

# KIC 005126932

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005126932-01	OBS	No	0.545682	131.627414	50.8	1.639	8.9	8.9	1.00	5780	0.85	5852.66
005126932-02	OBS	7718.01	208.183124	146.561159	939.1	3.114	7.4	6.8	1.00	5780	3.52	2.12

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005126932-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
005126932-02	OBS	FP	0.12	1	0	0	0	ALL_TRANS_CHASES—CENT_KIC_POS—CENT_UNCERTAIN

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

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

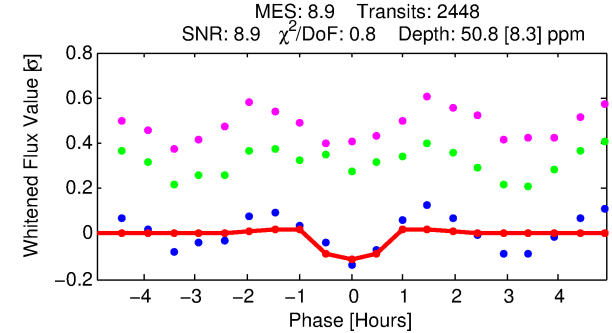
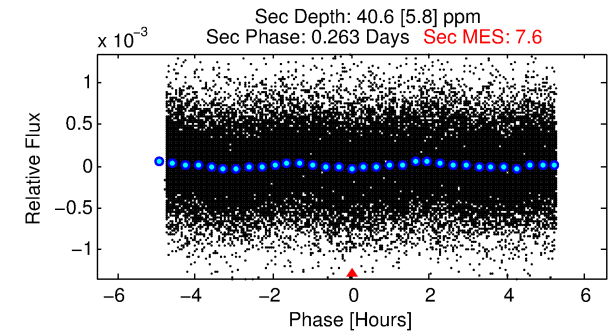
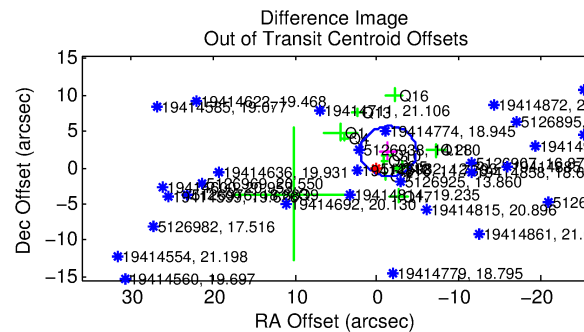
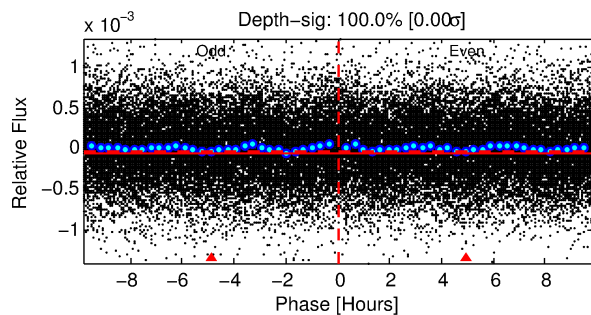
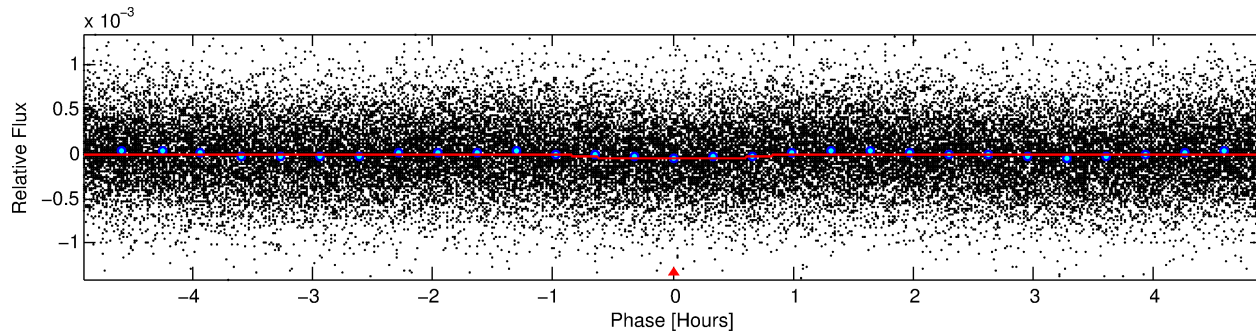
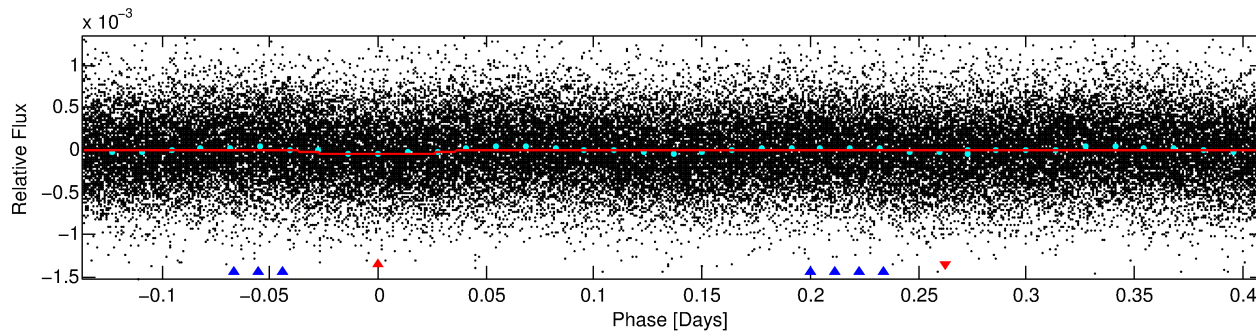
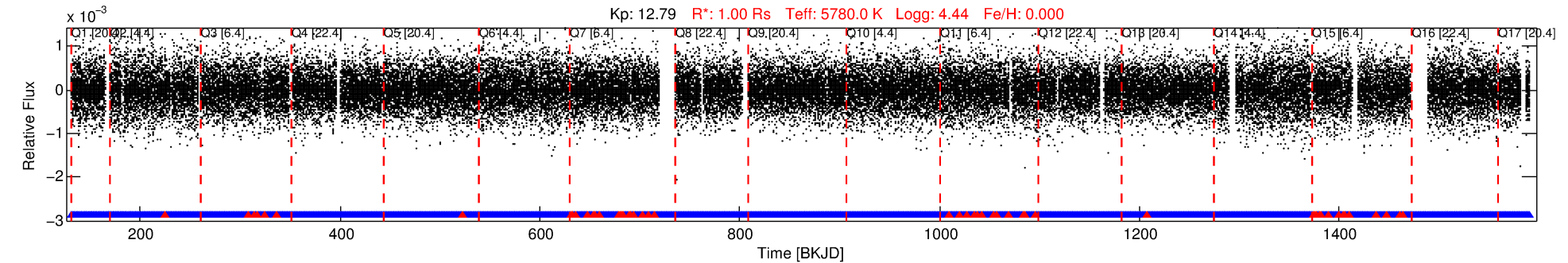
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005126932-01

No Significant Match Found

# DV One-Page Summary

KIC: 5126932 Candidate: 1 of 2 Period: 0.546 d



## DV Fit Results:

Period = 0.54568 [0.00001] d  
Epoch = 131.6274 [0.0021] BKJD  
Rp/R\* = 0.0078 [0.0048]  
b = 0.90 [0.64]  
Seff = 5852.66 [0.18]  
Teq = 2230 [0] K  
Rp = 0.85 [0.53] Re  
a = 0.0131 [0.0000] AU  
Ag = 5.28 [6.61] [0.65 $\sigma$ ]  
Teff = 5228 [1635] K [1.83 $\sigma$ ]

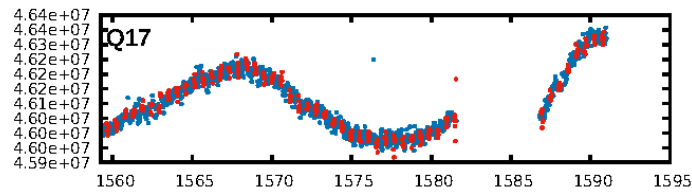
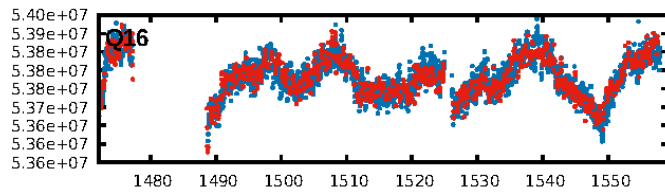
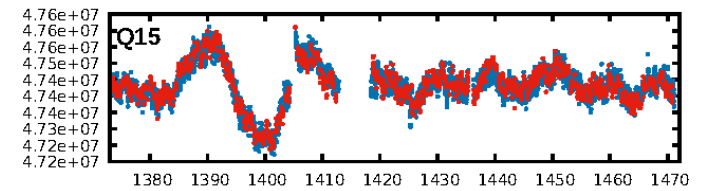
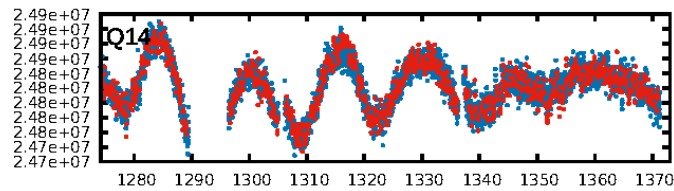
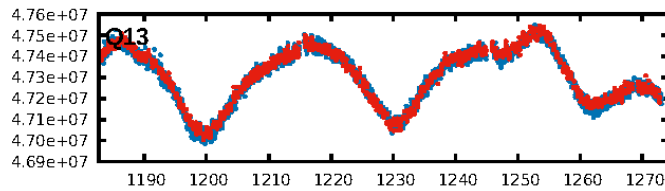
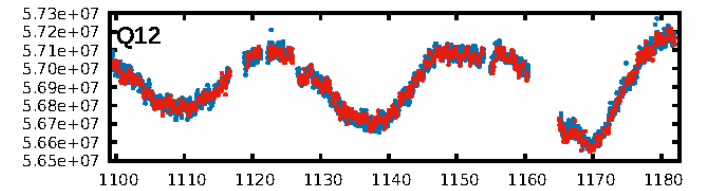
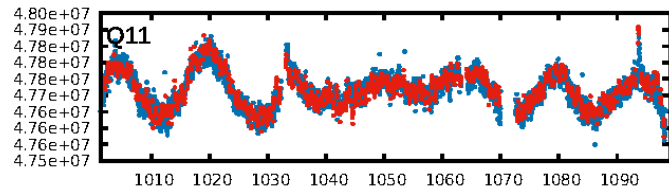
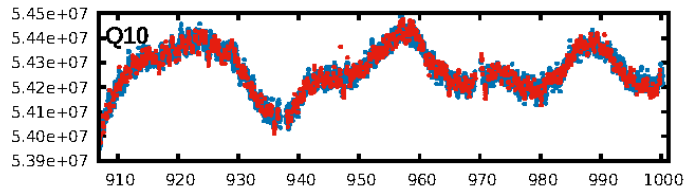
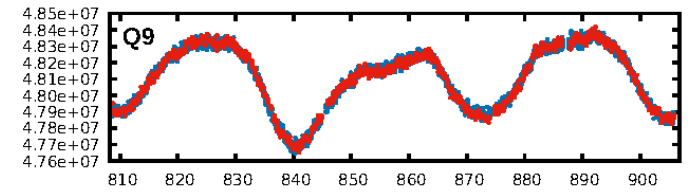
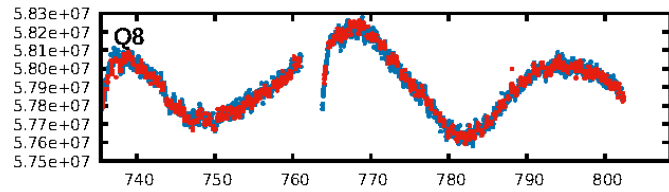
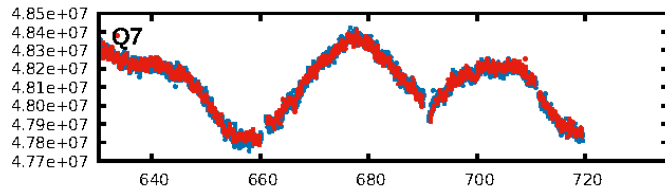
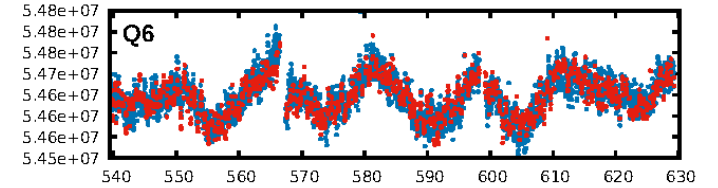
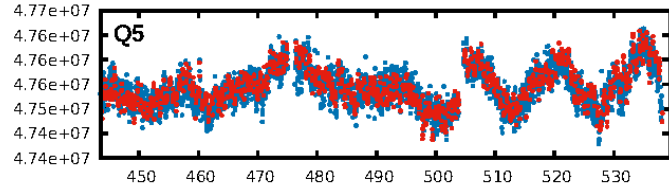
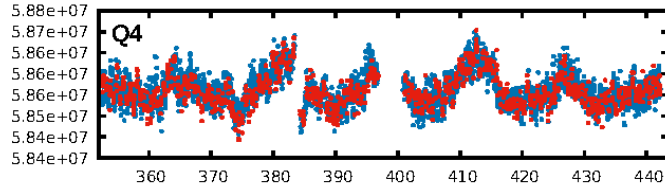
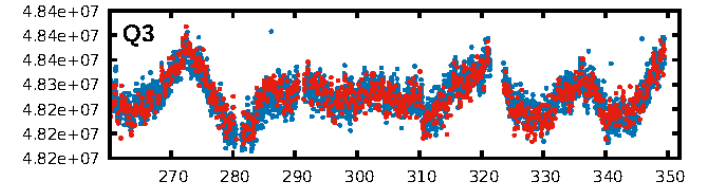
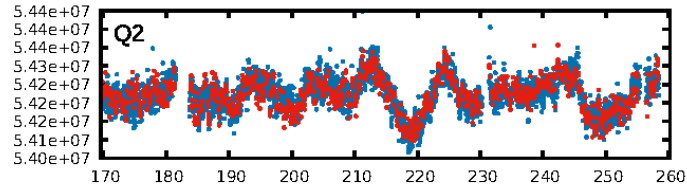
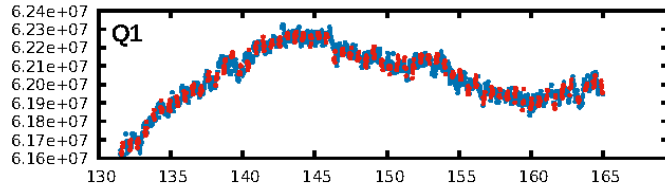
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [1416.13 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.77e-17  
RollingBand-fgt: 0.98 [2282/2337]  
GhostDiagnostic-chr: 1.751  
Centroid-sig: 0.0%  
Centroid-so: 1.336 arcsec [2.00 $\sigma$ ]  
OotOffset-rm: 2.644 arcsec [2.30 $\sigma$ ]  
KicOffset-rm: 3.643 arcsec [2.49 $\sigma$ ]  
OotOffset-st: 1/2/4/5 [12]  
KicOffset-st: 1/2/4/5 [12]  
DiffImageQuality-fgm: 0.25 [3/12]  
DiffImageOverlap-fno: 1.00 [17/17]

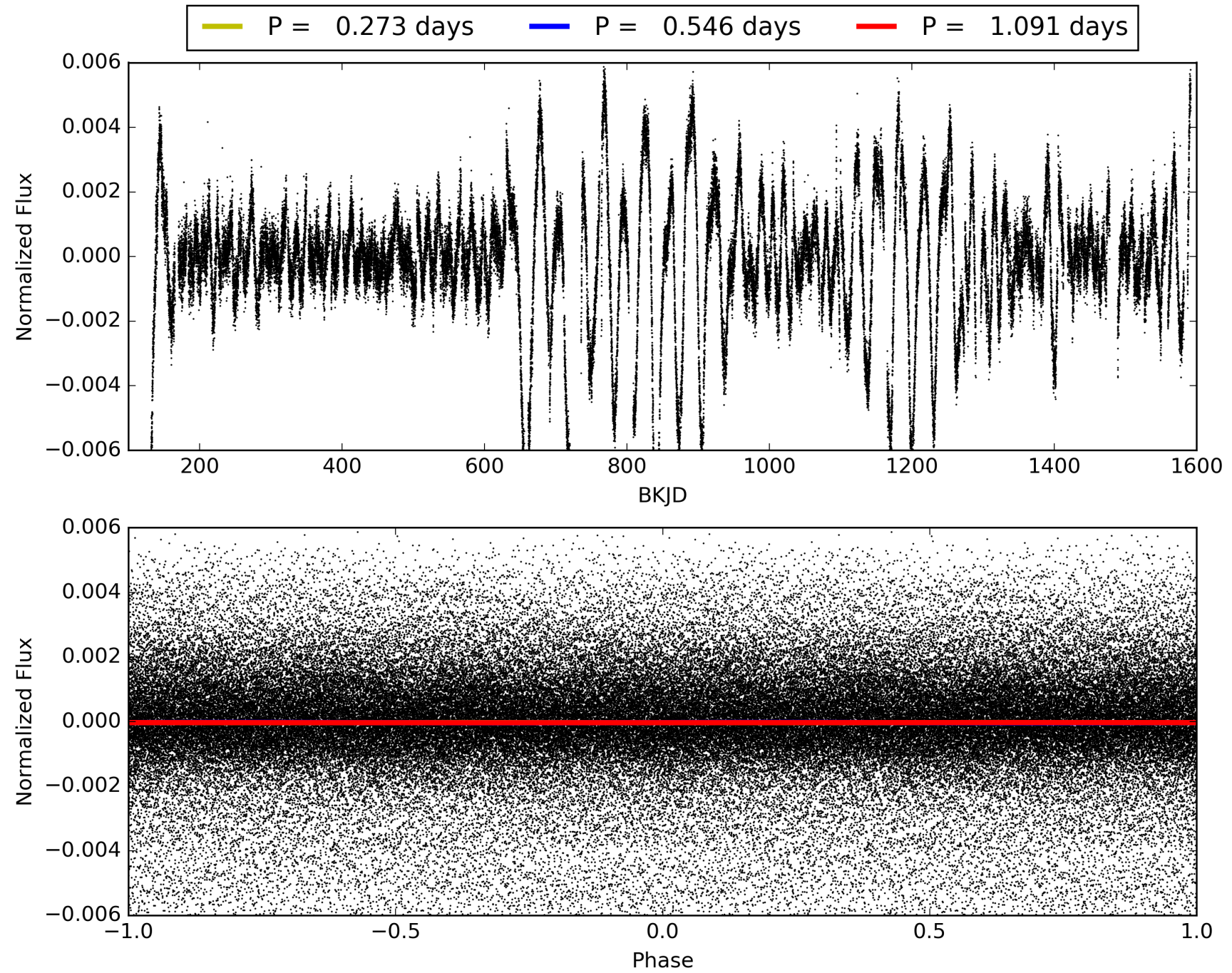
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:40:03 Z

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

# TCE 005126932-01, PDC Light Curves



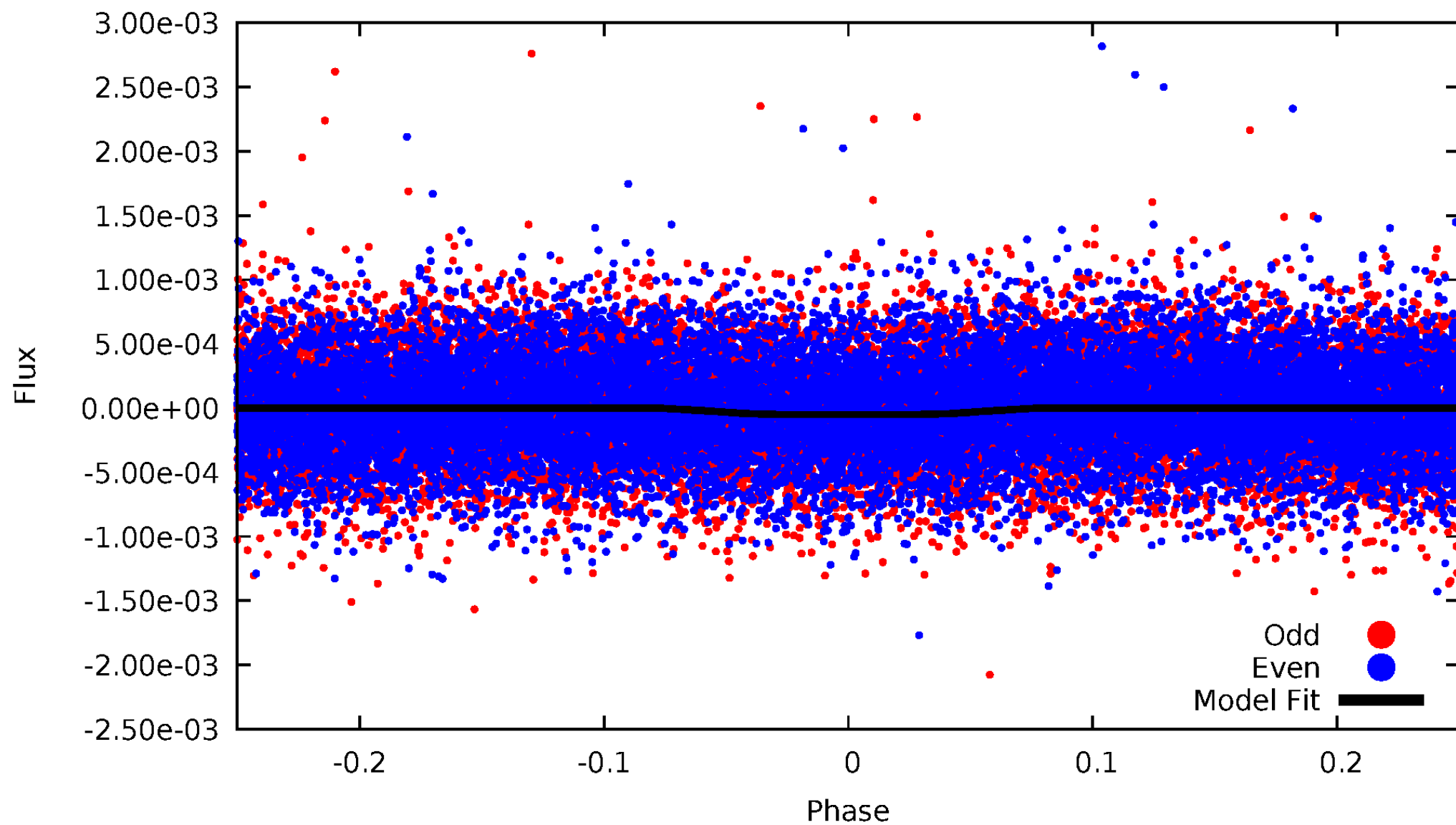
TCE 005126932-01





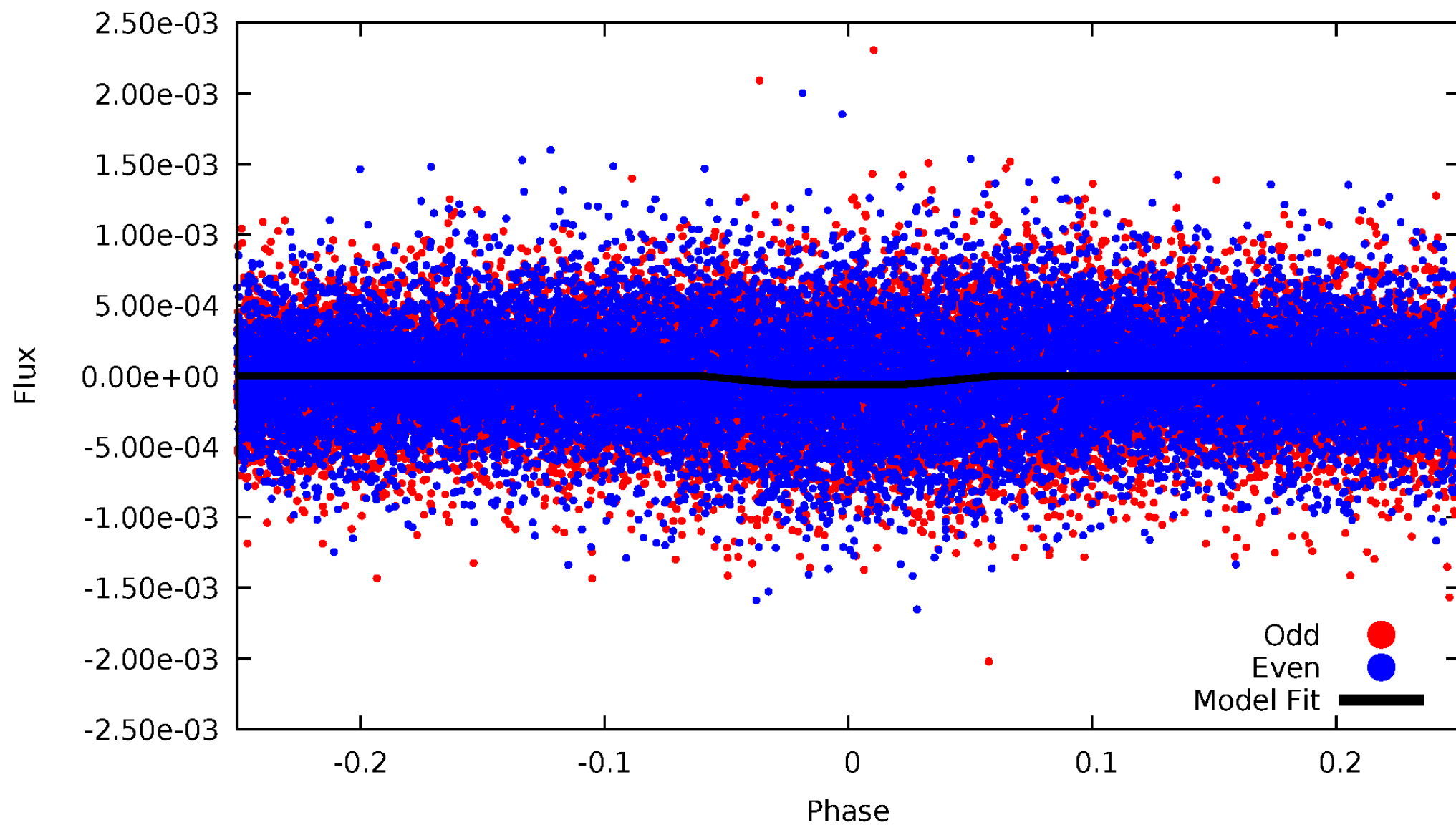
# DV Odd/Even

TCE 005126932-01

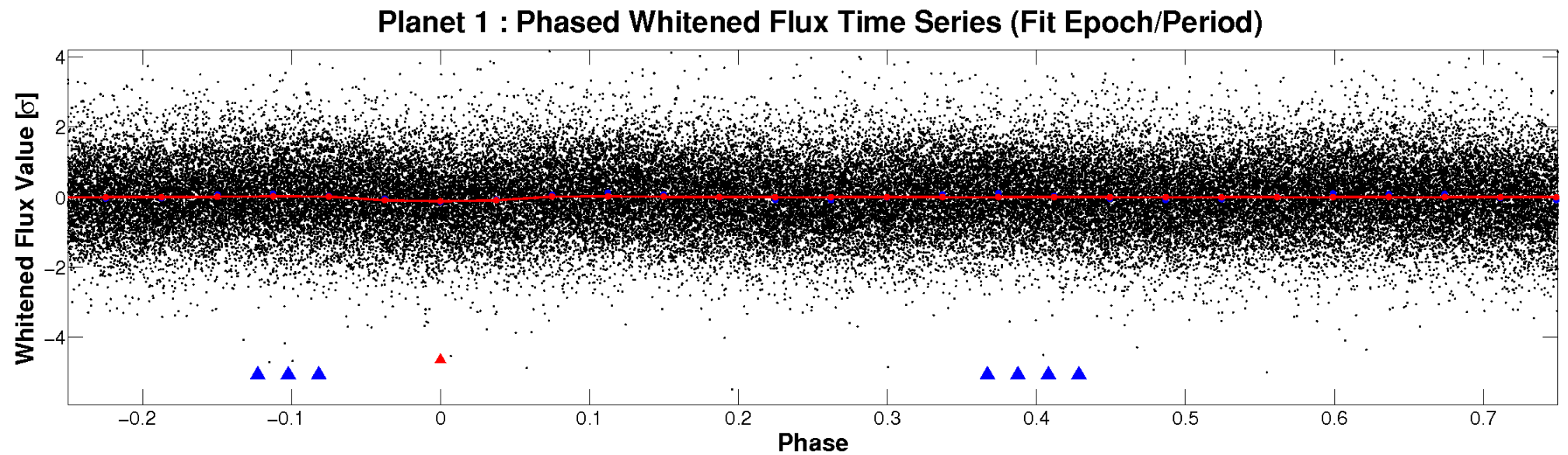
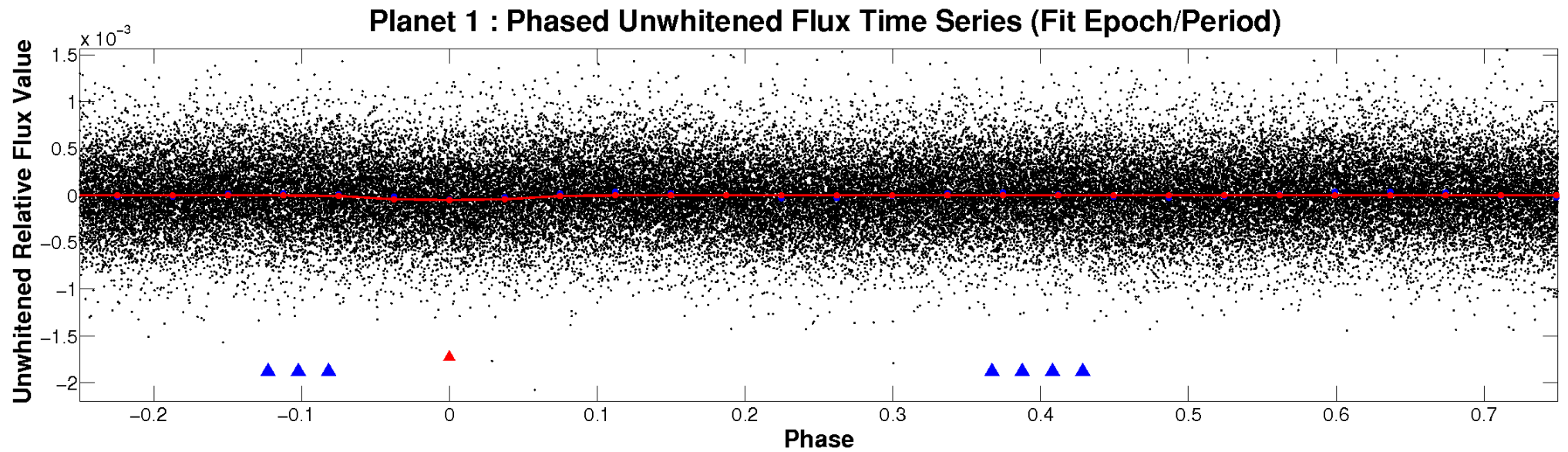


# ALT Odd/Even

TCE 005126932-01

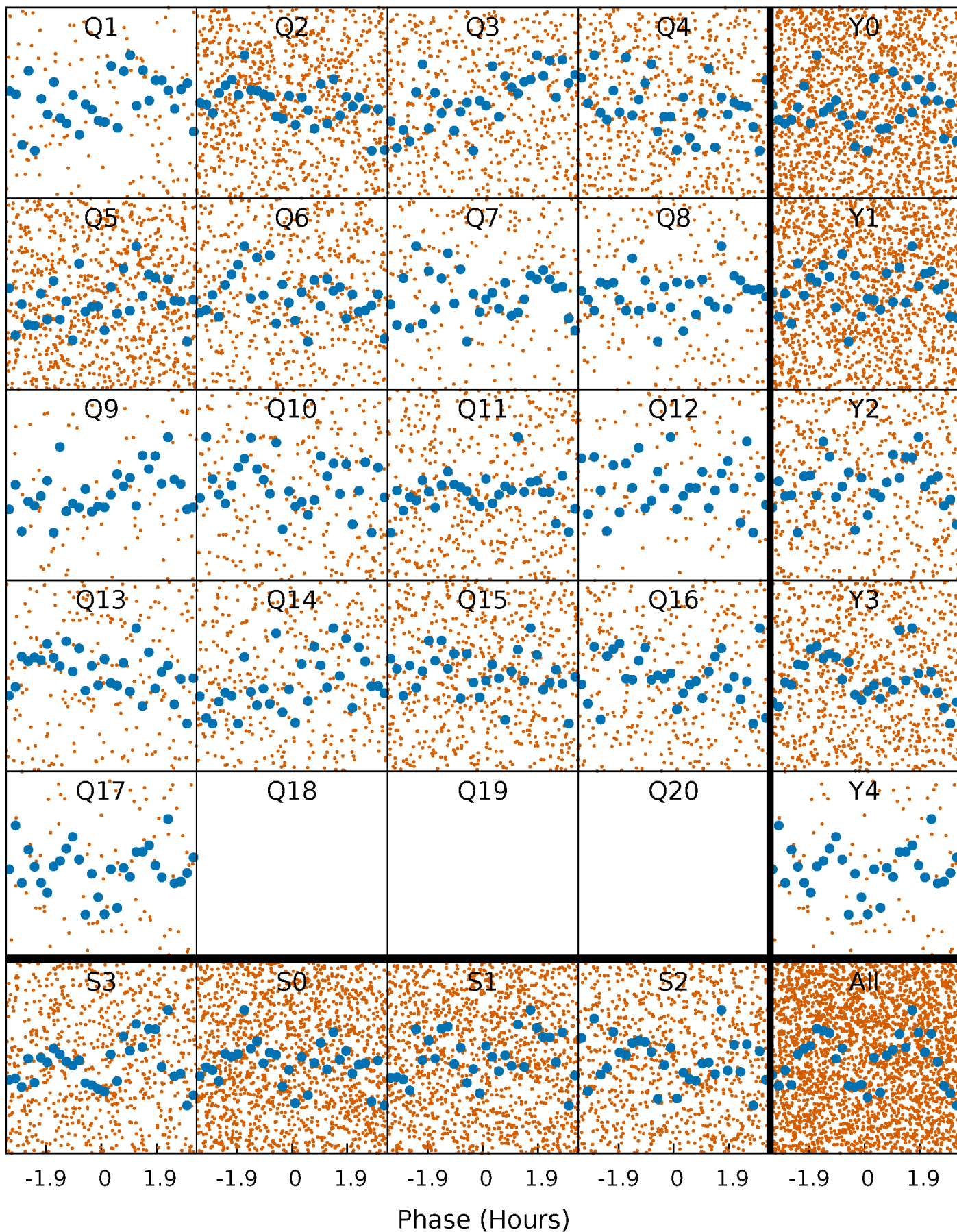


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

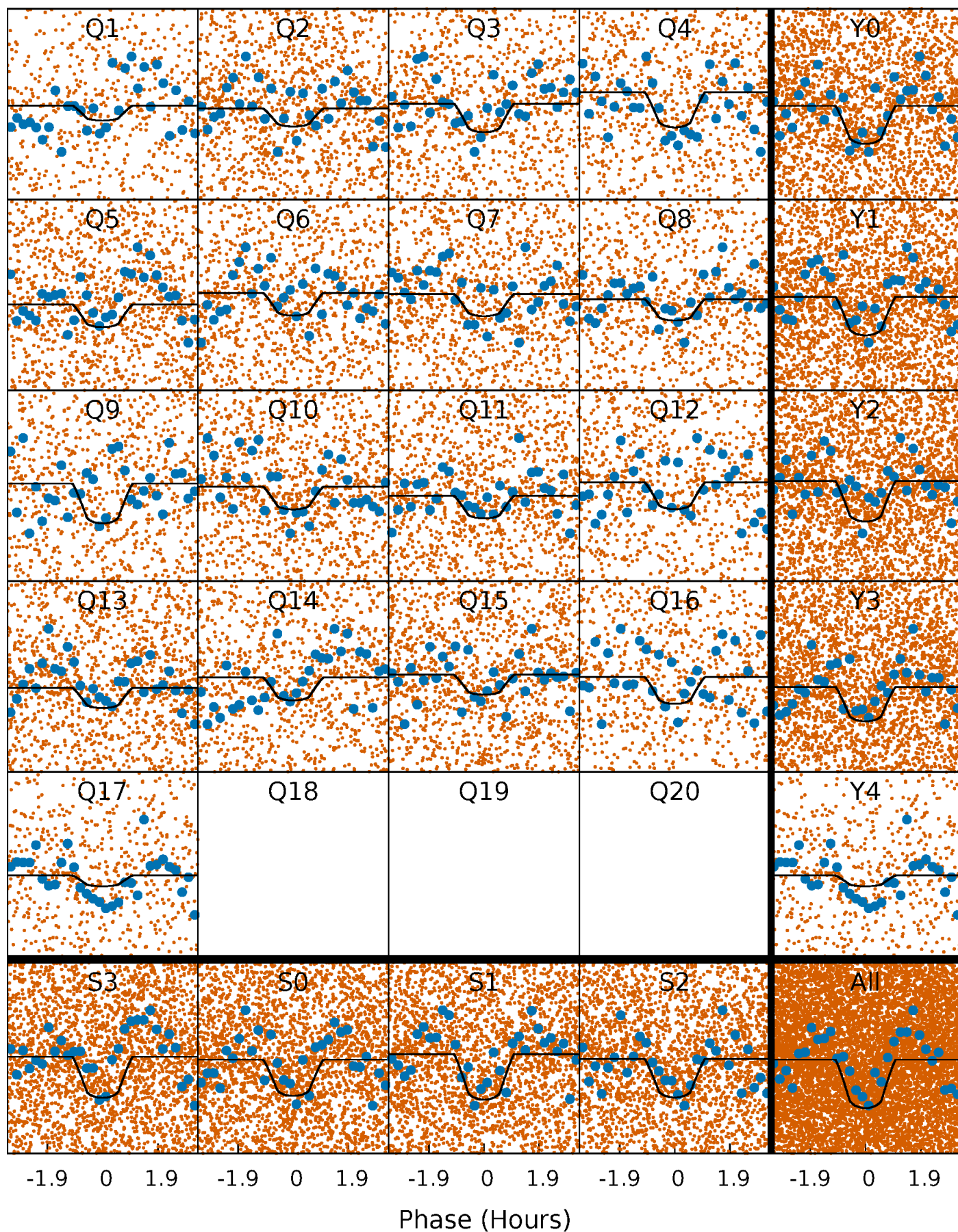
TCE 005126932-01 P= 0.545682 Days  $T_0=131.627414$  (BKJD)





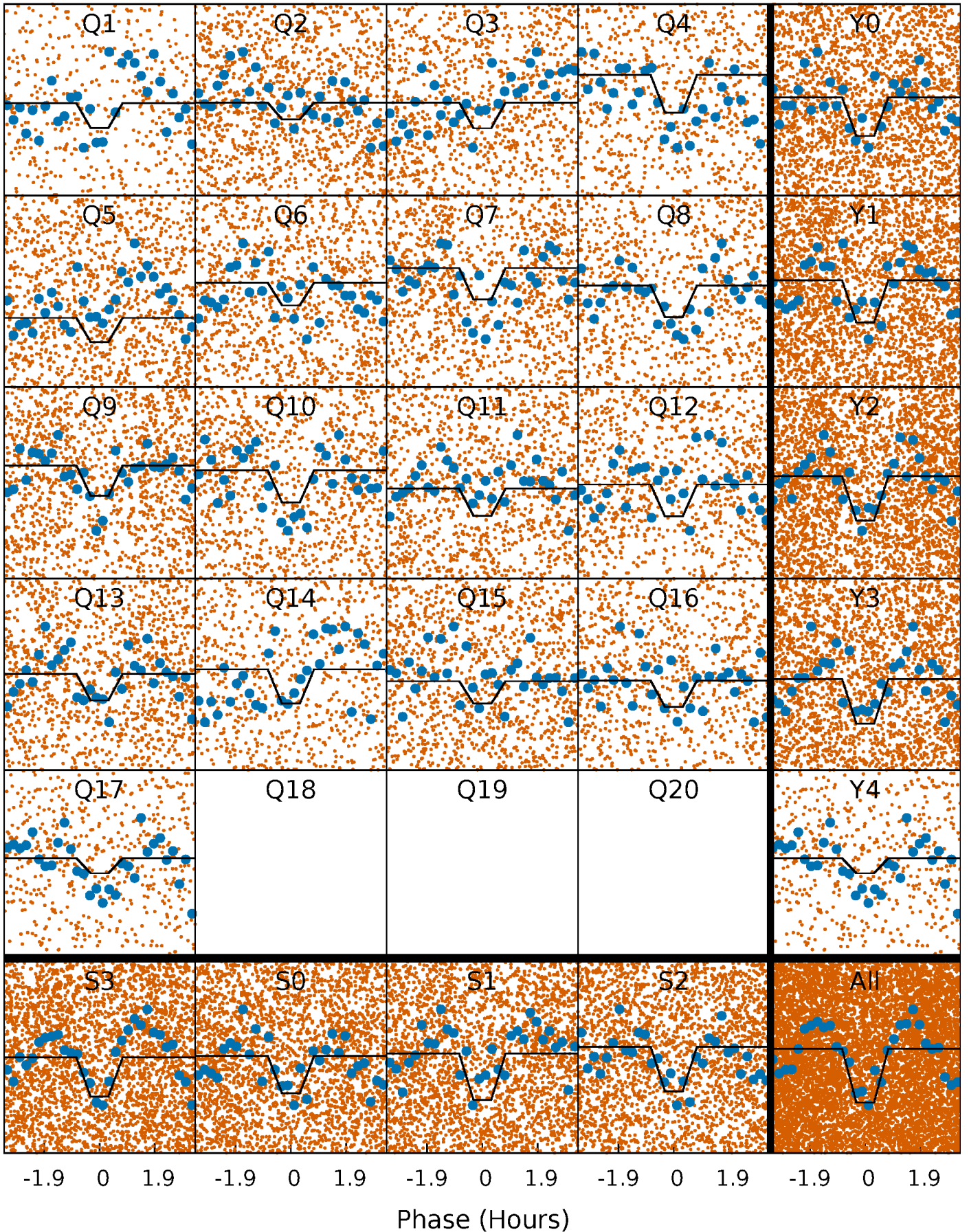
# DV Quarter-Phased Transit Curves

TCE 005126932-01 P= 0.545682 Days  $T_0=131.627414$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005126932-01 P= 0.545682 Days  $T_0=131.627411$  (BKJD)

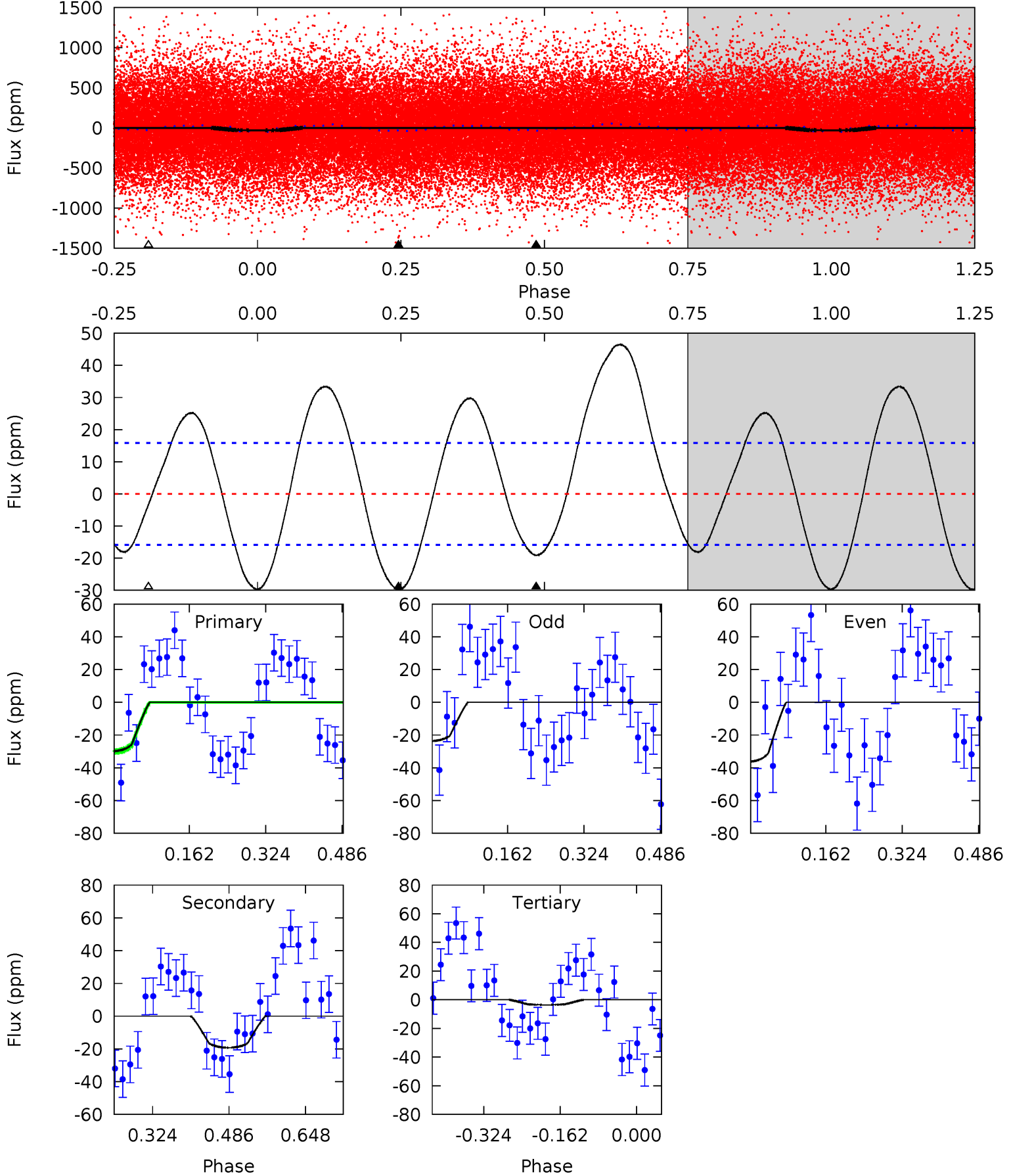




# DV Model-Shift Uniqueness Test

005126932-01, P = 0.545682 Days, E = 131.081732 Days

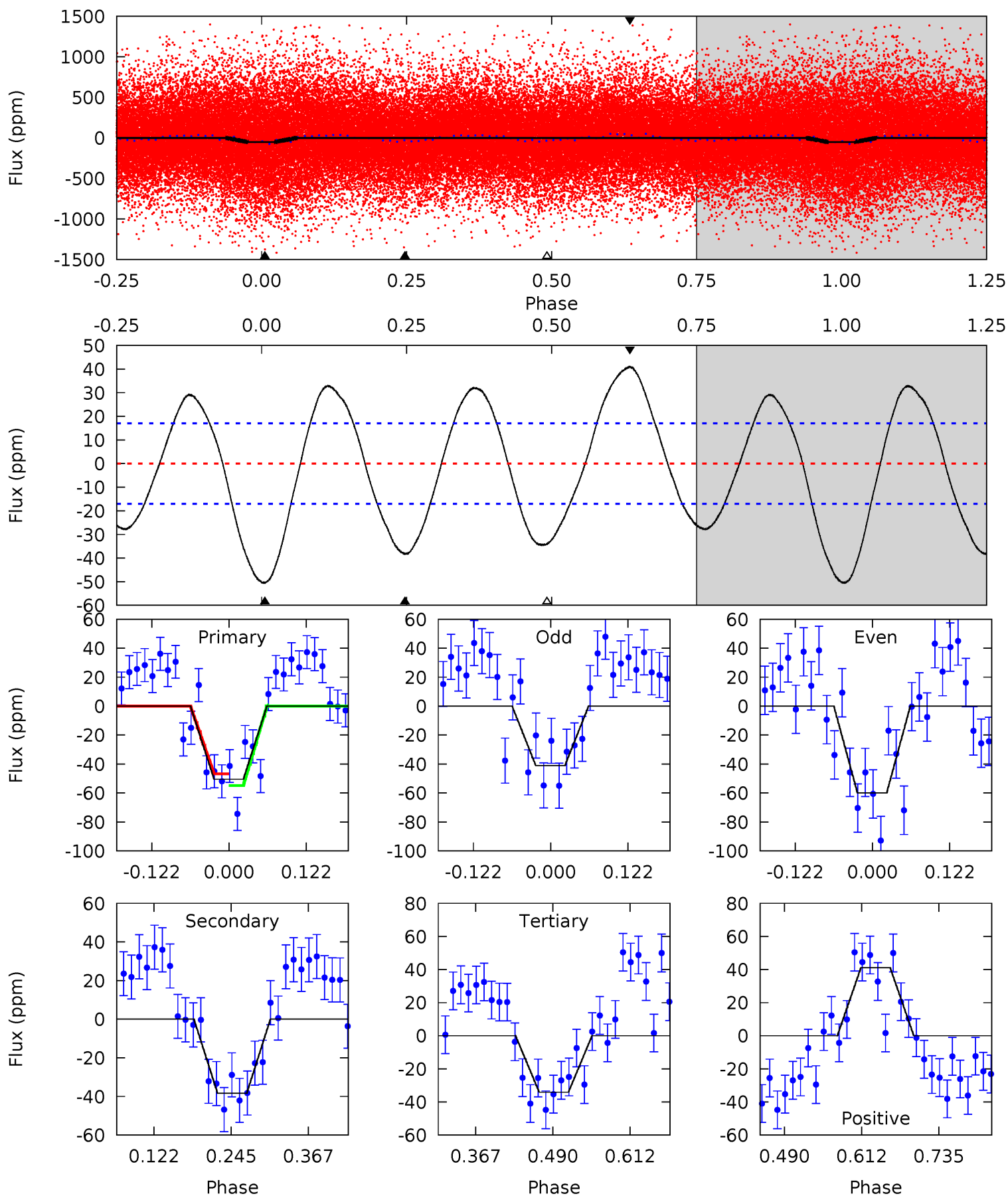
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.40	5.42	1.01	0	4.46	1.40	5.33	7.39	8.40	4.41	5.42	1.77	1.13	0.61	0.10



# Alt Model-Shift Uniqueness Test

005126932-01, P = 0.545682 Days, E = 131.081729 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
13.4	10.2	9.06	10.9	4.52	1.54	6.34	4.37	2.52	1.12	-0.73	2.53	1.11	0.45	1.07





### Stellar Parameters For KIC 005126932

	$T_{\text{eff}}(K)$	$\log(g)$	[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 005126932-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-19 \pm 4$	$0.87^{+0.49}_{-0.46}$	$3113^{+157}_{-152}$	$4358^{+1849}_{-836}$	$2.338^{+8.316}_{-1.429}$
Alt.	$-38 \pm 4$	$0.88^{+0.54}_{-0.46}$	$3120^{+144}_{-147}$	$5046^{+2453}_{-924}$	$4.534^{+16.670}_{-2.727}$

$T_{max}$  = 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

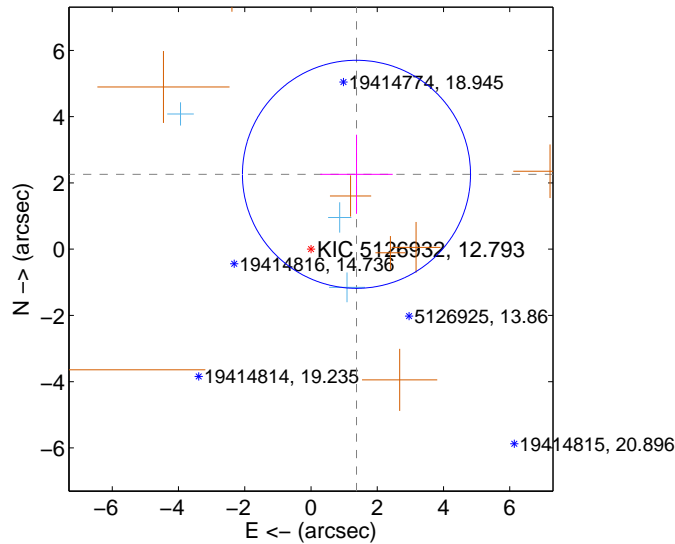
Supplemental centroid analysis for 005126932-01. Kepler magnitude: 12.79. Transit SNR 8.94

There are 3 quarters with good PRF difference image offsets

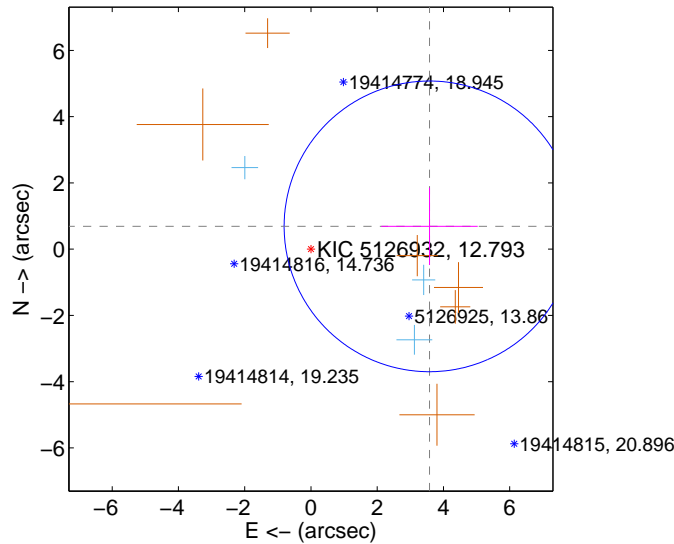
The direct PRF centroid is offset from the target star catalog position by about 1.54 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.644 \pm 1.147$	2.30	$-1.373 \pm 1.094$	$2.260 \pm 1.195$
PRF-fit source offset from KIC position	$3.643 \pm 1.462$	2.49	$-3.578 \pm 1.455$	$0.688 \pm 1.165$
photometric centroid source offset	$1.34 \pm 0.67$	2.00	$-0.32 \pm 0.74$	$1.30 \pm 0.66$

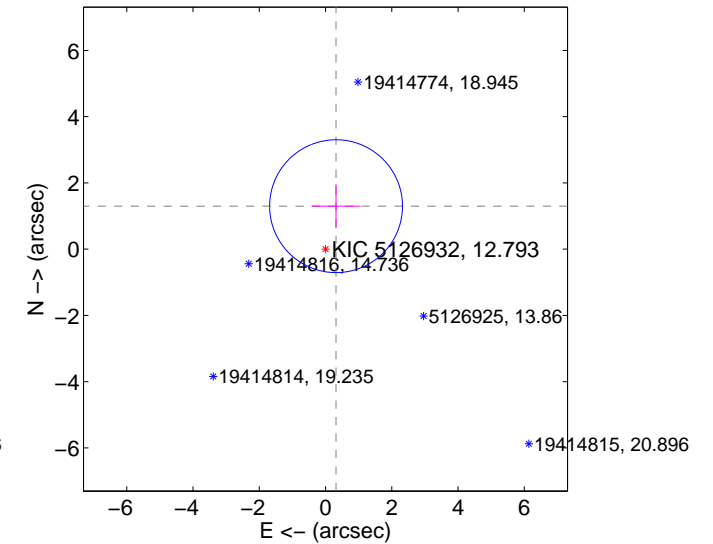
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



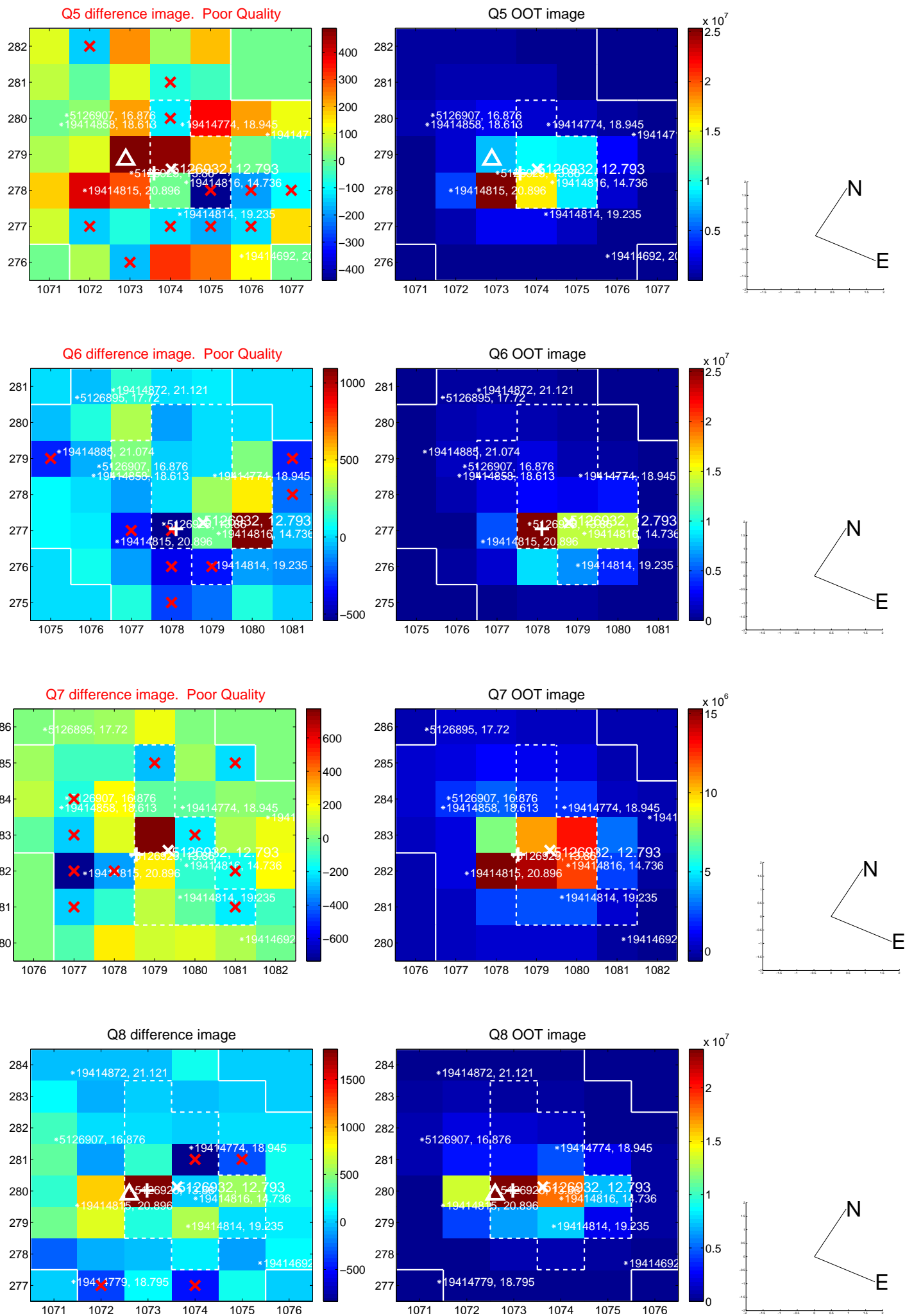
offset from photometric centroids



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.

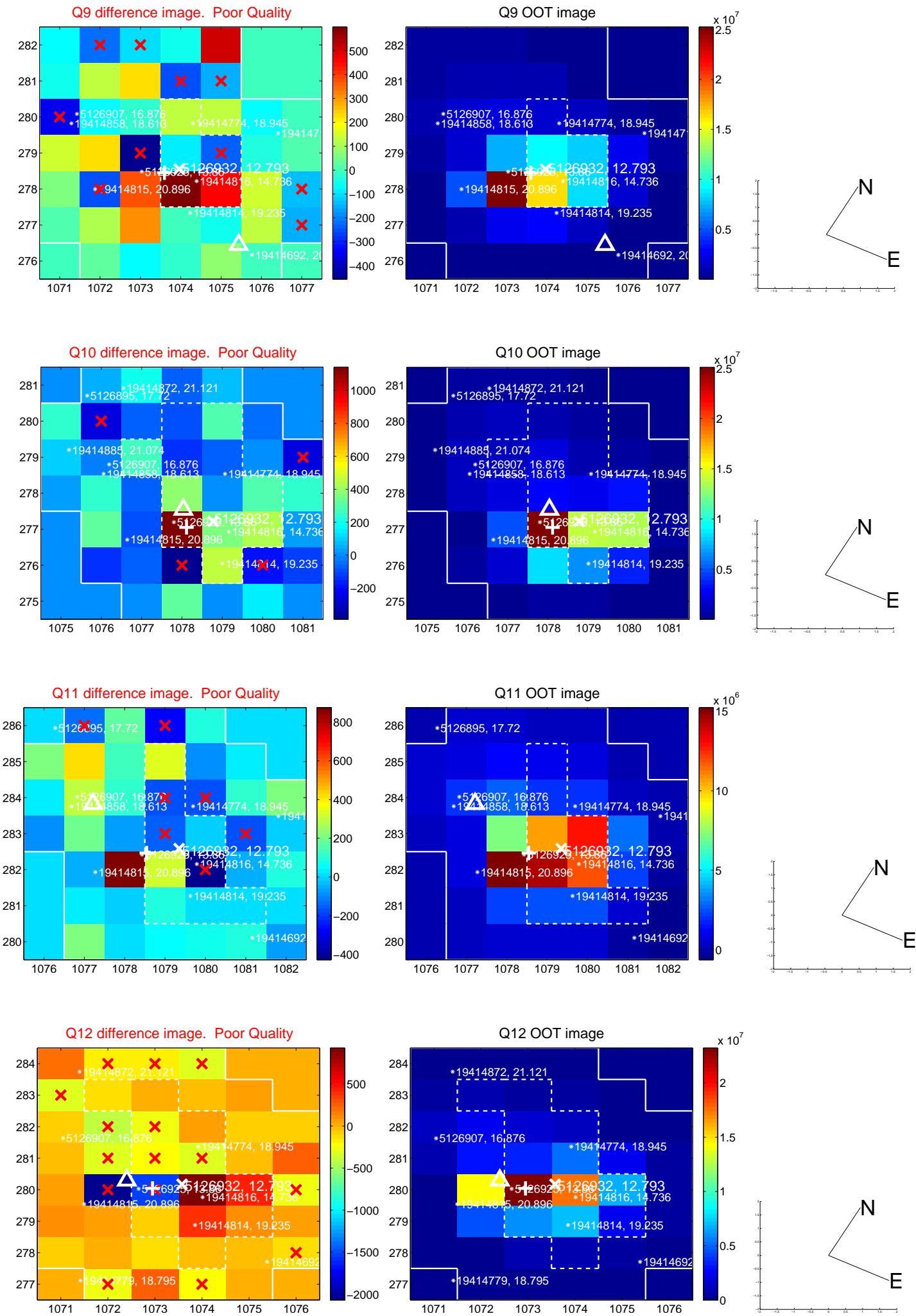


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

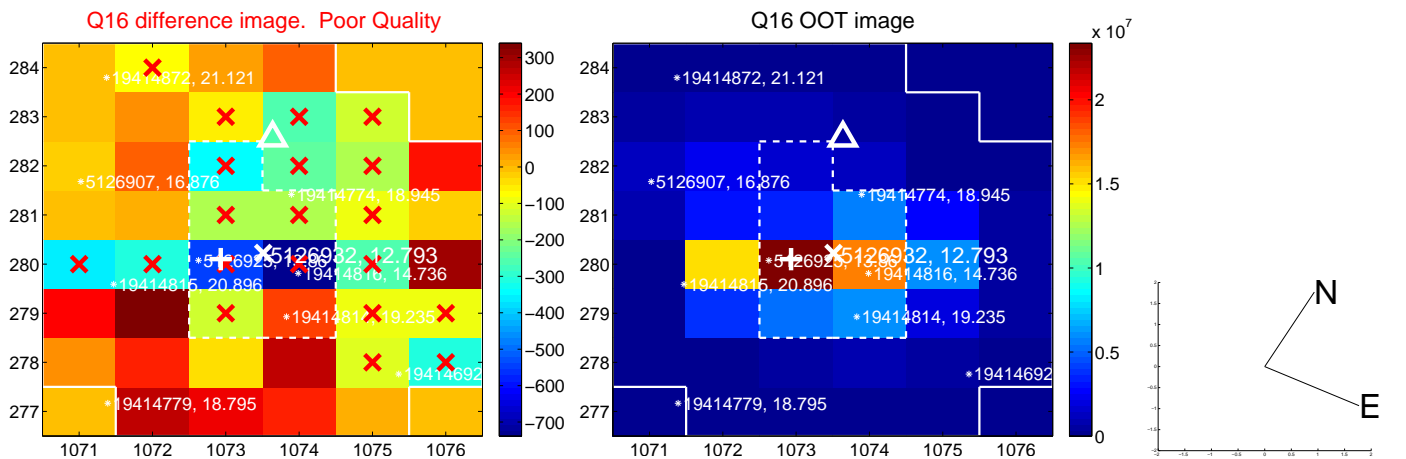
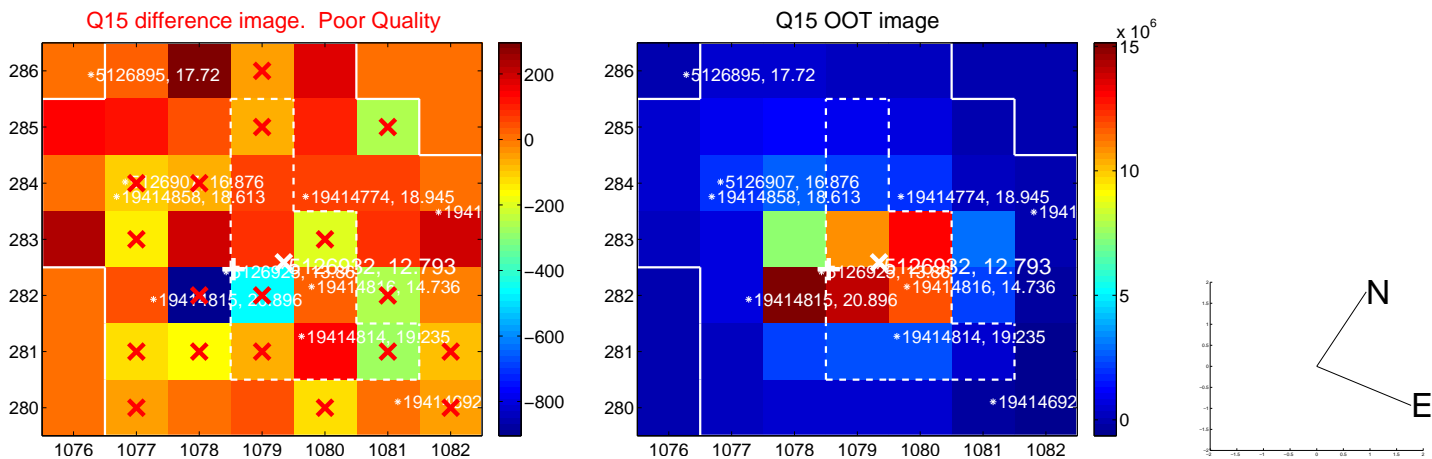
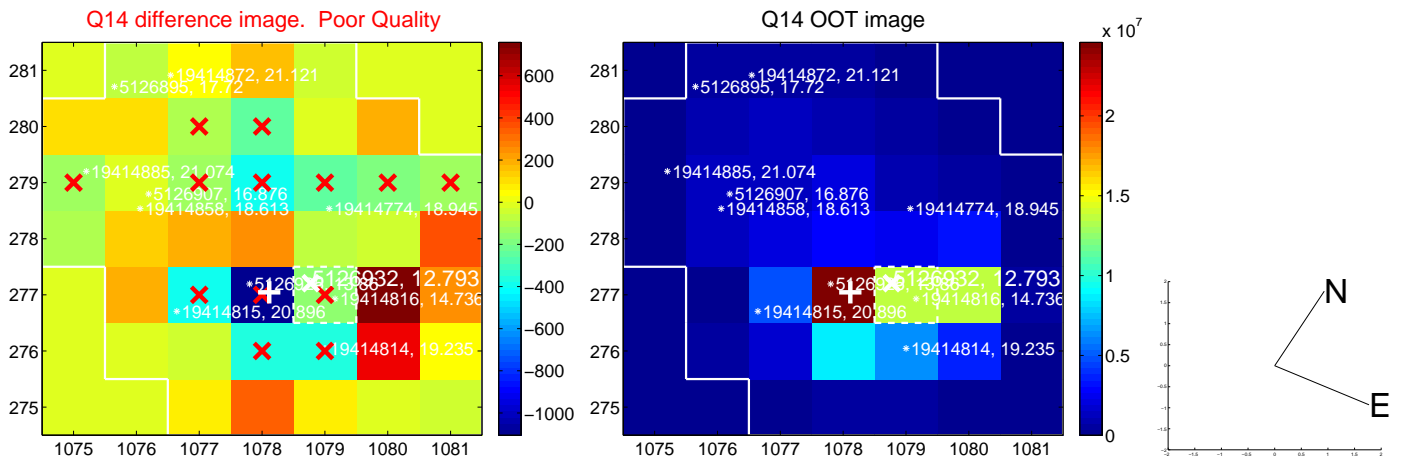
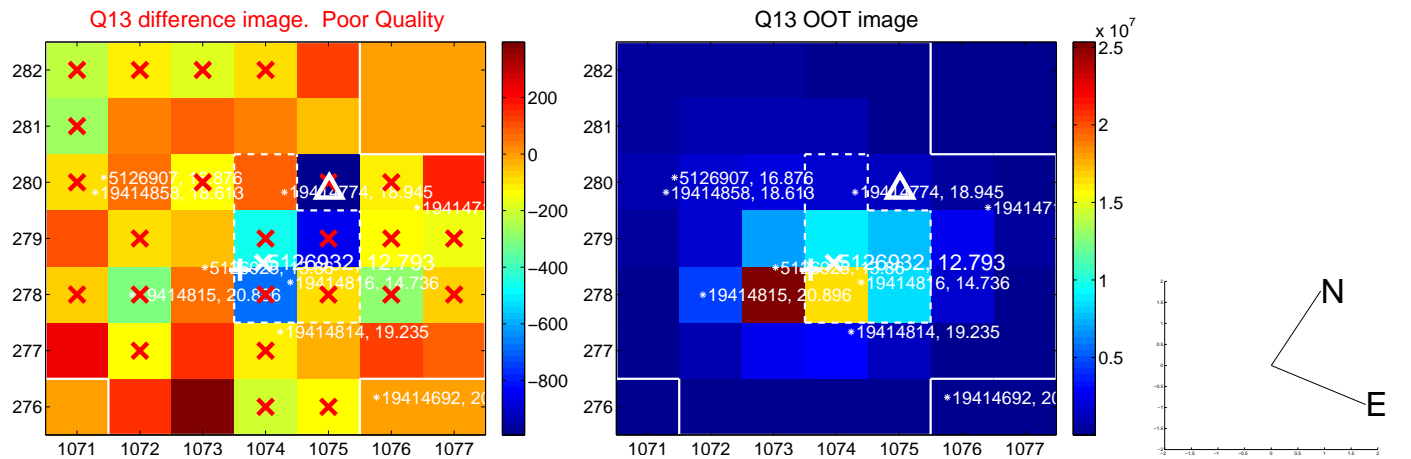




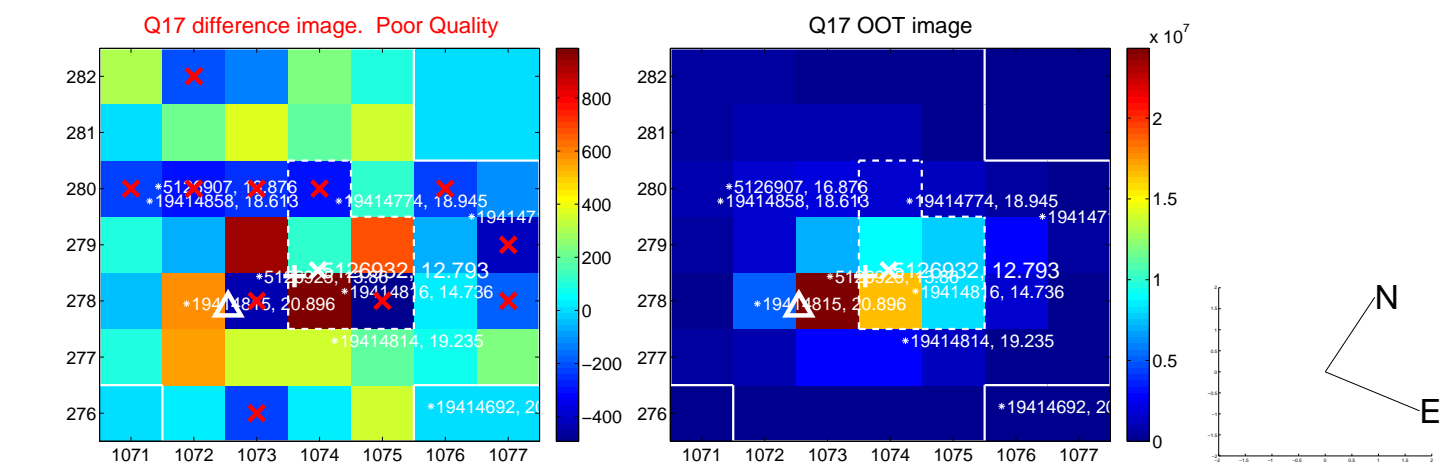
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



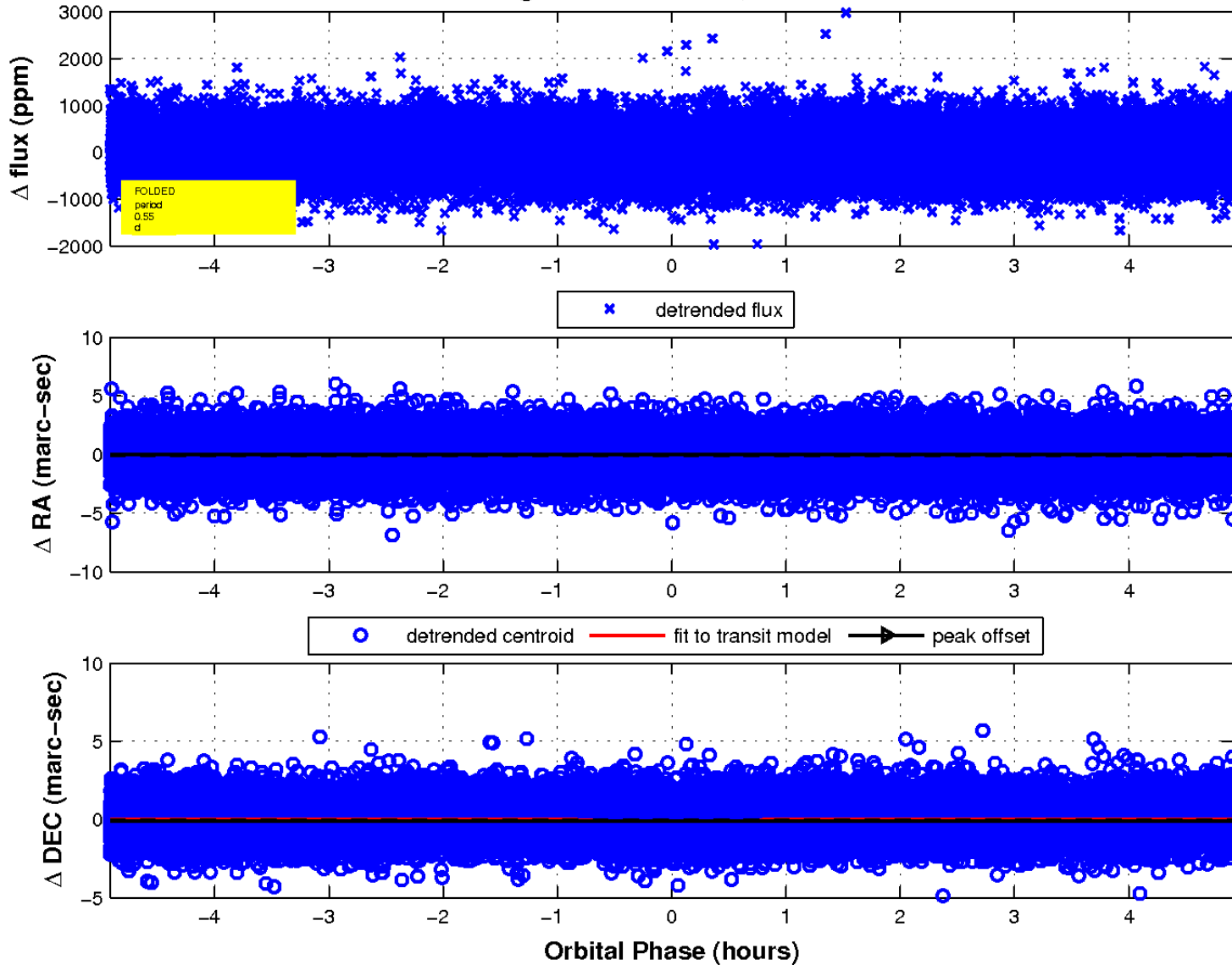
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

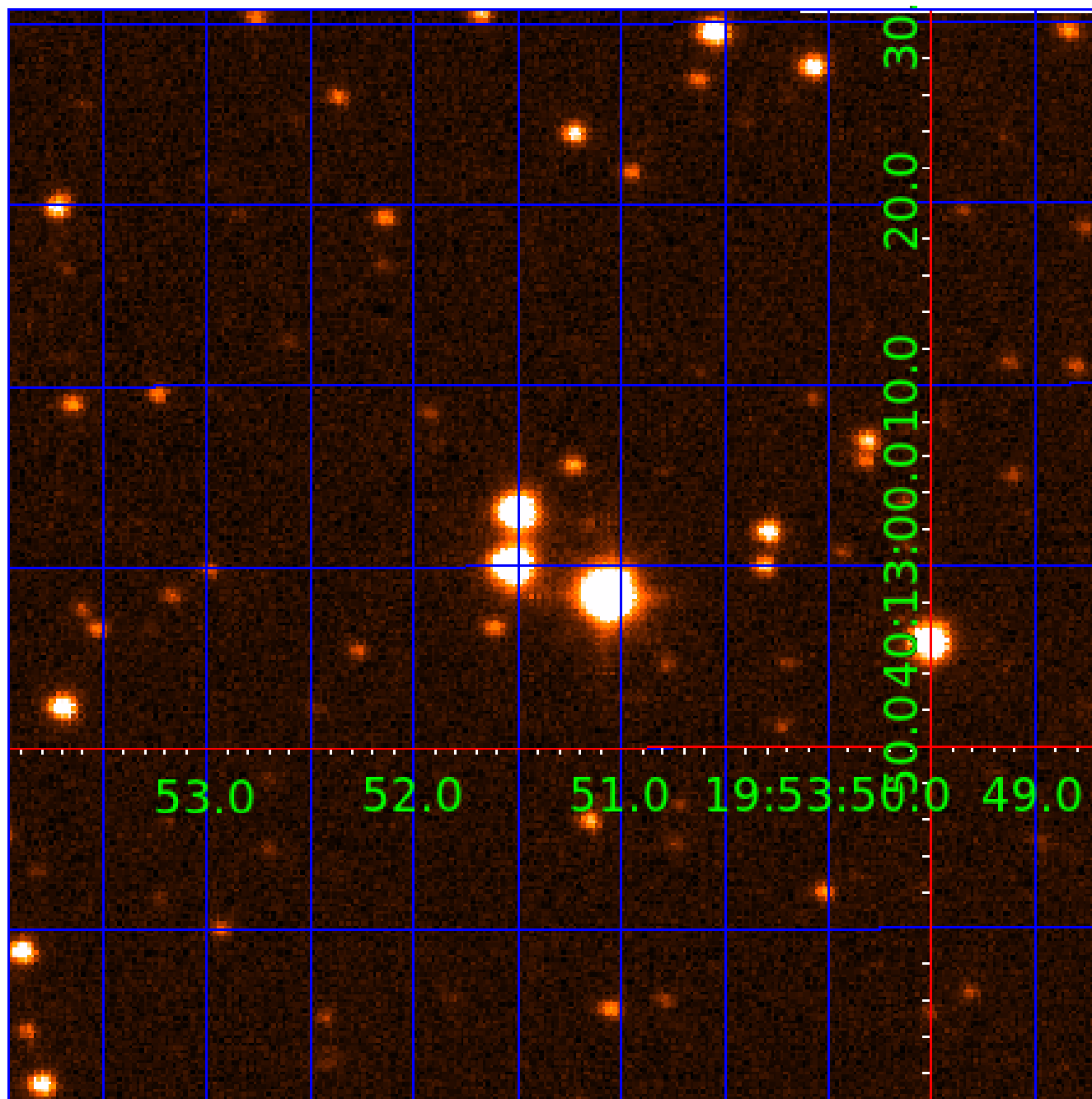


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination





# KIC 005126932

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005126932-01	OBS	No	0.545682	131.627414	50.8	1.639	8.9	8.9	1.00	5780	0.85	5852.66
005126932-02	OBS	7718.01	208.183124	146.561159	939.1	3.114	7.4	6.8	1.00	5780	3.52	2.12

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005126932-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_KIC_POS
005126932-02	OBS	FP	0.12	1	0	0	0	ALL_TRANS_CHASES—CENT_KIC_POS—CENT_UNCERTAIN

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

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

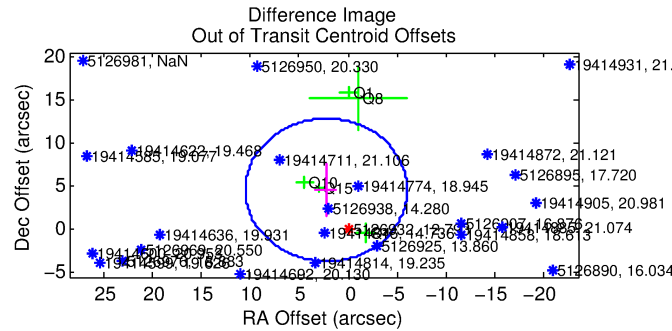
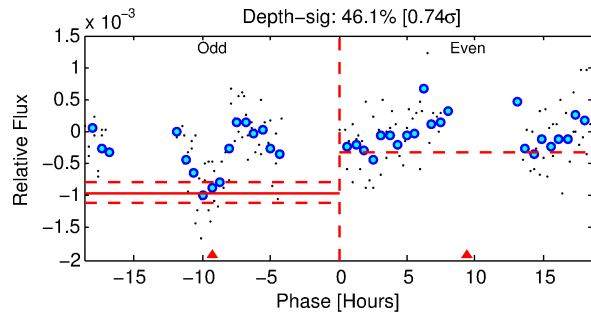
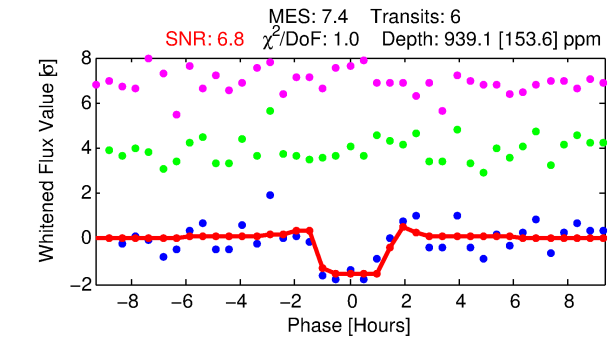
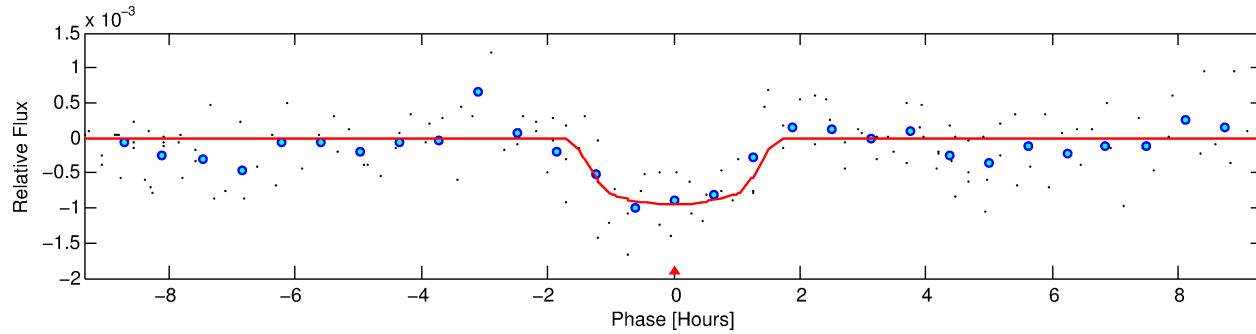
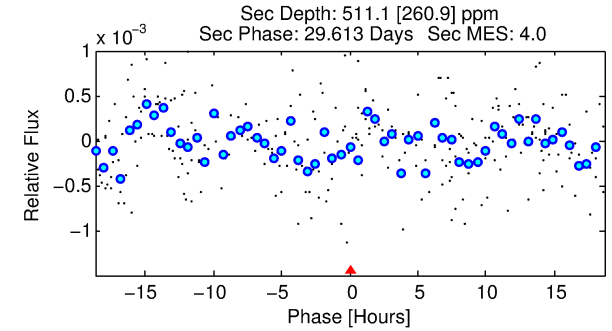
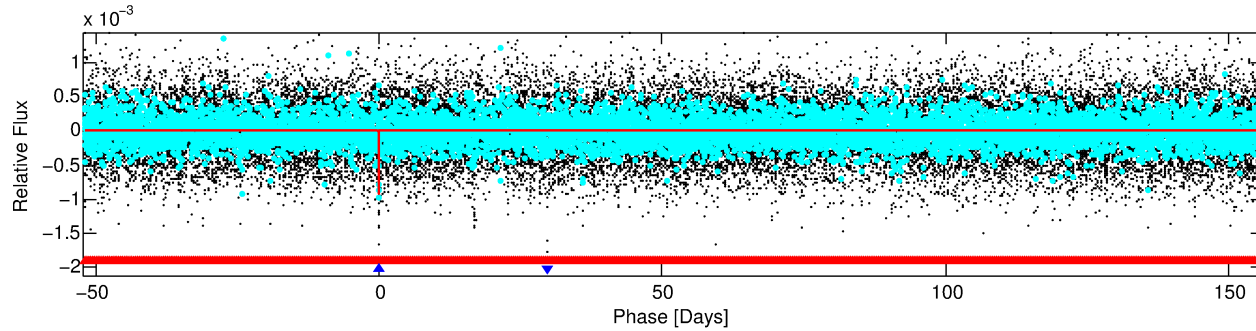
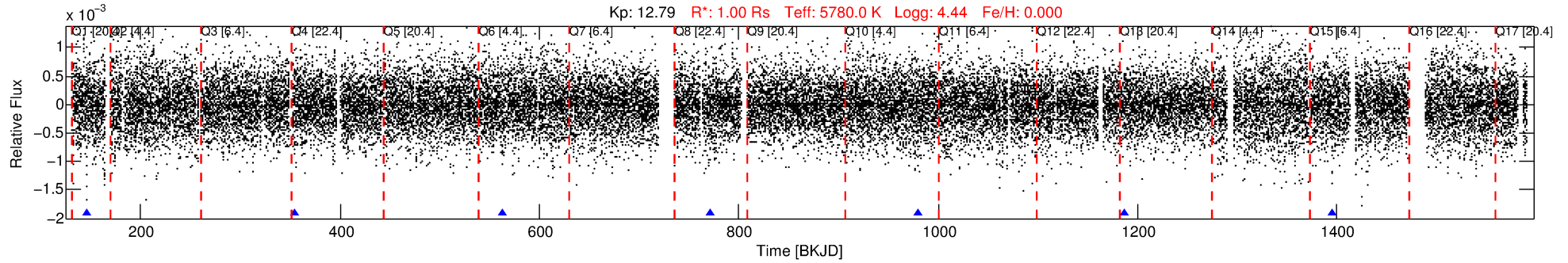
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005126932-02

No Significant Match Found

# DV One-Page Summary

KIC: 5126932 Candidate: 2 of 2 Period: 208.183 d



DV Fit Results:

Period = 208.18312 [0.00165] d  
Epoch = 146.5612 [0.0054] BKJD  
 $R_p/R^* = 0.0322$  [0.0137]  
 $a/R^* = 294.59$  [535.75]  
 $b = 0.86$  [0.57]  
 $\text{Seff} = 2.12$  [0.00]  
 $T_{\text{eq}} = 308$  [0] K  
 $R_p = 3.52$  [1.49]  $R_e$   
 $a = 0.6876$  [0.0000] AU  
 $\text{Ag} = 10739.63$  [10640.51] [1.01σ]  
 $T_{\text{eff}} = 4840$  [1199] K [3.78σ]

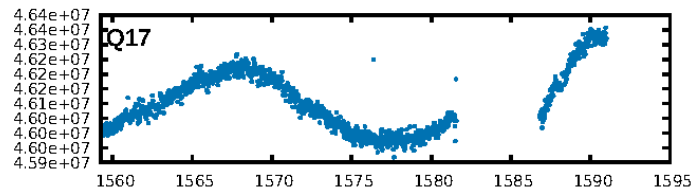
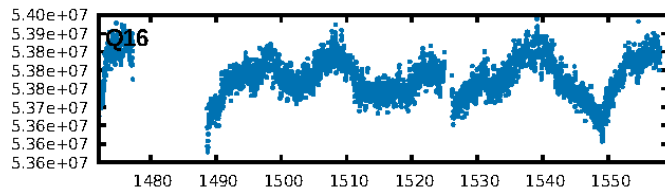
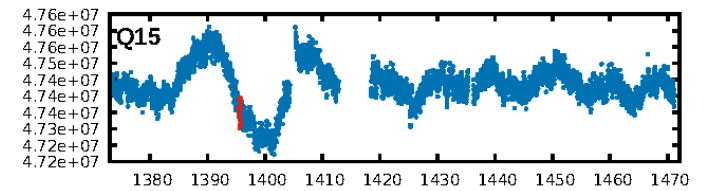
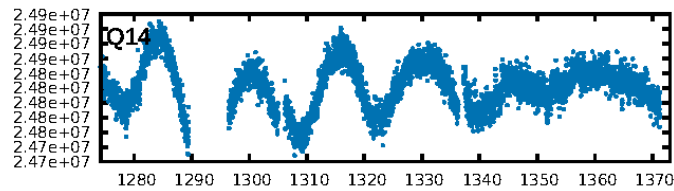
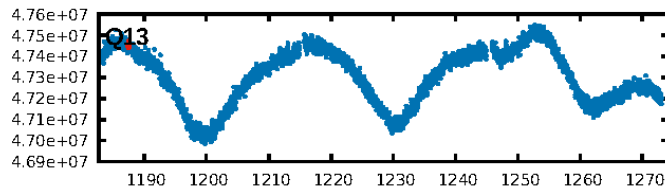
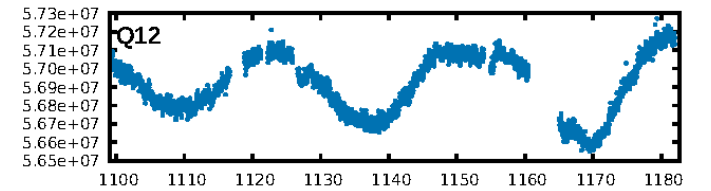
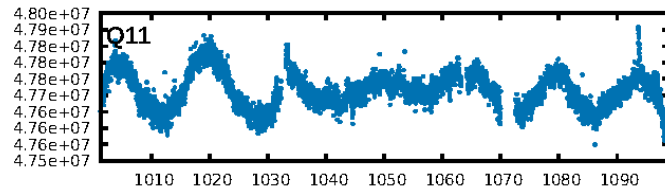
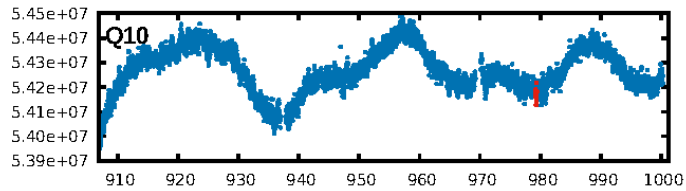
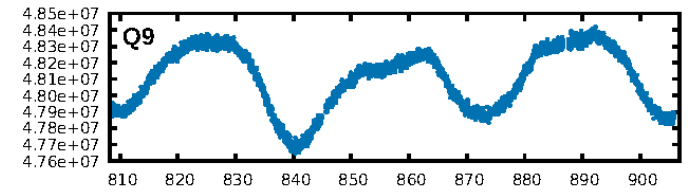
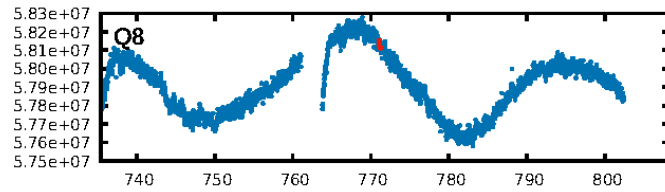
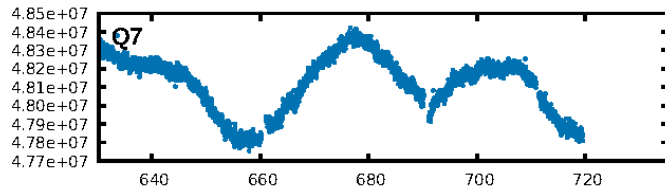
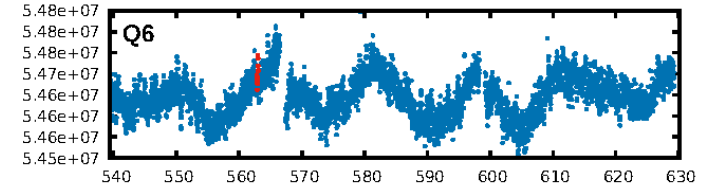
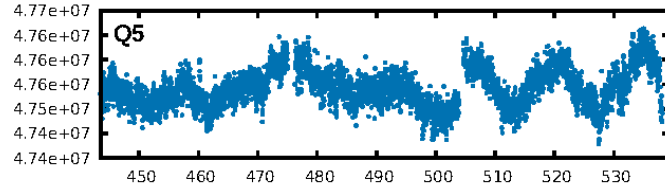
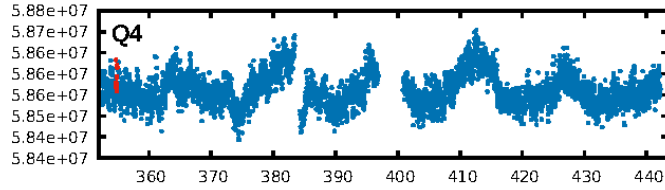
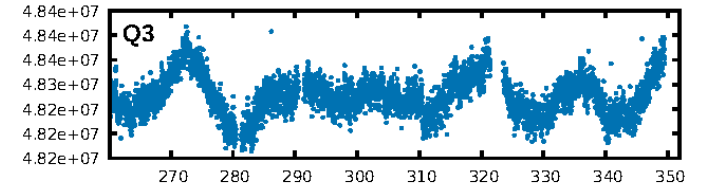
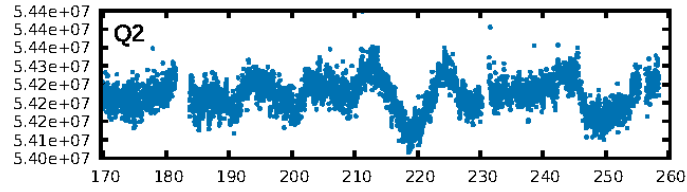
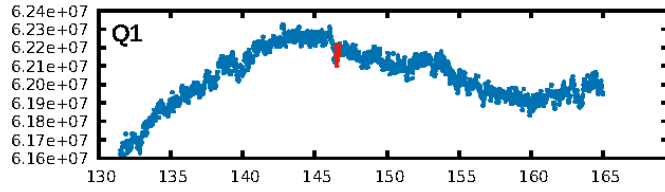
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [1416.13σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 68.1%  
ModelChiSquareGof-sig: 99.6%  
**Bootstrap-pfa: 7.88e-10**  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 9.674  
Centroid-sig: 43.8%  
Centroid-so: 0.383 arcsec [0.60σ]  
OotOffset-rm: 5.091 arcsec [1.85σ]  
OotOffset-st: 1/1/2/1 [5]  
KicOffset-rm: 2.819 arcsec [0.87σ]  
KicOffset-st: 1/1/2/1 [5]  
DiffImageQuality-fgm: 0.40 [2/5]  
DiffImageOverlap-fno: 0.00 [0/6]

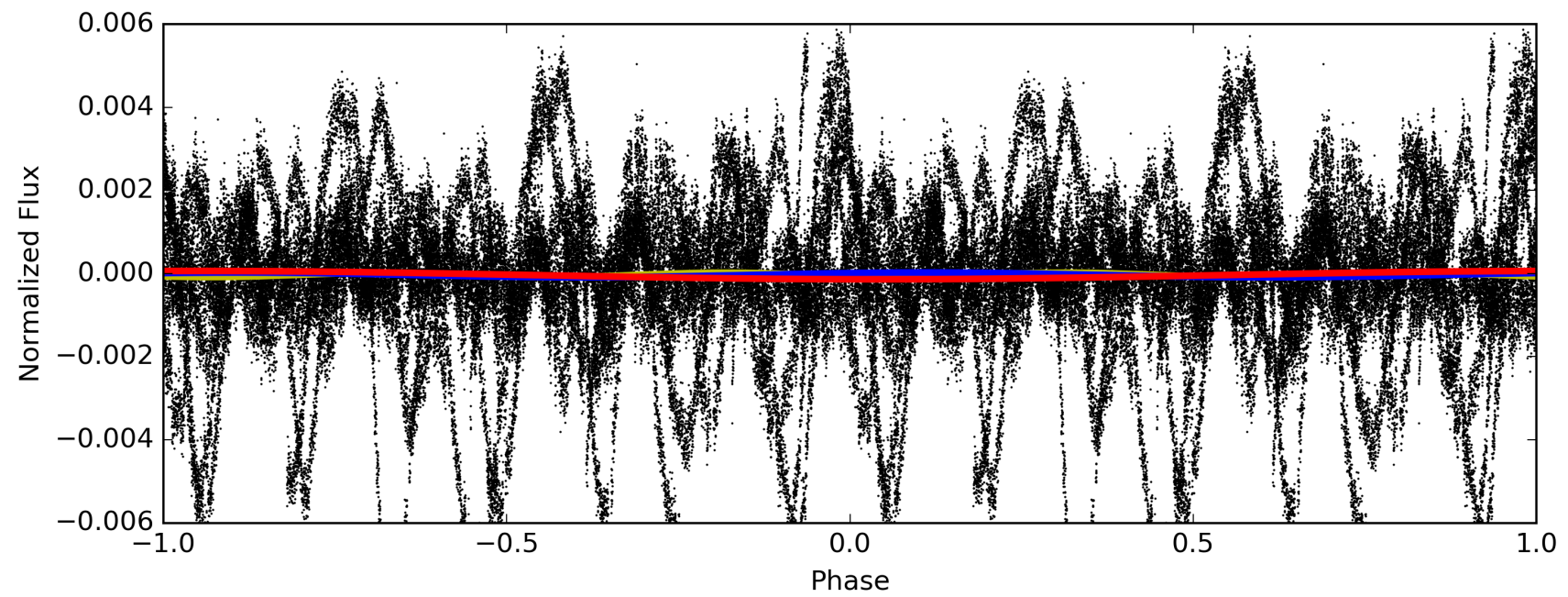
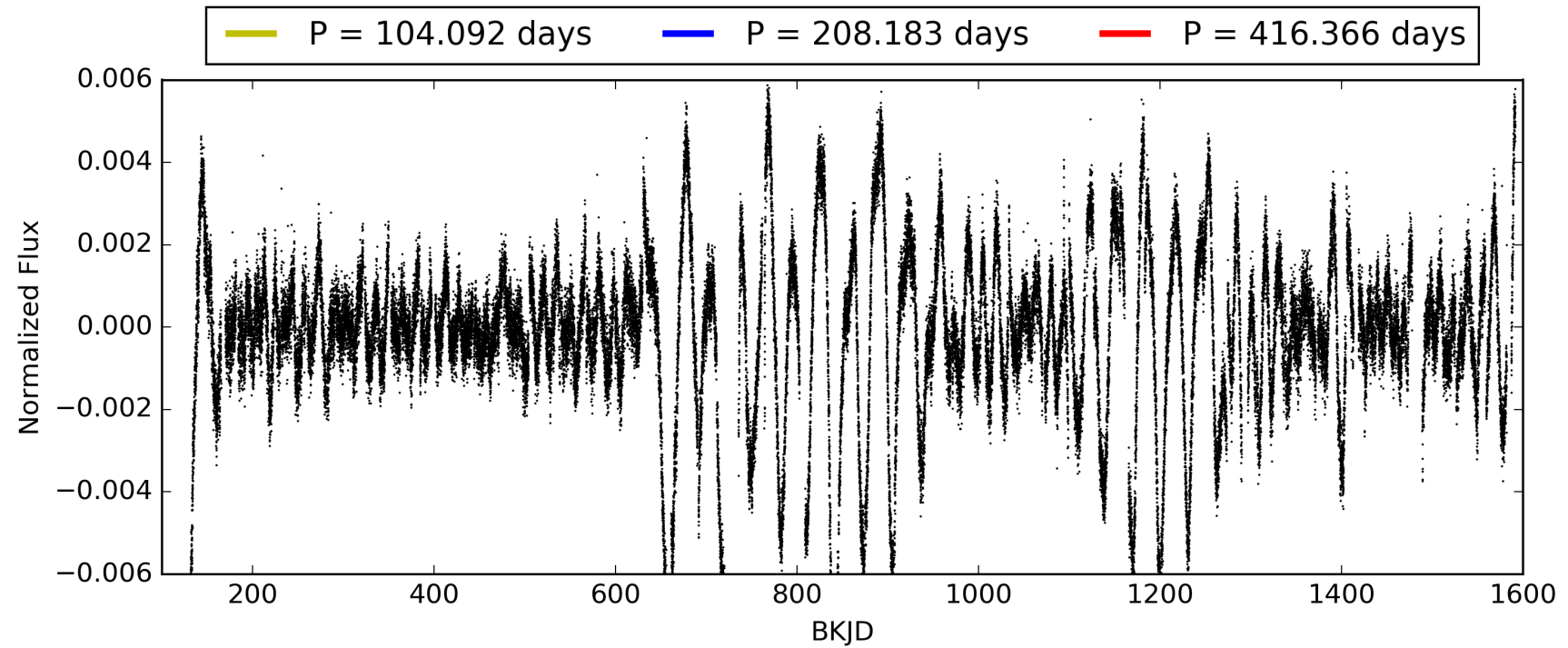
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 14:40:17 Z

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

# TCE 005126932-02, PDC Light Curves

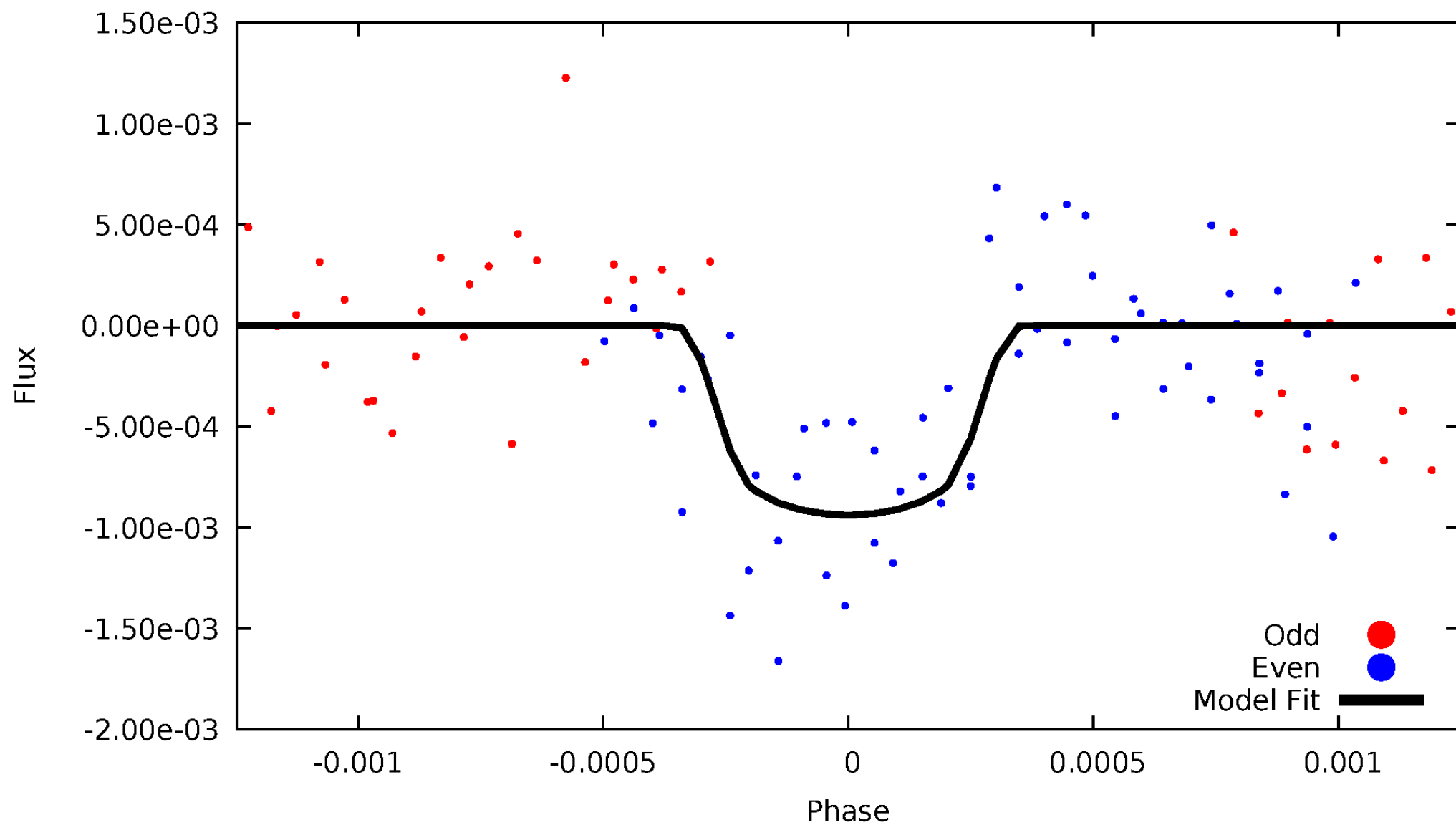


TCE 005126932-02



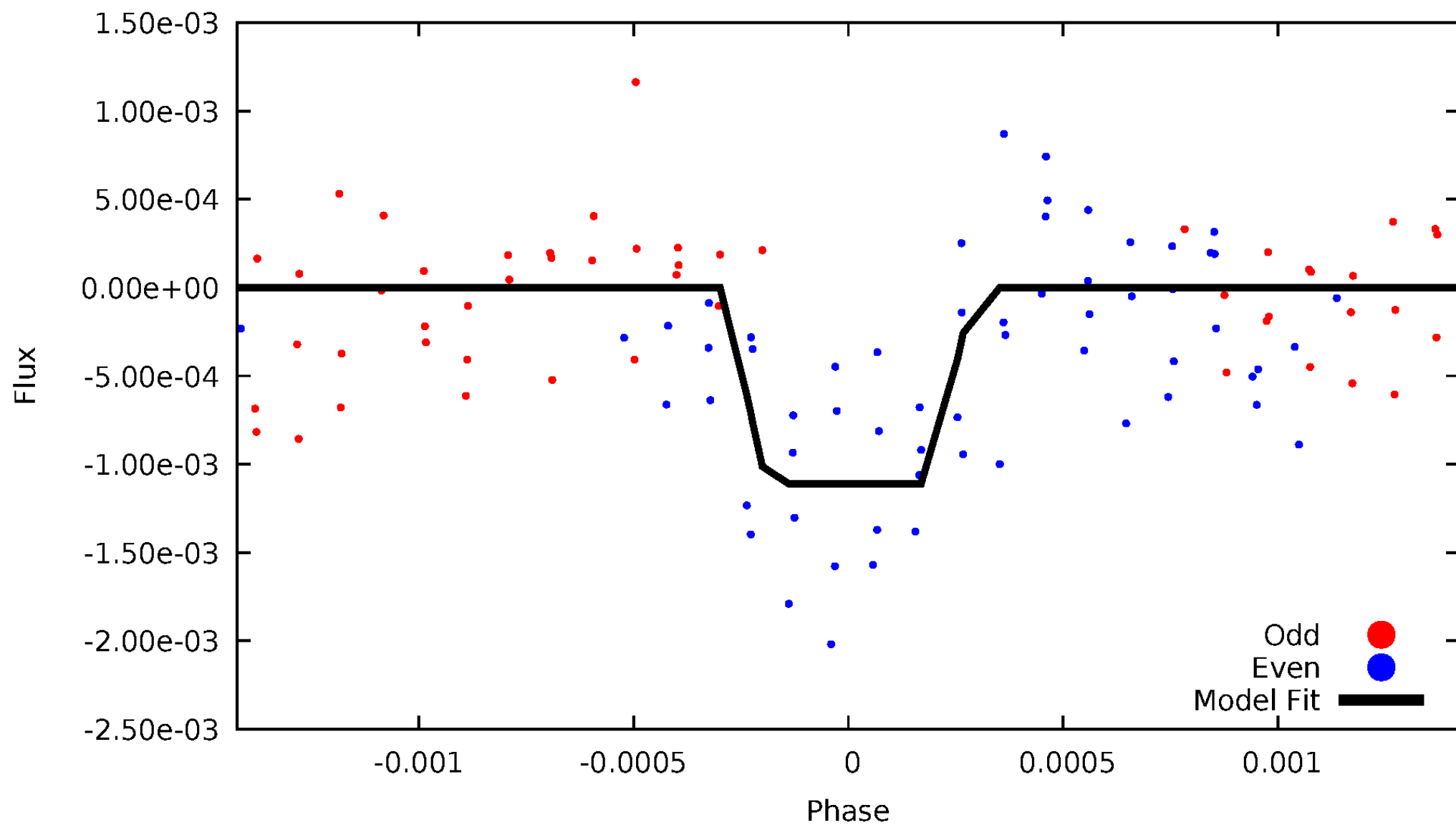
# DV Odd/Even

TCE 005126932-02



# ALT Odd/Even

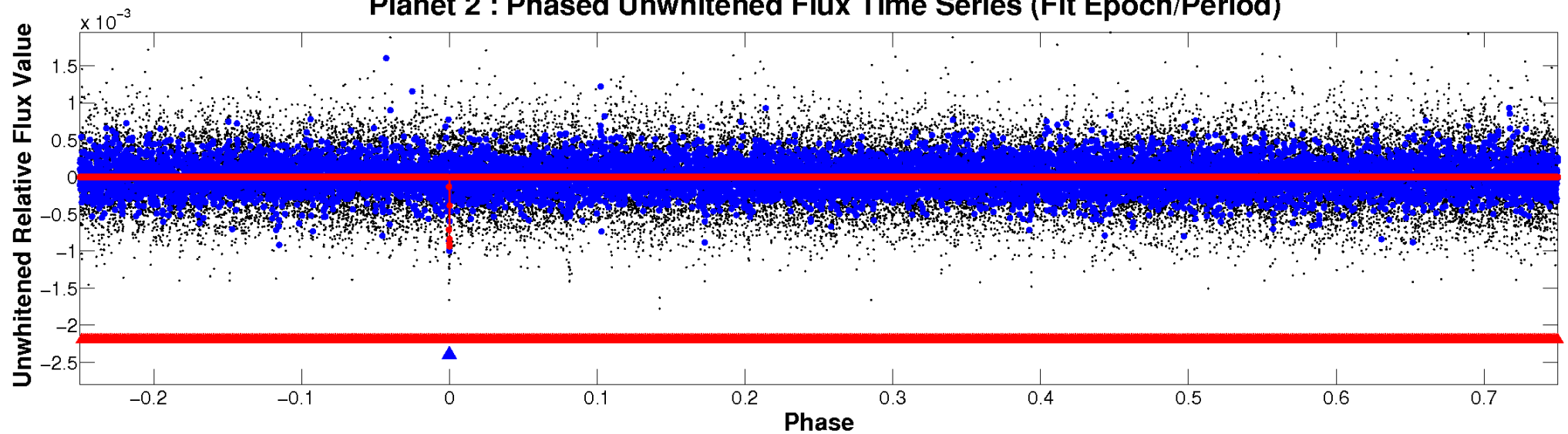
TCE 005126932-02



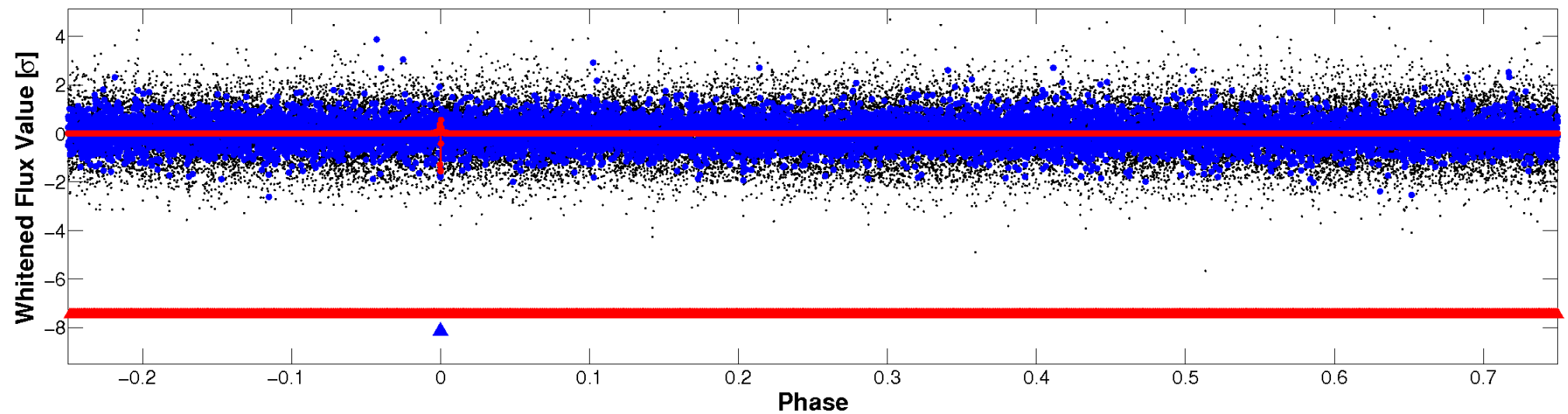


# Non-Whitened Vs. Whitened Light Curve

## Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

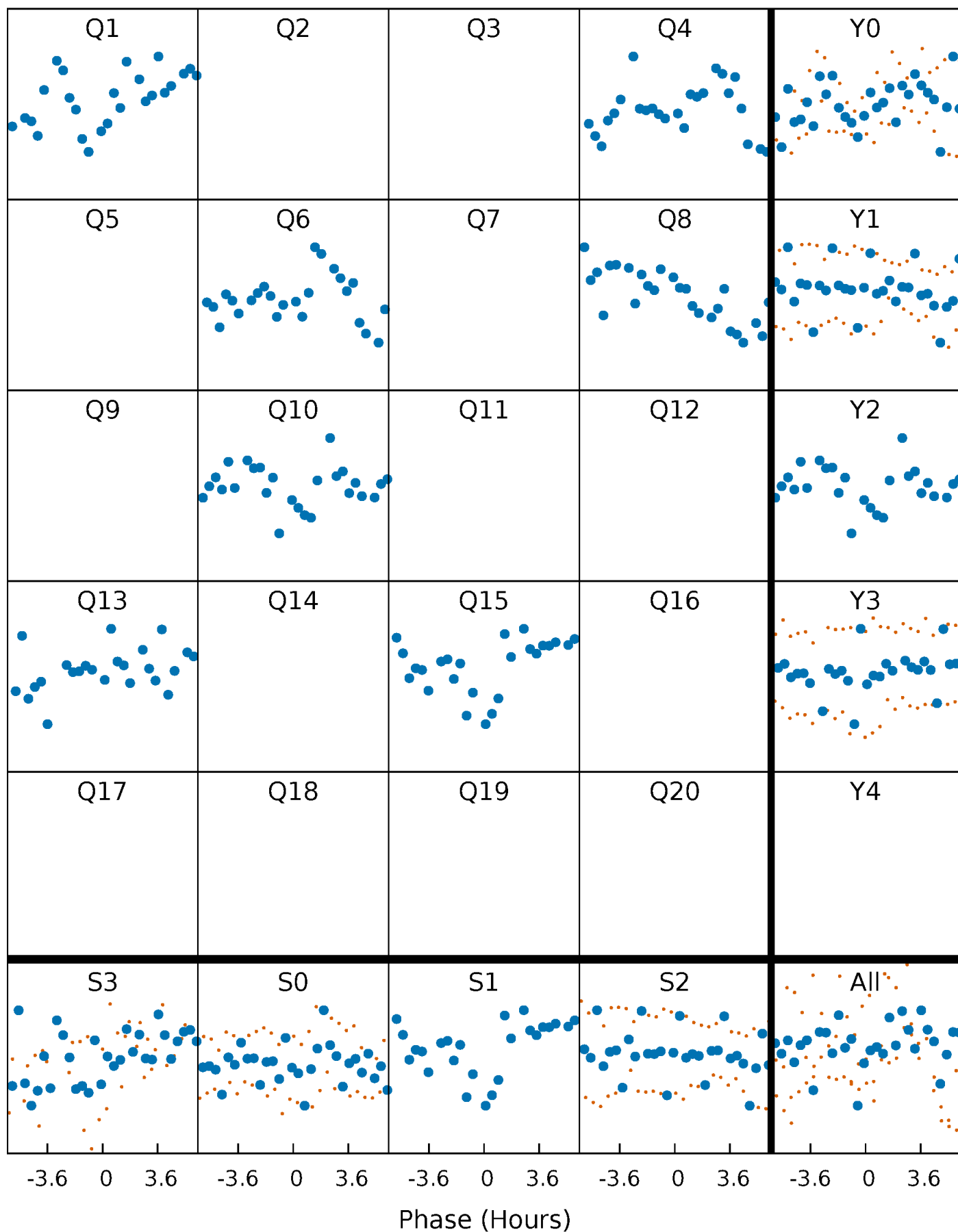


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



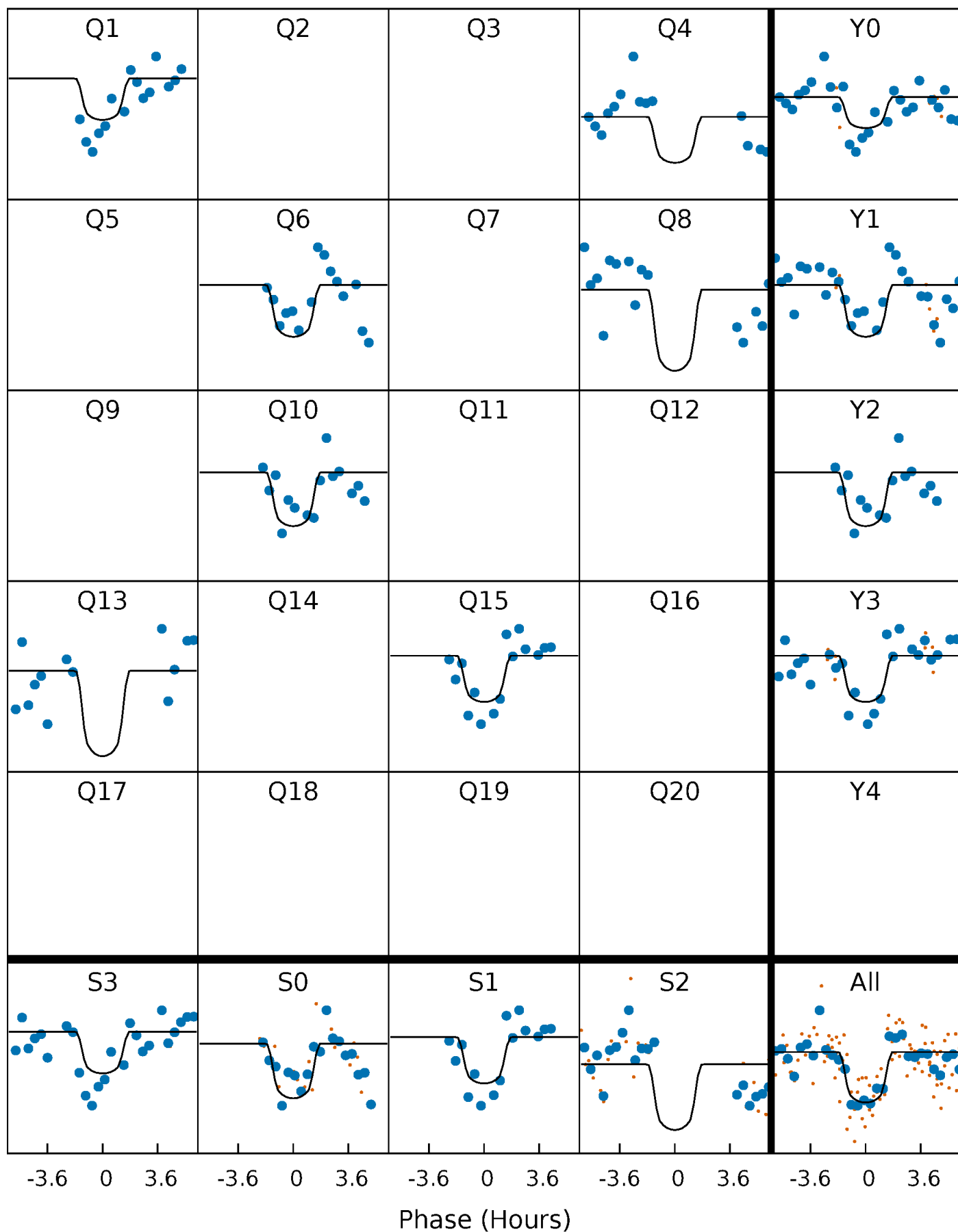
# PDC Quarter-Phased Transit Curves

TCE 005126932-02     $P=208.183124$  Days     $T_0=146.561159$  (BKJD)



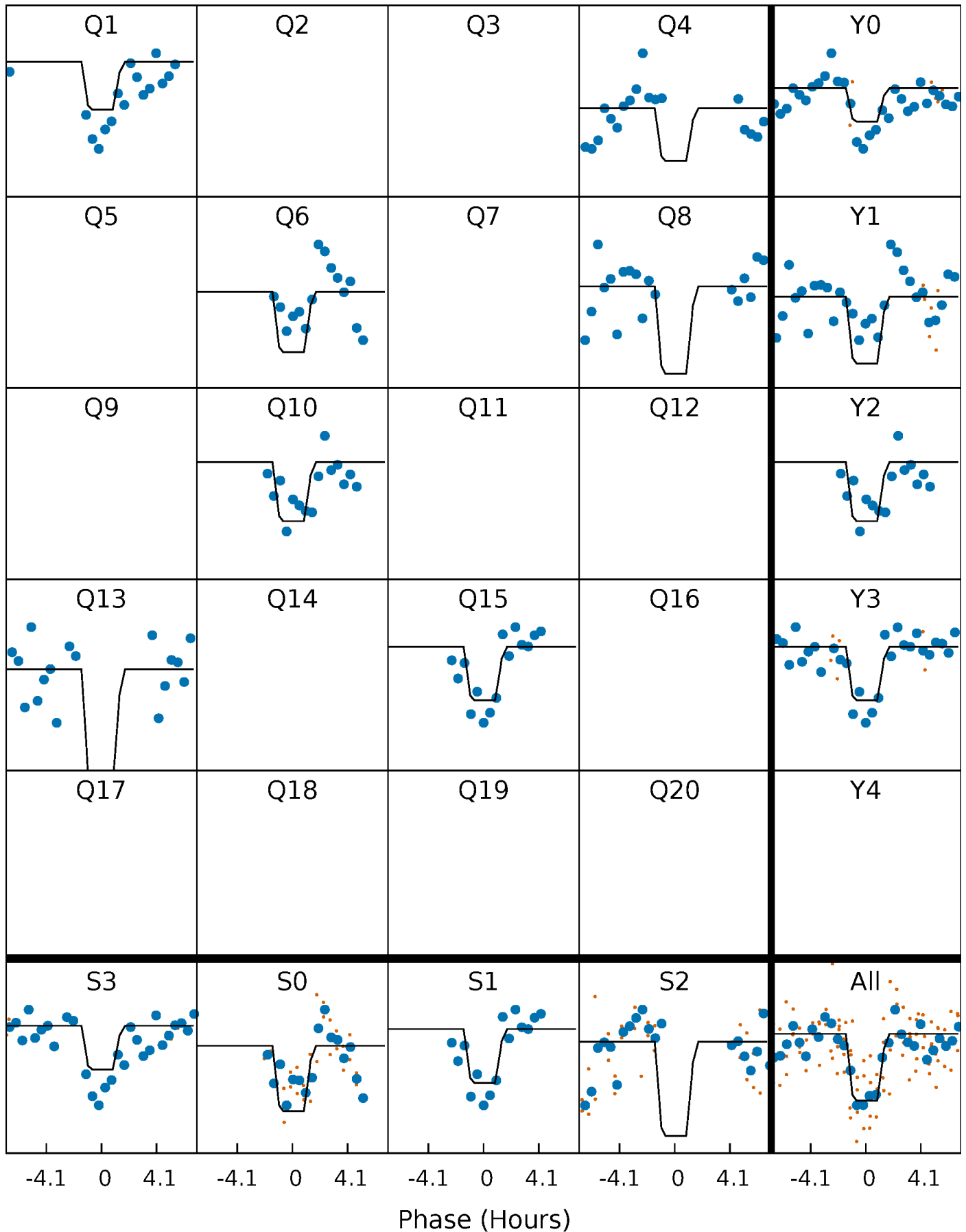
# DV Quarter-Phased Transit Curves

TCE 005126932-02 P=208.183124 Days  $T_0=146.561159$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

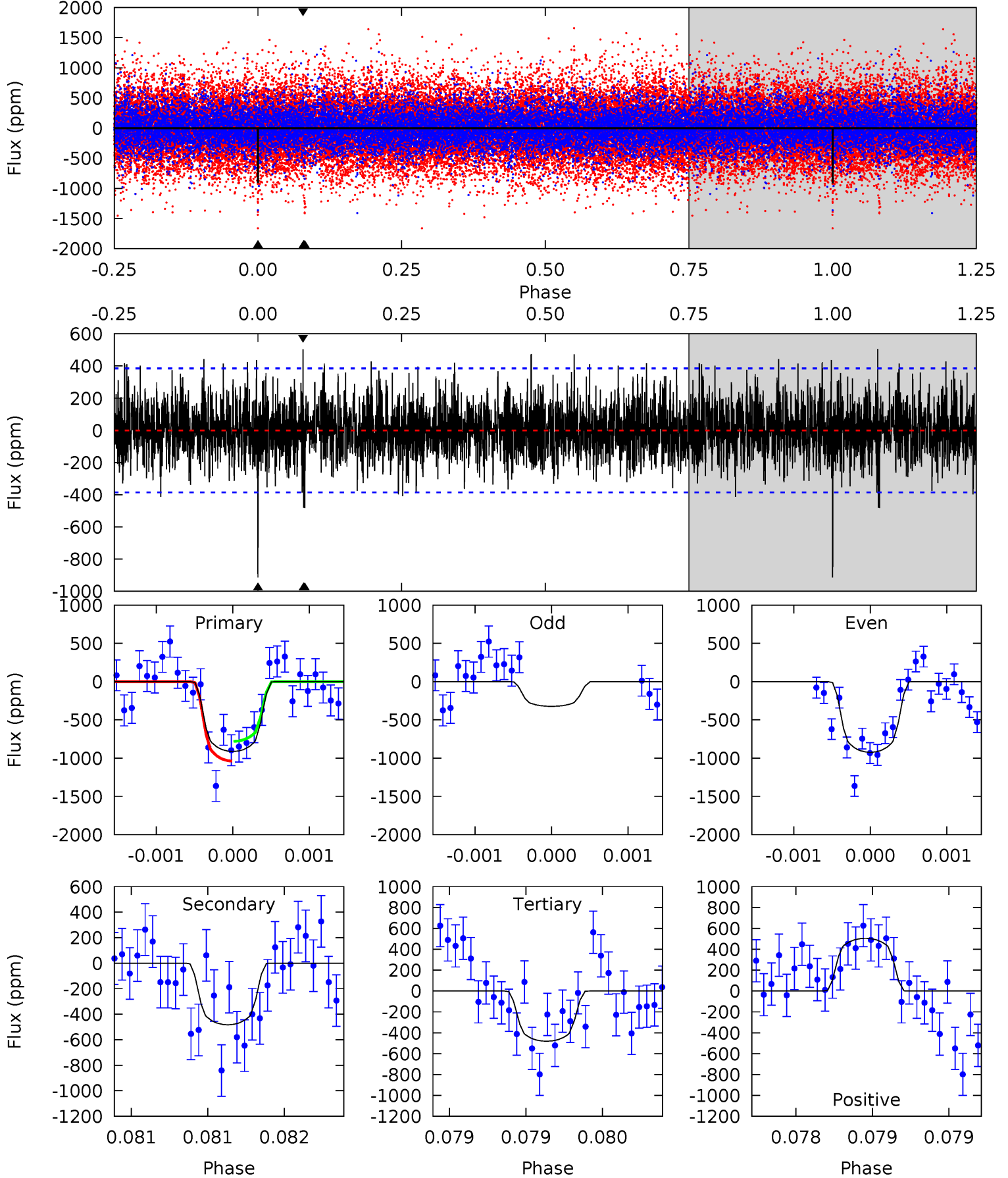
TCE 005126932-02 P=208.187524 Days  $T_0=146.539820$  (BKJD)



# DV Model-Shift Uniqueness Test

005126932-02, P = 208.183124 Days, E = 146.561159 Days

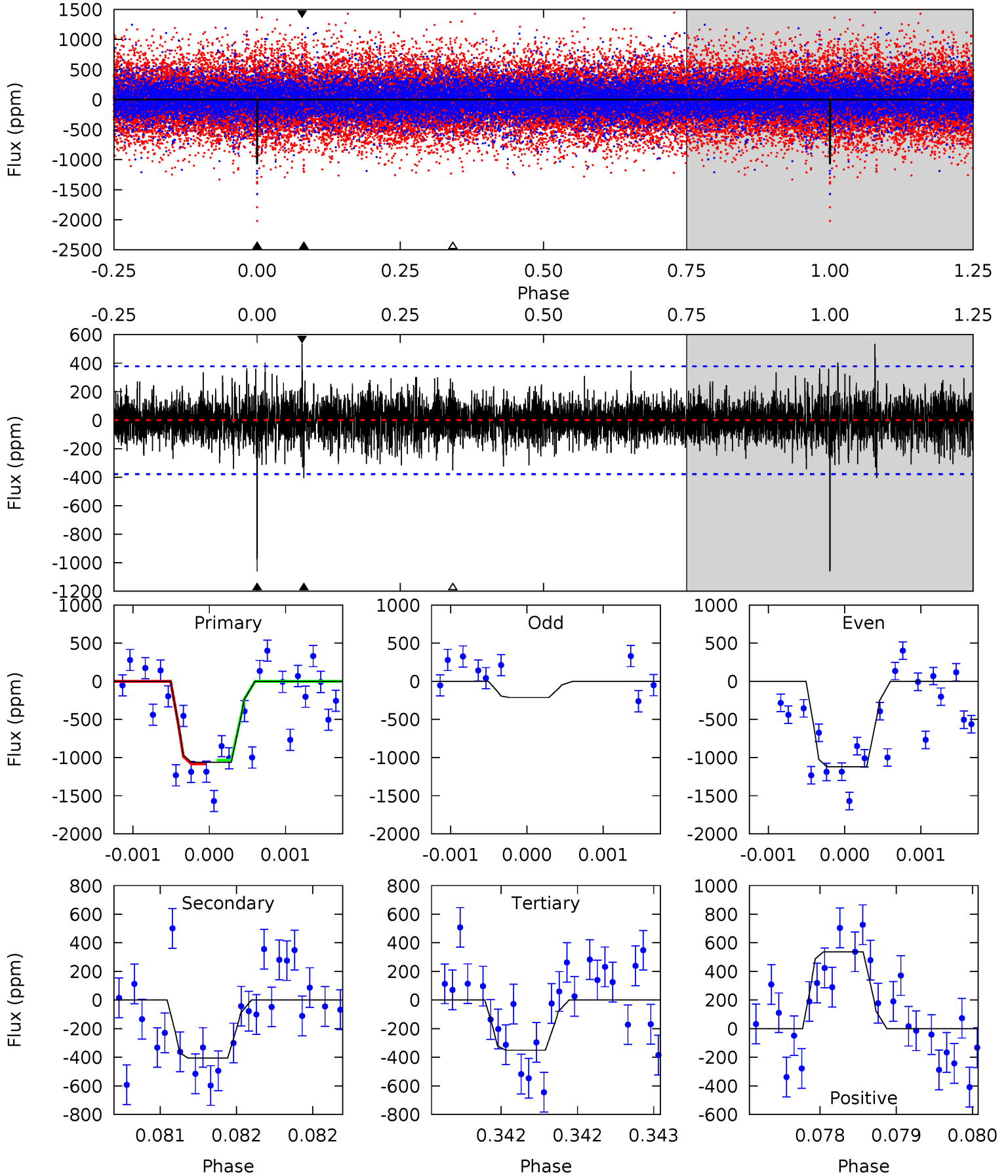
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	6.91	6.89	7.22	5.52	3.39	1.87	6.18	5.84	0.03	-0.31	1.61	1.00	0.36	1.84



# Alt Model-Shift Uniqueness Test

005126932-02, P = 208.187524 Days, E = 146.539820 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
15.6	5.94	5.15	7.86	5.54	3.44	1.38	10.4	7.70	0.79	-1.92	2.84	1.02	0.34	0.36





### Stellar Parameters For KIC 005126932

	$T_{\text{eff}}(K)$	$\log(g)$	[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 005126932-02 / KOI 7718.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-483 \pm 70$	$3.49^{+1.50}_{-1.41}$	$431^{+21}_{-20}$	$4909^{+1317}_{-698}$	$10650^{+18913}_{-5927}$
Alt.	$-405 \pm 68$	$3.60^{+1.58}_{-1.38}$	$431^{+20}_{-20}$	$4659^{+1106}_{-623}$	$8041^{+13607}_{-4188}$

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

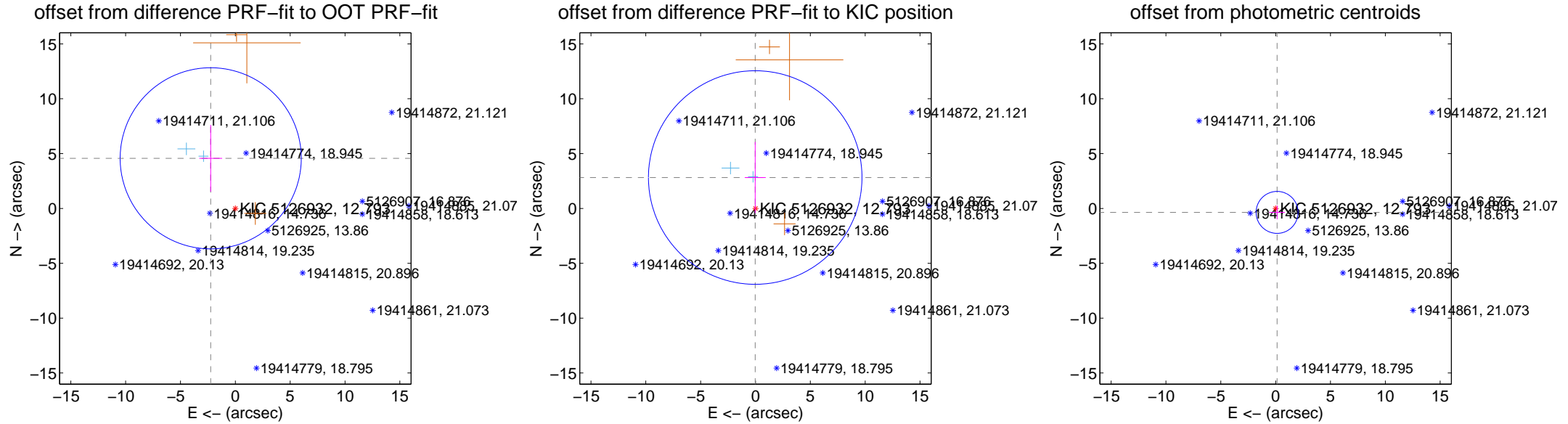
# DV Centroid Data

Supplemental centroid analysis for 005126932-02. Kepler magnitude: 12.79. Transit SNR 6.84

There are 2 quarters with good PRF difference image offsets

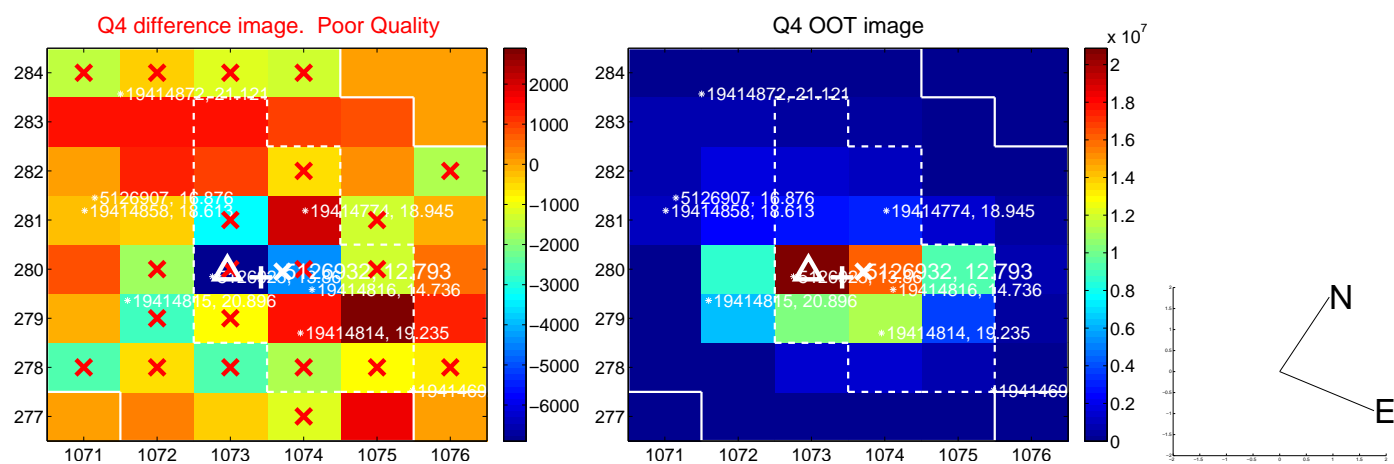
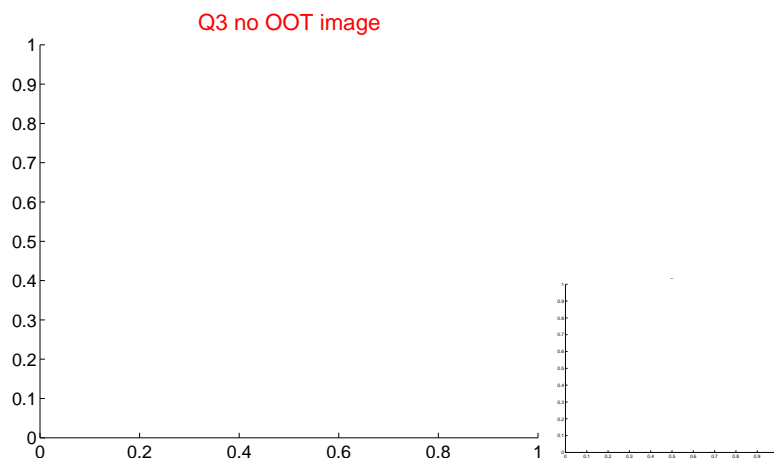
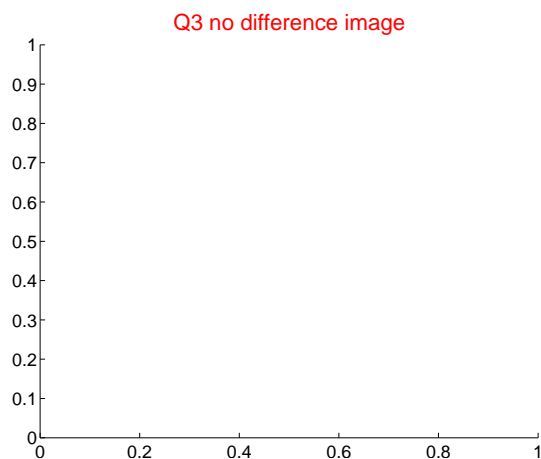
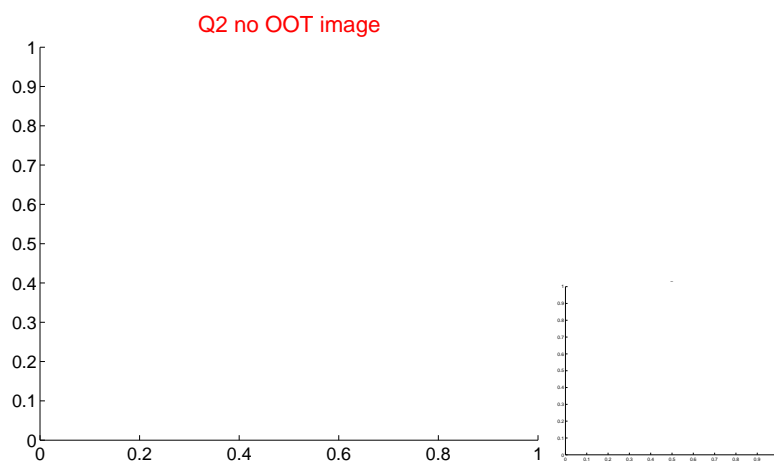
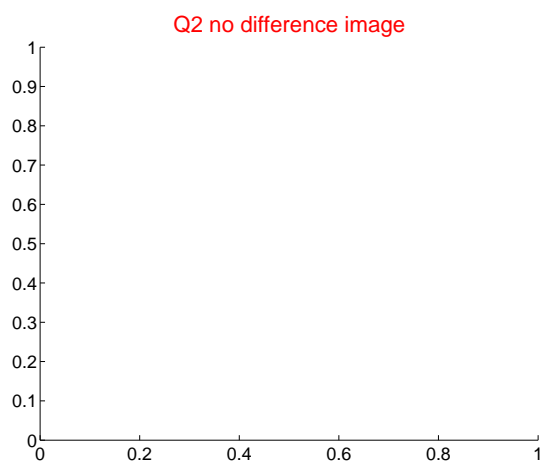
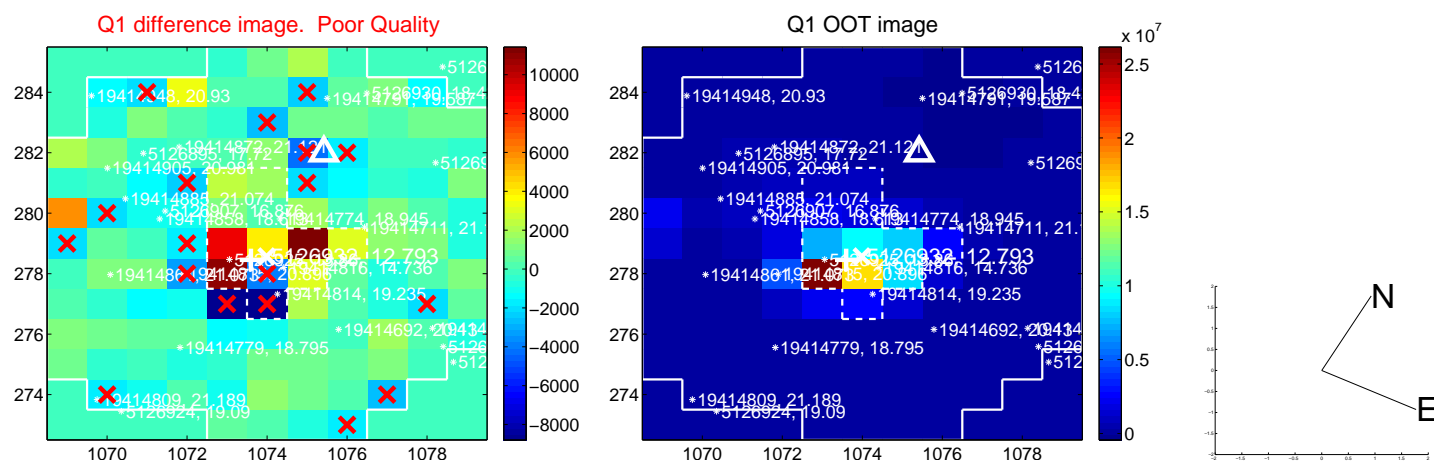
The OOT PRF centroid is offset from the target star catalog position by about 3.28 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.091 \pm 2.752$	1.85	$2.245 \pm 1.041$	$4.570 \pm 3.044$
PRF-fit source offset from KIC position	$2.819 \pm 3.244$	0.87	$0.025 \pm 0.959$	$2.819 \pm 3.245$
photometric centroid source offset	$0.38 \pm 0.64$	0.60	$-0.13 \pm 0.72$	$-0.36 \pm 0.63$



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.

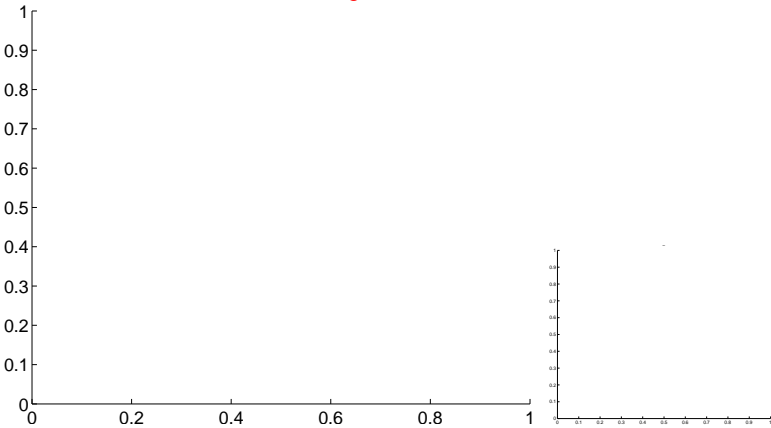


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

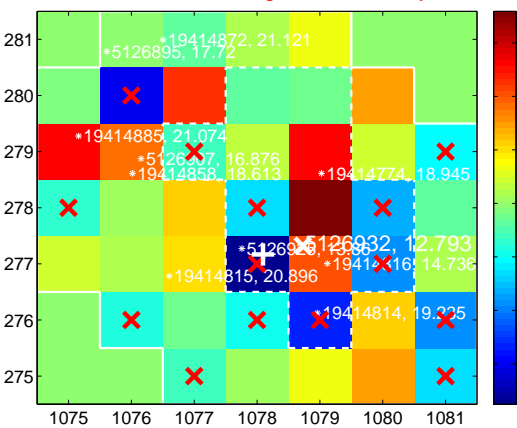
Q5 no difference image



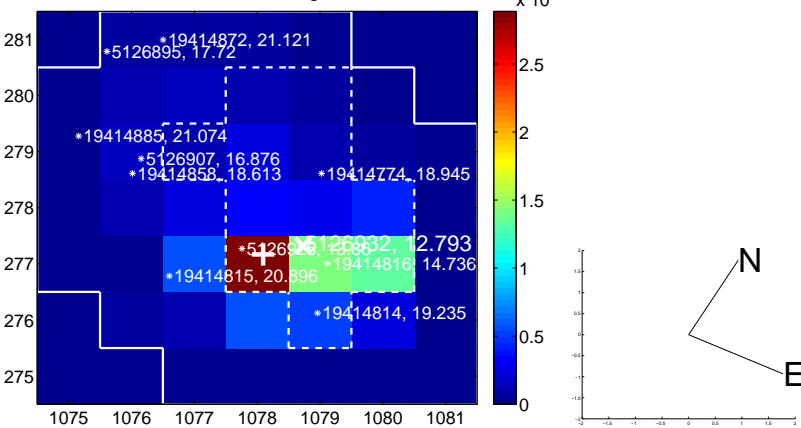
Q5 no OOT image



Q6 difference image. Poor Quality



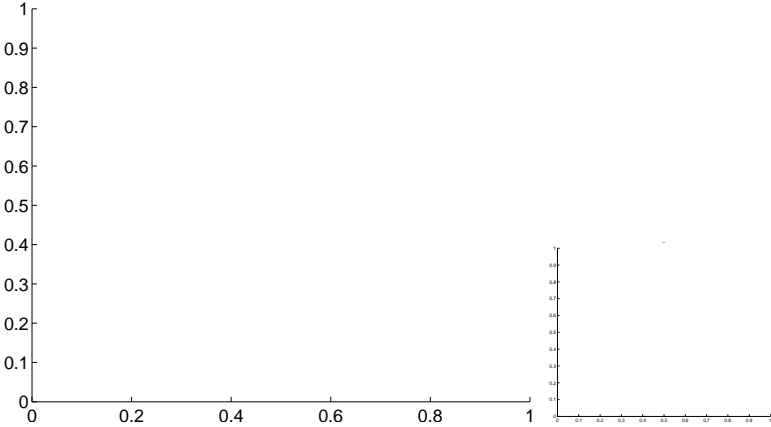
Q6 OOT image



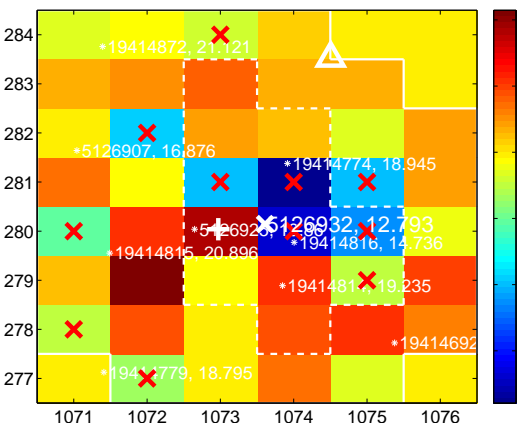
Q7 no difference image



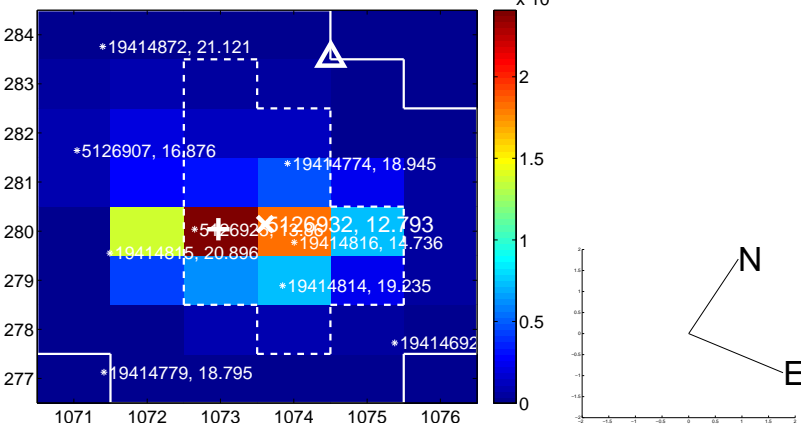
Q7 no OOT image



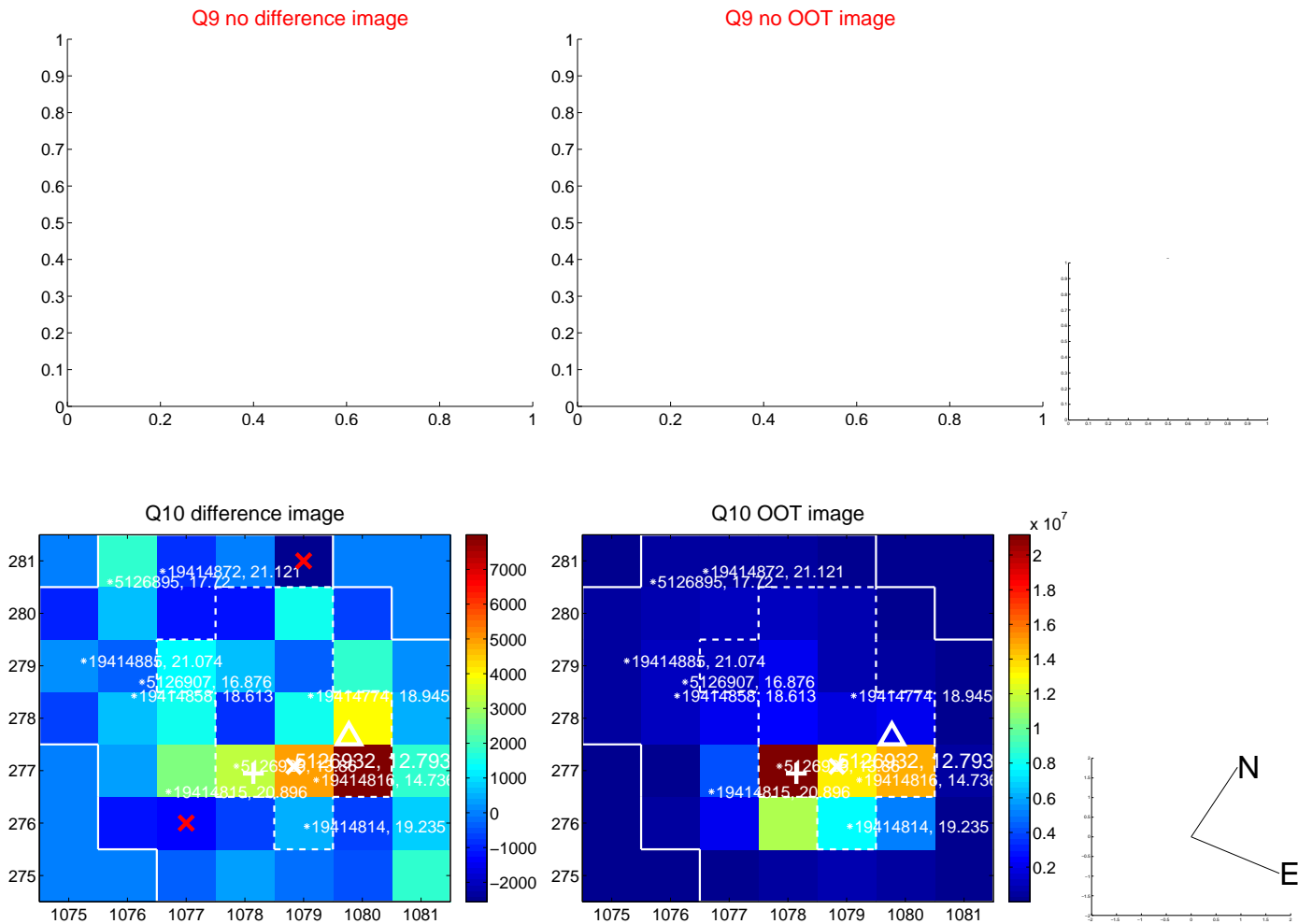
Q8 difference image. Poor Quality



Q8 OOT image



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.

Q13 no difference image



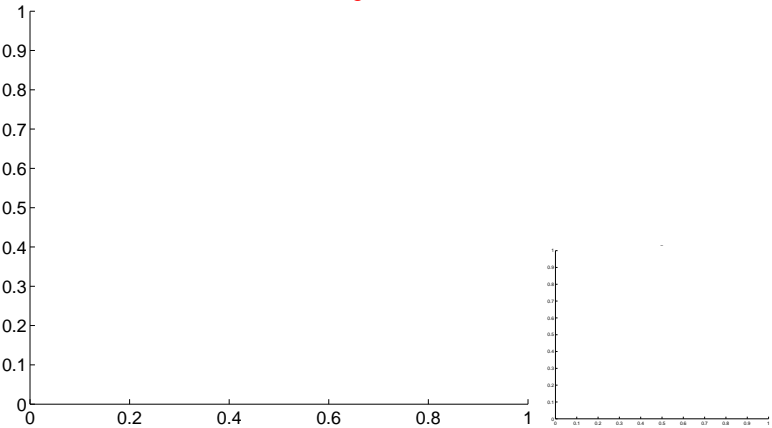
Q13 no OOT image



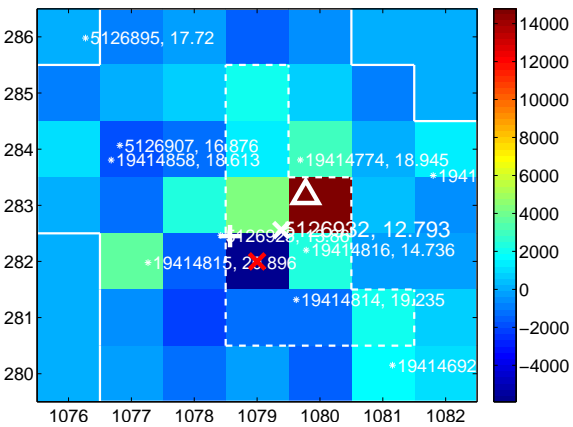
Q14 no difference image



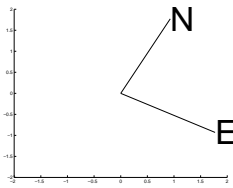
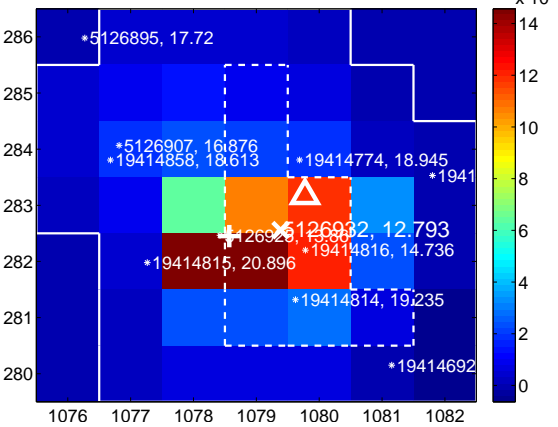
Q14 no OOT image



Q15 difference image



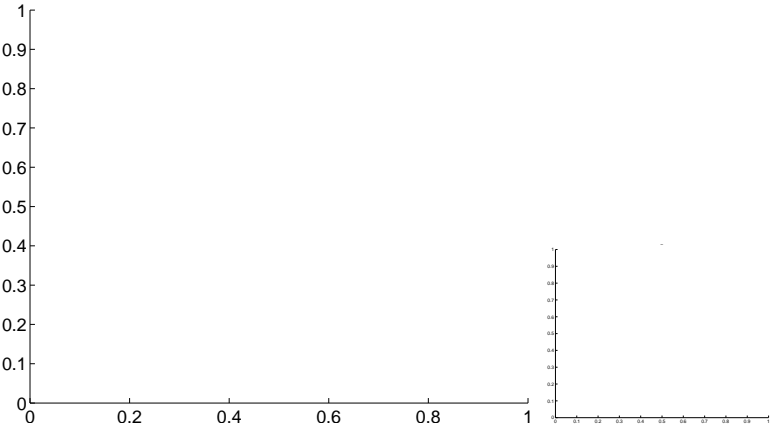
Q15 OOT image



Q16 no difference image

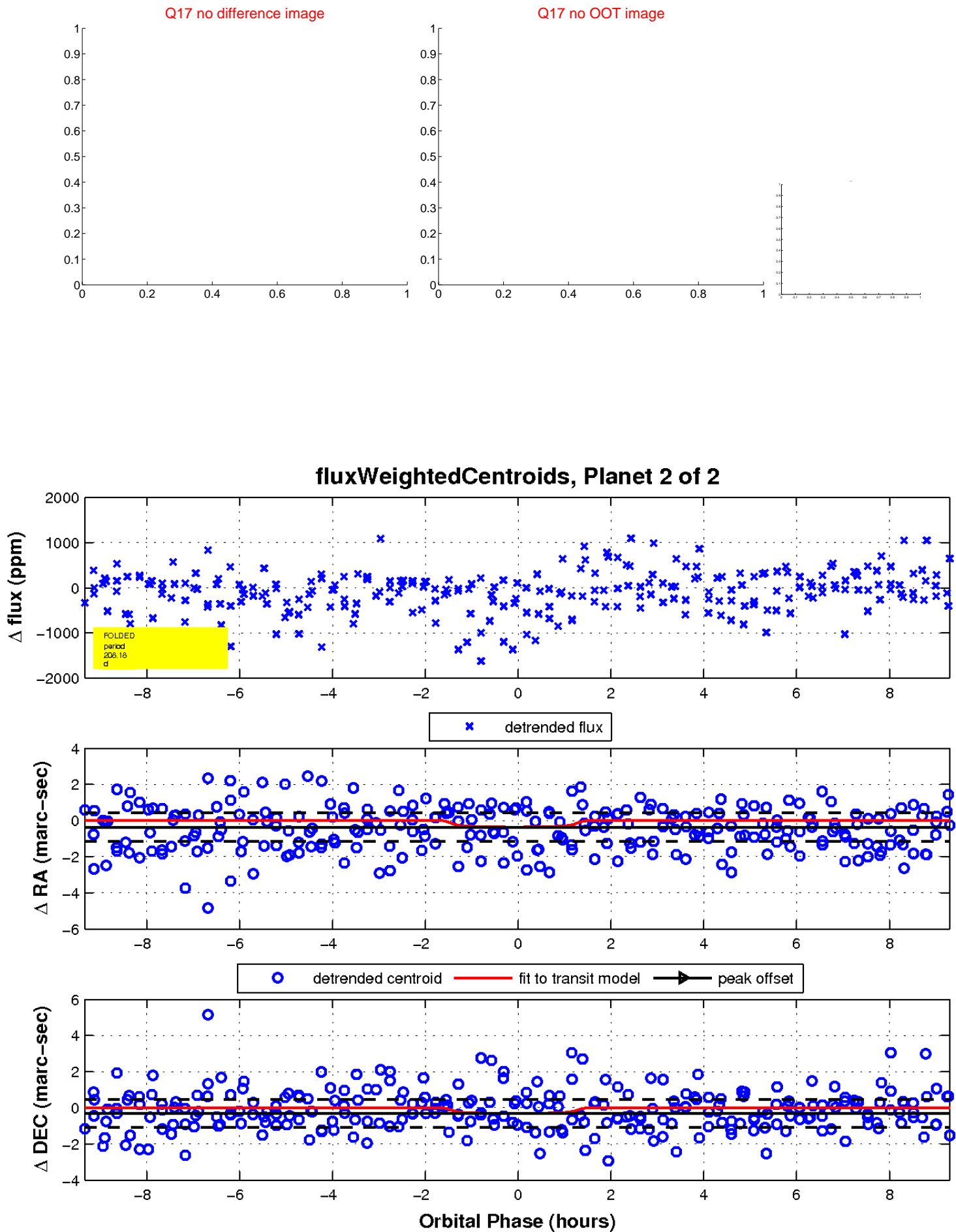


Q16 no OOT image





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



UKIRT Image

Declination

