

# KIC 010188415

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010188415-01	OBS	No	57.122025	160.384505	214.8	73.249	9.3	18.7	0.71	5140	1.97	4.60

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010188415-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—CENT_UNRESOLVED_OFFSET

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

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

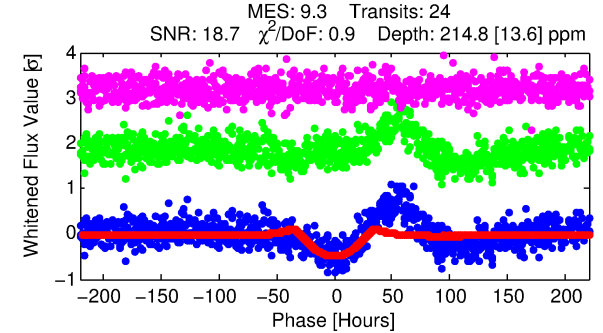
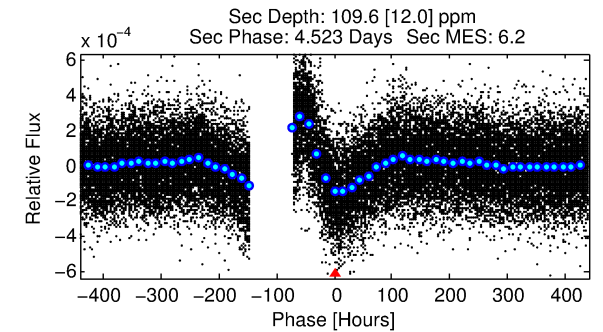
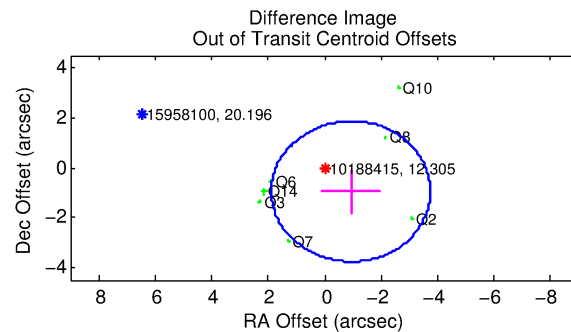
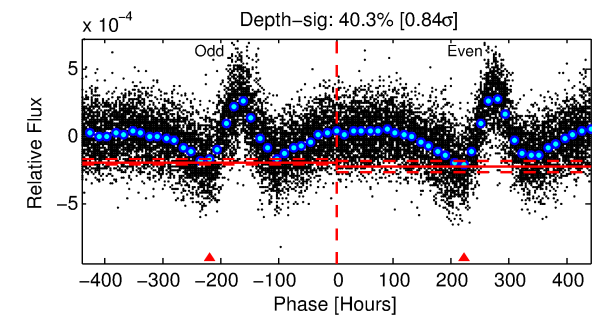
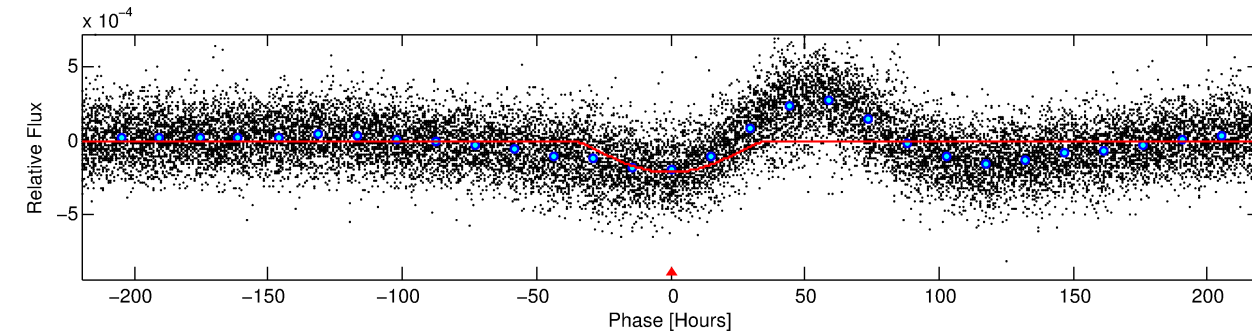
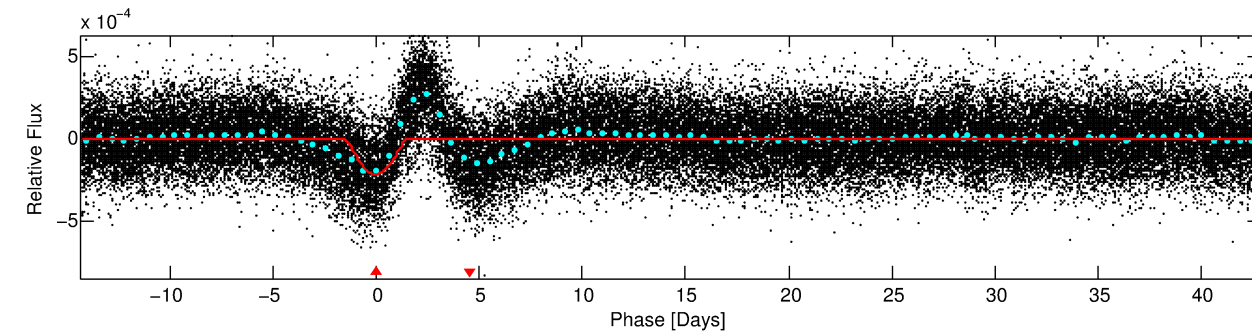
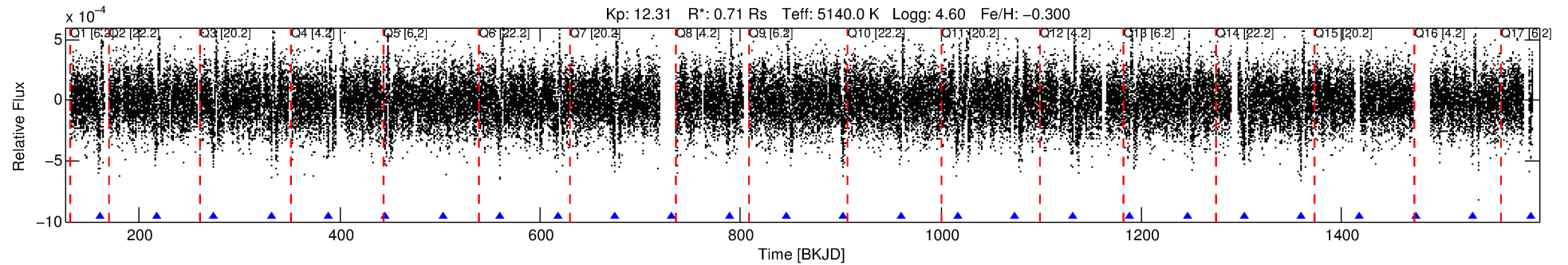
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010188415-01

No Significant Match Found

# DV One-Page Summary

KIC: 10188415 Candidate: 1 of 1 Period: 57.122 d



## DV Fit Results:

Period = 57.12202 [0.00519] d  
Epoch = 160.3845 [0.0711] BKJD  
Rp/R\* = 0.0253 [0.0175]  
a/R\* = 1.78 [0.24]  
b = 1.00 [0.03]  
Seff = 4.60 [0.92]  
Teq = 373 [19] K  
Rp = 1.97 [1.39] Re  
a = 0.2637 [0.0279] AU  
Ag = 1078.19 [1504.91] [0.72 $\sigma$ ]  
Teffp = 3308 [1154] K [2.54 $\sigma$ ]

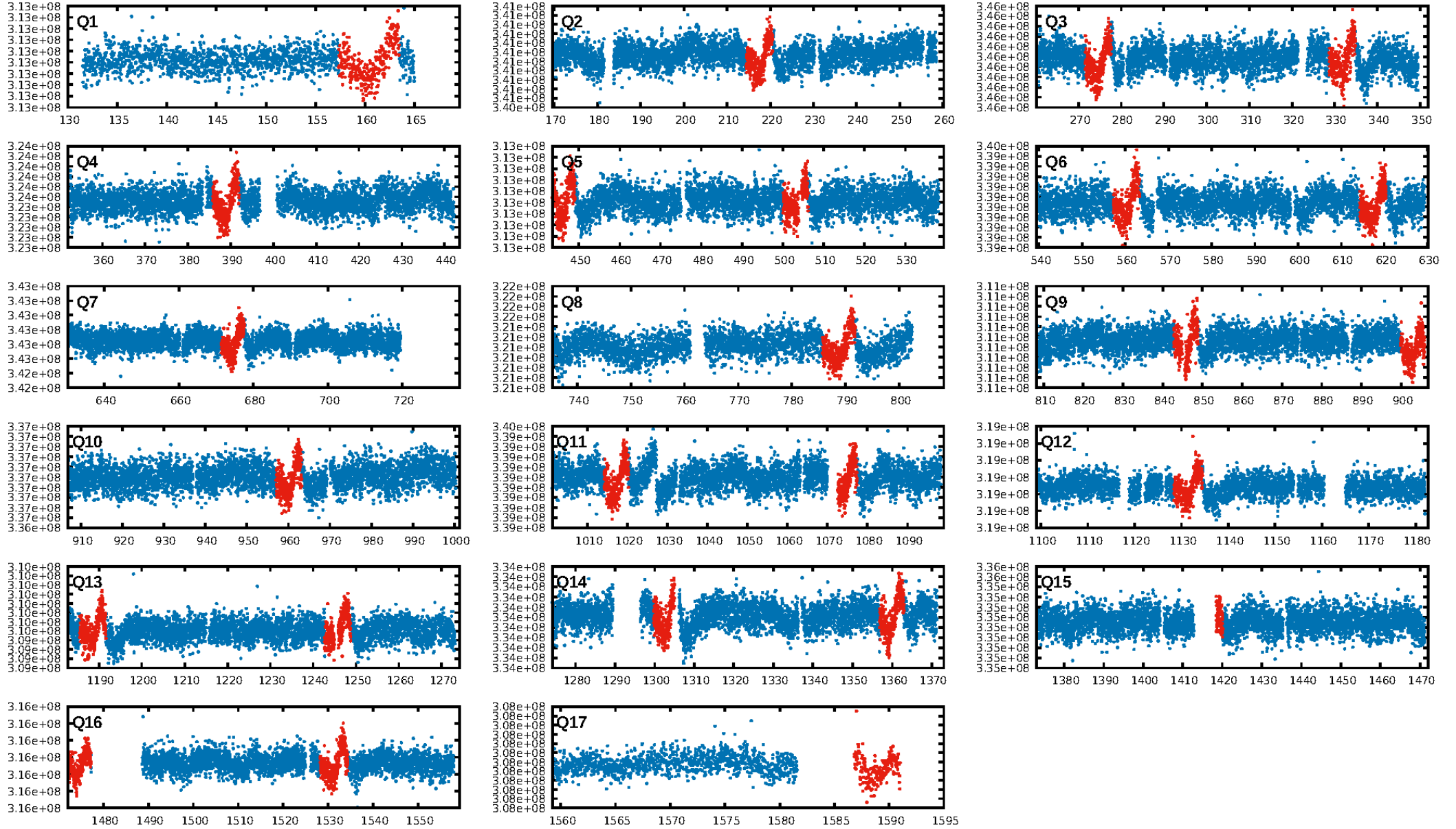
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 56.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.52e-21  
RollingBand-fgt: 1.00 [22/22]  
GhostDiagnostic-chr: 2.336  
Centroid-sig: 72.4%  
Centroid-so: 0.161 arcsec [0.60 $\sigma$ ]  
OotOffset-rm: 1.330 arcsec [1.42 $\sigma$ ]  
KicOffset-rm: 1.320 arcsec [1.41 $\sigma$ ]  
OotOffset-st: 4/2/1/0 [7]  
KicOffset-st: 4/2/1/0 [7]  
DiffImageQuality-fgm: 0.57 [4/7]  
DiffImageOverlap-fno: 1.00 [7/7]

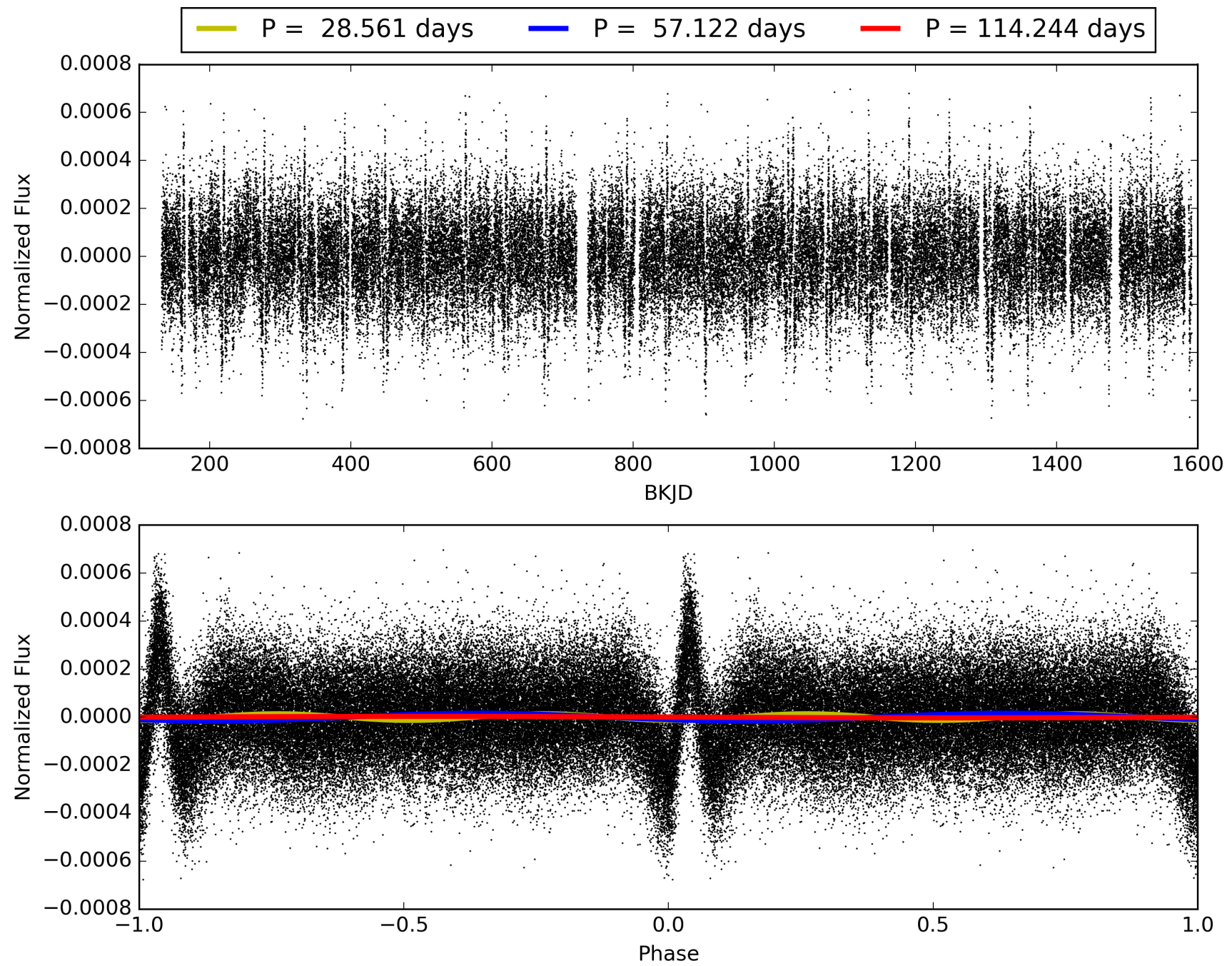
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 22:15:48 Z

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

# TCE 010188415-01, PDC Light Curves



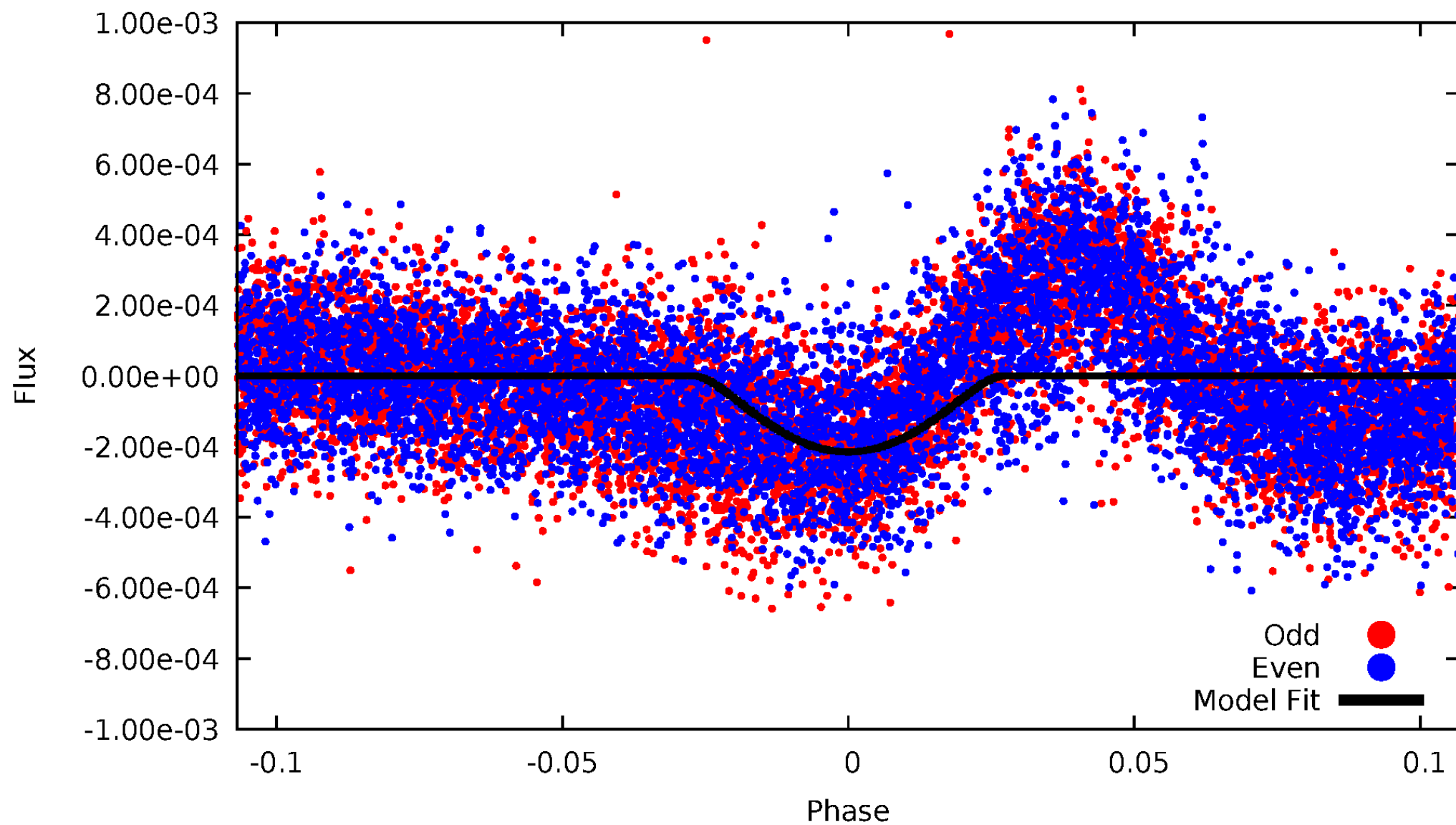
TCE 010188415-01





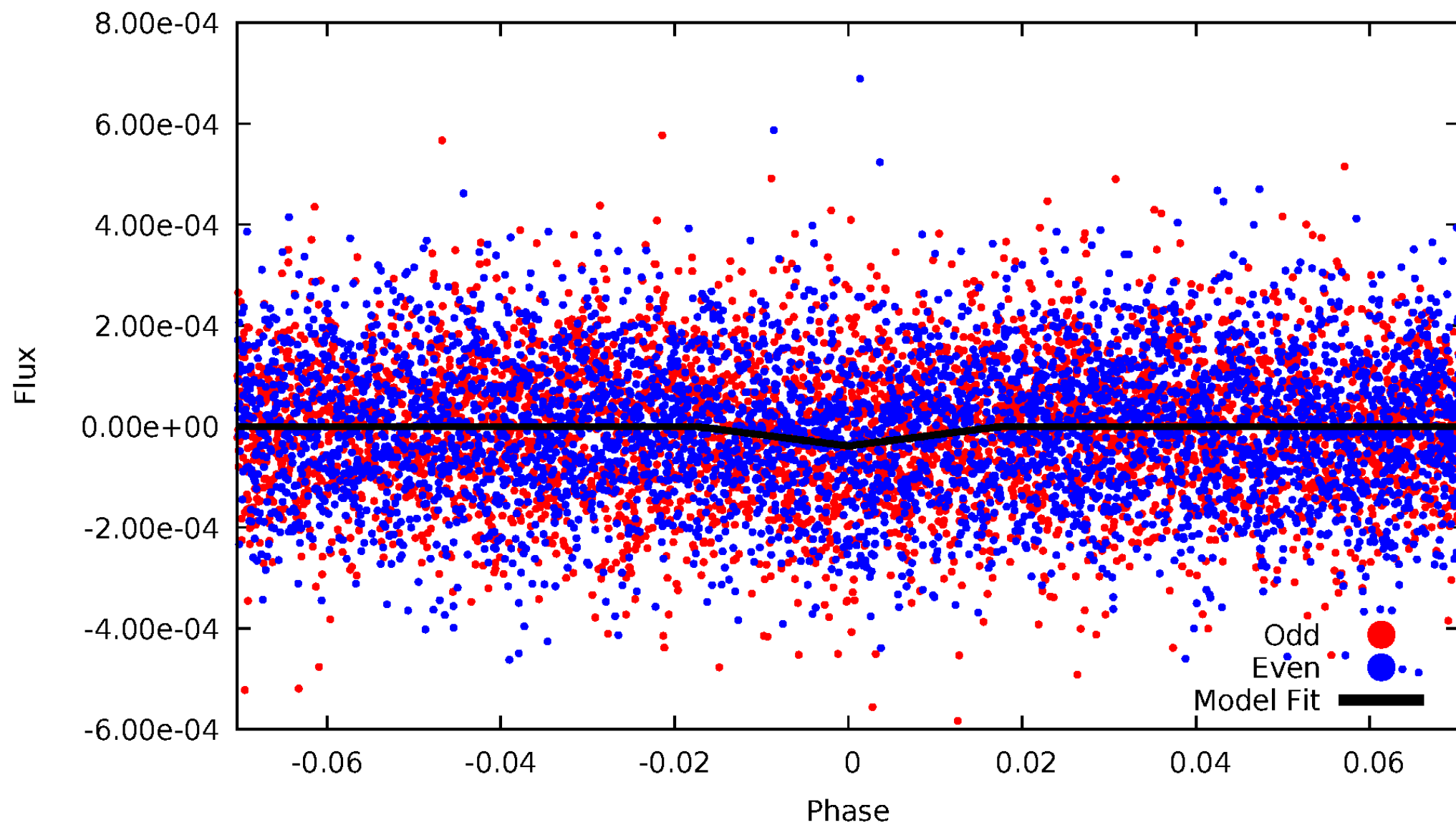
# DV Odd/Even

TCE 010188415-01

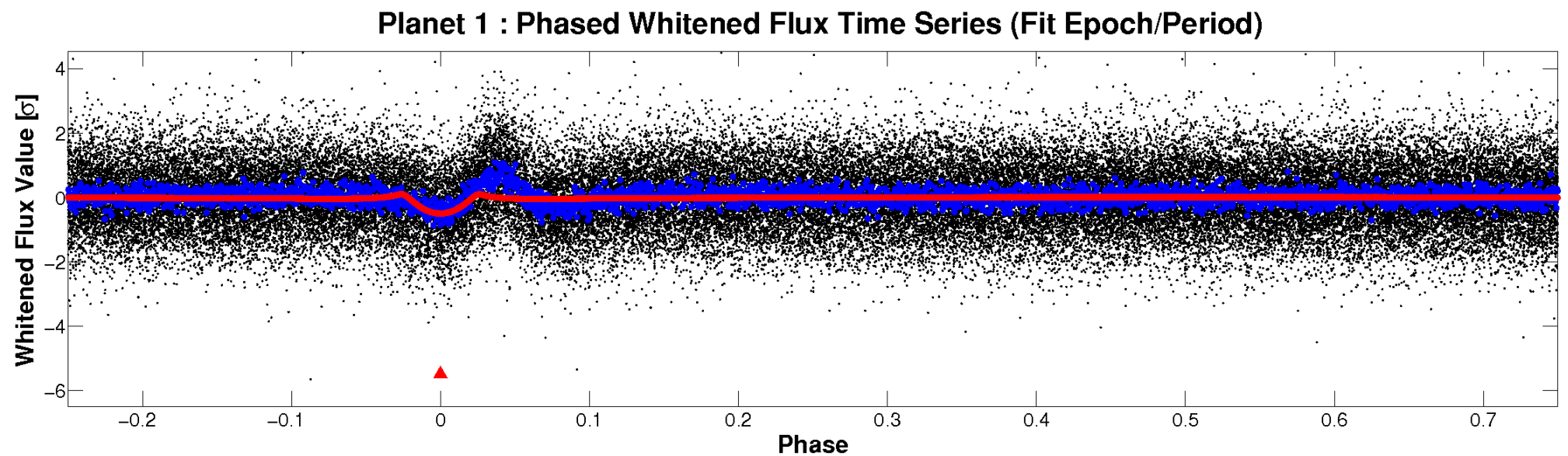
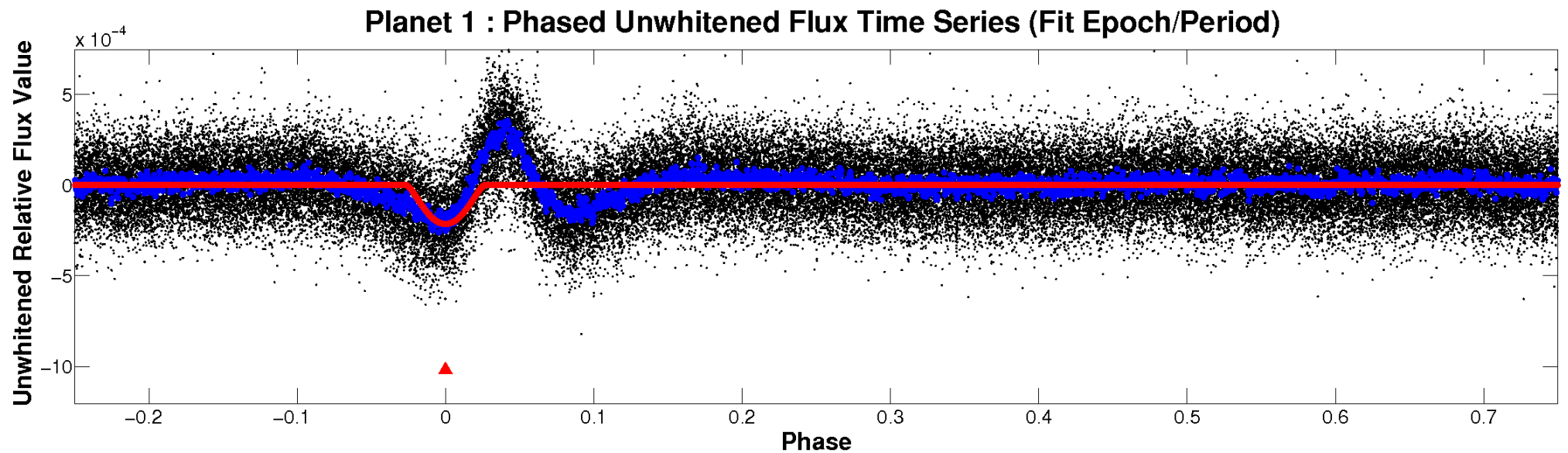


# ALT Odd/Even

TCE 010188415-01

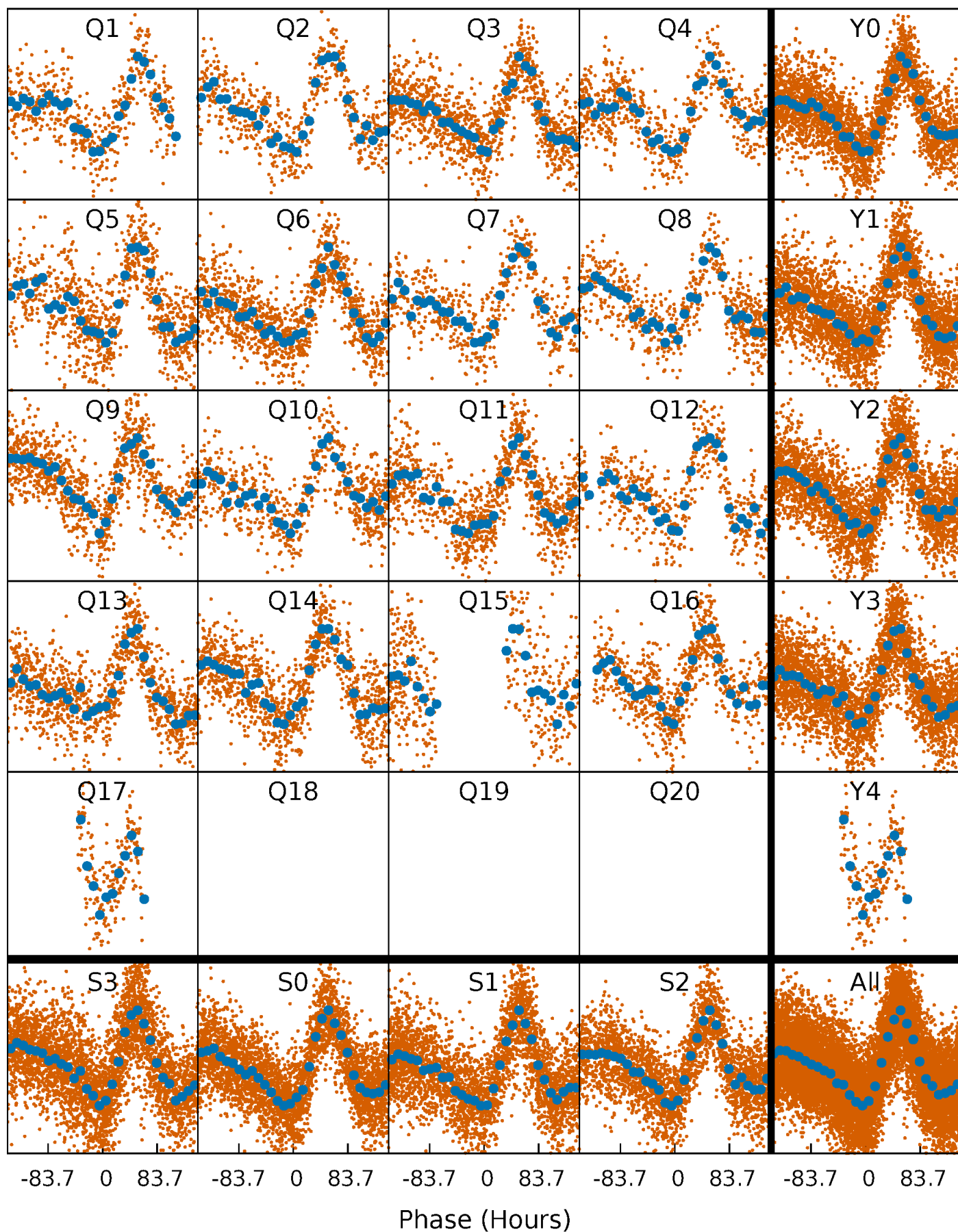


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

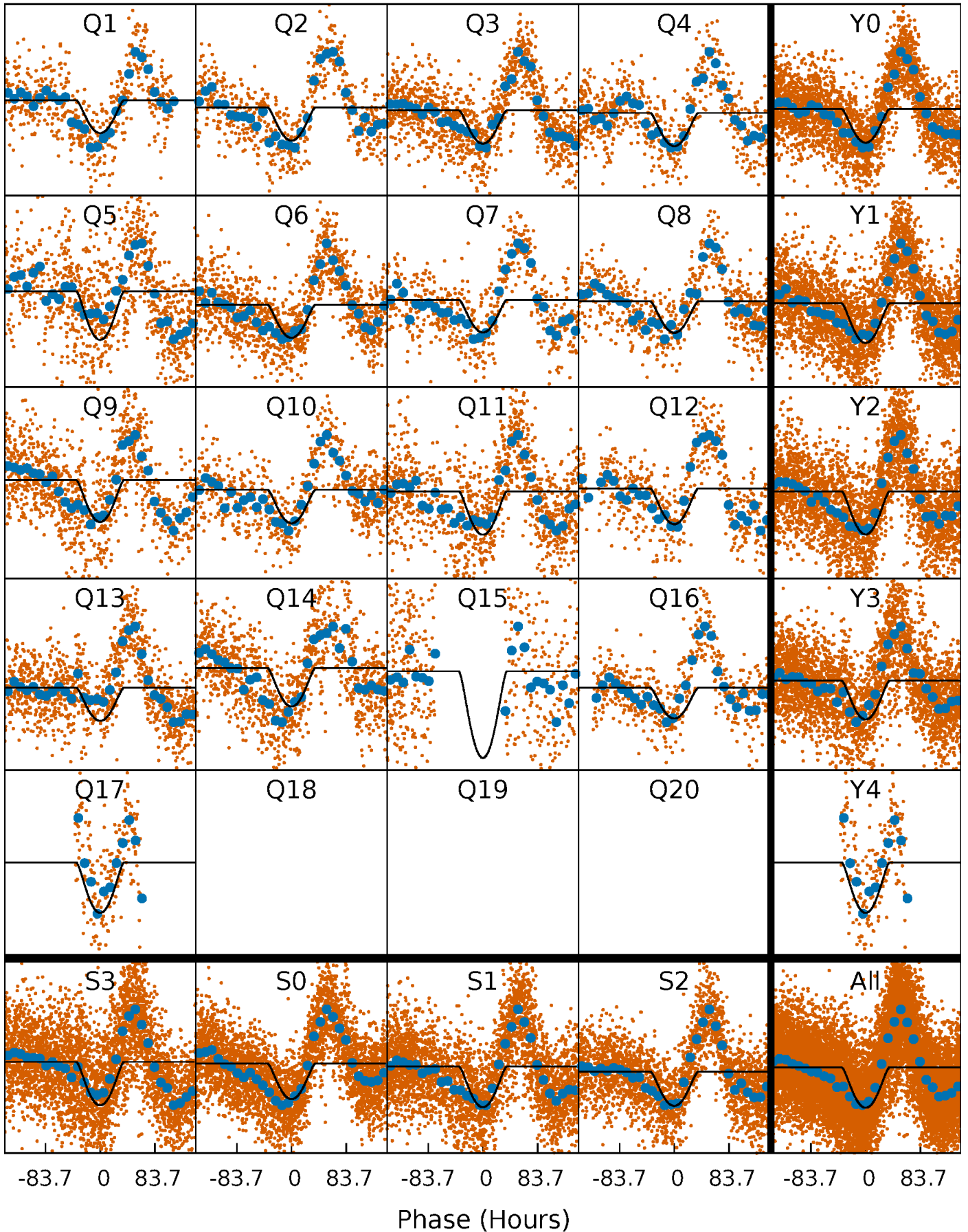
TCE 010188415-01 P= 57.122025 Days  $T_0=160.384505$  (BKJD)





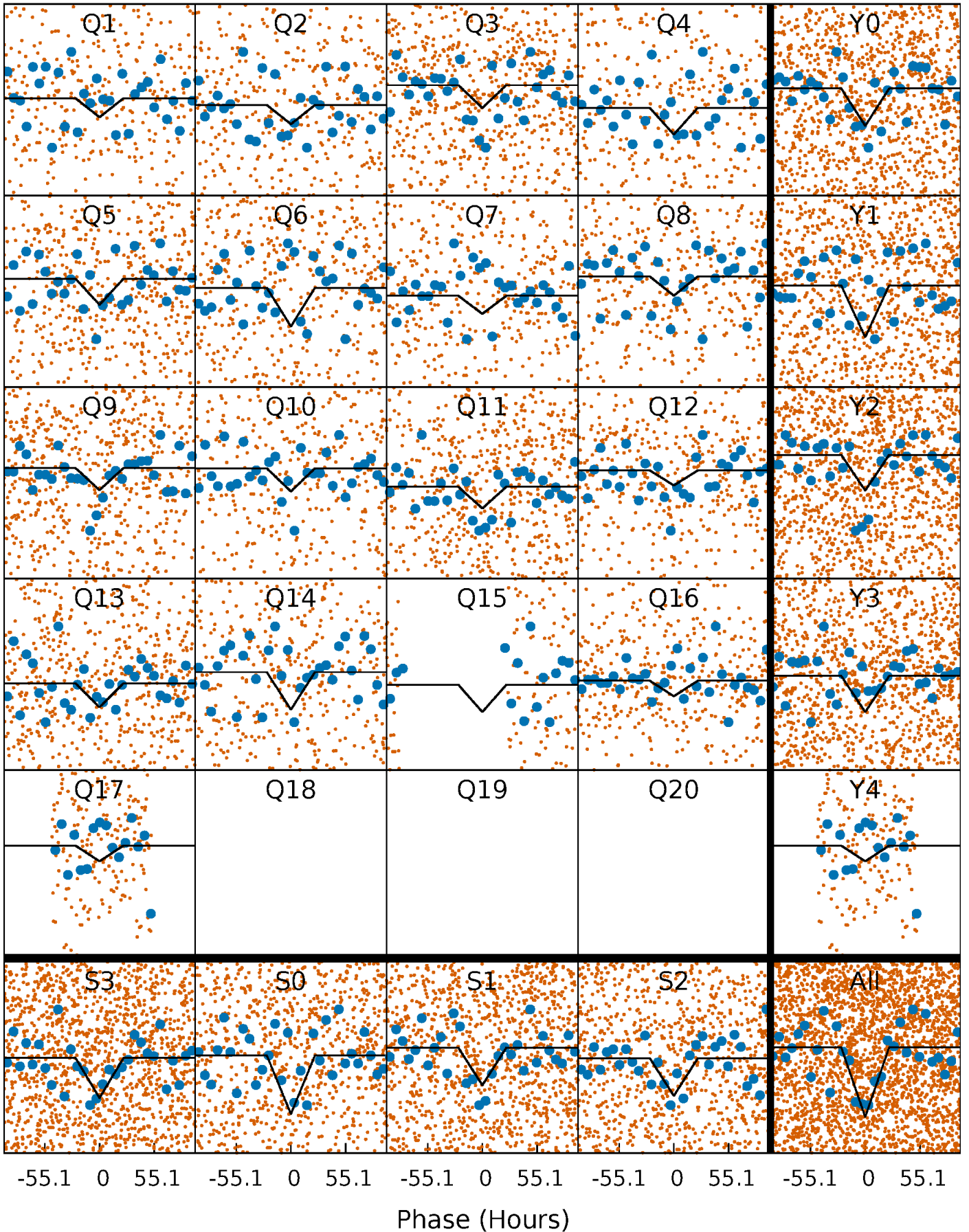
# DV Quarter-Phased Transit Curves

TCE 010188415-01 P= 57.122025 Days  $T_0=160.384505$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

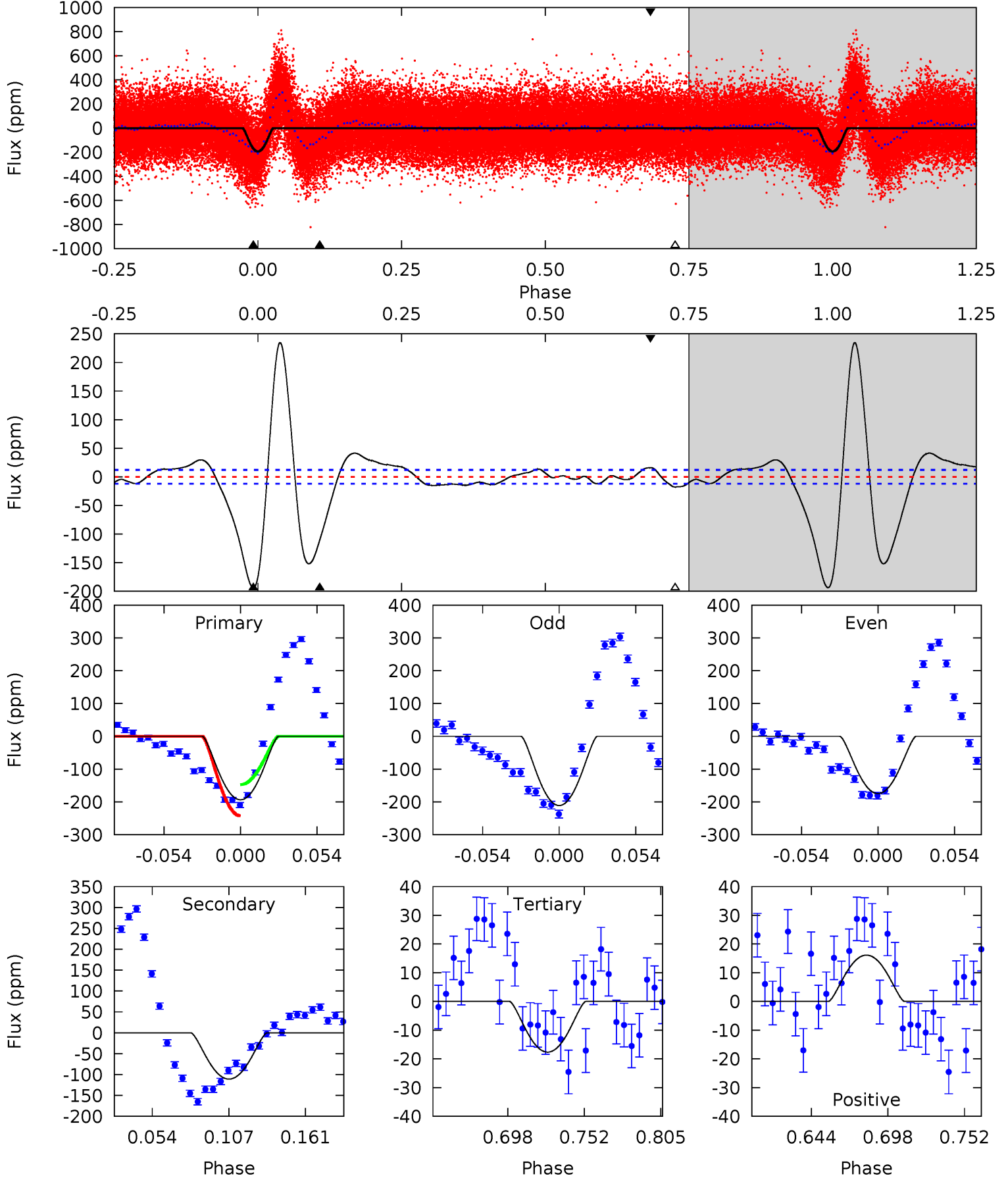
TCE 010188415-01 P= 57.128055 Days  $T_0=160.625327$  (BKJD)



# DV Model-Shift Uniqueness Test

010188415-01, P = 57.122025 Days, E = 103.262480 Days

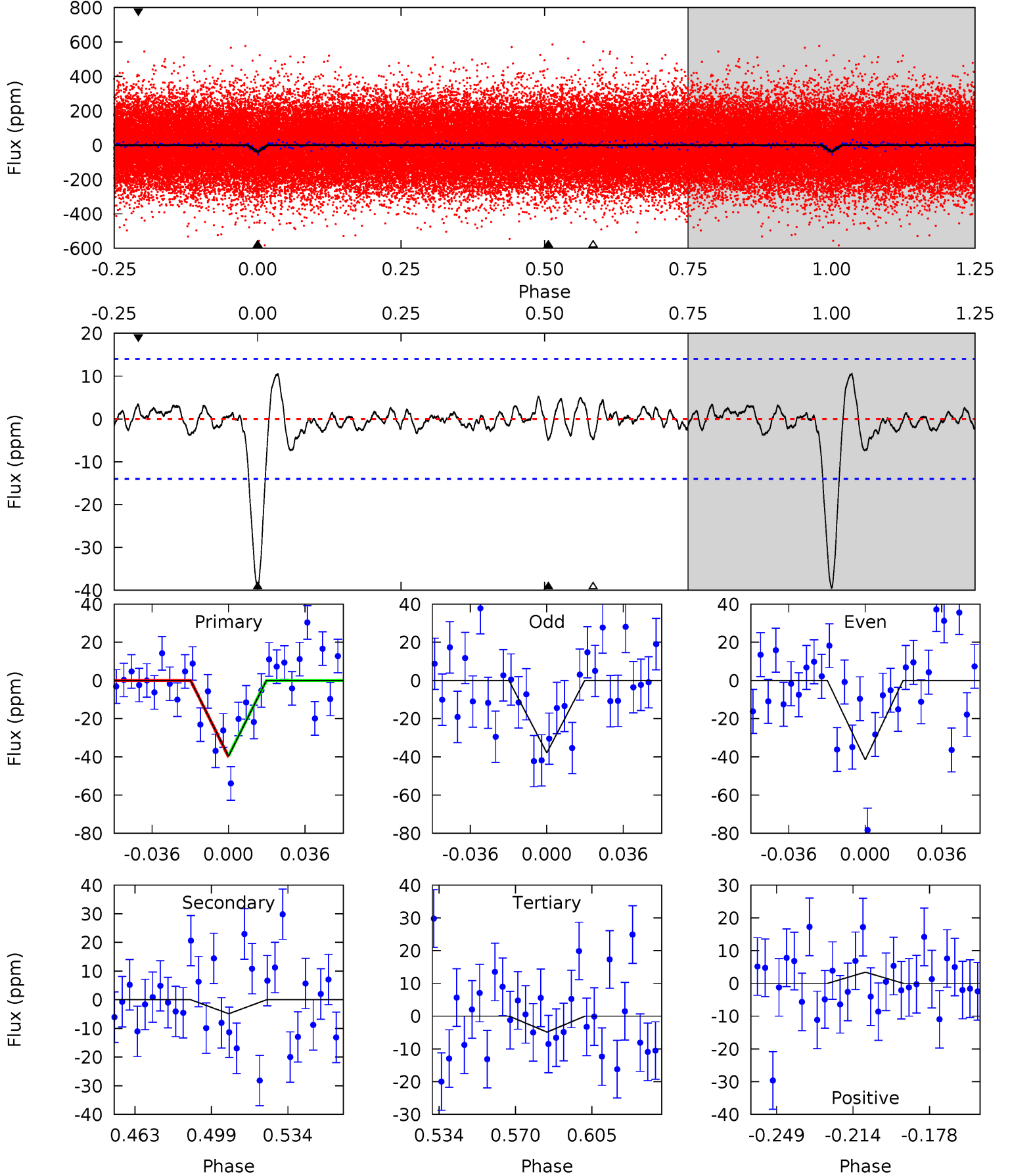
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
74.5	42.6	6.79	6.21	4.69	1.93	8.38	67.7	68.3	35.9	36.4	7.00	0.99	0.55	18.3



# Alt Model-Shift Uniqueness Test

010188415-01, P = 57.128055 Days, E = 103.497272 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
13.5	1.66	1.65	1.16	4.78	2.10	0.71	11.8	12.3	0.01	0.50	0.62	0.98	0.21	0.11





### Stellar Parameters For KIC 010188415

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5140^{+179}_{-179}$	$4.604^{+0.044}_{-0.072}$	$-0.300^{+0.300}_{-0.300}$	$0.715^{+0.097}_{-0.065}$	$0.751^{+0.088}_{-0.066}$	$2.889^{+0.586}_{-0.699}$
	+3%/-3%	+1%/-2%	+100%/-100%	+14%/-9%	+12%/-9%	+20%/-24%
Source	PHO54	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 010188415-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-111 \pm 3$	$2.13^{+1.34}_{-1.17}$	$525^{+23}_{-23}$	$3618^{+1285}_{-506}$	$919^{+3926}_{-564}$
Alt.	$-5 \pm 3$	$1.14^{+1.10}_{-0.77}$	$525^{+23}_{-21}$	$2705^{+1122}_{-518}$	$127^{+1142}_{-107}$

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

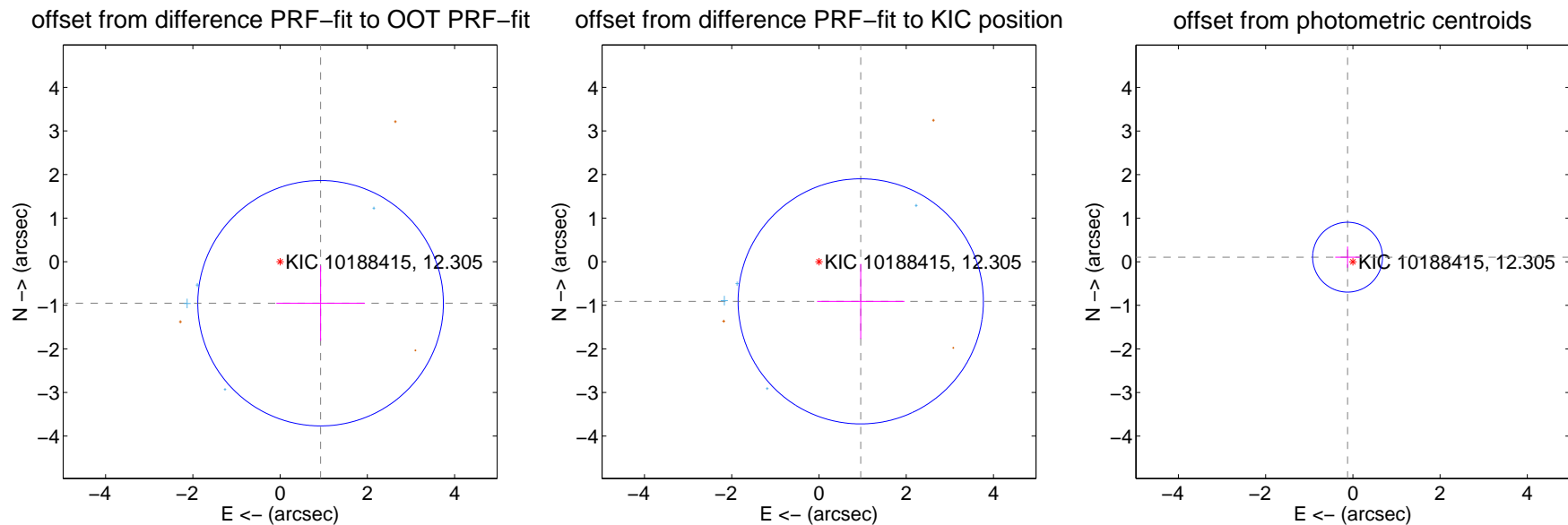
## DV Centroid Data

Supplemental centroid analysis for 010188415-01. Kepler magnitude: 12.30. Transit SNR 18.70

There are 4 quarters with good PRF difference image offsets

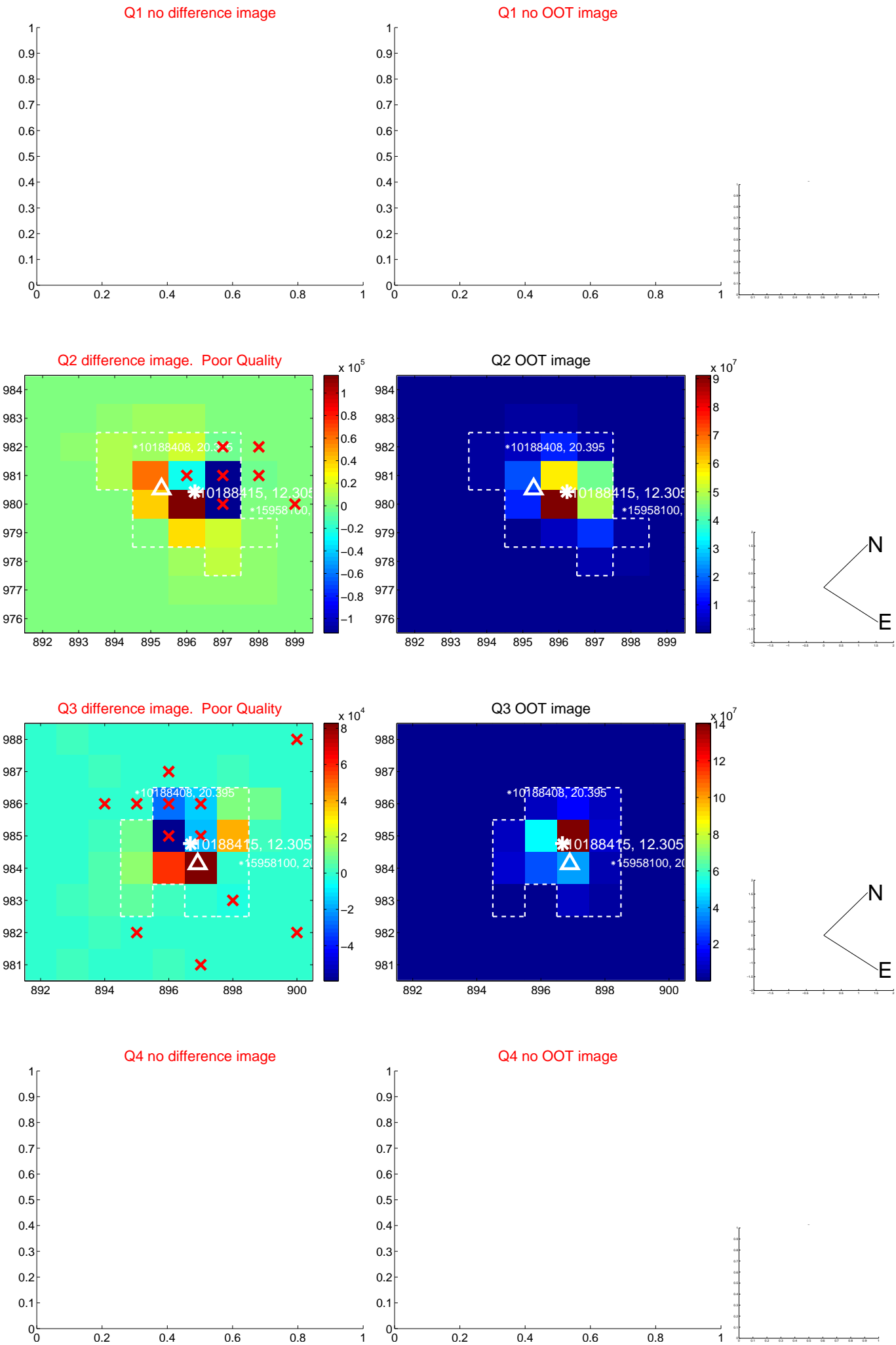
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.330 \pm 0.938$	1.42	$-0.928 \pm 1.014$	$-0.953 \pm 0.860$
PRF-fit source offset from KIC position	$1.320 \pm 0.937$	1.41	$-0.957 \pm 1.001$	$-0.910 \pm 0.860$
photometric centroid source offset	$0.16 \pm 0.27$	0.60	$0.12 \pm 0.28$	$0.11 \pm 0.24$

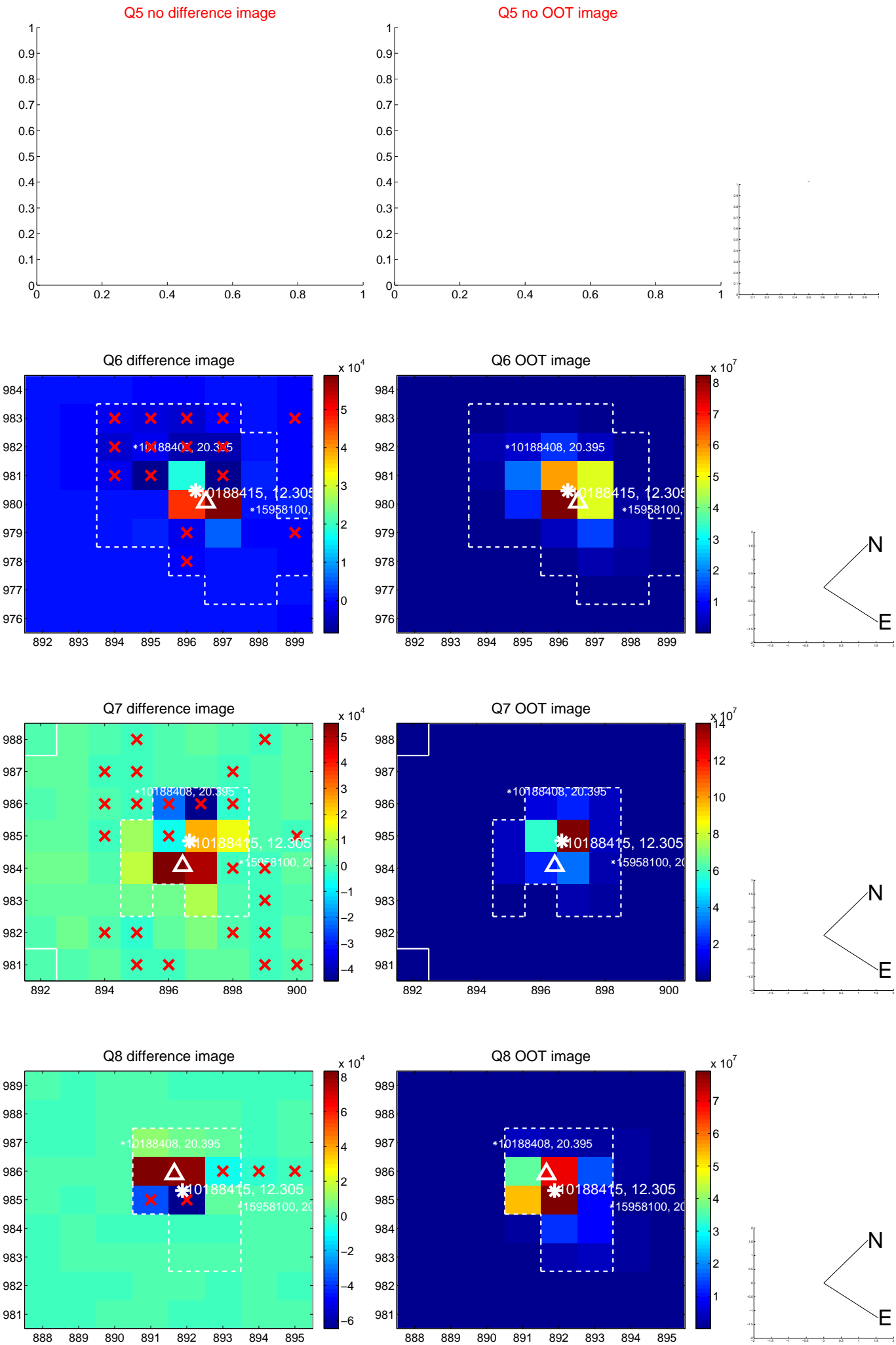


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

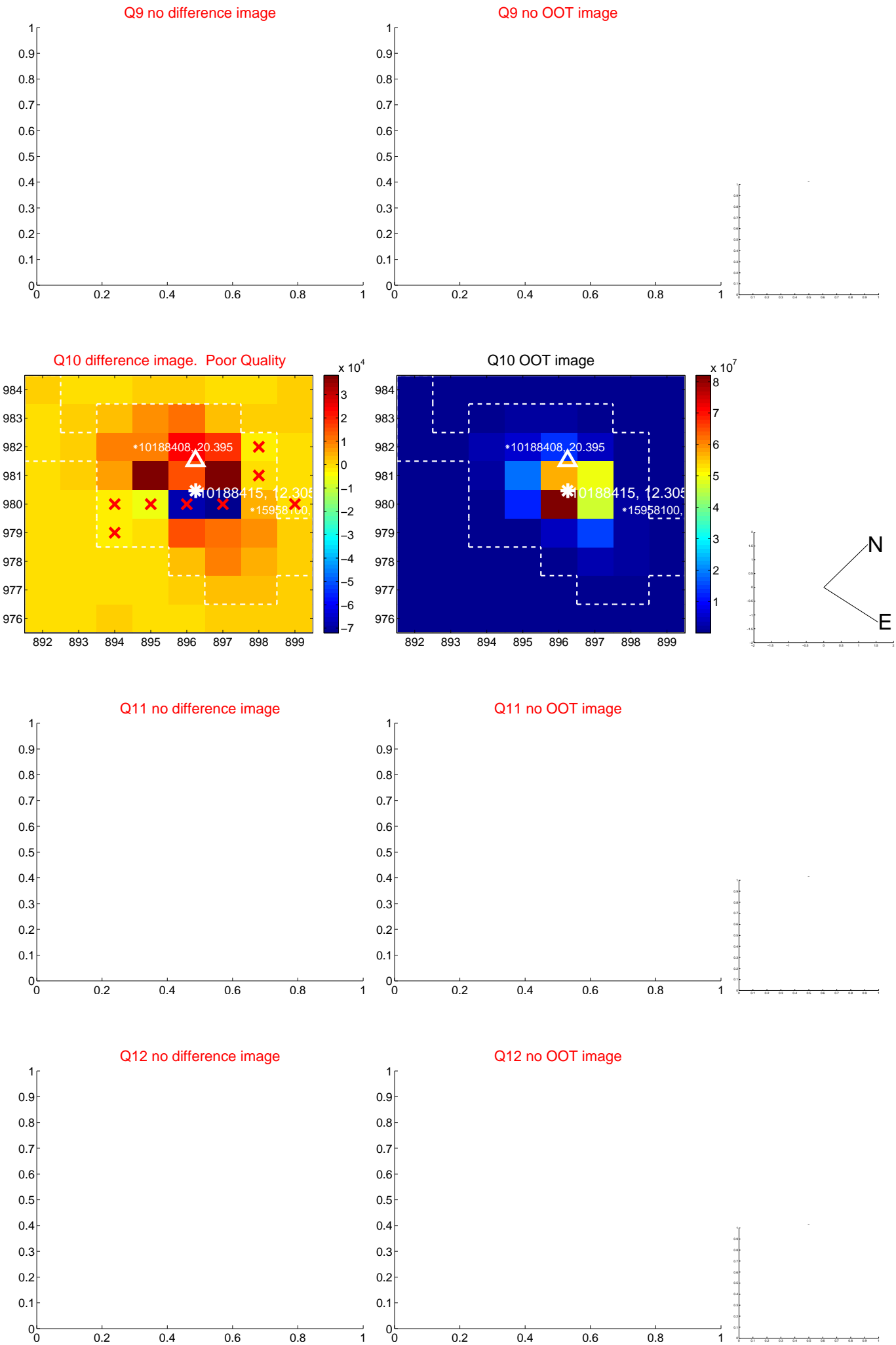


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

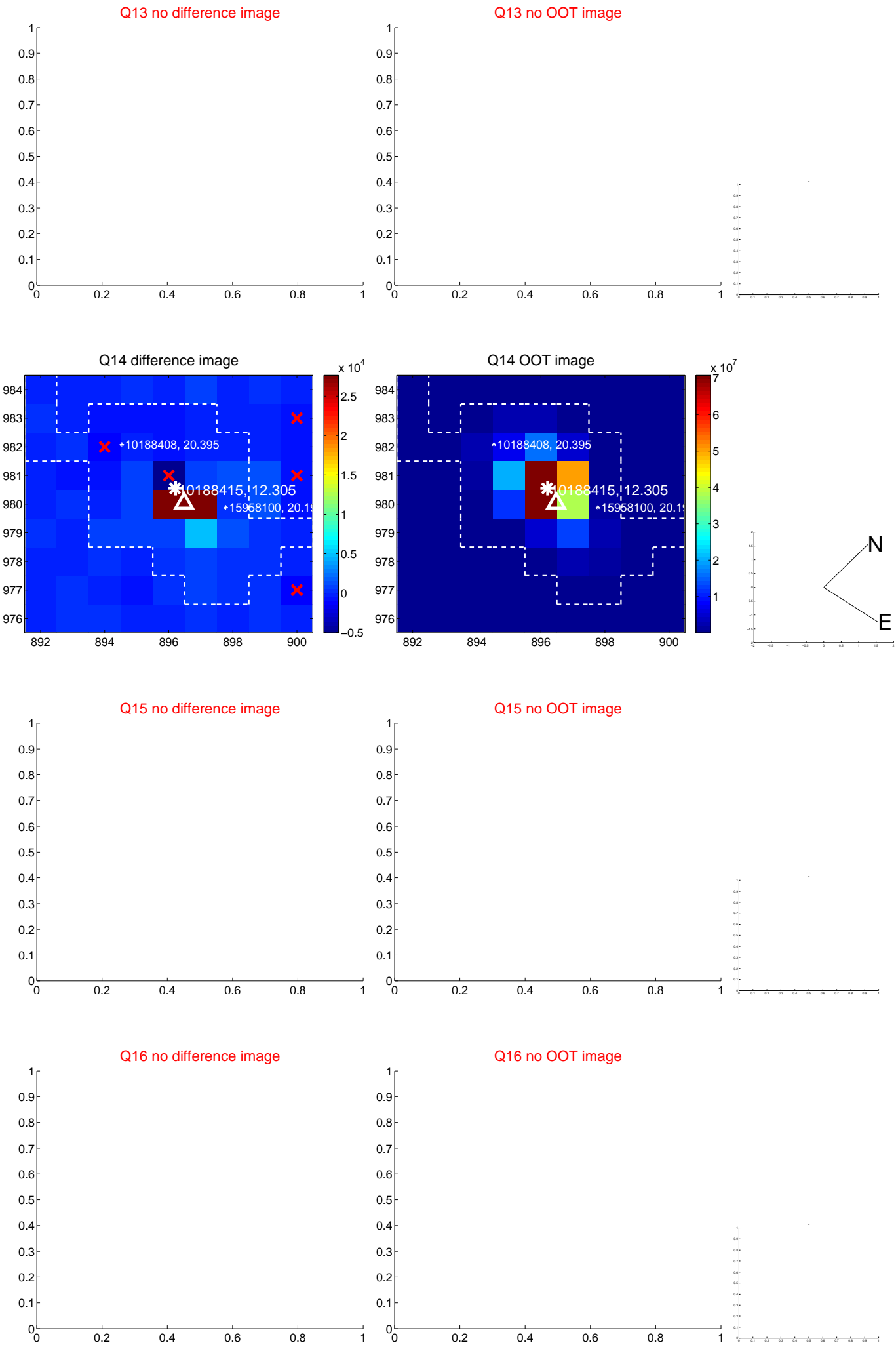




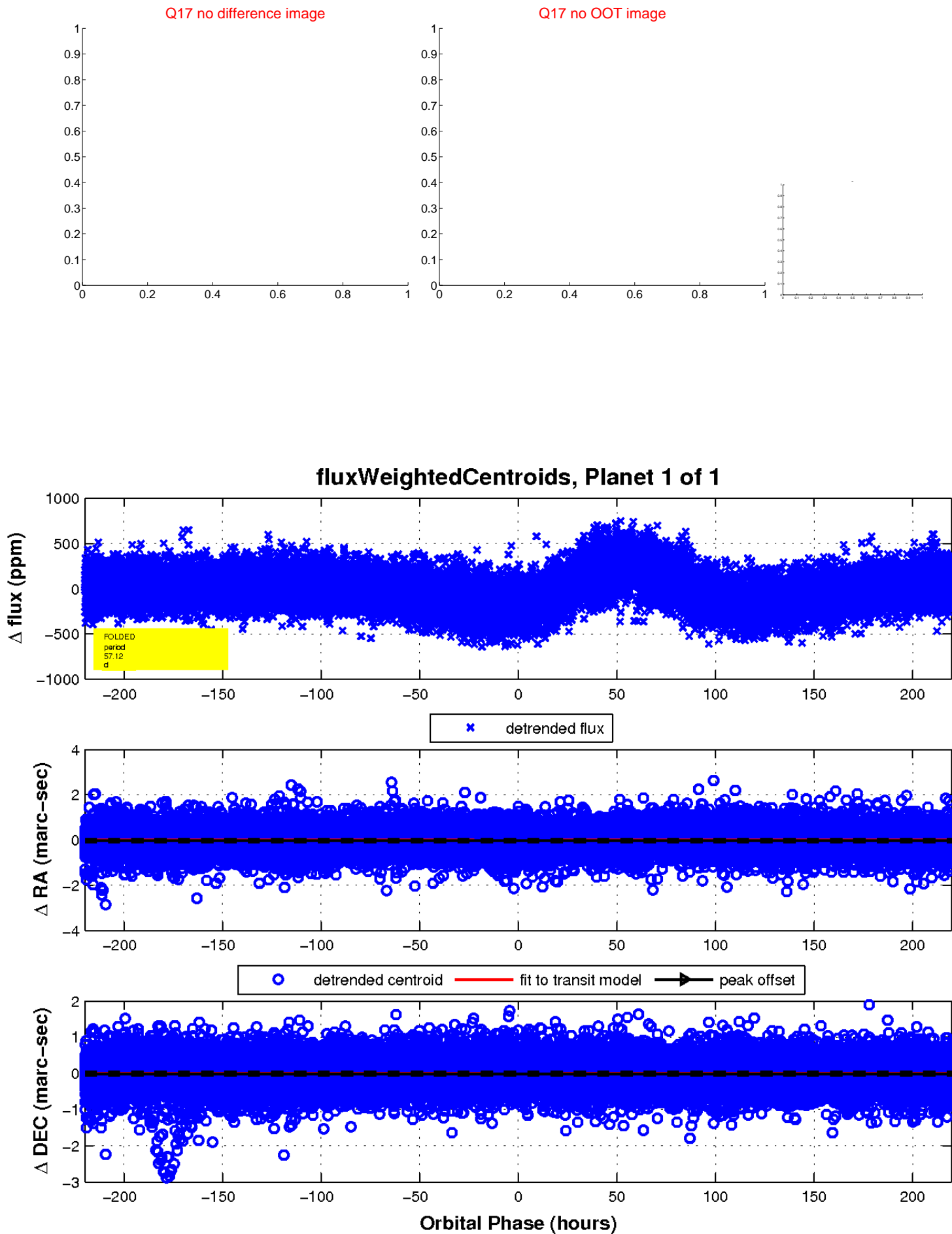
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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UKIRT Image

