

# KIC 006428850

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006428850-01	OBS	No	5.528606	134.612914	56.2	12.737	13.4	12.9	2.37	7068	2.43	2453.66
006428850-02	OBS	No	5.528712	135.805001	35.0	10.759	12.4	11.0	2.37	7068	1.66	2453.59
006428850-03	OBS	No	5.528226	132.773361	40.2	6.842	12.3	14.3	2.37	7068	1.75	2453.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006428850-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
006428850-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
006428850-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

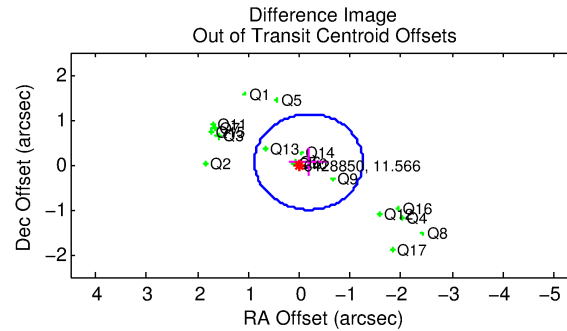
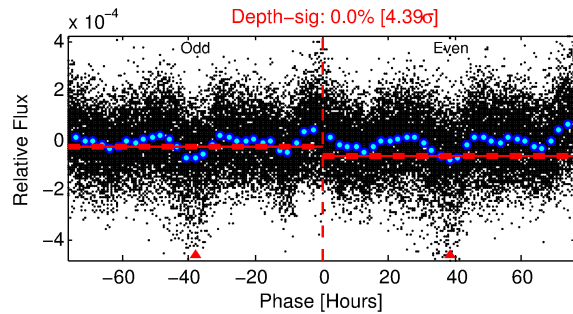
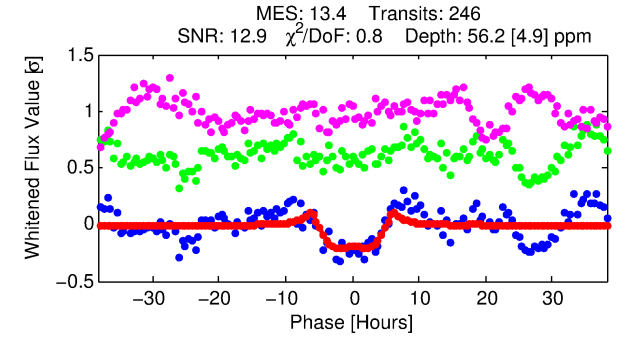
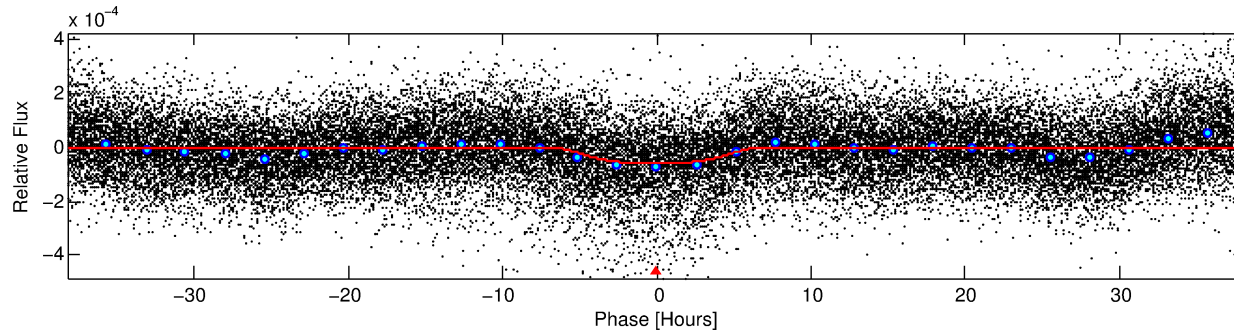
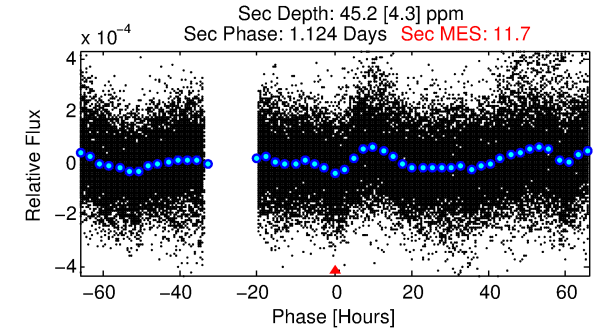
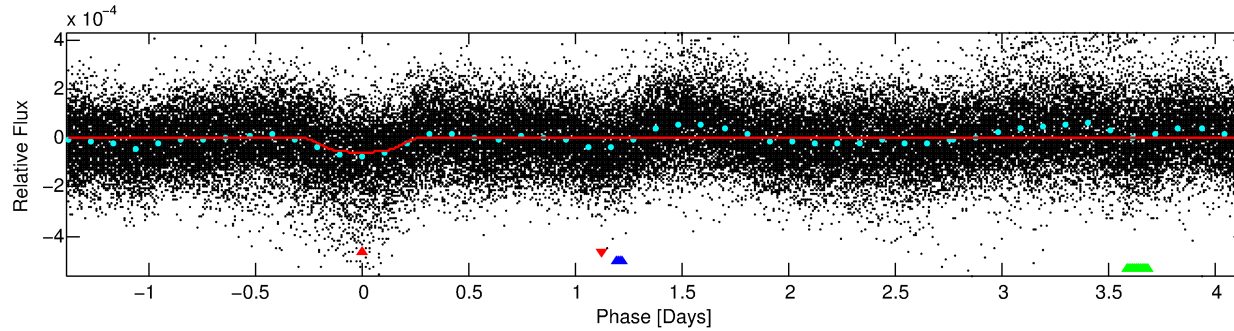
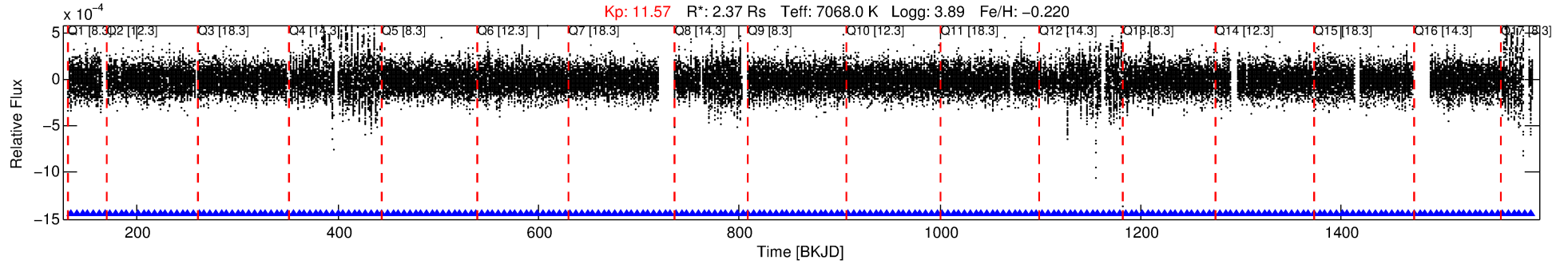
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006428850-01

No Significant Match Found

# DV One-Page Summary

KIC: 6428850 Candidate: 1 of 3 Period: 5.529 d



## DV Fit Results:

Period = 5.52861 [0.00010] d  
Epoch = 134.6129 [0.0140] BKJD  
Rp/R\* = 0.0094 [0.0005]  
a/R\* = 1.20 [0.03]  
b = 0.99 [0.00]  
Seff = 2453.66 [1081.49]  
Teq = 1795 [198] K  
Rp = 2.43 [0.75] Re  
a = 0.0714 [0.0196] AU  
Ag = 21.51 [9.52] [2.15σ]  
Teffp = 5976 [284] K [12.10σ]

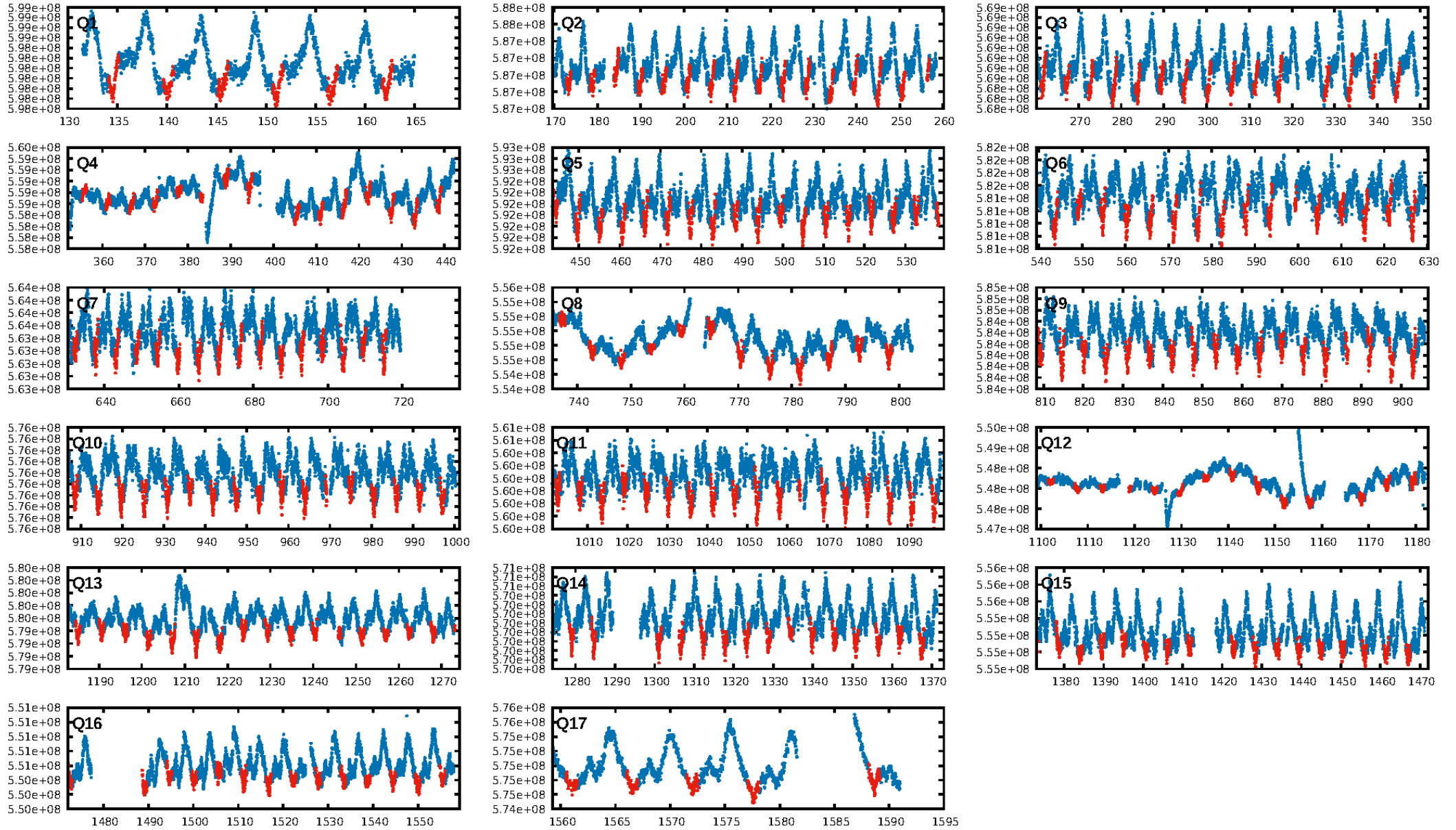
## DV Diagnostic Results:

ShortPeriod-sig: 0.1% [0.00σ]  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 7.99e-19  
RollingBand-fgt: 1.00 [235/235]  
GhostDiagnostic-chr: 1.165  
Centroid-sig: 0.0%  
Centroid-so: 0.794 arcsec [2.47σ]  
OotOffset-rm: 0.195 arcsec [0.55σ]  
KicOffset-rm: 0.384 arcsec [1.26σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.94 [16/17]  
DiffImageOverlap-fno: 1.00 [17/17]

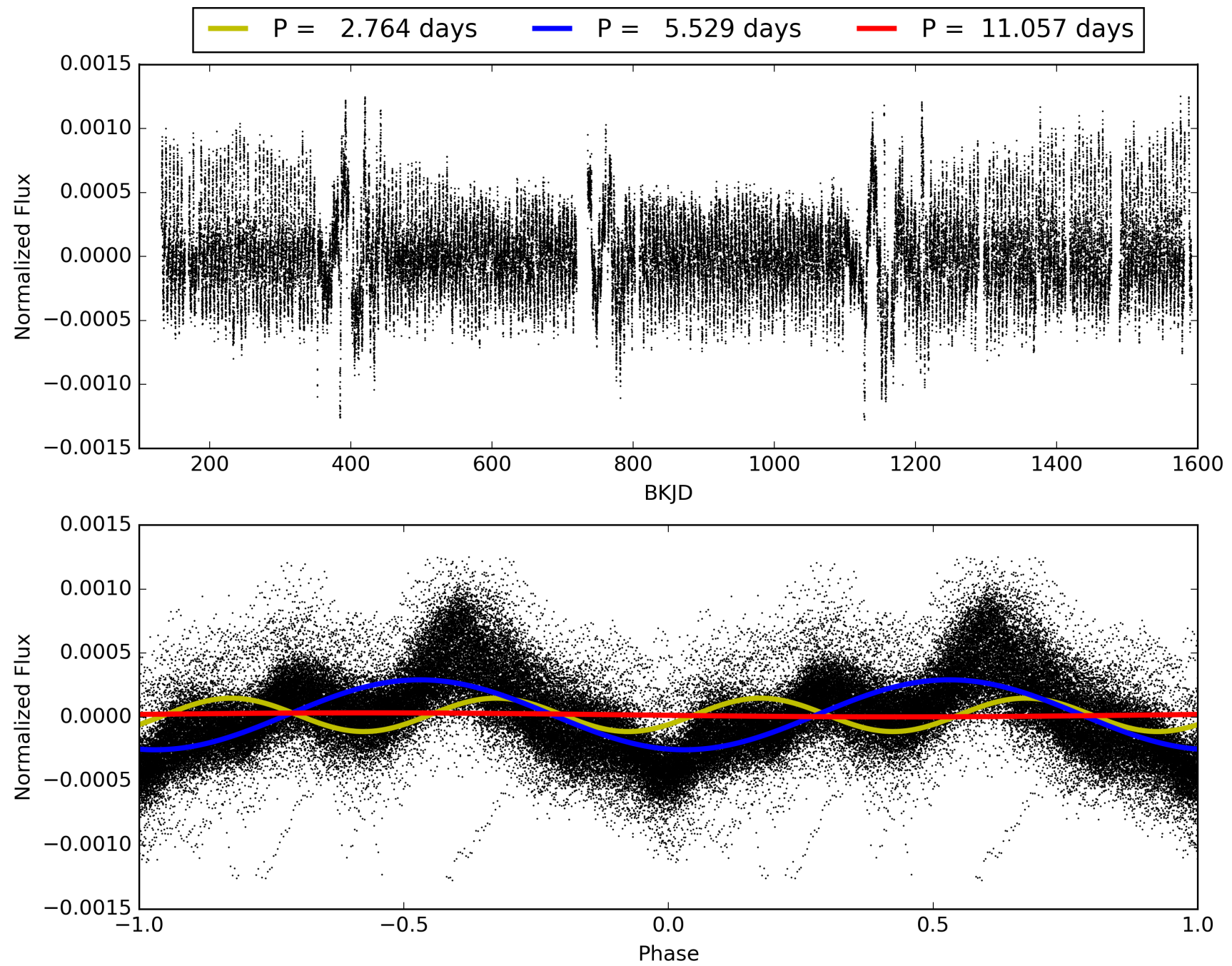
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 02:43:17 Z

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

# TCE 006428850-01, PDC Light Curves



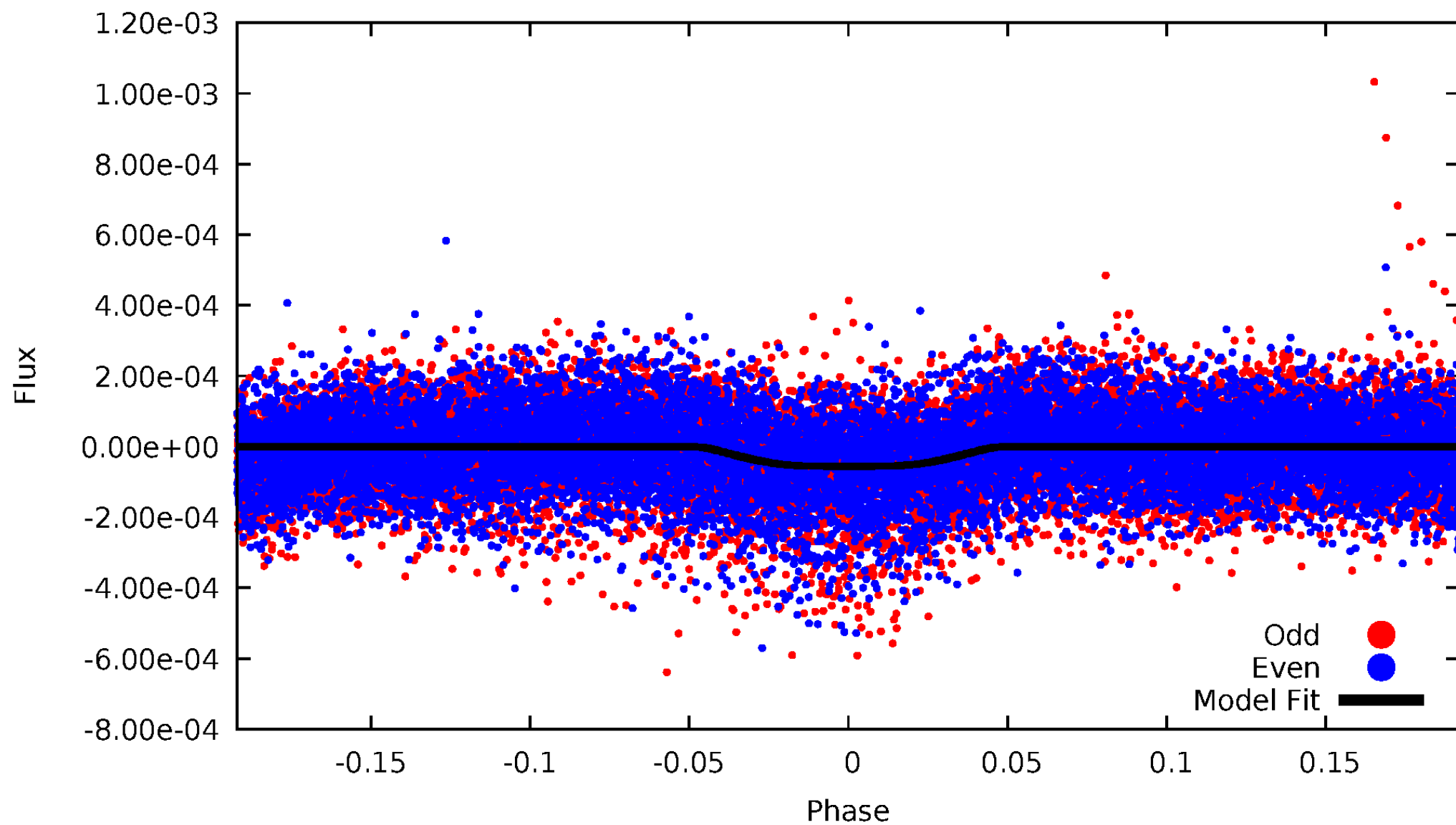
TCE 006428850-01





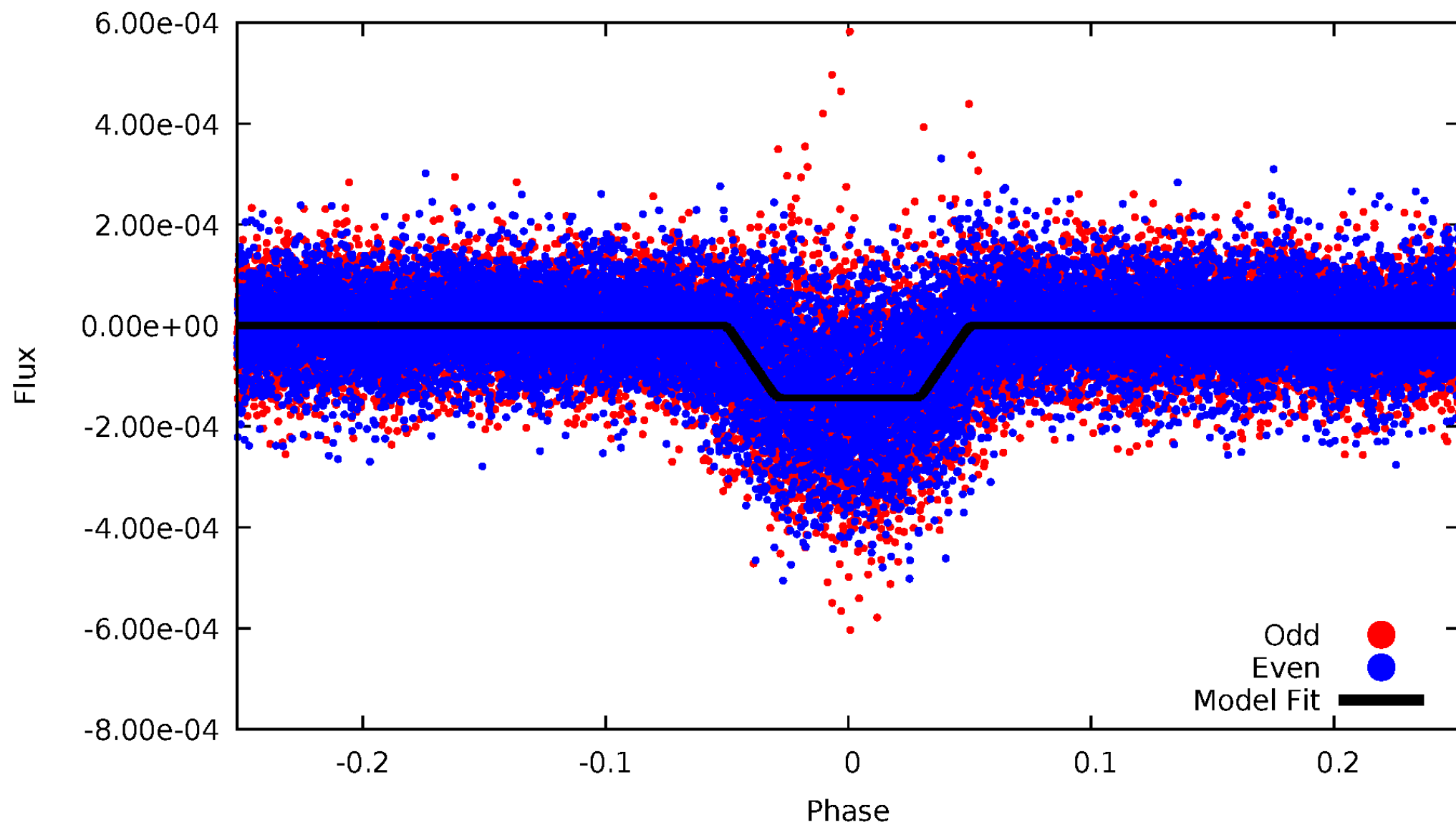
# DV Odd/Even

TCE 006428850-01



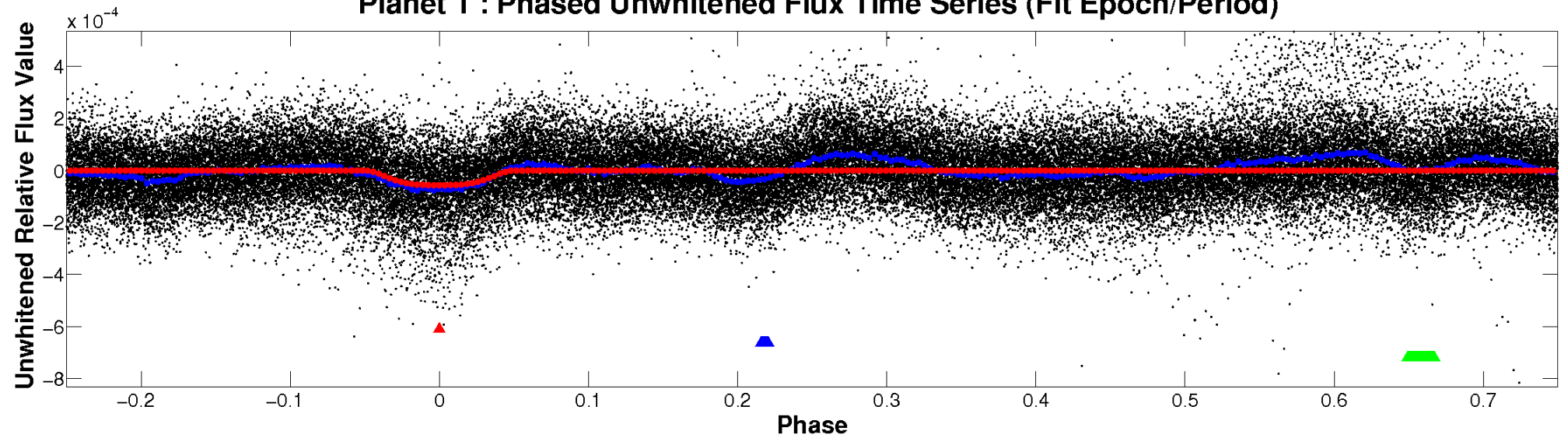
# ALT Odd/Even

TCE 006428850-01

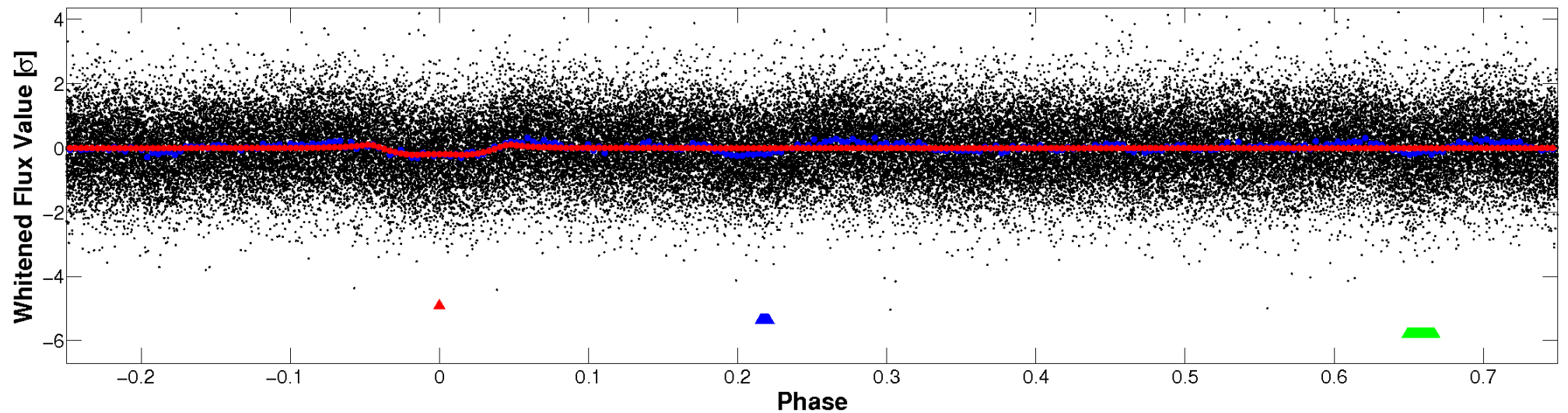


# Non-Whitened Vs. Whitened Light Curve

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

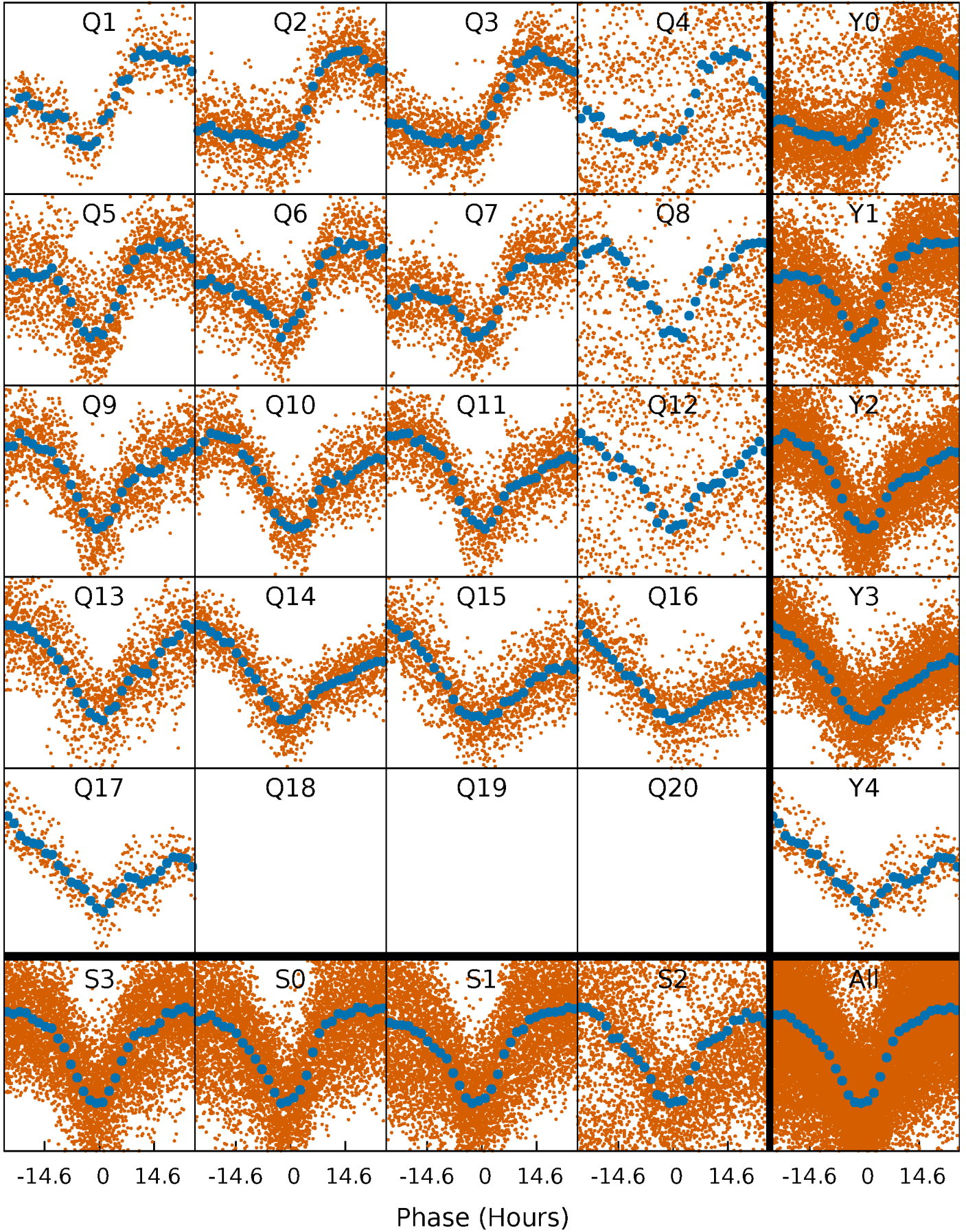


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

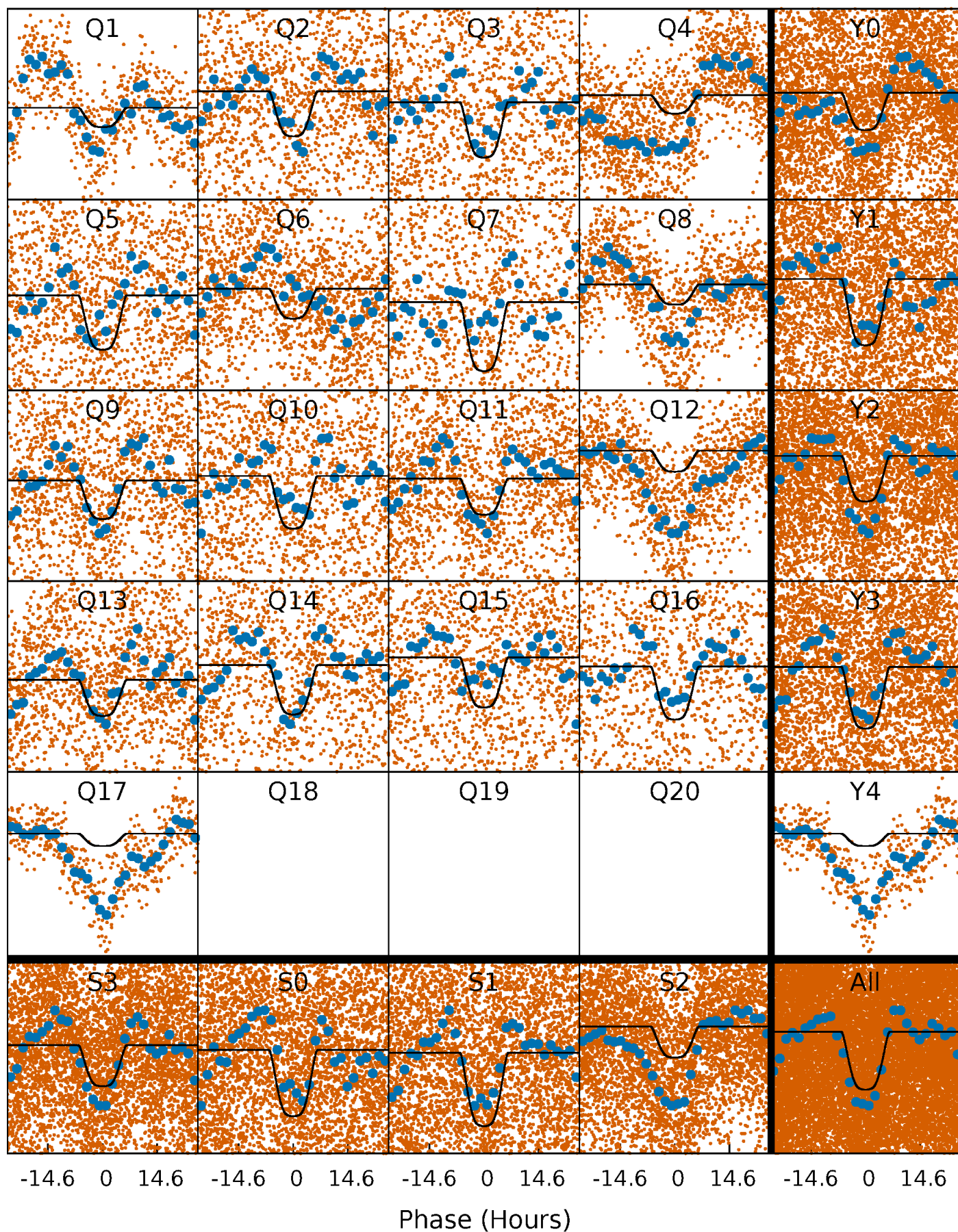
TCE 006428850-01 P= 5.528606 Days  $T_0=134.612914$  (BKJD)





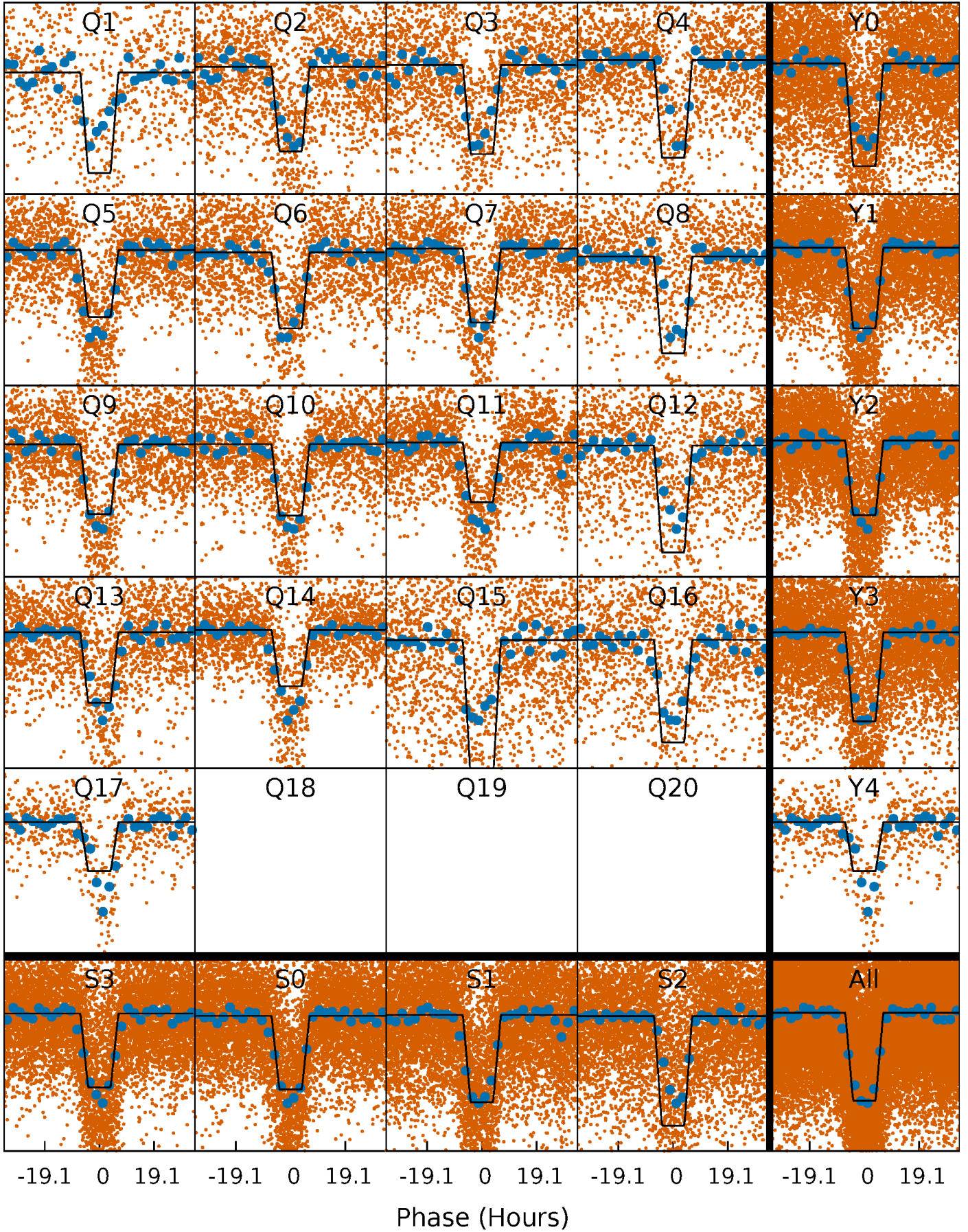
# DV Quarter-Phased Transit Curves

TCE 006428850-01 P= 5.528606 Days  $T_0=134.612914$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006428850-01 P= 5.528389 Days  $T_0=134.633525$  (BKJD)

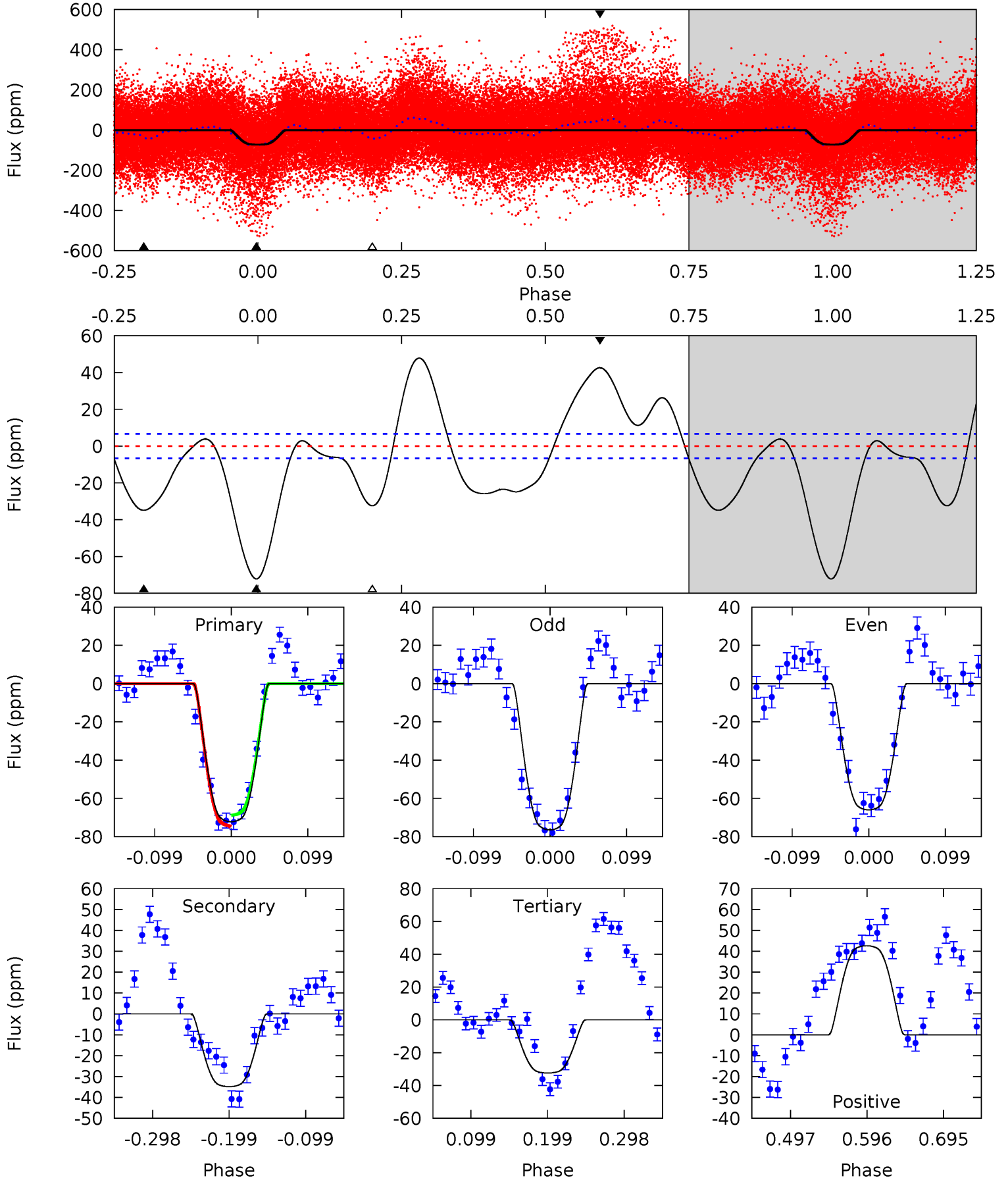




# DV Model-Shift Uniqueness Test

006428850-01, P = 5.528606 Days, E = 129.084308 Days

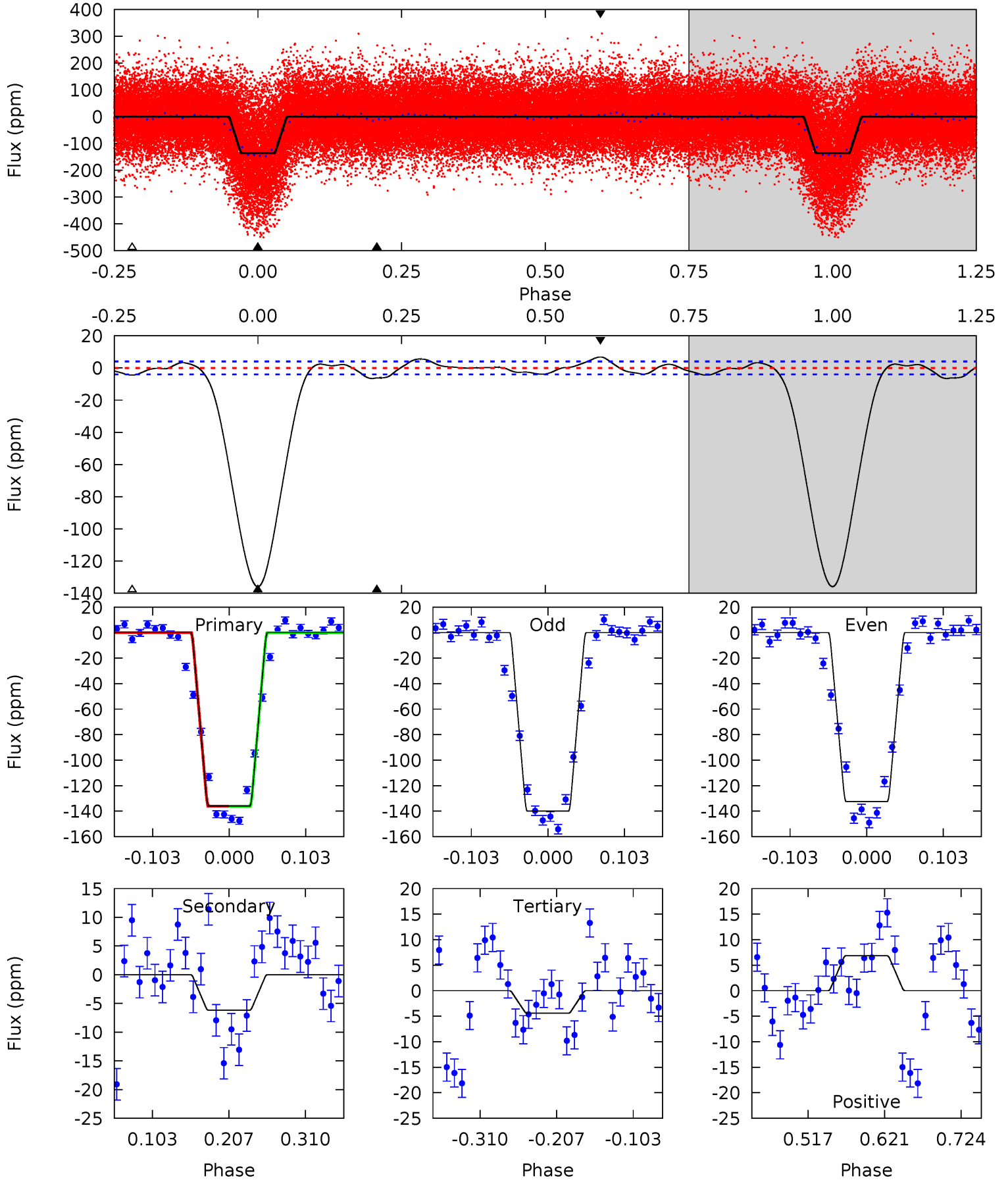
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
49.6	23.9	22.2	29.3	4.57	1.65	16.6	27.3	20.3	1.70	-5.33	3.61	1.34	0.40	2.01



# Alt Model-Shift Uniqueness Test

006428850-01, P = 5.528389 Days, E = 129.105136 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
154.7	7.03	5.03	7.80	4.56	1.63	2.91	149.7	146.9	2.00	-0.77	4.31	0.95	0.05	0.05





### Stellar Parameters For KIC 006428850

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$\rho_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7068^{+169}_{-232}$	$3.891^{+0.240}_{-0.111}$	$-0.220^{+0.300}_{-0.300}$	$2.365^{+0.481}_{-0.721}$	$1.584^{+0.221}_{-0.271}$	$0.169^{+0.264}_{-0.063}$
	+2%/-3%	+6%/-3%	+136%/-136%	+20%/-30%	+14%/-17%	+157%/-37%
Source	PHO1	FLK73	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 006428850-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-35 \pm 1$	$2.37^{+0.33}_{-0.38}$	$2472^{+154}_{-194}$	$5542^{+207}_{-188}$	$18^{+6}_{-4}$
Alt.	$-6 \pm 1$	$3.04^{+0.37}_{-0.47}$	$2470^{+153}_{-182}$	$3527^{+118}_{-122}$	$1.891^{+0.718}_{-0.450}$

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

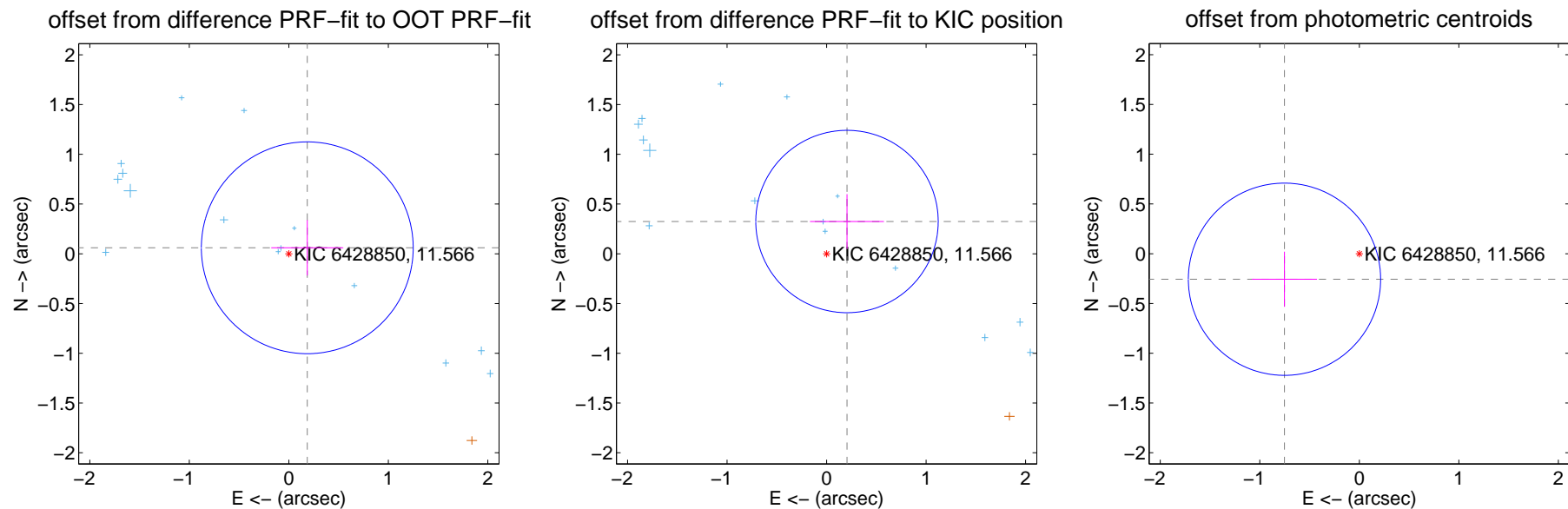
## DV Centroid Data

Supplemental centroid analysis for 006428850-01. **Kepler magnitude: 11.57.** Transit SNR 12.92

There are 16 quarters with good PRF difference image offsets

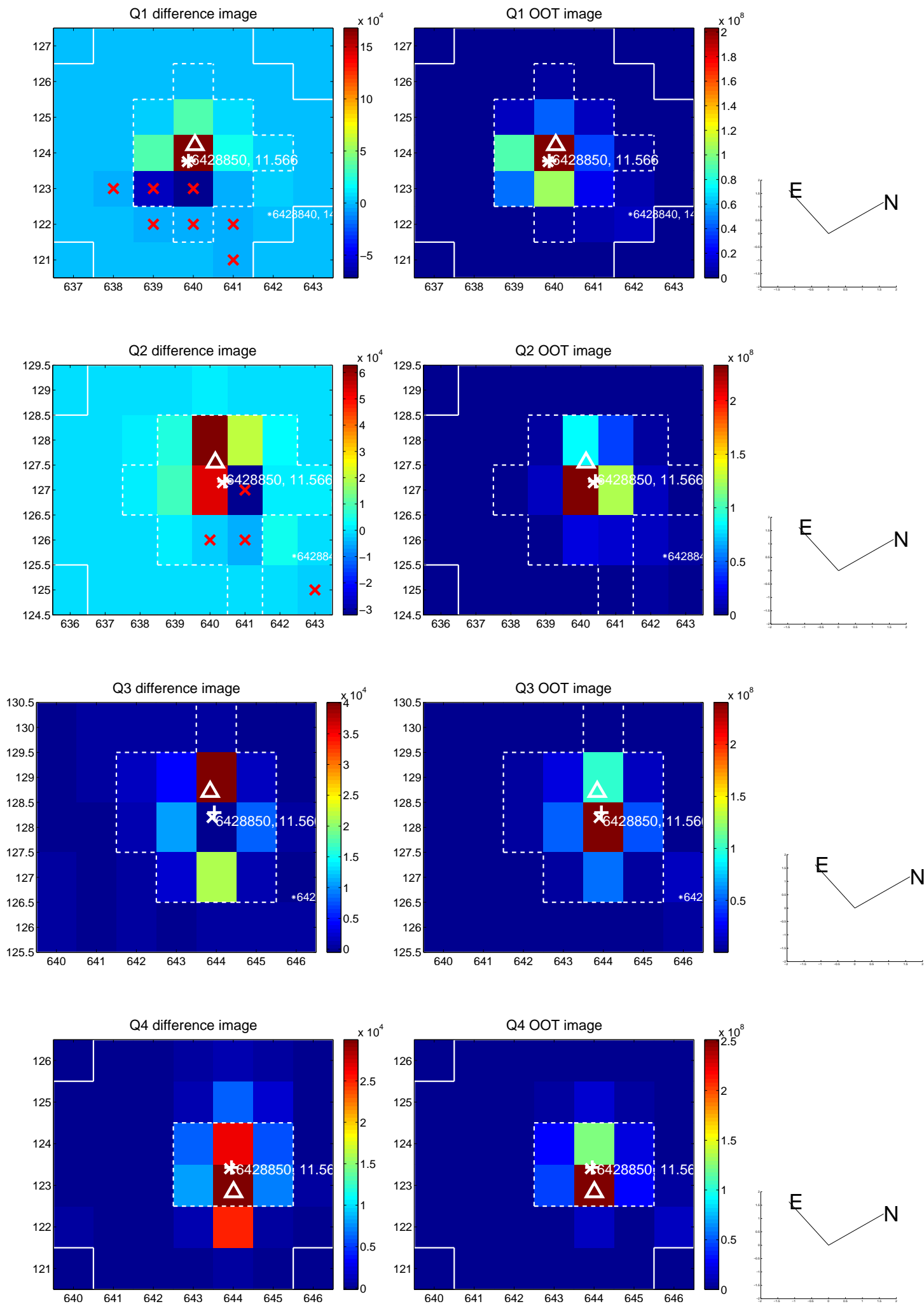
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.195 \pm 0.355$	0.55	$-0.185 \pm 0.362$	$0.060 \pm 0.278$
PRF-fit source offset from KIC position	$0.384 \pm 0.305$	1.26	$-0.205 \pm 0.371$	$0.324 \pm 0.275$
photometric centroid source offset	$0.79 \pm 0.32$	2.47	$0.75 \pm 0.33$	$-0.26 \pm 0.28$

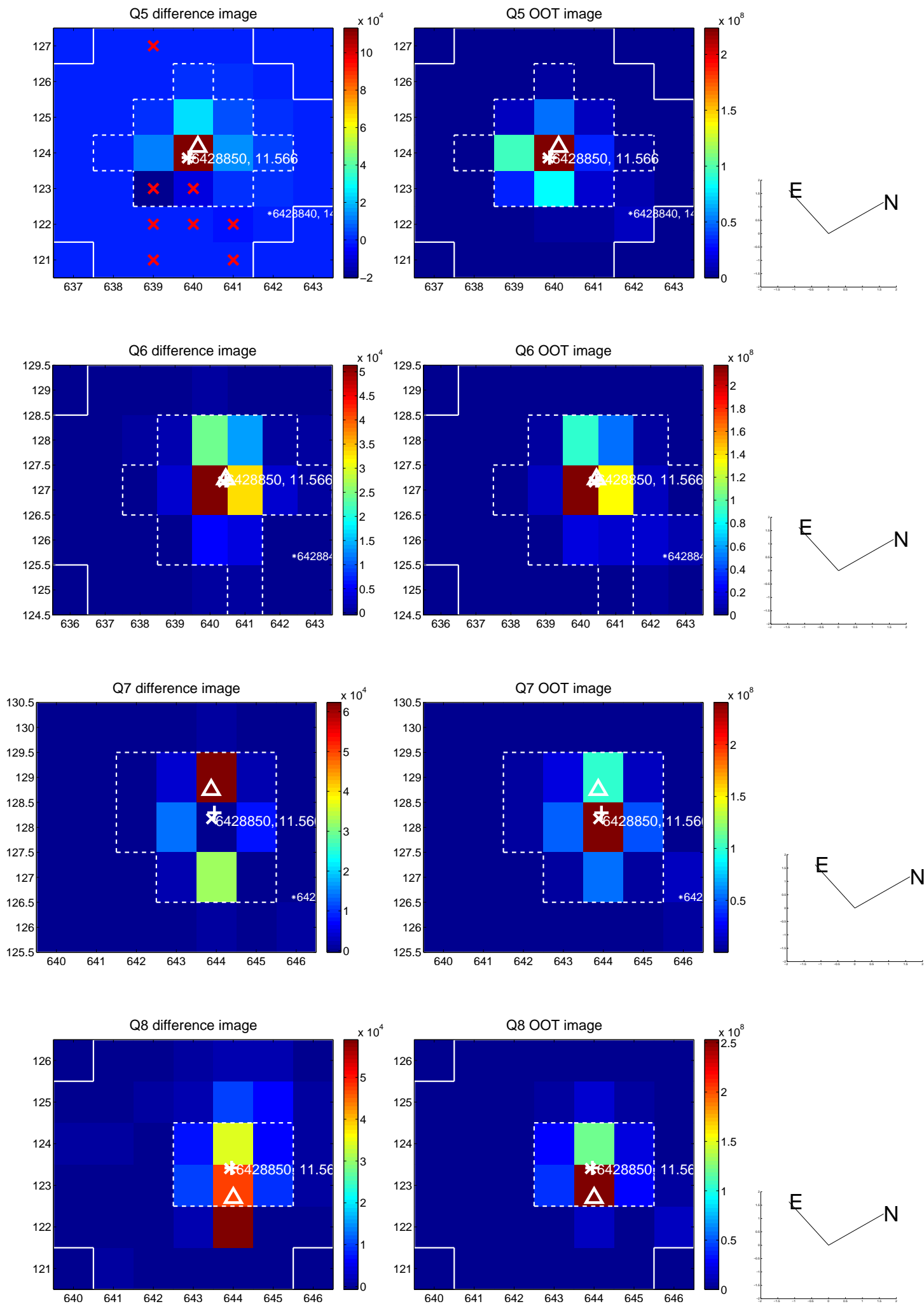


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

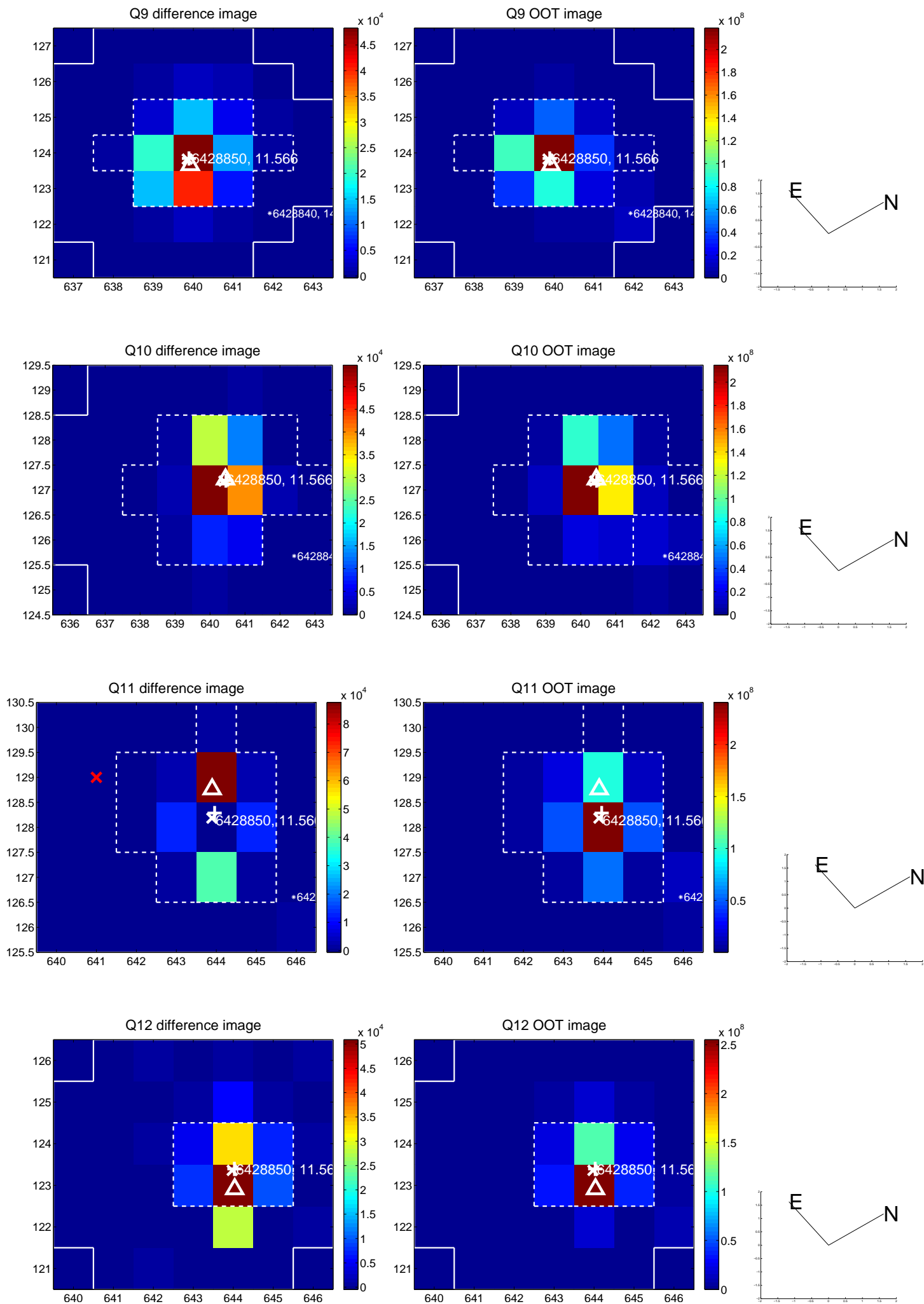


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

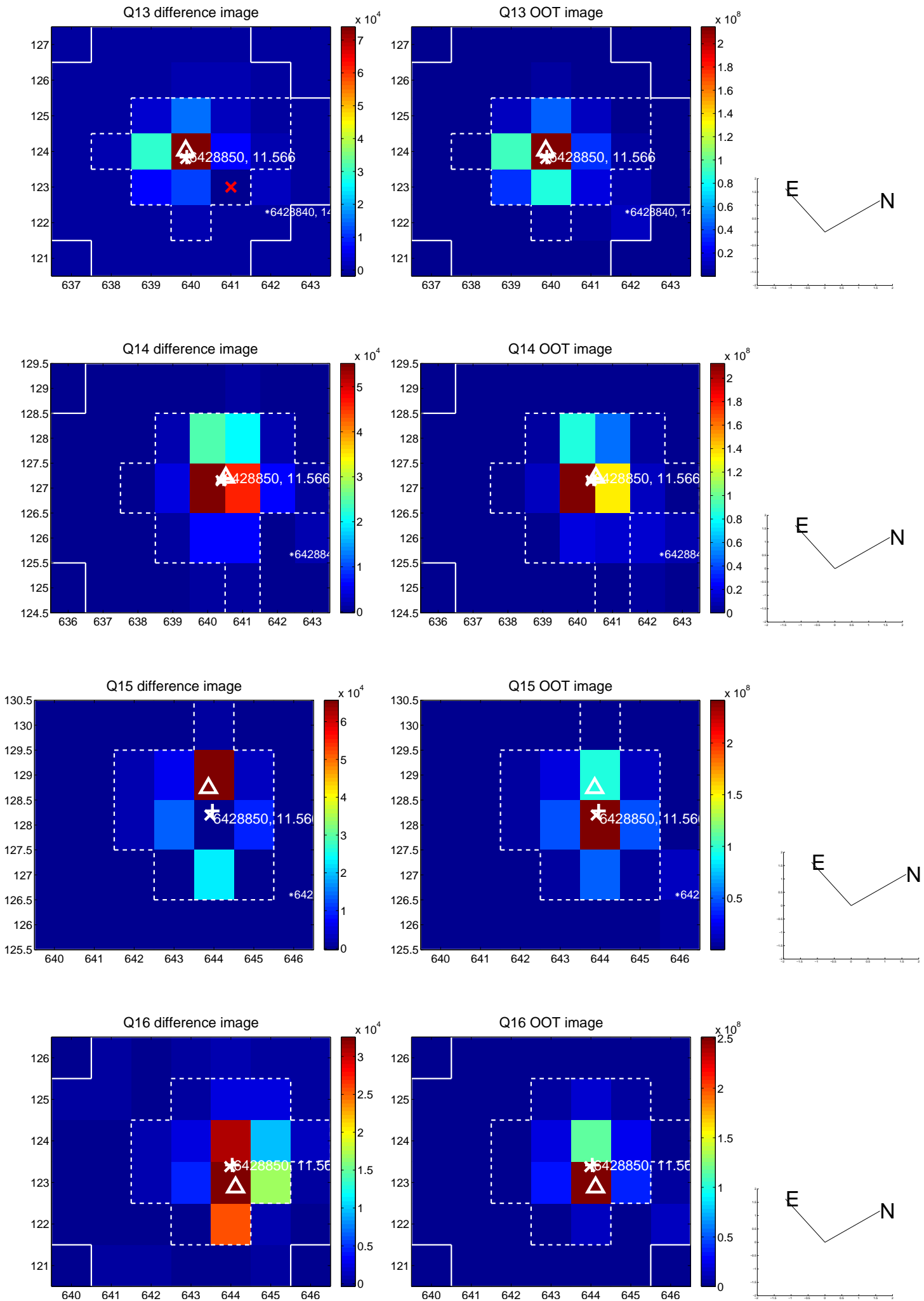




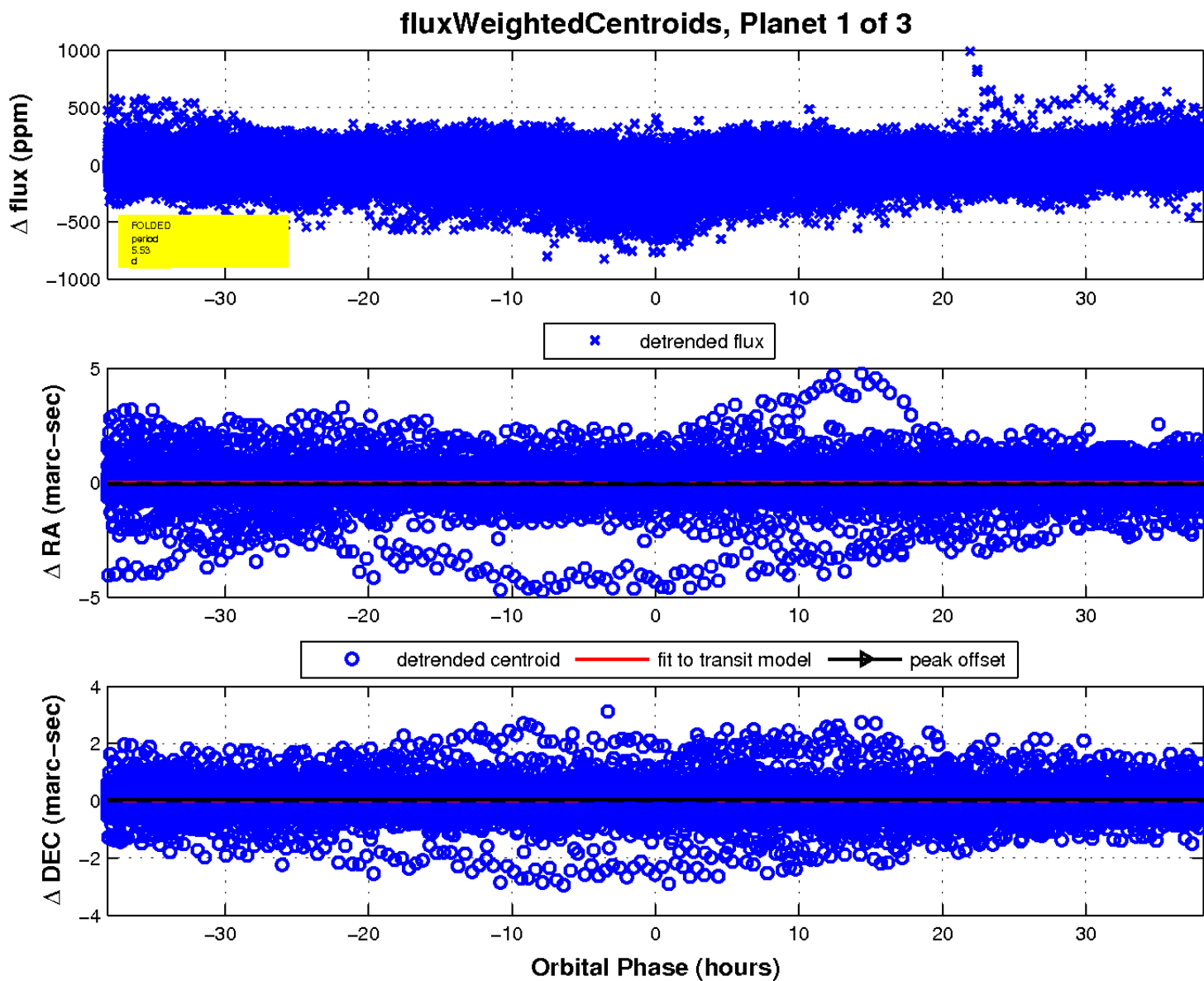
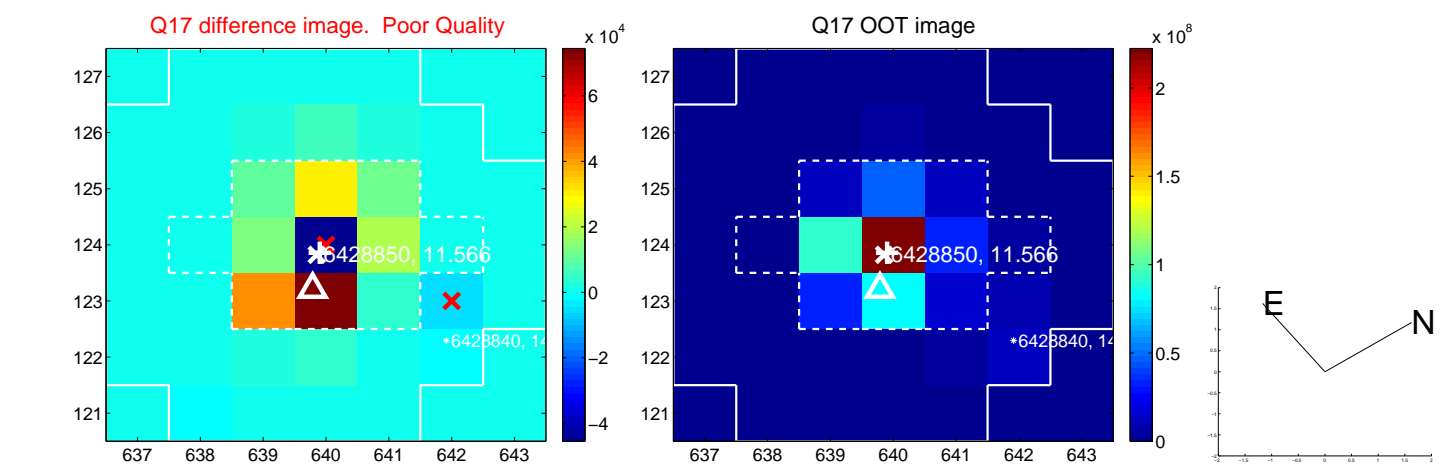
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

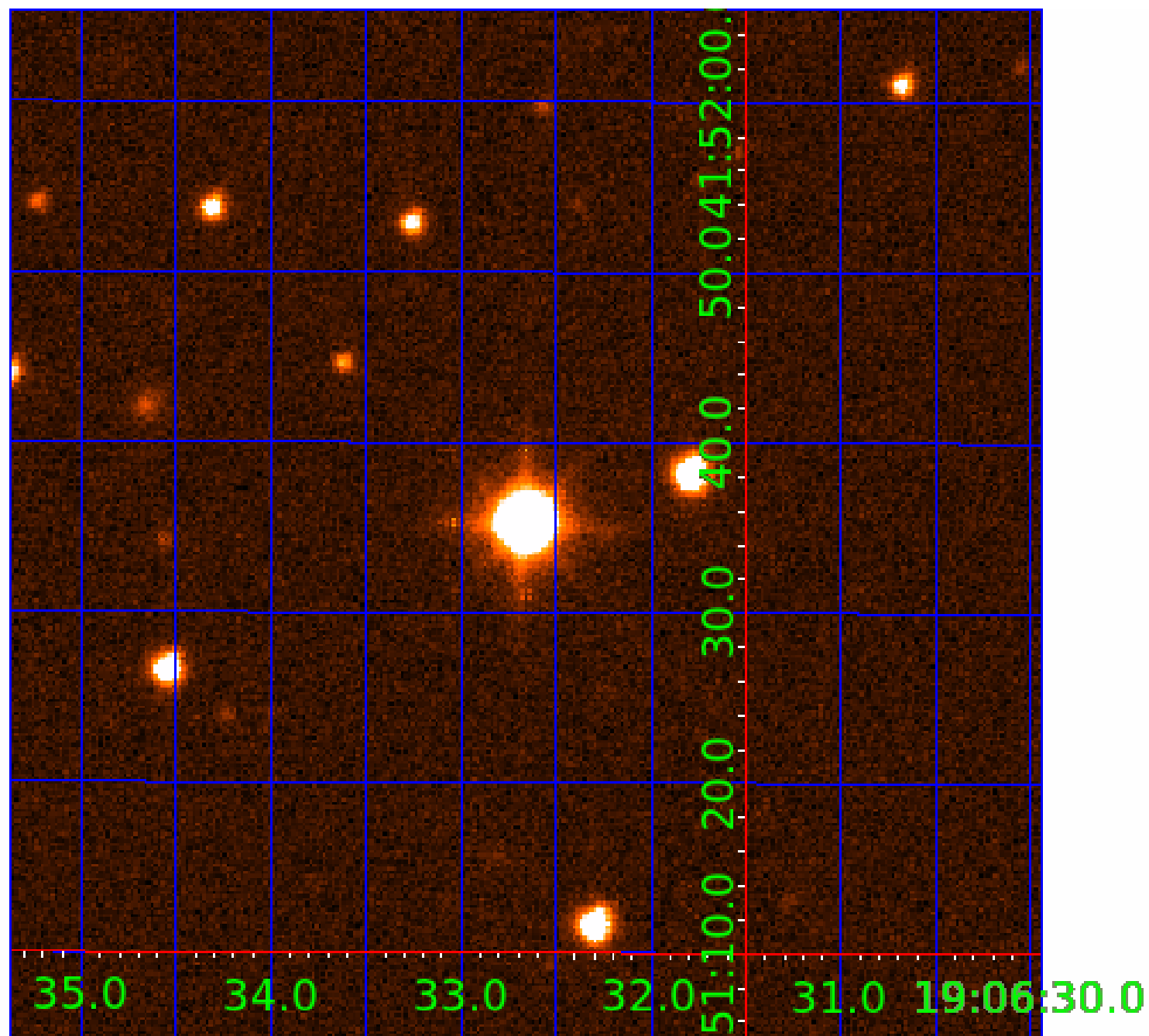


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 006428850

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006428850-01	OBS	No	5.528606	134.612914	56.2	12.737	13.4	12.9	2.37	7068	2.43	2453.66
006428850-02	OBS	No	5.528712	135.805001	35.0	10.759	12.4	11.0	2.37	7068	1.66	2453.59
006428850-03	OBS	No	5.528226	132.773361	40.2	6.842	12.3	14.3	2.37	7068	1.75	2453.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006428850-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
006428850-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
006428850-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

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

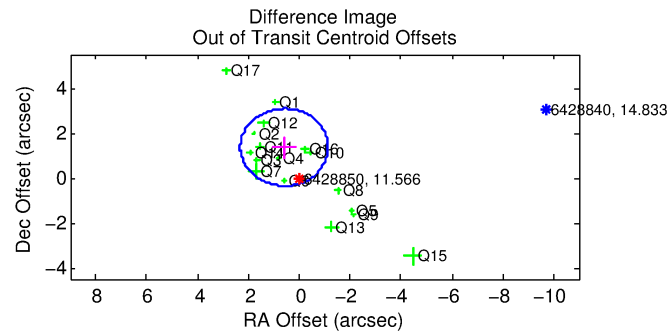
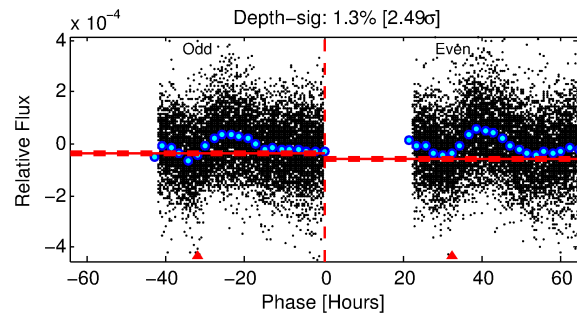
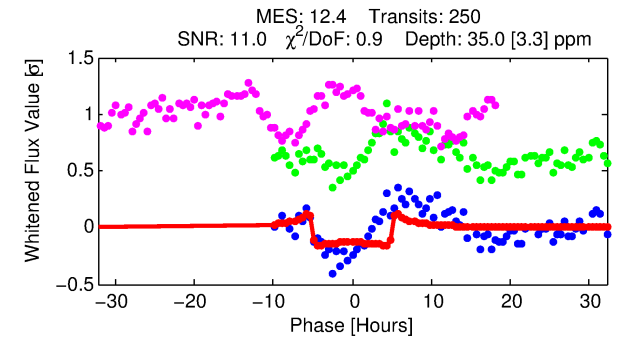
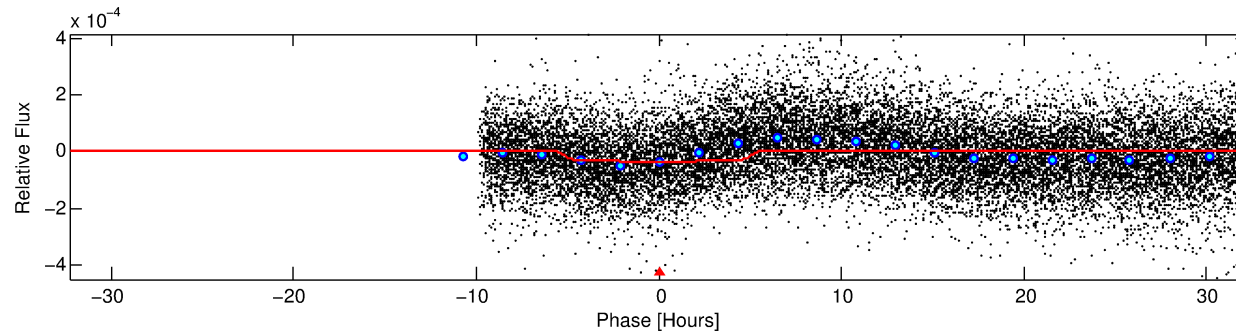
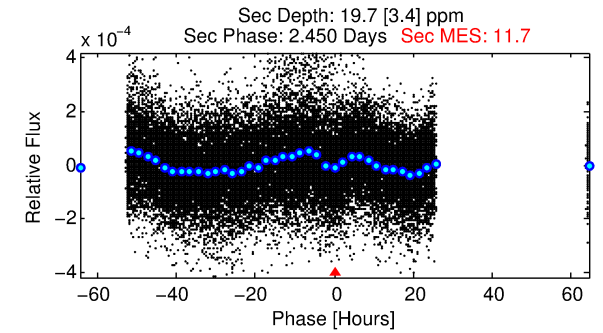
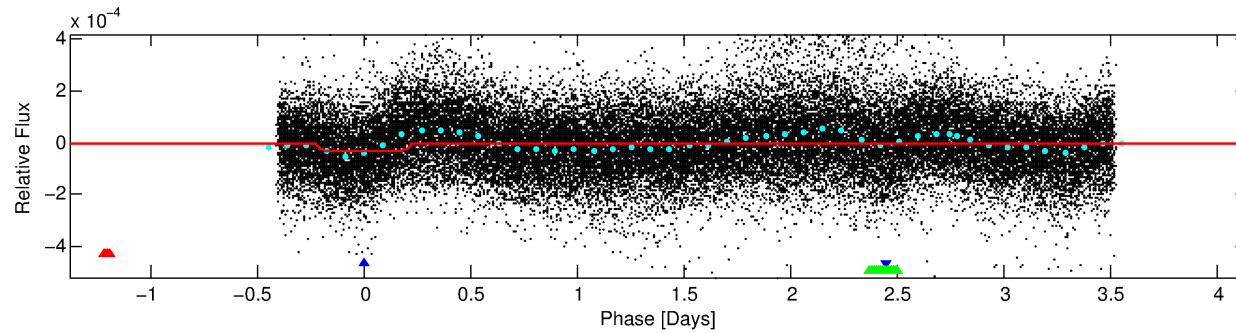
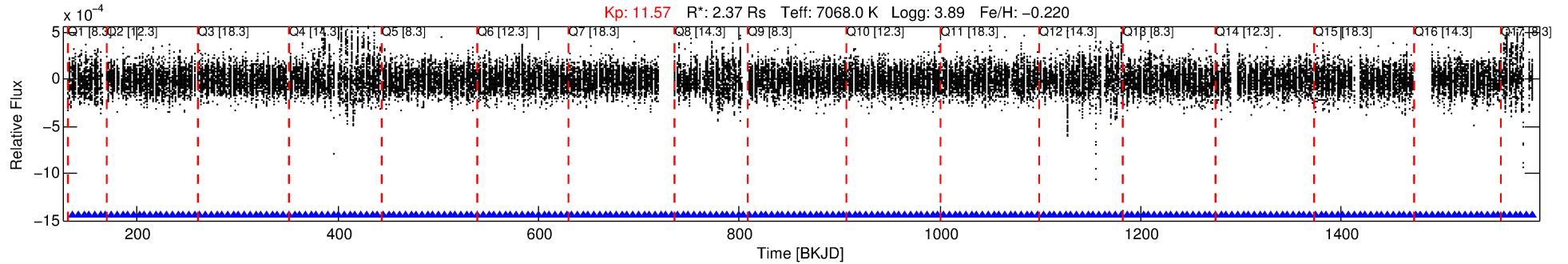
## Ephemeris Match Information For 006428850-02

No Significant Match Found



# DV One-Page Summary

KIC: 6428850 Candidate: 2 of 3 Period: 5.529 d



## DV Fit Results:

Period = 5.52871 [0.00004] d  
Epoch = 135.8050 [0.0053] BKJD  
Rp/R\* = 0.0064 [0.0006]  
a/R\* = 1.85 [0.53]  
b = 0.92 [0.07]  
Seff = 2453.59 [1081.46]  
Teq = 1795 [198] K  
Rp = 1.66 [0.53] Re  
a = 0.0714 [0.0196] AU  
Ag = 19.98 [9.70] [1.96σ]  
Teffp = 5866 [404] K [9.05σ]

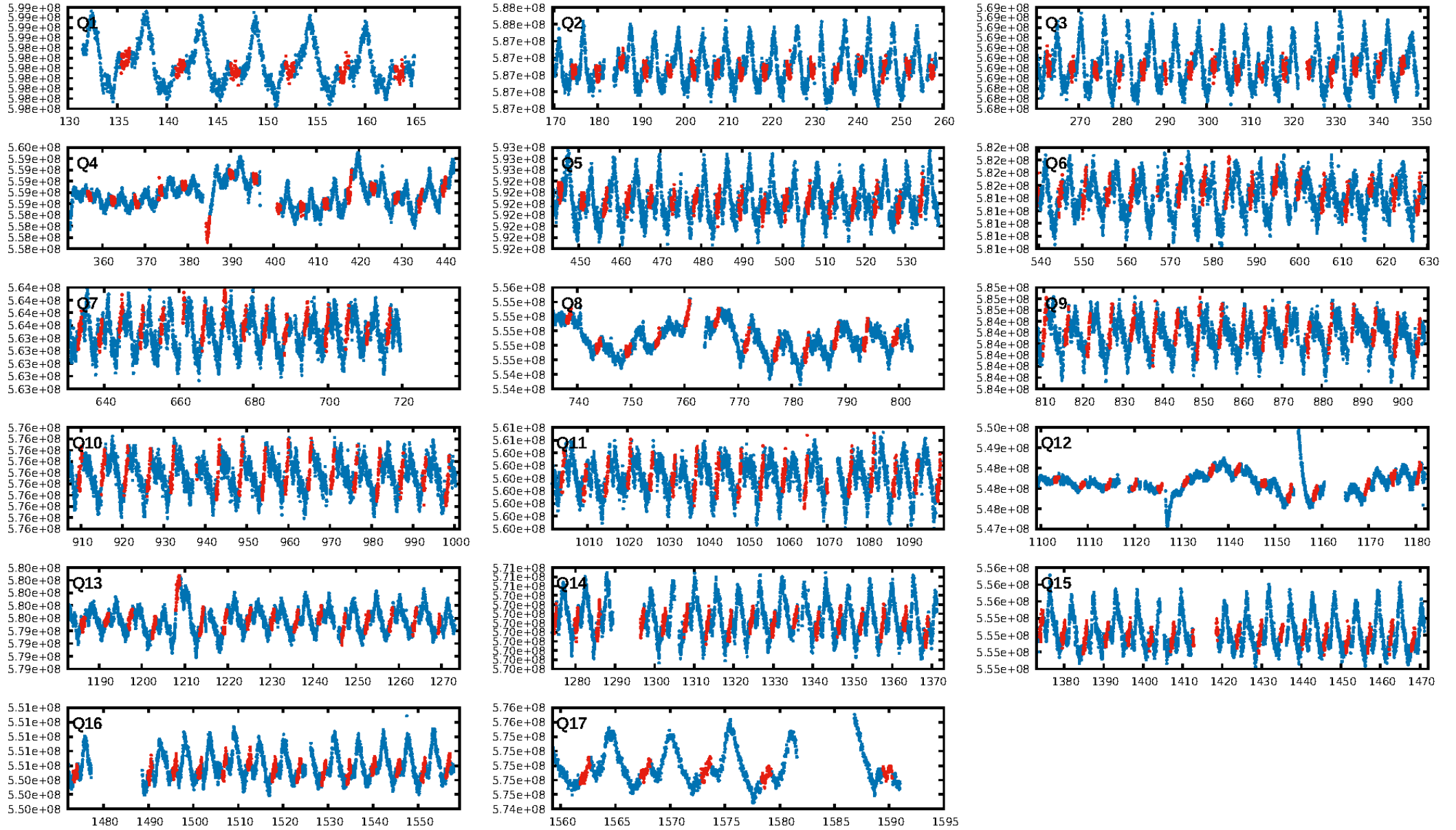
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.71e-15  
RollingBand-fgt: 1.00 [239/239]  
GhostDiagnostic-chr: 0.9421  
Centroid-sig: 0.0%  
Centroid-so: 1.448 arcsec [3.16σ]  
OotOffset-rm: 1.486 arcsec [2.59σ]  
KicOffset-rm: 1.738 arcsec [3.03σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.65 [11/17]  
DiffImageOverlap-fno: 1.00 [17/17]

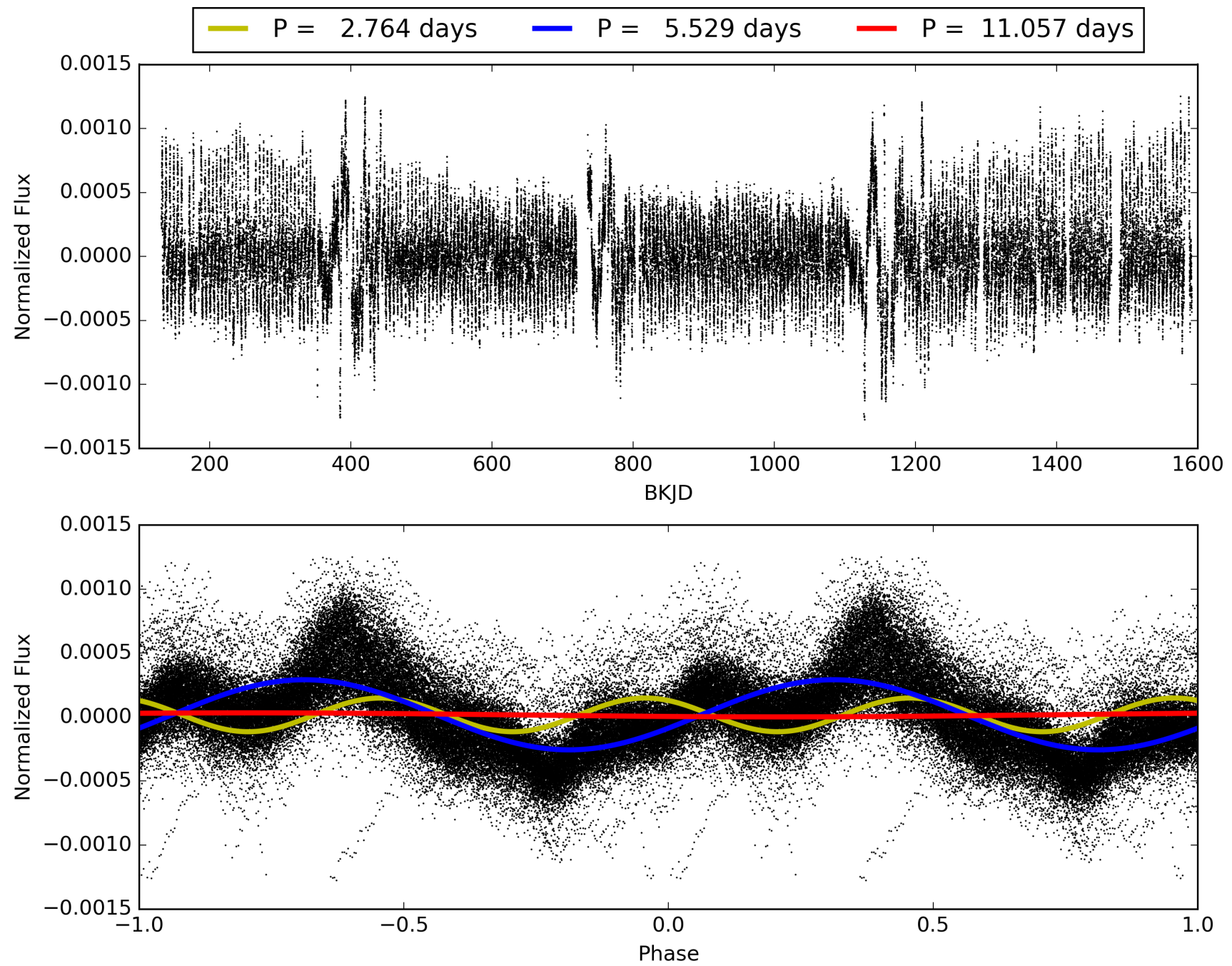
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 02:43:27 Z

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

# TCE 006428850-02, PDC Light Curves

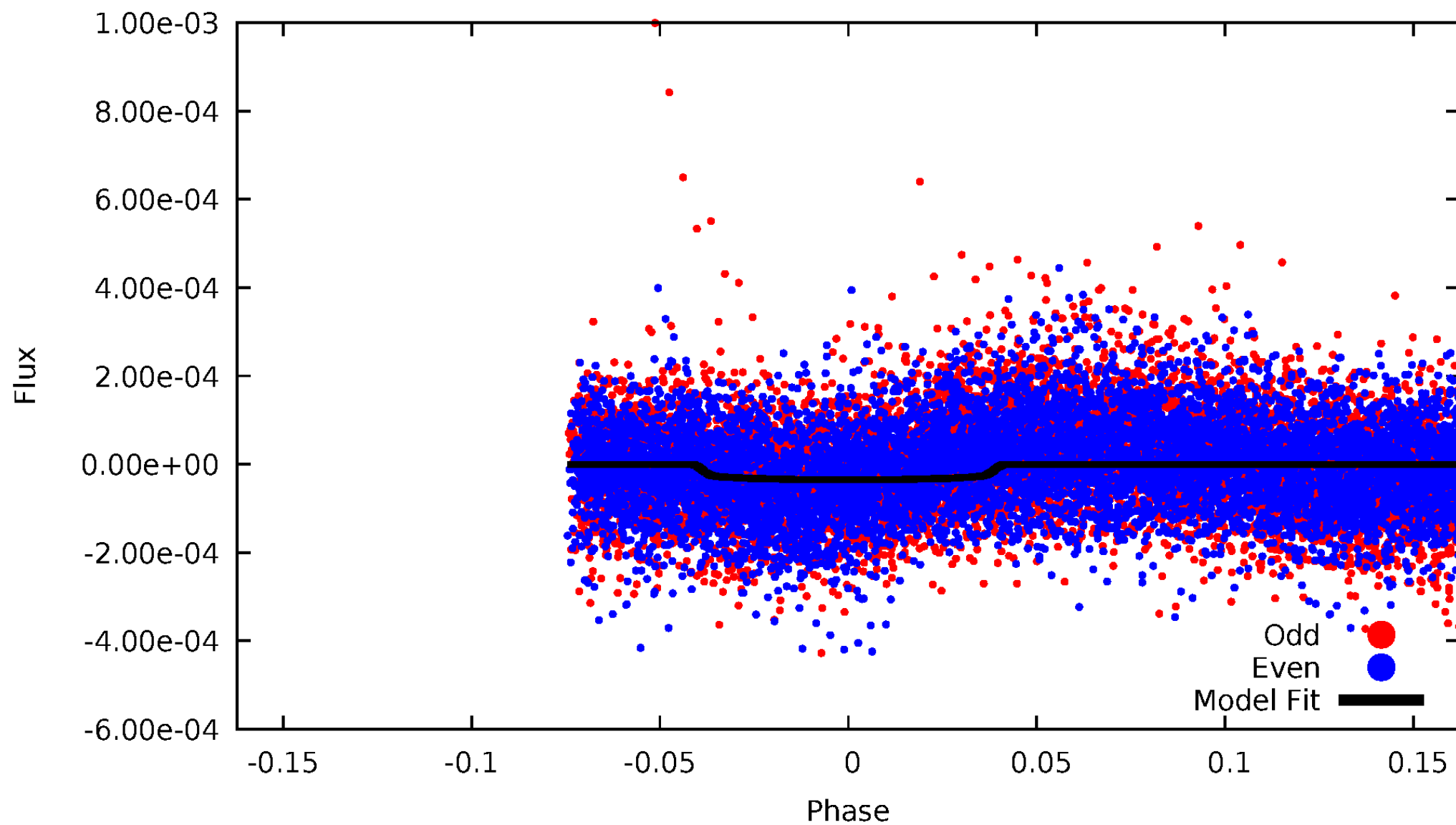


TCE 006428850-02



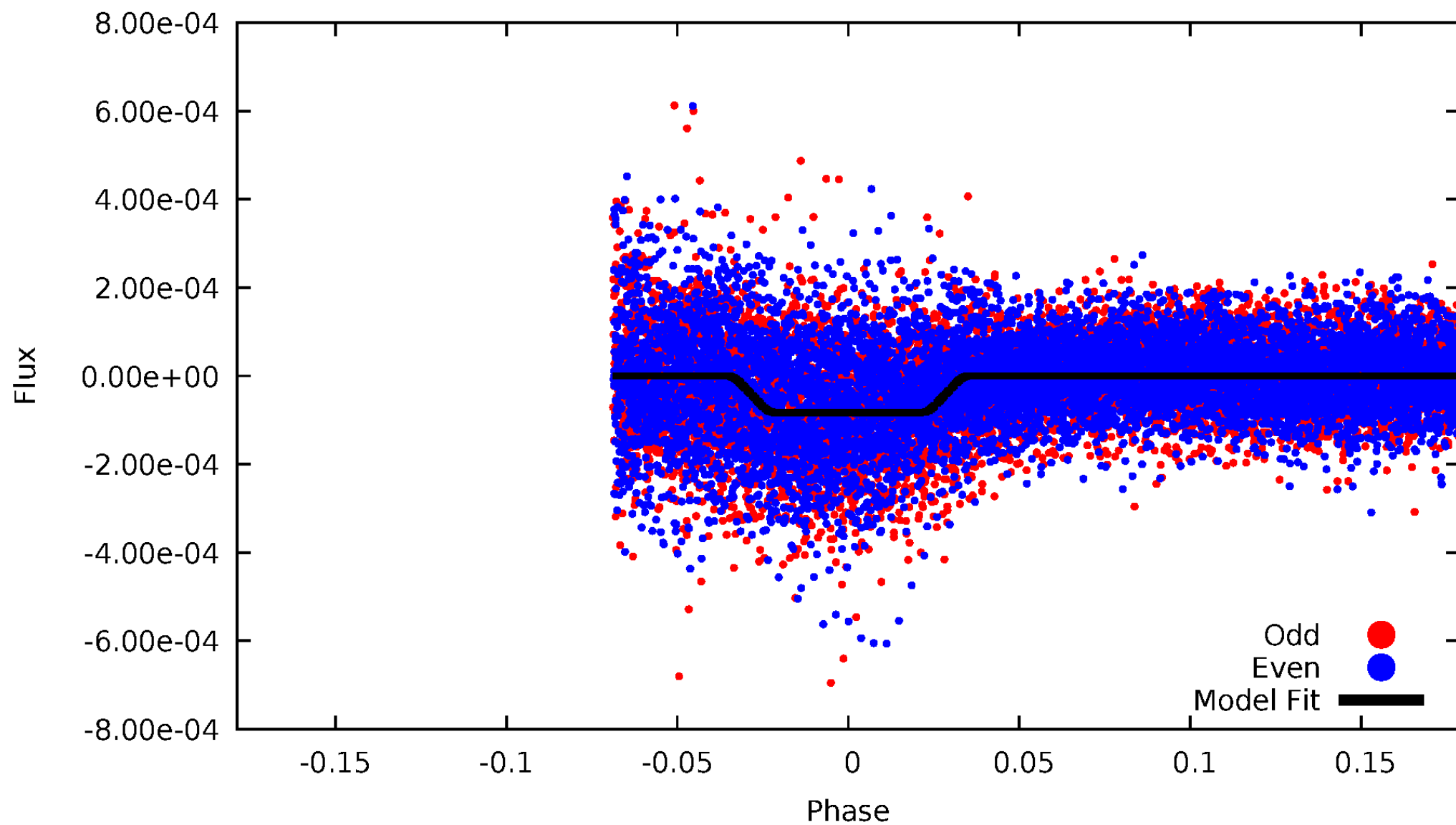
# DV Odd/Even

TCE 006428850-02



# ALT Odd/Even

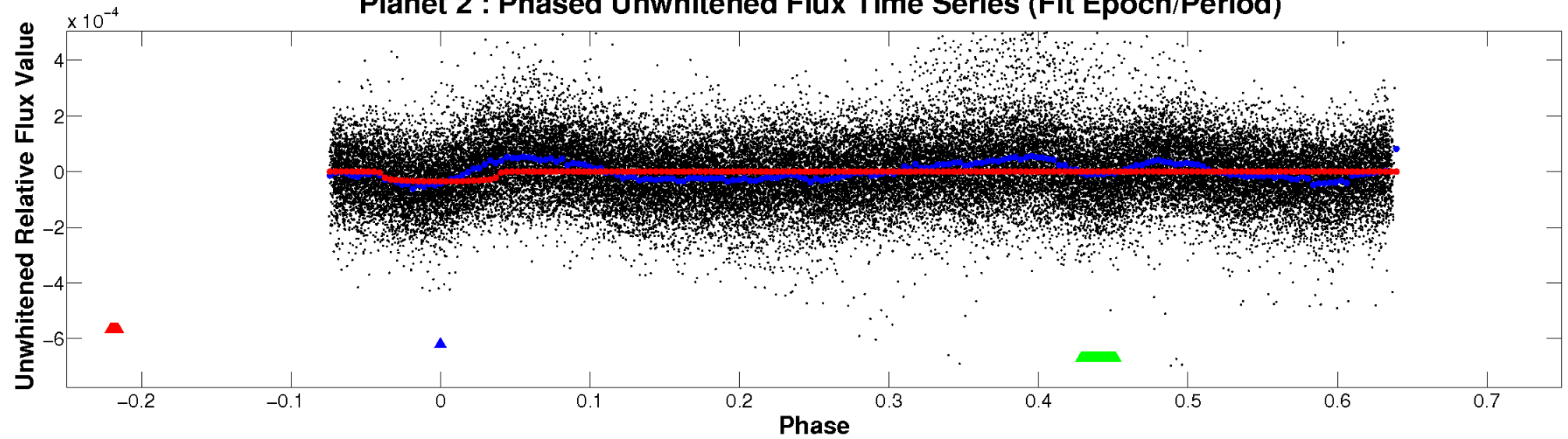
TCE 006428850-02



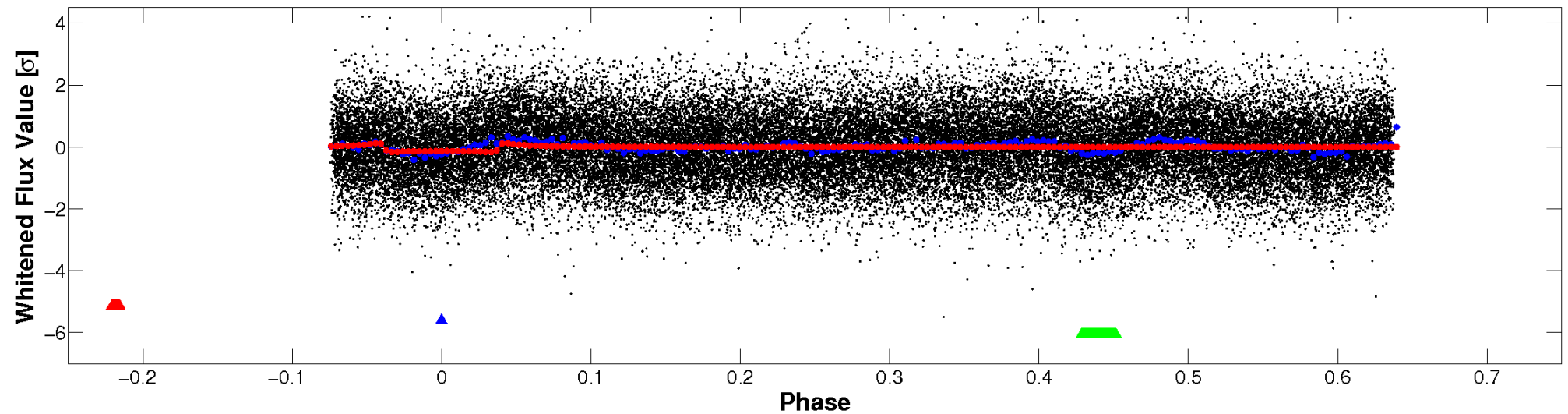


# Non-Whitened Vs. Whitened Light Curve

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

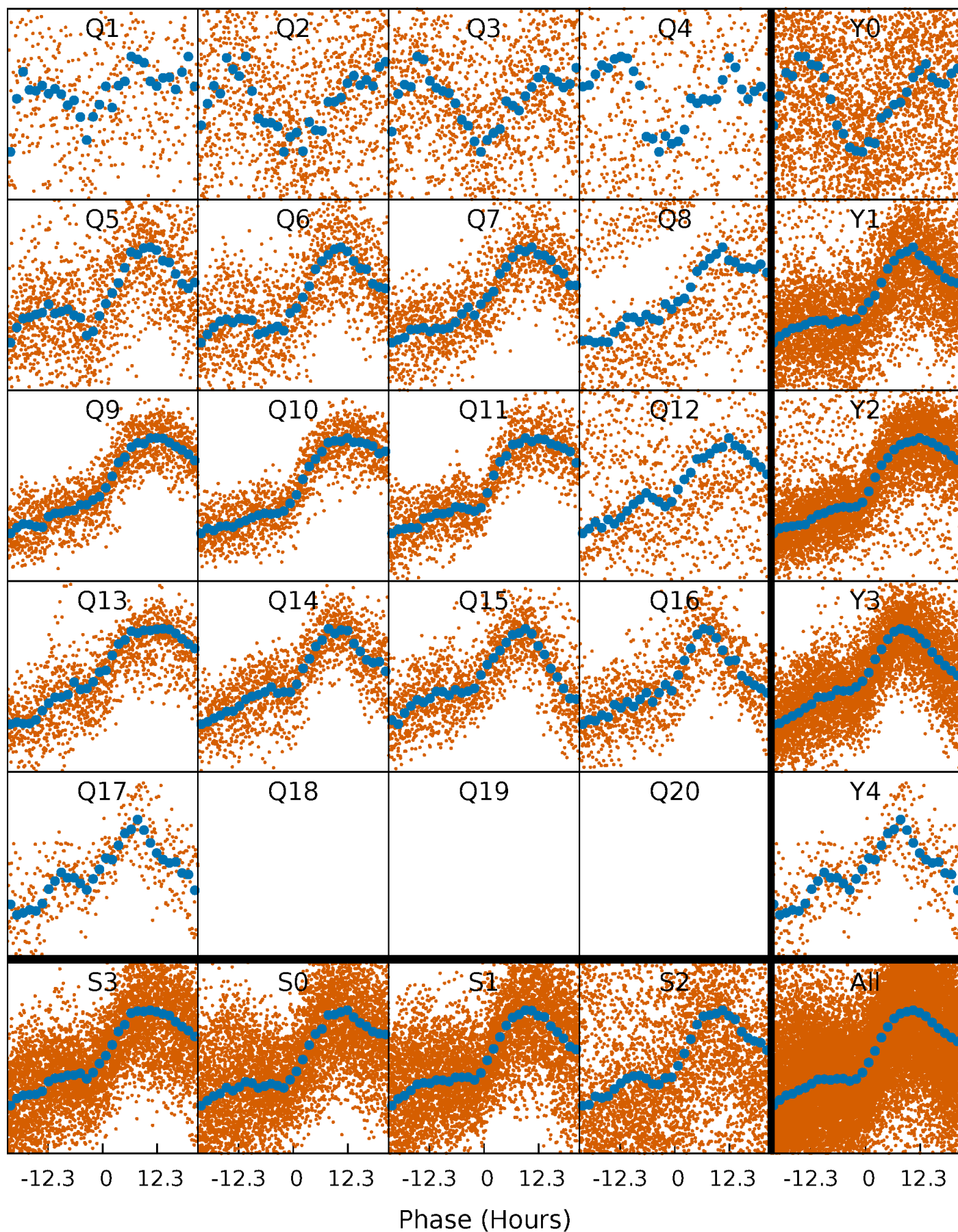


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



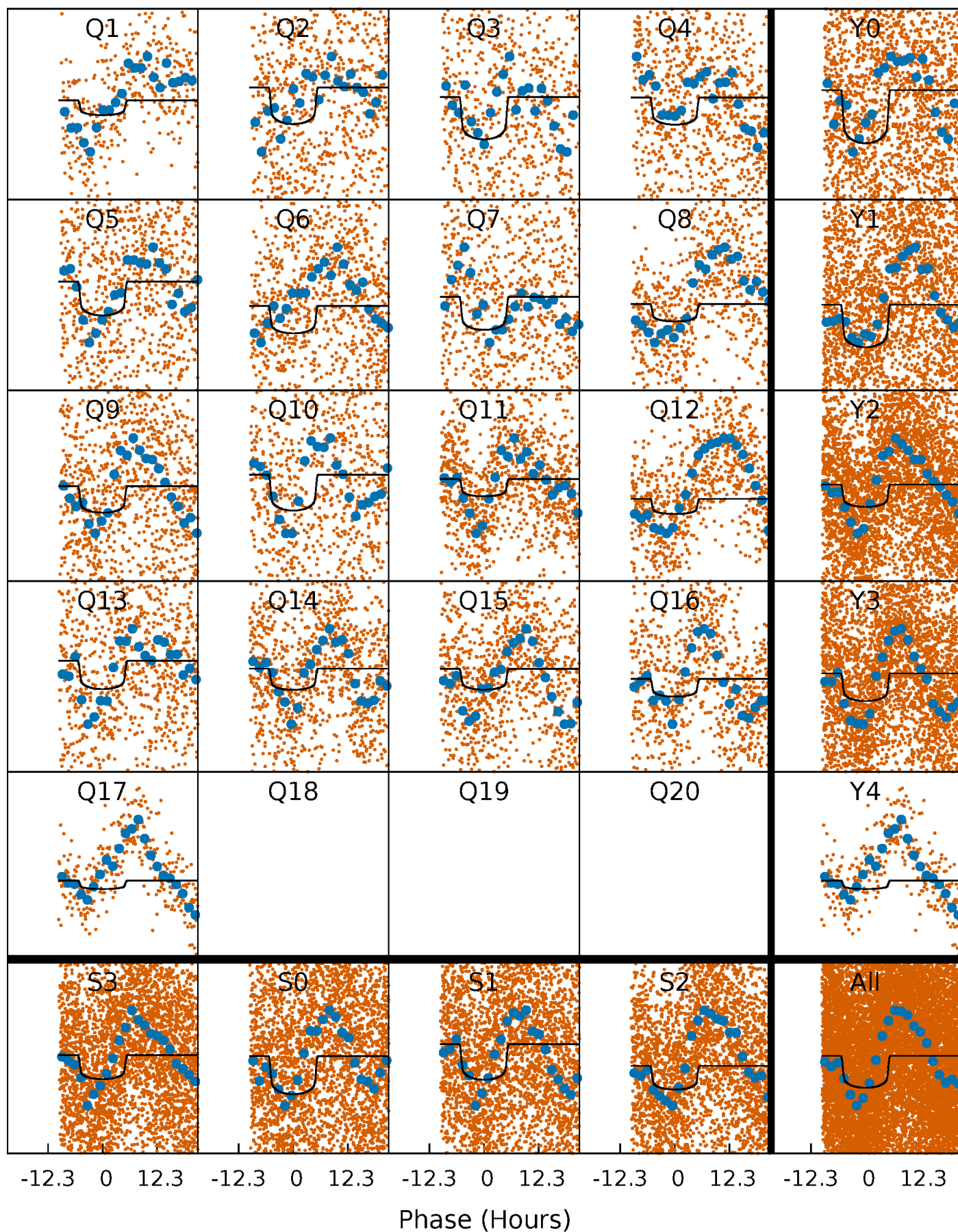
# PDC Quarter-Phased Transit Curves

TCE 006428850-02 P= 5.528712 Days  $T_0=135.805001$  (BKJD)



# DV Quarter-Phased Transit Curves

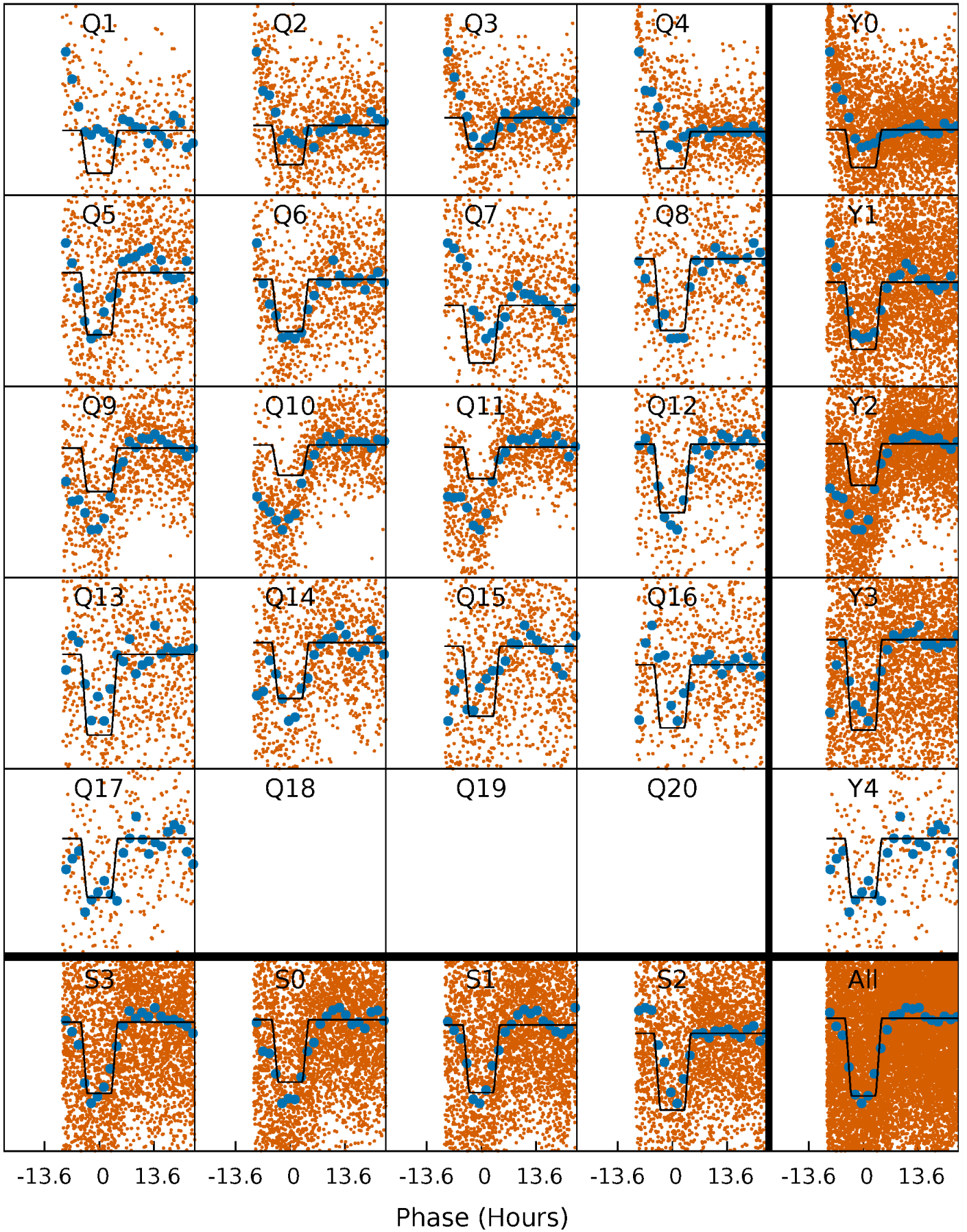
TCE 006428850-02   P= 5.528712 Days    $T_0=135.805001$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

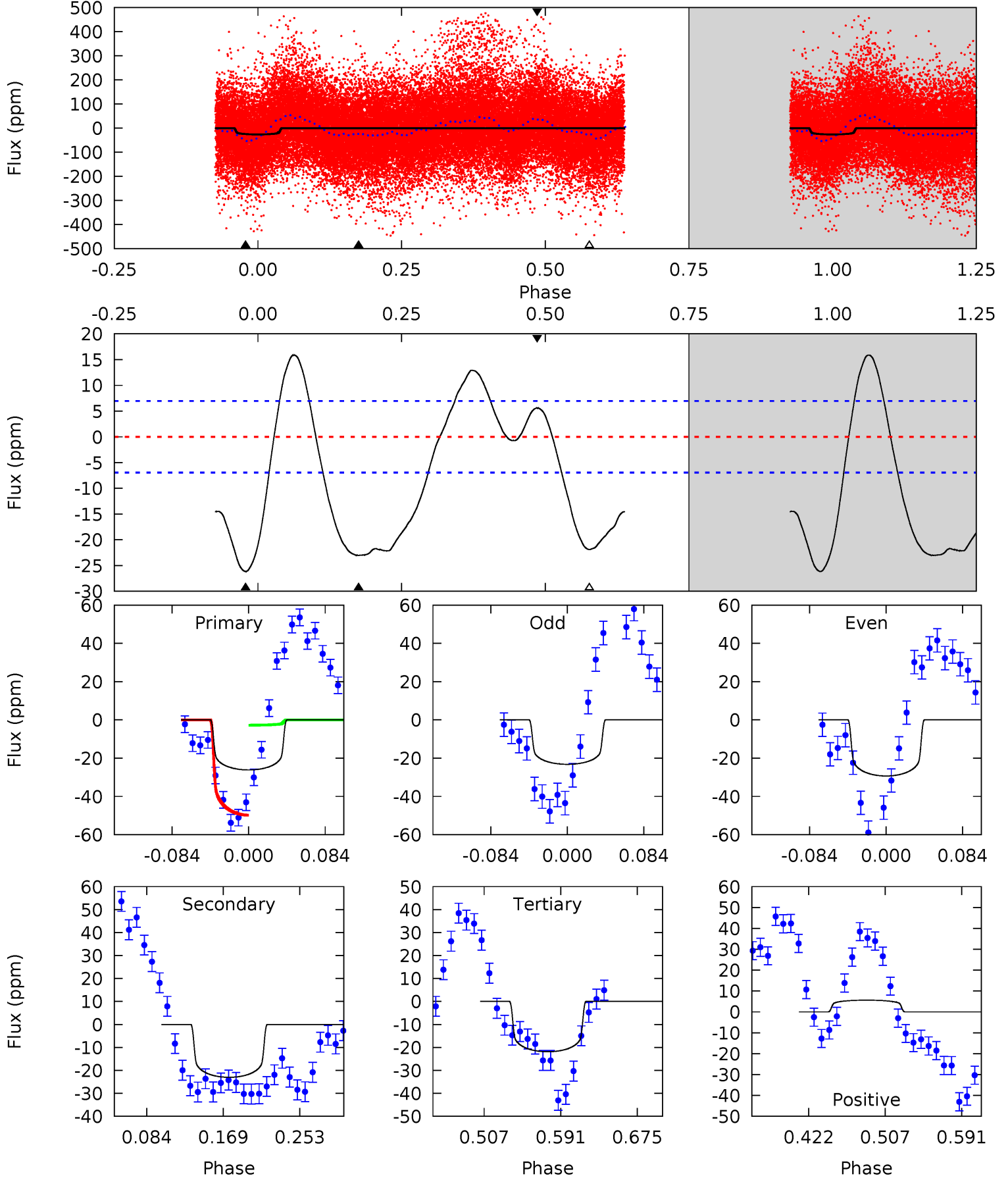
TCE 006428850-02   P= 5.528593 Days    $T_0=135.800557$  (BKJD)



# DV Model-Shift Uniqueness Test

006428850-02, P = 5.528712 Days, E = 130.276289 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
17.3	15.3	14.5	3.72	4.60	1.73	7.54	2.83	13.6	0.75	11.5	2.04	0.88	0.38	16.0

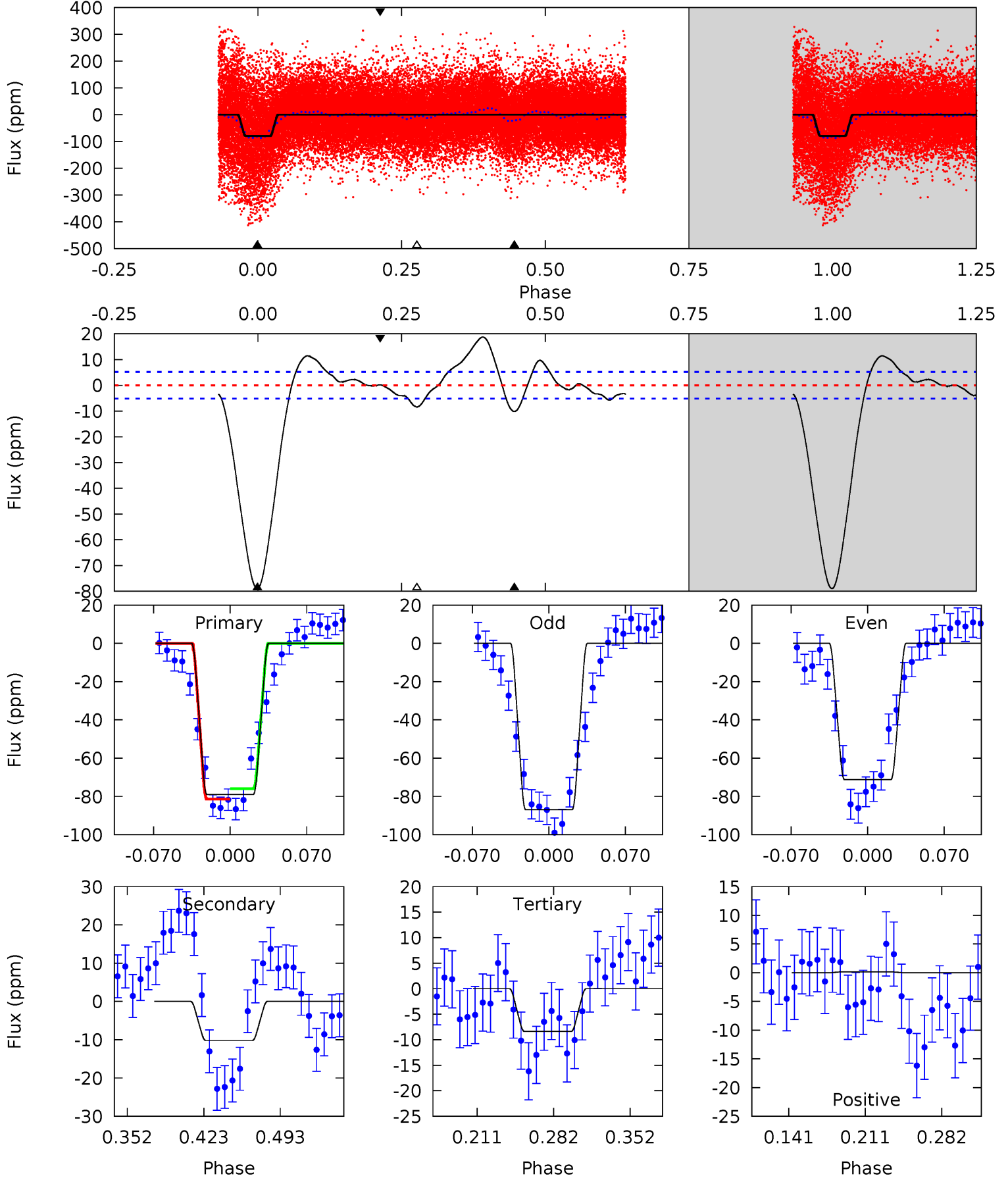




# Alt Model-Shift Uniqueness Test

006428850-02, P = 5.528593 Days, E = 130.271964 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
70.9	9.15	7.53	0.15	4.64	1.81	4.80	63.3	70.7	1.62	9.00	7.05	1.10	0.19	2.41



### Stellar Parameters For KIC 006428850

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7068^{+169}_{-232}$	$3.891^{+0.240}_{-0.111}$	$-0.220^{+0.300}_{-0.300}$	$2.365^{+0.481}_{-0.721}$	$1.584^{+0.221}_{-0.271}$	$0.169^{+0.264}_{-0.063}$
	+2%/-3%	+6%/-3%	+136%/-136%	+20%/-30%	+14%/-17%	+157%/-37%
Source	PHO1	FLK73	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 006428850-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-23 \pm 2$	$1.61^{+0.24}_{-0.28}$	$2464^{+148}_{-185}$	$6024^{+323}_{-316}$	$25^{+11}_{-7}$
Alt.	$-10 \pm 1$	$2.30^{+0.34}_{-0.38}$	$2475^{+159}_{-191}$	$4309^{+183}_{-152}$	$5.412^{+2.173}_{-1.362}$

$T_{\text{max}}$  = 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

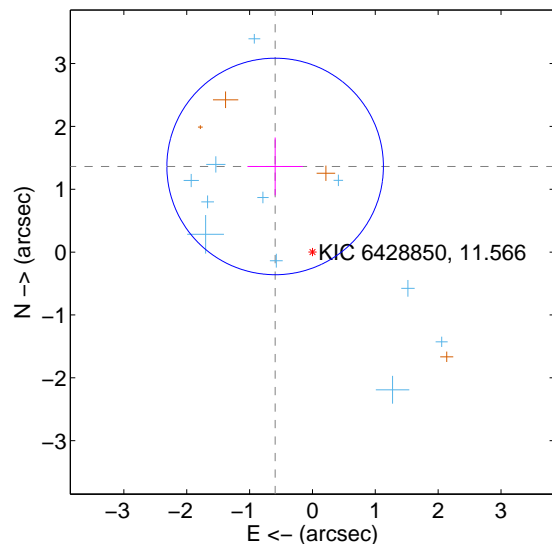
Supplemental centroid analysis for 006428850-02. **Kepler magnitude: 11.57.** Transit SNR 10.97

There are 11 quarters with good PRF difference image offsets

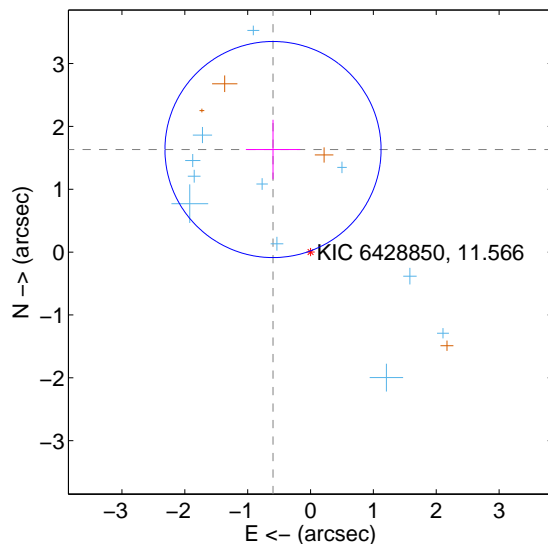
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.486 \pm 0.574$	2.59	$0.593 \pm 0.440$	$1.363 \pm 0.460$
PRF-fit source offset from KIC position	<b><math>1.738 \pm 0.573</math></b>	<b>3.03</b>	$0.597 \pm 0.432$	$1.632 \pm 0.473$
photometric centroid source offset	<b><math>1.45 \pm 0.46</math></b>	<b>3.16</b>	$1.39 \pm 0.46$	$0.39 \pm 0.40$

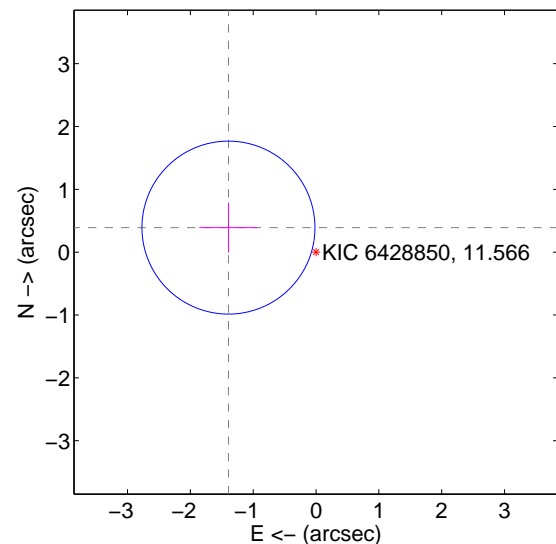
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

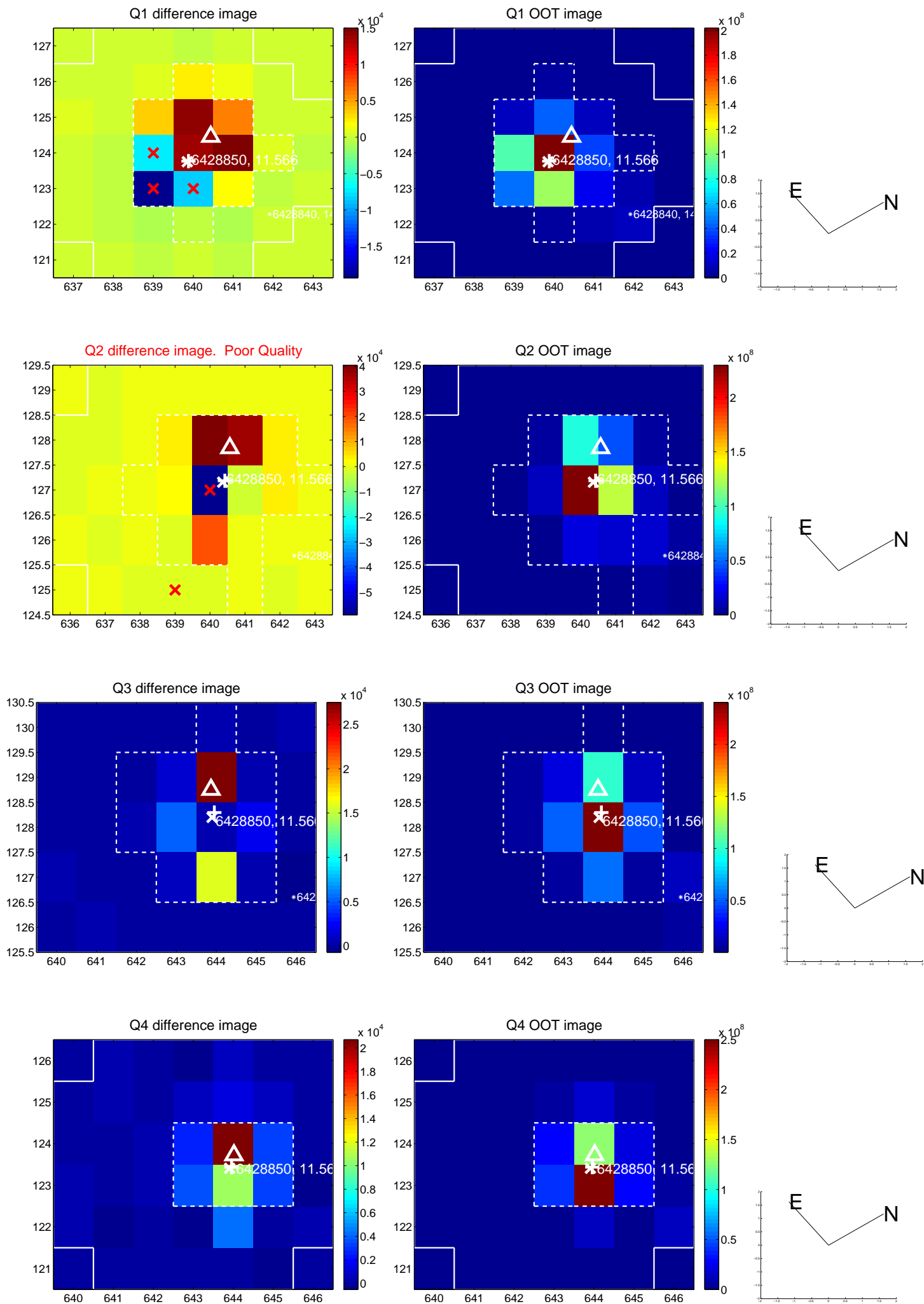


offset from photometric centroids

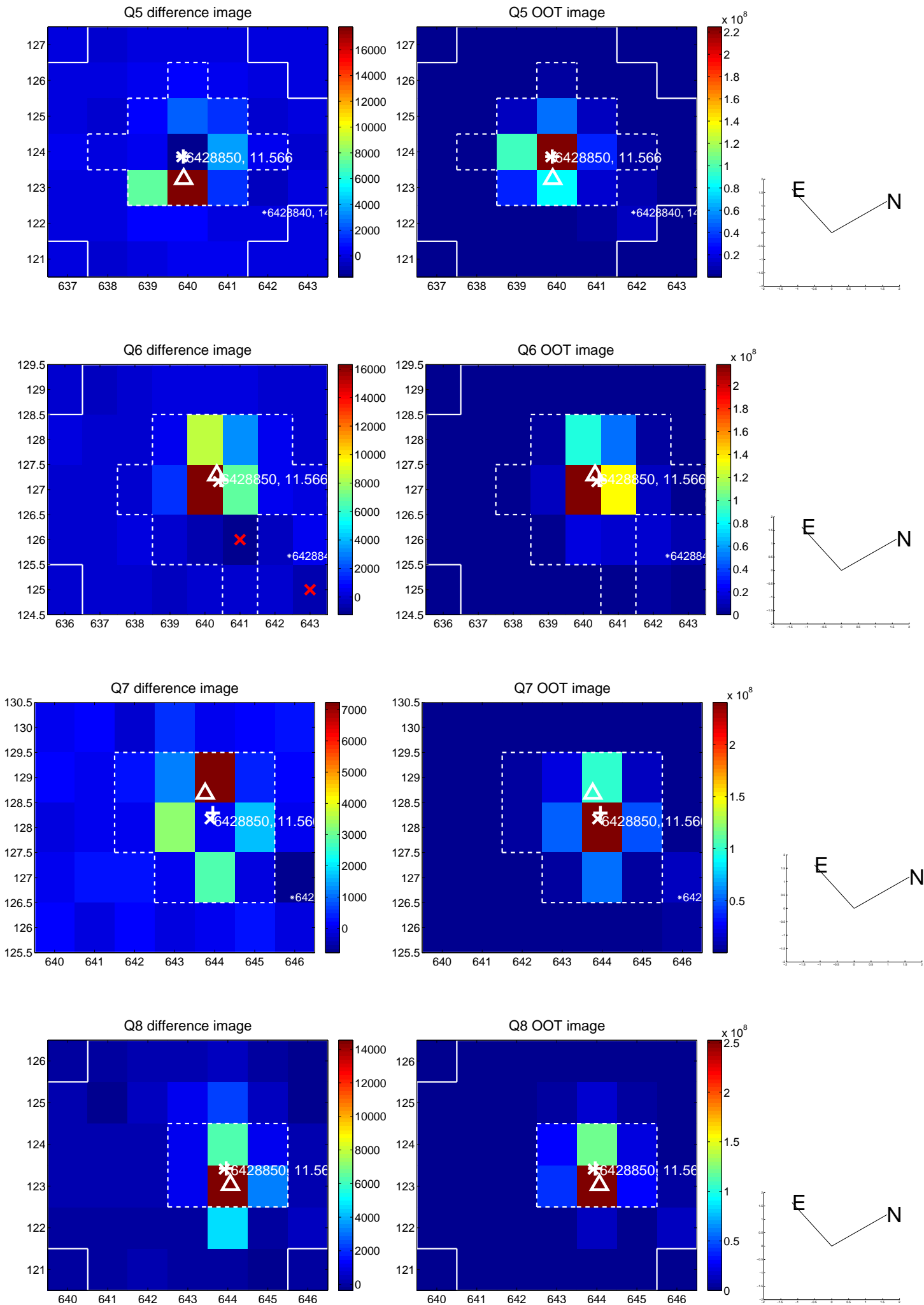


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

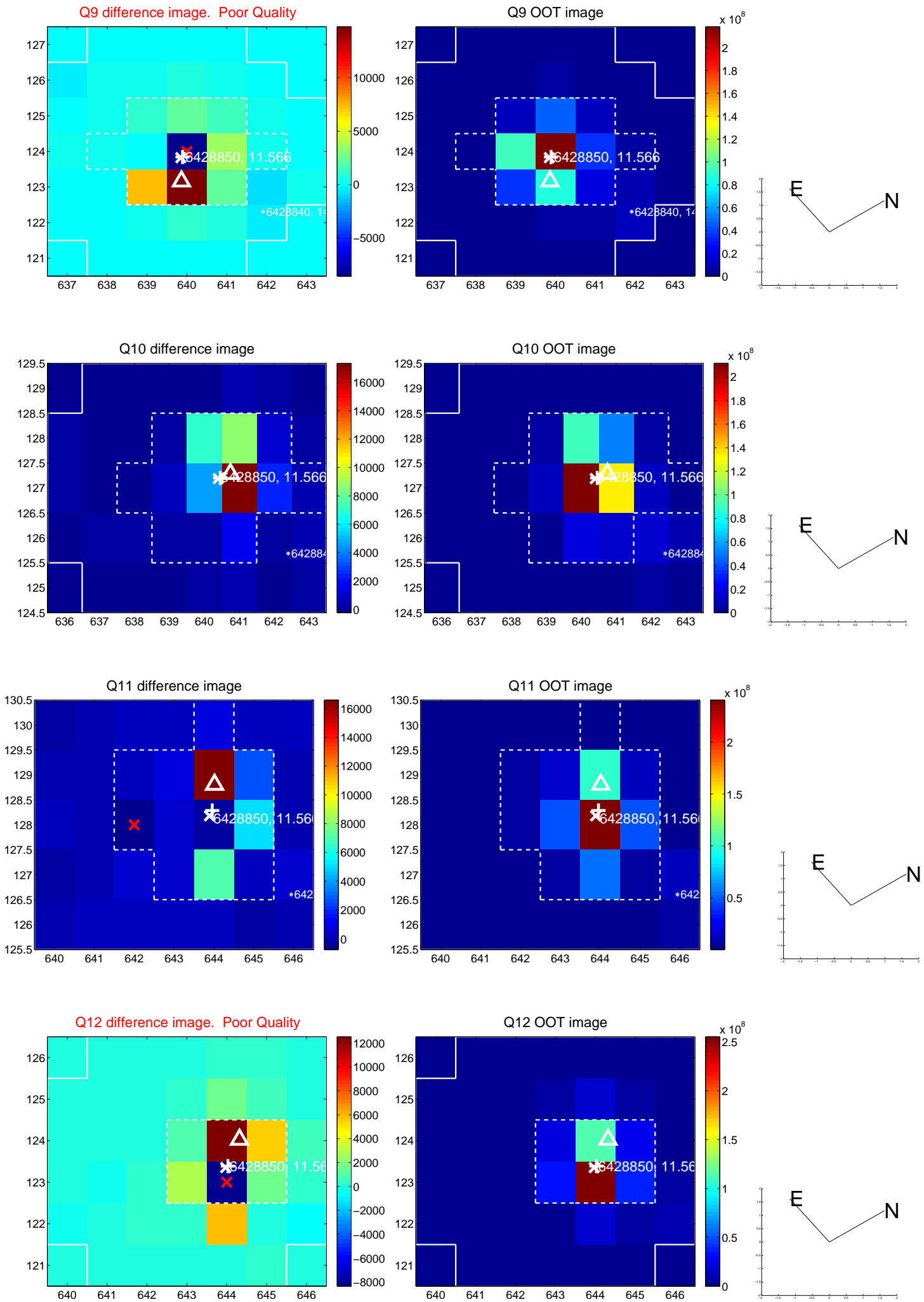


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

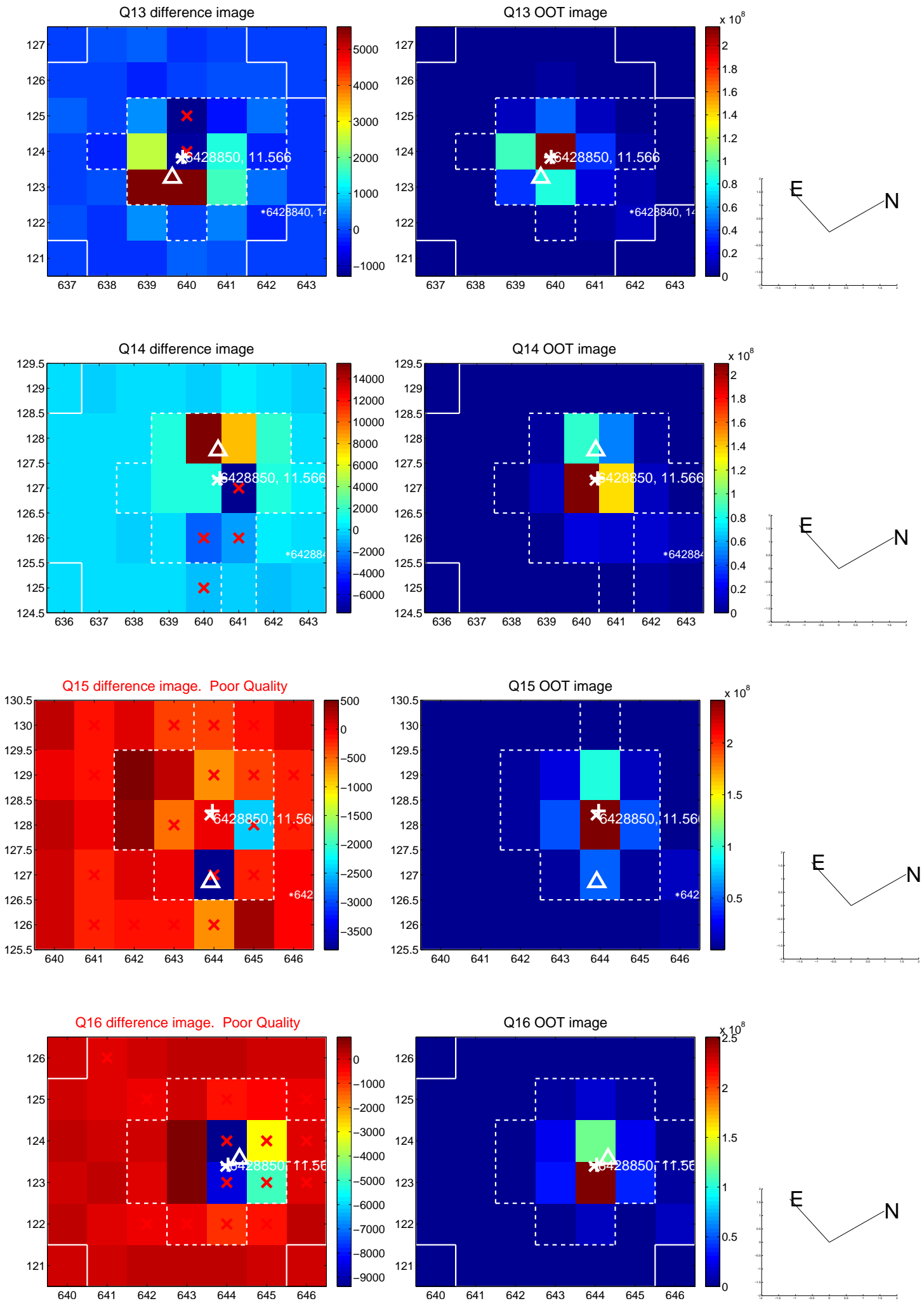




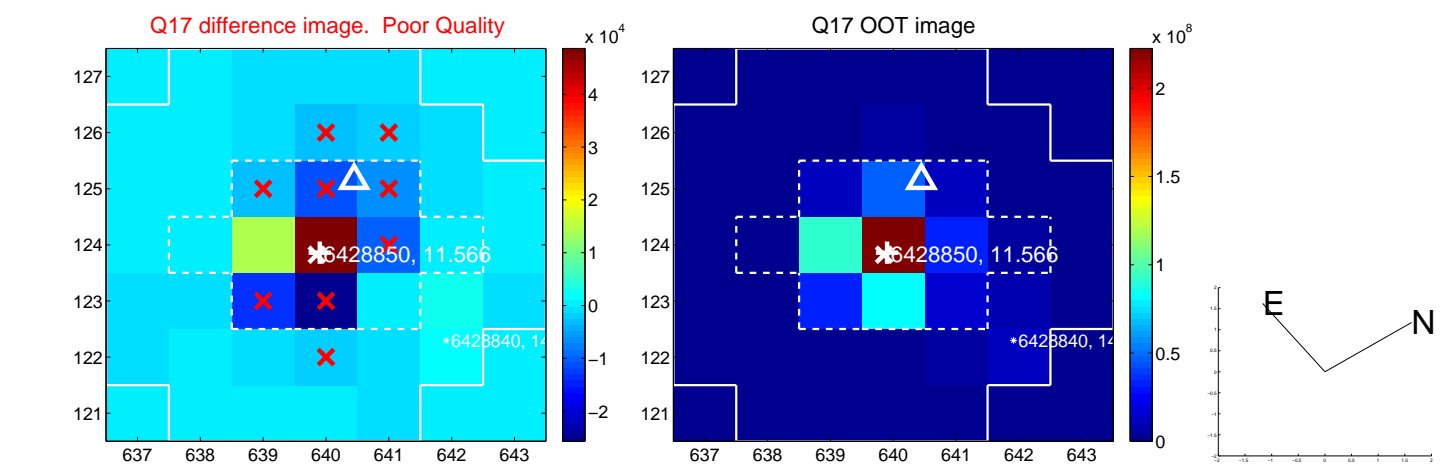
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



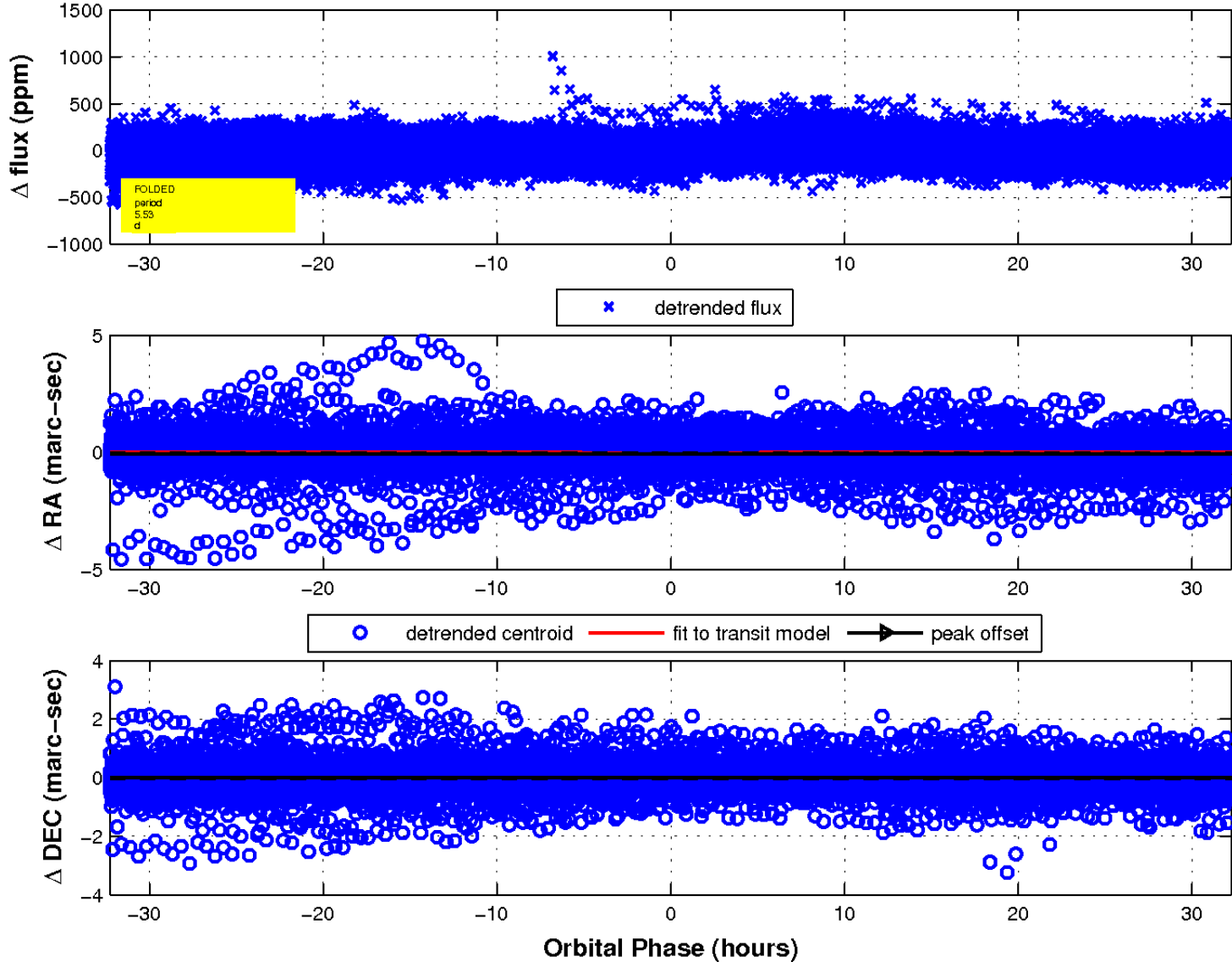
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

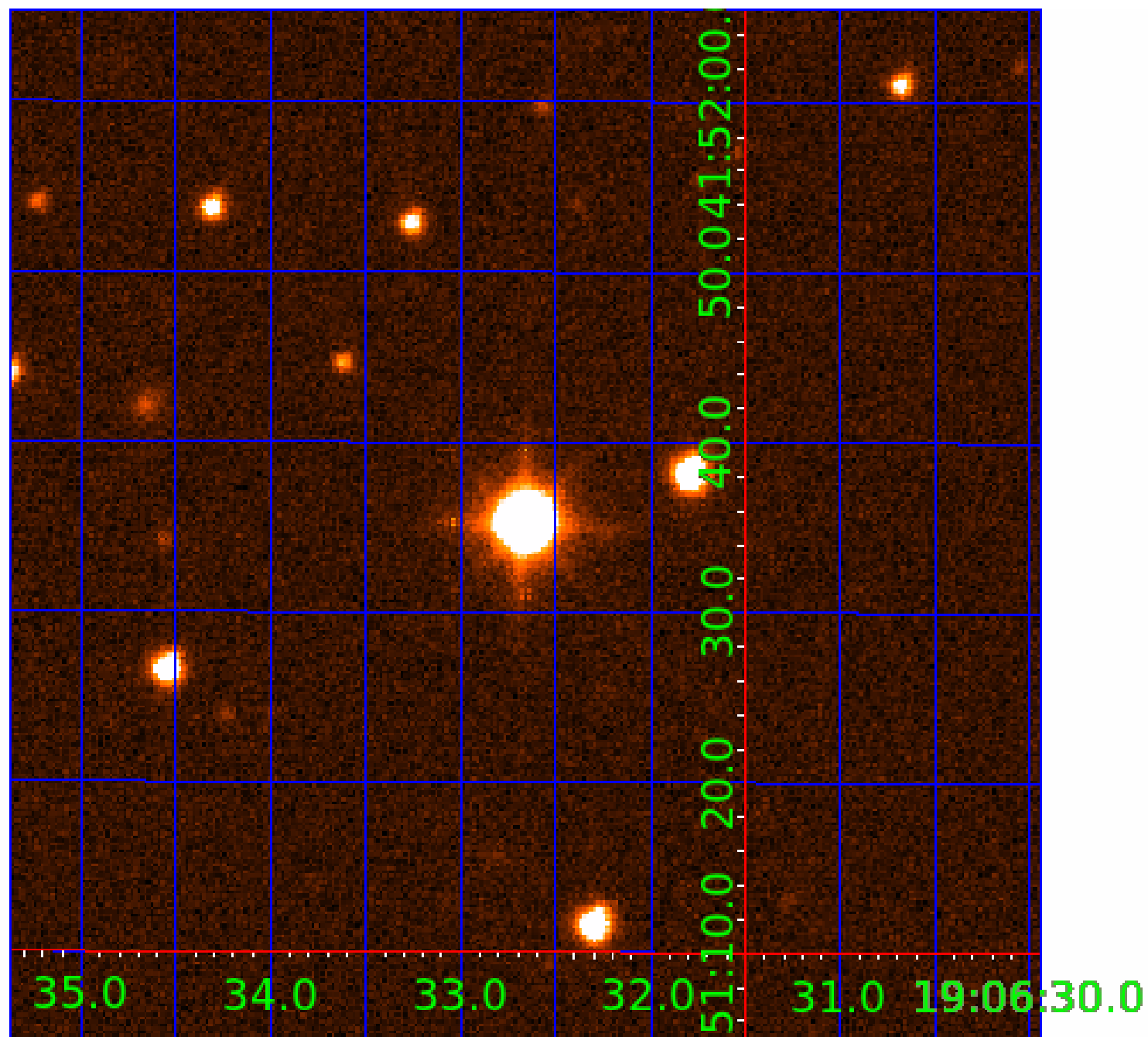


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



# KIC 006428850

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006428850-01	OBS	No	5.528606	134.612914	56.2	12.737	13.4	12.9	2.37	7068	2.43	2453.66
006428850-02	OBS	No	5.528712	135.805001	35.0	10.759	12.4	11.0	2.37	7068	1.66	2453.59
006428850-03	OBS	No	5.528226	132.773361	40.2	6.842	12.3	14.3	2.37	7068	1.75	2453.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006428850-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV
006428850-02	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV—SAME_NTL_PERIOD
006428850-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_FEW_DIFFS

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

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

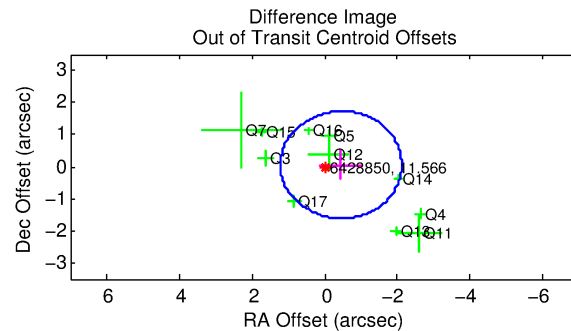
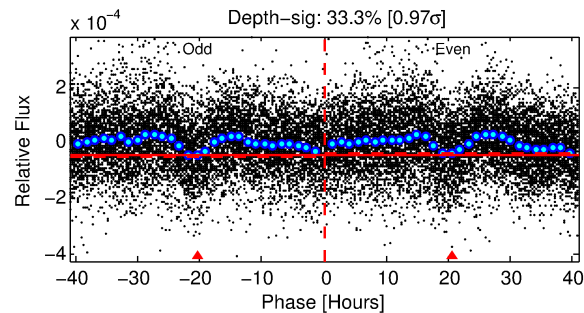
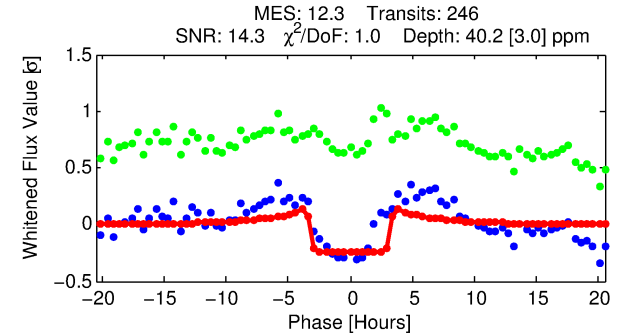
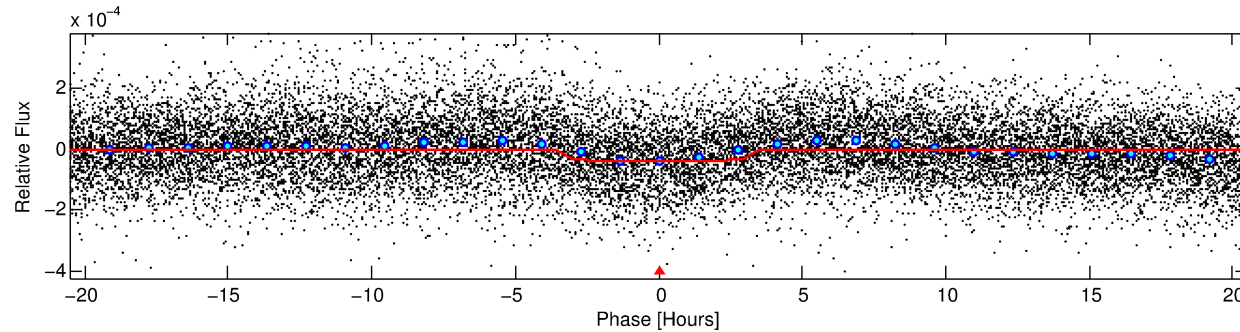
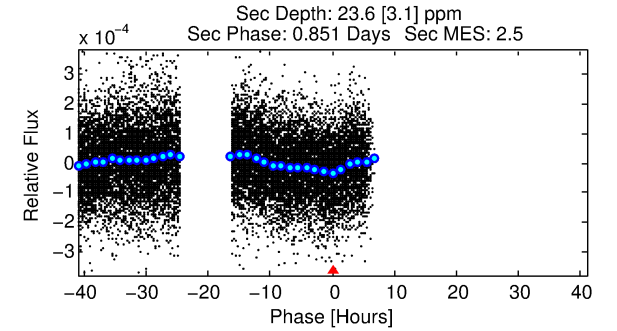
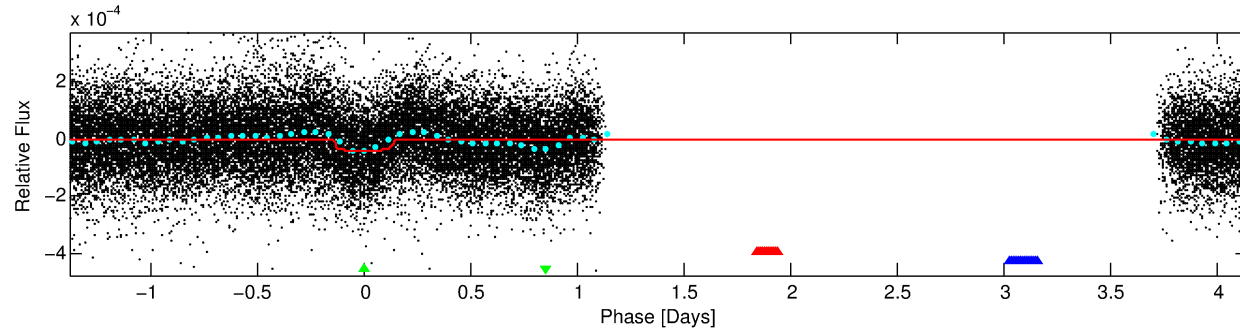
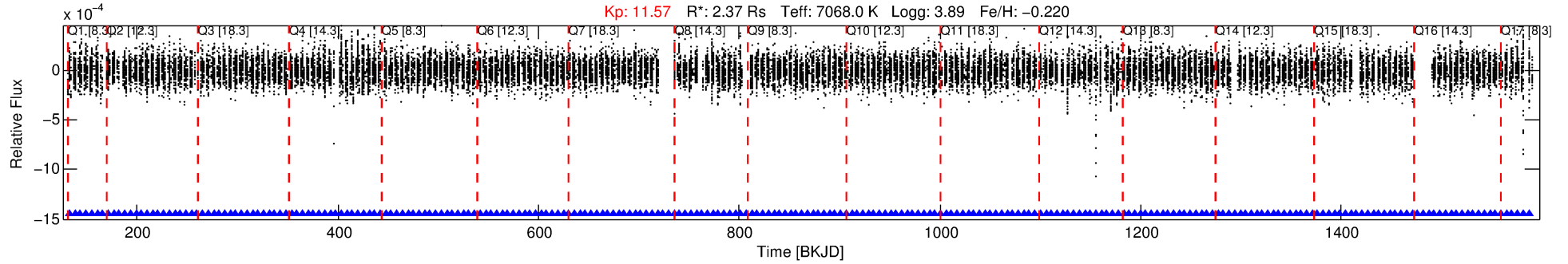
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006428850-03

No Significant Match Found

# DV One-Page Summary

KIC: 6428850 Candidate: 3 of 3 Period: 5.528 d



## DV Fit Results:

Period = 5.52823 [0.00003] d  
Epoch = 132.7734 [0.0038] BKJD  
Rp/R\* = 0.0068 [0.0009]  
a/R\* = 2.94 [1.96]  
b = 0.90 [0.16]  
Seff = 2453.88 [1081.59]  
Teq = 1795 [198] K  
Rp = 1.75 [0.58] Re  
a = 0.0714 [0.0196] AU  
Ag = 21.73 [11.15] [1.86σ]  
Teffp = 5991 [482] K [8.05σ]

## DV Diagnostic Results:

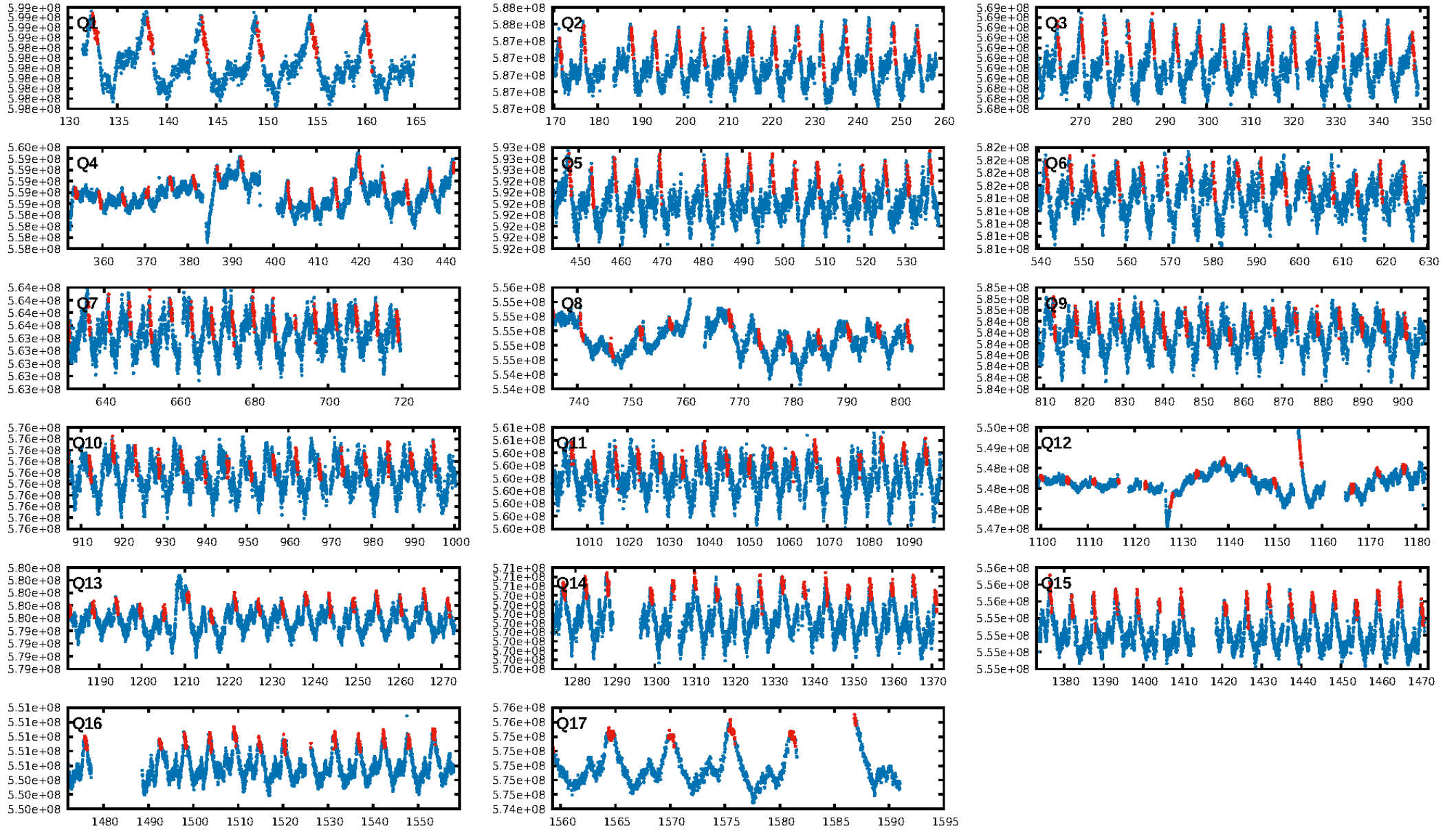
ShortPeriod-sig: N/A  
LongPeriod-sig: 0.1% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 5.14e-17  
RollingBand-fgt: 1.00 [235/235]  
GhostDiagnostic-chr: -1.721  
Centroid-sig: 1.2%  
Centroid-so: 0.475 arcsec [1.16σ]  
OotOffset-rm: 0.457 arcsec [0.82σ]  
KicOffset-rm: 0.583 arcsec [1.12σ]  
OotOffset-st: 1/4/3/3 [11]  
KicOffset-st: 1/4/3/3 [11]  
DiffImageQuality-fgm: 0.09 [1/11]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 02:43:34 Z

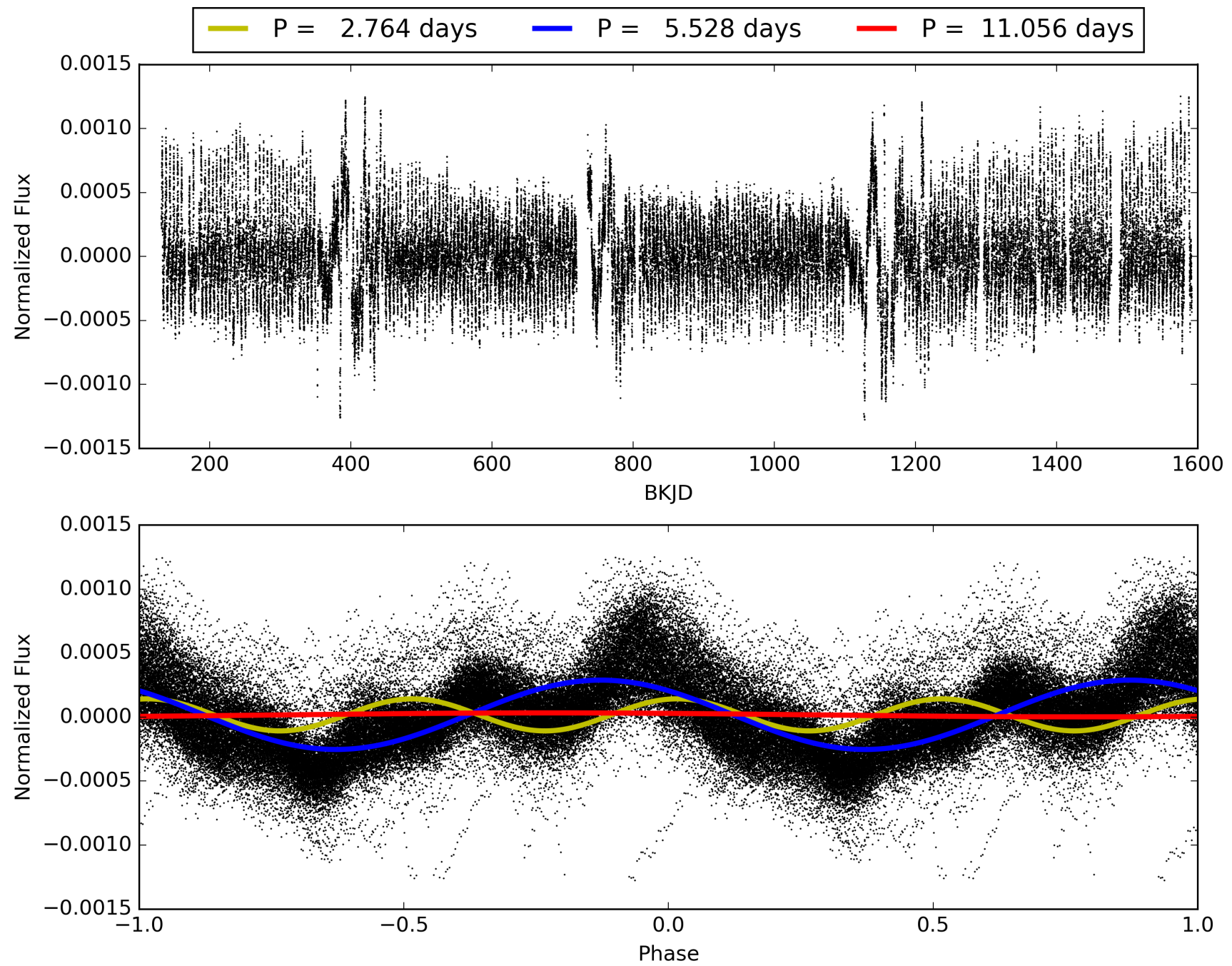
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 006428850-03, PDC Light Curves

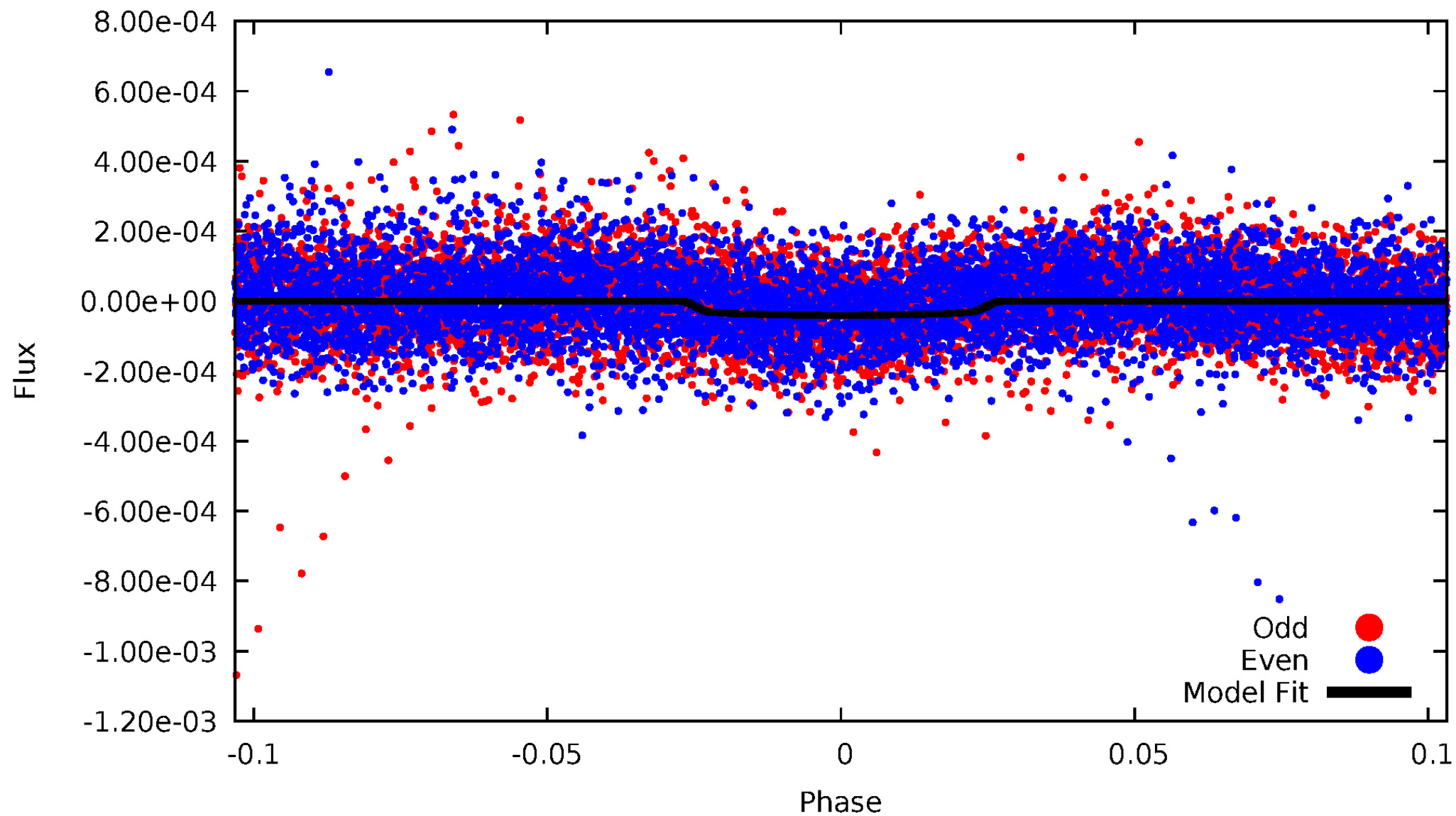


TCE 006428850-03



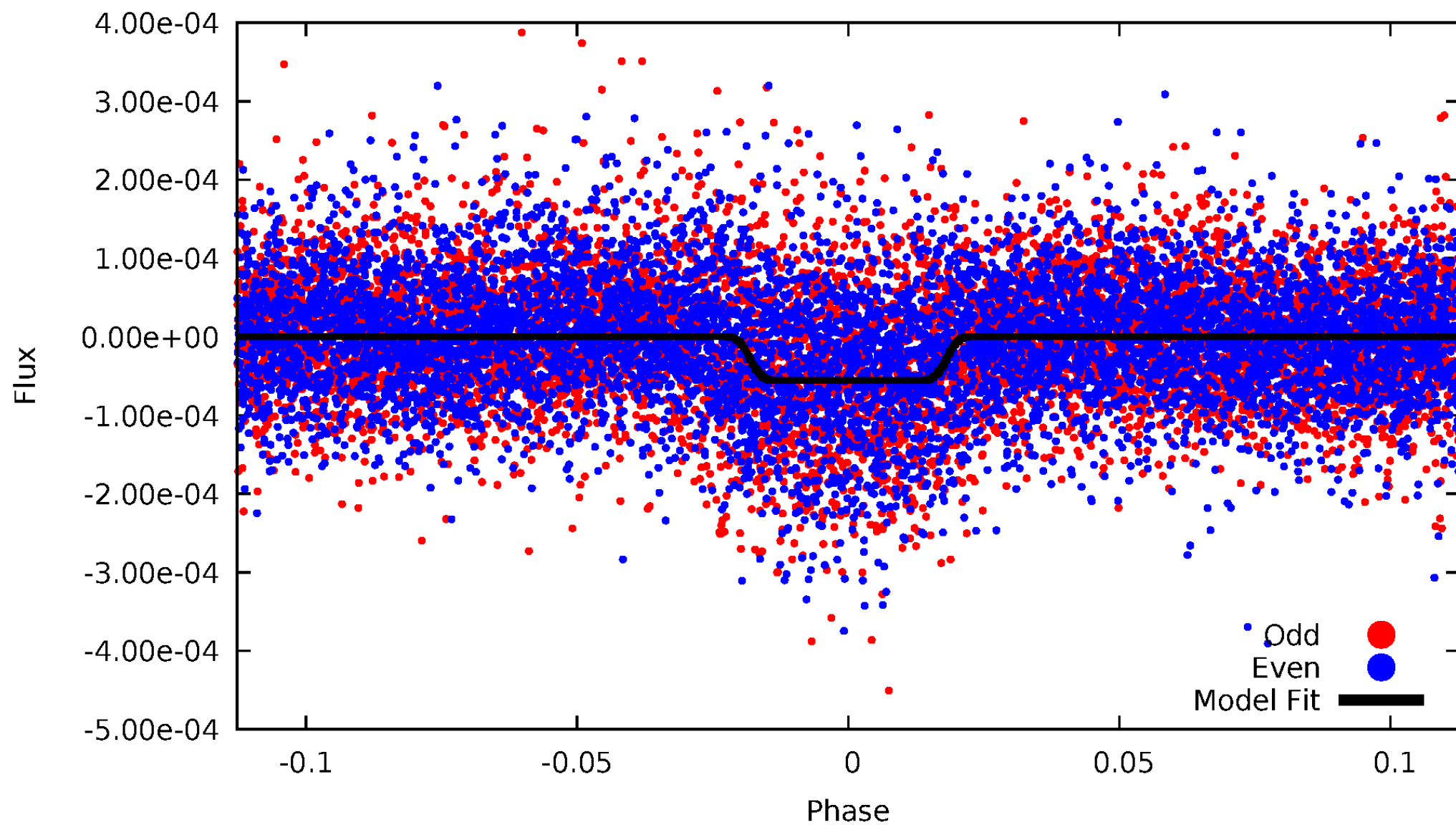
DV Odd/Even

TCE 006428850-03



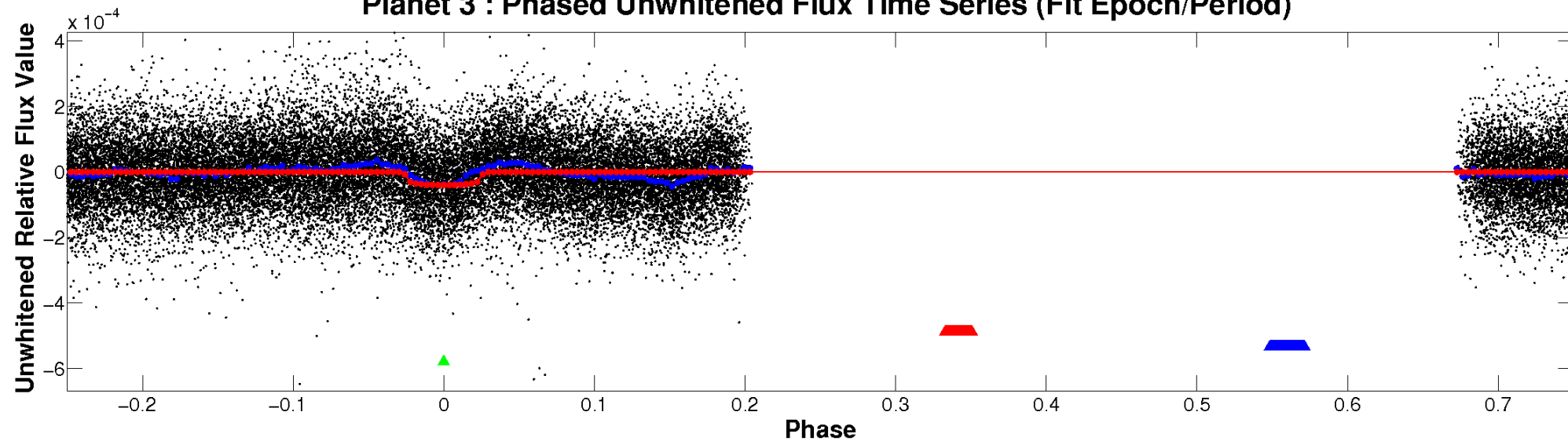
# ALT Odd/Even

TCE 006428850-03

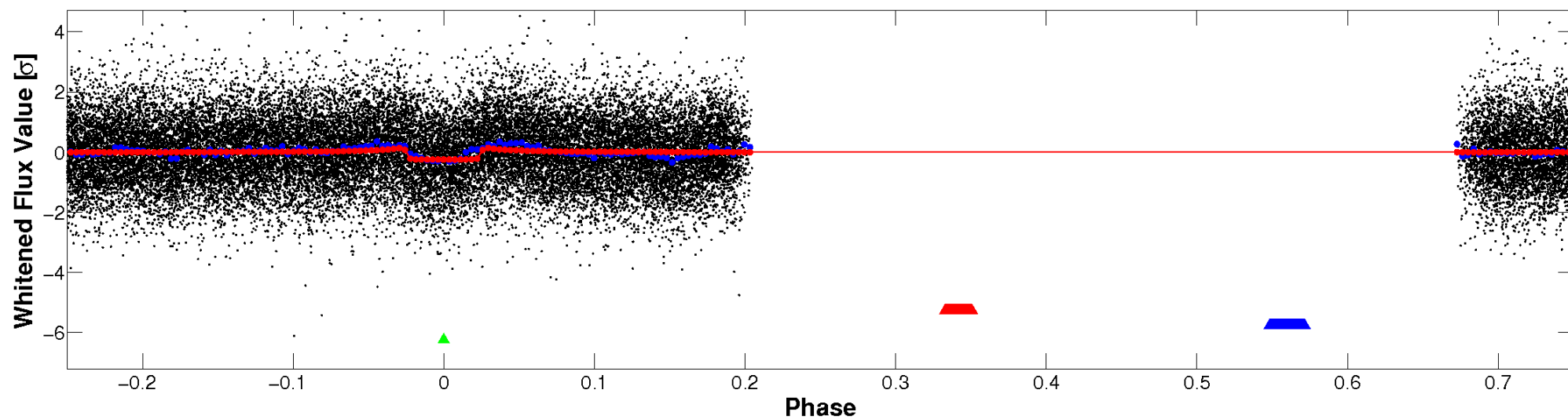


# Non-Whitened Vs. Whitened Light Curve

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



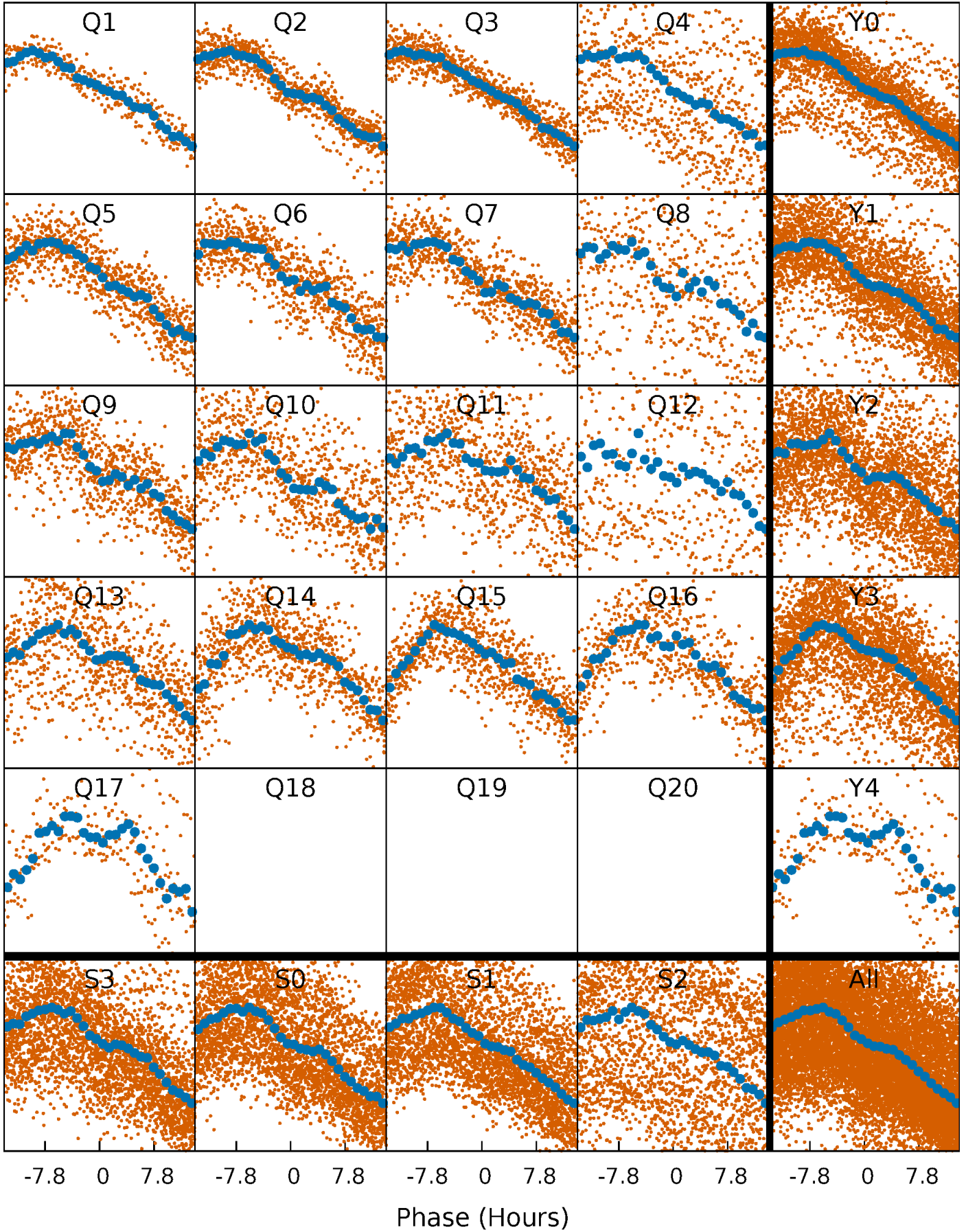
## Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)





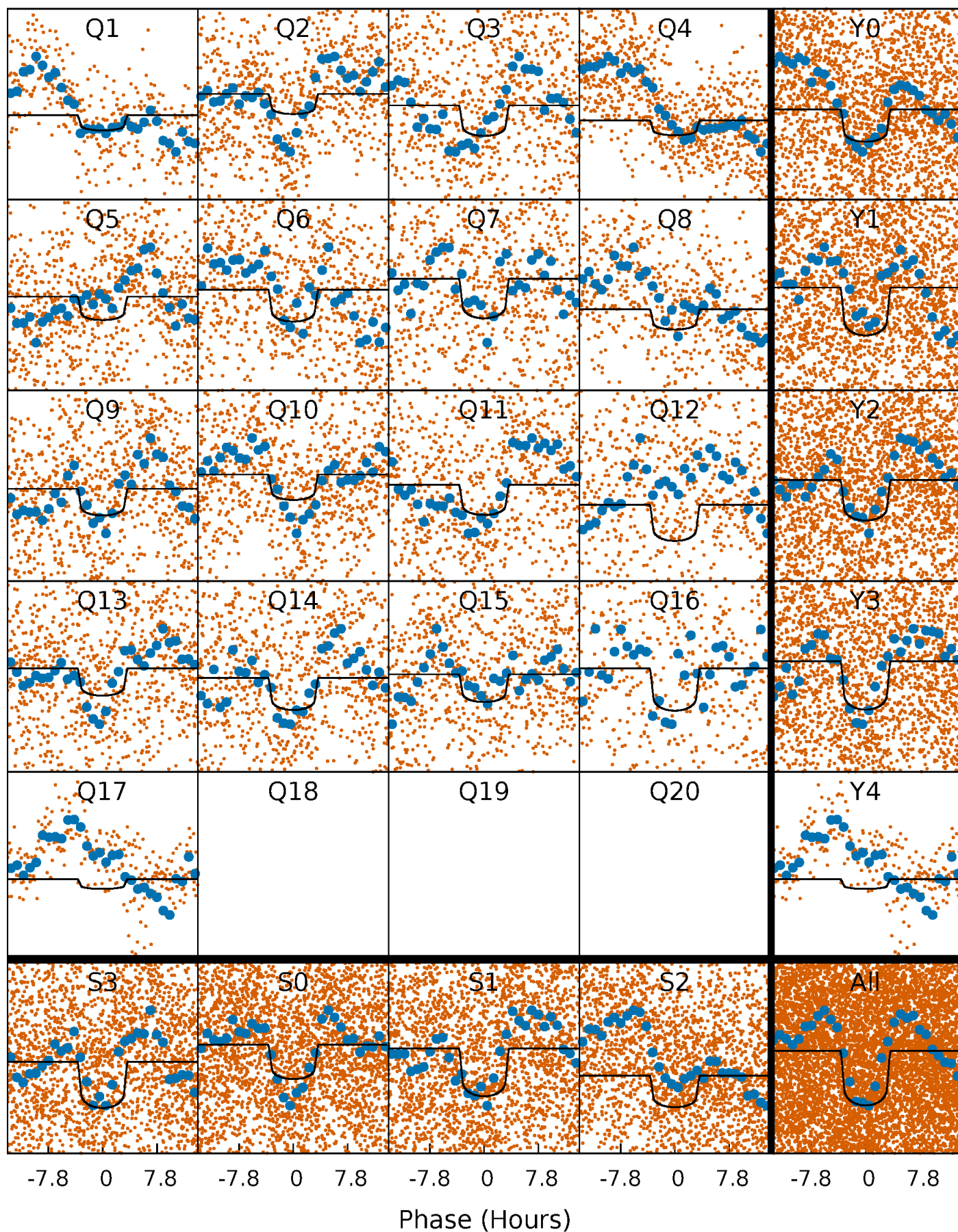
# PDC Quarter-Phased Transit Curves

TCE 006428850-03   P= 5.528226 Days    $T_0=132.773361$  (BKJD)



# DV Quarter-Phased Transit Curves

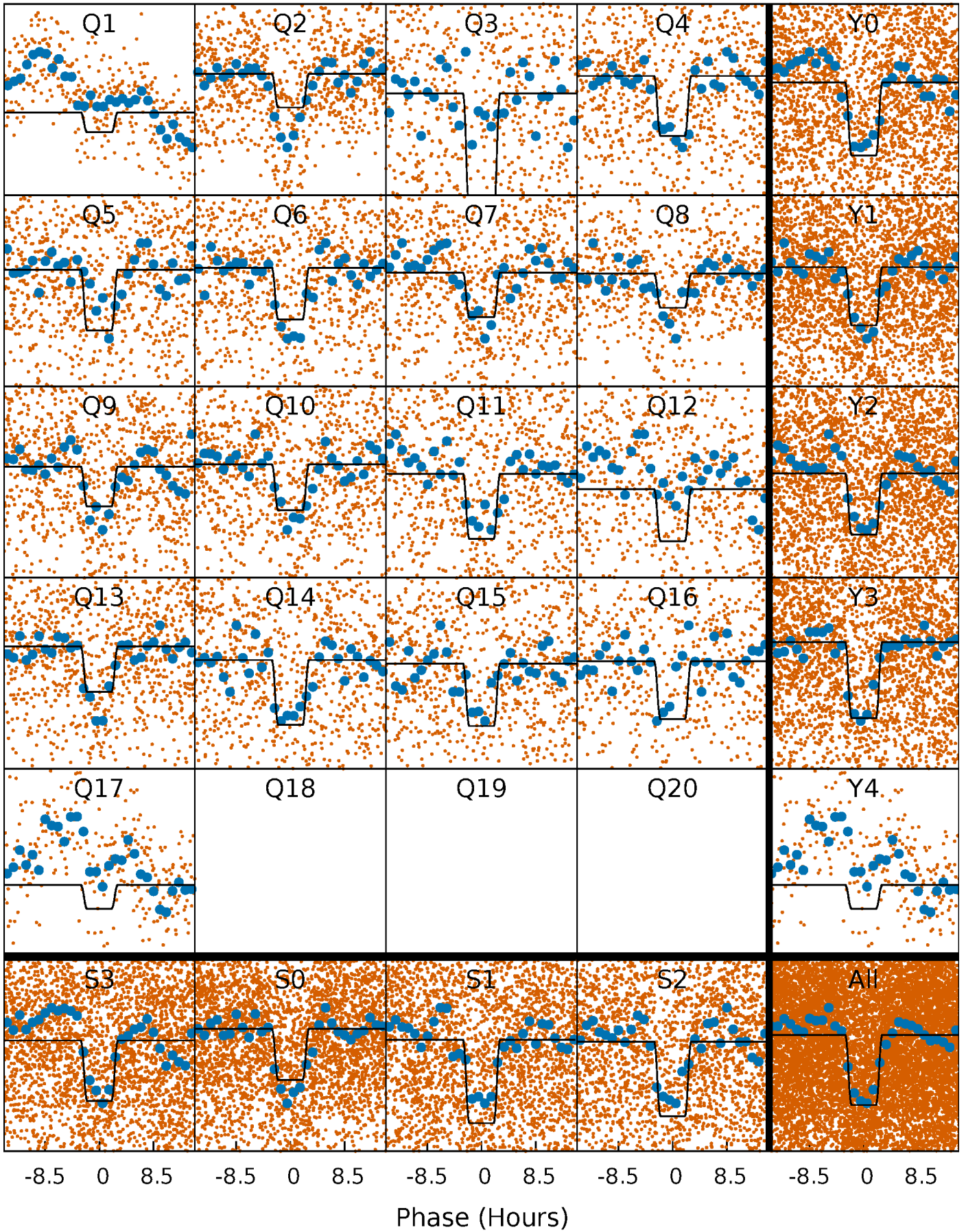
TCE 006428850-03 P= 5.528226 Days  $T_0=132.773361$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

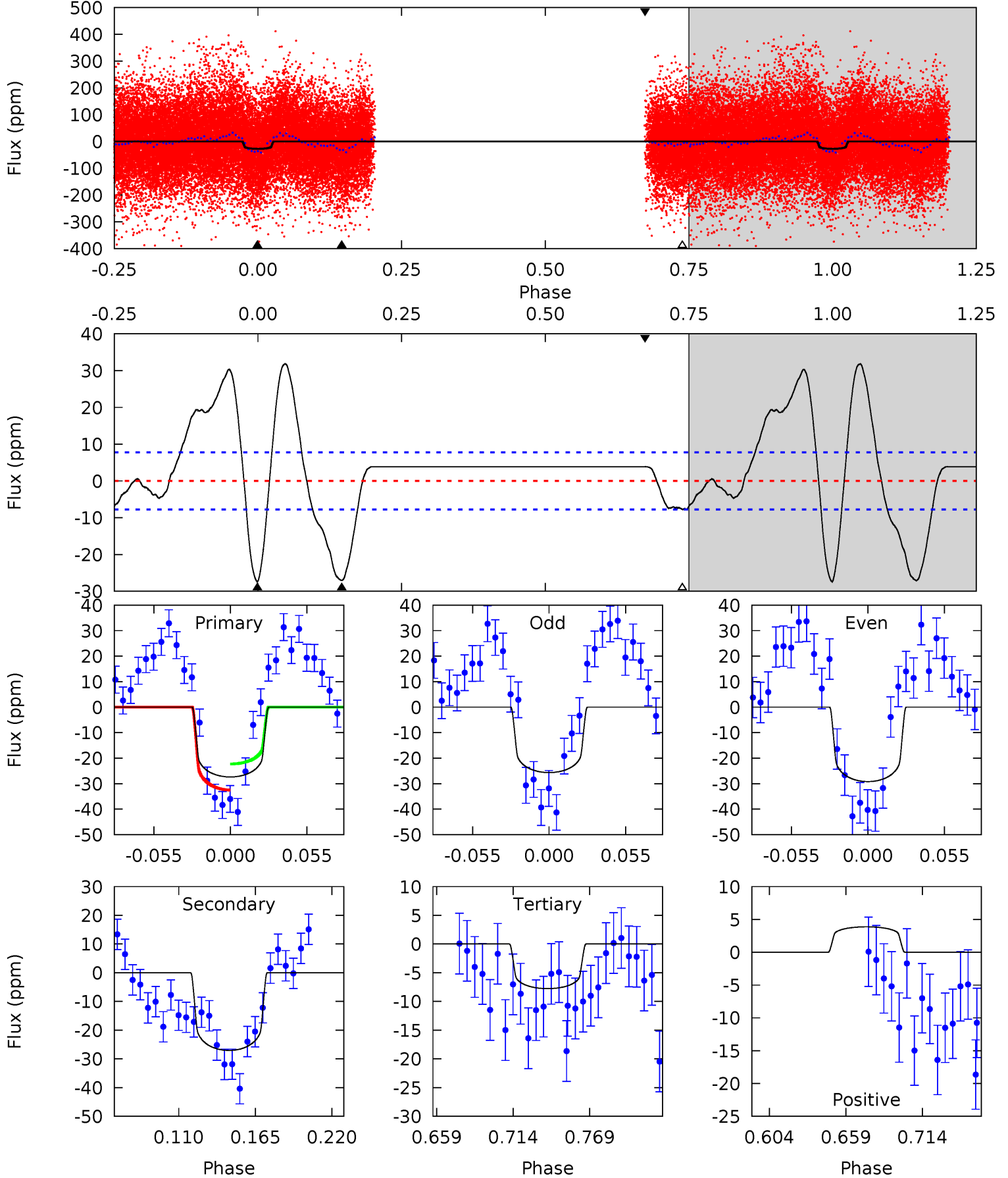
TCE 006428850-03 P= 5.528181 Days  $T_0=132.770550$  (BKJD)



# DV Model-Shift Uniqueness Test

006428850-03, P = 5.528226 Days, E = 127.245135 Days

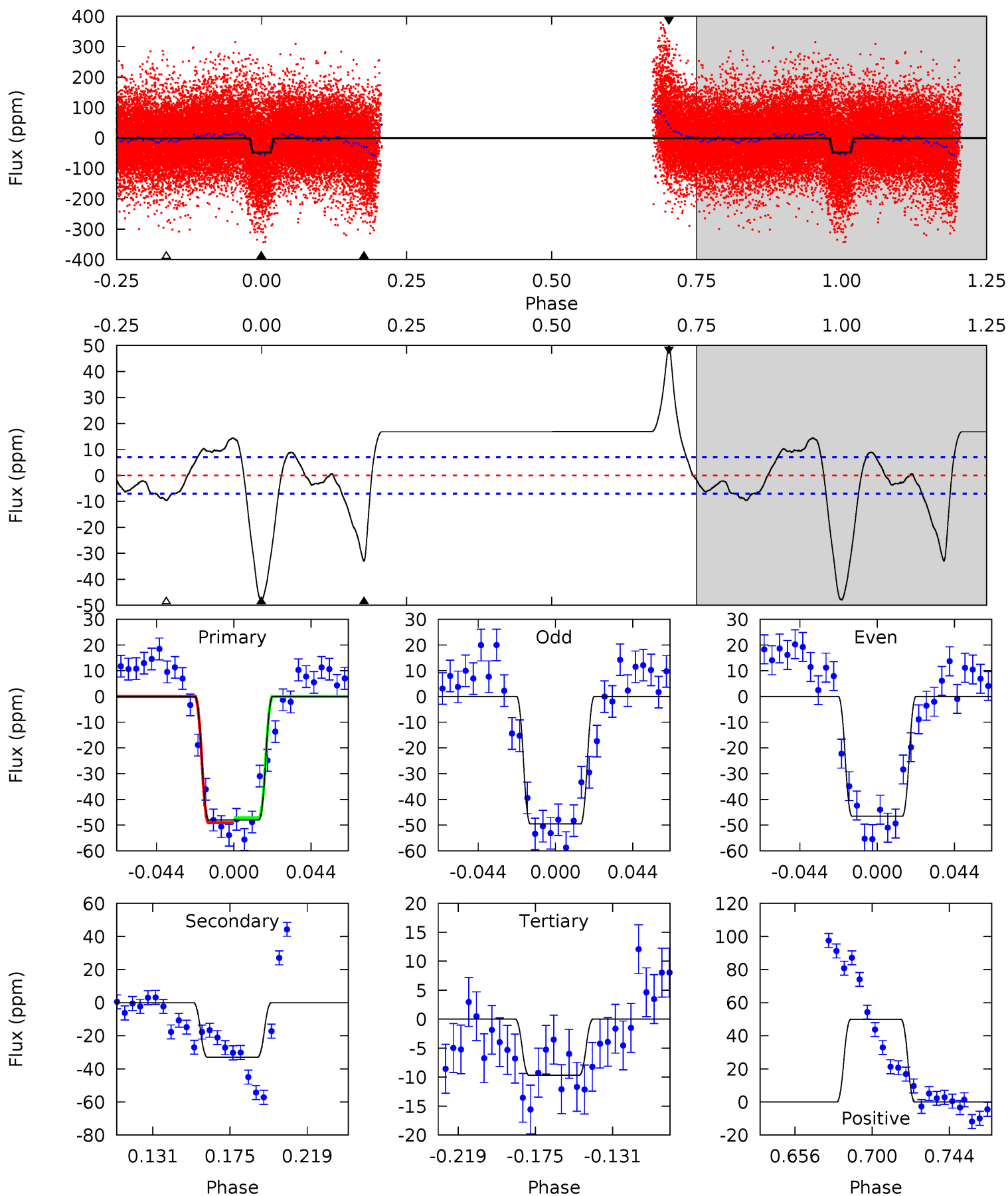
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.5	16.3	4.69	2.34	4.69	1.92	6.73	11.8	14.2	11.7	14.0	1.07	0.93	0.54	3.12



# Alt Model-Shift Uniqueness Test

006428850-03, P = 5.528181 Days, E = 127.242369 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
32.4	22.2	6.54	33.7	4.74	2.02	8.21	25.8	-1.30	15.7	-11.4	1.02	1.08	0.51	0.67





### Stellar Parameters For KIC 006428850

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7068^{+169}_{-232}$	$3.891^{+0.240}_{-0.111}$	$-0.220^{+0.300}_{-0.300}$	$2.365^{+0.481}_{-0.721}$	$1.584^{+0.221}_{-0.271}$	$0.169^{+0.264}_{-0.063}$
	+2%/-3%	+6%/-3%	+136%/-136%	+20%/-30%	+14%/-17%	+157%/-37%
Source	PHO1	FLK73	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 006428850-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-27 \pm 2$	$1.69^{+0.34}_{-0.32}$	$2482^{+153}_{-188}$	$6137^{+492}_{-416}$	$26^{+12}_{-8}$
Alt.	$-33 \pm 1$	$1.87^{+0.34}_{-0.35}$	$2472^{+152}_{-177}$	$6110^{+418}_{-349}$	$26^{+13}_{-7}$

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

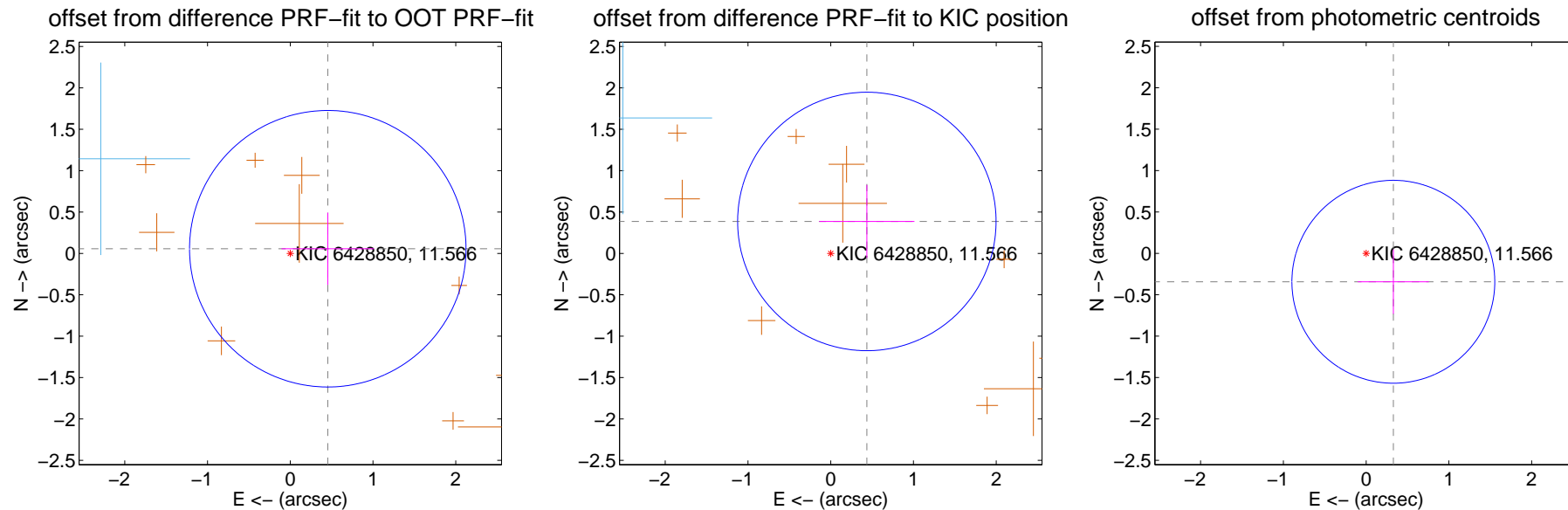
## DV Centroid Data

Supplemental centroid analysis for 006428850-03. **Kepler magnitude: 11.57.** Transit SNR 14.31

**There are 1 quarters with good PRF difference image offsets**

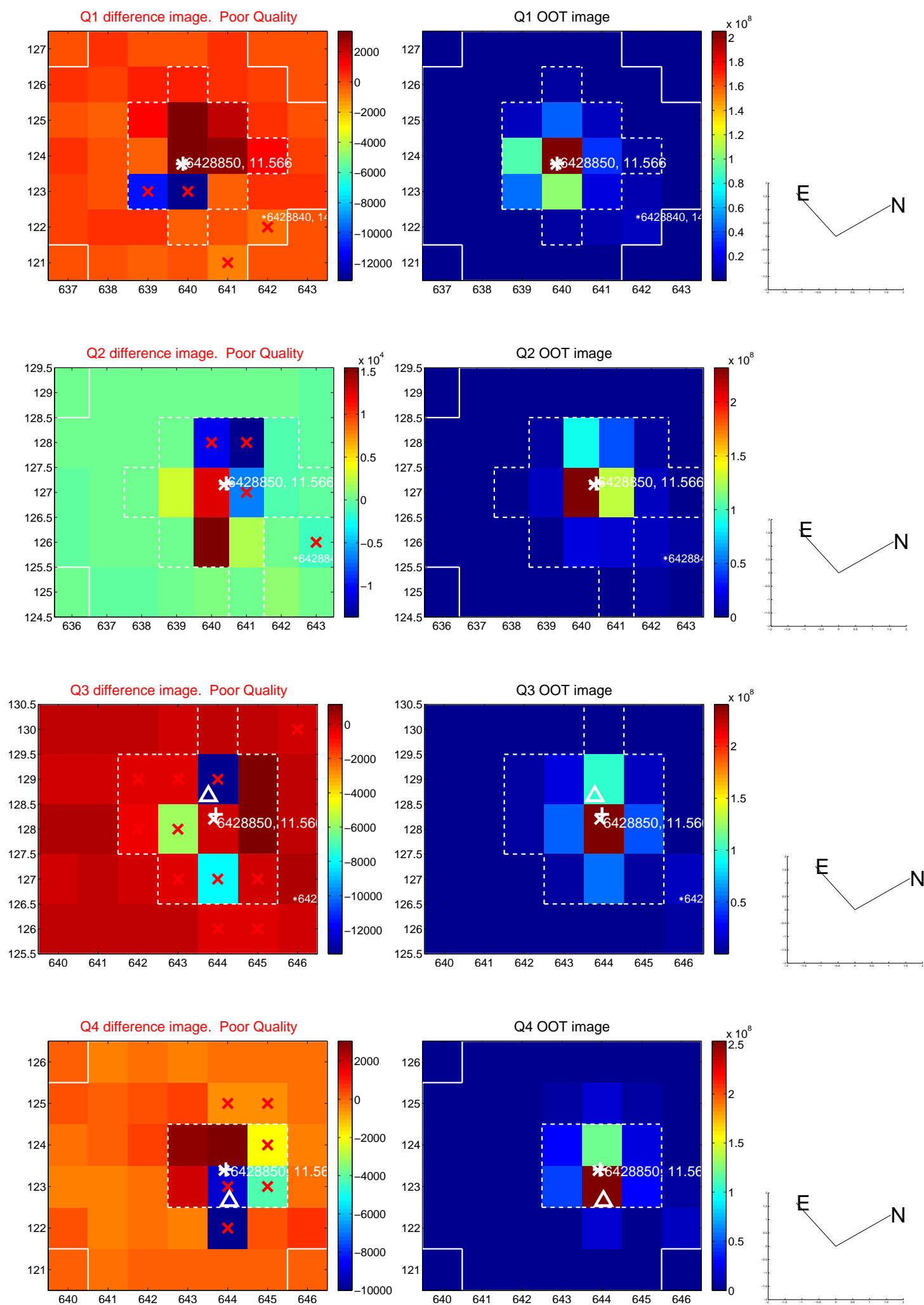
The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.457 \pm 0.557$	0.82	$-0.453 \pm 0.558$	$0.056 \pm 0.436$
PRF-fit source offset from KIC position	$0.583 \pm 0.520$	1.12	$-0.437 \pm 0.575$	$0.386 \pm 0.441$
photometric centroid source offset	$0.48 \pm 0.41$	1.16	$-0.33 \pm 0.43$	$-0.34 \pm 0.39$

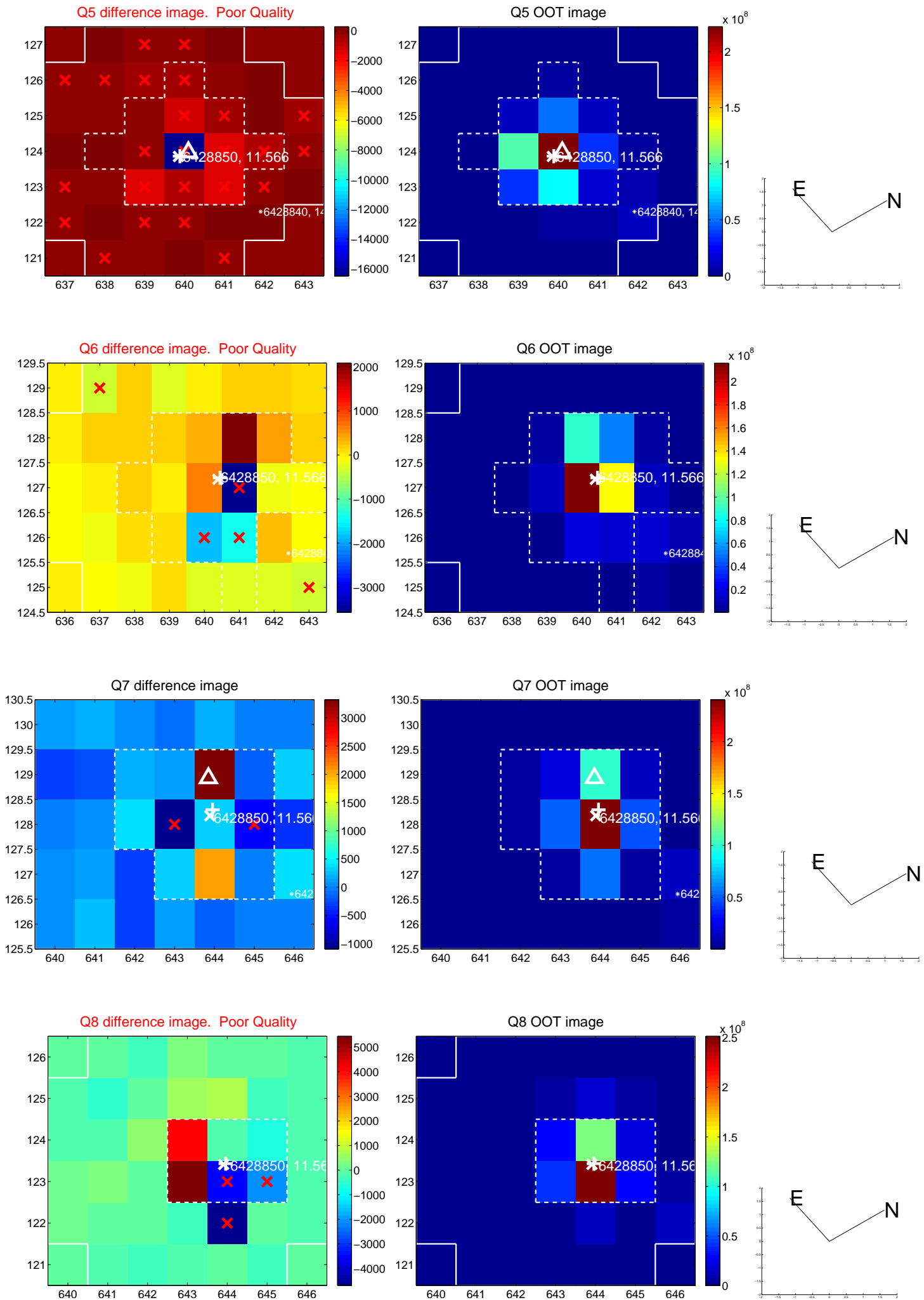


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

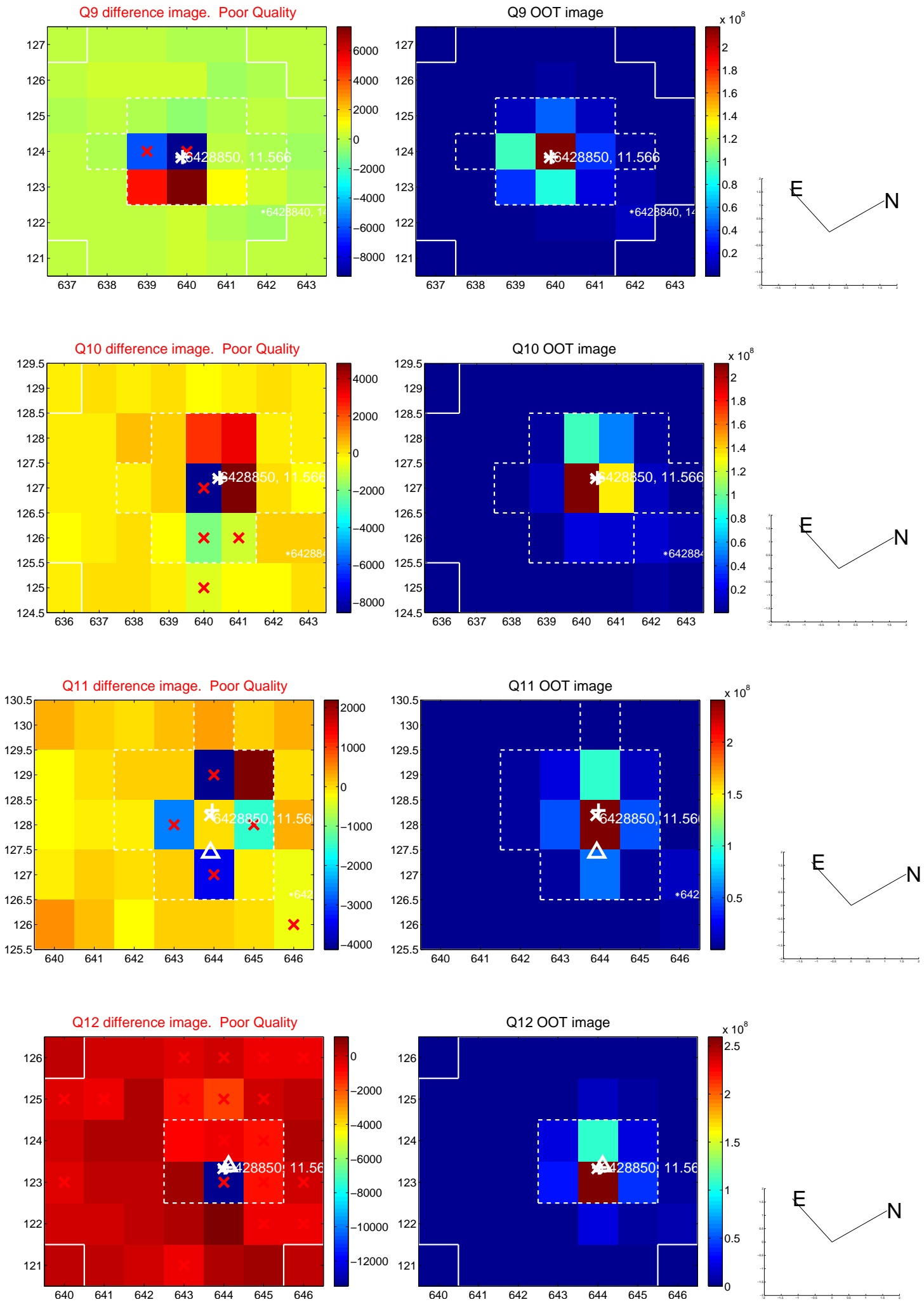
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



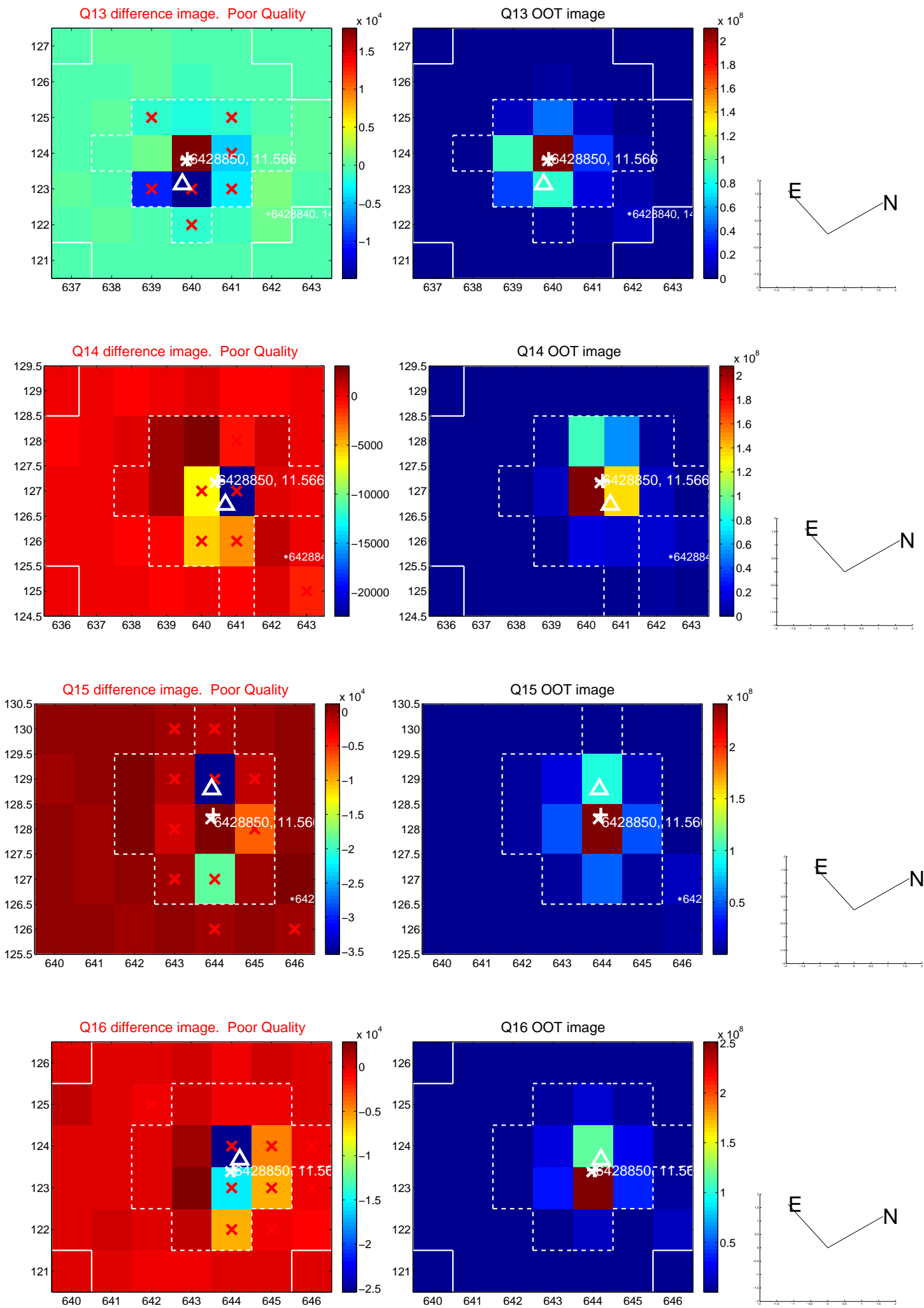
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

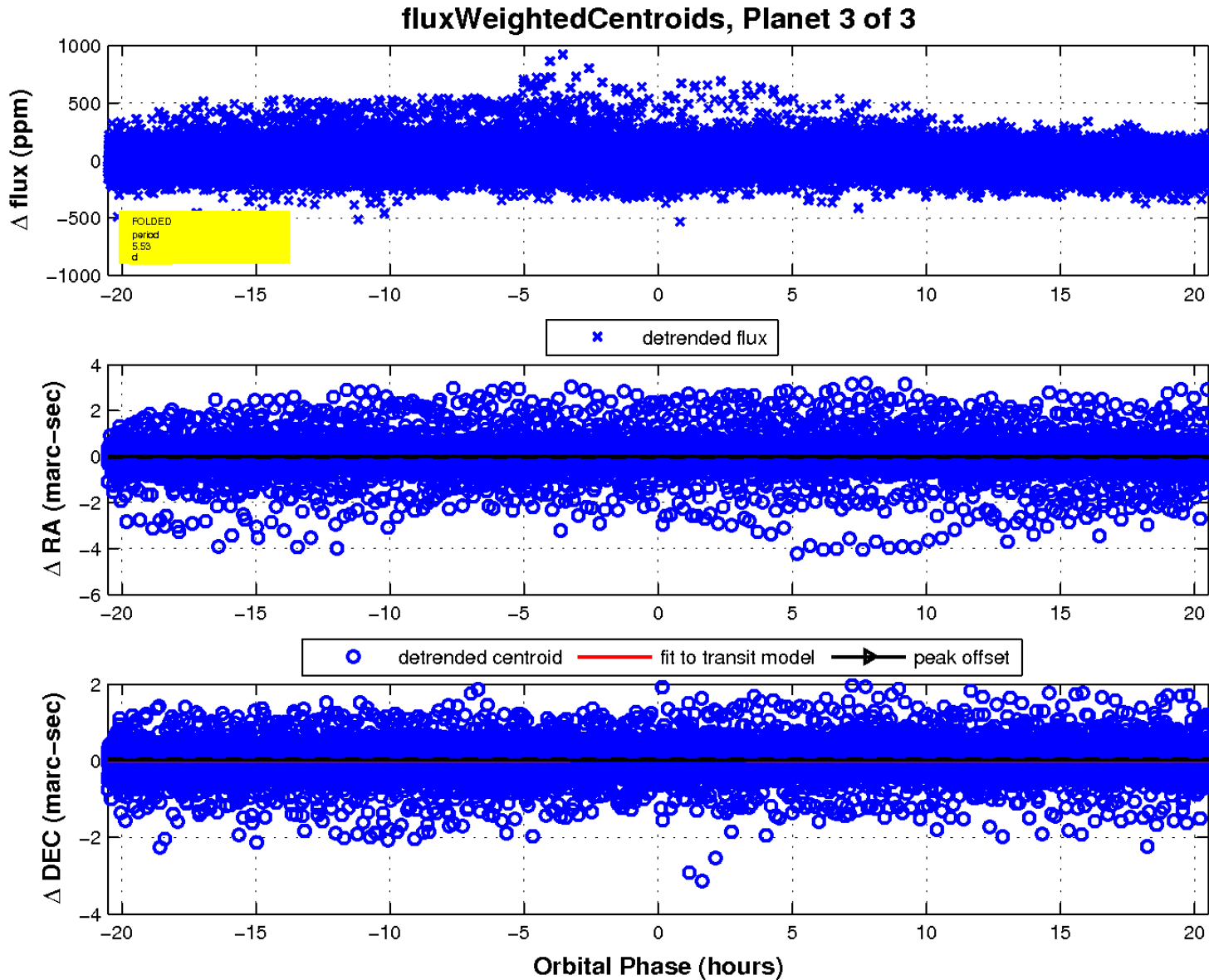
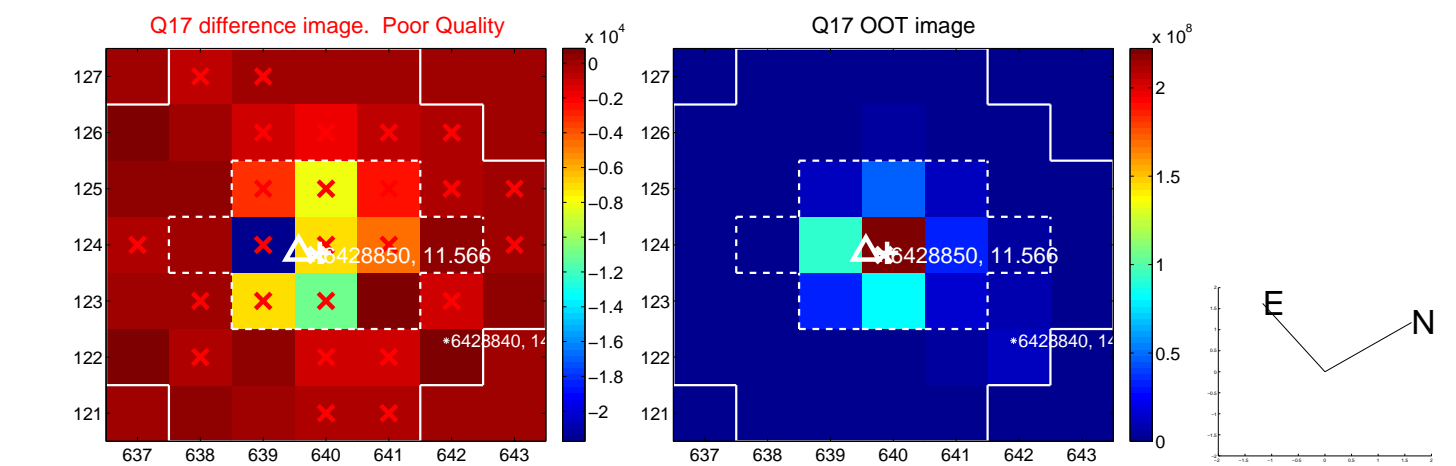


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

