

# KIC 004281390

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004281390-01	OBS	No	1.068537	132.186462	2.3	2.704	8.9	1.0	1.70	6858	0.31	10742.39

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004281390-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—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.

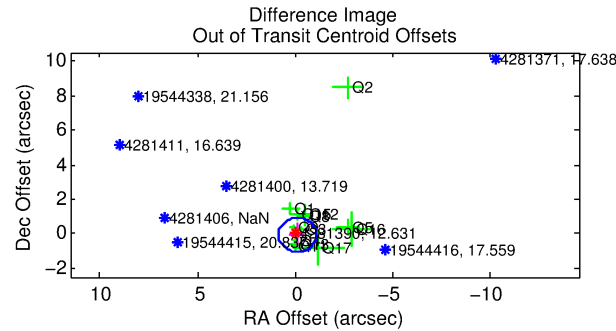
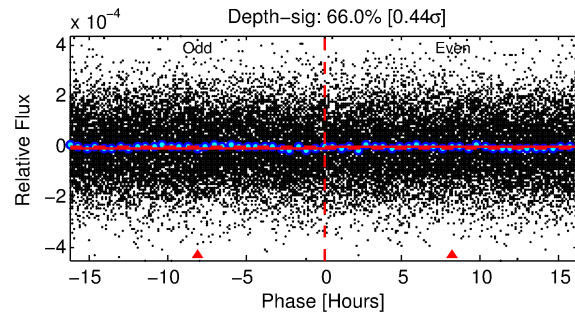
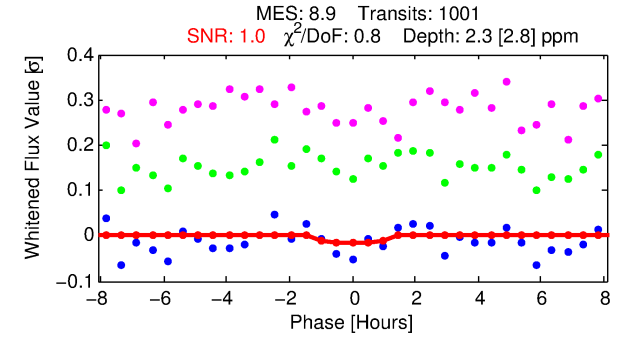
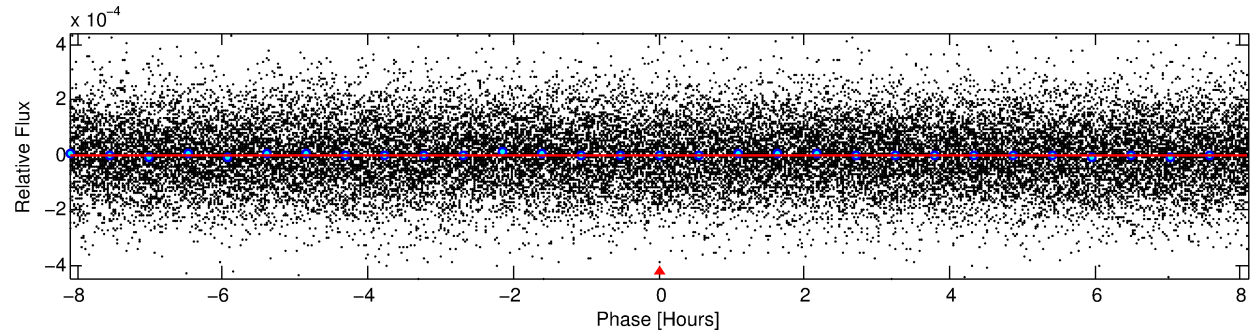
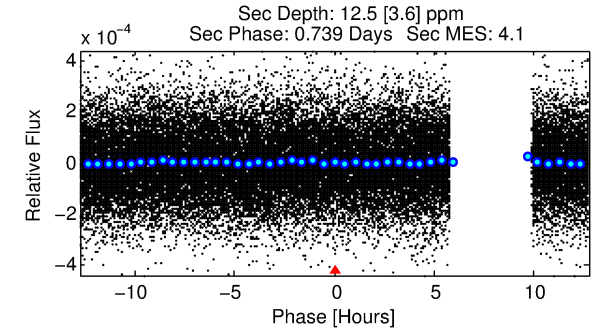
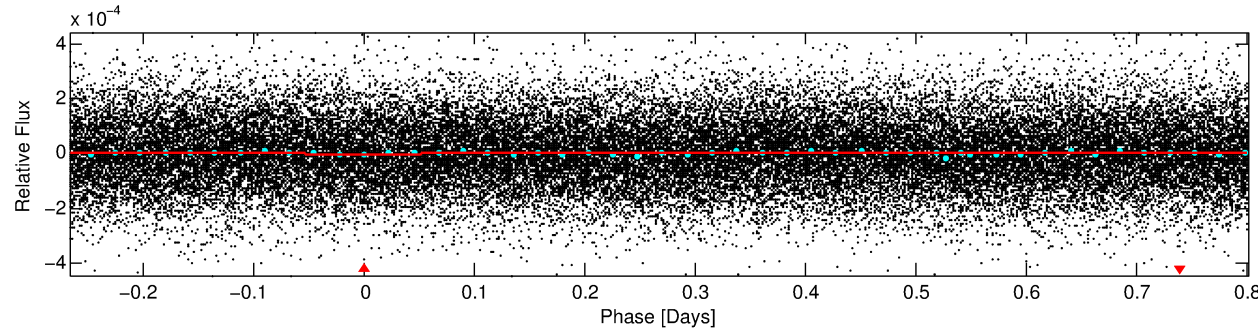
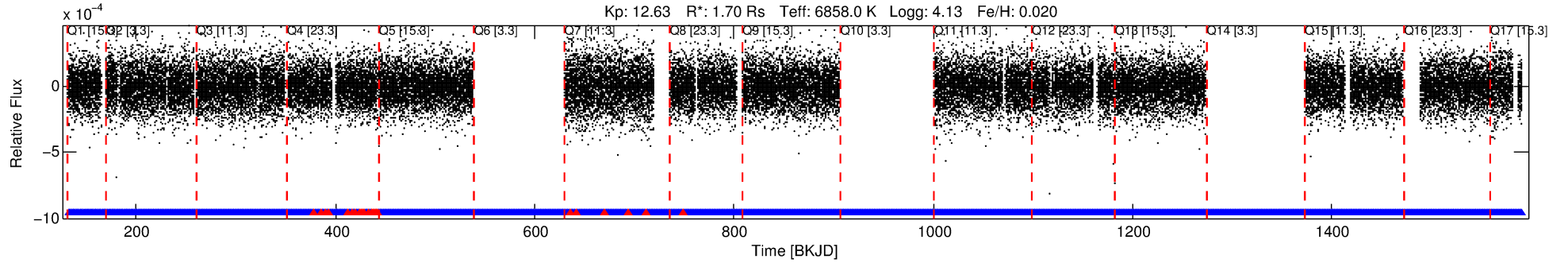
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004281390-01

No Significant Match Found

# DV One-Page Summary

KIC: 4281390 Candidate: 1 of 1 Period: 1.069 d



## DV Fit Results:

Period = 1.06854 [0.00011] d  
Epoch = 132.1865 [0.0293] BKJD  
Rp/R\* = 0.0016 [0.0014]  
a/R\* = 1.49 [2.96]  
b = 0.93 [0.55]  
Seff = 10742.39 [2360.50]  
Teff = 2596 [143] K  
Rp = 0.31 [0.27] Re  
a = 0.0231 [0.0034] AU  
Ag = 39.04 [68.55] [0.55σ]  
Teffp = 10033 [4373] K [1.70σ]

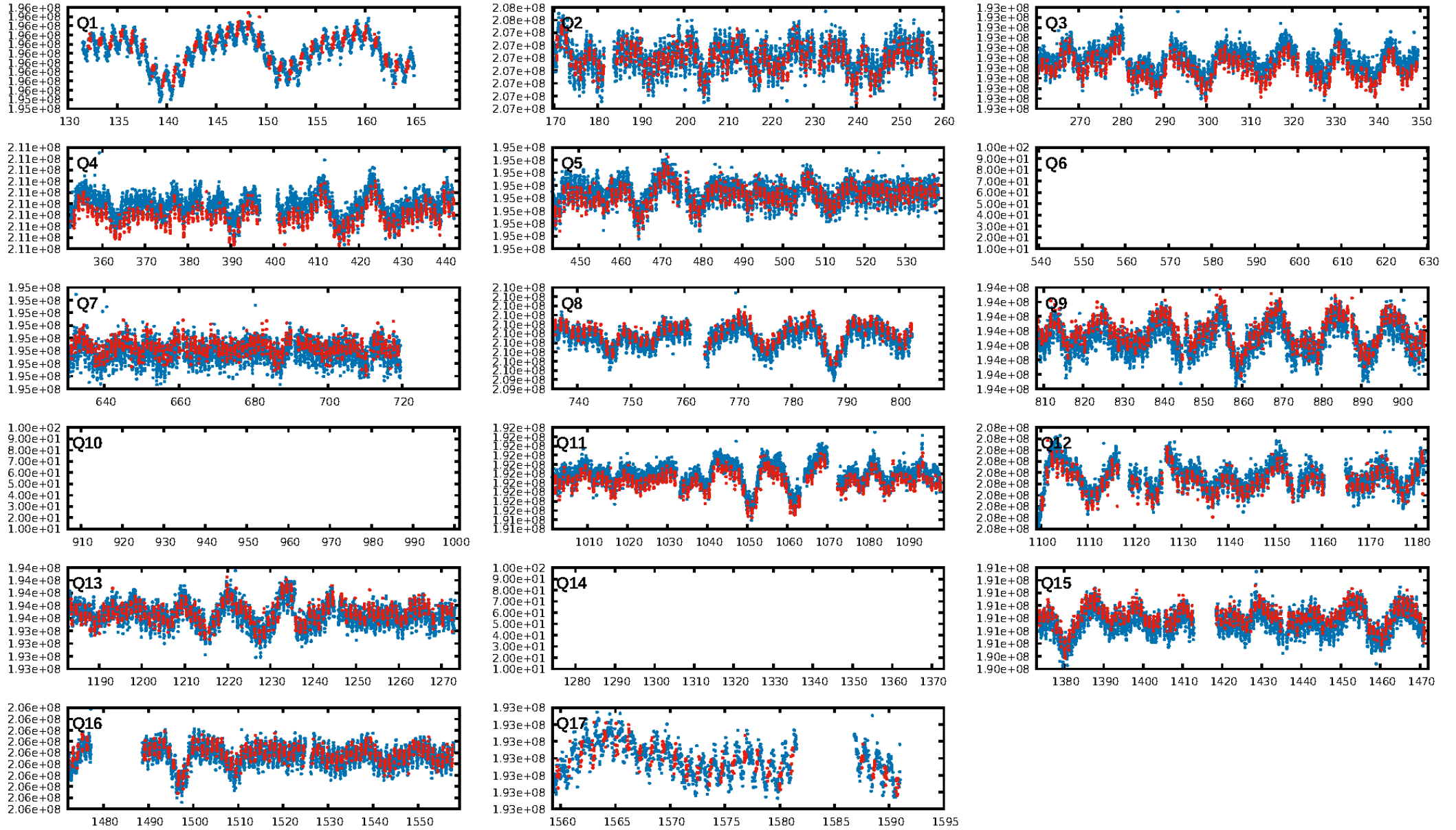
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.93e-16  
RollingBand-fgt: 0.97 [919/945]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.112 arcsec [0.34σ]  
KicOffset-rm: 0.104 arcsec [0.37σ]  
OotOffset-st: 1/3/4/5 [13]  
KicOffset-st: 1/3/4/5 [13]  
DiffImageQuality-fgm: 0.31 [4/13]  
DiffImageOverlap-fno: 1.00 [14/14]

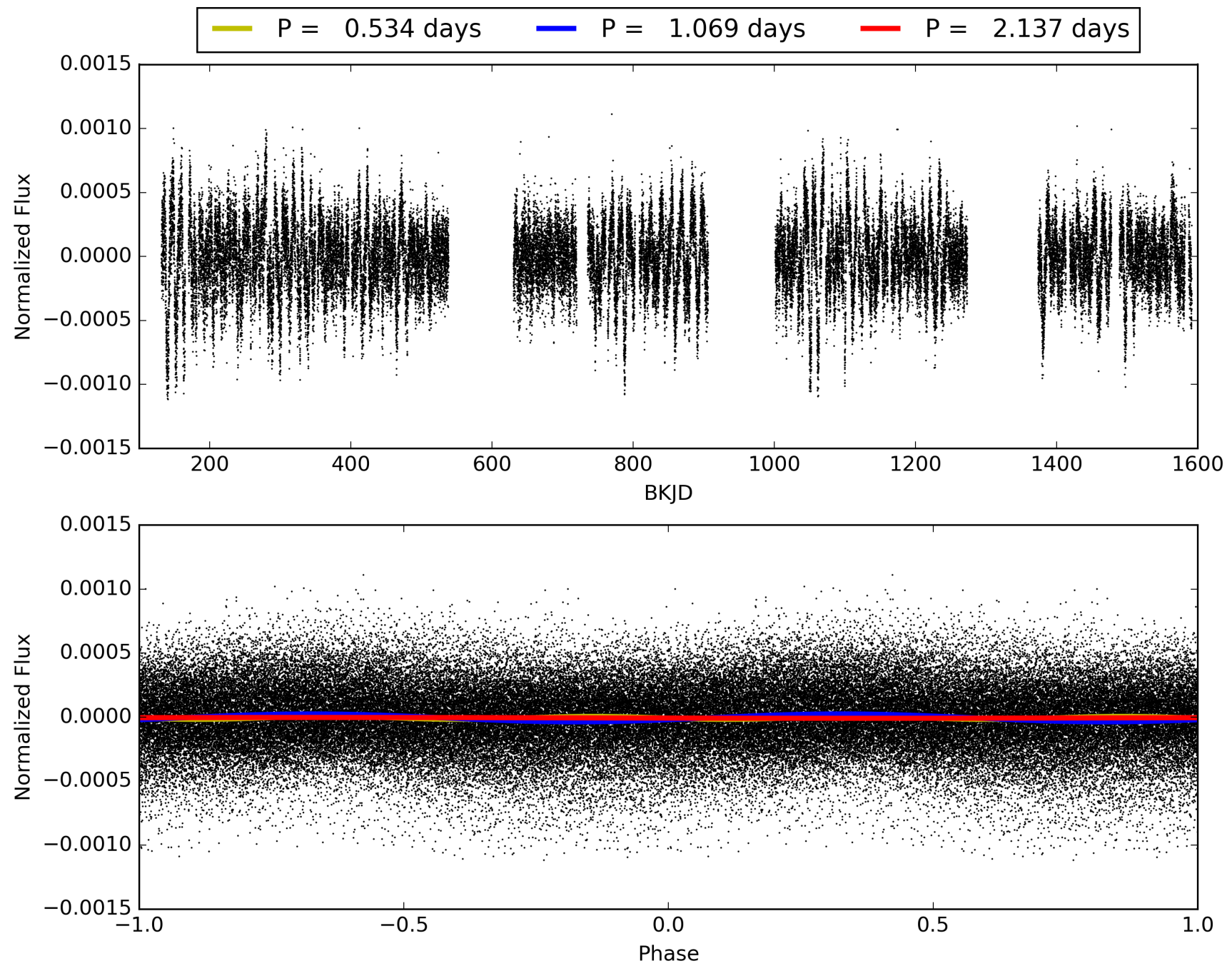
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 00:08:52 Z

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

# TCE 004281390-01, PDC Light Curves

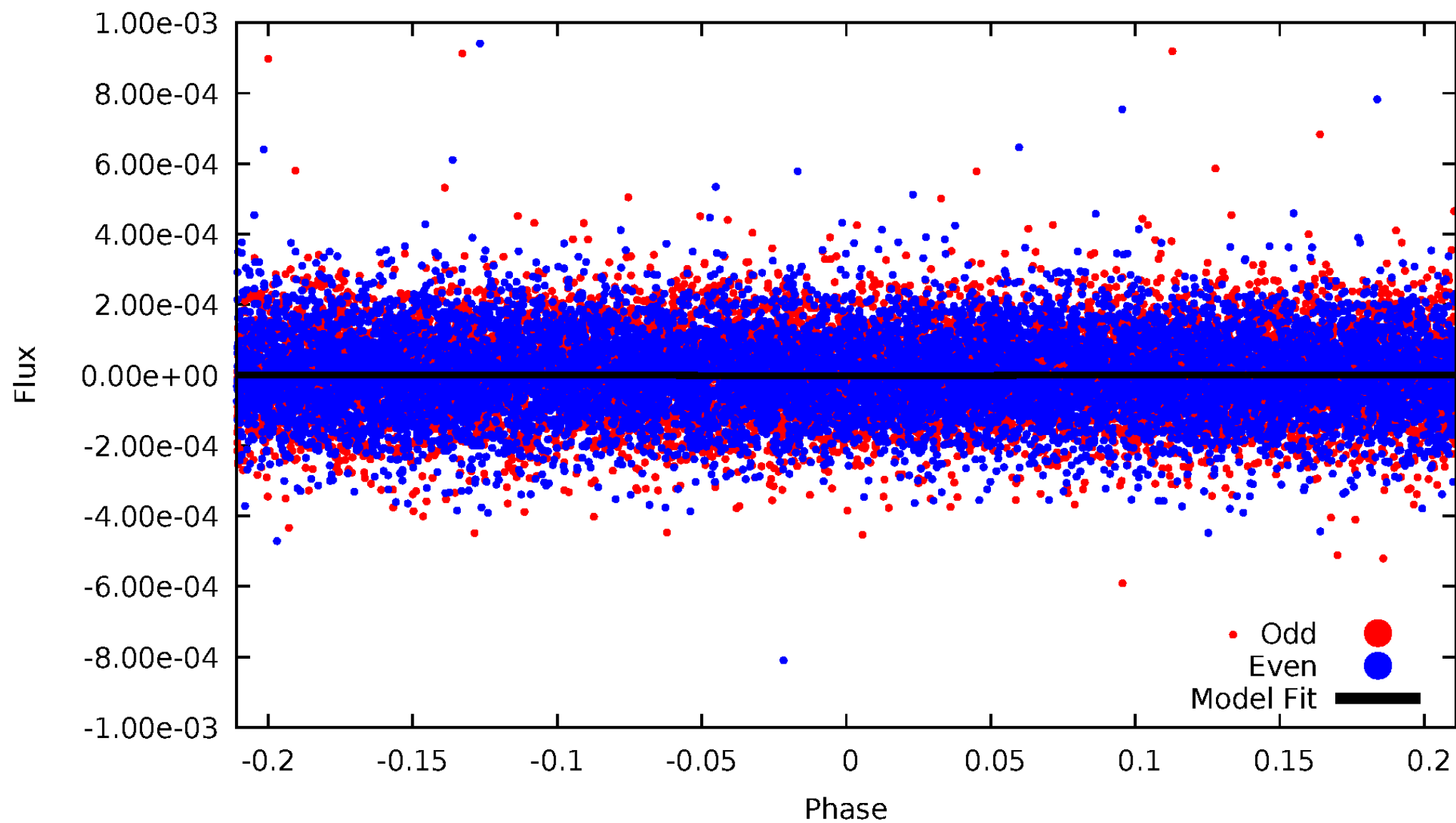


TCE 004281390-01



# DV Odd/Even

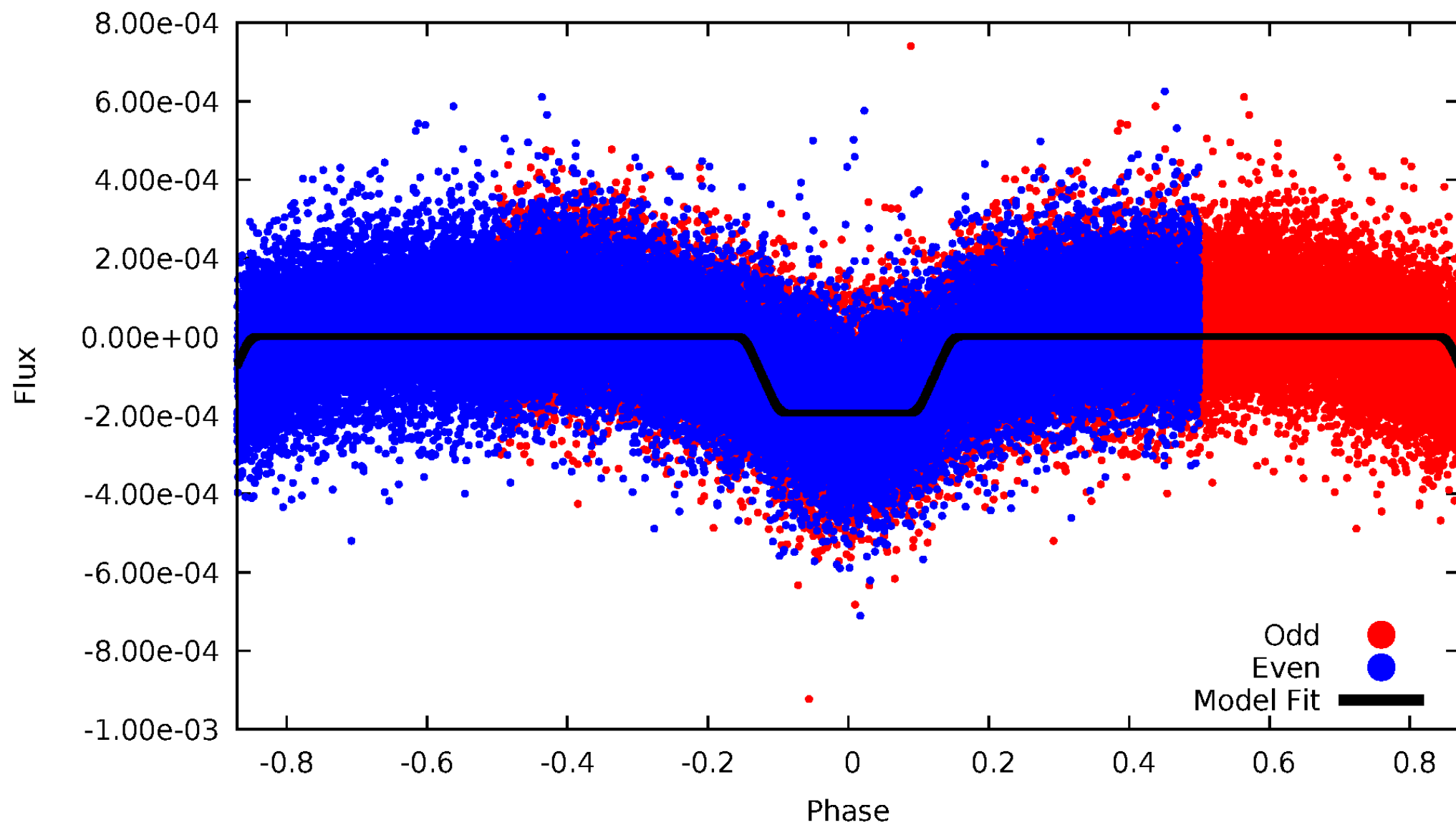
TCE 004281390-01



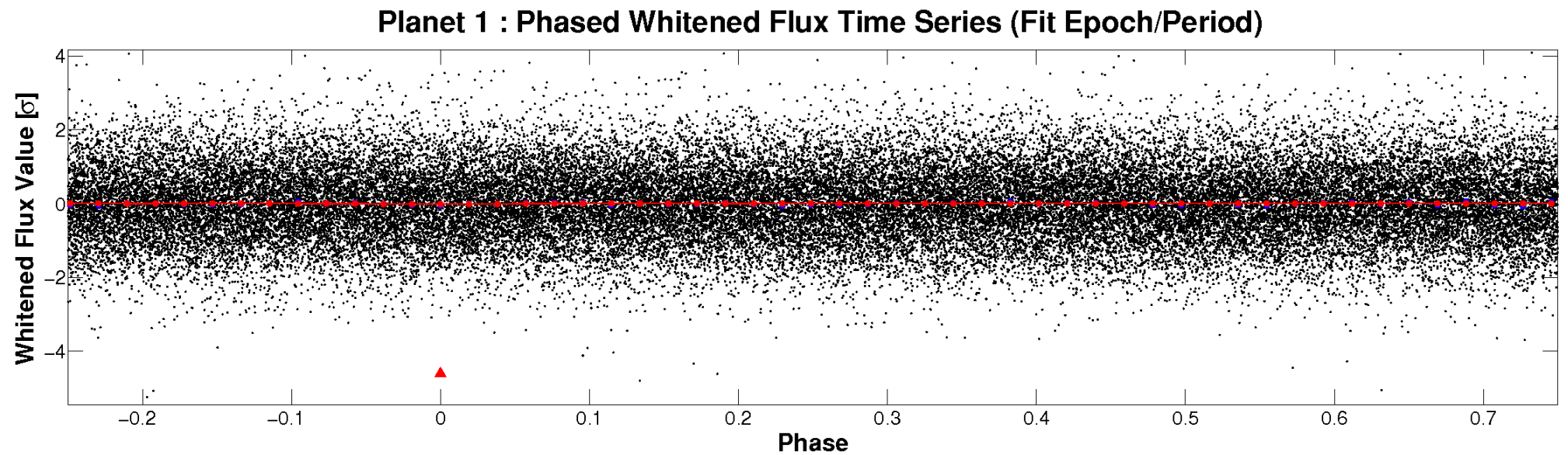
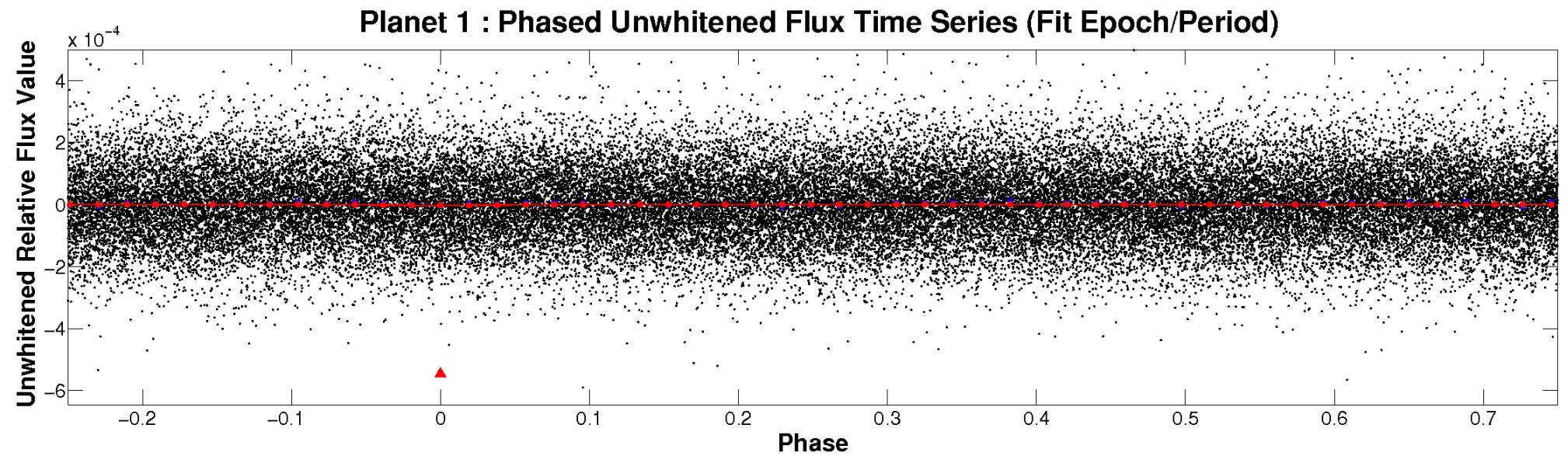


# ALT Odd/Even

TCE 004281390-01

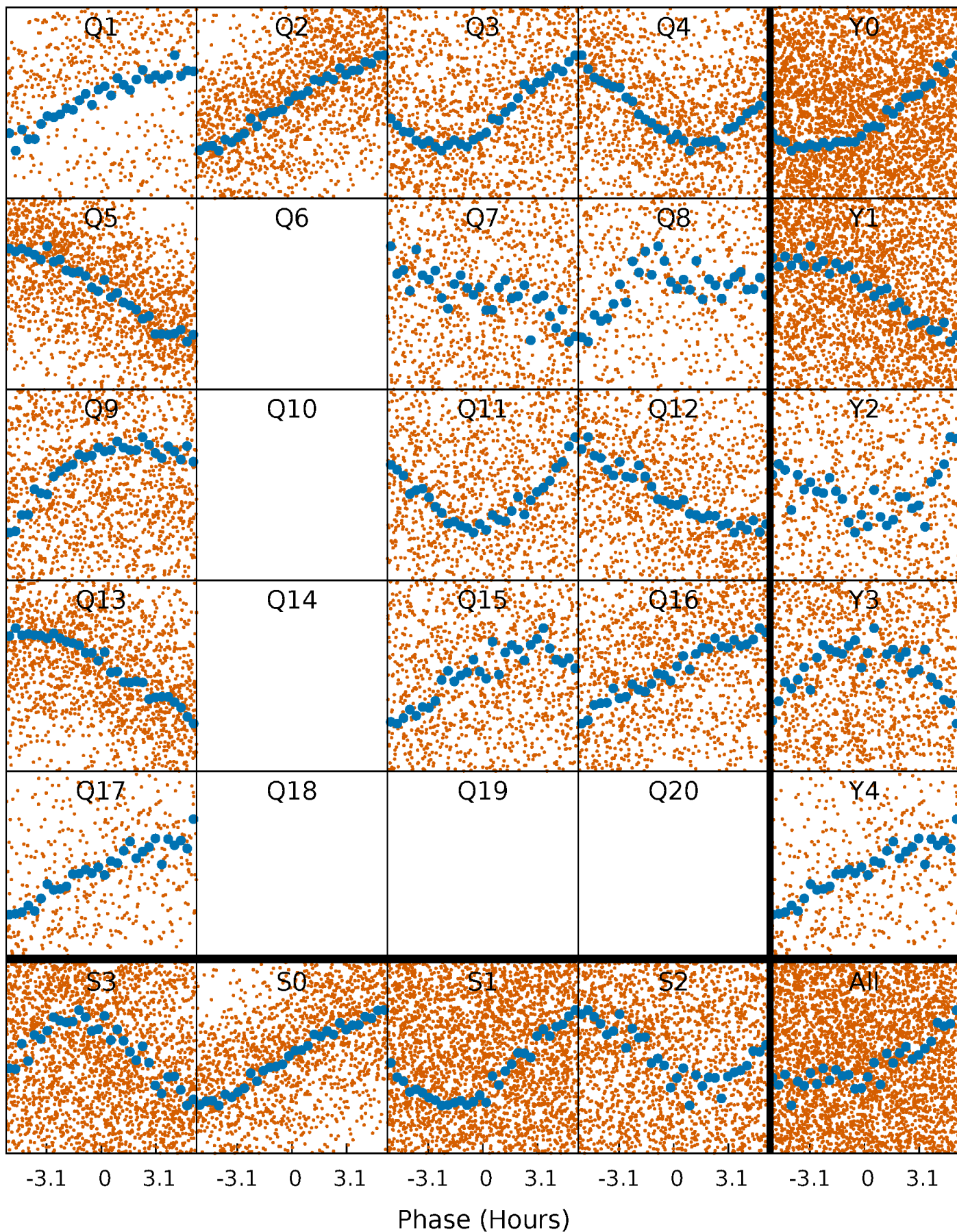


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

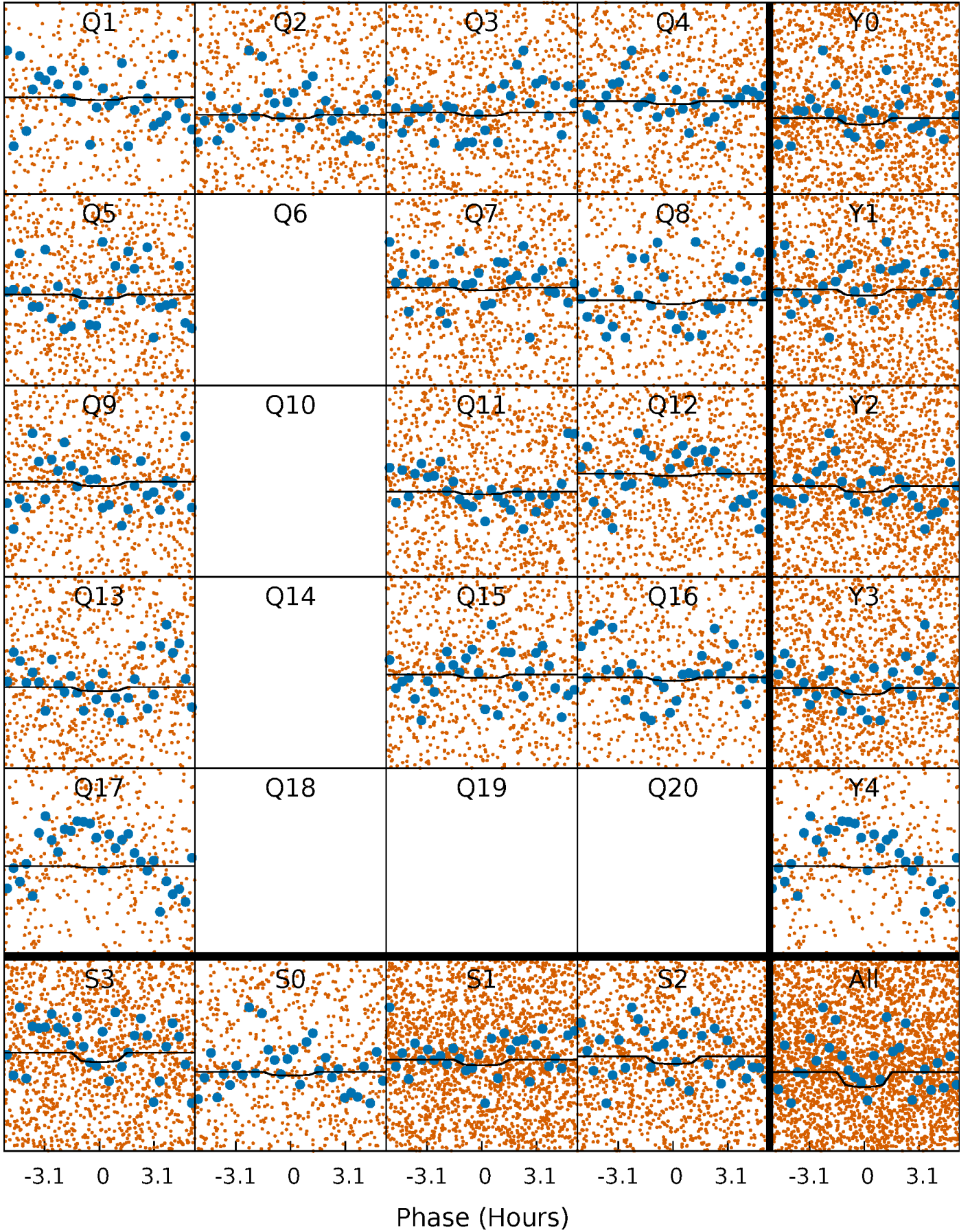
TCE 004281390-01 P= 1.068537 Days  $T_0=132.186462$  (BKJD)





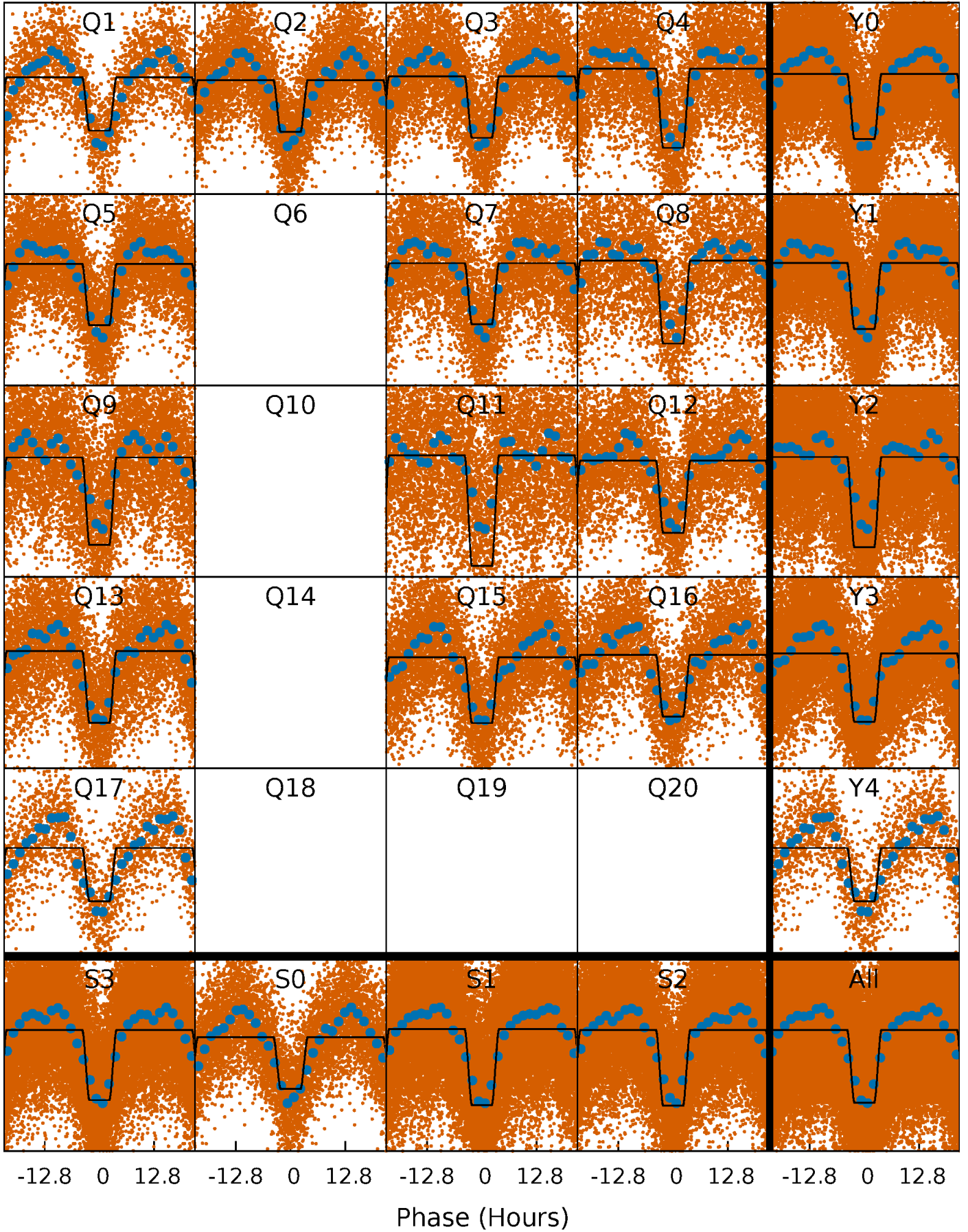
# DV Quarter-Phased Transit Curves

TCE 004281390-01     $P = 1.068537$  Days     $T_0 = 132.186462$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

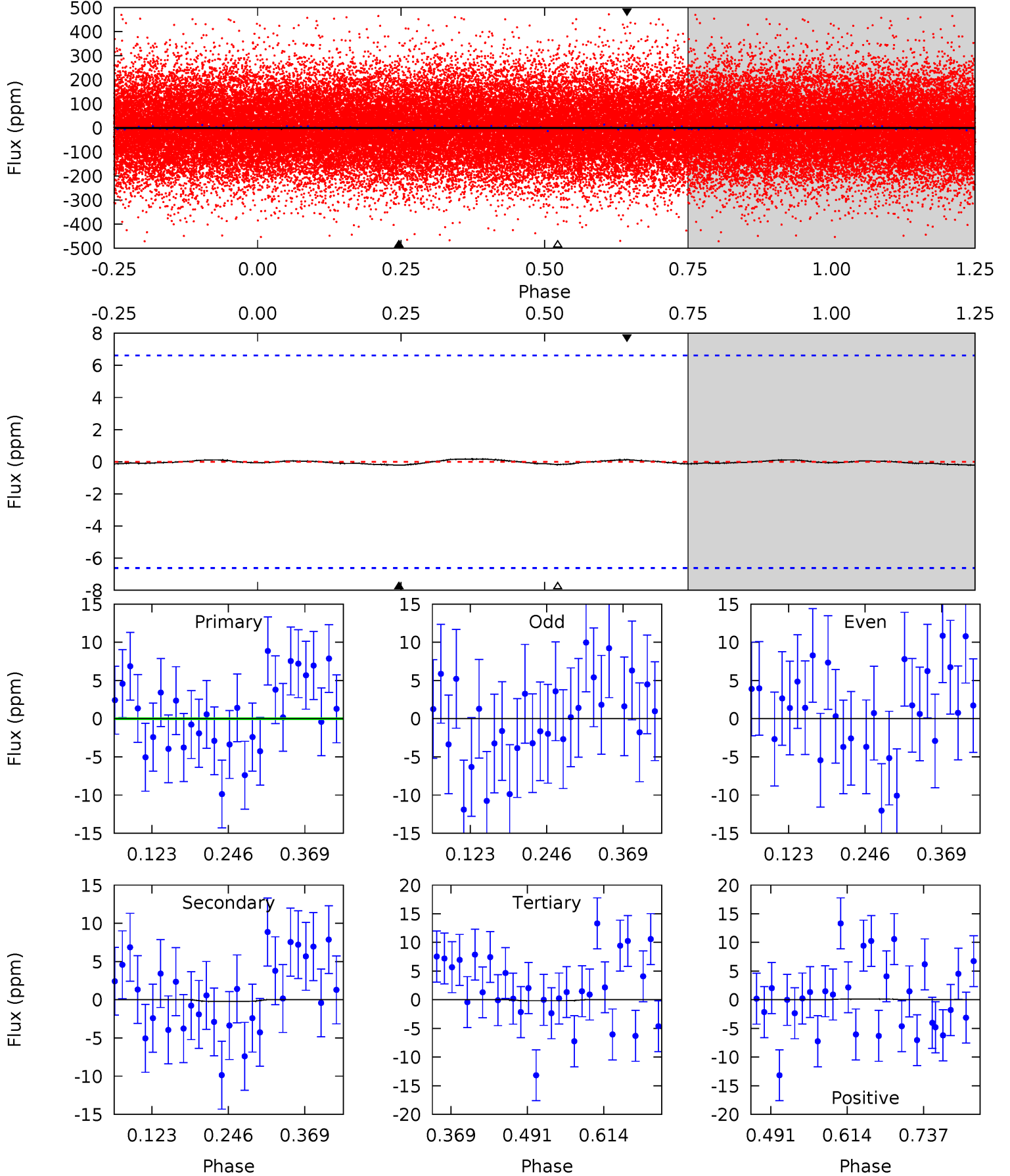
TCE 004281390-01 P= 1.070208 Days  $T_0=131.818461$  (BKJD)



# DV Model-Shift Uniqueness Test

004281390-01, P = 1.068537 Days, E = 131.117925 Days

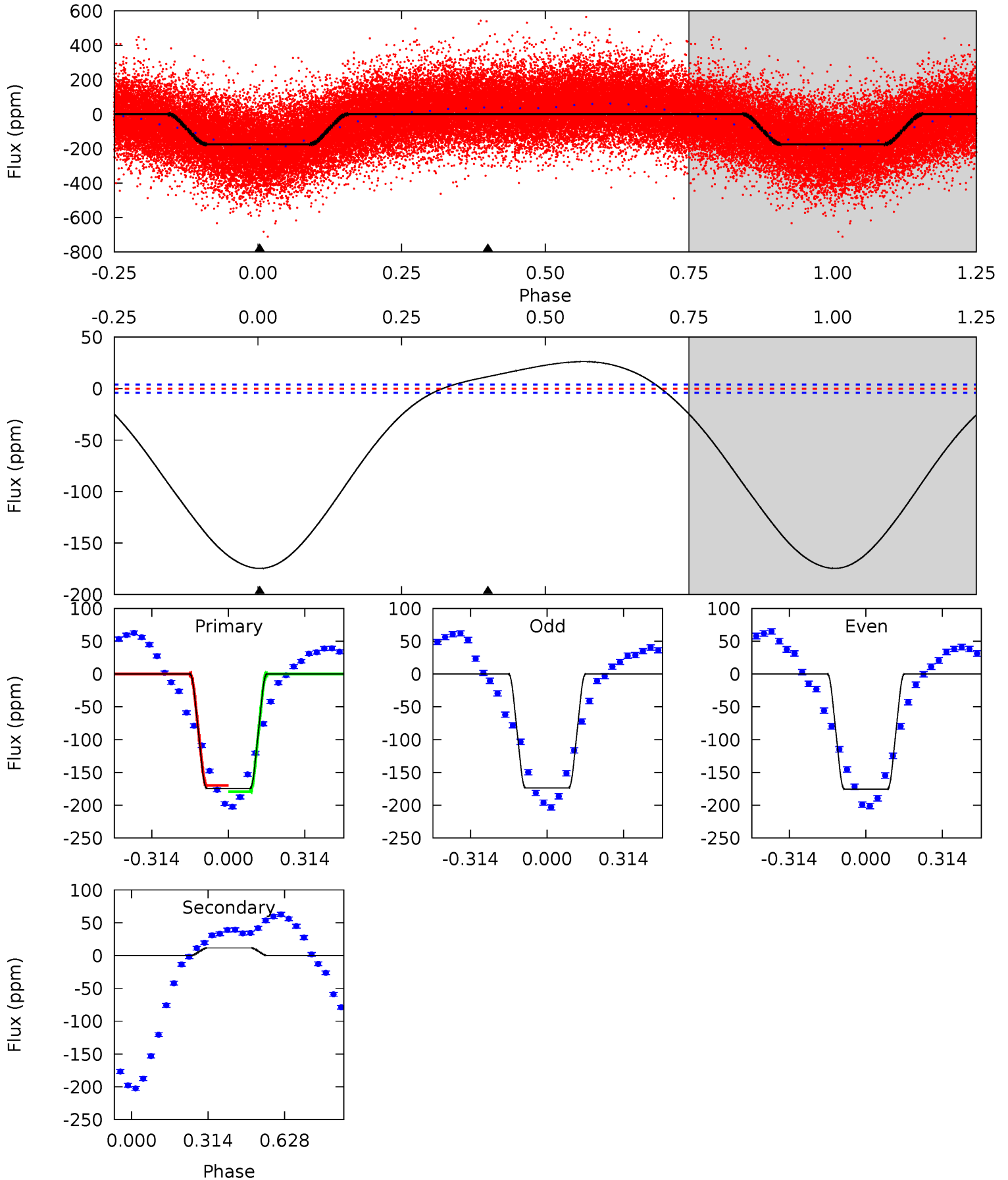
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.15	0.15	0.11	0.09	4.52	1.54	0.06	0.03	0.06	0.03	0.06	0.15	-0.47	0.45	0.15



# Alt Model-Shift Uniqueness Test

004281390-01, P = 1.070208 Days, E = 130.748253 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
186.1	-12.4	0	0	4.32	1.01	13.2	186.1	186.1	-12.4	-12.4	0.89	0.99	0.13	5.16





### Stellar Parameters For KIC 004281390

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6858^{+82}_{-82}$	$4.135^{+0.095}_{-0.116}$	$0.020^{+0.150}_{-0.150}$	$1.701^{+0.305}_{-0.229}$	$1.440^{+0.119}_{-0.079}$	$0.412^{+0.177}_{-0.146}$
	+1%/-1%	+2%/-3%	+750%/-750%	+18%/-13%	+8%/-5%	+43%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 004281390-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	-0±1	$0.34^{+0.27}_{-0.21}$	$3640^{+158}_{-139}$	$2425^{+4070}_{-8174}$	$0.321^{+6.905}_{-4.269}$
Alt.	12±1	$2.61^{+0.38}_{-0.31}$	$3635^{+153}_{-129}$	$-4094^{+111}_{-124}$	$-0.501^{+0.118}_{-0.162}$

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

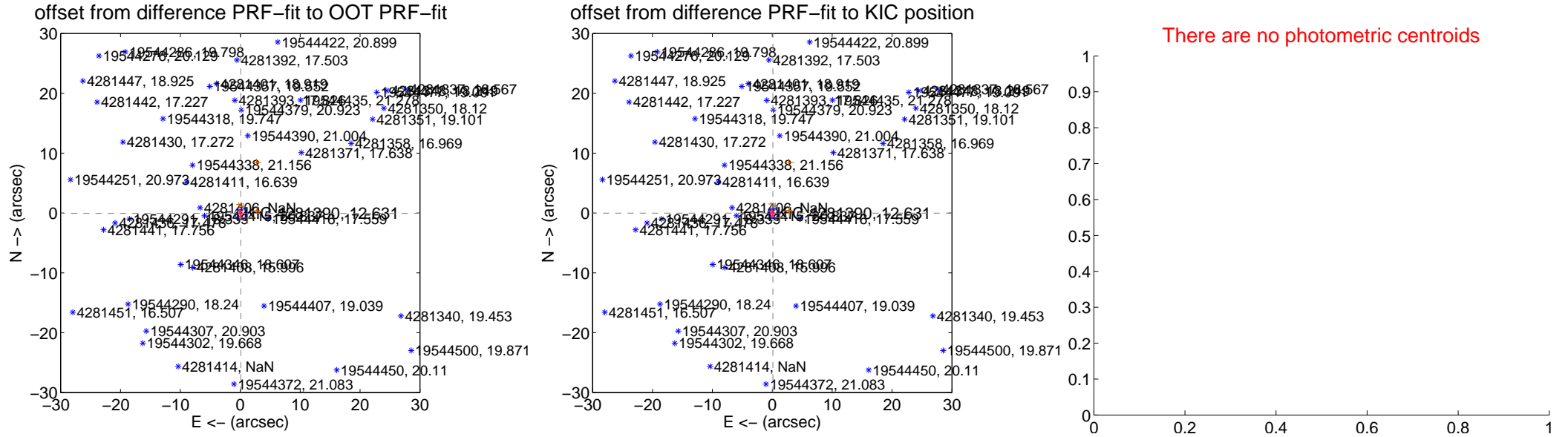
## DV Centroid Data

Supplemental centroid analysis for 004281390-01. Kepler magnitude: 12.63. Transit SNR 0.97

There are 4 quarters with good PRF difference image offsets

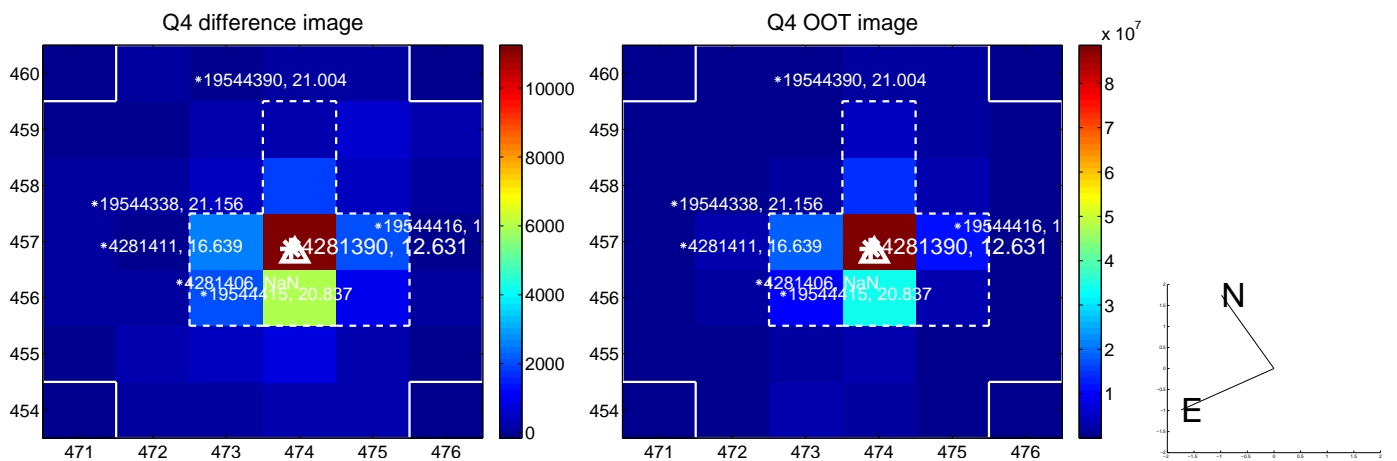
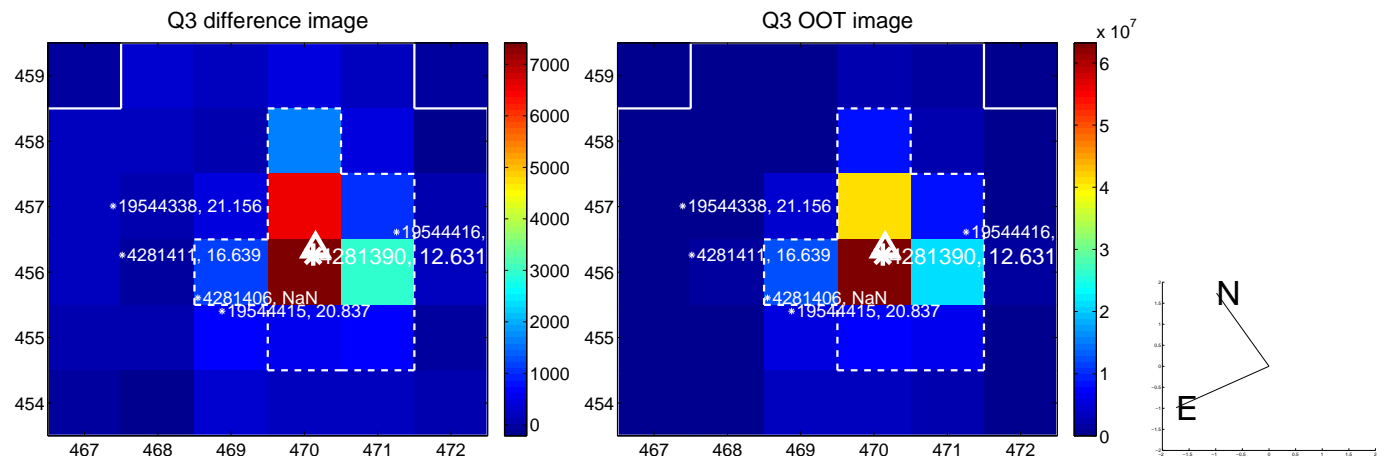
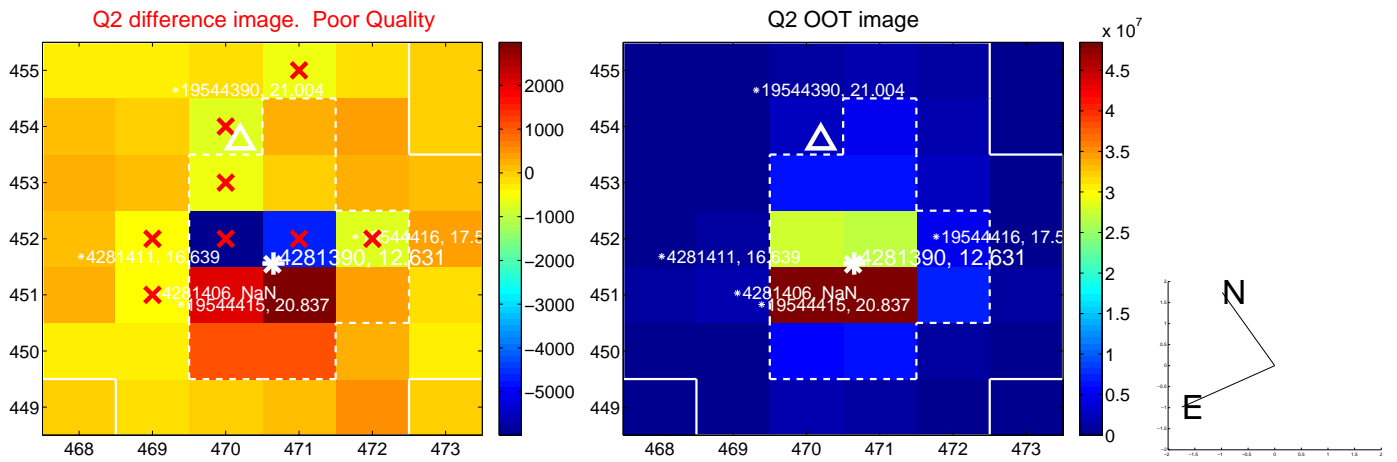
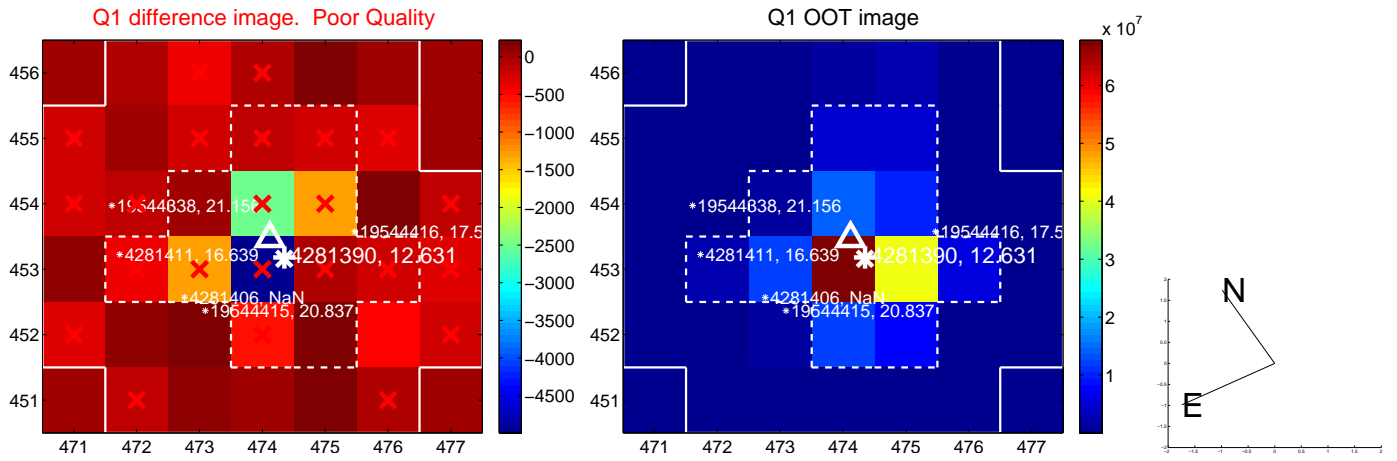
The direct PRF centroid is offset from the target star catalog position by about 0.05 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.112 \pm 0.327$	0.34	$-0.090 \pm 0.319$	$-0.065 \pm 0.610$
PRF-fit source offset from KIC position	$0.104 \pm 0.284$	0.37	$-0.100 \pm 0.327$	$-0.027 \pm 0.641$
photometric centroid source offset	—	—	—	—

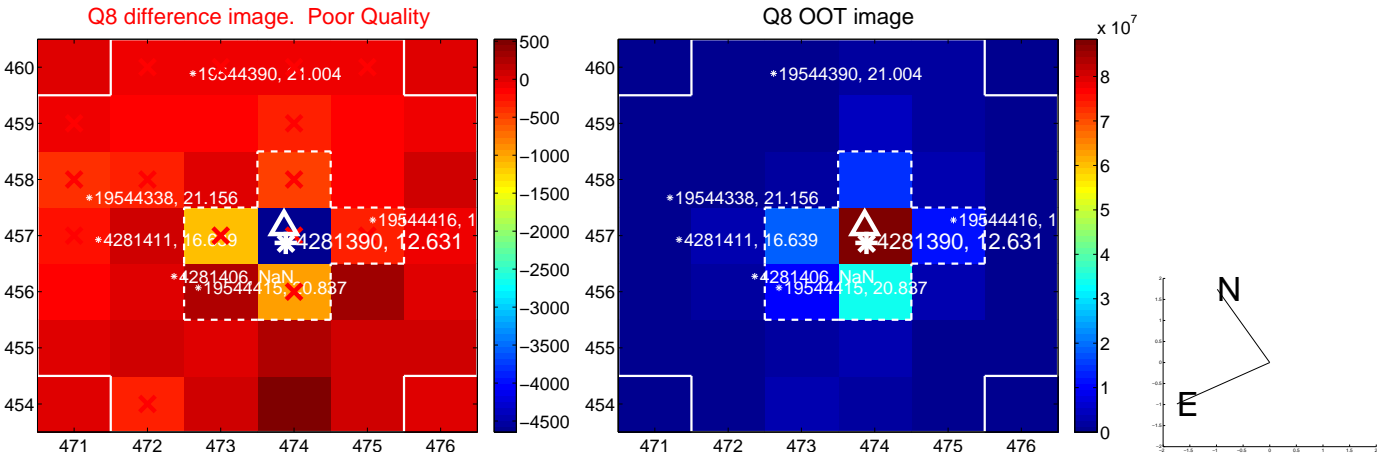
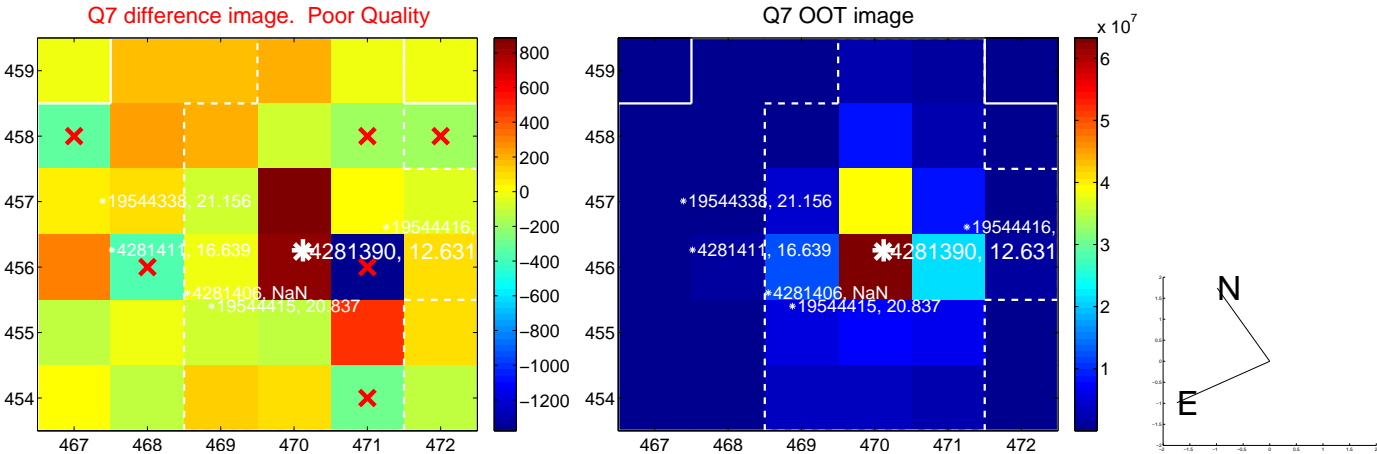
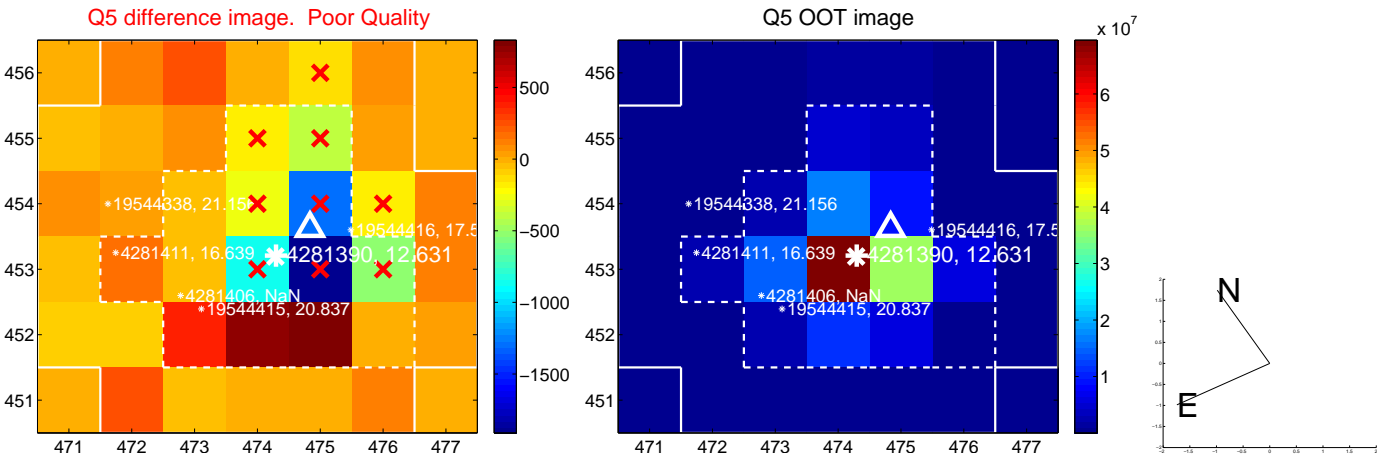


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

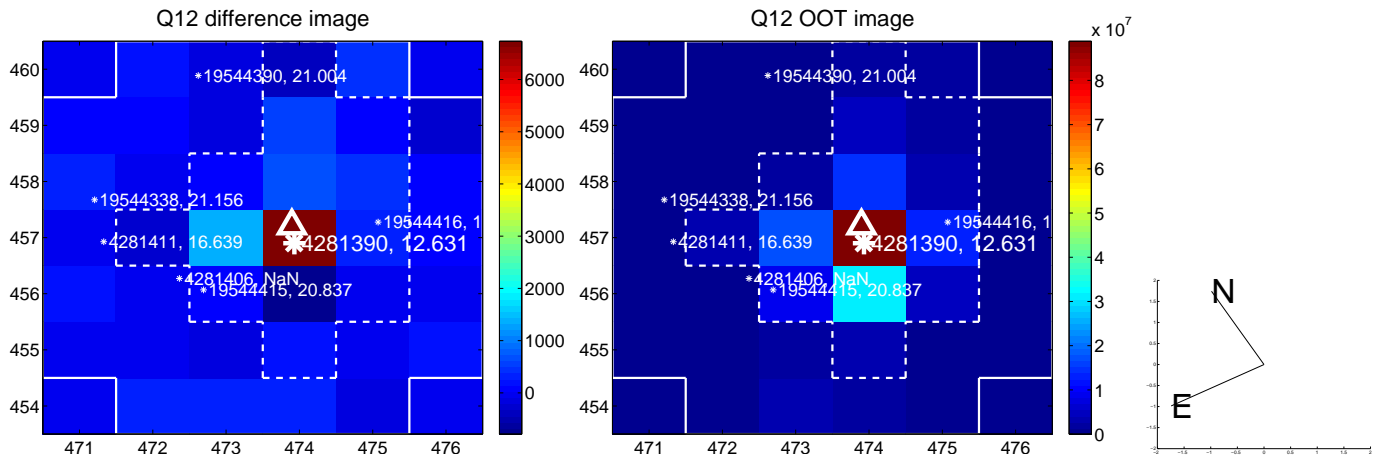
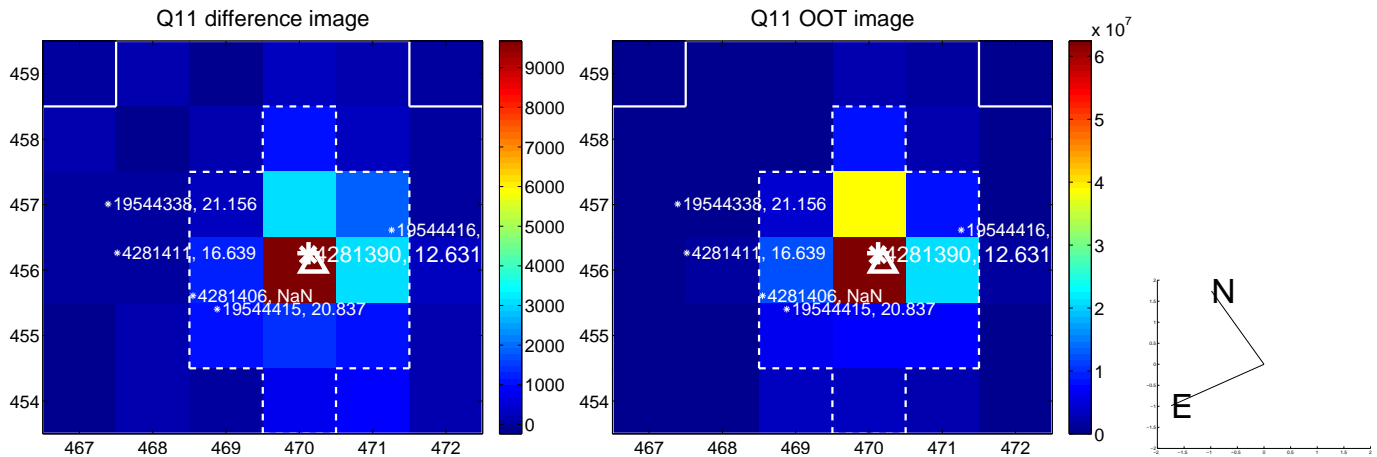
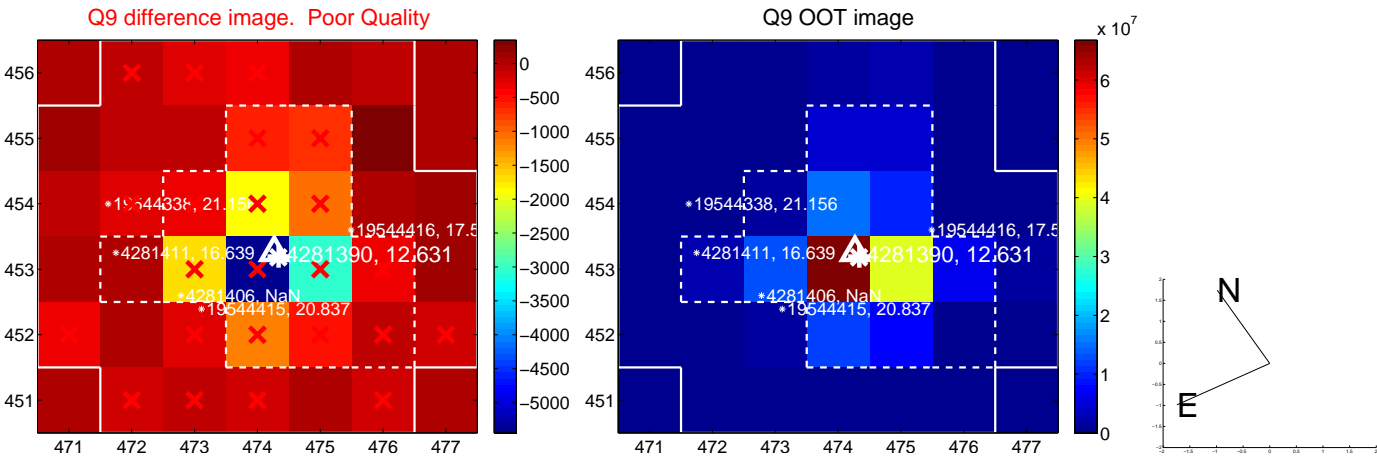


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

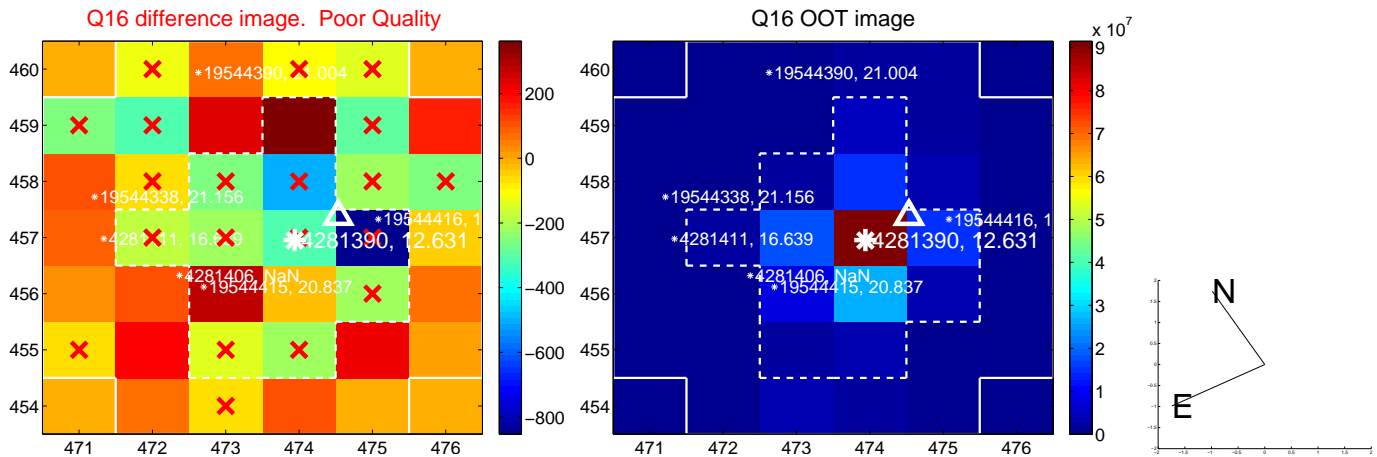
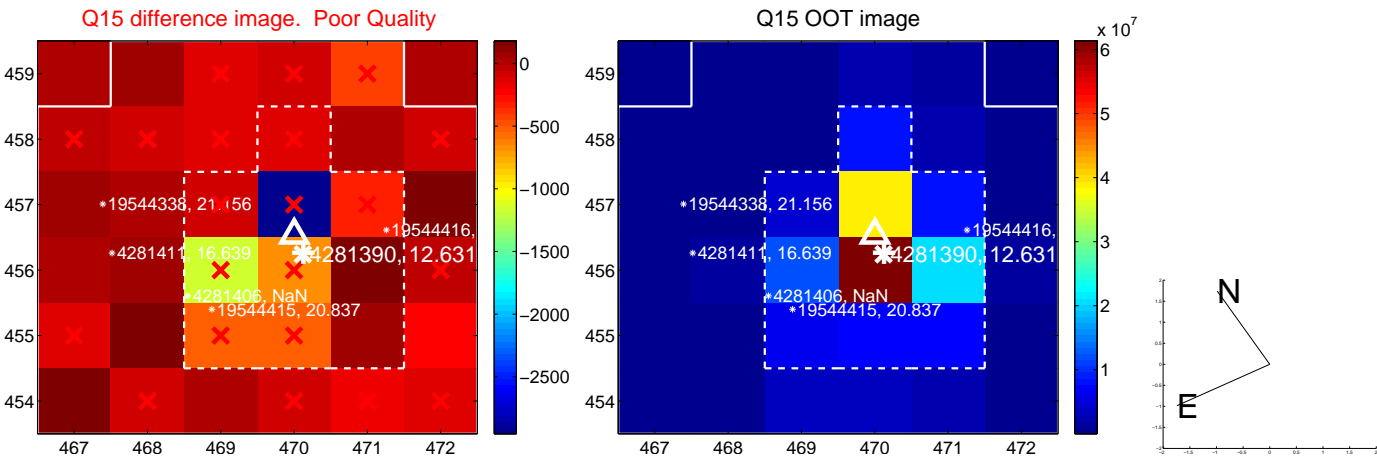
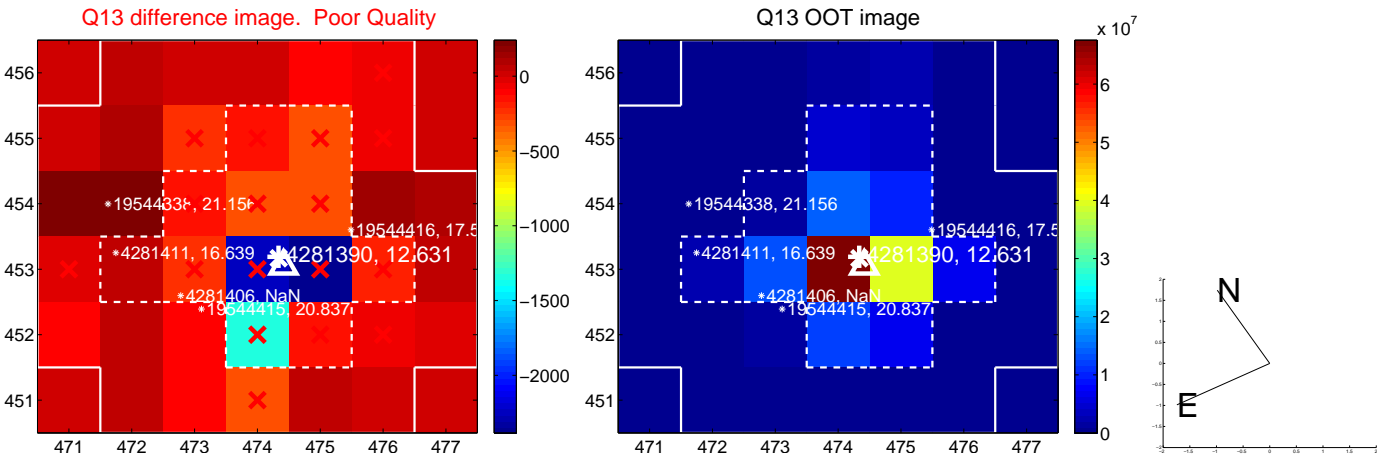




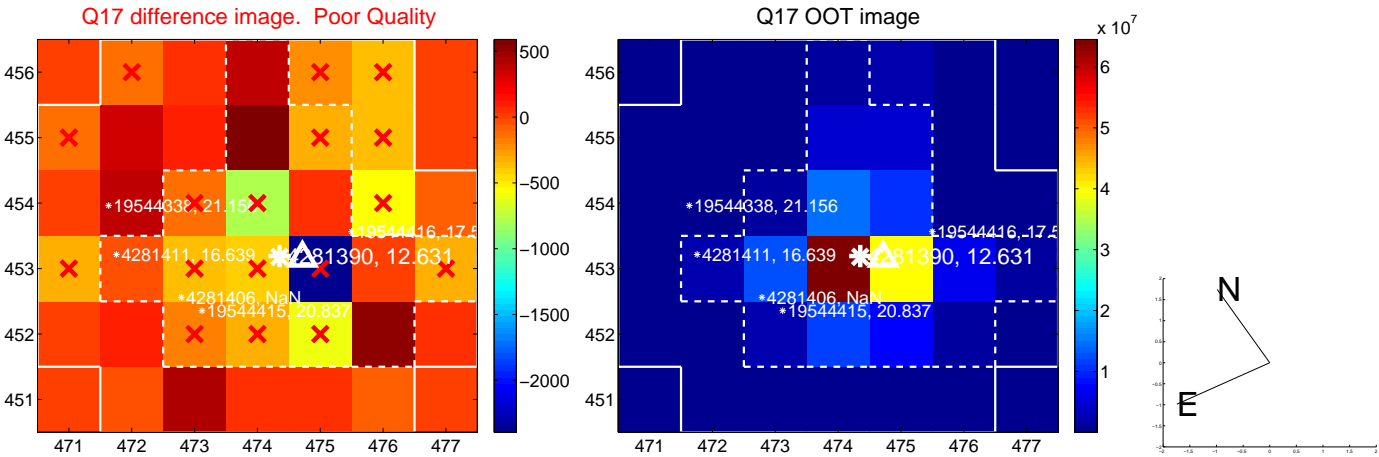
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



folded centroid time series figure for this object.

UKIRT Image

Declination

