

# KIC 011098069

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011098069-01	OBS	No	18.941472	135.583717	117.4	28.643	11.0	14.5	1.83	7135	3.89	315.93

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011098069-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV

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

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

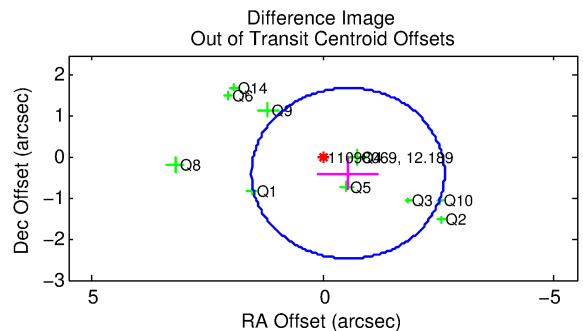
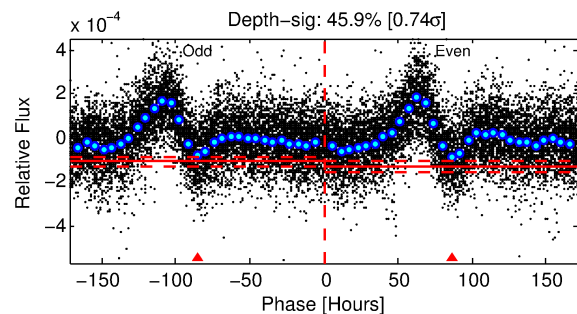
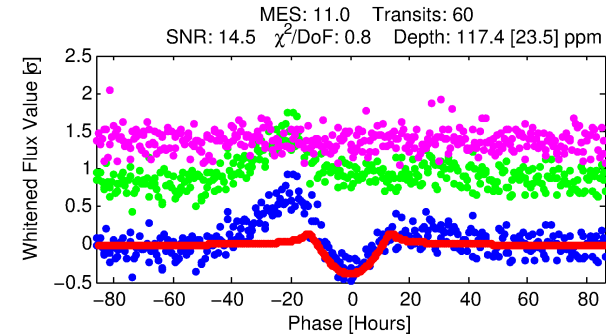
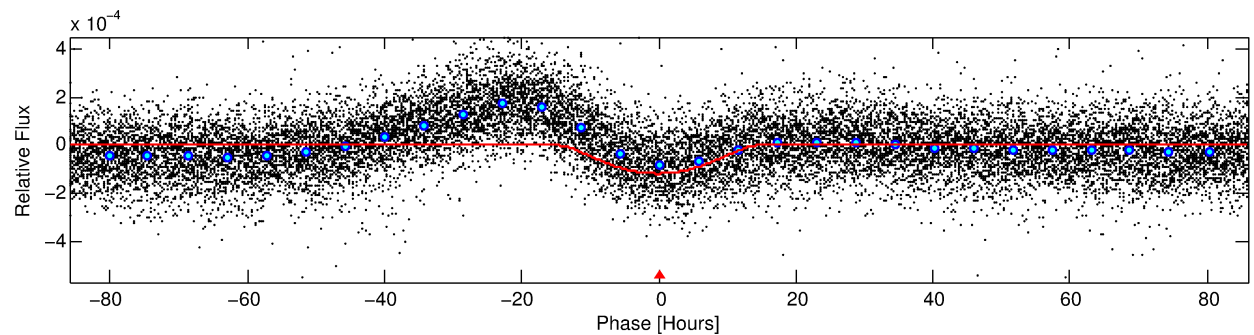
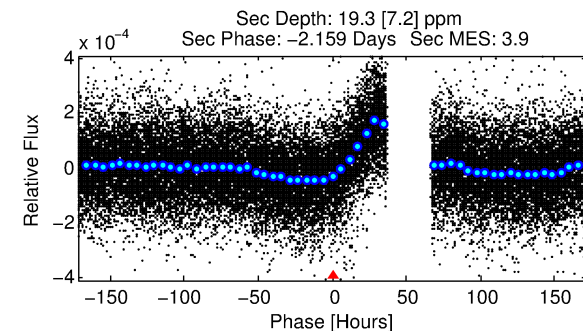
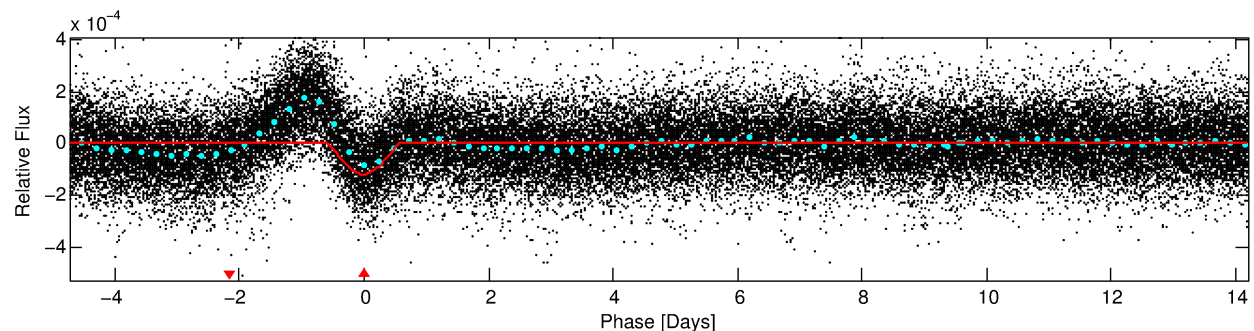
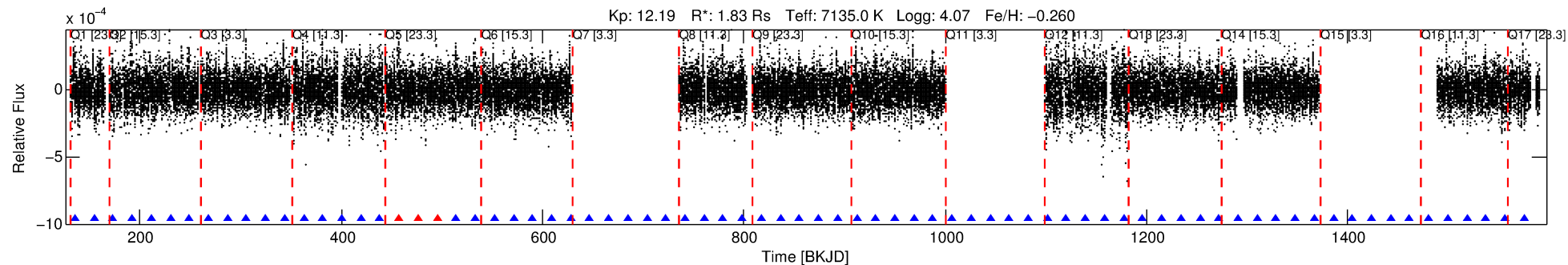
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011098069-01

No Significant Match Found

# DV One-Page Summary

KIC: 11098069 Candidate: 1 of 1 Period: 18.941 d



## DV Fit Results:

Period = 18.94147 [0.00073] d  
Epoch = 135.5837 [0.0308] BKJD  
Rp/R\* = 0.0195 [0.0202]  
a/R\* = 1.42 [0.18]  
b = 1.00 [0.03]  
Seff = 315.93 [106.87]  
Teq = 1075 [91] K  
Rp = 3.89 [4.14] Re  
a = 0.1565 [0.0326] AU  
Ag = 17.23 [36.69] [0.44σ]  
Teffp = 3386 [1788] K [1.29σ]

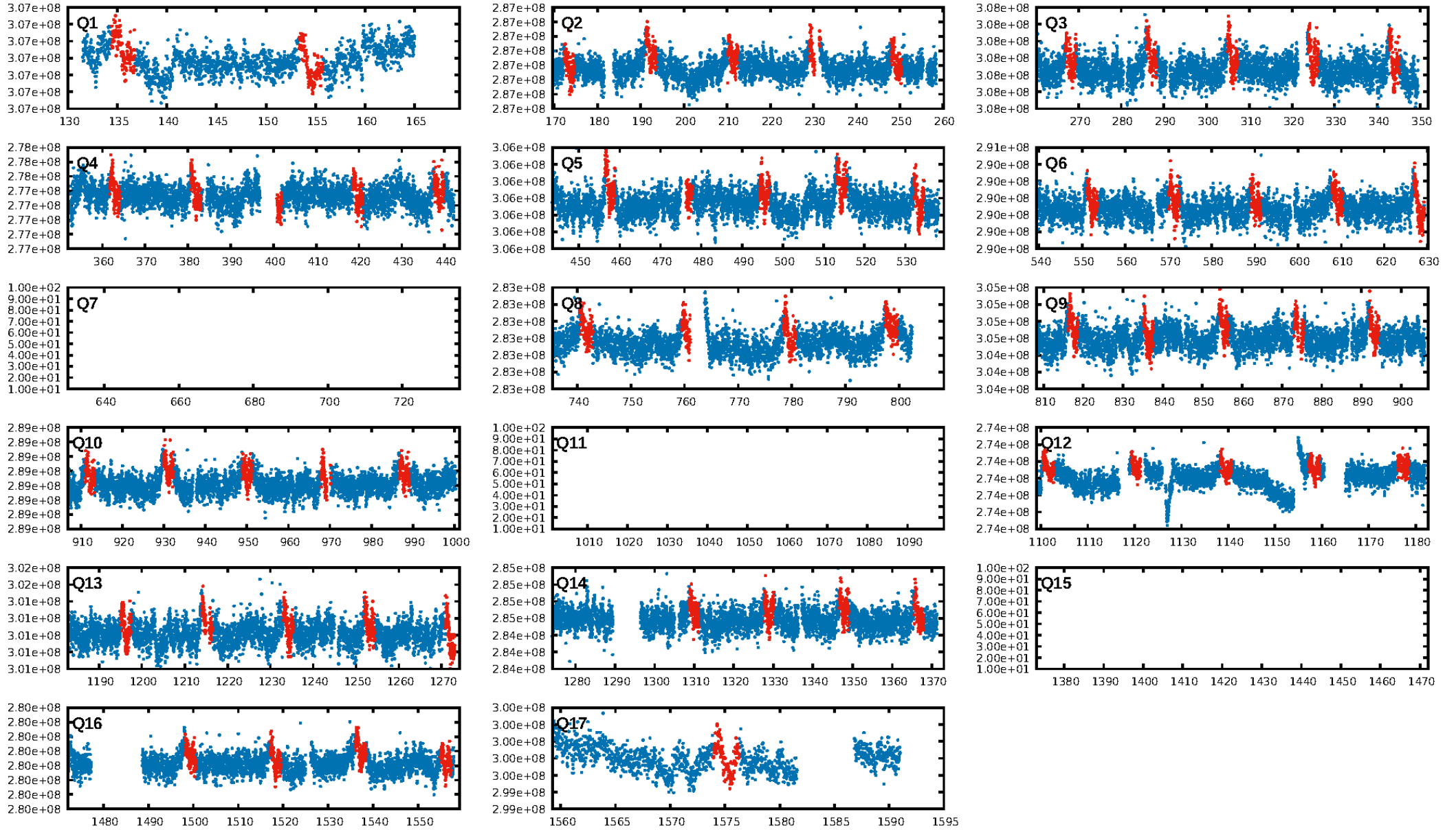
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.65e-25  
RollingBand-fgt: 0.95 [54/57]  
GhostDiagnostic-chr: 1.886  
Centroid-sig: 25.3%  
Centroid-so: 0.343 arcsec [0.86σ]  
OotOffset-rm: 0.671 arcsec [0.96σ]  
OotOffset-st: 4/1/2/3 [10]  
KicOffset-rm: 0.727 arcsec [1.15σ]  
KicOffset-st: 4/1/2/3 [10]  
DiffImageQuality-fgm: 0.60 [6/10]  
DiffImageOverlap-fno: 1.00 [14/14]

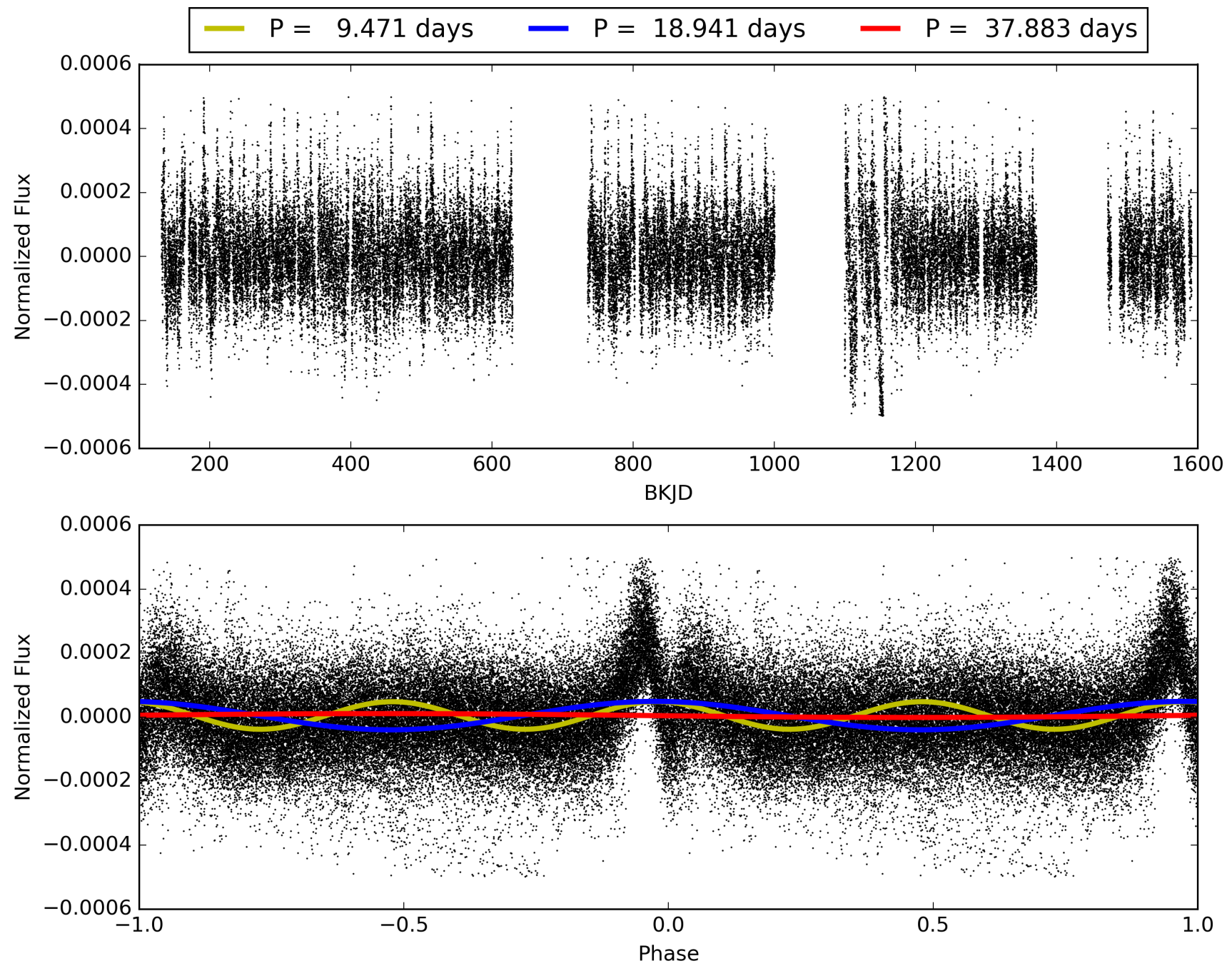
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:09:45 Z

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

# TCE 011098069-01, PDC Light Curves

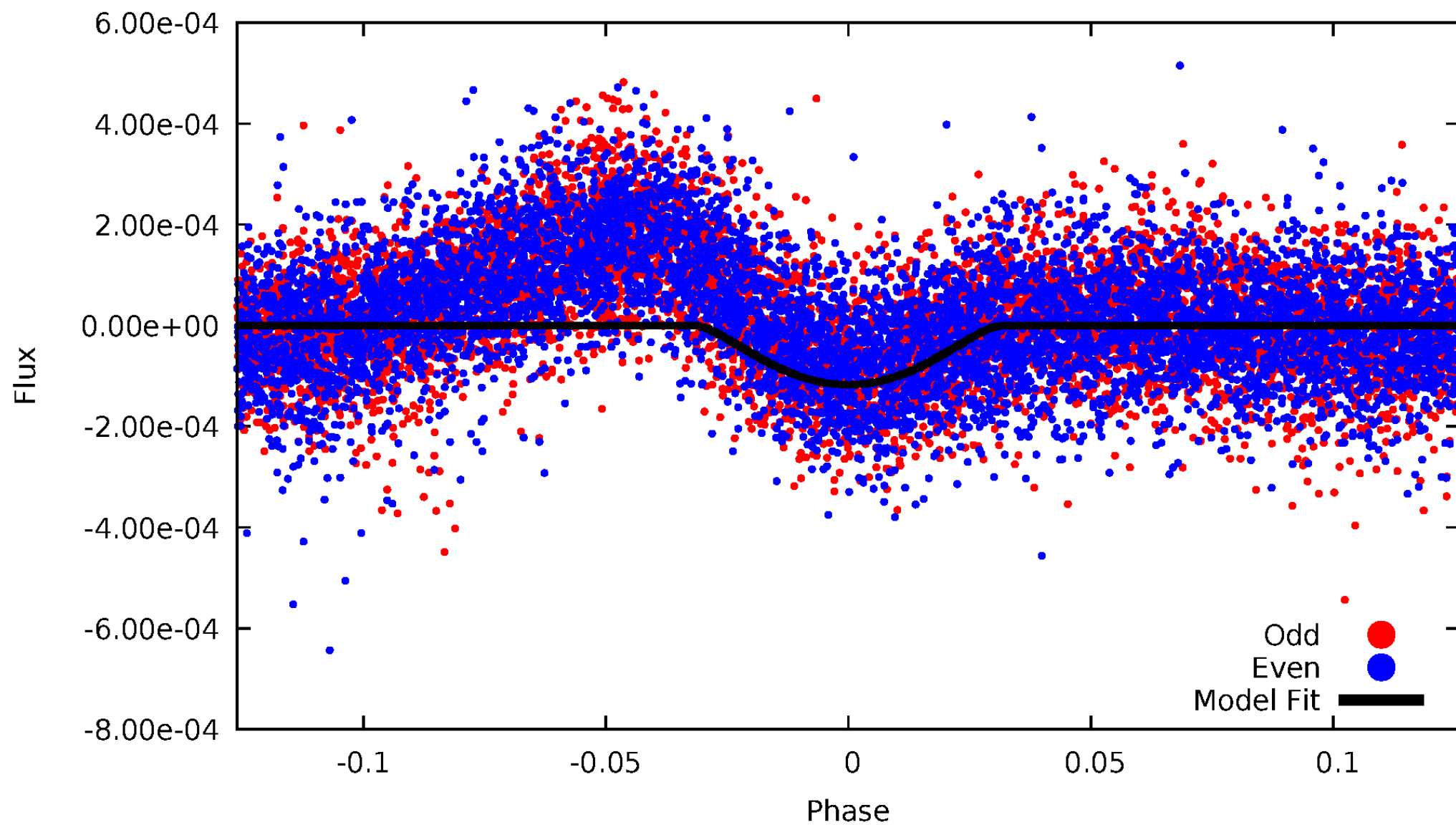


TCE 011098069-01



# DV Odd/Even

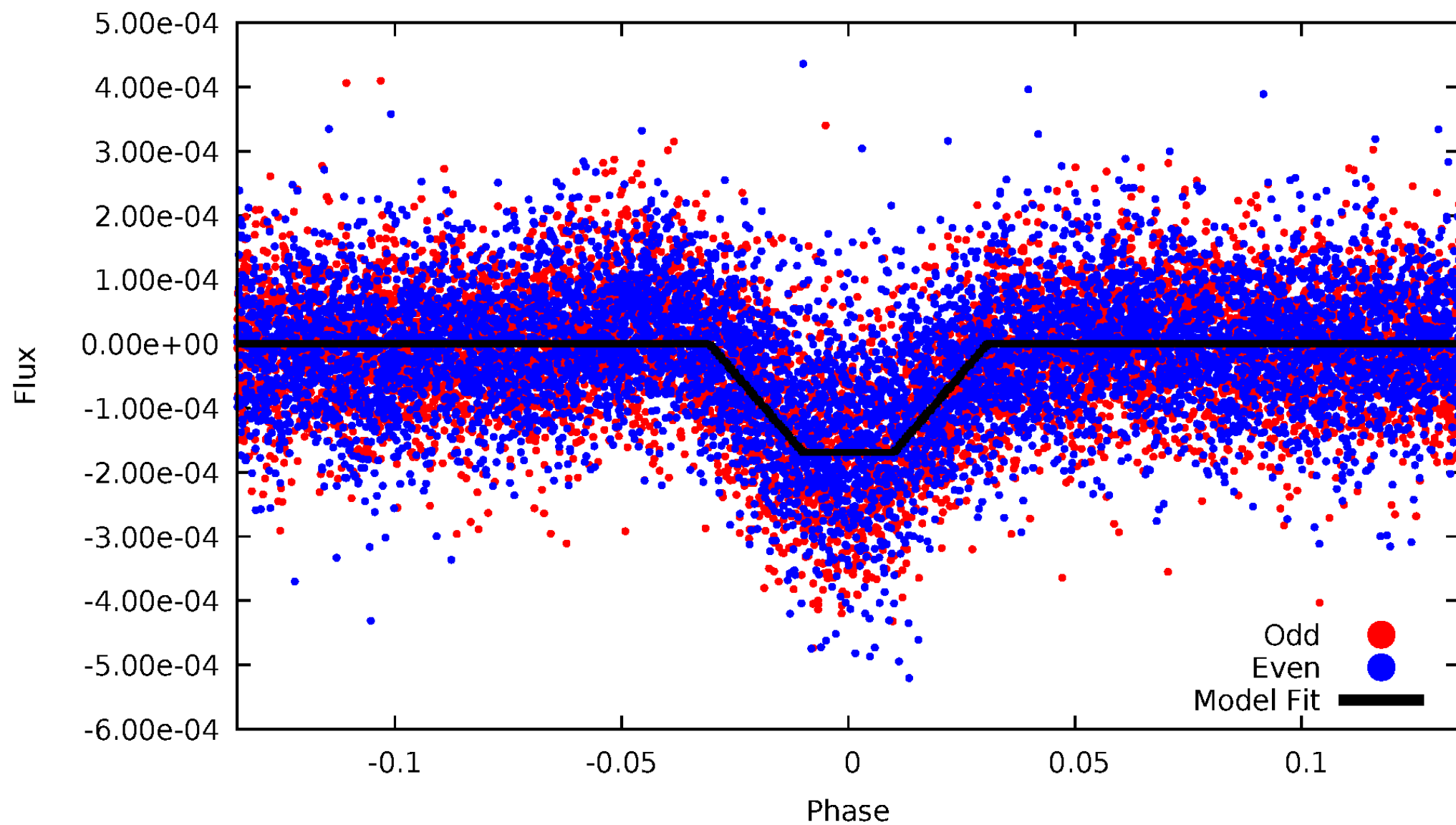
TCE 011098069-01



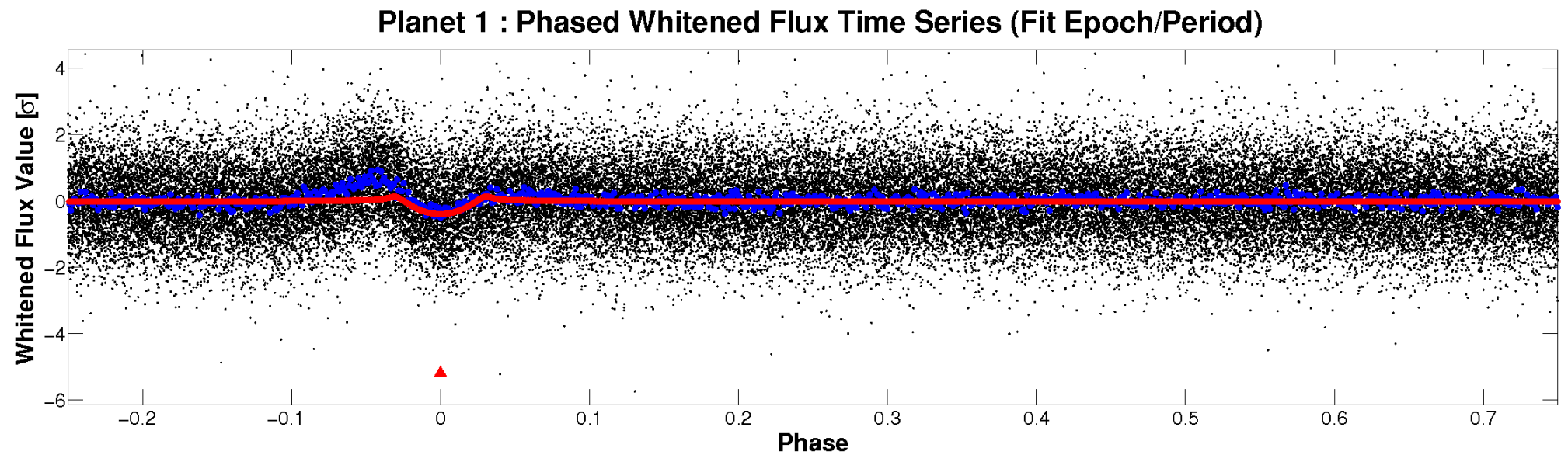
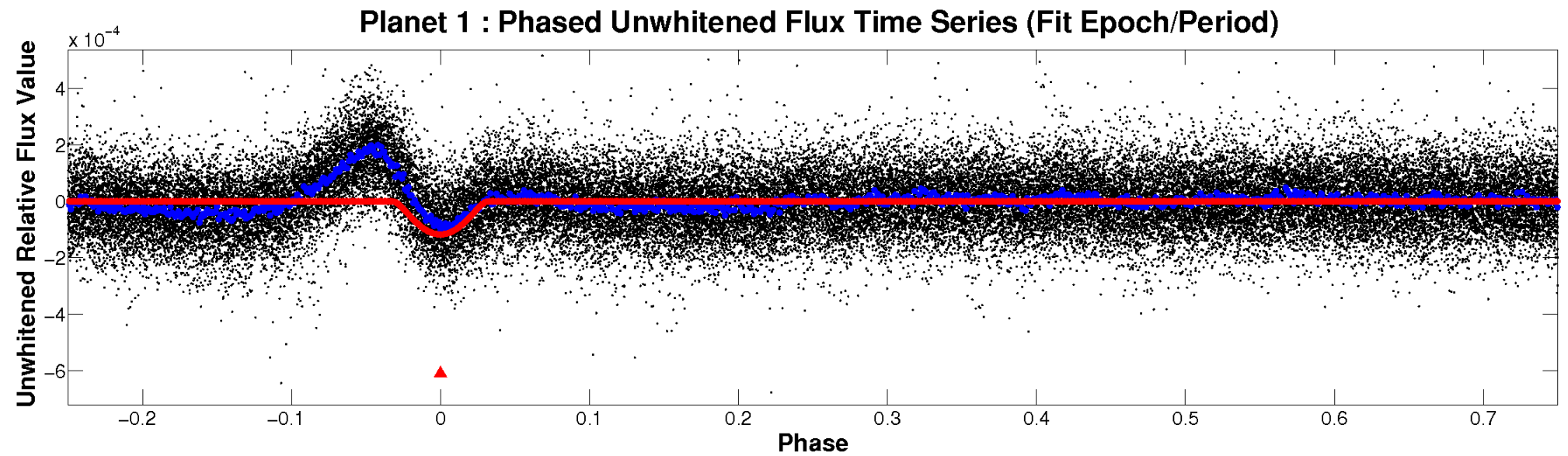


# ALT Odd/Even

TCE 011098069-01

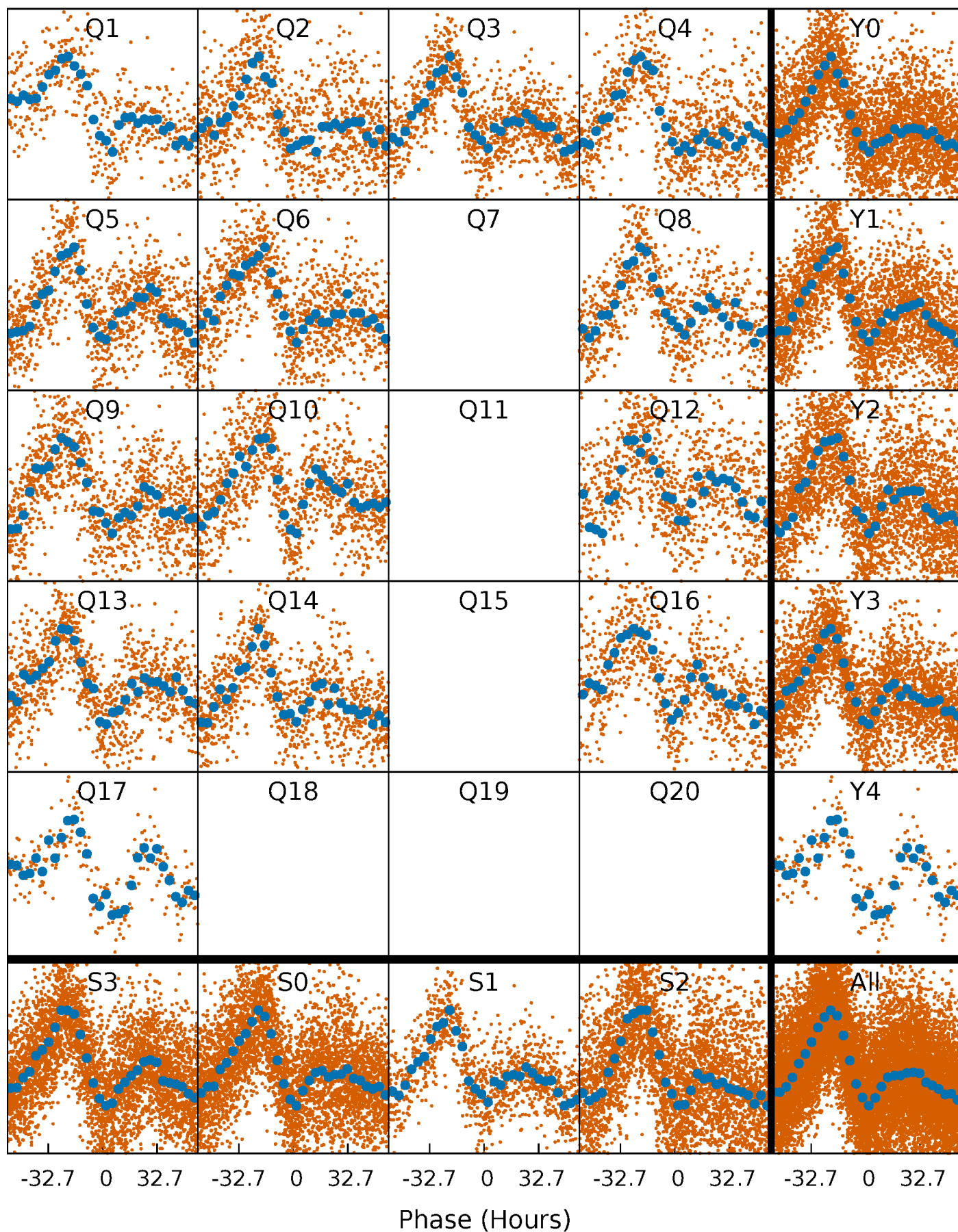


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

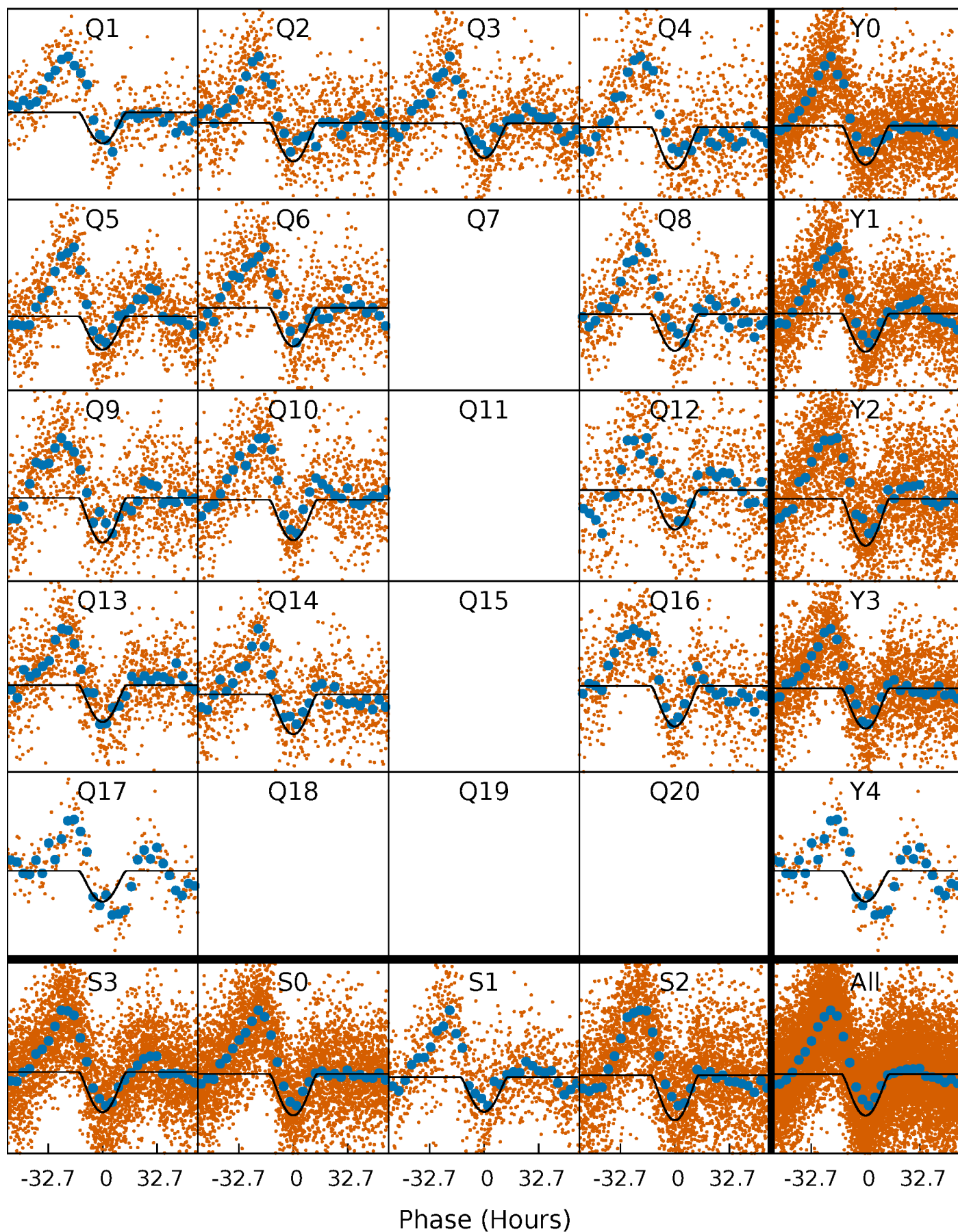
TCE 011098069-01 P= 18.941472 Days  $T_0=135.583717$  (BKJD)





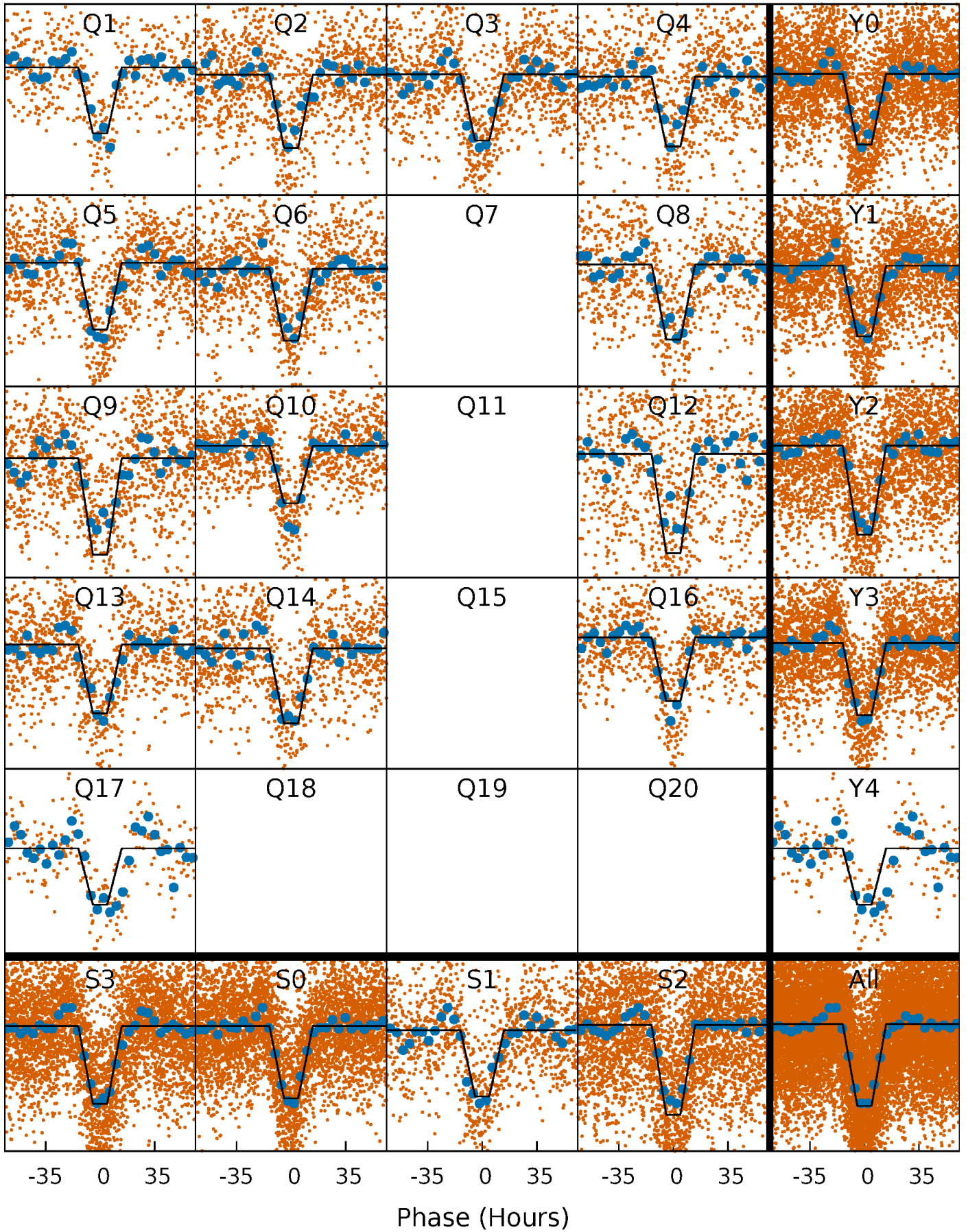
# DV Quarter-Phased Transit Curves

TCE 011098069-01 P= 18.941472 Days  $T_0=135.583717$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

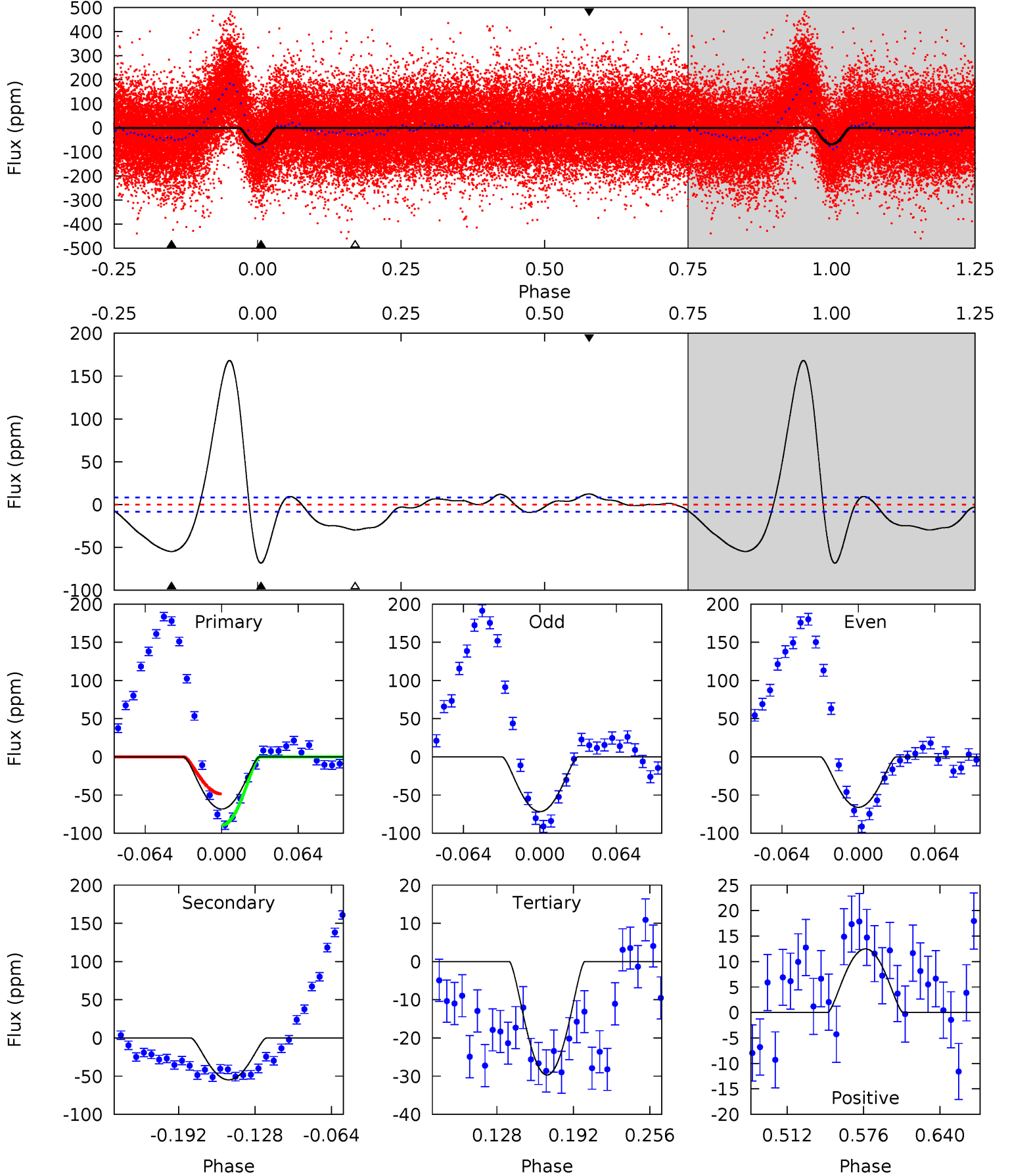
TCE 011098069-01 P= 18.941651 Days  $T_0=135.543765$  (BKJD)



# DV Model-Shift Uniqueness Test

011098069-01, P = 18.941472 Days, E = 116.642245 Days

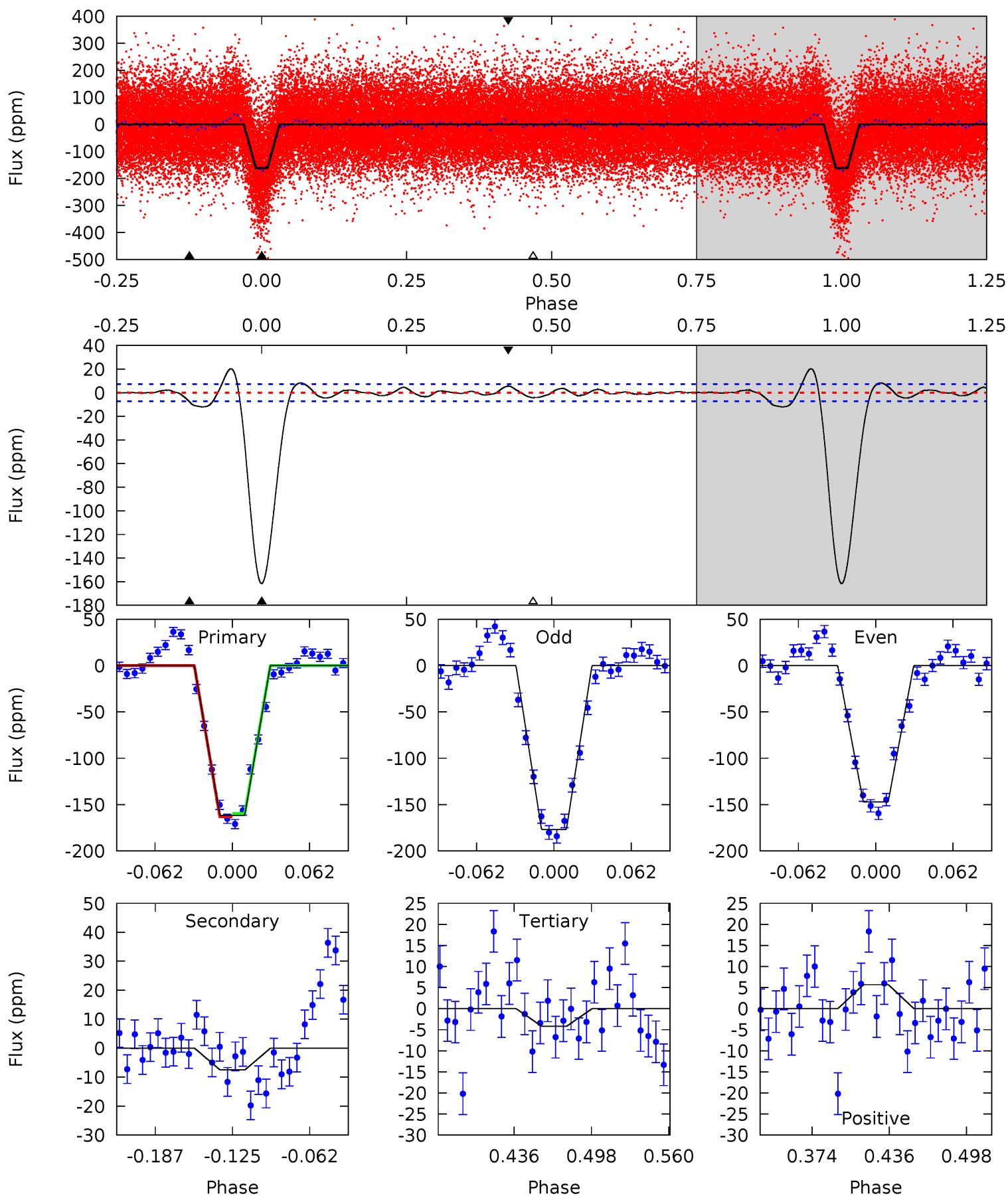
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
38.5	30.9	16.8	7.04	4.66	1.85	14.0	21.8	31.5	14.2	23.9	1.60	1.09	0.71	11.1



# Alt Model-Shift Uniqueness Test

011098069-01, P = 18.941651 Days, E = 116.602114 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
103.6	4.81	2.68	3.65	4.66	1.86	1.47	100.9	99.9	2.13	1.16	9.57	0.94	0.11	1.07





### Stellar Parameters For KIC 011098069

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7135^{+199}_{-249}$	$4.069^{+0.171}_{-0.124}$	$-0.260^{+0.250}_{-0.350}$	$1.826^{+0.402}_{-0.442}$	$1.427^{+0.180}_{-0.240}$	$0.330^{+0.333}_{-0.122}$
	+3%/-3%	+4%/-3%	+96%/-135%	+22%/-24%	+13%/-17%	+101%/-37%
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 011098069-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-55 \pm 2$	$4.65^{+3.86}_{-2.93}$	$1496^{+96}_{-97}$	$4189^{+2371}_{-755}$	$33^{+213}_{-23}$
Alt.	$-8 \pm 2$	$3.94^{+3.31}_{-2.44}$	$1487^{+95}_{-101}$	$3152^{+1243}_{-508}$	$6.186^{+35.999}_{-4.278}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

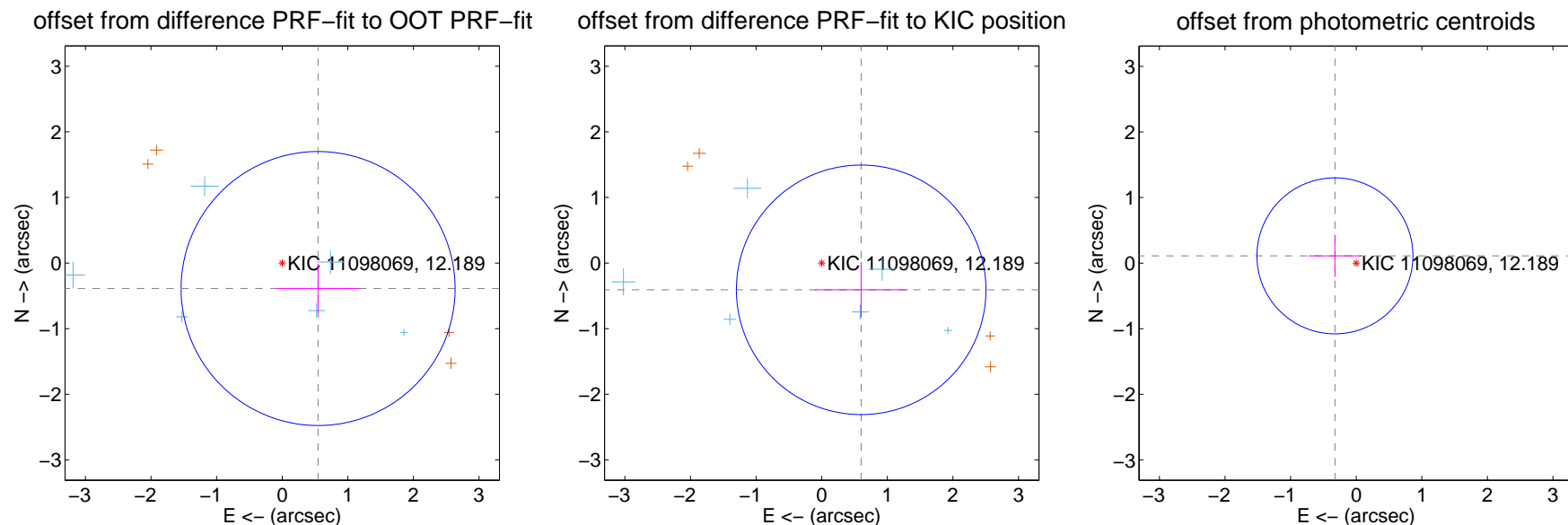
## DV Centroid Data

Supplemental centroid analysis for 011098069-01. Kepler magnitude: 12.19. Transit SNR 14.50

There are 6 quarters with good PRF difference image offsets

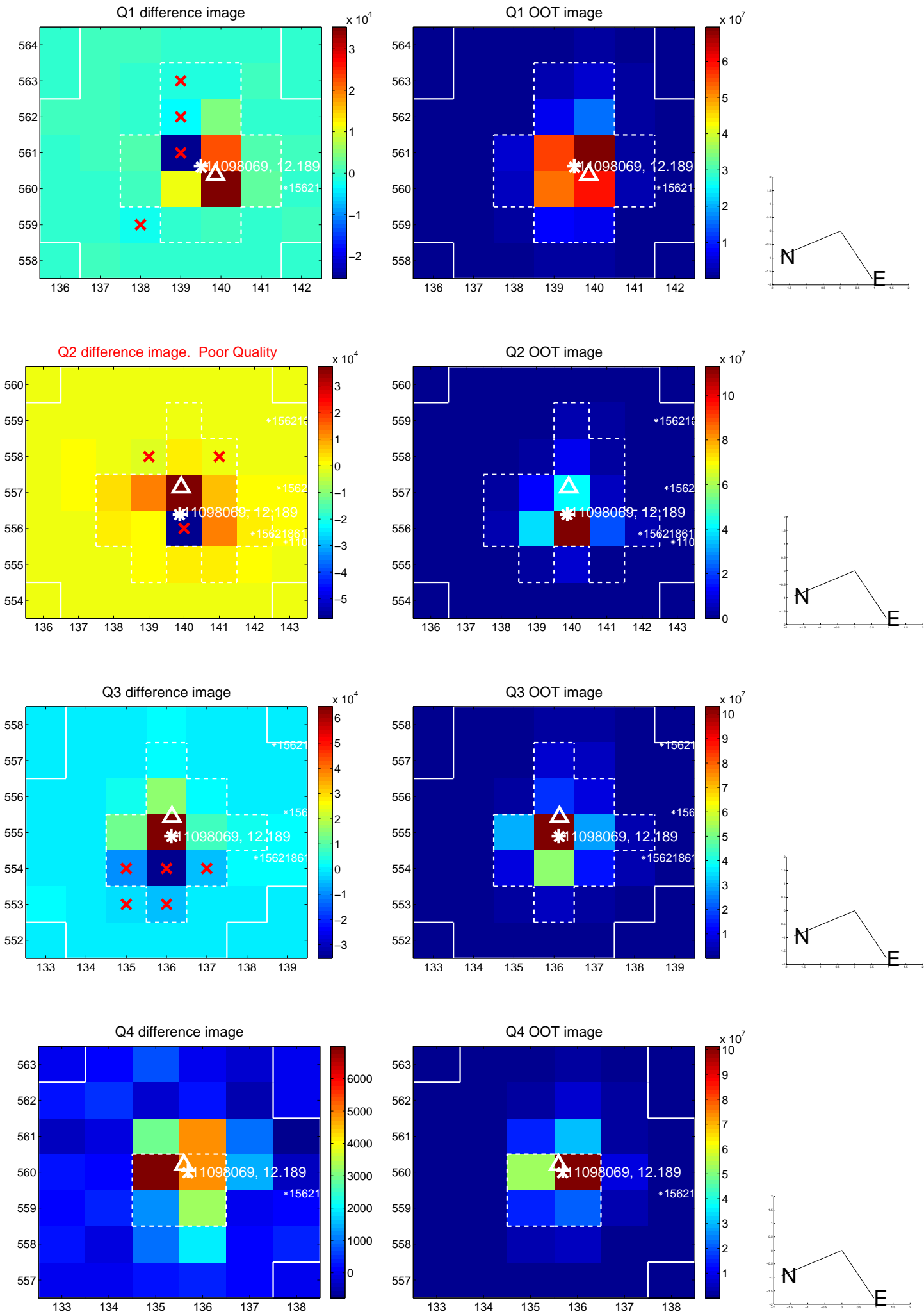
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.671 \pm 0.696$	0.96	$-0.547 \pm 0.637$	$-0.389 \pm 0.375$
PRF-fit source offset from KIC position	$0.727 \pm 0.634$	1.15	$-0.602 \pm 0.710$	$-0.409 \pm 0.423$
photometric centroid source offset	$0.34 \pm 0.40$	0.86	$0.32 \pm 0.40$	$0.11 \pm 0.32$

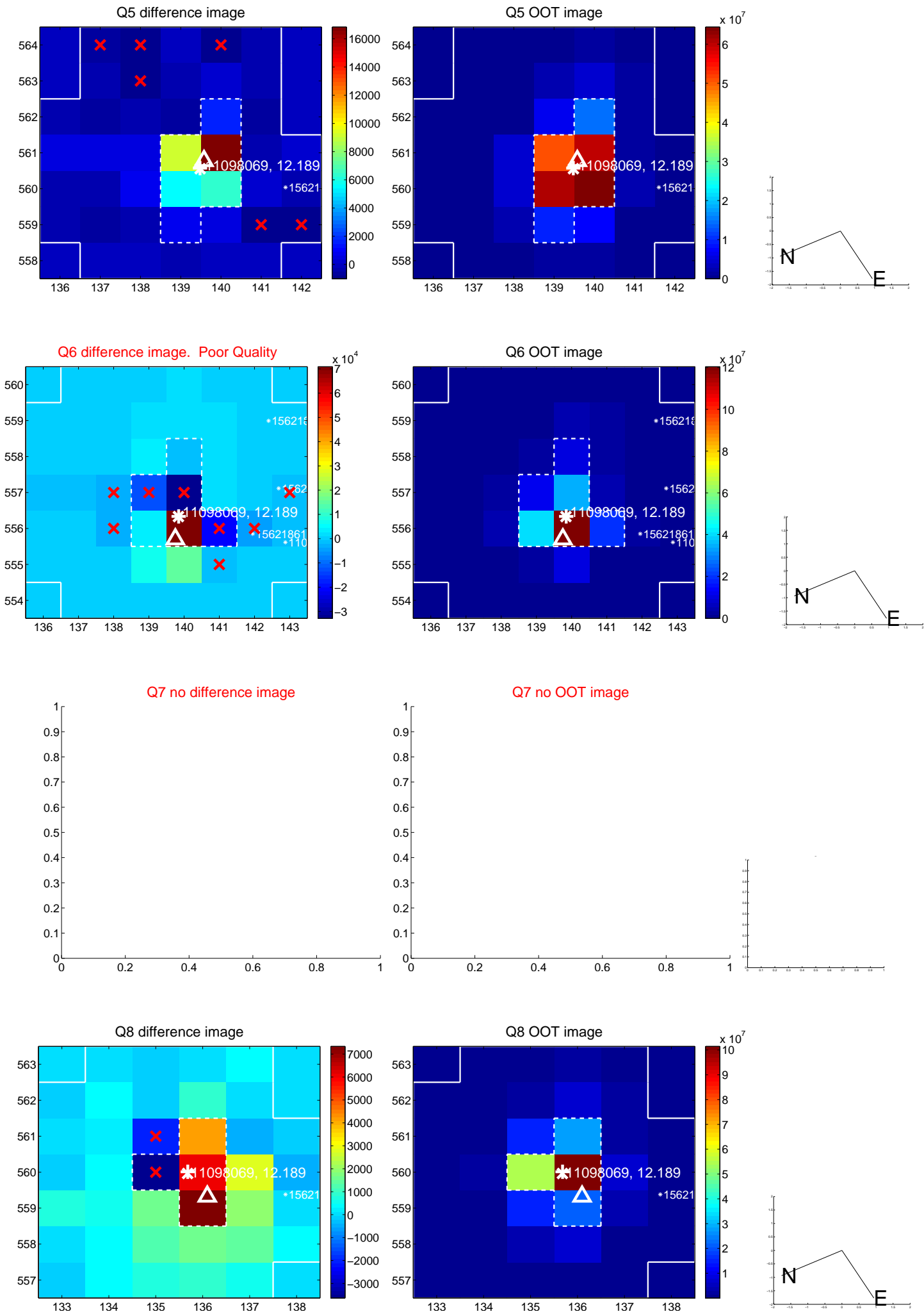


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

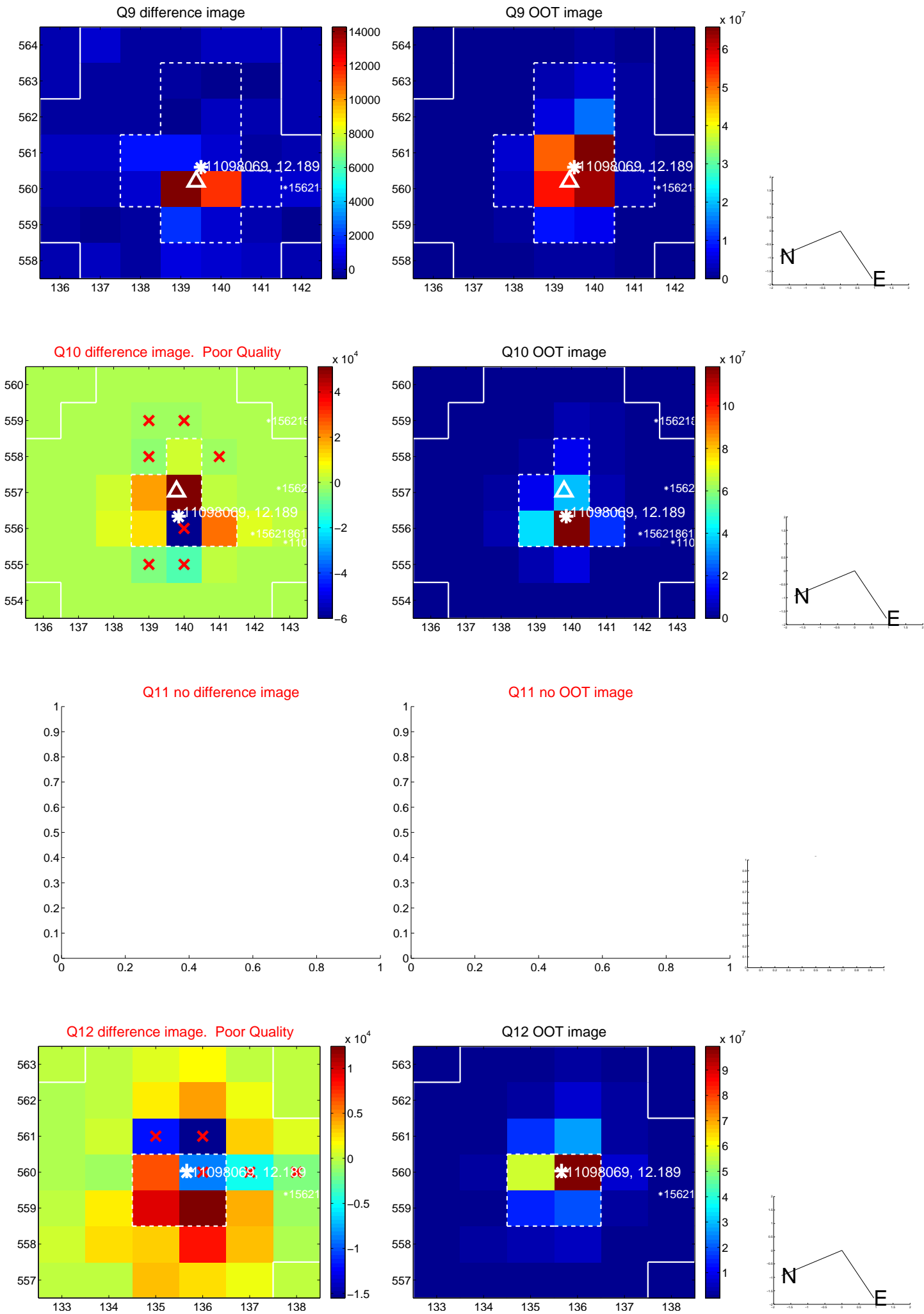


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

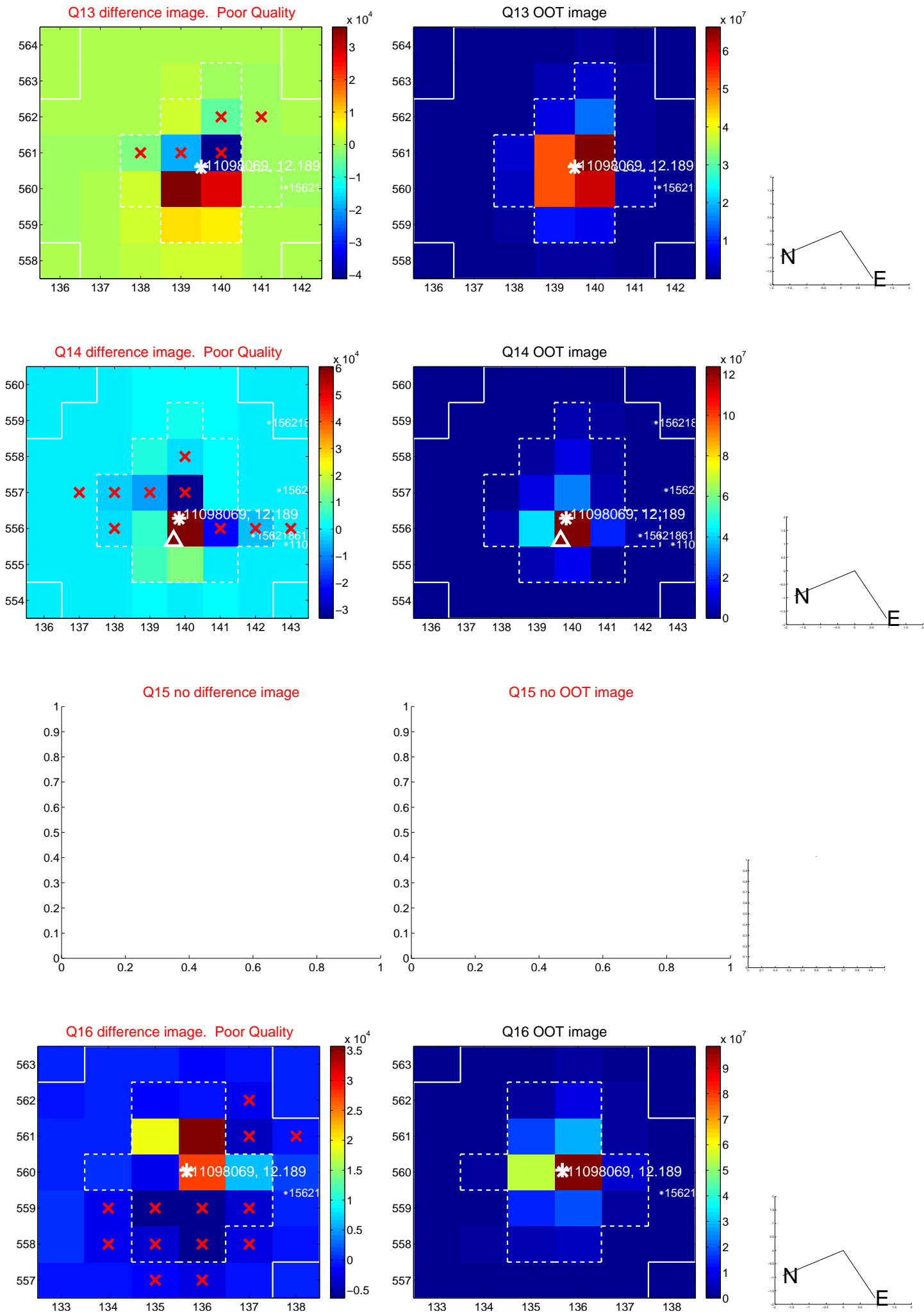




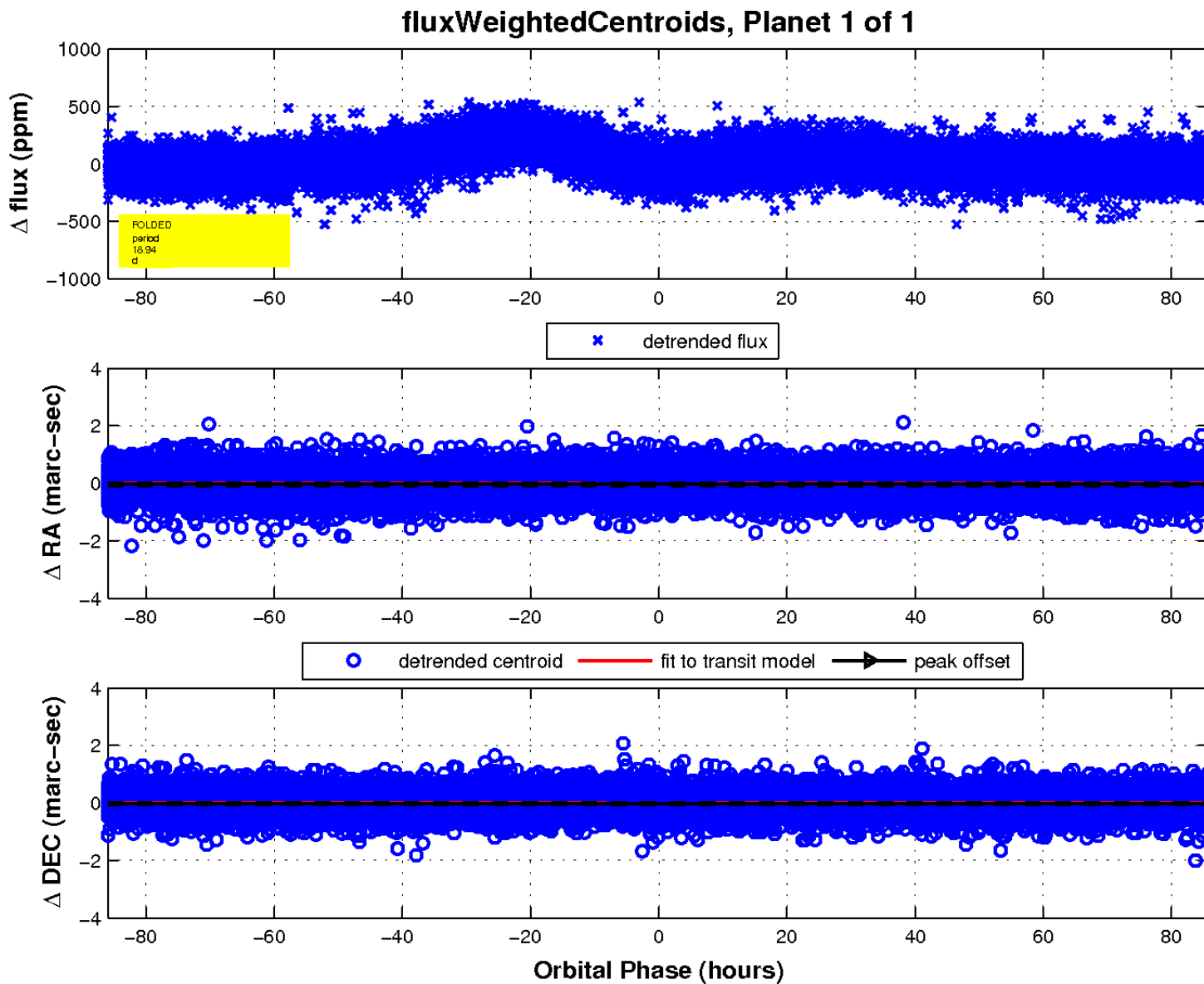
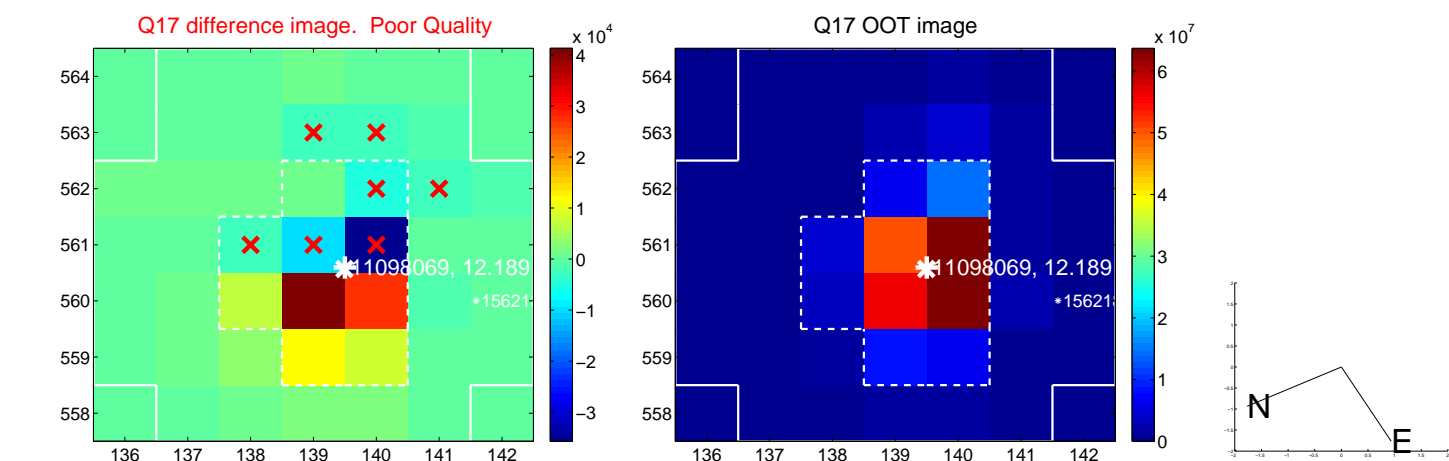
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

