

# KIC 009588514

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009588514-01	OBS	No	0.626018	131.987630	90.8	2.241	8.7	10.0	0.41	3587	0.45	213.89

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009588514-01	OBS	FP	0.00	1	0	1	0	LPP_DV—MOD_NONUNIQ_DV—CENT_RESOLVED_OFFSET—HALO_GHOST

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

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

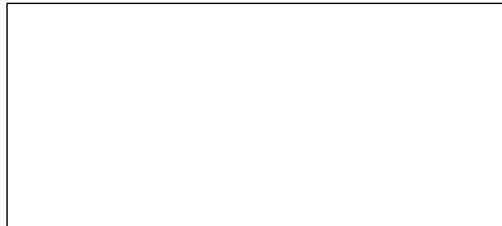
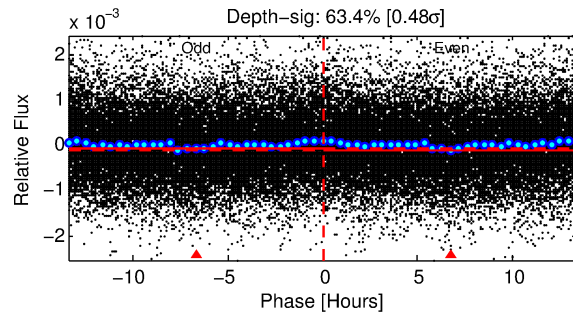
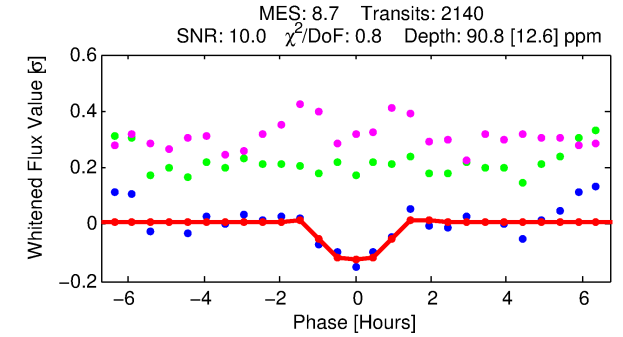
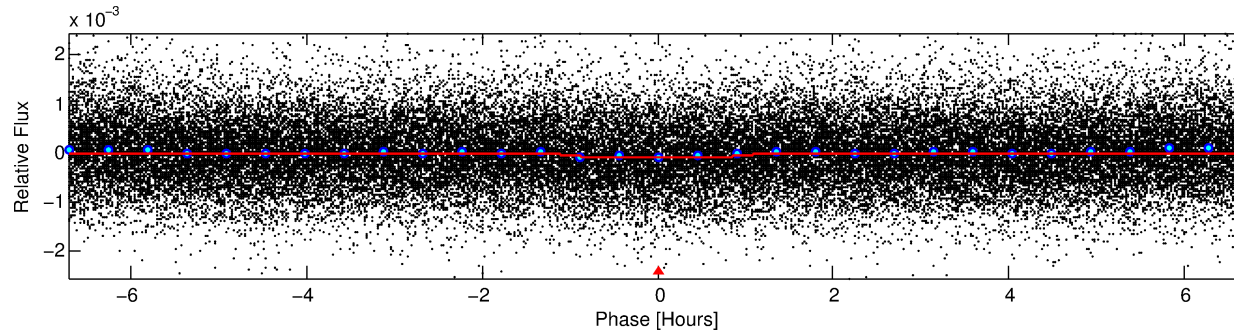
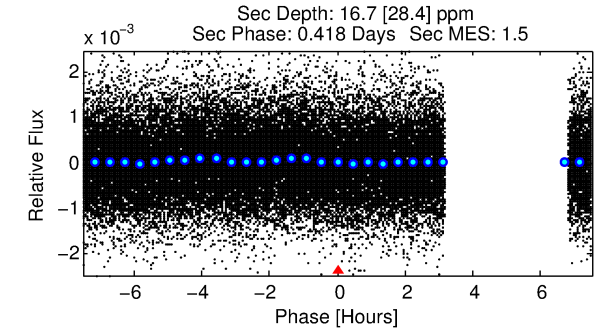
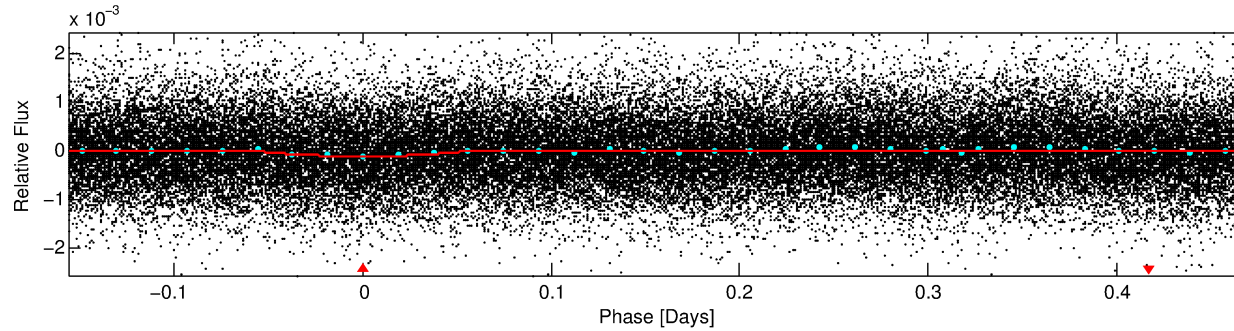
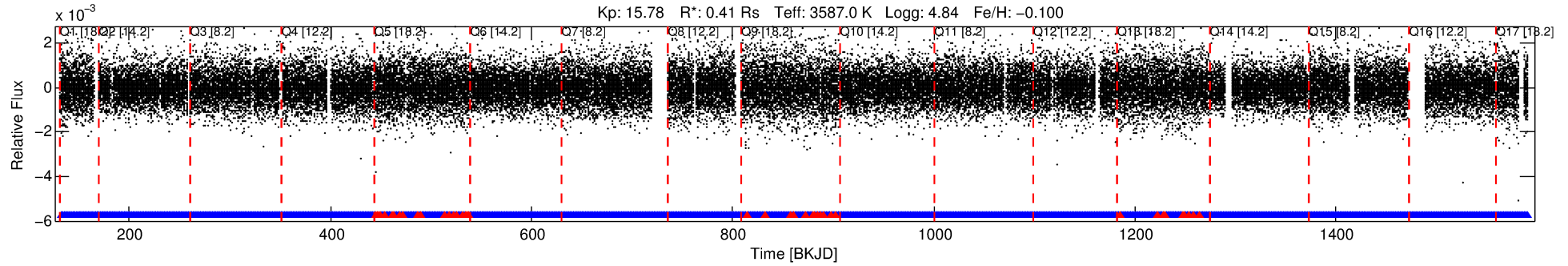
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009588514-01

No Significant Match Found

# DV One-Page Summary

KIC: 9588514 Candidate: 1 of 1 Period: 0.626 d



## DV Fit Results:

Period = 0.62602 [0.00001] d  
Epoch = 131.9876 [0.0027] BKJD  
Rp/R\* = 0.0101 [0.0098]  
a/R\* = 1.43 [3.13]  
b = 0.87 [1.20]  
Seff = 213.89 [25.45]  
Teq = 975 [29] K  
Rp = 0.45 [0.44] Re  
a = 0.0108 [0.0008] AU  
Ag = 5.21 [13.41] [0.31σ]  
Teffp = 2278 [1466] K [0.89σ]

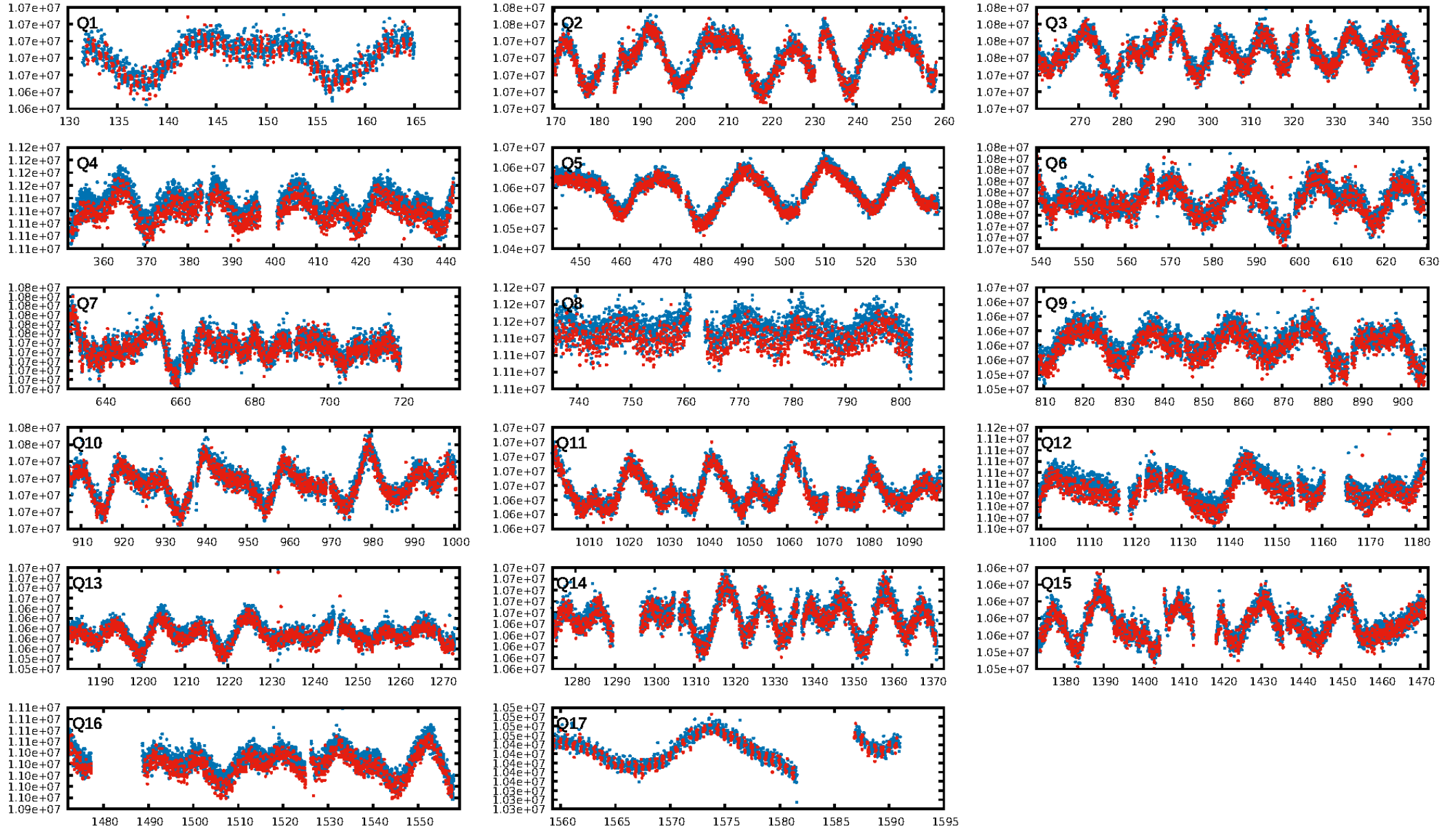
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.02e-15  
RollingBand-fgt: 0.98 [1999/2044]  
GhostDiagnostic-chr: 0.01333  
Centroid-sig: 77.1%  
Centroid-so: 2.206 arcsec [0.95σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [17/17]

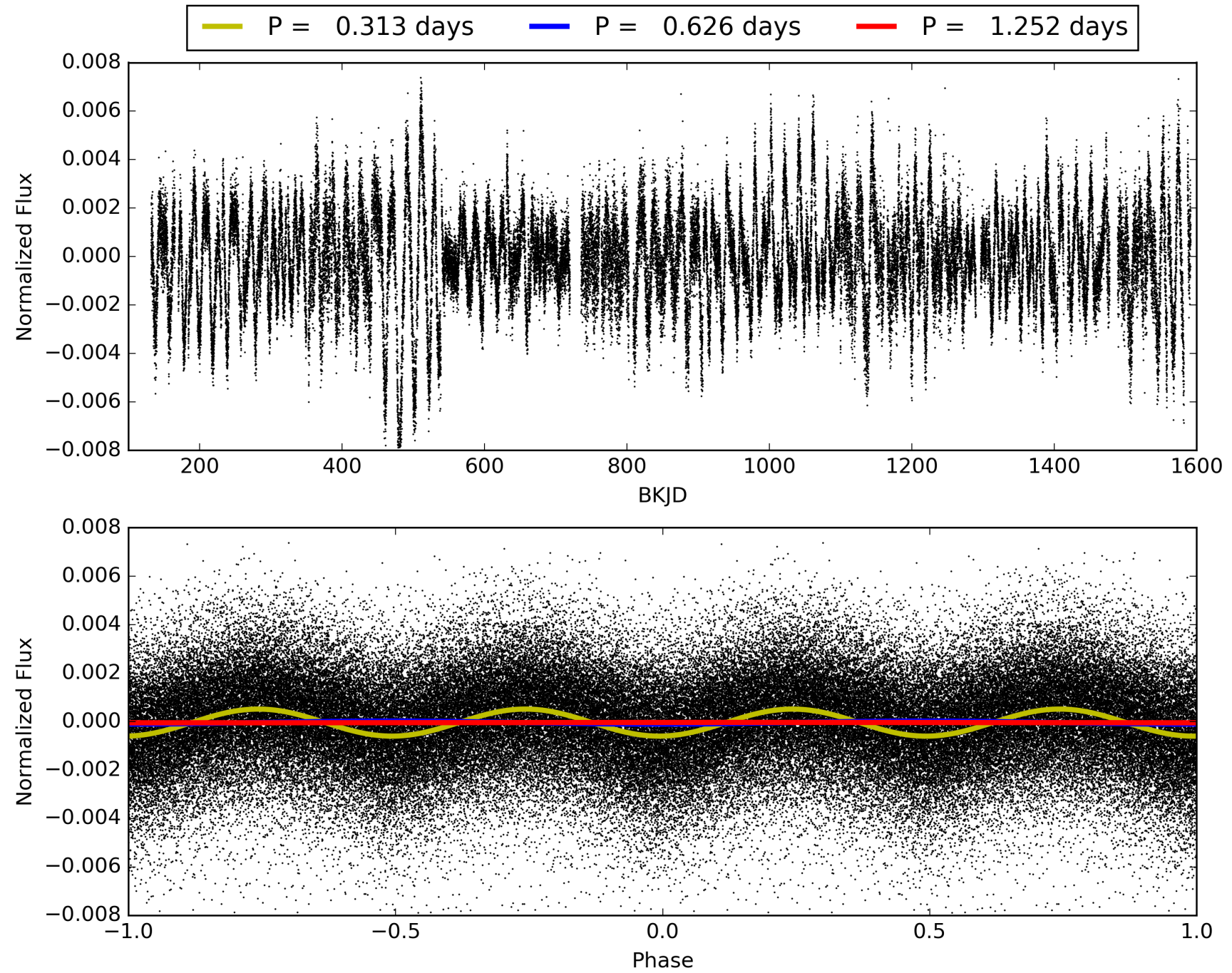
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 02:18:01 Z

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

# TCE 009588514-01, PDC Light Curves



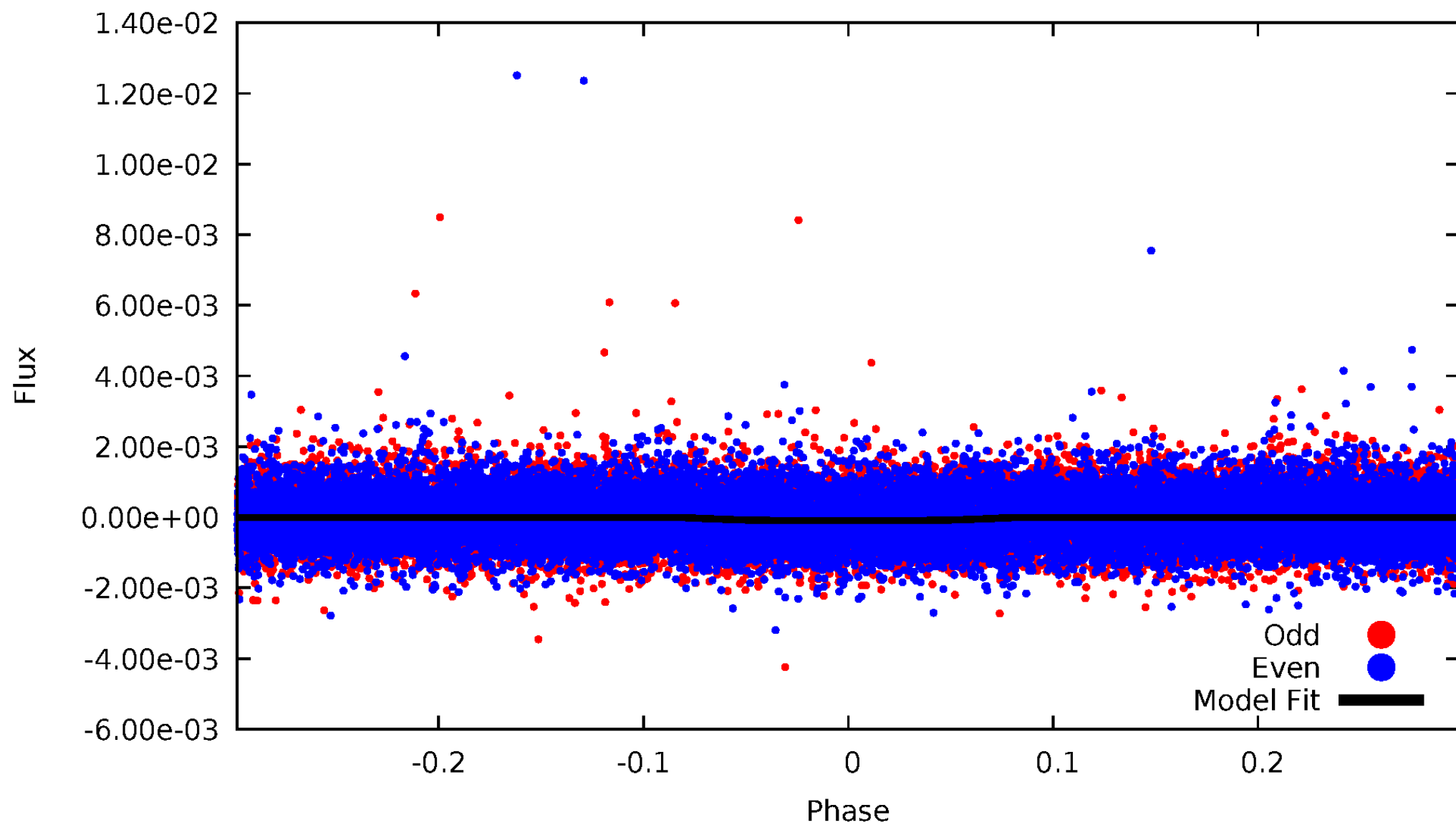
TCE 009588514-01





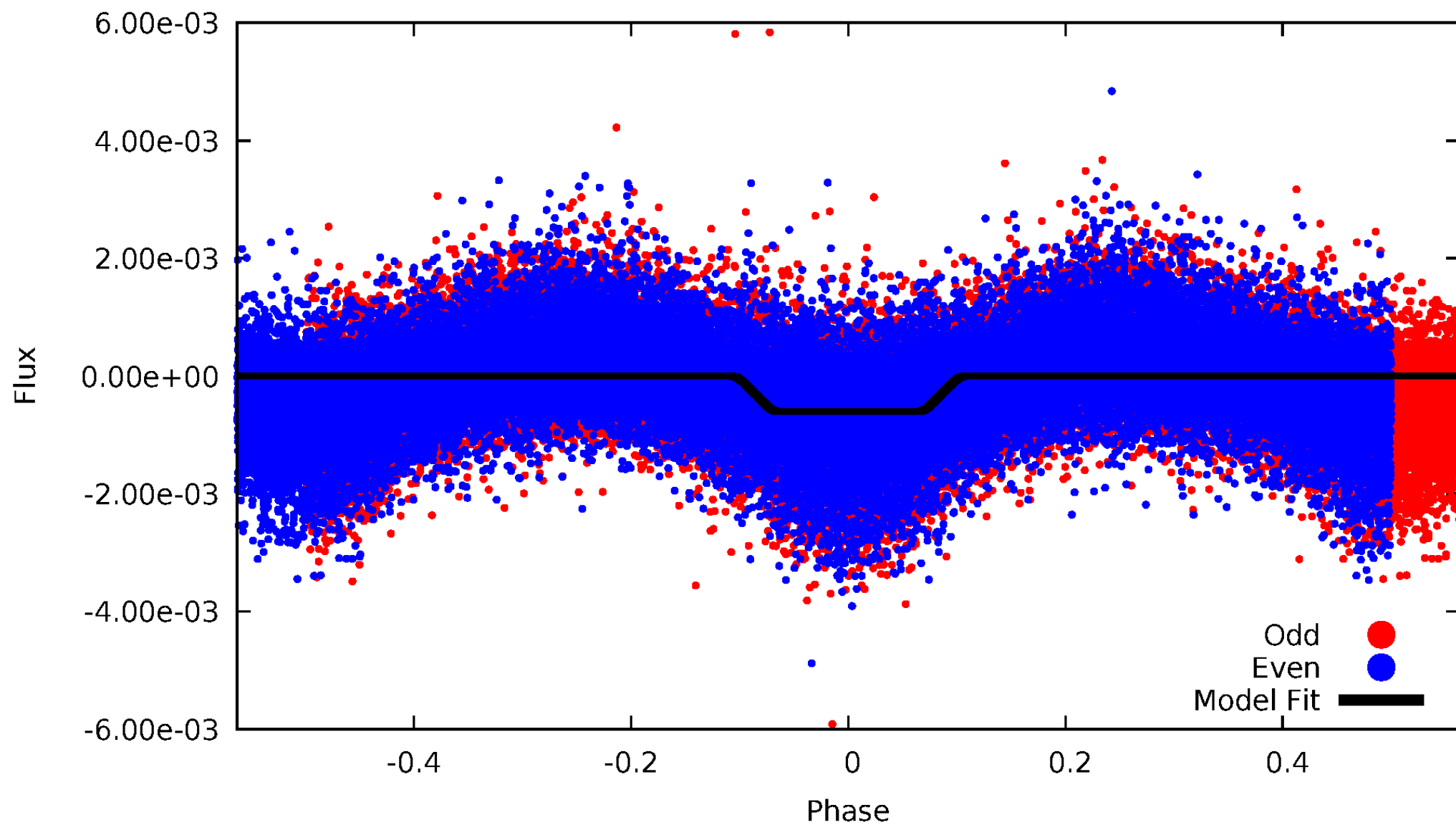
# DV Odd/Even

TCE 009588514-01



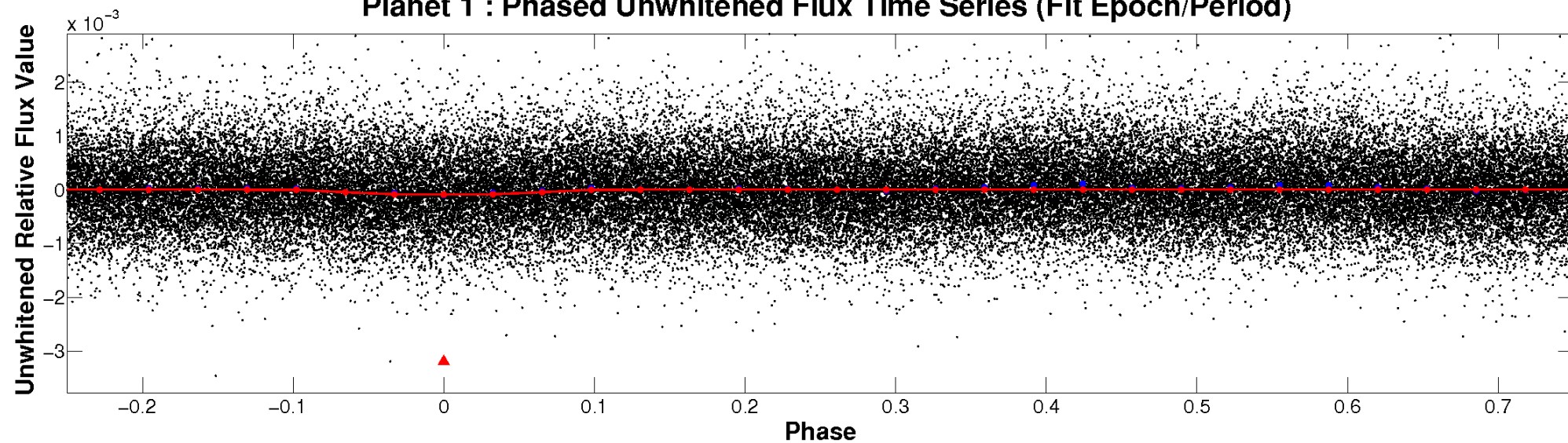
# ALT Odd/Even

TCE 009588514-01

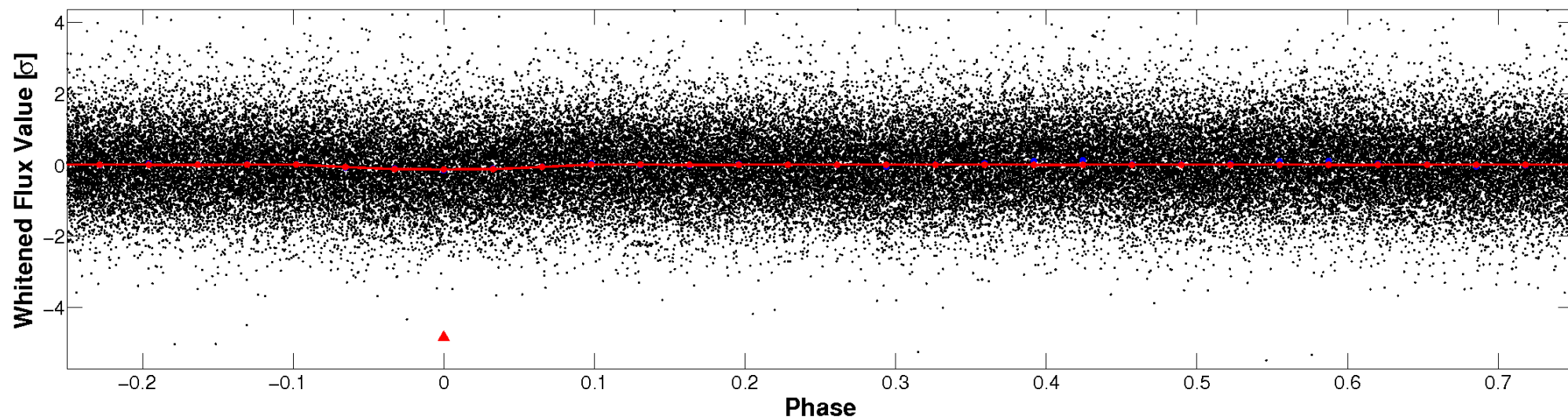


# Non-Whitened Vs. Whitened Light Curve

**Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

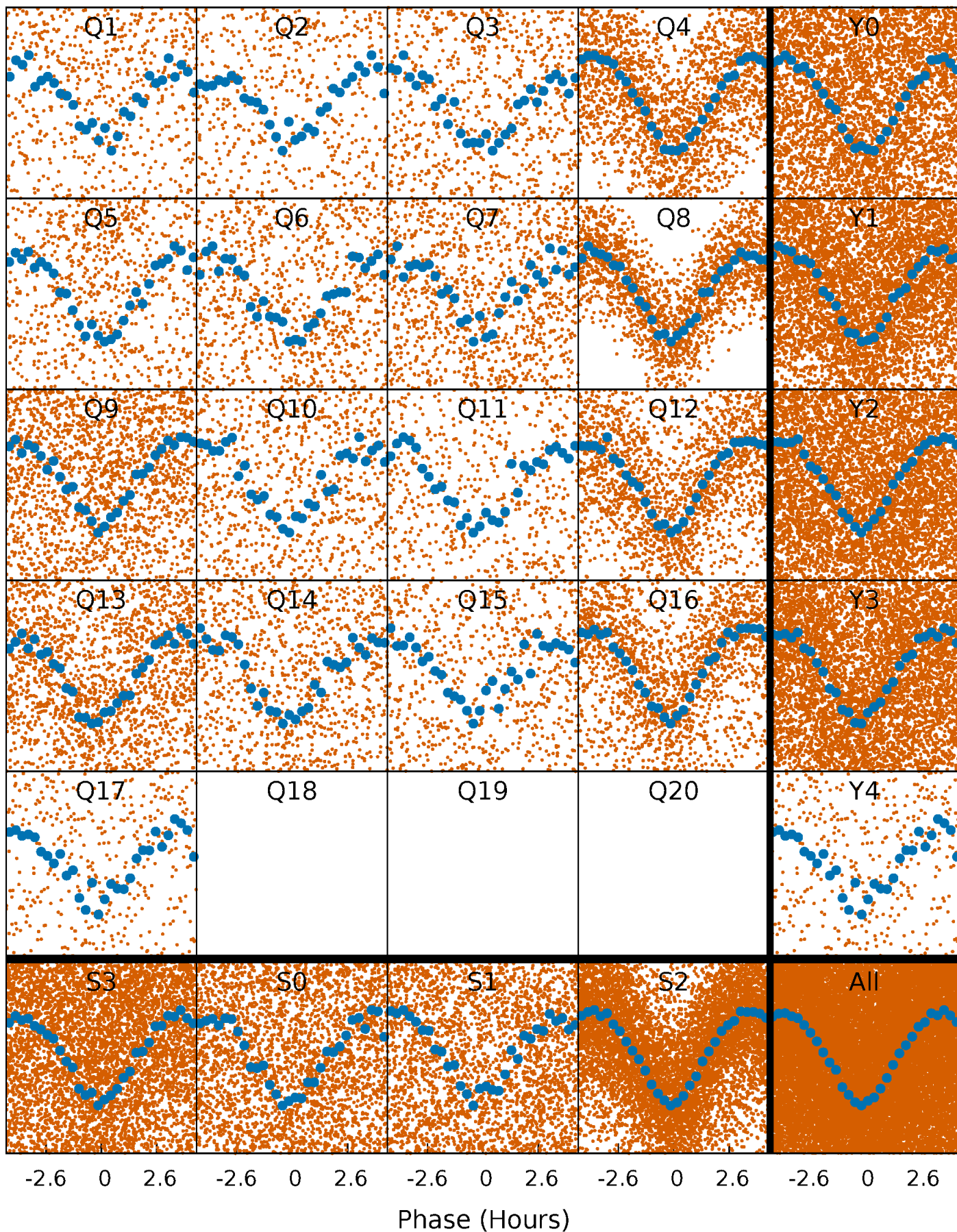


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

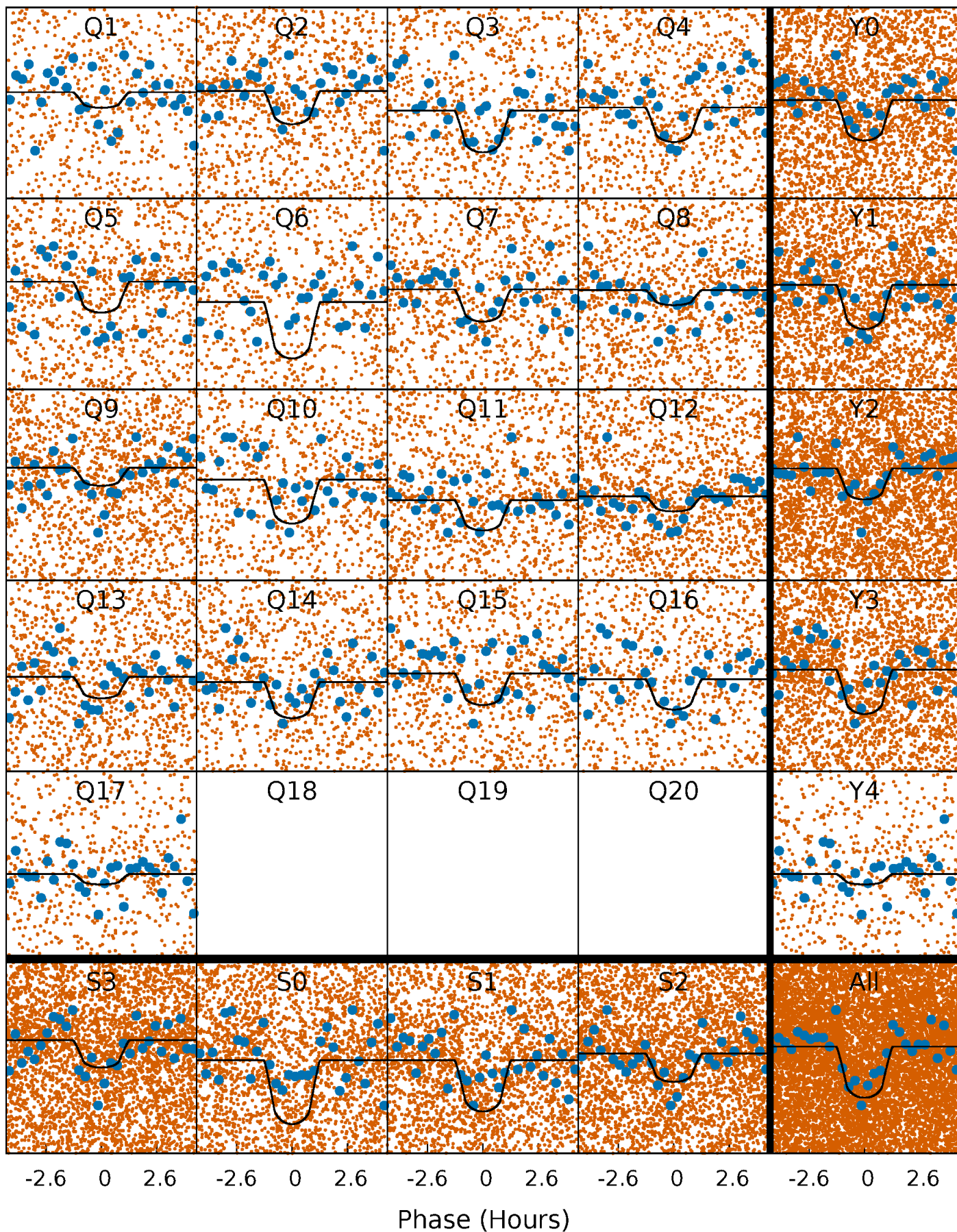
TCE 009588514-01 P= 0.626018 Days  $T_0=131.987630$  (BKJD)





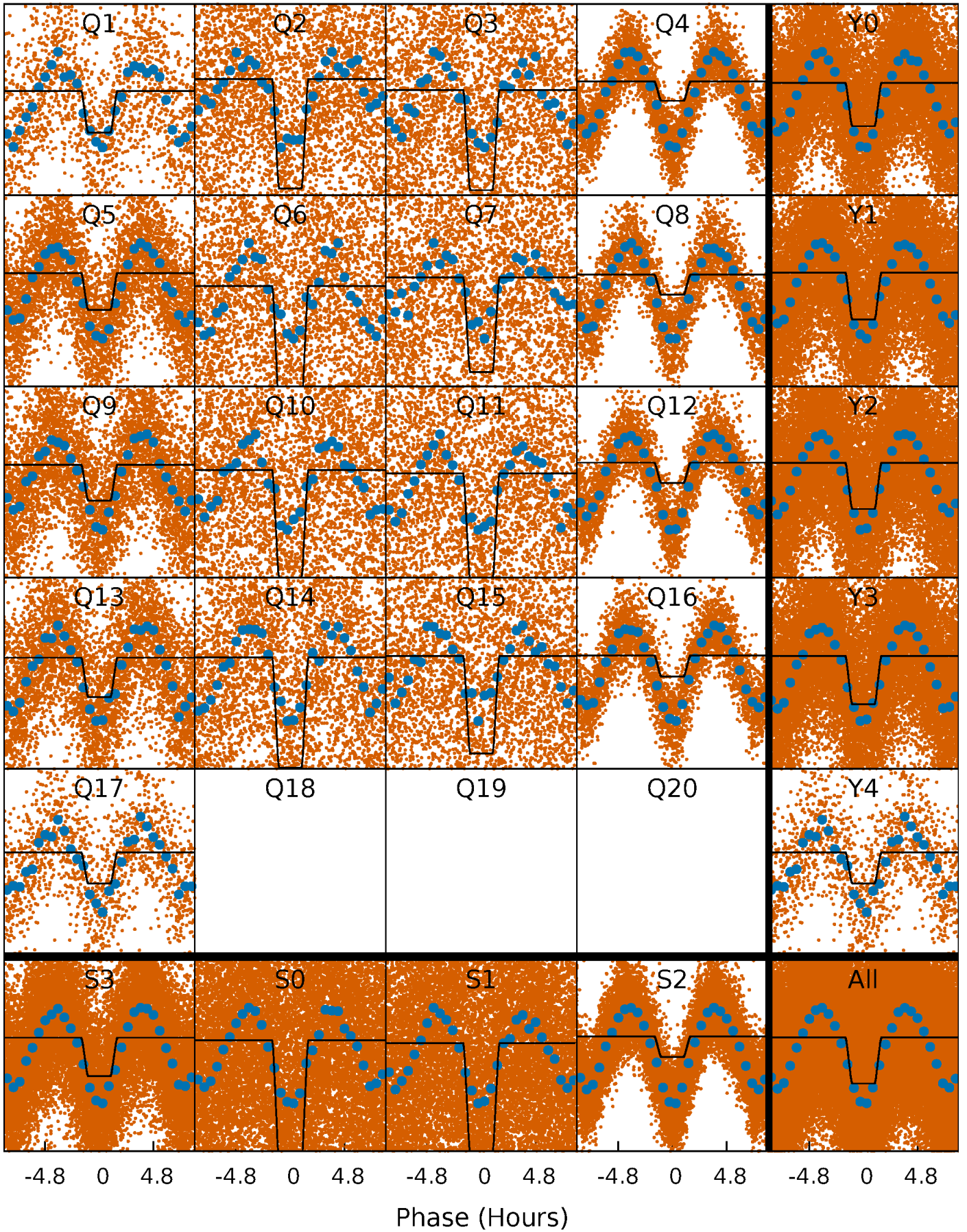
# DV Quarter-Phased Transit Curves

TCE 009588514-01 P= 0.626018 Days  $T_0=131.987630$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 009588514-01 P= 0.626013 Days  $T_0=131.988973$  (BKJD)

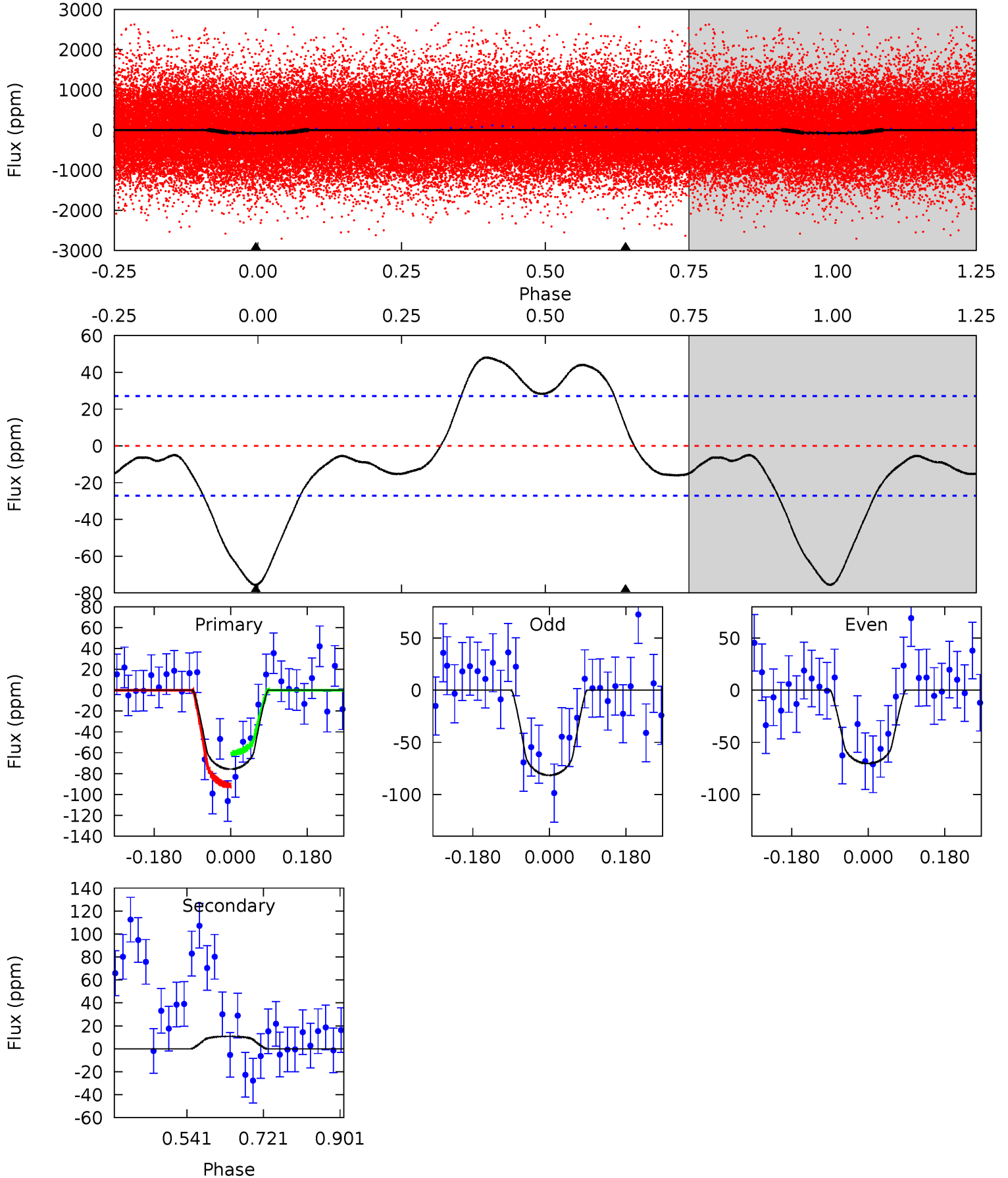




# DV Model-Shift Uniqueness Test

009588514-01, P = 0.626018 Days, E = 131.361612 Days

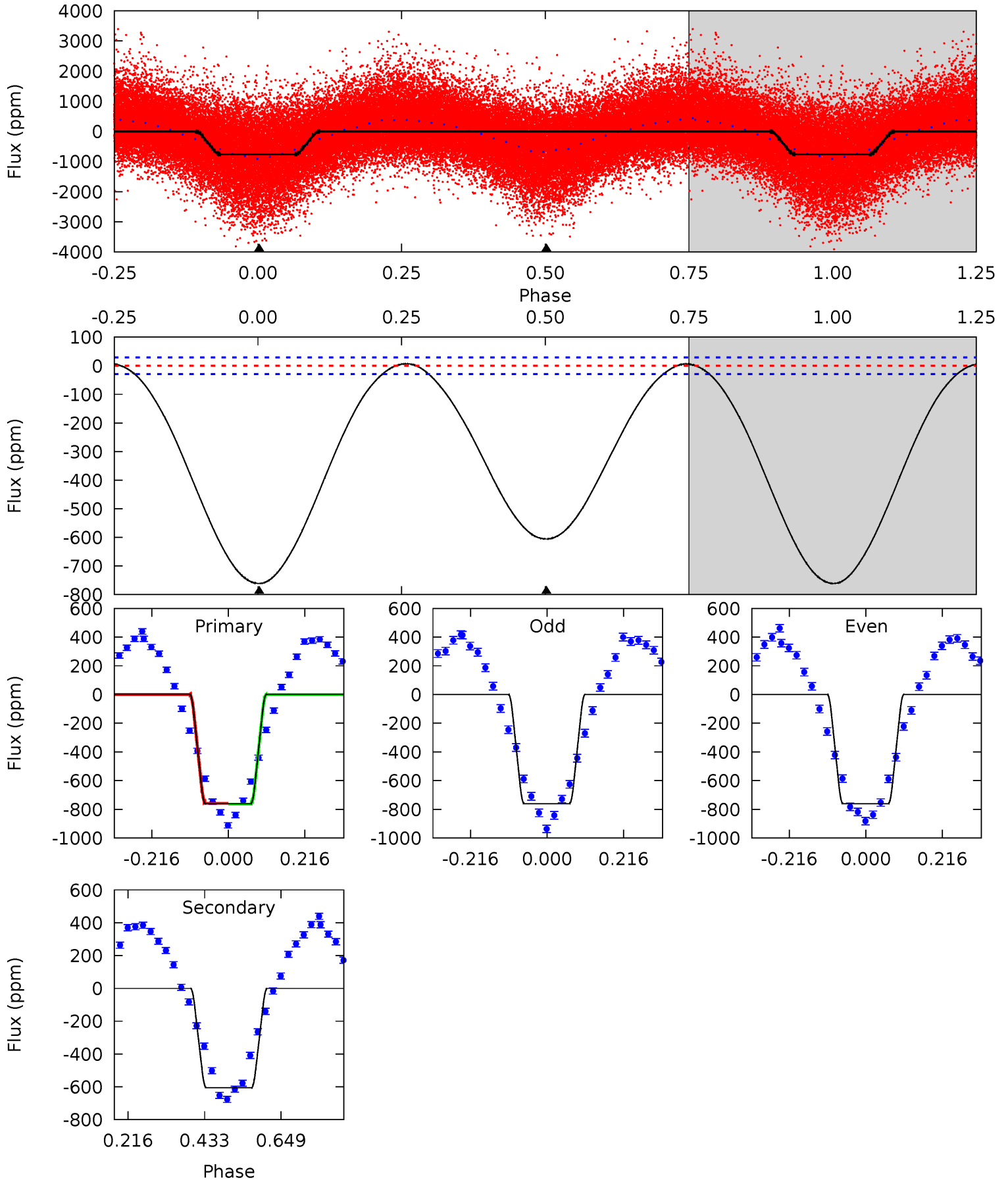
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	-1.78	0	0	4.44	1.34	4.17	12.4	12.4	-1.78	-1.78	0.93	0.88	0.39	2.54



# Alt Model-Shift Uniqueness Test

009588514-01, P = 0.626013 Days, E = 131.362960 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
114.7	91.3	0	0	4.40	1.24	1.37	114.7	114.7	91.3	91.3	0.04	1.22	0.01	0.45





### Stellar Parameters For KIC 009588514

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3587^{+57}_{-64}$	$4.843^{+0.042}_{-0.035}$	$-0.100^{+0.100}_{-0.100}$	$0.409^{+0.036}_{-0.043}$	$0.427^{+0.034}_{-0.047}$	$8.764^{+2.154}_{-1.330}$
	+2%/-2%	+1%/-1%	+100%/-100%	+9%/-11%	+8%/-11%	+25%/-15%
Source	PHO2	PHO2	PHO2	DSEP		

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

### Secondary Eclipse Parameters for KIC 009588514-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$11 \pm 6$	$0.54^{+0.38}_{-0.32}$	$1362^{+32}_{-36}$	$-2515^{+291}_{-656}$	$-2.178^{+1.573}_{-11.483}$
Alt.	$-606 \pm 7$	$1.11^{+0.45}_{-0.46}$	$1363^{+30}_{-31}$	$3599^{+658}_{-391}$	$32^{+58}_{-16}$

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

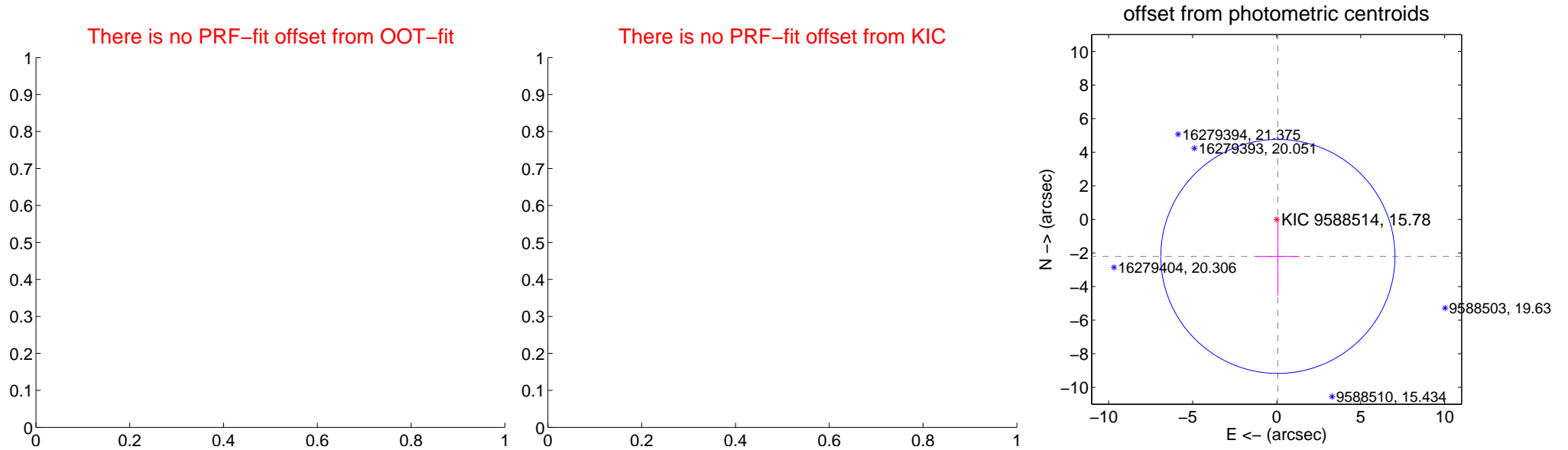
## DV Centroid Data

Supplemental centroid analysis for 009588514-01. Kepler magnitude: 15.78. Transit SNR 10.04

There are 0 quarters with good PRF difference image offsets

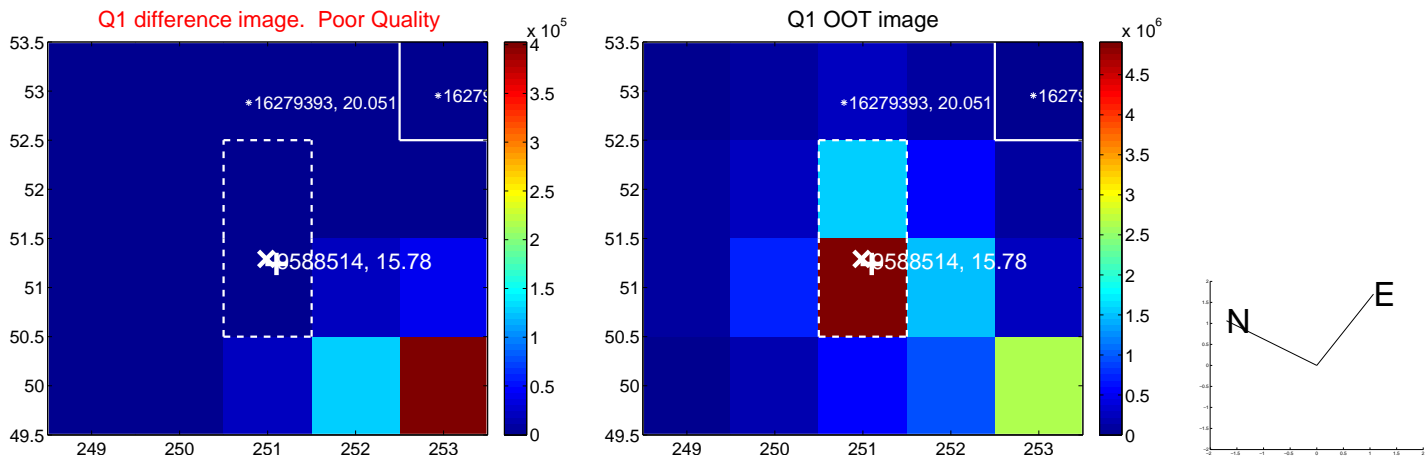
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$2.21 \pm 2.32$	0.95	$-0.07 \pm 1.28$	$-2.21 \pm 2.32$

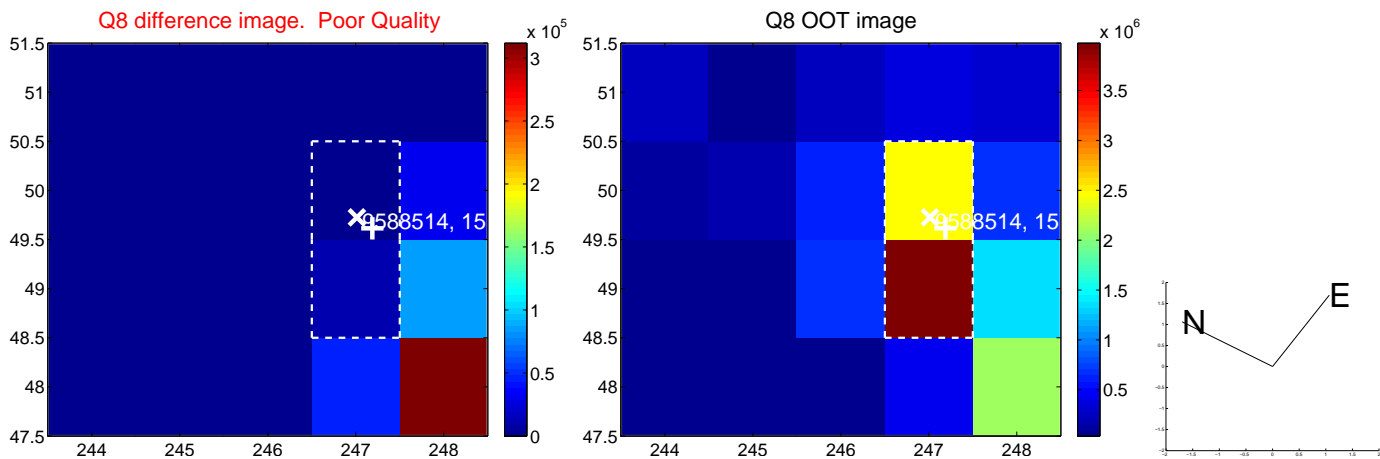
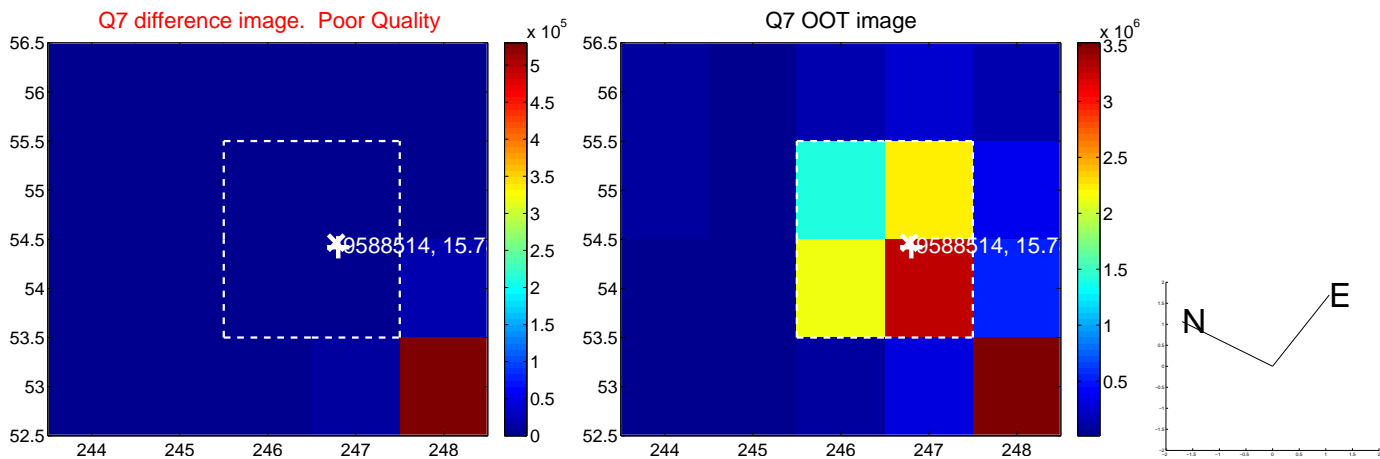
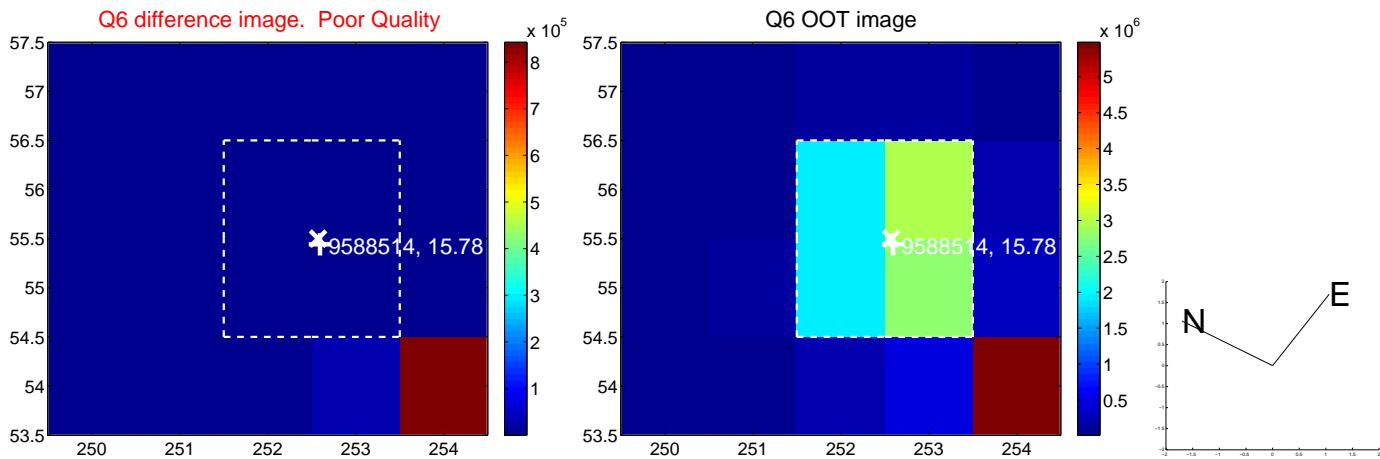
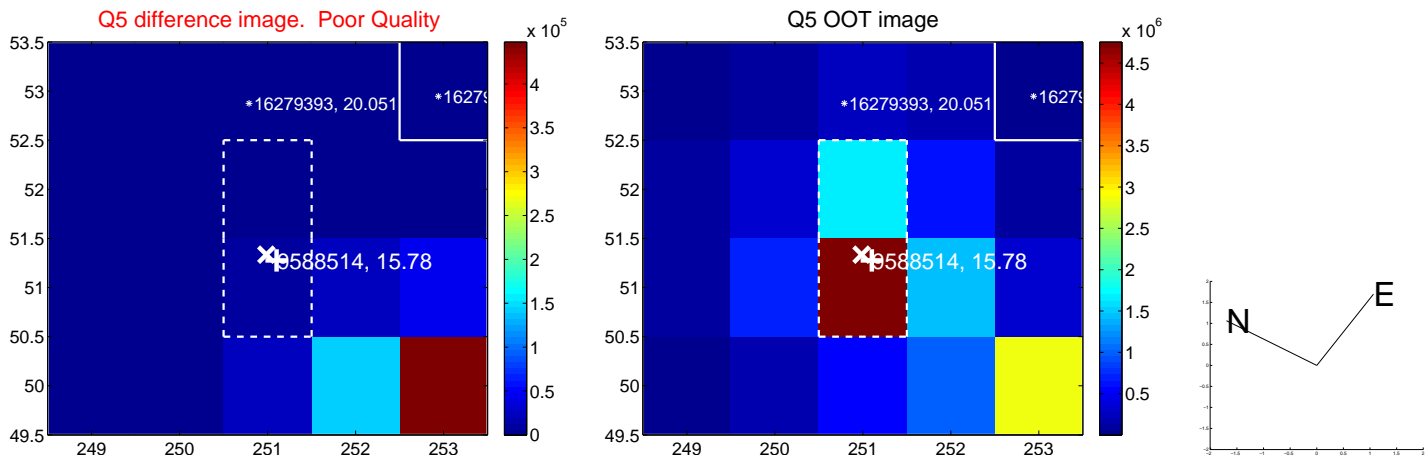


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

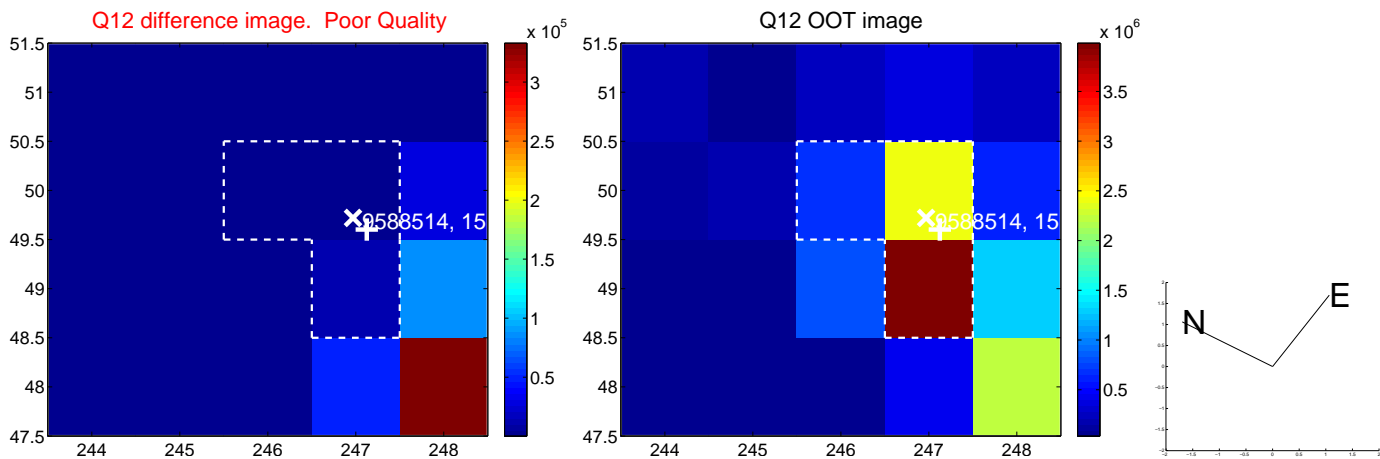
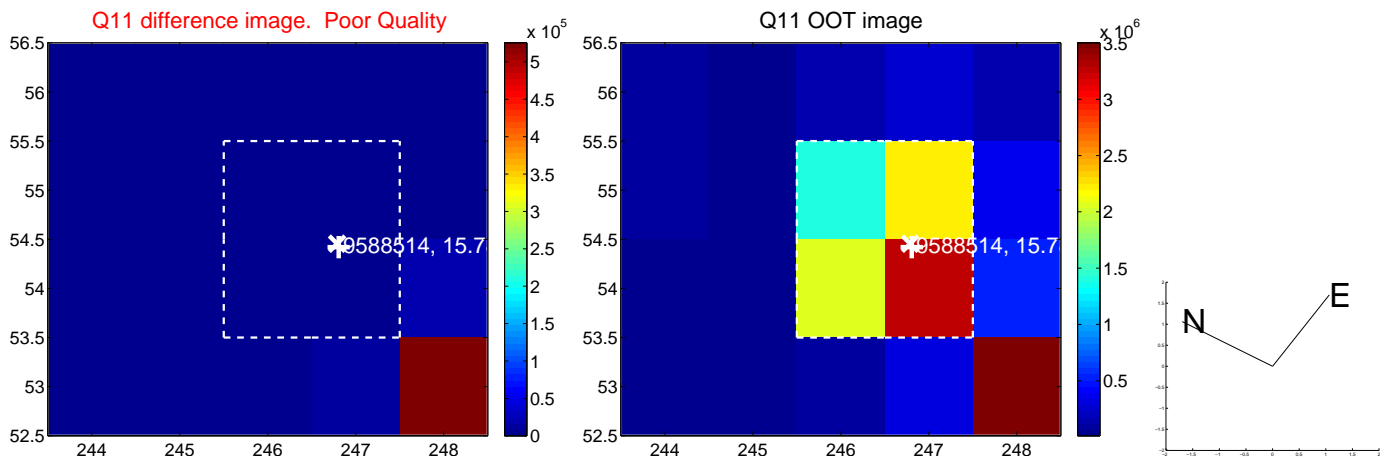
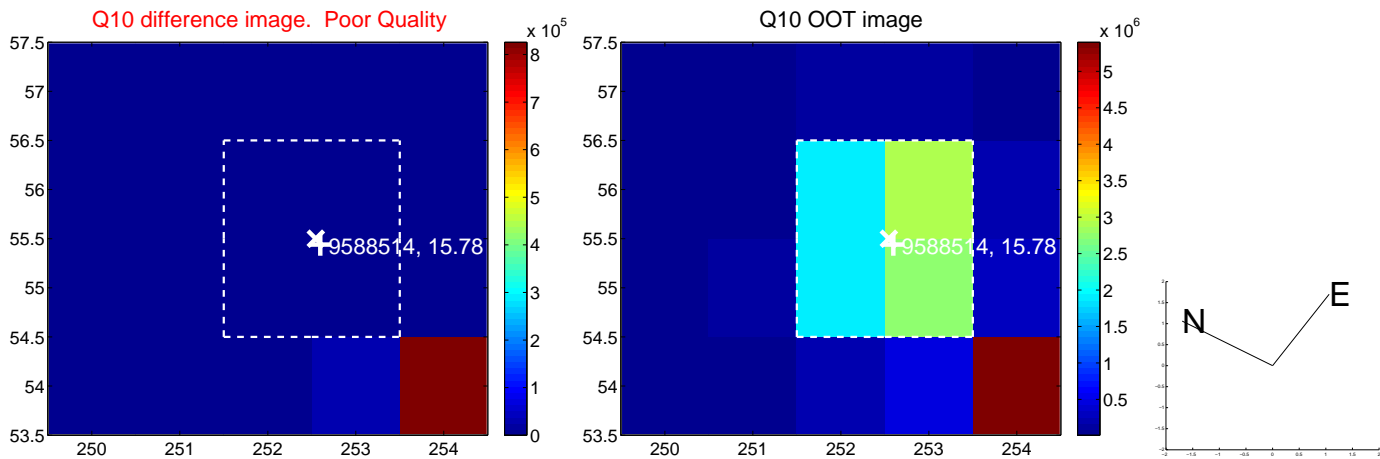
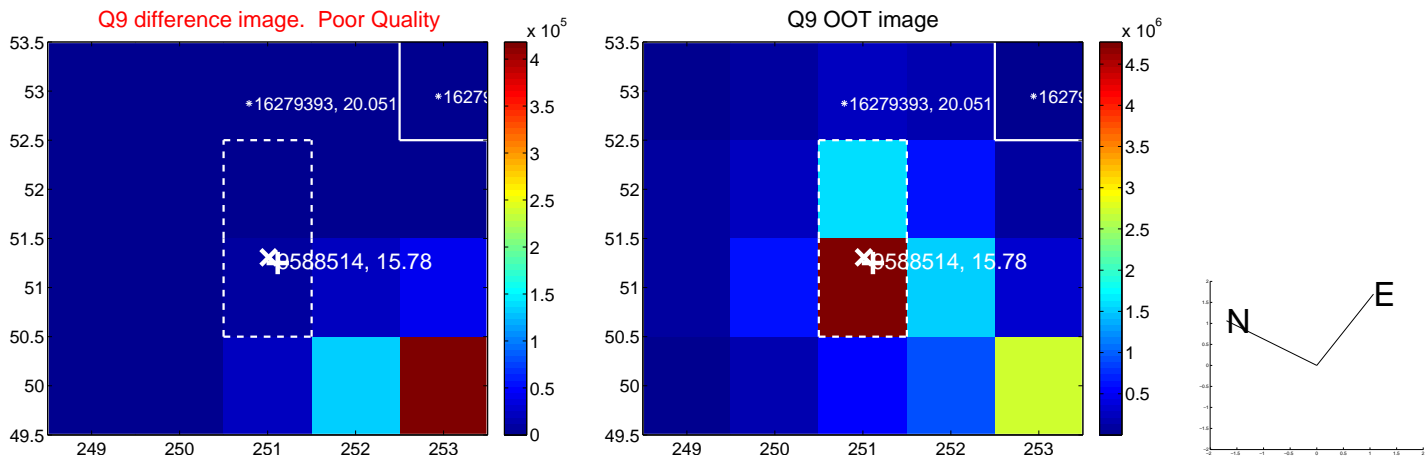


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

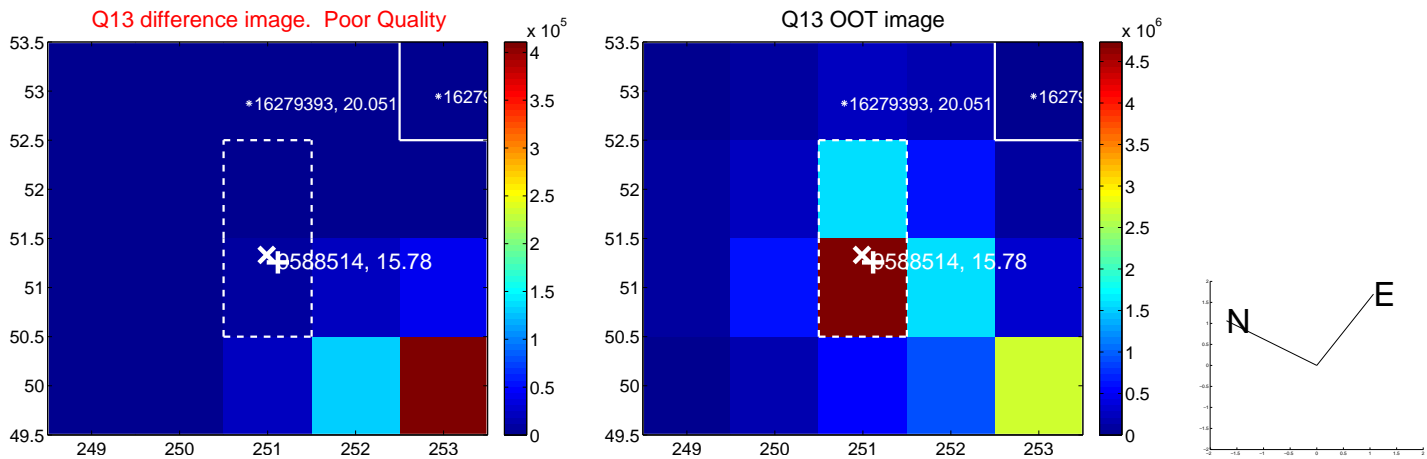




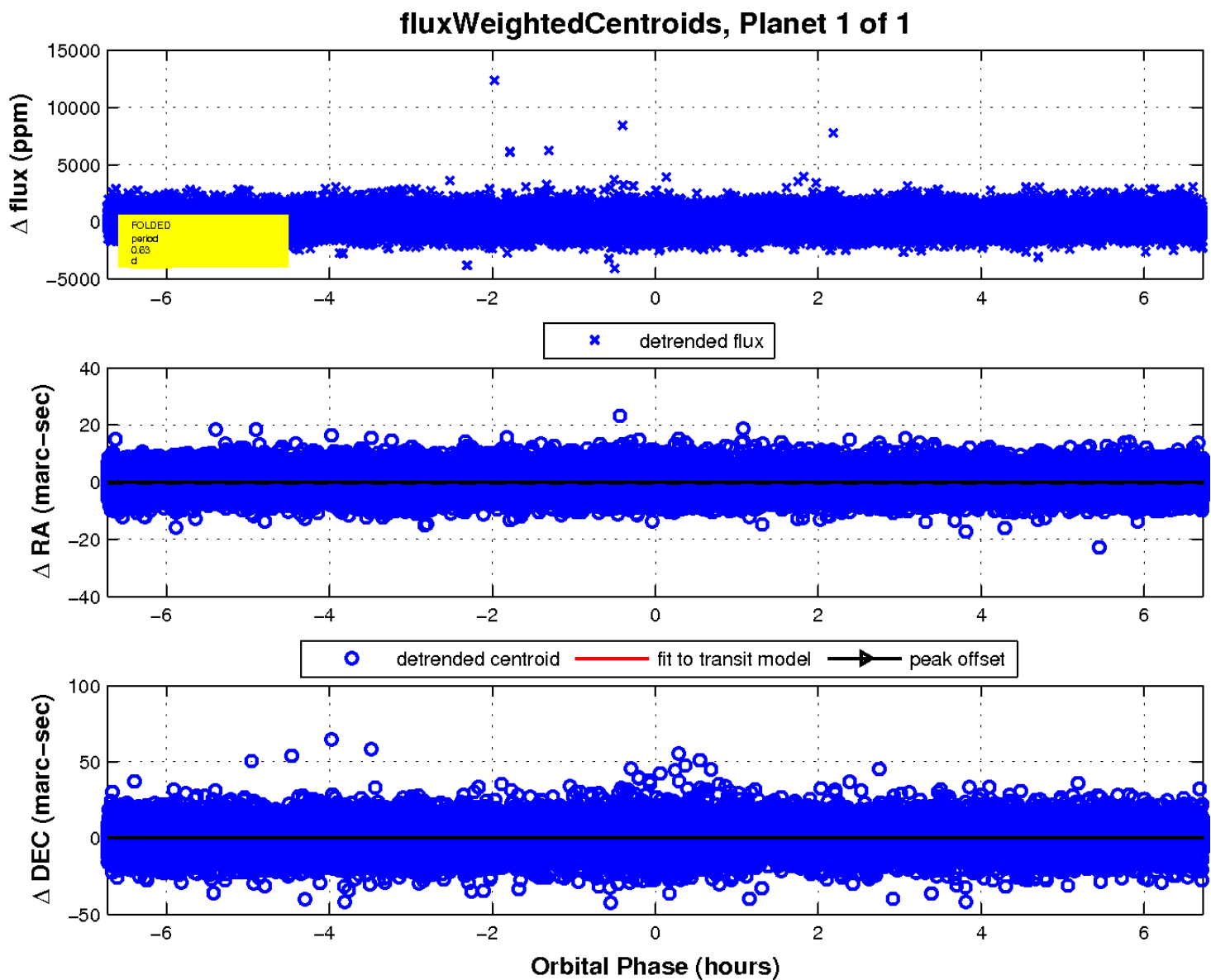
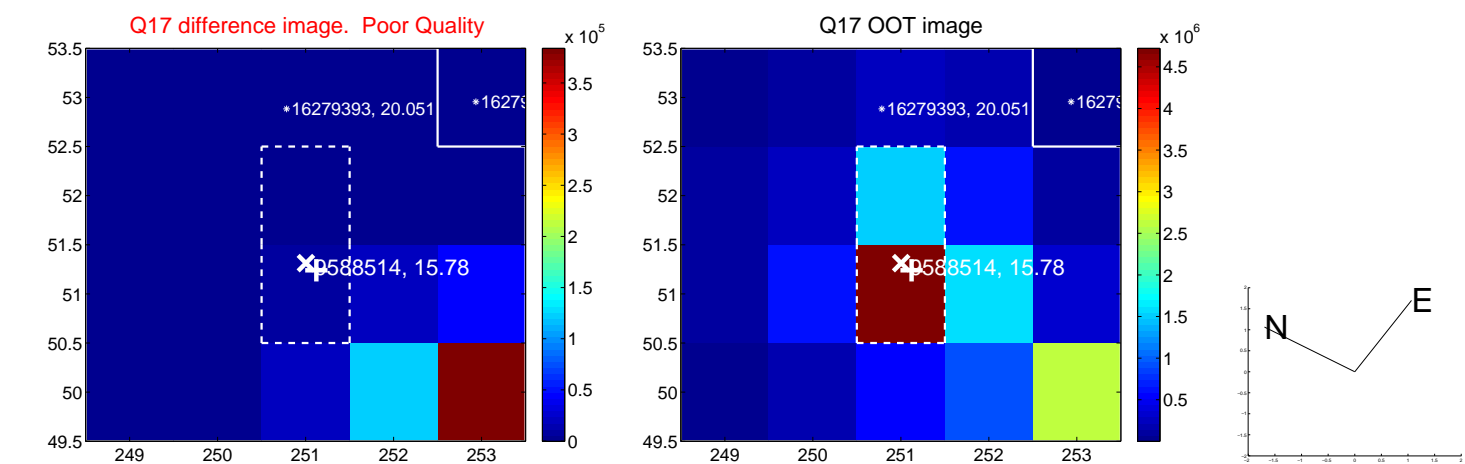
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UKIRT Image

Declination

