

# KIC 008889581

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008889581-01	OBS	No	510.100143	548.773602	929.9	8.530	10.3	8.3	0.88	5845	3.42	0.59

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008889581-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

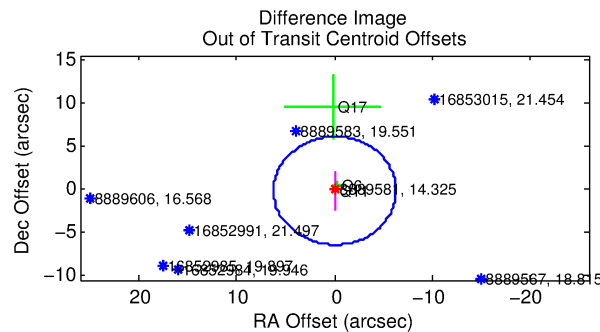
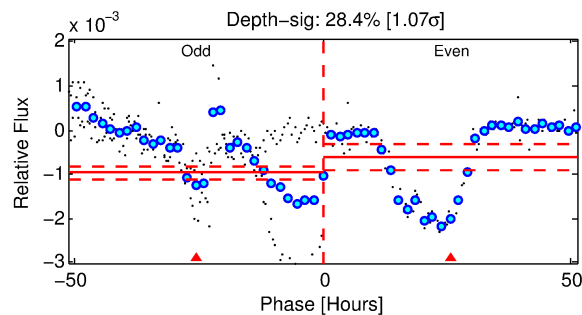
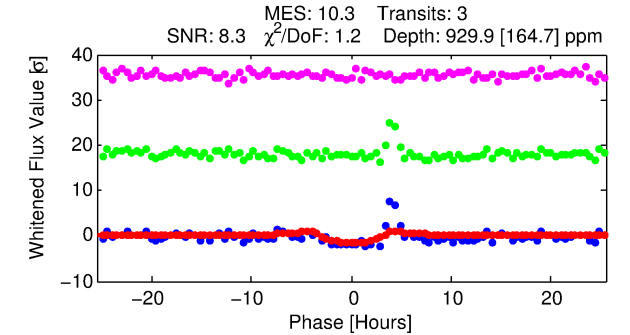
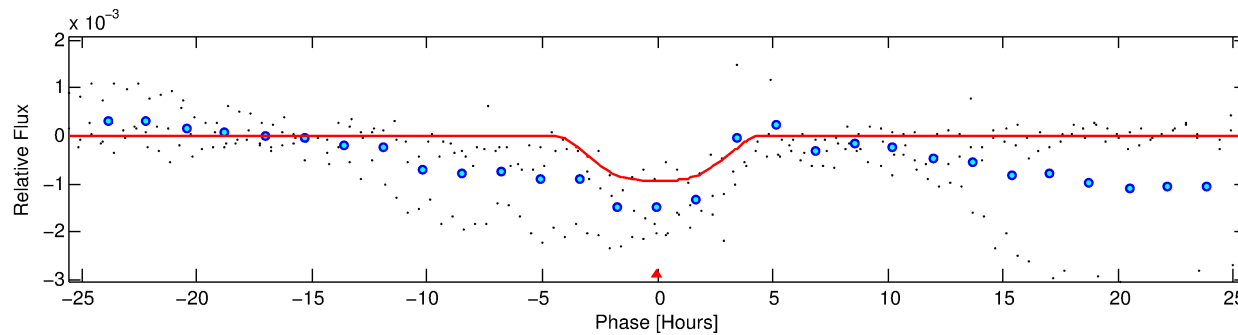
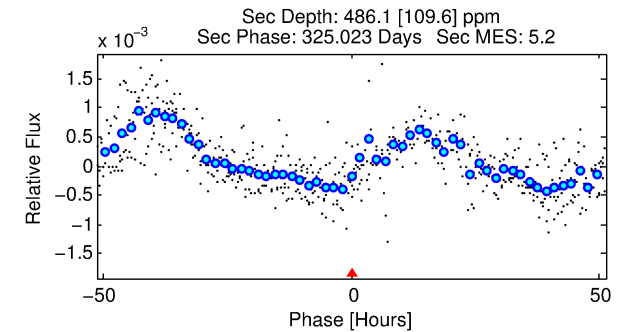
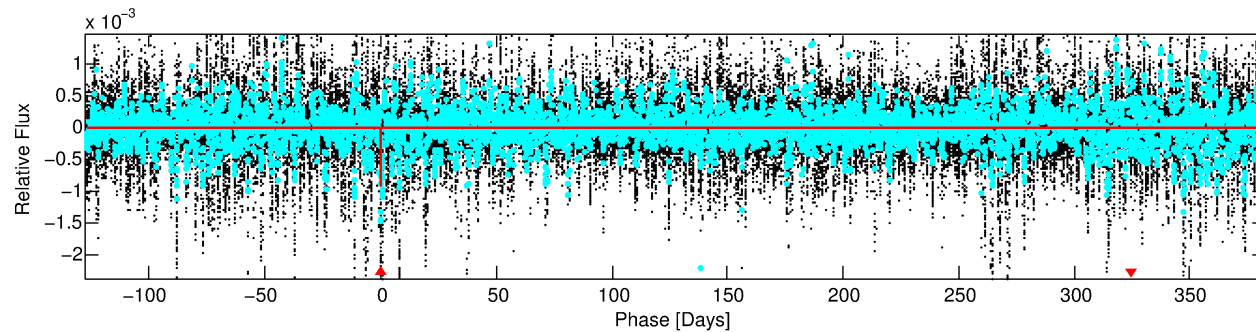
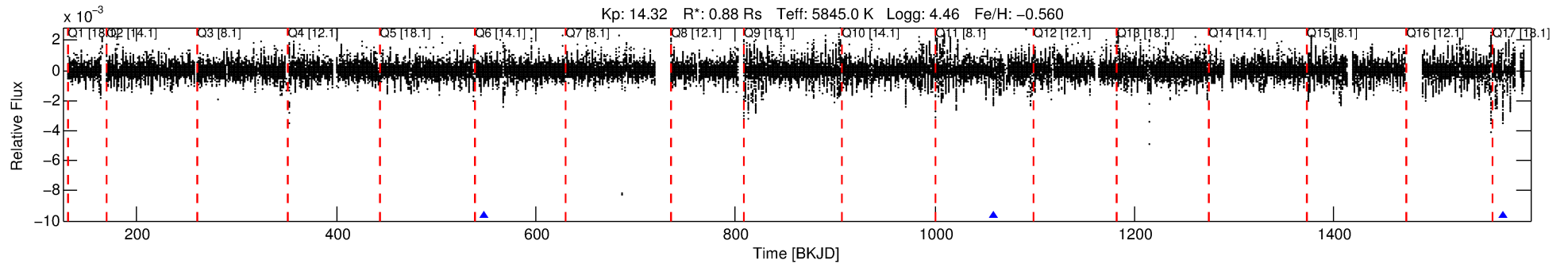
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008889581-01

No Significant Match Found

# DV One-Page Summary

KIC: 8889581 Candidate: 1 of 1 Period: 510.100 d



## DV Fit Results:

Period = 510.10014 [0.01137] d  
Epoch = 548.7736 [0.0157] BKJD  
Rp/R\* = 0.0358 [0.0038]  
a/R\* = 178.88 [26.52]  
b = 0.96 [0.02]  
Seff = 0.59 [0.20]  
Teff = 224 [18] K  
Rp = 3.42 [0.90] Re  
a = 1.1627 [0.2420] AU  
Ag = 30848.09 [13546.77] [2.28σ]  
Teffp = 4589 [377] K [11.57σ]

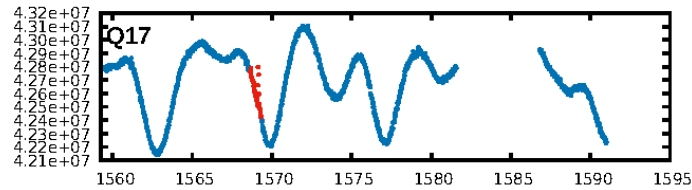
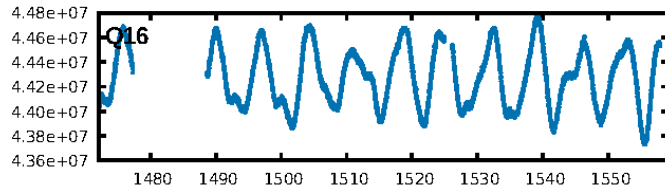
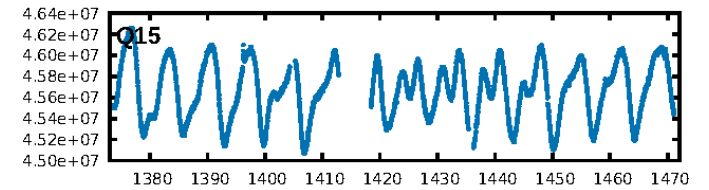
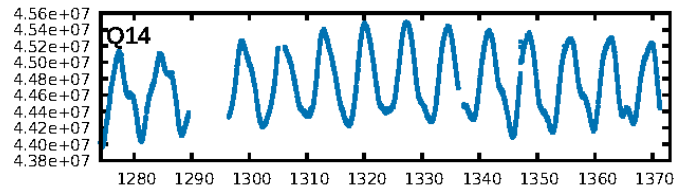
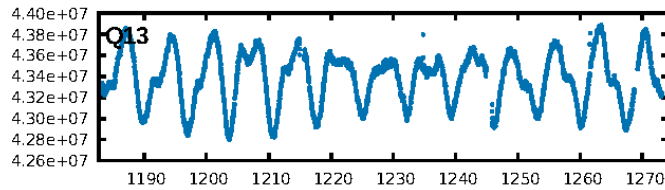
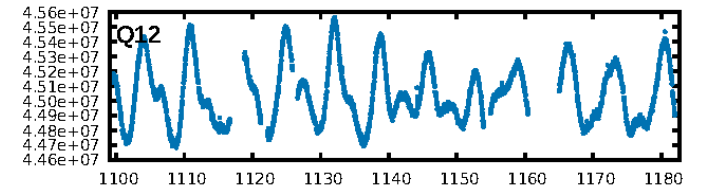
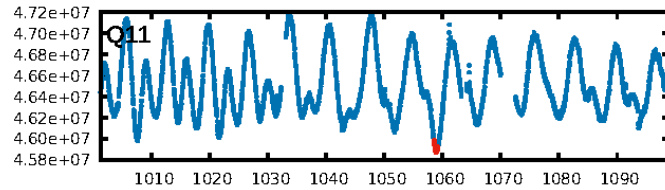
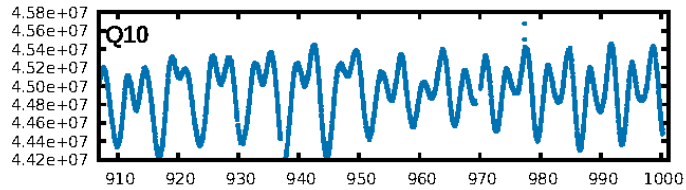
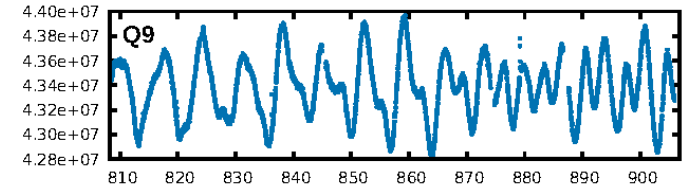
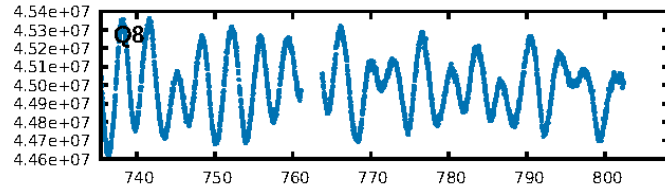
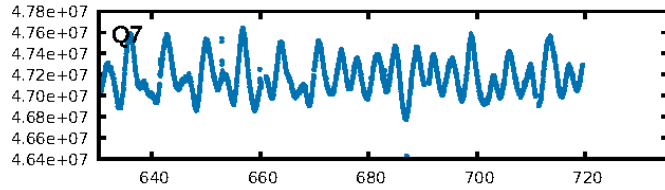
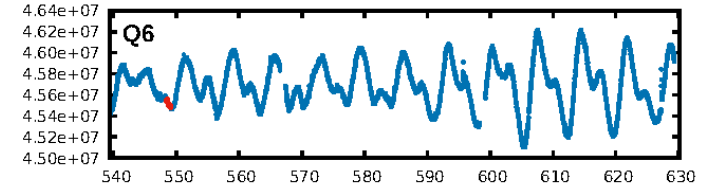
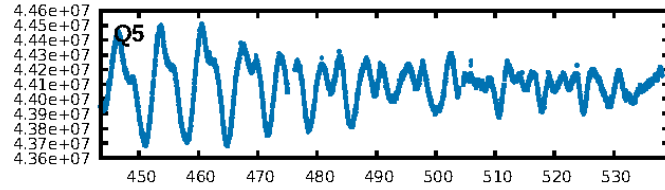
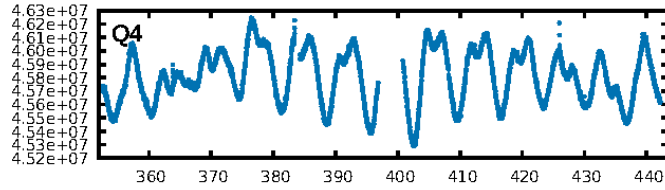
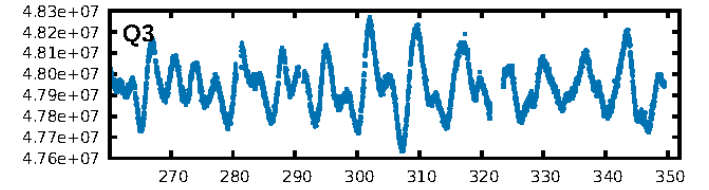
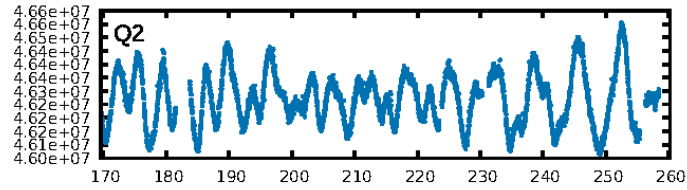
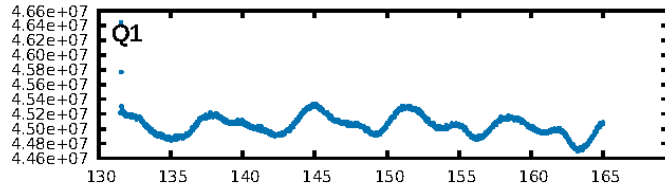
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 86.6%  
Bootstrap-pfa: 3.00e-08  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: 0.9552  
Centroid-sig: 52.1%  
Centroid-so: 0.693 arcsec [1.08σ]  
OotOffset-rm: 0.172 arcsec [0.08σ]  
KicOffset-rm: 0.120 arcsec [0.07σ]  
OotOffset-st: 1/1/0/1 [3]  
KicOffset-st: 1/1/0/1 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

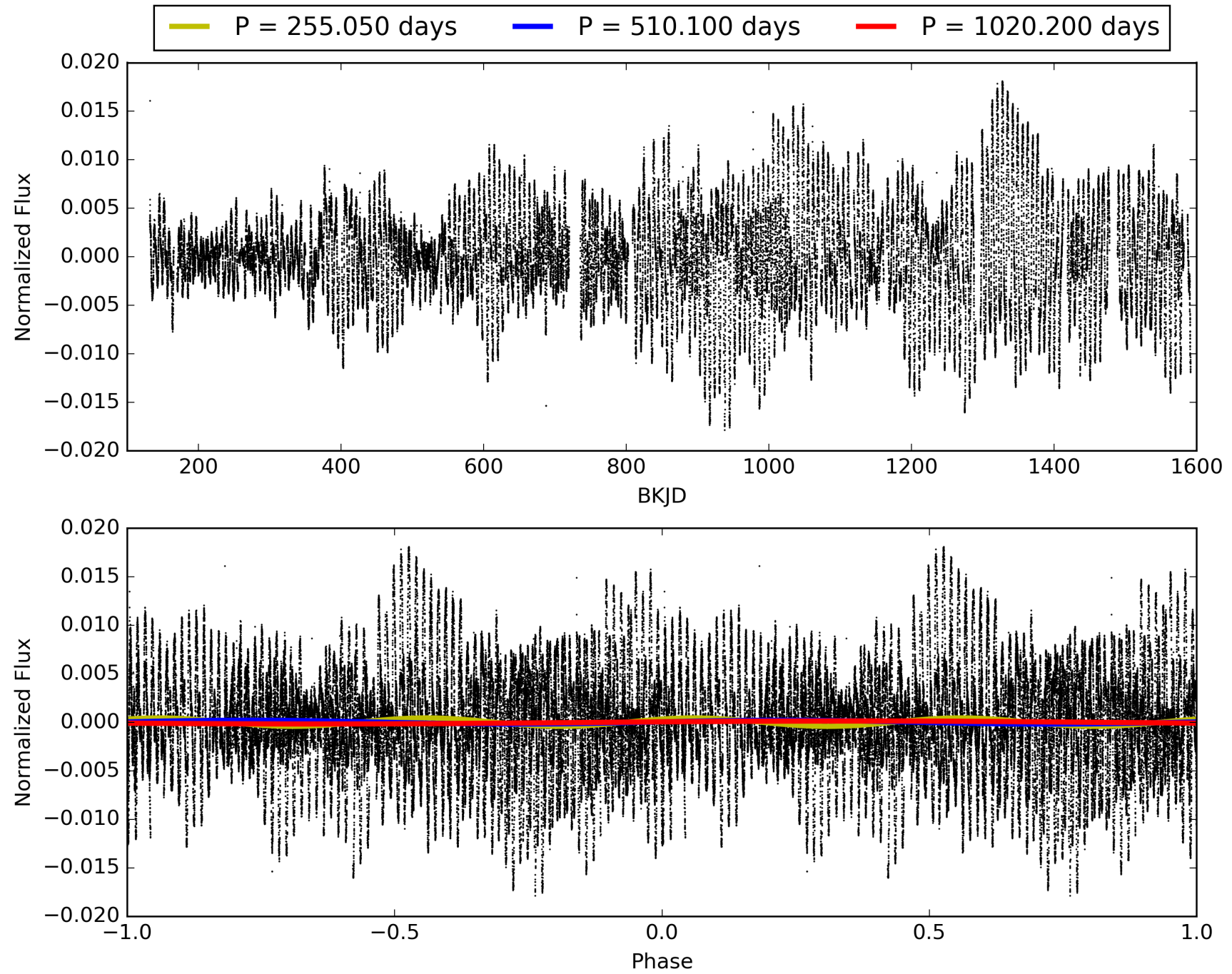
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:23:01 Z

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

# TCE 008889581-01, PDC Light Curves

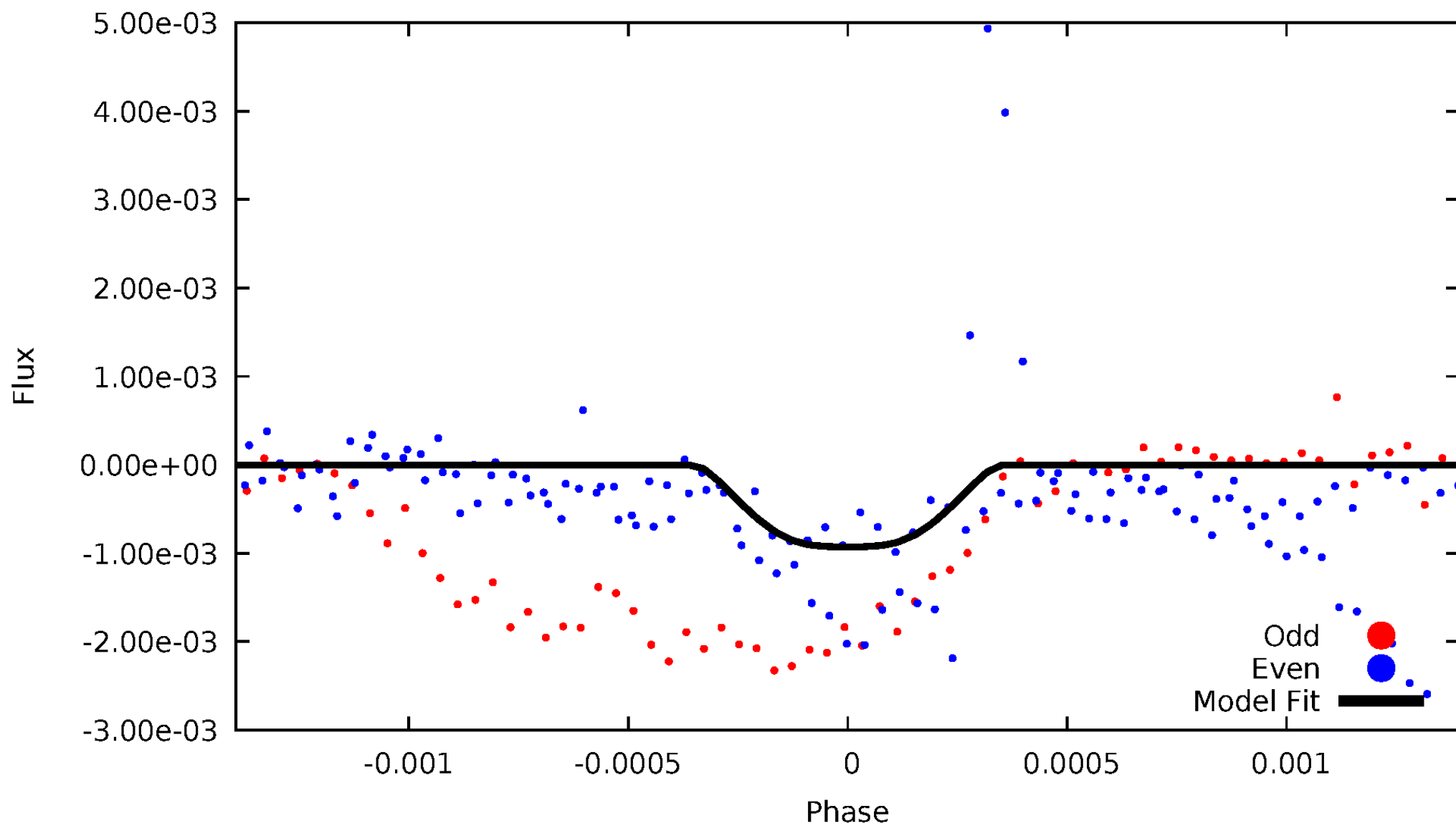


TCE 008889581-01



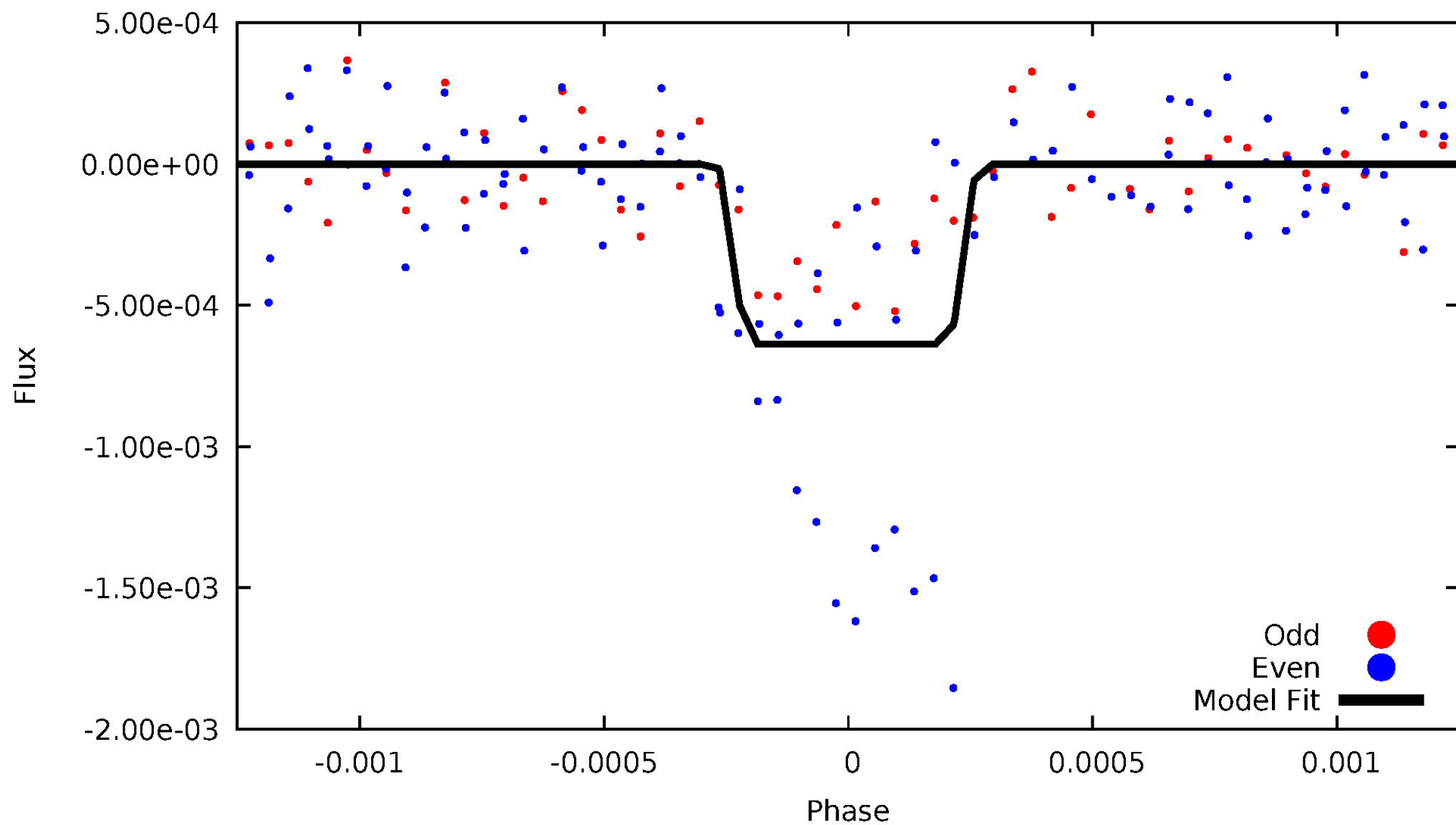
# DV Odd/Even

TCE 008889581-01

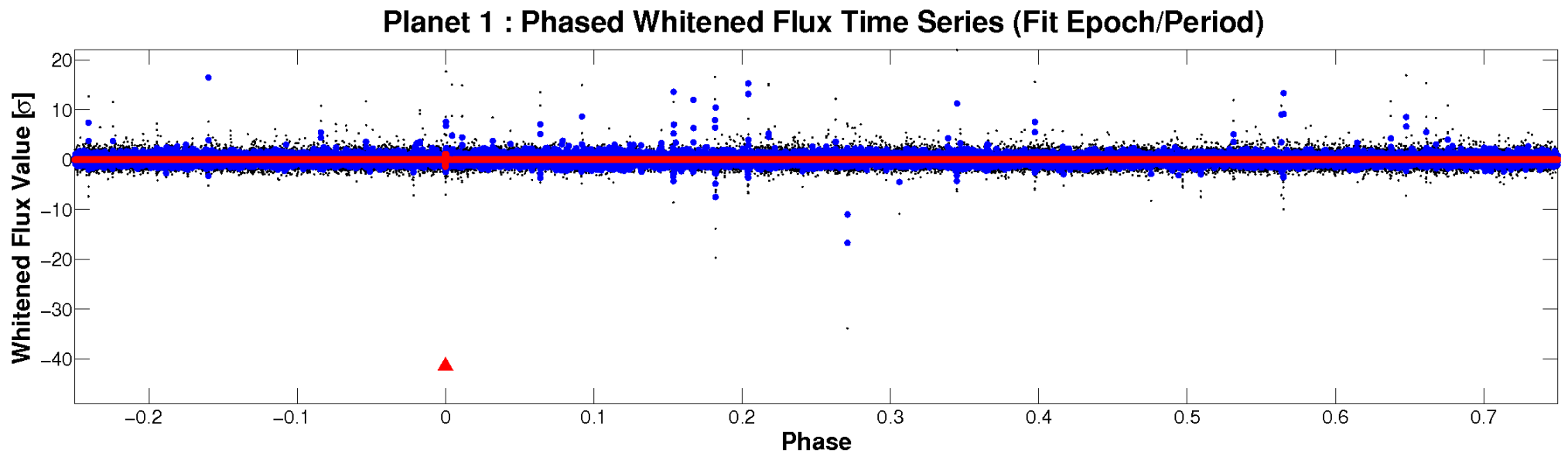
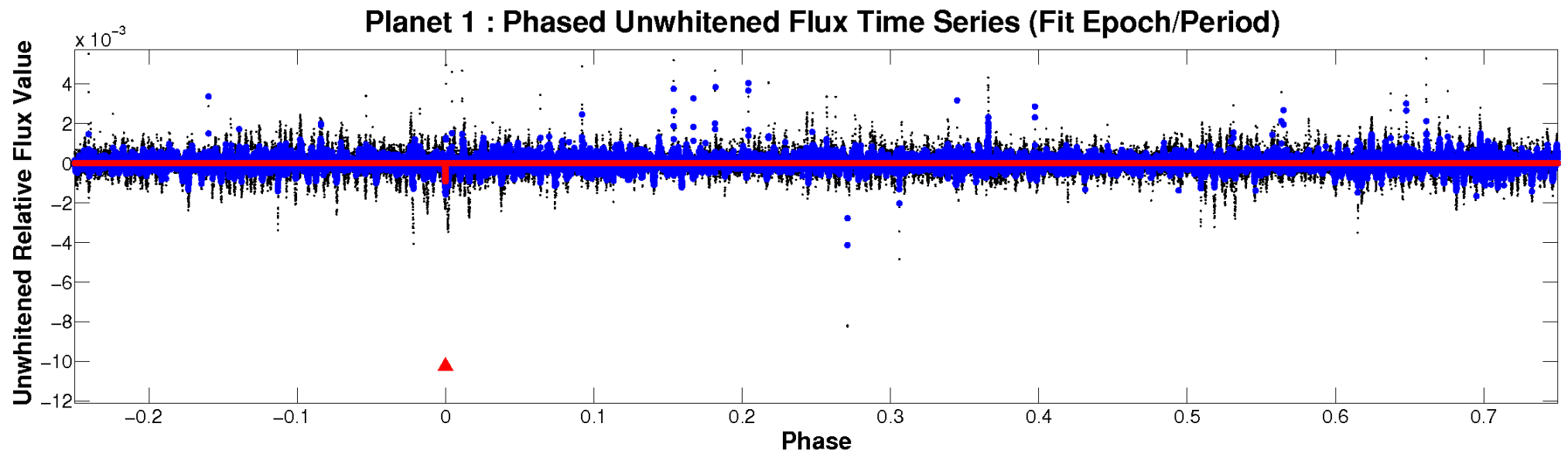


# ALT Odd/Even

TCE 008889581-01

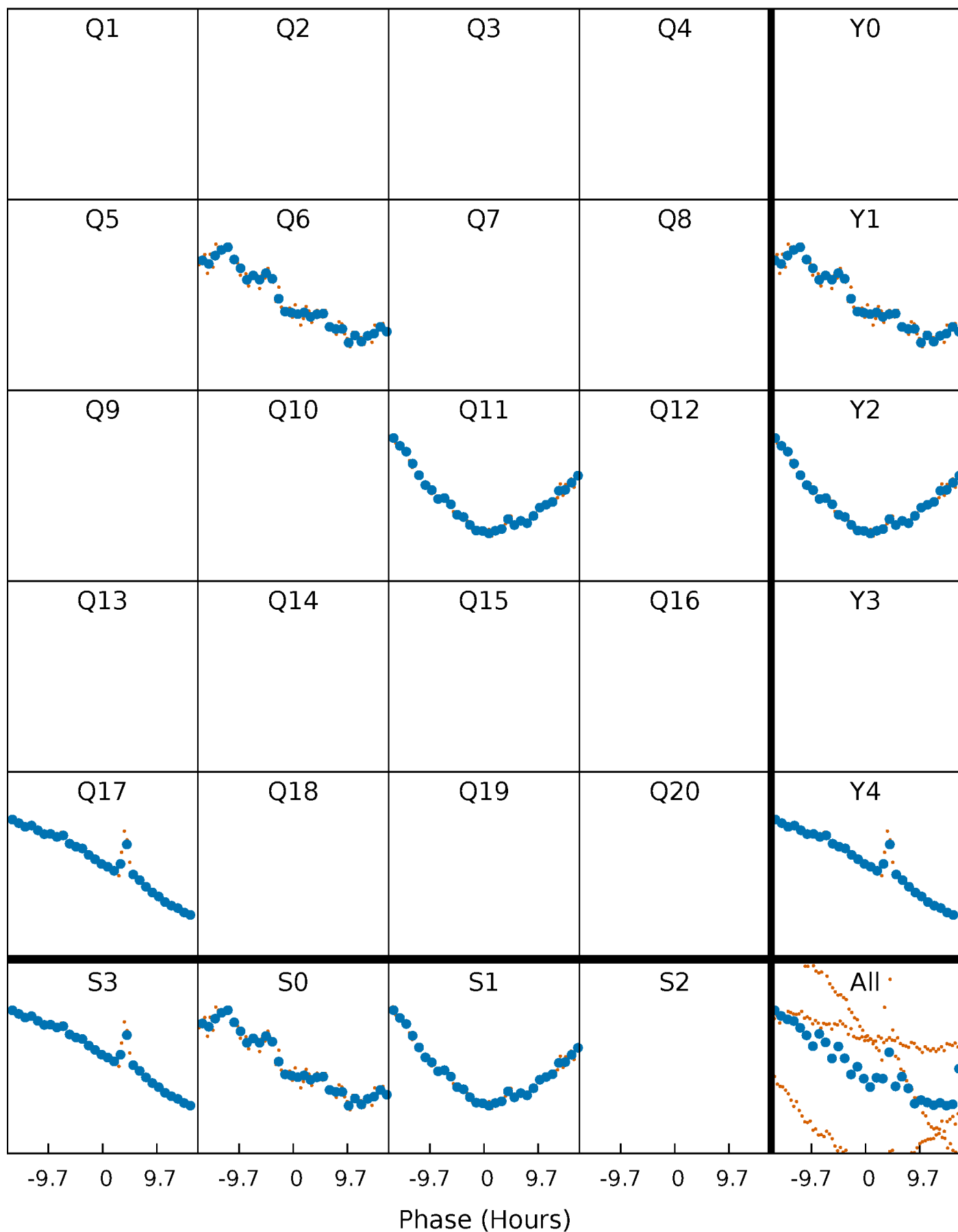


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

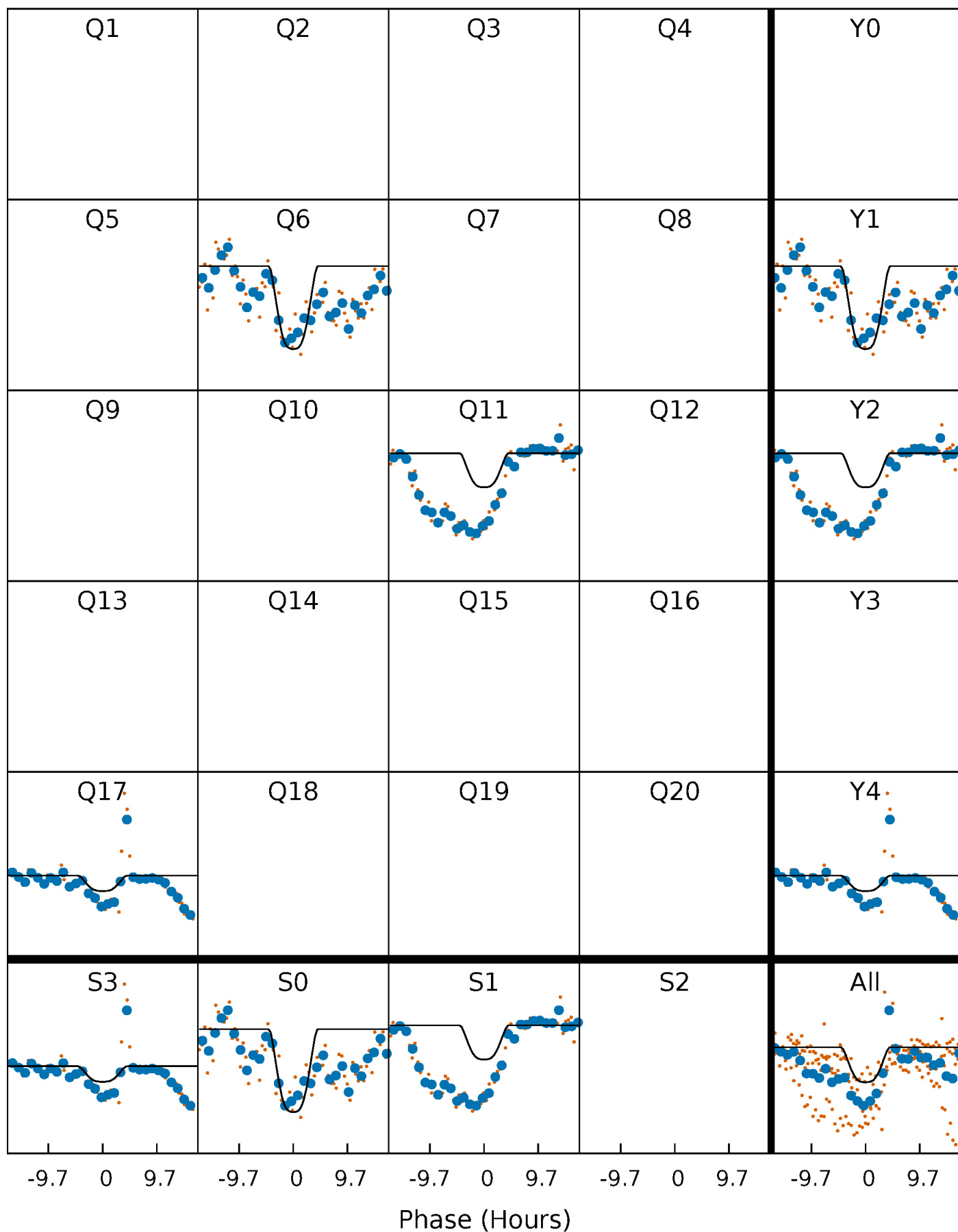
TCE 008889581-01   P=510.100143 Days    $T_0=548.773602$  (BKJD)





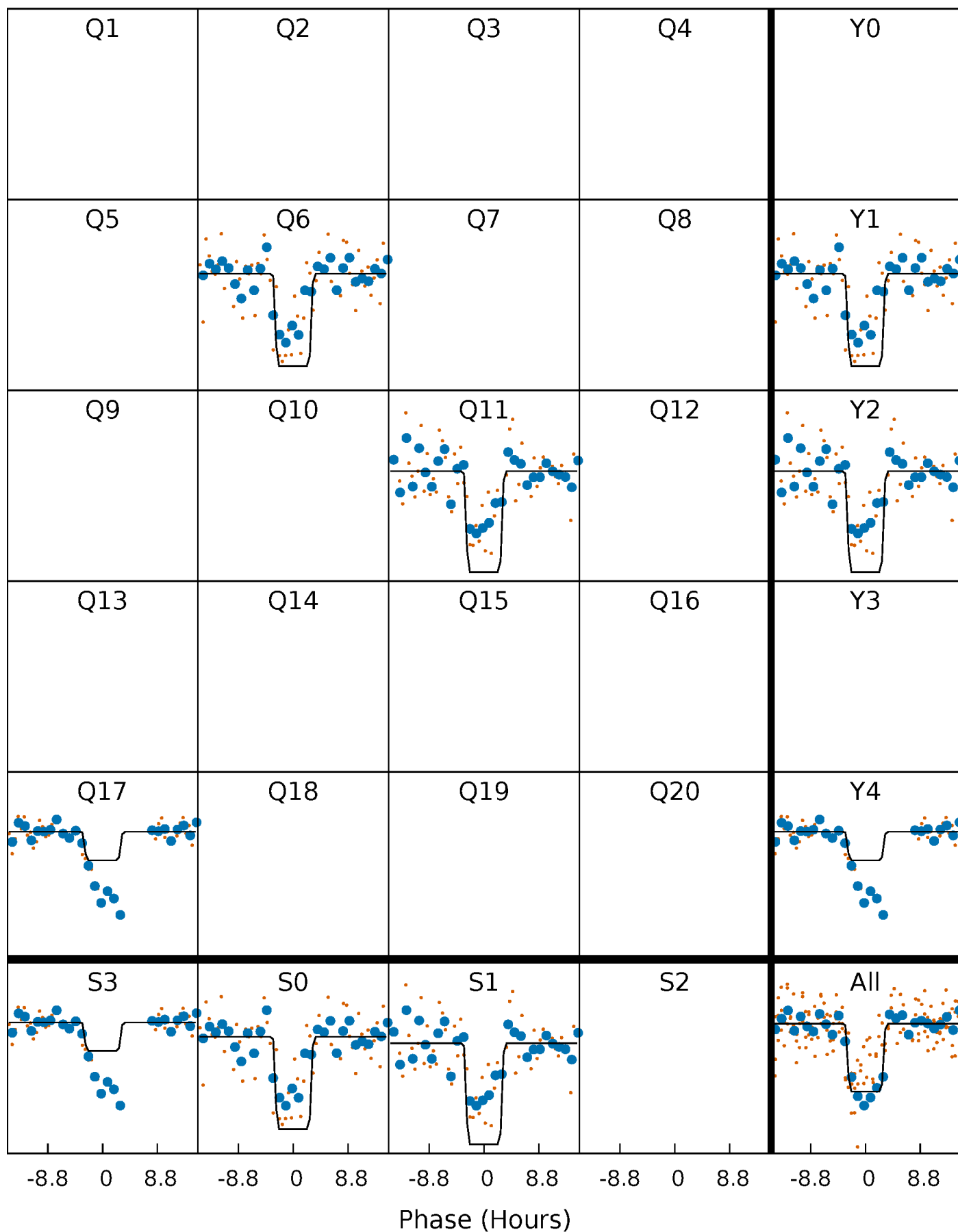
# DV Quarter-Phased Transit Curves

TCE 008889581-01 P=510.100143 Days  $T_0=548.773602$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

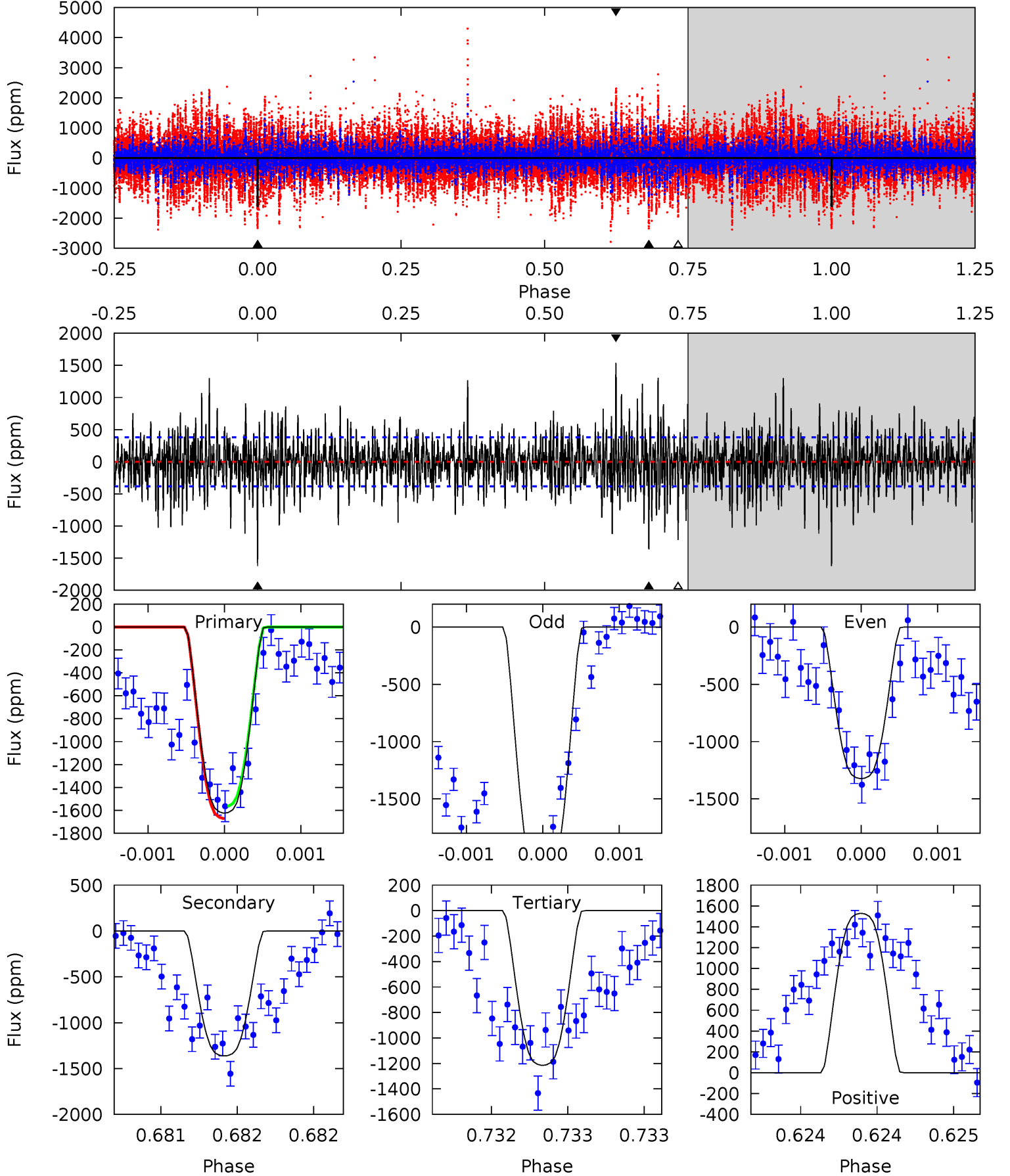
TCE 008889581-01 P=510.103392 Days  $T_0=548.779167$  (BKJD)



# DV Model-Shift Uniqueness Test

008889581-01, P = 510.100143 Days, E = 38.673459 Days

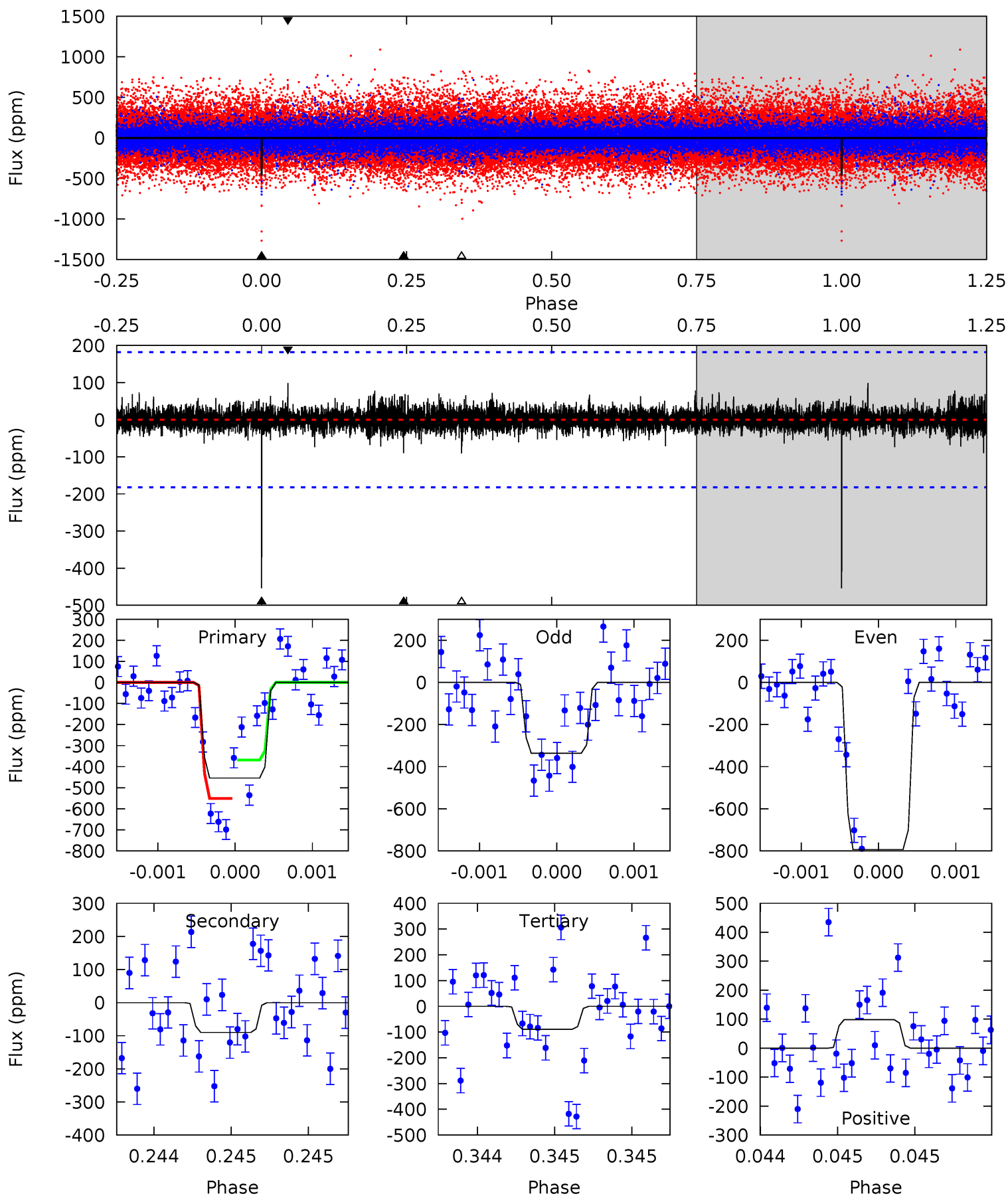
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.5	19.7	17.5	22.1	5.52	3.39	4.46	5.91	1.37	2.13	-2.41	6.00	0.94	0.48	0.77



# Alt Model-Shift Uniqueness Test

008889581-01, P = 510.103392 Days, E = 38.675775 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
13.9	2.75	2.71	3.00	5.55	3.45	0.50	11.2	10.9	0.04	-0.25	7.23	1.90	0.18	2.77



### Stellar Parameters For KIC 008889581

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5845^{+159}_{-159}$	$4.458^{+0.116}_{-0.174}$	$-0.560^{+0.300}_{-0.300}$	$0.877^{+0.210}_{-0.113}$	$0.805^{+0.103}_{-0.055}$	$1.679^{+0.839}_{-0.765}$
	+3%/-3%	+3%/-4%	+54%/-54%	+24%/-13%	+13%/-7%	+50%/-46%
Source	PHO1	KIC0	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 008889581-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-1362 \pm 69$	$3.51^{+0.59}_{-0.52}$	$316^{+20}_{-16}$	$5949^{+380}_{-340}$	$83833^{+30480}_{-23164}$
Alt.	$-90 \pm 33$	$2.45^{+0.45}_{-0.41}$	$314^{+20}_{-16}$	$3930^{+318}_{-351}$	$10896^{+6867}_{-4835}$

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

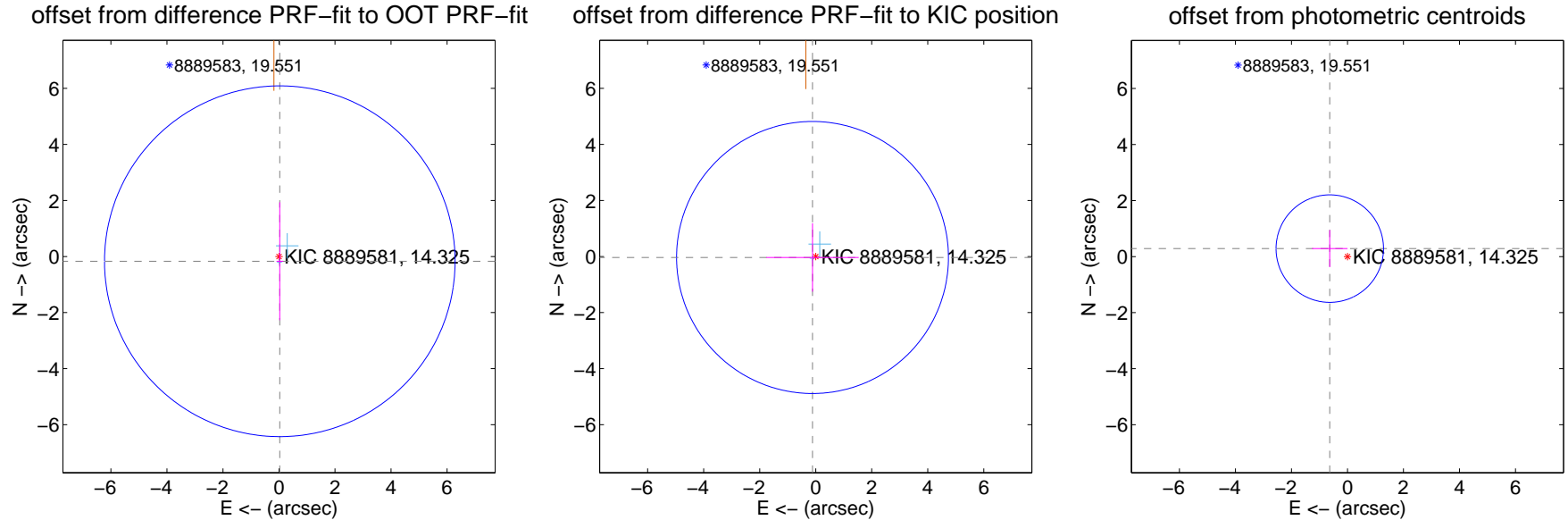
## DV Centroid Data

Supplemental centroid analysis for 008889581-01. Kepler magnitude: 14.32. Transit SNR 8.29

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.172 \pm 2.086$	0.08	$-0.029 \pm 0.119$	$-0.169 \pm 2.104$
PRF-fit source offset from KIC position	$0.120 \pm 1.618$	0.07	$0.115 \pm 1.649$	$-0.034 \pm 1.219$
photometric centroid source offset	$0.69 \pm 0.64$	1.08	$0.63 \pm 0.63$	$0.29 \pm 0.66$



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.



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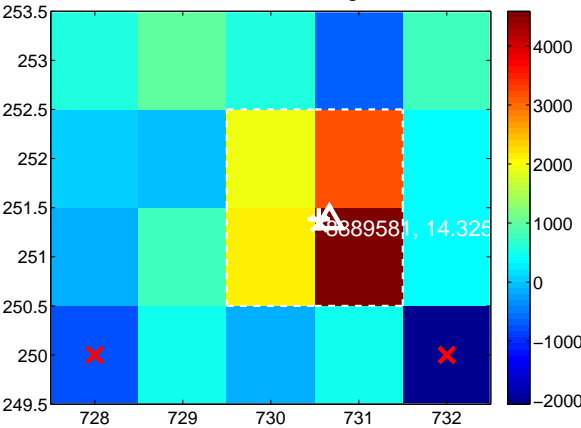
Q5 no difference image



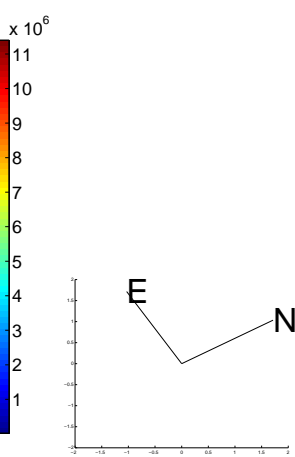
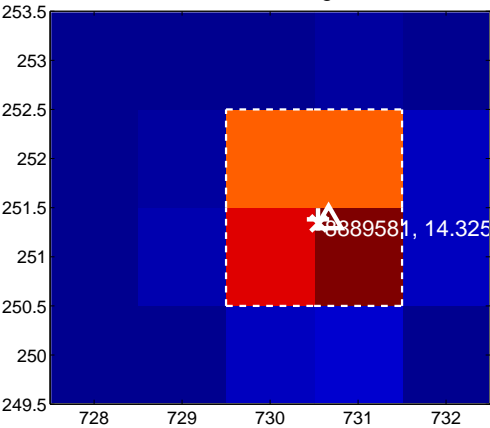
Q5 no OOT image



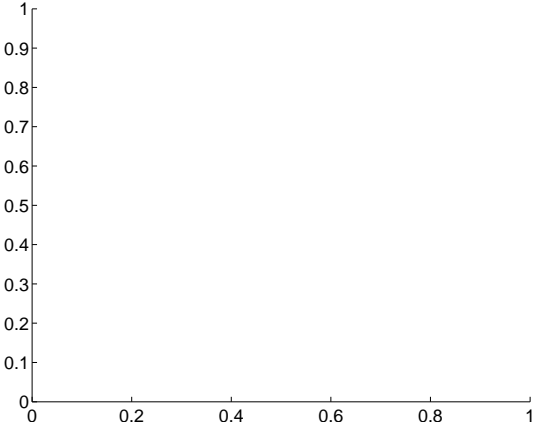
Q6 difference image



Q6 OOT image



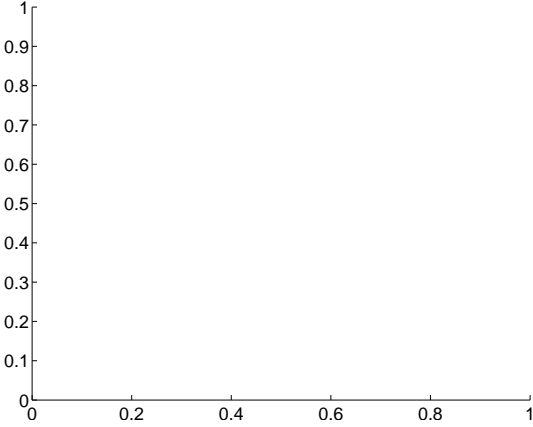
Q7 no difference image



Q7 no OOT image



Q8 no difference image

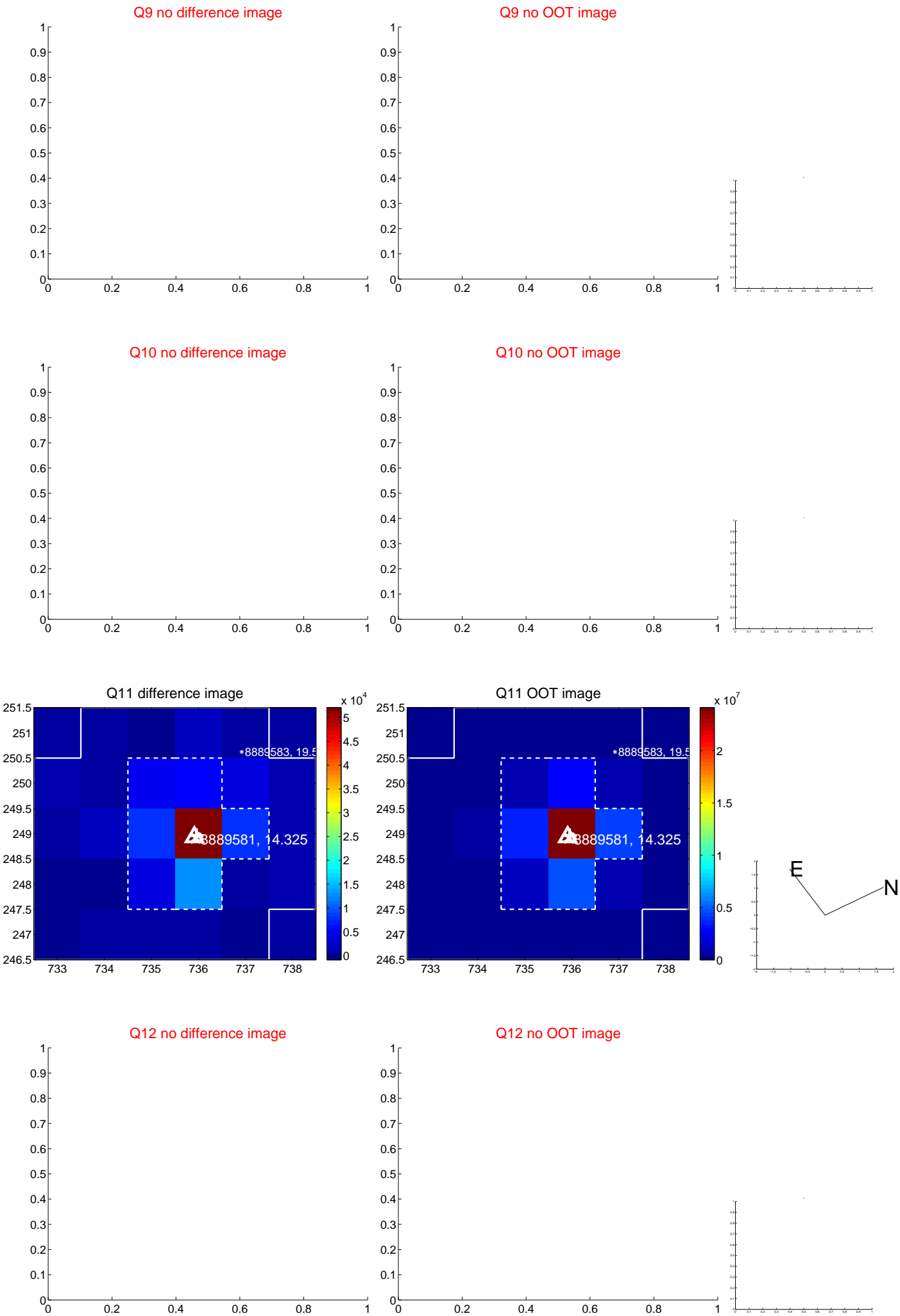


Q8 no OOT image





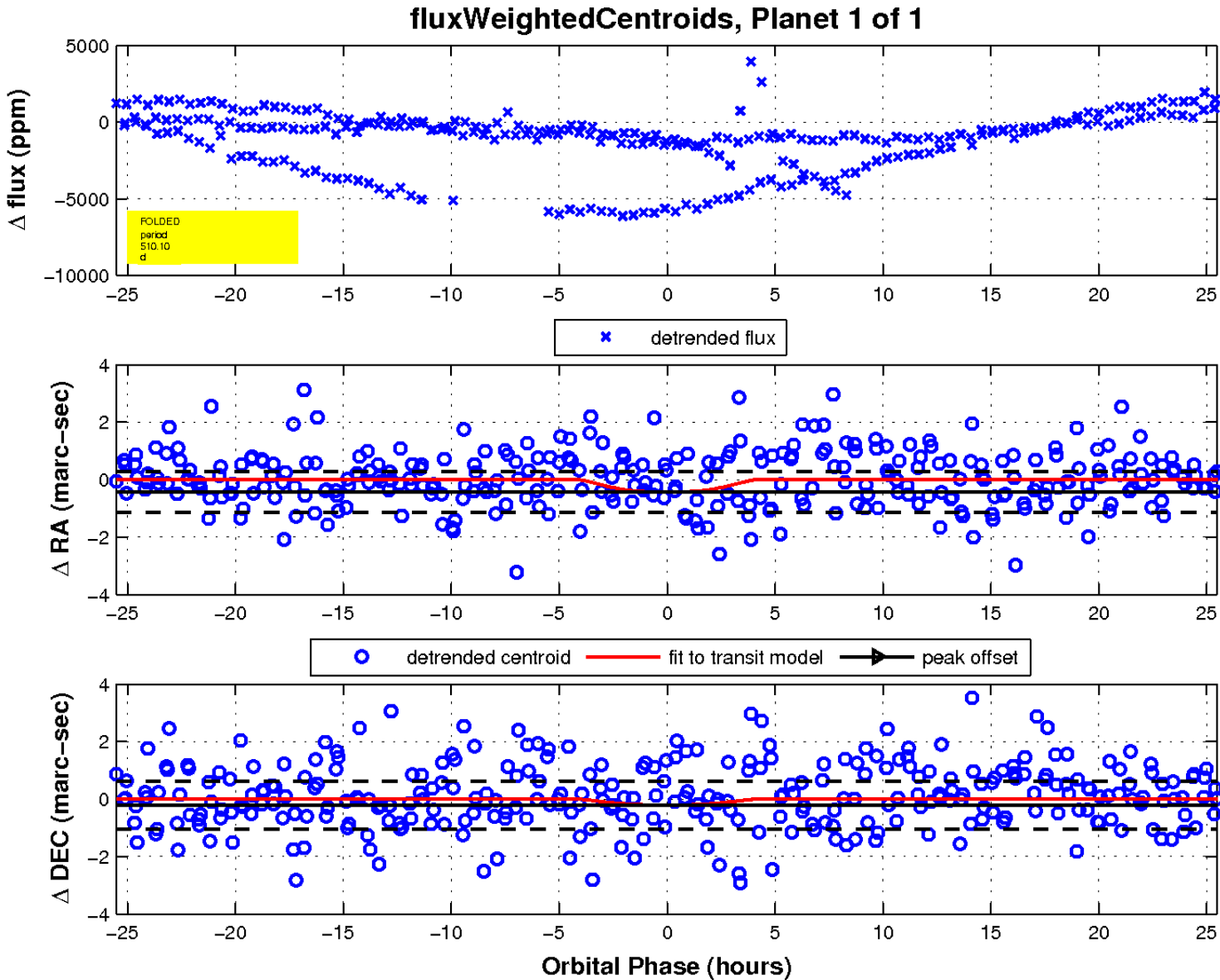
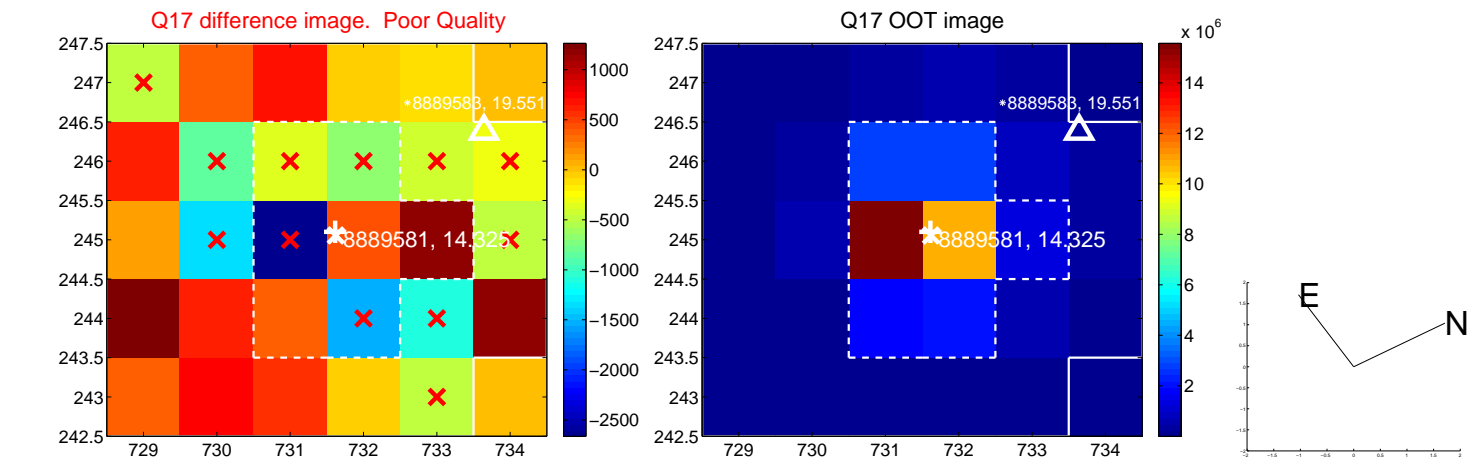
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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UKIRT Image

Declination

