

# KIC 008766285

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008766285-01	OBS	5571.01	5.297091	135.635660	119.0	24.230	15.4	16.8	1.00	5780	1.25	282.63

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008766285-01	OBS	FP	0.00	1	0	0	1	LPP_DV—CENT_SATURATED—EPHEM_MATCH

**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 008766285-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
008766285-01	8766285	008766222-01	8766222	1:1	102.7	-26	-4	13.85	10.25	12.49	Direct-PRF	1	1.54	2.66

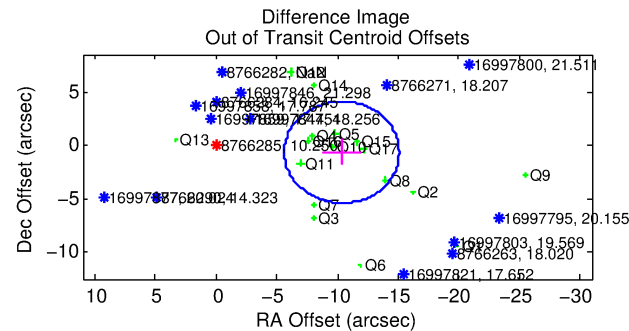
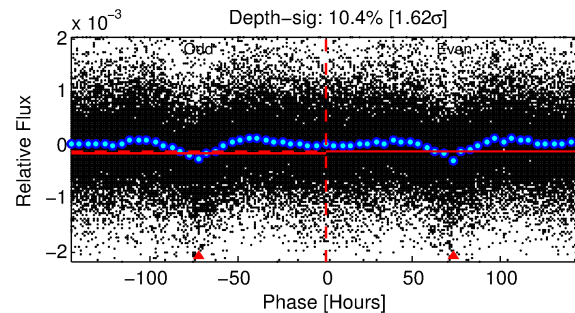
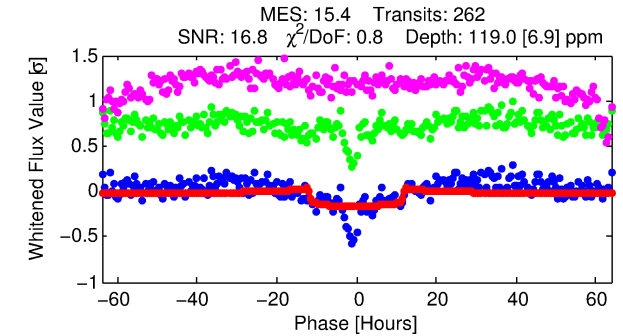
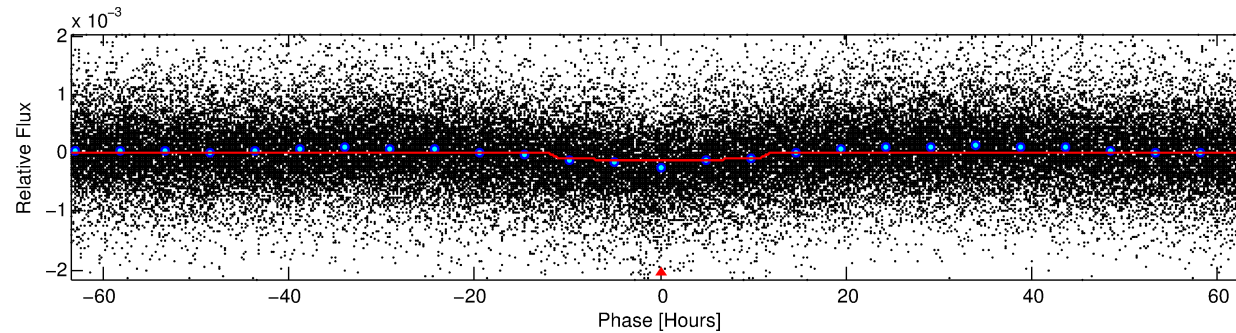
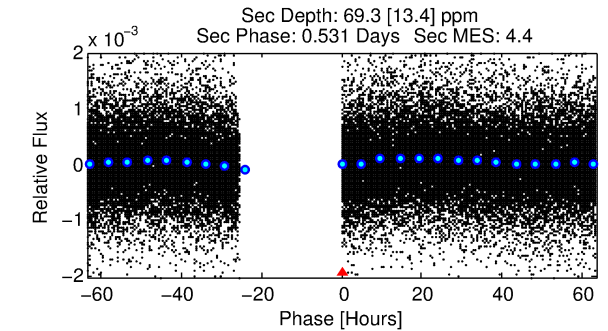
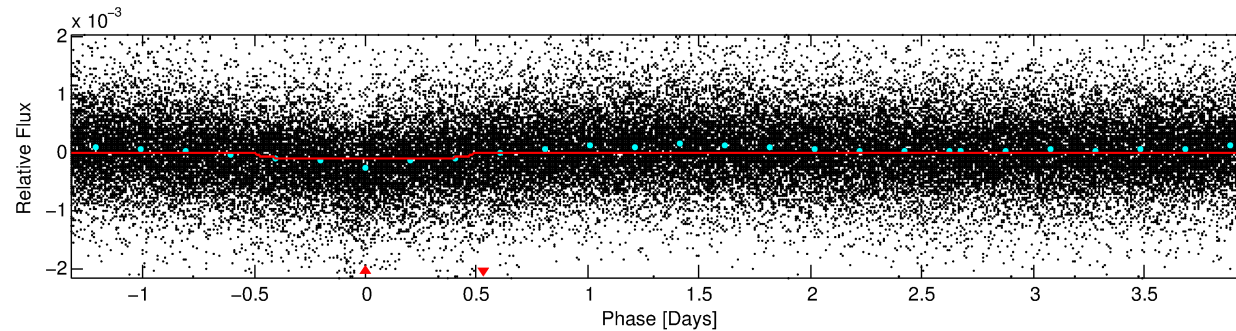
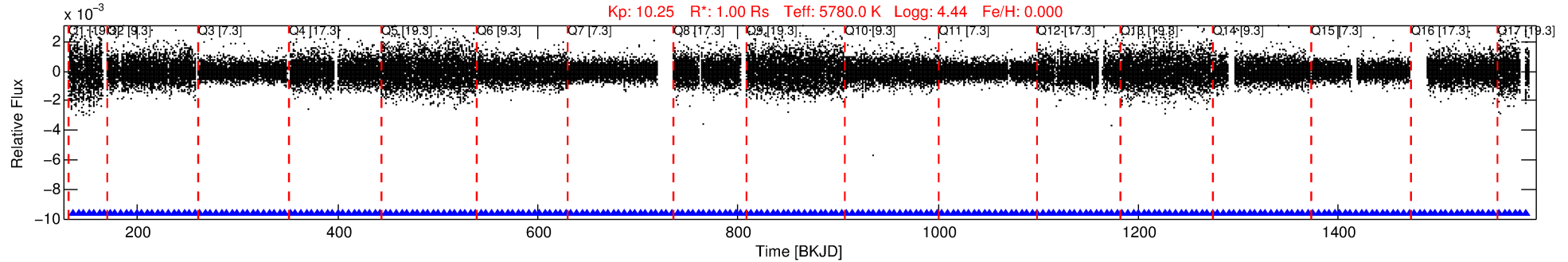
**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 8766285 Candidate: 1 of 1 Period: 5.297 d

KOI: K05571 Corr: No Ephemeris Match

Kp: 10.25 R\*: 1.00 Rs Teff: 5780.0 K Logg: 4.44 Fe/H: 0.000



## DV Fit Results:

Period = 5.29709 [0.00011] d  
Epoch = 135.6357 [0.0166] BKJD  
Rp/R\* = 0.0115 [0.0011]  
a/R\* = 1.28 [0.22]  
b = 0.86 [0.14]  
Seff = 282.63 [0.01]  
Teq = 1046 [0] K  
Rp = 1.25 [0.12] Re  
a = 0.0595 [0.0000] AU  
Ag = 86.07 [23.74] [3.58σ]  
Teff = 4924 [339] K [11.42σ]

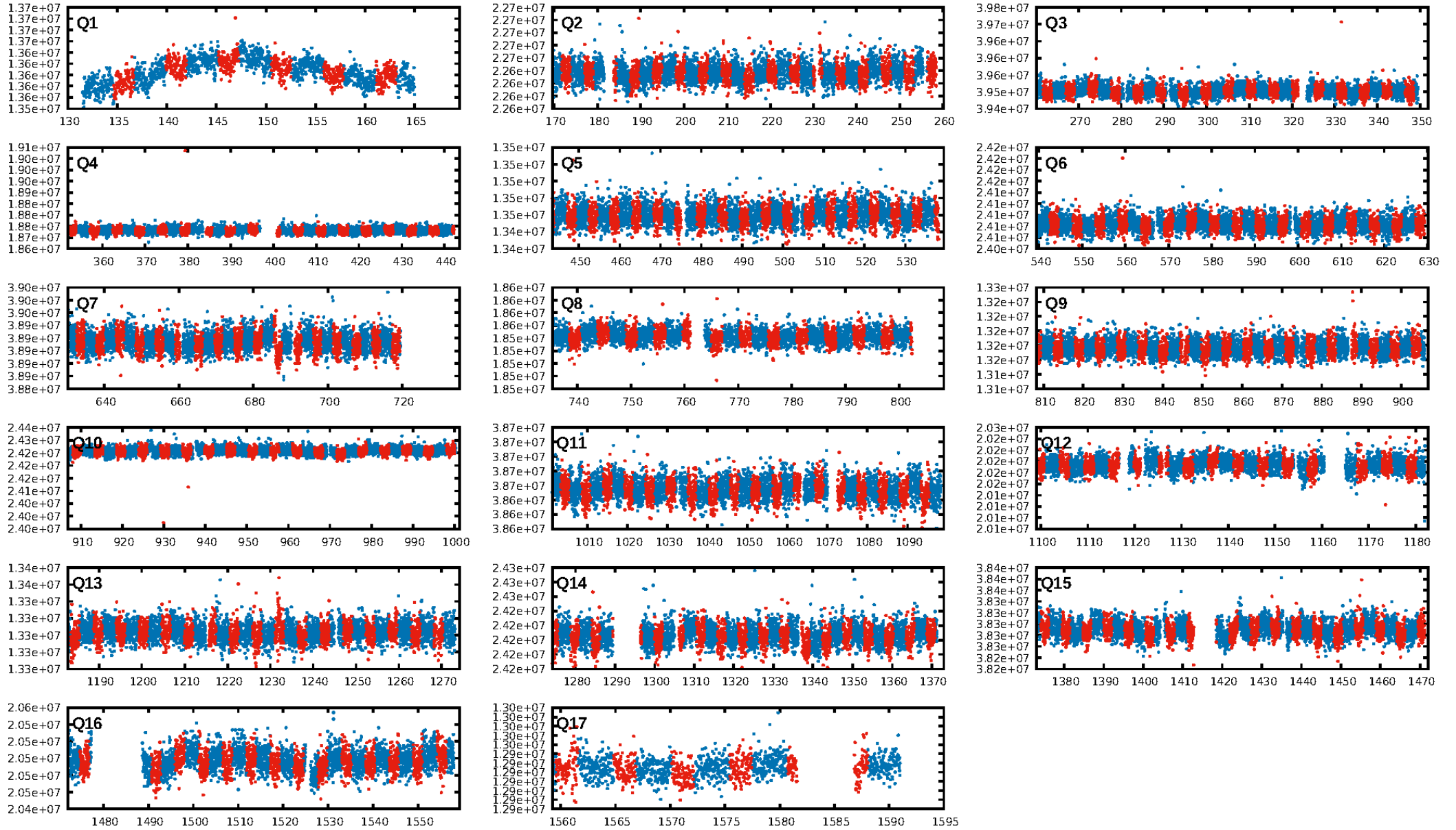
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.98e-53  
RollingBand-fgt: 1.00 [250/250]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 0.0%  
Centroid-so: 3.670 arcsec [5.39σ]  
OotOffset-rm: 10.380 arcsec [6.56σ]  
KicOffset-rm: 9.002 arcsec [6.08σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.00 [0/17]  
DiffImageOverlap-fno: 1.00 [17/17]

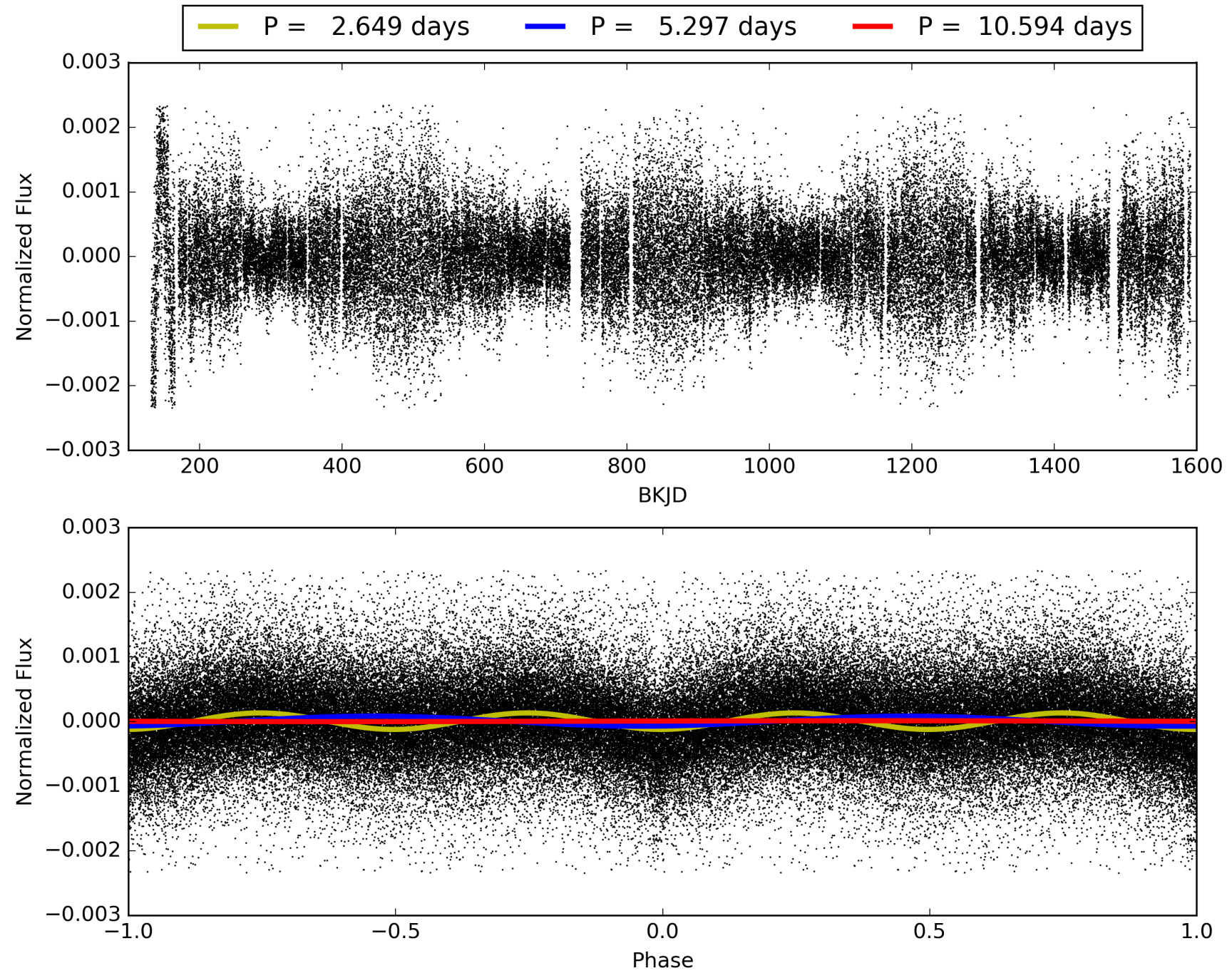
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:24:10 Z

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

# TCE 008766285-01, PDC Light Curves



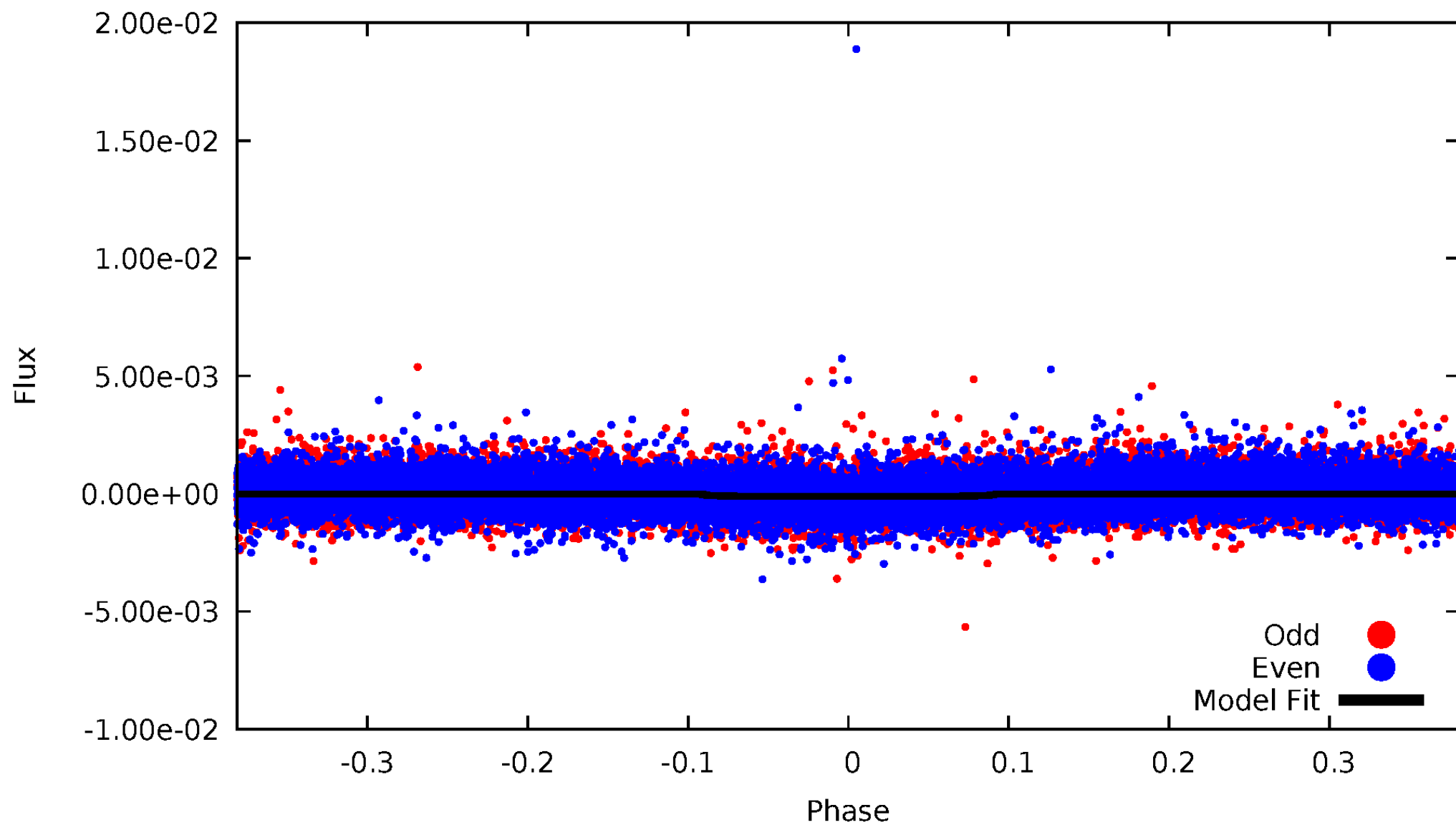
TCE 008766285-01





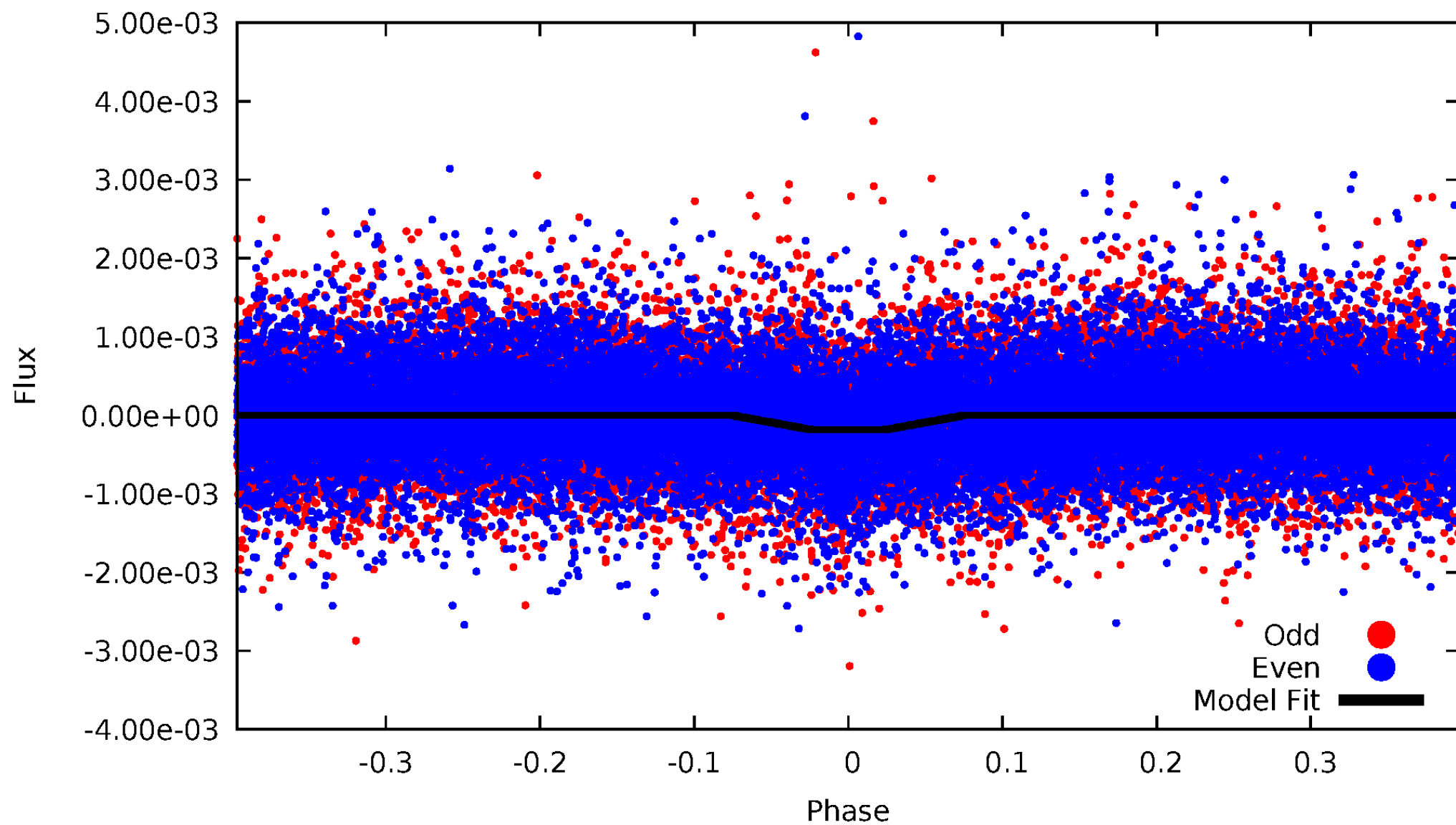
# DV Odd/Even

TCE 008766285-01

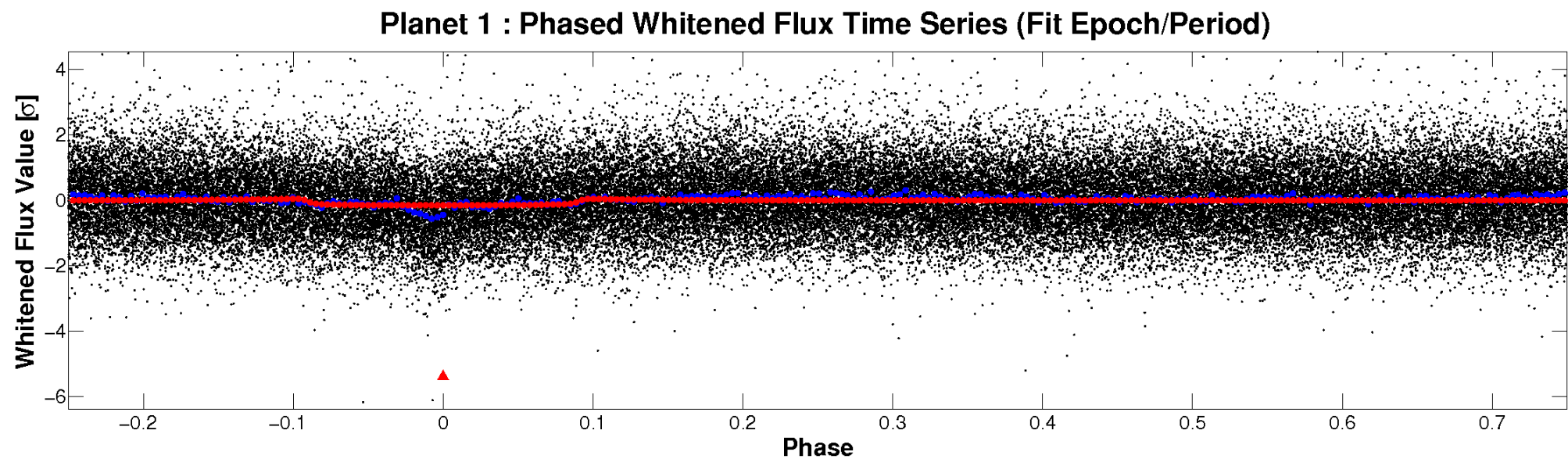
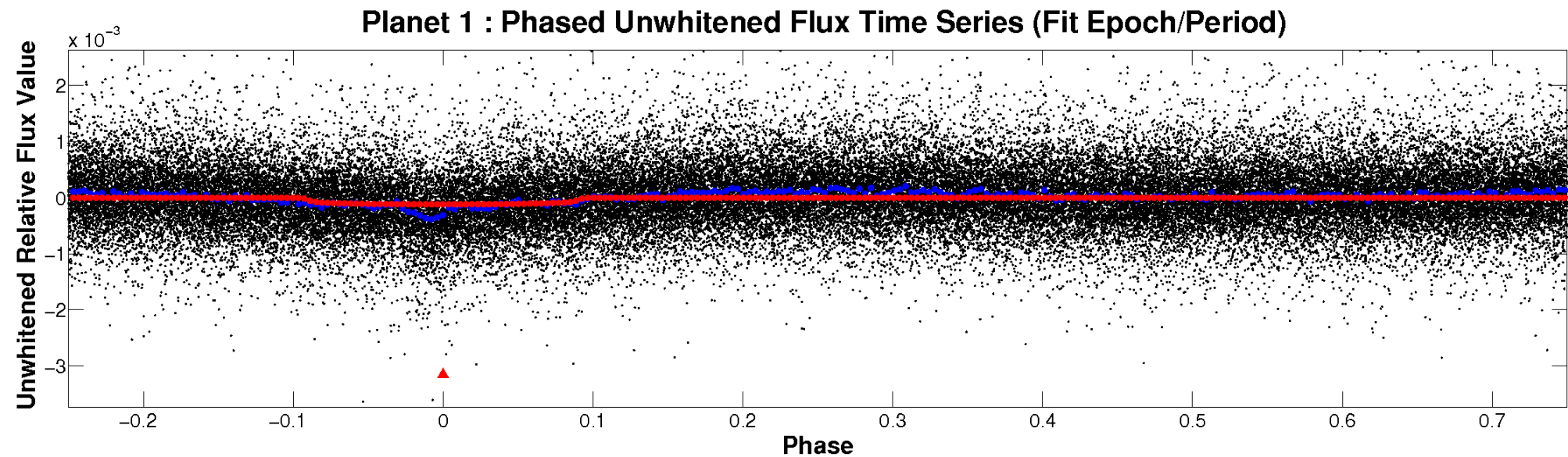


# ALT Odd/Even

TCE 008766285-01

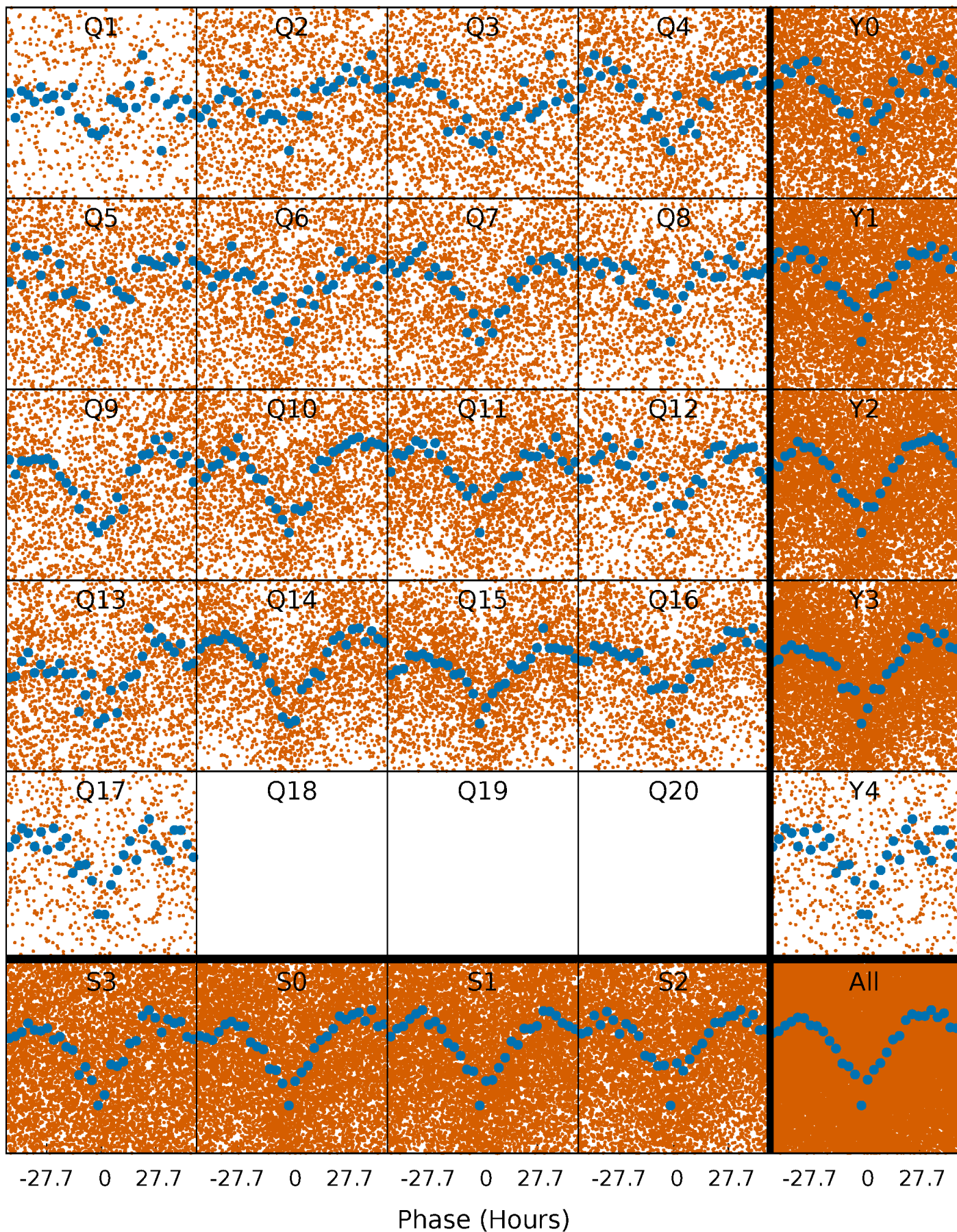


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

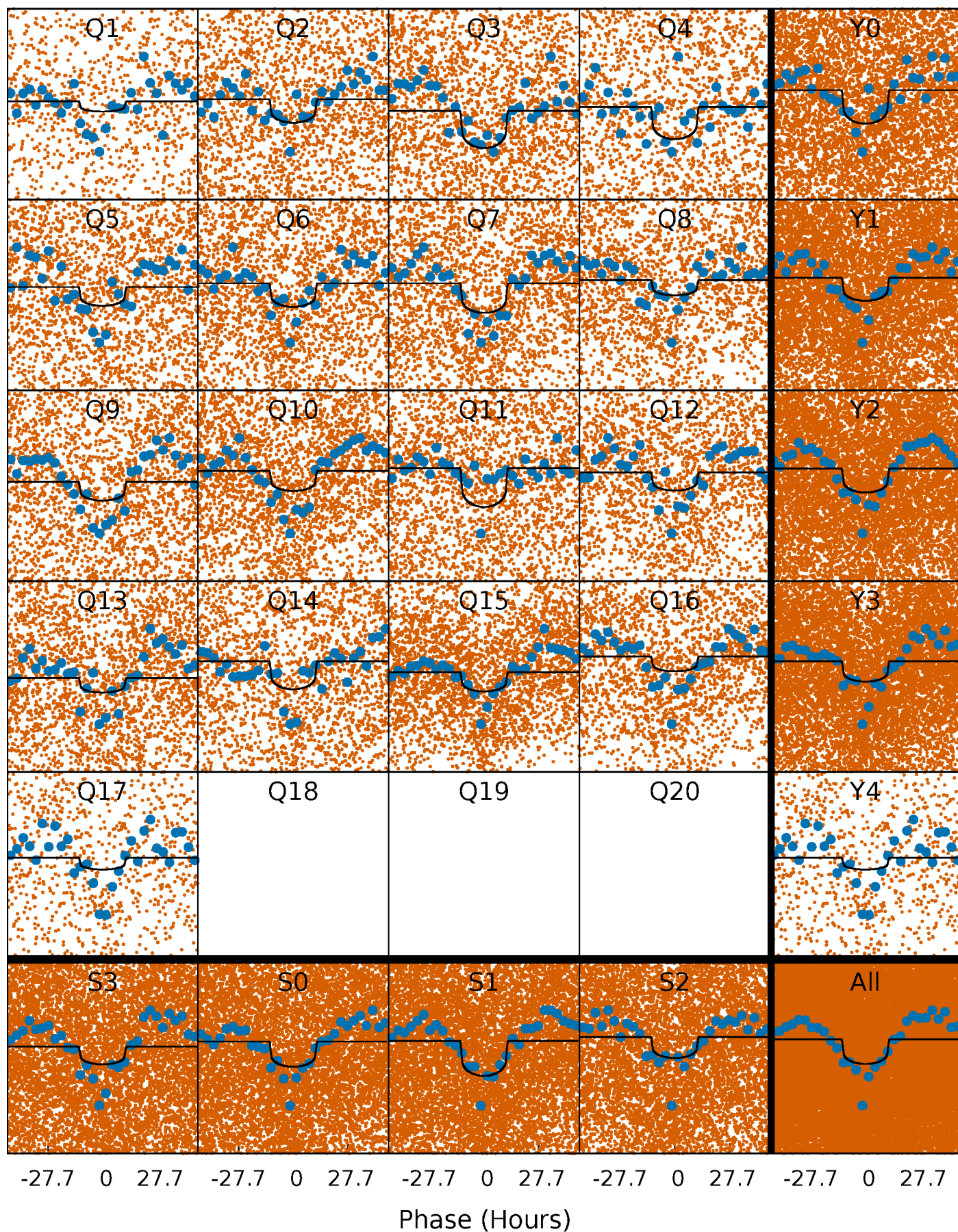
TCE 008766285-01 P= 5.297091 Days  $T_0=135.635660$  (BKJD)





# DV Quarter-Phased Transit Curves

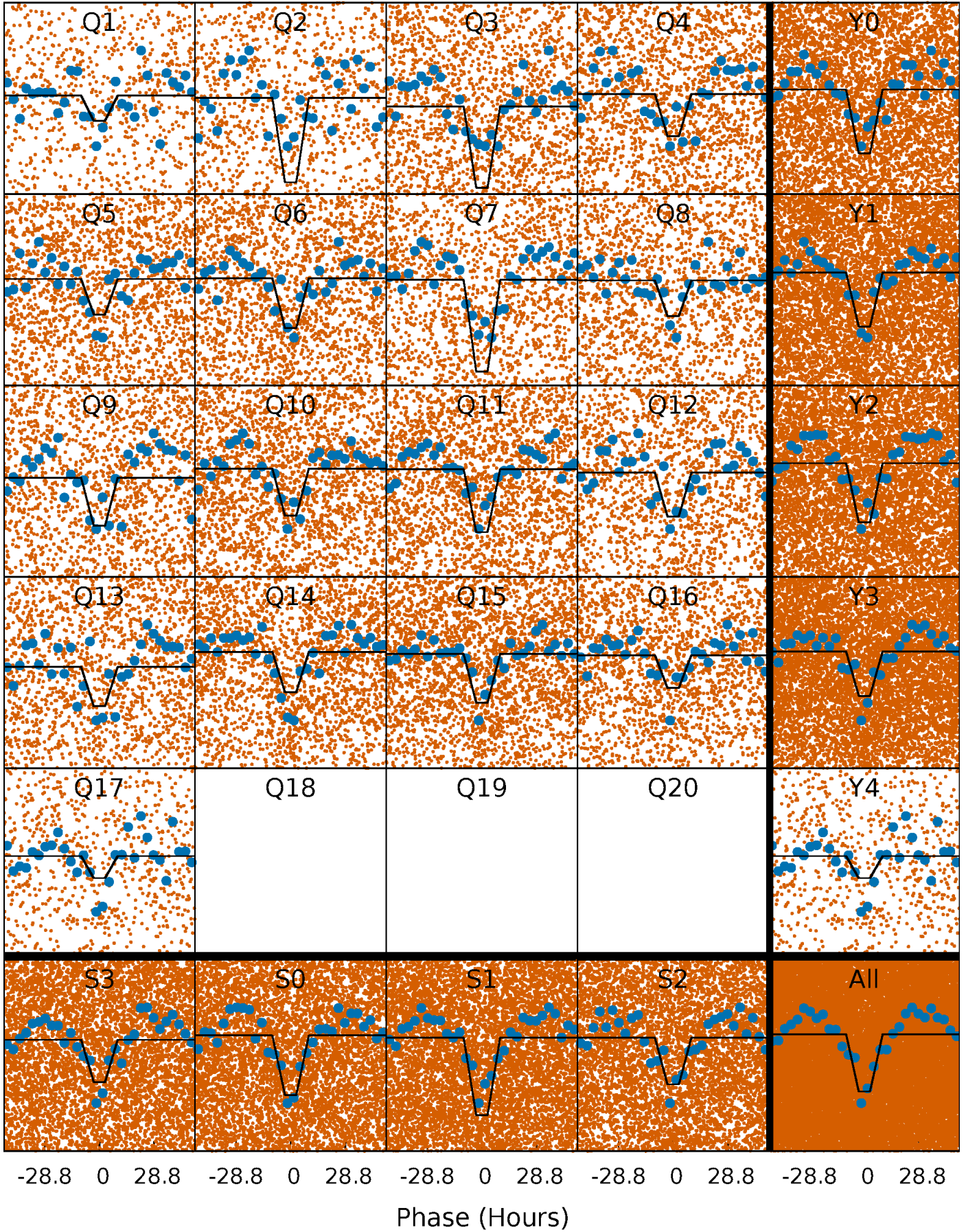
TCE 008766285-01 P= 5.297091 Days  $T_0=135.635660$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

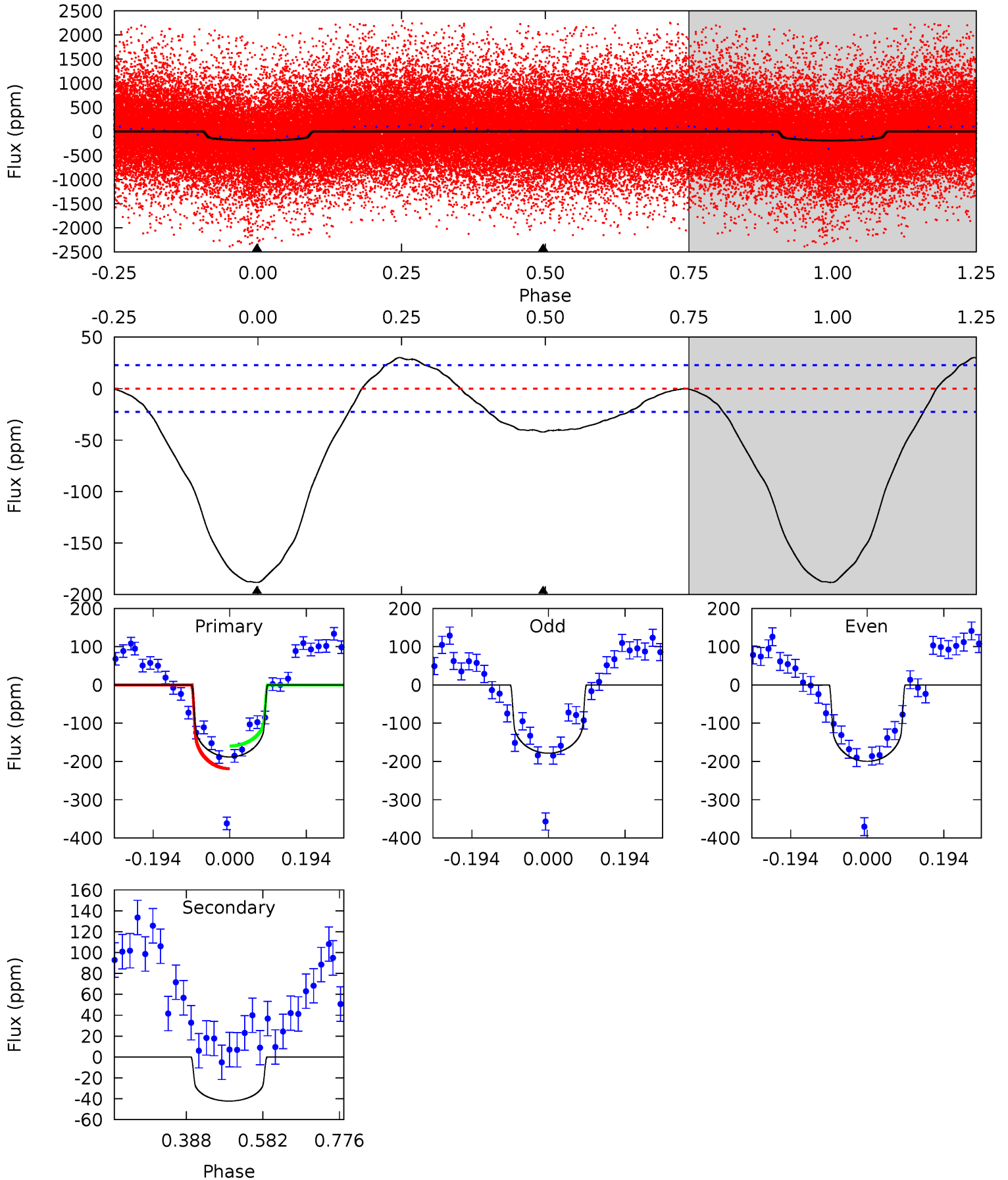
TCE 008766285-01 P= 5.297376 Days  $T_0=135.559819$  (BKJD)



# DV Model-Shift Uniqueness Test

008766285-01, P = 5.297091 Days, E = 130.338569 Days

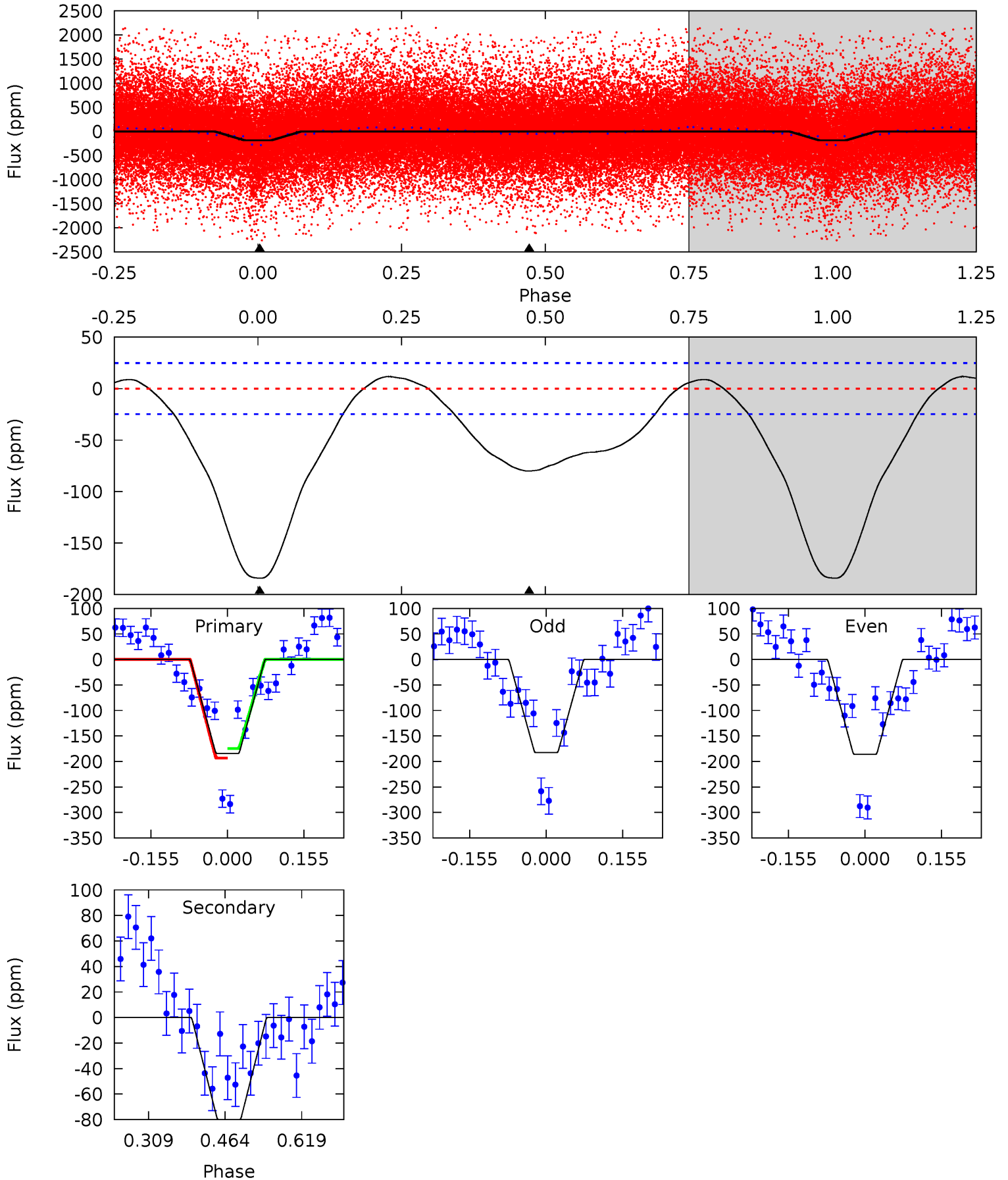
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.7	8.24	0	0	4.42	1.30	2.94	36.7	36.7	8.24	8.24	2.08	1.02	0.14	5.83



# Alt Model-Shift Uniqueness Test

008766285-01, P = 5.297376 Days, E = 130.262443 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
33.3	14.5	0	0	4.47	1.42	3.37	33.3	33.3	14.5	14.5	0.31	1.16	0.06	1.68





### Stellar Parameters For KIC 008766285

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5780^{+1}_{-1}$	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

### Secondary Eclipse Parameters for KIC 008766285-01 / KOI 5571.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-42 \pm 5$	$1.26^{+0.15}_{-0.15}$	$1465^{+75}_{-66}$	$4518^{+258}_{-228}$	$52^{+16}_{-13}$
Alt.	$-80 \pm 6$	$1.48^{+0.16}_{-0.16}$	$1462^{+67}_{-72}$	$4799^{+225}_{-219}$	$71^{+18}_{-14}$

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

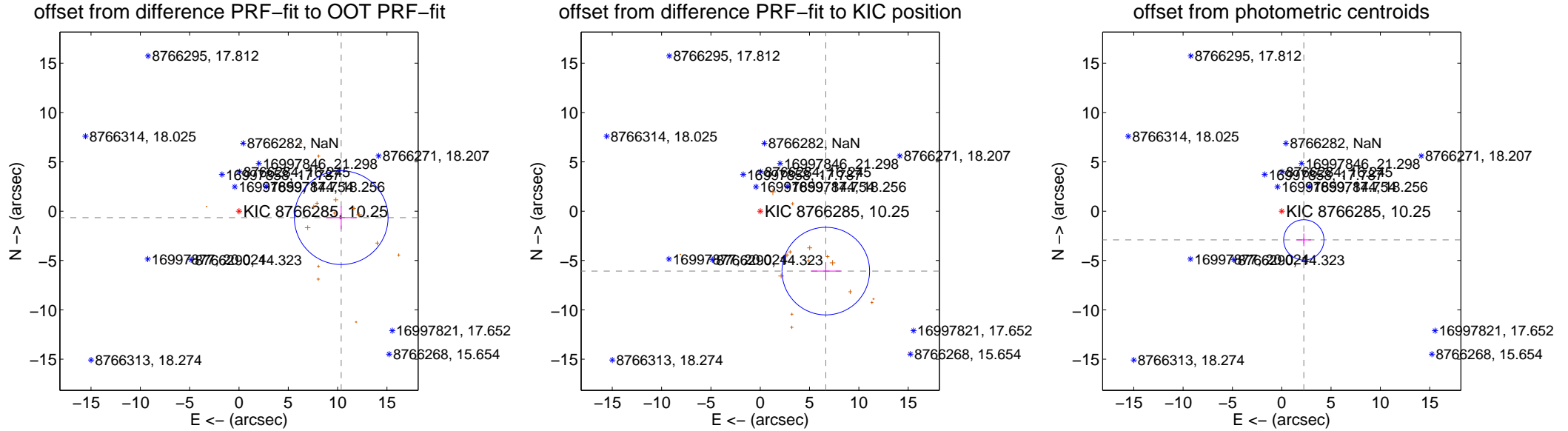
## DV Centroid Data

Supplemental centroid analysis for 008766285-01. **Kepler magnitude: 10.25.** Transit SNR 16.78

There are 0 quarters with good PRF difference image offsets

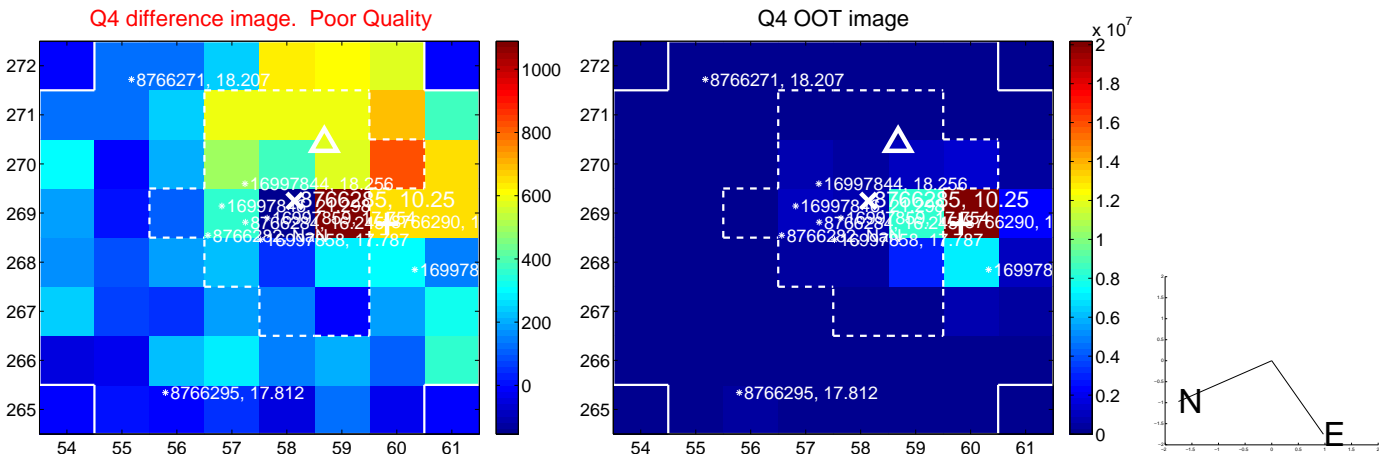
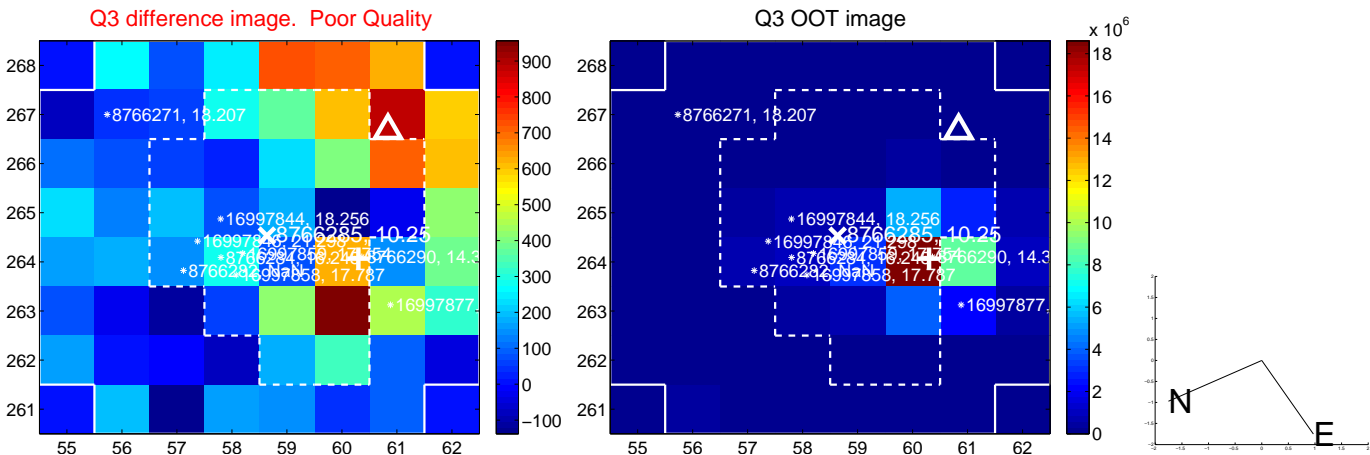
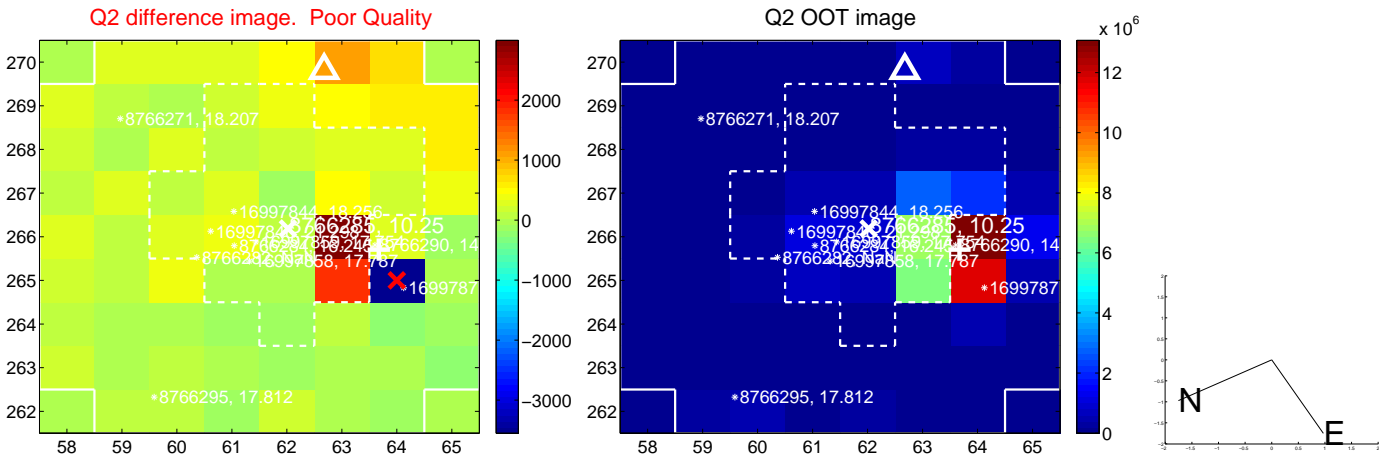
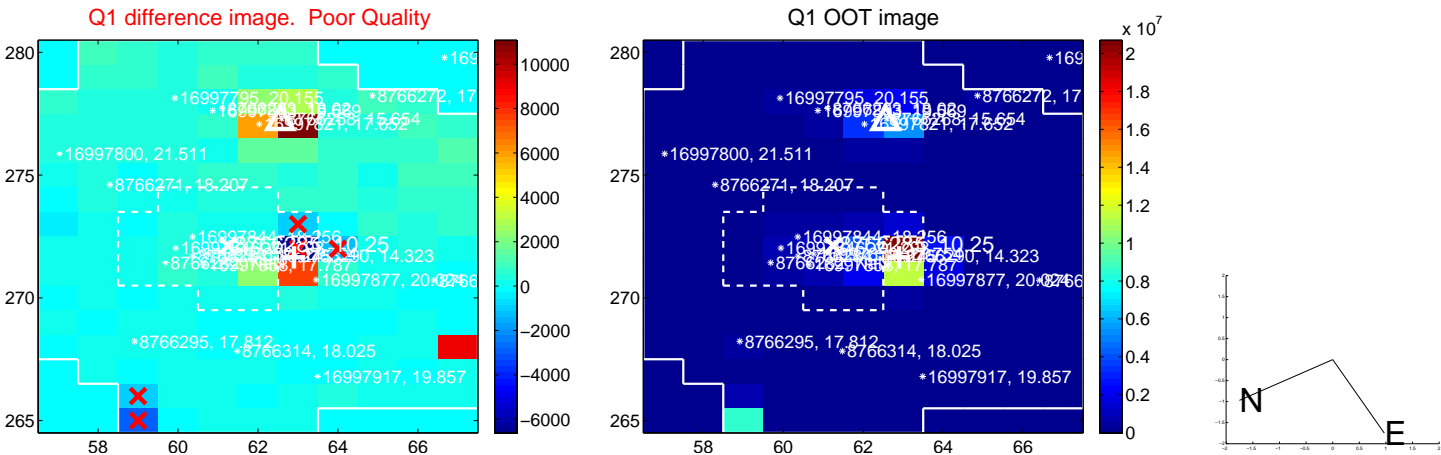
The OOT PRF centroid is offset from the target star catalog position by about 6.87 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>10.380 \pm 1.583</math></b>	<b>6.56</b>	$-10.359 \pm 1.553$	$-0.657 \pm 1.154$
PRF-fit source offset from KIC position	<b><math>9.002 \pm 1.480</math></b>	<b>6.08</b>	$-6.646 \pm 1.508$	$-6.072 \pm 0.876$
photometric centroid source offset	<b><math>3.67 \pm 0.68</math></b>	<b>5.39</b>	$-2.24 \pm 0.74$	$-2.91 \pm 0.64$

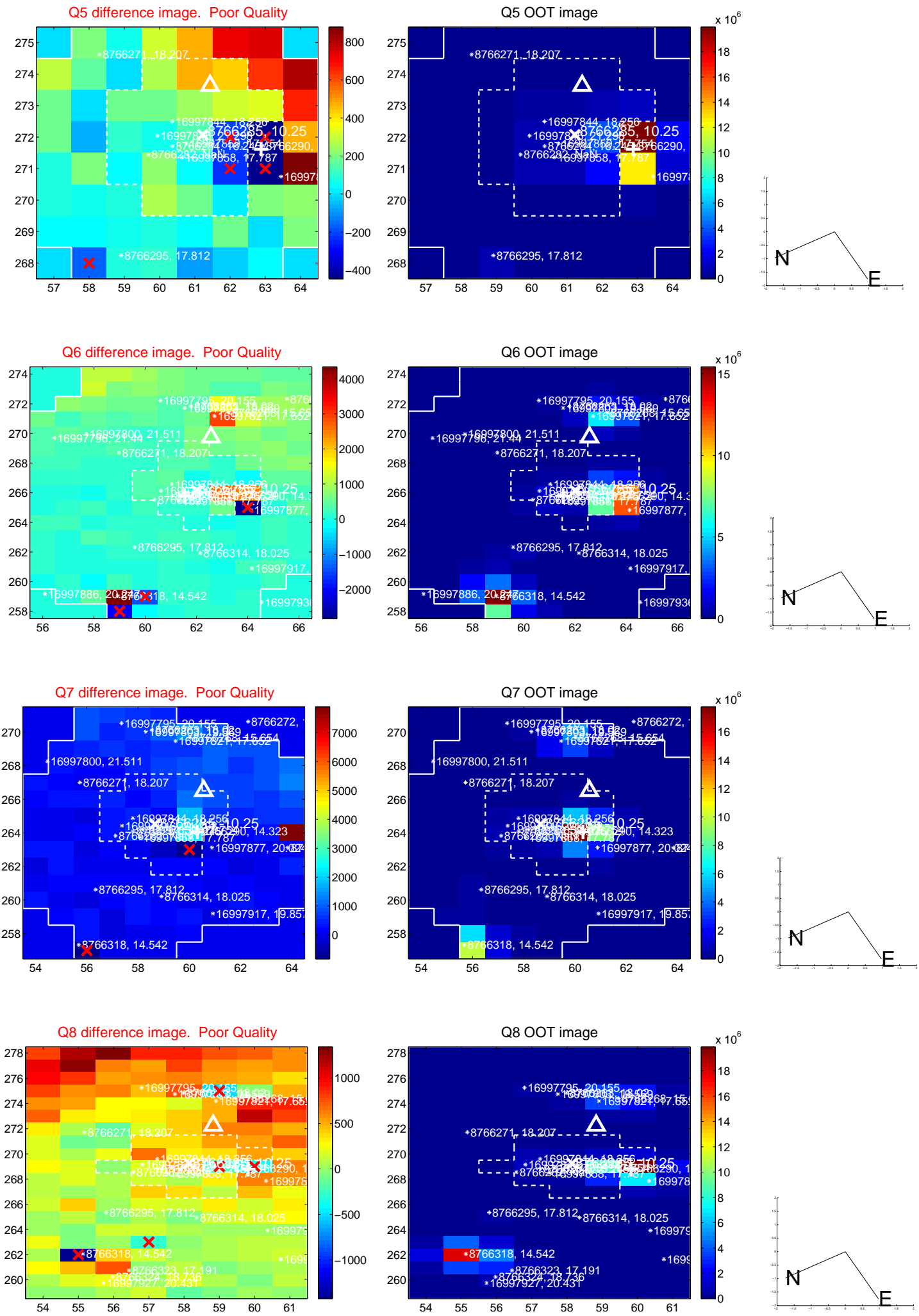


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

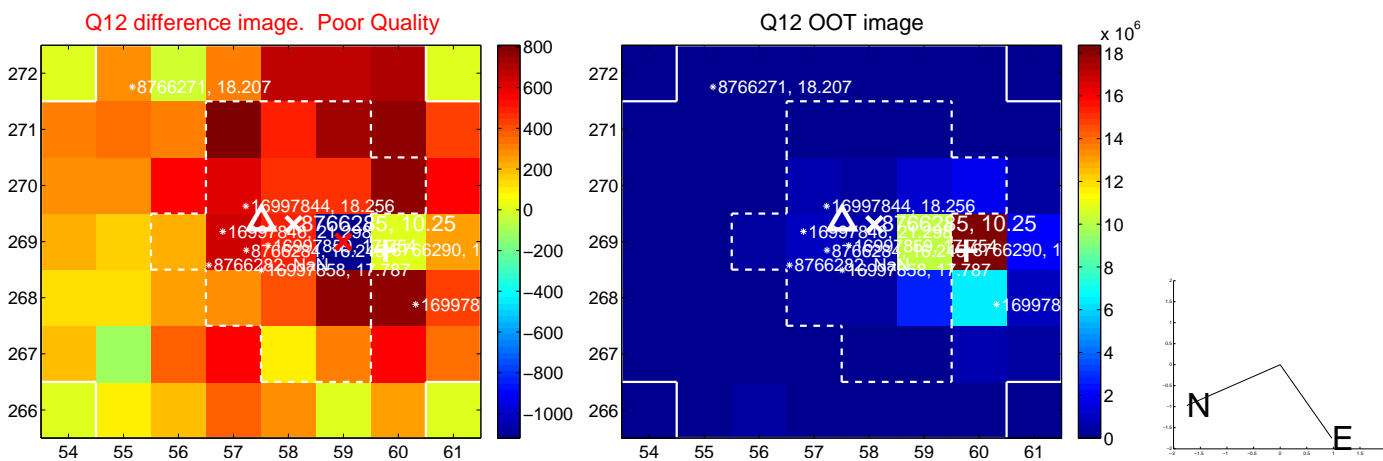
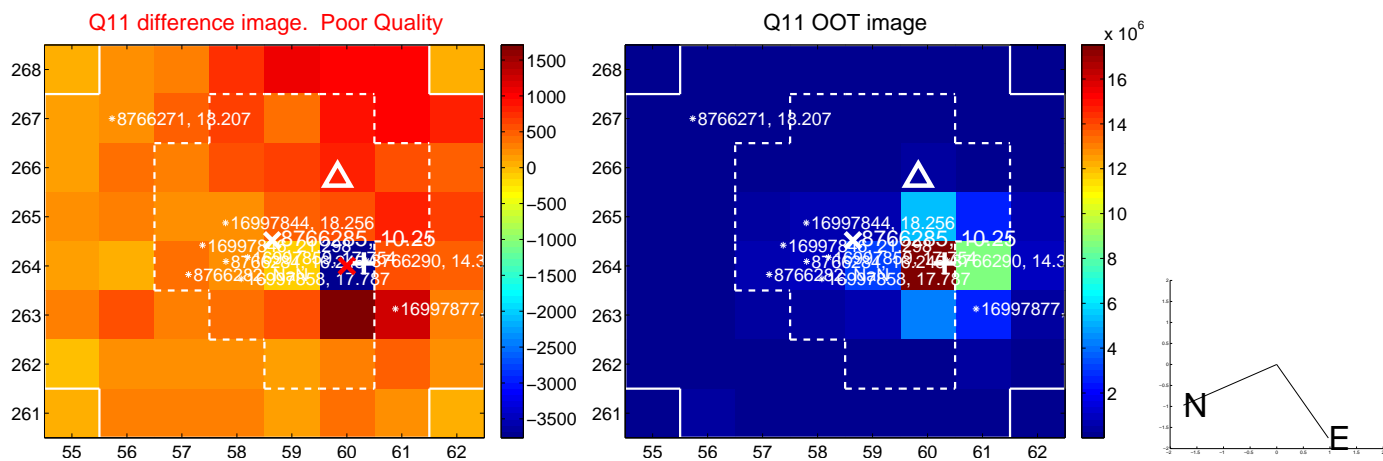
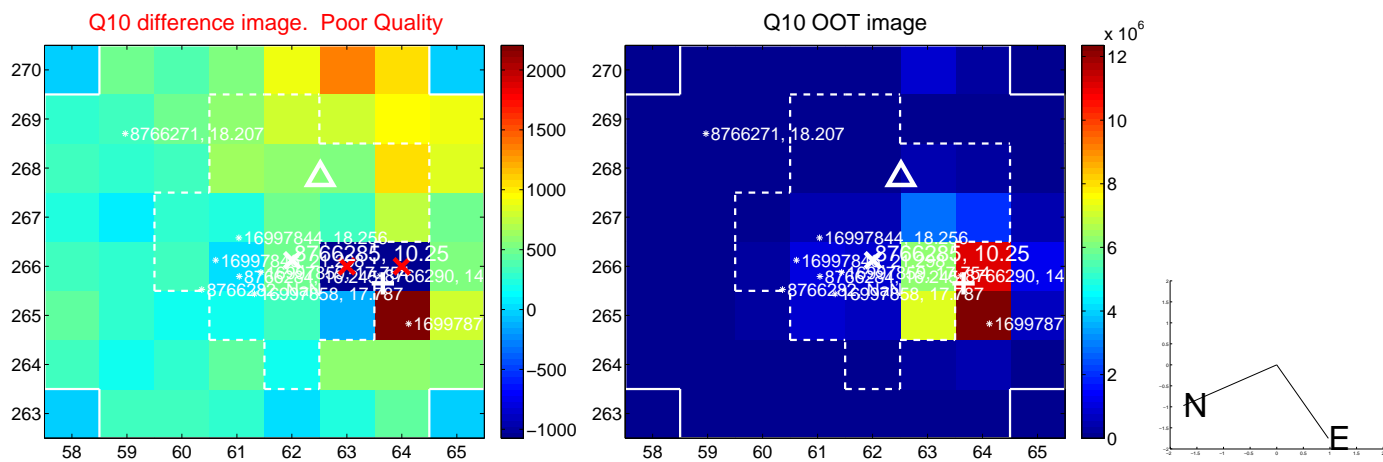
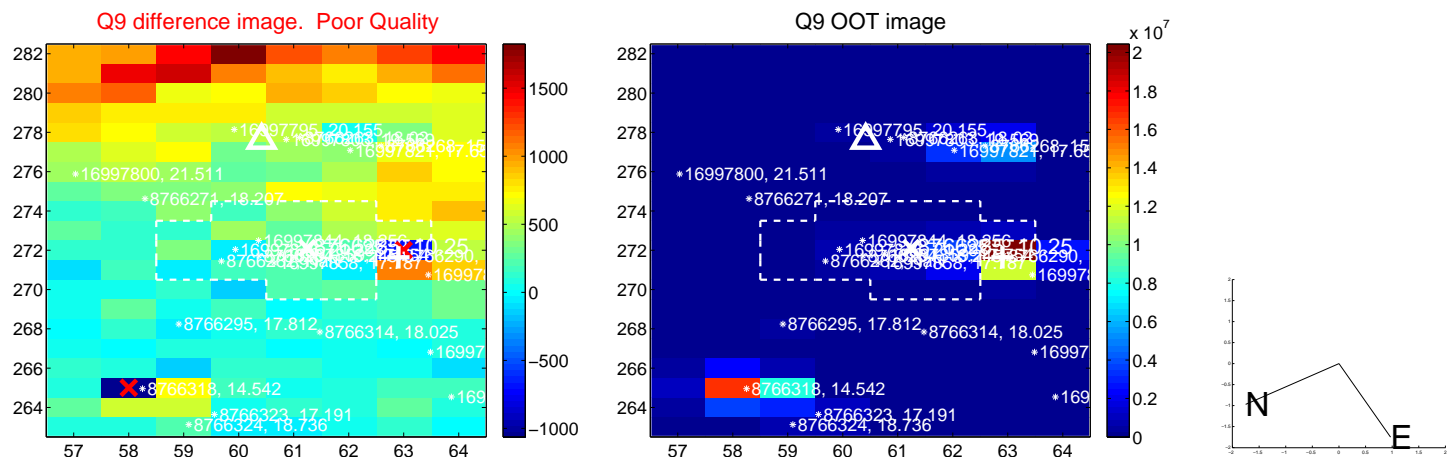


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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







UKIRT Image

Declination

