

# KIC 006522750

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006522750-01	OBS	6724.01	17.445490	135.754363	334457.7	3.500	35257.8	-1.0	0.94	5759	41.85	51.25
006522750-02	OBS	No	17.445640	145.249119	157878.6	6.903	19248.7	8417.7	0.94	5759	54.11	51.24
006522750-03	OBS	No	8.726305	135.476687	148.3	16.984	3800.0	17.0	0.94	5759	1.14	129.06
006522750-04	OBS	No	263.606460	382.869505	6074.9	25.556	387.8	80.4	0.94	5759	13.53	1.37

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006522750-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_SATURATED
006522750-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
006522750-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED
006522750-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—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_SATURATED

**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 006522750-01

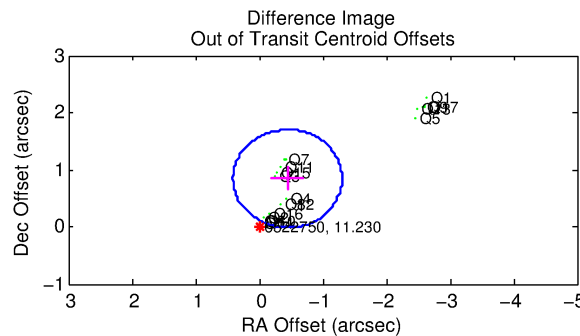
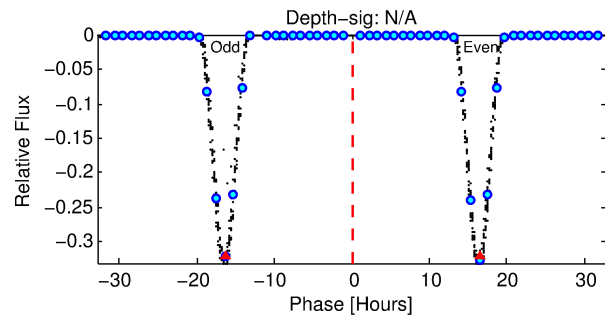
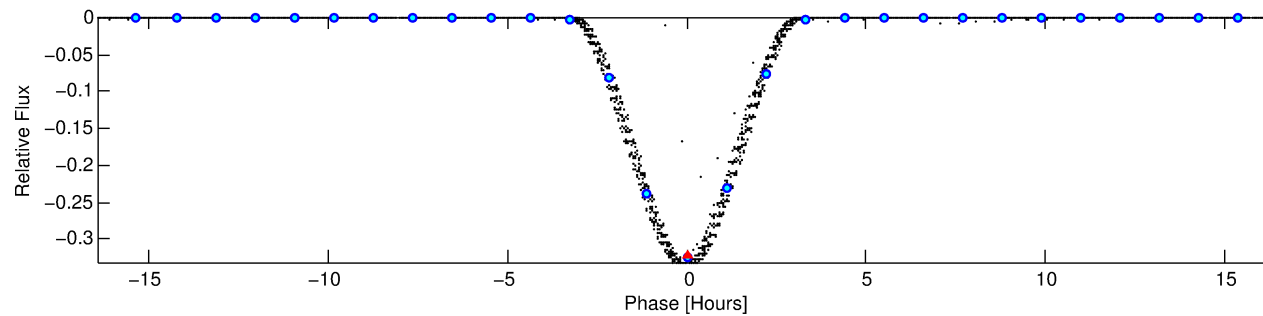
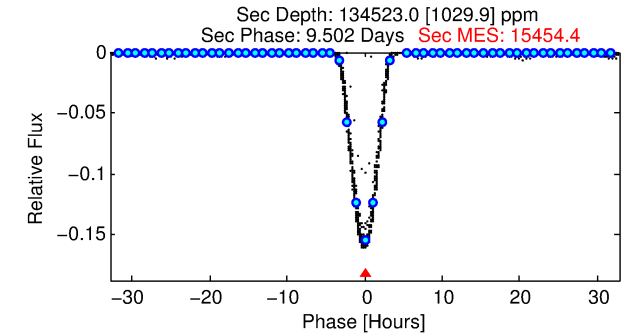
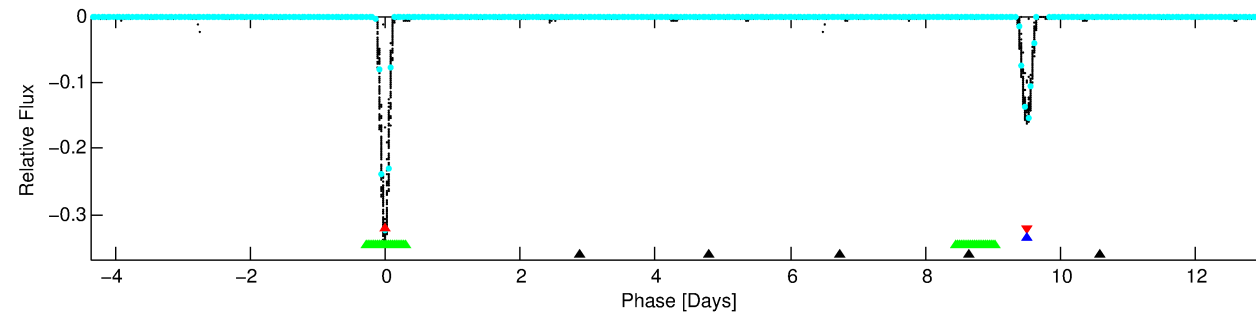
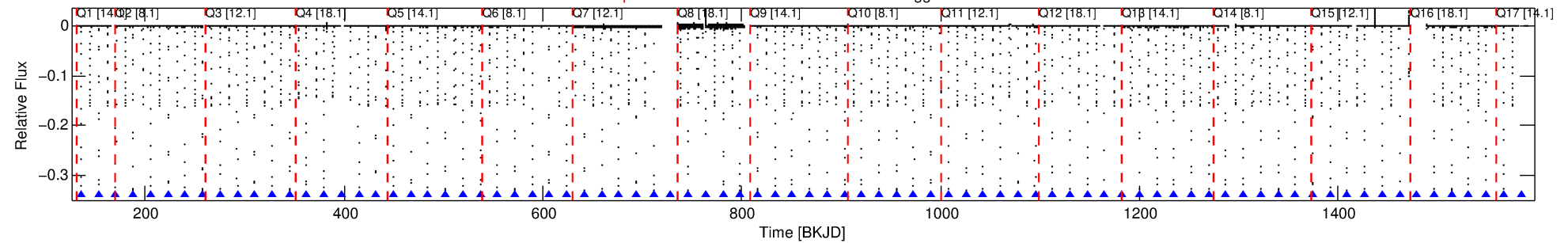
No Significant Match Found

# DV One-Page Summary

KIC: 6522750 Candidate: 1 of 4 Period: 17.445 d

KOI: K06724.01 Corr: 0.759

Kp: 11.23 R\*: 0.94 Rs Teff: 5759.0 K Logg: 4.48 Fe/H: 0.020



TPS TCE Results:

Period = 17.44549 d  
Epoch = 135.7544 BKJD

DV fit results are unavailable

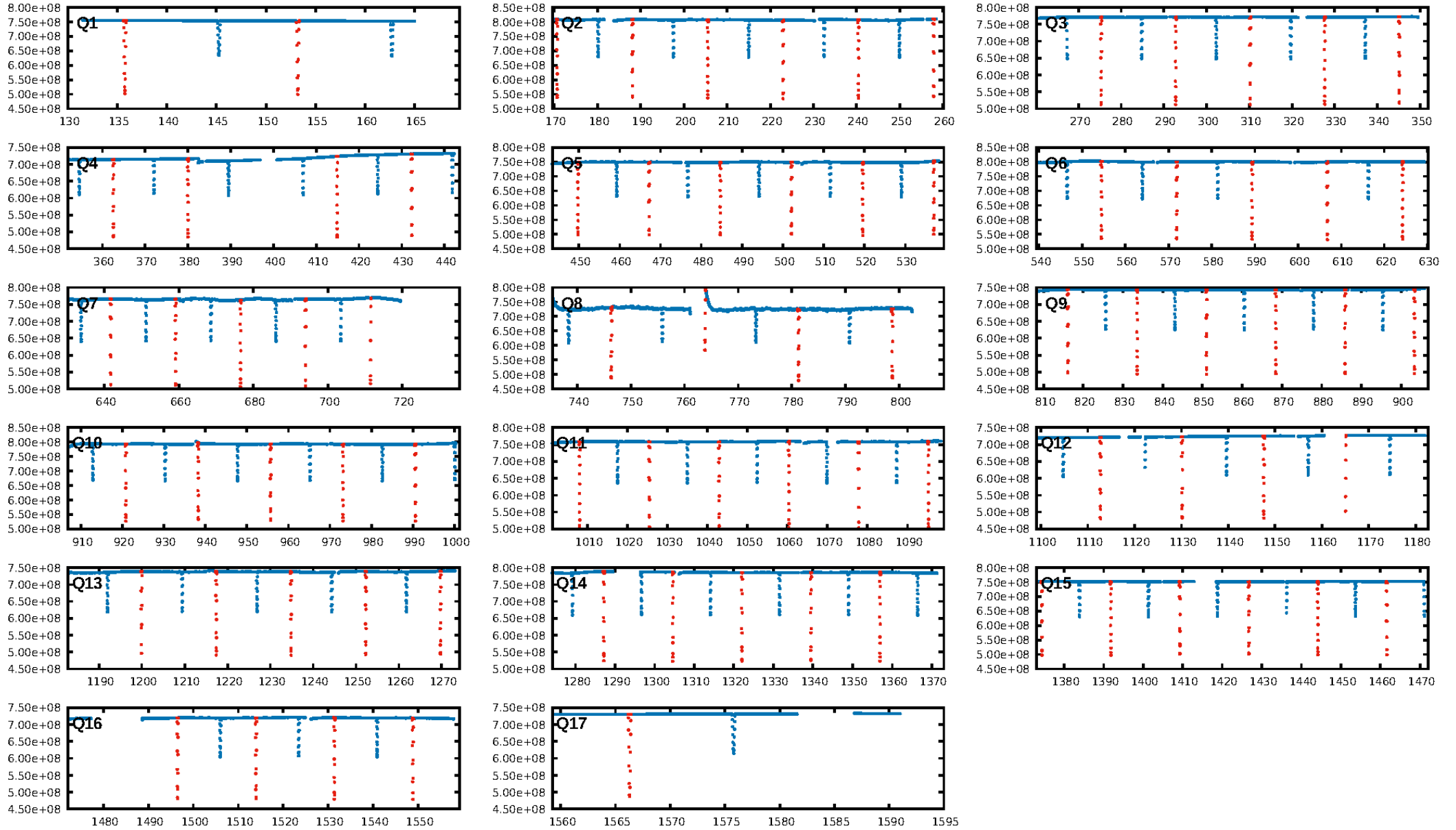
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [12.07 $\sigma$ ]  
LongPeriod-sig: 0.0% [0.00 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [76/76]  
GhostDiagnostic-chr: 3.466  
Centroid-sig: N/A  
Centroid-so: 0.787 arcsec [3390.18 $\sigma$ ]  
OotOffset-rm: 0.953 arcsec [3.34 $\sigma$ ]  
KicOffset-rm: 0.944 arcsec [3.21 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 0.00 [0/17]

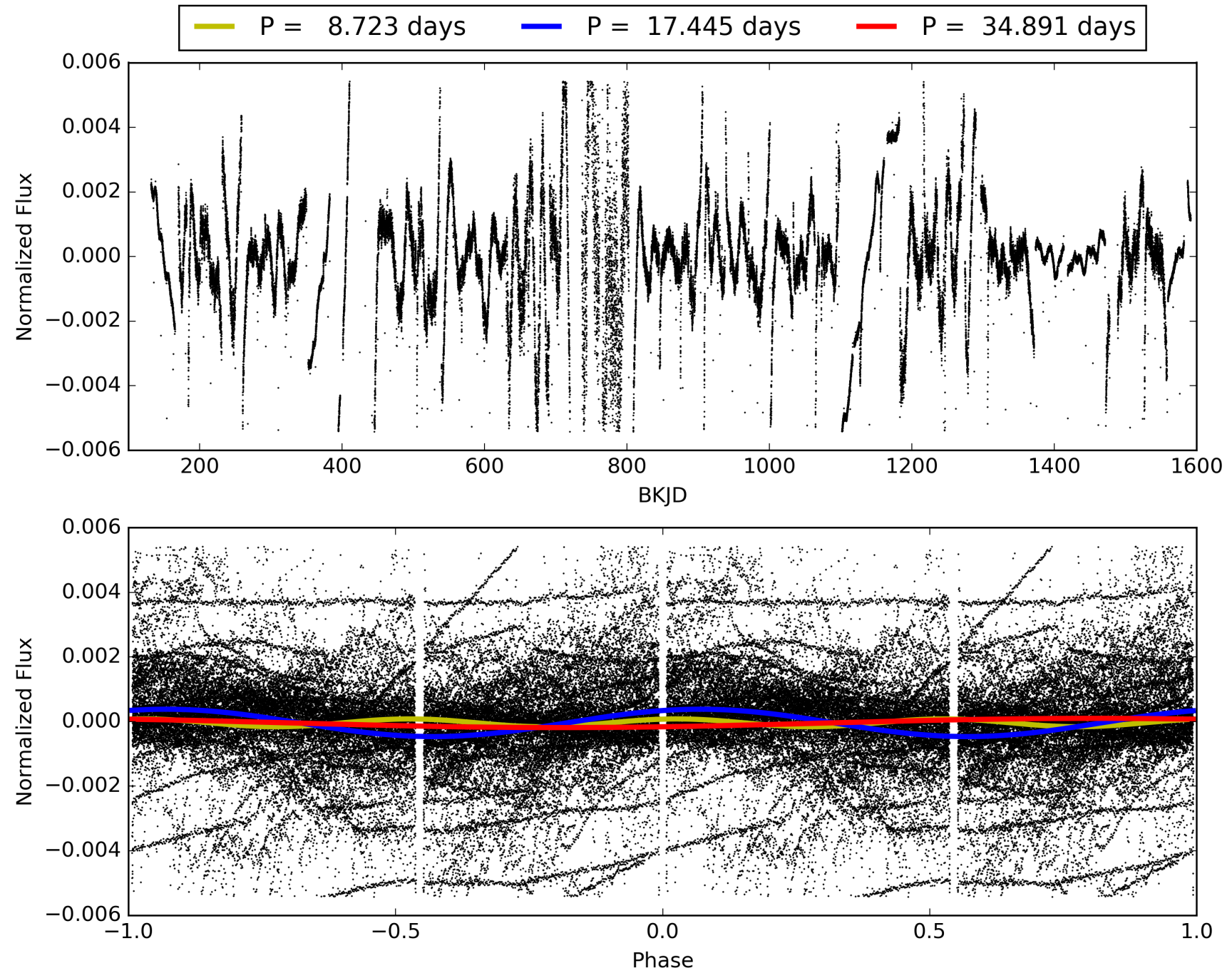
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:24:39 Z

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

# TCE 006522750-01, PDC Light Curves



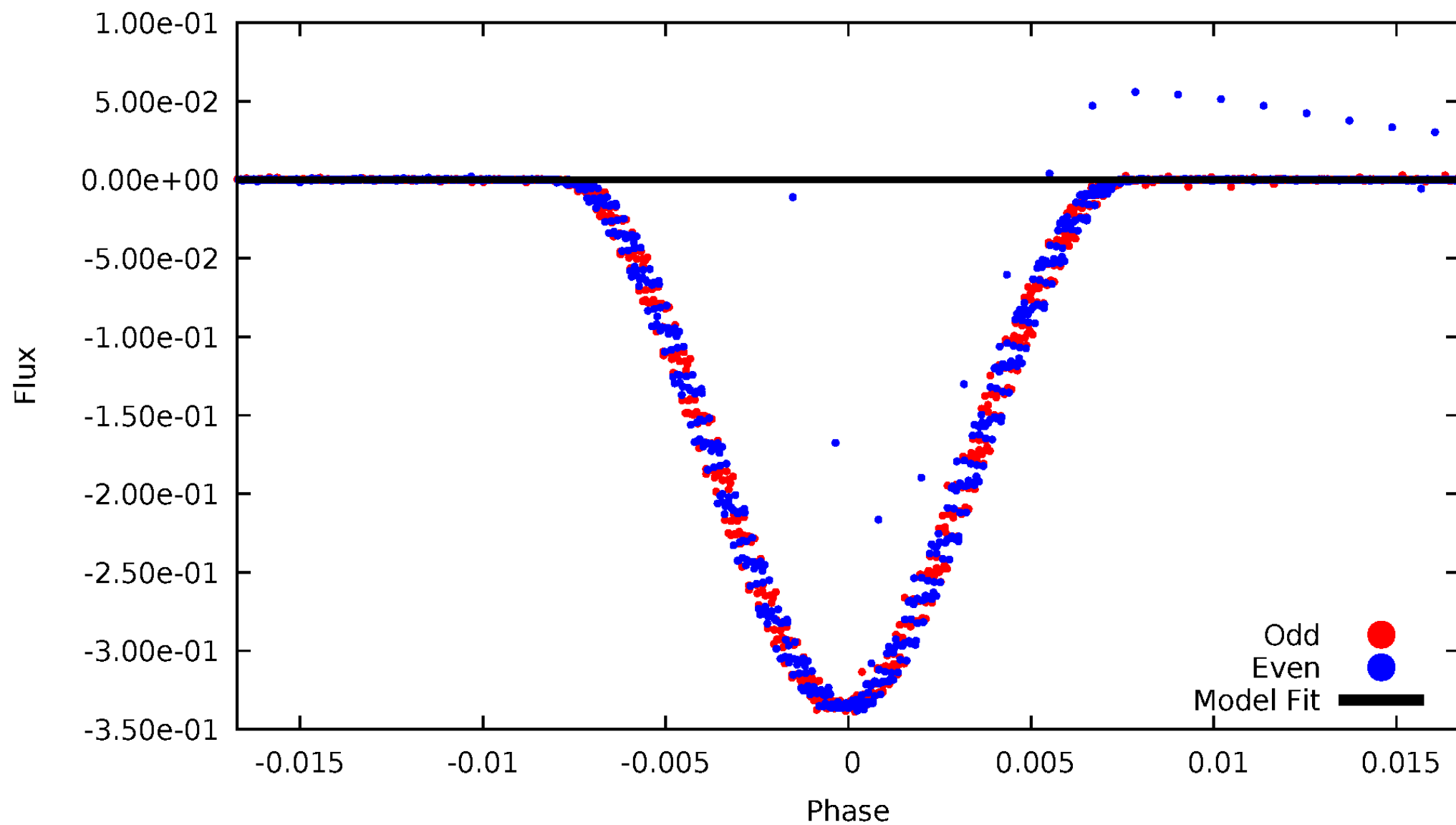
TCE 006522750-01





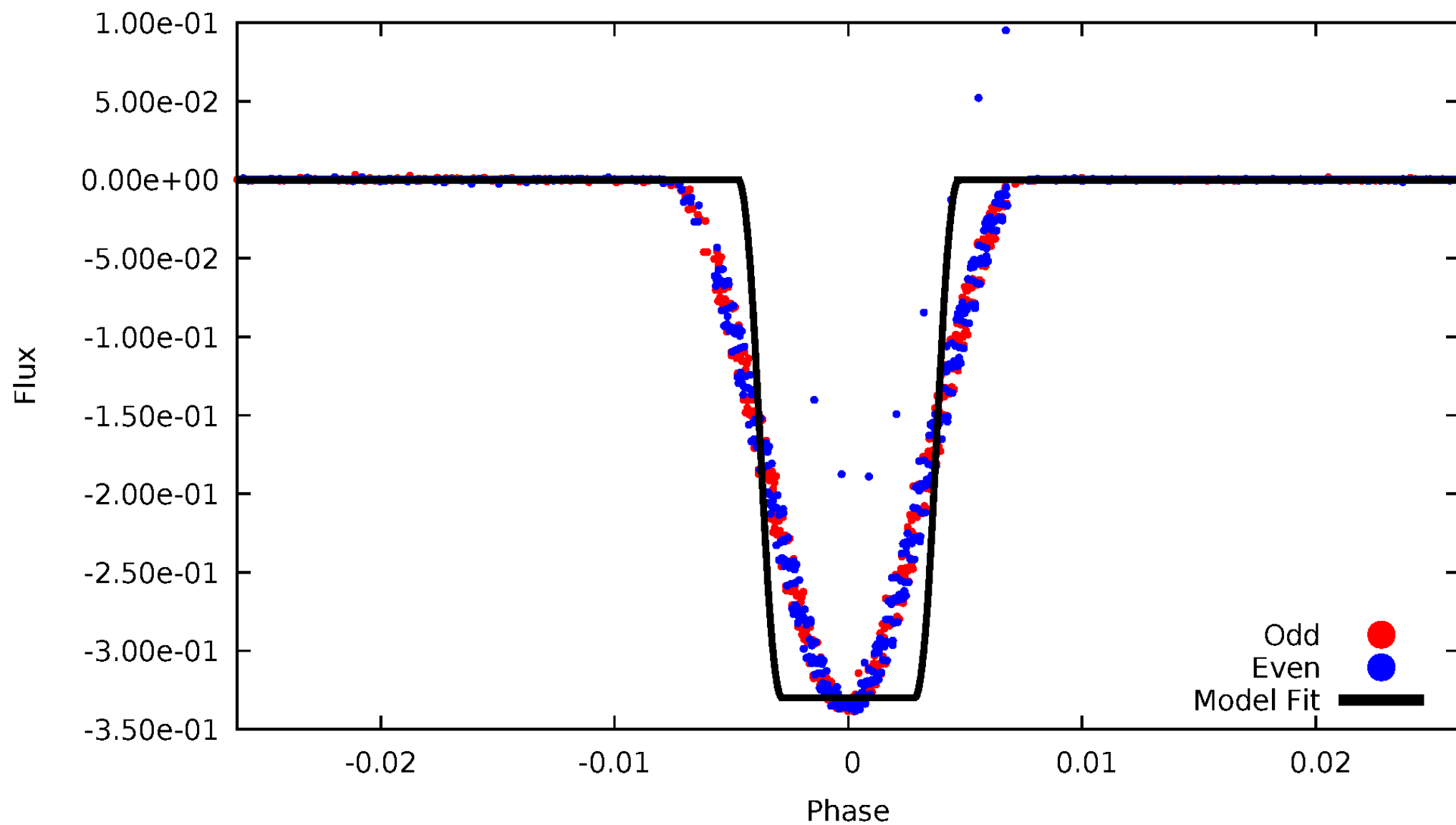
# DV Odd/Even

TCE 006522750-01



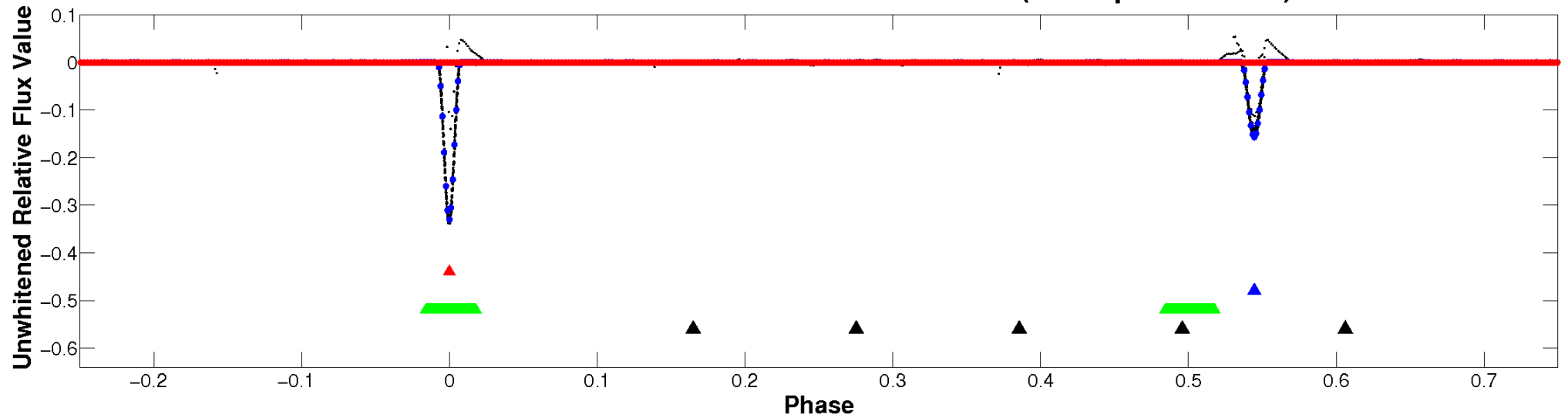
# ALT Odd/Even

TCE 006522750-01



# Non-Whitened Vs. Whitened Light Curve

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

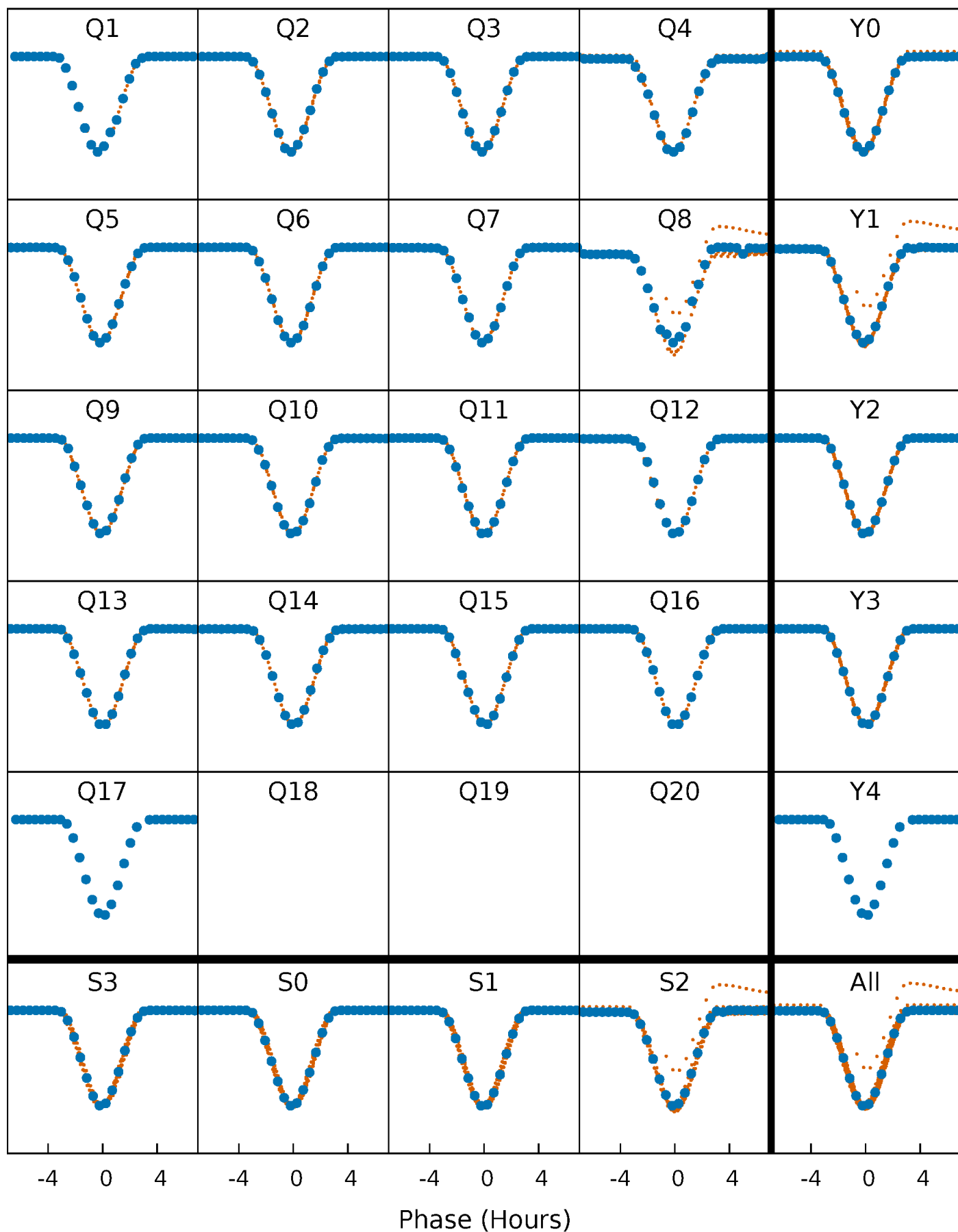


Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)



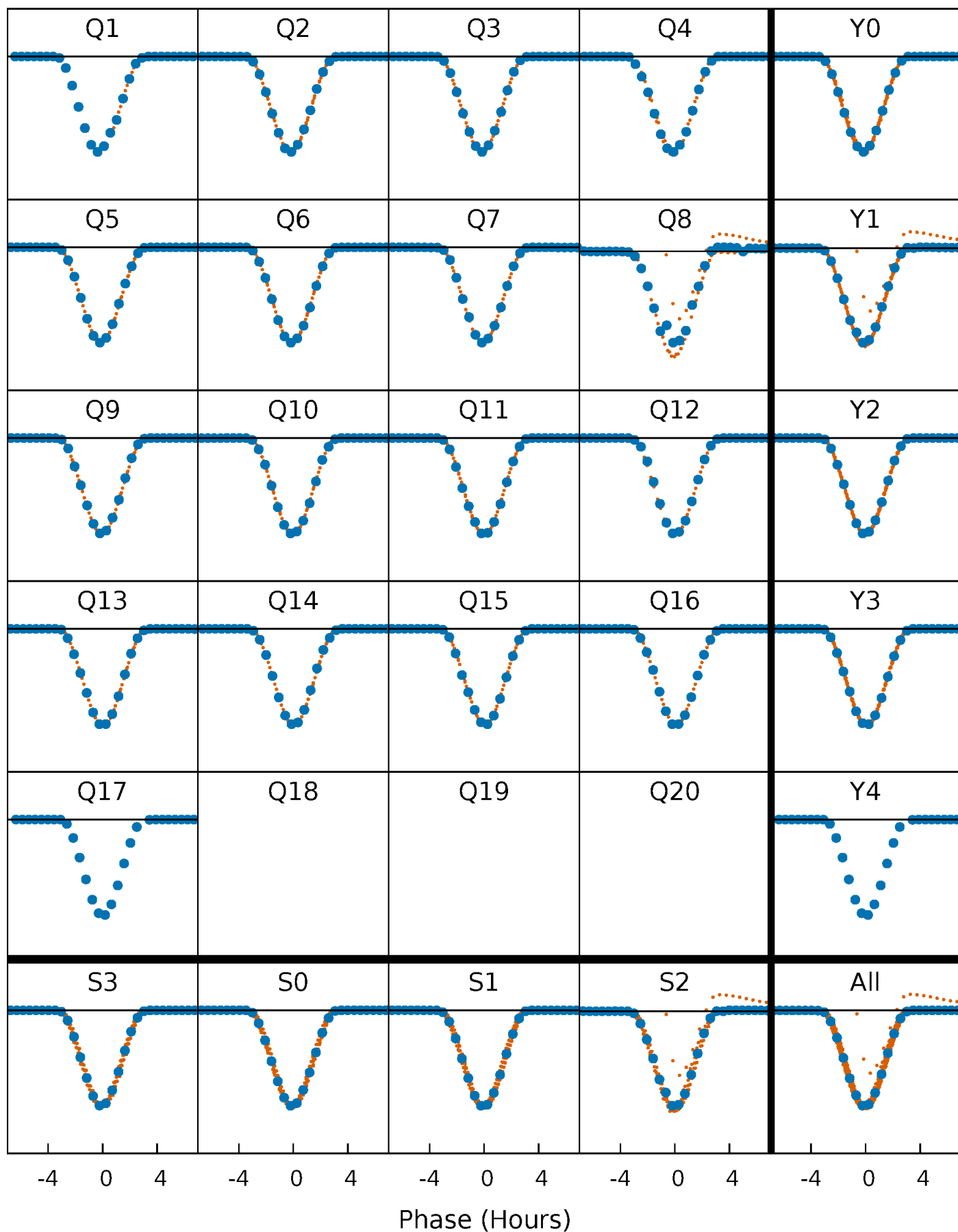
# PDC Quarter-Phased Transit Curves

TCE 006522750-01 P= 17.445490 Days  $T_0=135.754363$  (BKJD)



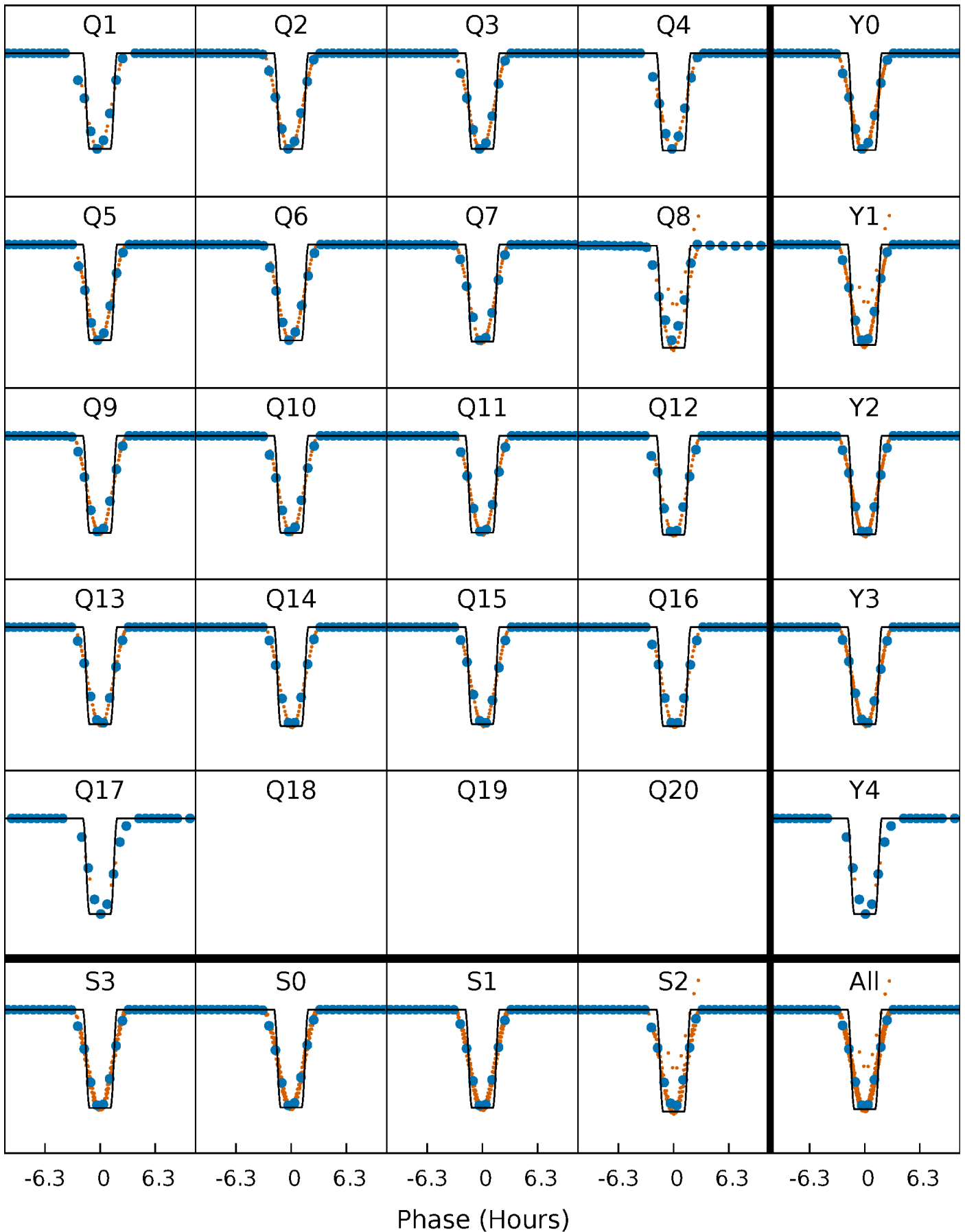
# DV Quarter-Phased Transit Curves

TCE 006522750-01 P= 17.445490 Days  $T_0=135.754363$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006522750-01 P= 17.445490 Days  $T_0=135.753312$  (BKJD)

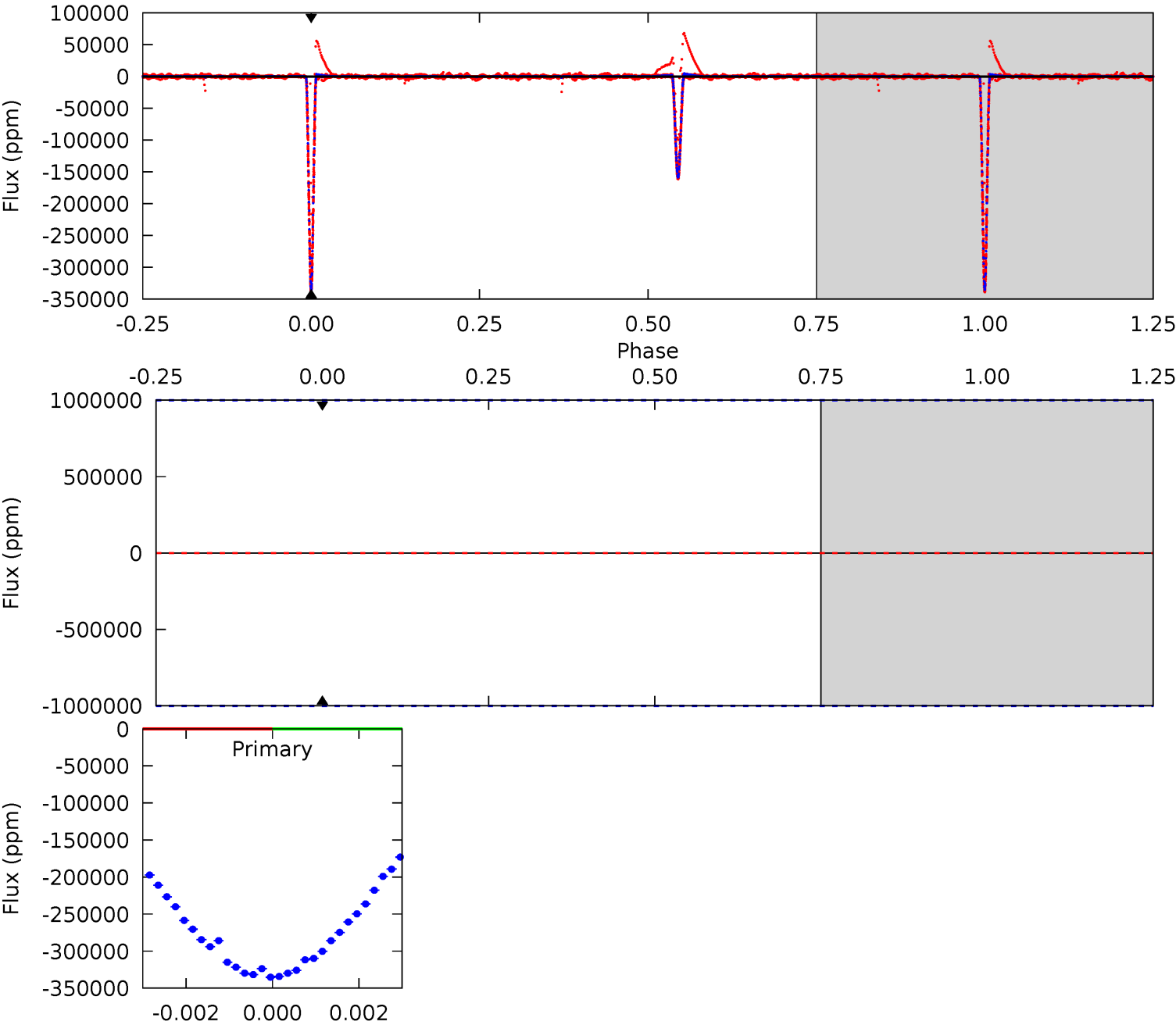




# DV Model-Shift Uniqueness Test

006522750-01, P = 17.445490 Days, E = 118.308873 Days

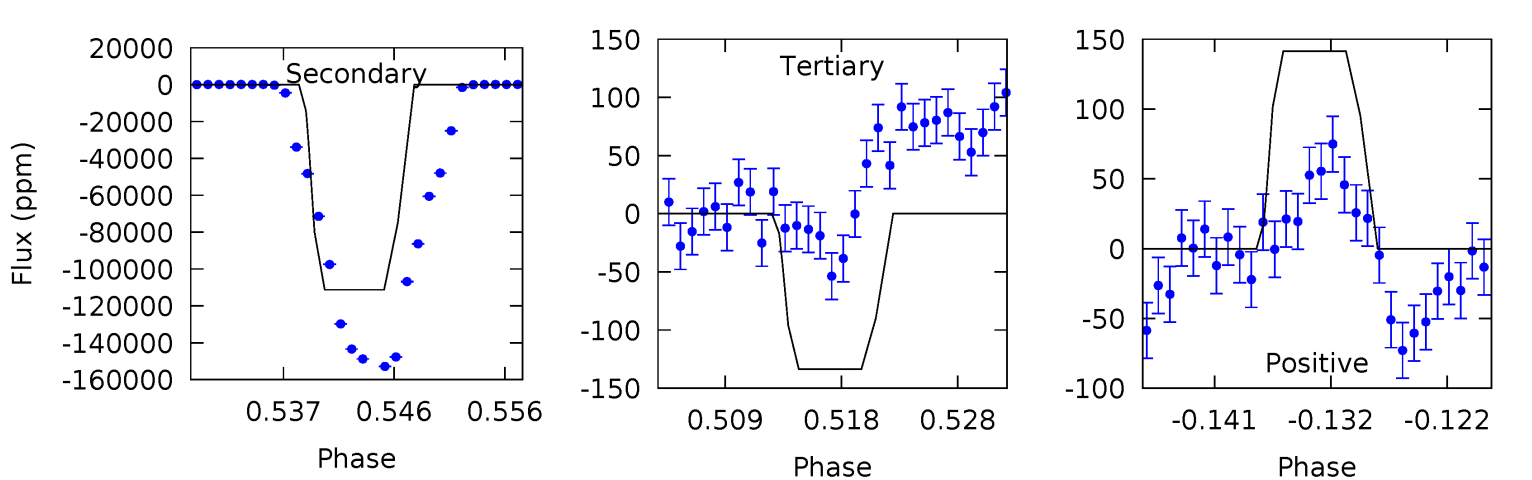
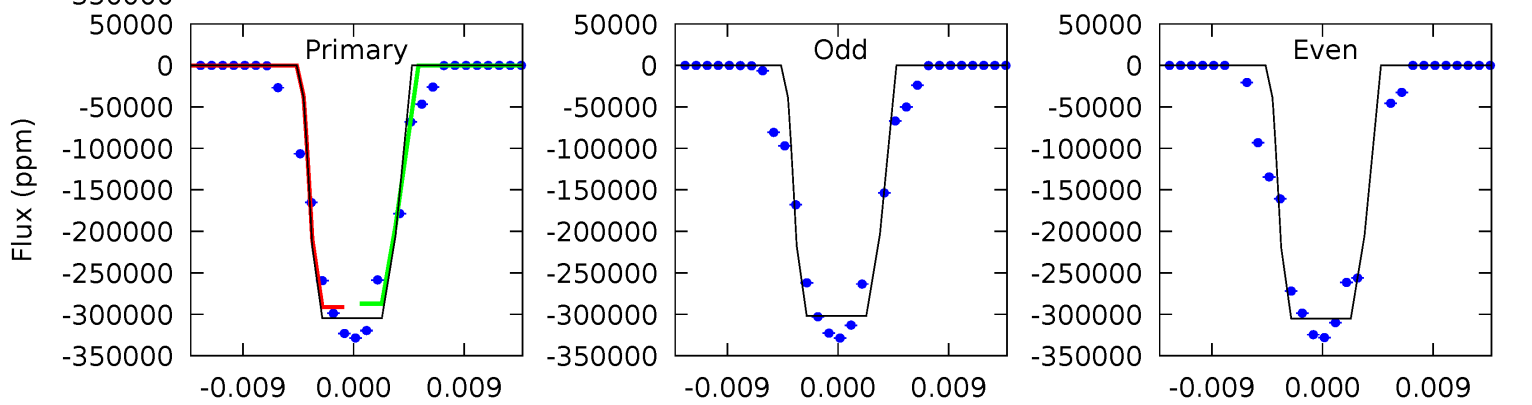
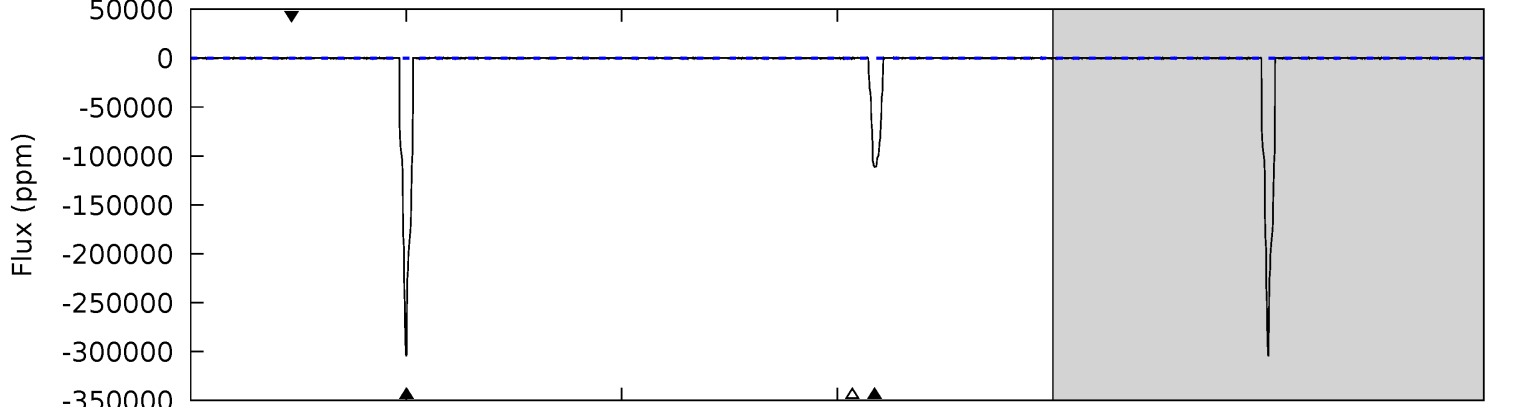
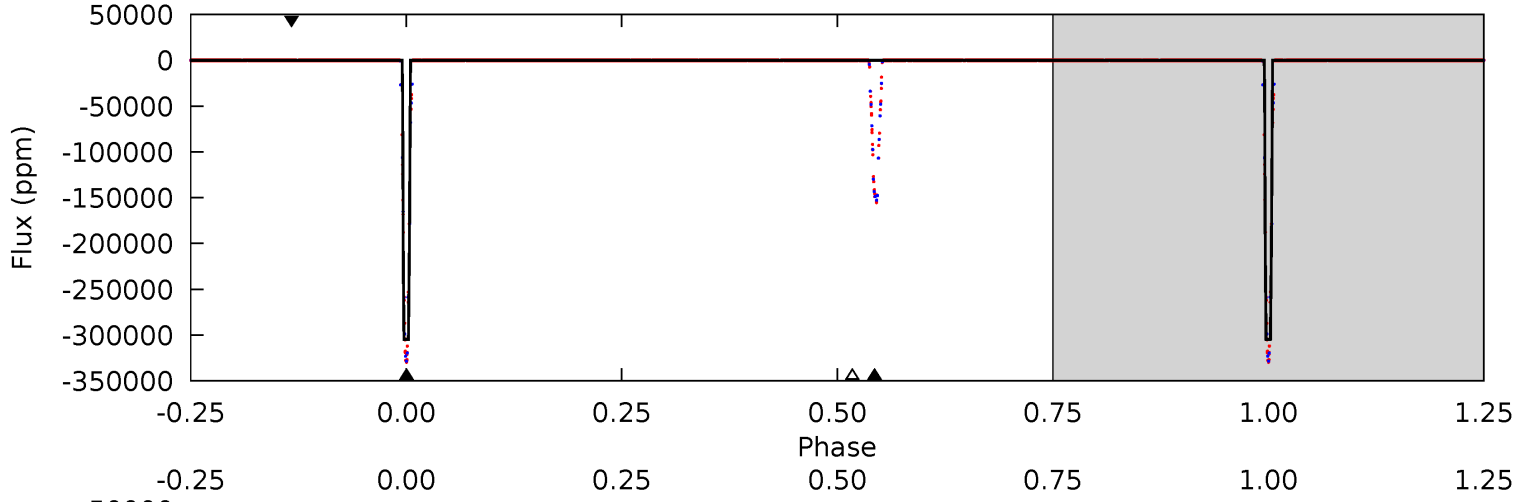
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

006522750-01, P = 17.445490 Days, E = 118.307822 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
10447	3814	4.58	4.85	5.04	2.60	5.27	10442	10442	3809	3809	71.5	0.99	0.00	0



### Stellar Parameters For KIC 006522750

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5759^{+78}_{-86}$	$4.481^{+0.040}_{-0.120}$	$0.020^{+0.150}_{-0.150}$	$0.945^{+0.134}_{-0.057}$	$0.984^{+0.056}_{-0.062}$	$1.644^{+0.292}_{-0.520}$
	+1%/-1%	+1%/-3%	+750%/-750%	+14%/-6%	+6%/-6%	+18%/-32%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 006522750-01 / KOI 6724.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 1000000$	$43.36^{+11.11}_{-10.25}$	$964^{+32}_{-25}$	$2595^{+2676}_{-7618}$	$8.003^{+542.575}_{-458.596}$
Alt.	$-111252 \pm 29$	$60.93^{+12.26}_{-11.19}$	$960^{+39}_{-25}$	$4656^{+386}_{-313}$	$316^{+155}_{-97}$

$T_{max}$  = 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

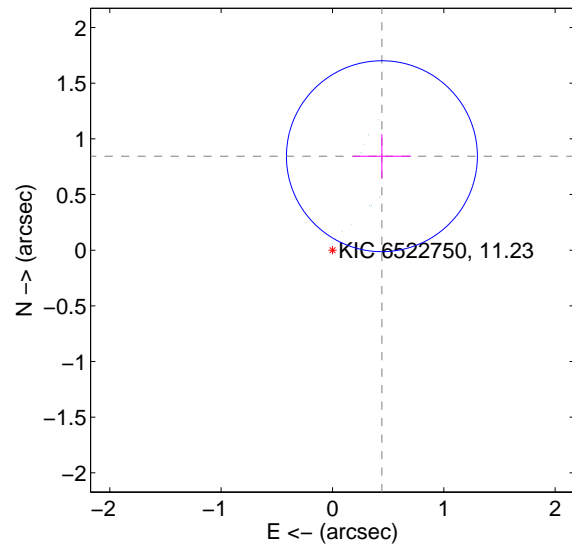
Supplemental centroid analysis for 006522750-01. **Kepler magnitude: 11.23**. Transit SNR -1.00

There are 17 quarters with good PRF difference image offsets

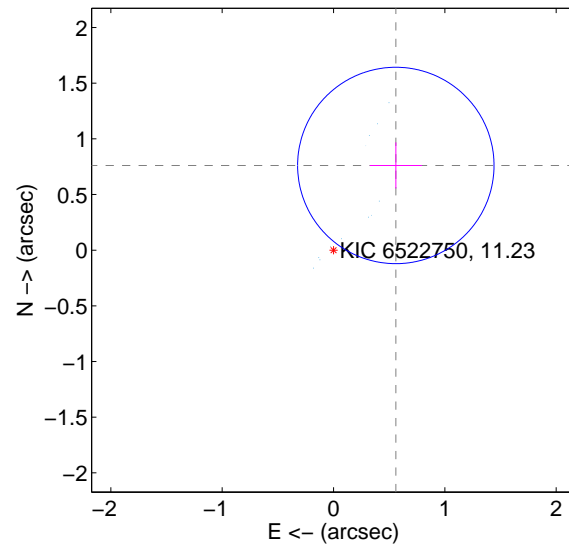
The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>0.953 \pm 0.286</math></b>	<b>3.34</b>	$-0.444 \pm 0.261$	$0.844 \pm 0.198$
PRF-fit source offset from KIC position	<b><math>0.944 \pm 0.294</math></b>	<b>3.21</b>	$-0.560 \pm 0.233$	$0.761 \pm 0.207$
photometric centroid source offset	<b><math>0.79 \pm 0.00</math></b>	<b>3390.18</b>	$-0.36 \pm 0.00$	$0.70 \pm 0.00$

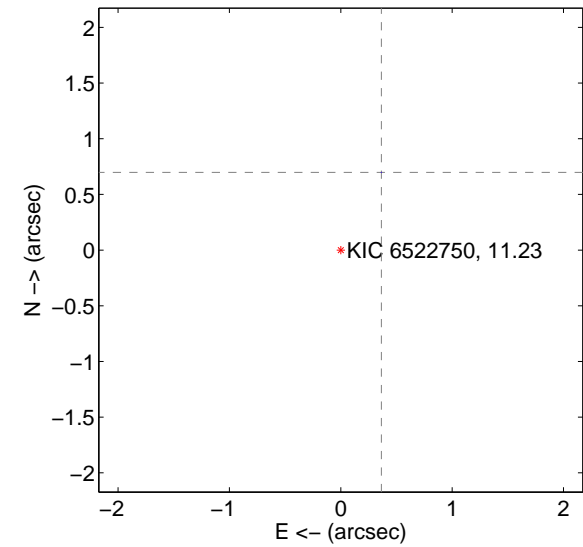
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

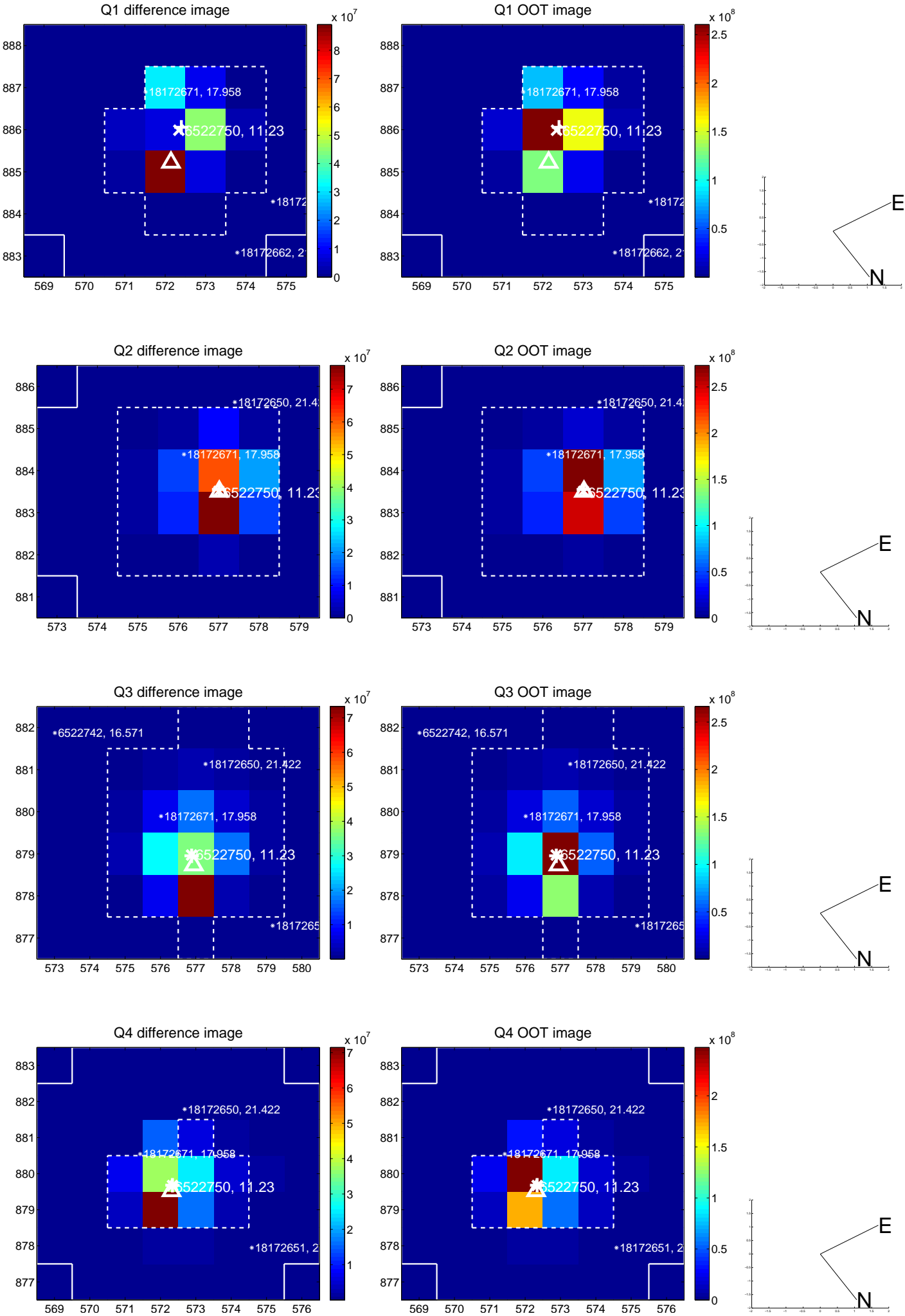


offset from photometric centroids

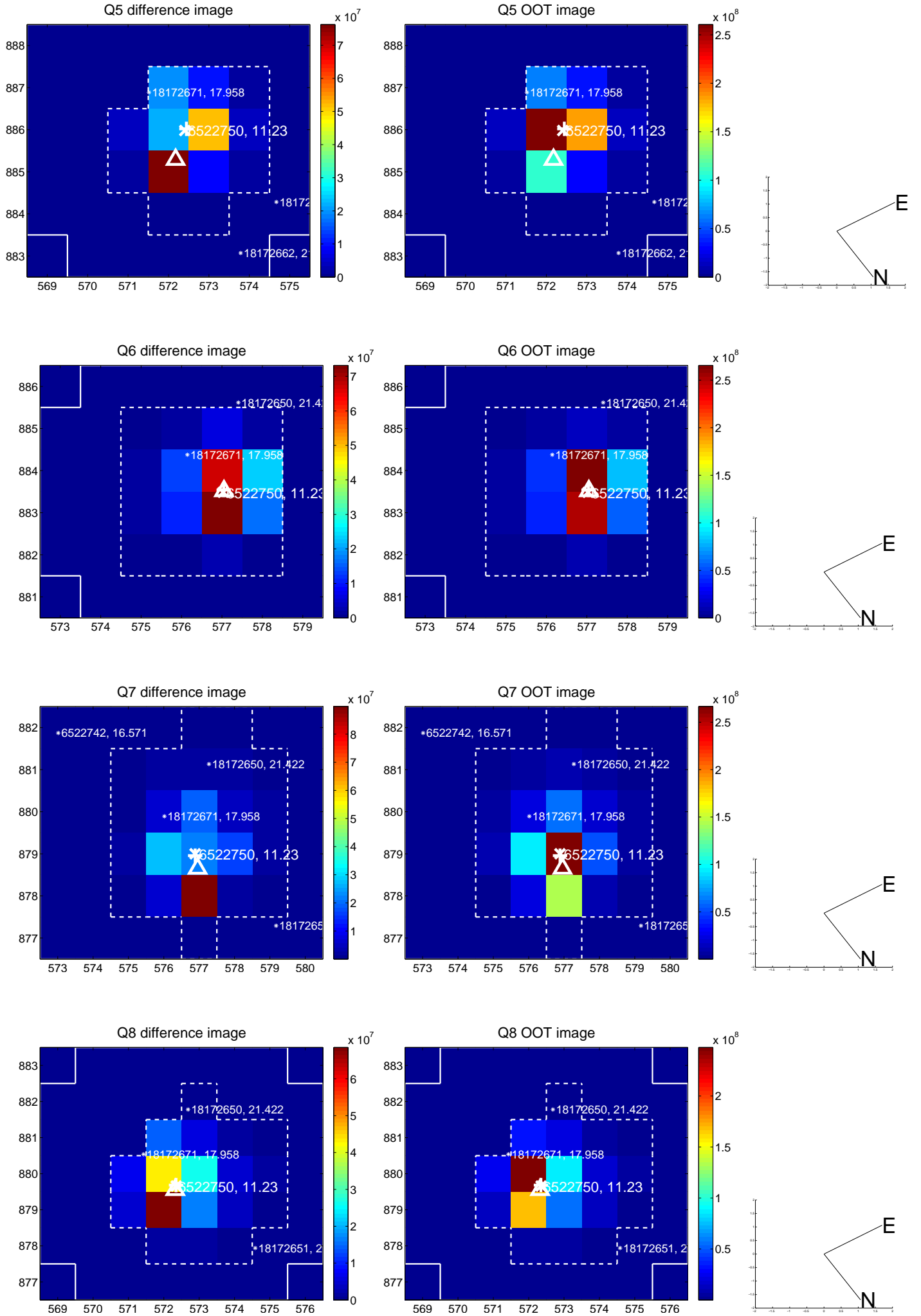


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

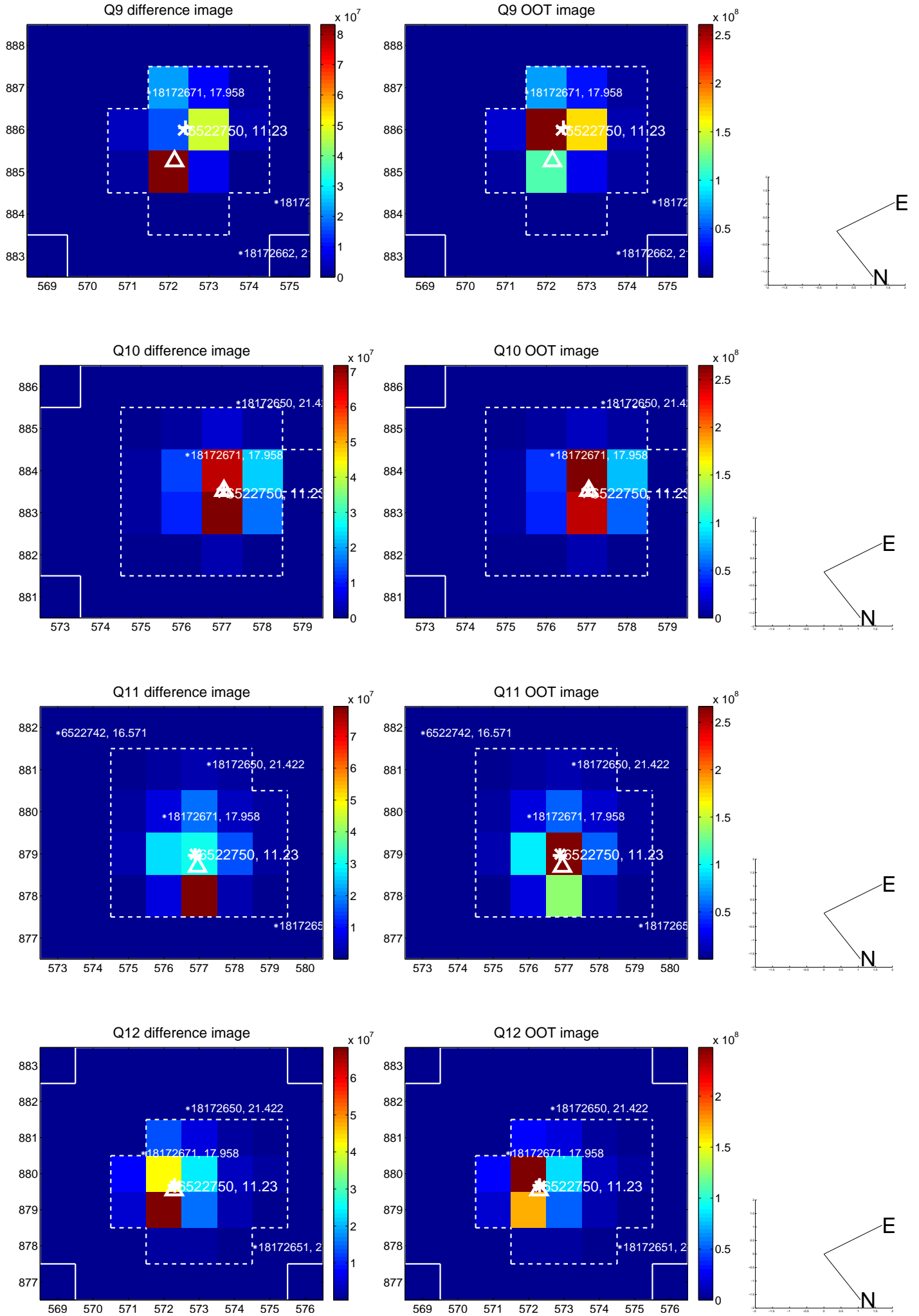


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

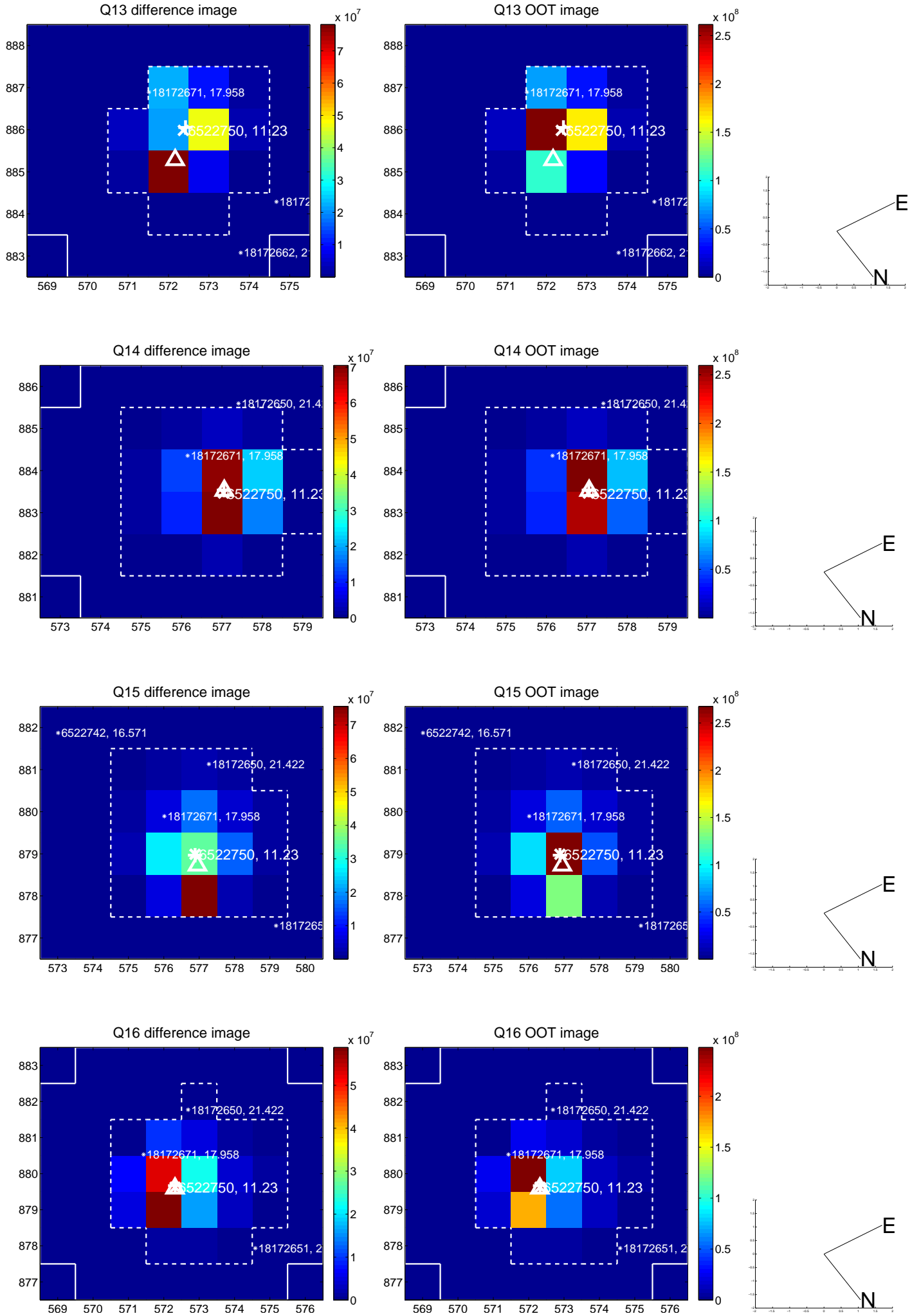




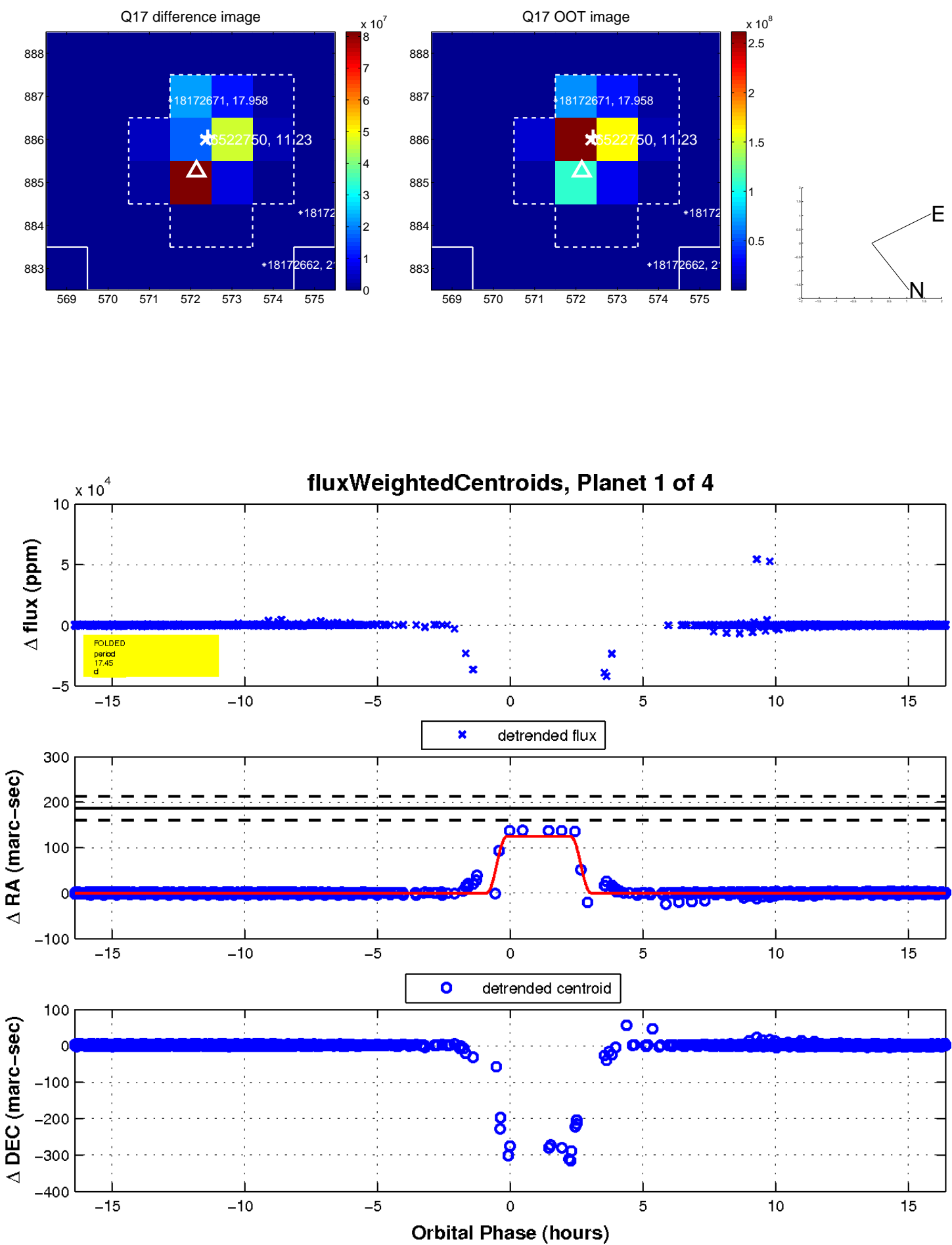
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

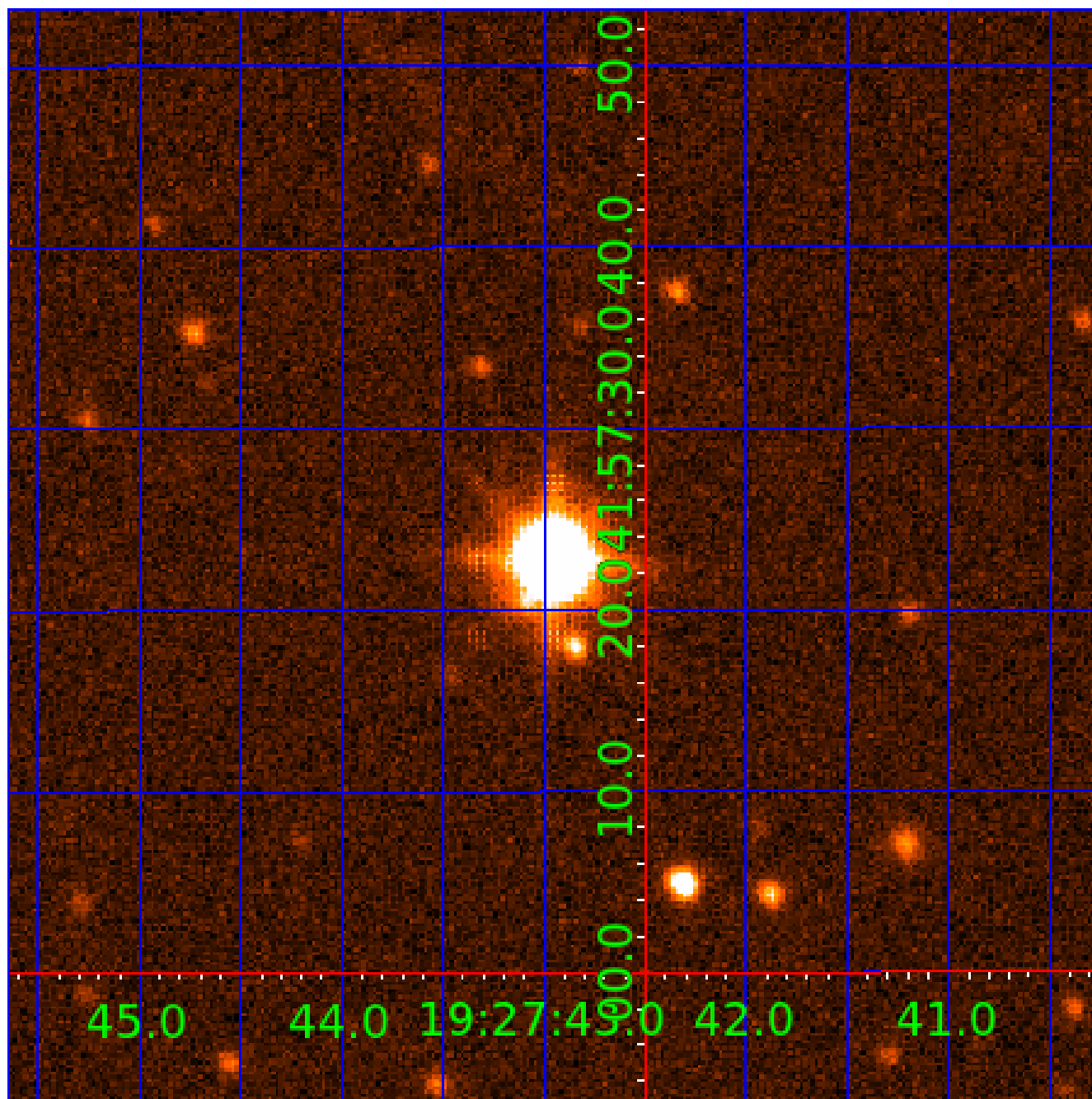


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 006522750

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006522750-01	OBS	6724.01	17.445490	135.754363	334457.7	3.500	35257.8	-1.0	0.94	5759	41.85	51.25
006522750-02	OBS	No	17.445640	145.249119	157878.6	6.903	19248.7	8417.7	0.94	5759	54.11	51.24
006522750-03	OBS	No	8.726305	135.476687	148.3	16.984	3800.0	17.0	0.94	5759	1.14	129.06
006522750-04	OBS	No	263.606460	382.869505	6074.9	25.556	387.8	80.4	0.94	5759	13.53	1.37

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006522750-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_SATURATED
006522750-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
006522750-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED
006522750-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—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_SATURATED

**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 006522750-02

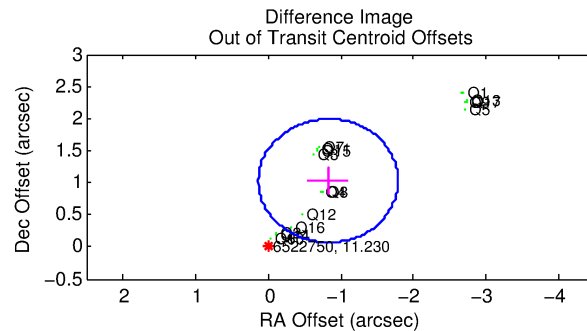
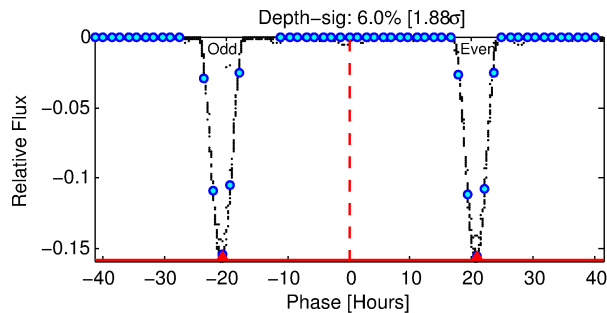
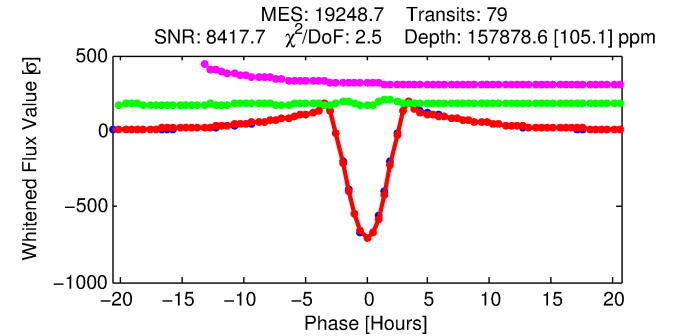
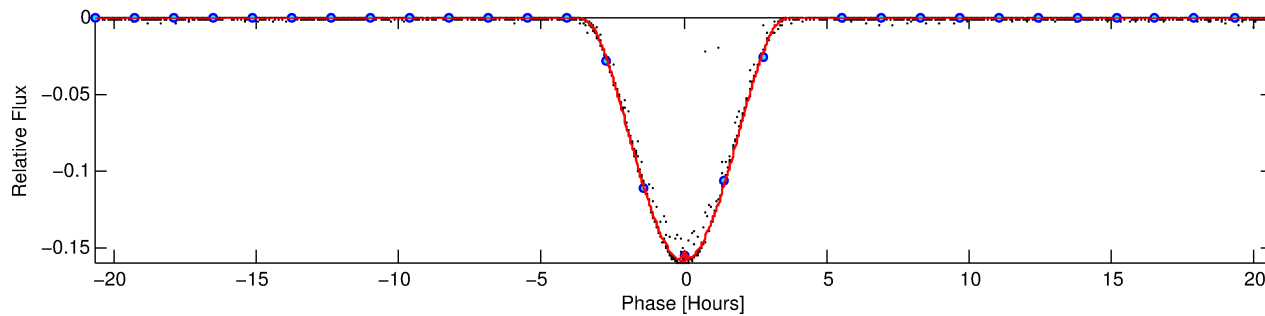
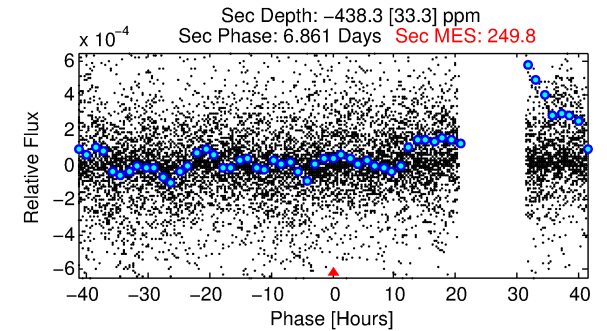
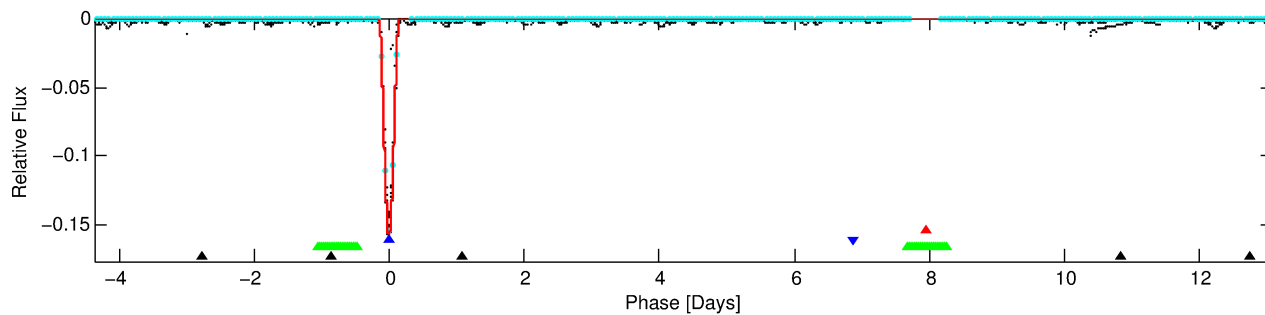
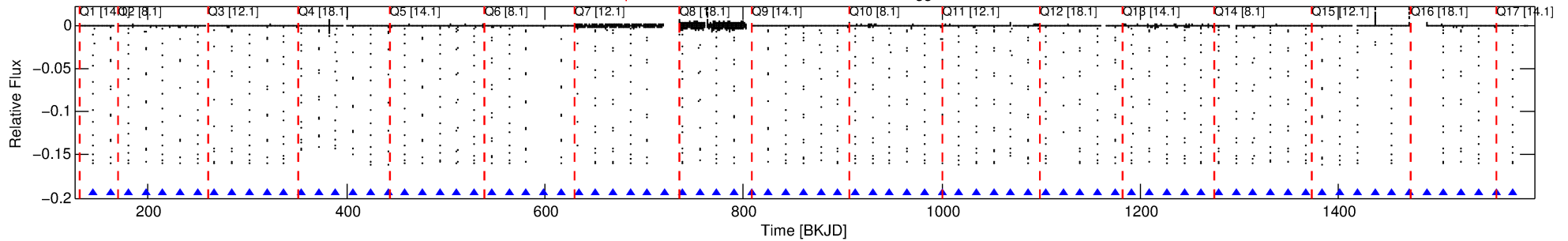
No Significant Match Found

# DV One-Page Summary

KIC: 6522750 Candidate: 2 of 4 Period: 17.446 d

KOI: K06724 Corr: No Ephemeris Match

Kp: 11.23 R\*: 0.94 Rs Teff: 5759.0 K Logg: 4.48 Fe/H: 0.020



## DV Fit Results:

Period = 17.44564 [0.00000] d  
Epoch = 145.2491 [0.0000] BKJD  
Rp/R\* = 0.5247 [0.0312]  
a/R\* = 24.15 [0.14]  
b = 0.87 [0.04]  
Seff = 51.25 [11.04]  
Teq = 682 [37] K  
**Rp = 54.11 [8.32] Re**  
a = 0.1311 [0.0173] AU  
Ag = N/A  
Teffp = N/A

## DV Diagnostic Results:

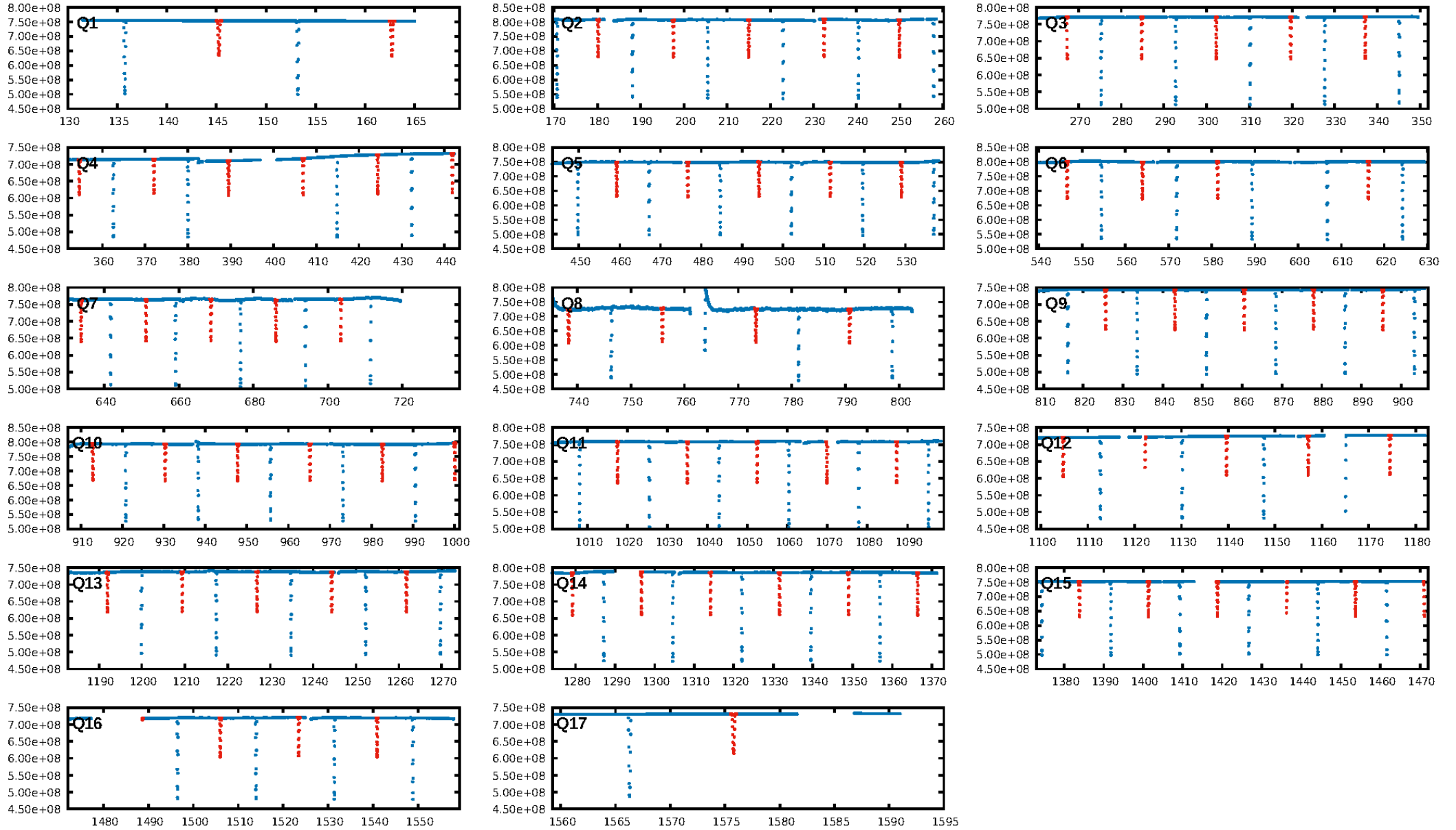
**ShortPeriod-sig: 0.0% [0.00σ]**  
**LongPeriod-sig: 100.0% [223.17σ]**  
**ModelChiSquare2-sig: 0.0%**  
**ModelChiSquareGof-sig: 0.0%**  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [76/76]  
GhostDiagnostic-chr: 10.73  
Centroid-sig: N/A  
**Centroid-so: 1.054 arcsec [1877.59σ]**  
**OotOffset-rm: 1.321 arcsec [4.12σ]**  
**KicOffset-rm: 1.245 arcsec [4.10σ]**  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 0.24 [4/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:24:43 Z

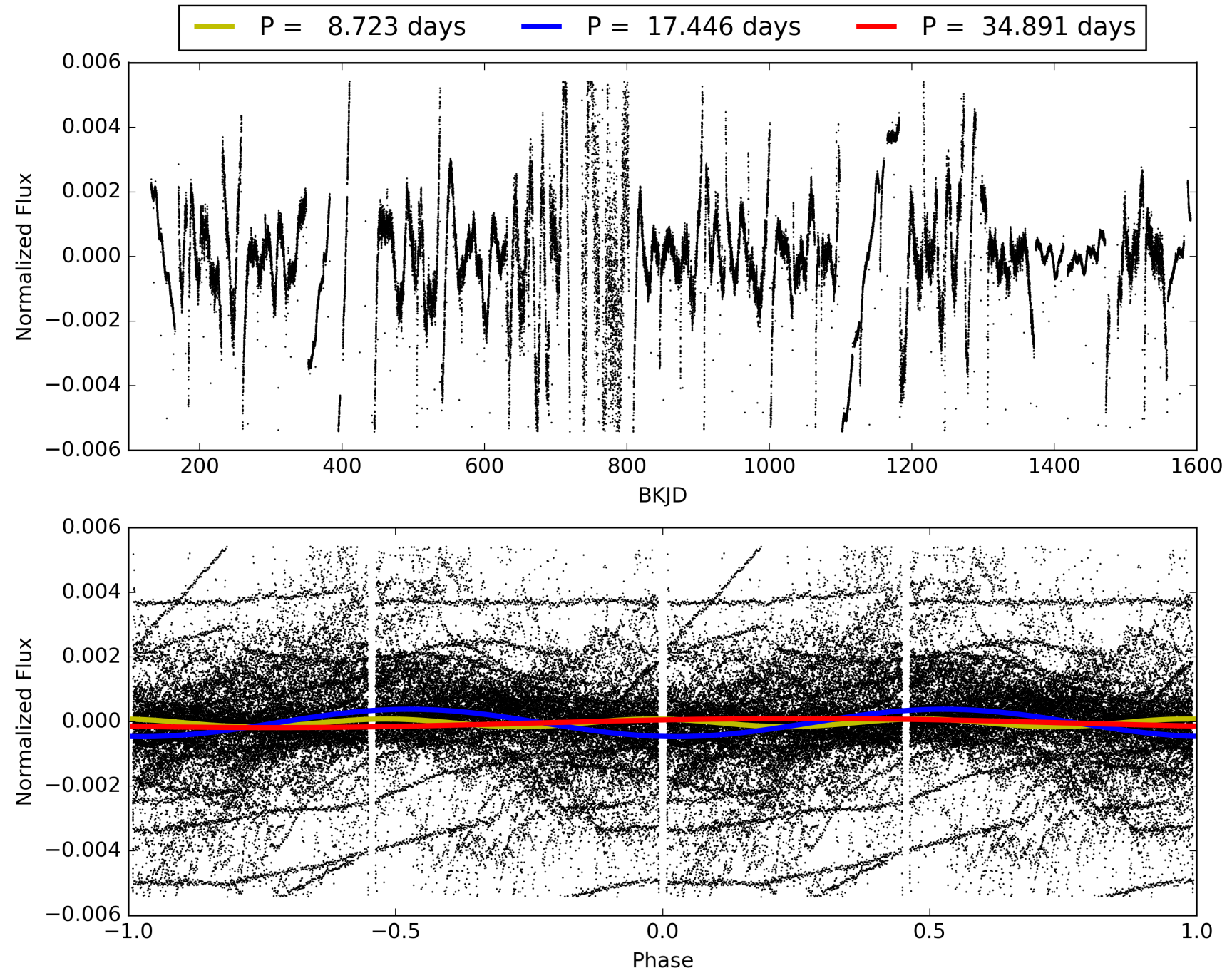
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 006522750-02, PDC Light Curves

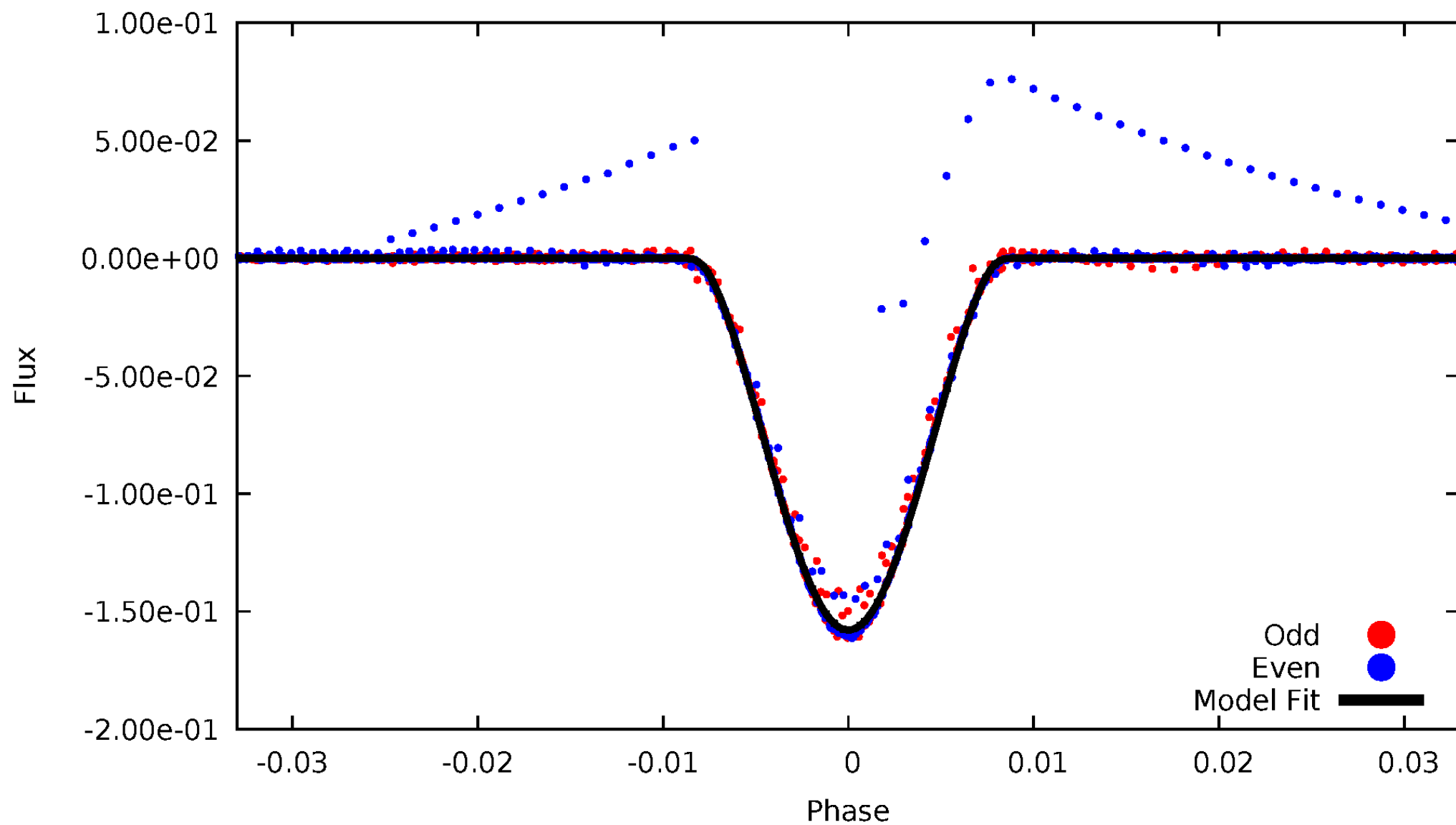


TCE 006522750-02



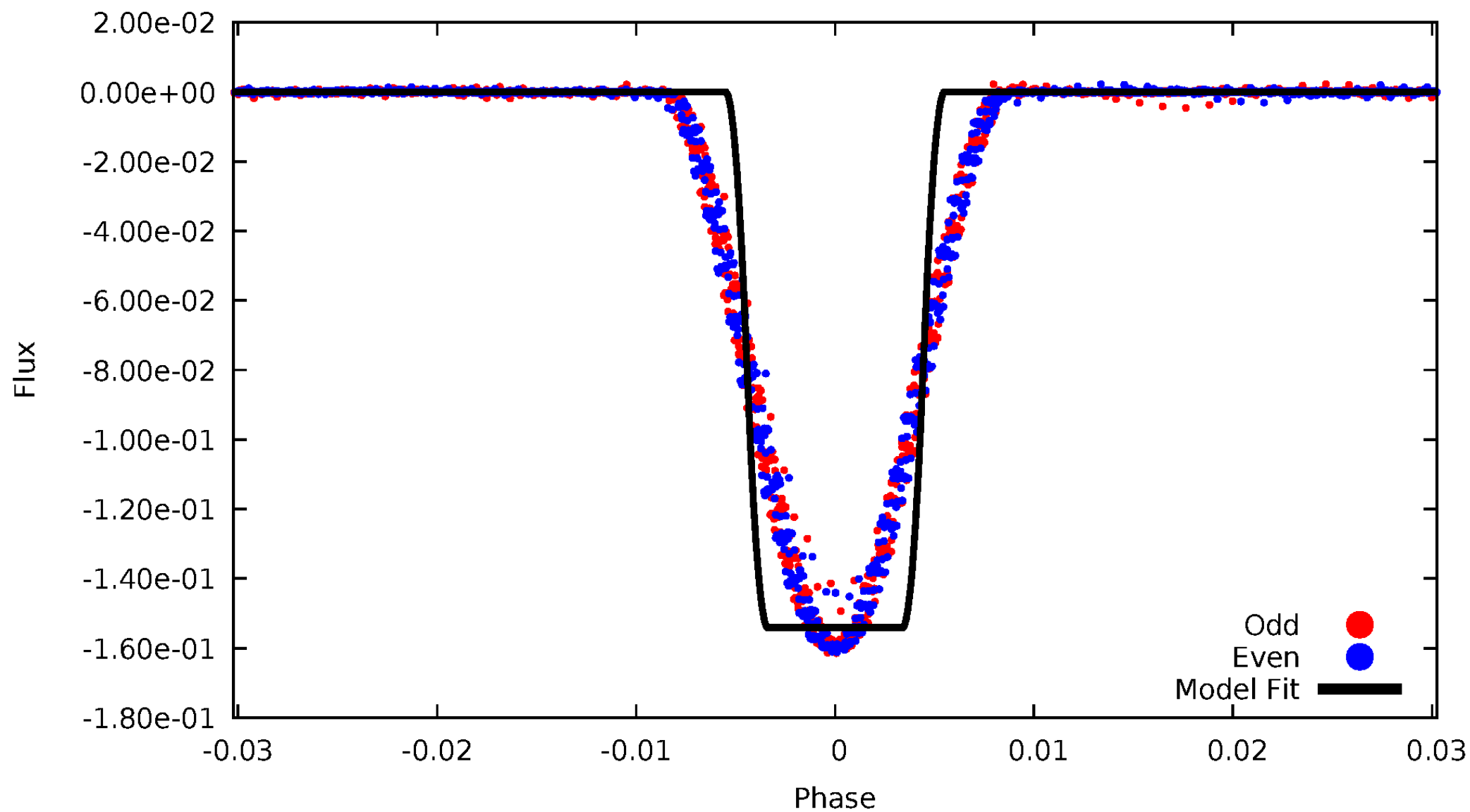
# DV Odd/Even

TCE 006522750-02



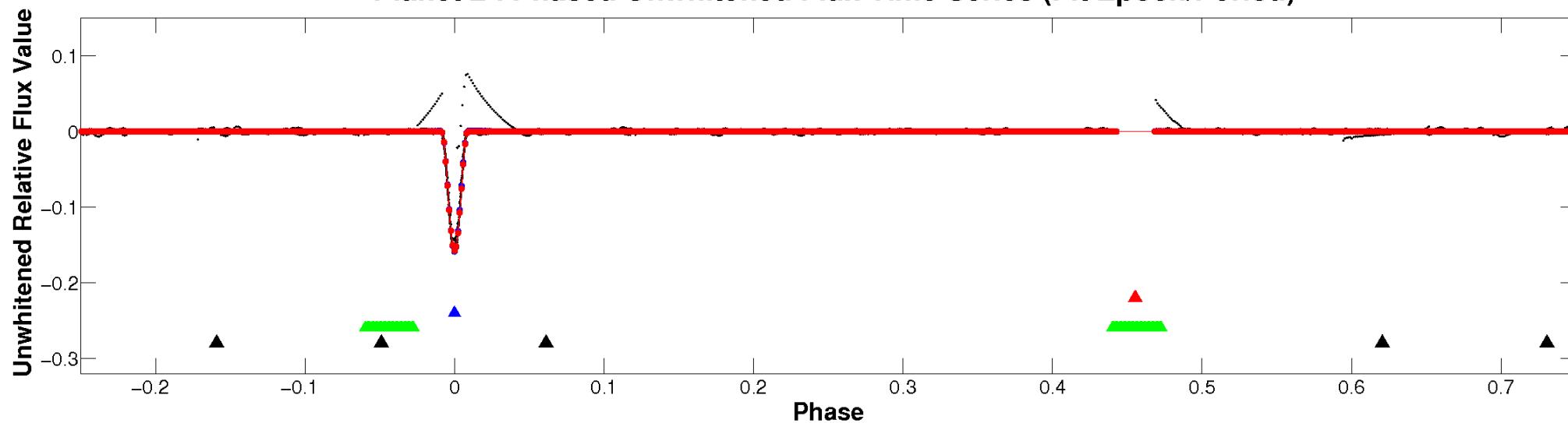
# ALT Odd/Even

TCE 006522750-02

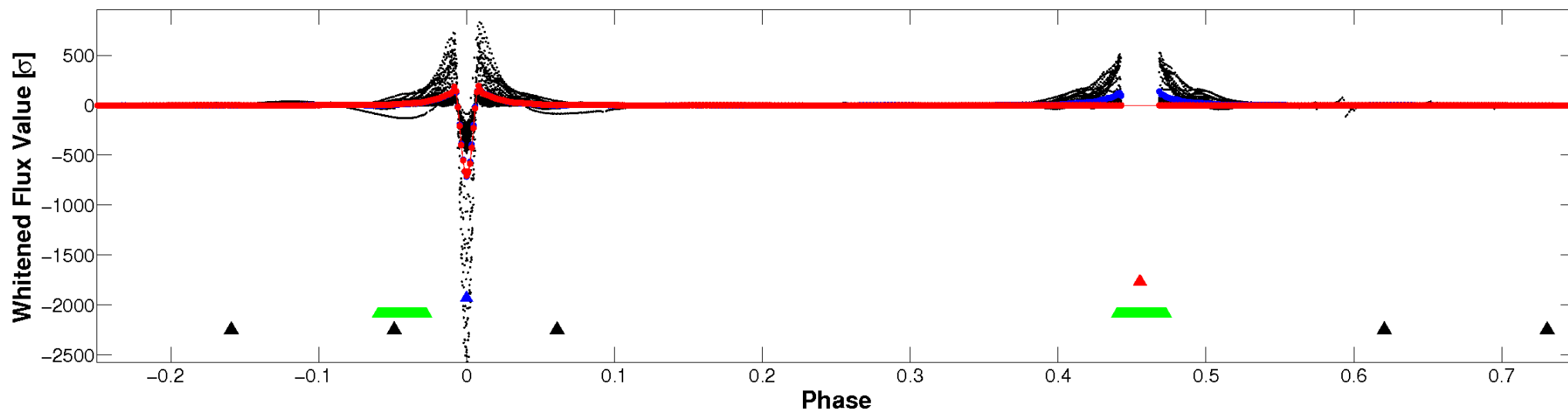


# Non-Whitened Vs. Whitened Light Curve

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

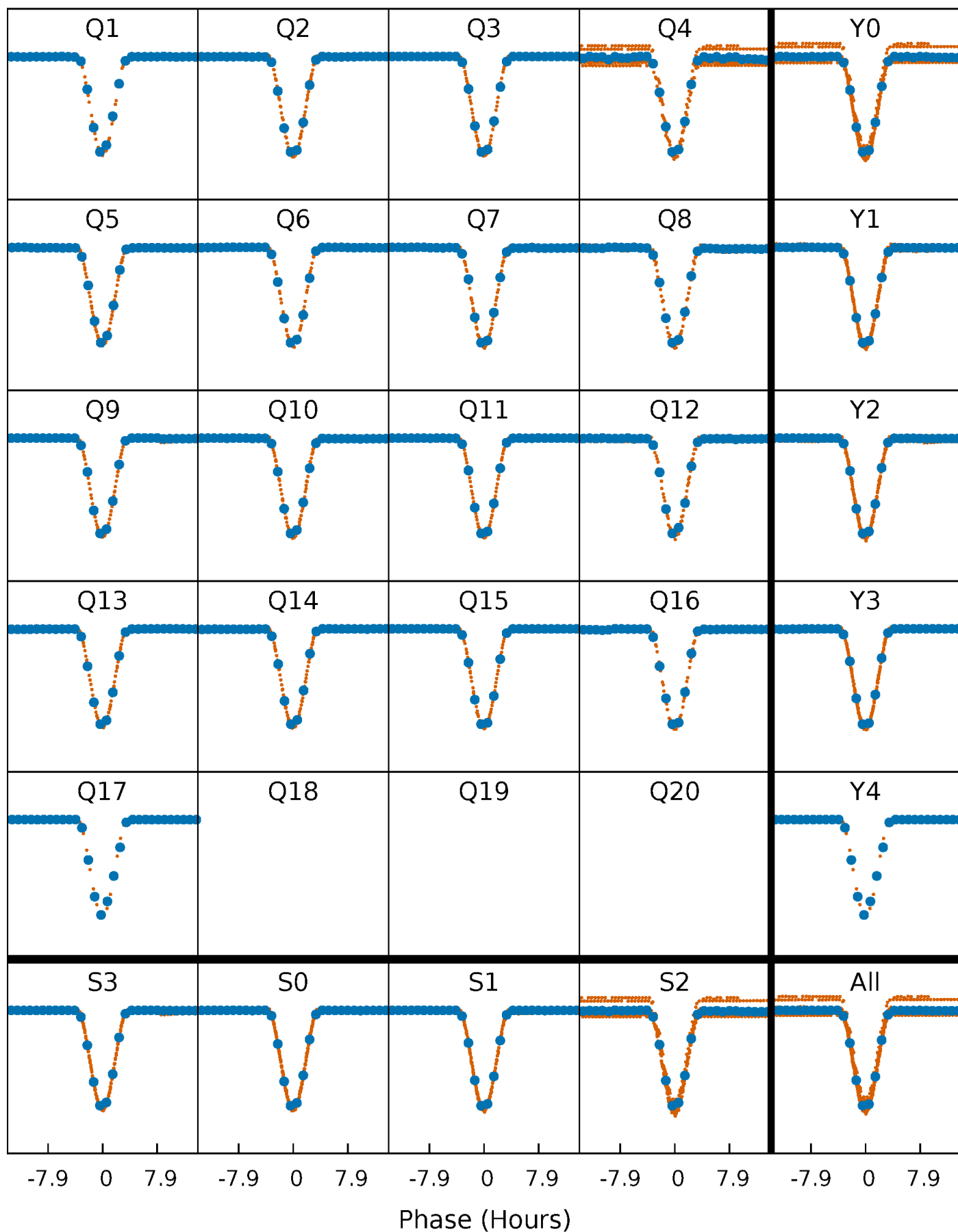


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

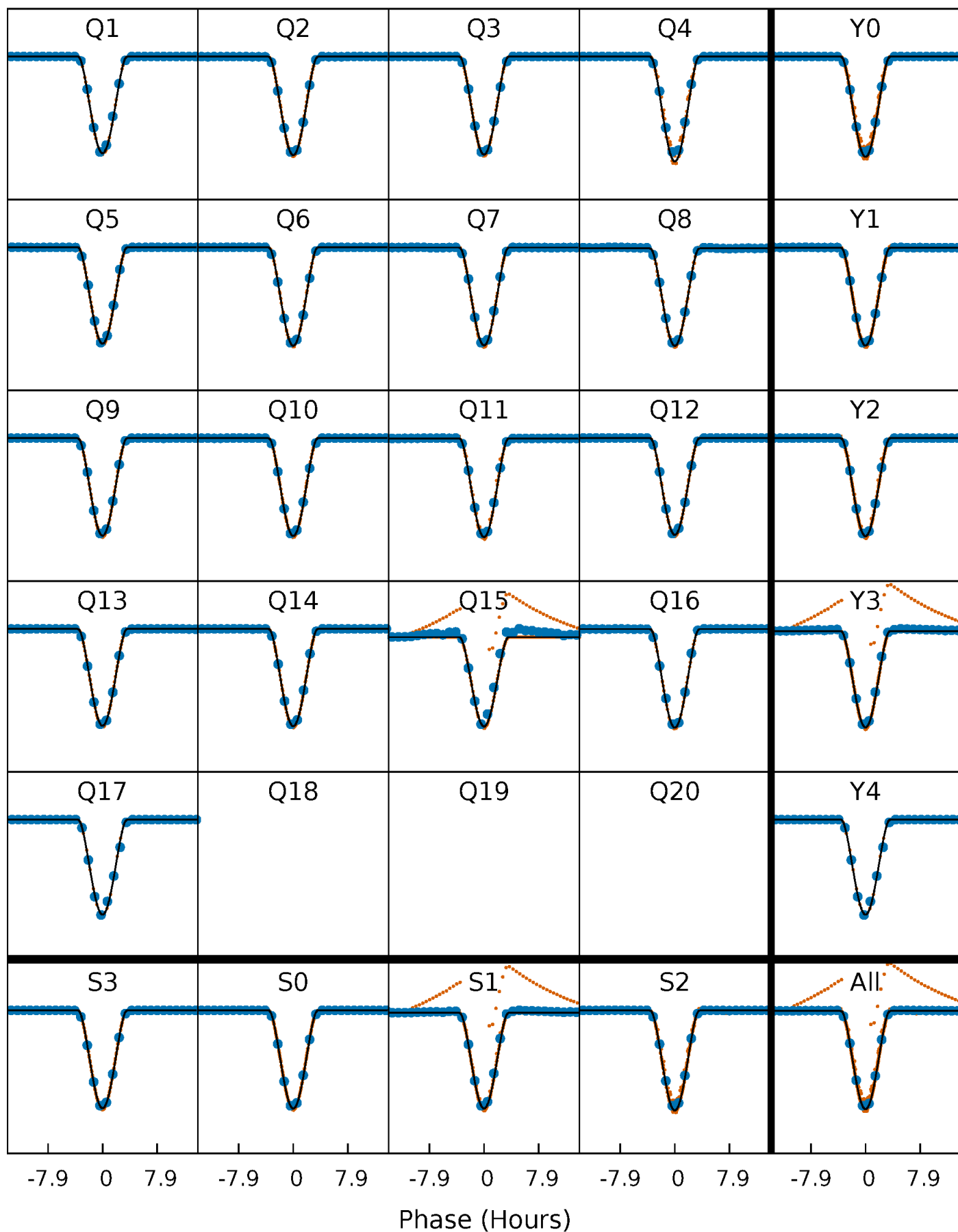
TCE 006522750-02 P= 17.445640 Days  $T_0=145.249119$  (BKJD)





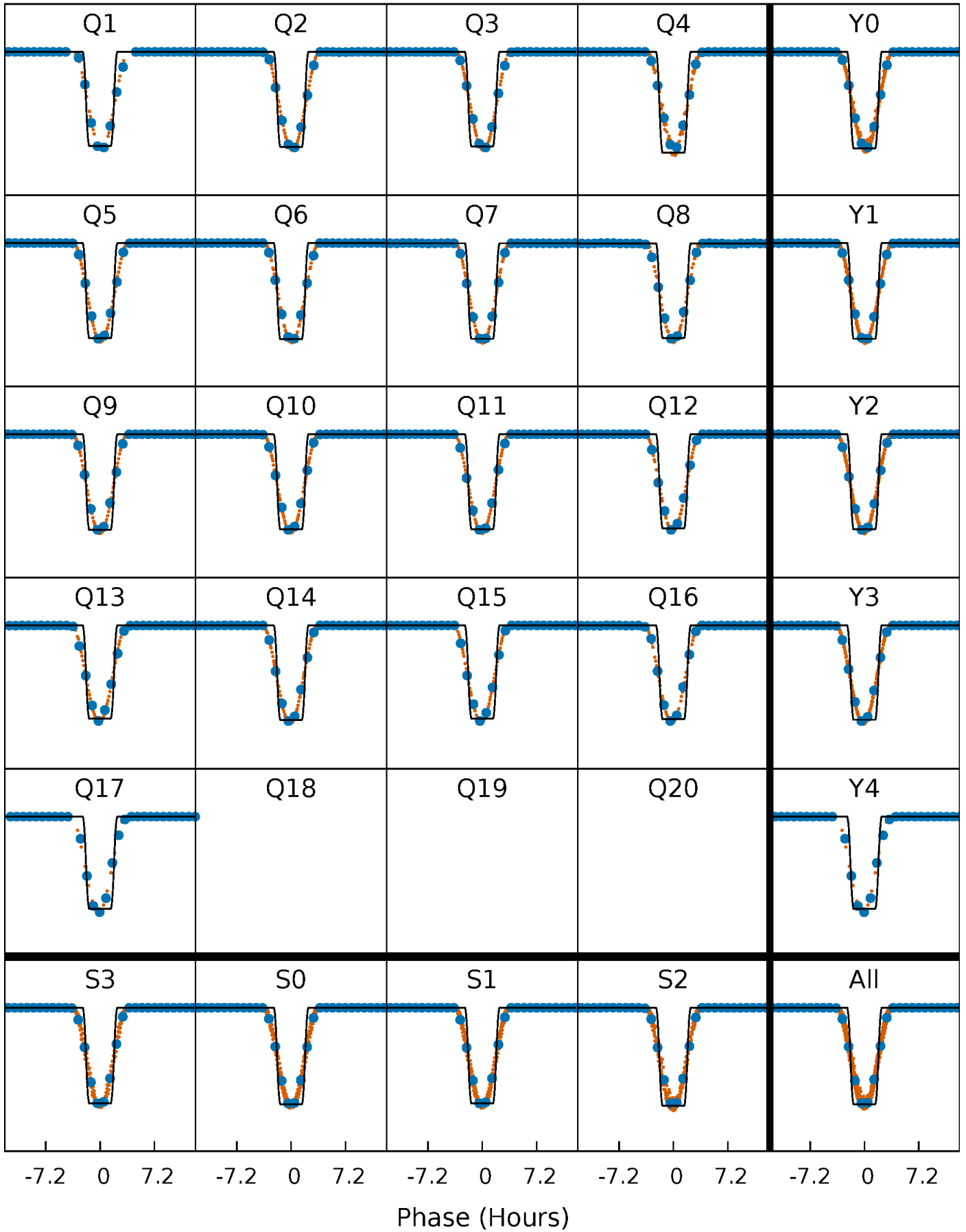
# DV Quarter-Phased Transit Curves

TCE 006522750-02 P= 17.445640 Days  $T_0=145.249119$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

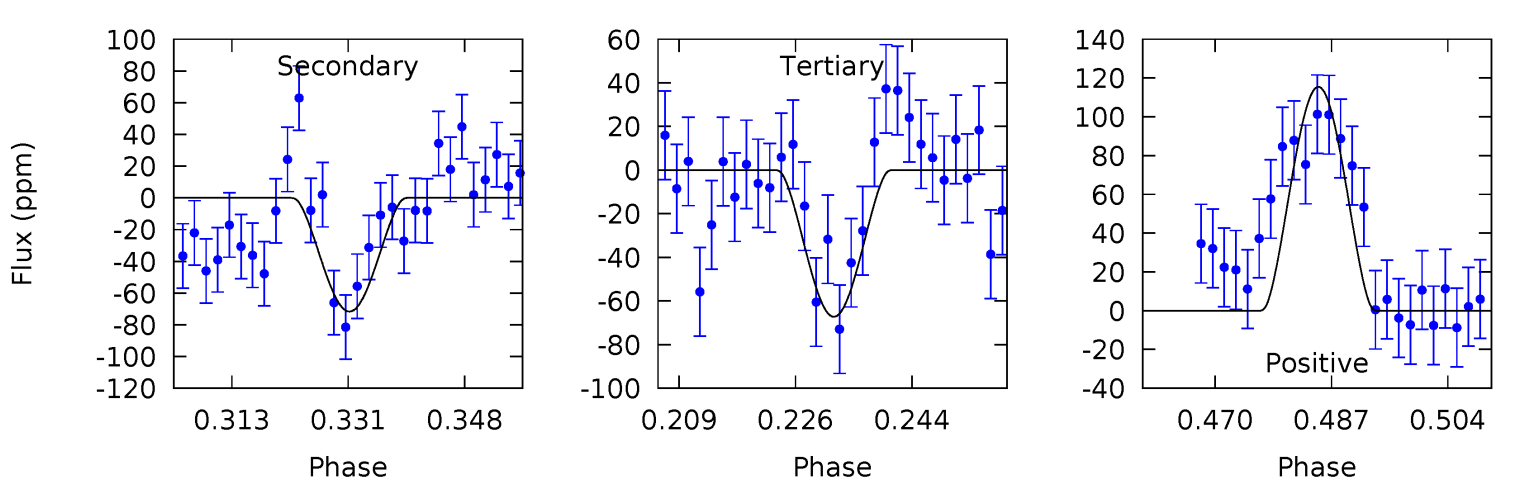
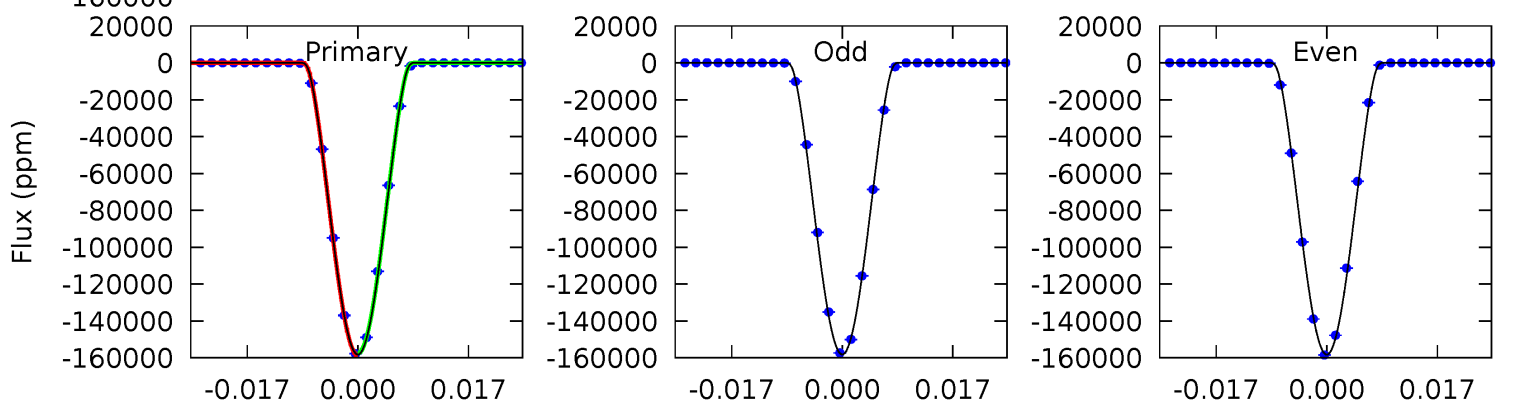
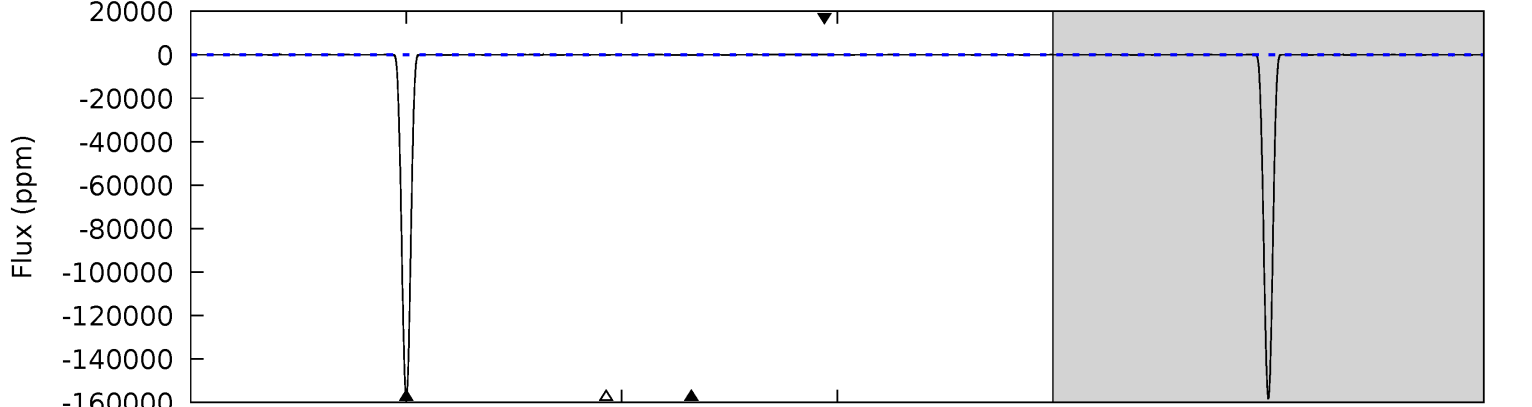
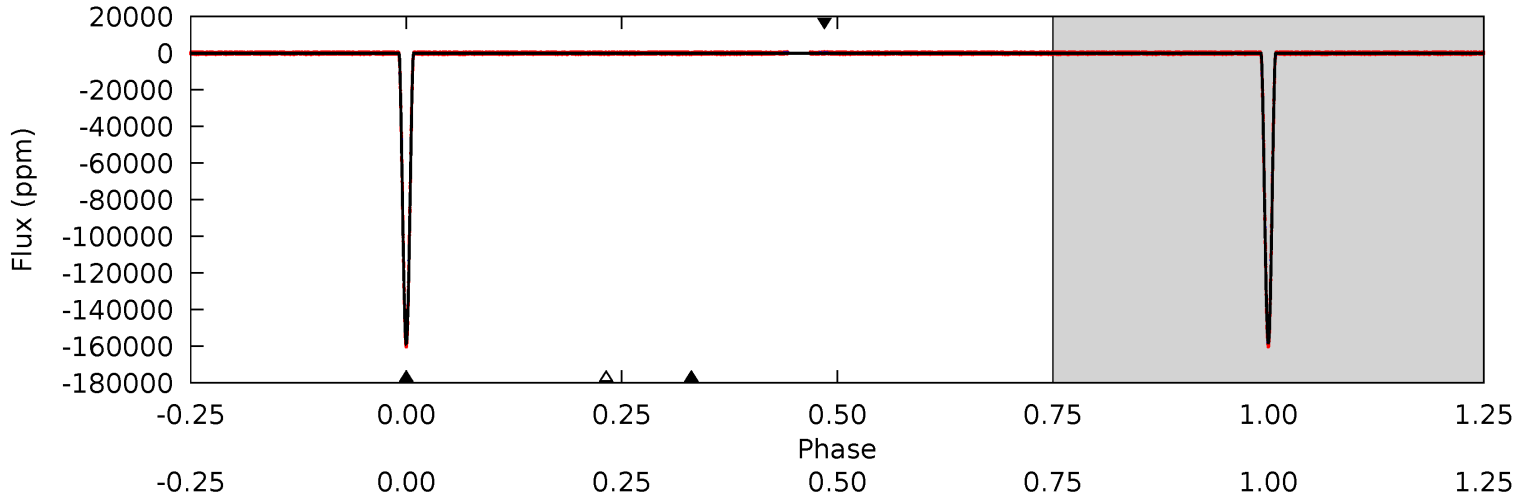
TCE 006522750-02 P= 17.445830 Days  $T_0=145.241237$  (BKJD)



# DV Model-Shift Uniqueness Test

006522750-02, P = 17.445640 Days, E = 127.803479 Days

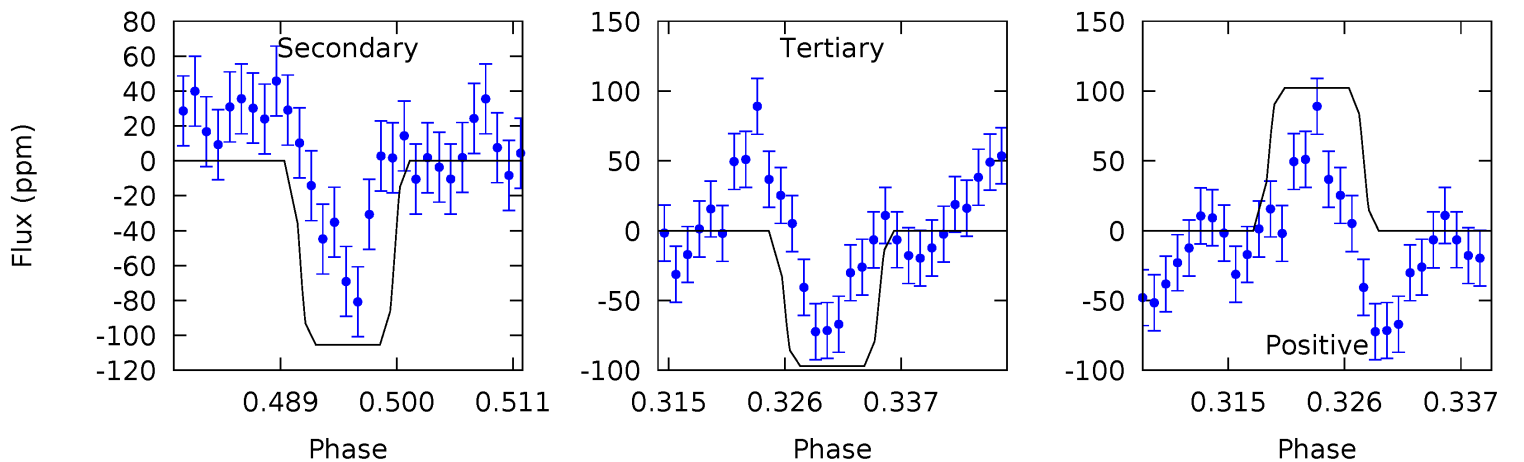
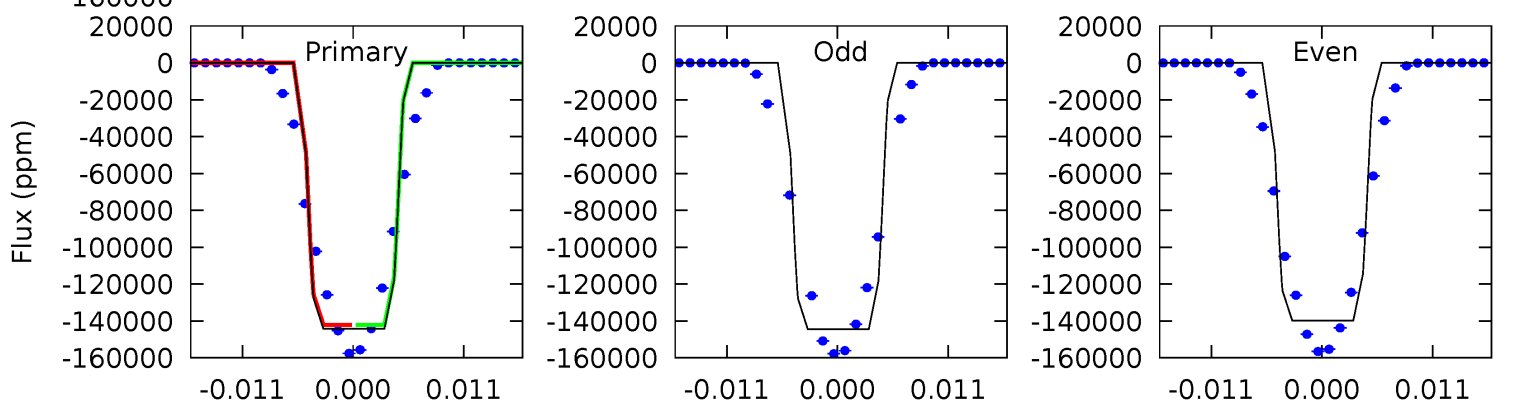
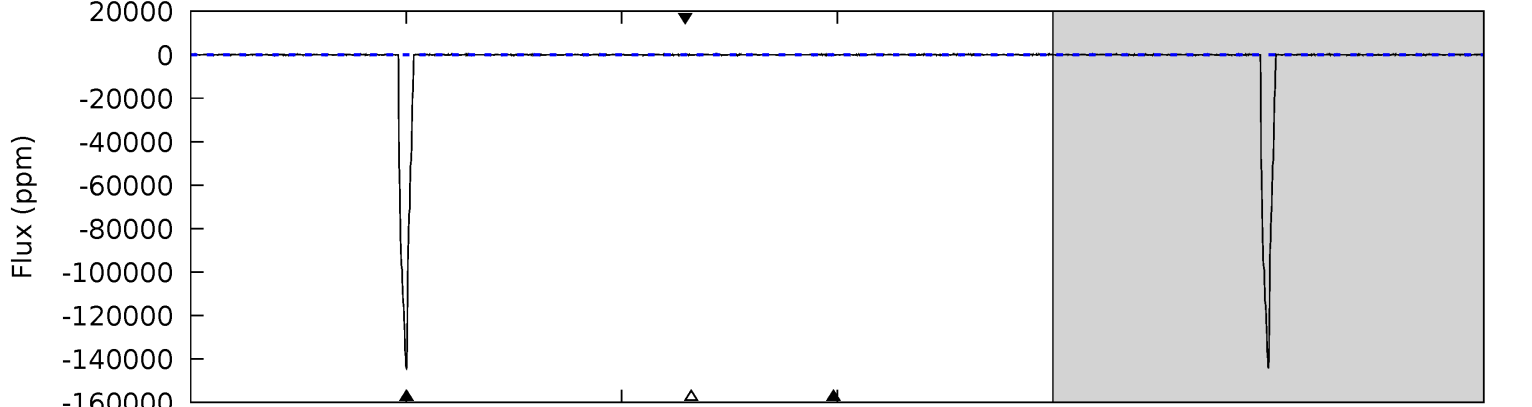
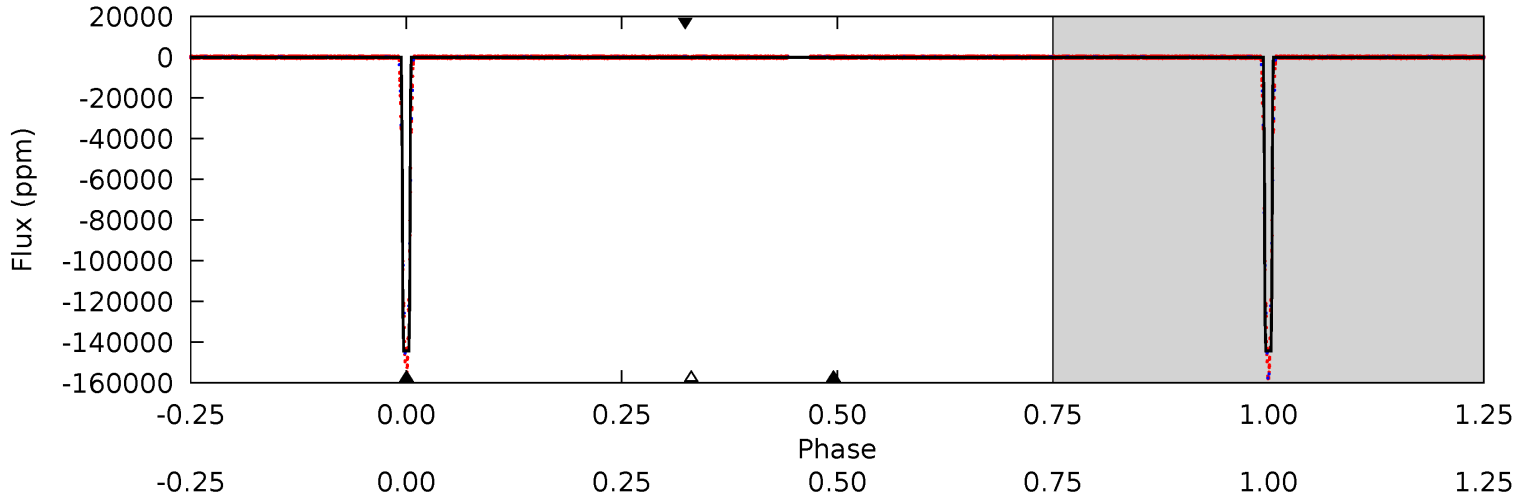
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22951	10.4	9.75	16.7	4.92	2.38	3.97	22941	22934	0.64	-6.35	7.90	0.98	0.00	0



# Alt Model-Shift Uniqueness Test

006522750-02, P = 17.445830 Days, E = 127.795407 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
6413	4.68	4.31	4.55	5.01	2.55	1.13	6408	6408	0.37	0.14	122.6	0.99	0.00	0



### Stellar Parameters For KIC 006522750

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$5759^{+78}_{-86}$	$4.481^{+0.040}_{-0.120}$	$0.020^{+0.150}_{-0.150}$	$0.945^{+0.134}_{-0.057}$	$0.984^{+0.056}_{-0.062}$	$1.644^{+0.292}_{-0.520}$
	+1%/-1%	+1%/-3%	+750%/-750%	+14%/-6%	+6%/-6%	+18%/-32%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 006522750-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-72 \pm 7$	$55.29^{+5.60}_{-4.34}$	$963^{+37}_{-26}$	$-1618^{+112}_{-77}$	$0.220^{+0.044}_{-0.041}$
Alt.	$-105 \pm 22$	$41.07^{+4.34}_{-3.62}$	$961^{+34}_{-24}$	$1814^{+82}_{-125}$	$0.587^{+0.166}_{-0.164}$

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

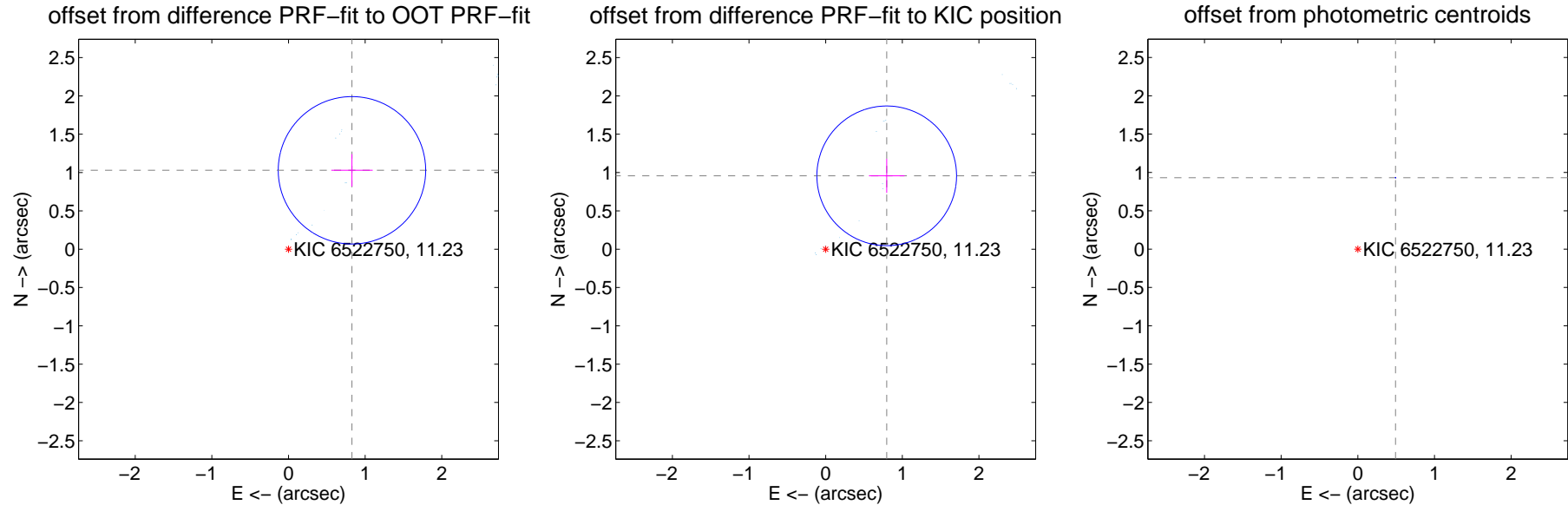
## DV Centroid Data

Supplemental centroid analysis for 006522750-02. **Kepler magnitude: 11.23**. Transit SNR 8417.66

There are 17 quarters with good PRF difference image offsets

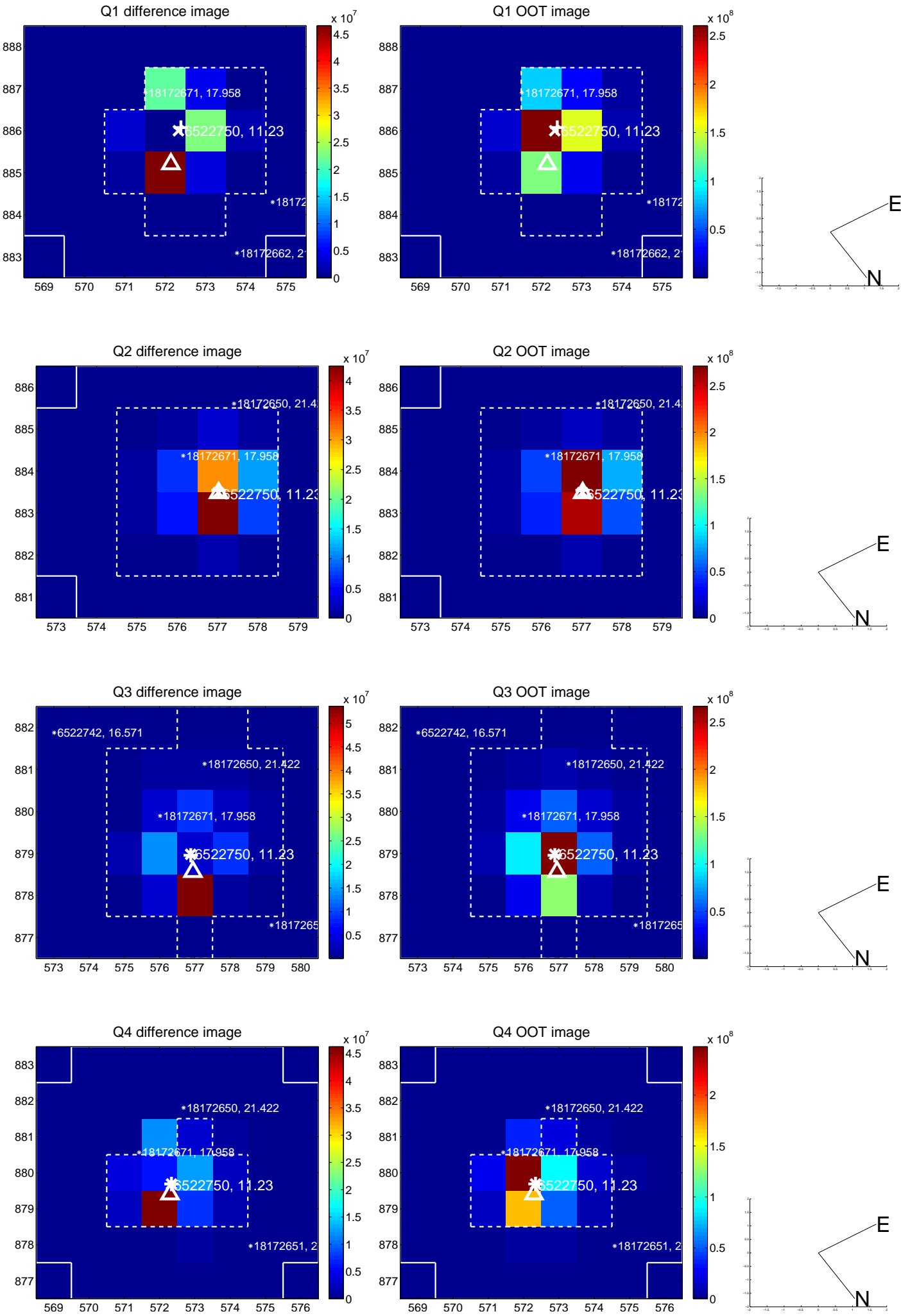
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>1.321 \pm 0.321</math></b>	<b>4.12</b>	$-0.828 \pm 0.270$	$1.029 \pm 0.211$
PRF-fit source offset from KIC position	<b><math>1.245 \pm 0.304</math></b>	<b>4.10</b>	$-0.797 \pm 0.232$	$0.957 \pm 0.223$
photometric centroid source offset	<b><math>1.05 \pm 0.00</math></b>	<b>1877.58</b>	$-0.49 \pm 0.00$	$0.93 \pm 0.00$

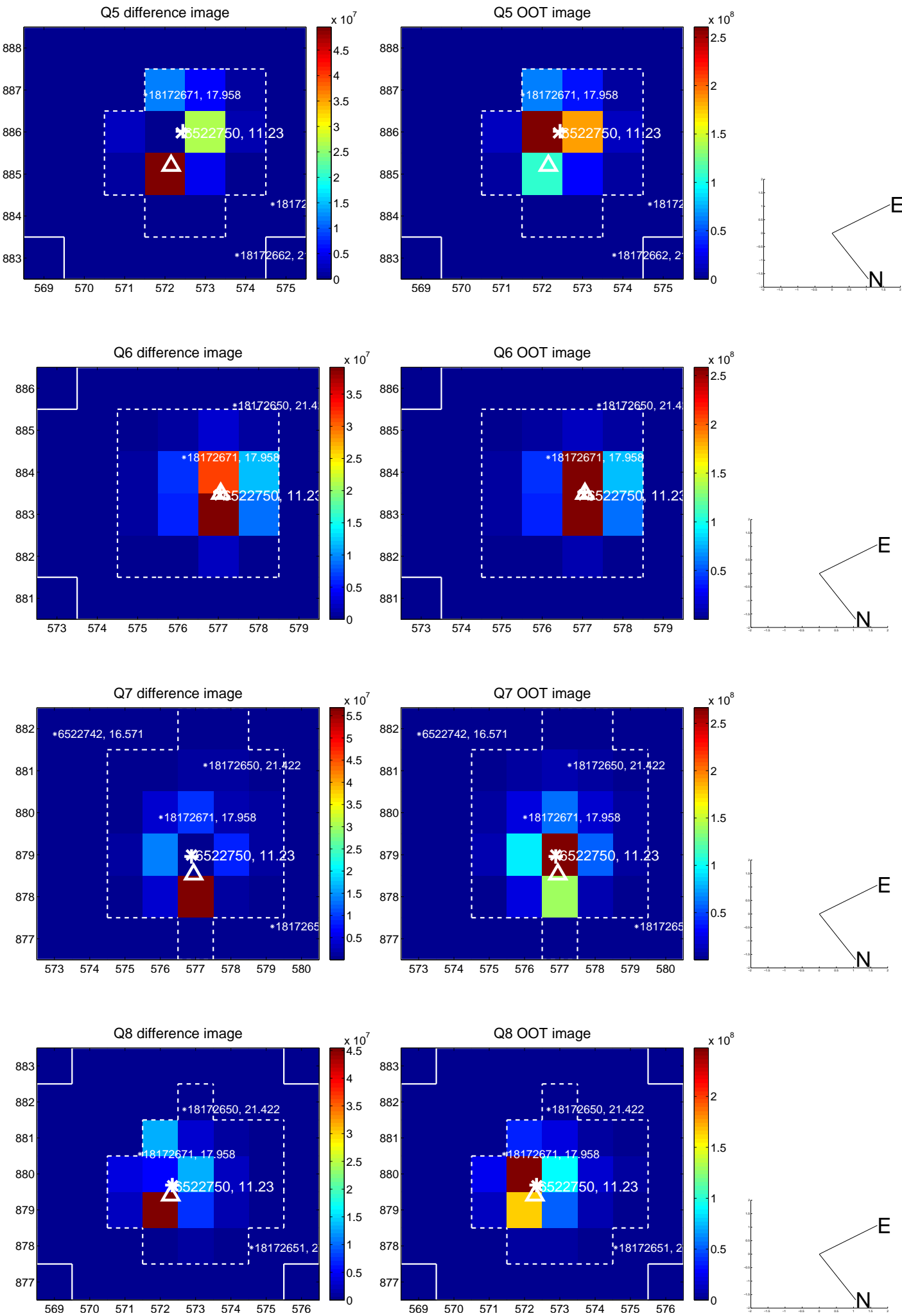


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

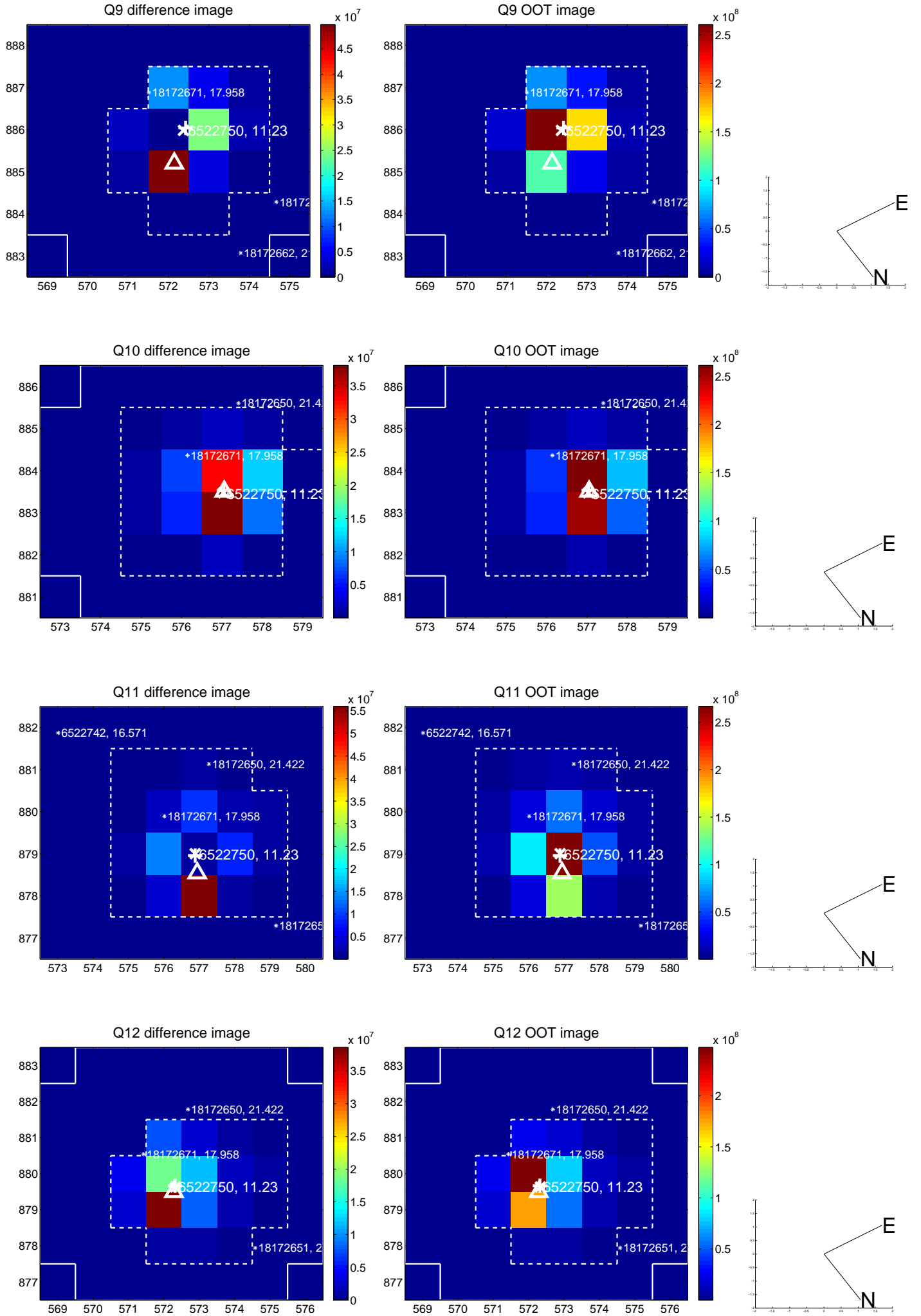


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

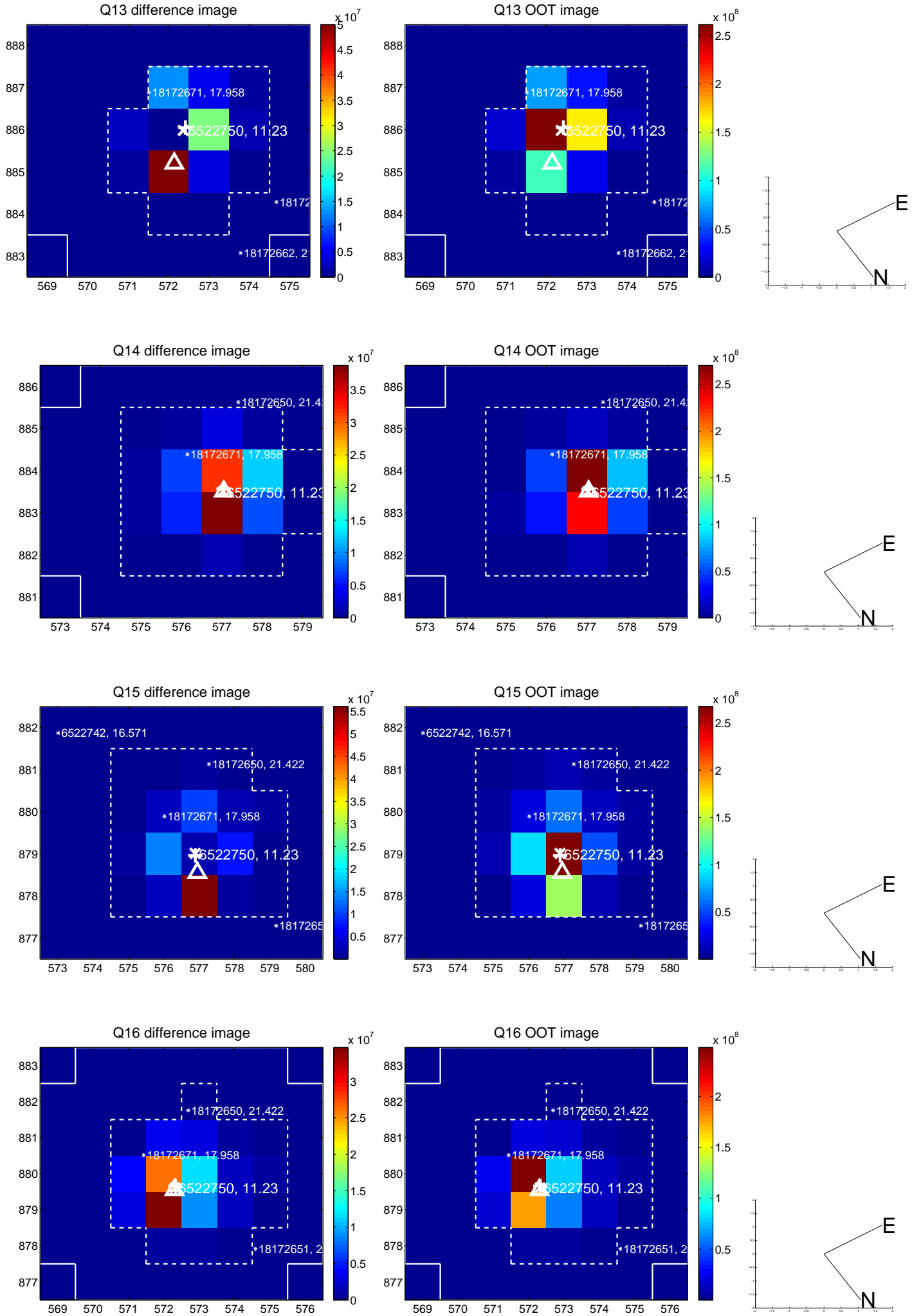




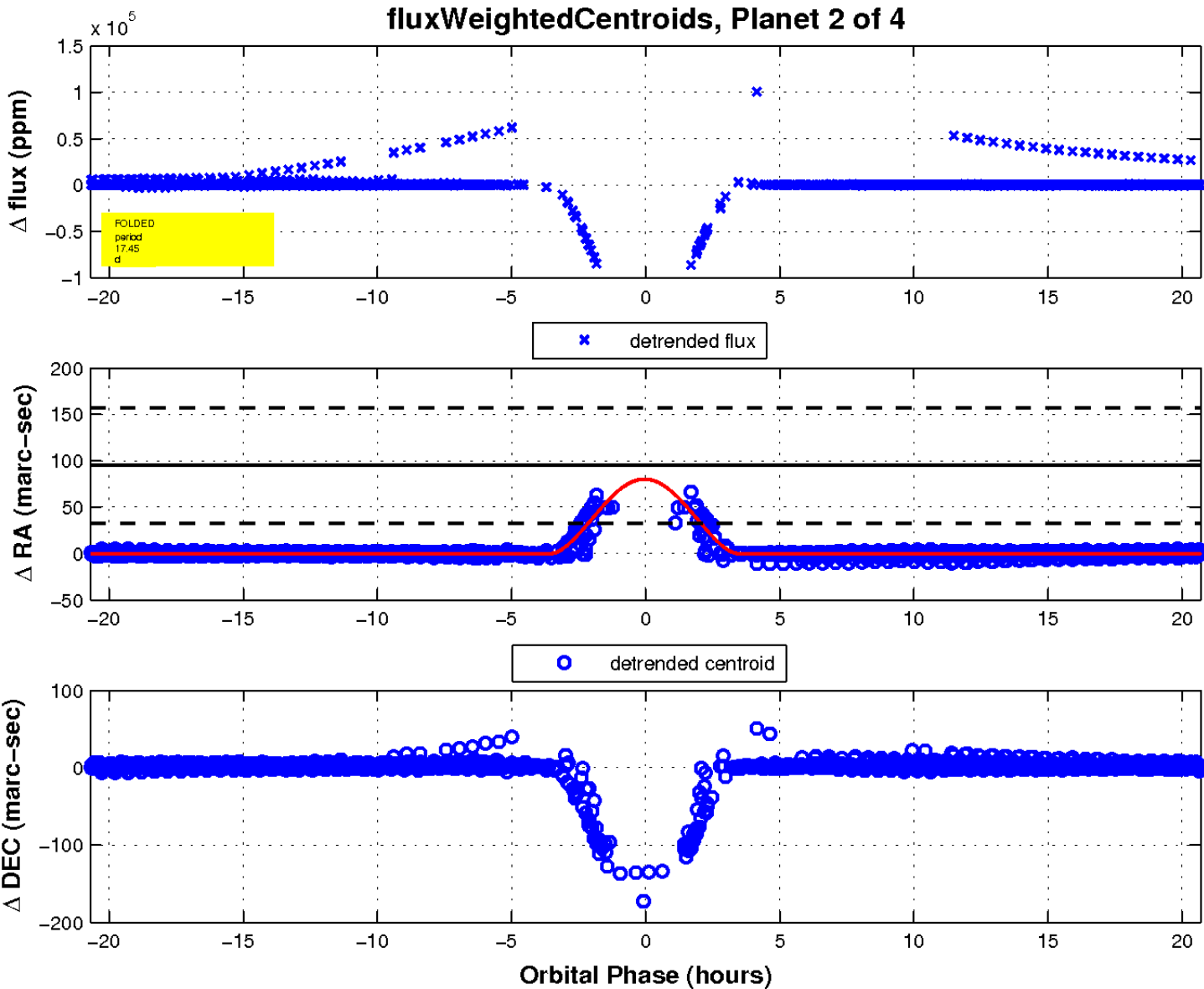
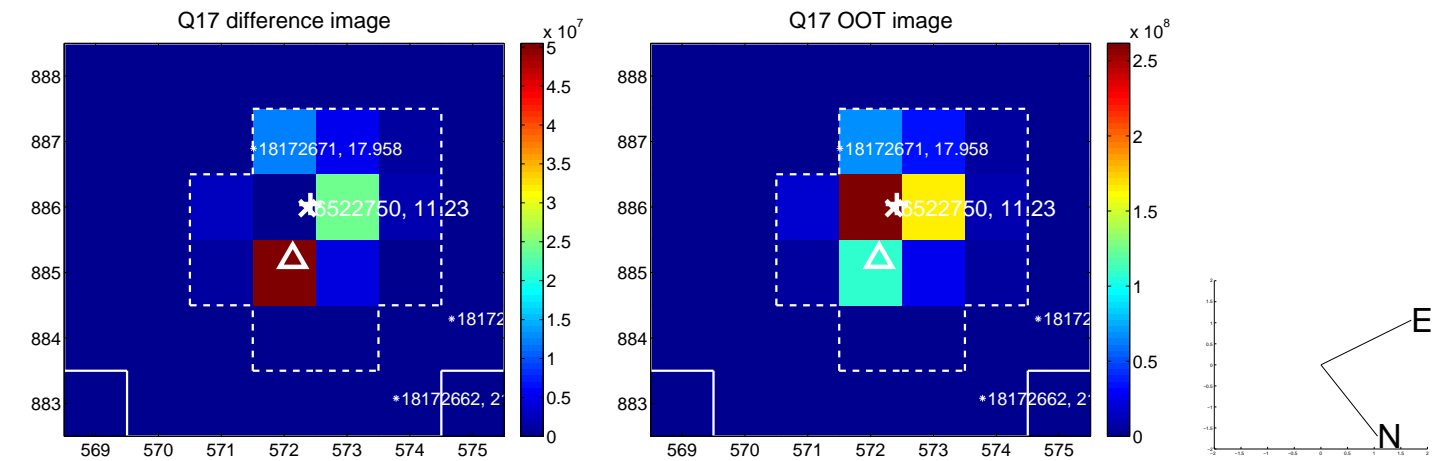
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

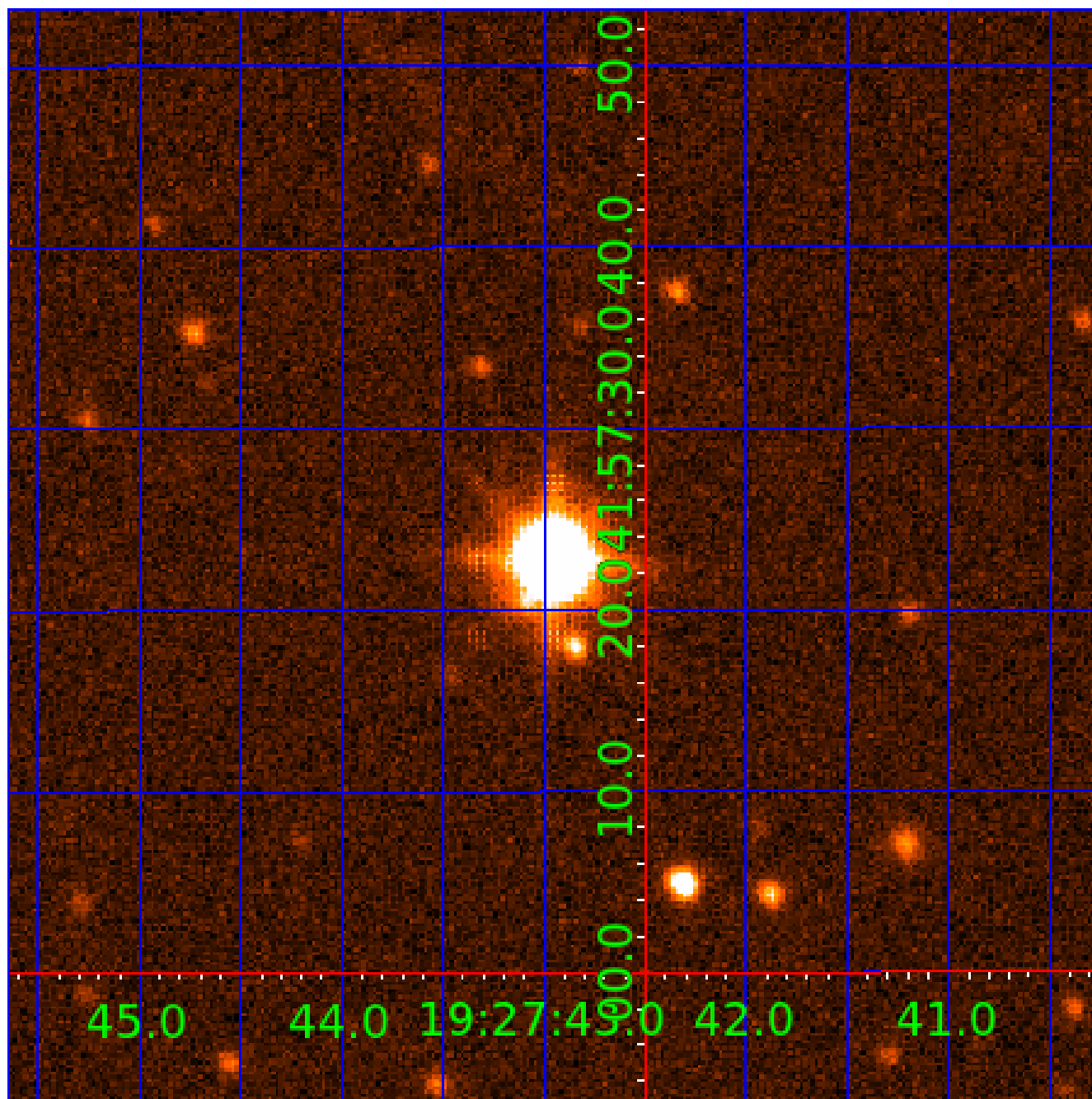


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 006522750

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006522750-01	OBS	6724.01	17.445490	135.754363	334457.7	3.500	35257.8	-1.0	0.94	5759	41.85	51.25
006522750-02	OBS	No	17.445640	145.249119	157878.6	6.903	19248.7	8417.7	0.94	5759	54.11	51.24
006522750-03	OBS	No	8.726305	135.476687	148.3	16.984	3800.0	17.0	0.94	5759	1.14	129.06
006522750-04	OBS	No	263.606460	382.869505	6074.9	25.556	387.8	80.4	0.94	5759	13.53	1.37

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006522750-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_SATURATED
006522750-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
006522750-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED
006522750-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—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_SATURATED

**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 006522750-03

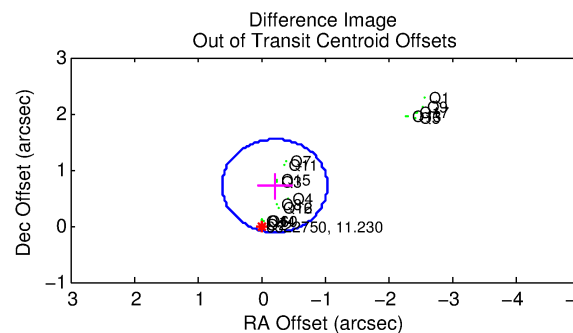
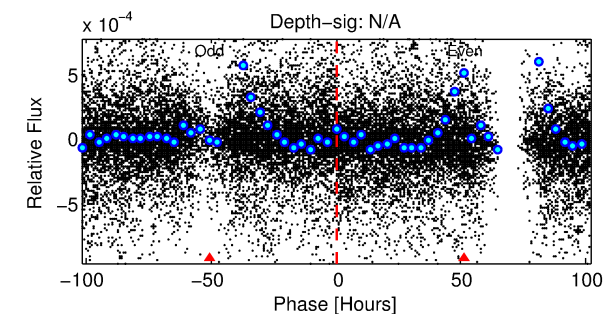
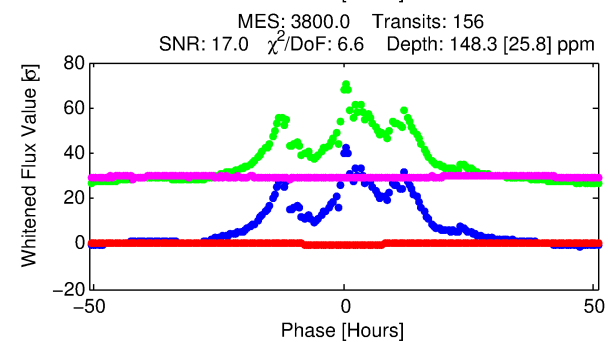
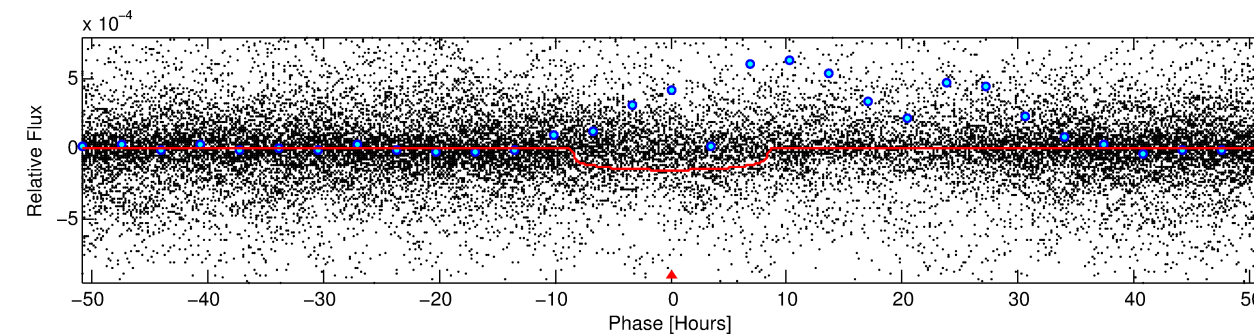
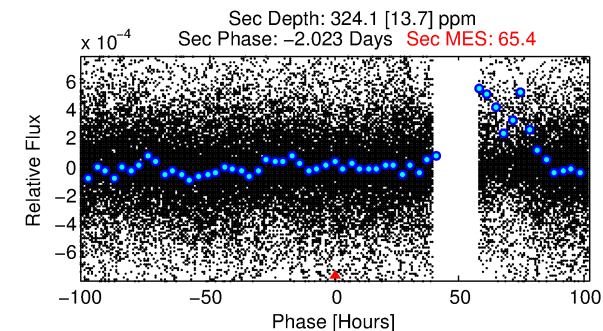
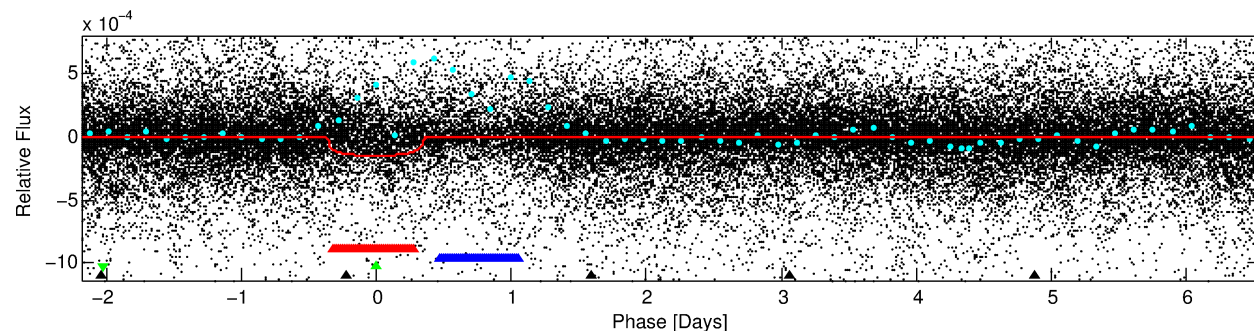
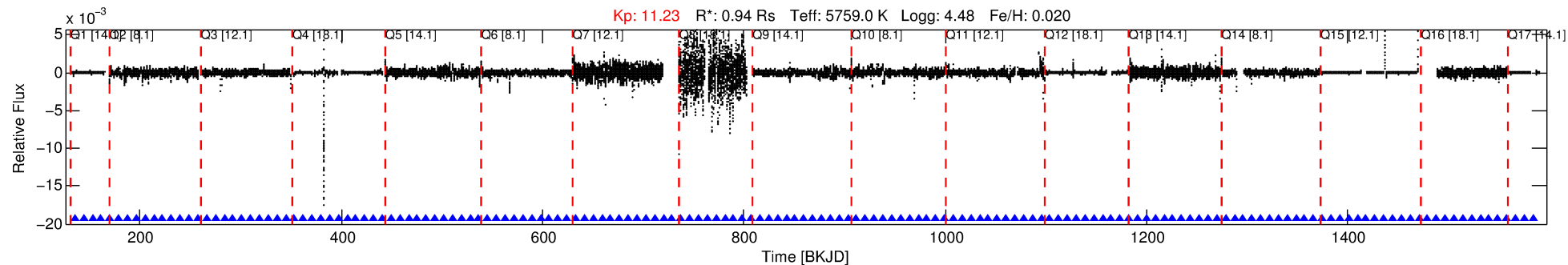
No Significant Match Found

# DV One-Page Summary

KIC: 6522750 Candidate: 3 of 4 Period: 8.726 d

KOI: K06724 Corr: No Ephemeris Match

Kp: 11.23 R\*: 0.94 Rs Teff: 5759.0 K Logg: 4.48 Fe/H: 0.020



## DV Fit Results:

Period = 8.72631 [0.00010] d  
Epoch = 135.4767 [0.0087] BKJD  
Rp/R\* = 0.0110 [0.0091]  
a/R\* = 4.01 [13.71]  
b = 0.00 [5836.65]  
Seff = 129.06 [27.81]  
Teq = 859 [46] K  
Rp = 1.14 [0.95] Re  
a = 0.0826 [0.0109] AU  
Ag = 940.34 [1560.00] [0.60σ]  
Teffp = 7358 [3030] K [2.14σ]

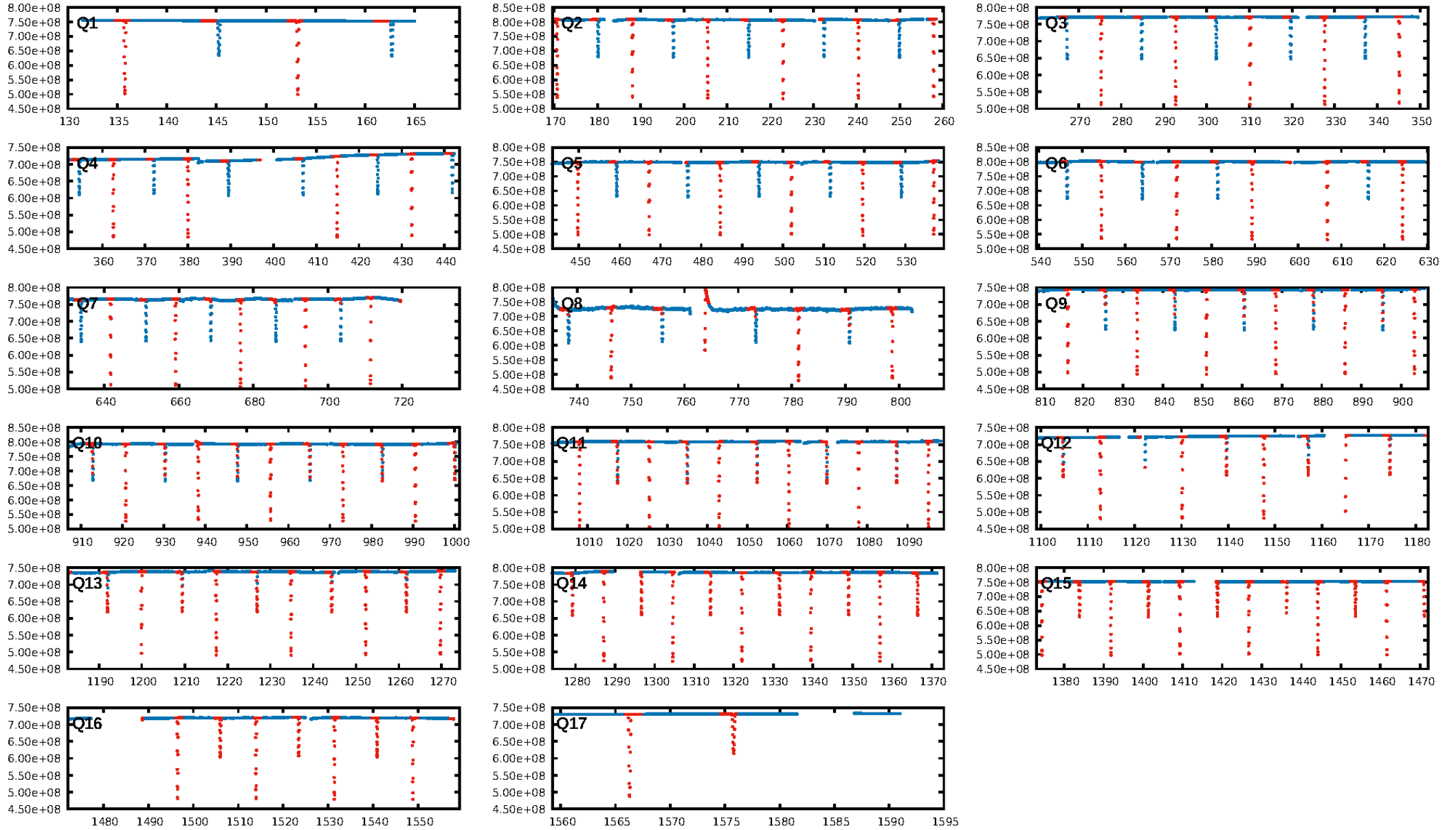
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [12.07σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 3.7%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [150/150]  
GhostDiagnostic-chr: 10.19  
Centroid-sig: N/A  
Centroid-so: 4.541 arcsec [11.20σ]  
OotOffset-rm: 0.744 arcsec [2.70σ]  
KicOffset-rm: 0.754 arcsec [2.87σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:24:48 Z

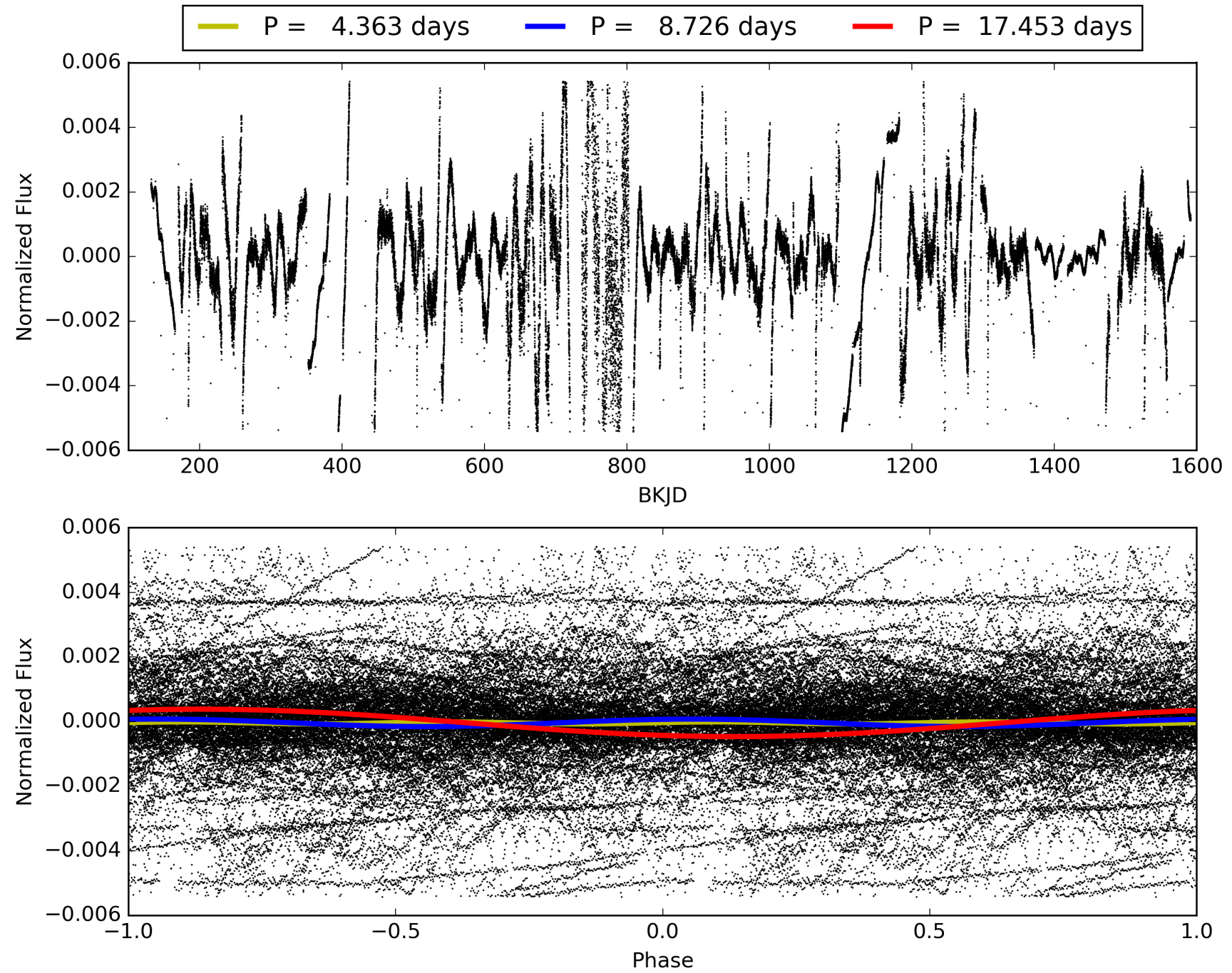
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006522750-03, PDC Light Curves





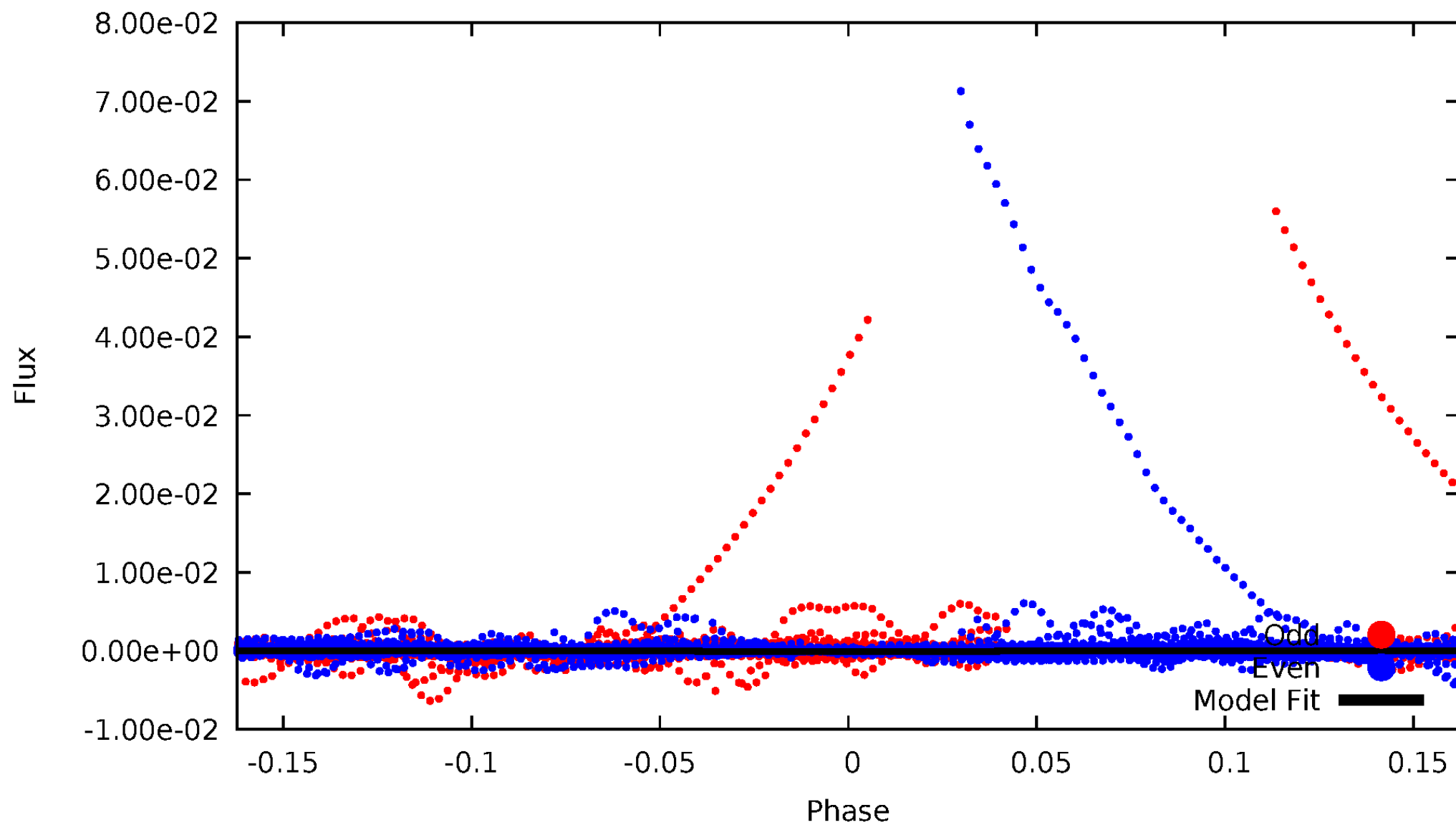
TCE 006522750-03





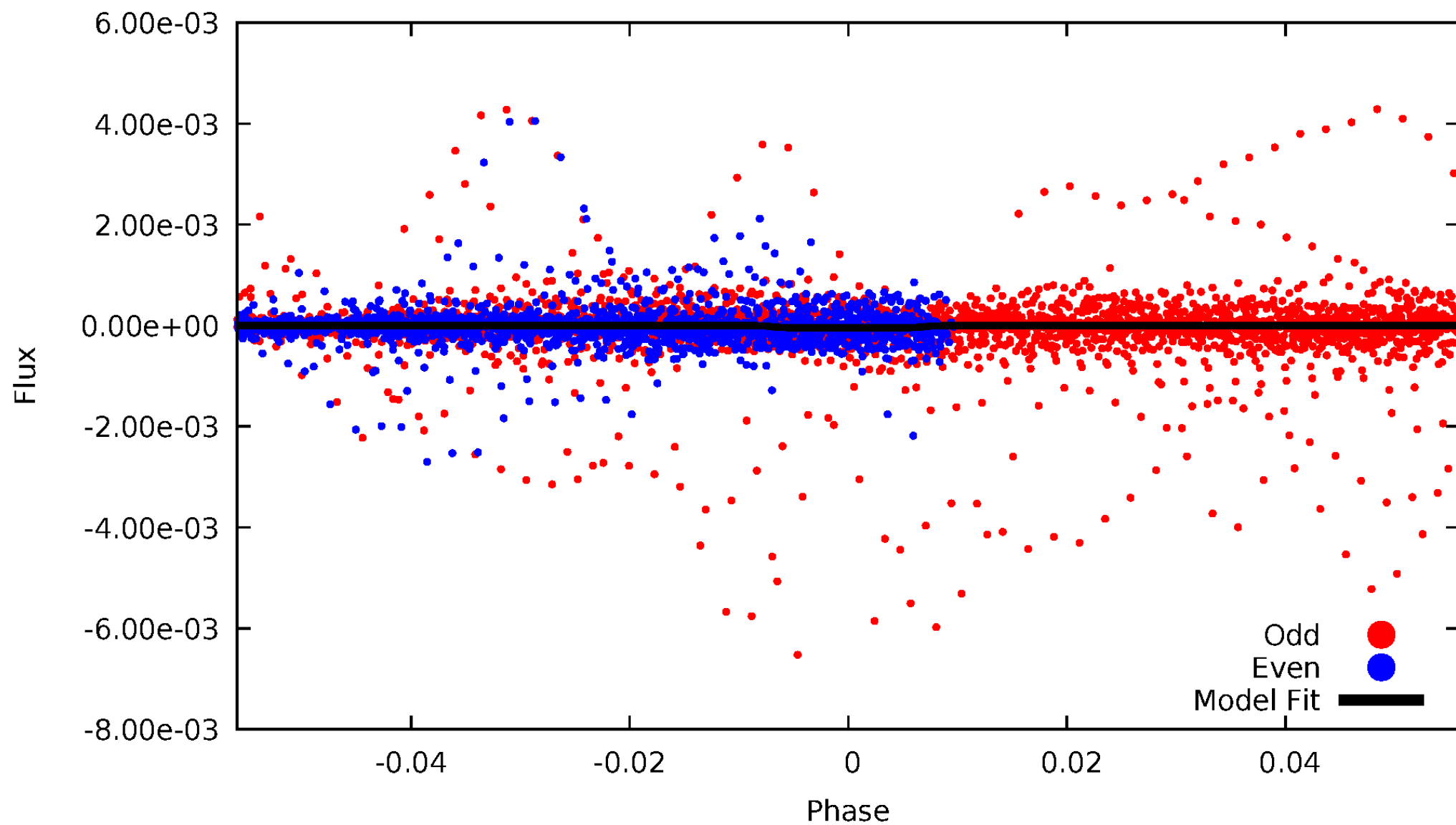
# DV Odd/Even

TCE 006522750-03



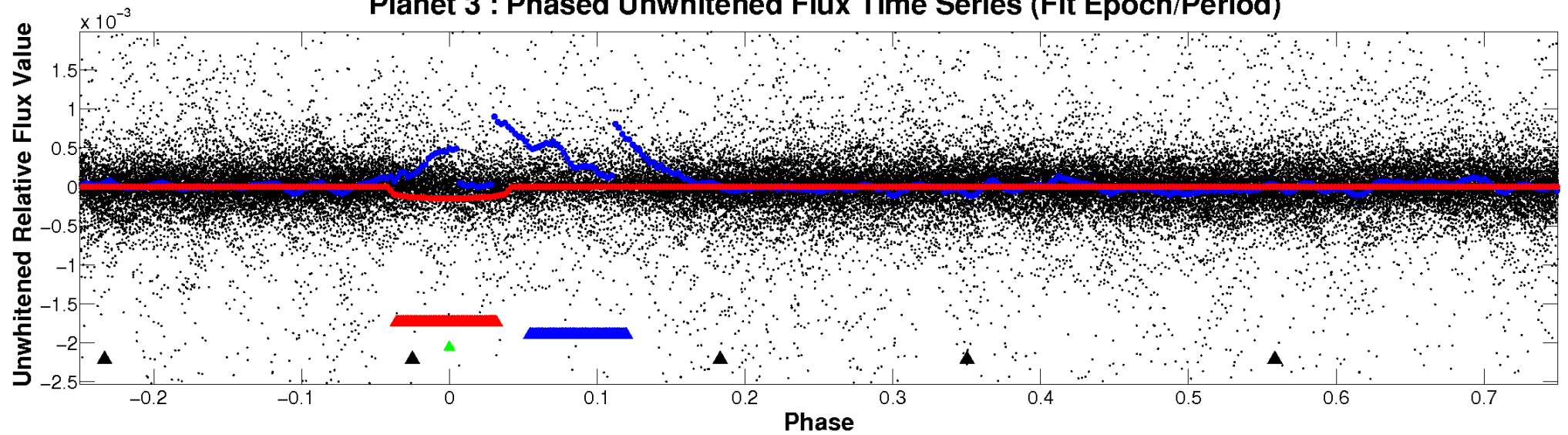
# ALT Odd/Even

TCE 006522750-03

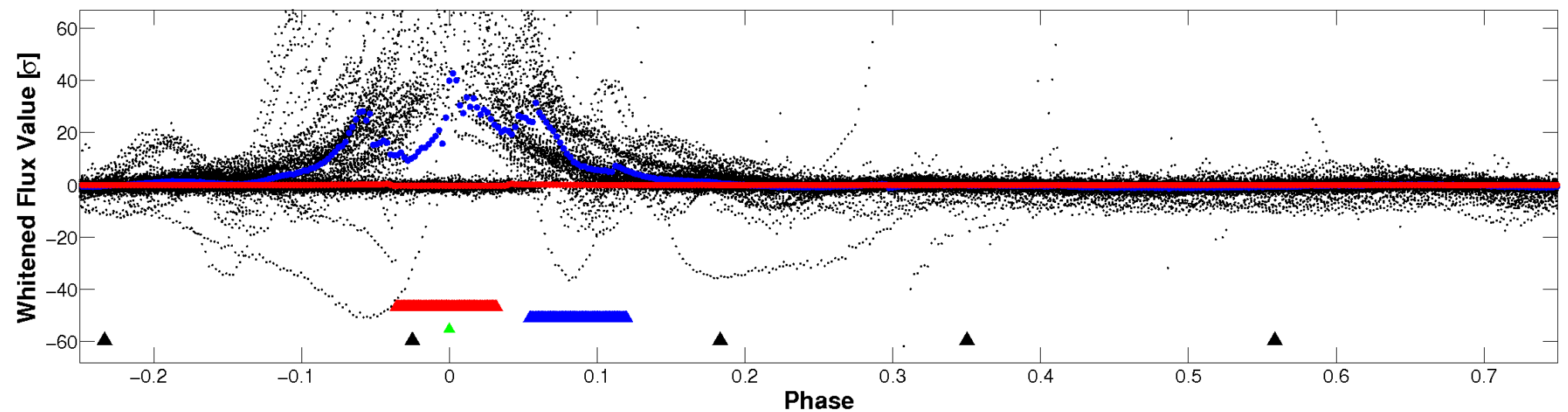


# Non-Whitened Vs. Whitened Light Curve

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

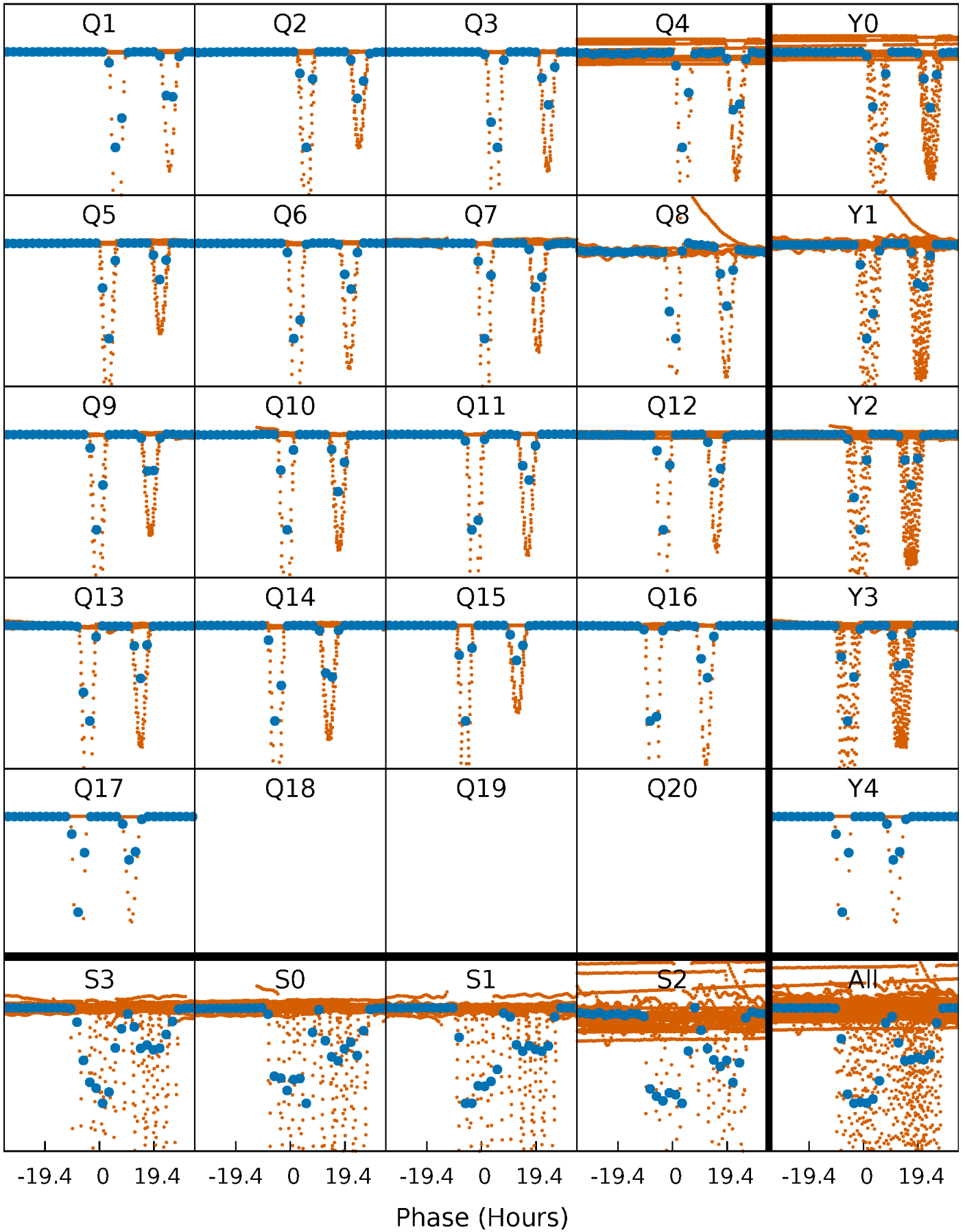


## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



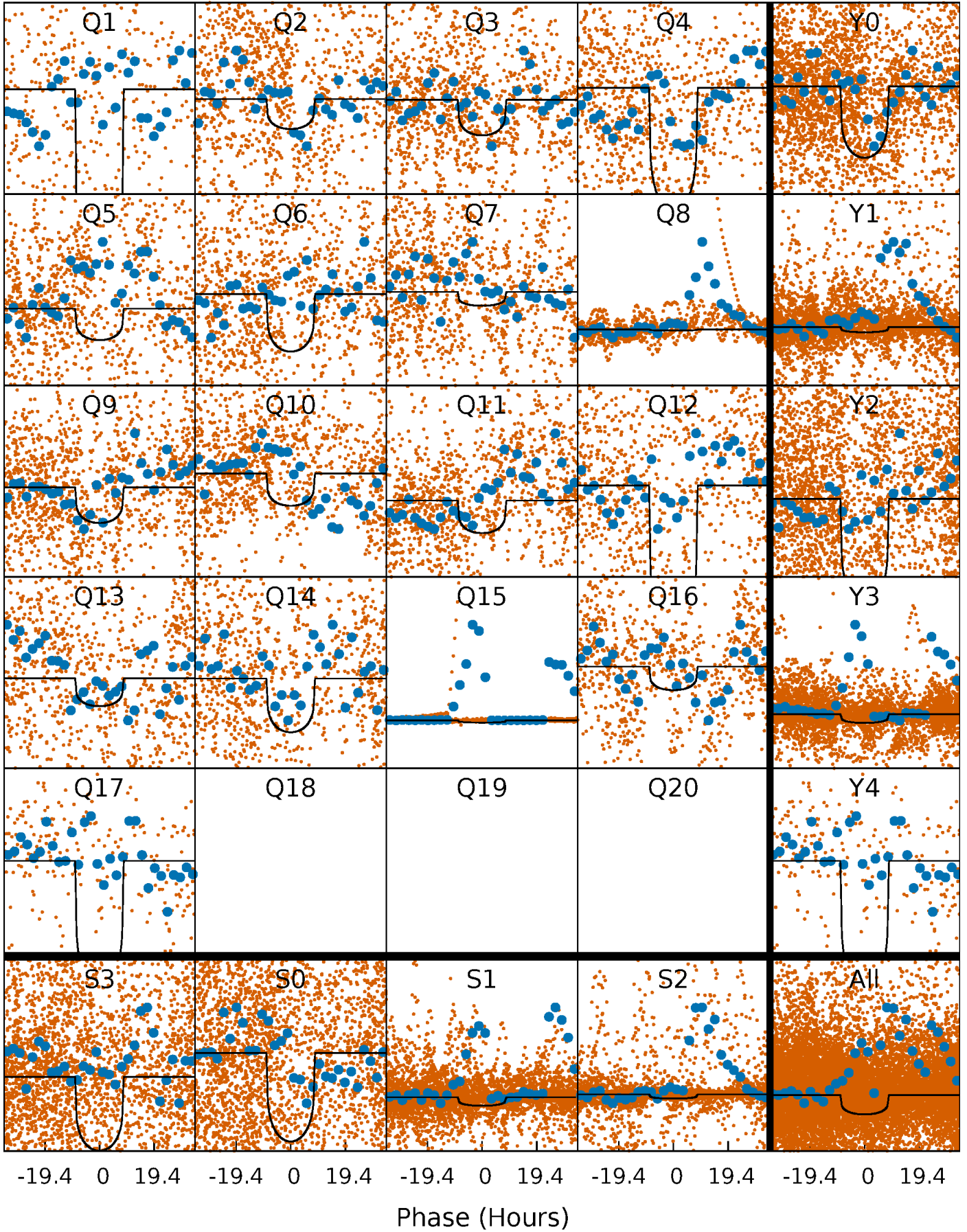
# PDC Quarter-Phased Transit Curves

TCE 006522750-03     $P = 8.726305$  Days     $T_0 = 135.476687$  (BKJD)



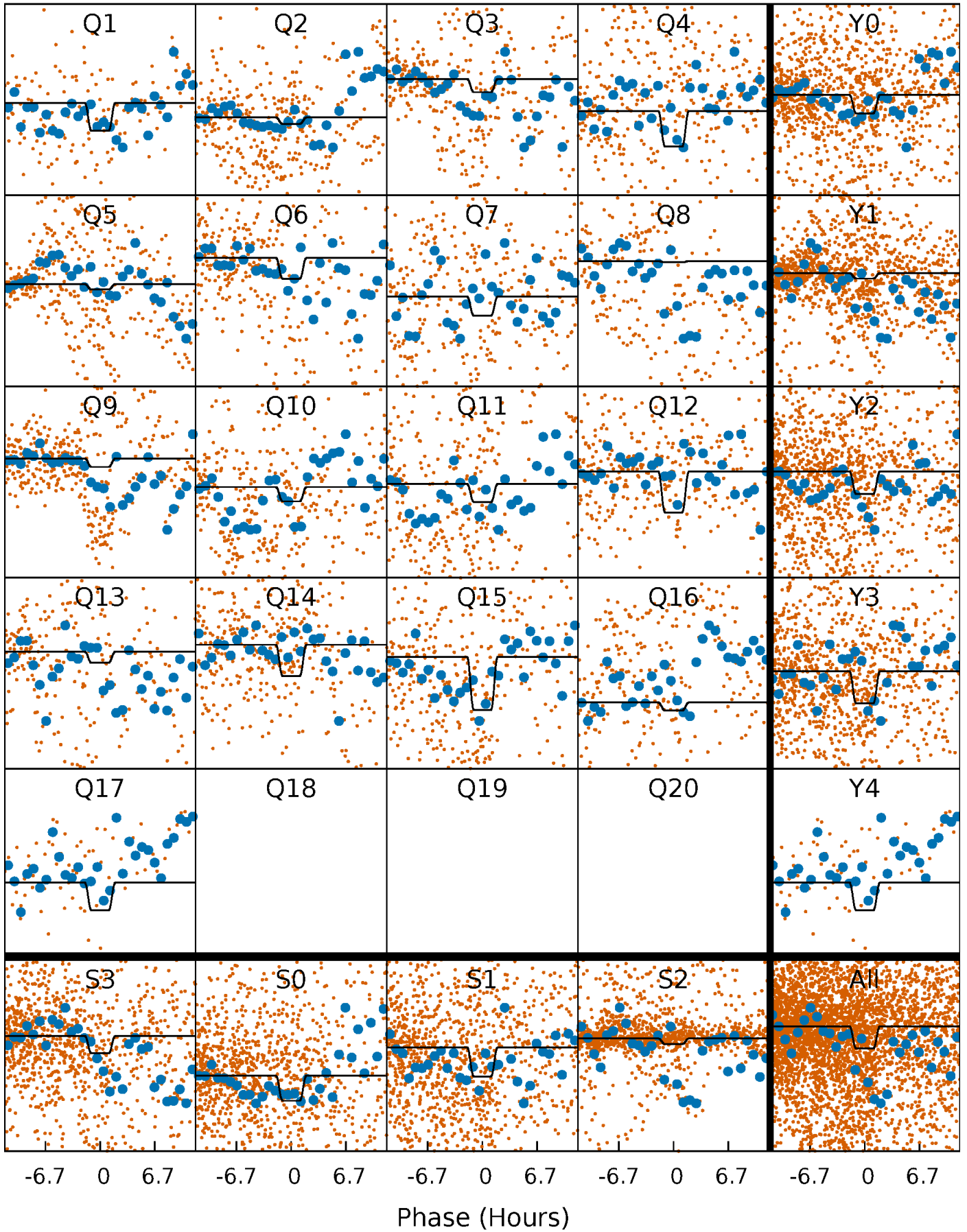
# DV Quarter-Phased Transit Curves

TCE 006522750-03 P= 8.726305 Days  $T_0=135.476687$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006522750-03 P= 8.722981 Days  $T_0=135.438618$  (BKJD)

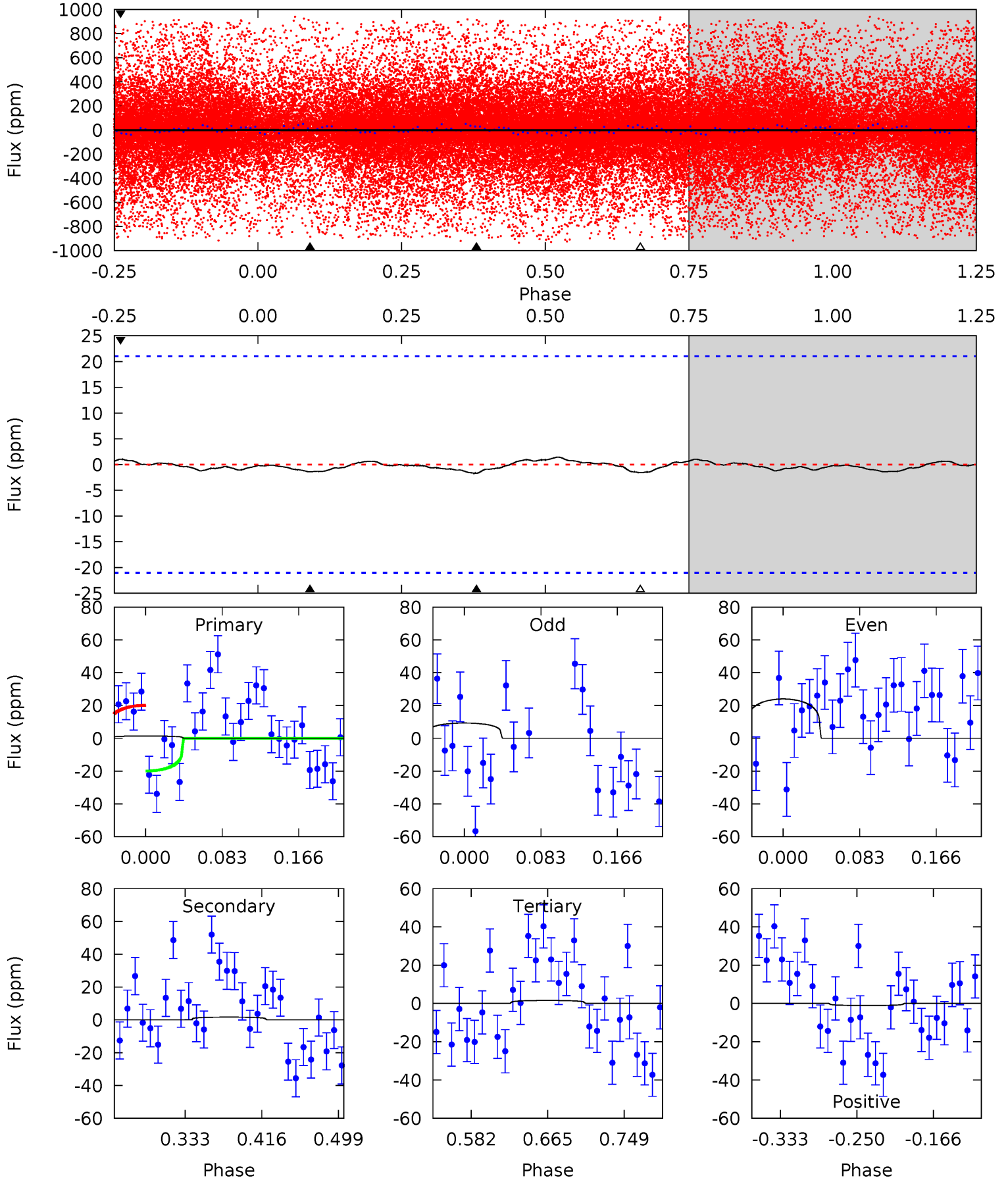




# DV Model-Shift Uniqueness Test

006522750-03, P = 8.726305 Days, E = 126.750382 Days

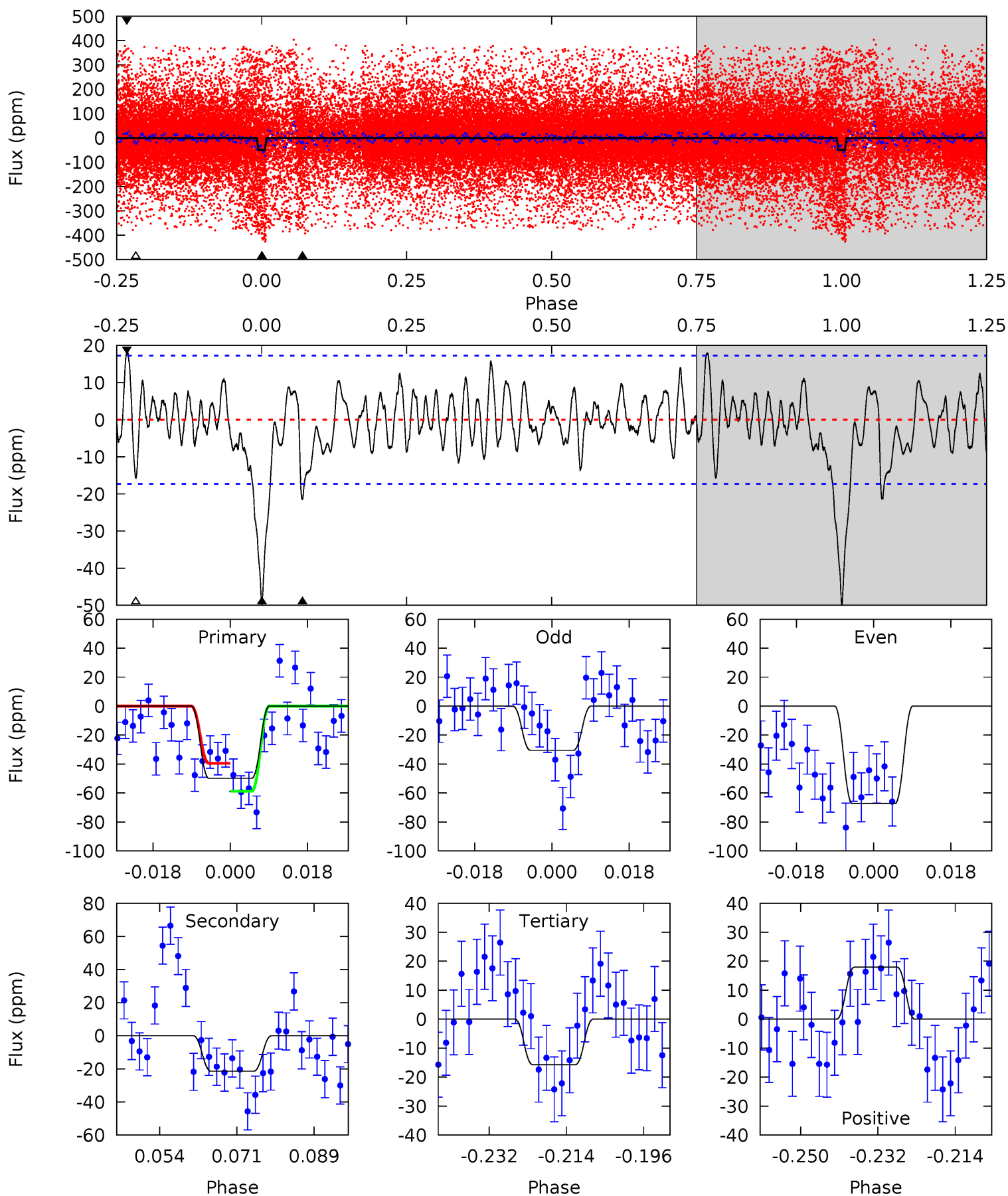
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.31	0.37	0.34	0.23	4.60	1.73	0.15	-0.04	0.08	0.03	0.14	1.54	54.7	0.46	0.01



# Alt Model-Shift Uniqueness Test

006522750-03, P = 8.722981 Days, E = 126.715637 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
14.2	6.09	4.46	5.10	4.91	2.37	1.69	9.73	9.09	1.63	0.99	5.21	7.12	0.26	0





### Stellar Parameters For KIC 006522750

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$5759^{+78}_{-86}$	$4.481^{+0.040}_{-0.120}$	$0.020^{+0.150}_{-0.150}$	$0.945^{+0.134}_{-0.057}$	$0.984^{+0.056}_{-0.062}$	$1.644^{+0.292}_{-0.520}$
	+1%/-1%	+1%/-3%	+750%/-750%	+14%/-6%	+6%/-6%	+18%/-32%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 006522750-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-2 \pm 5$	$1.30^{+0.92}_{-0.78}$	$1210^{+49}_{-29}$	$2481^{+1020}_{-5391}$	$2.520^{+23.725}_{-9.316}$
Alt.	$-21 \pm 4$	$0.97^{+0.84}_{-0.61}$	$1210^{+45}_{-32}$	$4302^{+2325}_{-863}$	$86^{+508}_{-63}$

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

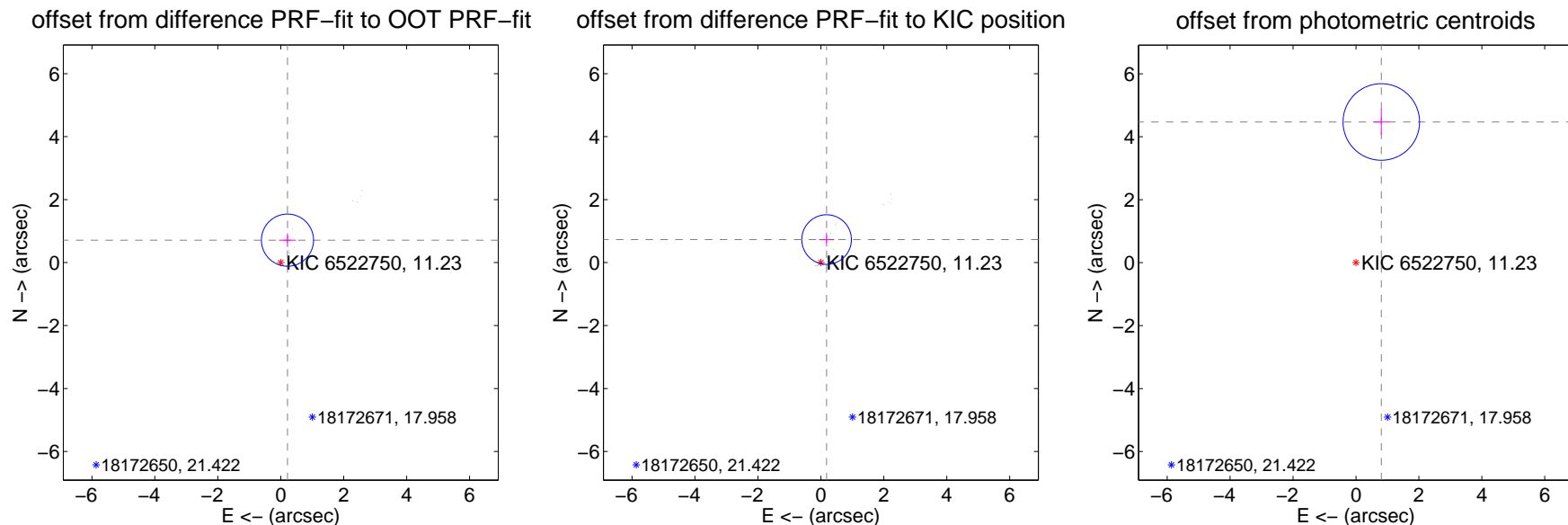
## DV Centroid Data

Supplemental centroid analysis for 006522750-03. **Kepler magnitude: 11.23.** Transit SNR 17.00

There are 17 quarters with good PRF difference image offsets

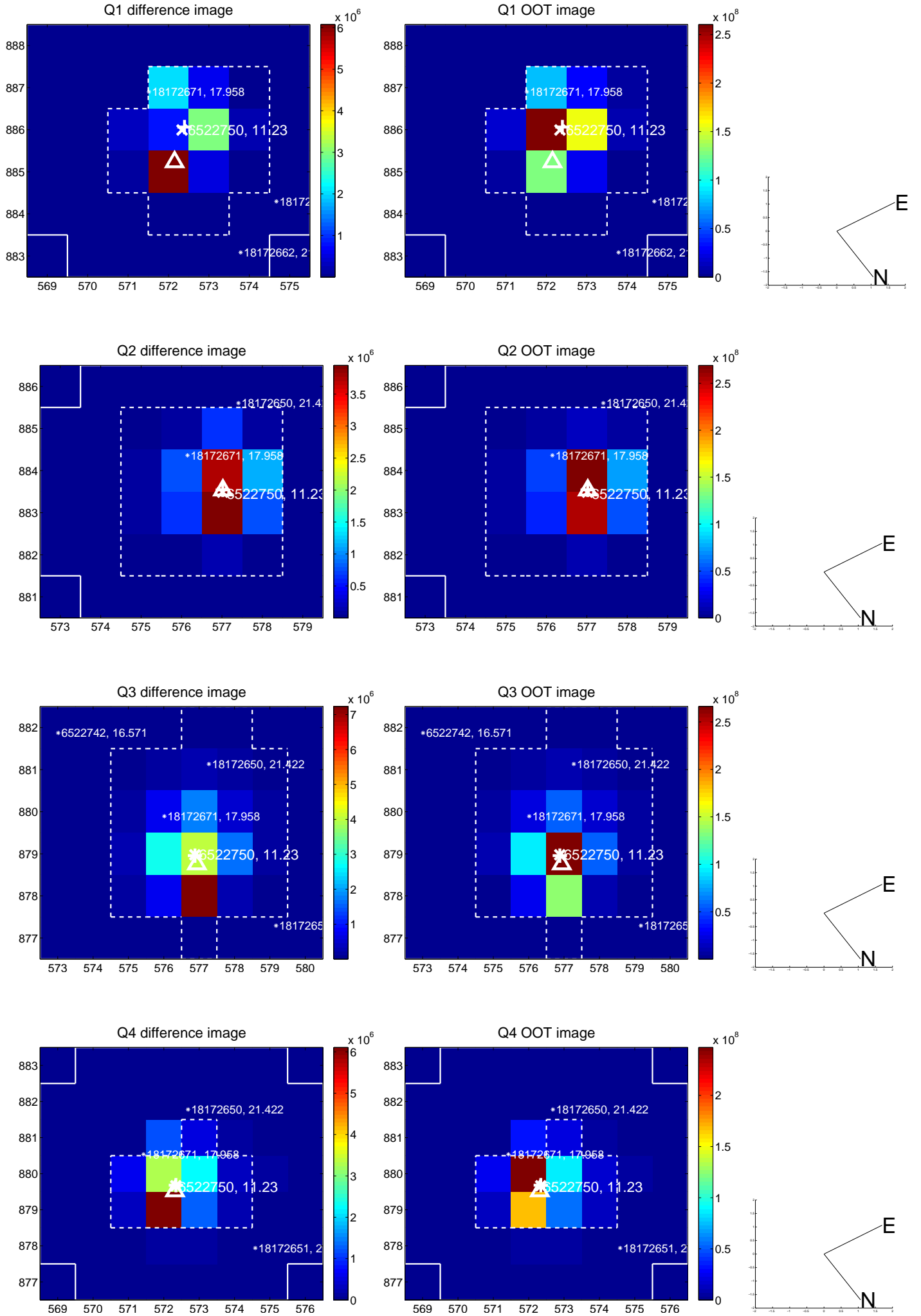
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.744 \pm 0.276$	2.70	$-0.214 \pm 0.265$	$0.713 \pm 0.216$
PRF-fit source offset from KIC position	$0.754 \pm 0.263$	2.87	$-0.182 \pm 0.241$	$0.731 \pm 0.218$
photometric centroid source offset	<b><math>4.54 \pm 0.41</math></b>	<b>11.20</b>	$-0.81 \pm 0.25$	$4.47 \pm 0.41$

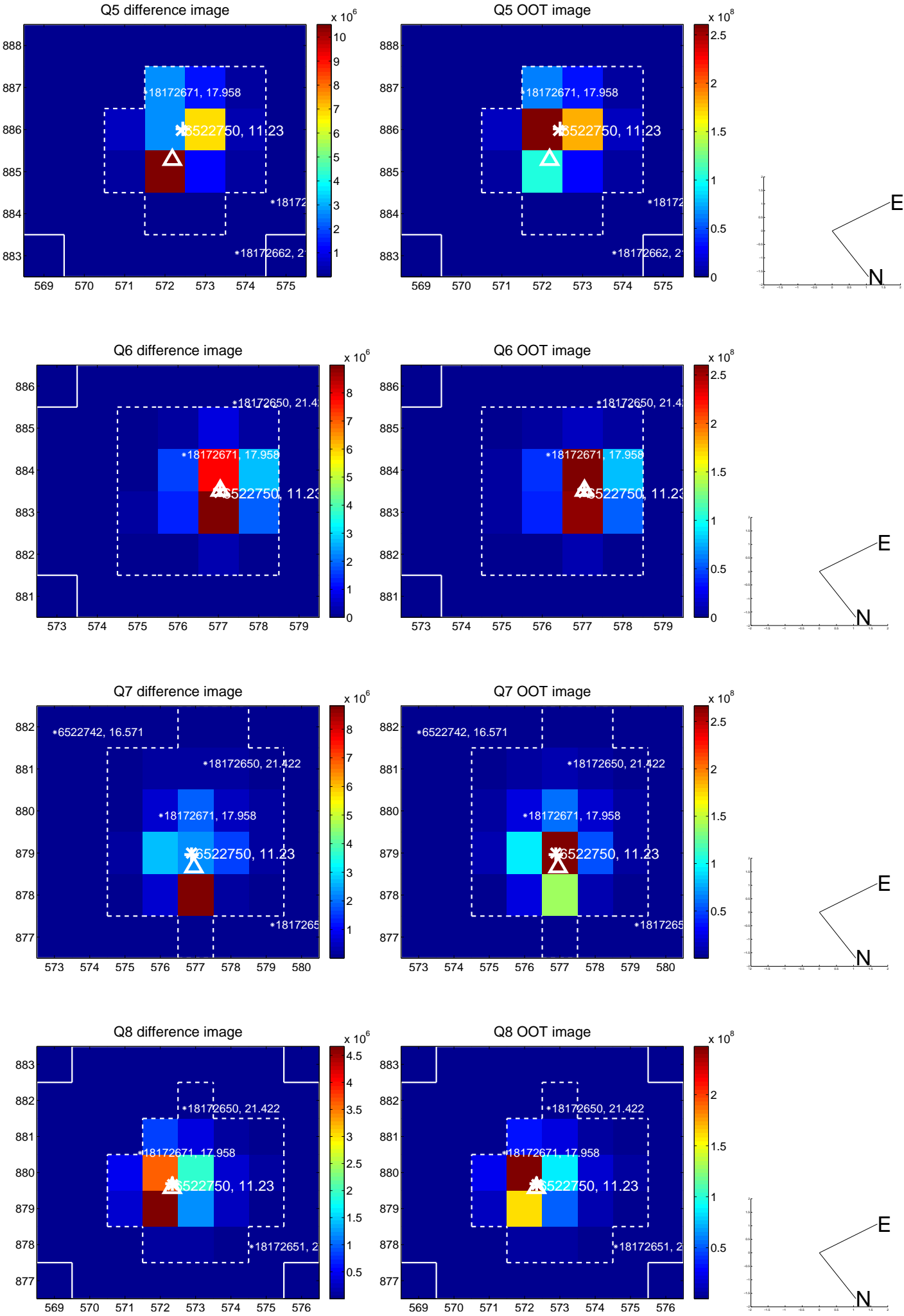


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

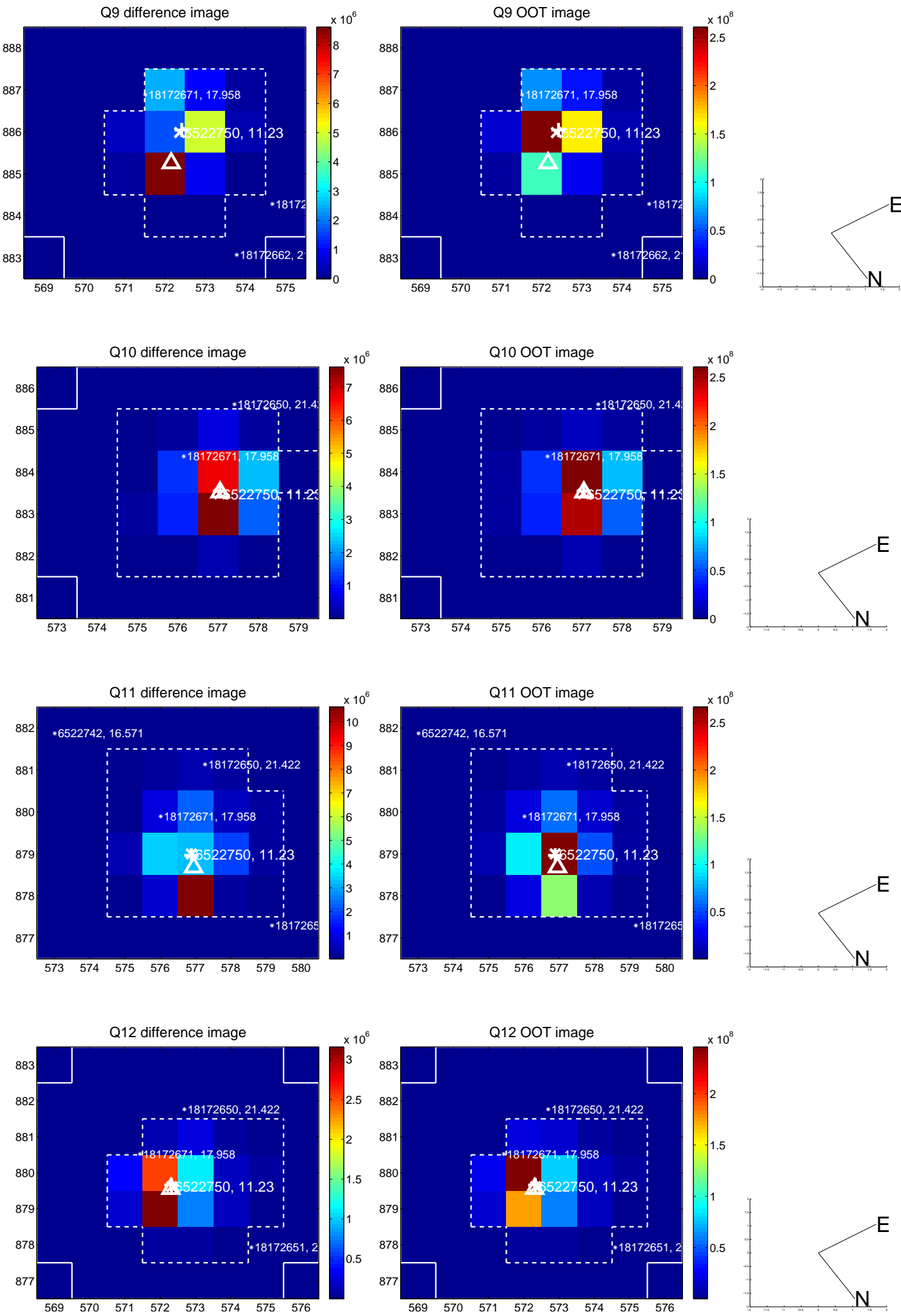
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



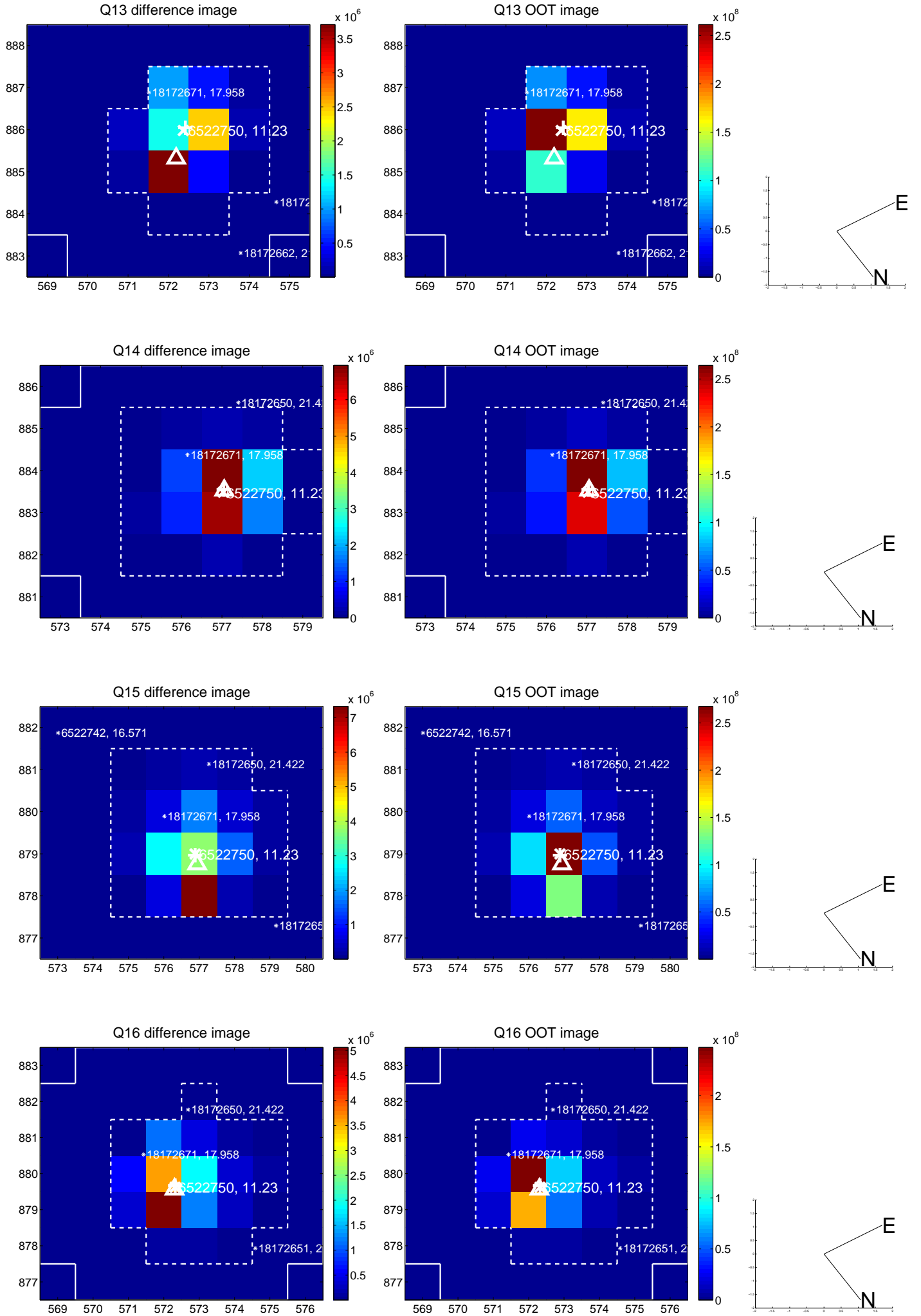
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



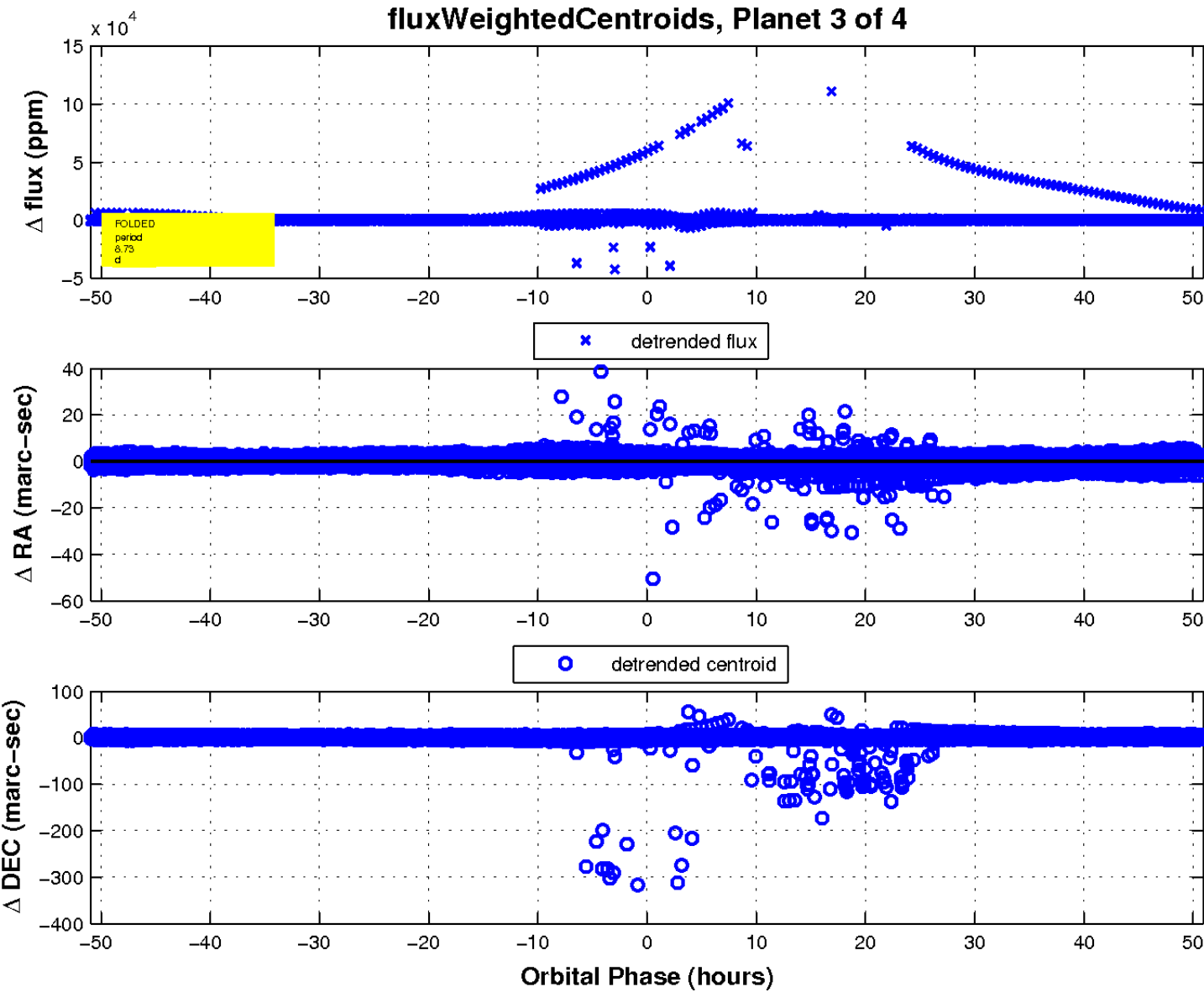
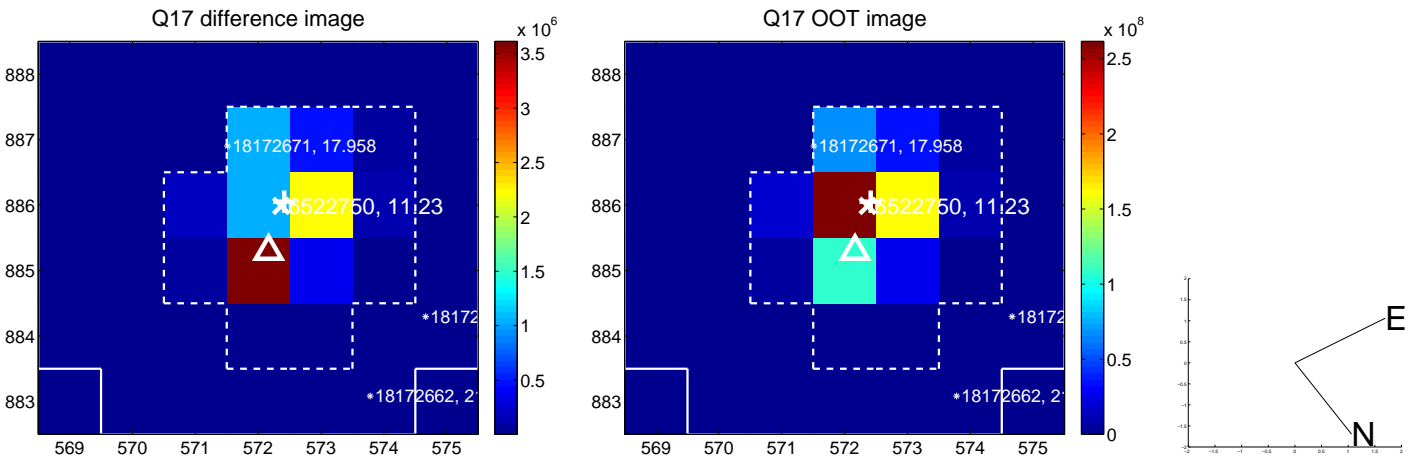
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

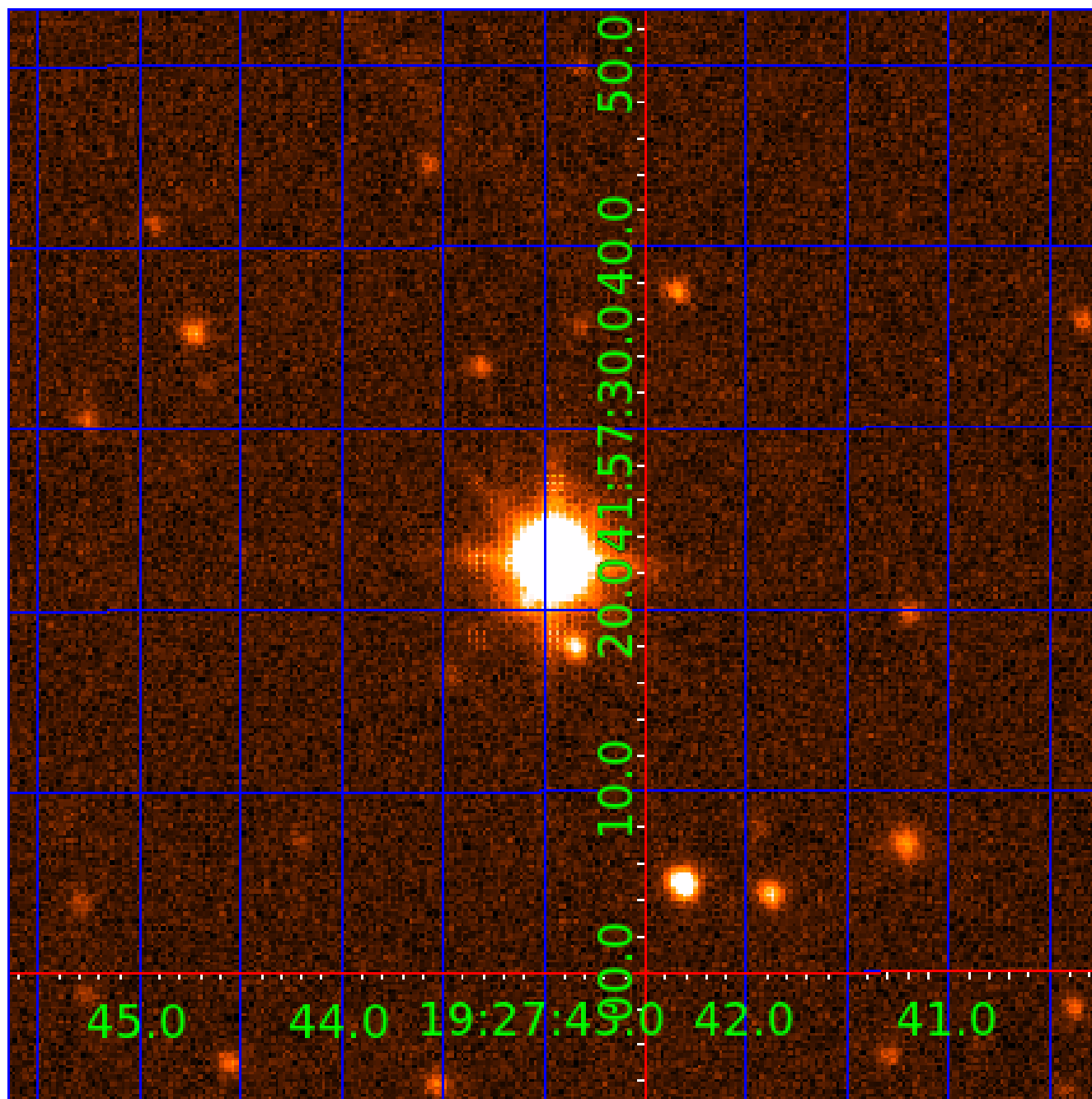


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 006522750

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006522750-01	OBS	6724.01	17.445490	135.754363	334457.7	3.500	35257.8	-1.0	0.94	5759	41.85	51.25
006522750-02	OBS	No	17.445640	145.249119	157878.6	6.903	19248.7	8417.7	0.94	5759	54.11	51.24
006522750-03	OBS	No	8.726305	135.476687	148.3	16.984	3800.0	17.0	0.94	5759	1.14	129.06
006522750-04	OBS	No	263.606460	382.869505	6074.9	25.556	387.8	80.4	0.94	5759	13.53	1.37

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006522750-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_ALT—MOD_ODDEVEN_ALT—HAS_SEC_TCE—CENT_SATURATED
006522750-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_SATURATED
006522750-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA_TRACKER—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—CENT_SATURATED
006522750-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—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_SATURATED

**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 006522750-04

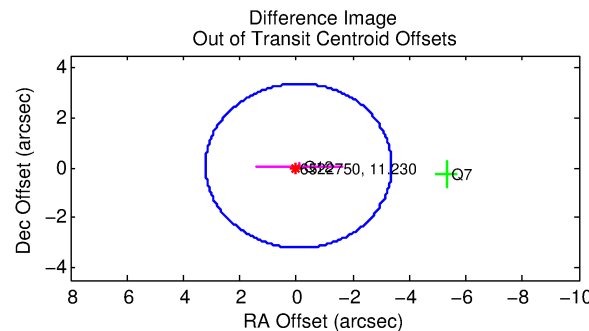
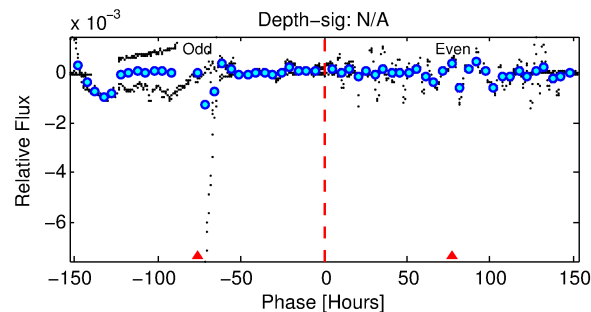
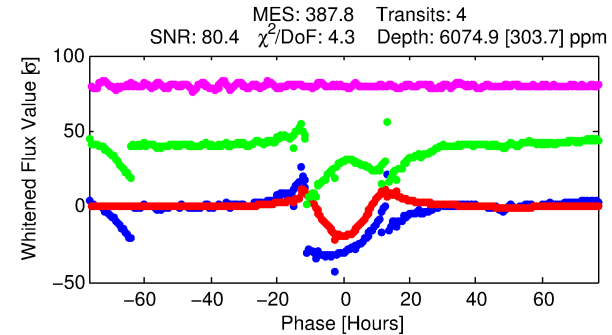
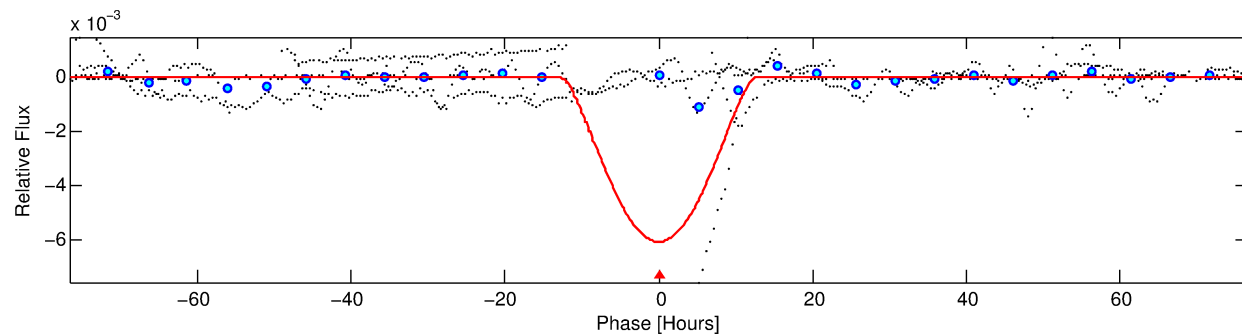
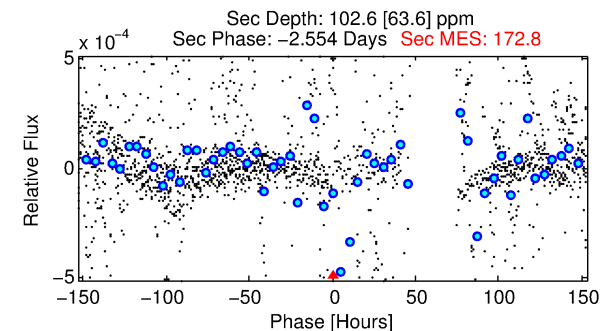
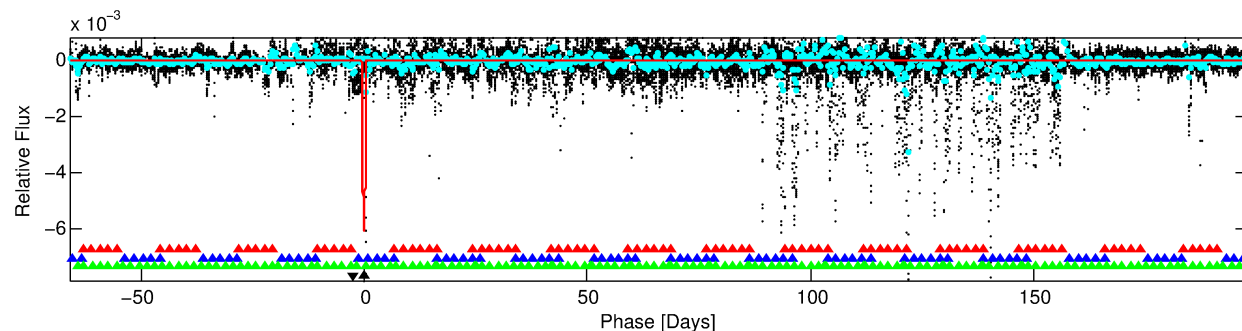
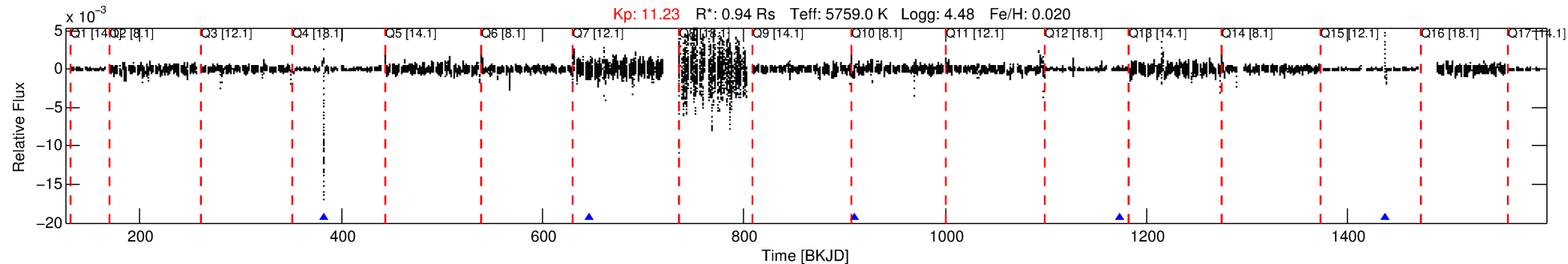
No Significant Match Found

# DV One-Page Summary

KIC: 6522750 Candidate: 4 of 4 Period: 263.606 d

KOI: K06724 Corr: No Ephemeris Match

Kp: 11.23 R\*: 0.94 Rs Teff: 5759.0 K Logg: 4.48 Fe/H: 0.020



## DV Fit Results:

Period = 263.60646 [0.00194] d  
Epoch = 382.8695 [0.0069] BKJD  
Rp/R\* = 0.1312 [0.0489]  
a/R\* = 41.69 [2.66]  
b = 1.00 [0.06]  
Seff = 1.37 [0.30]  
Teq = 276 [15] K  
Rp = 13.53 [5.40] Re  
a = 0.8010 [0.1057] AU  
Ag = 197.77 [196.09] [1.00σ]  
Teffp = 1600 [389] K [3.40σ]

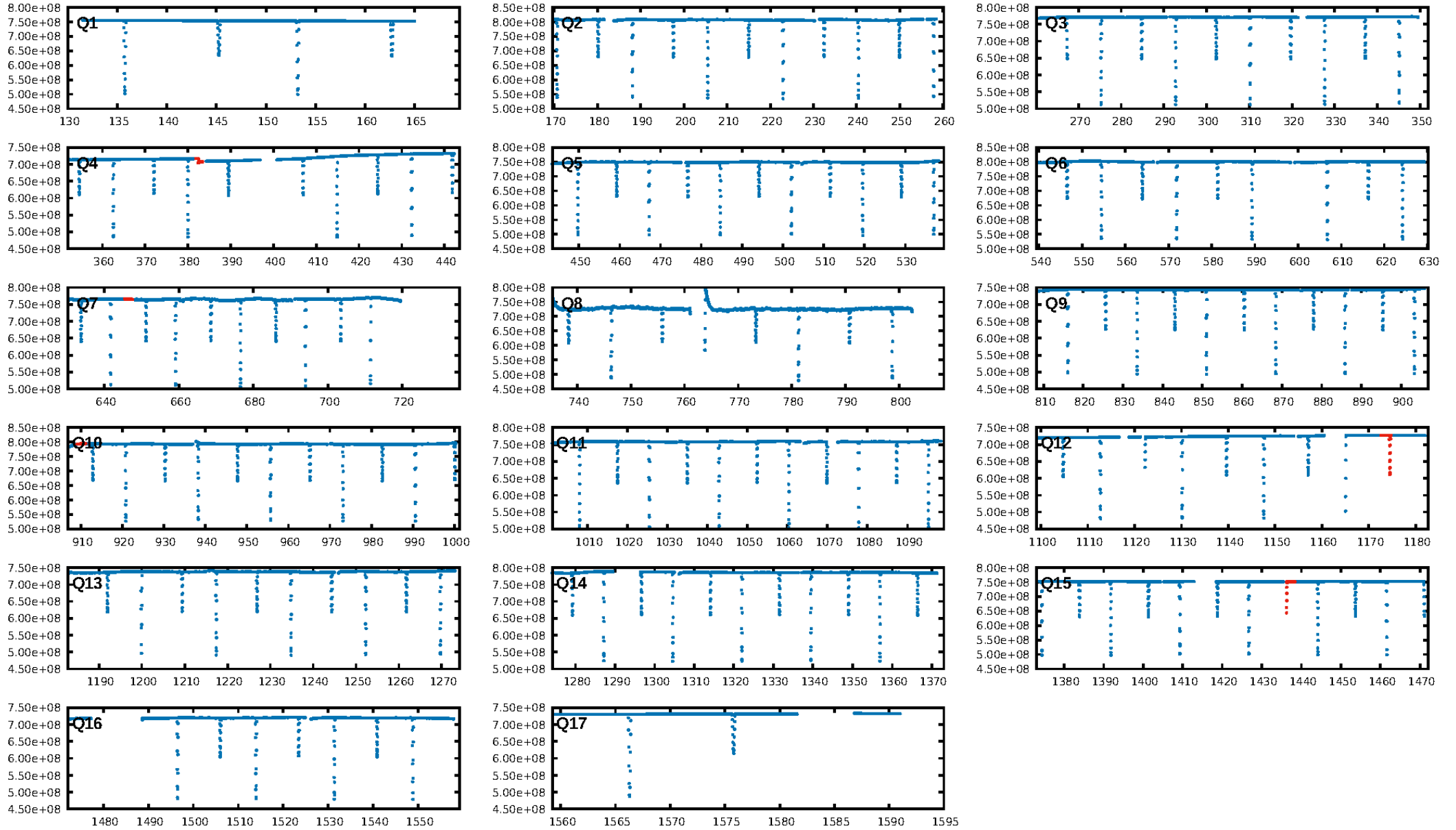
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [223.17σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 0.8248  
Centroid-sig: N/A  
Centroid-so: 0.090 arcsec [1.29σ]  
OotOffset-rm: 0.110 arcsec [0.10σ]  
OotOffset-st: 0/1/1/0 [2]  
KicOffset-rm: 0.169 arcsec [0.59σ]  
KicOffset-st: 0/1/1/0 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 0.33 [1/3]

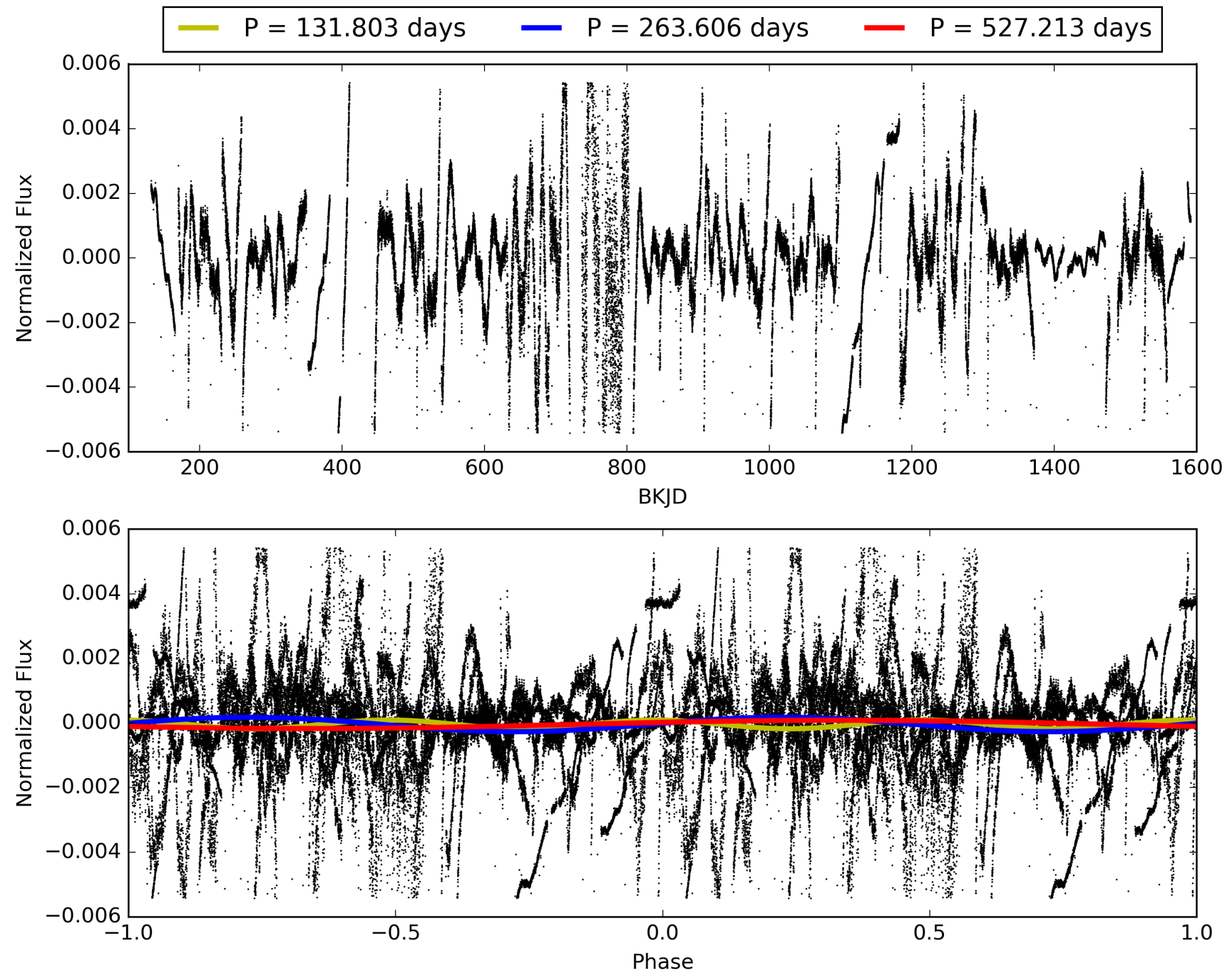
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:24:57 Z

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

# TCE 006522750-04, PDC Light Curves

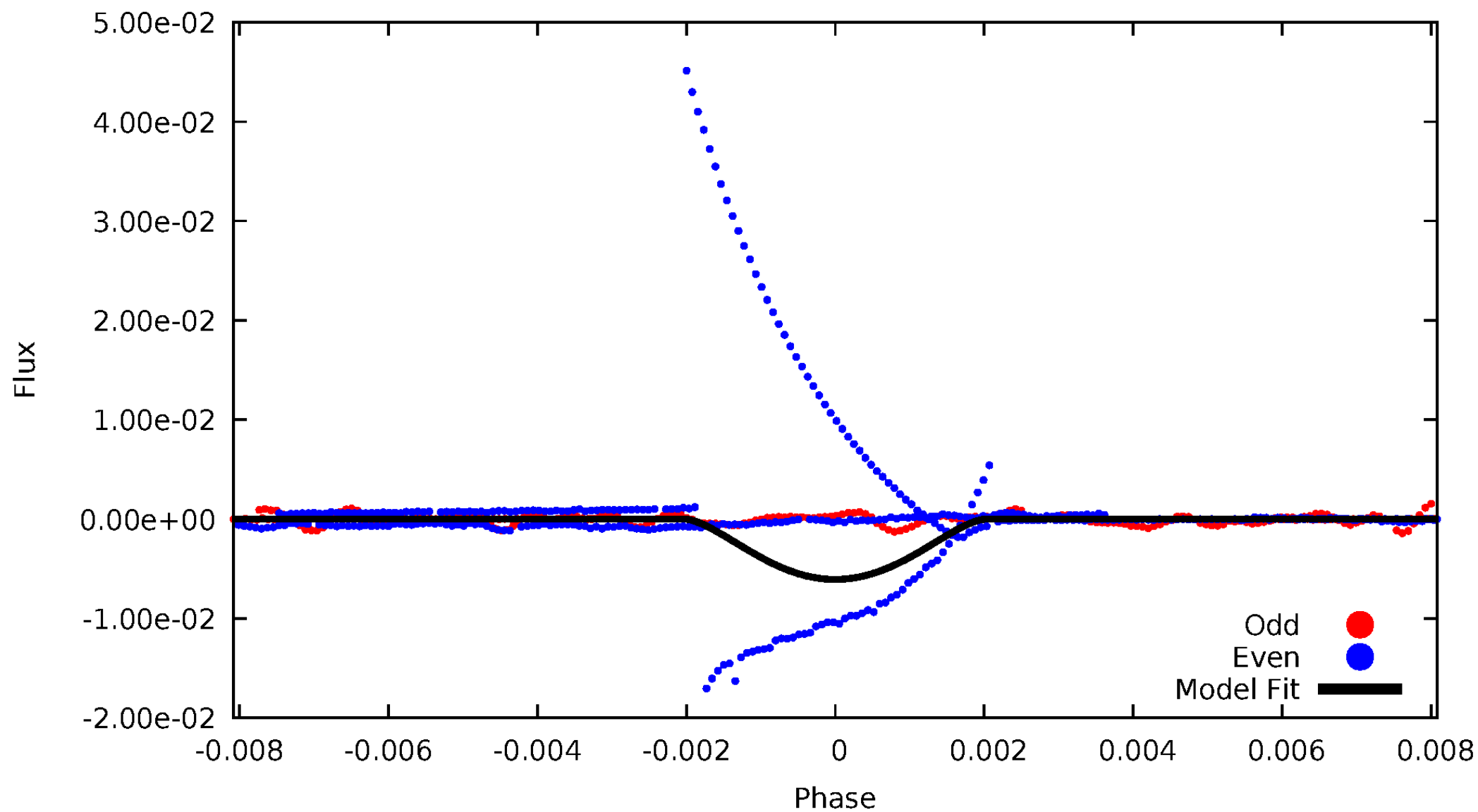


TCE 006522750-04



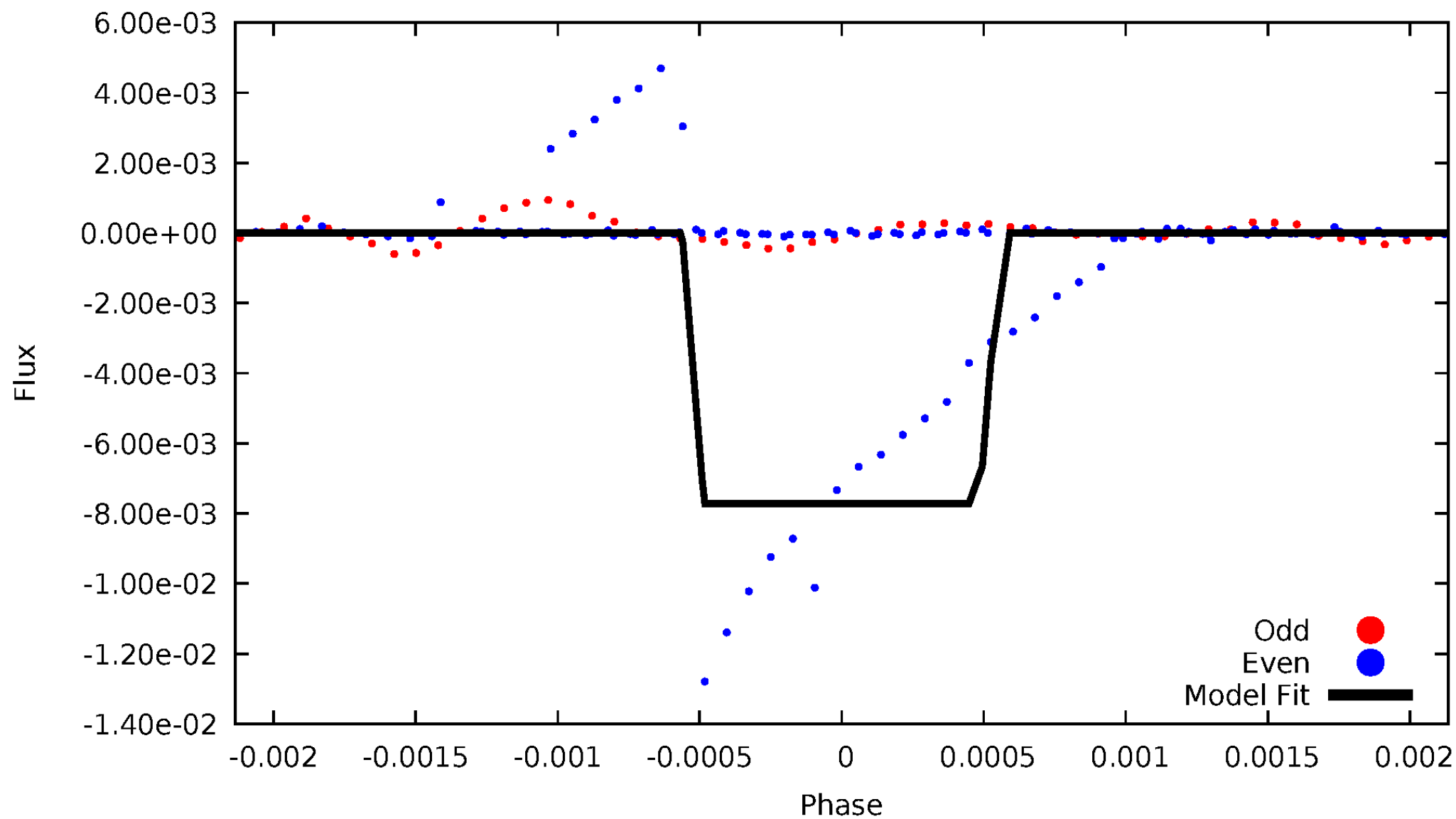
# DV Odd/Even

TCE 006522750-04



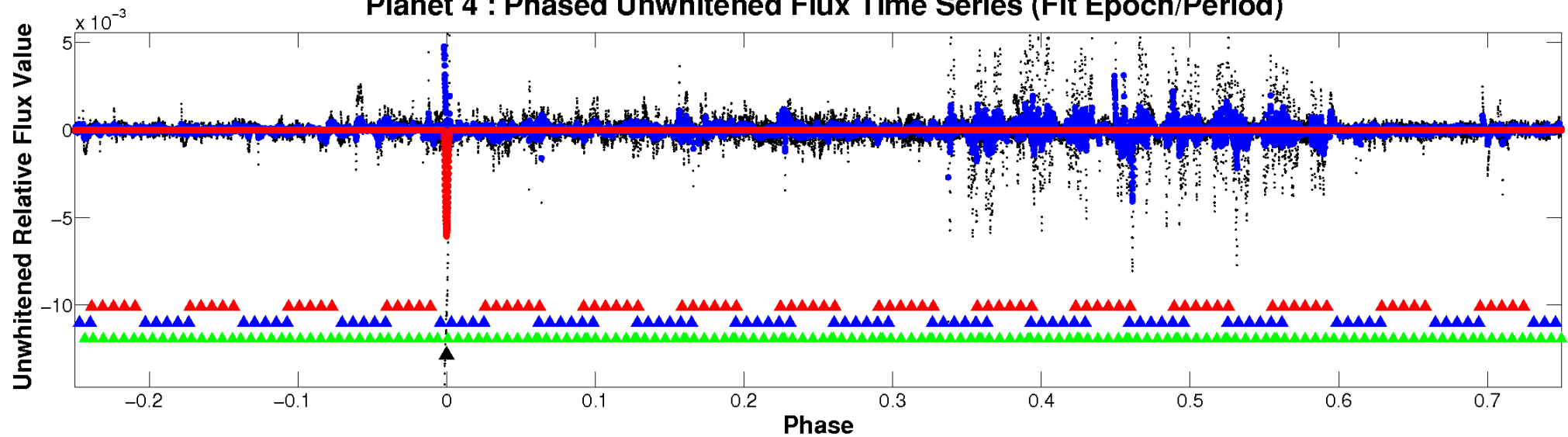
# ALT Odd/Even

TCE 006522750-04

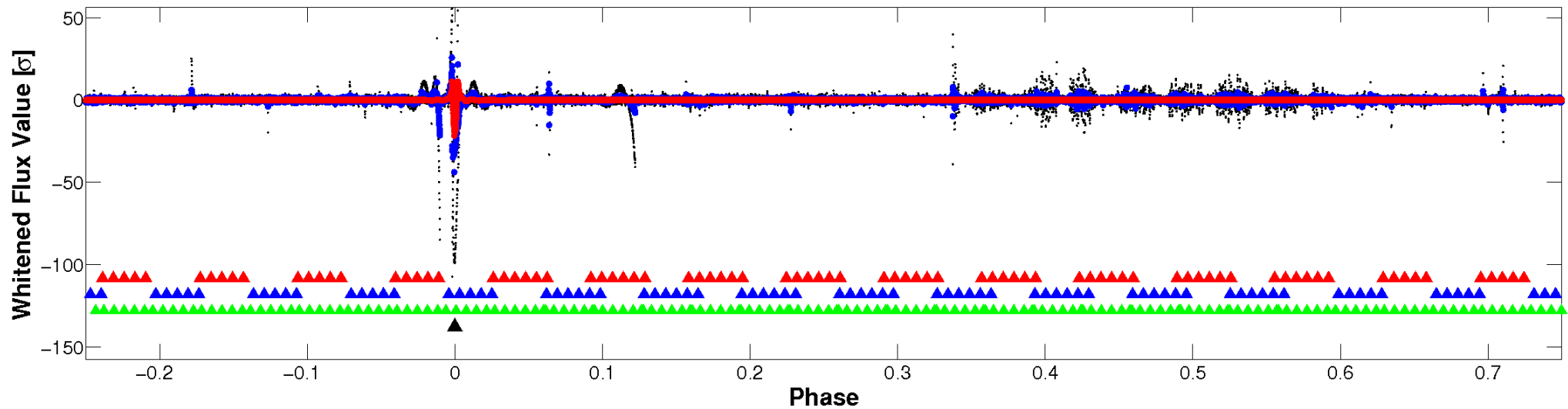


# Non-Whitened Vs. Whitened Light Curve

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

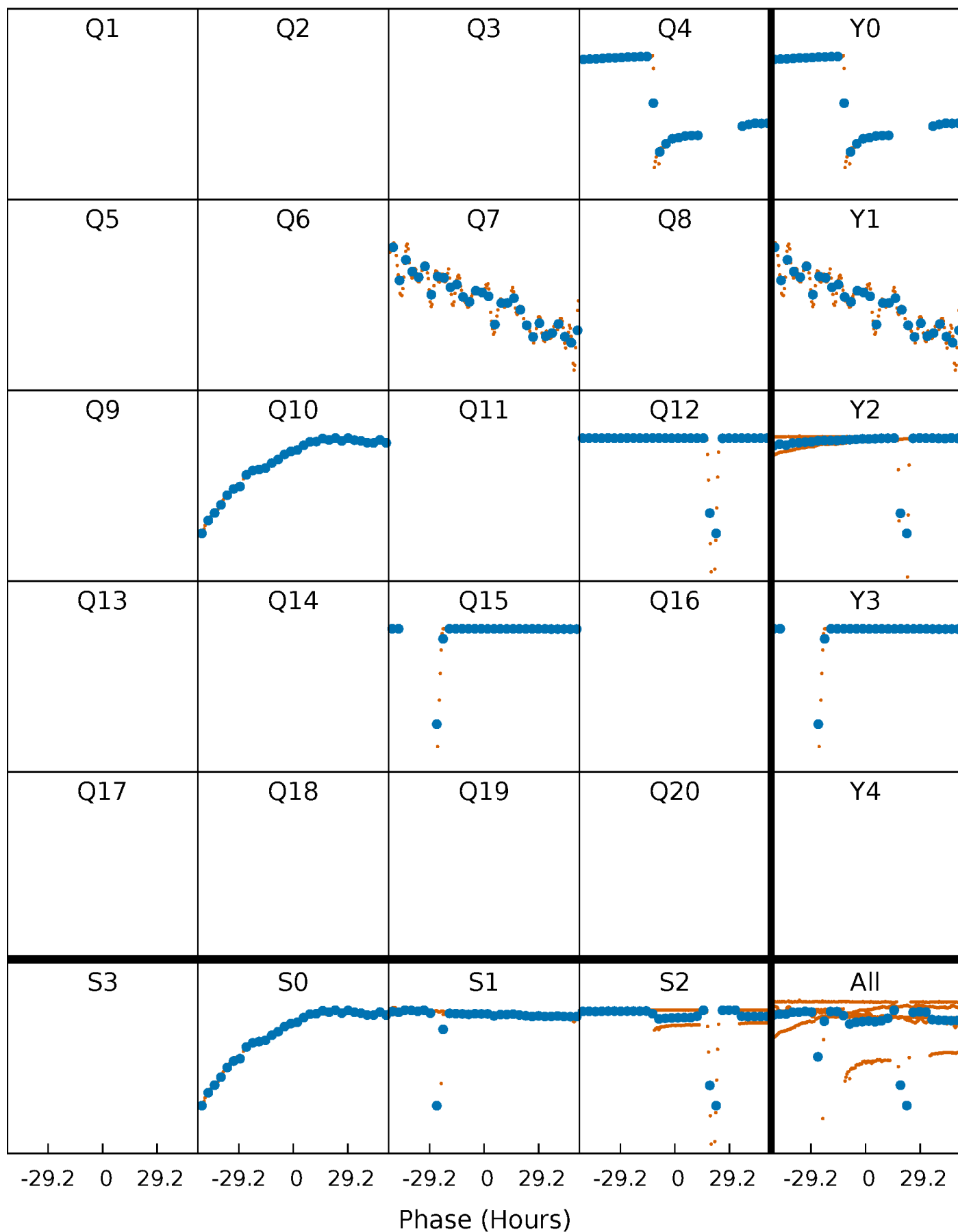


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

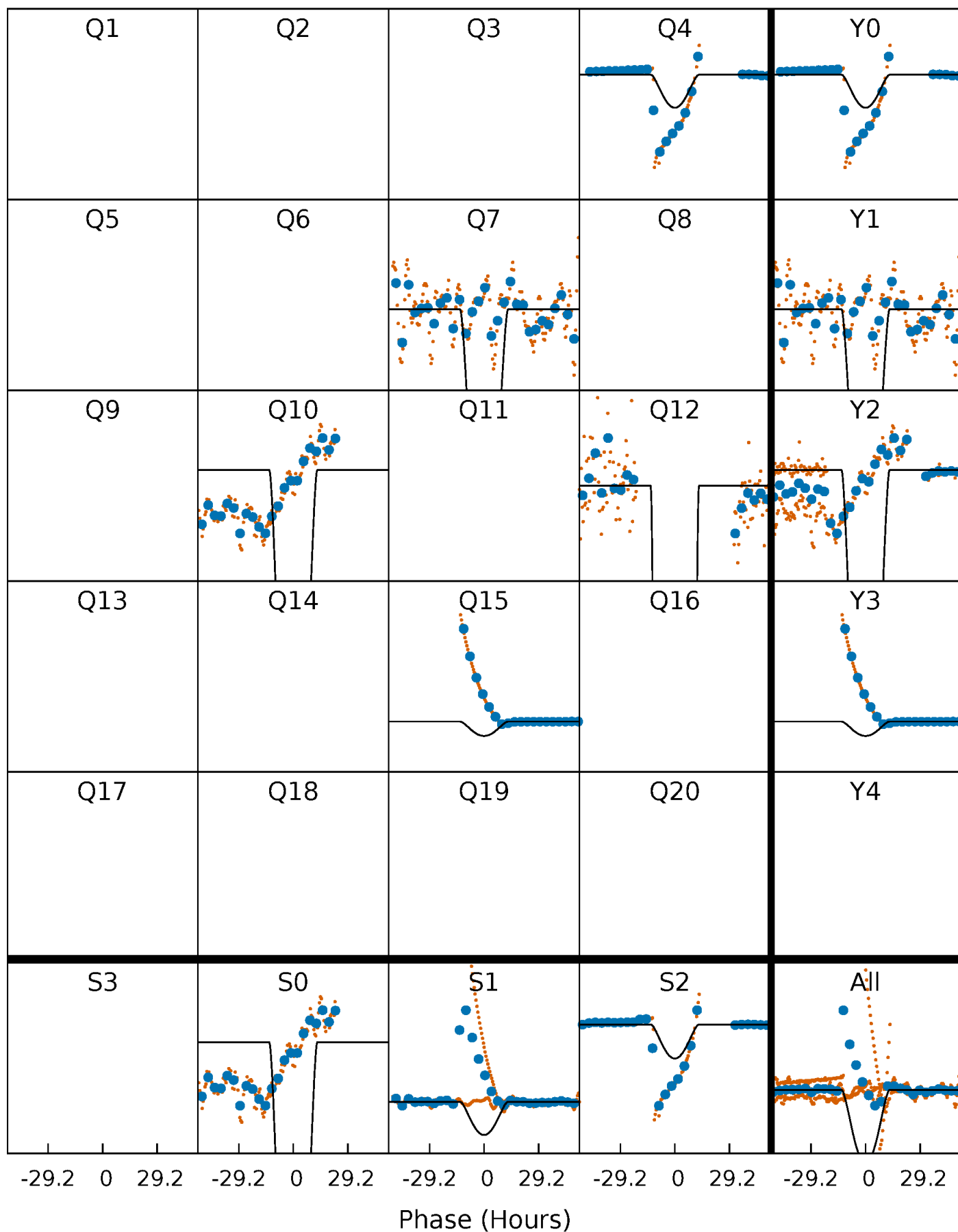
TCE 006522750-04 P=263.606460 Days  $T_0=382.869505$  (BKJD)





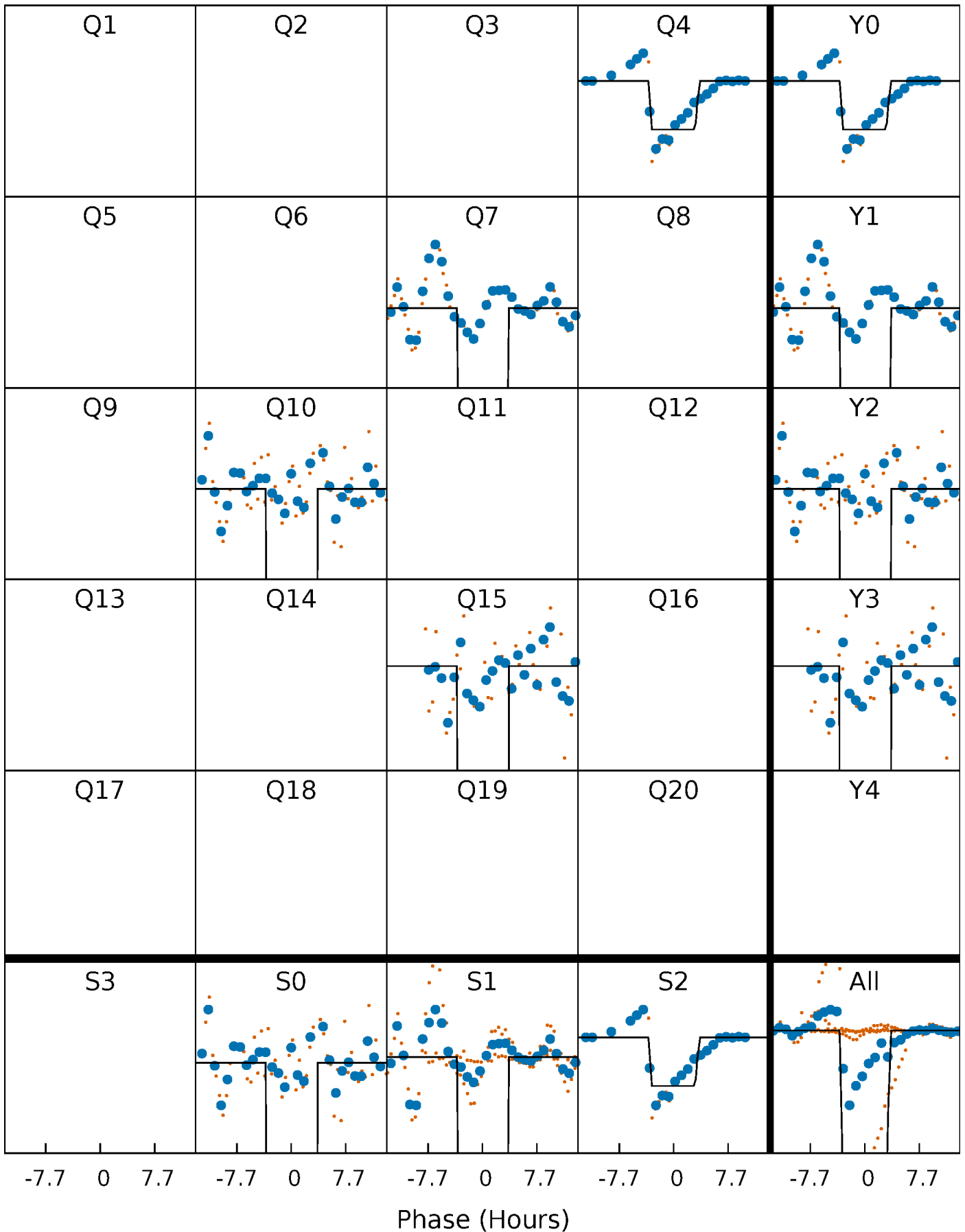
# DV Quarter-Phased Transit Curves

TCE 006522750-04 P=263.606460 Days  $T_0=382.869505$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

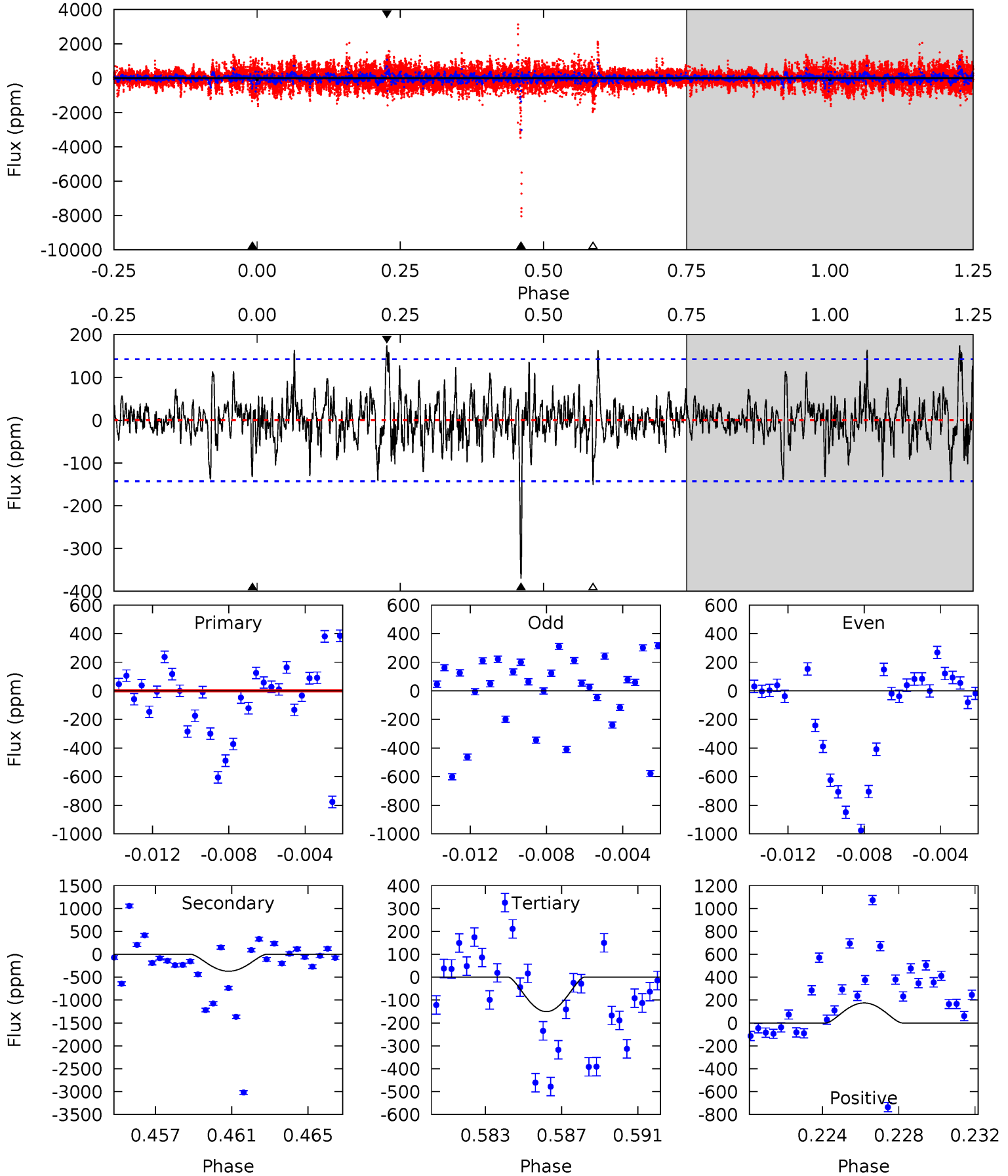
TCE 006522750-04 P=263.640602 Days  $T_0=382.540394$  (BKJD)



# DV Model-Shift Uniqueness Test

006522750-04, P = 263.606460 Days, E = 119.263045 Days

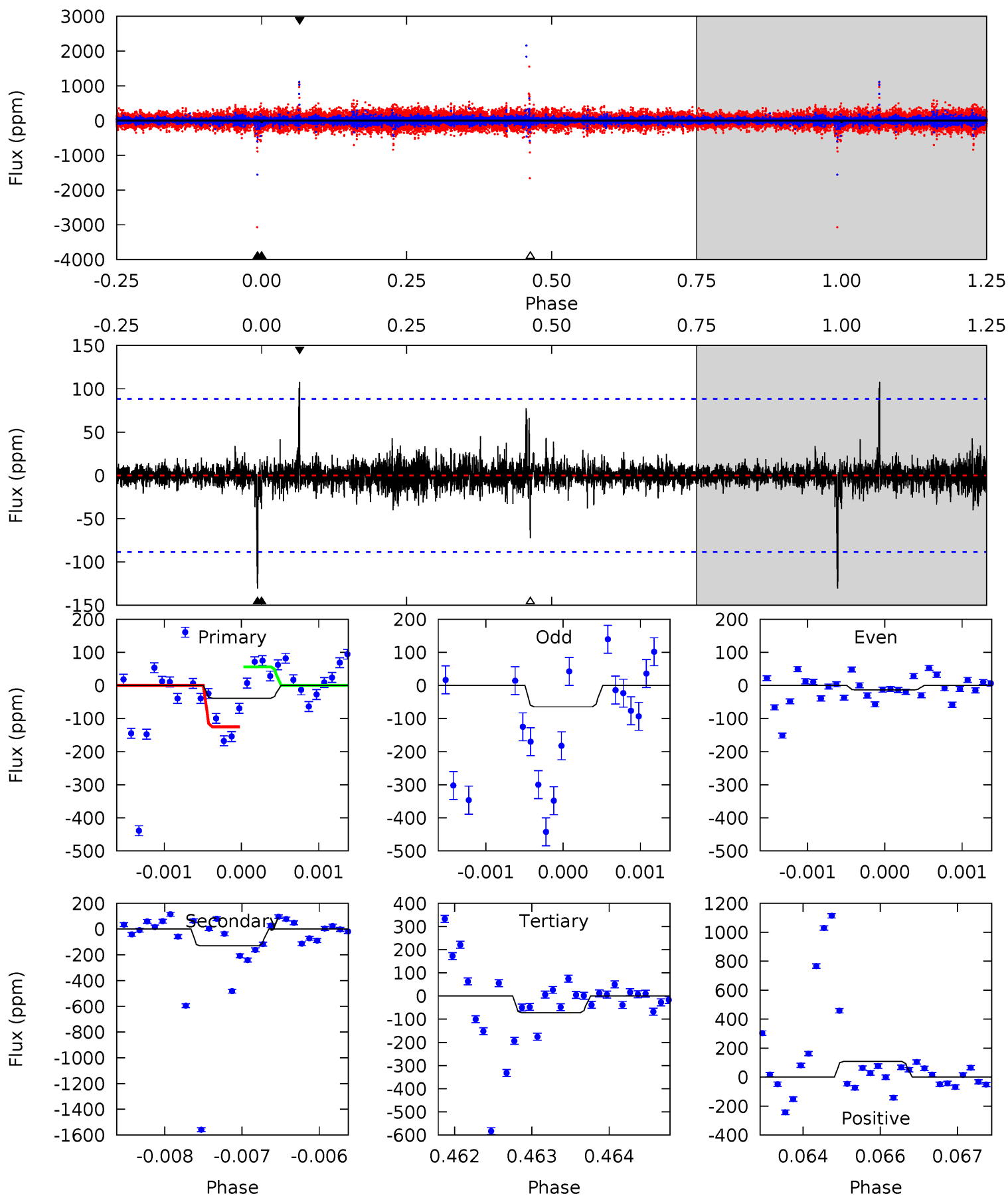
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.58	13.5	5.48	6.36	5.20	2.87	1.49	-0.90	-1.78	8.01	7.13	2.12	-4.60	0.32	0



# Alt Model-Shift Uniqueness Test

006522750-04, P = 263.640602 Days, E = 118.899792 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
2.37	8.01	4.44	6.63	5.43	3.25	0.59	-2.07	-4.26	3.57	1.38	0.71	51.1	0.45	0



### Stellar Parameters For KIC 006522750

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$5759^{+78}_{-86}$	$4.481^{+0.040}_{-0.120}$	$0.020^{+0.150}_{-0.150}$	$0.945^{+0.134}_{-0.057}$	$0.984^{+0.056}_{-0.062}$	$1.644^{+0.292}_{-0.520}$
	+1%/-1%	+1%/-3%	+750%/-750%	+14%/-6%	+6%/-6%	+18%/-32%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 006522750-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-371 \pm 27$	$14.07^{+5.38}_{-5.05}$	$388^{+15}_{-9}$	$2889^{+403}_{-230}$	$652^{+974}_{-309}$
Alt.	$-131 \pm 16$	$9.50^{+5.15}_{-4.84}$	$388^{+16}_{-10}$	$2788^{+650}_{-296}$	$495^{+1633}_{-288}$

$T_{max}$  = 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

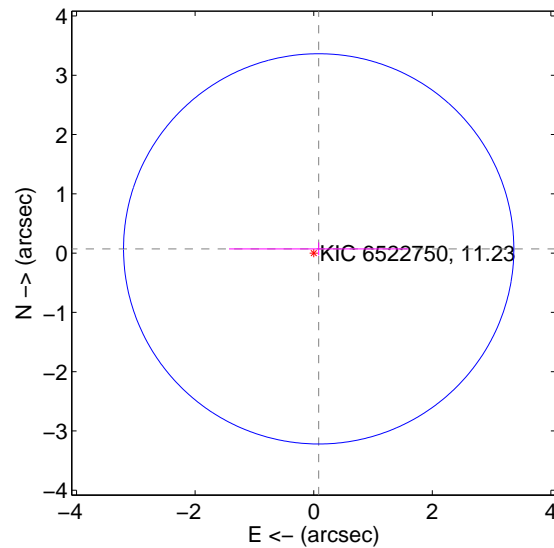
Supplemental centroid analysis for 006522750-04. **Kepler magnitude: 11.23.** Transit SNR 80.44

**There are 0 quarters with good PRF difference image offsets**

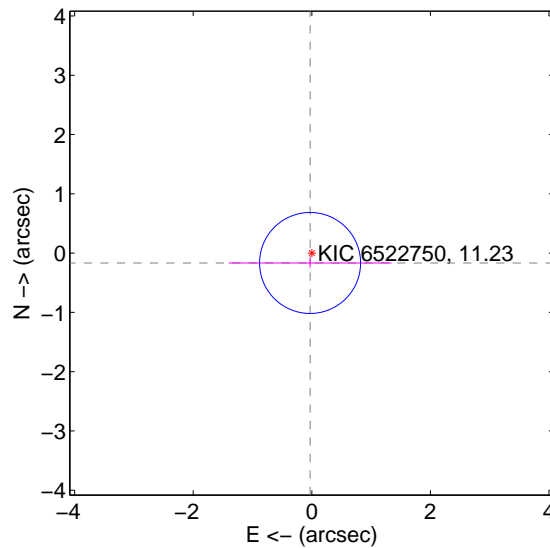
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.110 \pm 1.097$	0.10	$-0.084 \pm 1.513$	$0.071 \pm 0.110$
PRF-fit source offset from KIC position	$0.169 \pm 0.284$	0.59	$0.029 \pm 1.373$	$-0.166 \pm 0.079$
photometric centroid source offset	$0.09 \pm 0.07$	1.29	$-0.09 \pm 0.07$	$-0.02 \pm 0.12$

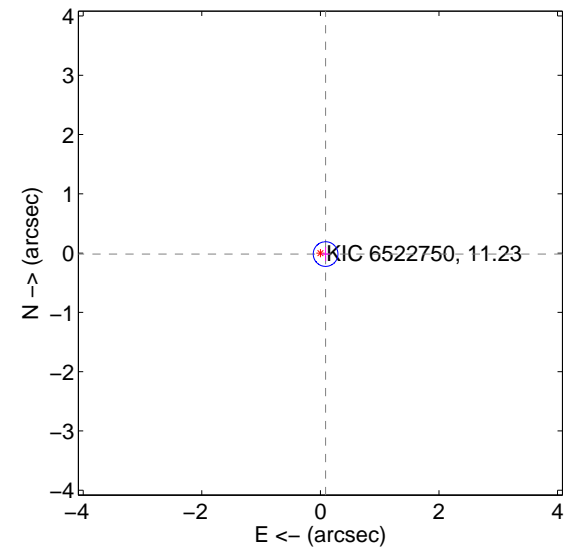
offset from difference PRF-fit to OOT PRF-fit



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

Q5 no difference image



Q5 no OOT image



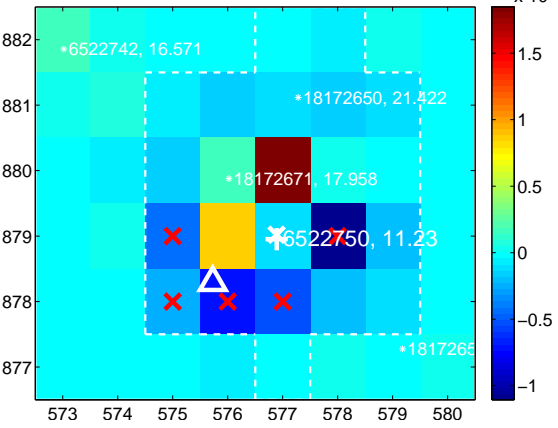
Q6 no difference image



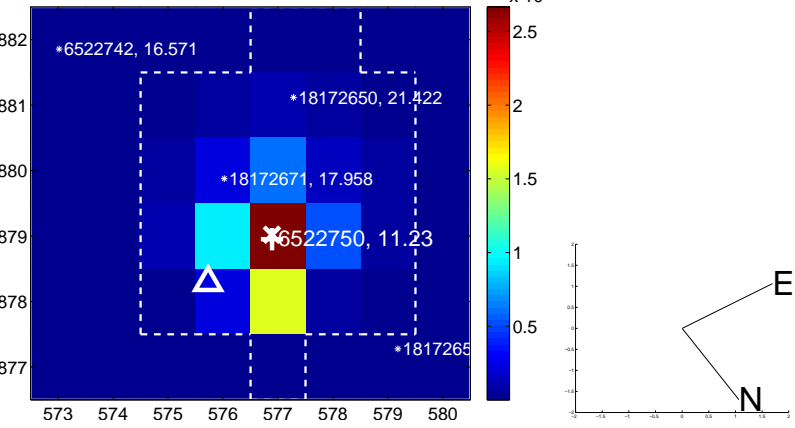
Q6 no OOT image



Q7 difference image. Poor Quality



Q7 OOT image



Q8 no difference image

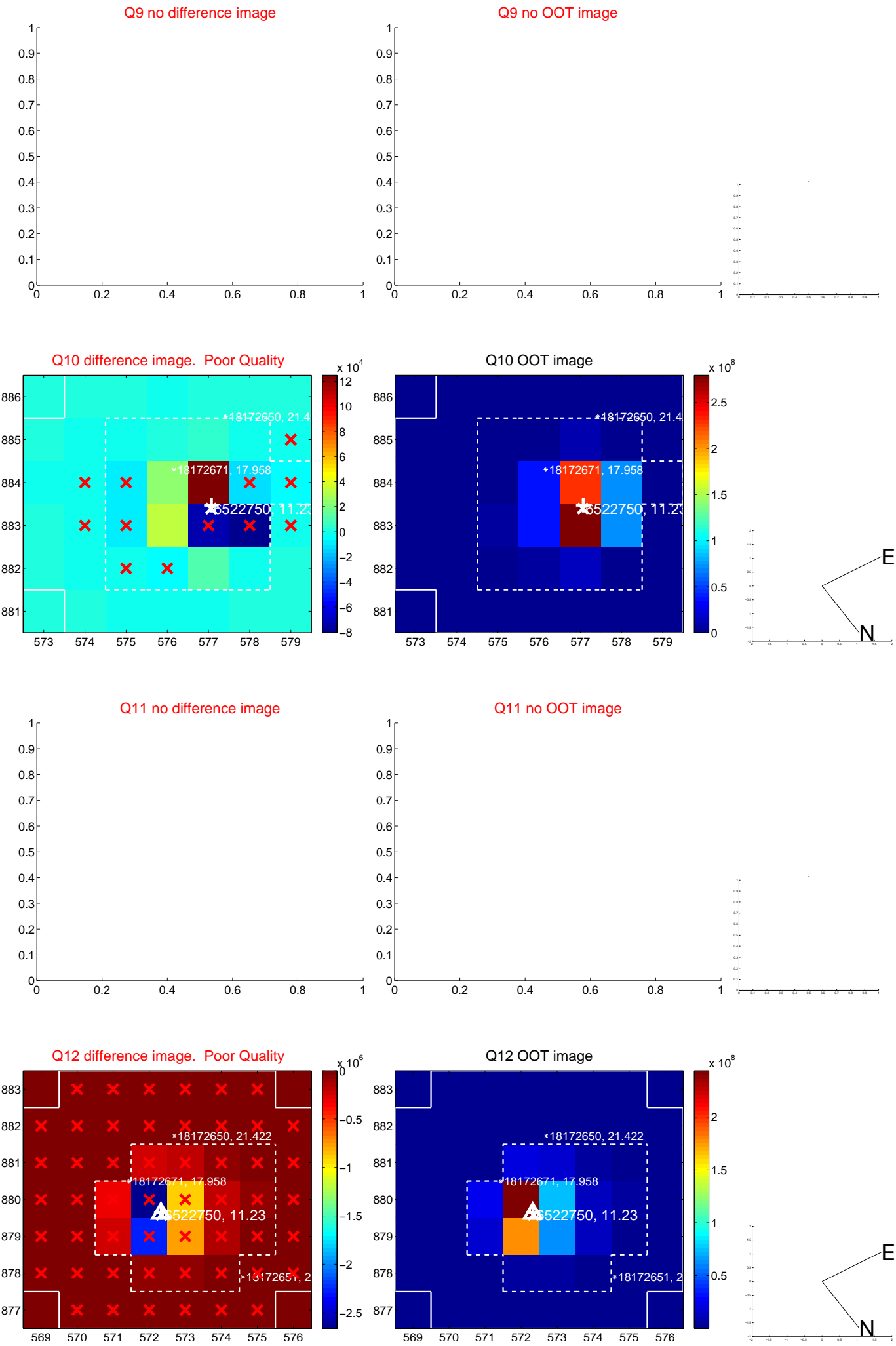


Q8 no OOT image





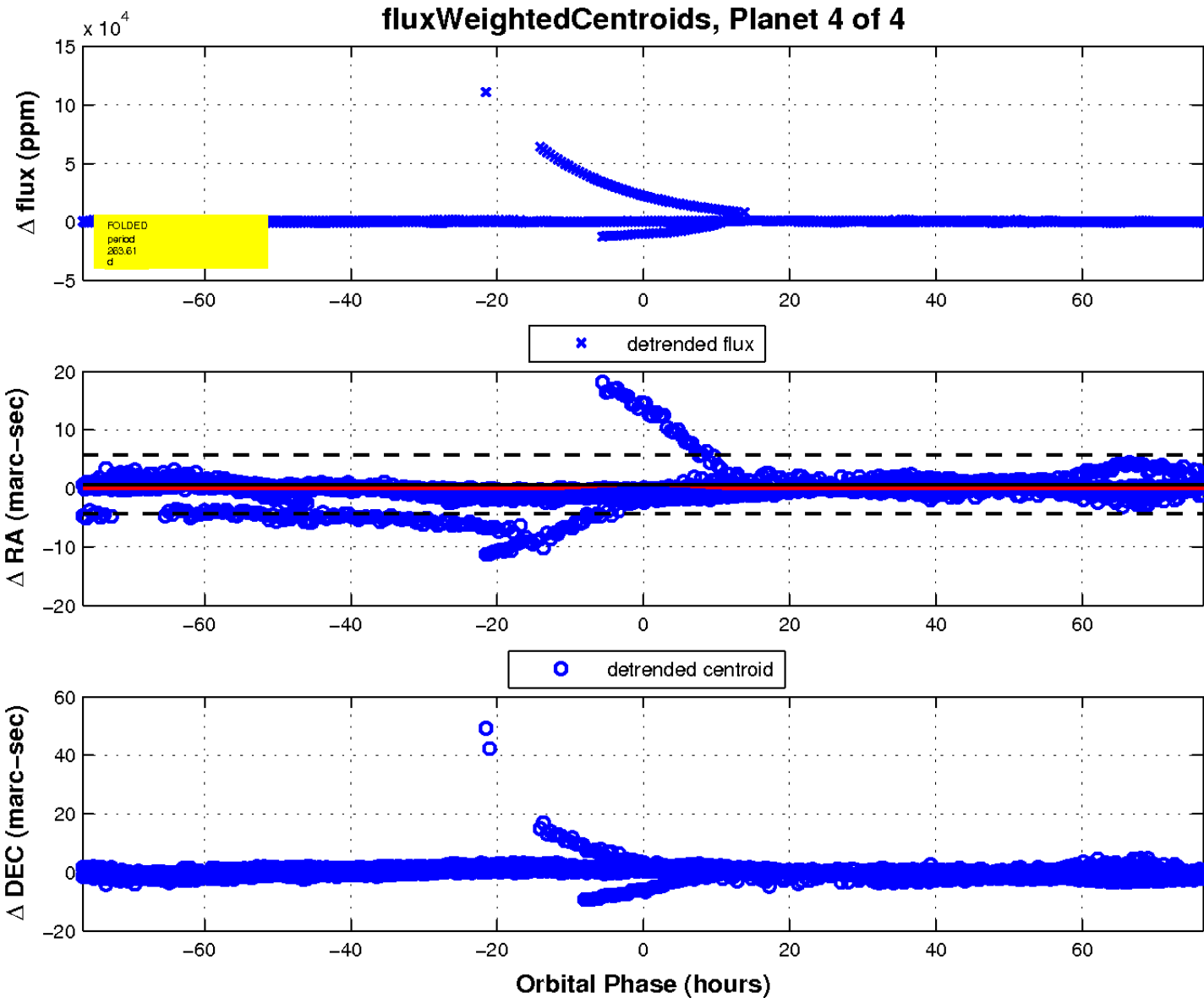
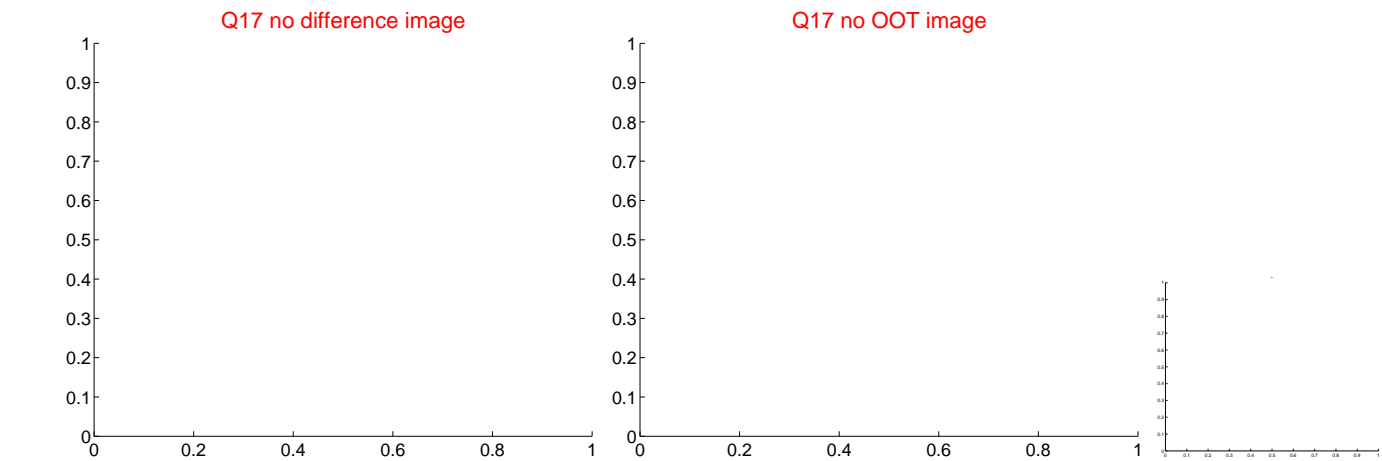
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

