

# KIC 005426665

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005426665-01	OBS	No	305.730189	325.386576	11305.4	7.376	53.3	13.3	1.32	6329	14.04	3.01
005426665-02	OBS	No	319.751532	219.551005	51746.0	4.256	36.1	22.1	1.32	6329	41.64	2.83
005426665-03	OBS	No	602.909264	137.617565	12071.7	12.760	34.0	14.4	1.32	6329	14.51	1.22
005426665-04	OBS	No	230.141666	143.145257	1456.4	2.355	21.0	1.3	1.32	6329	5.62	4.39
005426665-05	OBS	No	461.614554	187.376347	741.1	10.500	12.6	-1.0	1.32	6329	3.60	1.74

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005426665-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005426665-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS— CENT_FEW_DIFFS
005426665-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT— MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005426665-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT— MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005426665-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS— CENT_NOFITS—HALO_GHOST

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

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

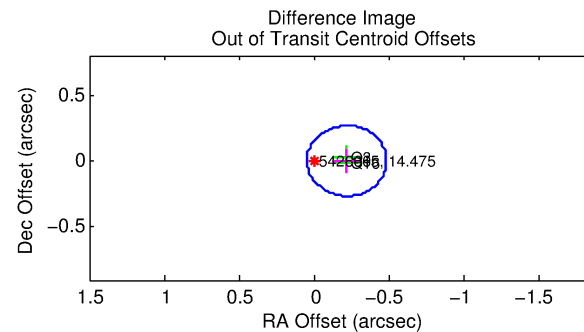
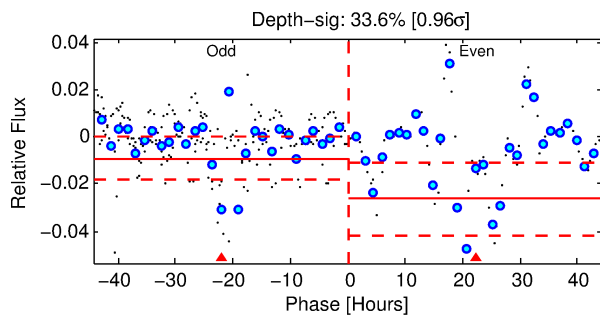
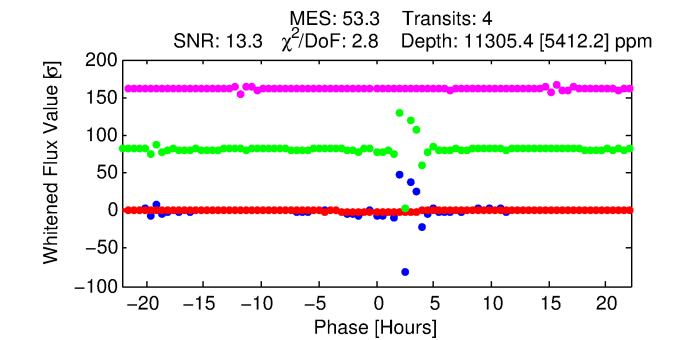
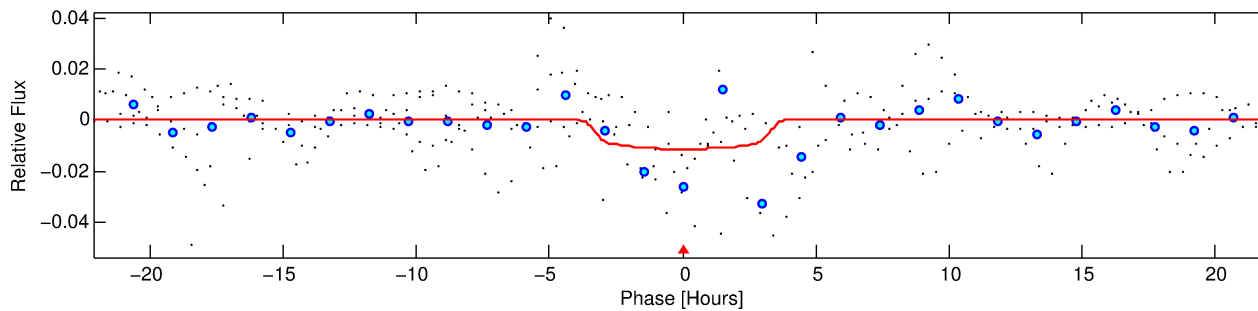
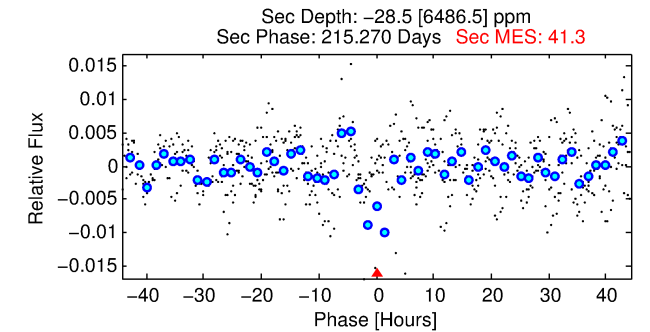
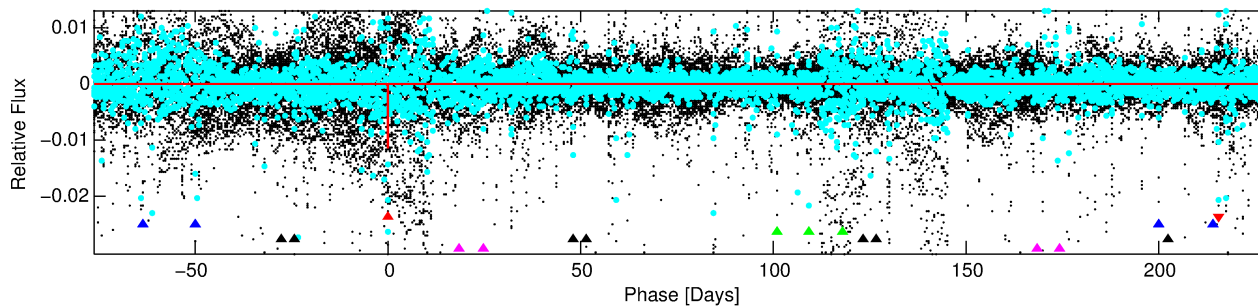
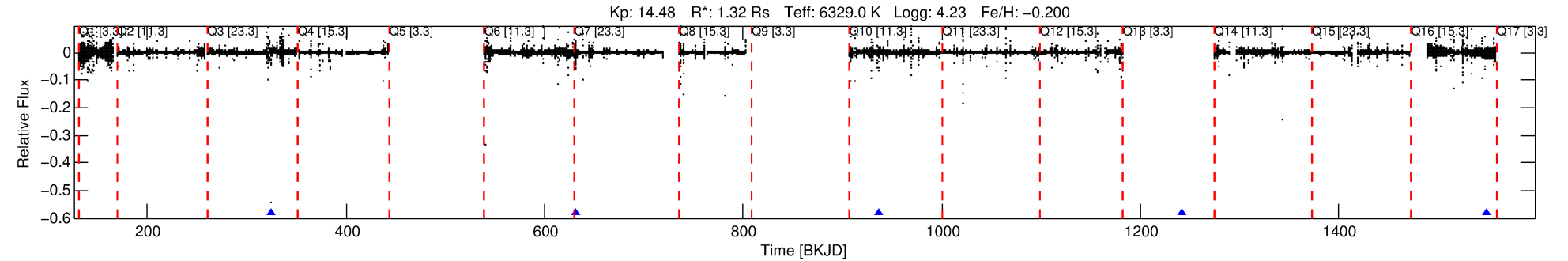
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005426665-01

No Significant Match Found

# DV One-Page Summary

KIC: 5426665 Candidate: 1 of 5 Period: 305.730 d



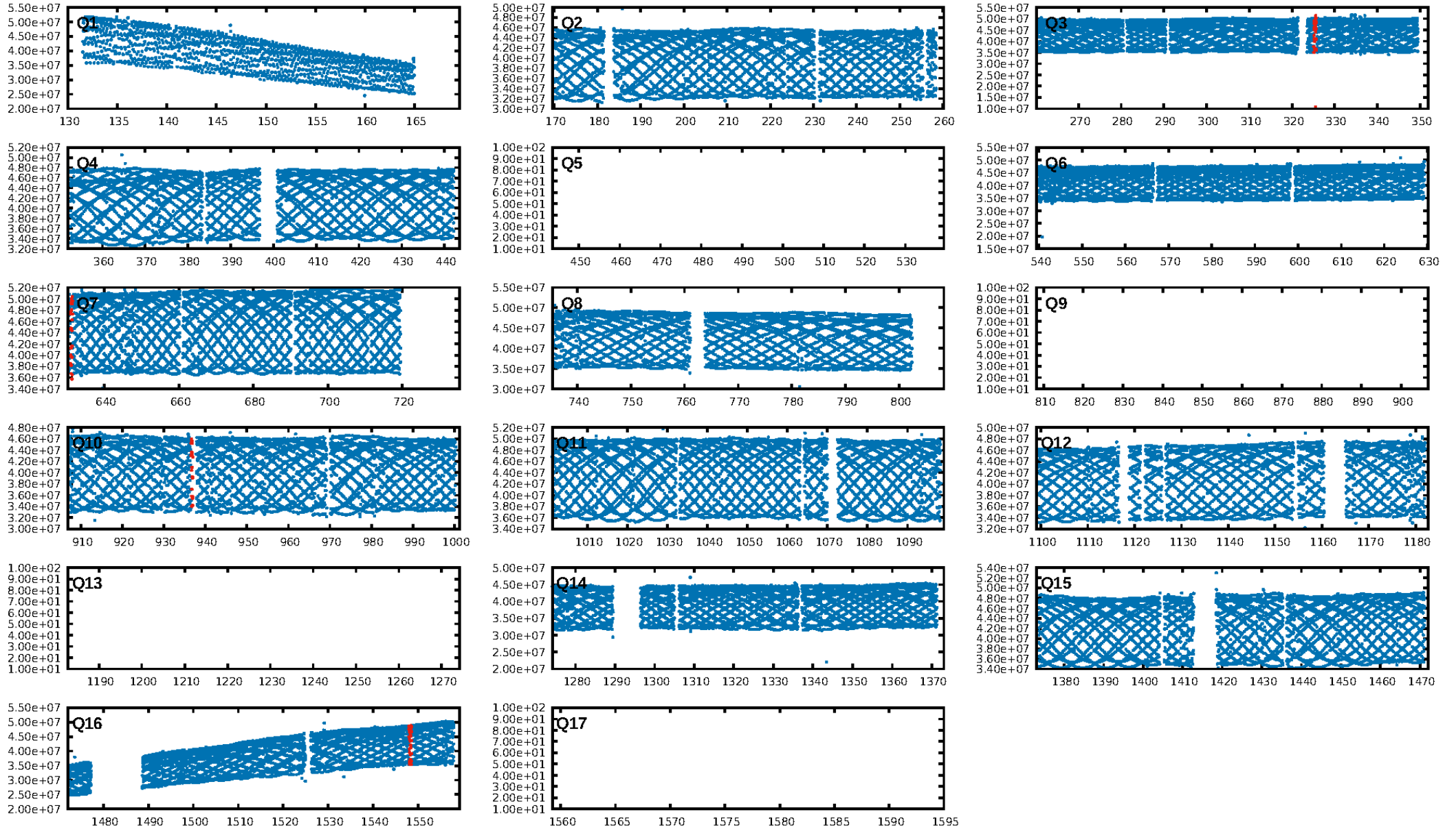
## DV Fit Results:

Period = 305.73019 [0.02145] d  
Epoch = 325.3866 [0.0392] BKJD  
Rp/R\* = 0.0977 [0.0620]  
a/R\* = 347.59 [928.23]  
b = 0.01 [433.70]  
Seff = 3.01 [1.11]  
Teq = 336 [31] K  
Rp = 14.04 [9.81] Re  
a = 0.9106 [0.2192] AU  
Ag = N/A  
Teffp = N/A

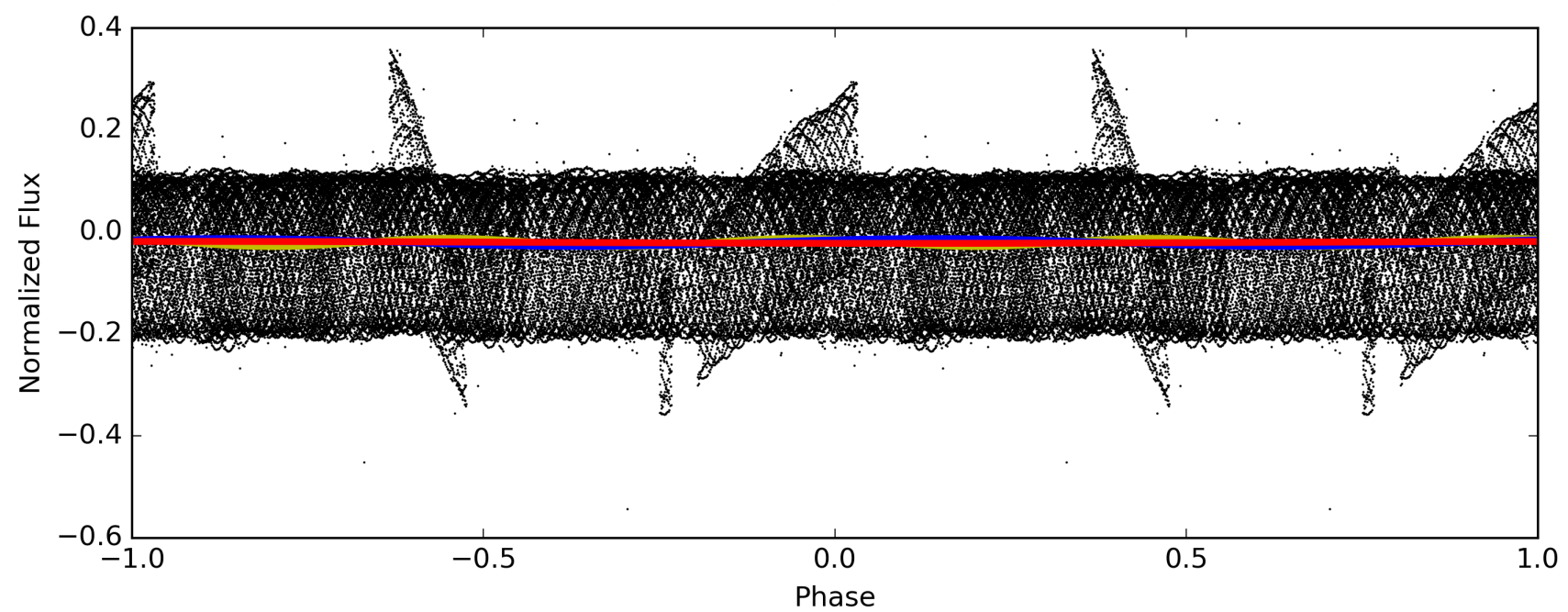
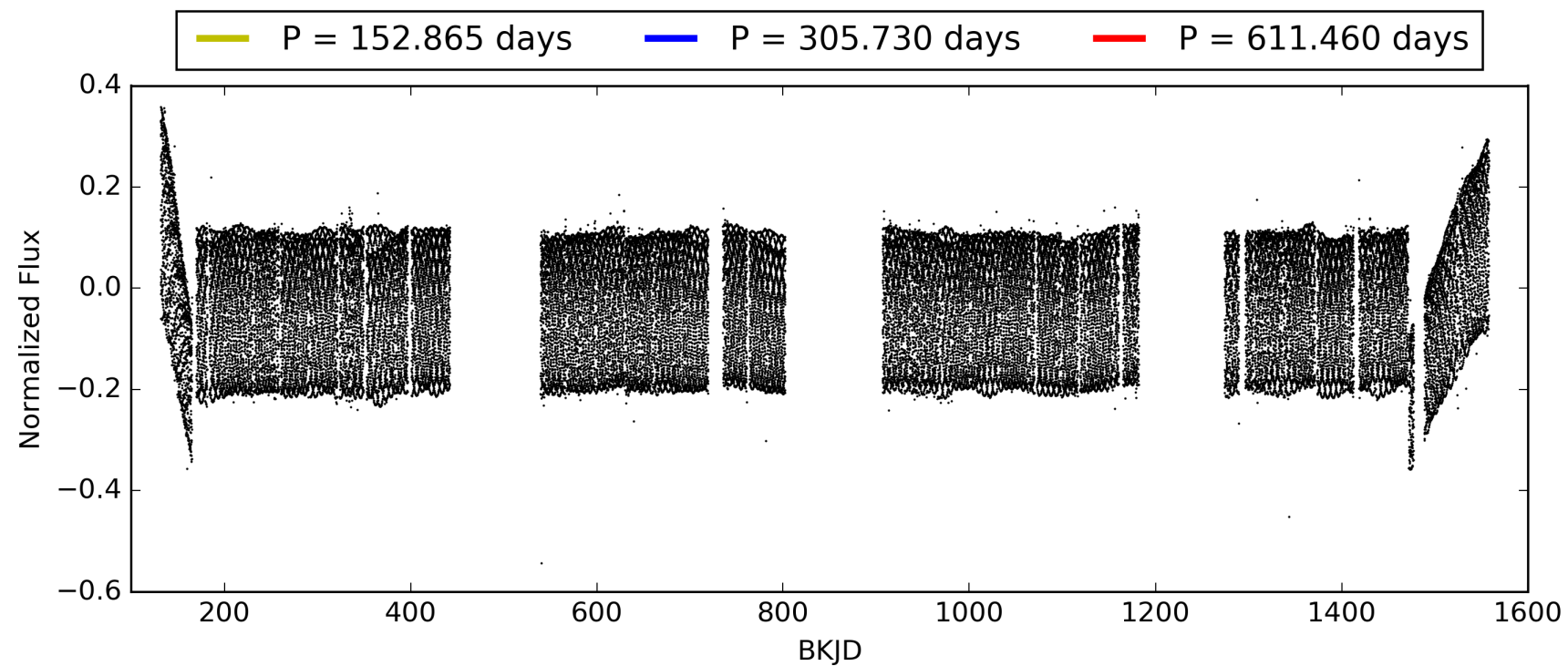
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [234.30 $\sigma$ ]  
LongPeriod-sig: 100.0% [39.52 $\sigma$ ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.4%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 0.1953  
Centroid-sig: N/A  
Centroid-so: 0.414 arcsec [7.42 $\sigma$ ]  
OotOffset-rm: 0.221 arcsec [2.49 $\sigma$ ]  
KicOffset-rm: 0.423 arcsec [4.77 $\sigma$ ]  
OotOffset-st: 0/1/1/0 [2]  
KicOffset-st: 0/1/1/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [2/2]

# TCE 005426665-01, PDC Light Curves



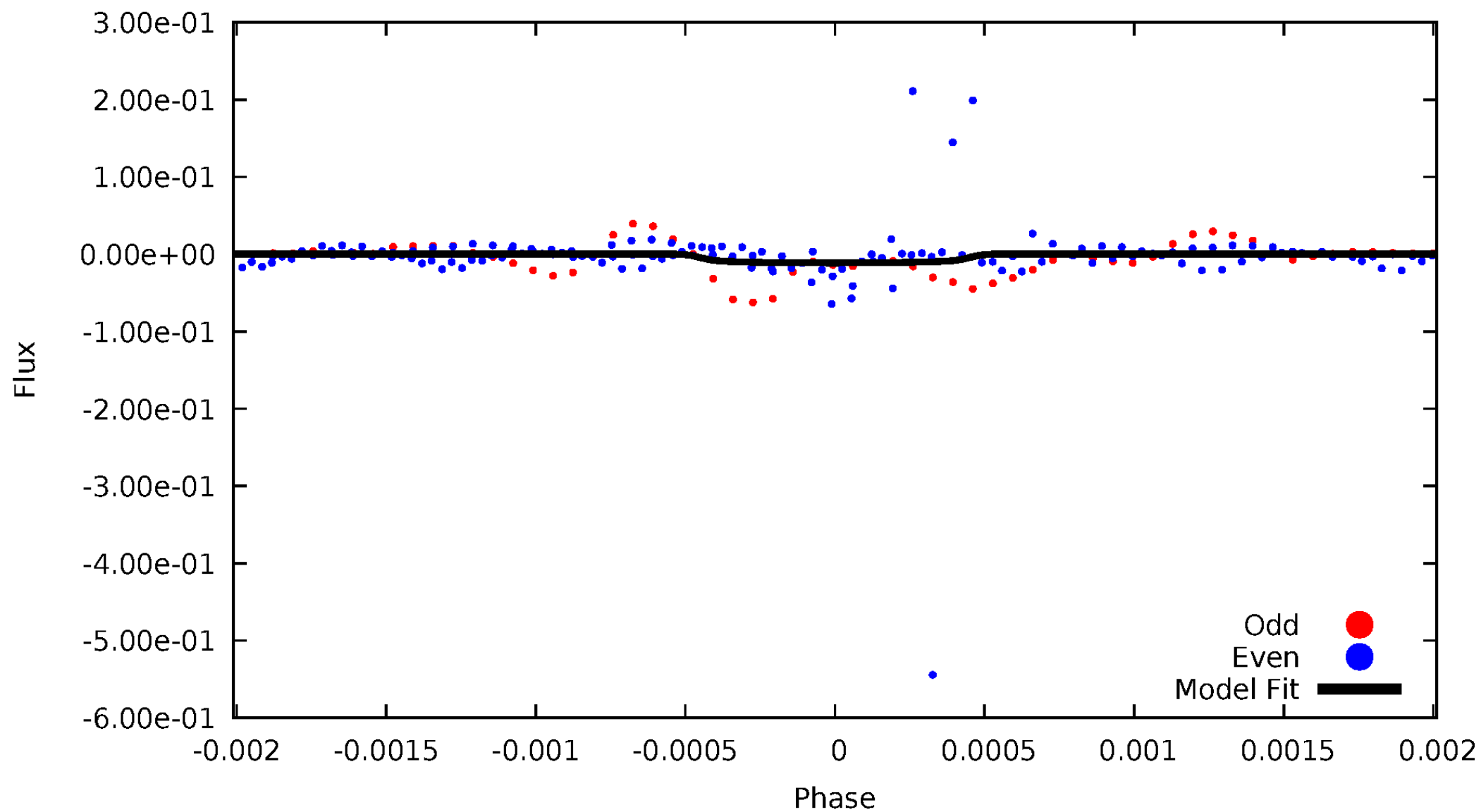
TCE 005426665-01





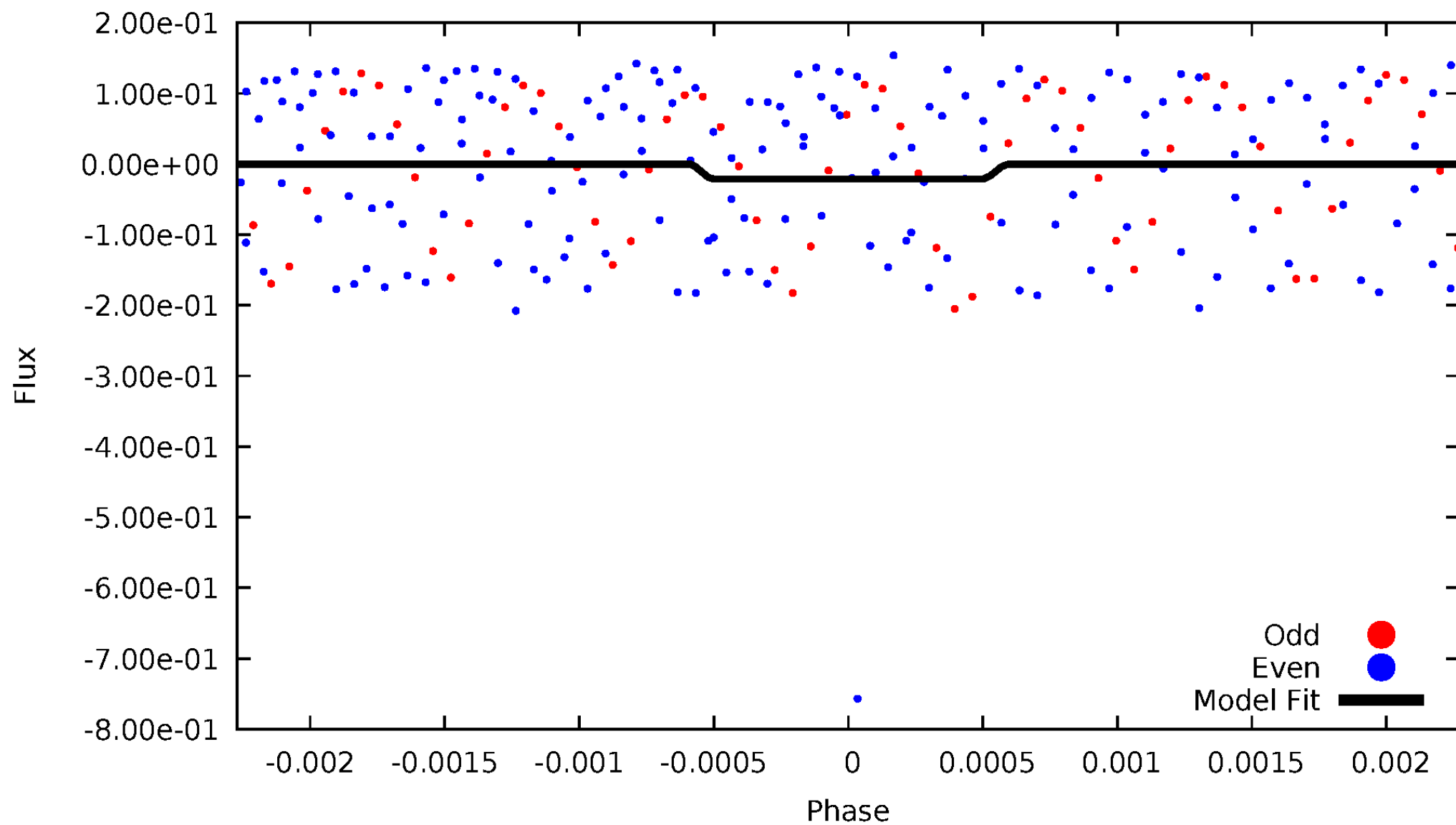
# DV Odd/Even

TCE 005426665-01



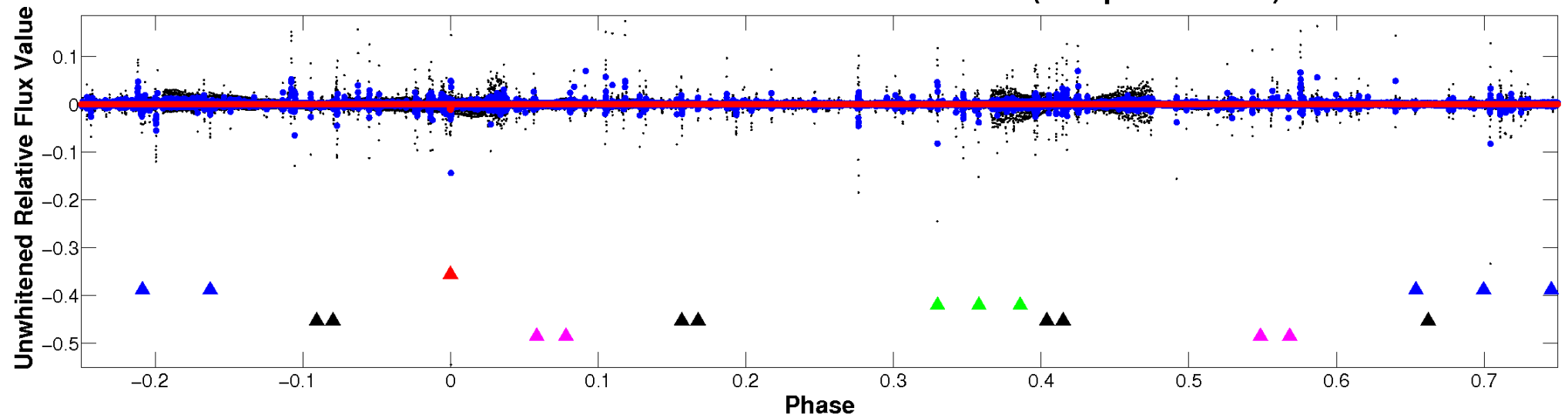
# ALT Odd/Even

TCE 005426665-01

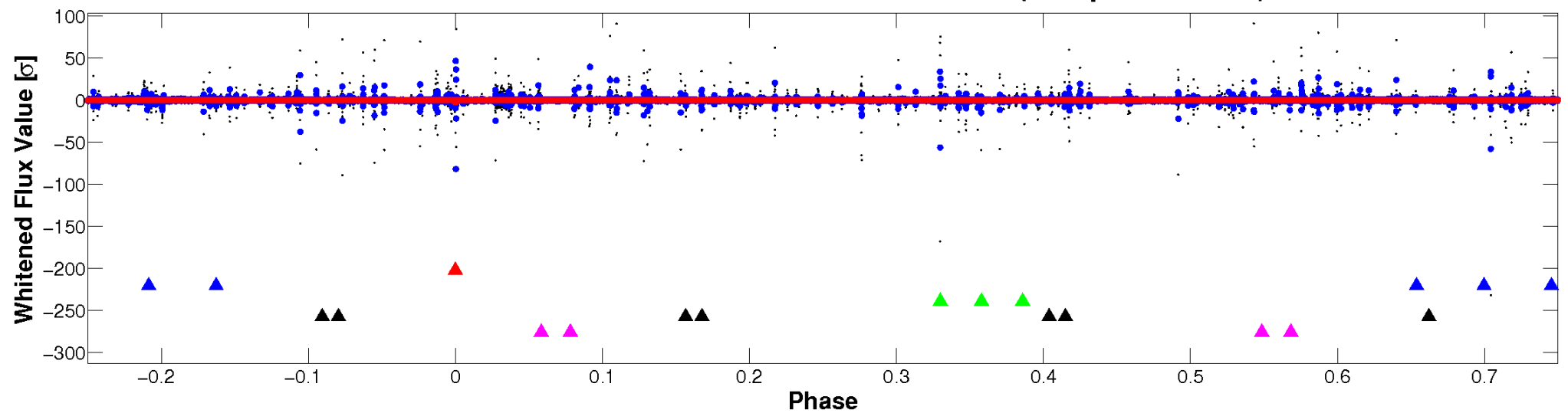


# Non-Whitened Vs. Whitened Light Curve

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

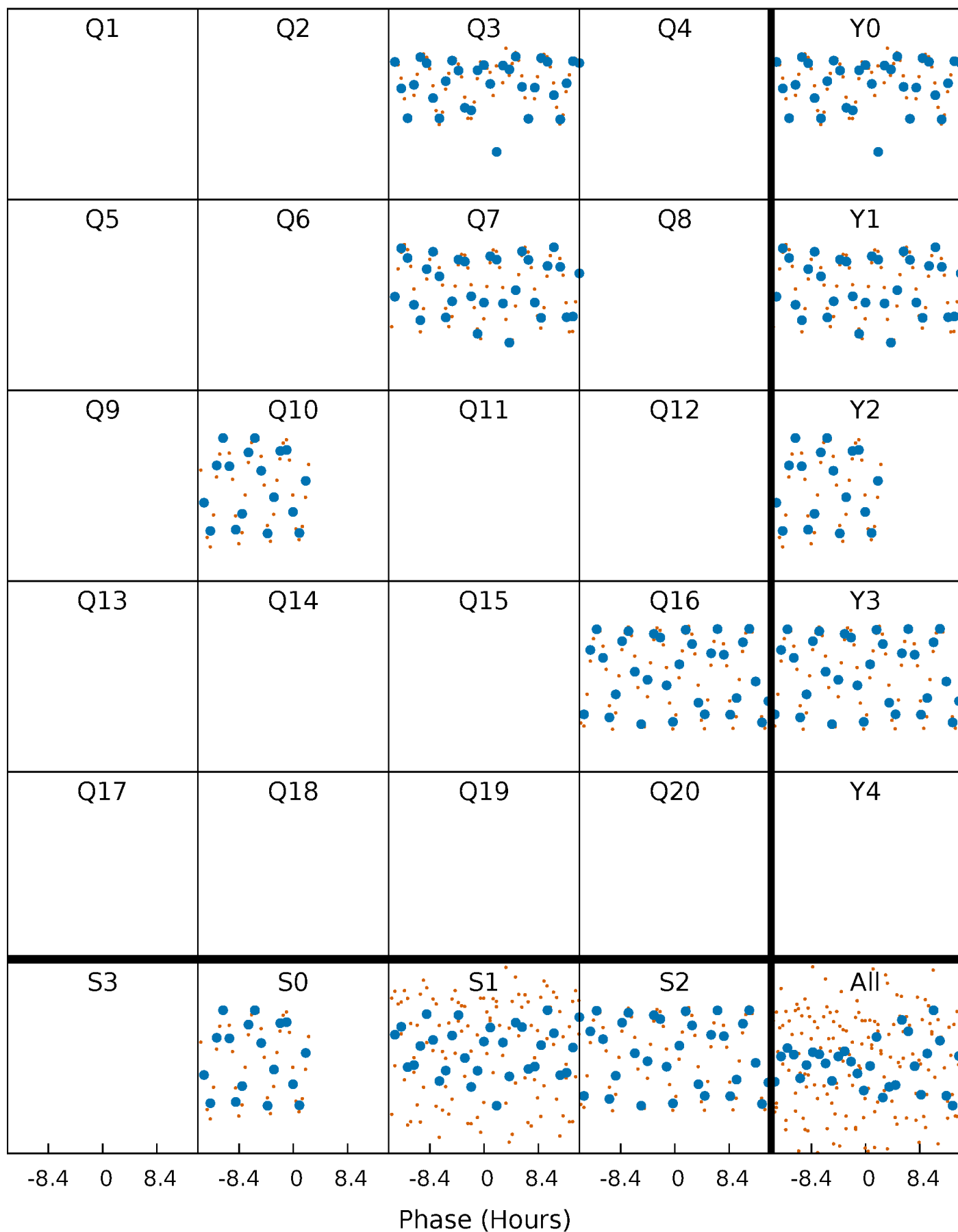


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



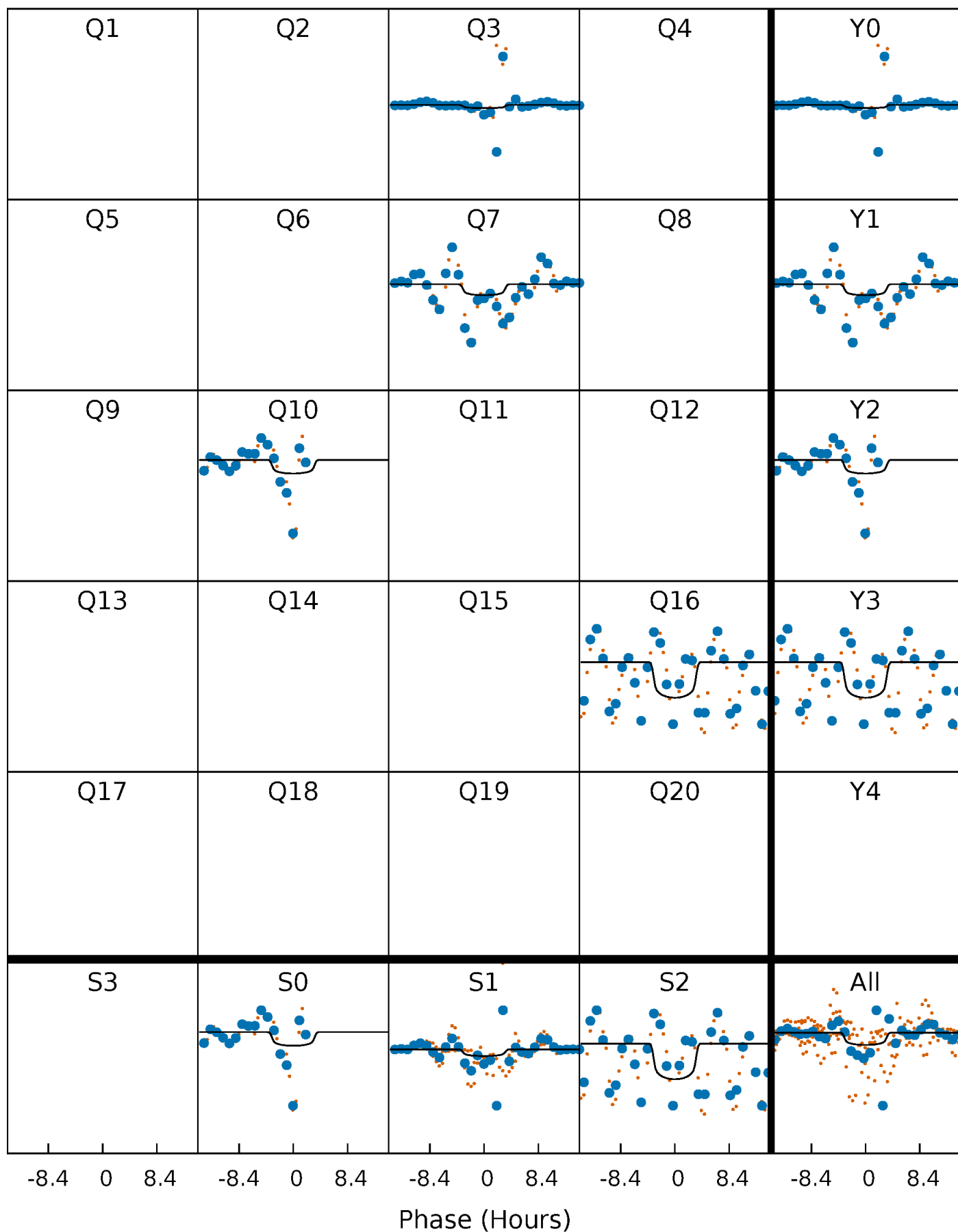
# PDC Quarter-Phased Transit Curves

TCE 005426665-01 P=305.730189 Days  $T_0=325.386576$  (BKJD)



# DV Quarter-Phased Transit Curves

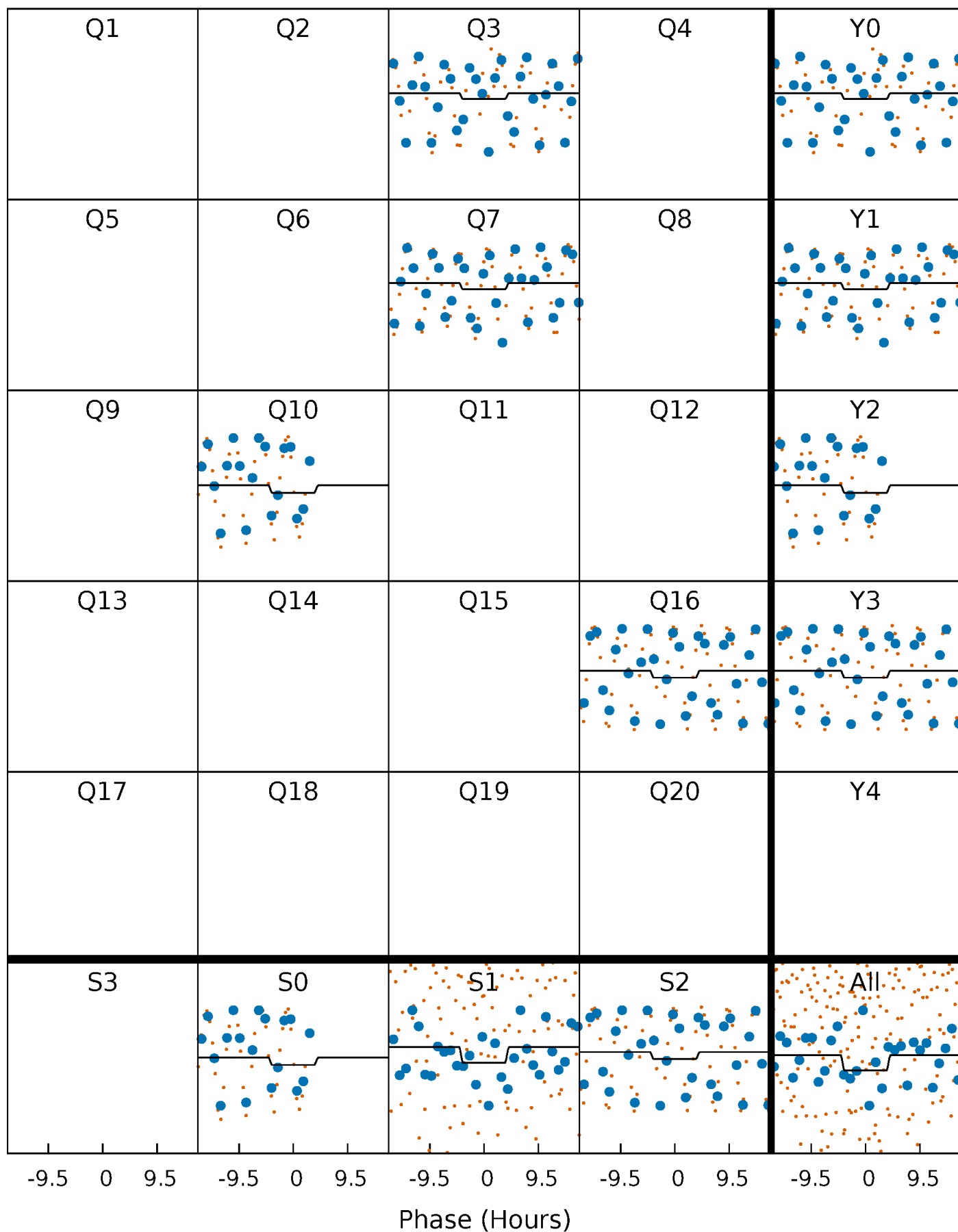
TCE 005426665-01 P=305.730189 Days  $T_0=325.386576$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

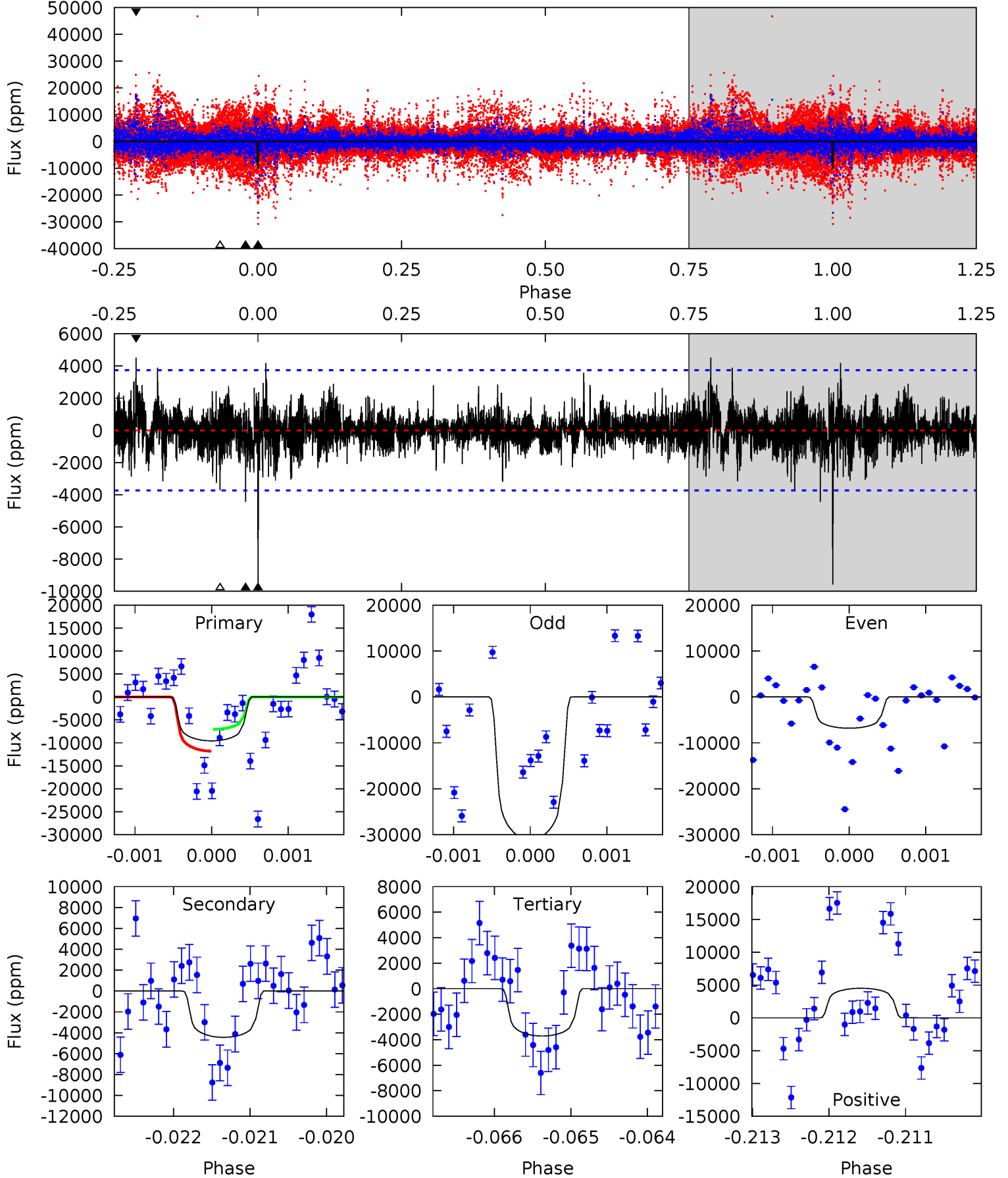
TCE 005426665-01 P=305.681566 Days  $T_0=325.475952$  (BKJD)



# DV Model-Shift Uniqueness Test

005426665-01, P = 305.730189 Days, E = 19.656387 Days

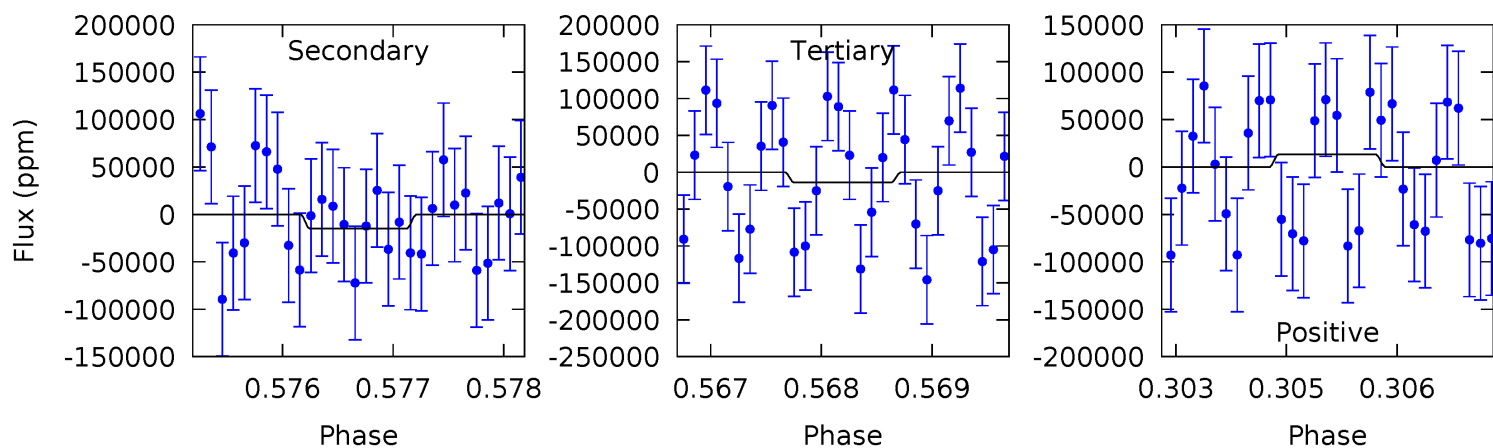
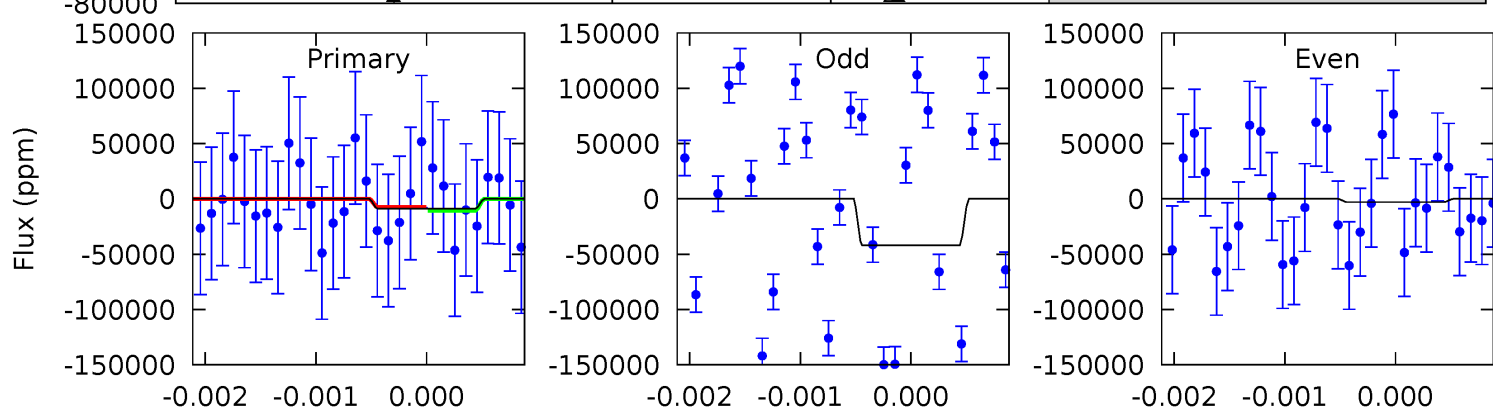
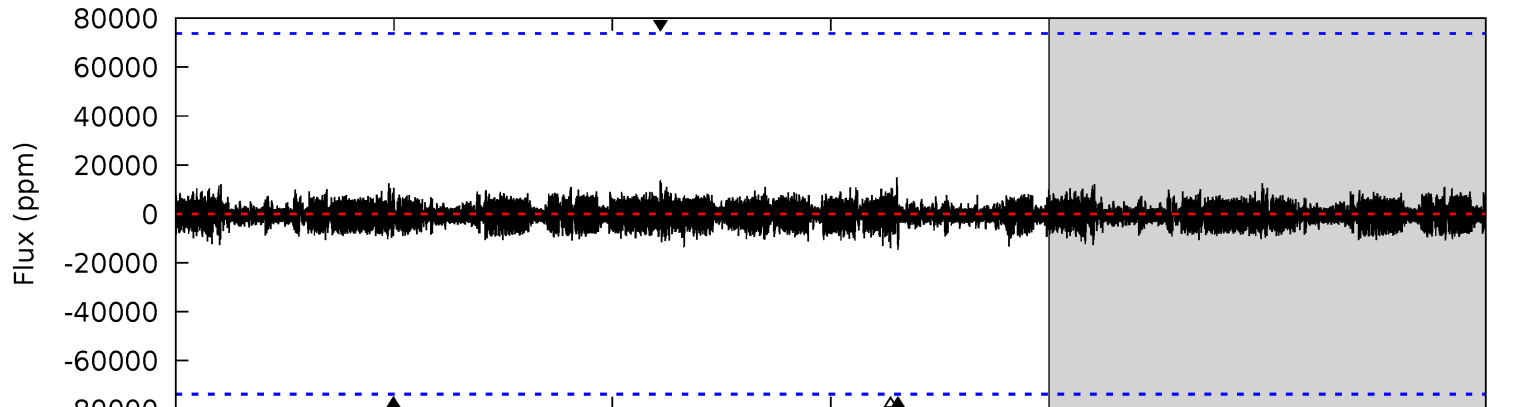
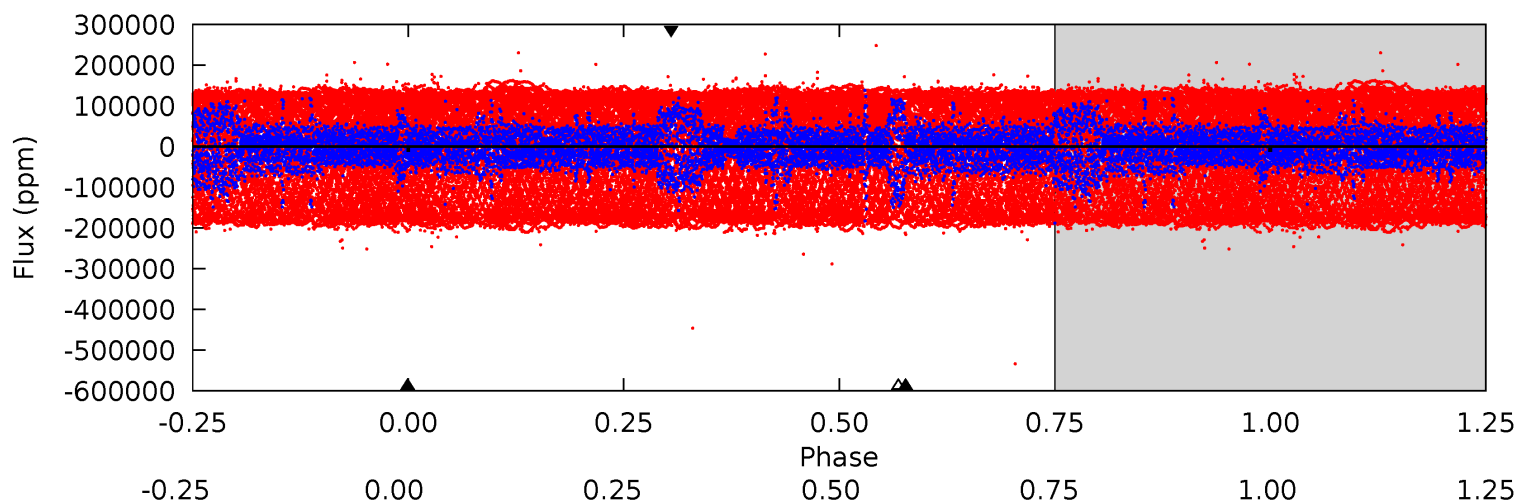
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.0	6.47	5.41	6.58	5.45	3.29	1.22	8.54	7.37	1.06	-0.11	15.1	0.91	0.32	3.50



# Alt Model-Shift Uniqueness Test

005426665-01, P = 305.681566 Days, E = 19.794386 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
0.66	1.09	1.02	0.98	5.43	3.25	0.28	-0.37	-0.32	0.07	0.11	1.29	1.27	0.50	0.11



### Stellar Parameters For KIC 005426665

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6329^{+169}_{-206}$	$4.231^{+0.167}_{-0.185}$	$-0.200^{+0.250}_{-0.300}$	$1.317^{+0.384}_{-0.279}$	$1.074^{+0.185}_{-0.123}$	$0.662^{+0.625}_{-0.320}$
	+3%/-3%	+4%/-4%	+125%/-150%	+29%/-21%	+17%/-11%	+94%/-48%
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 005426665-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-4439 \pm 686$	$15.18^{+9.19}_{-8.35}$	$470^{+32}_{-31}$	$5096^{+2457}_{-849}$	$8988^{+34532}_{-5654}$
Alt.	$-14818 \pm 13592$	$20.88^{+9.84}_{-9.02}$	$469^{+36}_{-34}$	$5733^{+2265}_{-1978}$	$14885^{+41817}_{-13221}$

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

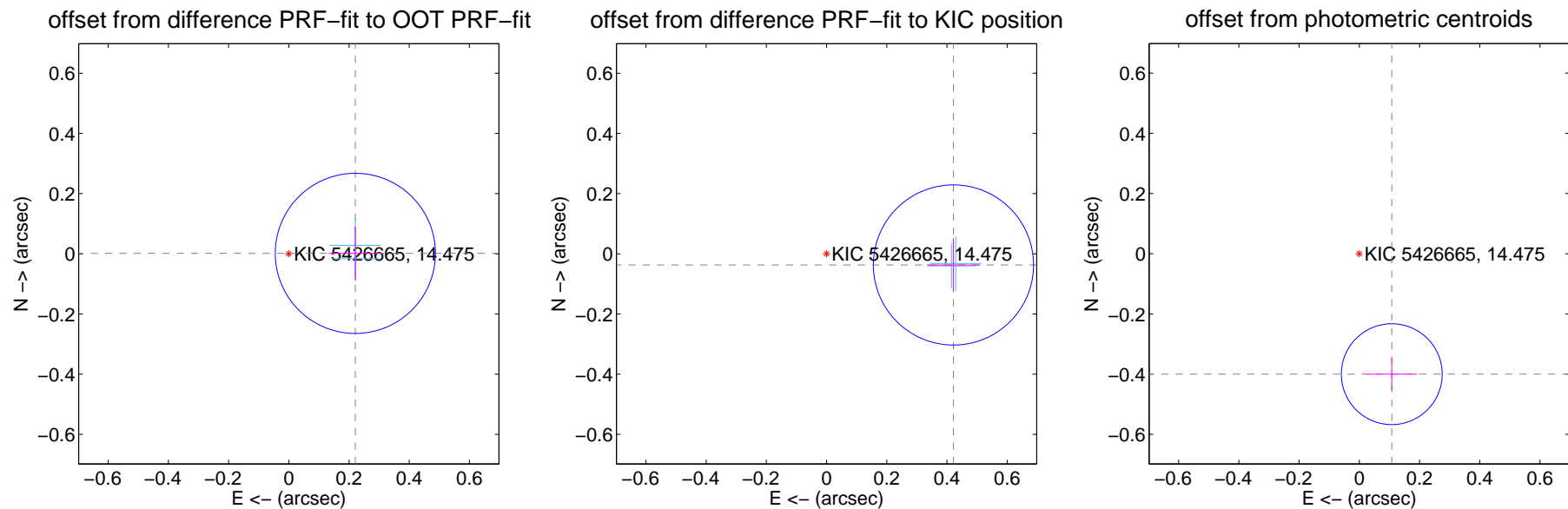
## DV Centroid Data

Supplemental centroid analysis for 005426665-01. Kepler magnitude: 14.47. Transit SNR 13.28

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

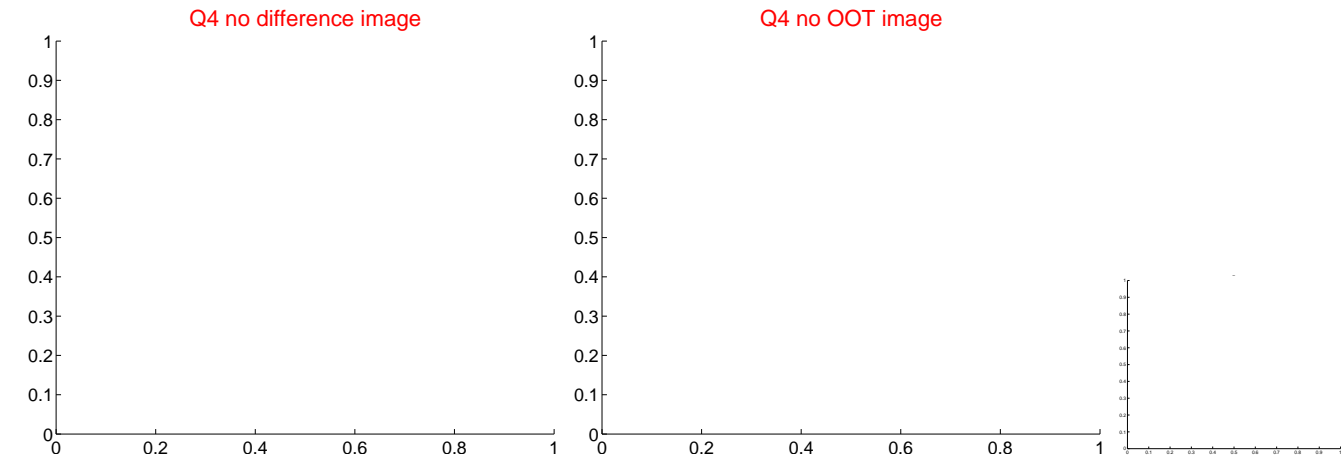
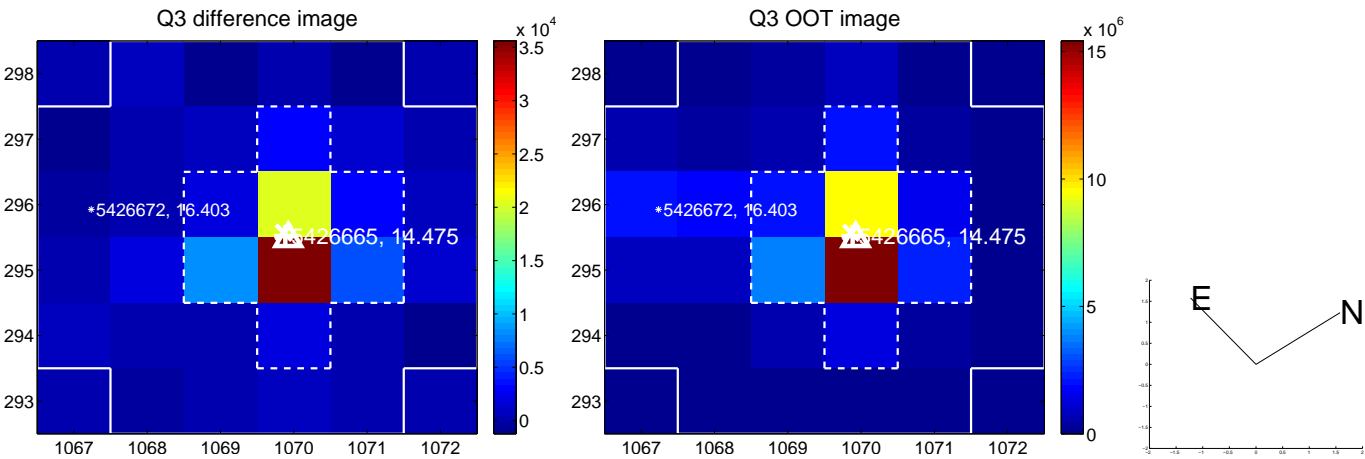
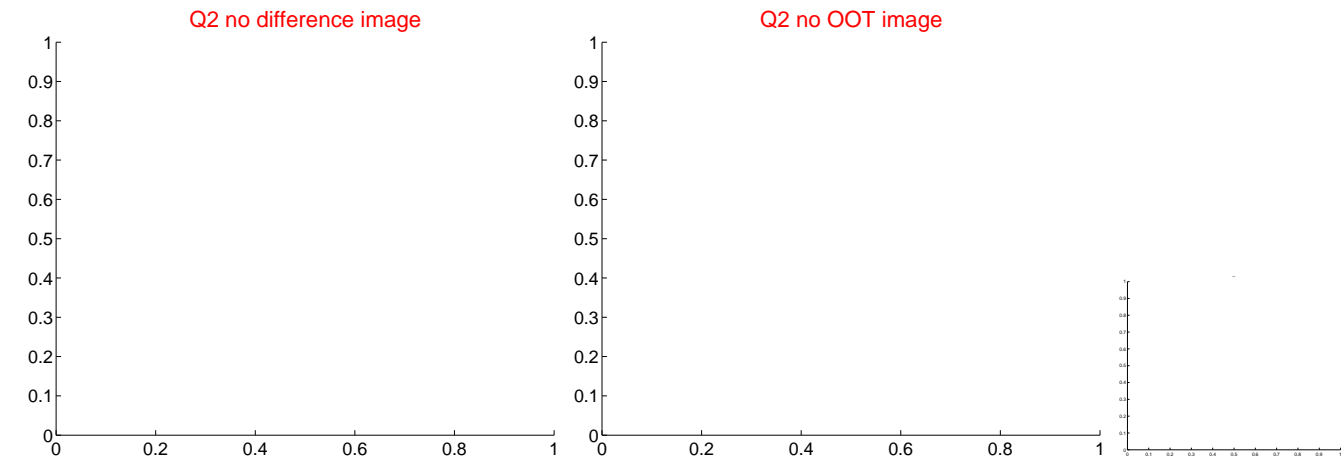
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.221 \pm 0.089$	2.49	$-0.221 \pm 0.089$	$0.001 \pm 0.089$
PRF-fit source offset from KIC position	$0.423 \pm 0.089$	4.77	$-0.421 \pm 0.089$	$-0.037 \pm 0.089$
photometric centroid source offset	$0.41 \pm 0.06$	7.42	$-0.11 \pm 0.08$	$-0.40 \pm 0.05$



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.



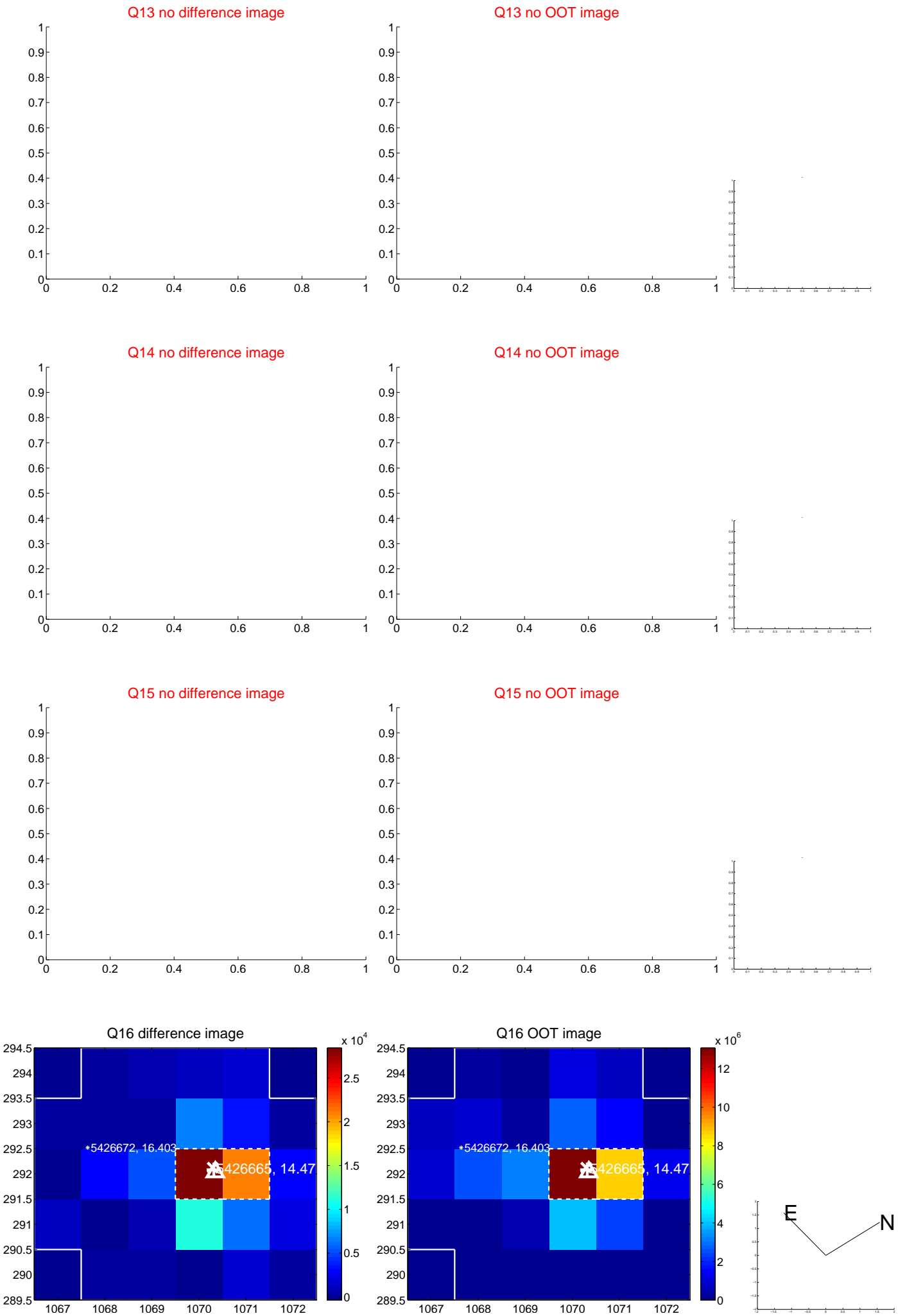
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



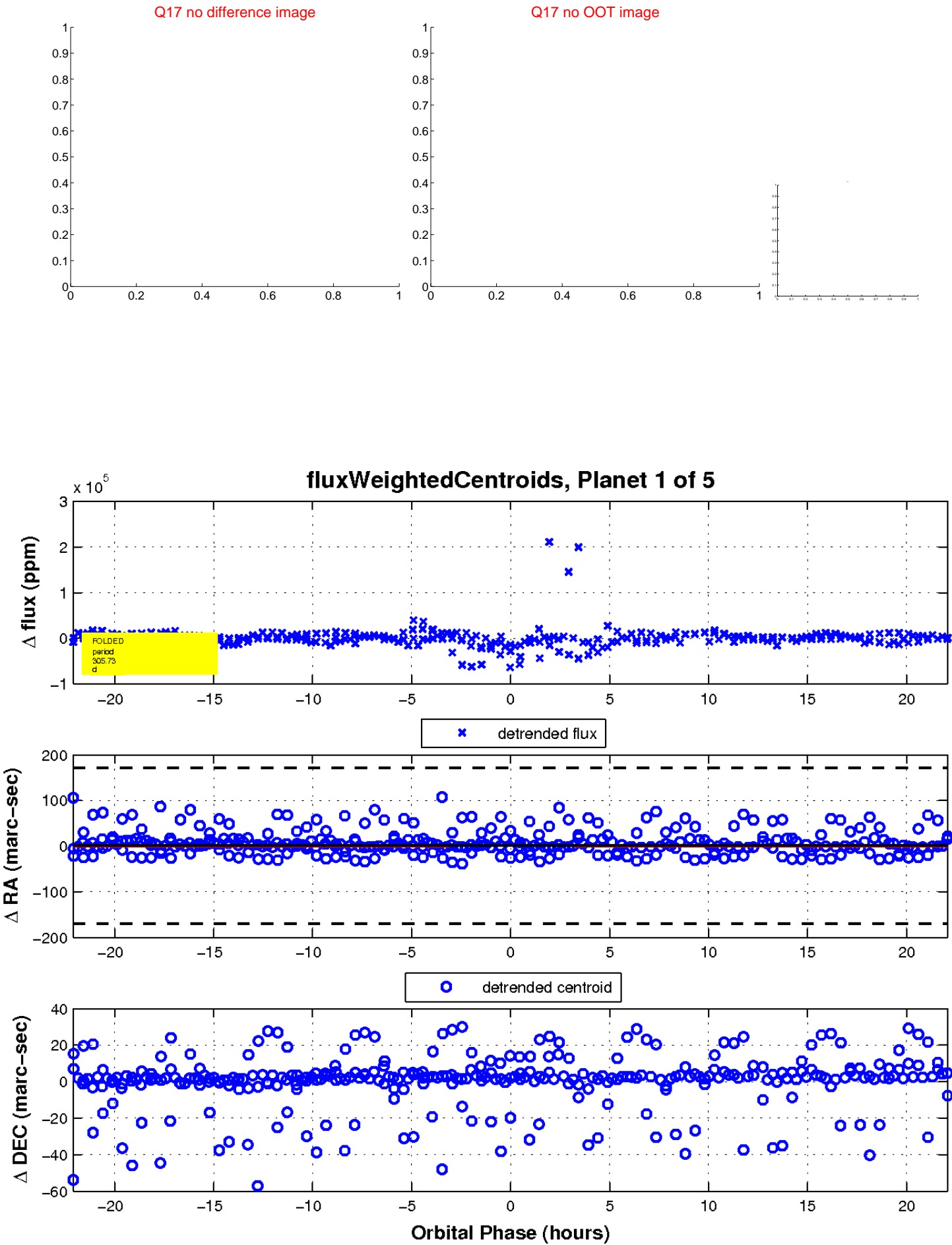
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



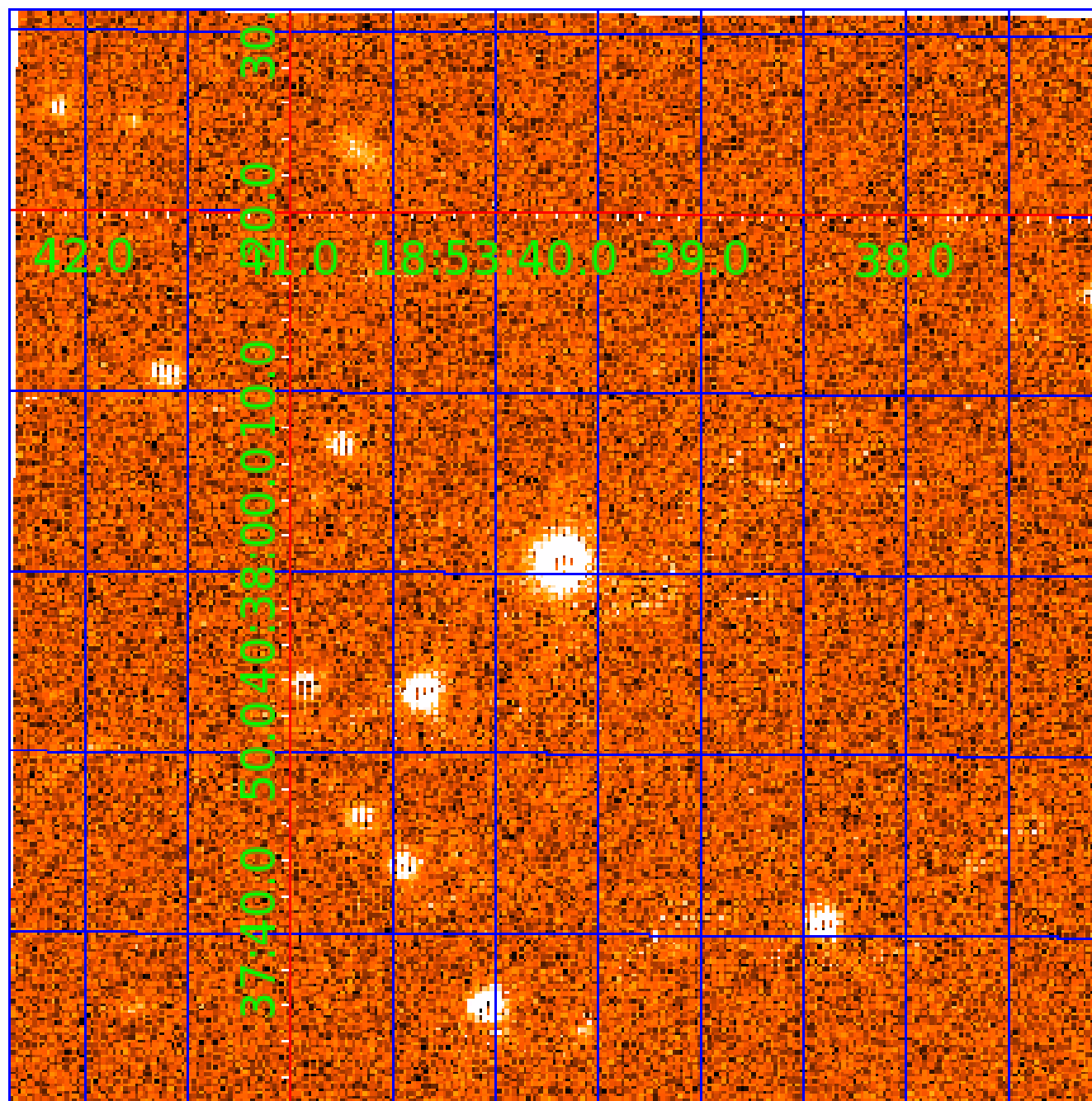
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





# UKIRT Image

Declination



# KIC 005426665

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005426665-01	OBS	No	305.730189	325.386576	11305.4	7.376	53.3	13.3	1.32	6329	14.04	3.01
005426665-02	OBS	No	319.751532	219.551005	51746.0	4.256	36.1	22.1	1.32	6329	41.64	2.83
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005426665-05	OBS	No	461.614554	187.376347	741.1	10.500	12.6	-1.0	1.32	6329	3.60	1.74

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005426665-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005426665-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005426665-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005426665-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005426665-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

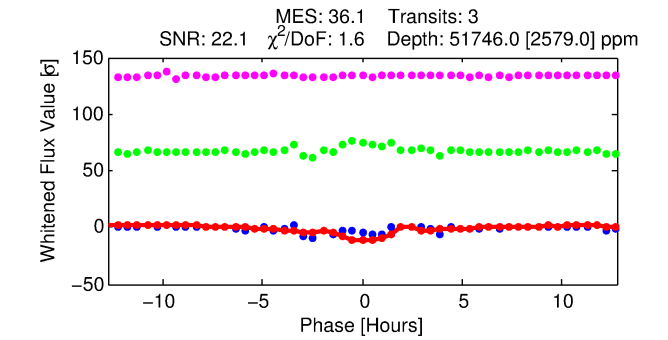
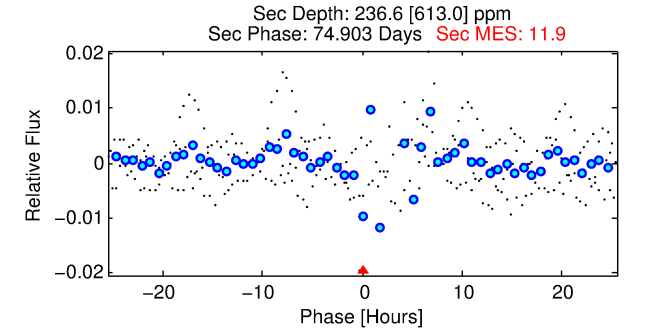
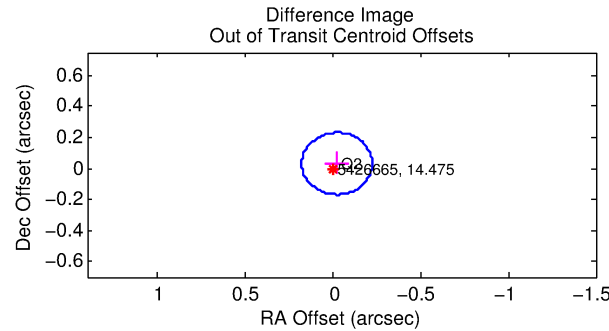
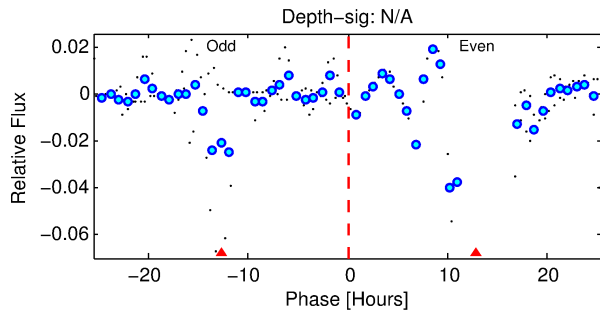
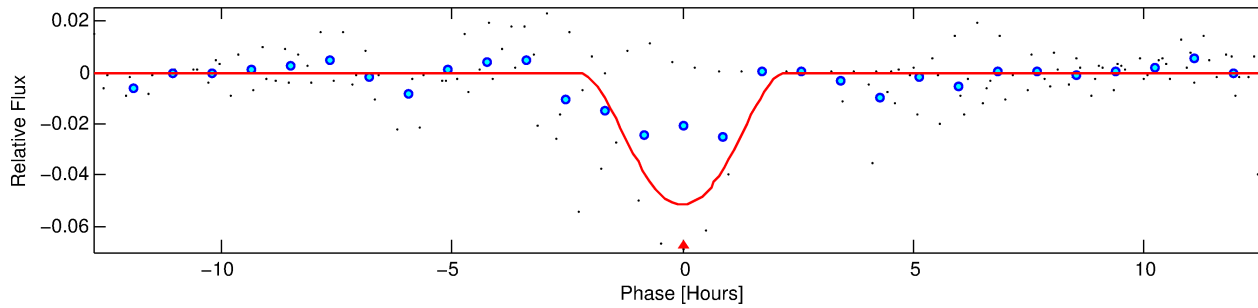
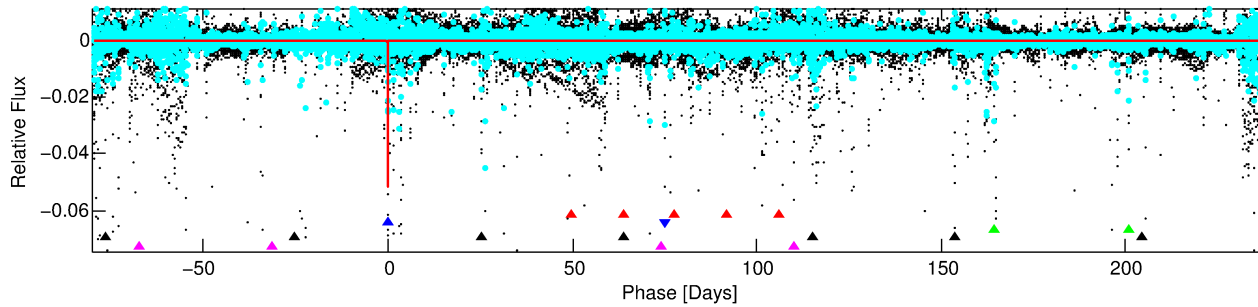
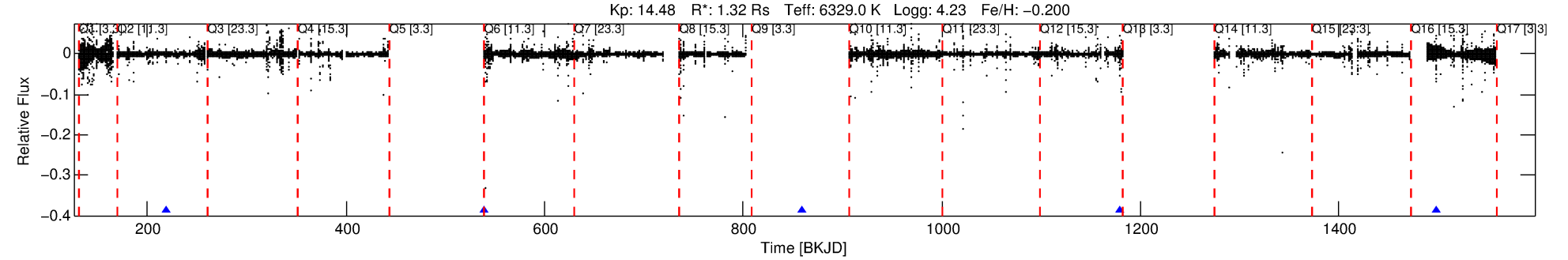
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005426665-02

No Significant Match Found

# DV One-Page Summary

KIC: 5426665 Candidate: 2 of 5 Period: 319.752 d



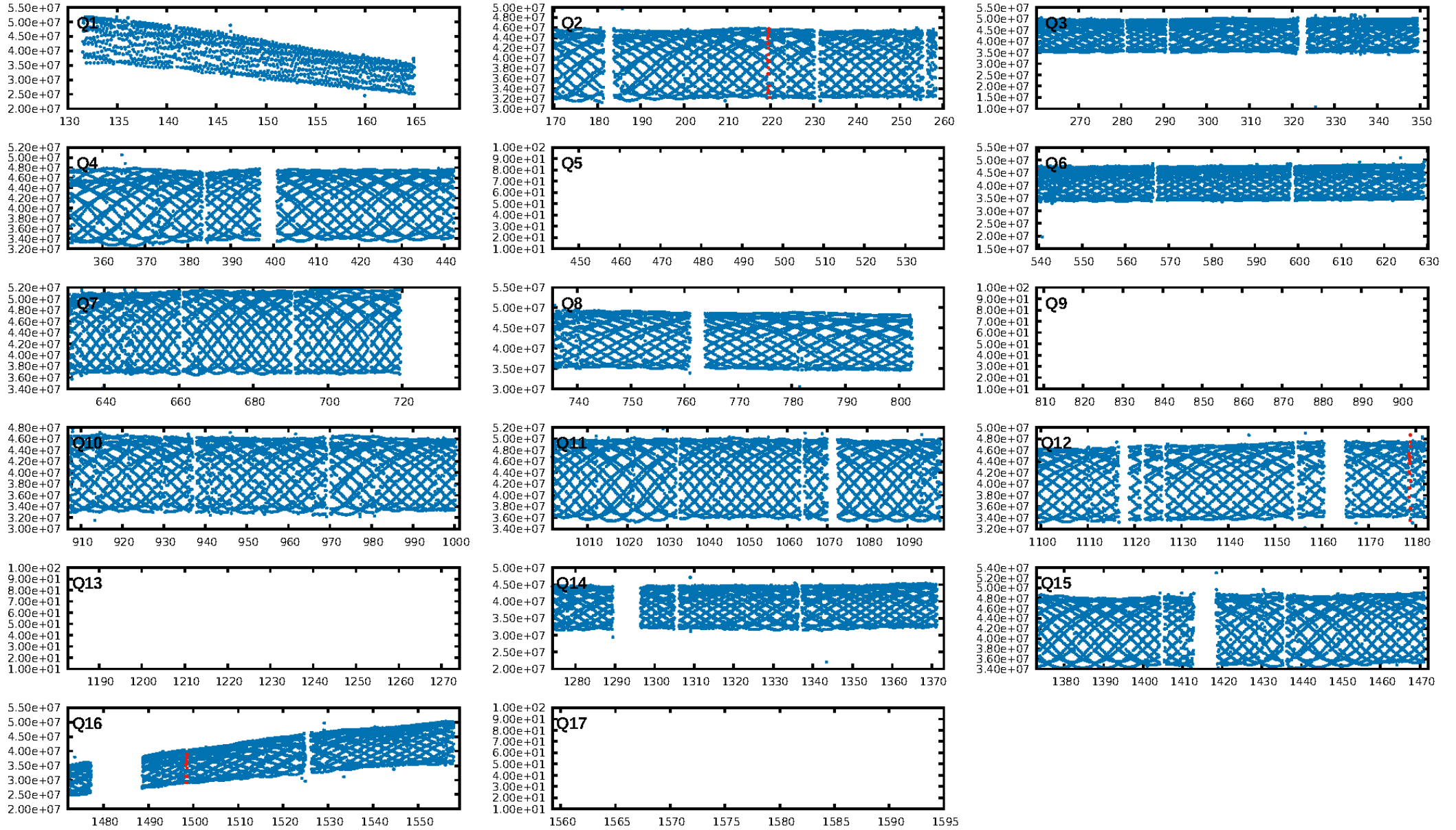
## DV Fit Results:

Period = 319.75153 [0.00194] d  
Epoch = 219.5510 [0.0025] BKJD  
Rp/R\* = 0.2897 [0.1868]  
a/R\* = 529.46 [37.22]  
b = 0.90 [0.30]  
Seff = 2.83 [1.04]  
Teq = 331 [30] K  
Rp = 41.64 [29.46] Re  
a = 0.9382 [0.2258] AU  
Ag = 66.08 [192.57] [0.34σ]  
Teffp = 1458 [1056] K [1.07σ]

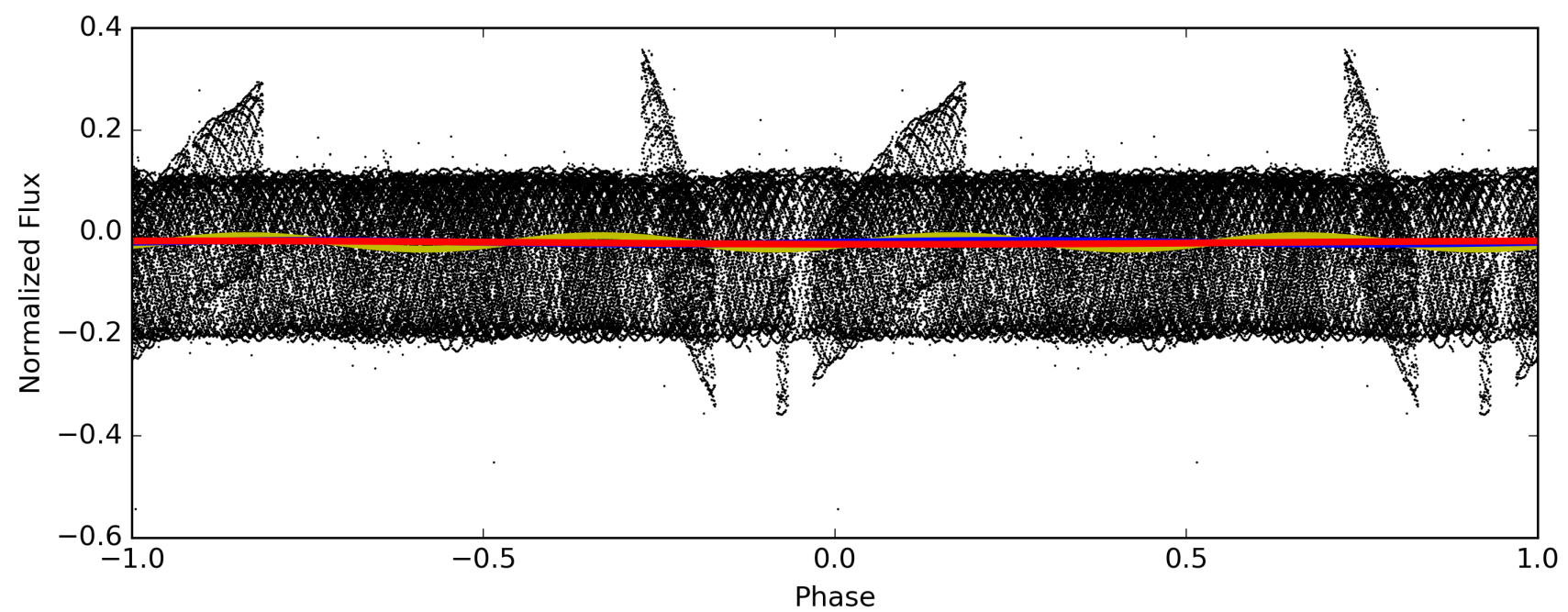
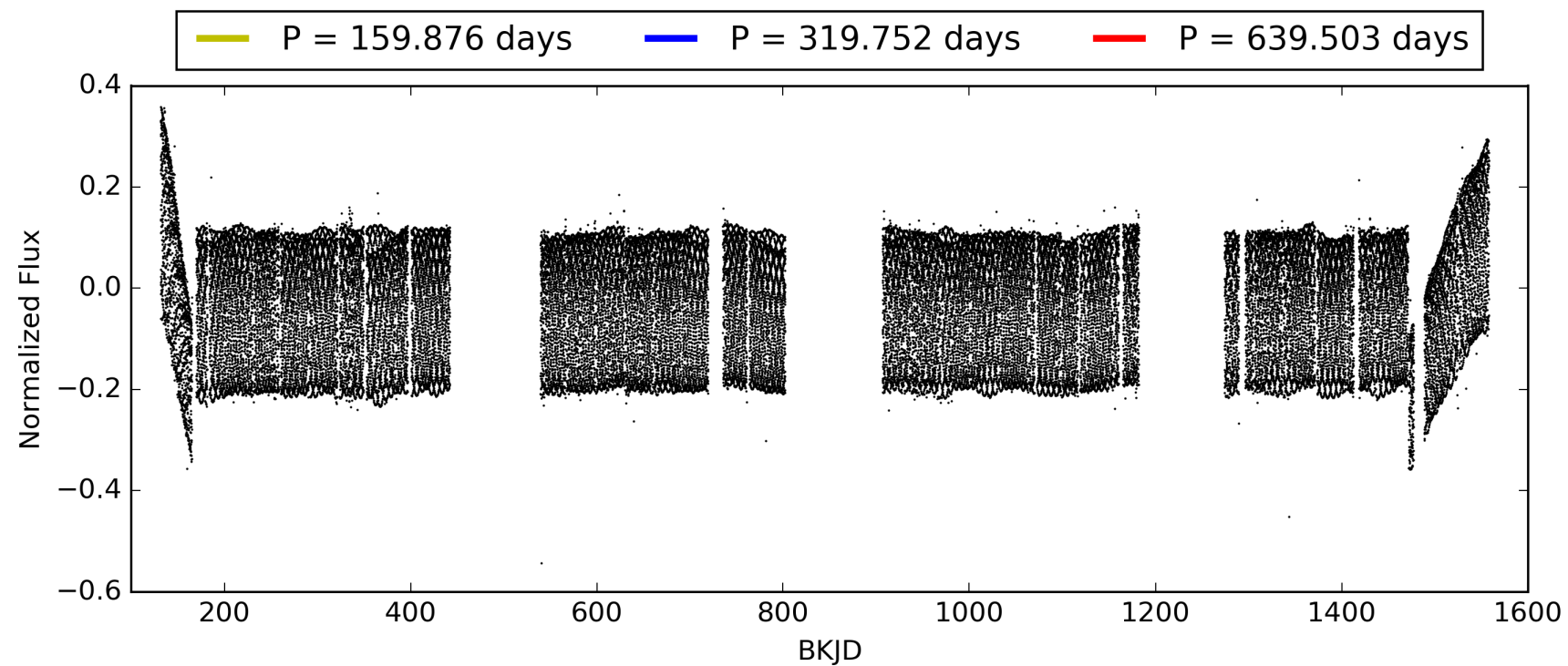
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [39.52σ]  
LongPeriod-sig: 100.0% [300.51σ]  
ModelChiSquare2-sig: 85.3%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.071  
Centroid-sig: N/A  
Centroid-so: 0.523 arcsec [24.70σ]  
OotOffset-rm: 0.039 arcsec [0.58σ]  
KicOffset-rm: 0.268 arcsec [4.01σ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [1/1]

# TCE 005426665-02, PDC Light Curves



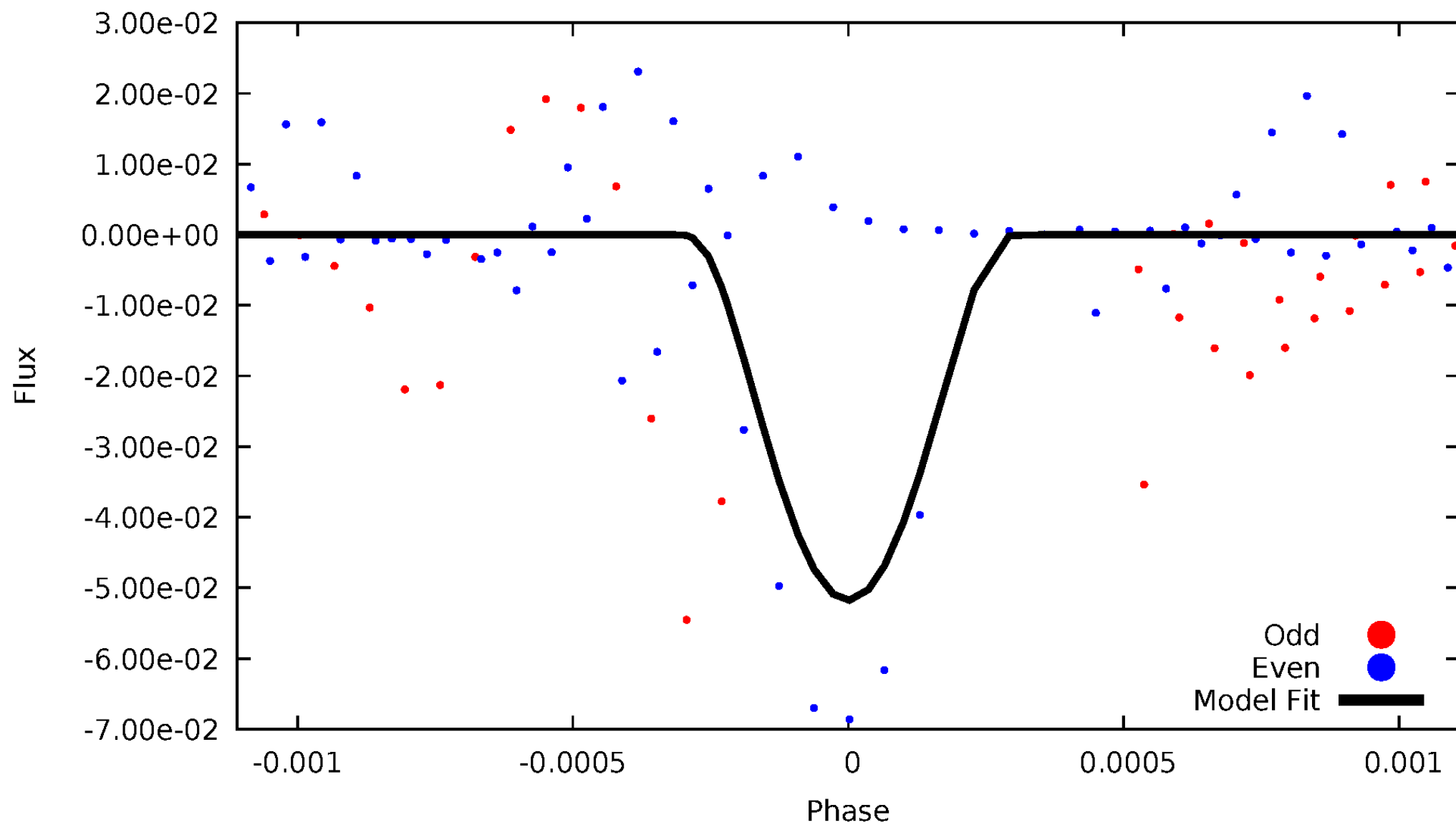
TCE 005426665-02





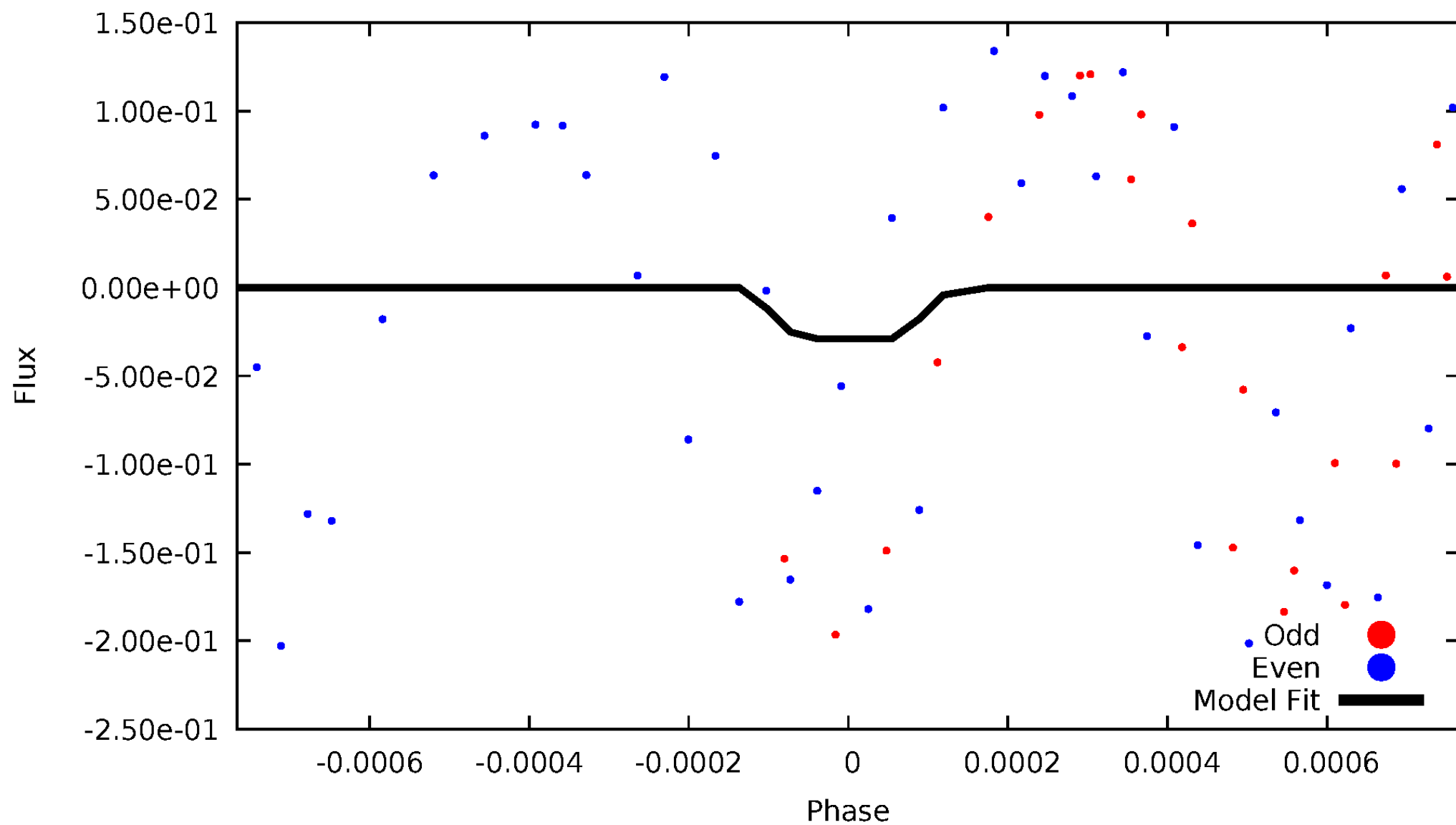
# DV Odd/Even

TCE 005426665-02



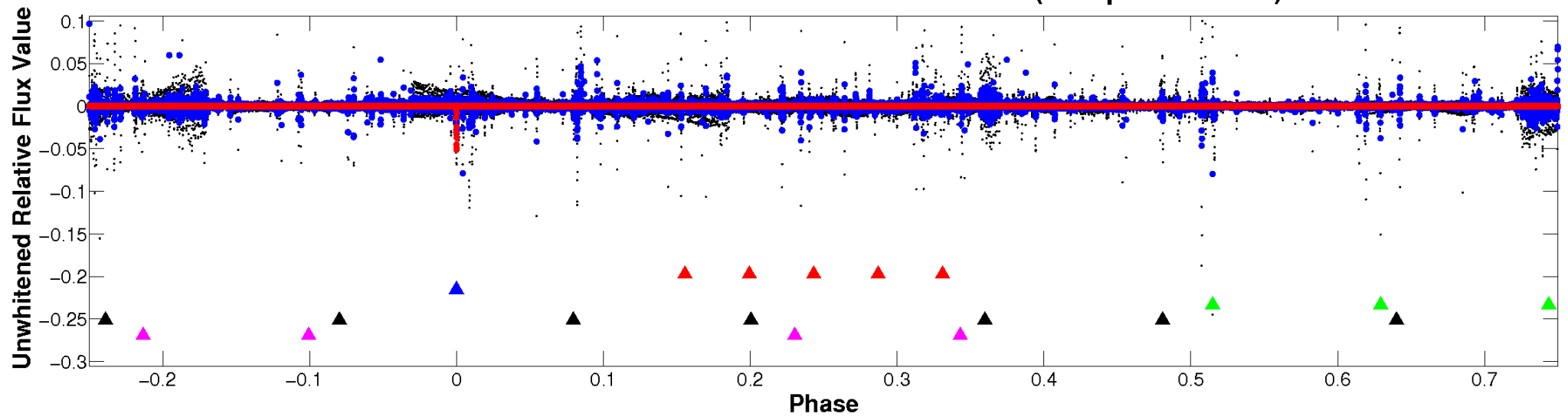
# ALT Odd/Even

TCE 005426665-02

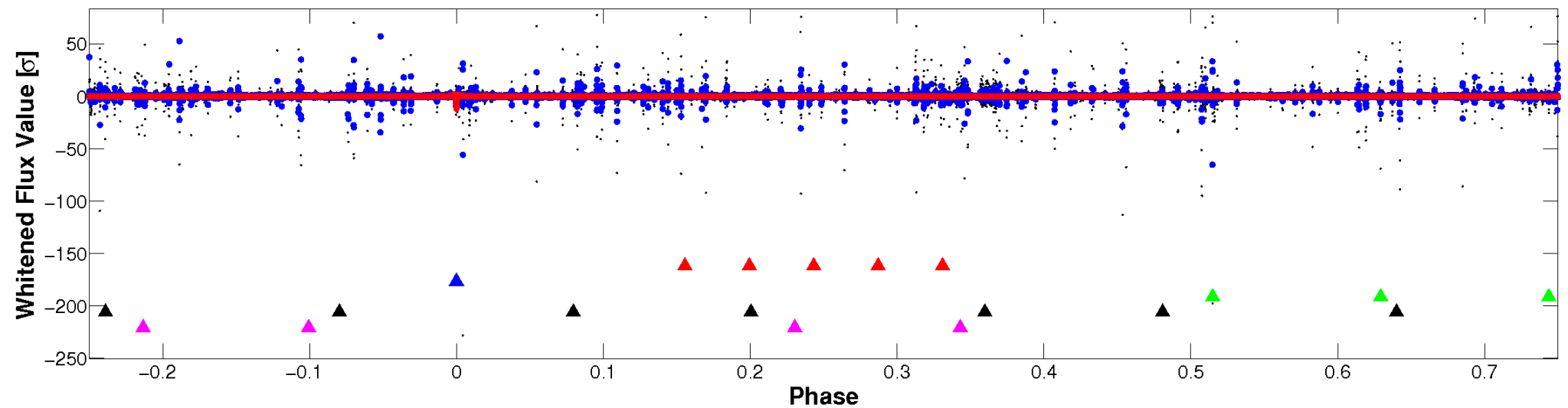


# Non-Whitened Vs. Whitened Light Curve

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

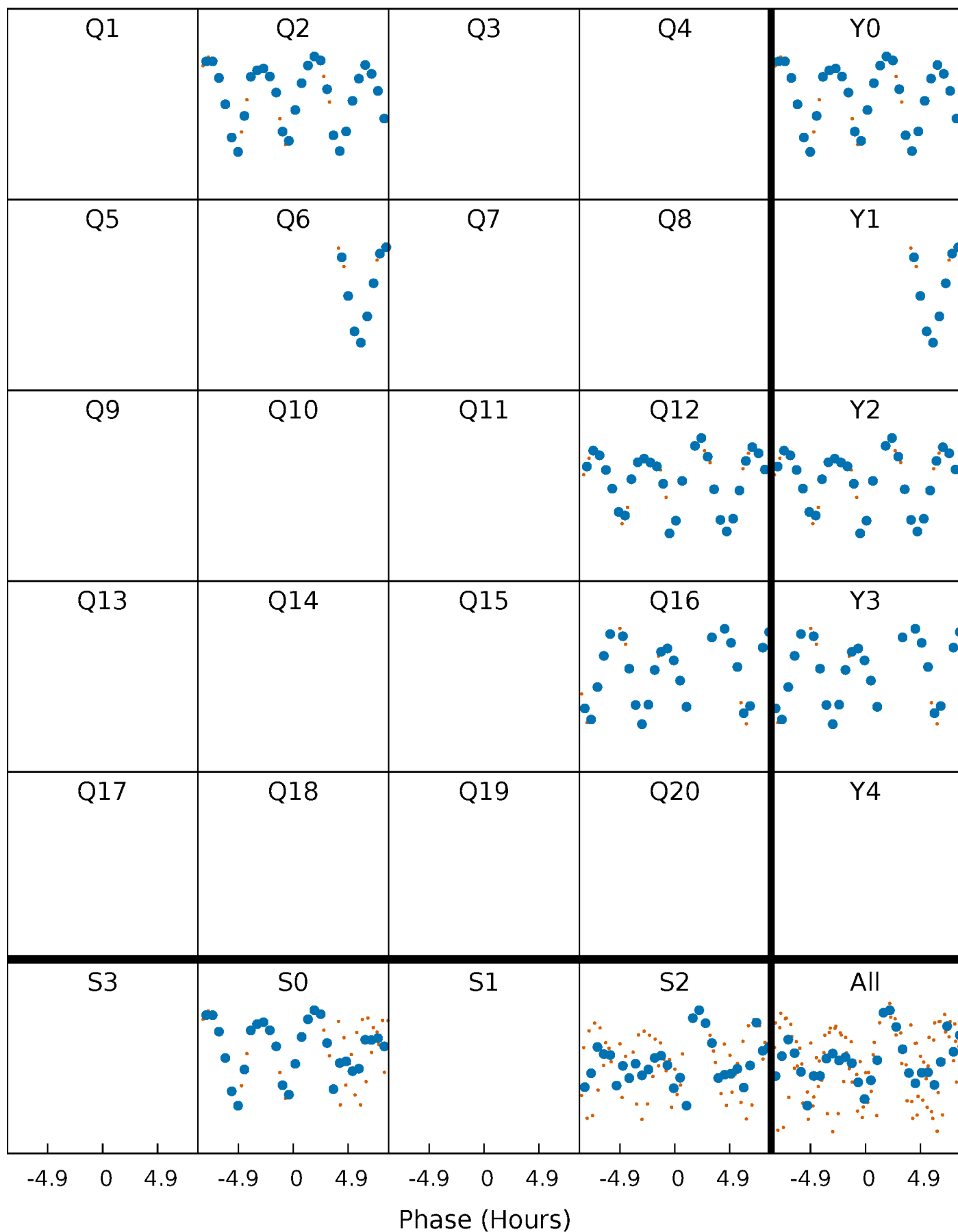


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



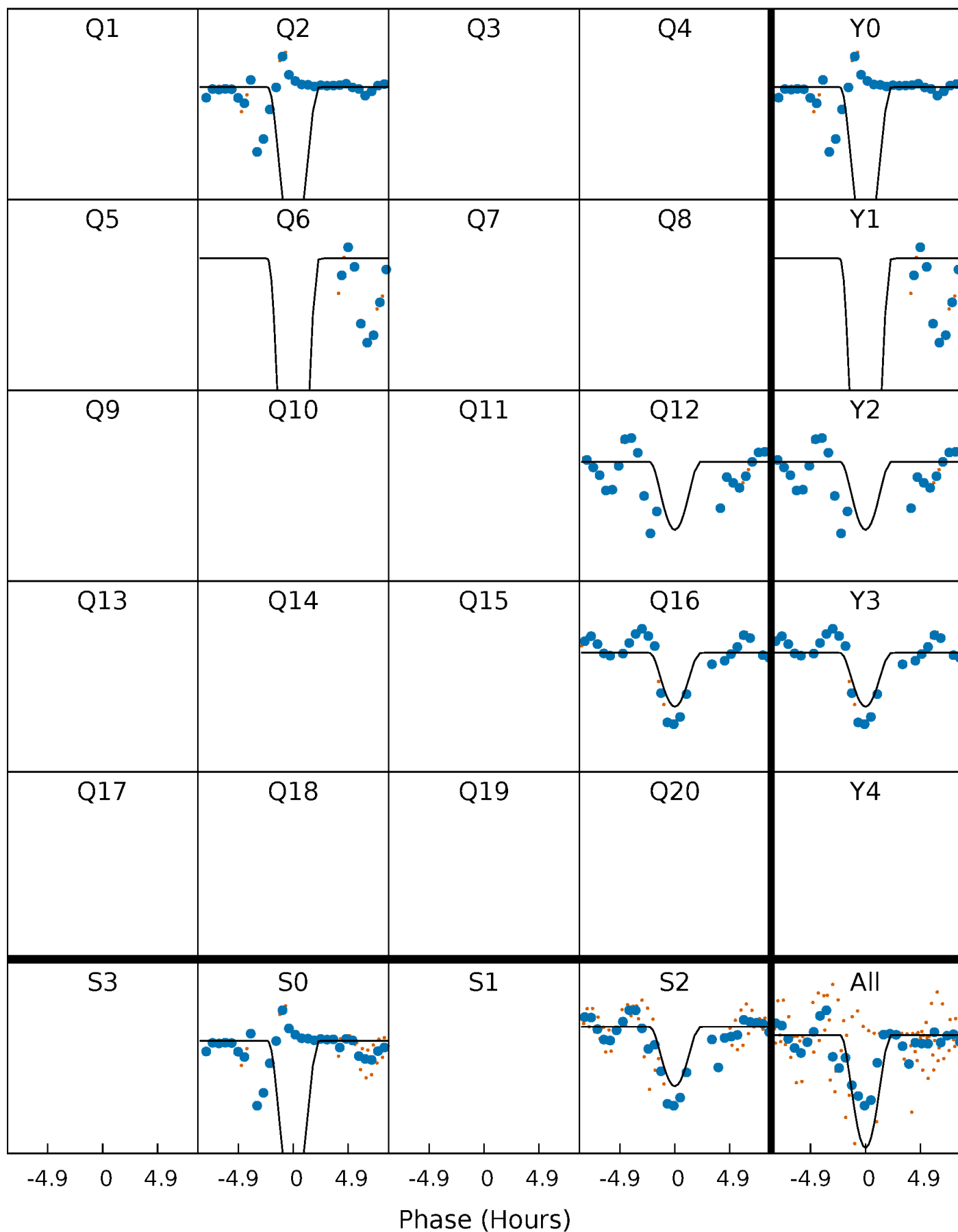
# PDC Quarter-Phased Transit Curves

TCE 005426665-02     $P=319.751532$  Days     $T_0=219.551005$  (BKJD)



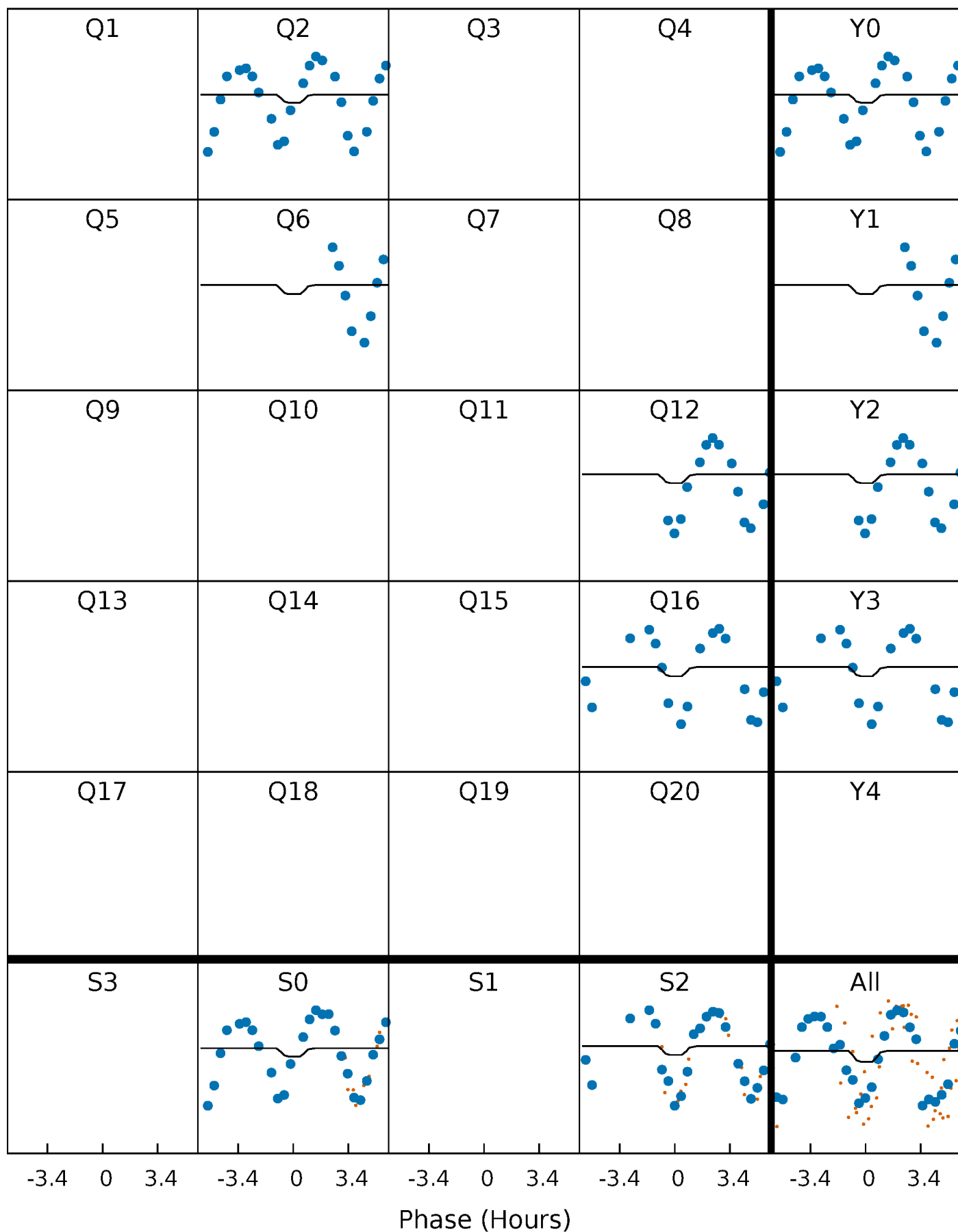
# DV Quarter-Phased Transit Curves

TCE 005426665-02     $P=319.751532$  Days     $T_0=219.551005$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

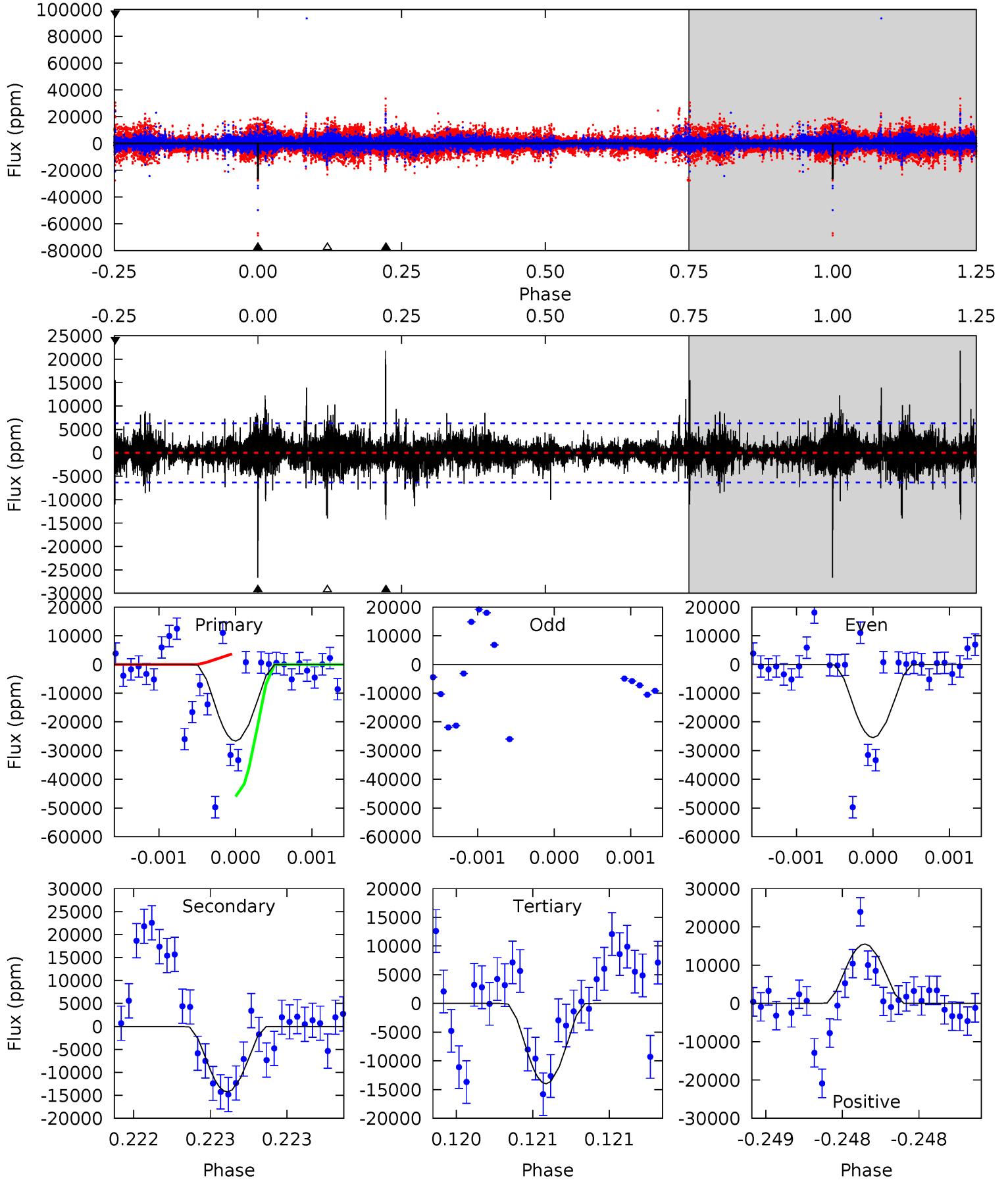
TCE 005426665-02 P=319.812459 Days  $T_0=219.565548$  (BKJD)



# DV Model-Shift Uniqueness Test

005426665-02, P = 319.751532 Days, E = 219.551005 Days

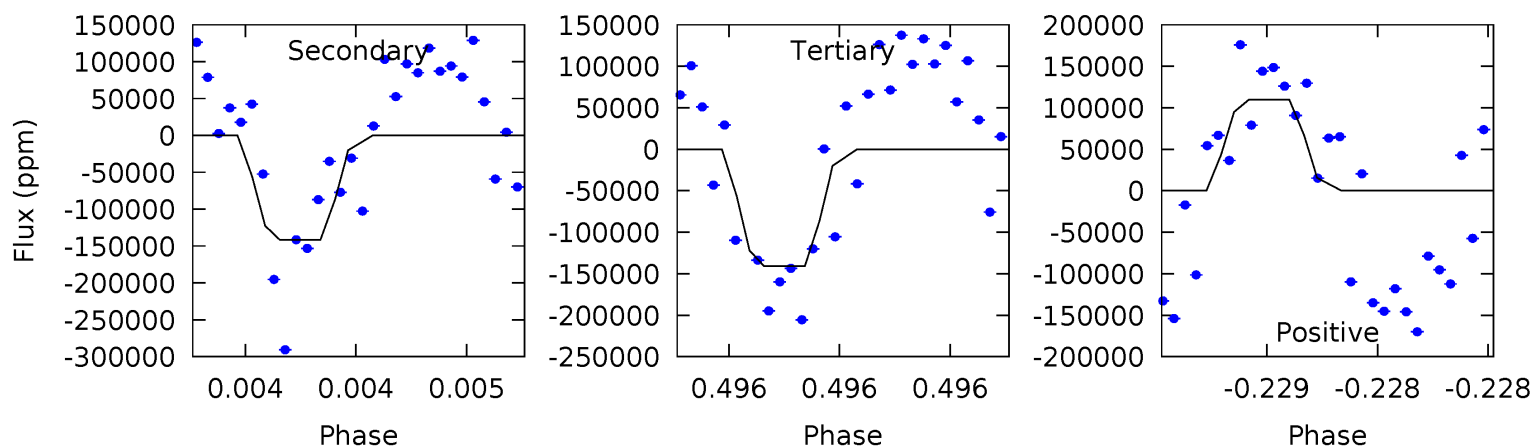
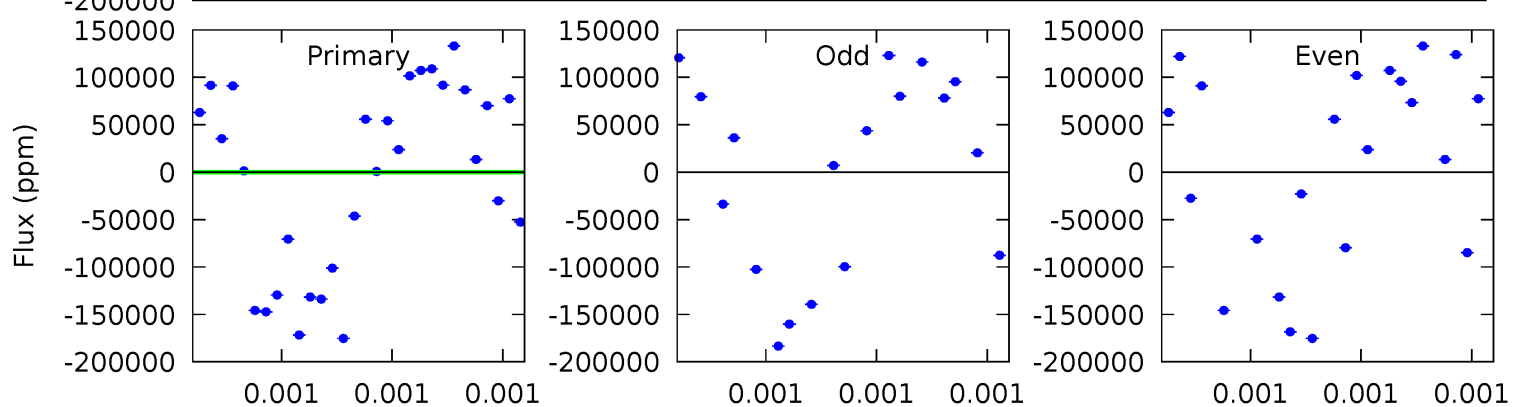
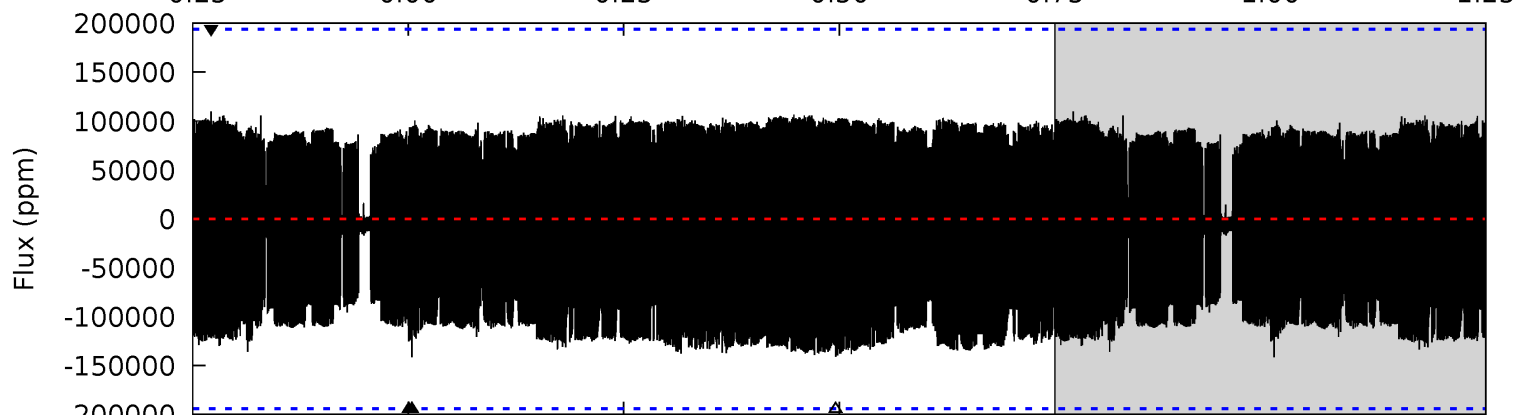
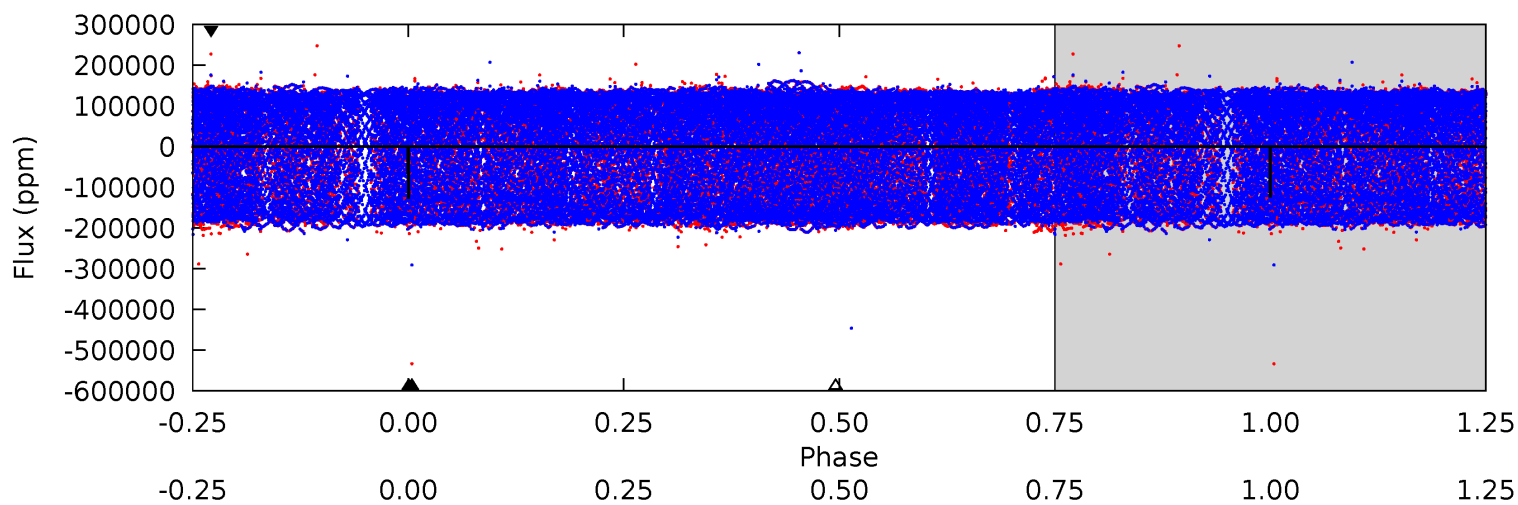
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.4	12.5	12.3	13.6	5.55	3.44	1.76	11.1	9.76	0.22	-1.11	0	1.59	0.45	14.6



# Alt Model-Shift Uniqueness Test

005426665-02, P = 319.812459 Days, E = 219.565548 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
3.66	4.15	4.14	3.22	5.69	3.66	2.10	-0.47	0.45	0.01	0.93	1.10	0.85	0.44	0.50





### Stellar Parameters For KIC 005426665

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6329^{+169}_{-206}$	$4.231^{+0.167}_{-0.185}$	$-0.200^{+0.250}_{-0.300}$	$1.317^{+0.384}_{-0.279}$	$1.074^{+0.185}_{-0.123}$	$0.662^{+0.625}_{-0.320}$
	+3%/-3%	+4%/-4%	+125%/-150%	+29%/-21%	+17%/-11%	+94%/-48%
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 005426665-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-14250 \pm 1142$	$44.19^{+27.26}_{-24.36}$	$463^{+36}_{-30}$	$4264^{+1743}_{-686}$	$3635^{+14454}_{-2209}$
Alt.	$-141542 \pm 34103$	$31.38^{+25.52}_{-19.58}$	$463^{+36}_{-33}$	$9218^{+12093}_{-2828}$	$78365^{+497369}_{-55334}$

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

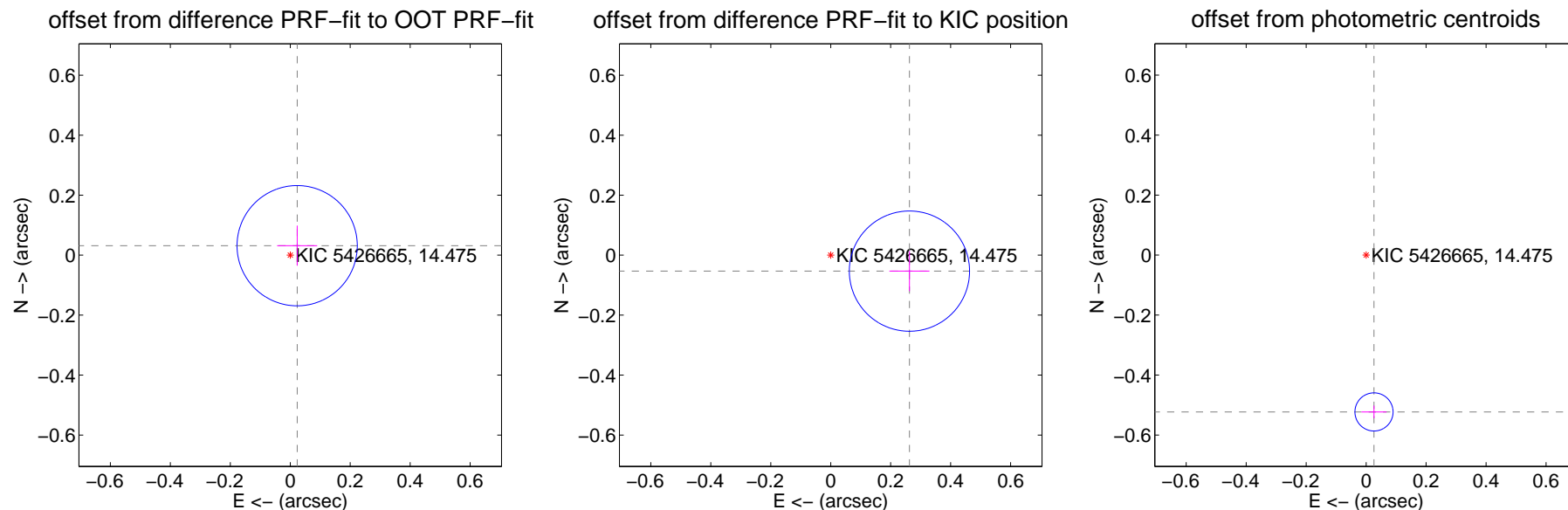
## DV Centroid Data

Supplemental centroid analysis for 005426665-02. Kepler magnitude: 14.47. Transit SNR 22.07

There are 1 quarters with good PRF difference image offsets

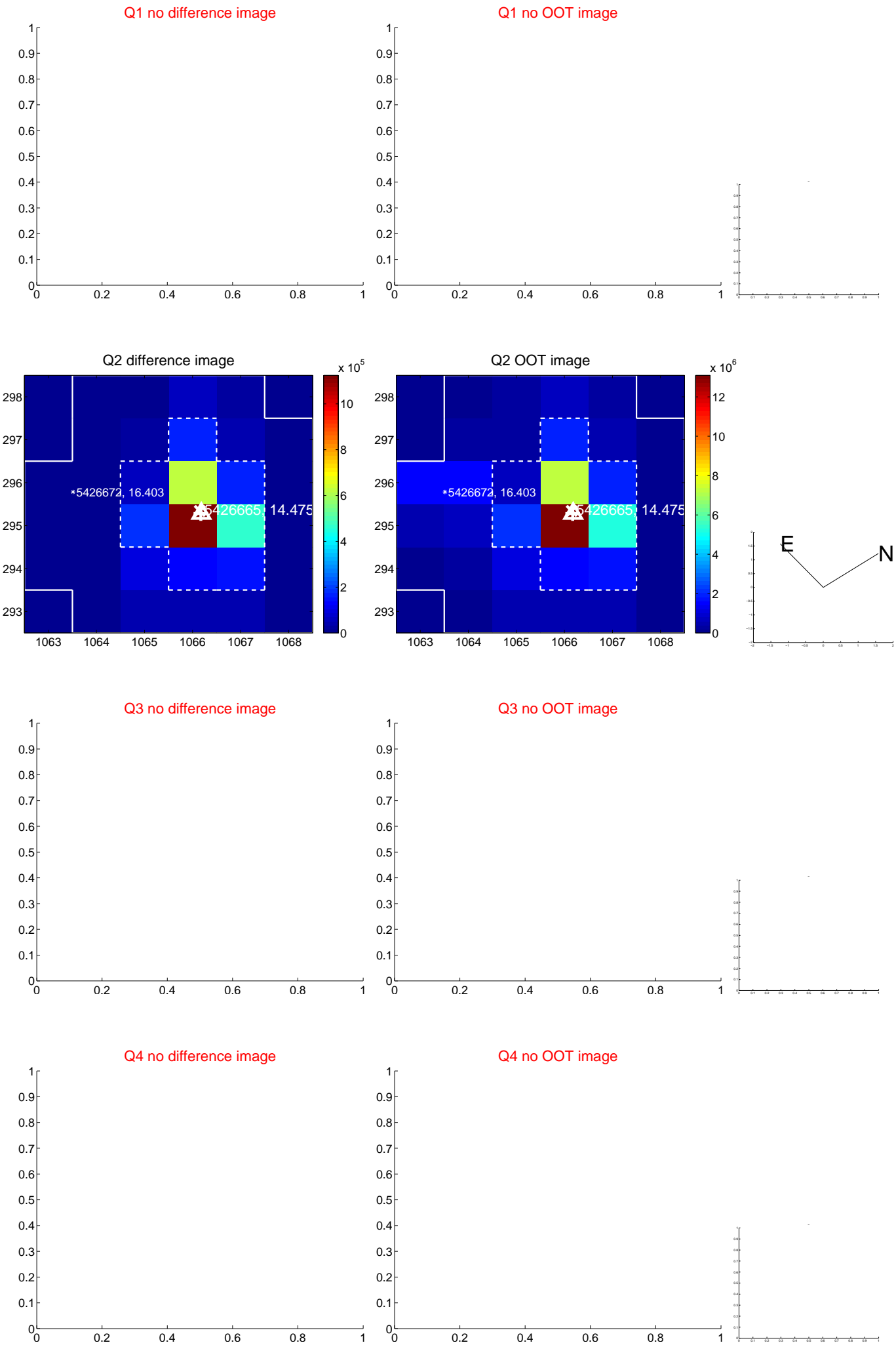
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.039 \pm 0.067$	0.58	$-0.023 \pm 0.067$	$0.032 \pm 0.067$
PRF-fit source offset from KIC position	$0.268 \pm 0.067$	4.01	$-0.262 \pm 0.067$	$-0.053 \pm 0.067$
photometric centroid source offset	$0.52 \pm 0.02$	24.70	$-0.03 \pm 0.04$	$-0.52 \pm 0.02$



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.



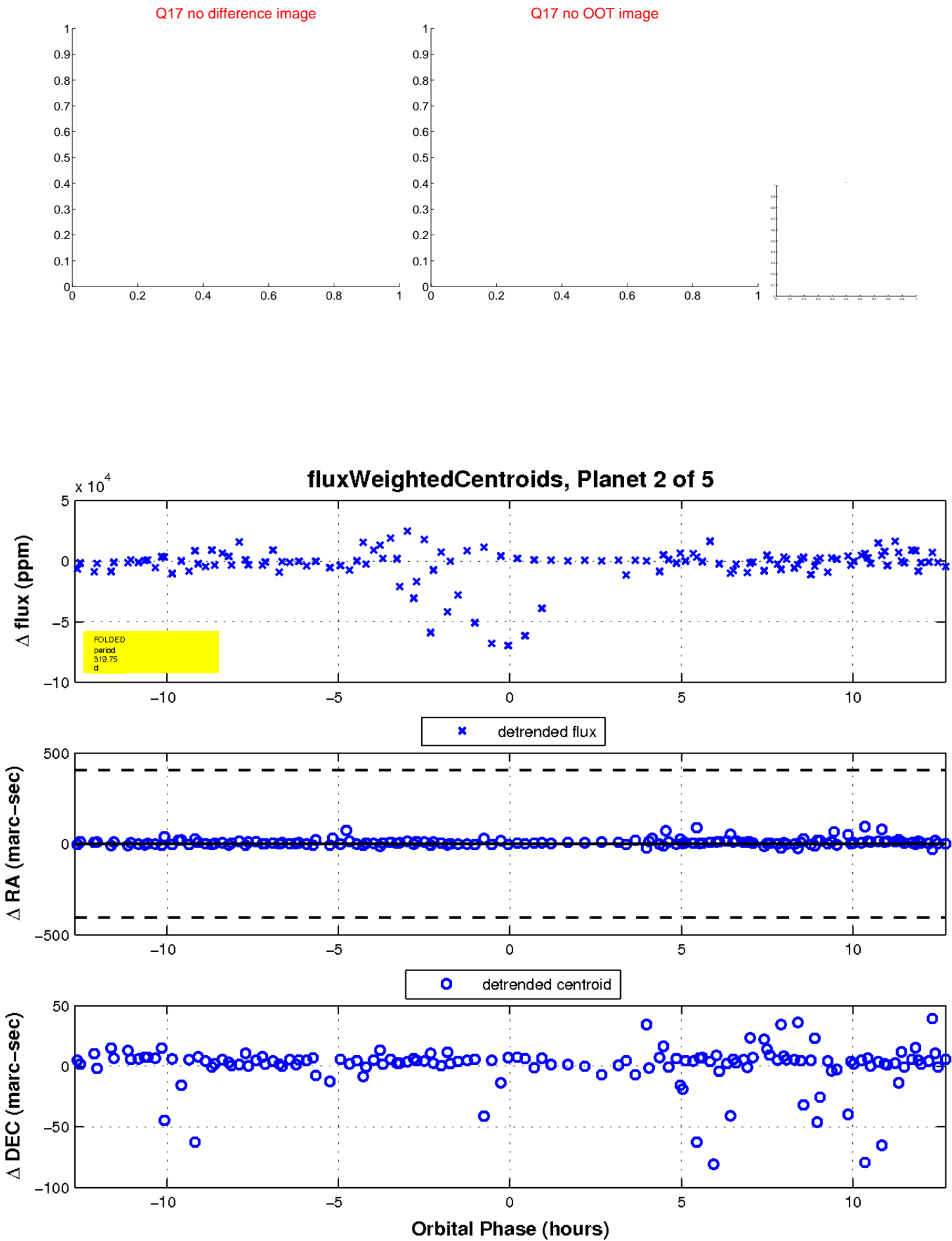
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

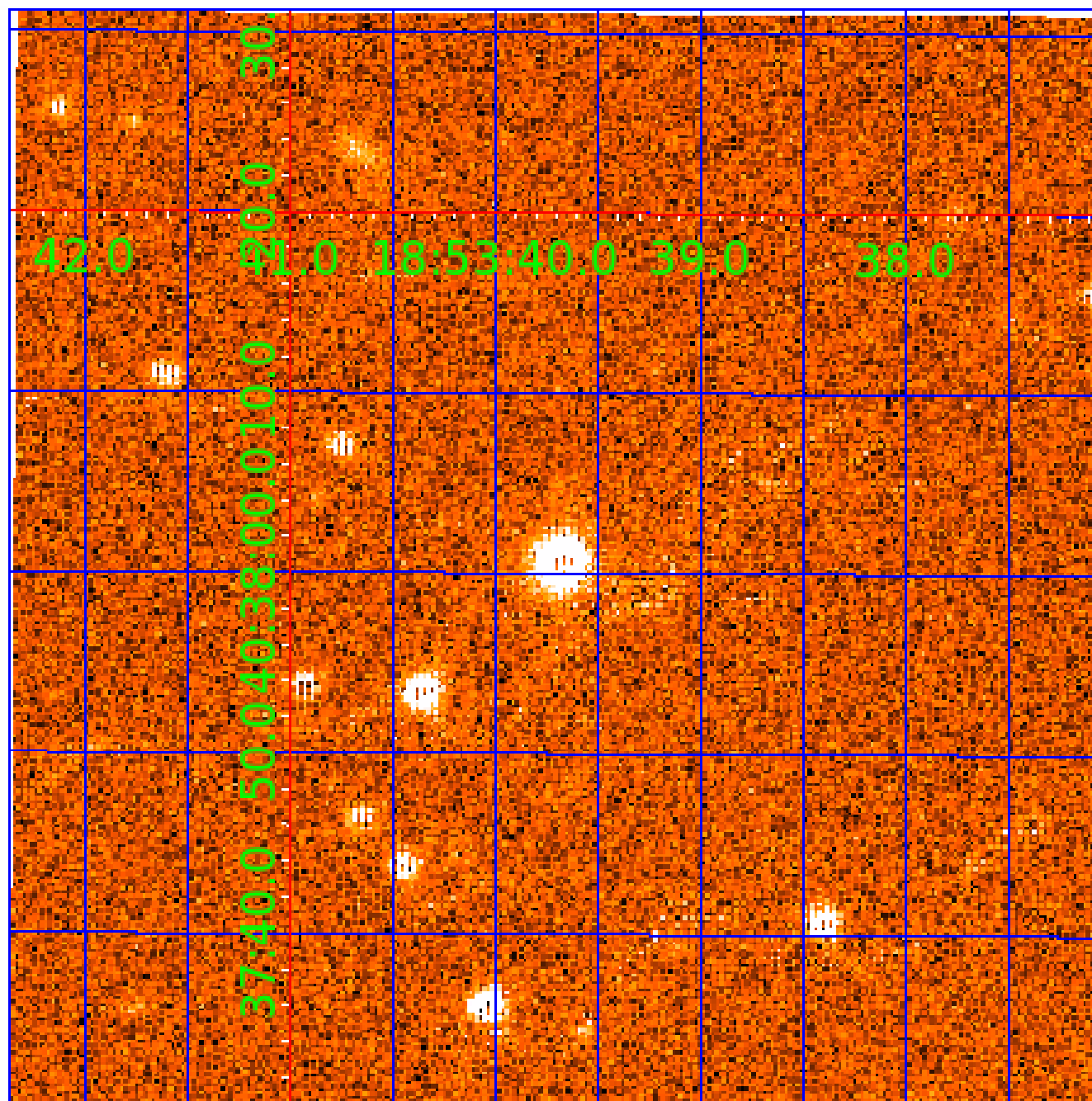


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination





# KIC 005426665

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005426665-01	OBS	No	305.730189	325.386576	11305.4	7.376	53.3	13.3	1.32	6329	14.04	3.01
005426665-02	OBS	No	319.751532	219.551005	51746.0	4.256	36.1	22.1	1.32	6329	41.64	2.83
005426665-03	OBS	No	602.909264	137.617565	12071.7	12.760	34.0	14.4	1.32	6329	14.51	1.22
005426665-04	OBS	No	230.141666	143.145257	1456.4	2.355	21.0	1.3	1.32	6329	5.62	4.39
005426665-05	OBS	No	461.614554	187.376347	741.1	10.500	12.6	-1.0	1.32	6329	3.60	1.74

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005426665-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005426665-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005426665-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005426665-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005426665-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

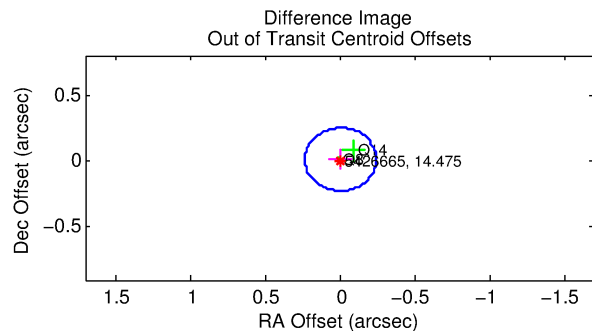
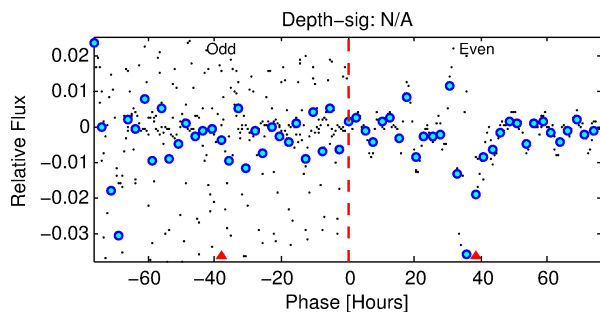
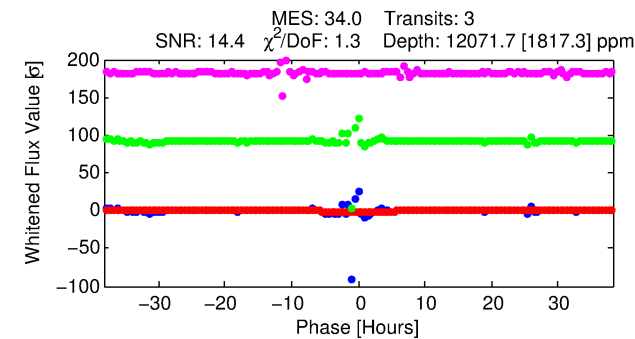
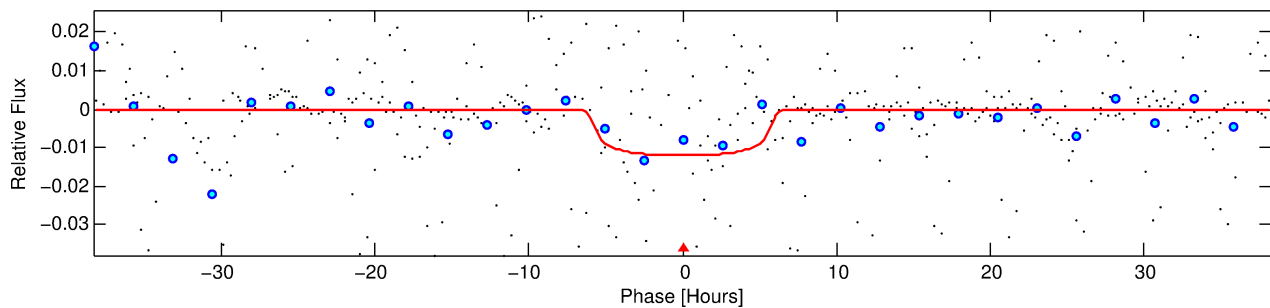
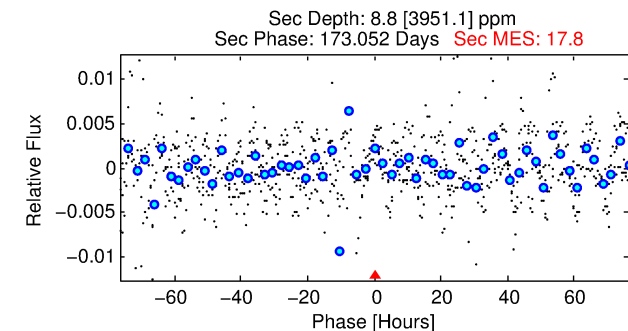
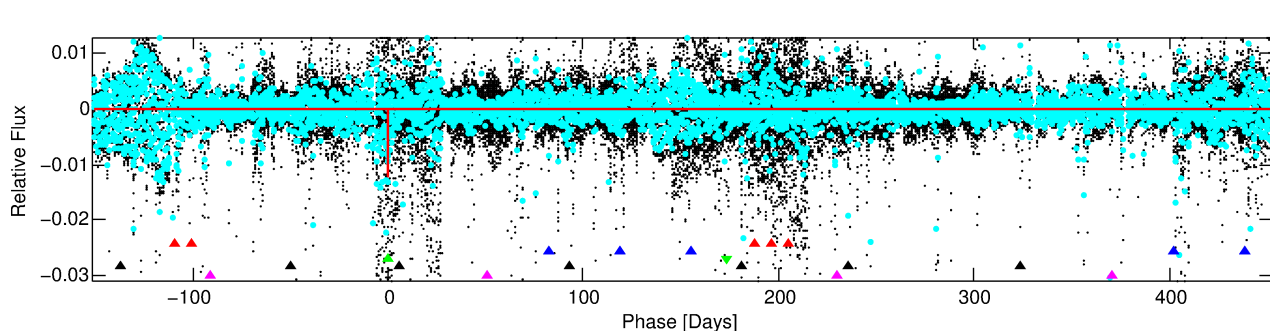
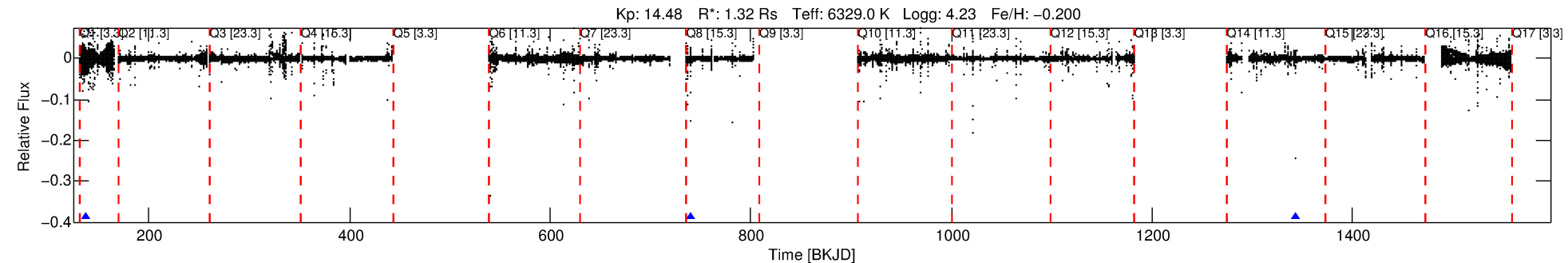
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005426665-03

No Significant Match Found

# DV One-Page Summary

KIC: 5426665 Candidate: 3 of 5 Period: 602.909 d



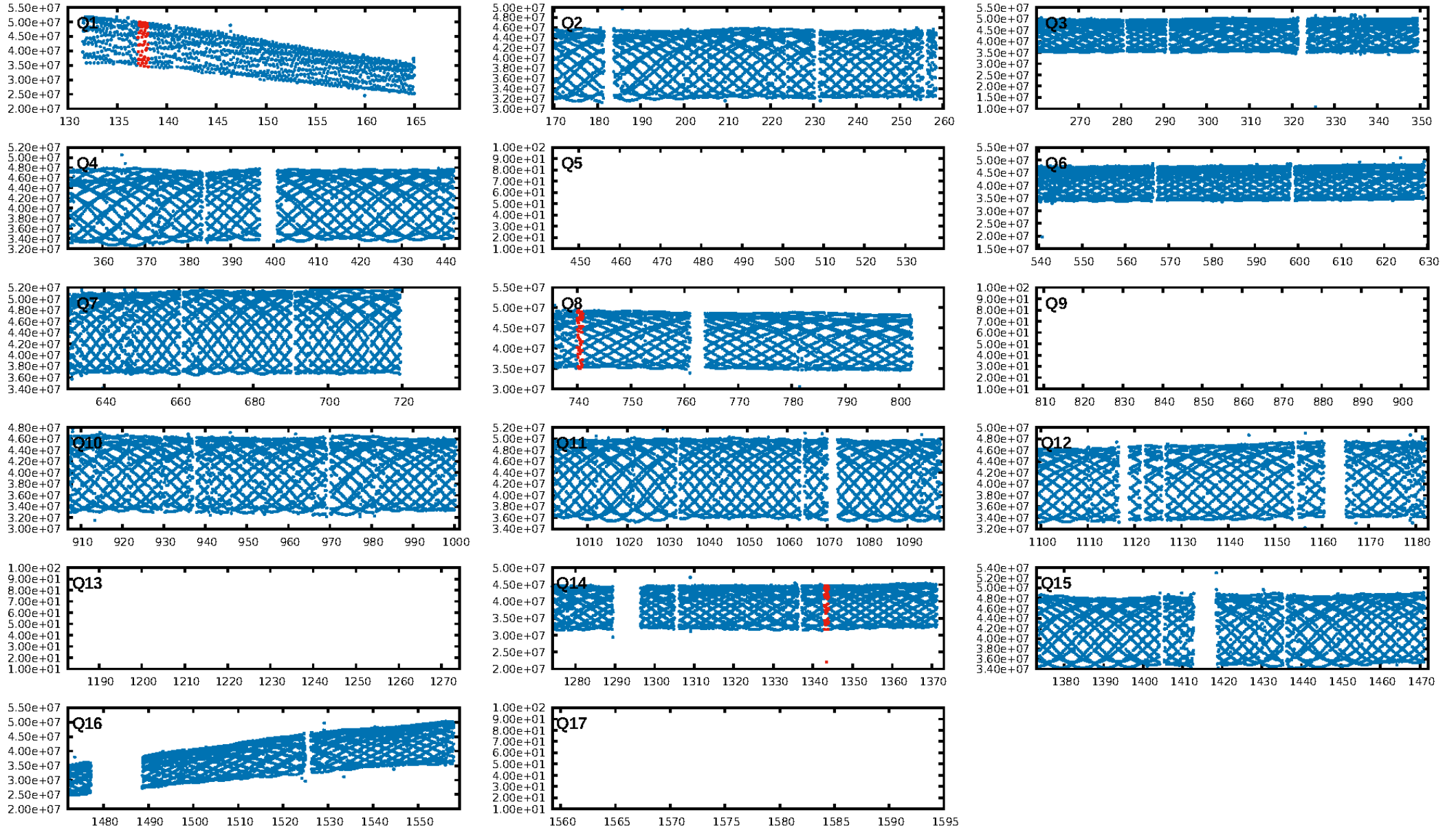
## DV Fit Results:

Period = 602.90926 [0.02753] d  
Epoch = 137.6176 [0.0486] BKJD  
Rp/R\* = 0.1010 [0.0139]  
a/R\* = 397.39 [227.69]  
b = 0.00 [365.09]  
Seff = 1.22 [0.45]  
Teq = 268 [25] K  
Rp = 14.51 [4.68] Re  
a = 1.4319 [0.3447] AU  
Ag = 46.92 [21172.70] [0.00σ]  
Teffp = 1084 [122228] K [0.01σ]

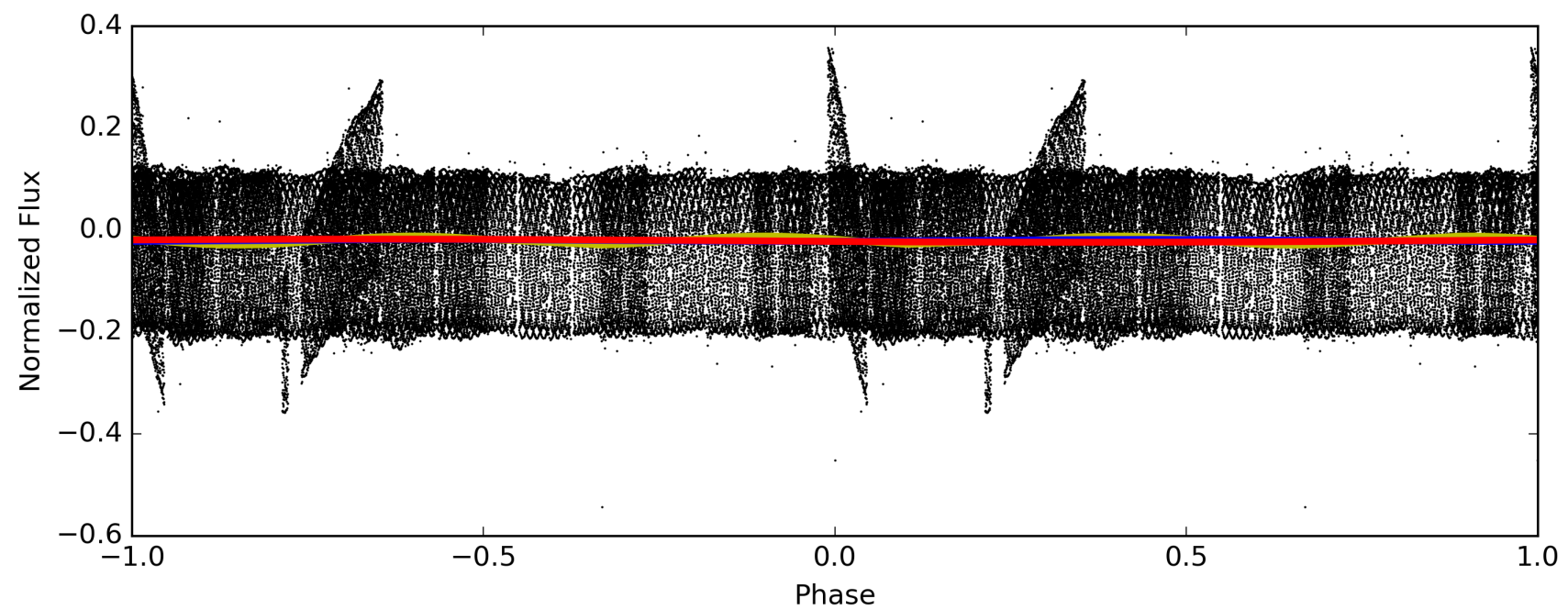
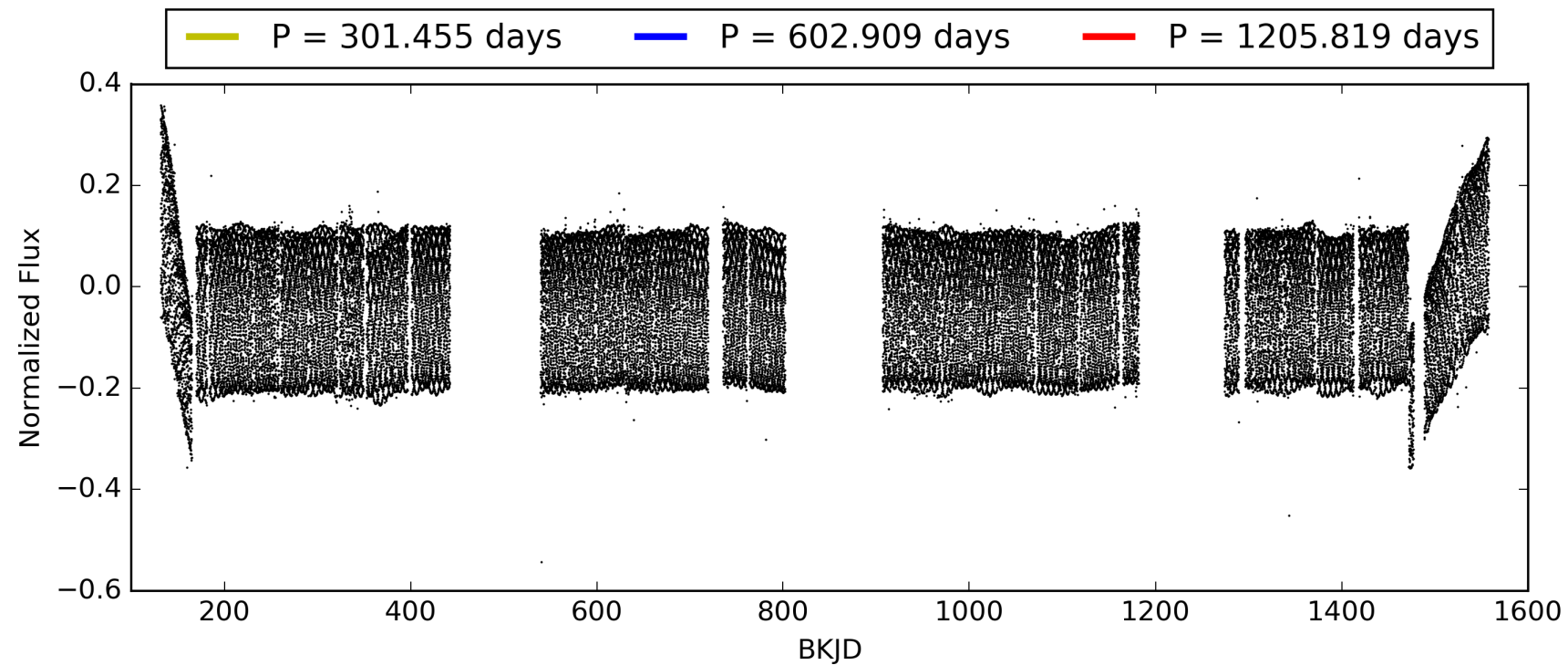
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [205.21σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 94.3%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: 0.733  
Centroid-sig: N/A  
Centroid-so: 0.336 arcsec [3.16σ]  
OotOffset-rm: 0.014 arcsec [0.18σ]  
KicOffset-rm: 0.193 arcsec [1.95σ]  
OotOffset-st: 1/0/1/0 [2]  
KicOffset-st: 1/0/1/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

# TCE 005426665-03, PDC Light Curves

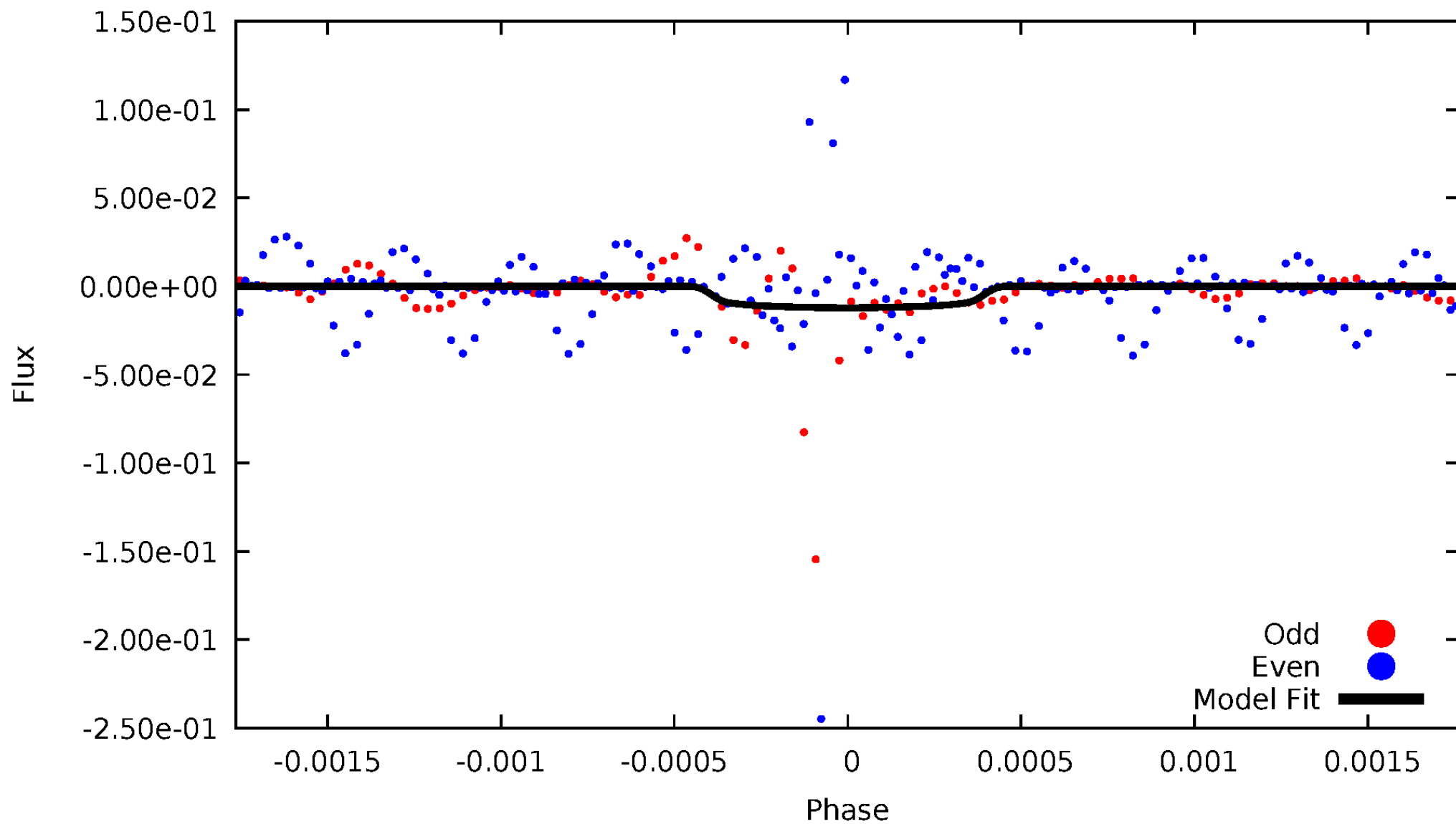


TCE 005426665-03



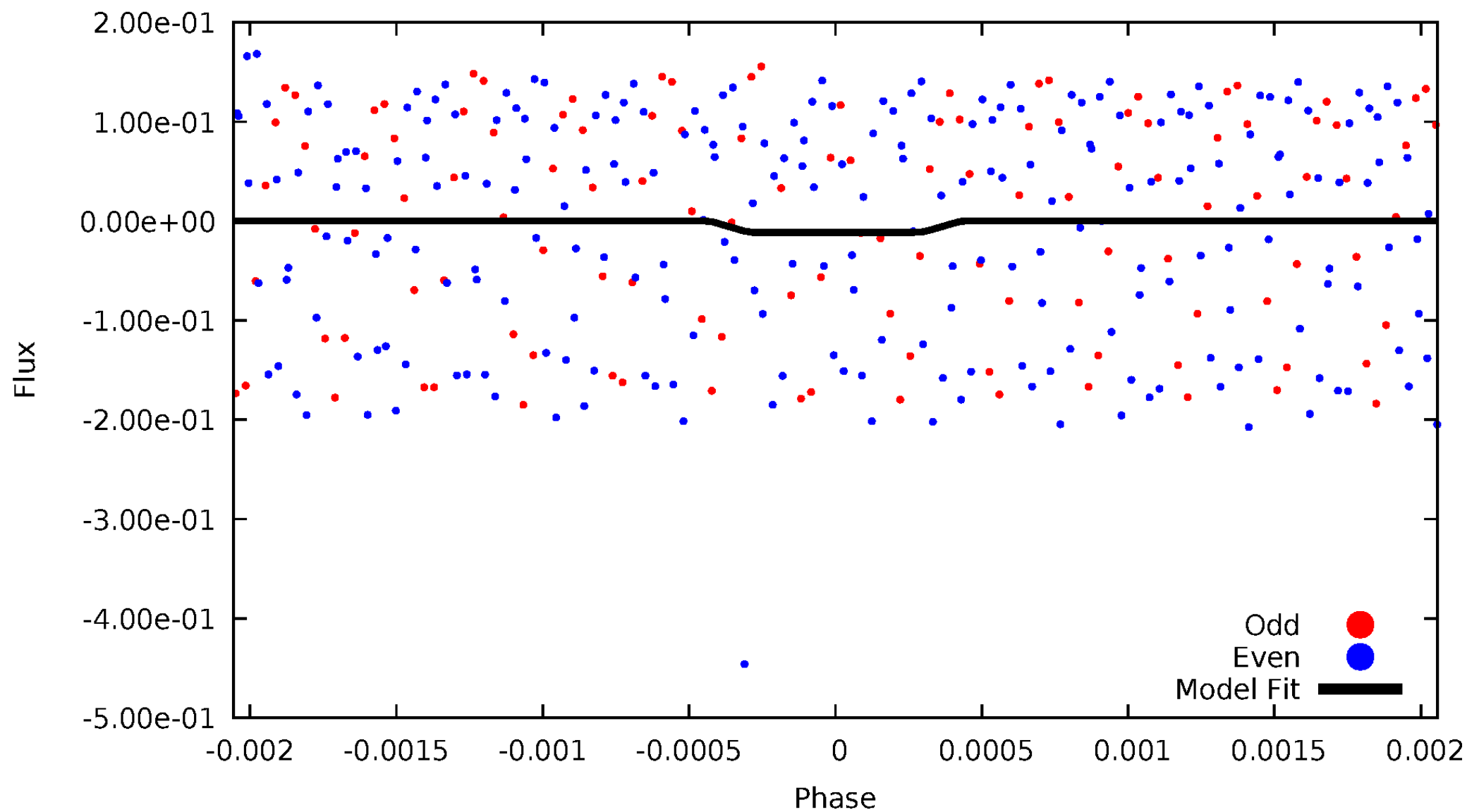
# DV Odd/Even

TCE 005426665-03



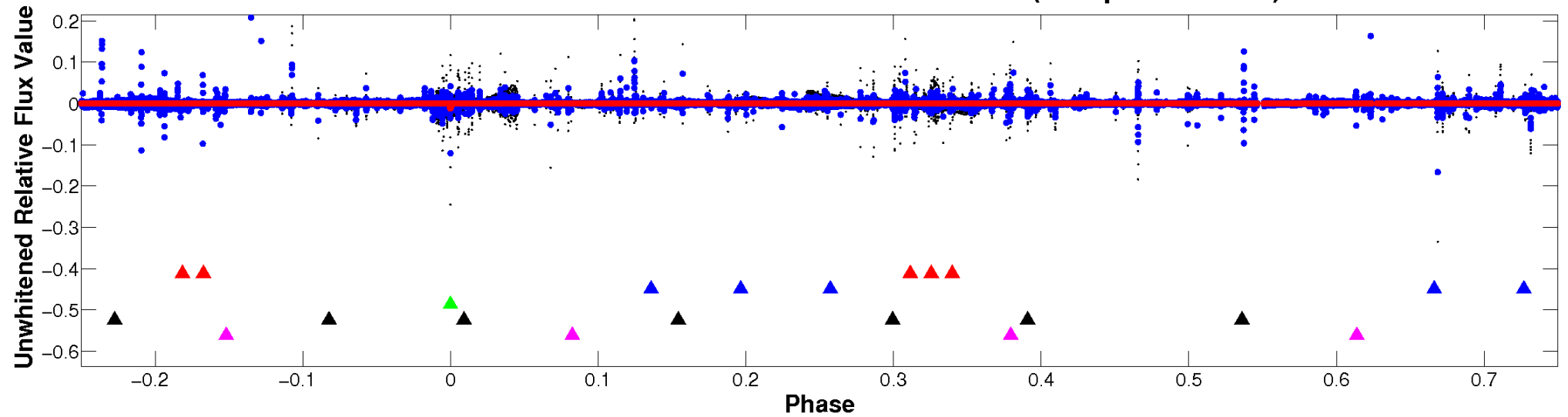
# ALT Odd/Even

TCE 005426665-03

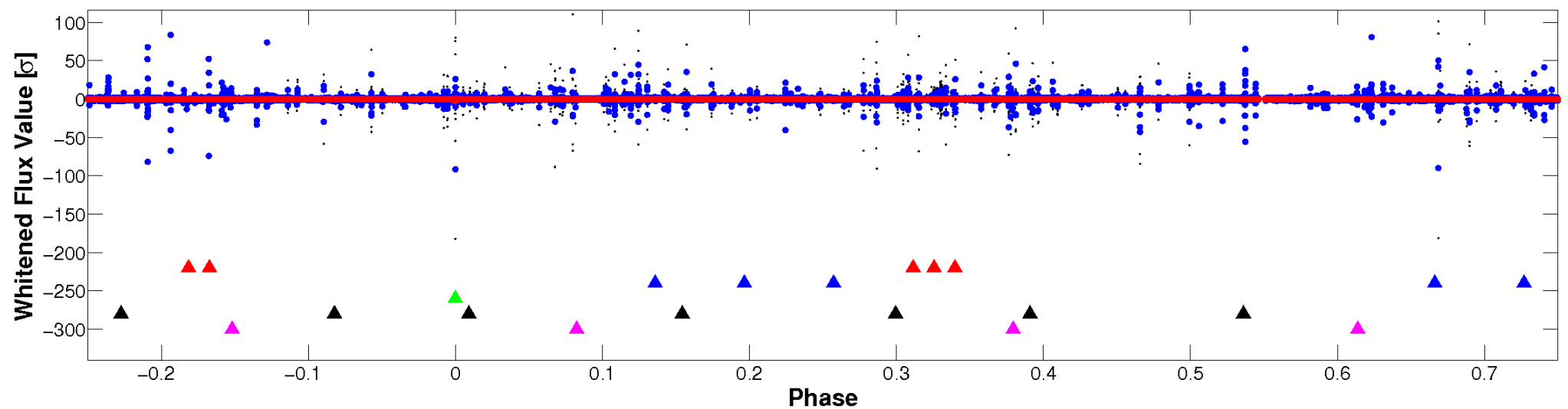


# Non-Whitened Vs. Whitened Light Curve

**Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

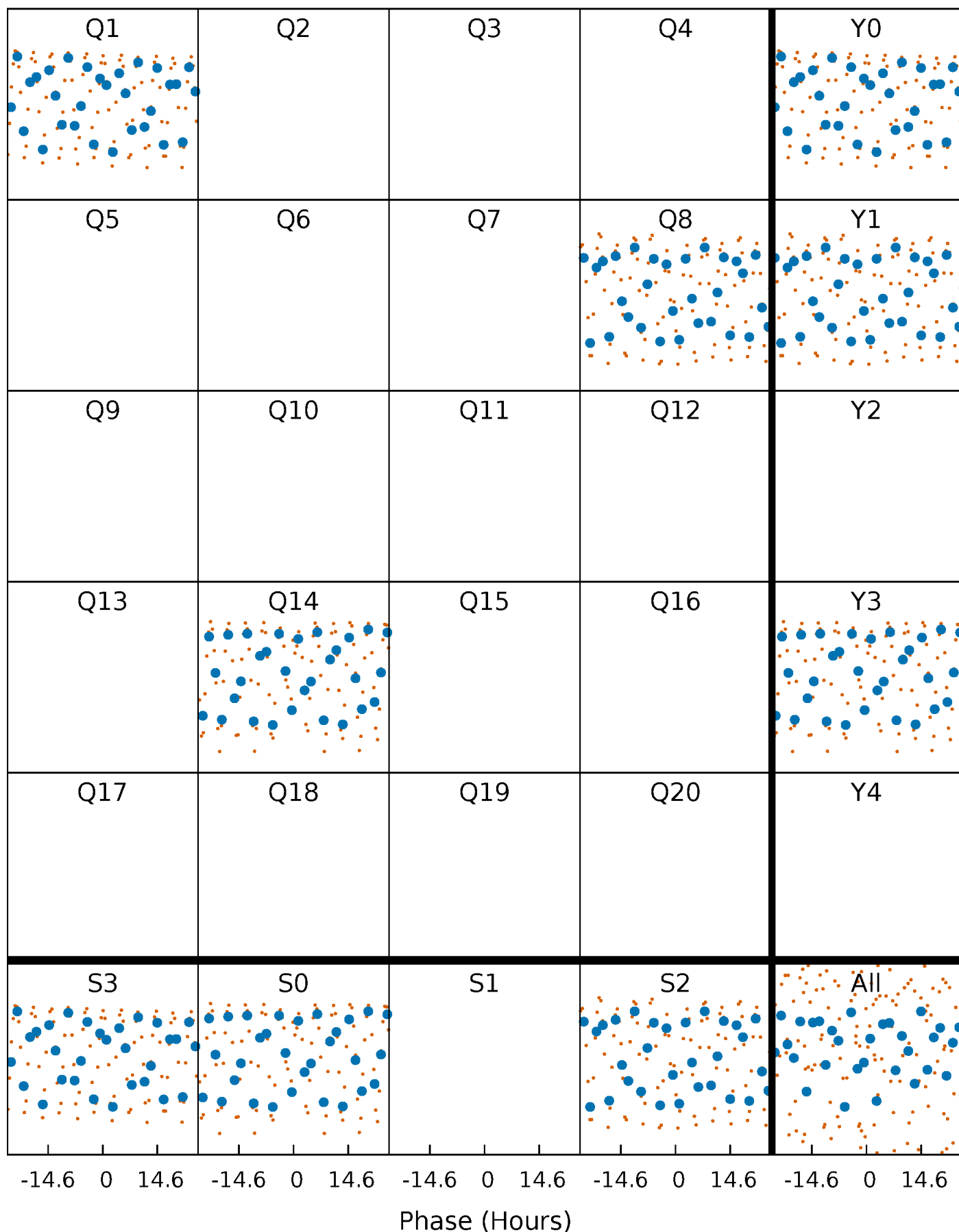


**Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

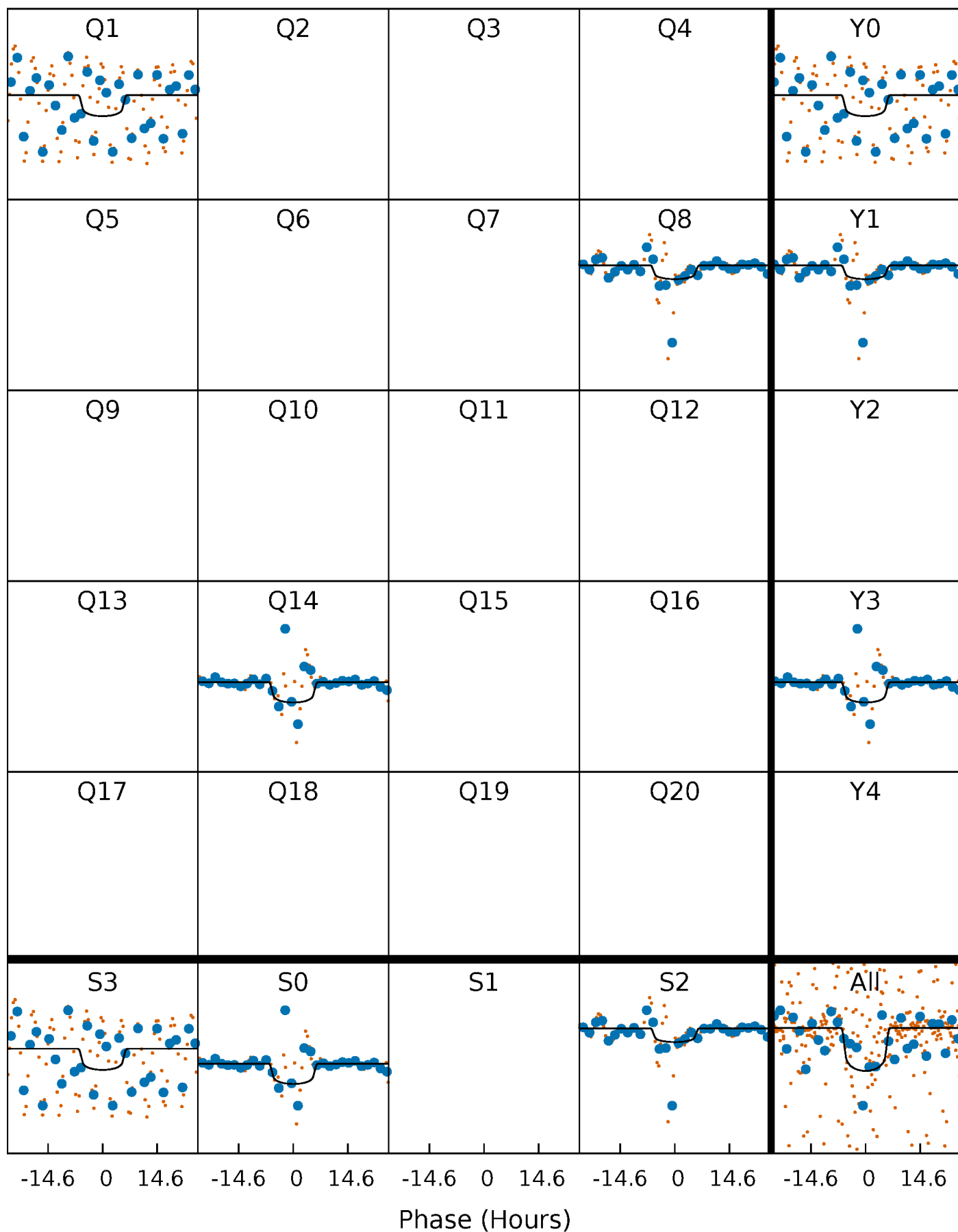
TCE 005426665-03     $P=602.909264$  Days     $T_0=137.617565$  (BKJD)





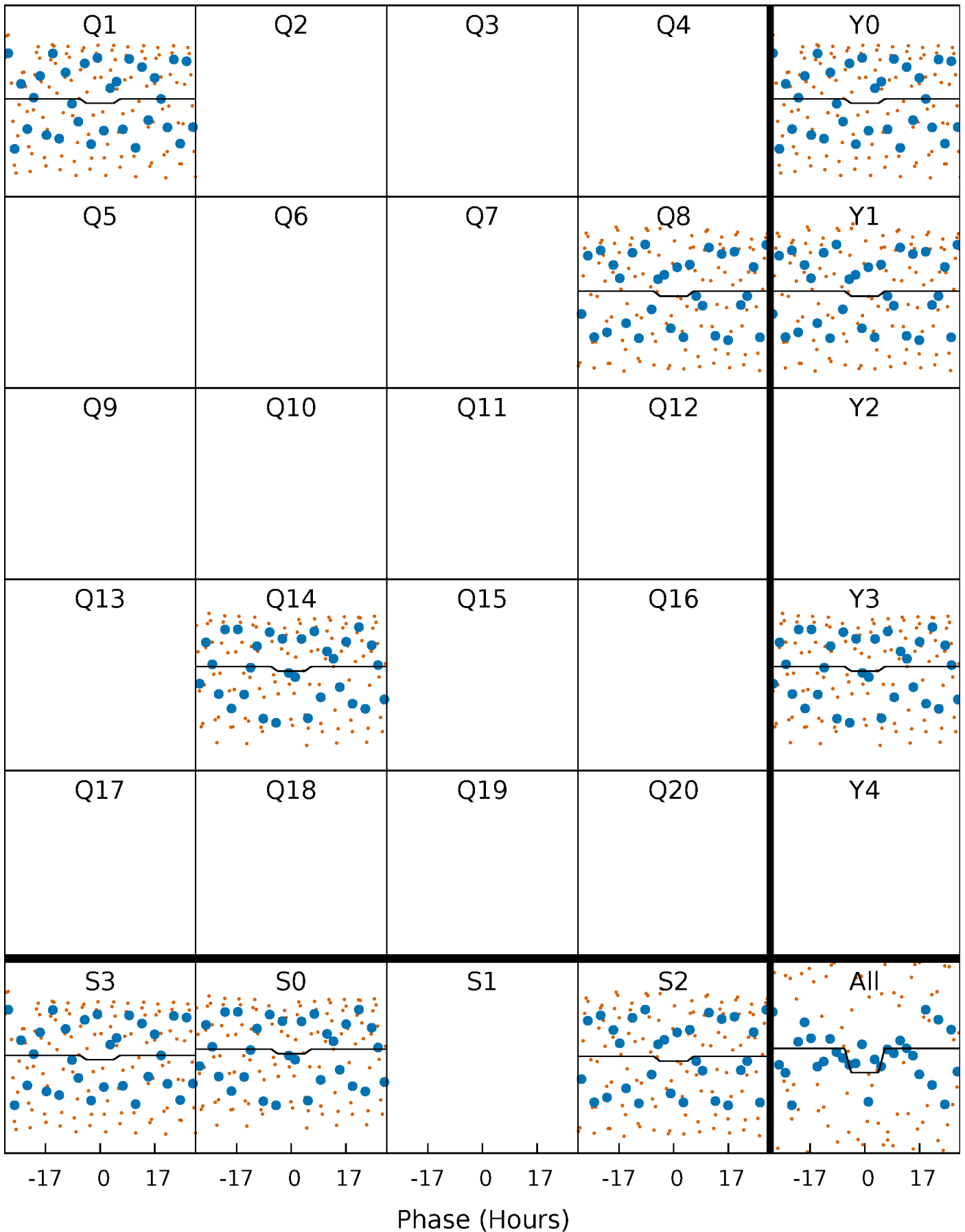
# DV Quarter-Phased Transit Curves

TCE 005426665-03     $P=602.909264$  Days     $T_0=137.617565$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

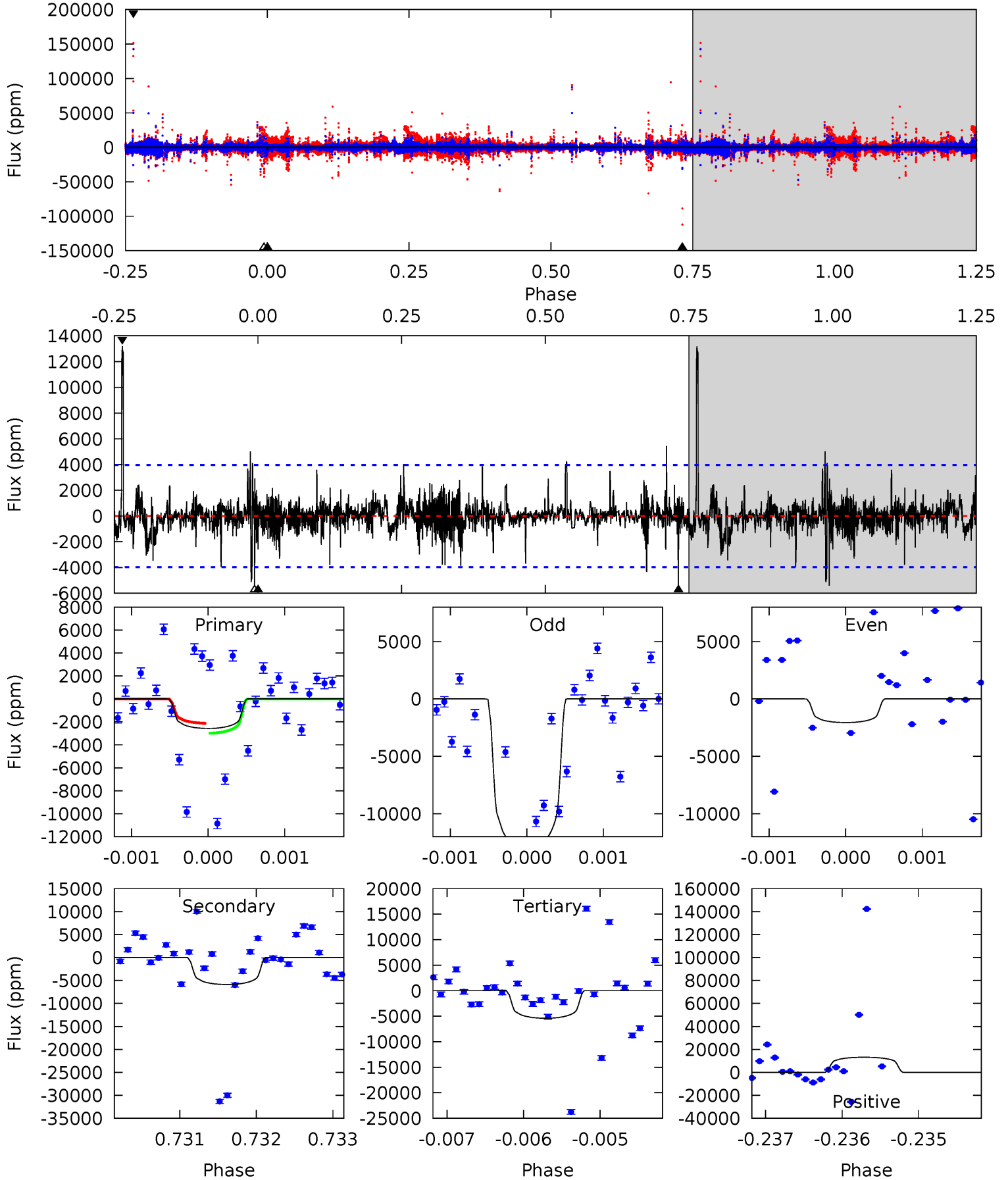
TCE 005426665-03     $P=603.157824$  Days     $T_0=137.261798$  (BKJD)



# DV Model-Shift Uniqueness Test

005426665-03, P = 602.909264 Days, E = 137.617565 Days

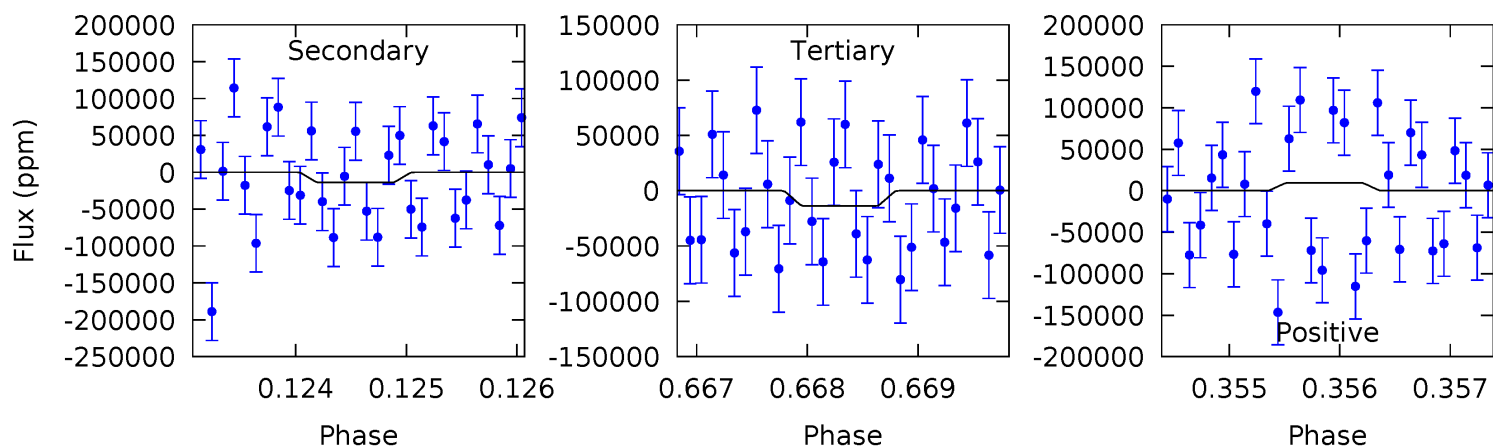
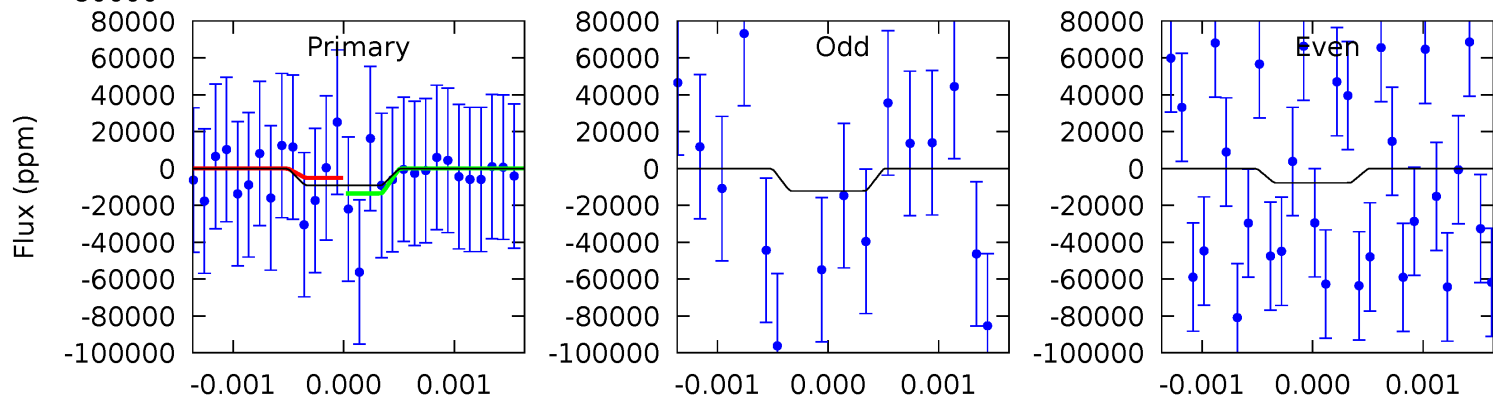
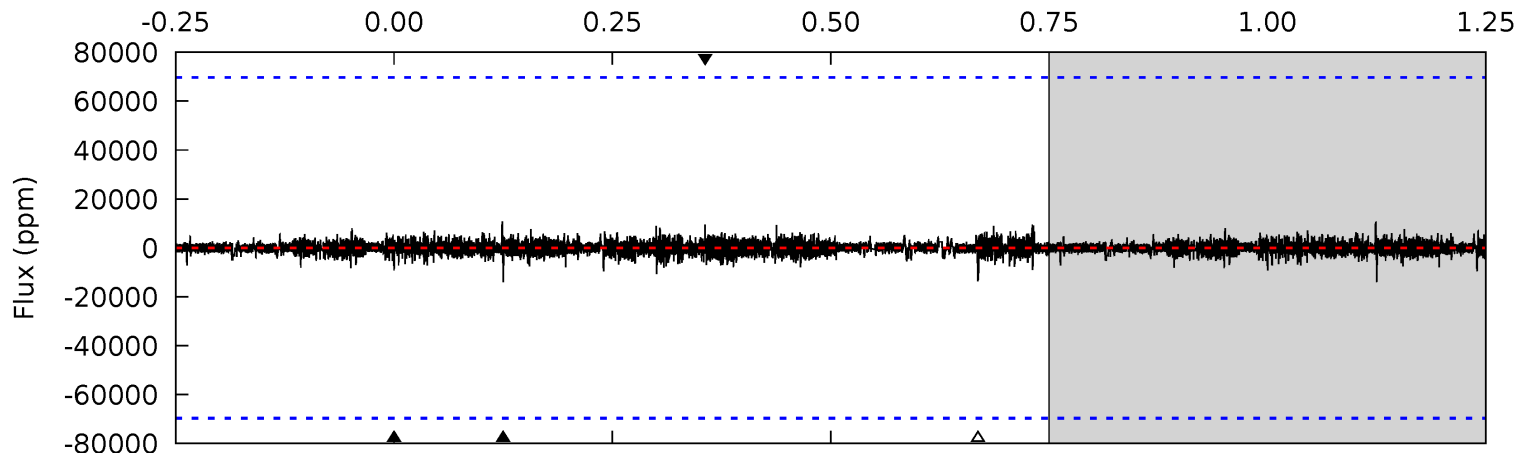
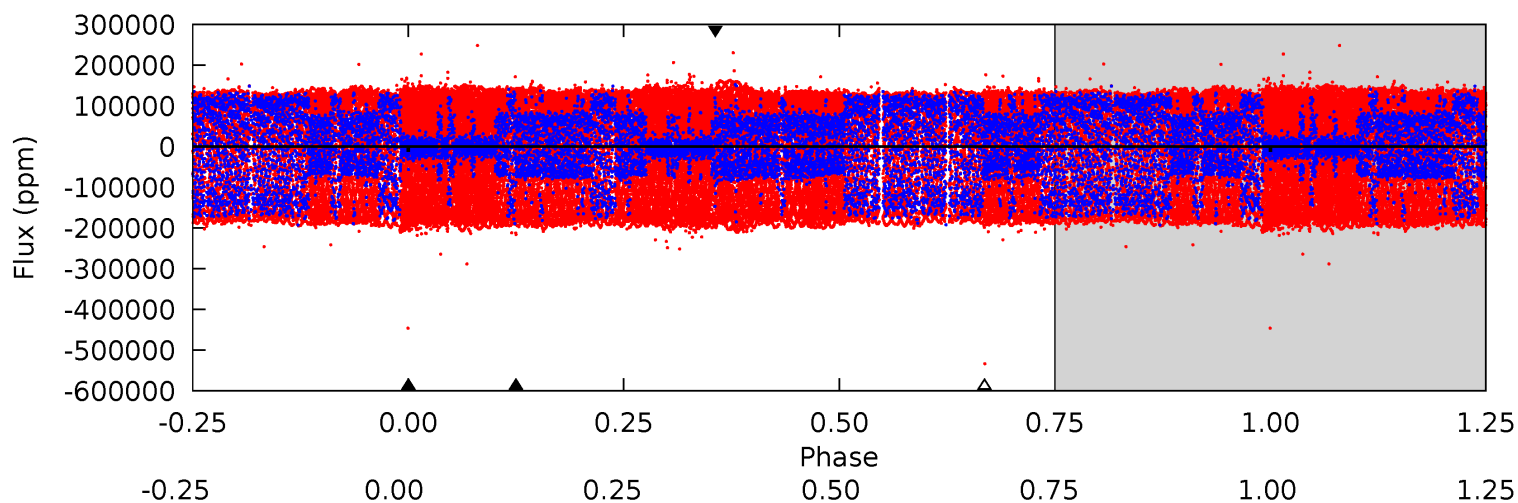
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.56	8.14	7.48	18.2	5.47	3.33	1.19	-3.92	-14.6	0.67	-10.1	7.09	2.88	0.69	0



# Alt Model-Shift Uniqueness Test

005426665-03, P = 603.157824 Days, E = 137.261798 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
0.72	1.10	1.08	0.75	5.48	3.34	0.16	-0.35	-0.03	0.02	0.35	0.16	0.74	0.43	0.34



### Stellar Parameters For KIC 005426665

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6329^{+169}_{-206}$	$4.231^{+0.167}_{-0.185}$	$-0.200^{+0.250}_{-0.300}$	$1.317^{+0.384}_{-0.279}$	$1.074^{+0.185}_{-0.123}$	$0.662^{+0.625}_{-0.320}$
	+3%/-3%	+4%/-4%	+125%/-150%	+29%/-21%	+17%/-11%	+94%/-48%
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 005426665-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-5894 \pm 724$	$14.52^{+2.85}_{-2.70}$	$373^{+28}_{-26}$	$5564^{+450}_{-390}$	$31825^{+16151}_{-10182}$
Alt.	$-13952 \pm 12712$	$15.28^{+3.29}_{-2.64}$	$373^{+29}_{-24}$	$6654^{+1577}_{-2427}$	$63742^{+83183}_{-55447}$

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

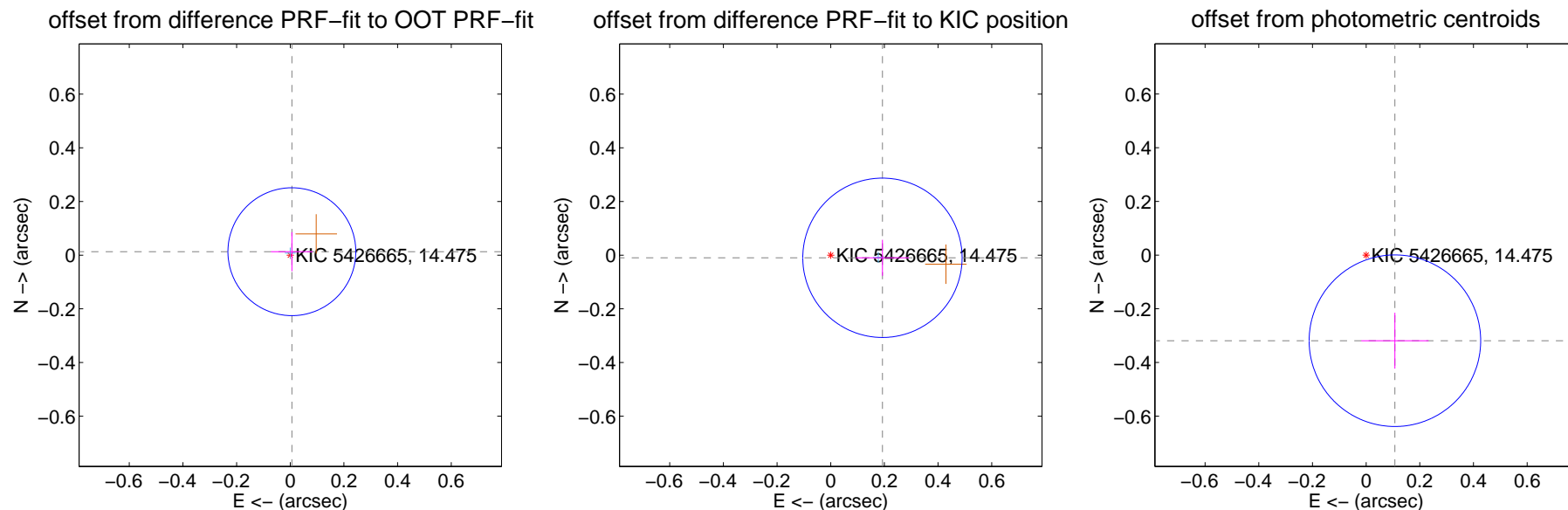
## DV Centroid Data

Supplemental centroid analysis for 005426665-03. Kepler magnitude: 14.47. Transit SNR 14.40

There are 1 quarters with good PRF difference image offsets

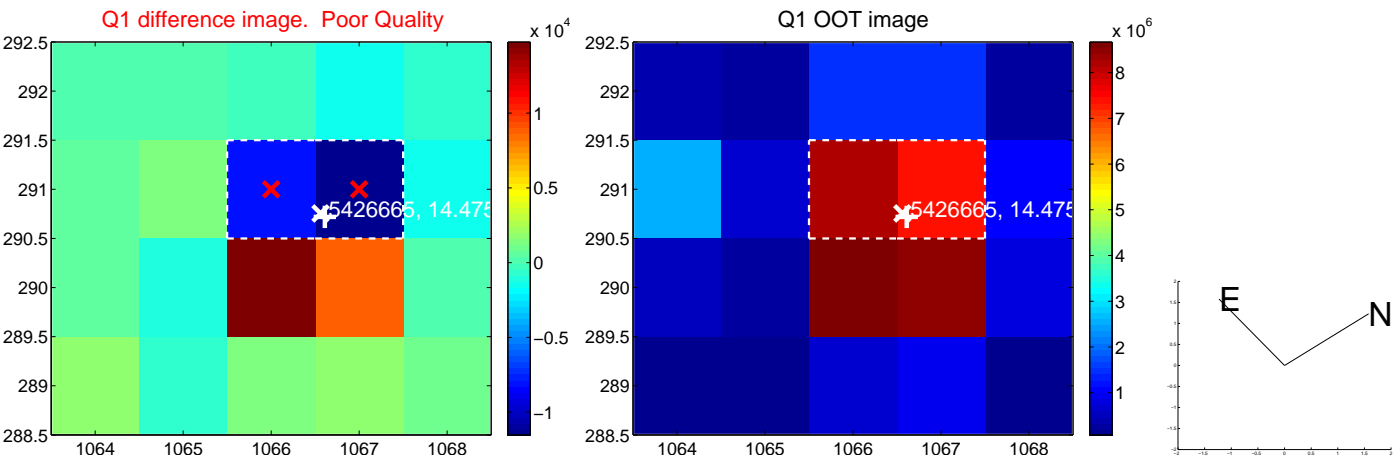
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.014 \pm 0.079$	0.18	$-0.006 \pm 0.078$	$0.013 \pm 0.073$
PRF-fit source offset from KIC position	$0.193 \pm 0.099$	1.95	$-0.193 \pm 0.099$	$-0.010 \pm 0.067$
photometric centroid source offset	$0.34 \pm 0.11$	3.16	$-0.11 \pm 0.13$	$-0.32 \pm 0.10$

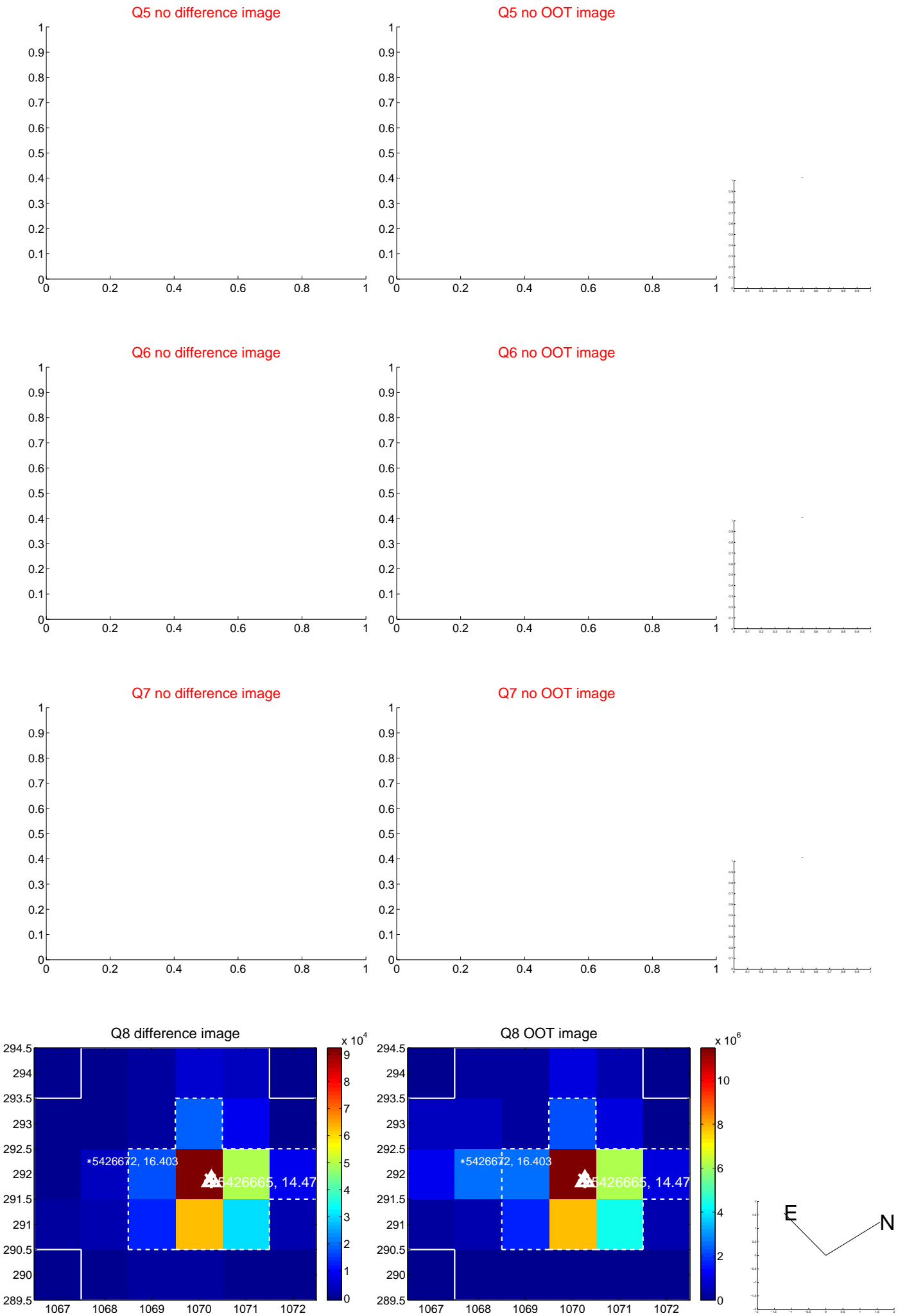


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

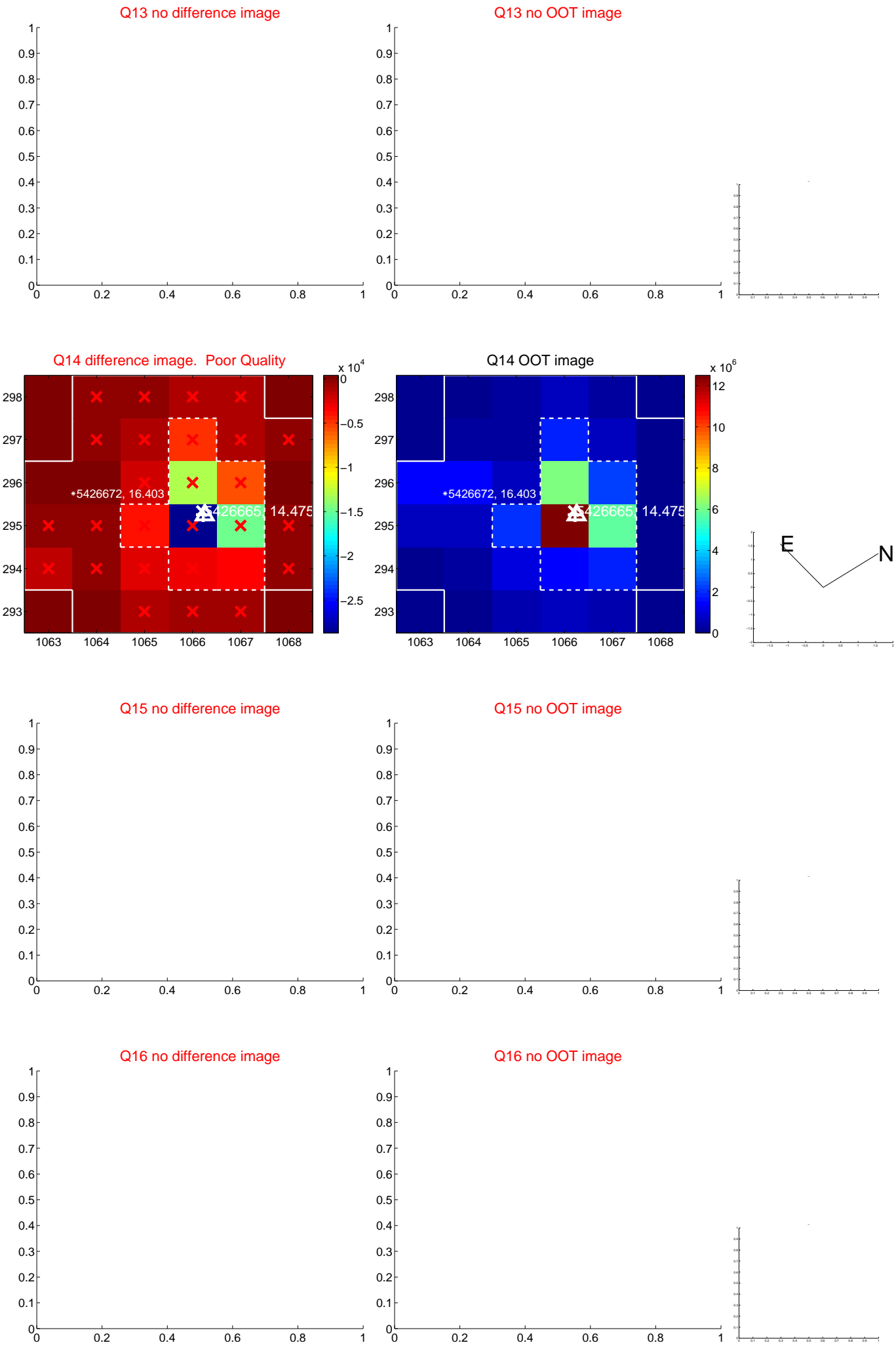




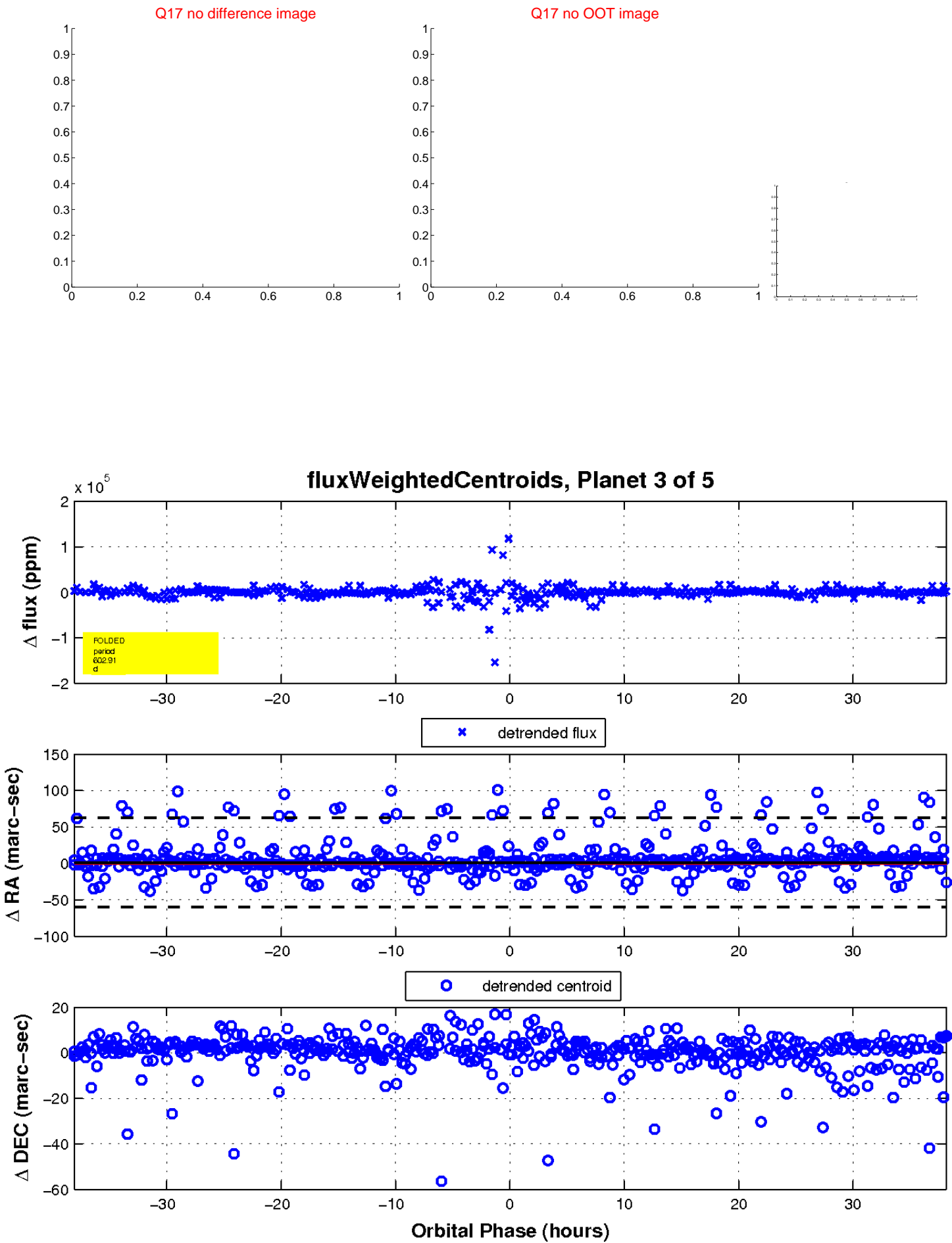
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

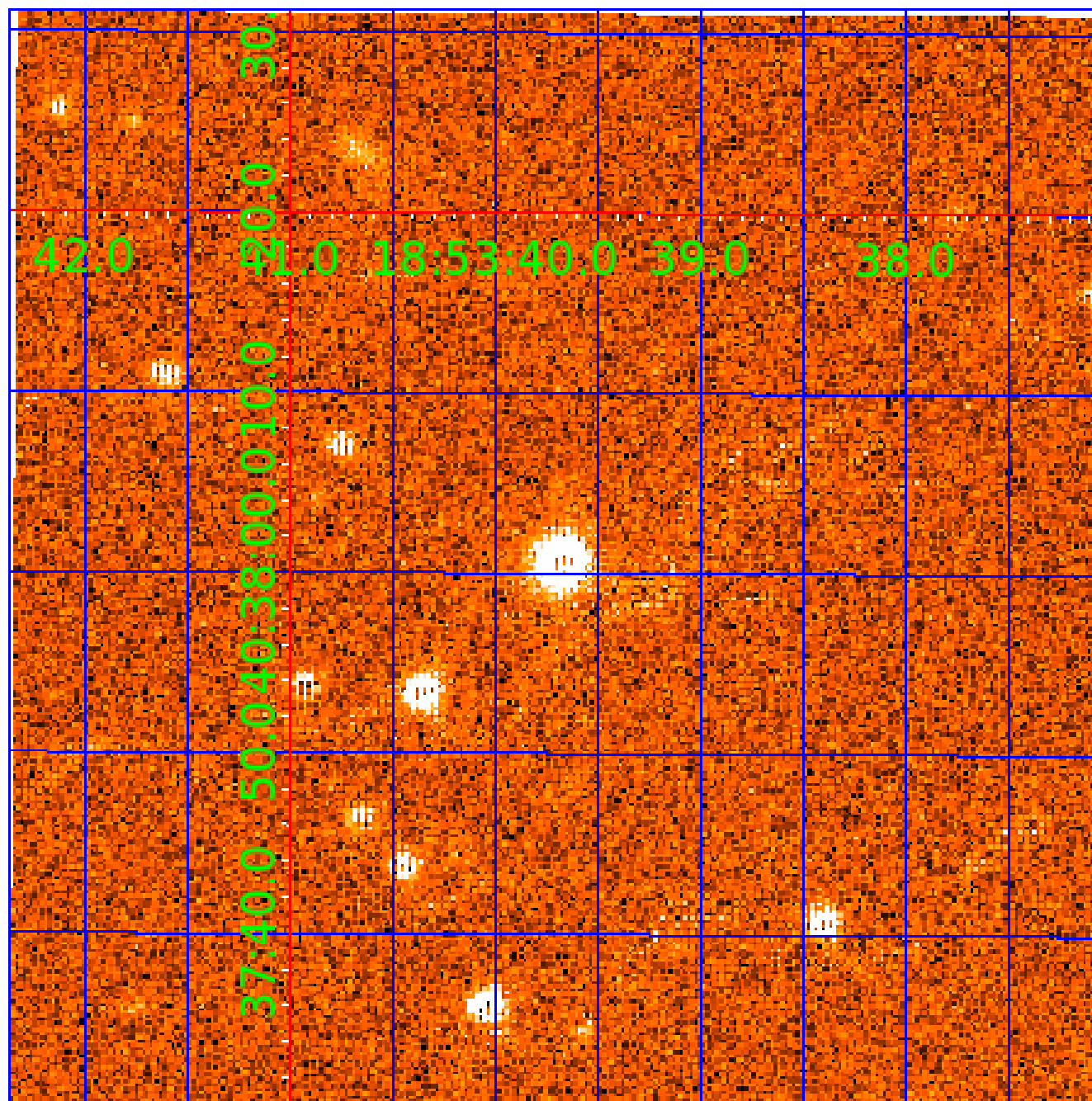


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination



# KIC 005426665

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005426665-01	OBS	No	305.730189	325.386576	11305.4	7.376	53.3	13.3	1.32	6329	14.04	3.01
005426665-02	OBS	No	319.751532	219.551005	51746.0	4.256	36.1	22.1	1.32	6329	41.64	2.83
005426665-03	OBS	No	602.909264	137.617565	12071.7	12.760	34.0	14.4	1.32	6329	14.51	1.22
005426665-04	OBS	No	230.141666	143.145257	1456.4	2.355	21.0	1.3	1.32	6329	5.62	4.39
005426665-05	OBS	No	461.614554	187.376347	741.1	10.500	12.6	-1.0	1.32	6329	3.60	1.74

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005426665-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005426665-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005426665-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005426665-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005426665-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

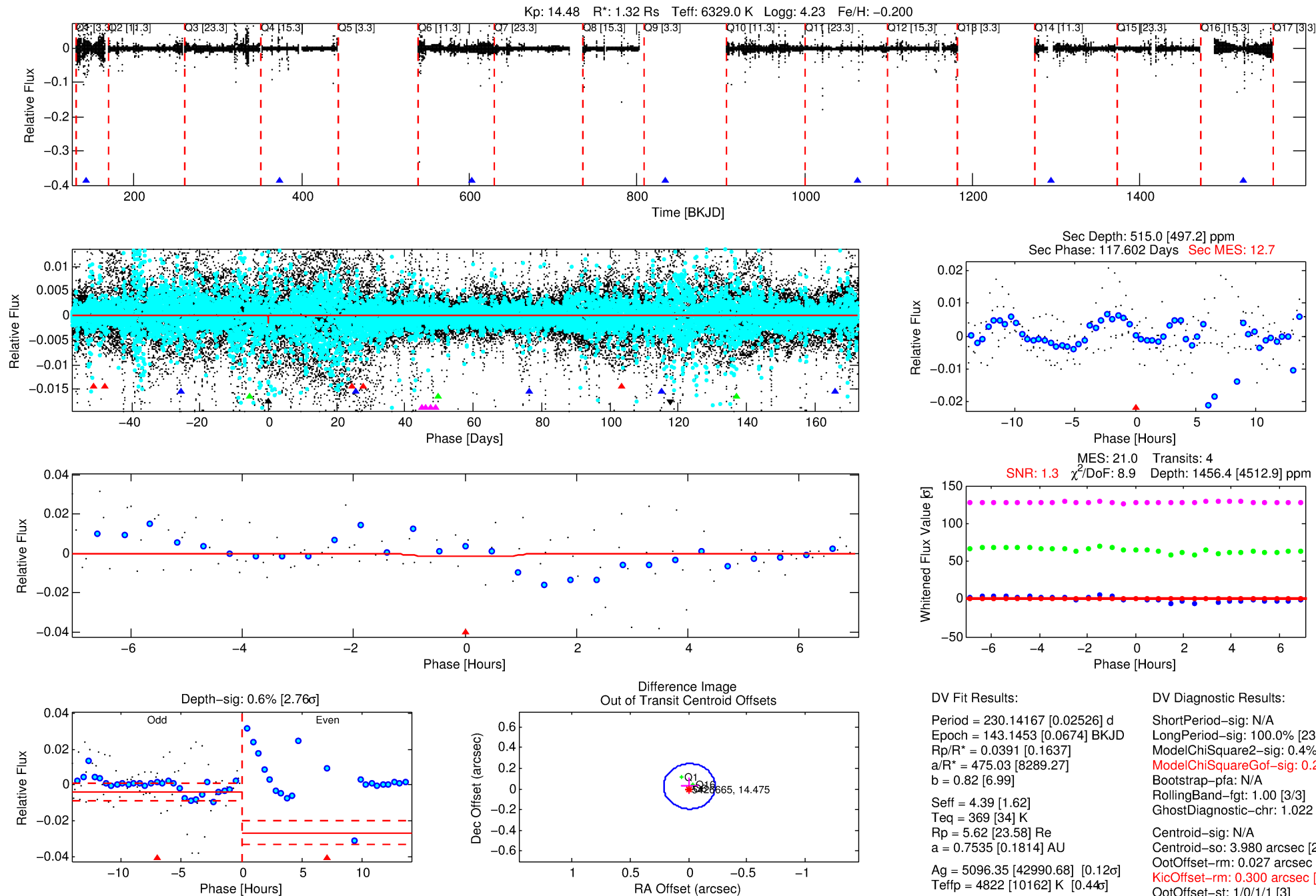
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005426665-04

No Significant Match Found

# DV One-Page Summary

KIC: 5426665 Candidate: 4 of 5 Period: 230.142 d



## DV Fit Results:

Period = 230.14167 [0.02526] d  
Epoch = 143.1453 [0.0674] BKJD  
Rp/R\* = 0.0391 [0.1637]  
a/R\* = 475.03 [8289.27]  
b = 0.82 [6.99]  
Seff = 4.39 [1.62]  
Teq = 369 [34] K  
Rp = 5.62 [23.58] Re  
a = 0.7535 [0.1814] AU  
Ag = 5096.35 [42990.68] [0.12 $\sigma$ ]  
Teff = 4822 [10162] K [0.44 $\sigma$ ]

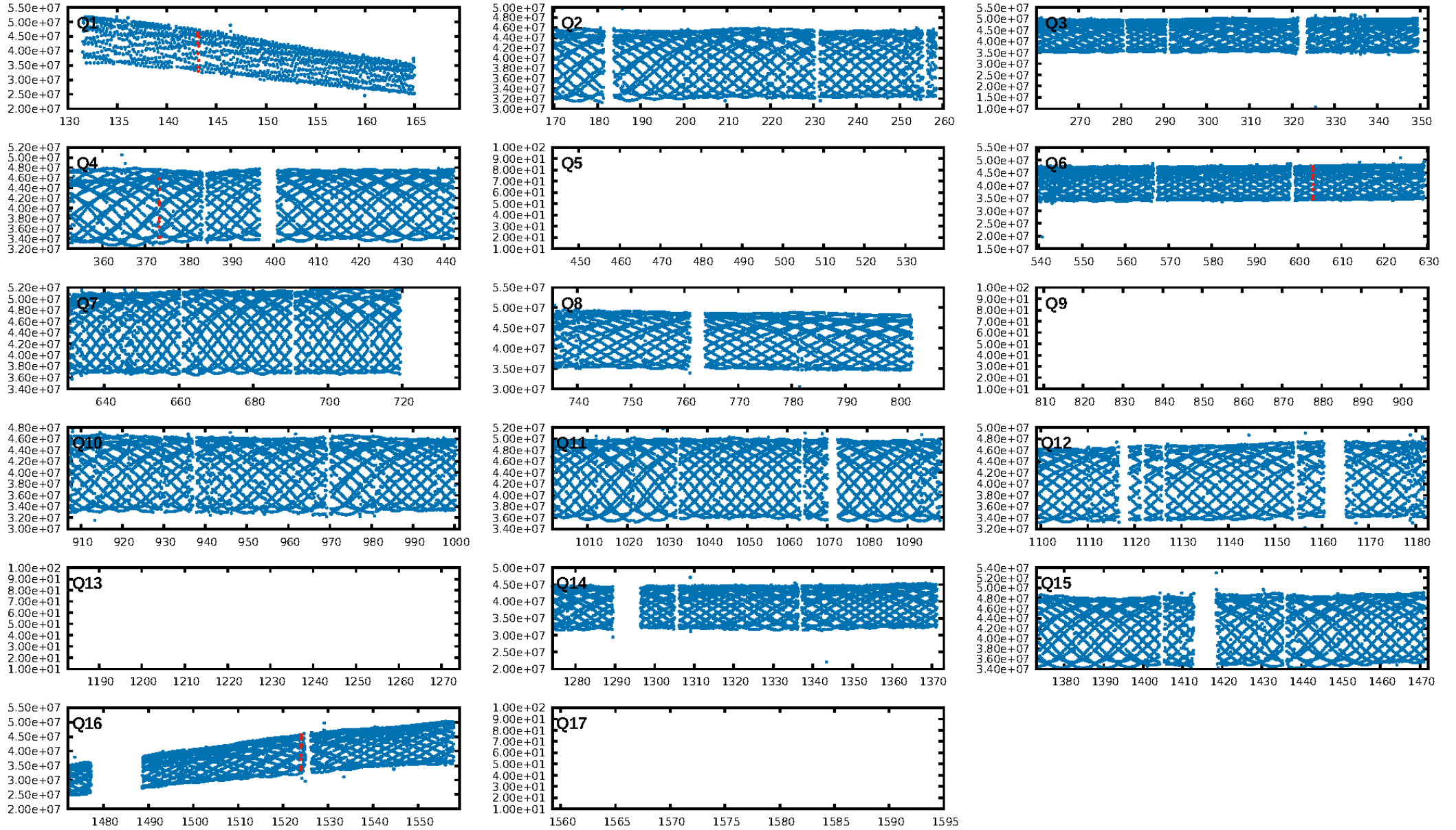
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [234.30 $\sigma$ ]  
ModelChiSquare2-sig: 0.4%  
**ModelChiSquareGof-sig: 0.2%**  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.022  
Centroid-sig: N/A  
Centroid-so: 3.980 arcsec [2.54 $\sigma$ ]  
OotOffset-rm: 0.027 arcsec [0.37 $\sigma$ ]  
**KicOffset-rm: 0.300 arcsec [3.31 $\sigma$ ]**  
OotOffset-st: 1/0/1/1 [3]  
KicOffset-st: 1/0/1/1 [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: 02-Feb-2016 07:39:14 Z

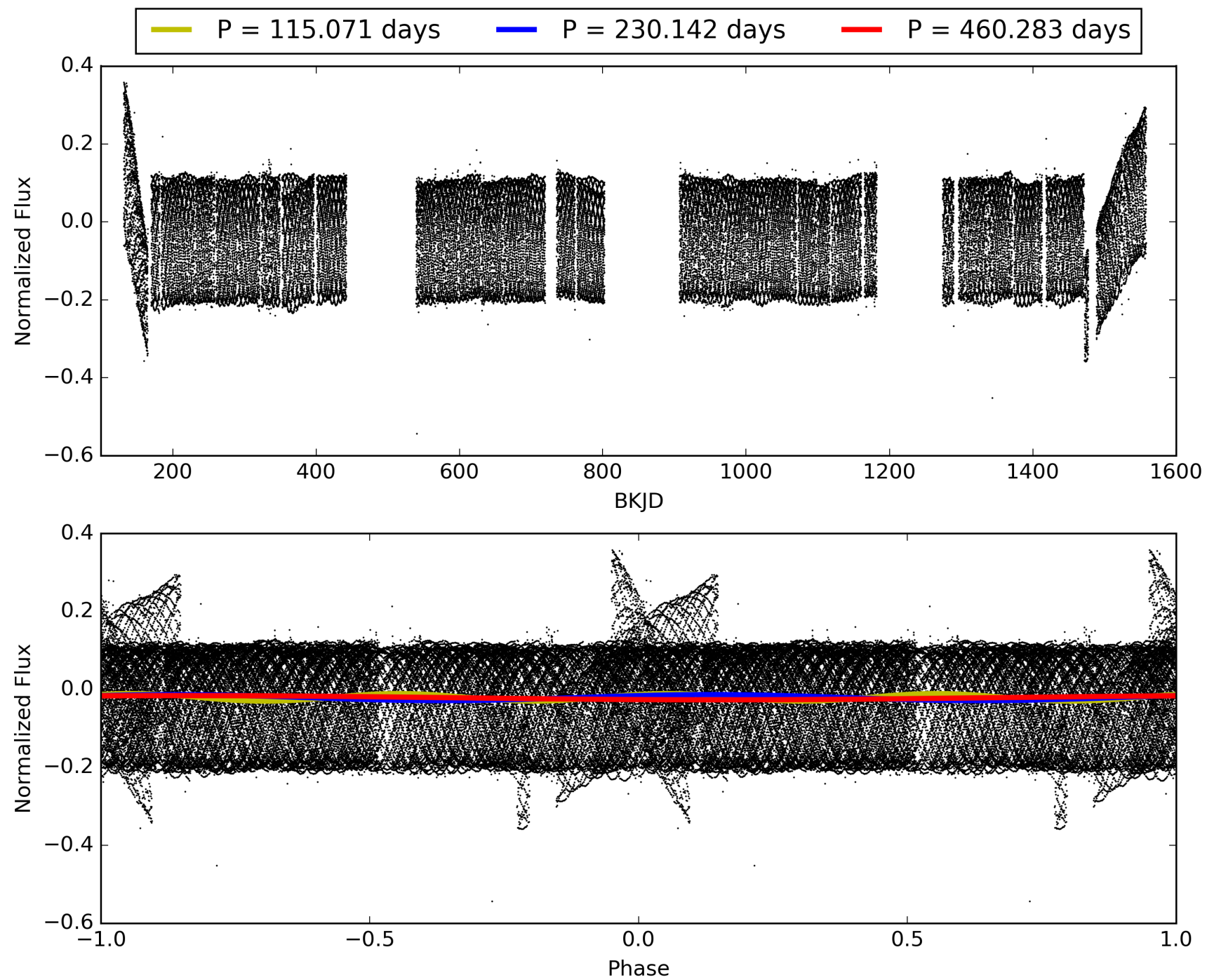
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005426665-04, PDC Light Curves





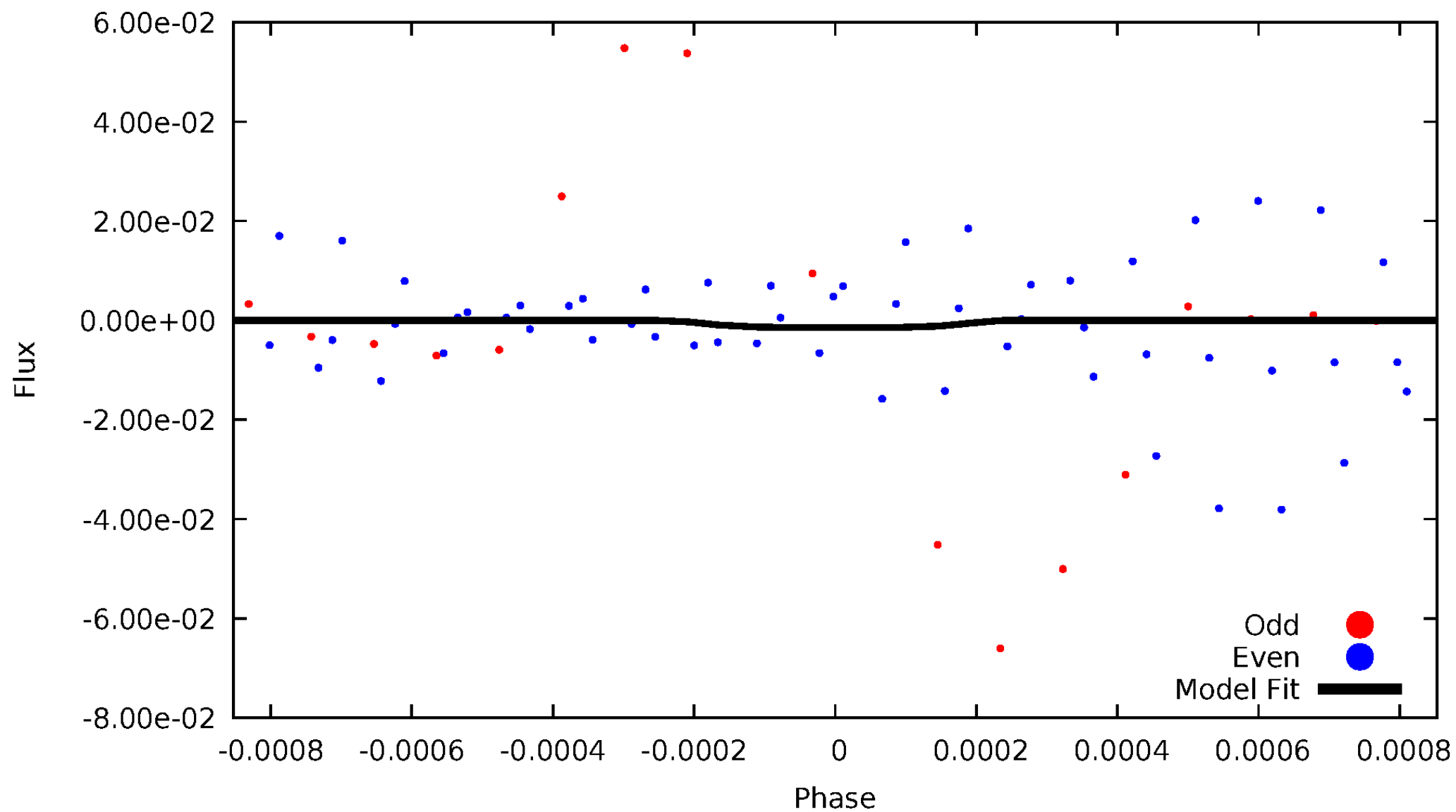
TCE 005426665-04





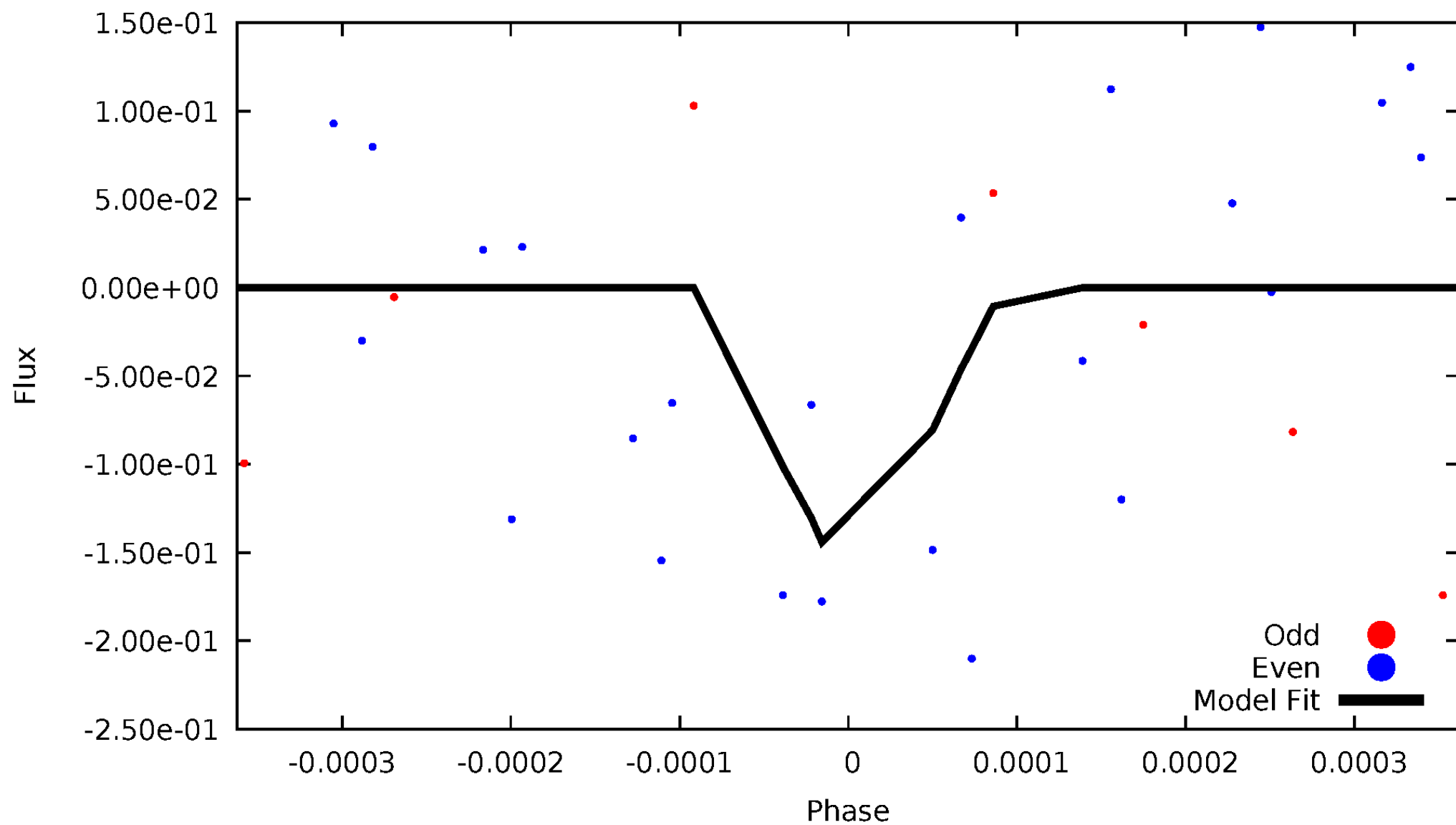
# DV Odd/Even

TCE 005426665-04



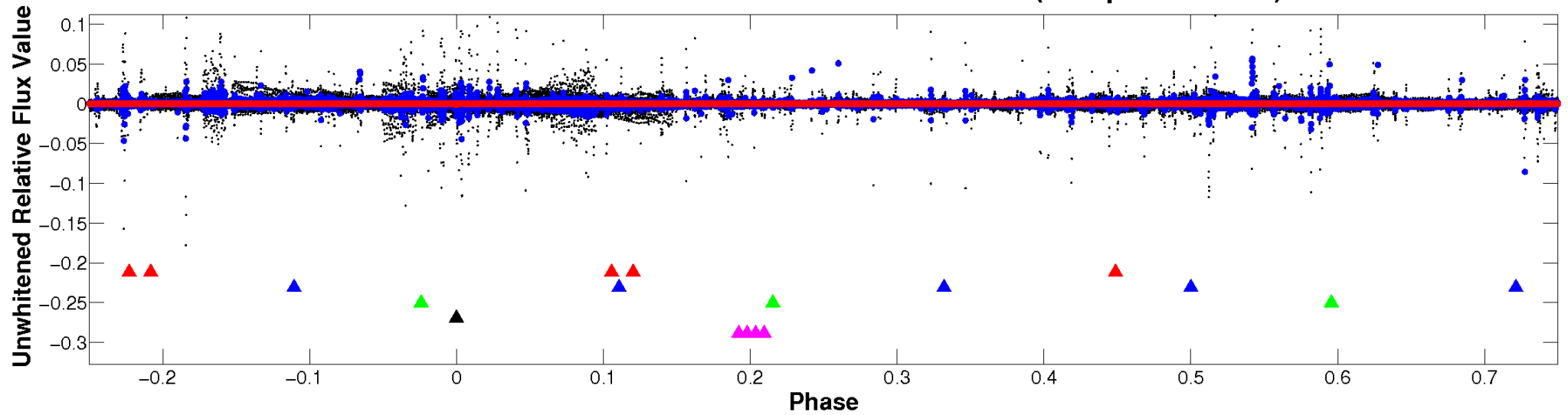
# ALT Odd/Even

TCE 005426665-04

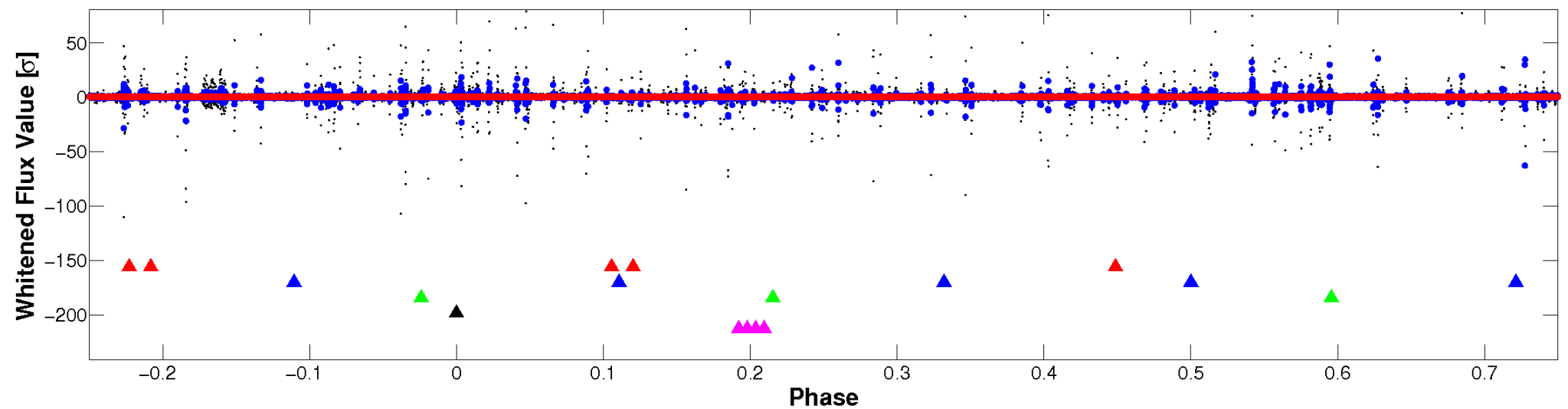


# Non-Whitened Vs. Whitened Light Curve

**Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**

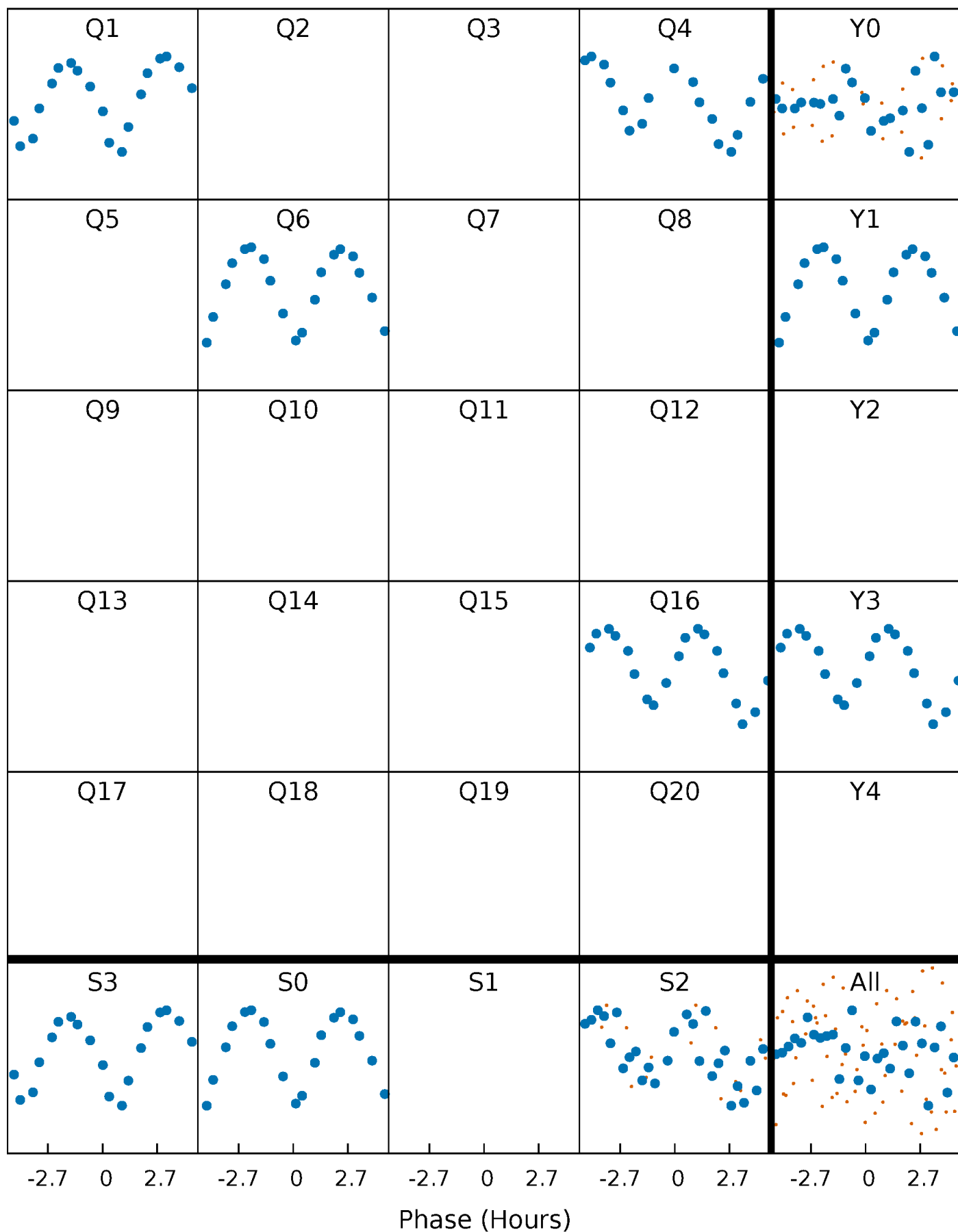


**Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



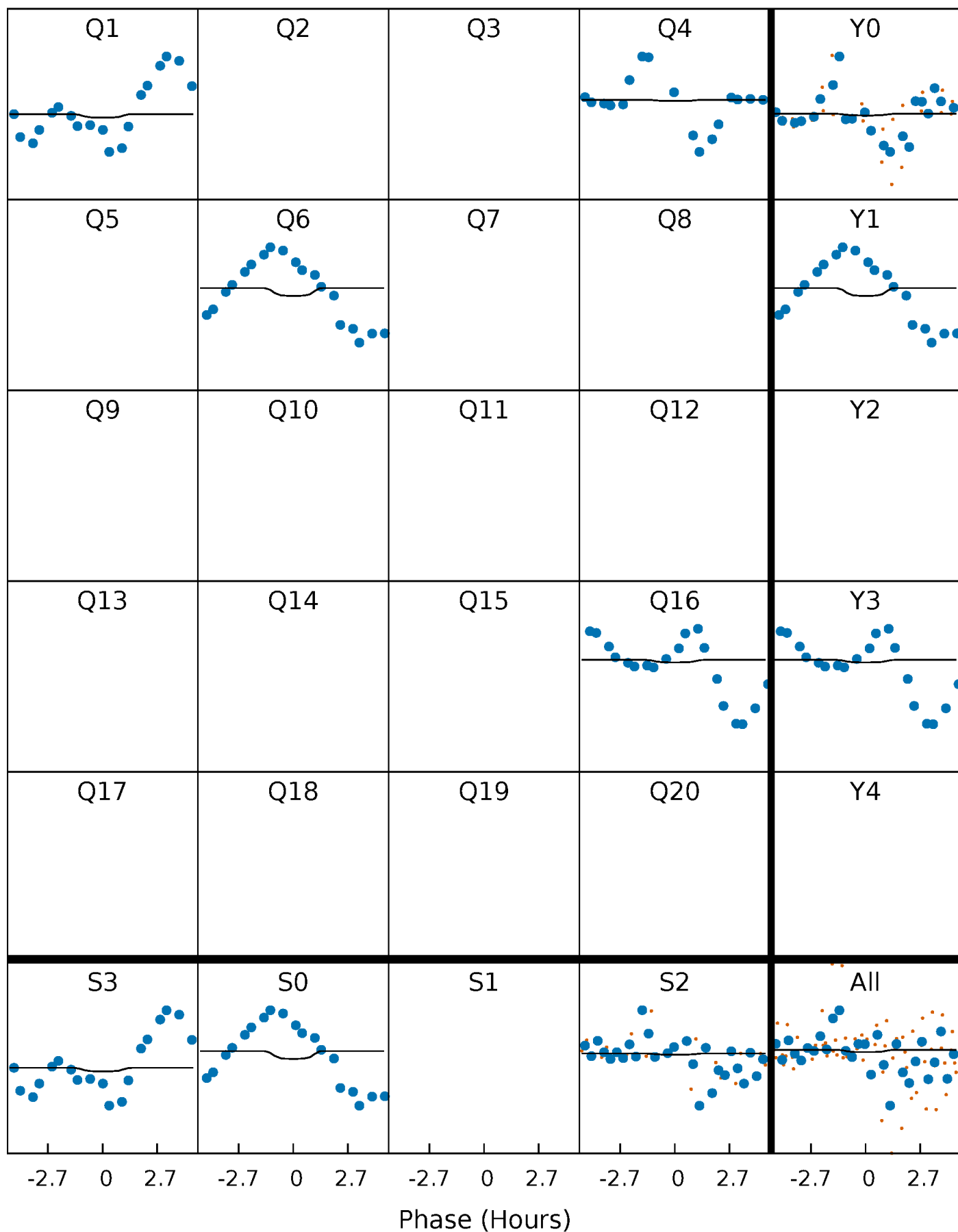
# PDC Quarter-Phased Transit Curves

TCE 005426665-04     $P=230.141666$  Days     $T_0=143.145257$  (BKJD)



# DV Quarter-Phased Transit Curves

TCE 005426665-04 P=230.141666 Days  $T_0=143.145257$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

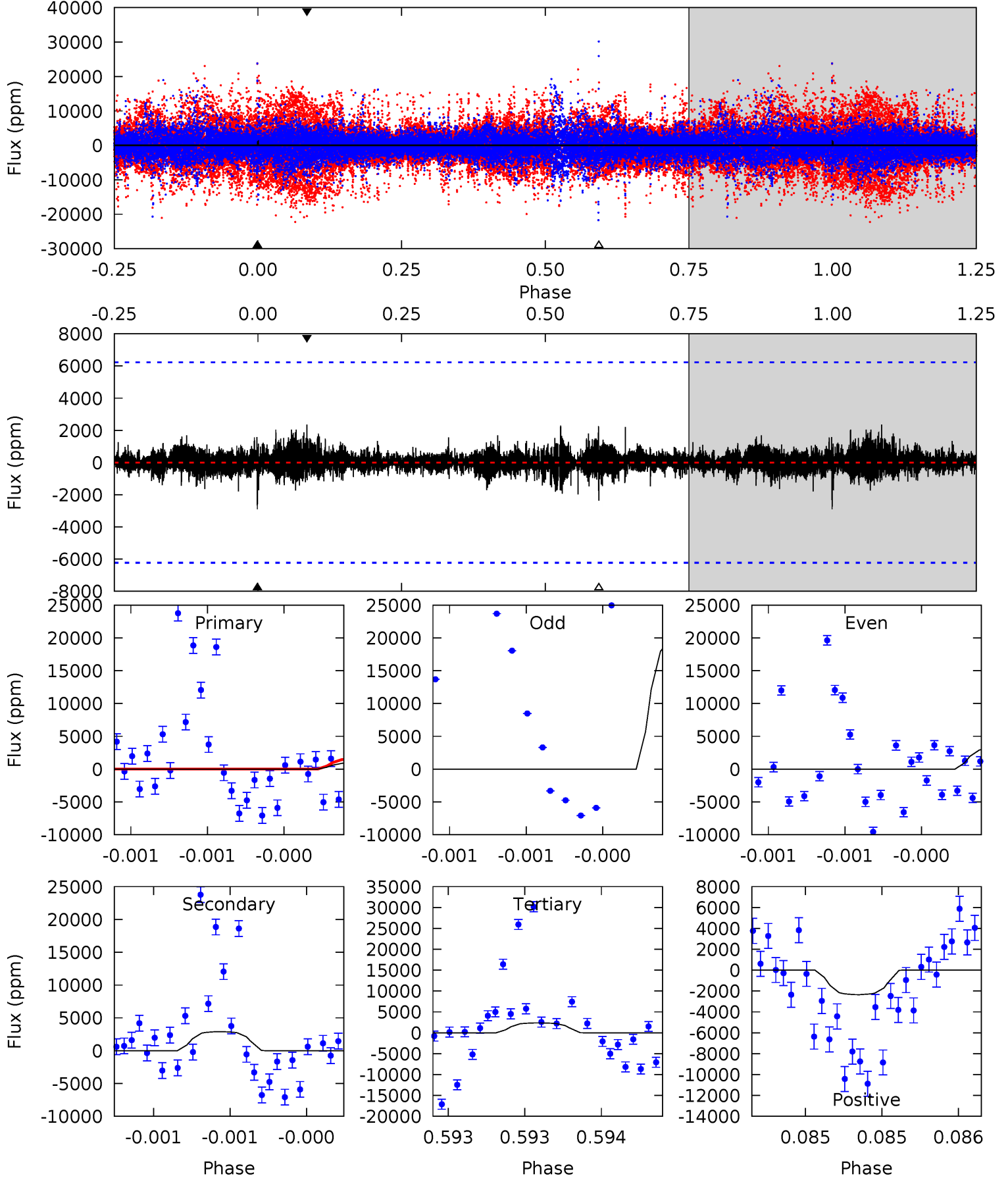
TCE 005426665-04 P=230.136375 Days  $T_0=143.164196$  (BKJD)



# DV Model-Shift Uniqueness Test

005426665-04, P = 230.141666 Days, E = 143.145257 Days

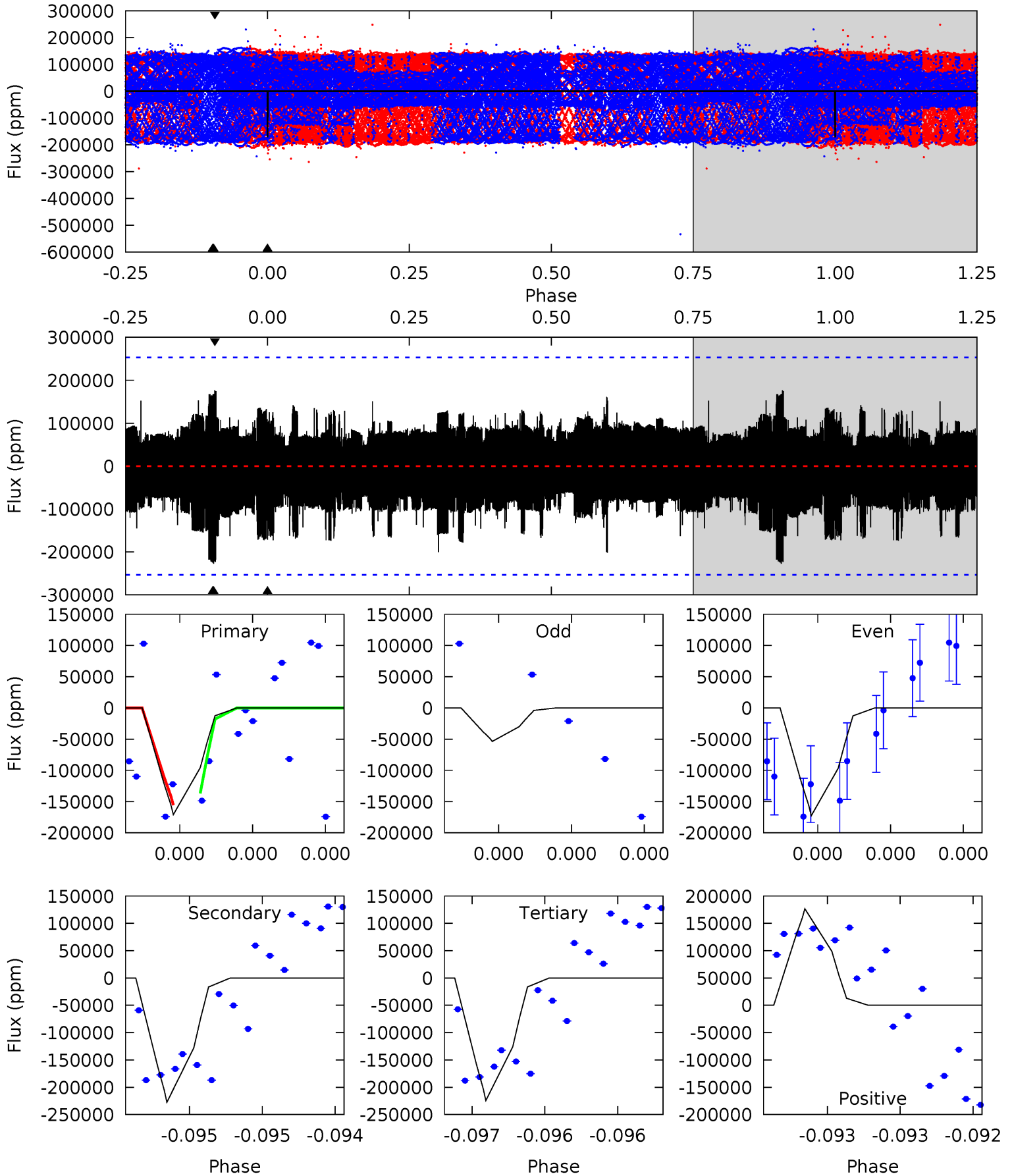
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.85	2.60	2.11	2.11	5.59	3.51	0.44	-1.26	-1.26	0.49	0.50	3.36	0.80	0.45	1.00



# Alt Model-Shift Uniqueness Test

005426665-04, P = 230.136375 Days, E = 143.164196 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
3.88	5.17	5.09	4.01	5.75	3.75	1.21	-1.21	-0.13	0.08	1.16	1.02	0.81	0.44	0.20





### Stellar Parameters For KIC 005426665

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6329^{+169}_{-206}$	$4.231^{+0.167}_{-0.185}$	$-0.200^{+0.250}_{-0.300}$	$1.317^{+0.384}_{-0.279}$	$1.074^{+0.185}_{-0.123}$	$0.662^{+0.625}_{-0.320}$
	+3%/-3%	+4%/-4%	+125%/-150%	+29%/-21%	+17%/-11%	+94%/-48%
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 005426665-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	-2901±1114	$17.94^{+18.78}_{-12.55}$	$517^{+41}_{-35}$	$4364^{+3605}_{-1027}$	$2759^{+30645}_{-2180}$
Alt.	-227603±44029	$61.13^{+24.93}_{-24.70}$	$517^{+40}_{-35}$	$7292^{+2616}_{-1276}$	$25058^{+46249}_{-13153}$

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

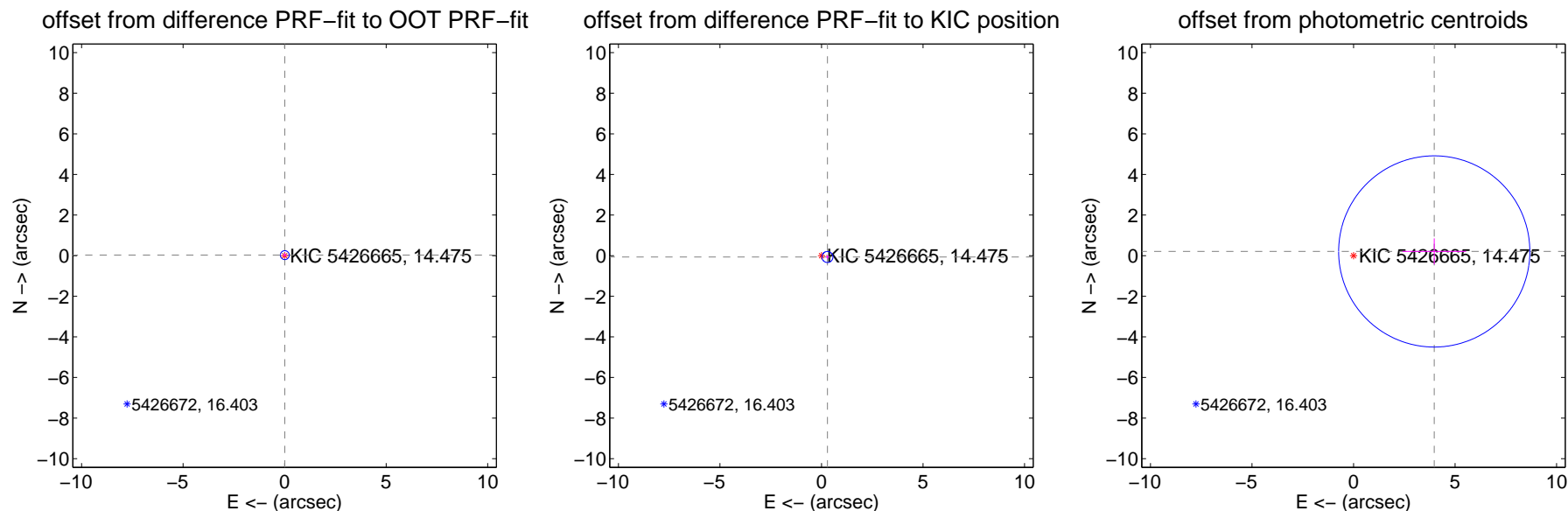
## DV Centroid Data

Supplemental centroid analysis for 005426665-04. Kepler magnitude: 14.47. Transit SNR 1.27

There are 2 quarters with good PRF difference image offsets

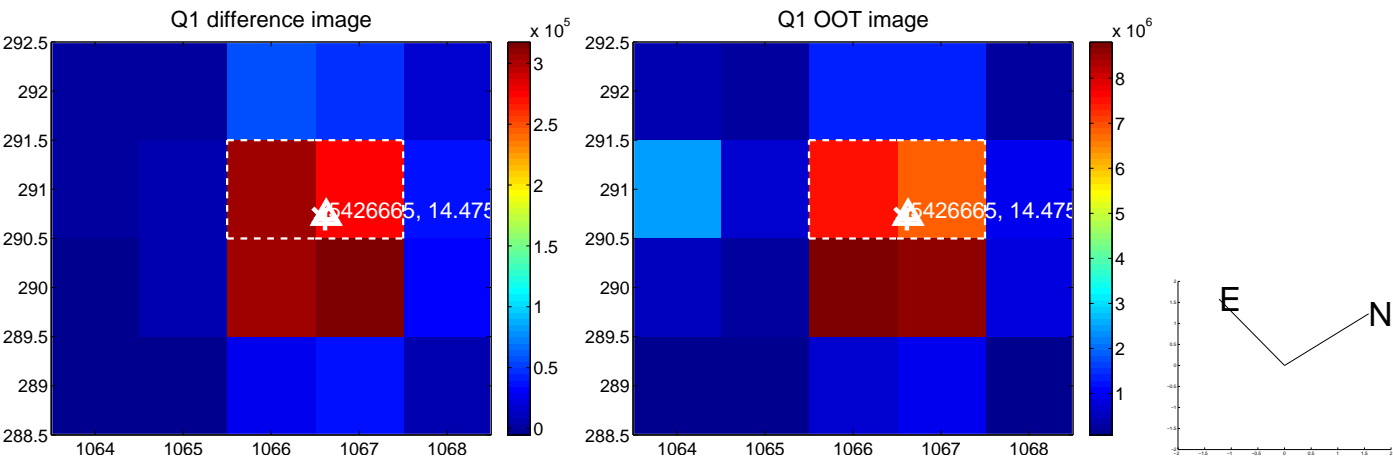
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.027 \pm 0.073$	0.37	$-0.008 \pm 0.072$	$0.026 \pm 0.073$
PRF-fit source offset from KIC position	$0.300 \pm 0.091$	3.31	$-0.293 \pm 0.080$	$-0.066 \pm 0.108$
photometric centroid source offset	$3.98 \pm 1.57$	2.54	$-3.97 \pm 1.57$	$0.21 \pm 0.64$

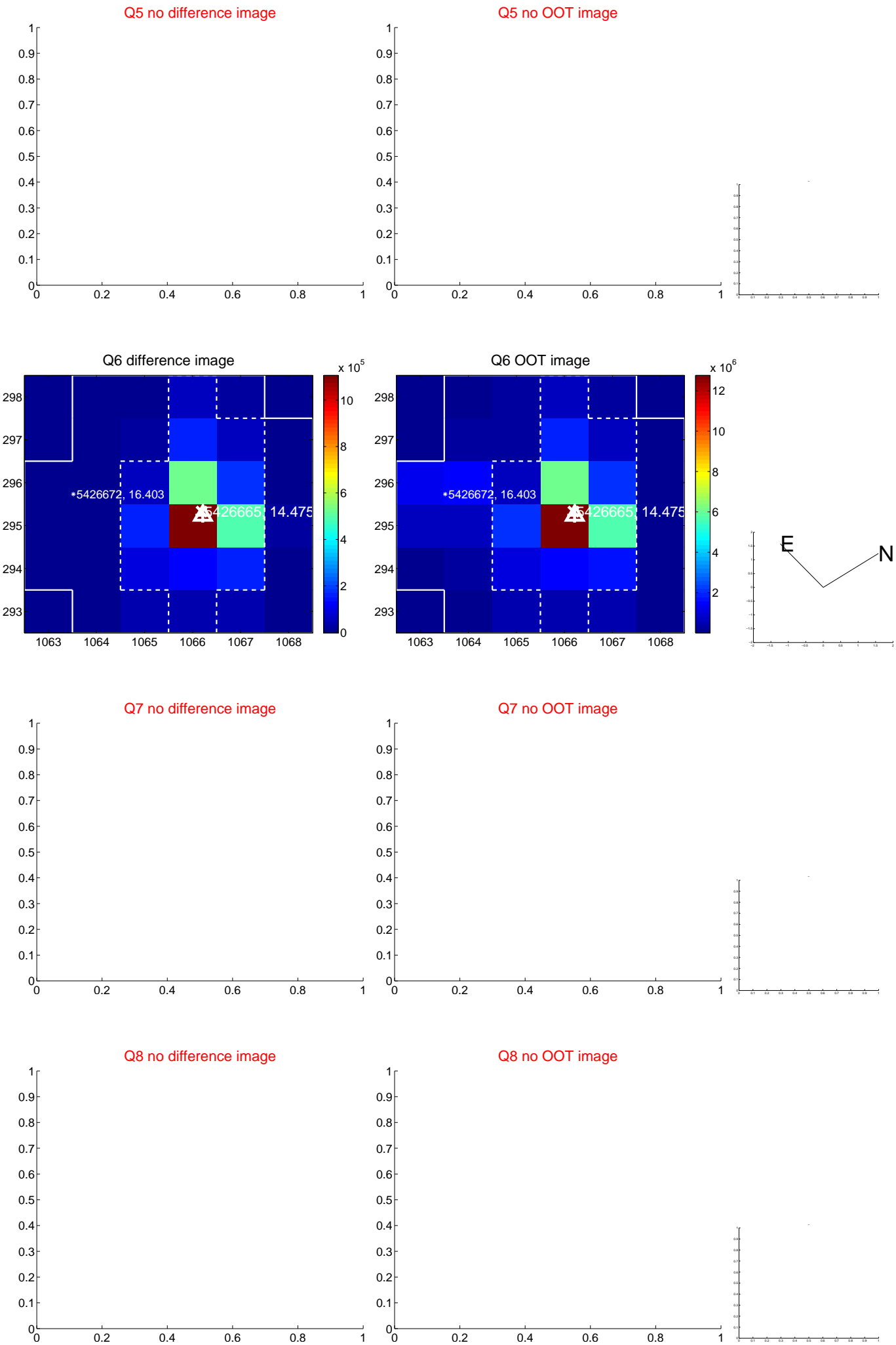


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



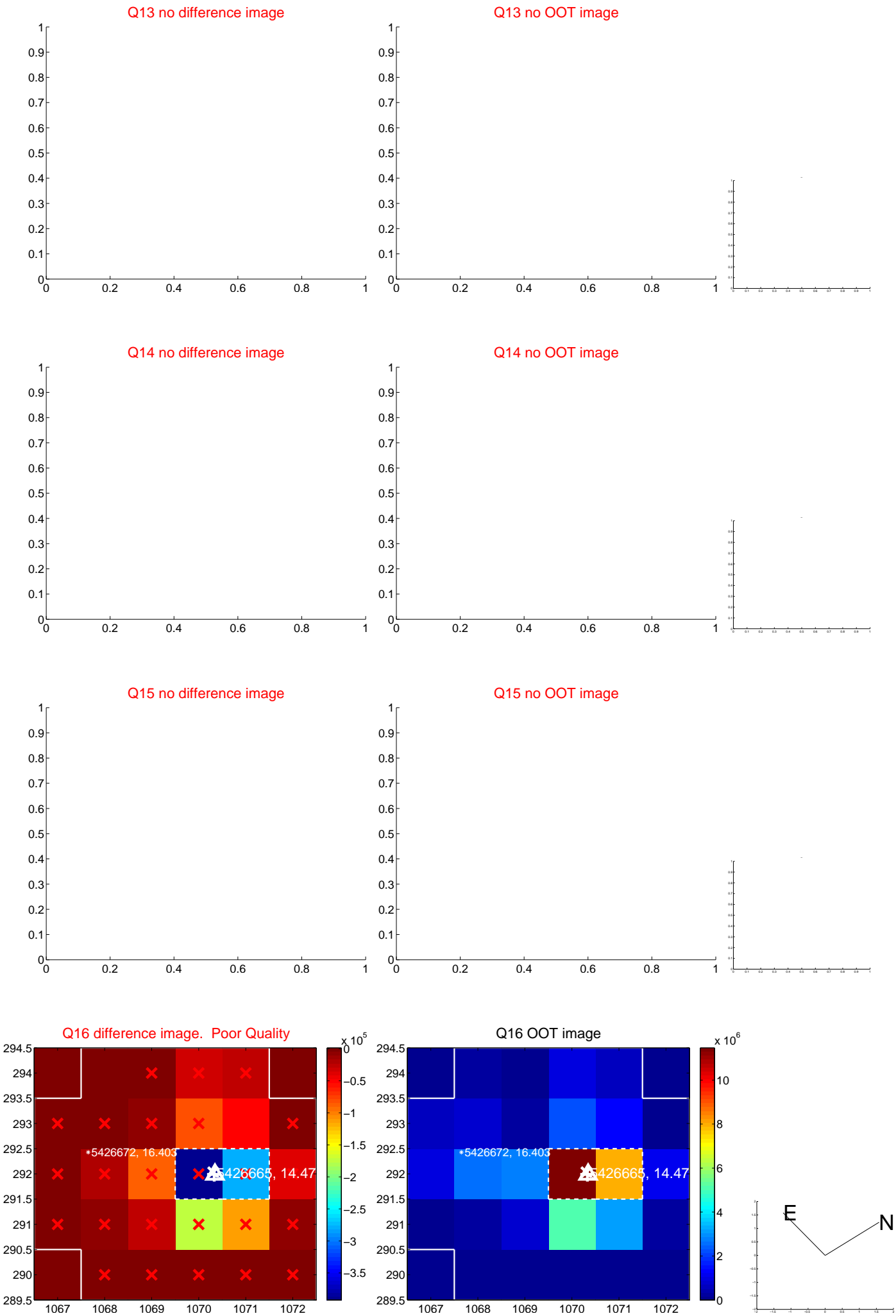
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



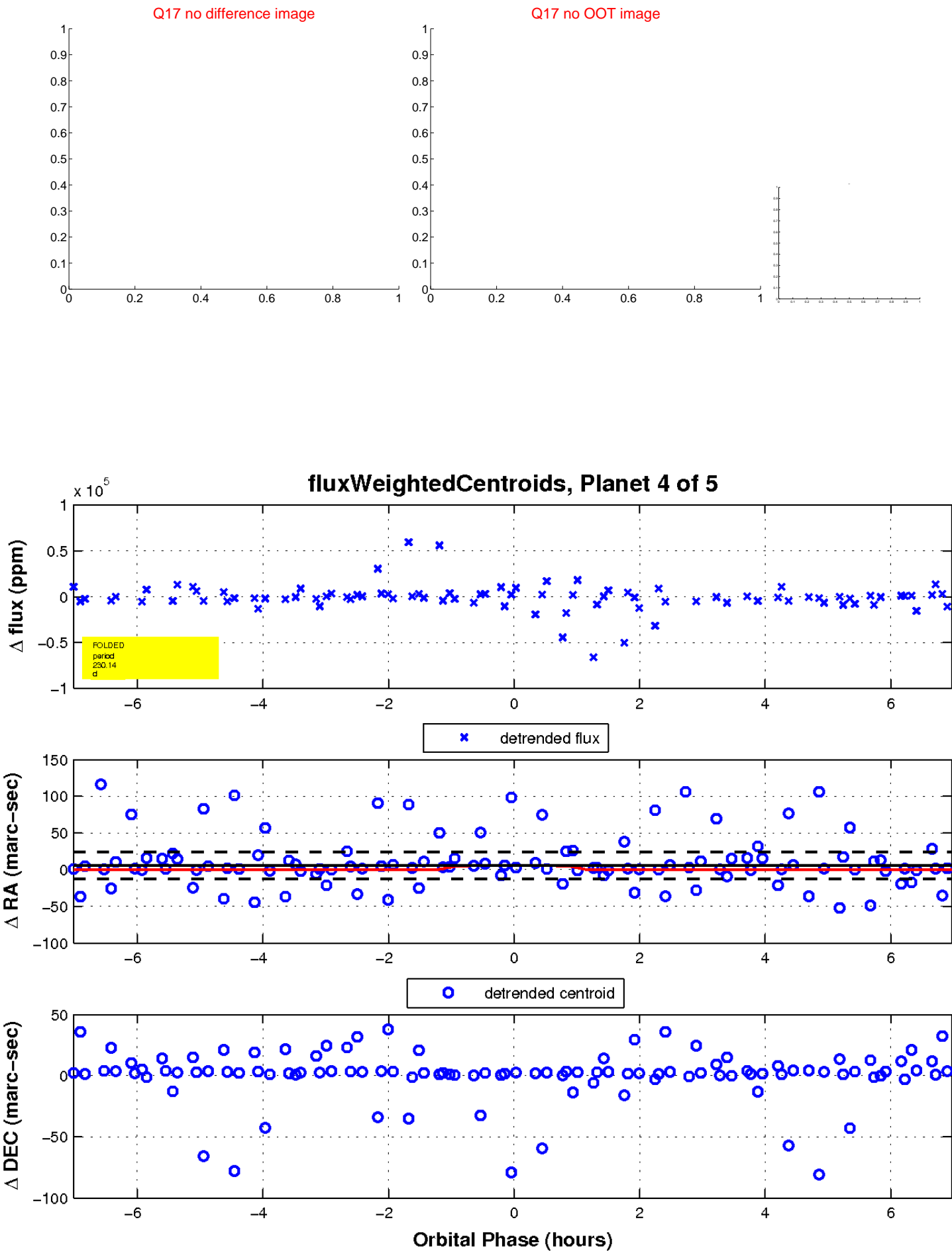
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

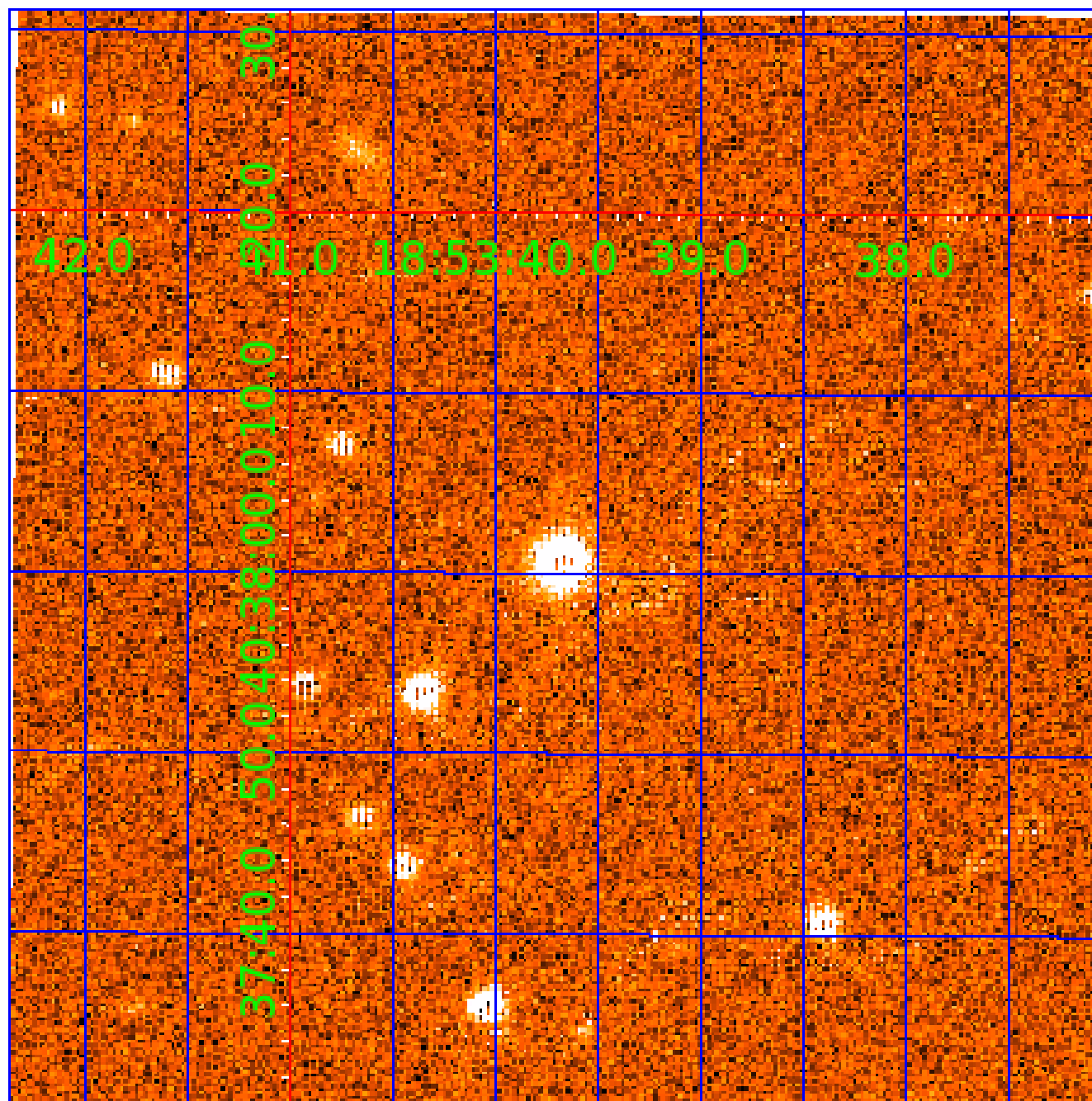


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination





# KIC 005426665

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005426665-01	OBS	No	305.730189	325.386576	11305.4	7.376	53.3	13.3	1.32	6329	14.04	3.01
005426665-02	OBS	No	319.751532	219.551005	51746.0	4.256	36.1	22.1	1.32	6329	41.64	2.83
005426665-03	OBS	No	602.909264	137.617565	12071.7	12.760	34.0	14.4	1.32	6329	14.51	1.22
005426665-04	OBS	No	230.141666	143.145257	1456.4	2.355	21.0	1.3	1.32	6329	5.62	4.39
005426665-05	OBS	No	461.614554	187.376347	741.1	10.500	12.6	-1.0	1.32	6329	3.60	1.74

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005426665-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
005426665-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005426665-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005426665-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_SKYE_ZUMA_TRACKER—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
005426665-05	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_NOFITS—HALO_GHOST

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

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

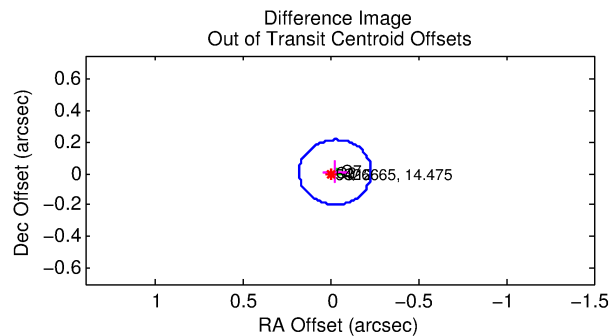
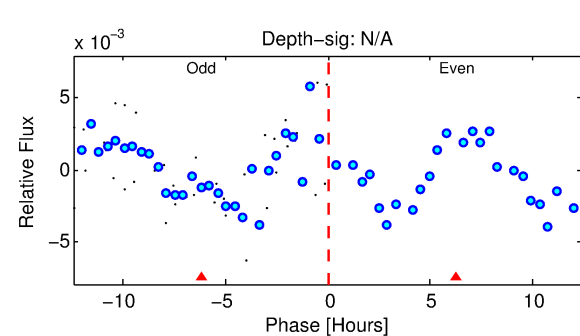
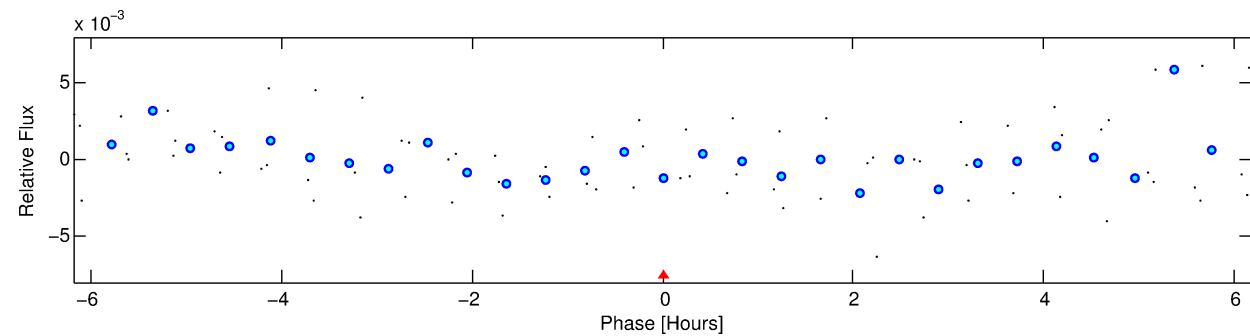
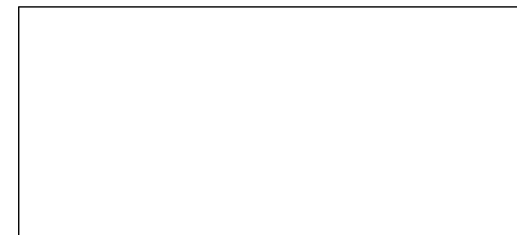
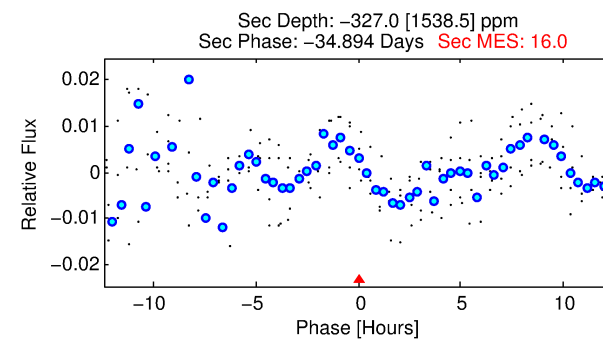
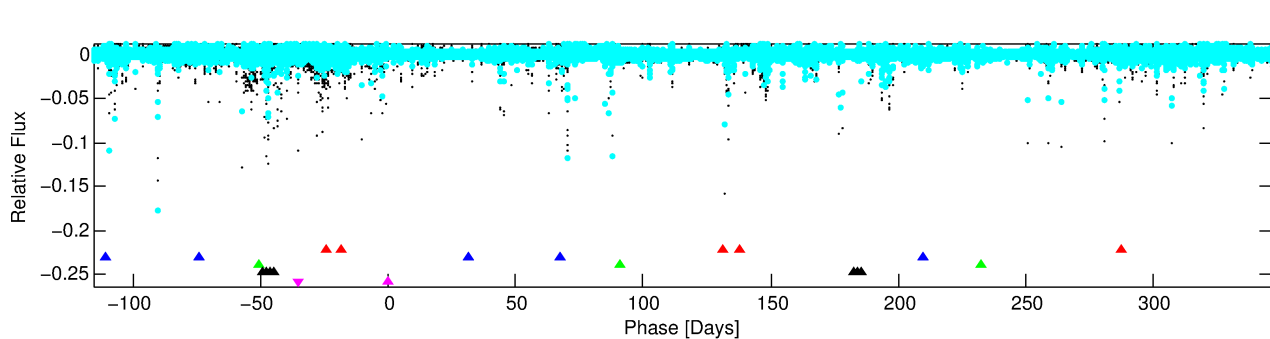
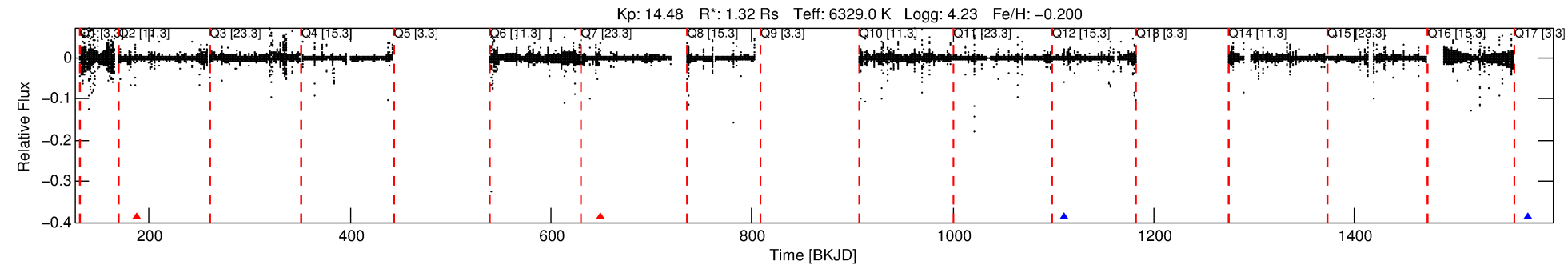
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 005426665-05

No Significant Match Found

# DV One-Page Summary

KIC: 5426665 Candidate: 5 of 5 Period: 461.615 d



## TPS TCE Results:

Period = 461.61455 d  
Epoch = 187.3763 BKJD

DV fit results are unavailable

## DV Diagnostic Results:

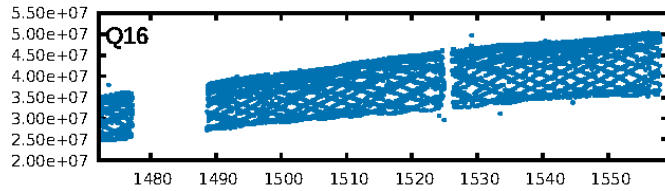
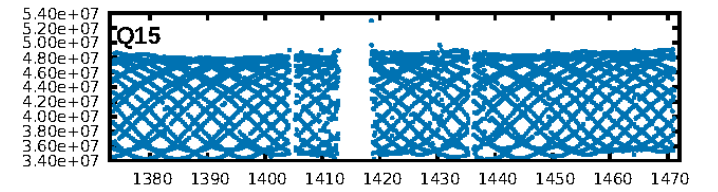
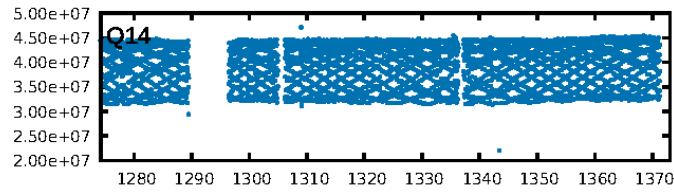
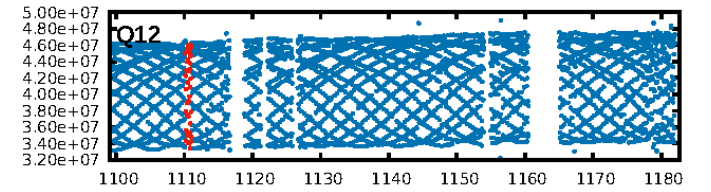
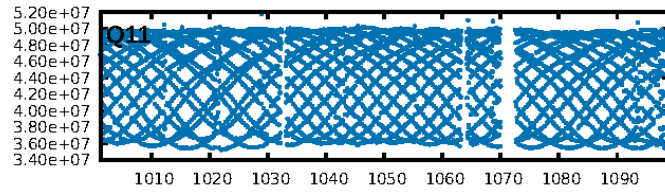
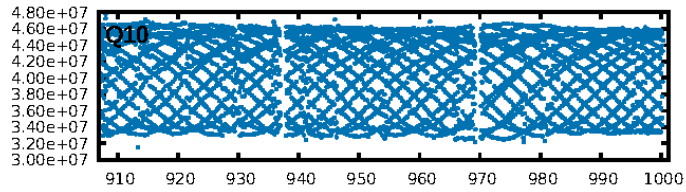
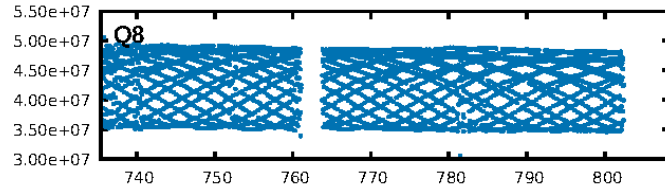
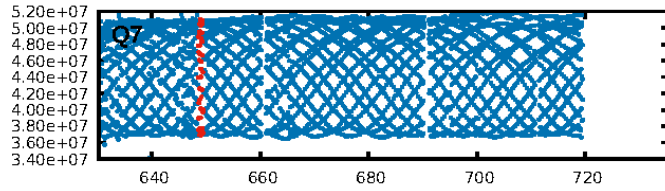
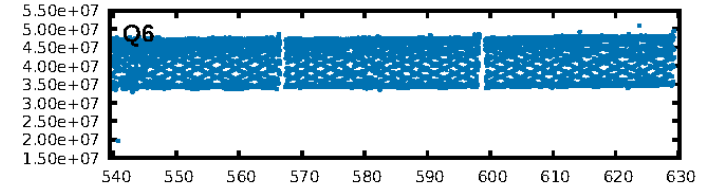
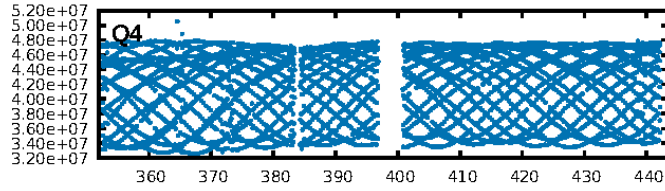
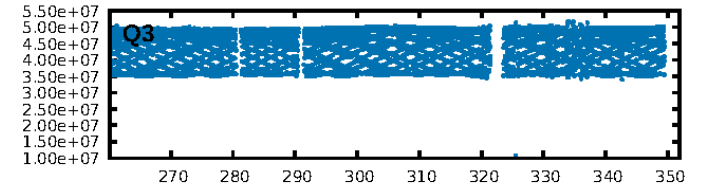
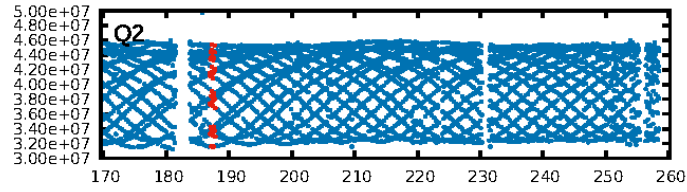
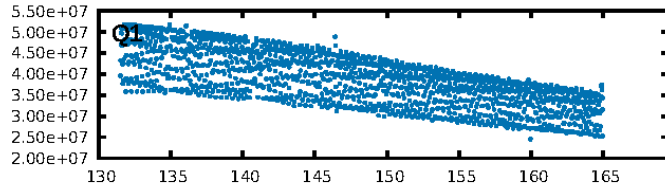
ShortPeriod-sig: 100.0% [300.51 $\sigma$ ]  
LongPeriod-sig: 100.0% [205.21 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.33 [1/3]  
GhostDiagnostic-chr: 0.008781

Centroid-sig: N/A  
Centroid-so: 0.449 arcsec [15.16 $\sigma$ ]  
OotOffset-rm: 0.027 arcsec [0.39 $\sigma$ ]  
KicOffset-rm: 0.213 arcsec [3.09 $\sigma$ ]  
OotOffset-st: 1/1/1/0 [3]  
KicOffset-st: 1/1/1/0 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

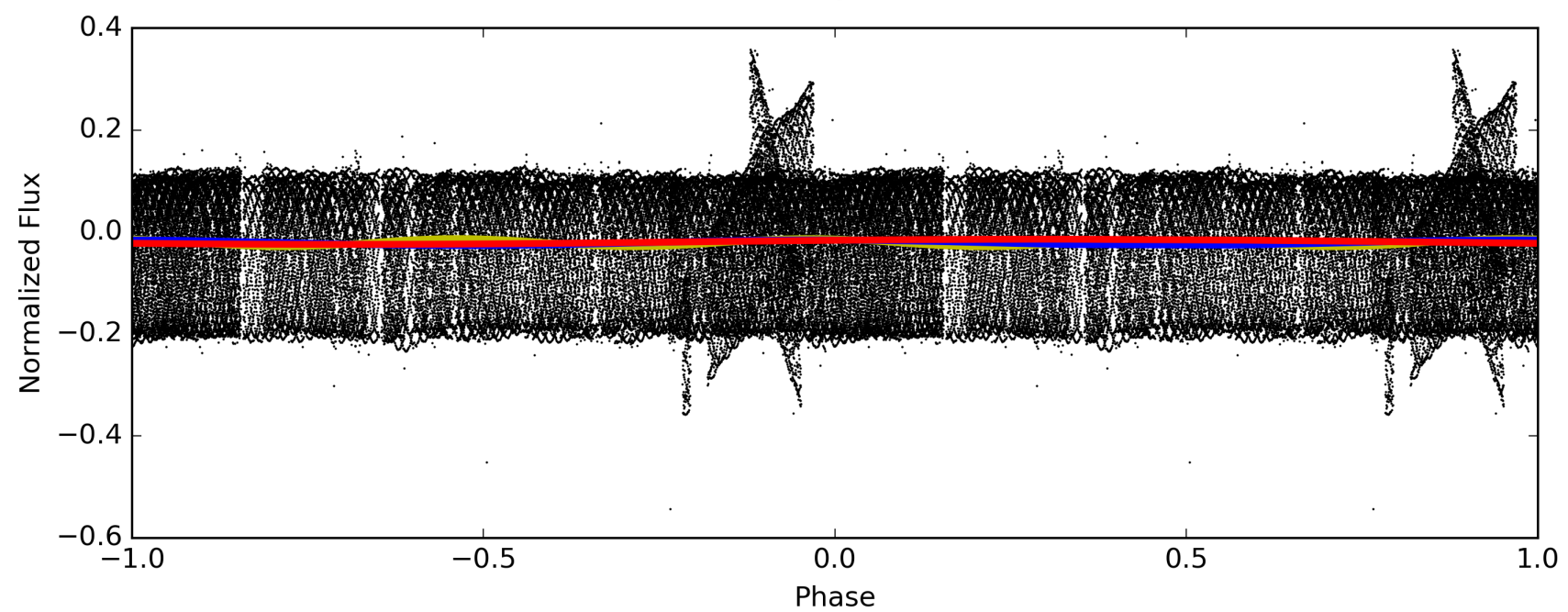
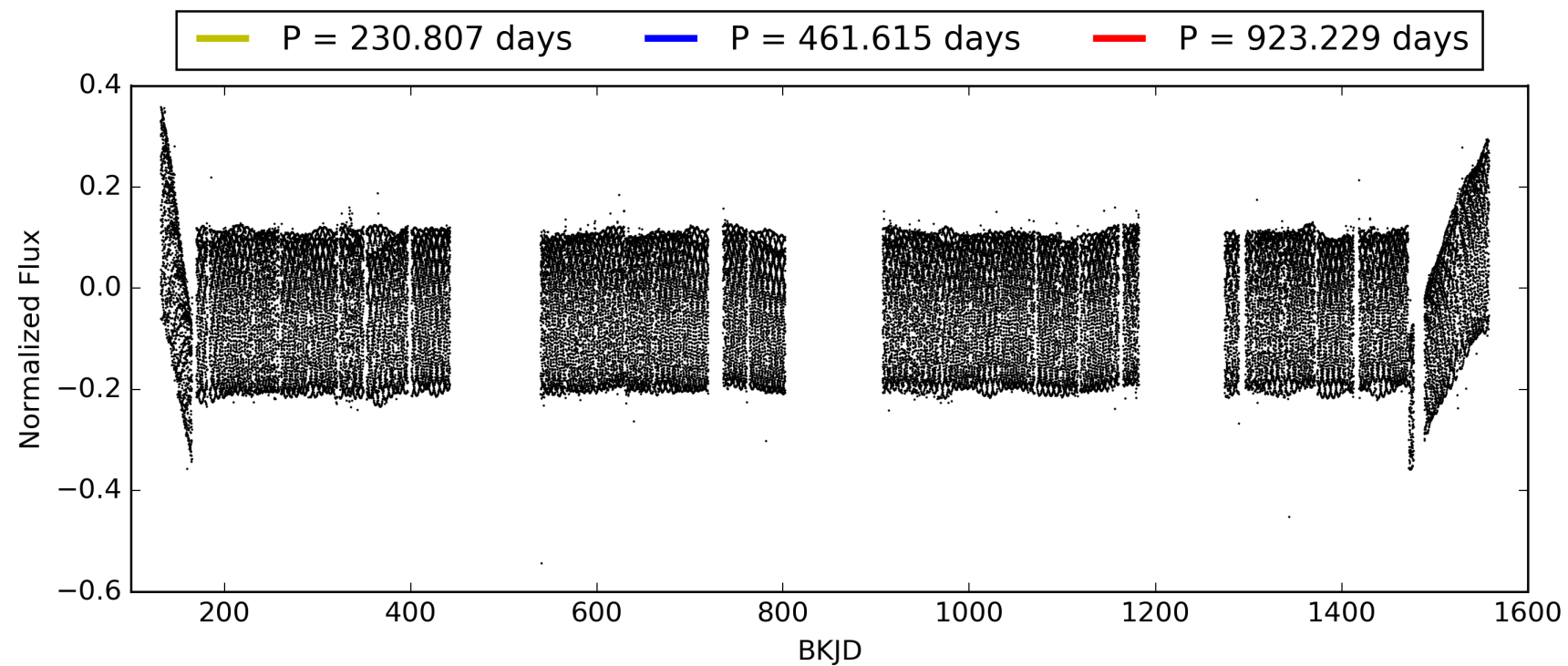
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 02-Feb-2016 07:39:36 Z

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

# TCE 005426665-05, PDC Light Curves

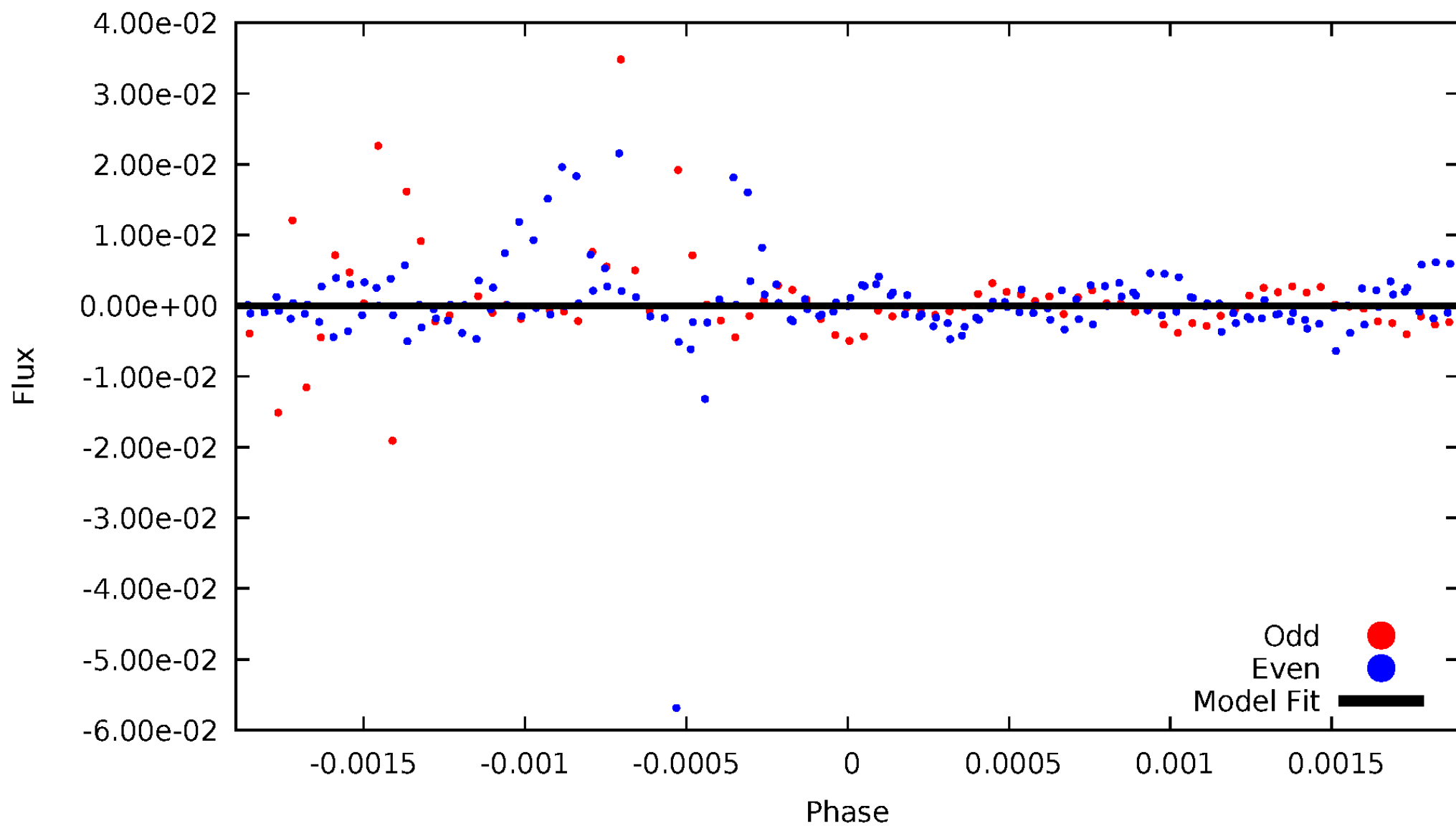


TCE 005426665-05



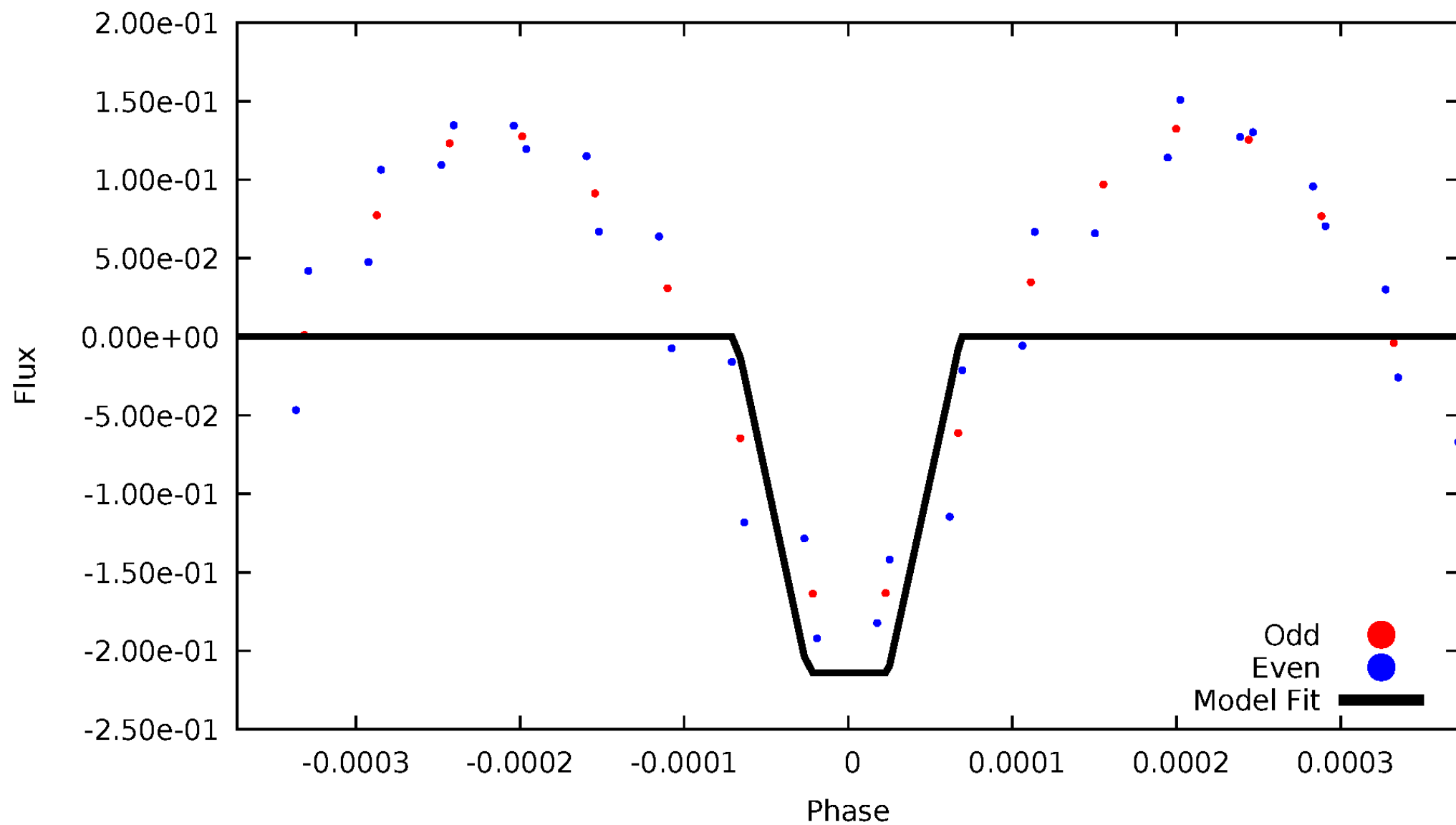
# DV Odd/Even

TCE 005426665-05



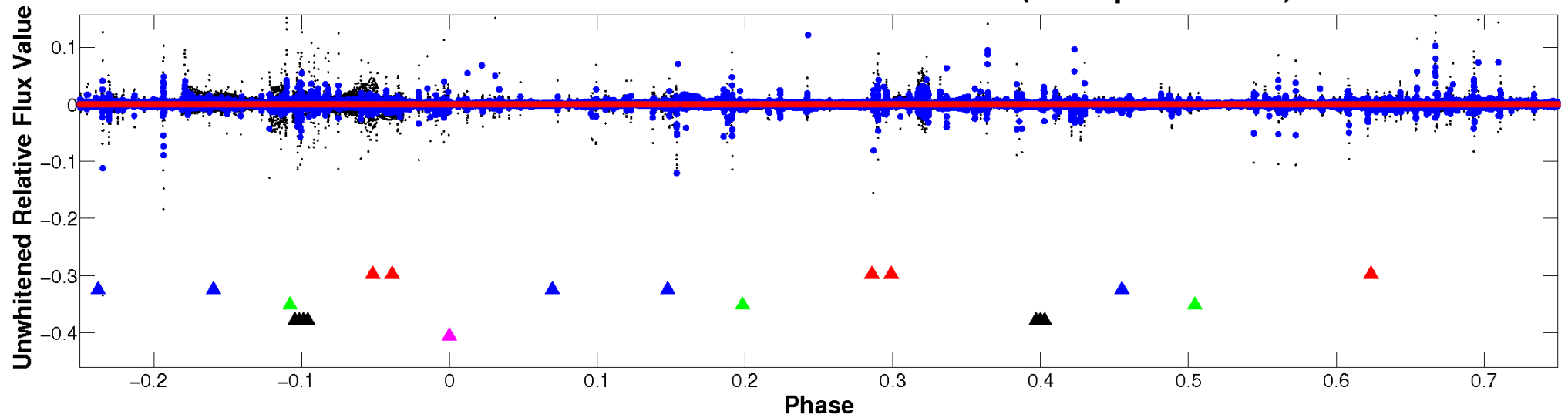
# ALT Odd/Even

TCE 005426665-05



# Non-Whitened Vs. Whitened Light Curve

**Planet 5 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

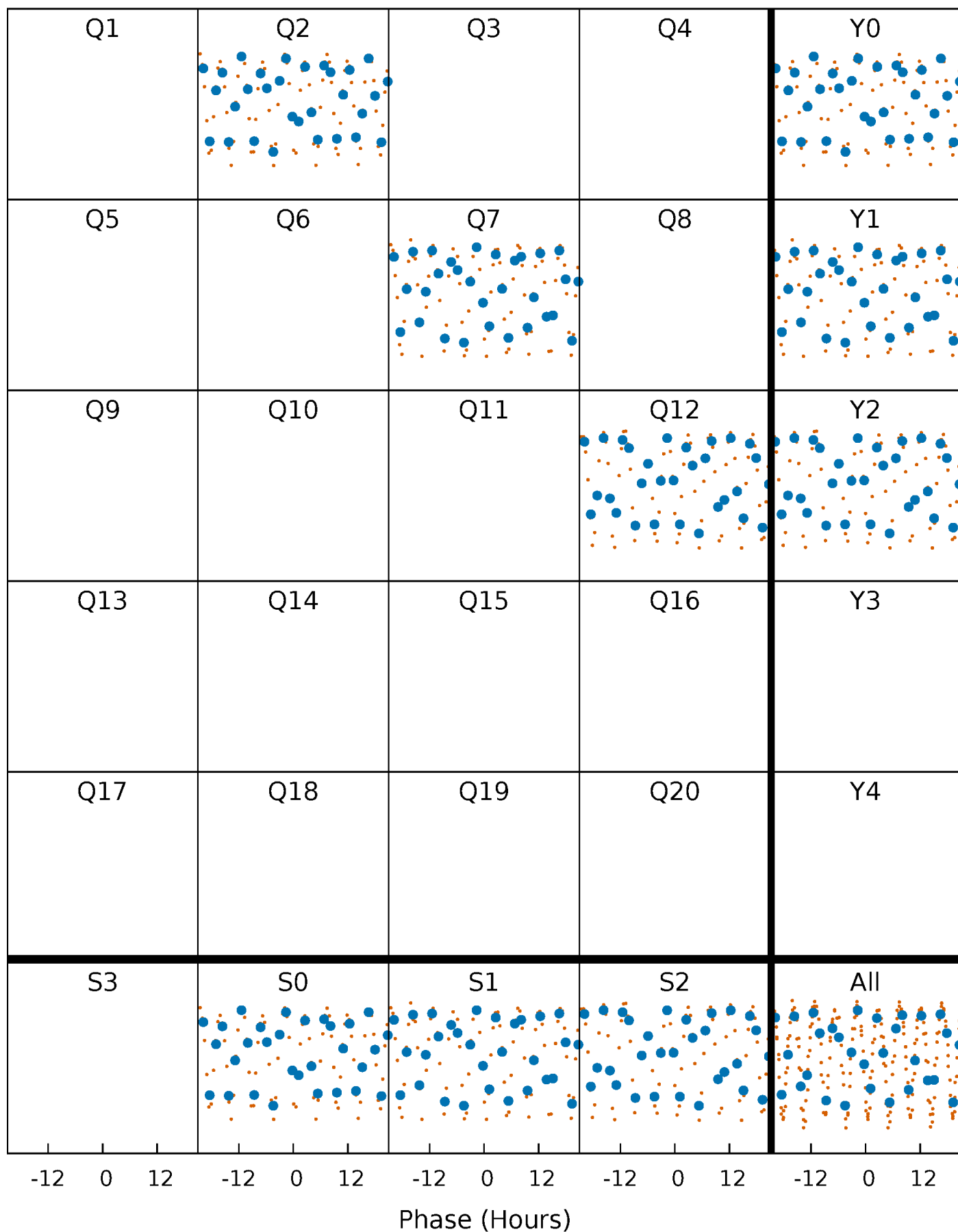


**Planet 5 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



# PDC Quarter-Phased Transit Curves

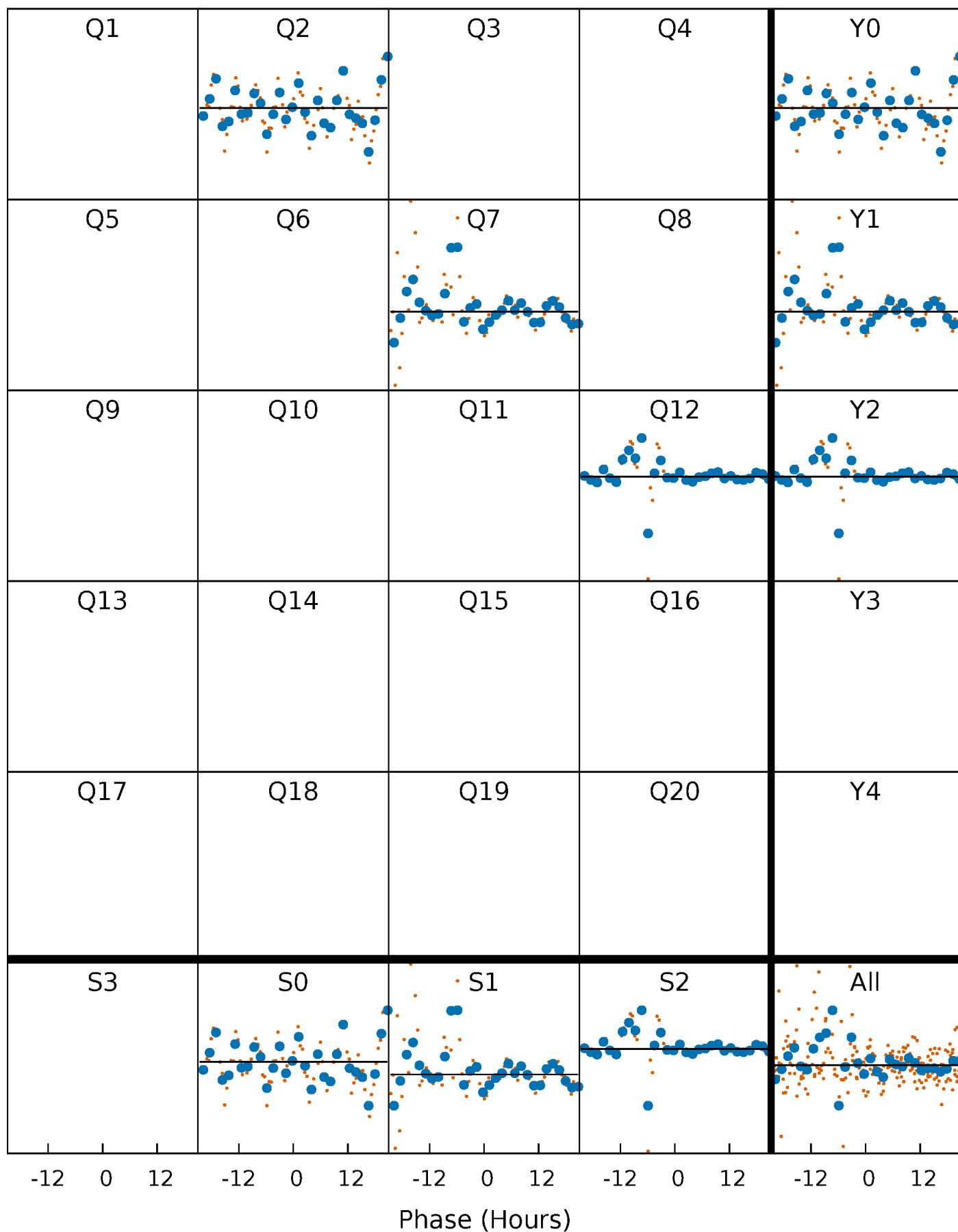
TCE 005426665-05     $P=461.614554$  Days     $T_0=187.376347$  (BKJD)





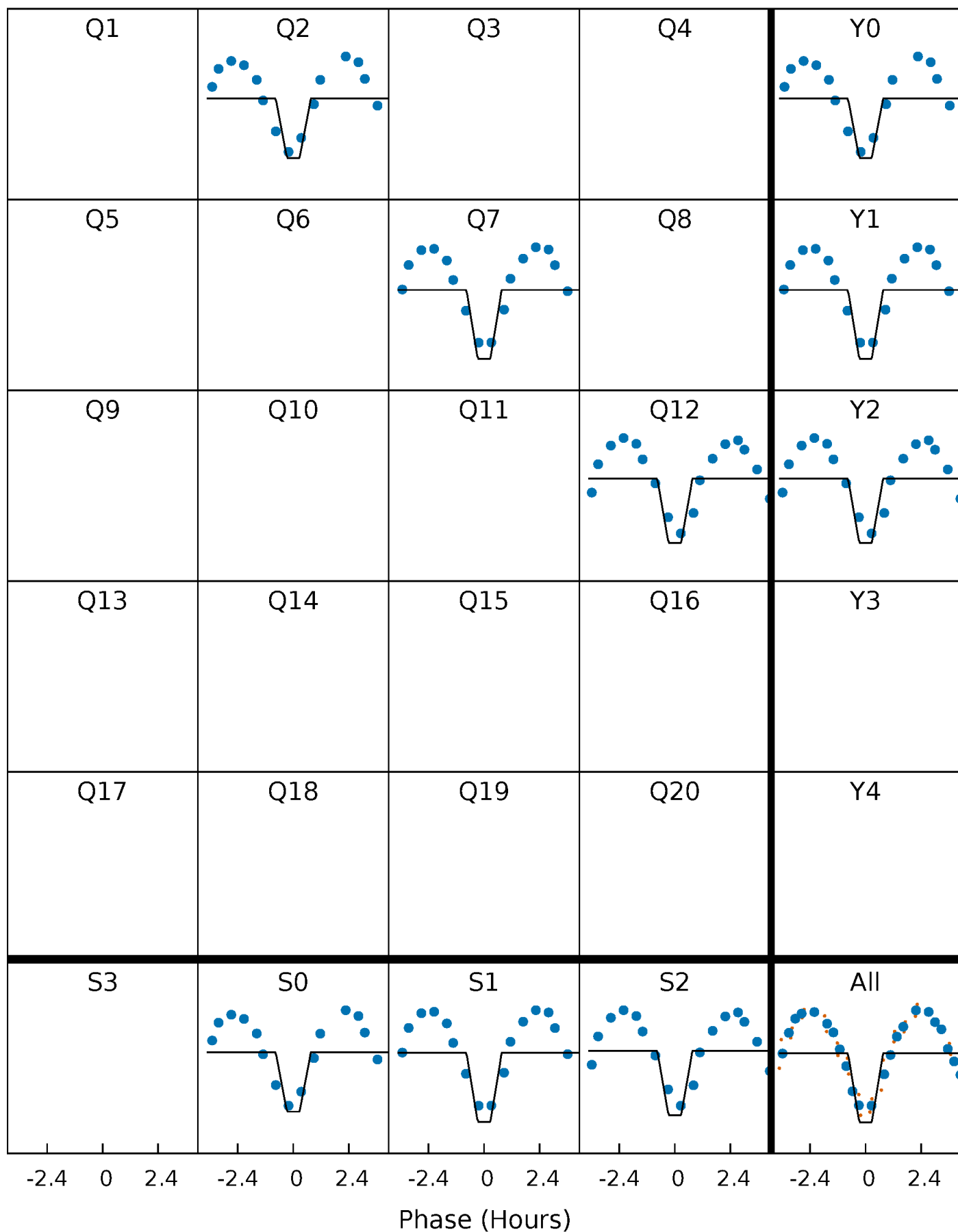
# DV Quarter-Phased Transit Curves

TCE 005426665-05     $P=461.614554$  Days     $T_0=187.376347$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

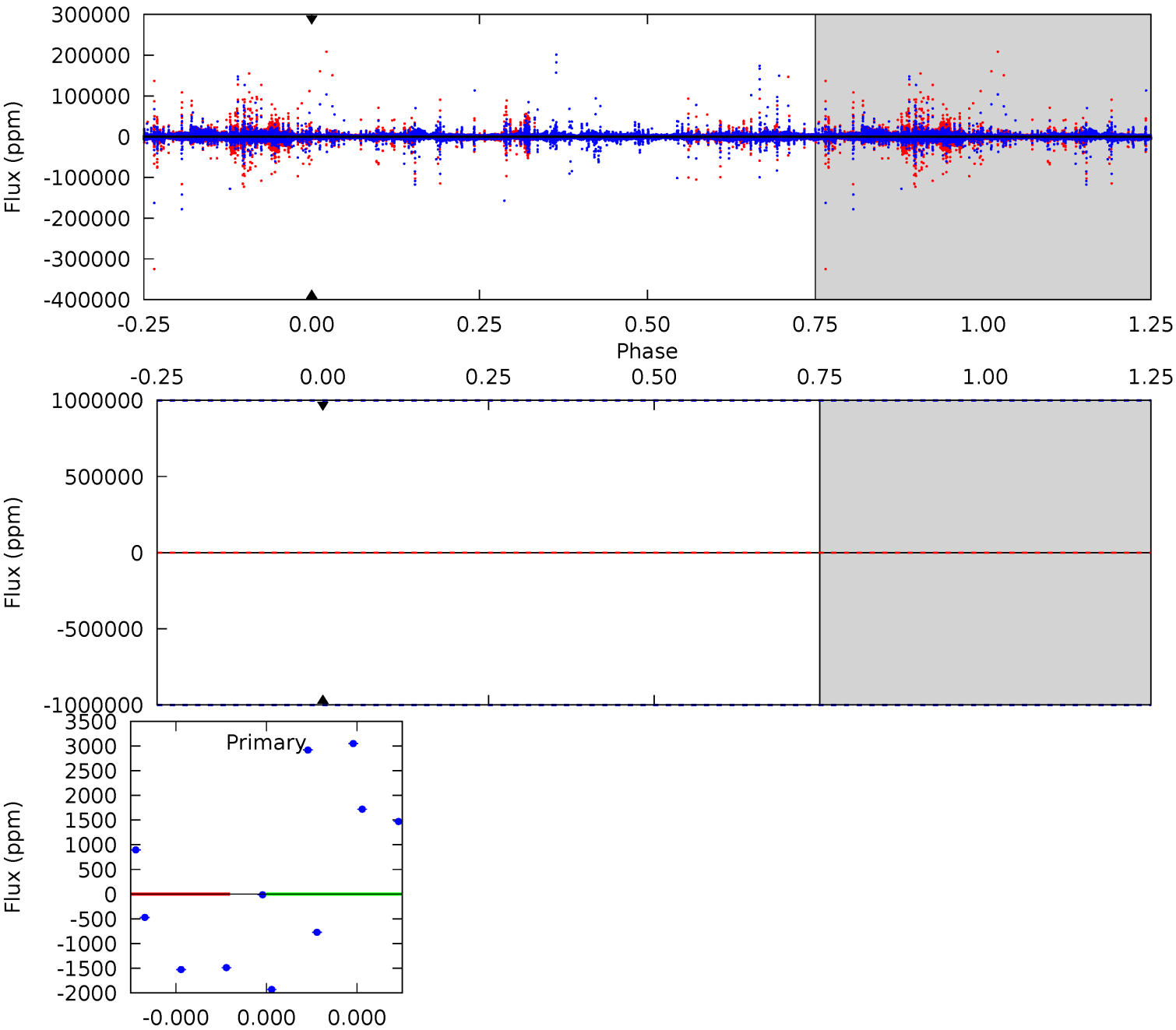
TCE 005426665-05 P=461.614554 Days  $T_0=187.981310$  (BKJD)



# DV Model-Shift Uniqueness Test

005426665-05, P = 461.614554 Days, E = 187.376347 Days

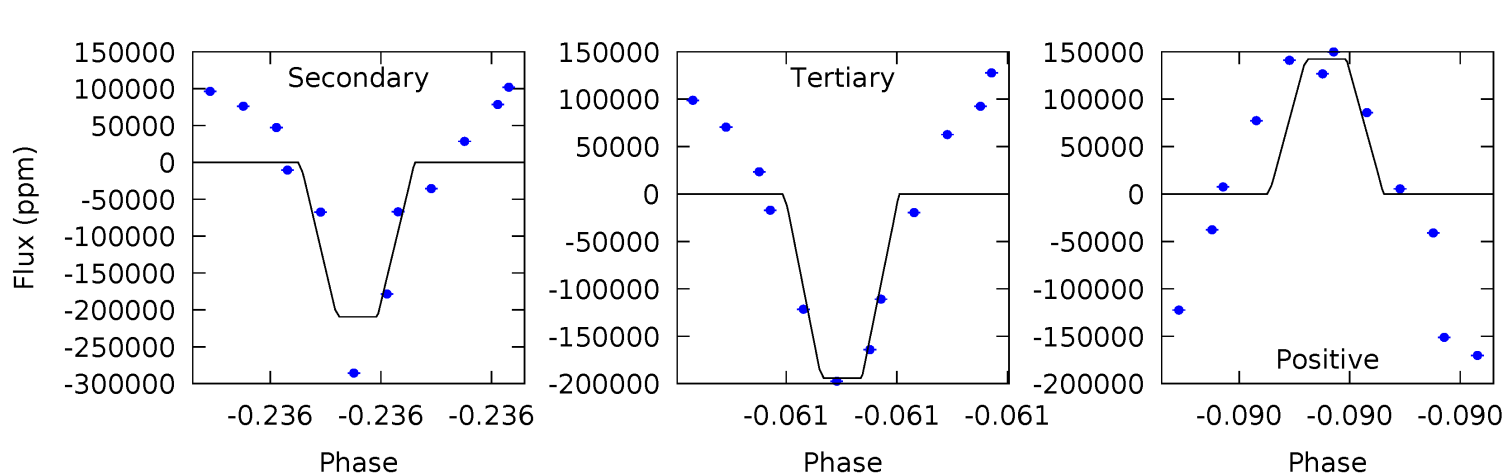
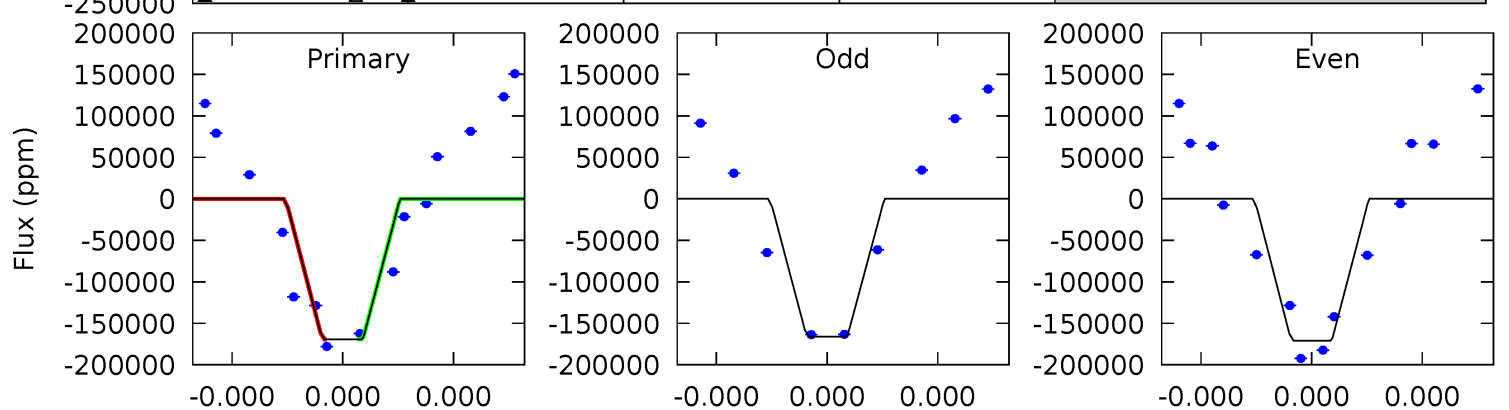
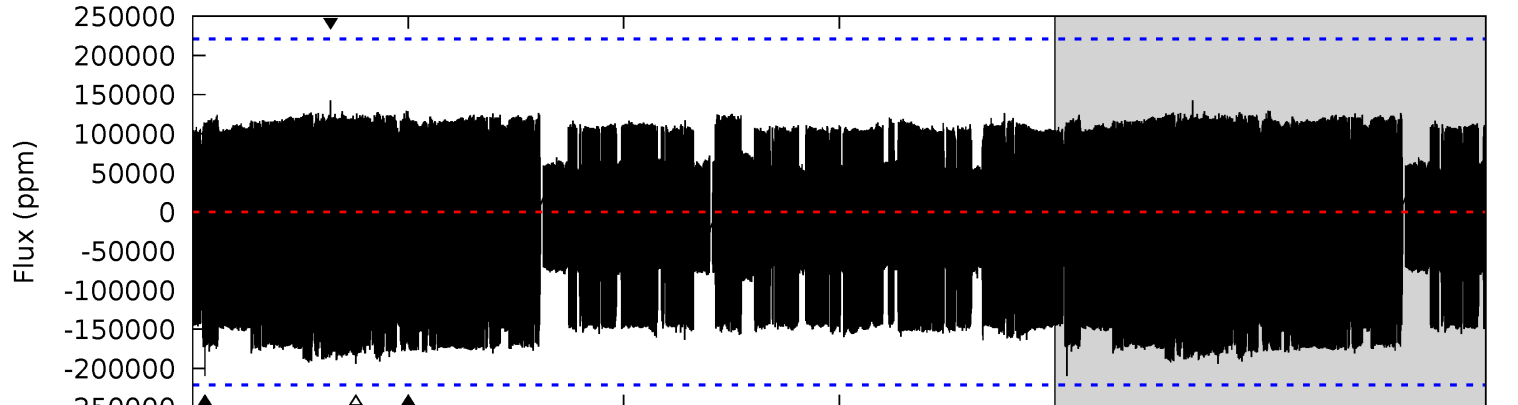
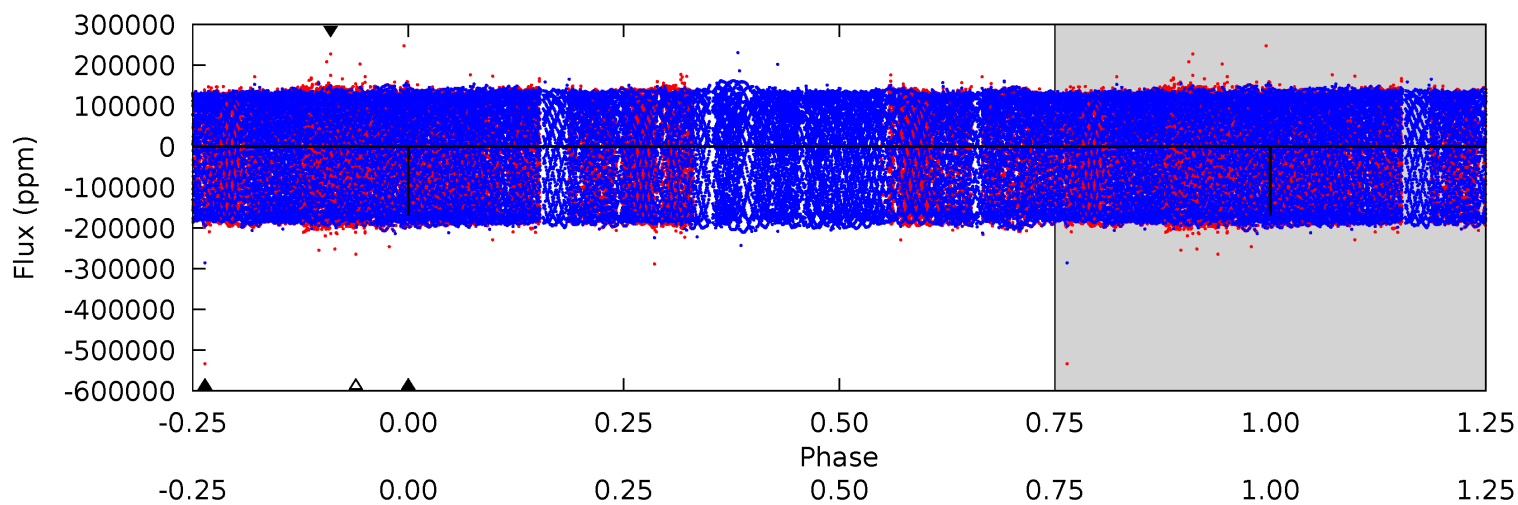
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

005426665-05, P = 461.614554 Days, E = 187.981310 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
4.44	5.49	5.09	3.73	5.80	3.82	2.38	-0.65	0.71	0.40	1.76	0.05	1.01	0.40	0.00



### Stellar Parameters For KIC 005426665

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6329^{+169}_{-206}$	$4.231^{+0.167}_{-0.185}$	$-0.200^{+0.250}_{-0.300}$	$1.317^{+0.384}_{-0.279}$	$1.074^{+0.185}_{-0.123}$	$0.662^{+0.625}_{-0.320}$
	+3%/-3%	+4%/-4%	+125%/-150%	+29%/-21%	+17%/-11%	+94%/-48%
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 005426665-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$11.34^{+12.03}_{-7.96}$	$410^{+34}_{-28}$	$4837^{+21232}_{-26947}$	$12046^{+1189134}_{-922814}$
Alt.	$-209351 \pm 38125$	$66.10^{+17.80}_{-17.72}$	$409^{+29}_{-27}$	$6788^{+1119}_{-872}$	$50508^{+38186}_{-22979}$

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

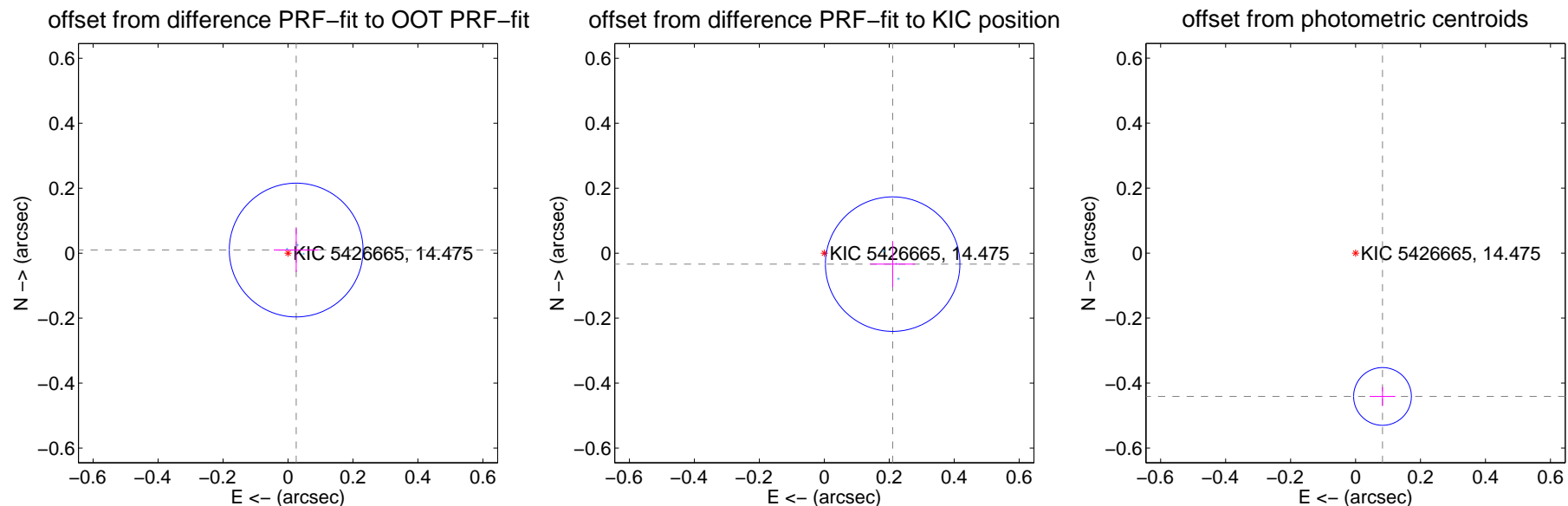
## DV Centroid Data

Supplemental centroid analysis for 005426665-05. Kepler magnitude: 14.47. Transit SNR -1.00

There are 3 quarters with good PRF difference image offsets

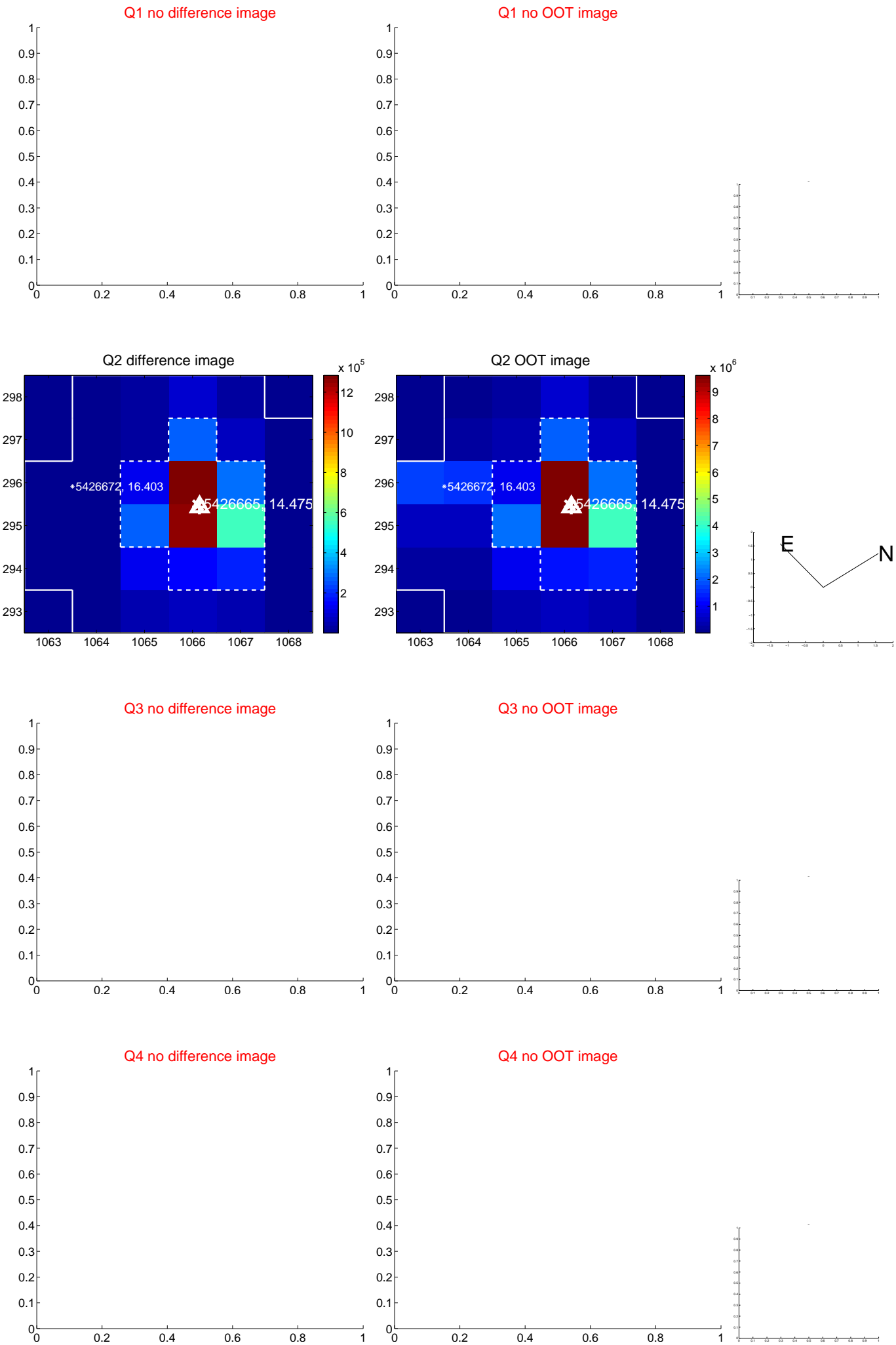
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.027 \pm 0.069$	0.39	$-0.025 \pm 0.069$	$0.010 \pm 0.067$
PRF-fit source offset from KIC position	$0.213 \pm 0.069$	3.09	$-0.210 \pm 0.069$	$-0.034 \pm 0.071$
photometric centroid source offset	$0.45 \pm 0.03$	15.16	$-0.08 \pm 0.04$	$-0.44 \pm 0.03$

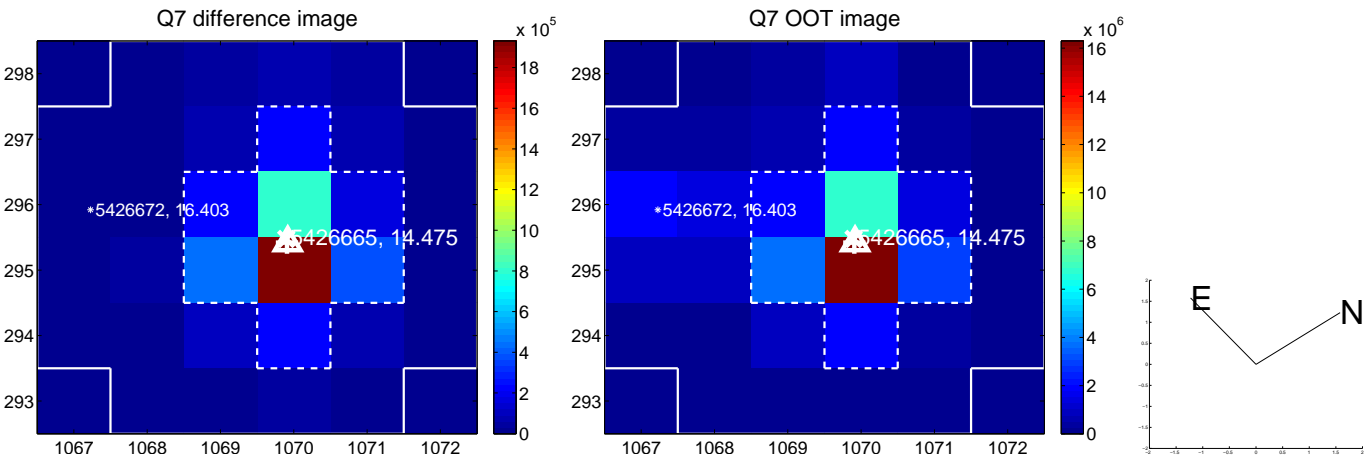


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

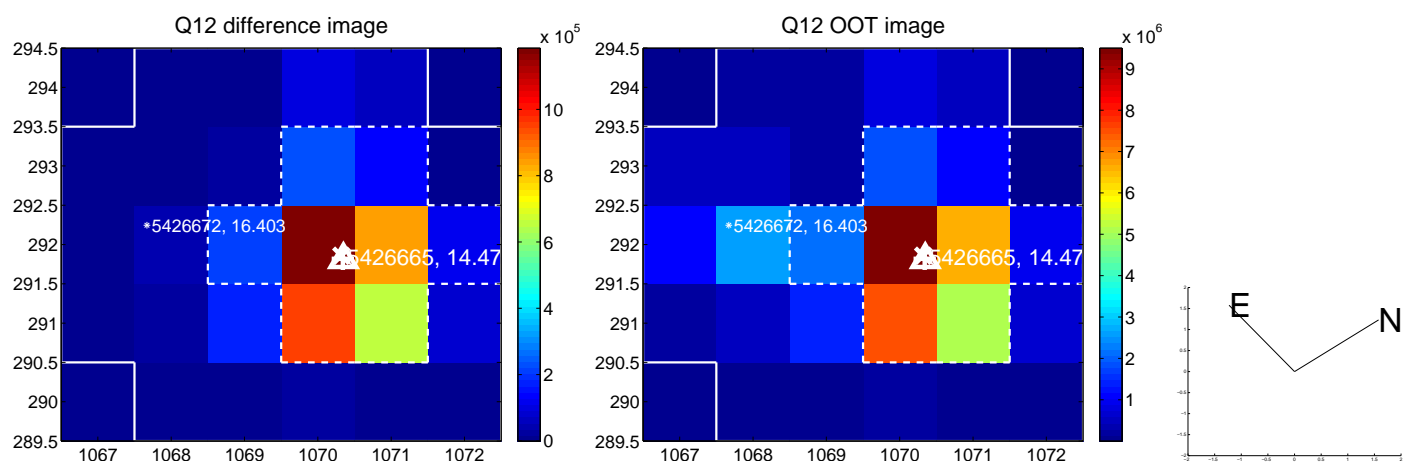
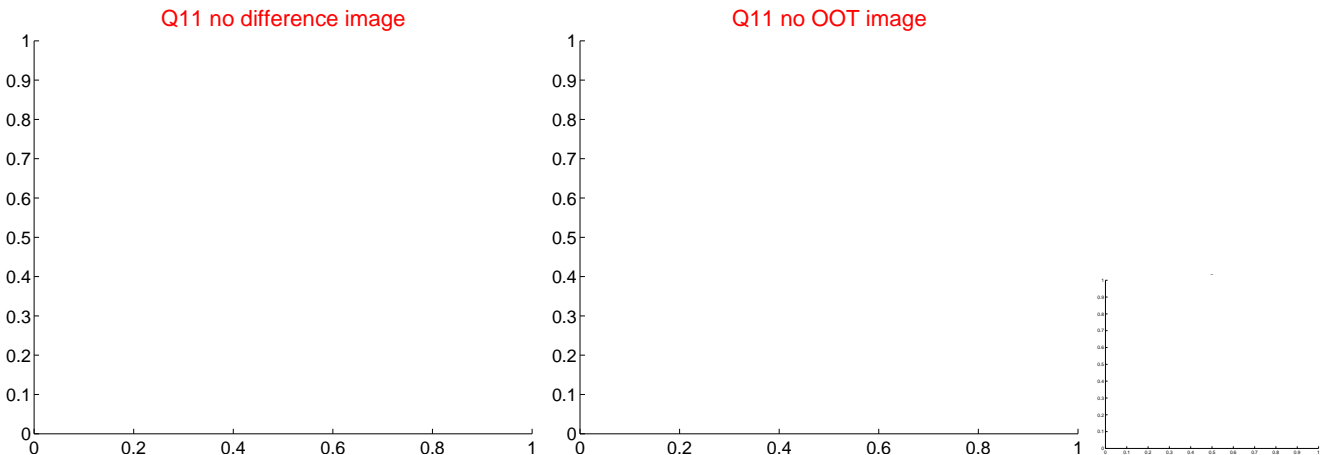
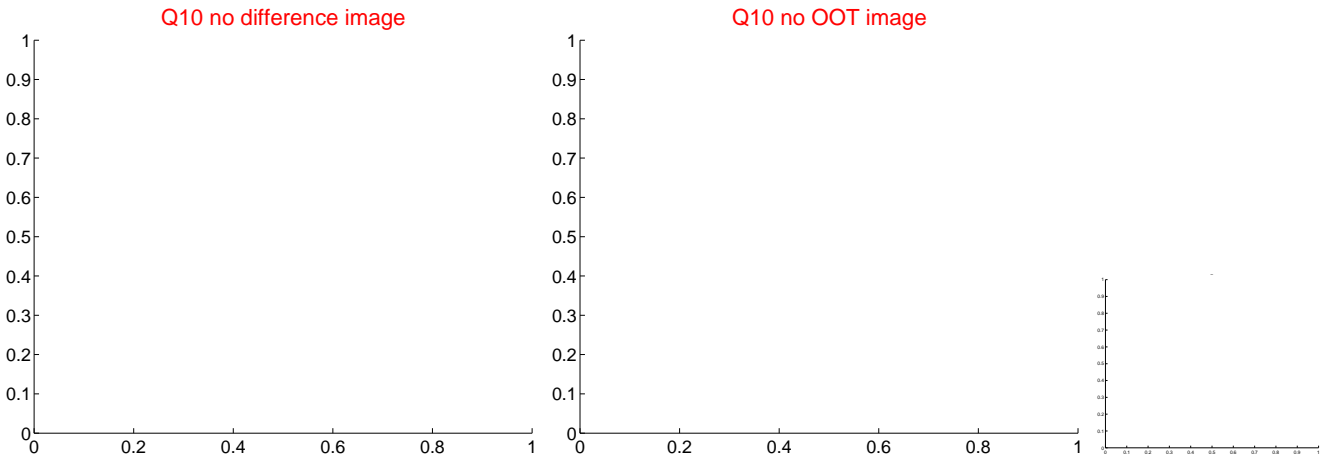
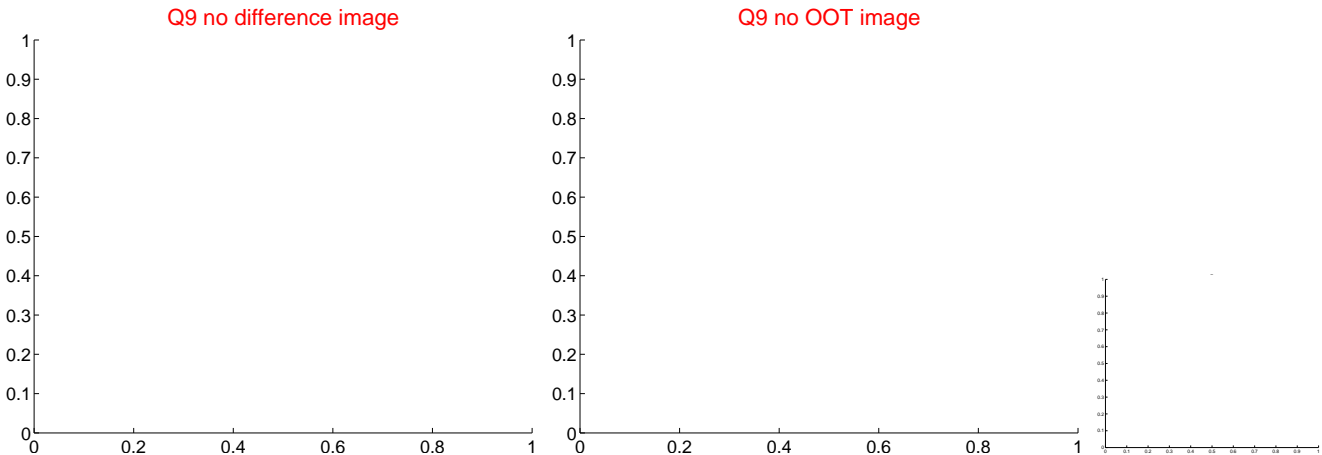


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



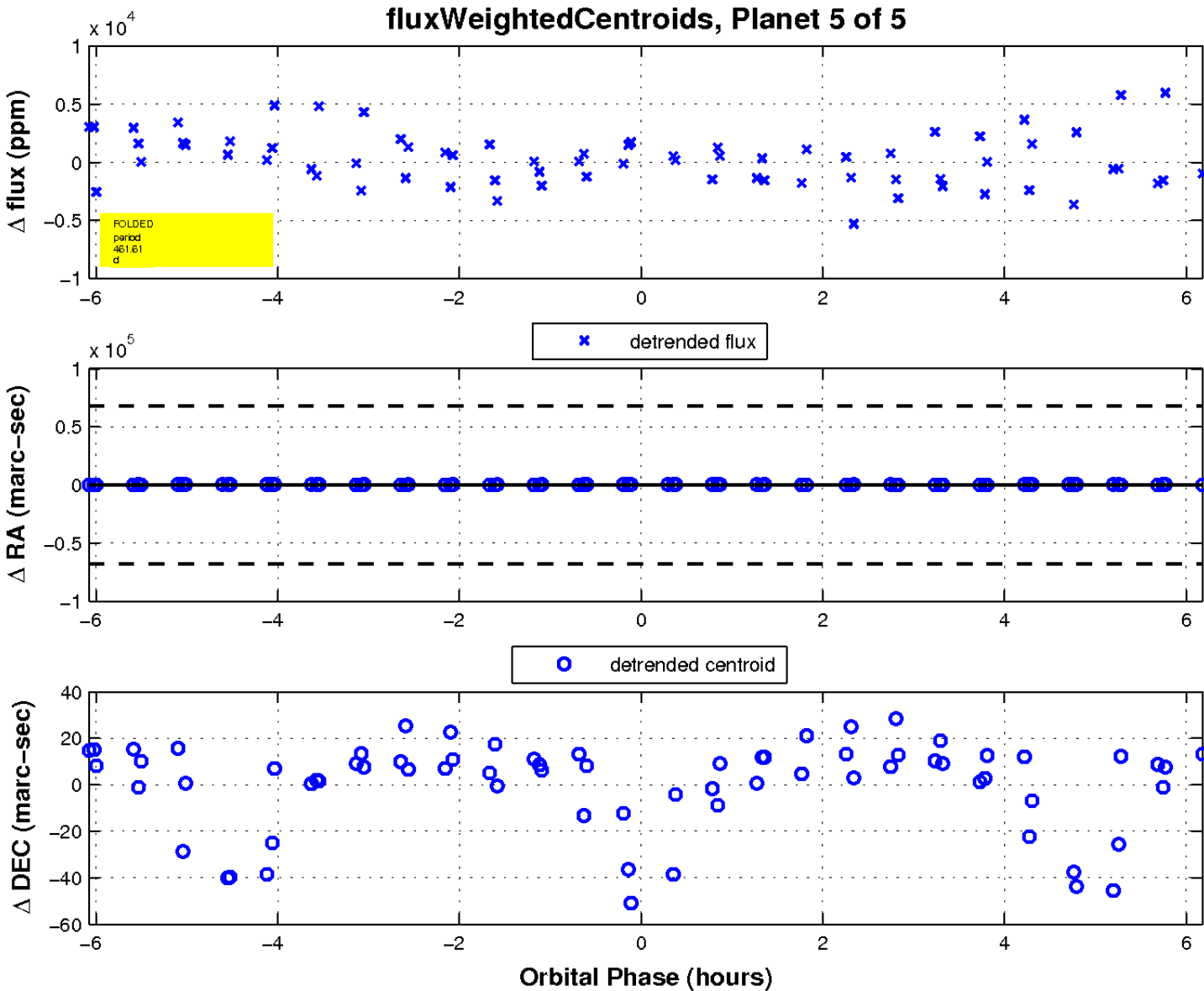
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

Q17 no difference image

Q17 no OOT image



# UKIRT Image

Declination

