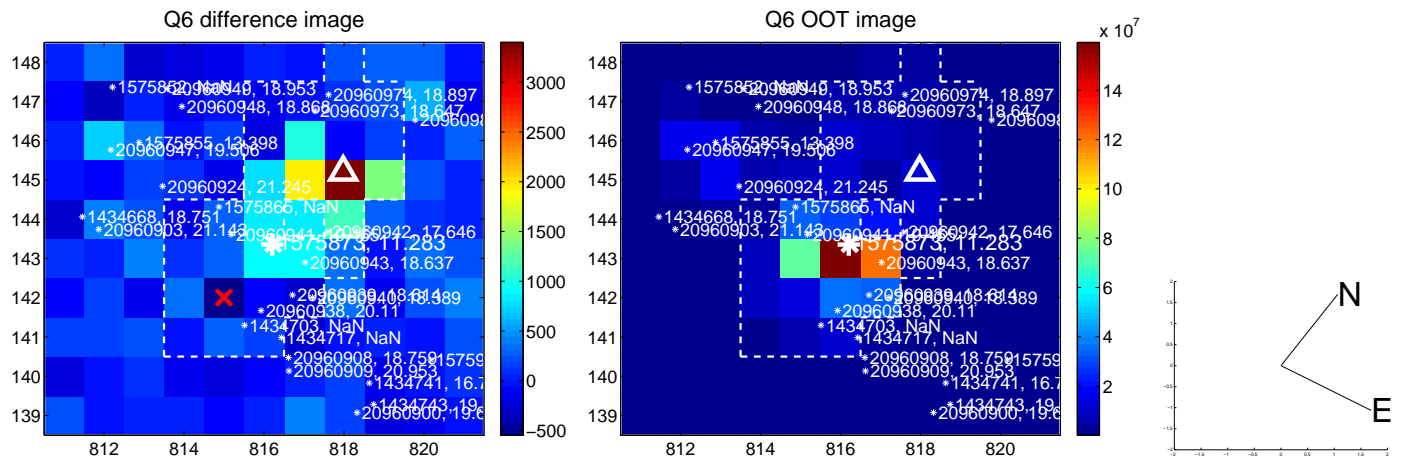
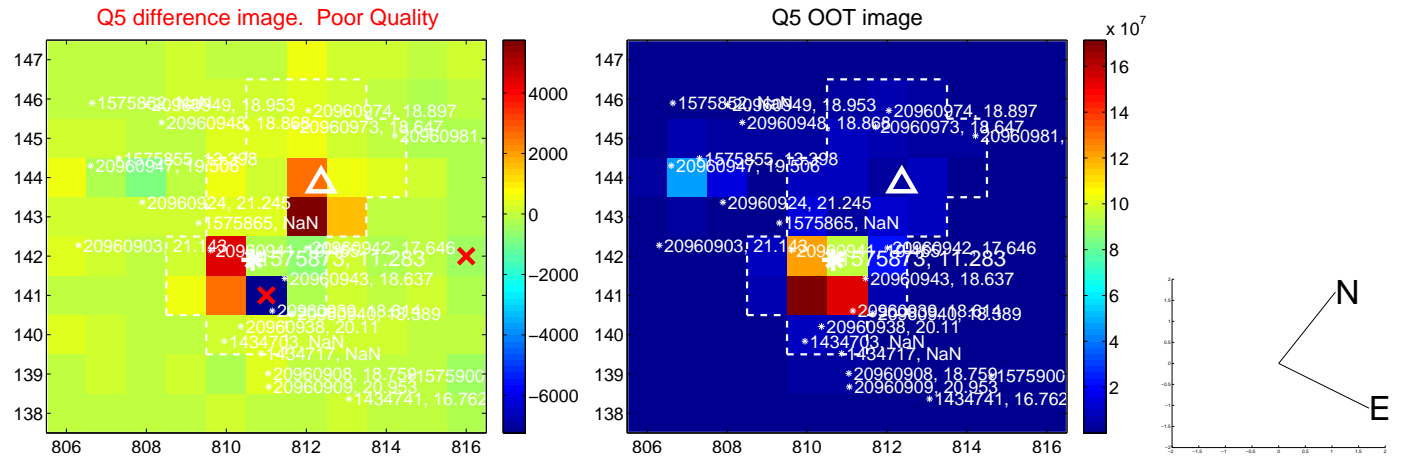


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

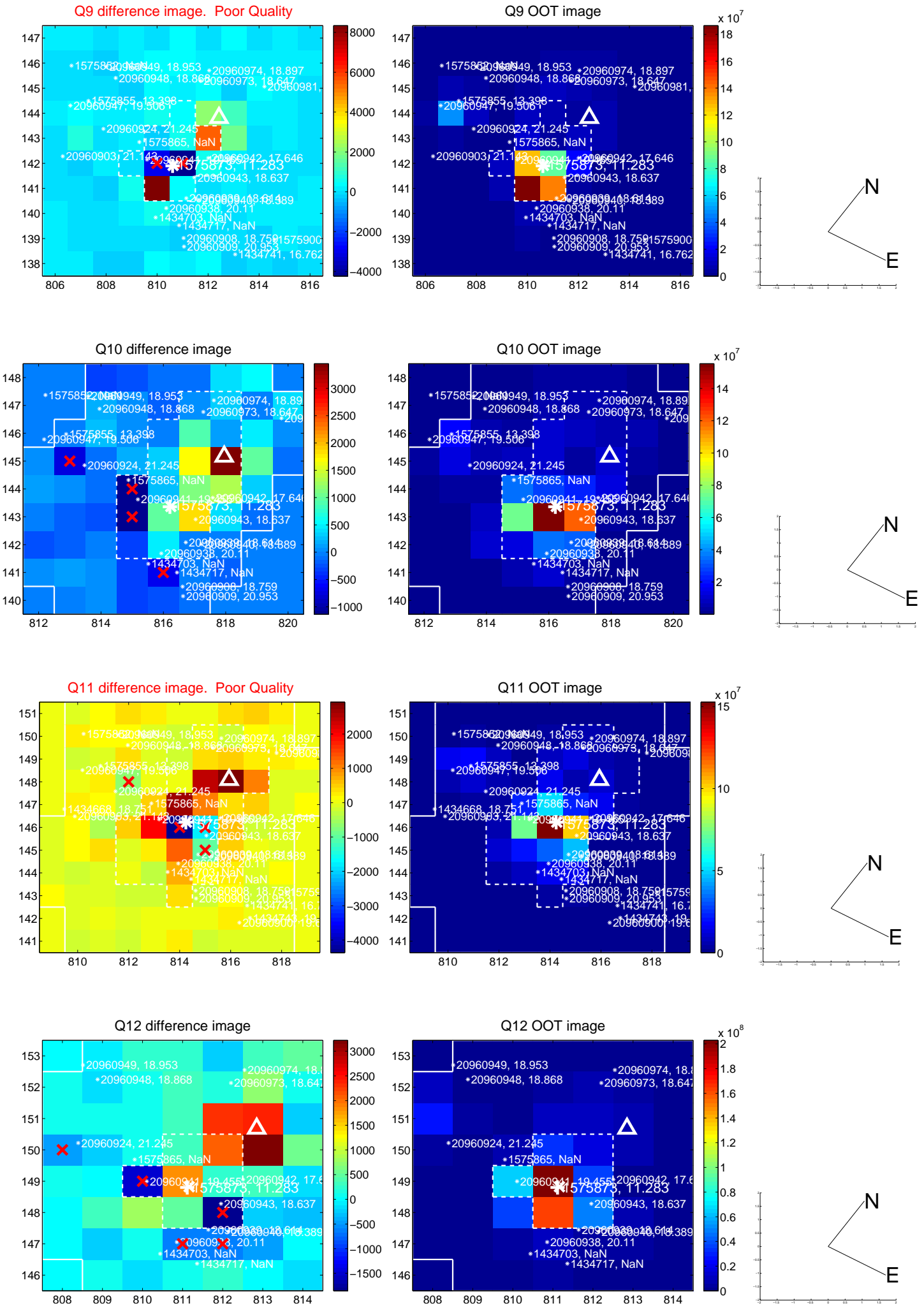


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

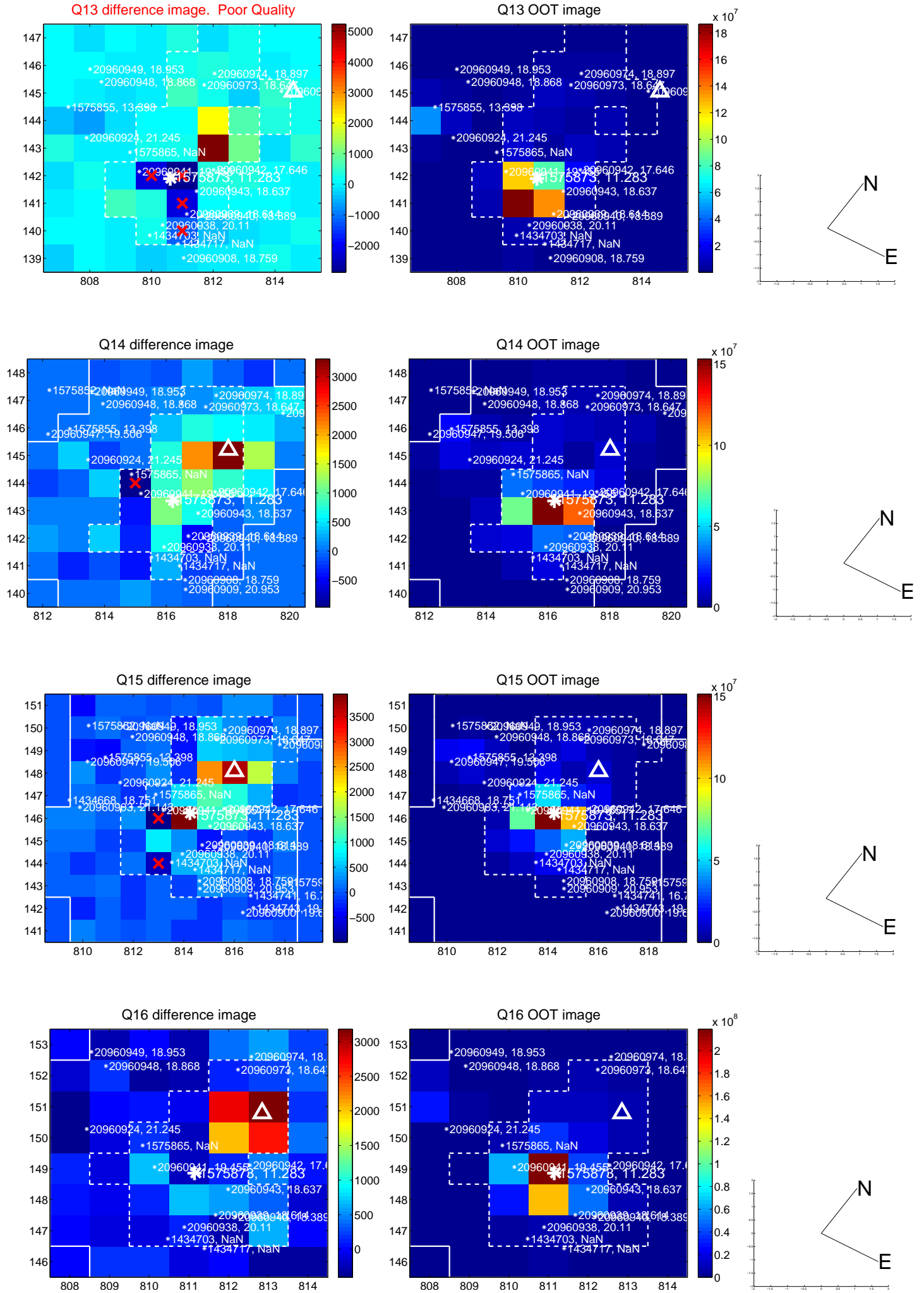




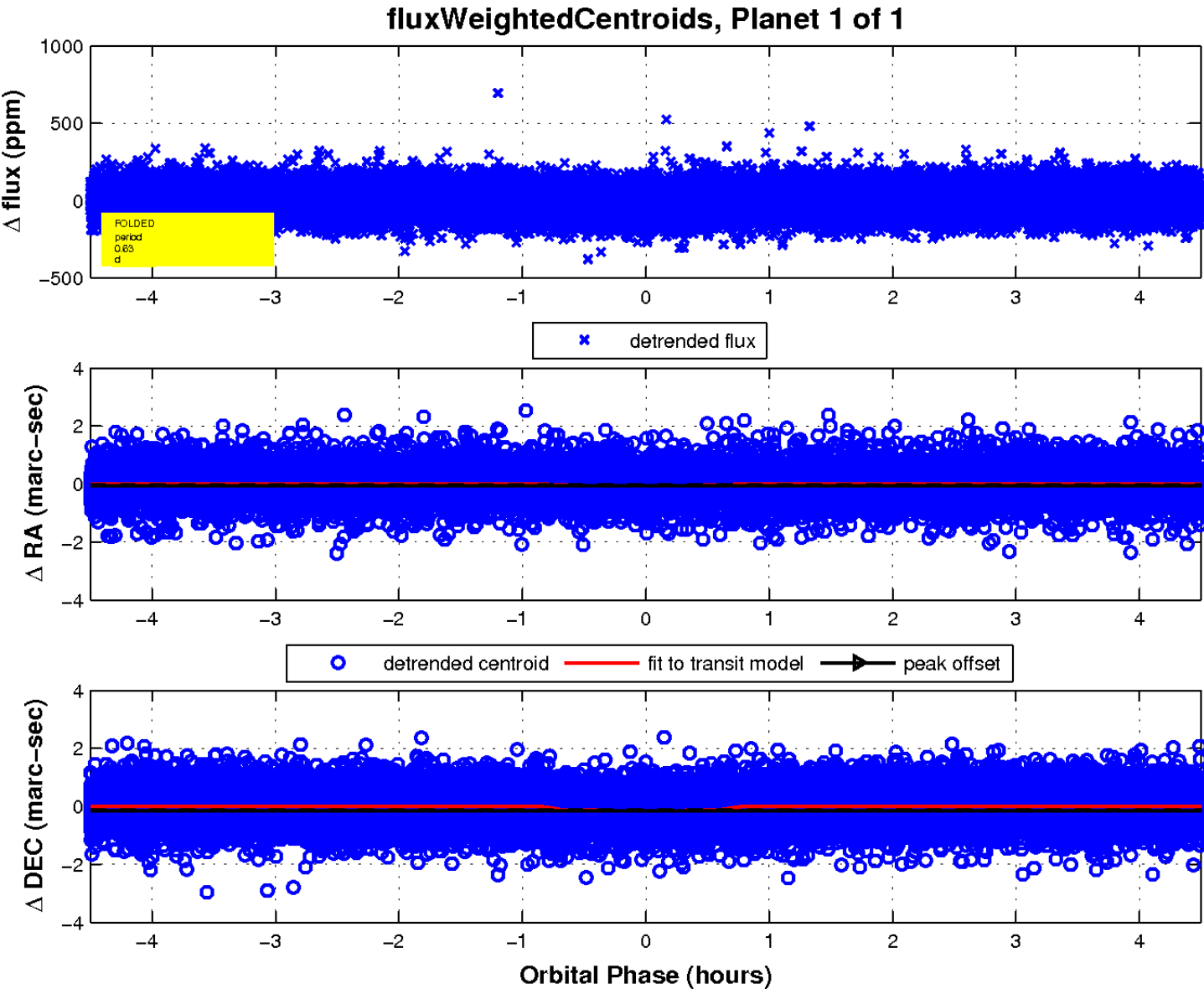
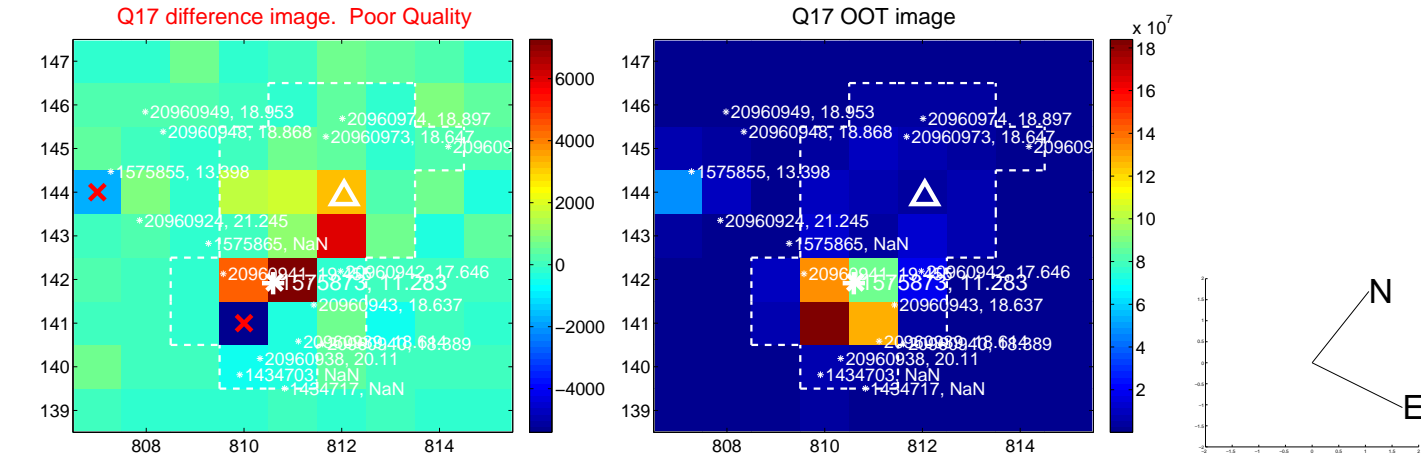
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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.



UKIRT Image

