

# KIC 006273239

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006273239-01	OBS	No	1.410238	132.131954	21.1	4.751	11.9	11.1	1.72	7098	0.91	8347.61
006273239-02	OBS	No	327.967345	154.741632	217.4	6.526	11.6	5.5	1.72	7098	2.56	5.84
006273239-03	OBS	No	1.410189	132.863428	21.9	4.797	10.2	10.9	1.72	7098	0.83	8348.00
006273239-05	OBS	No	25.321563	146.804469	18.7	4.127	10.0	0.7	1.72	7098	0.86	177.54
006273239-06	OBS	No	39.787611	161.026669	318.3	2.852	10.8	7.6	1.72	7098	3.14	97.19

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006273239-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
006273239-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006273239-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED
006273239-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
006273239-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

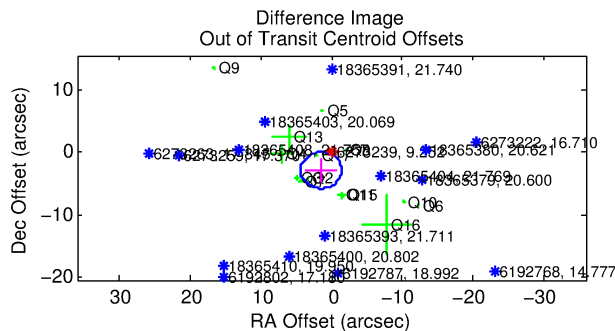
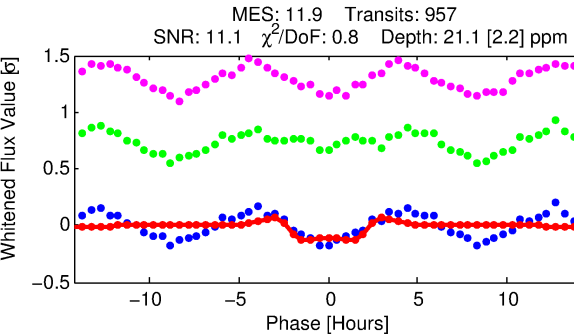
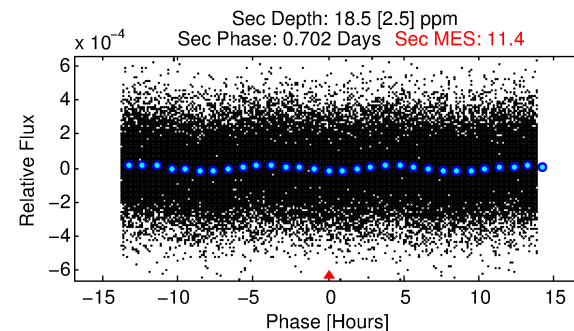
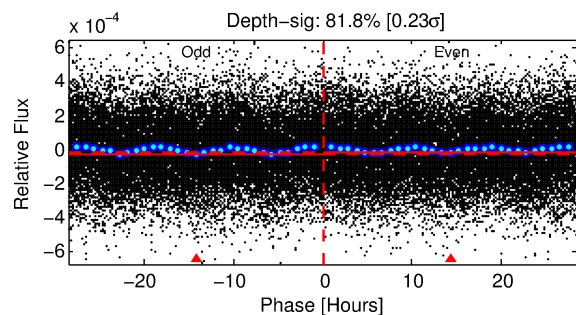
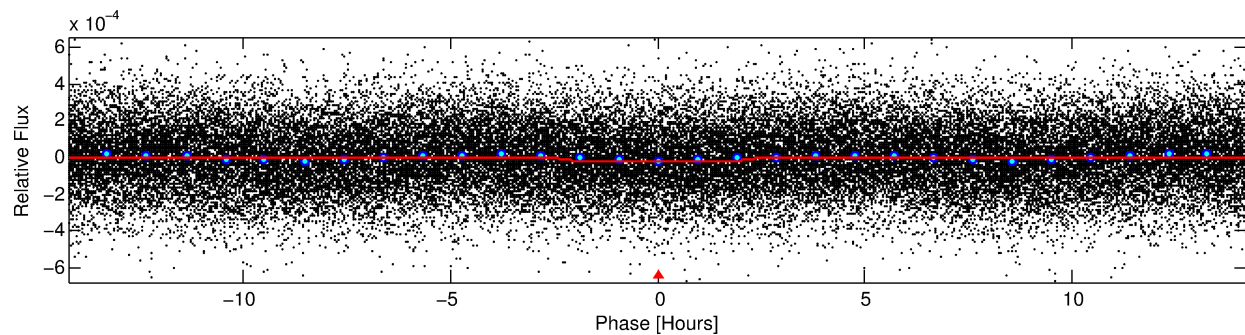
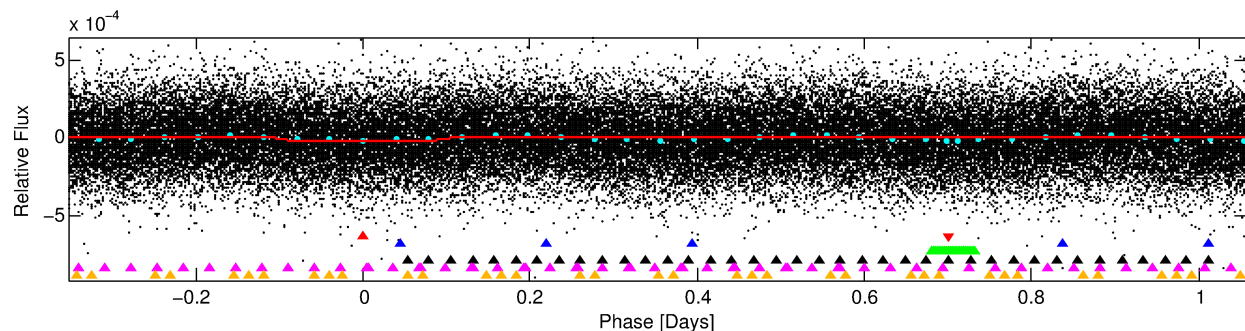
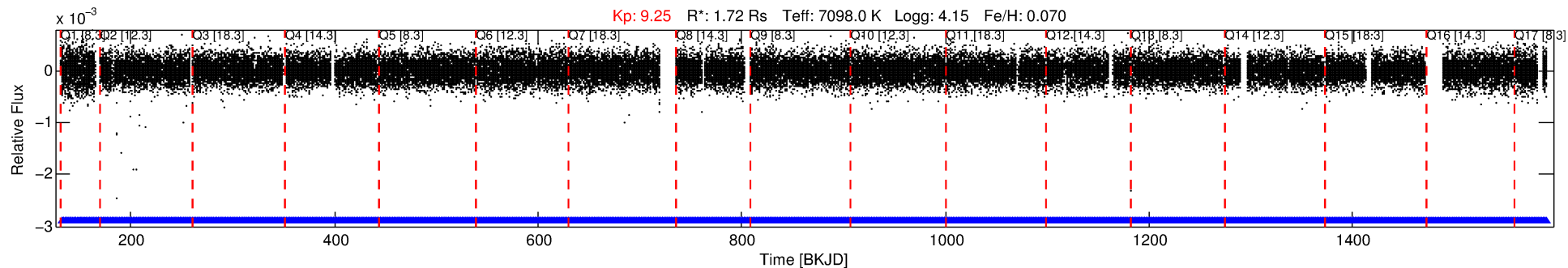
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006273239-01

No Significant Match Found

# DV One-Page Summary

KIC: 6273239 Candidate: 1 of 6 Period: 1.410 d



## DV Fit Results:

Period = 1.41024 [0.00001] d  
Epoch = 132.1320 [0.0036] BKJD  
Rp/R\* = 0.0049 [0.0012]  
a/R\* = 1.39 [1.05]  
b = 0.90 [0.34]  
Seff = 8347.61 [3526.03]  
Teq = 2437 [257] K  
Rp = 0.91 [0.38] Re  
a = 0.0283 [0.0075] AU  
Ag = 9.77 [6.35] [1.38 $\sigma$ ]  
Teffp = 6663 [937] K [4.35 $\sigma$ ]

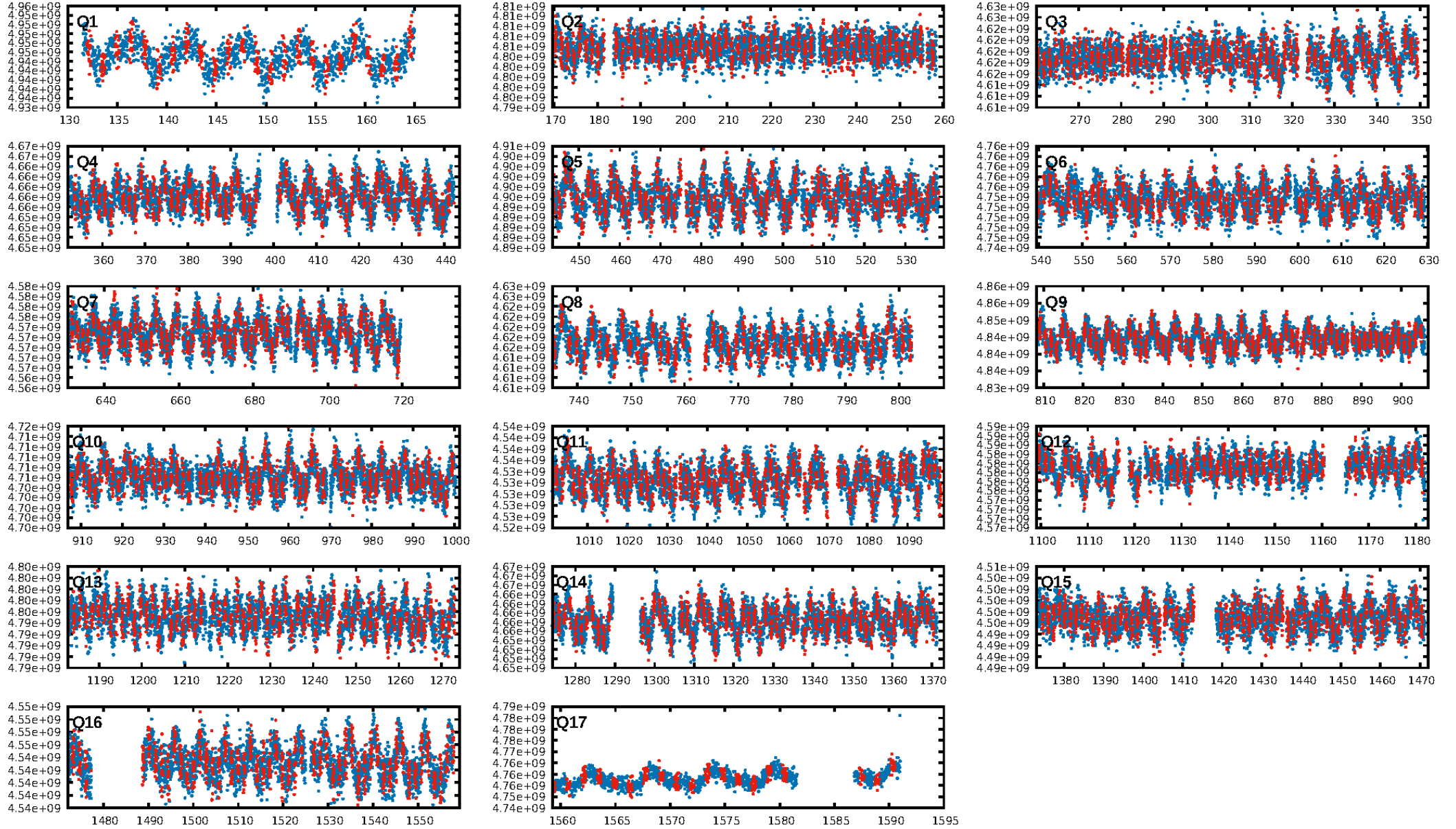
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00 $\sigma$ ]  
LongPeriod-sig: 100.0% [91.19 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.79e-15  
RollingBand-fgt: 1.00 [914/914]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 0.0%  
Centroid-so: 4.638 arcsec [4.94 $\sigma$ ]  
OotOffset-rm: 3.278 arcsec [3.39 $\sigma$ ]  
KicOffset-rm: 4.297 arcsec [4.18 $\sigma$ ]  
OotOffset-st: 3/4/3/4 [14]  
KicOffset-st: 3/4/3/4 [14]  
DiffImageQuality-fgm: 0.21 [3/14]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 20:13:10 Z

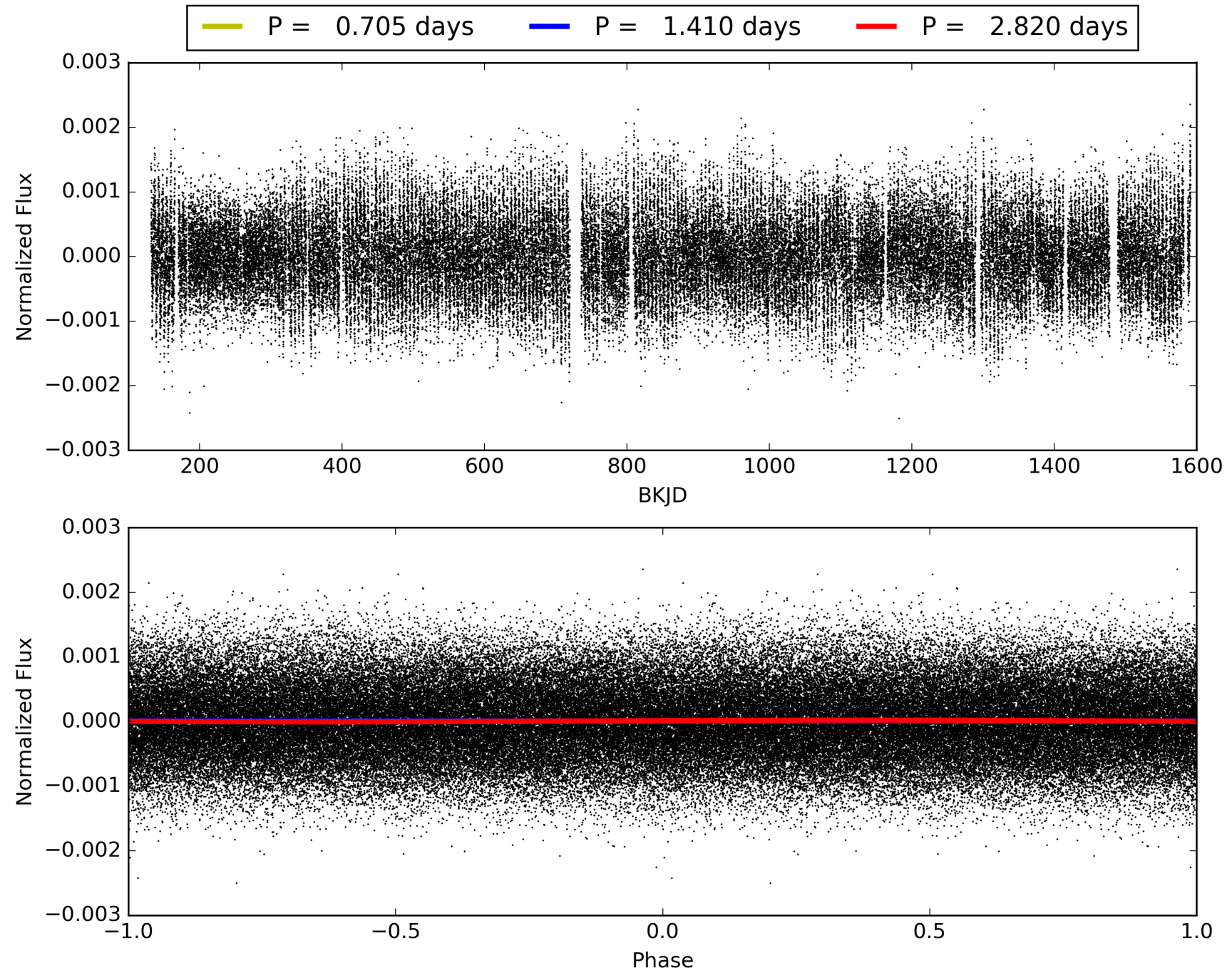
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006273239-01, PDC Light Curves





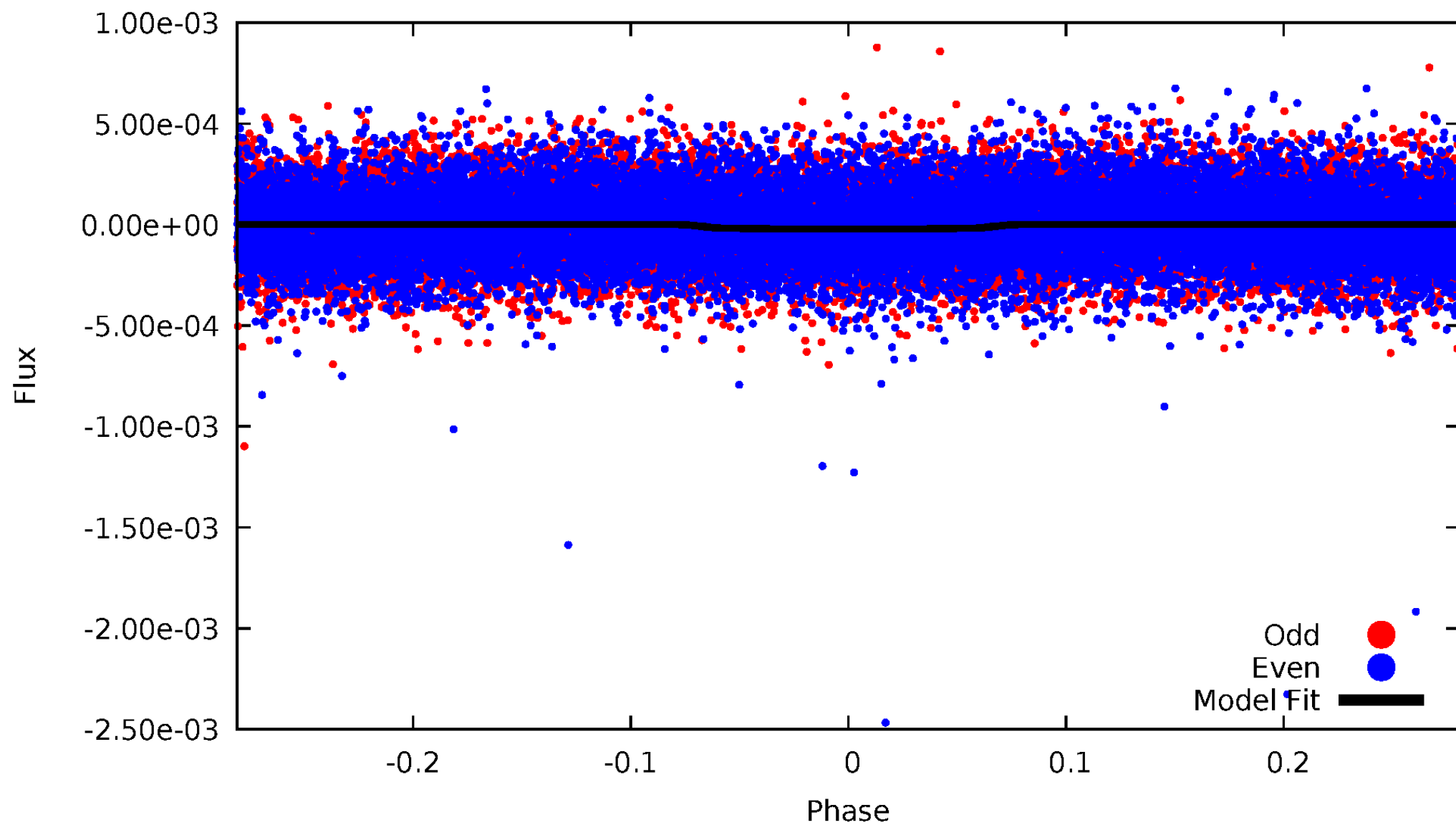
TCE 006273239-01





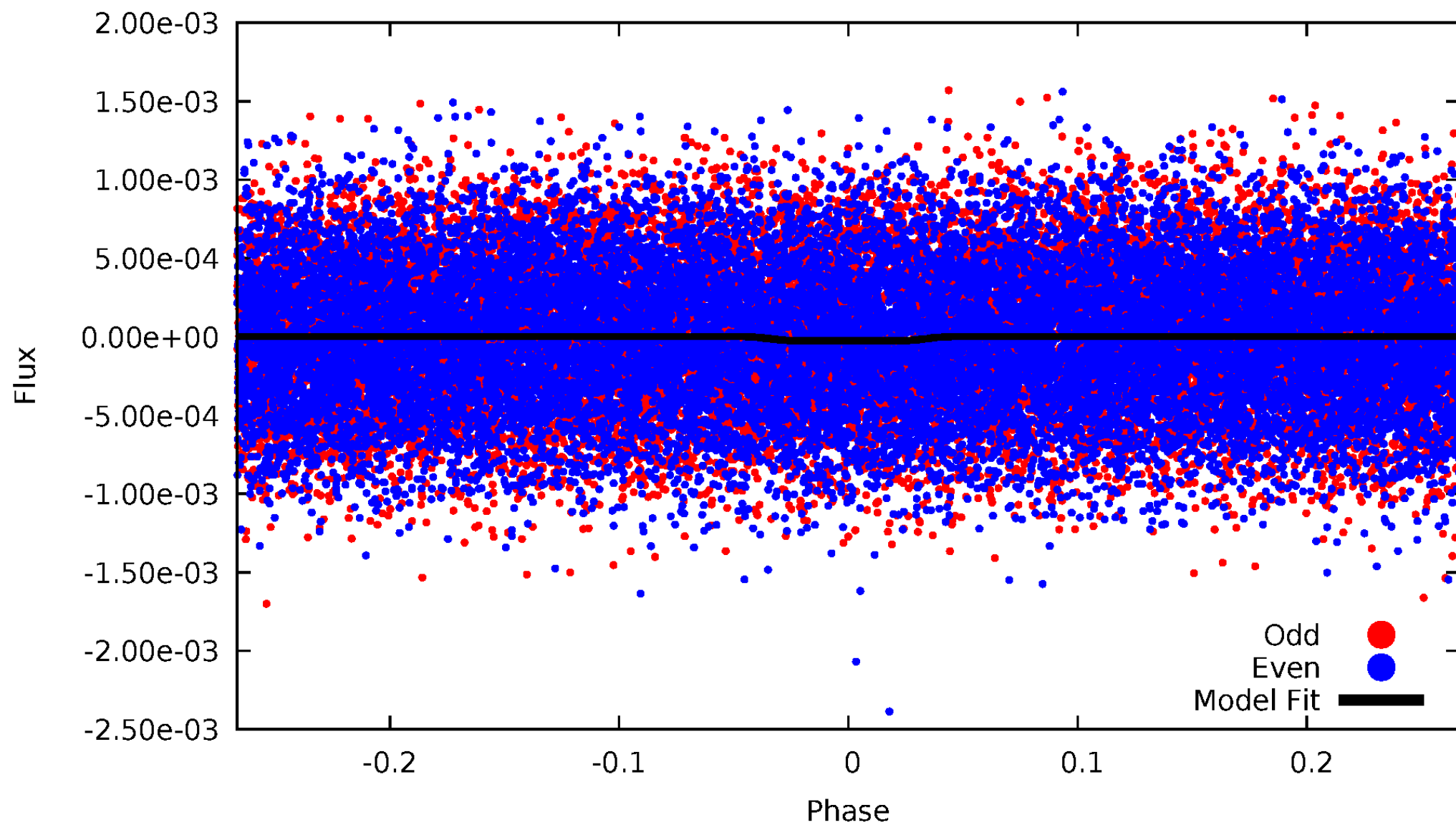
# DV Odd/Even

TCE 006273239-01

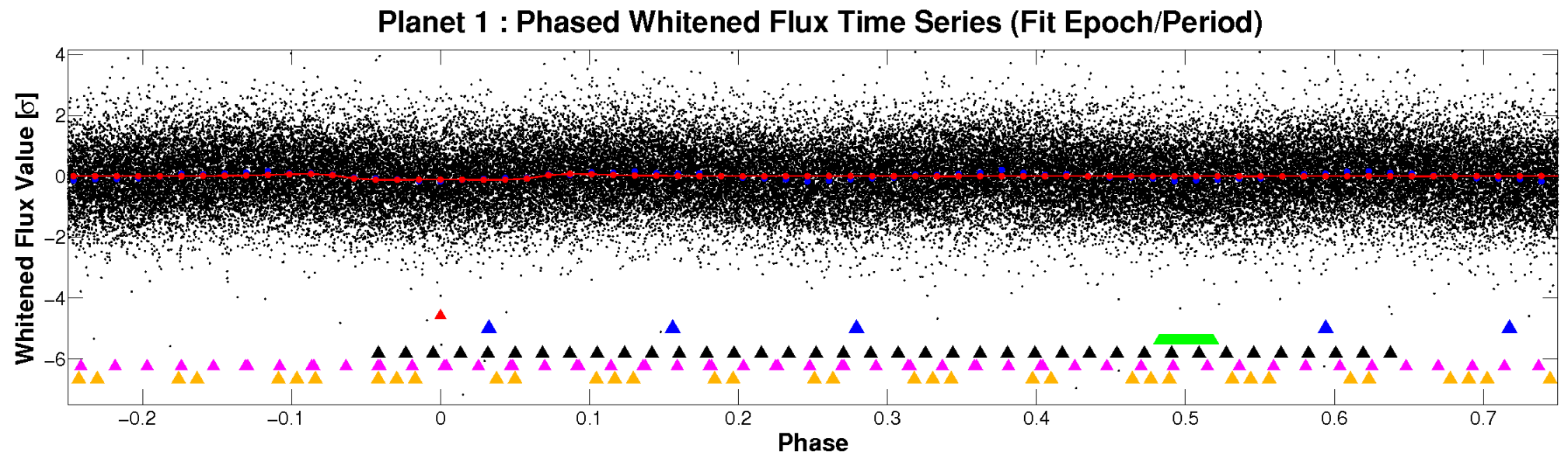
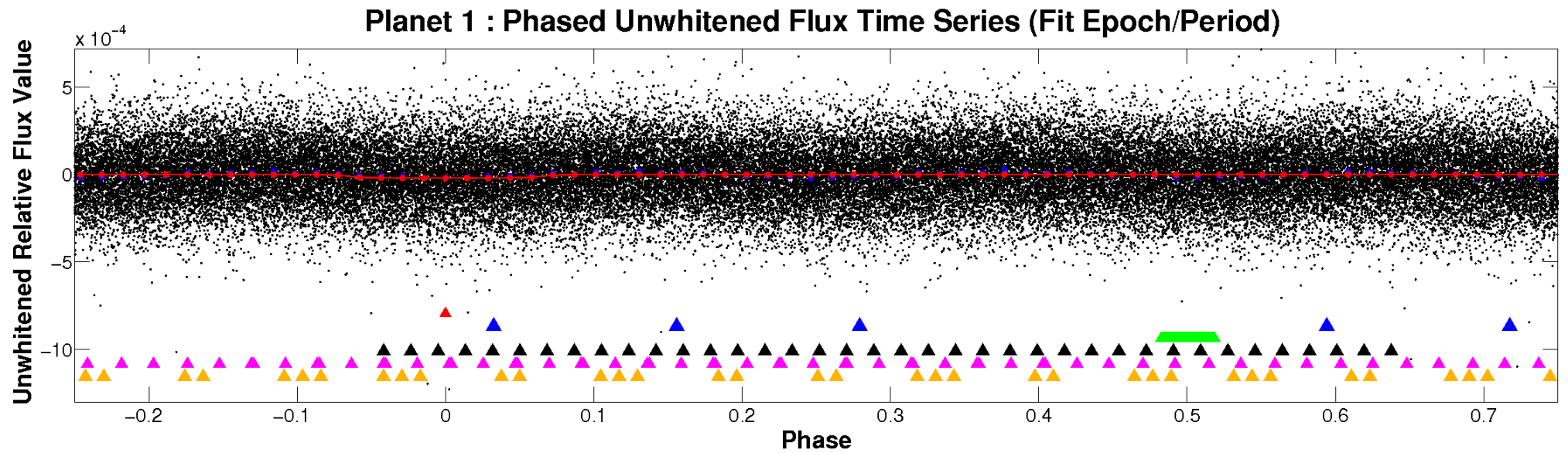


# ALT Odd/Even

TCE 006273239-01



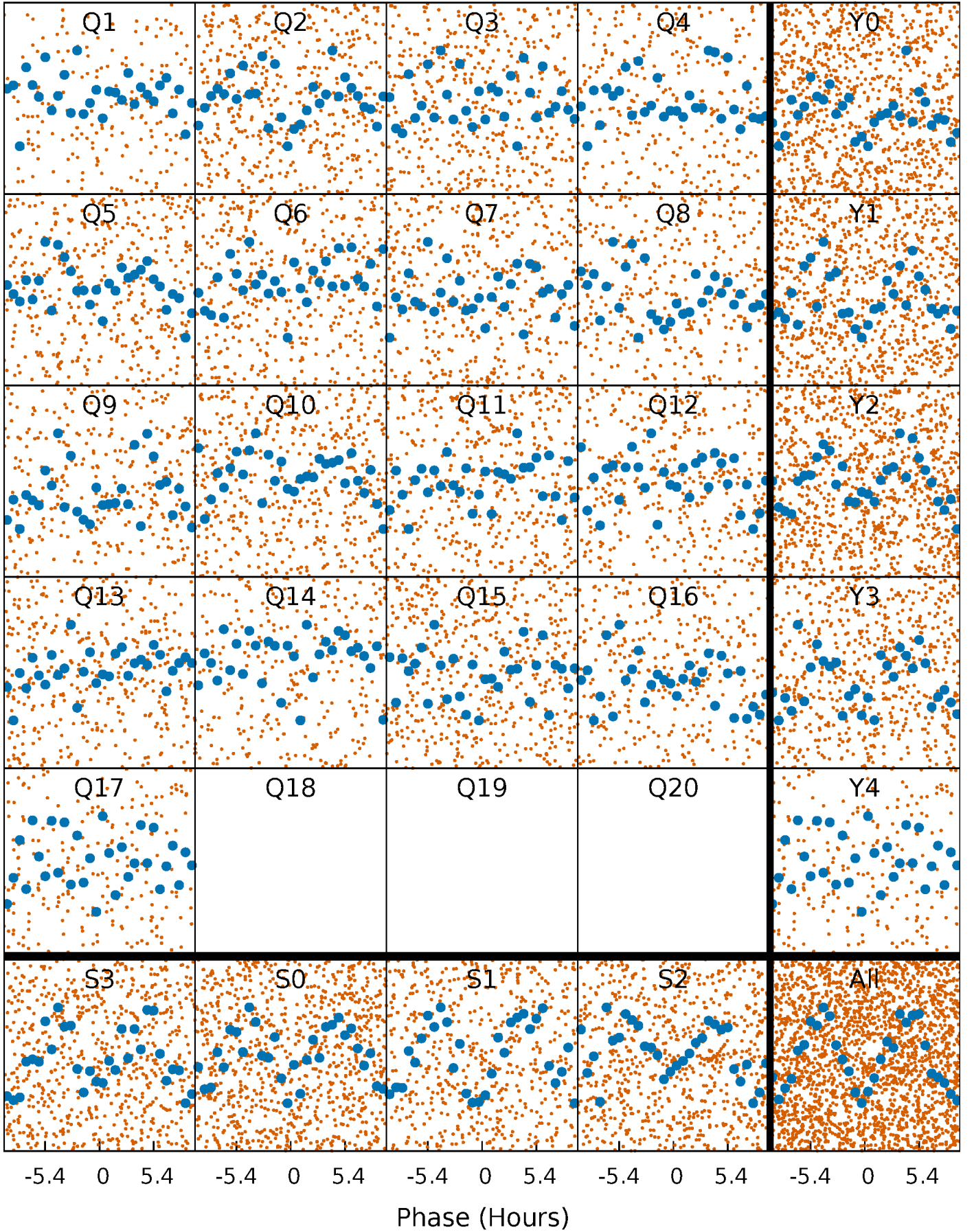
# Non-Whitened Vs. Whitened Light Curve





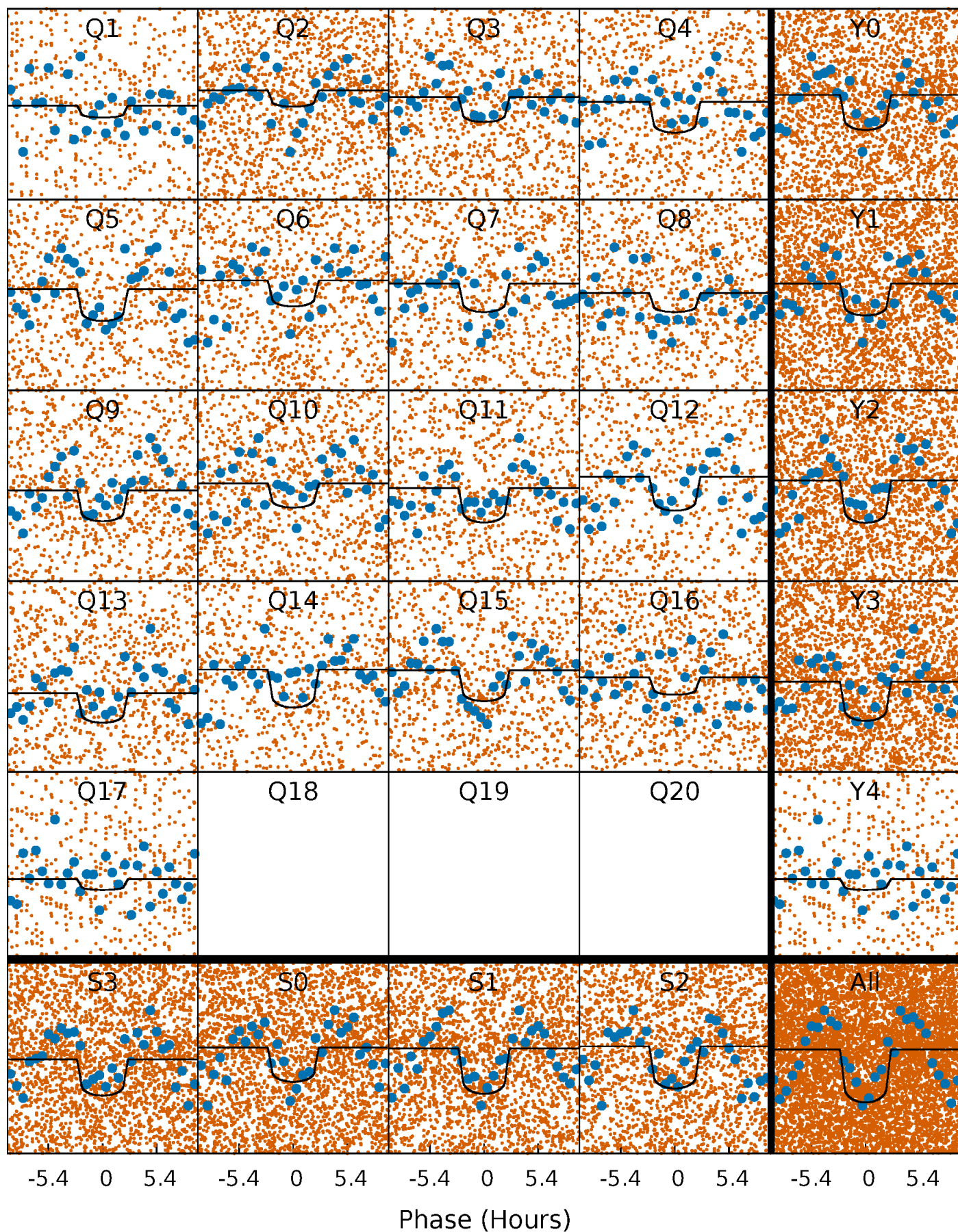
# PDC Quarter-Phased Transit Curves

TCE 006273239-01 P= 1.410238 Days  $T_0=132.131954$  (BKJD)



# DV Quarter-Phased Transit Curves

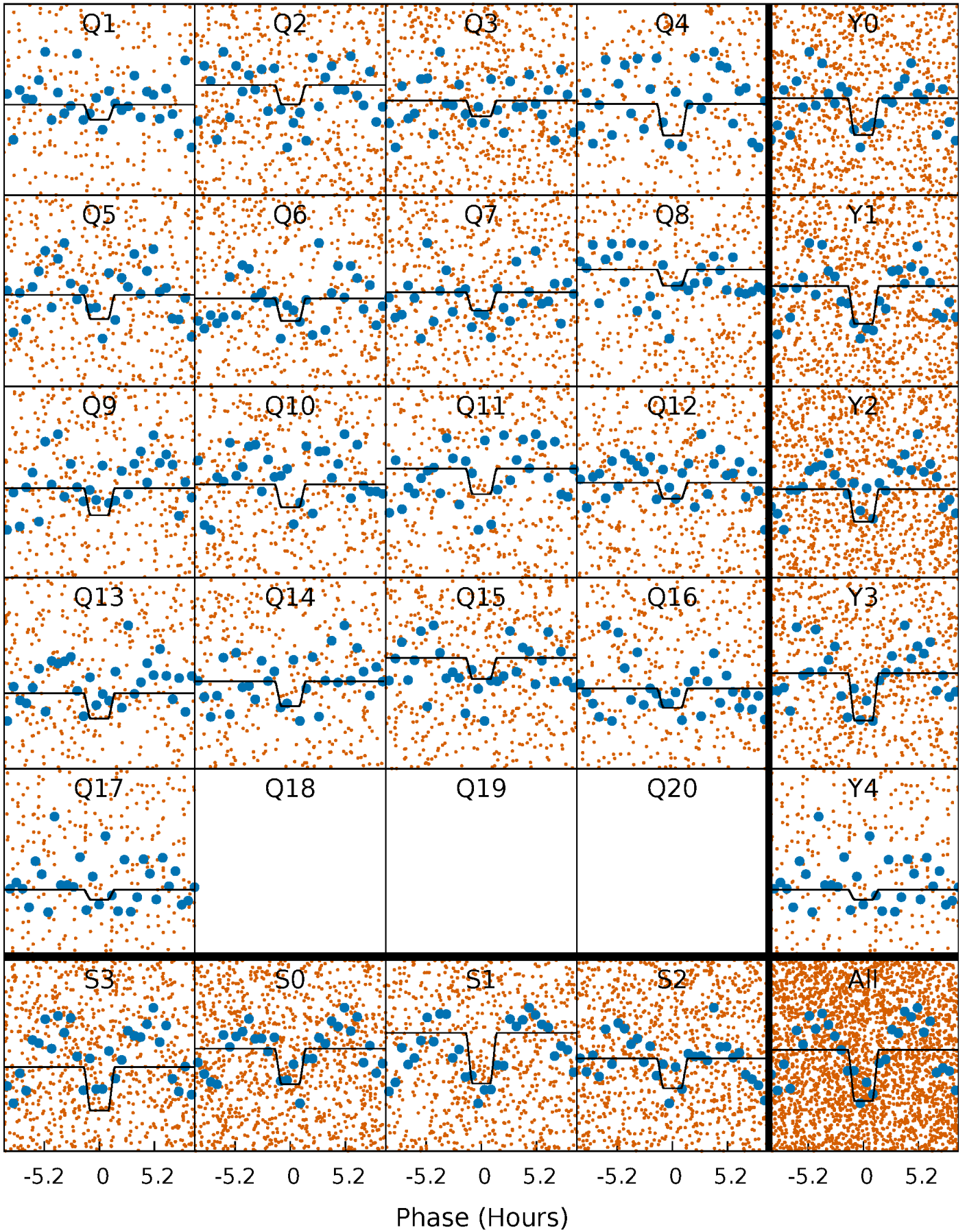
TCE 006273239-01 P= 1.410238 Days  $T_0=132.131954$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 006273239-01 P= 1.410224 Days  $T_0=132.131306$  (BKJD)

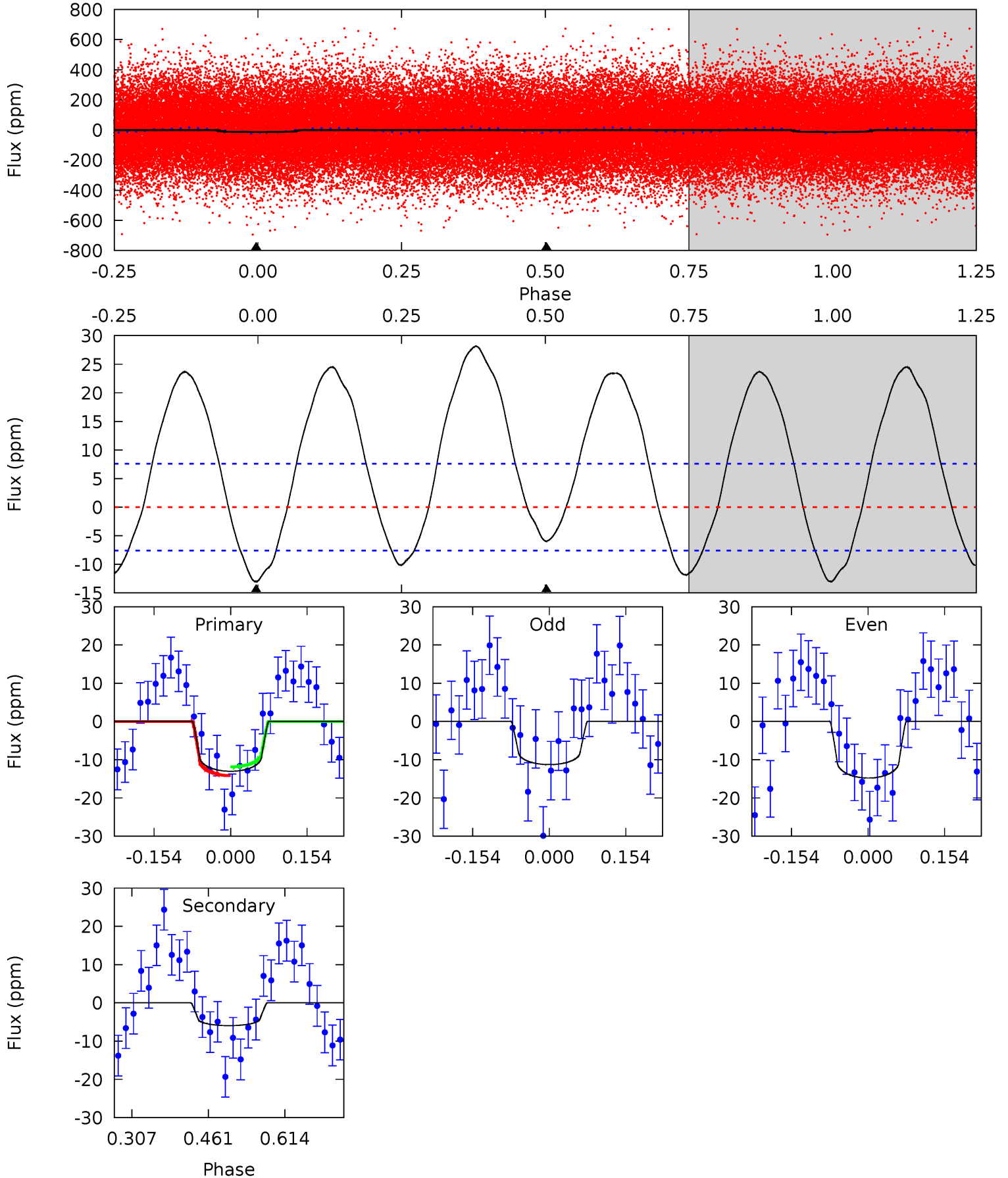




# DV Model-Shift Uniqueness Test

006273239-01, P = 1.410238 Days, E = 130.721716 Days

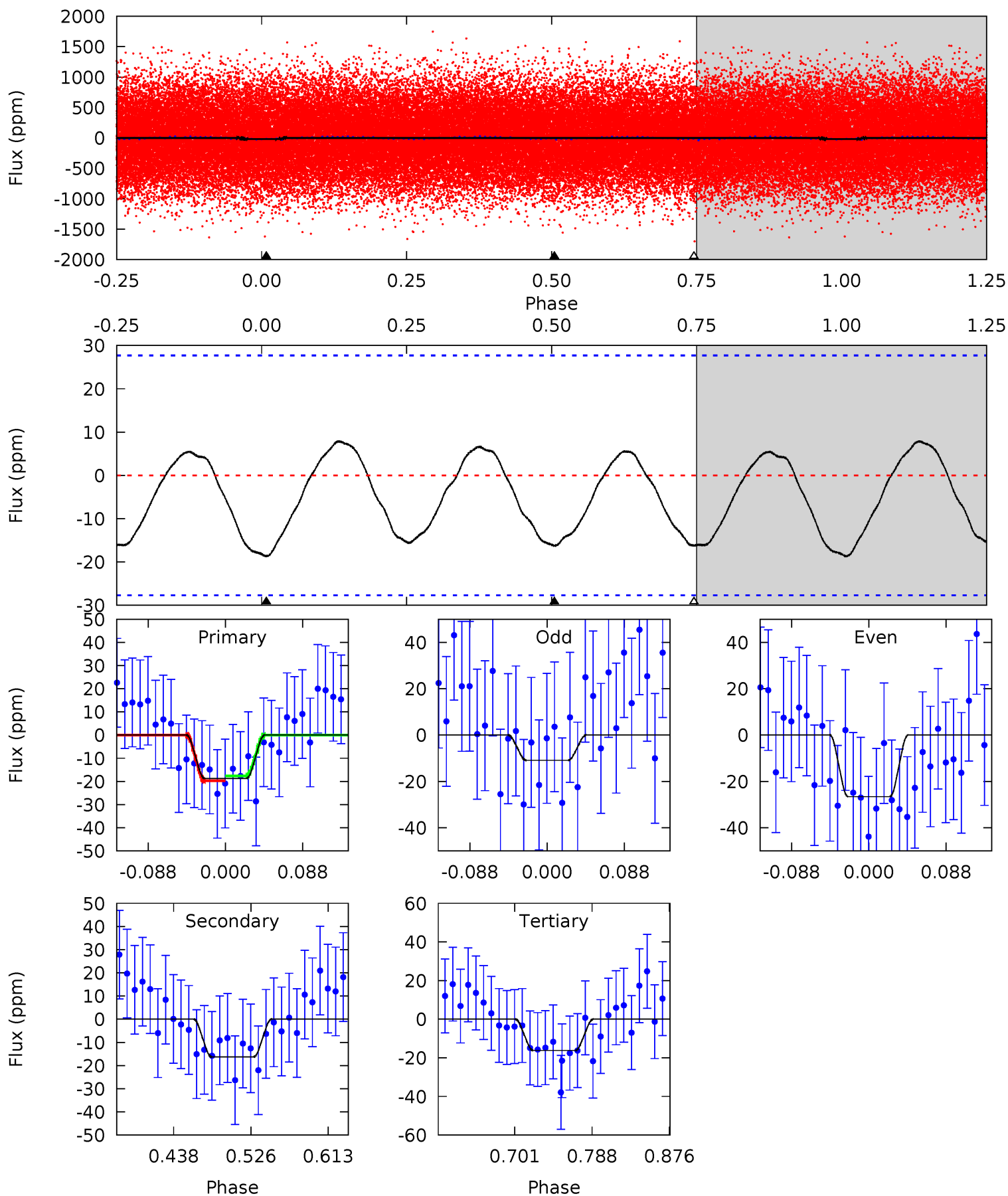
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.67	3.50	0	0	4.47	1.43	6.03	7.67	7.67	3.50	3.50	1.04	1.00	0.68	0.68



# Alt Model-Shift Uniqueness Test

006273239-01, P = 1.410224 Days, E = 130.721082 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
3.10	2.70	2.69	0	4.59	1.71	1.32	0.41	3.10	0.01	2.70	1.31	1.22	0.30	0.17



### Stellar Parameters For KIC 006273239

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7098^{+197}_{-338}$	$4.152^{+0.108}_{-0.201}$	$0.070^{+0.200}_{-0.350}$	$1.717^{+0.558}_{-0.300}$	$1.527^{+0.206}_{-0.229}$	$0.425^{+0.264}_{-0.220}$
	+3%/-5%	+3%/-5%	+286%/-500%	+32%/-17%	+13%/-15%	+62%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 006273239-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-6 \pm 2$	$0.93^{+0.30}_{-0.25}$	$3447^{+250}_{-240}$	$4887^{+913}_{-603}$	$2.860^{+2.972}_{-1.341}$
Alt.	$-16 \pm 6$	$0.95^{+0.30}_{-0.25}$	$3422^{+269}_{-205}$	$6181^{+1232}_{-886}$	$7.539^{+7.634}_{-3.573}$

$T_{max}$  = 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

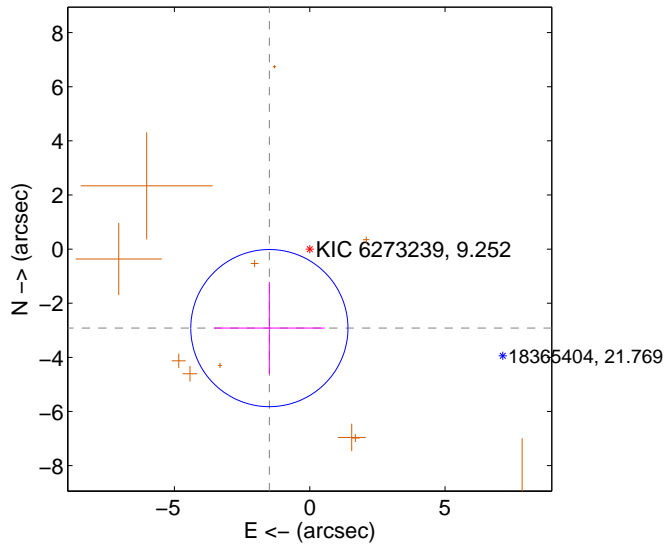
Supplemental centroid analysis for 006273239-01. **Kepler magnitude: 9.25.** Transit SNR 11.05

**There are 3 quarters with good PRF difference image offsets**

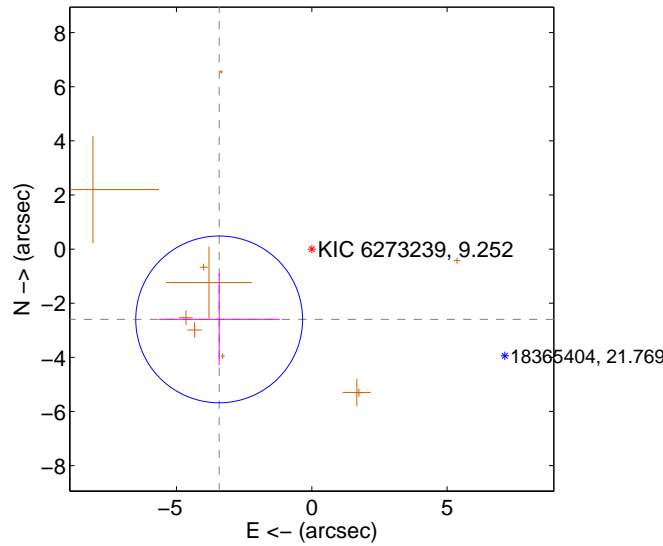
The direct PRF centroid is offset from the target star catalog position by about 1.96 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>3.278 \pm 0.968</math></b>	<b>3.39</b>	$1.491 \pm 2.044$	$-2.919 \pm 1.702$
PRF-fit source offset from KIC position	<b><math>4.297 \pm 1.027</math></b>	<b>4.18</b>	$3.423 \pm 2.237$	$-2.598 \pm 1.693$
photometric centroid source offset	<b><math>4.64 \pm 0.94</math></b>	<b>4.94</b>	$-4.40 \pm 0.96$	$-1.45 \pm 0.67$

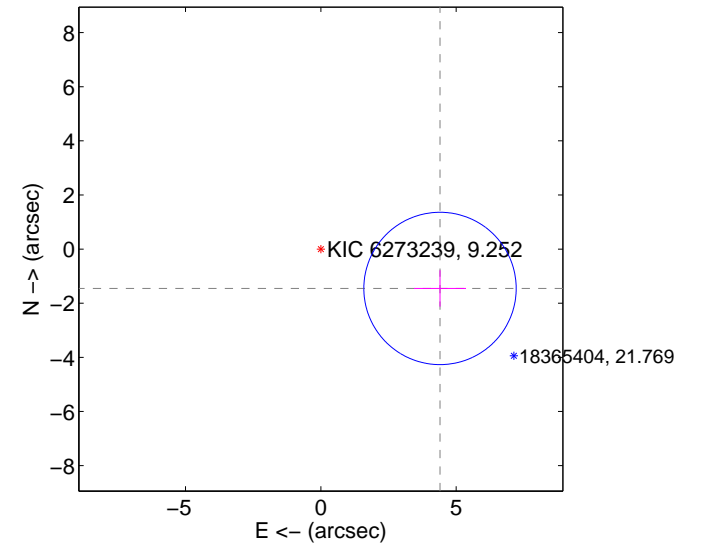
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



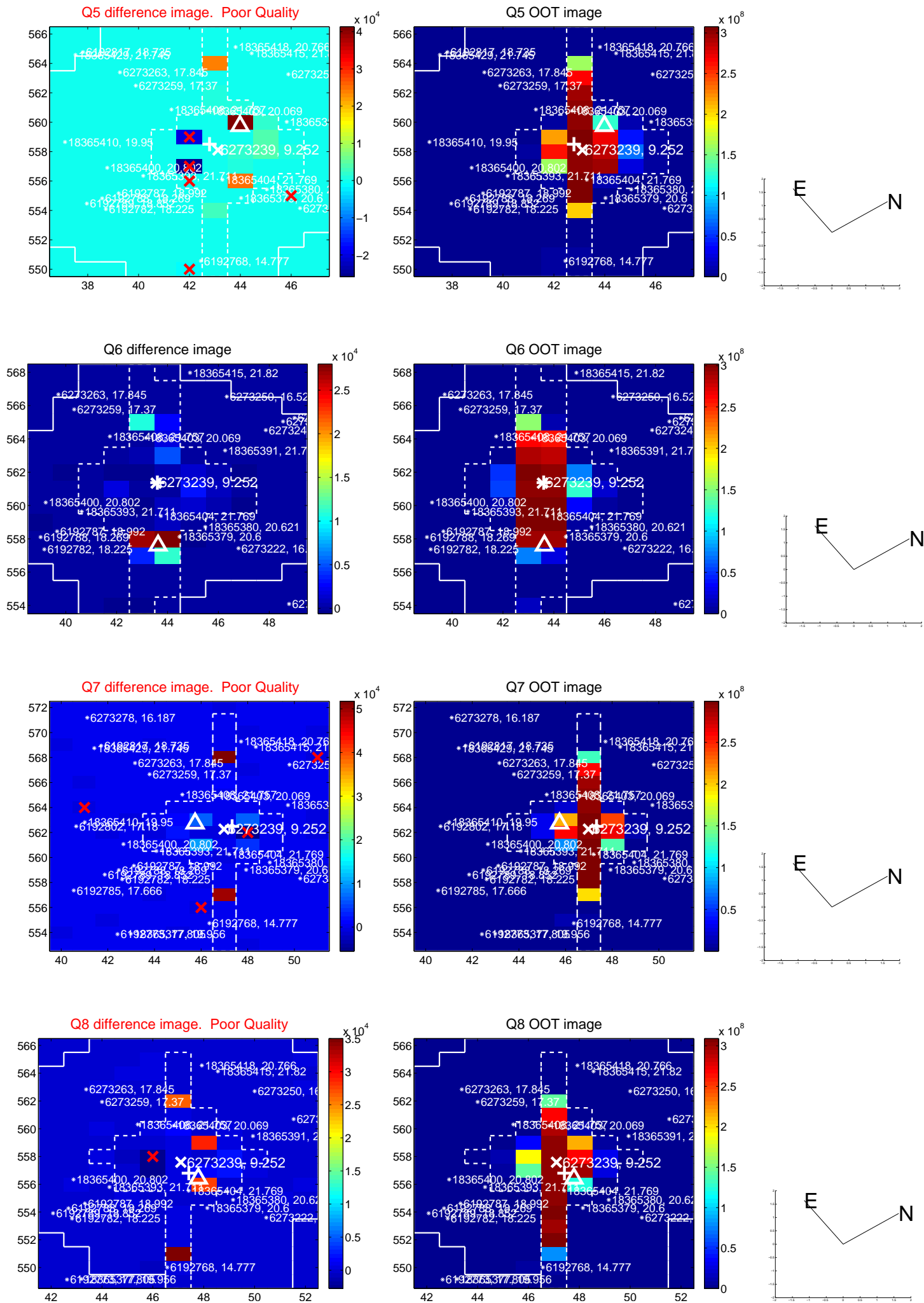
offset from photometric centroids



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.

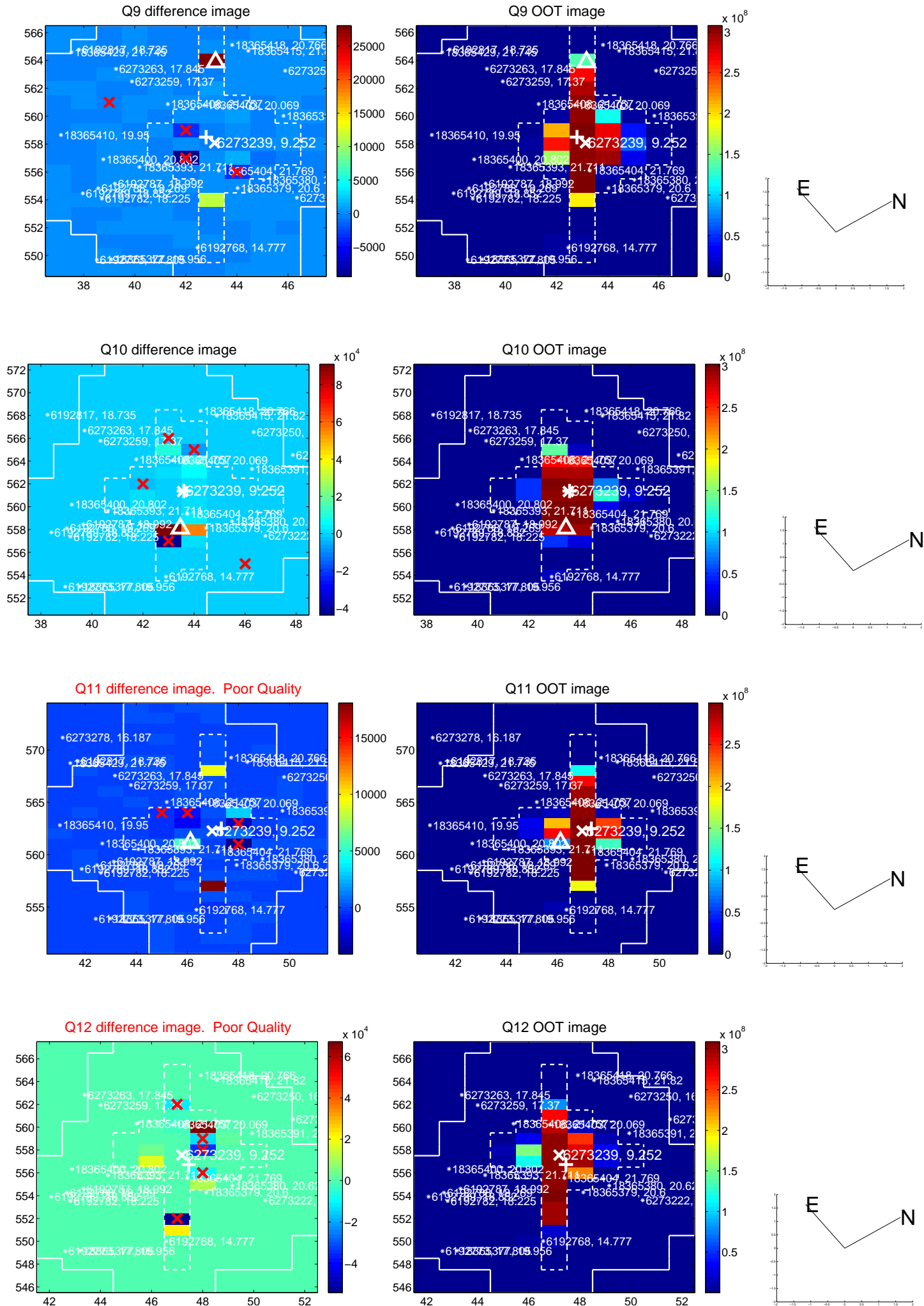


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

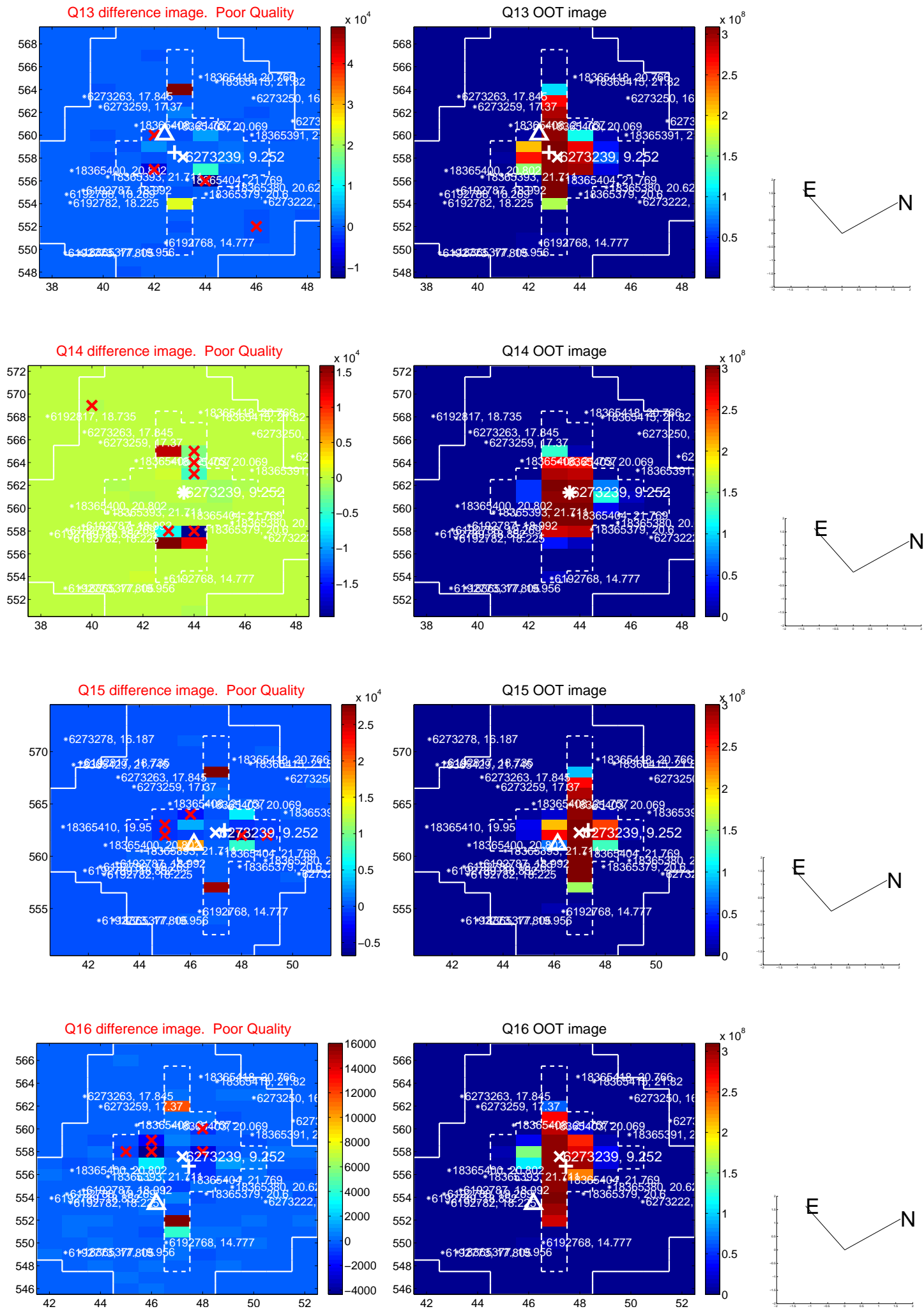




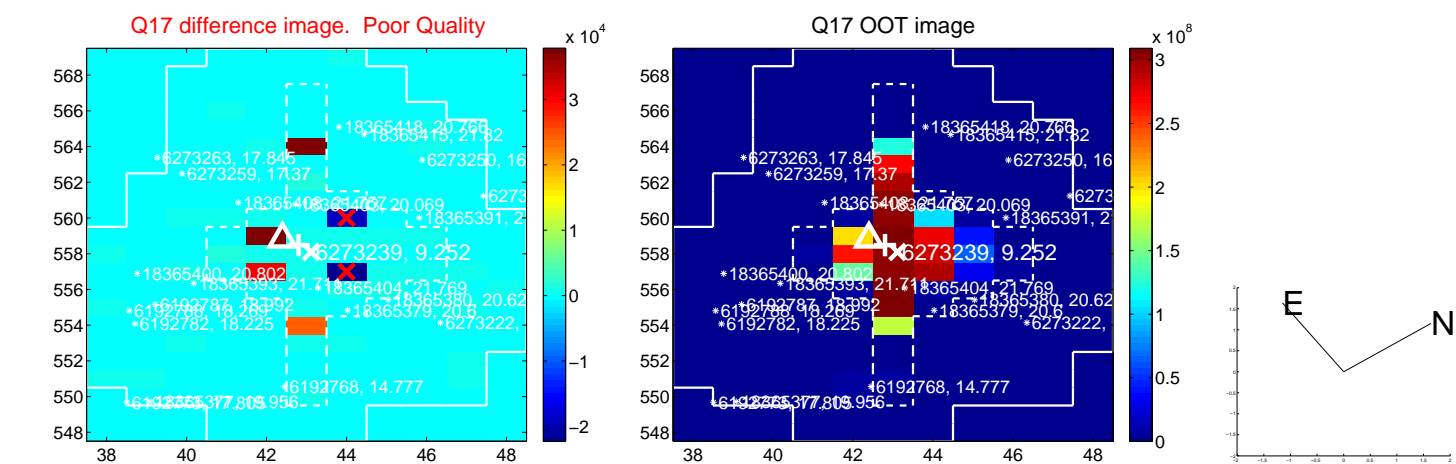
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



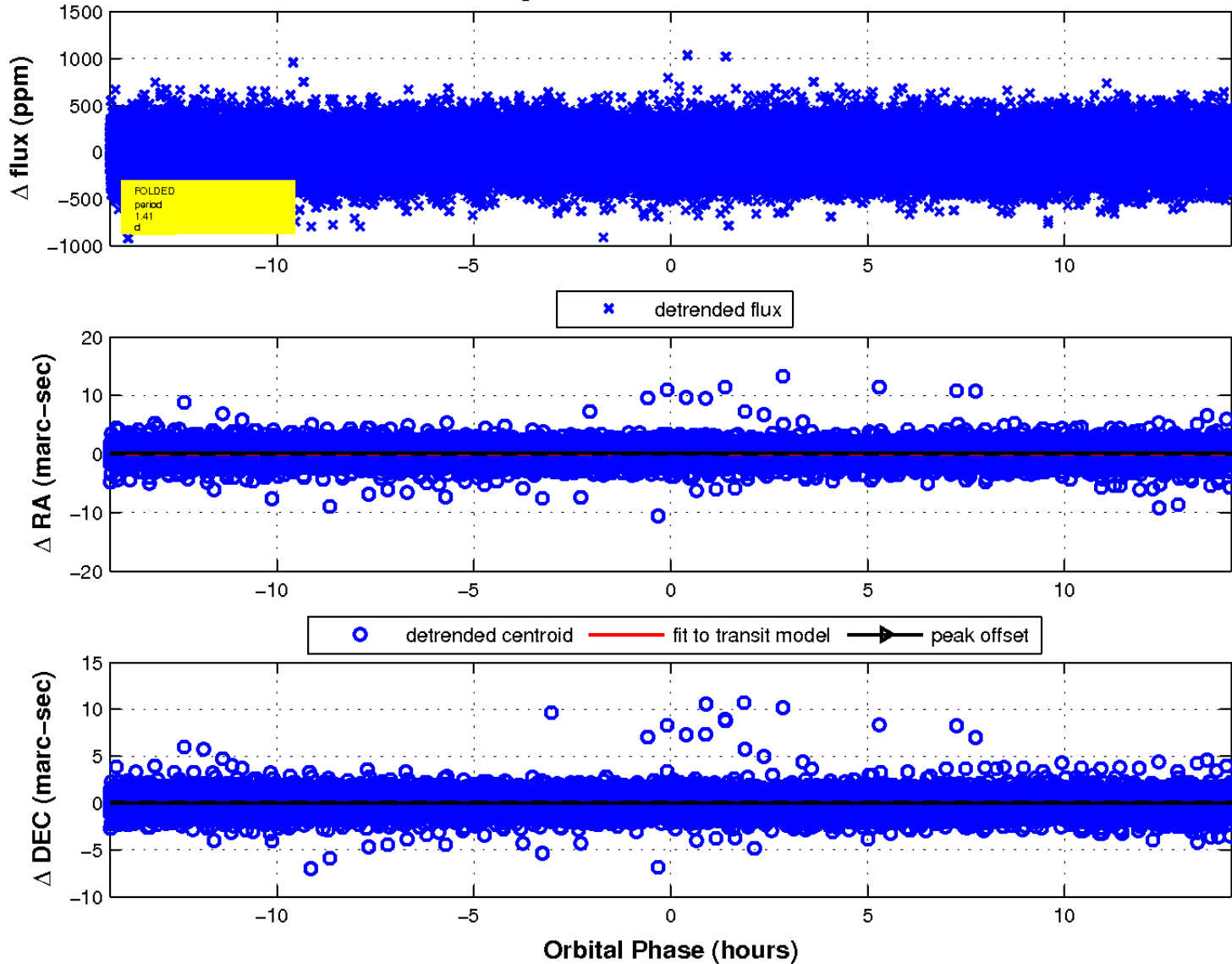
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

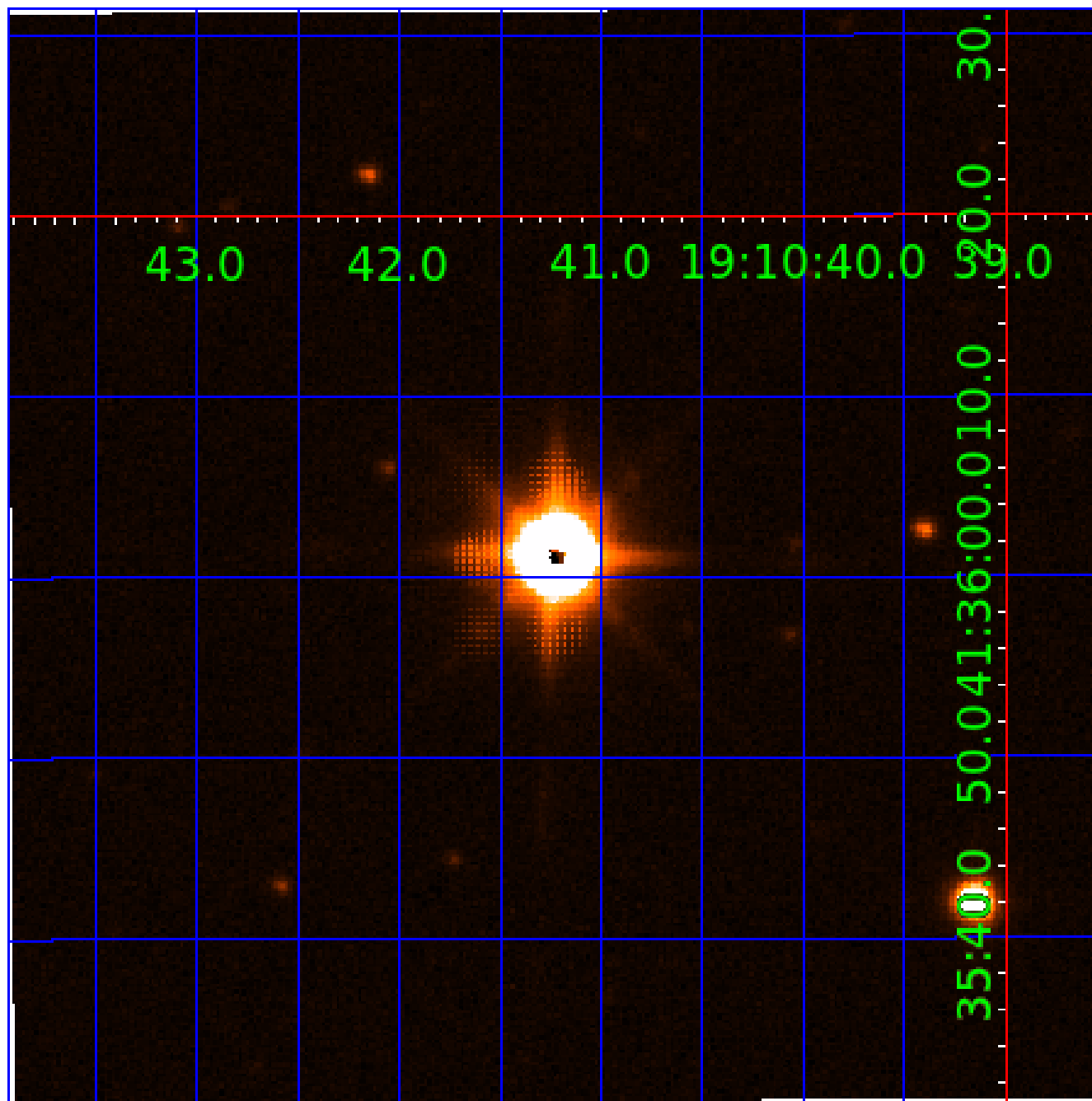


fluxWeightedCentroids, Planet 1 of 6



UKIRT Image

Declination





# KIC 006273239

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006273239-01	OBS	No	1.410238	132.131954	21.1	4.751	11.9	11.1	1.72	7098	0.91	8347.61
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006273239-03	OBS	No	1.410189	132.863428	21.9	4.797	10.2	10.9	1.72	7098	0.83	8348.00
006273239-05	OBS	No	25.321563	146.804469	18.7	4.127	10.0	0.7	1.72	7098	0.86	177.54
006273239-06	OBS	No	39.787611	161.026669	318.3	2.852	10.8	7.6	1.72	7098	3.14	97.19

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006273239-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
006273239-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006273239-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED
006273239-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
006273239-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

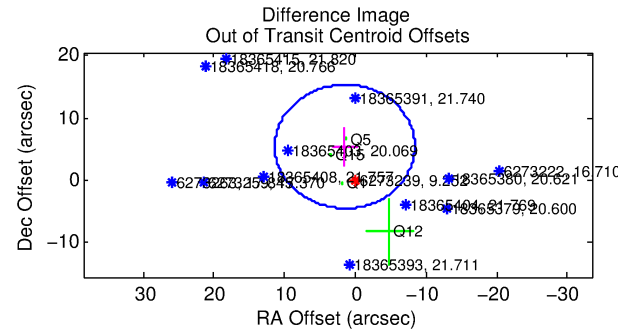
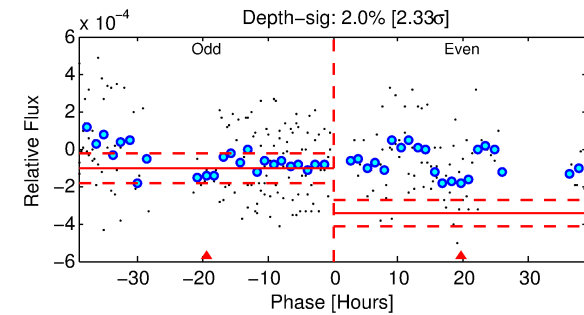
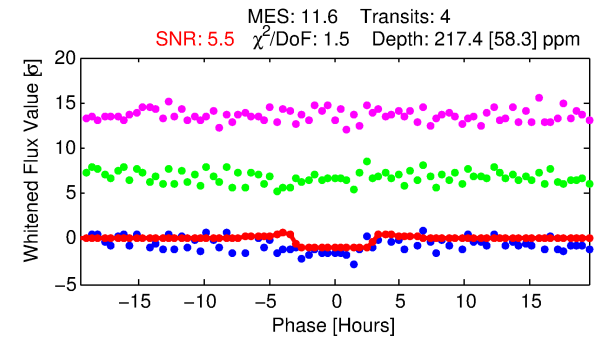
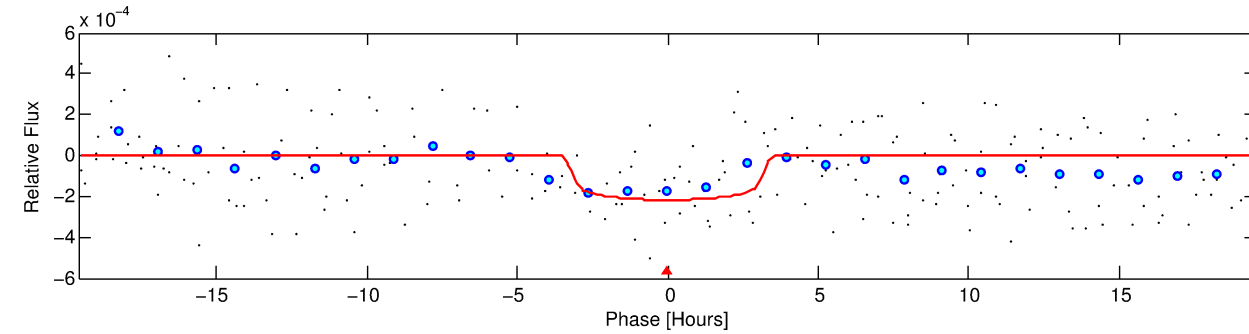
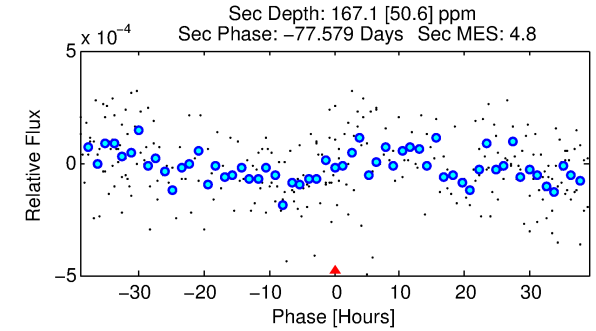
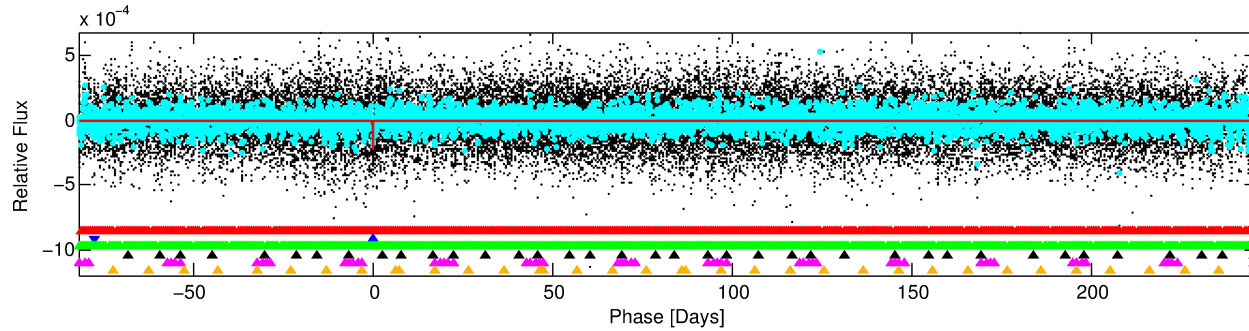
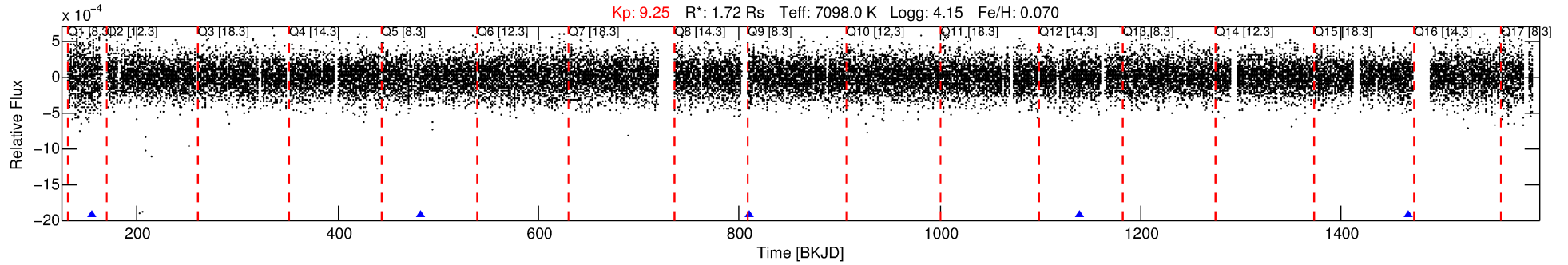
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006273239-02

No Significant Match Found

# DV One-Page Summary

KIC: 6273239 Candidate: 2 of 6 Period: 327.967 d



## DV Fit Results:

Period = 327.96735 [0.00882] d  
Epoch = 154.7416 [0.0227] BKJD  
Rp/R\* = 0.0137 [0.0324]  
a/R\* = 386.36 [5273.34]  
b = 0.12 [110.97]  
Seff = 5.84 [2.47]  
Teq = 396 [42] K  
Rp = 2.56 [6.13] Re  
a = 1.0718 [0.2851] AU  
Ag = 16080.60 [76564.35] [0.21σ]  
Teff = 6901 [8195] K [0.79σ]

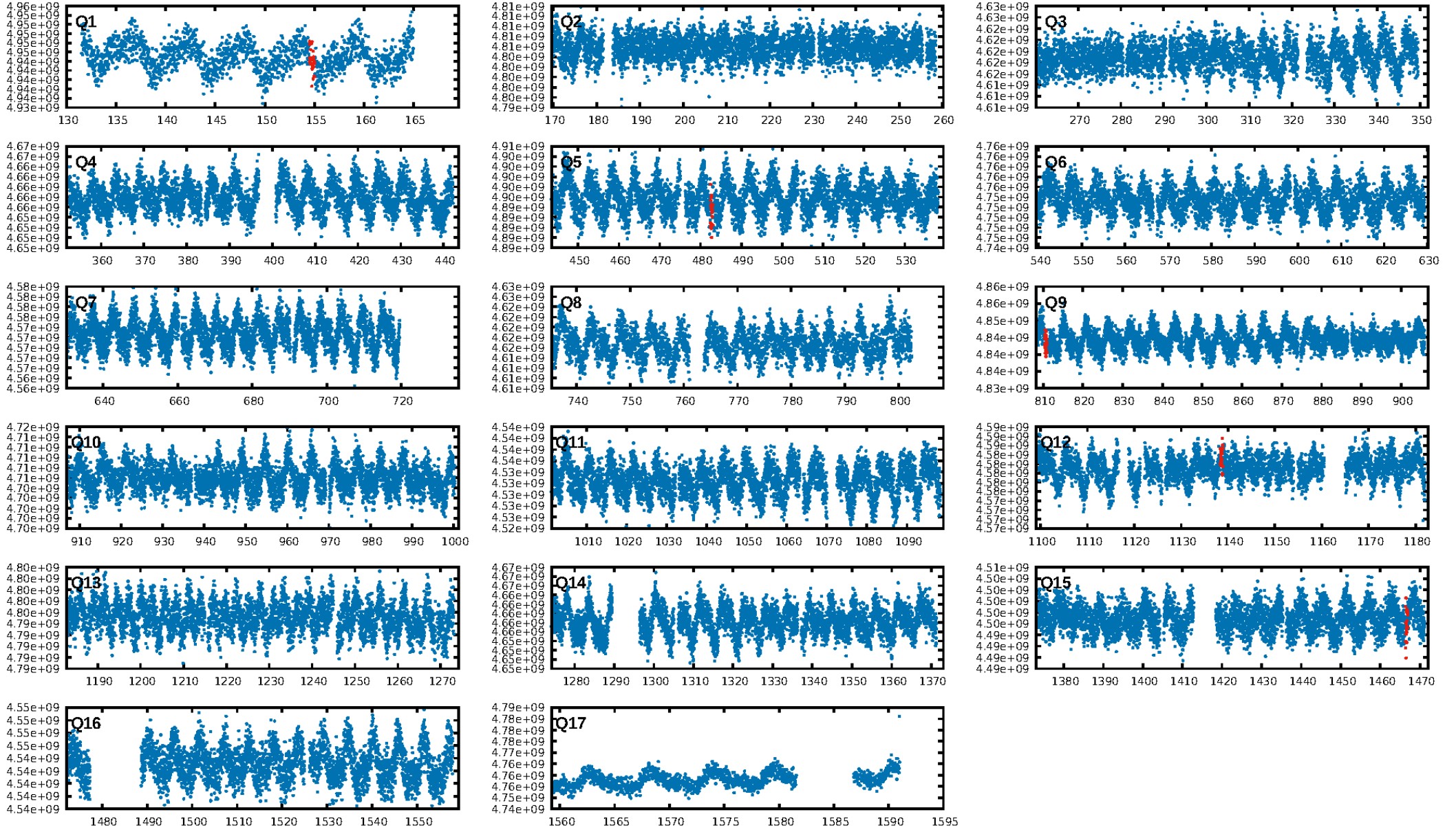
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [971.14σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 94.3%  
Bootstrap-pfa: 3.74e-14  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 20.4%  
Centroid-so: 2.052 arcsec [1.55σ]  
OotOffset-rm: 5.606 arcsec [1.70σ]  
OotOffset-st: 0/1/1/2 [4]  
KicOffset-rm: 6.284 arcsec [1.40σ]  
KicOffset-st: 0/1/1/2 [4]  
DiffImageQuality-fgm: 0.00 [0/4]  
DiffImageOverlap-fno: 0.00 [0/5]

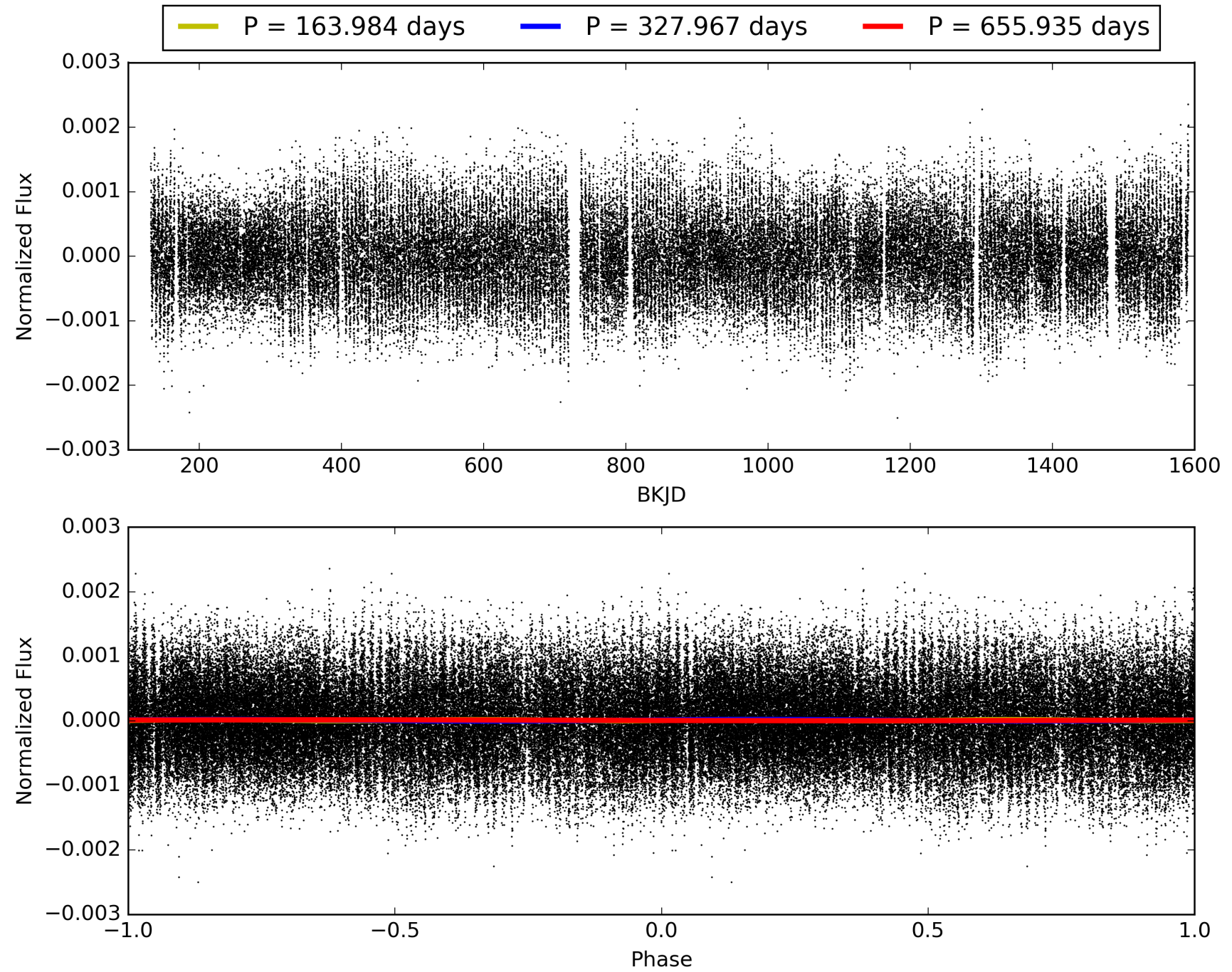
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 20:13:23 Z

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

# TCE 006273239-02, PDC Light Curves



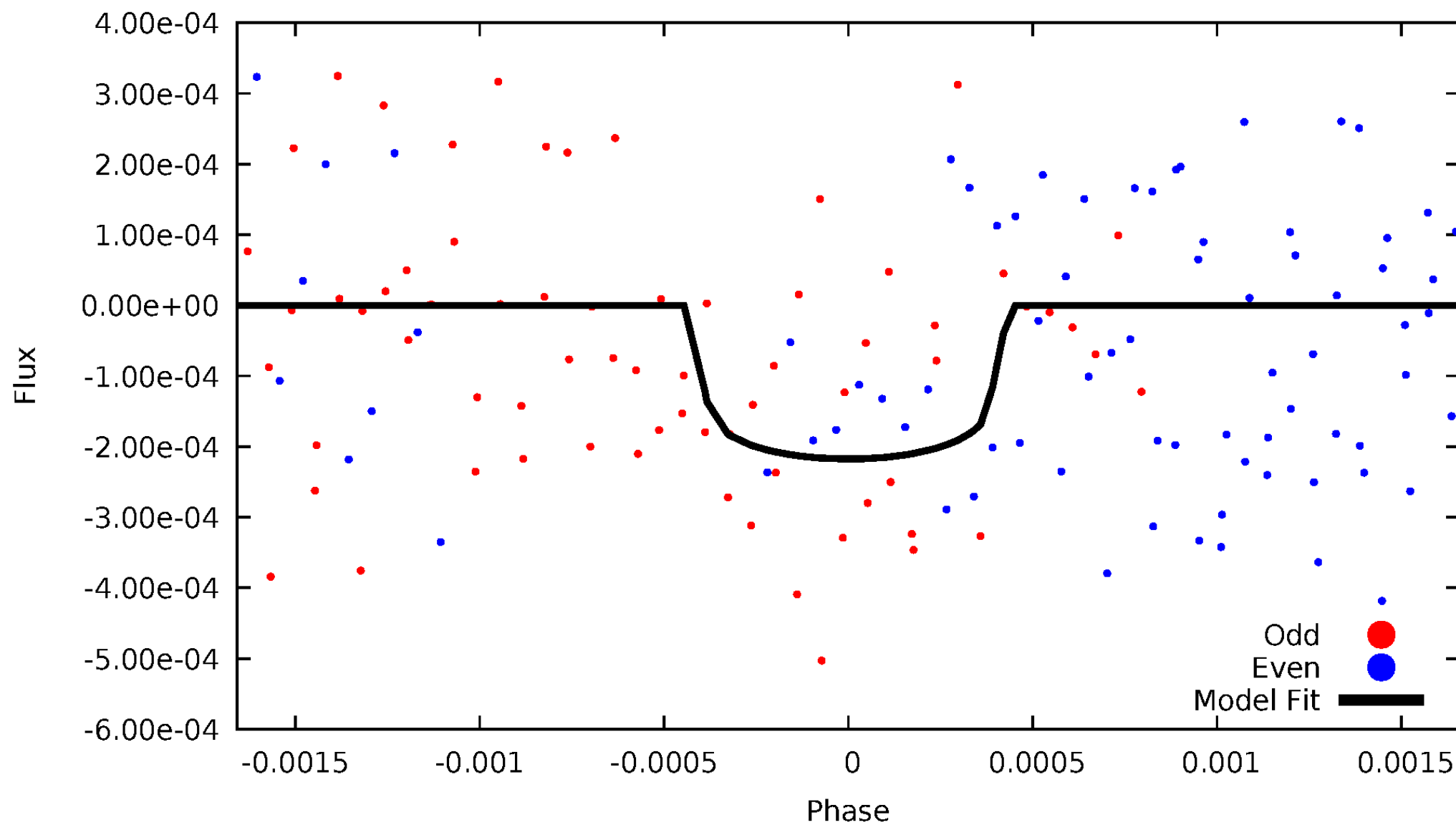
# TCE 006273239-02





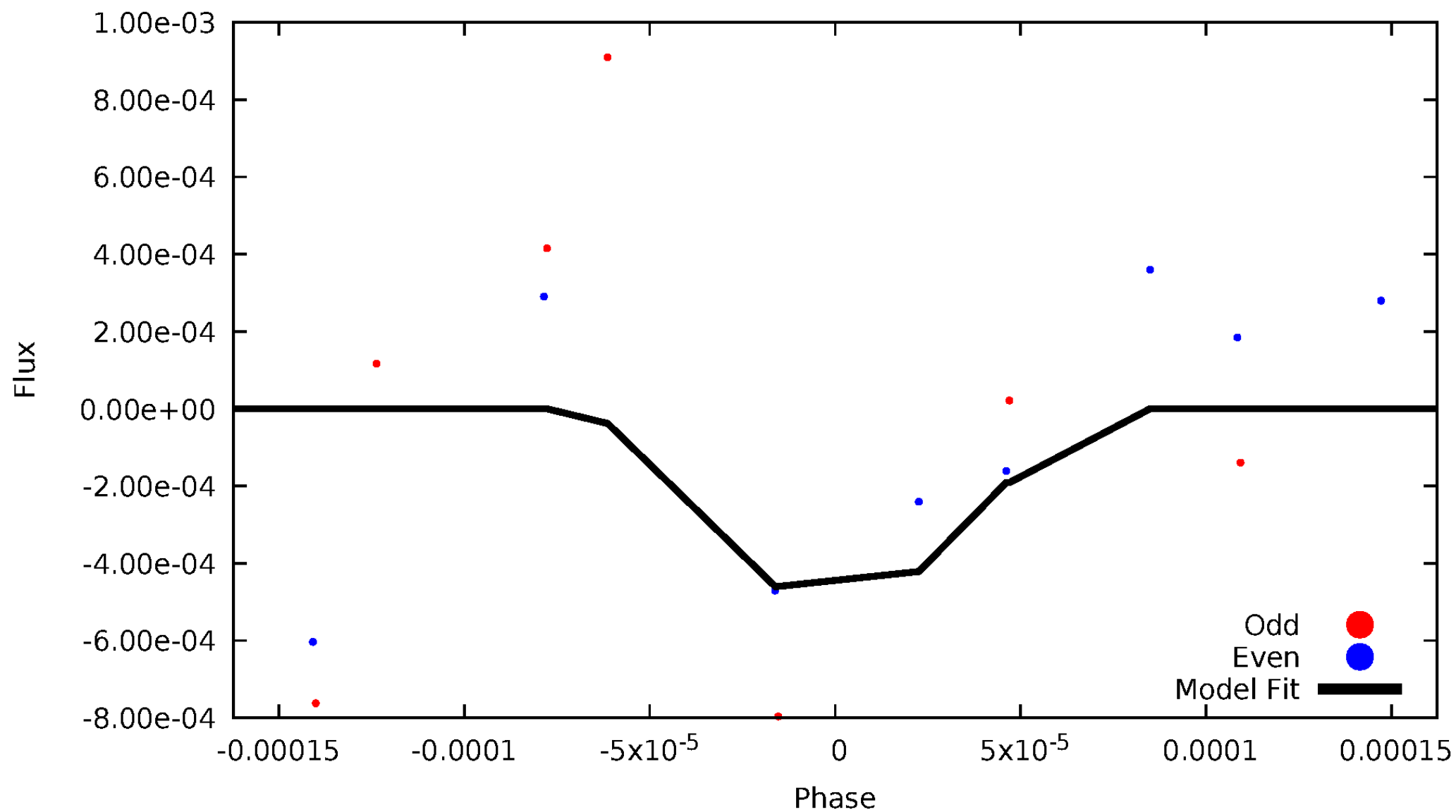
# DV Odd/Even

TCE 006273239-02



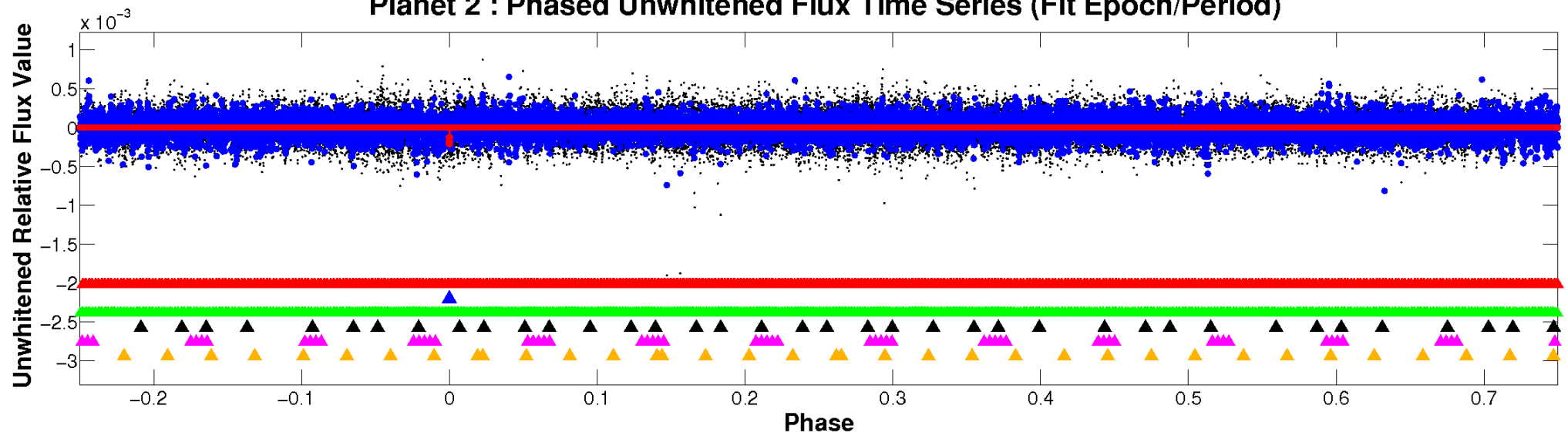
# ALT Odd/Even

TCE 006273239-02

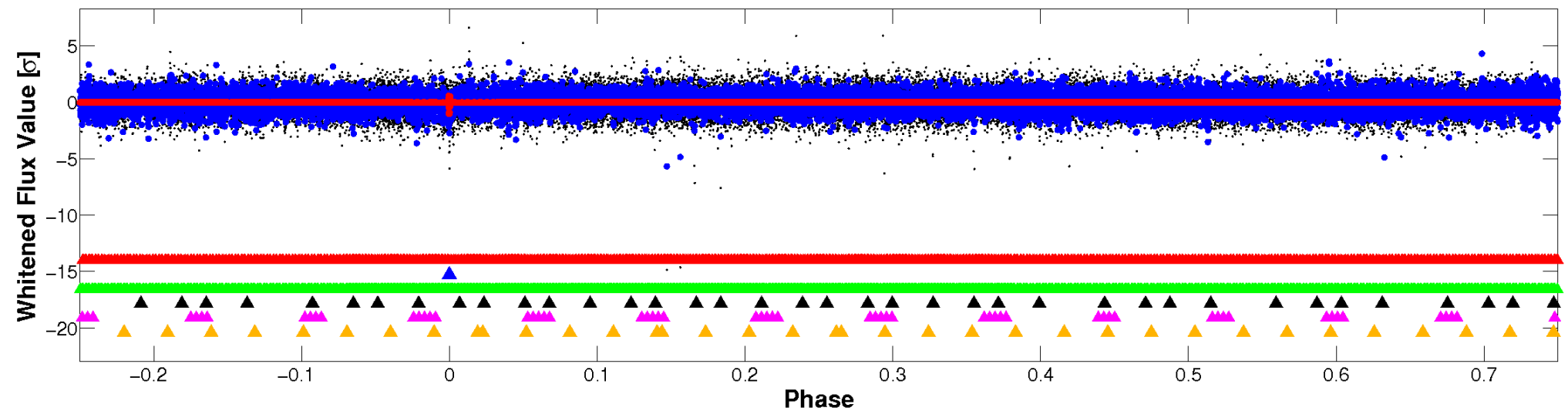


# Non-Whitened Vs. Whitened Light Curve

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

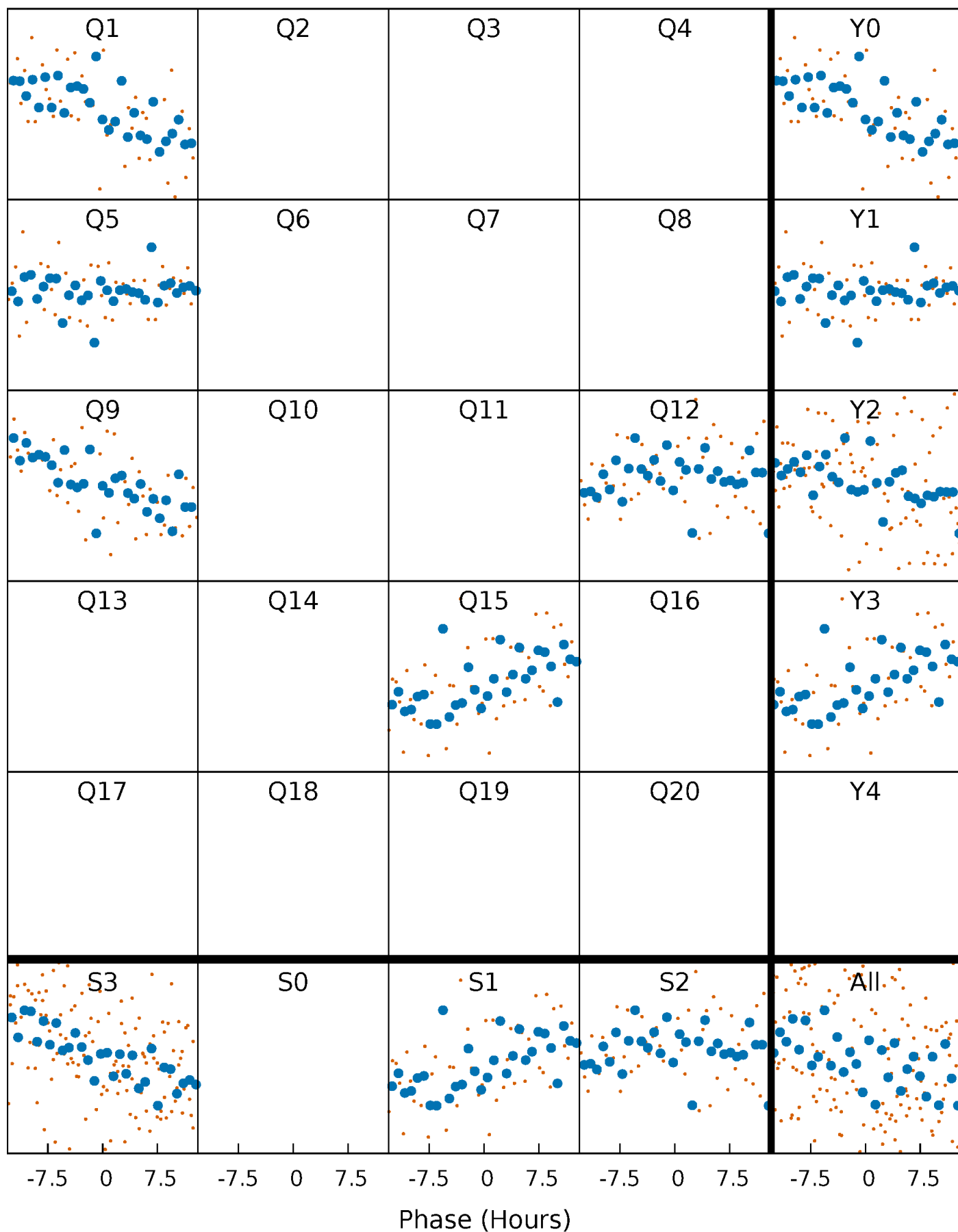


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

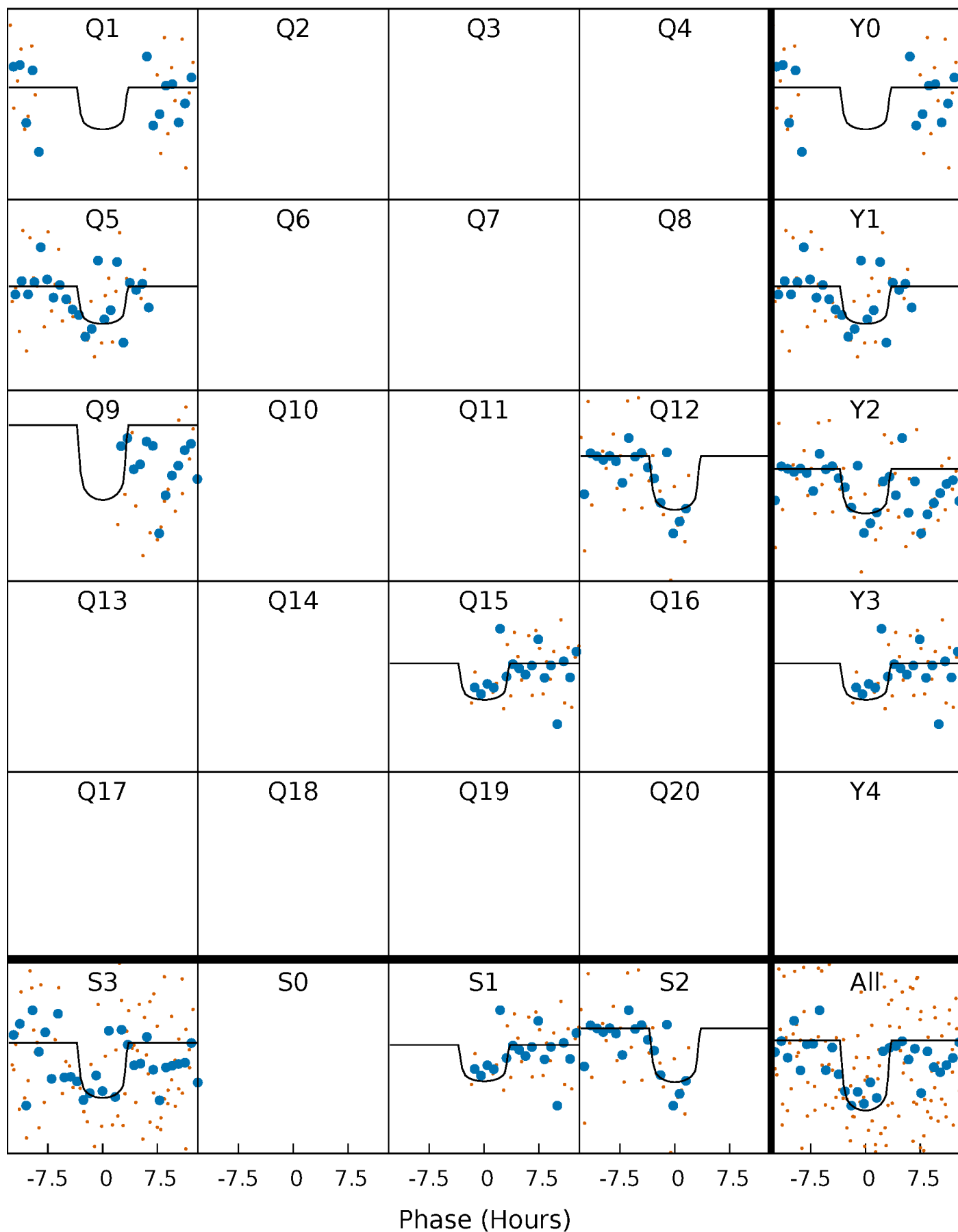
TCE 006273239-02     $P=327.967345$  Days     $T_0=154.741632$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 006273239-02     $P=327.967345$  Days     $T_0=154.741632$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

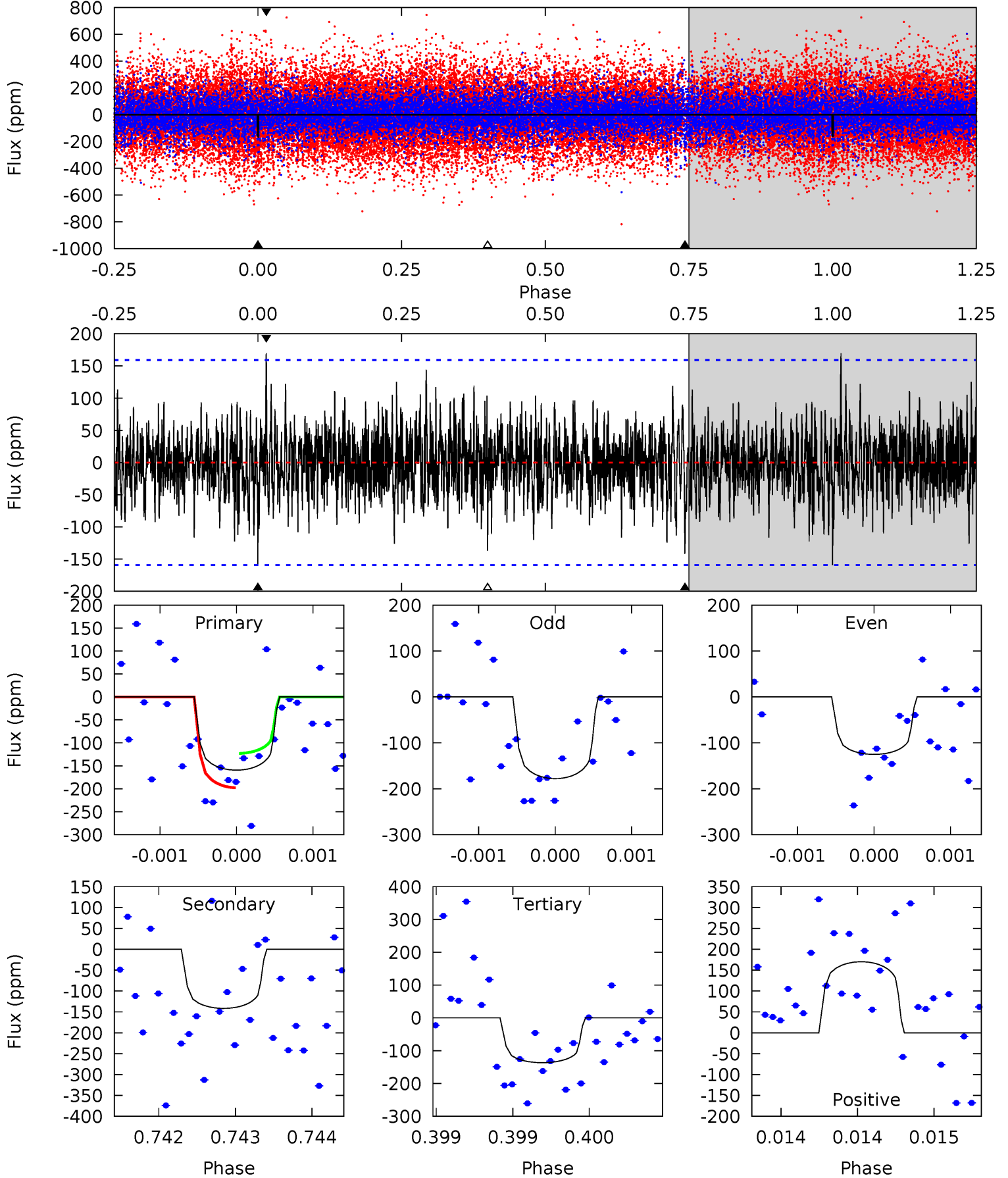
TCE 006273239-02 P=327.985883 Days  $T_0=154.784574$  (BKJD)



# DV Model-Shift Uniqueness Test

006273239-02, P = 327.967345 Days, E = 154.741632 Days

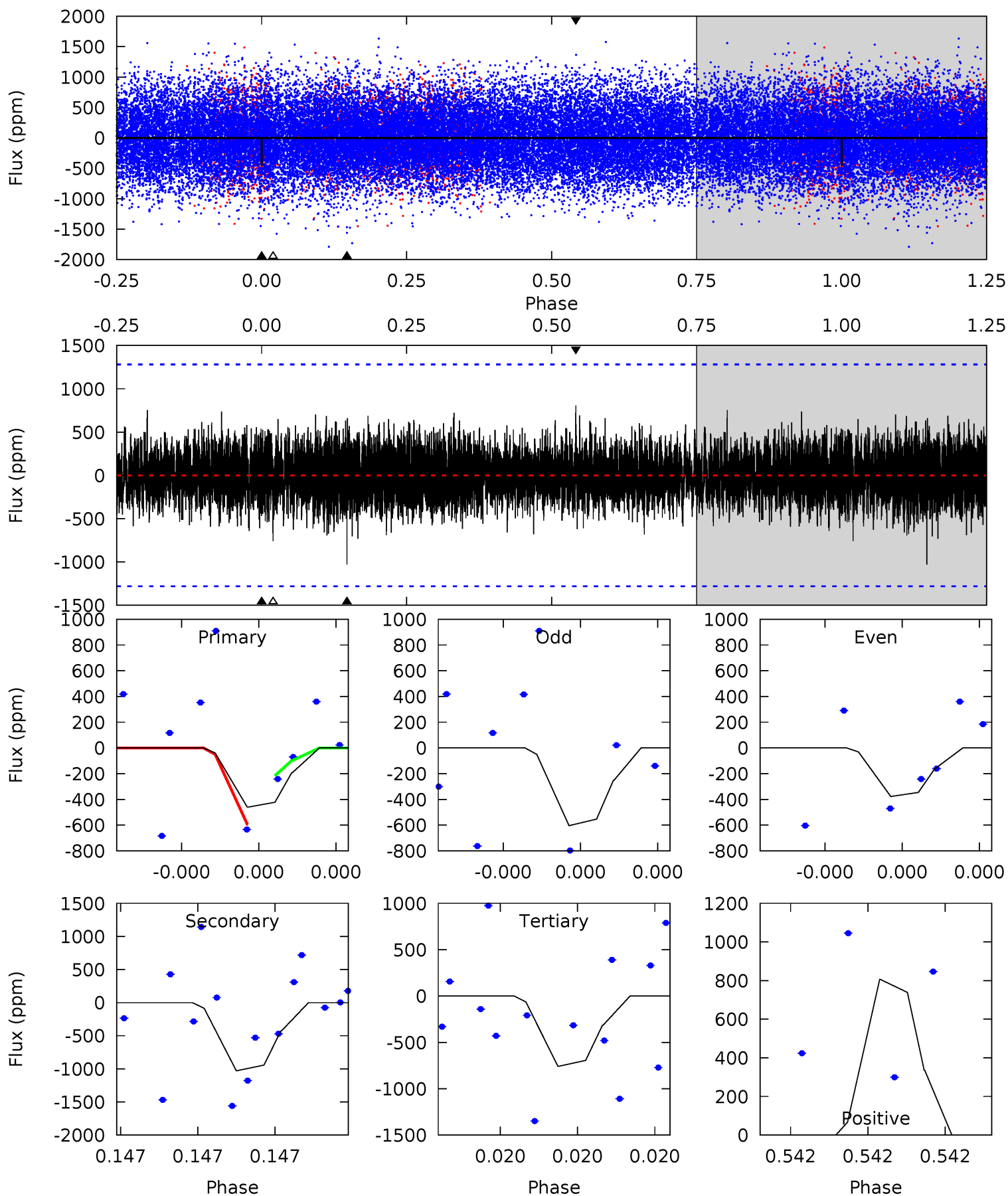
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.50	4.88	4.71	5.87	5.49	3.35	1.39	0.79	-0.37	0.17	-0.98	0.89	1.12	0.52	1.28



# Alt Model-Shift Uniqueness Test

006273239-02, P = 327.985883 Days, E = 154.784574 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
2.10	4.69	3.46	3.67	5.83	3.87	0.86	-1.36	-1.57	1.23	1.01	0.44	1.00	0.44	0.86





### Stellar Parameters For KIC 006273239

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7098^{+197}_{-338}$	$4.152^{+0.108}_{-0.201}$	$0.070^{+0.200}_{-0.350}$	$1.717^{+0.558}_{-0.300}$	$1.527^{+0.206}_{-0.229}$	$0.425^{+0.264}_{-0.220}$
	+3%/-5%	+3%/-5%	+286%/-500%	+32%/-17%	+13%/-15%	+62%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 006273239-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-142 \pm 29$	$5.13^{+5.51}_{-3.58}$	$559^{+44}_{-35}$	$4784^{+3917}_{-1126}$	$3237^{+32130}_{-2518}$
Alt.	$-1028 \pm 219$	$6.48^{+5.82}_{-4.18}$	$555^{+47}_{-36}$	$6849^{+7018}_{-1780}$	$15409^{+109457}_{-11174}$

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

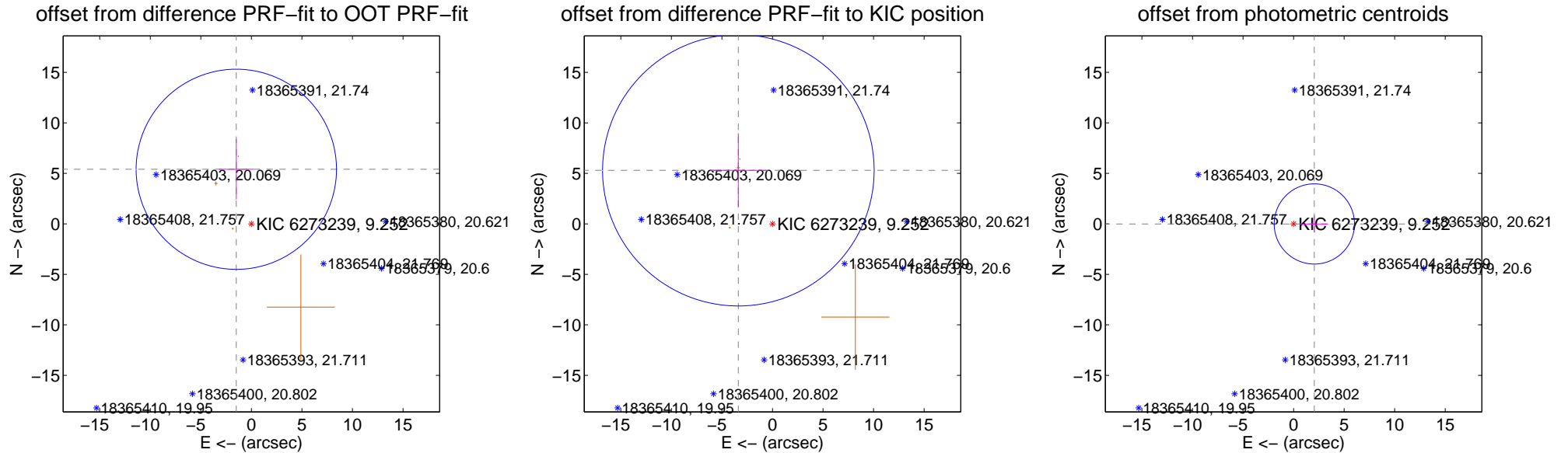
## DV Centroid Data

Supplemental centroid analysis for 006273239-02. **Kepler magnitude: 9.25.** Transit SNR 5.51

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

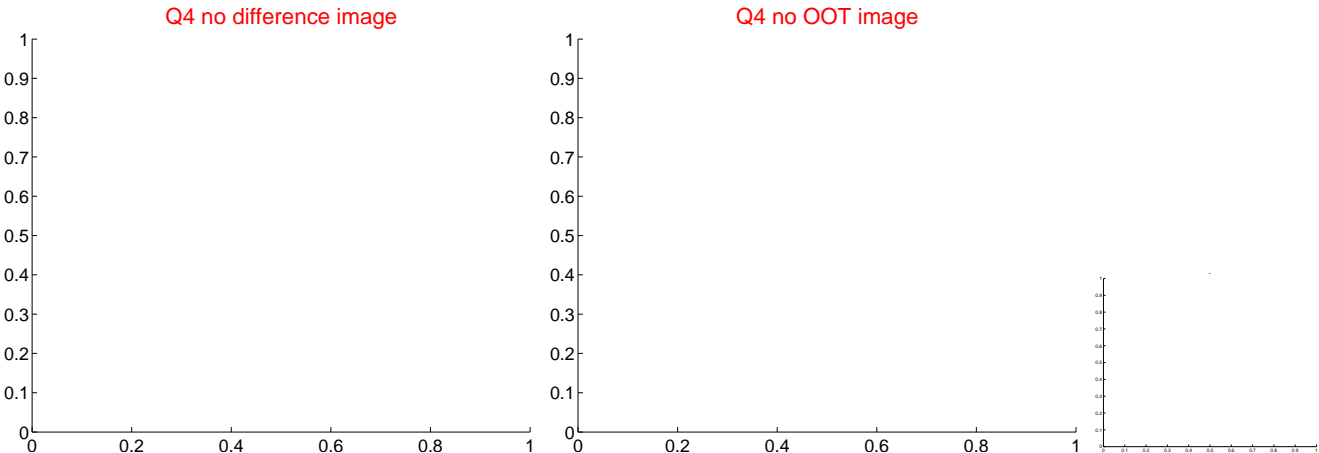
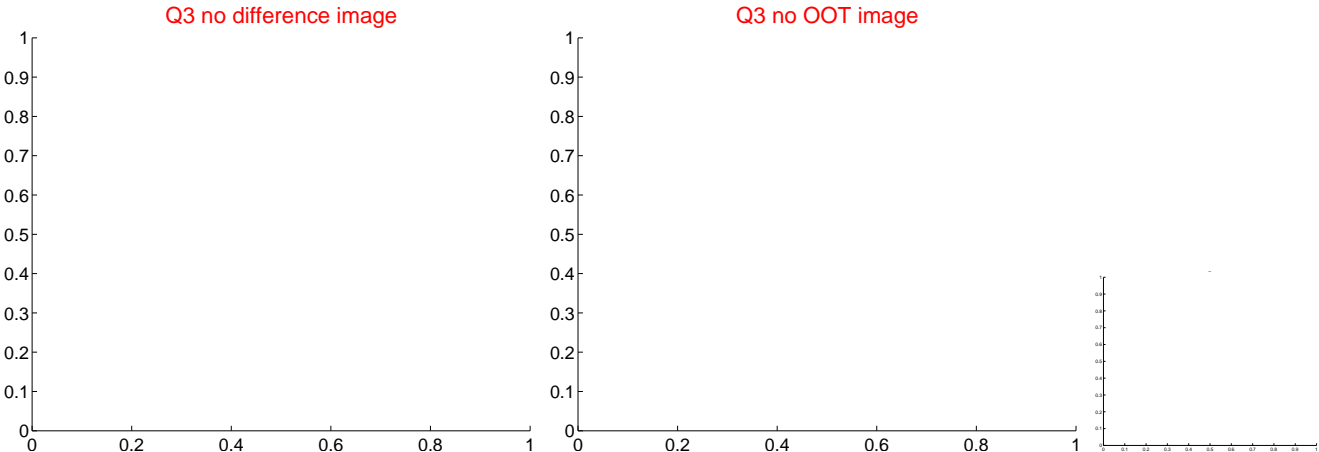
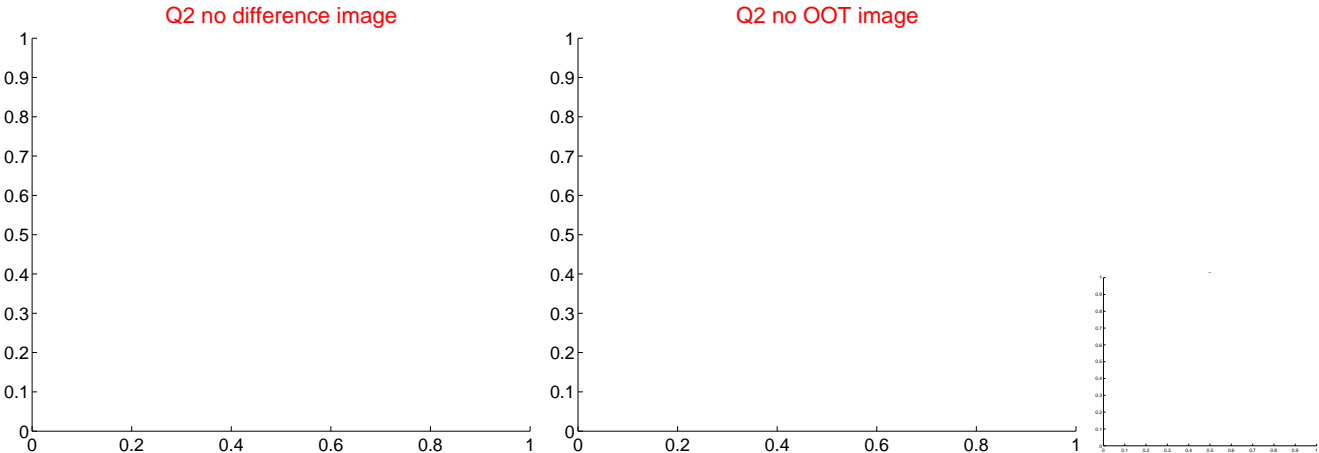
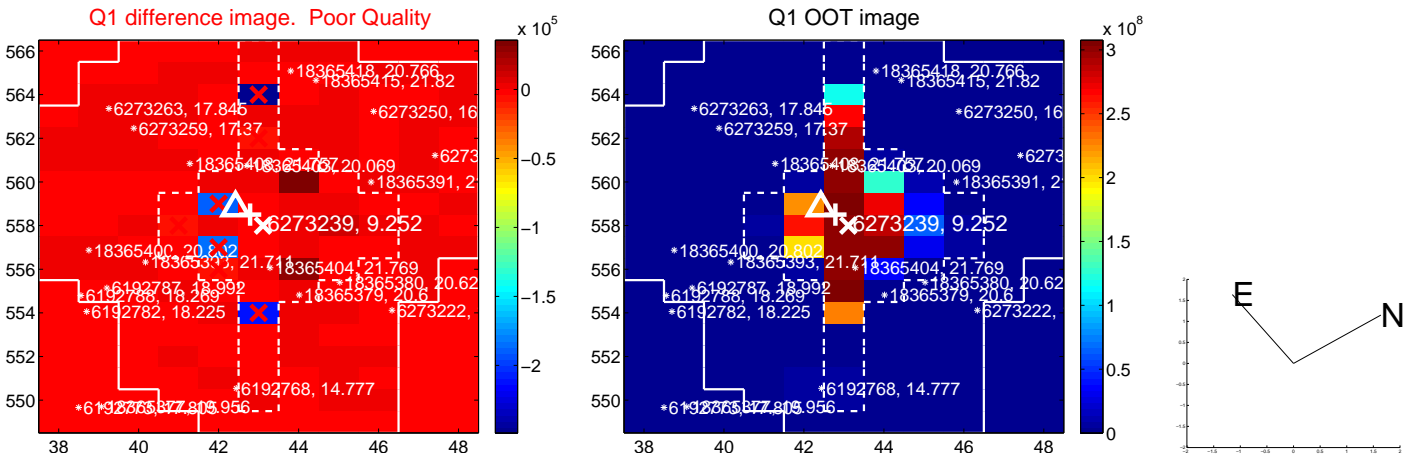
The direct PRF centroid is offset from the target star catalog position by about 1.56 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.606 \pm 3.303$	1.70	$1.490 \pm 1.726$	$5.404 \pm 2.992$
PRF-fit source offset from KIC position	$6.284 \pm 4.476$	1.40	$3.375 \pm 2.804$	$5.300 \pm 3.674$
photometric centroid source offset	$2.05 \pm 1.32$	1.55	$-2.05 \pm 1.32$	$-0.01 \pm 0.83$

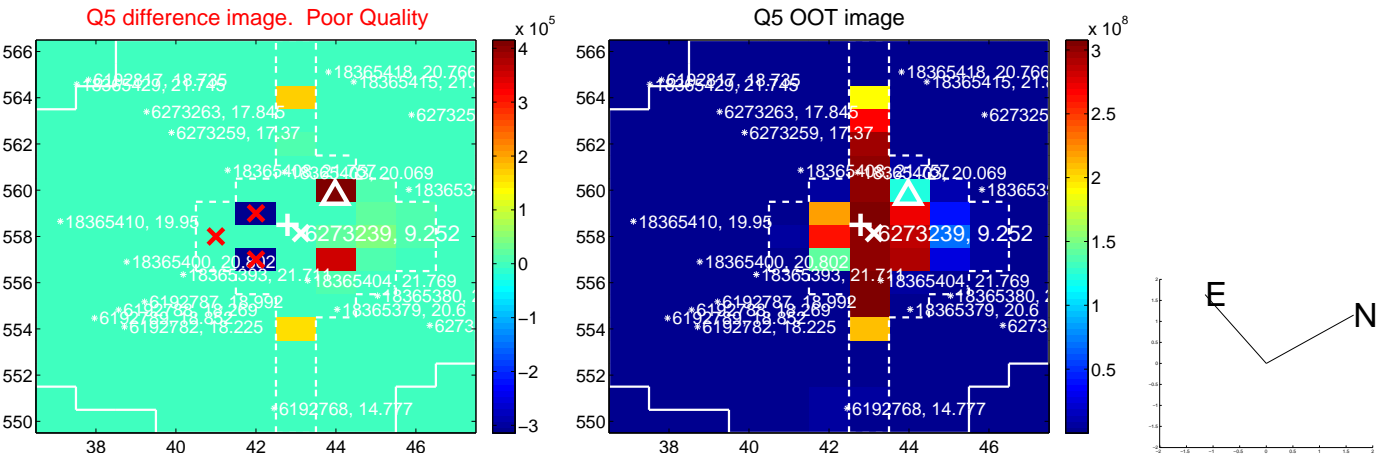


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

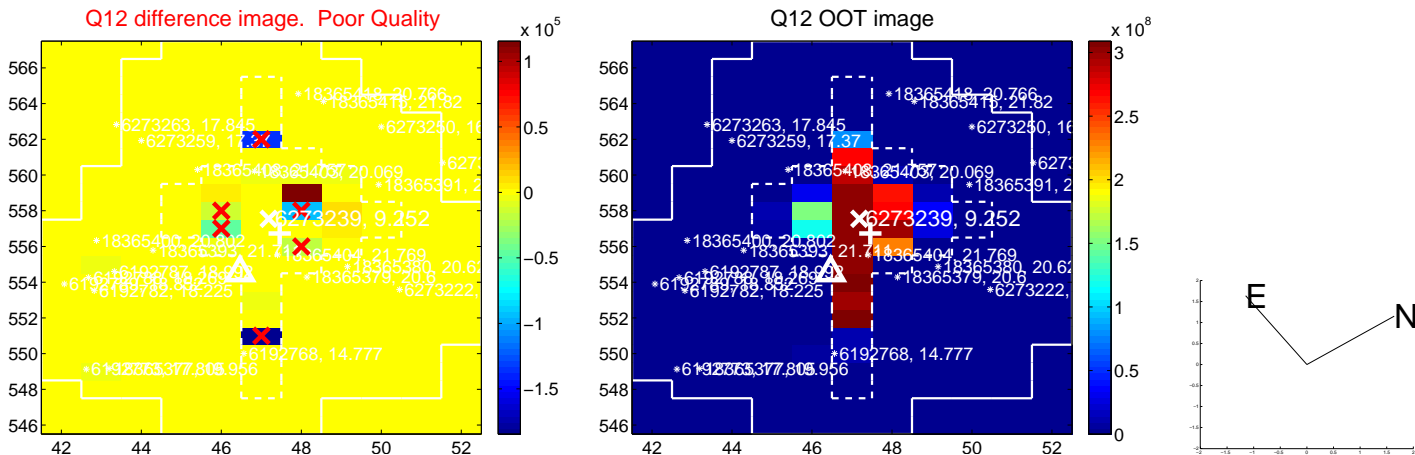
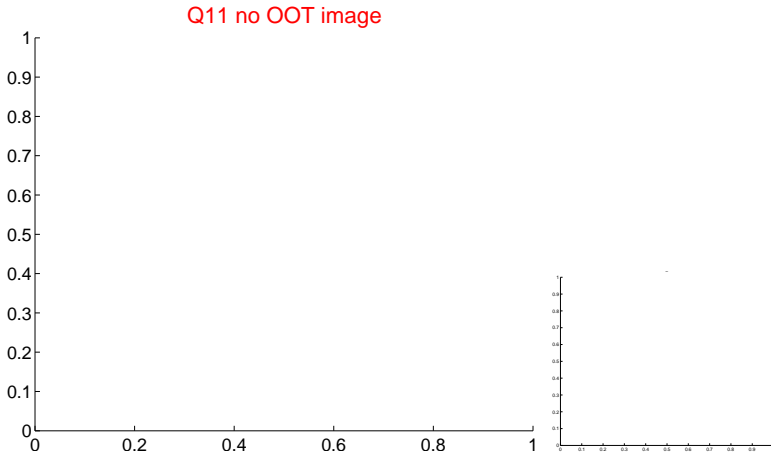
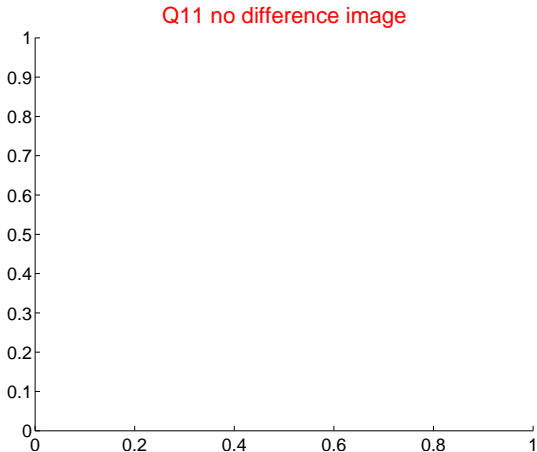
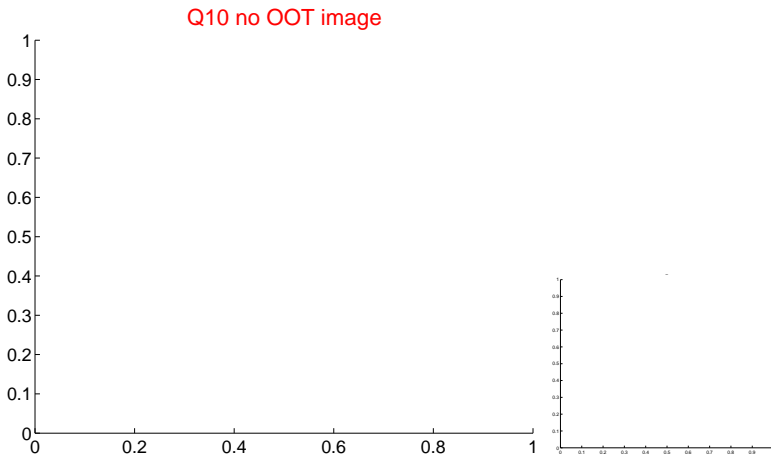
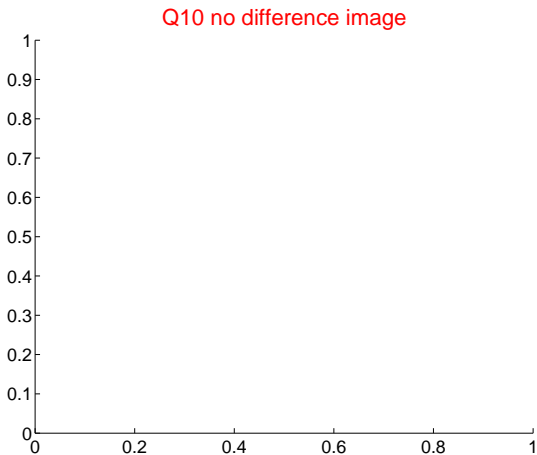
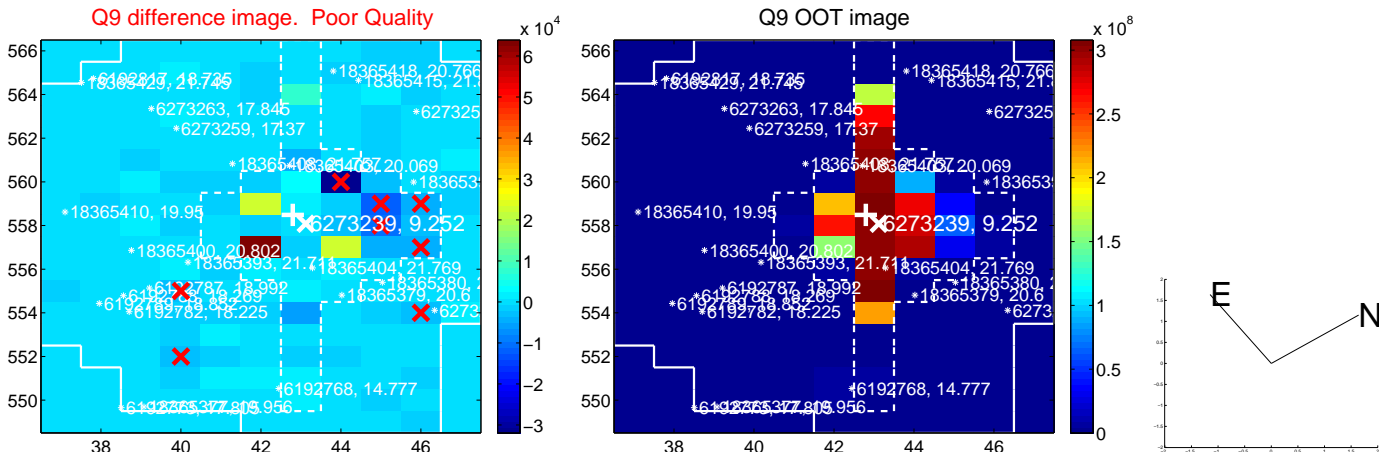
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

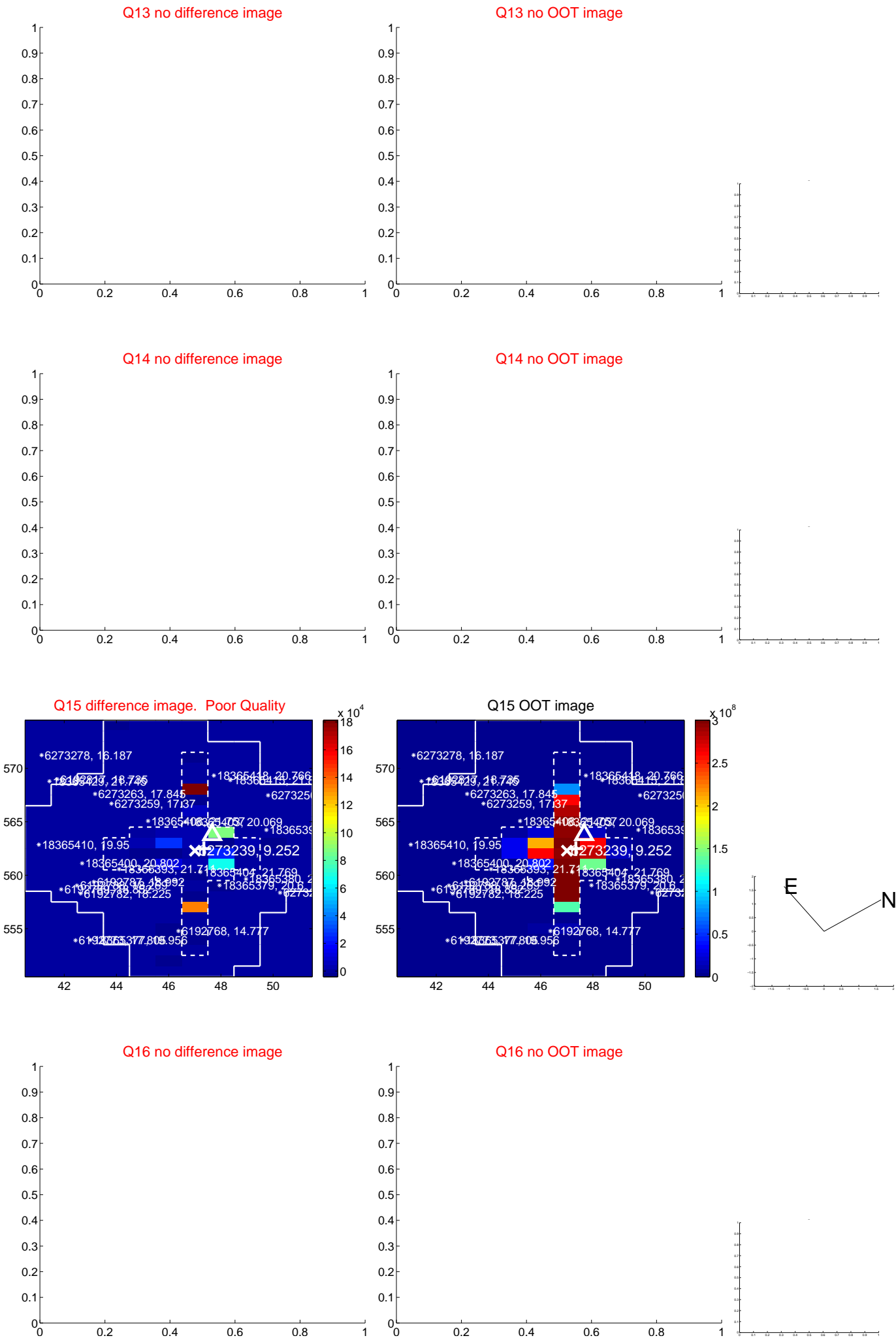


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

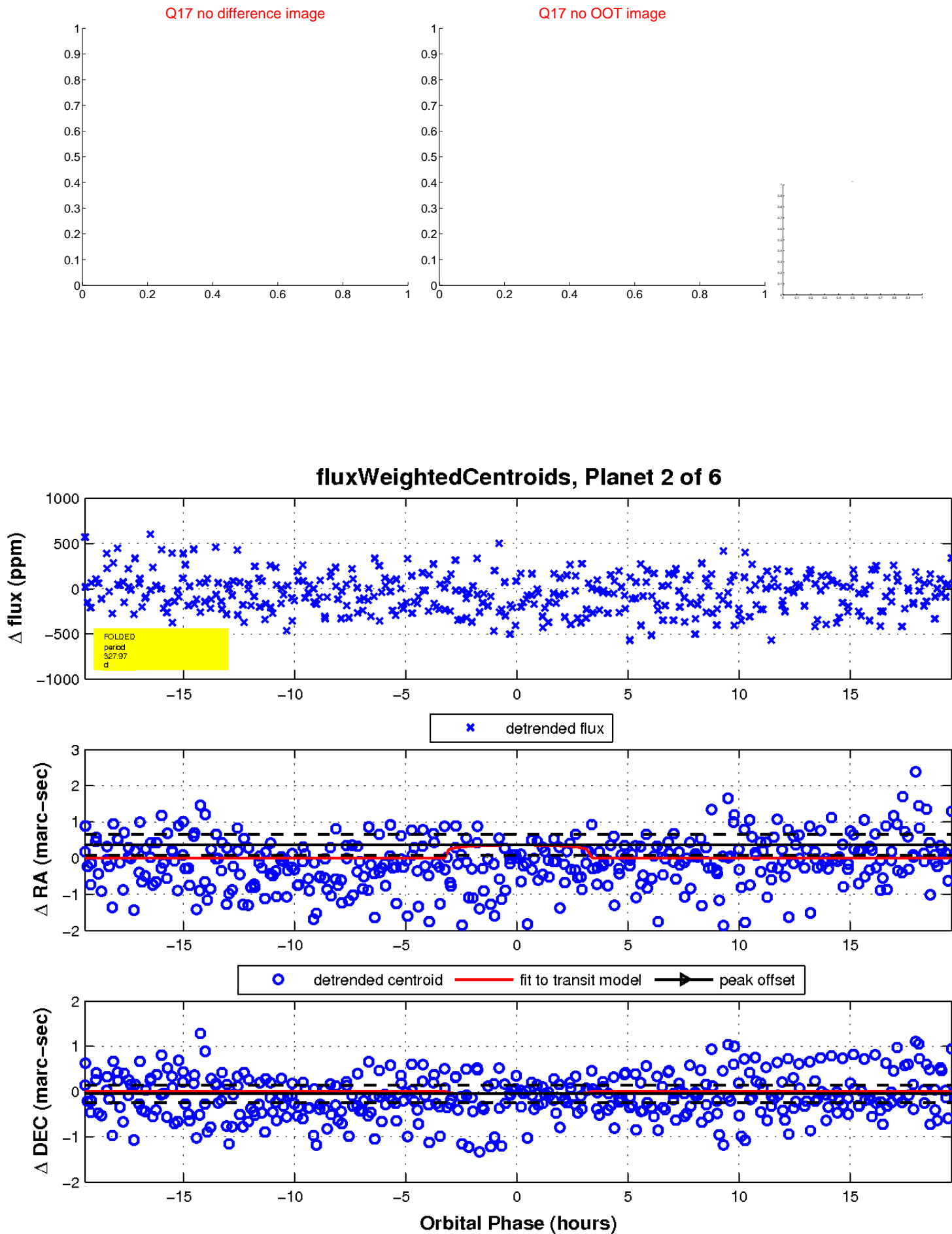




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

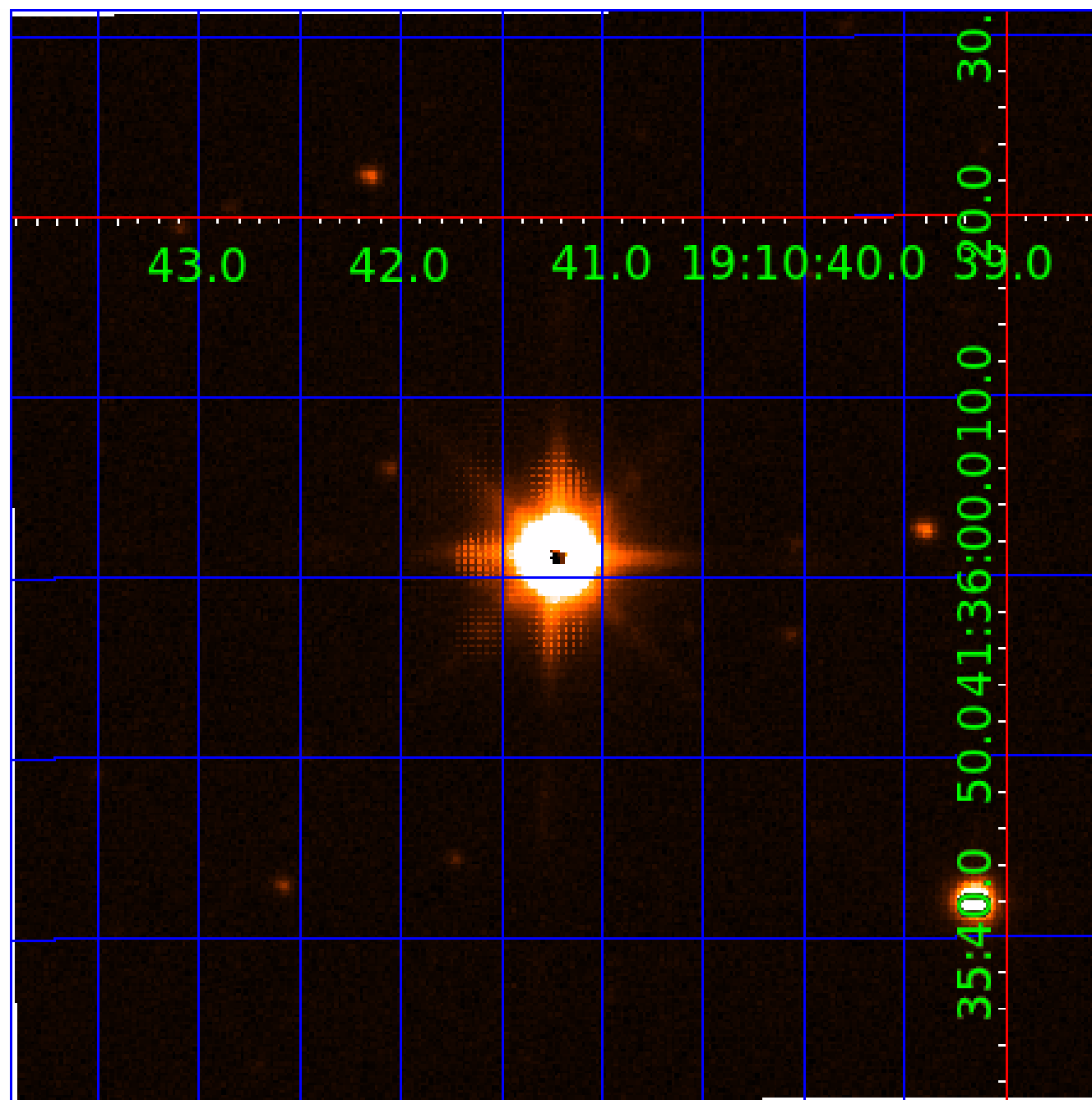


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 006273239

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006273239-01	OBS	No	1.410238	132.131954	21.1	4.751	11.9	11.1	1.72	7098	0.91	8347.61
006273239-02	OBS	No	327.967345	154.741632	217.4	6.526	11.6	5.5	1.72	7098	2.56	5.84
006273239-03	OBS	No	1.410189	132.863428	21.9	4.797	10.2	10.9	1.72	7098	0.83	8348.00
006273239-05	OBS	No	25.321563	146.804469	18.7	4.127	10.0	0.7	1.72	7098	0.86	177.54
006273239-06	OBS	No	39.787611	161.026669	318.3	2.852	10.8	7.6	1.72	7098	3.14	97.19

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006273239-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
006273239-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006273239-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED
006273239-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
006273239-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

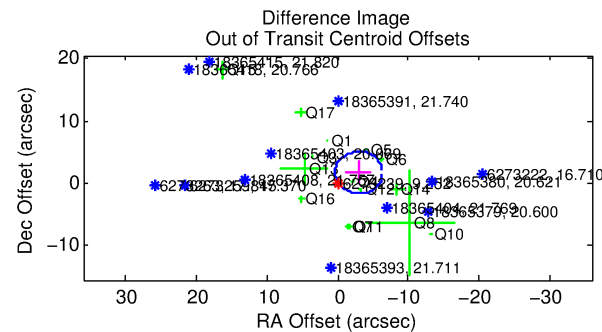
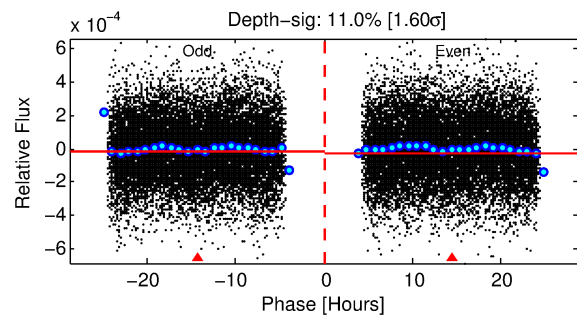
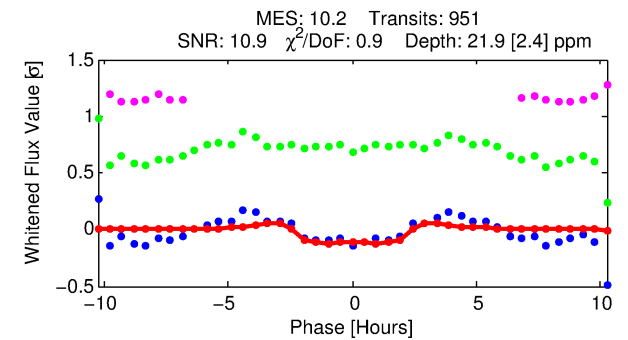
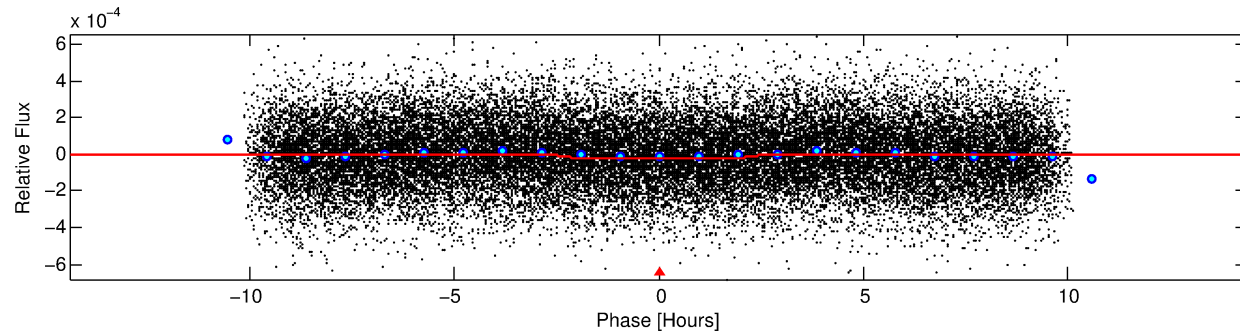
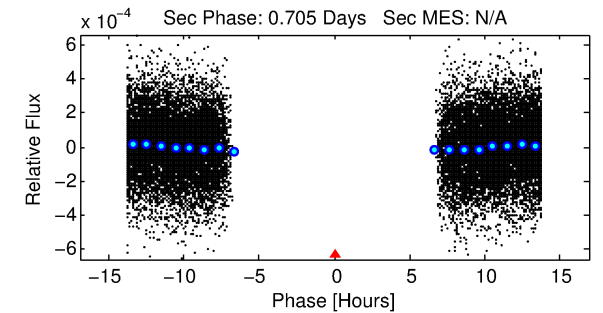
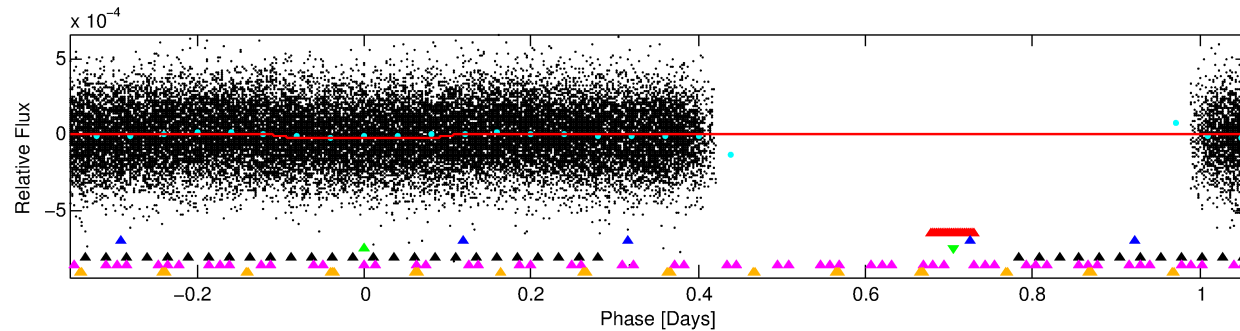
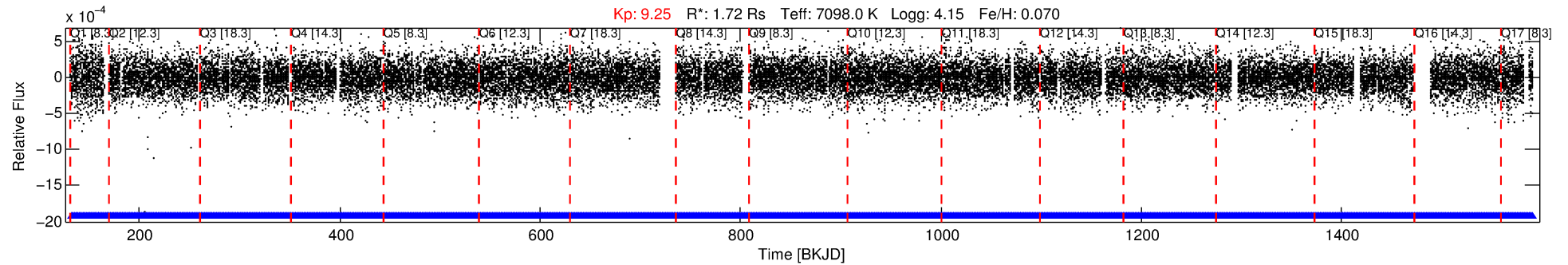
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006273239-03

No Significant Match Found

# DV One-Page Summary

KIC: 6273239 Candidate: 3 of 6 Period: 1.410 d



## DV Fit Results:

Period = 1.41019 [0.00001] d  
Epoch = 132.8634 [0.0042] BKJD  
Rp/R\* = 0.0044 [0.0011]  
a/R\* = 2.08 [2.19]  
b = 0.50 [2.04]  
Seff = 8348.00 [3526.20]  
Teq = 2437 [257] K  
Rp = 0.83 [0.34] Re  
a = 0.0283 [0.0075] AU

## DV Diagnostic Results:

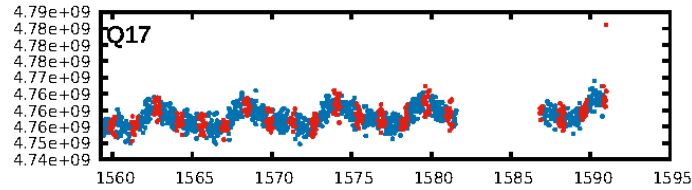
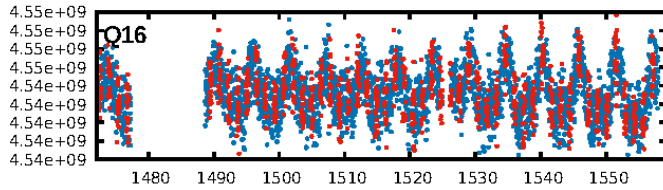
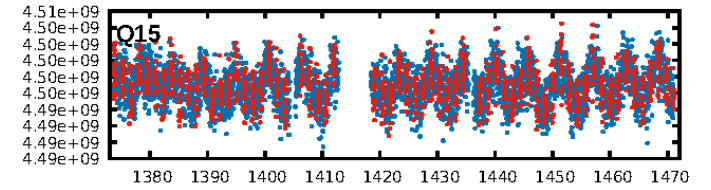
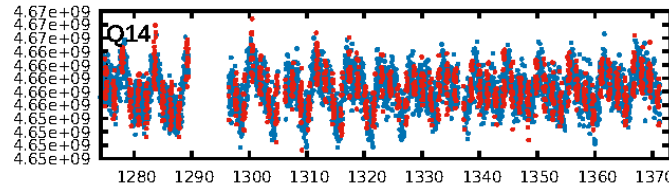
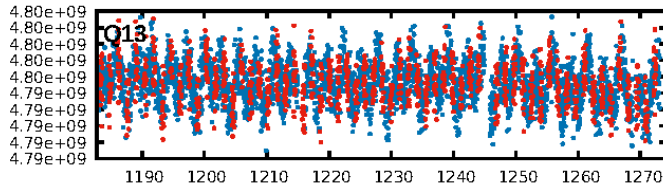
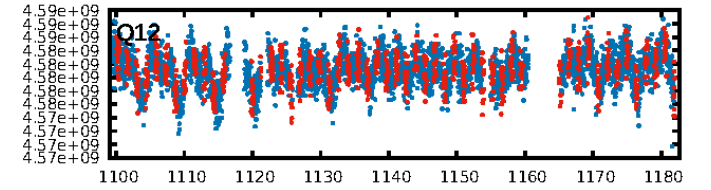
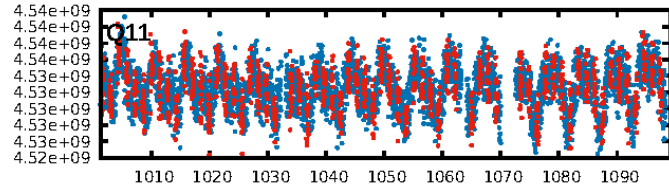
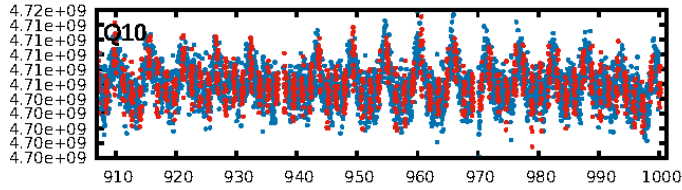
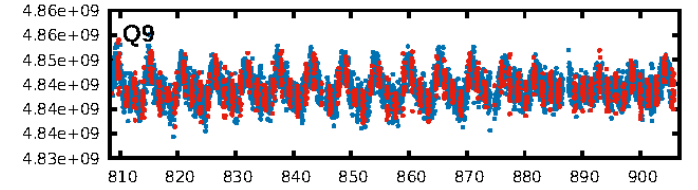
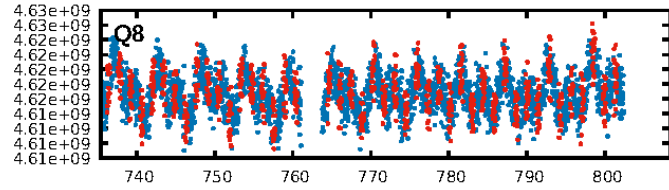
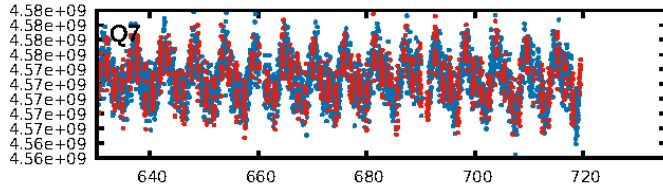
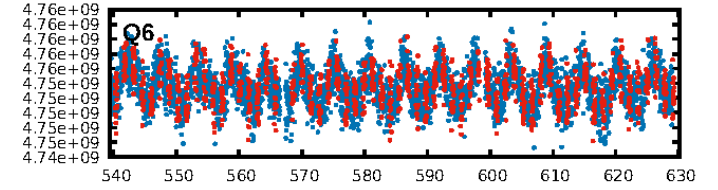
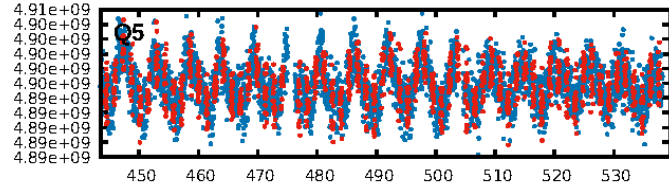
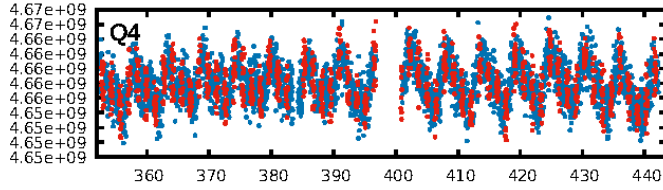
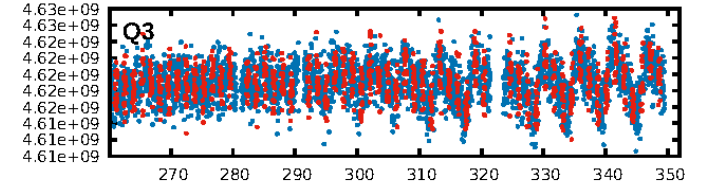
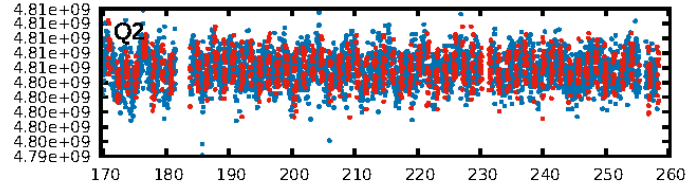
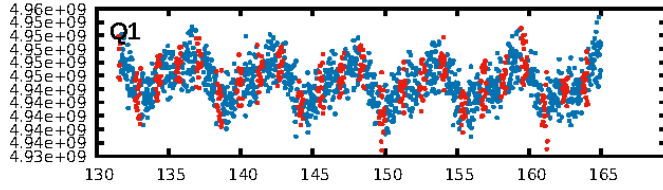
ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.48e-10  
RollingBand-fgt: 1.00 [907/907]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 0.1%  
Centroid-so: 2.652 arcsec [2.95σ]  
OotOffset-rm: 3.429 arcsec [3.04σ]  
KicOffset-rm: 4.651 arcsec [3.03σ]  
OotOffset-st: 3/4/4/4 [15]  
KicOffset-st: 3/4/4/4 [15]  
DiffImageQuality-fgm: 0.13 [2/15]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 20:13:30 Z

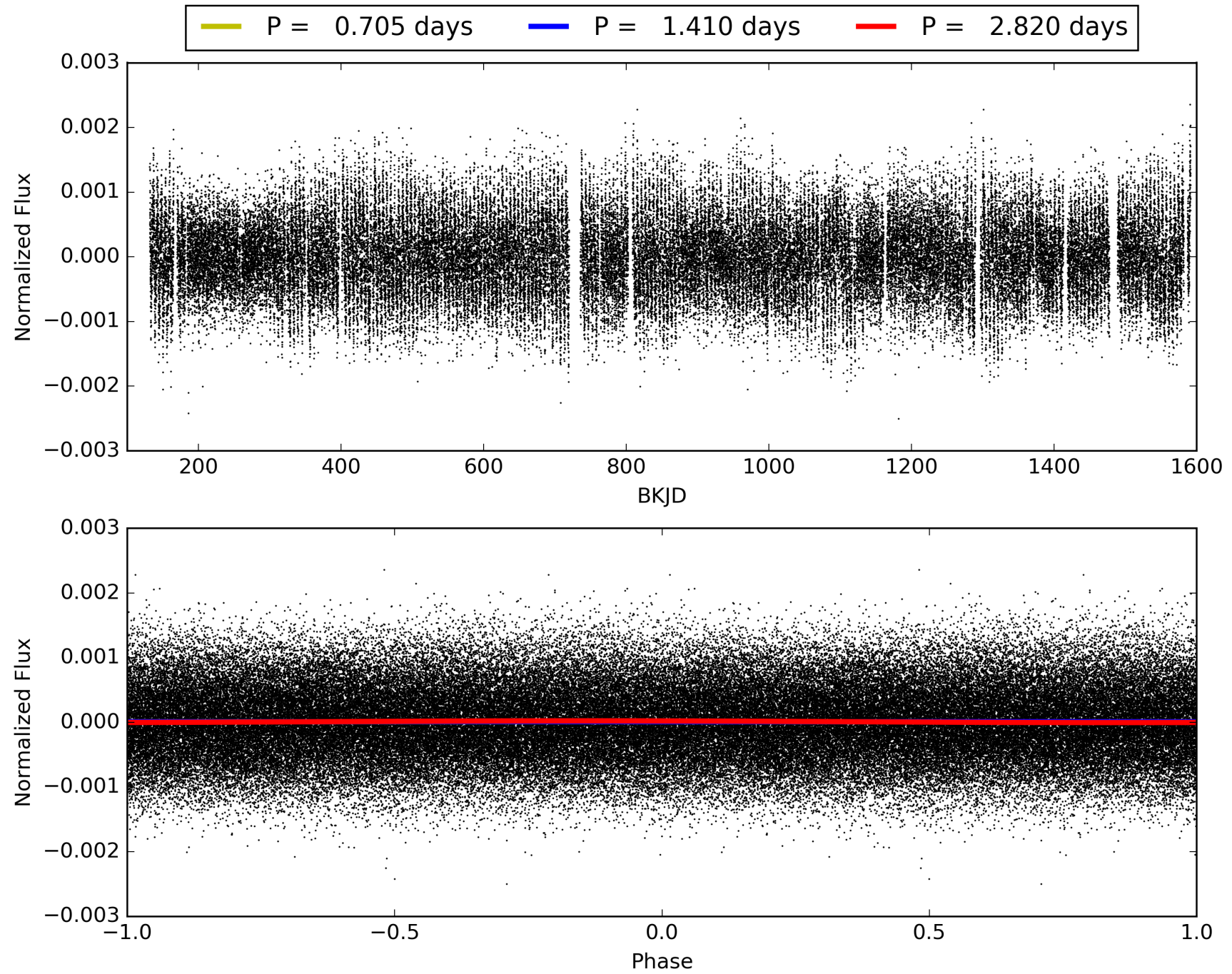
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 006273239-03, PDC Light Curves

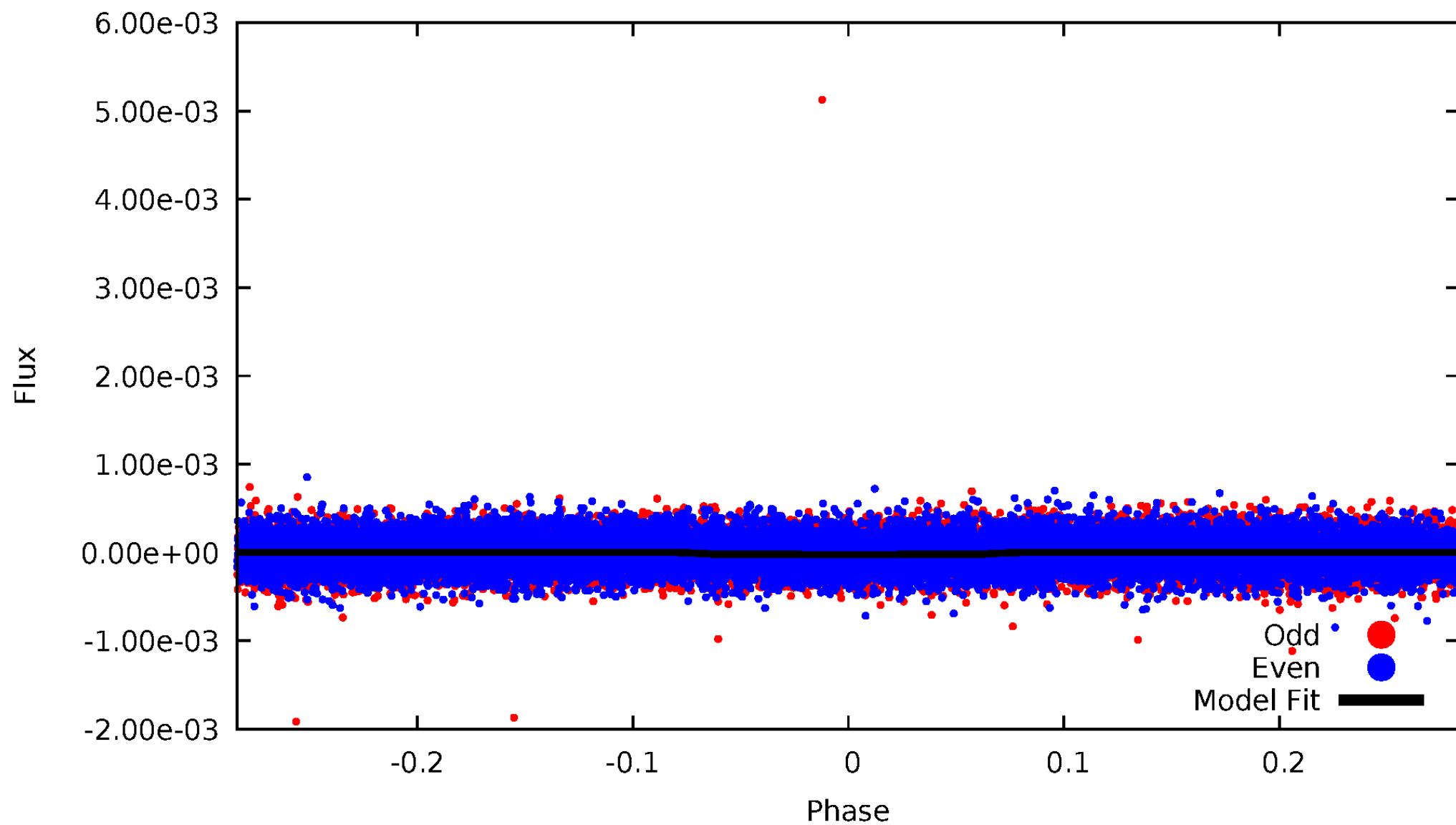


TCE 006273239-03



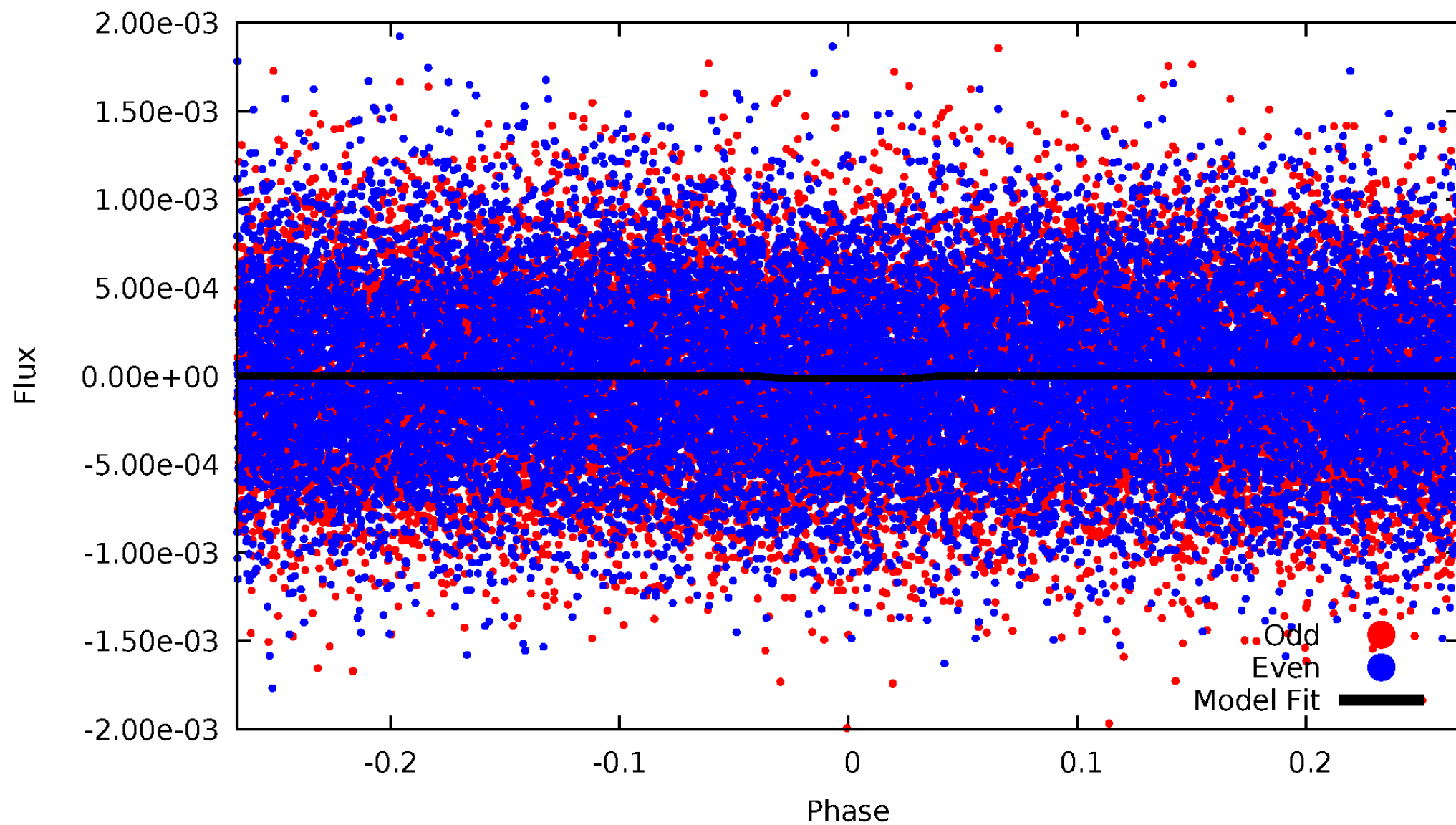
# DV Odd/Even

TCE 006273239-03



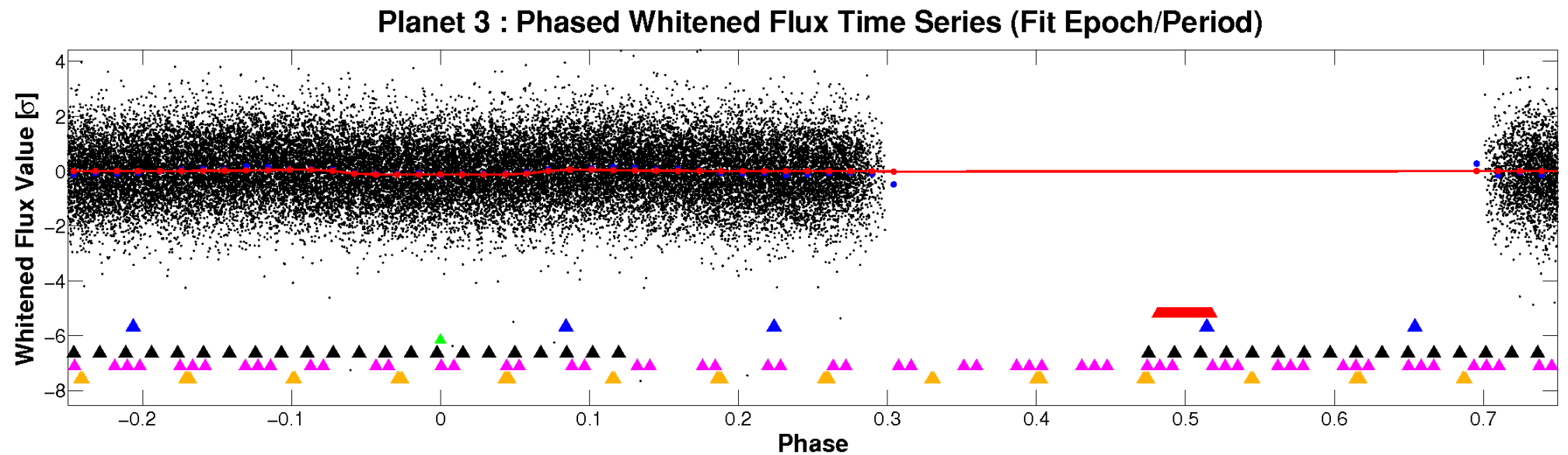
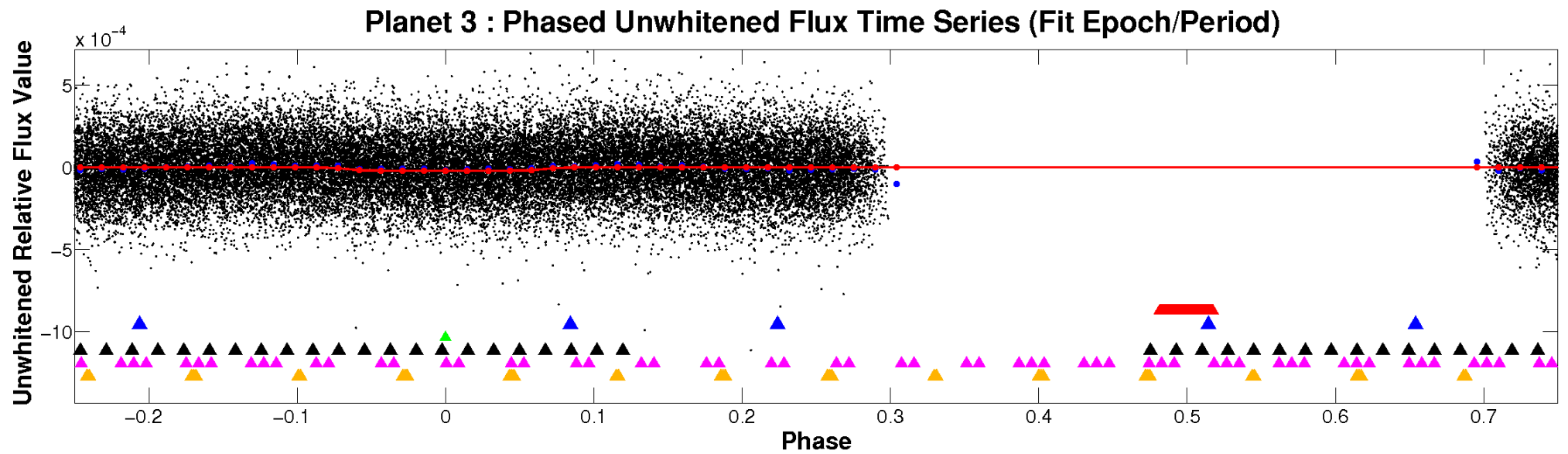
# ALT Odd/Even

TCE 006273239-03



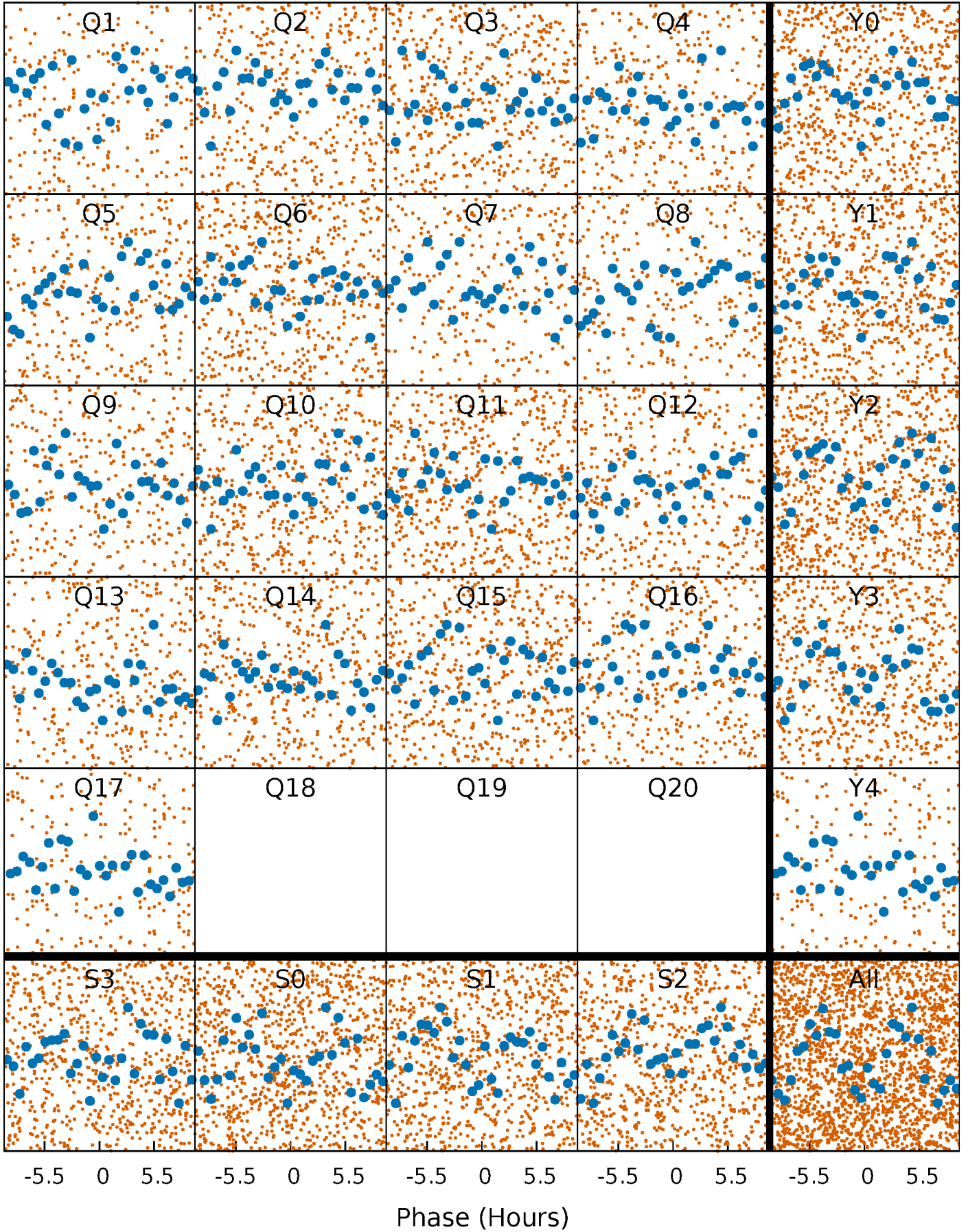


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

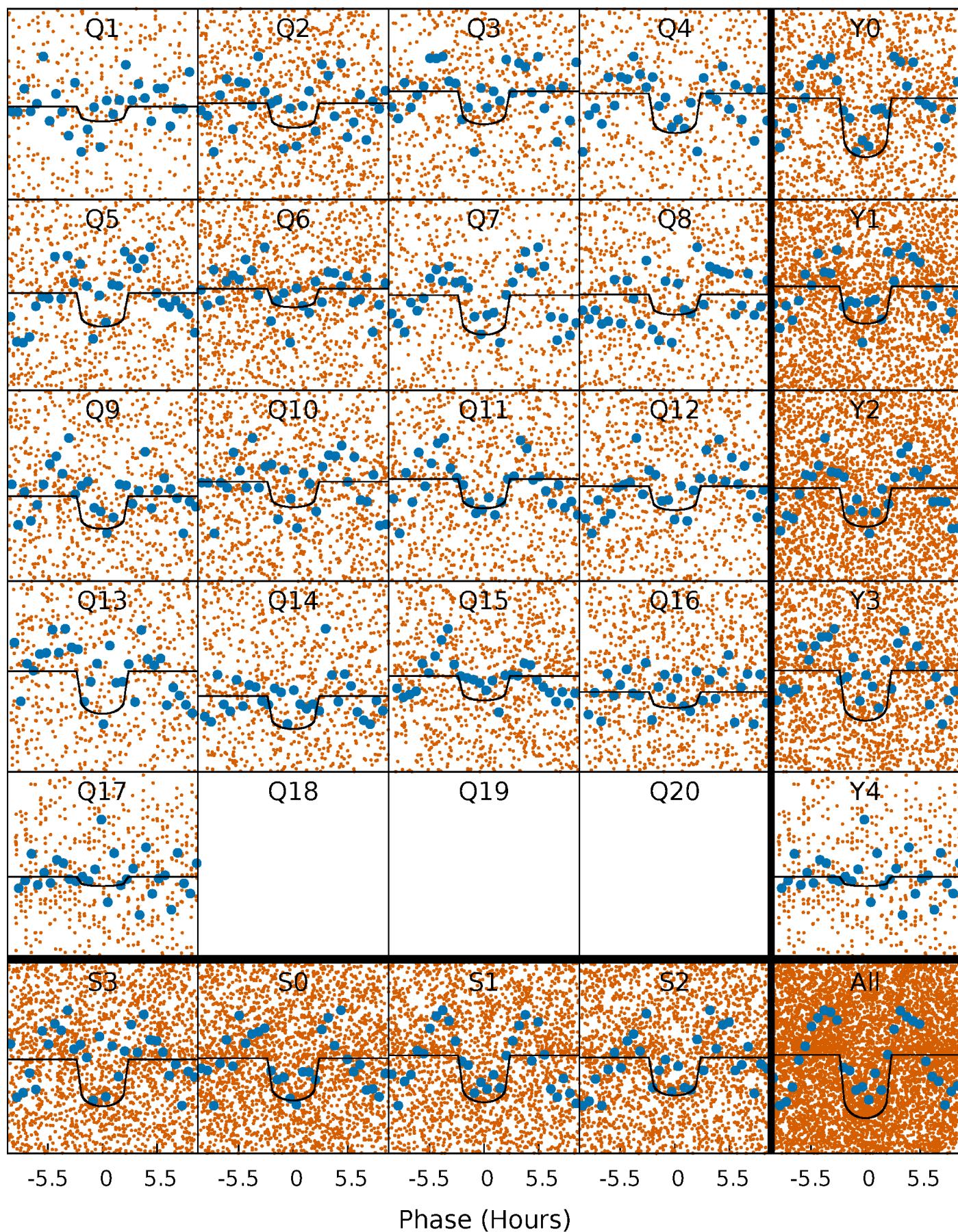
TCE 006273239-03 P= 1.410189 Days  $T_0=132.863428$  (BKJD)





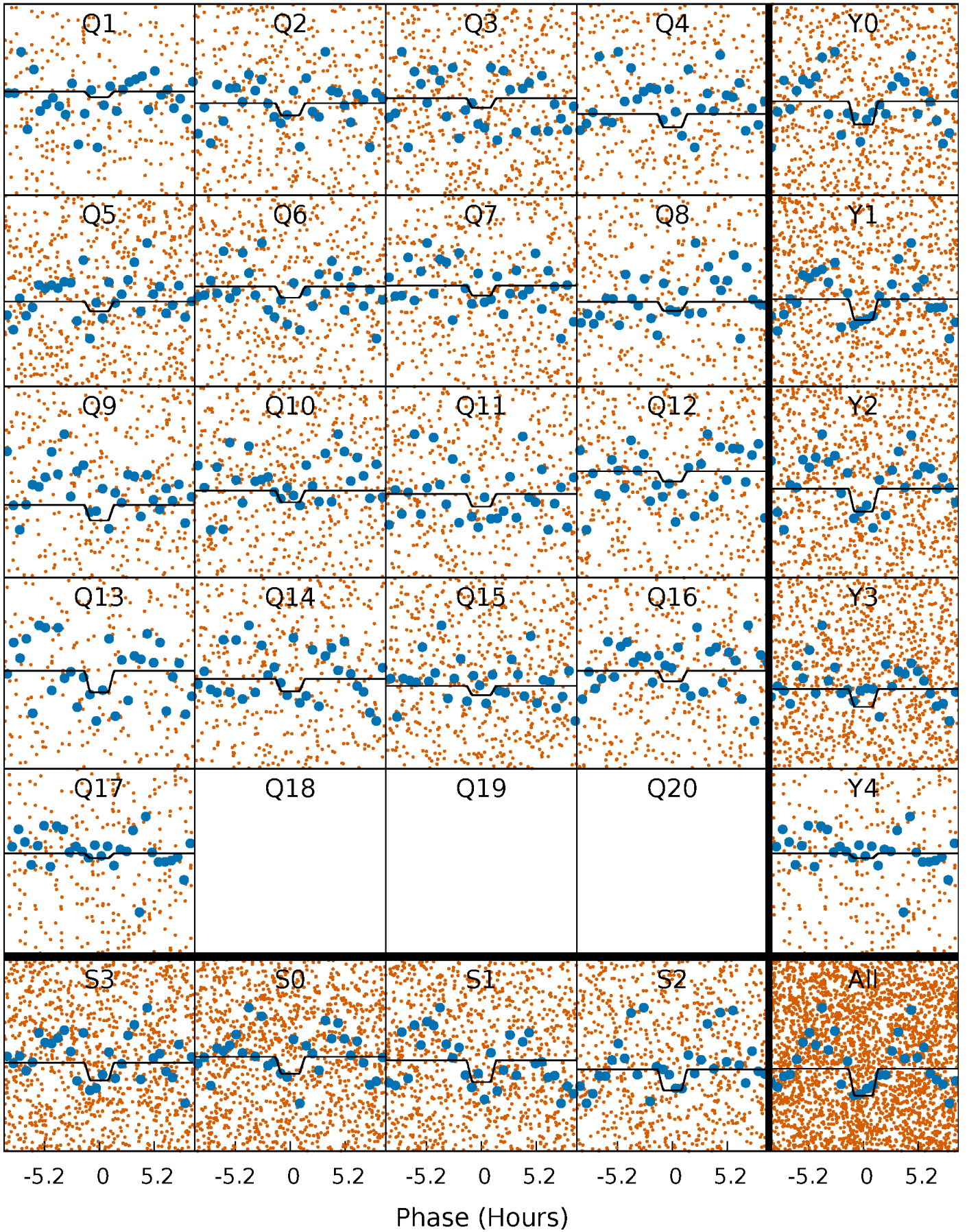
# DV Quarter-Phased Transit Curves

TCE 006273239-03   P= 1.410189 Days    $T_0=132.863428$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

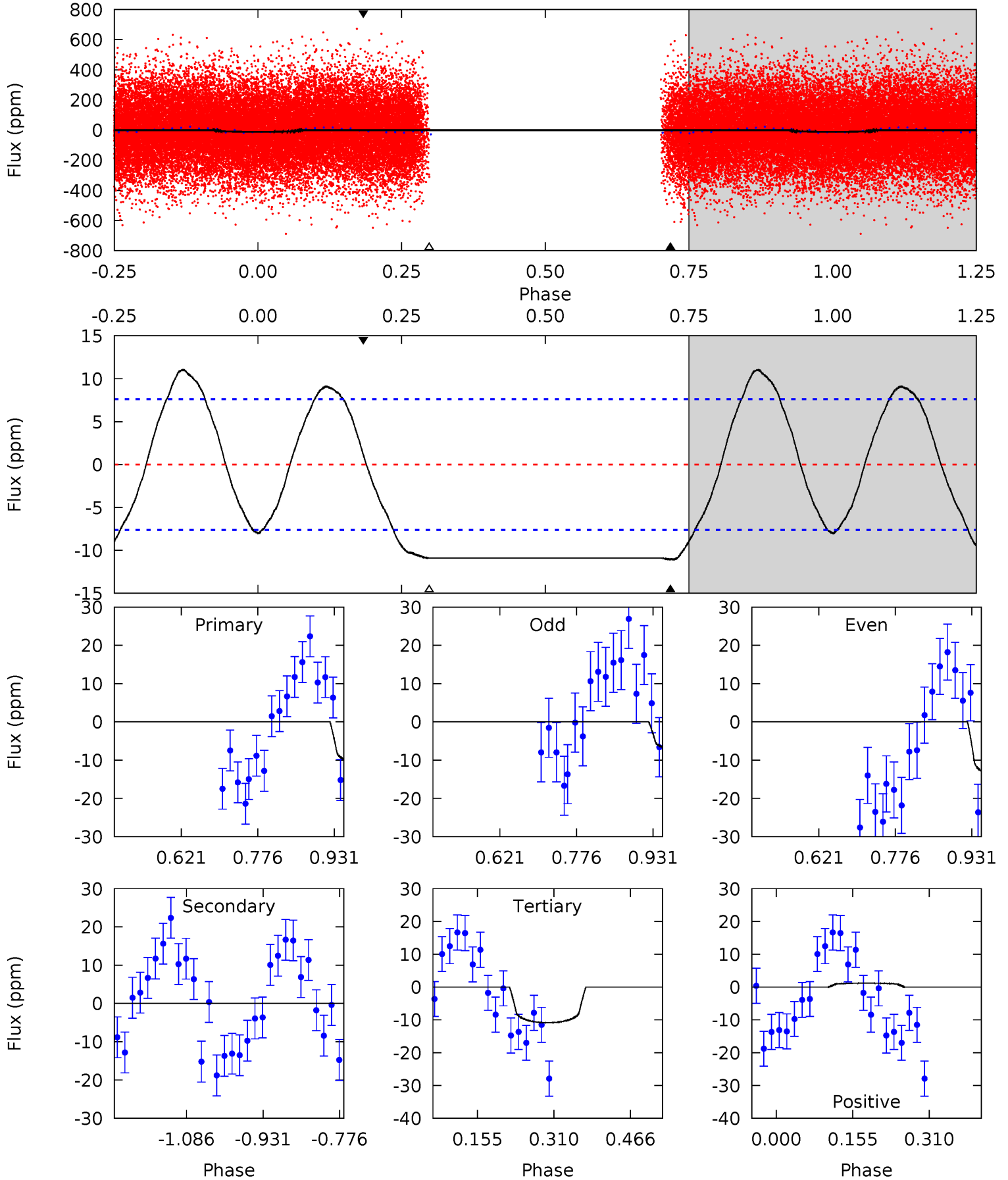
TCE 006273239-03 P= 1.410184 Days  $T_0=132.859751$  (BKJD)



# DV Model-Shift Uniqueness Test

006273239-03, P = 1.410189 Days, E = 131.453239 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
6.50	0	6.40	0.69	4.47	1.42	3.93	0.10	5.81	-6.40	-0.69	2.08	1.13	0.50	0.36

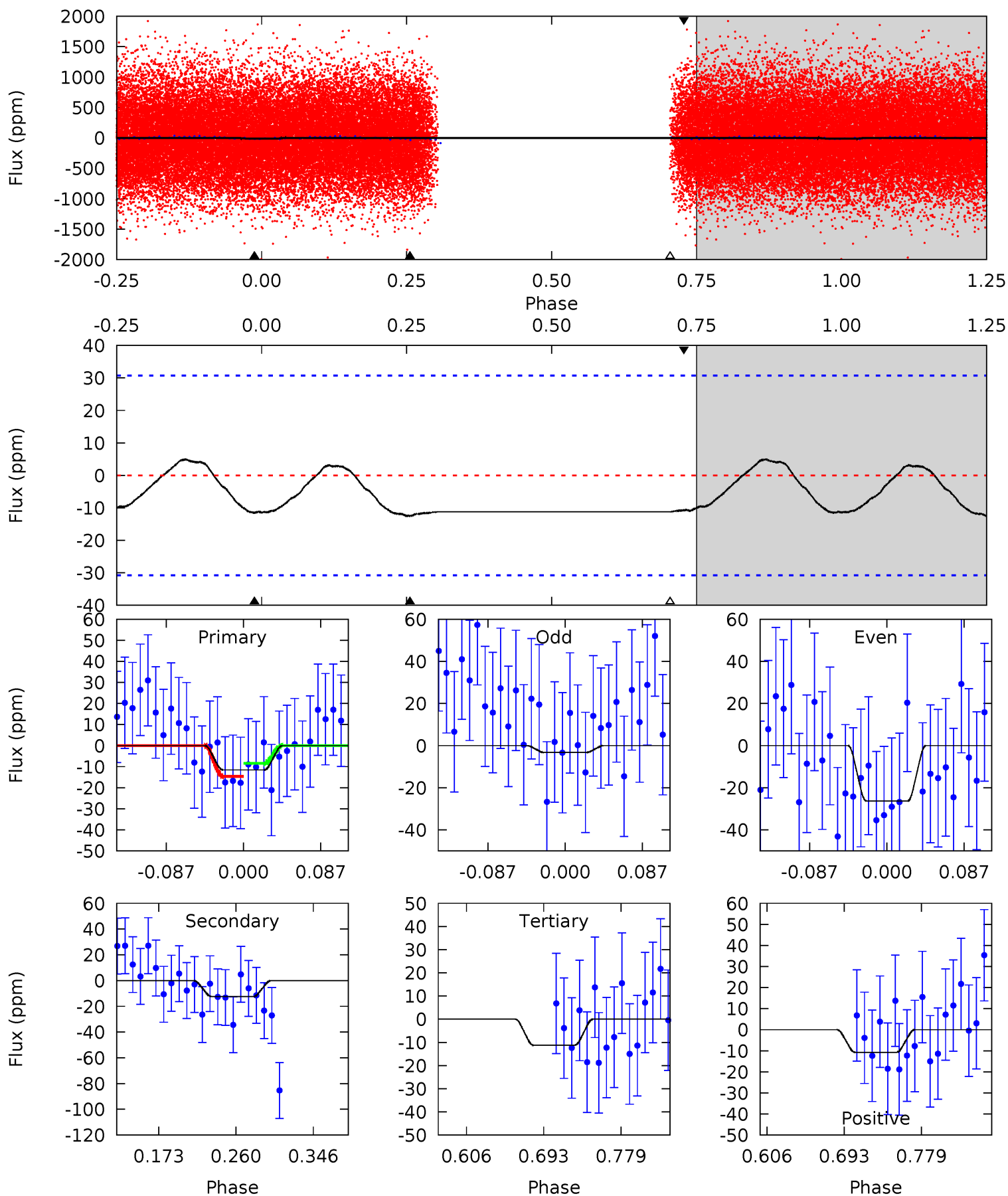




# Alt Model-Shift Uniqueness Test

006273239-03, P = 1.410184 Days, E = 131.449567 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
1.72	1.87	1.68	-1.60	4.59	1.71	0.79	0.05	3.32	0.19	3.47	1.74	0.47	0.28	0.46



### Stellar Parameters For KIC 006273239

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7098^{+197}_{-338}$	$4.152^{+0.108}_{-0.201}$	$0.070^{+0.200}_{-0.350}$	$1.717^{+0.558}_{-0.300}$	$1.527^{+0.206}_{-0.229}$	$0.425^{+0.264}_{-0.220}$
	+3%/-5%	+3%/-5%	+286%/-500%	+32%/-17%	+13%/-15%	+62%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 006273239-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$0 \pm 2$	$0.86^{+0.24}_{-0.22}$	$3434^{+274}_{-223}$	$-3258^{+7142}_{-1062}$	$0.037^{+1.043}_{-1.029}$
Alt.	$-12 \pm 7$	$0.73^{+0.25}_{-0.21}$	$3428^{+244}_{-211}$	$6517^{+1737}_{-1313}$	$9.008^{+12.186}_{-5.451}$

$T_{max}$  = 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

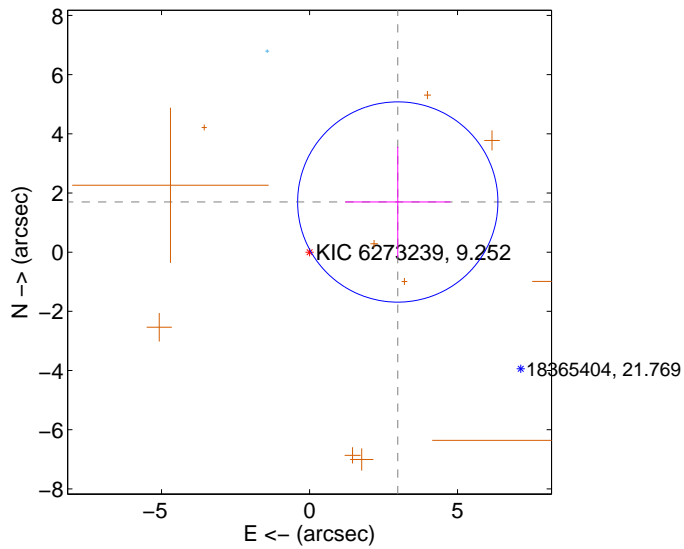
Supplemental centroid analysis for 006273239-03. **Kepler magnitude: 9.25.** Transit SNR 10.87

**There are 2 quarters with good PRF difference image offsets**

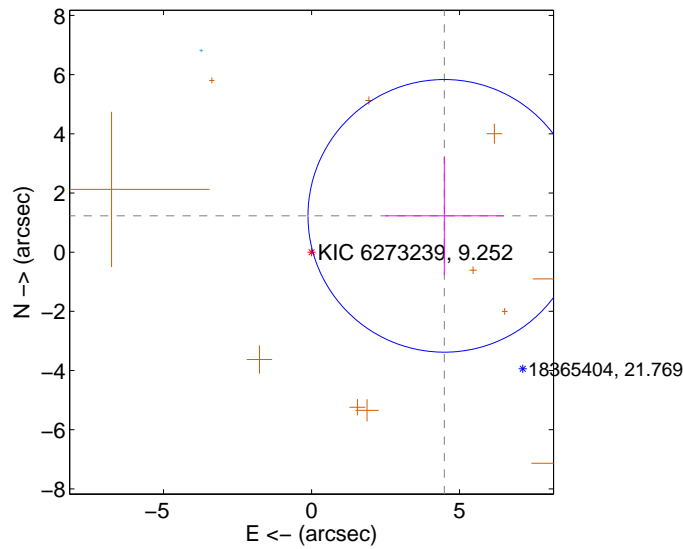
The direct PRF centroid is offset from the target star catalog position by about 1.96 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>3.429 \pm 1.128</math></b>	<b>3.04</b>	$-2.981 \pm 1.780$	$1.695 \pm 1.868$
PRF-fit source offset from KIC position	<b><math>4.651 \pm 1.536</math></b>	<b>3.03</b>	$-4.486 \pm 2.003$	$1.227 \pm 1.991$
photometric centroid source offset	$2.65 \pm 0.90$	2.95	$-2.49 \pm 0.93$	$-0.92 \pm 0.65$

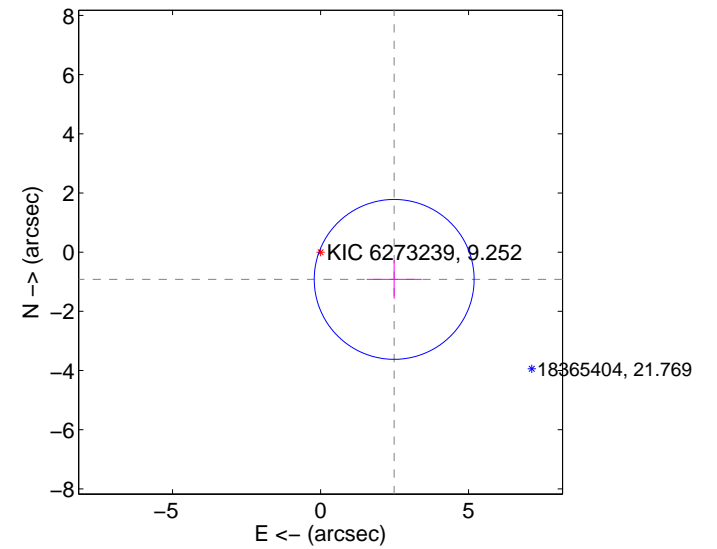
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



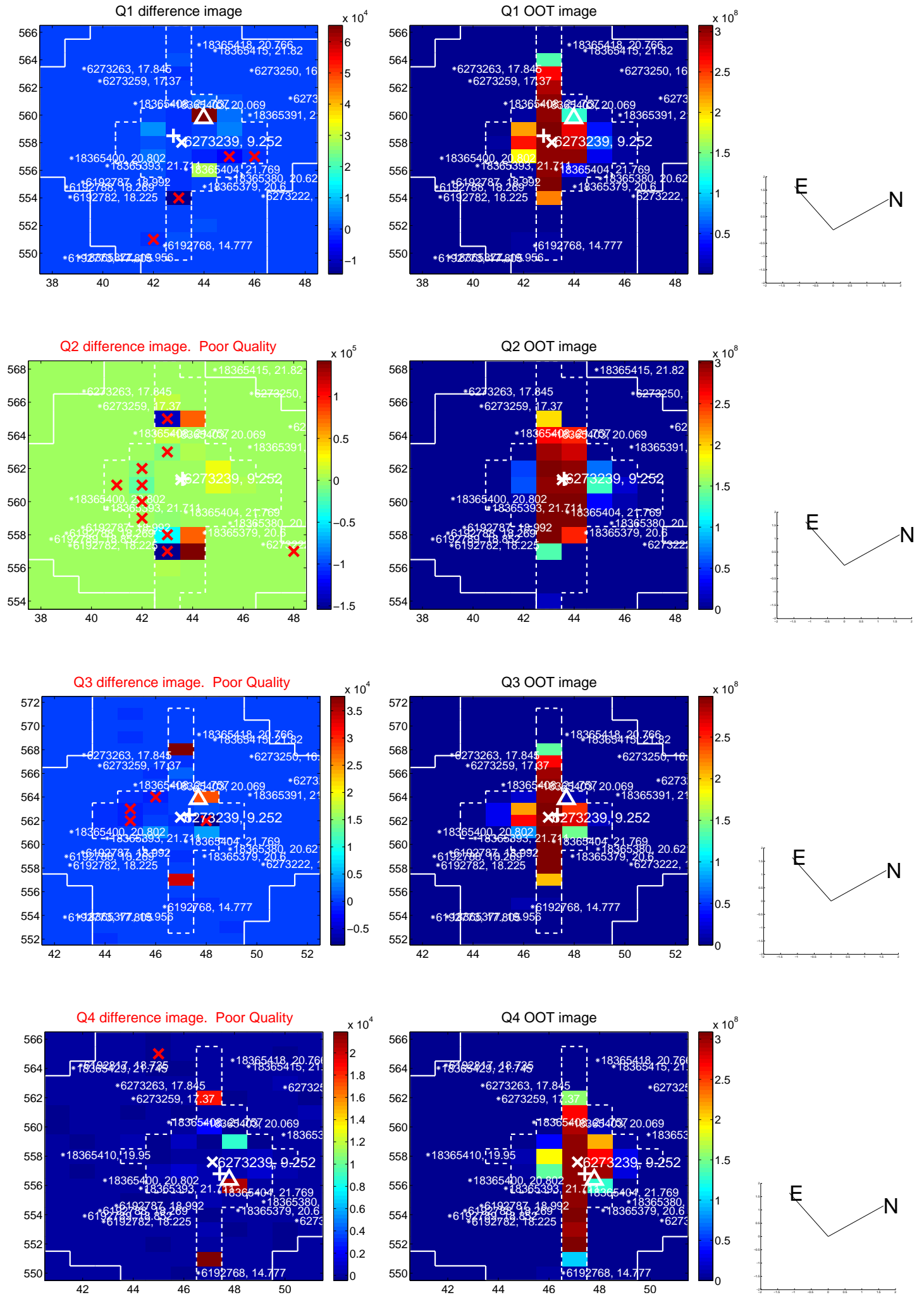
offset from photometric centroids



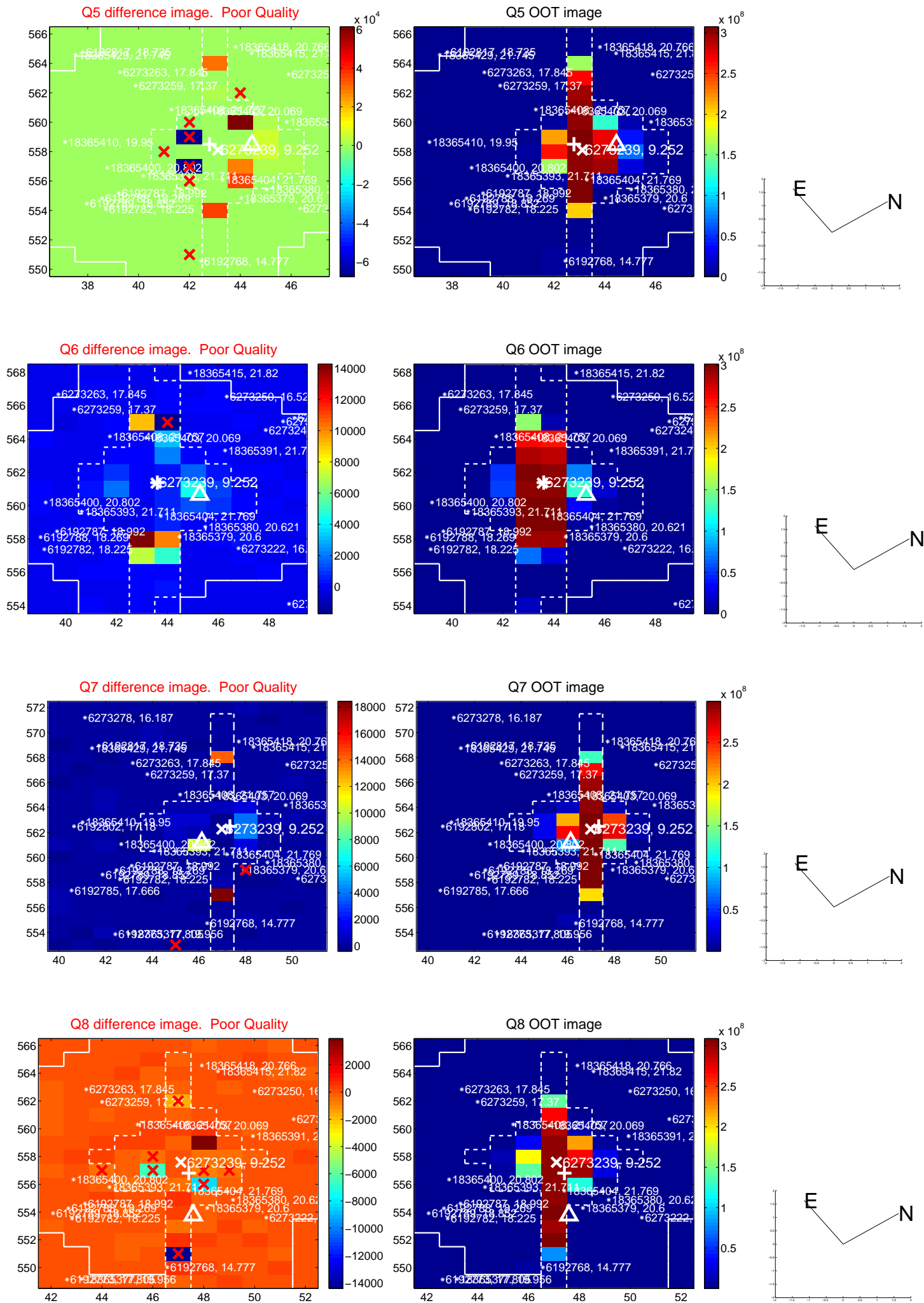
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



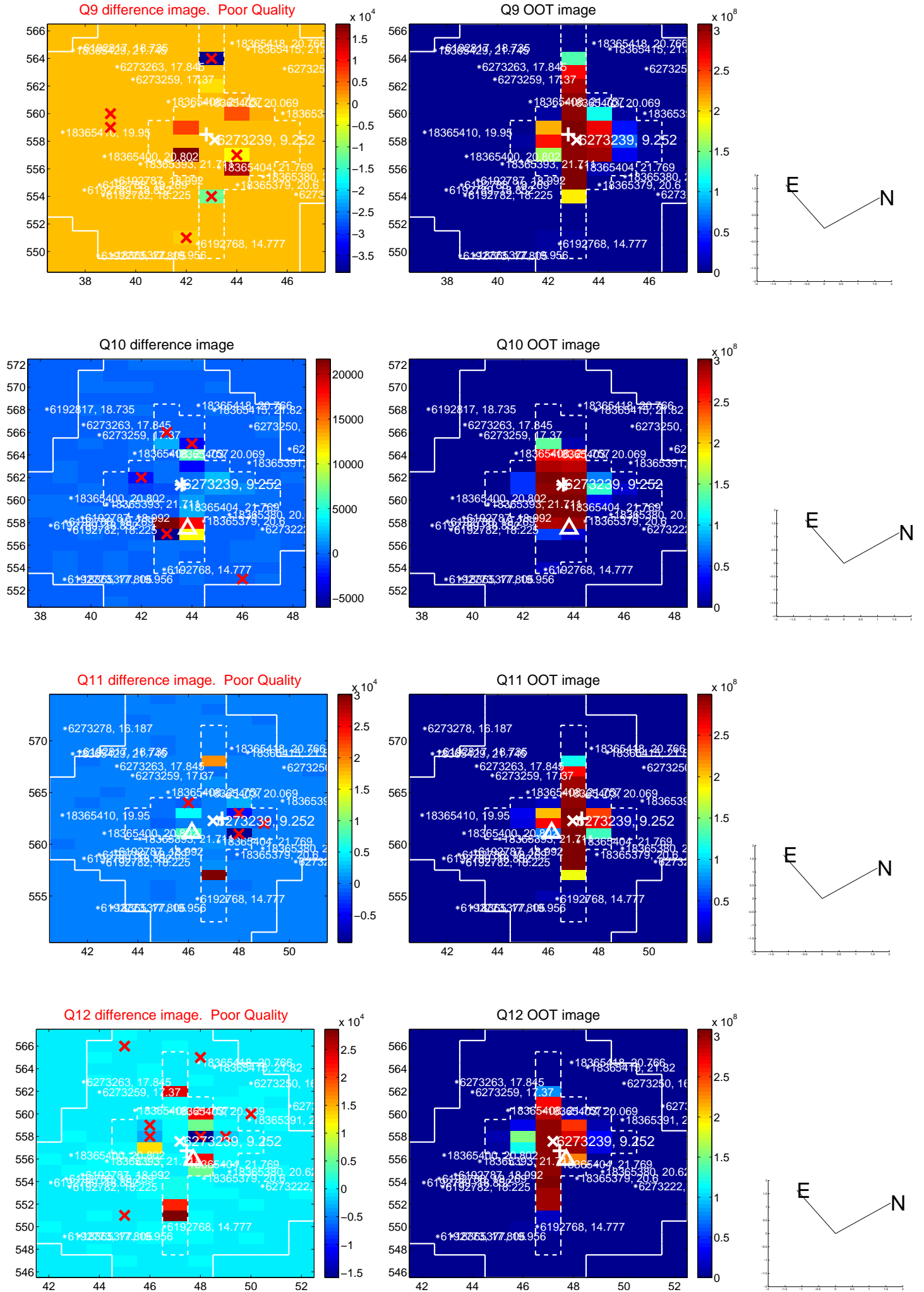
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



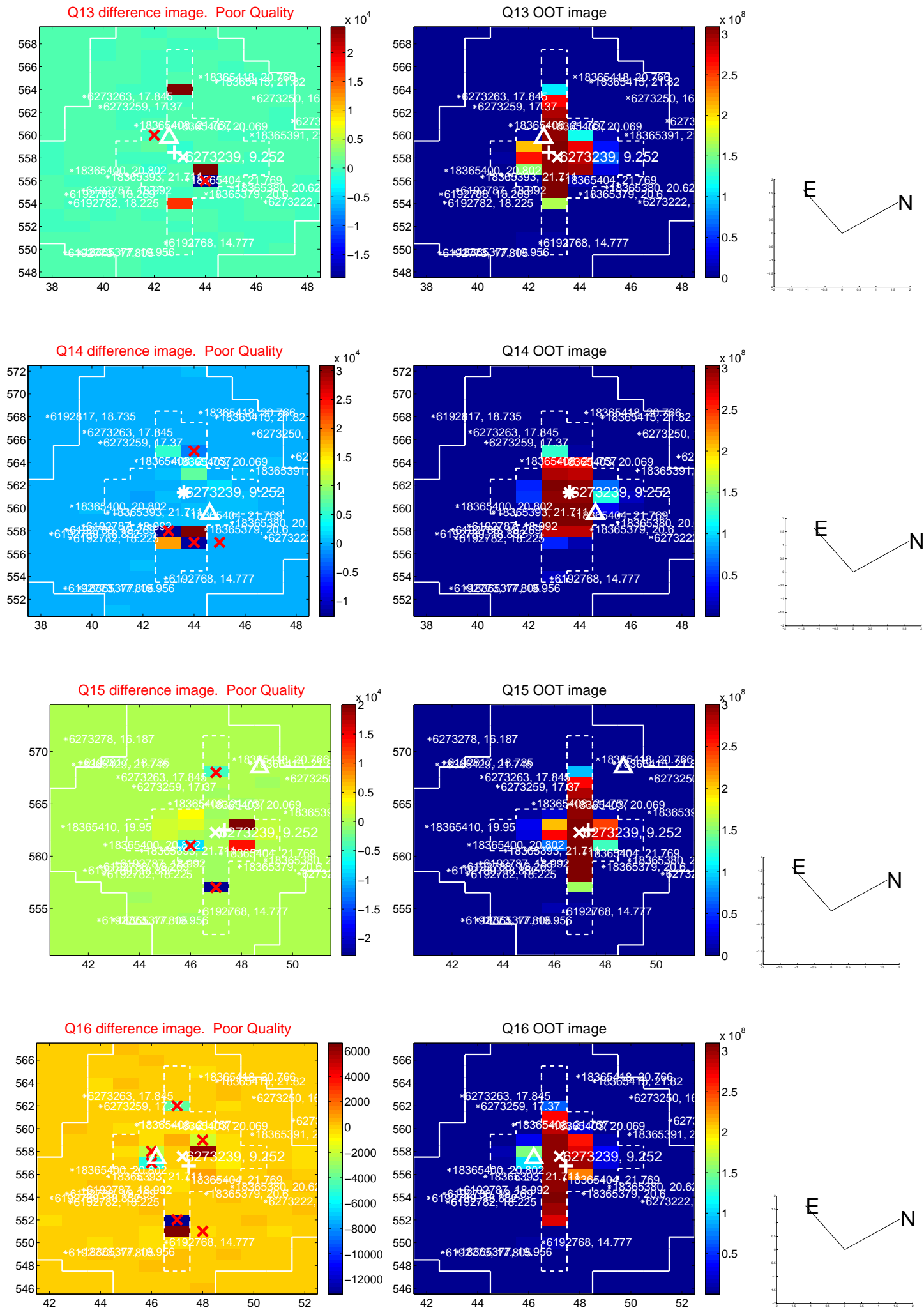
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



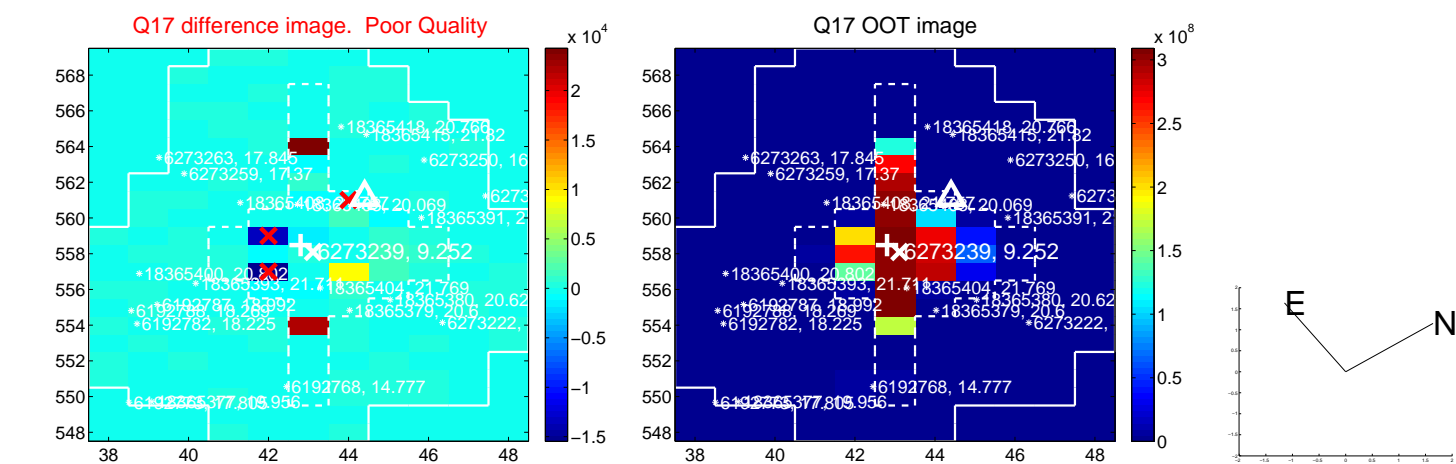
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



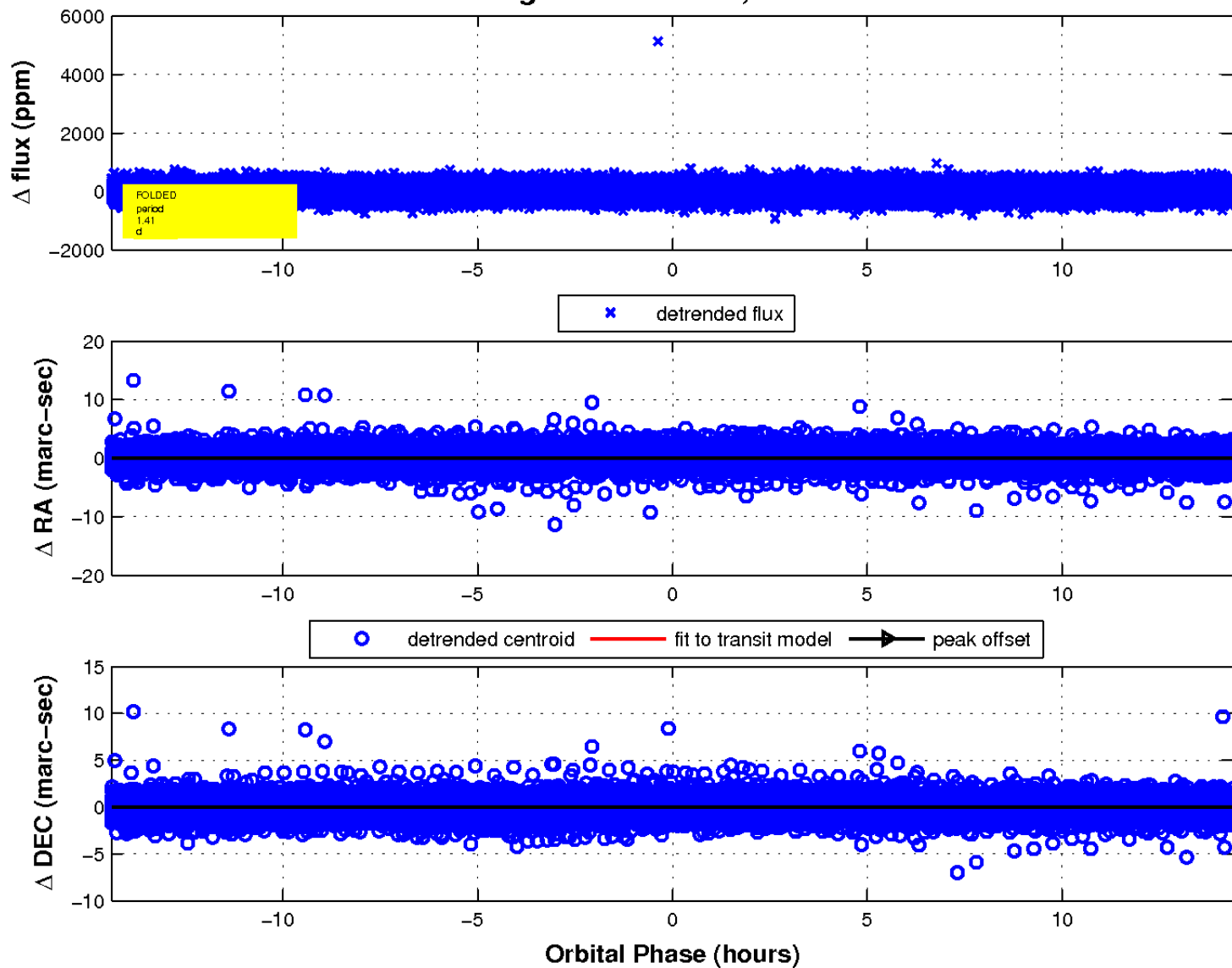
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

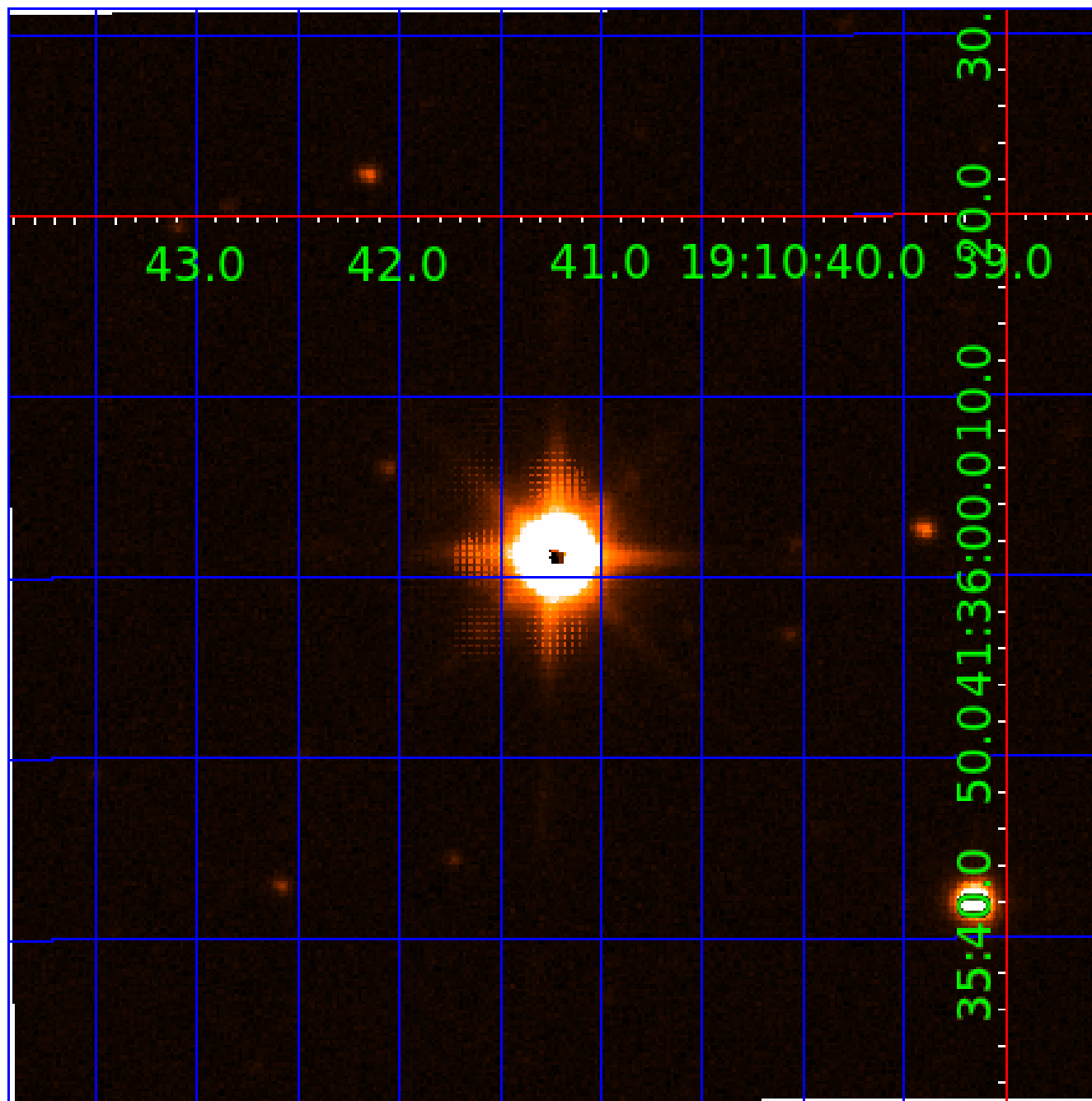


### fluxWeightedCentroids, Planet 3 of 6



UKIRT Image

Declination





# KIC 006273239

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006273239-01	OBS	No	1.410238	132.131954	21.1	4.751	11.9	11.1	1.72	7098	0.91	8347.61
006273239-02	OBS	No	327.967345	154.741632	217.4	6.526	11.6	5.5	1.72	7098	2.56	5.84
006273239-03	OBS	No	1.410189	132.863428	21.9	4.797	10.2	10.9	1.72	7098	0.83	8348.00
006273239-05	OBS	No	25.321563	146.804469	18.7	4.127	10.0	0.7	1.72	7098	0.86	177.54
006273239-06	OBS	No	39.787611	161.026669	318.3	2.852	10.8	7.6	1.72	7098	3.14	97.19

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006273239-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
006273239-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006273239-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED
006273239-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
006273239-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

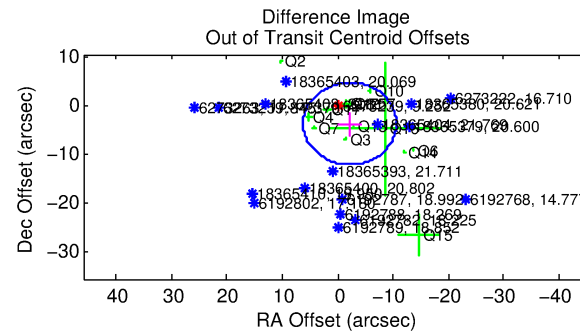
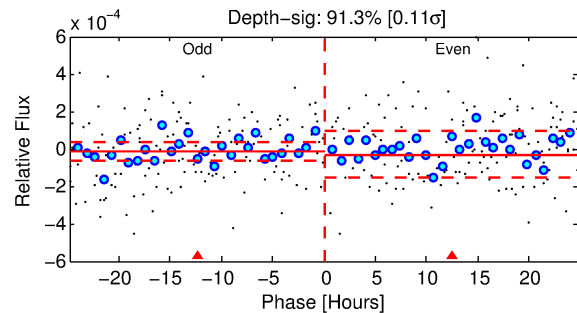
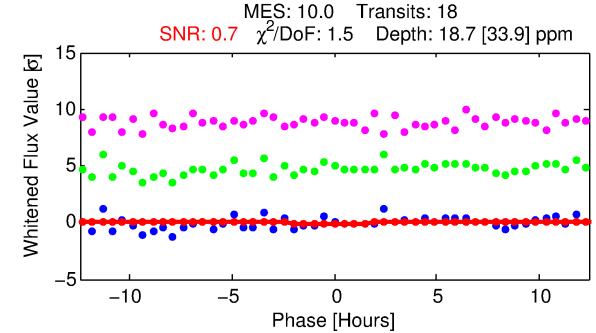
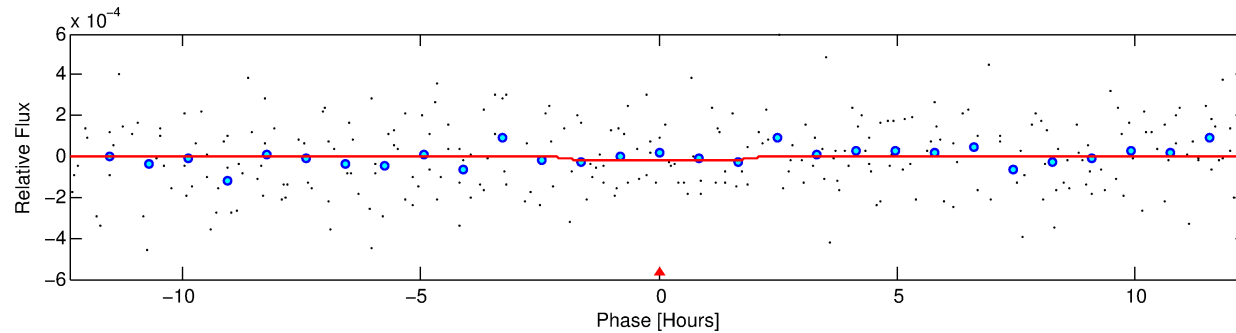
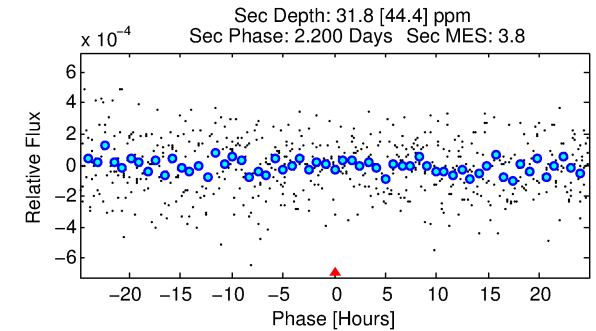
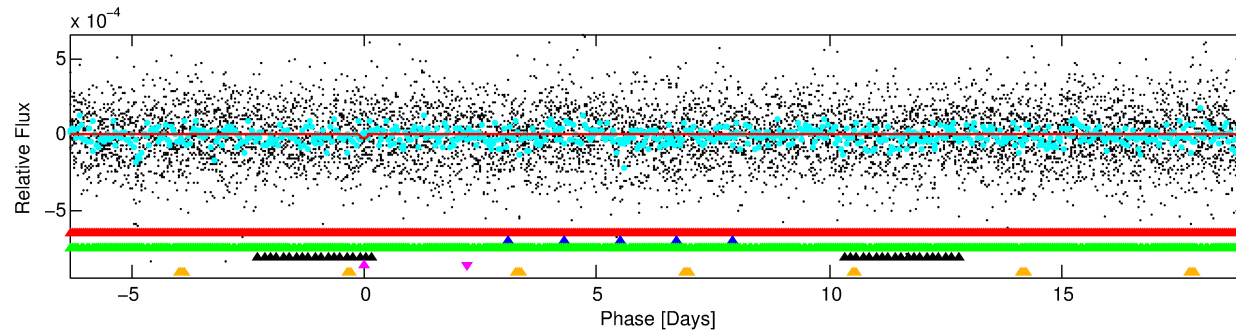
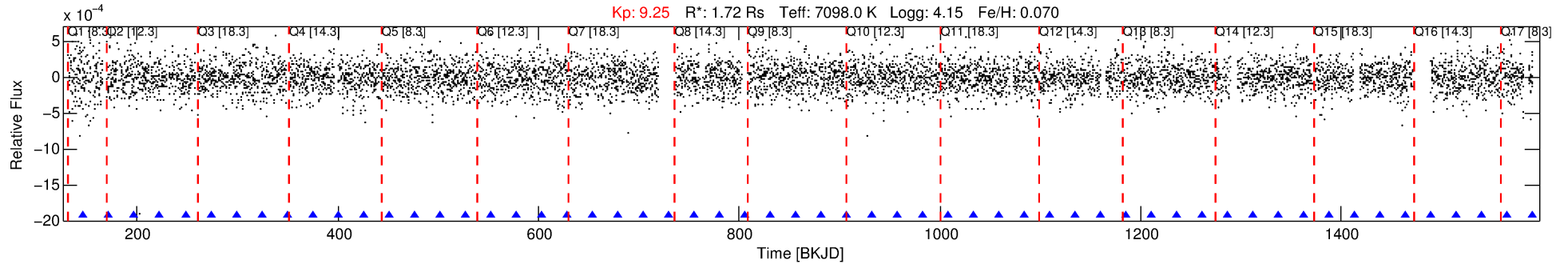
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006273239-05

No Significant Match Found

# DV One-Page Summary

KIC: 6273239 Candidate: 5 of 6 Period: 25.322 d



## DV Fit Results:

Period = 25.32156 [0.00500] d  
Epoch = 146.8045 [0.1368] BKJD  
 $R_p/R^* = 0.0046$  [0.0236]  
 $a/R^* = 20.55$  [647.67]  
 $b = 0.90$  [6.48]  
 $\text{Seff} = 177.54$  [74.99]  
 $T_{\text{eq}} = 931$  [98] K  
 $R_p = 0.86$  [4.44]  $R_e$   
 $a = 0.1943$  [0.0517] AU  
 $A_g = 884.86$  [9161.49] [0.10σ]  
 $T_{\text{eff}} = 7849$  [20306] K [0.34σ]

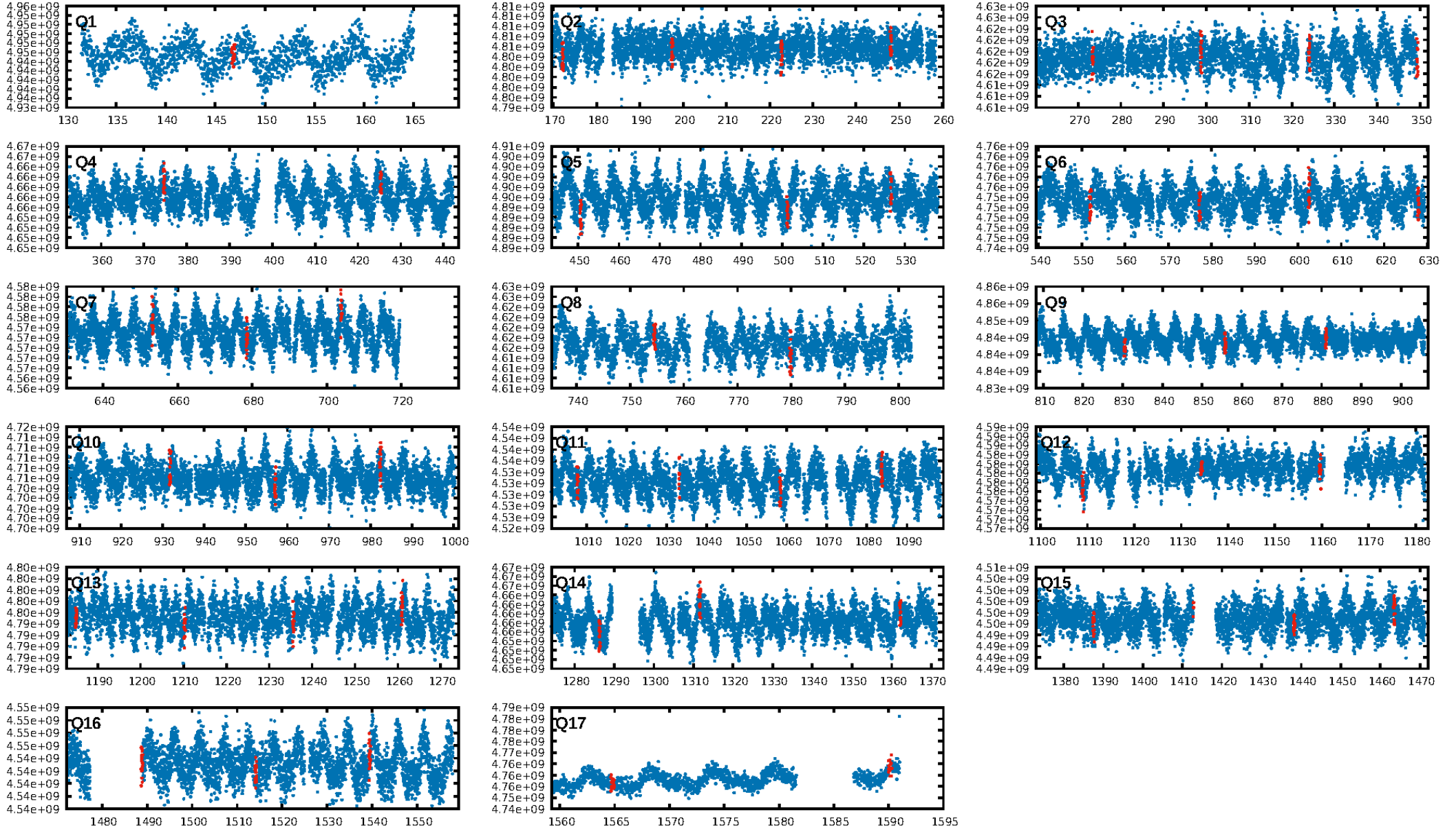
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [91.19σ]  
LongPeriod-sig: 100.0% [50.03σ]  
ModelChiSquare2-sig: 47.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 6.43e-15  
RollingBand-fgt: 1.00 [18/18]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 18.5%  
Centroid-so: 6.249 arcsec [1.30σ]  
OotOffset-rm: 4.295 arcsec [1.53σ]  
KicOffset-rm: 3.686 arcsec [1.51σ]  
OotOffset-st: 4/4/4/2 [14]  
KicOffset-st: 4/4/4/2 [14]  
DiffImageQuality-fgm: 0.07 [1/14]  
DiffImageOverlap-fno: 0.00 [0/17]

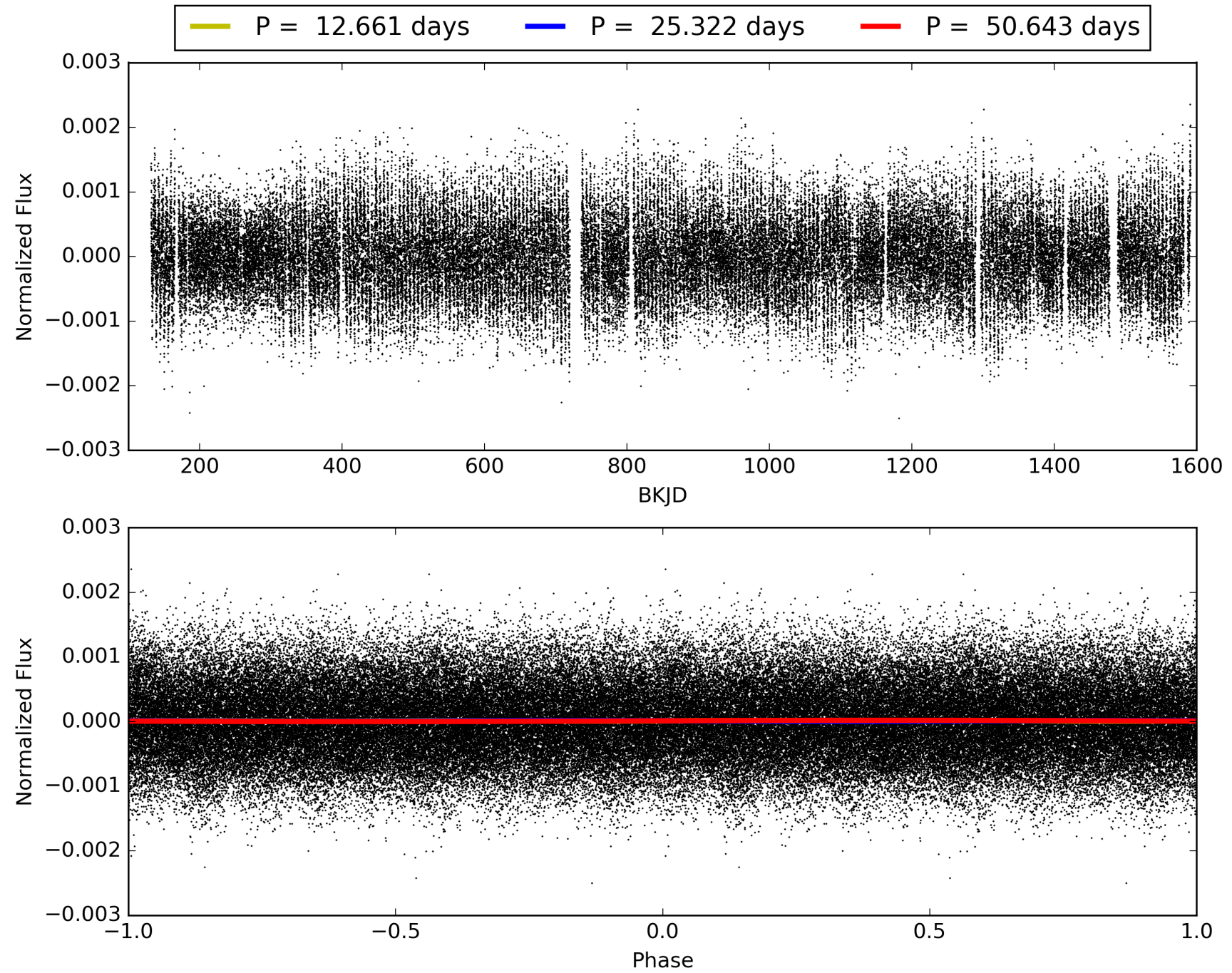
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 20:13:41 Z

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

# TCE 006273239-05, PDC Light Curves

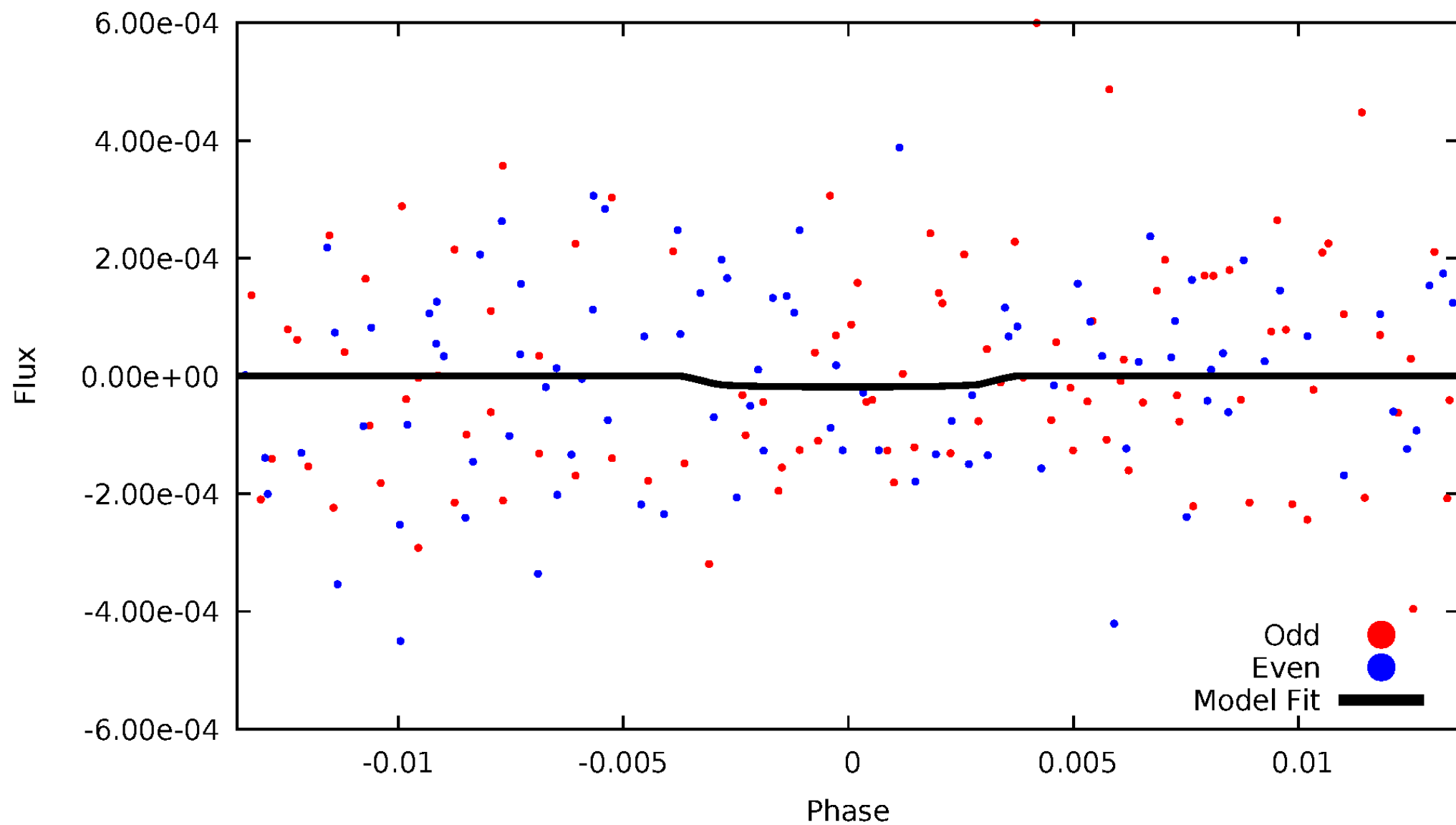


TCE 006273239-05



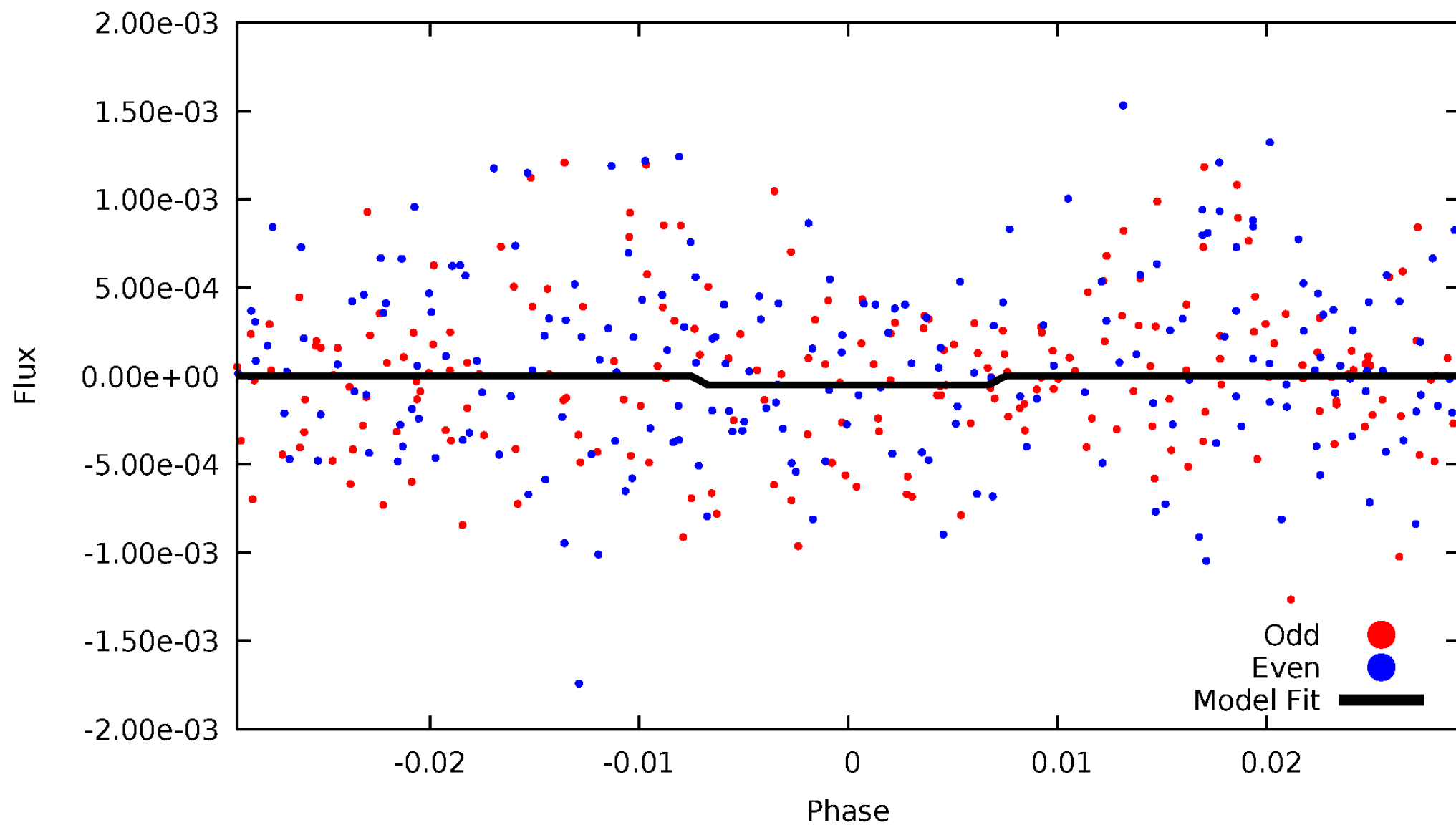
# DV Odd/Even

TCE 006273239-05



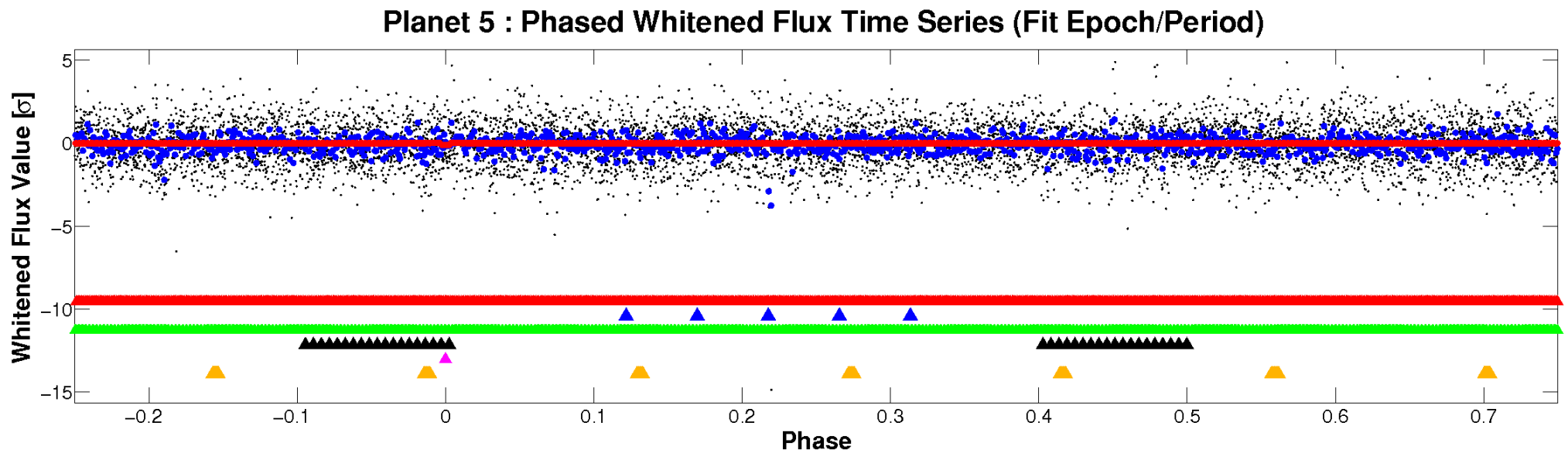
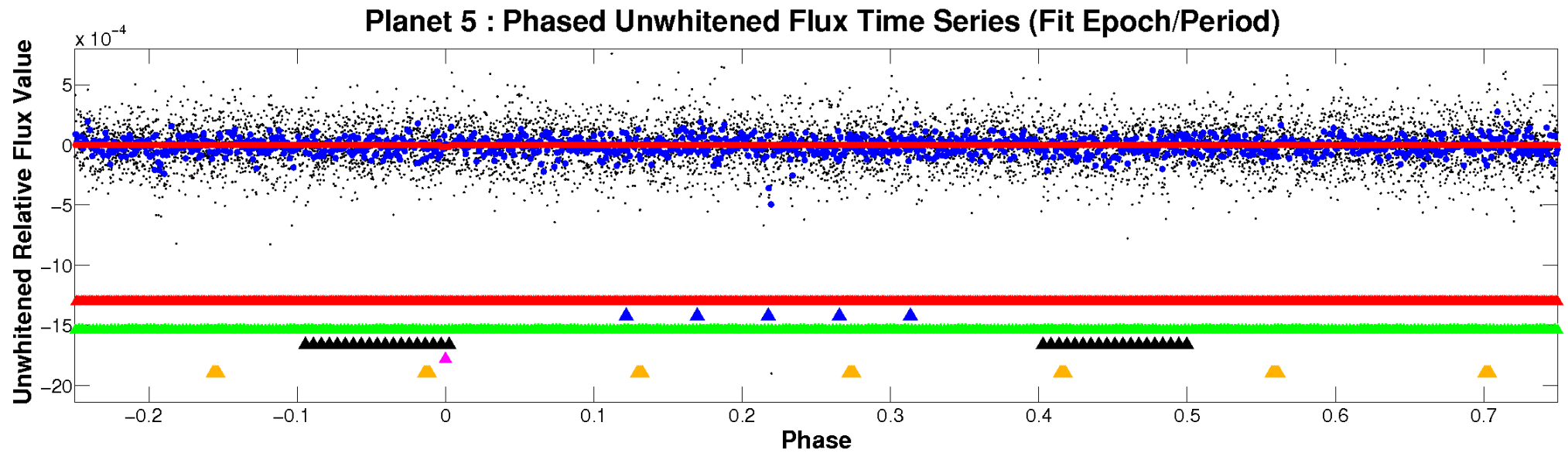
# ALT Odd/Even

TCE 006273239-05



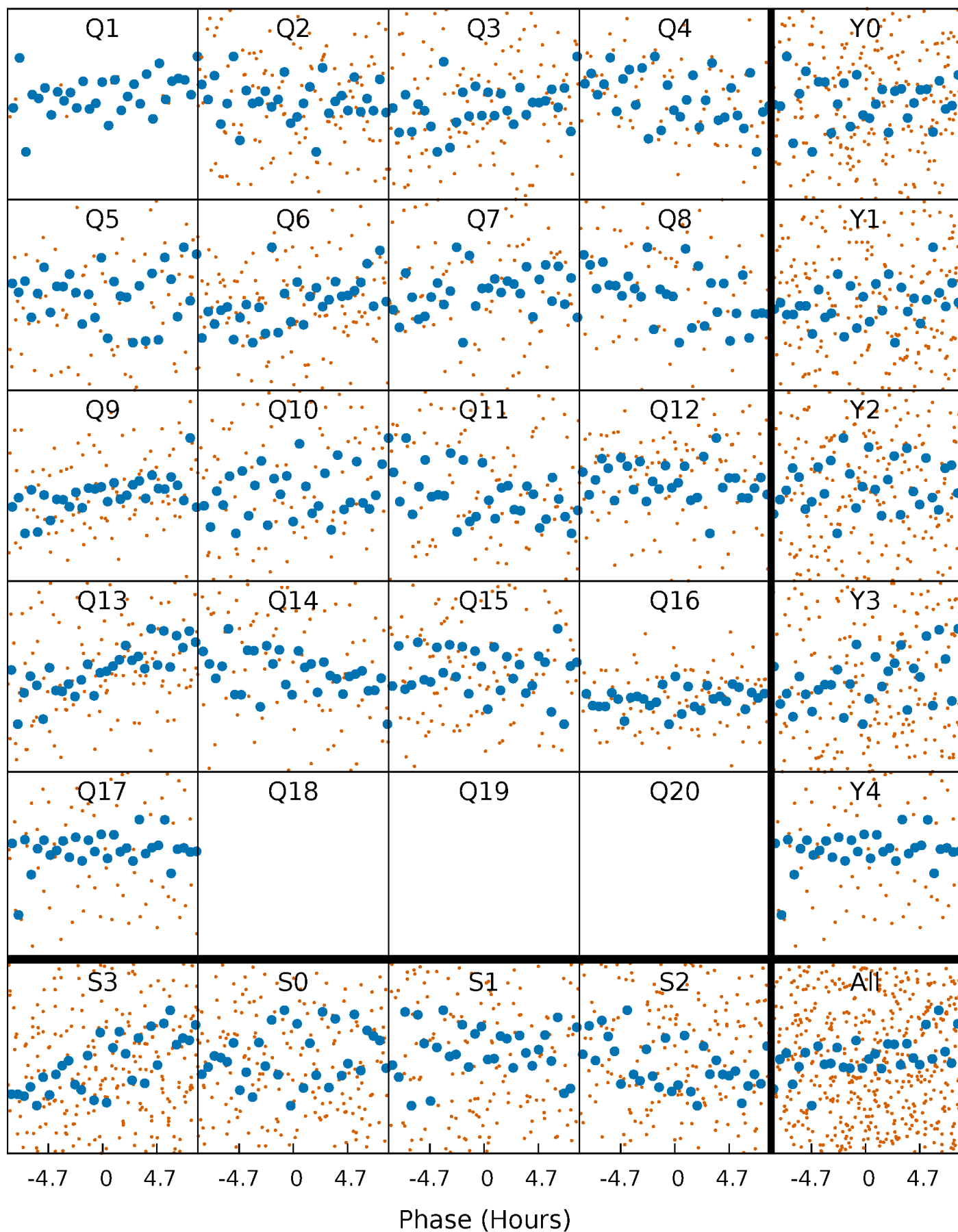


# Non-Whitened Vs. Whitened Light Curve



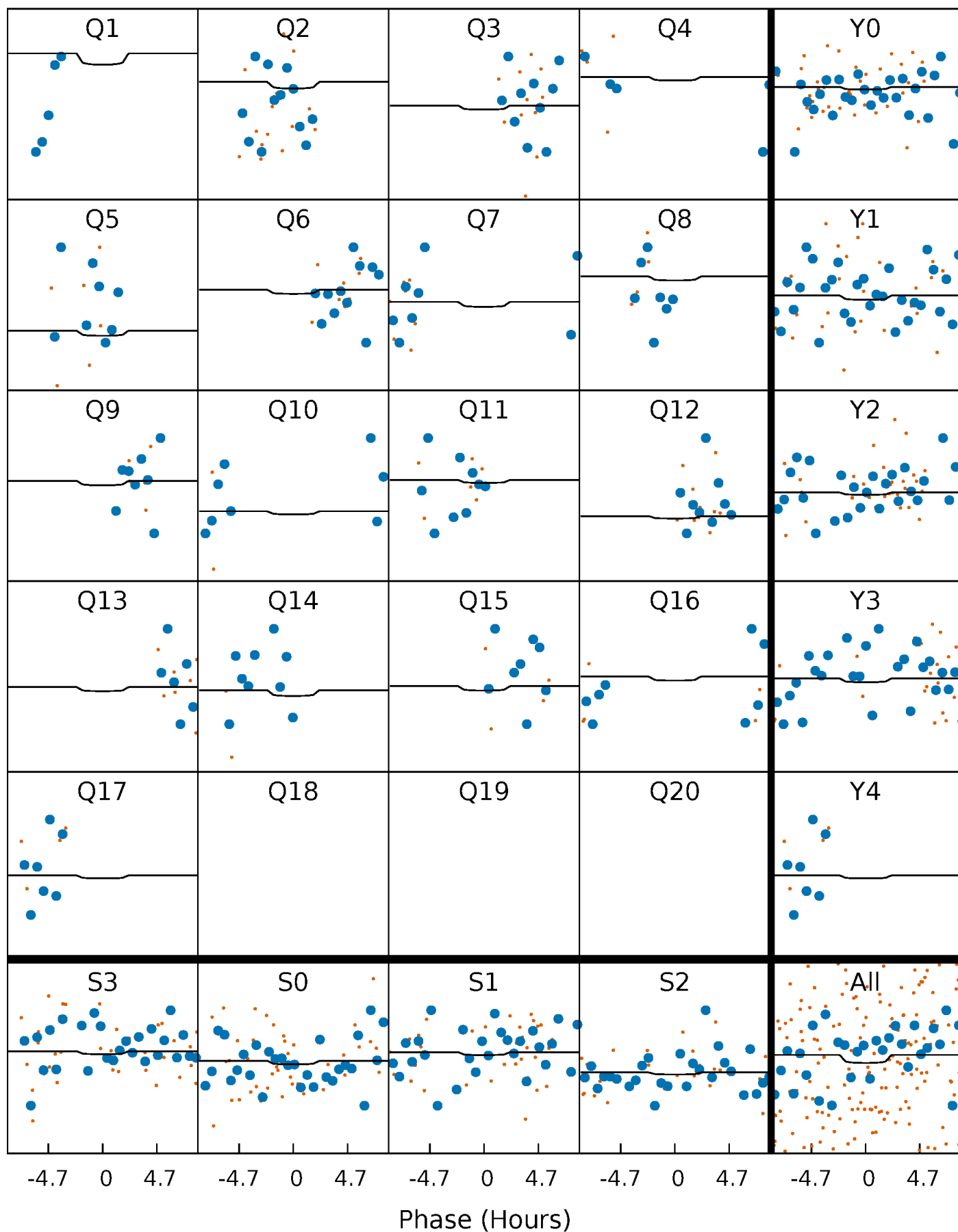
# PDC Quarter-Phased Transit Curves

TCE 006273239-05   P= 25.321563 Days    $T_0=146.804469$  (BKJD)



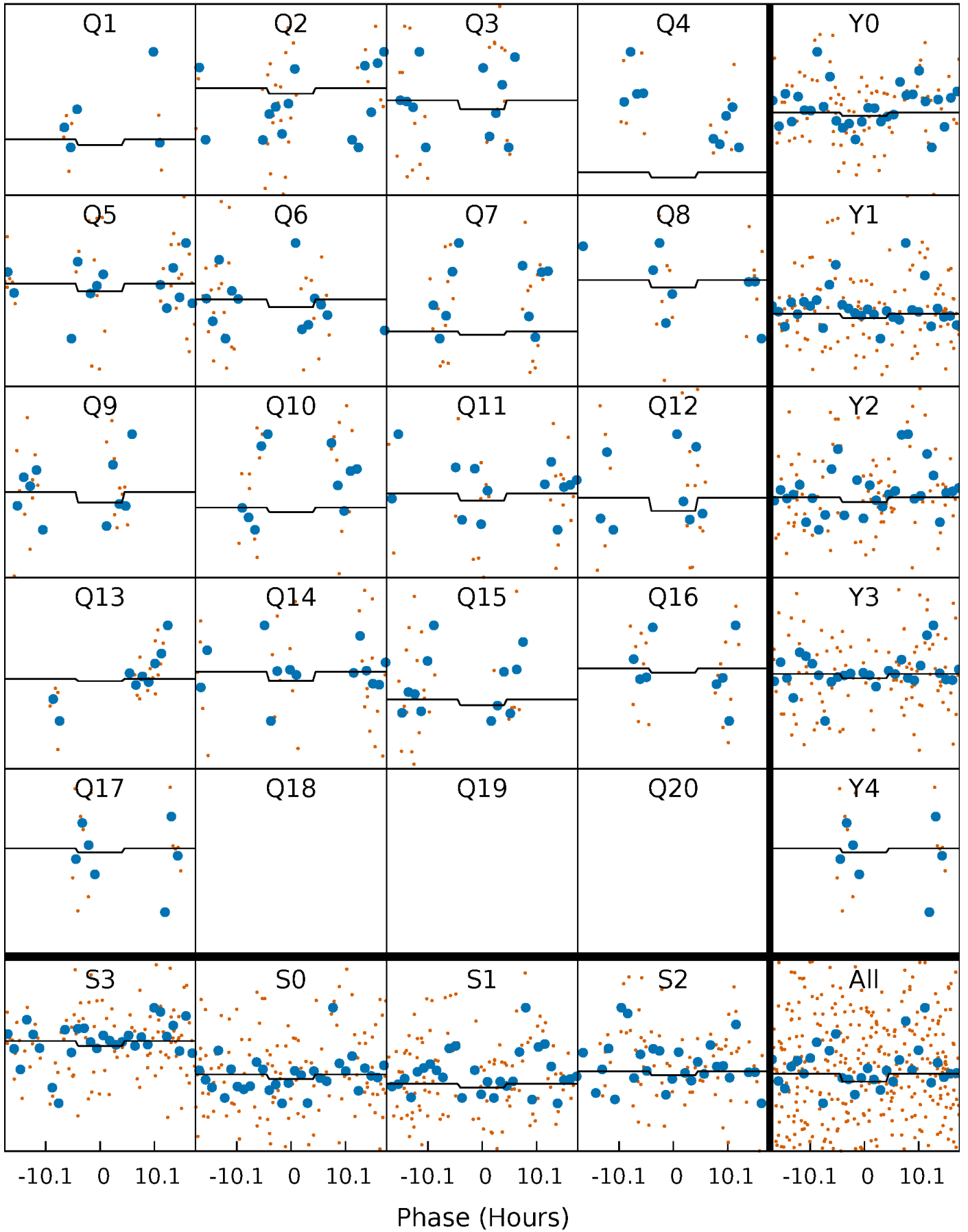
# DV Quarter-Phased Transit Curves

TCE 006273239-05   P= 25.321563 Days    $T_0=146.804469$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

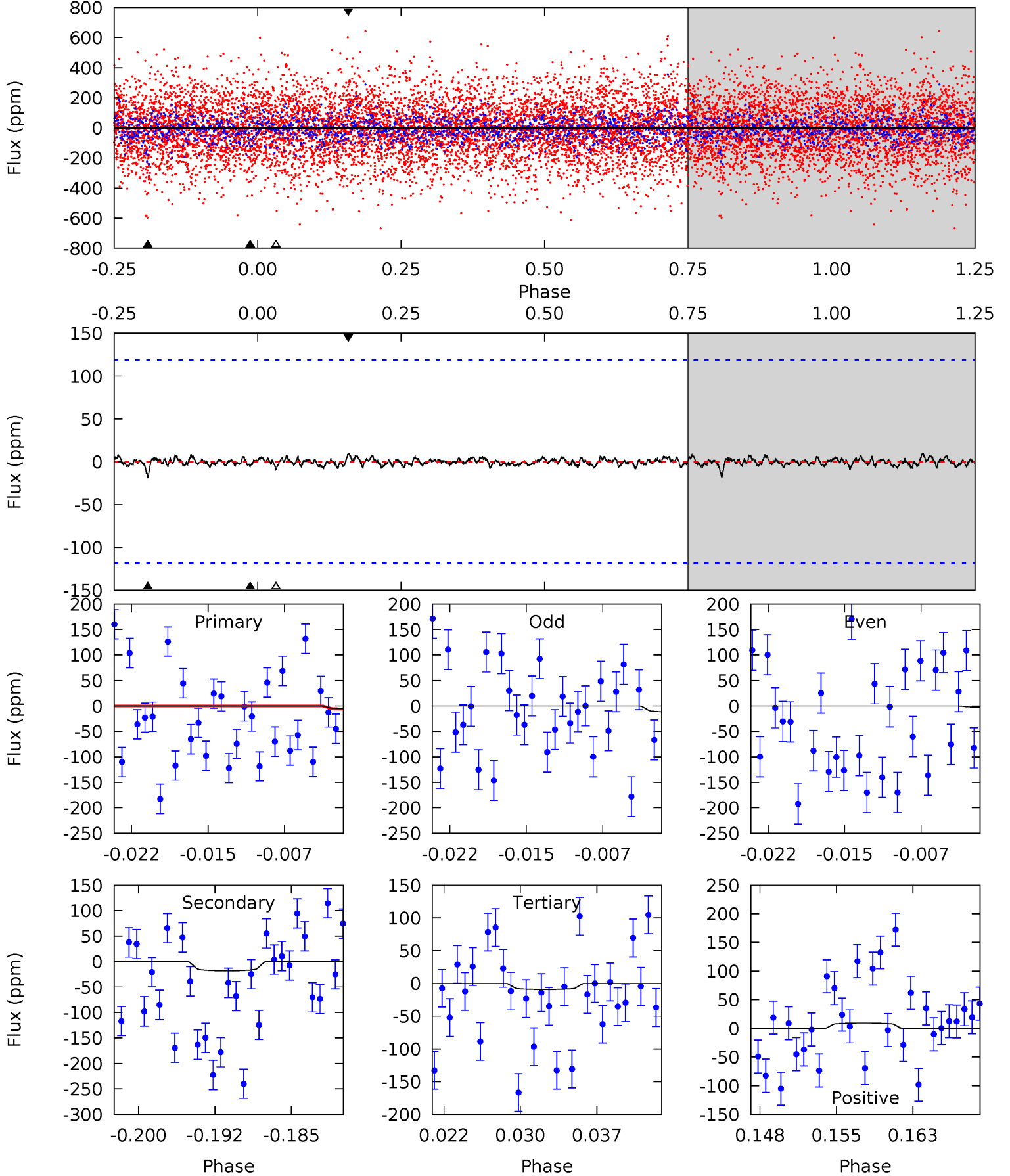
TCE 006273239-05   P= 25.319231 Days    $T_0=146.853303$  (BKJD)



# DV Model-Shift Uniqueness Test

006273239-05, P = 25.321563 Days, E = 121.482906 Days

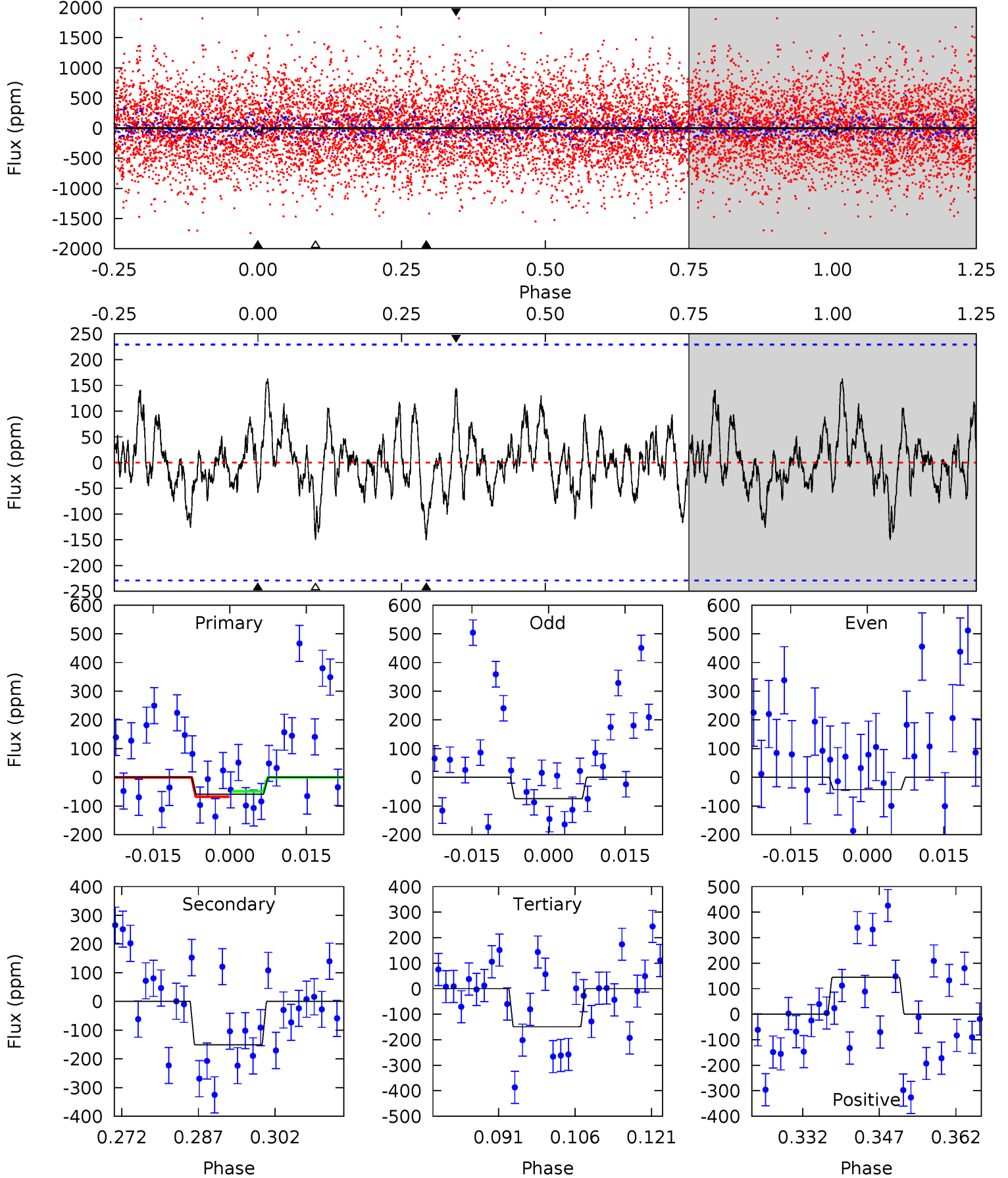
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.23	0.79	0.40	0.41	5.08	2.68	0.14	-0.17	-0.18	0.39	0.38	0.21	0.01	0.34	0.03



# Alt Model-Shift Uniqueness Test

006273239-05, P = 25.319231 Days, E = 121.534072 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
1.27	3.26	3.22	3.12	4.95	2.43	1.09	-1.96	-1.86	0.03	0.13	0.34	2.14	0.52	0.20





### Stellar Parameters For KIC 006273239

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7098^{+197}_{-338}$	$4.152^{+0.108}_{-0.201}$	$0.070^{+0.200}_{-0.350}$	$1.717^{+0.558}_{-0.300}$	$1.527^{+0.206}_{-0.229}$	$0.425^{+0.264}_{-0.220}$
	+3%/-5%	+3%/-5%	+286%/-500%	+32%/-17%	+13%/-15%	+62%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 006273239-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-18 \pm 23$	$3.45^{+3.47}_{-2.46}$	$1308^{+106}_{-86}$	$3625^{+2384}_{-6407}$	$24^{+256}_{-27}$
Alt.	$-151 \pm 46$	$3.76^{+3.60}_{-2.52}$	$1310^{+94}_{-80}$	$5484^{+5383}_{-1325}$	$209^{+1835}_{-157}$

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

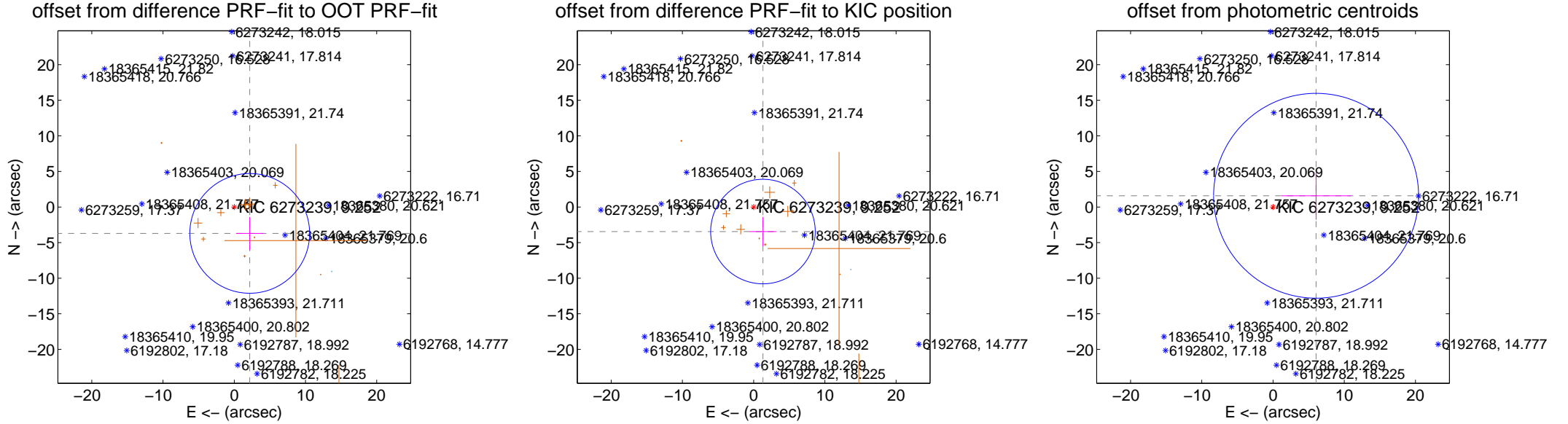
## DV Centroid Data

Supplemental centroid analysis for 006273239-05. **Kepler magnitude: 9.25.** Transit SNR 0.74

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

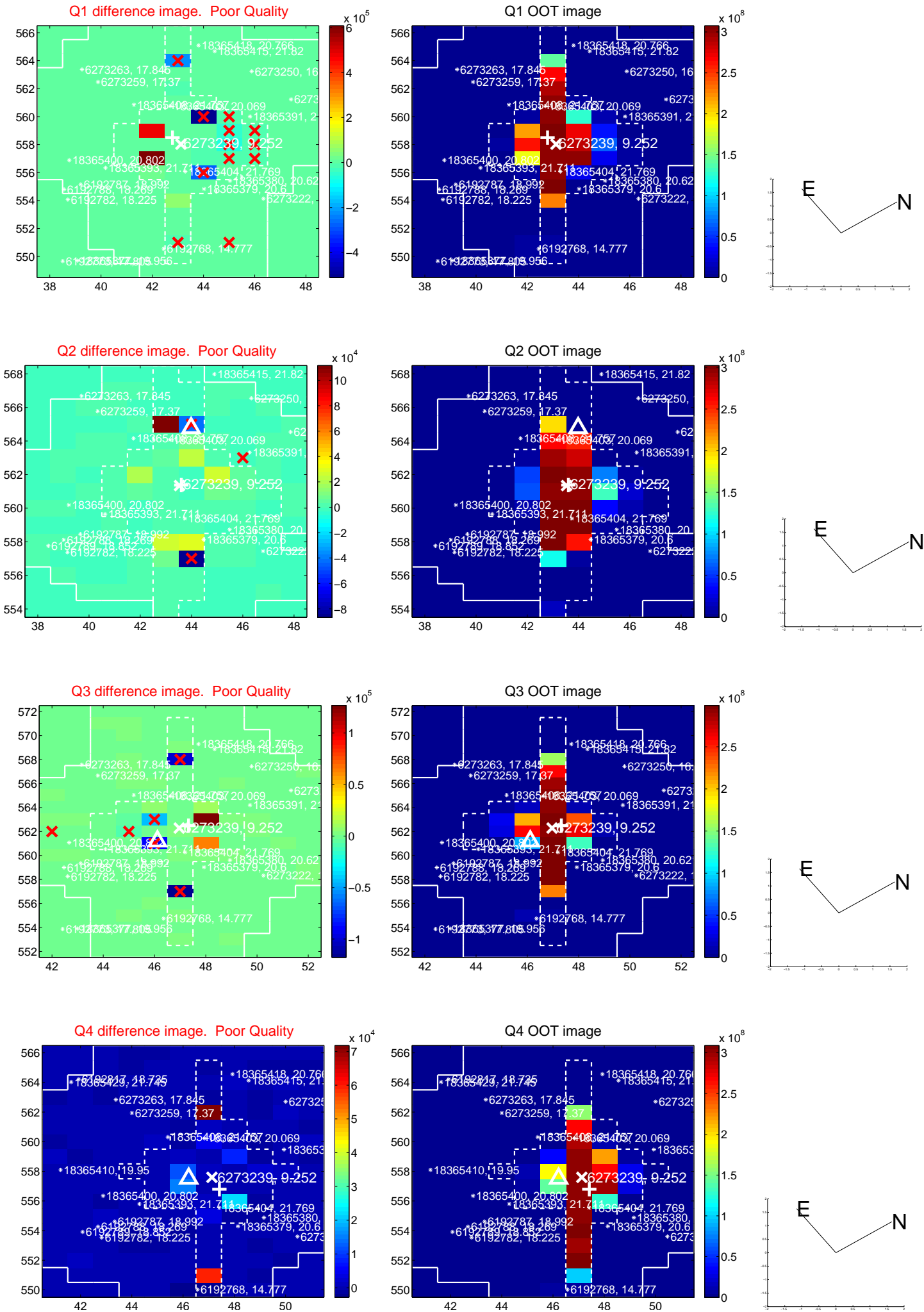
The direct PRF centroid is offset from the target star catalog position by about 1.96 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.295 \pm 2.804$	1.53	$-2.172 \pm 1.920$	$-3.706 \pm 2.309$
PRF-fit source offset from KIC position	$3.686 \pm 2.448$	1.51	$-1.307 \pm 1.892$	$-3.446 \pm 2.053$
photometric centroid source offset	$6.25 \pm 4.80$	1.30	$-6.05 \pm 4.88$	$1.58 \pm 3.37$

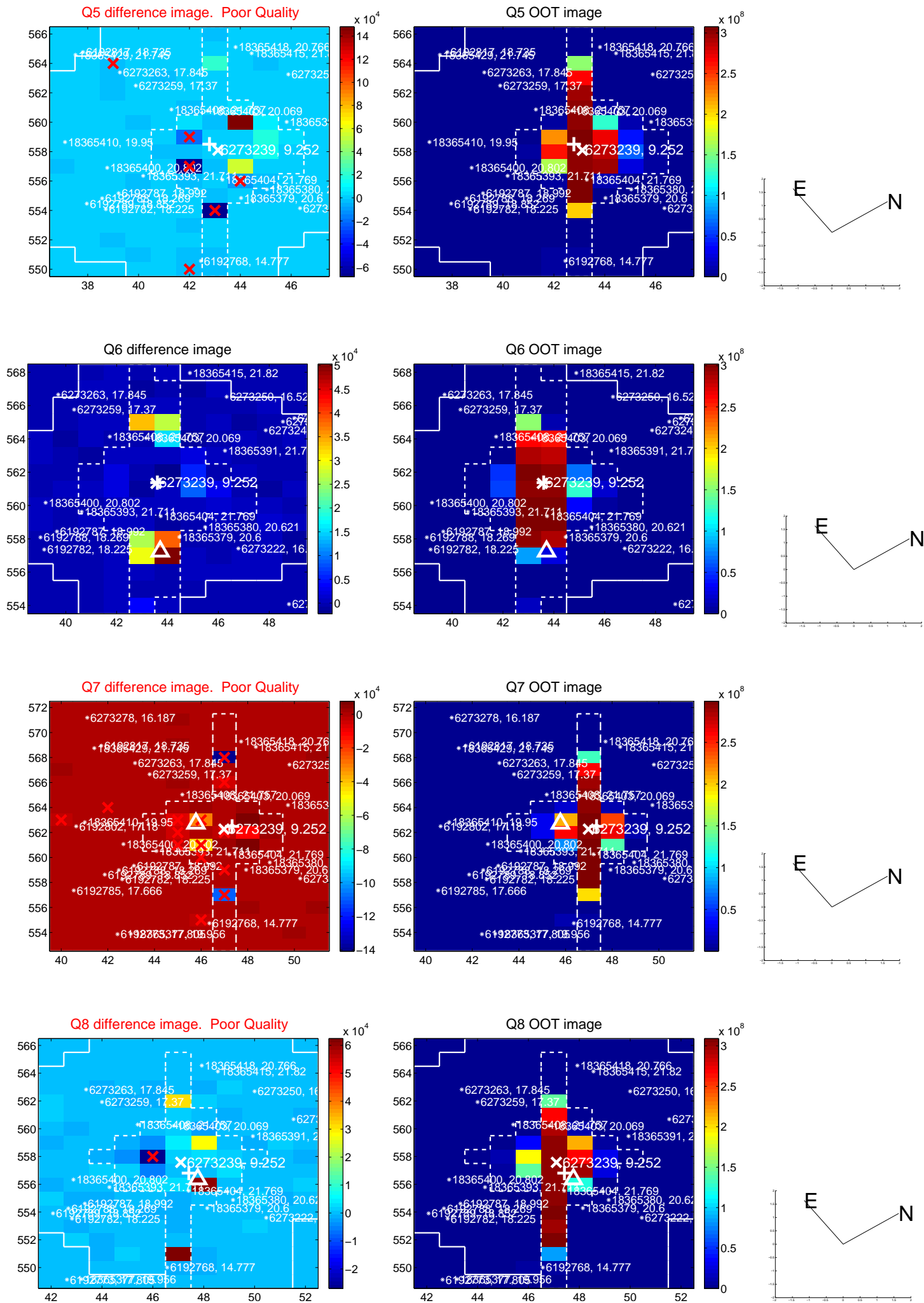


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

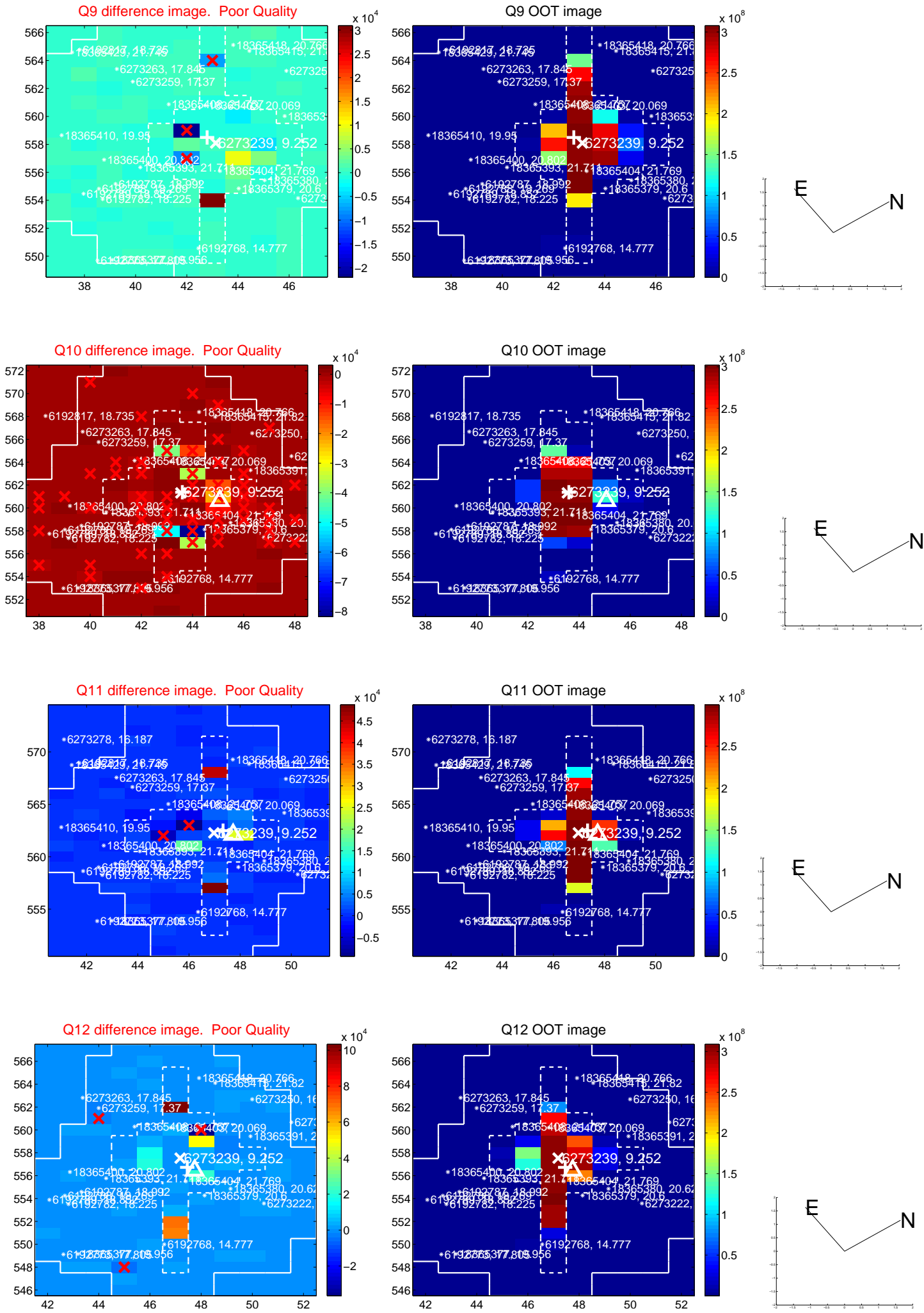
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



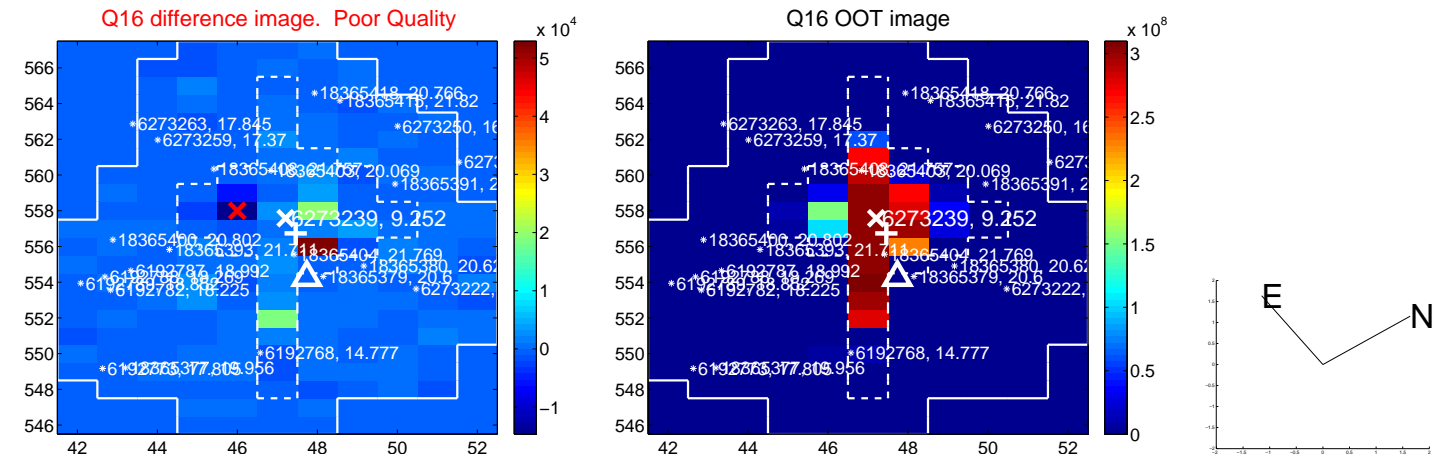
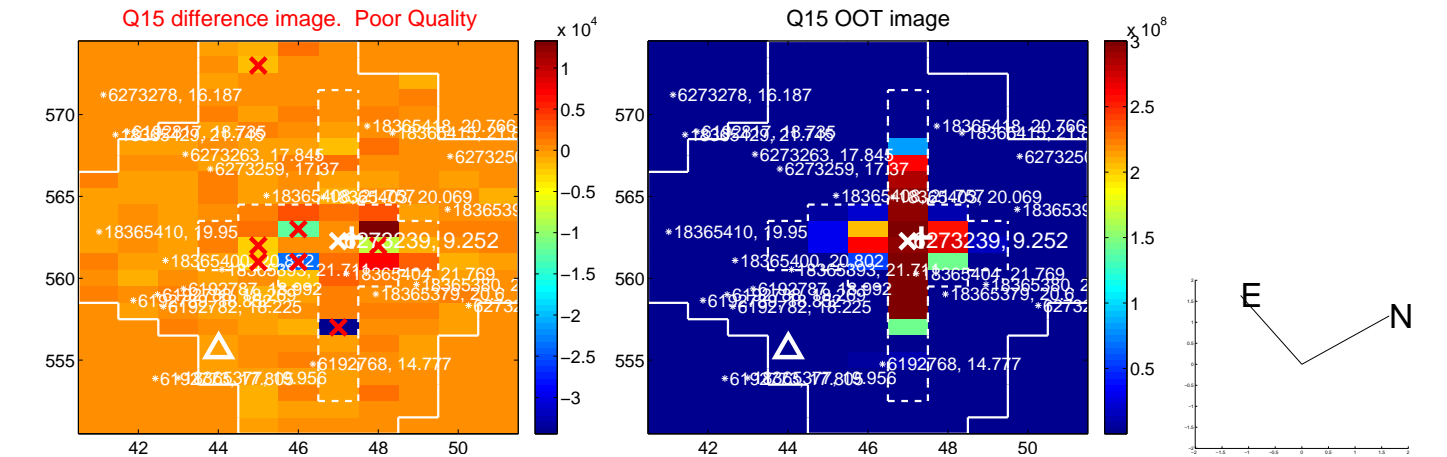
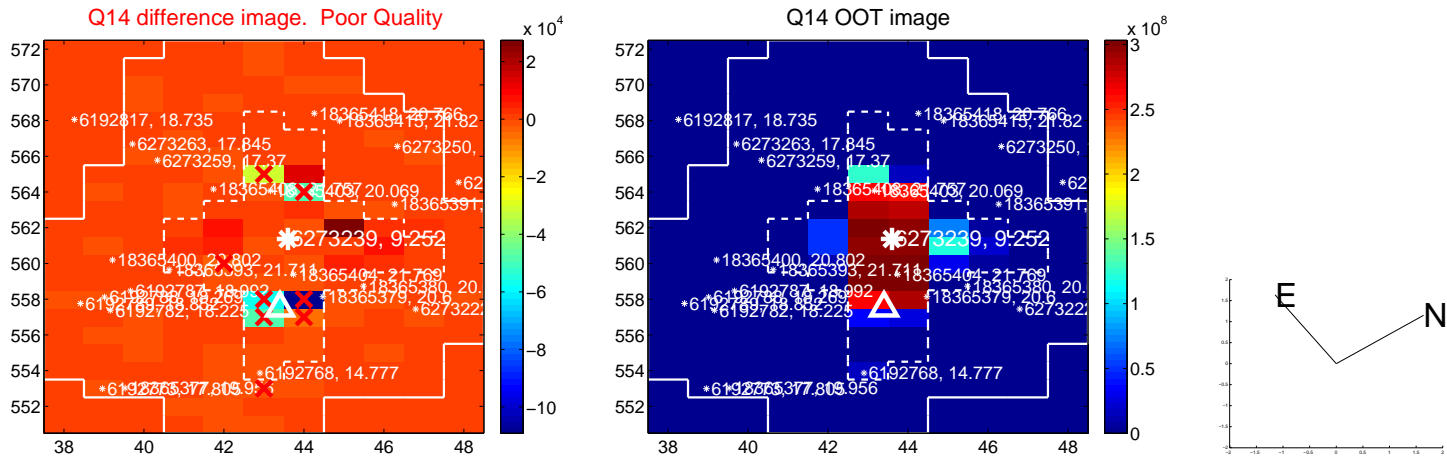
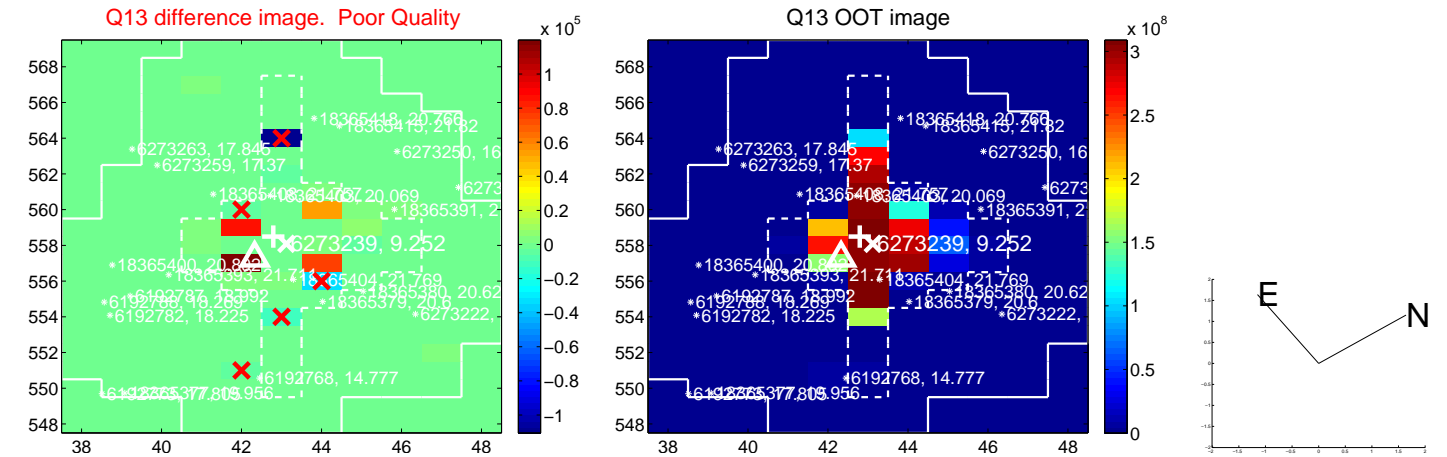
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

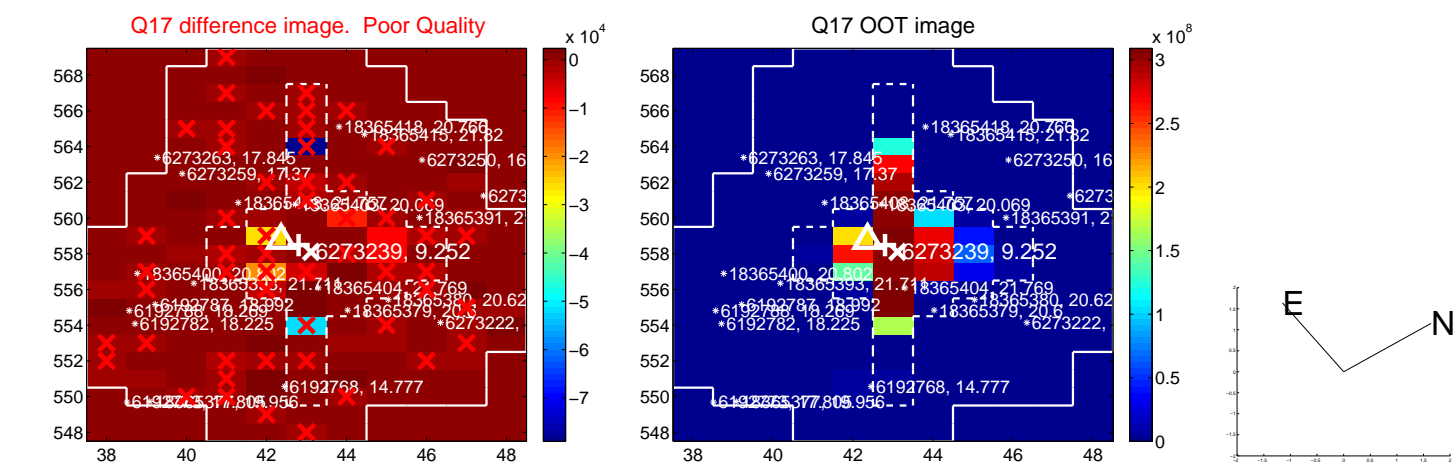


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

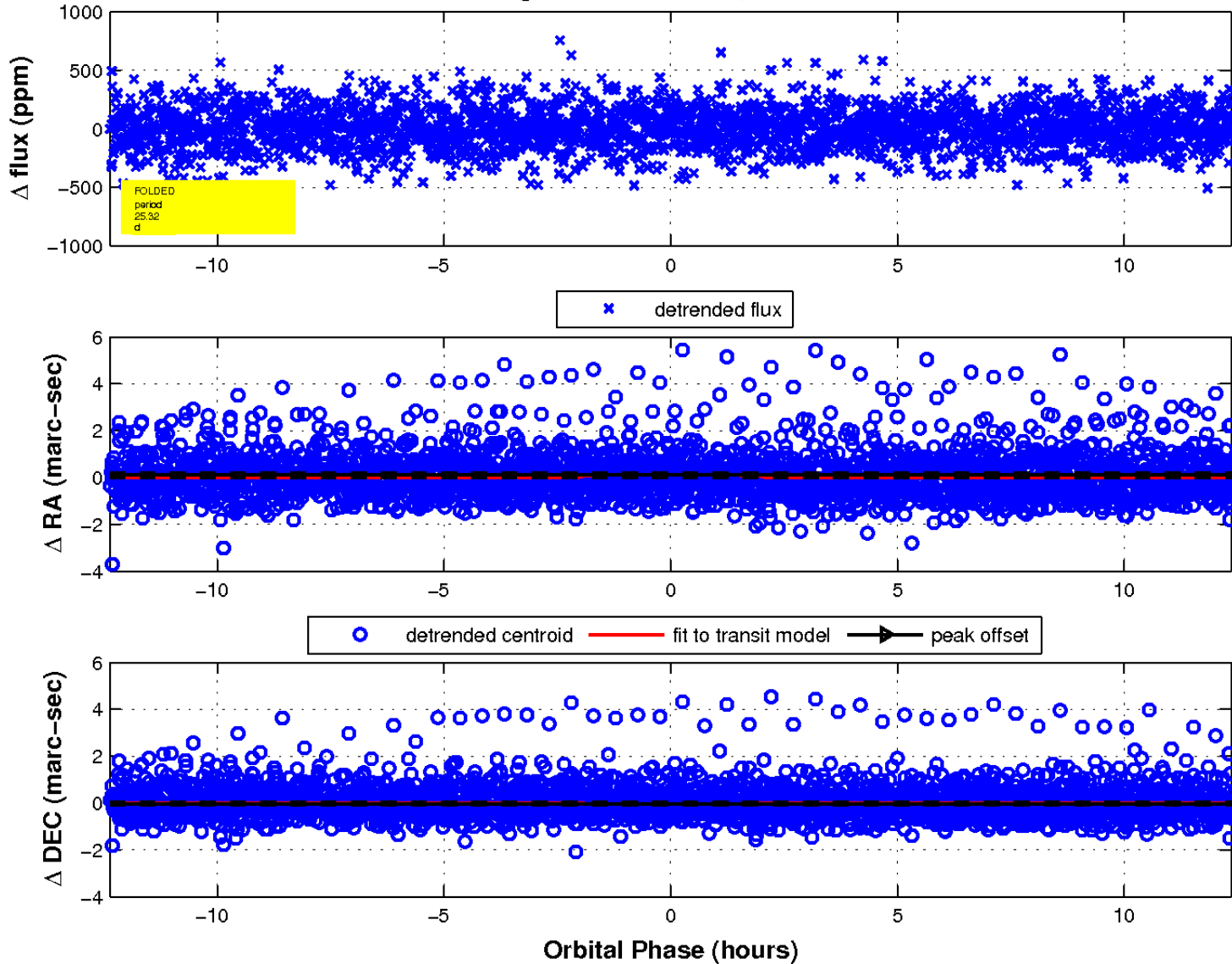




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\Delta$ : difference centroid. red  $\times$ : large negative pixel value.

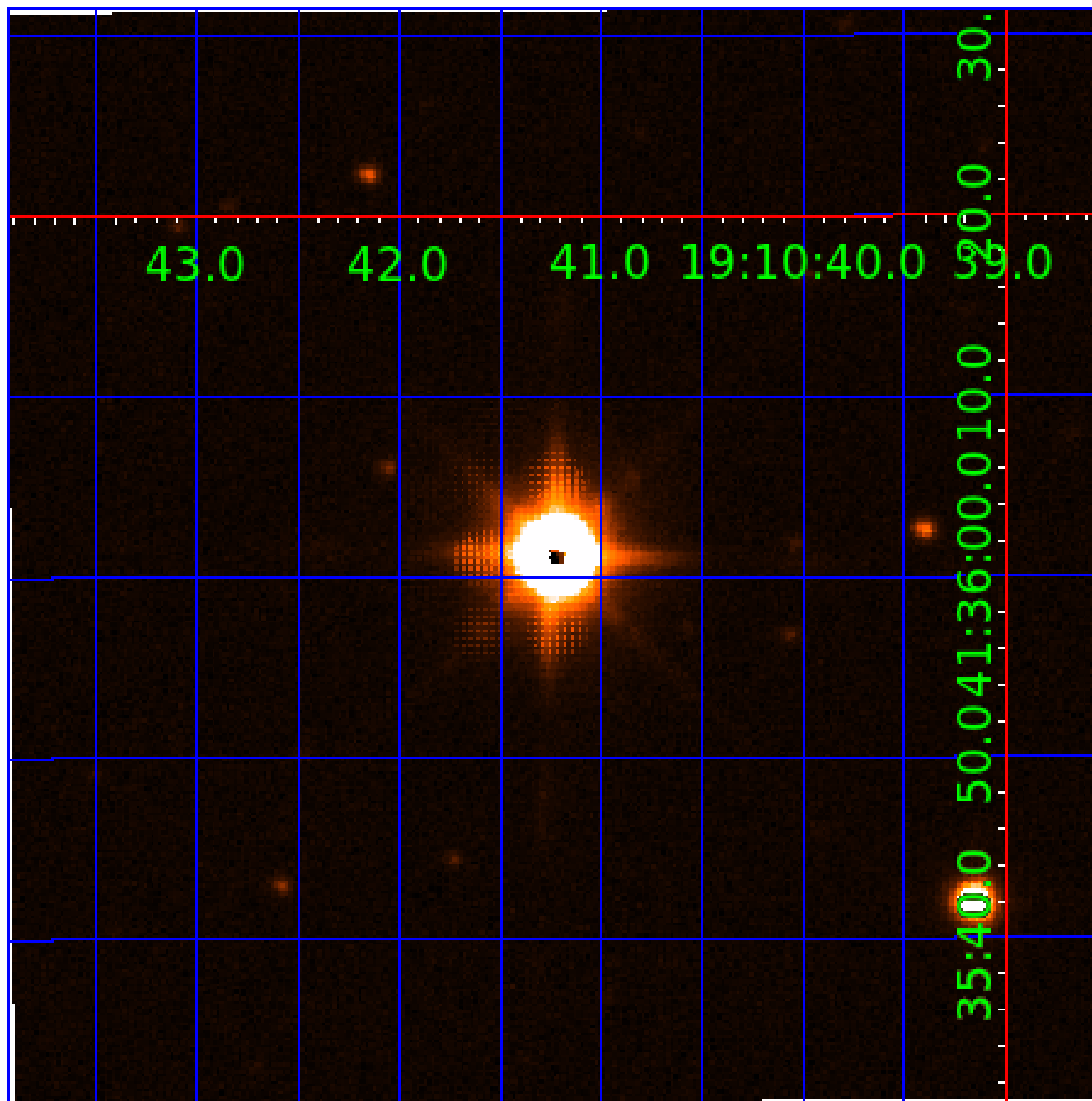


fluxWeightedCentroids, Planet 5 of 6



UKIRT Image

Declination



# KIC 006273239

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006273239-01	OBS	No	1.410238	132.131954	21.1	4.751	11.9	11.1	1.72	7098	0.91	8347.61
006273239-02	OBS	No	327.967345	154.741632	217.4	6.526	11.6	5.5	1.72	7098	2.56	5.84
006273239-03	OBS	No	1.410189	132.863428	21.9	4.797	10.2	10.9	1.72	7098	0.83	8348.00
006273239-05	OBS	No	25.321563	146.804469	18.7	4.127	10.0	0.7	1.72	7098	0.86	177.54
006273239-06	OBS	No	39.787611	161.026669	318.3	2.852	10.8	7.6	1.72	7098	3.14	97.19

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006273239-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—CENT_SATURATED
006273239-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
006273239-03	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—SAME_NTL_PERIOD—CENT_SATURATED
006273239-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_TRACKER—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
006273239-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

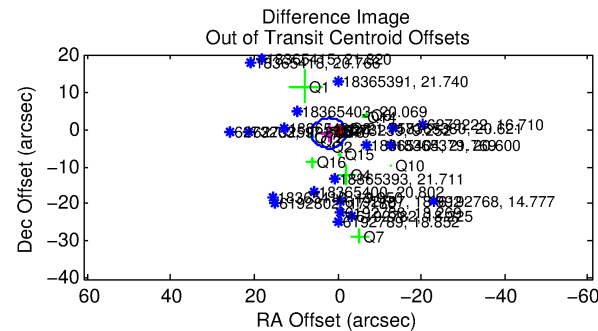
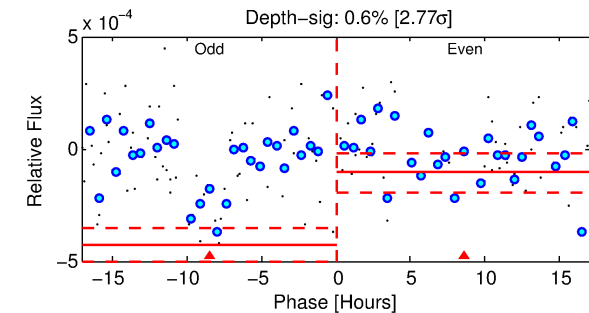
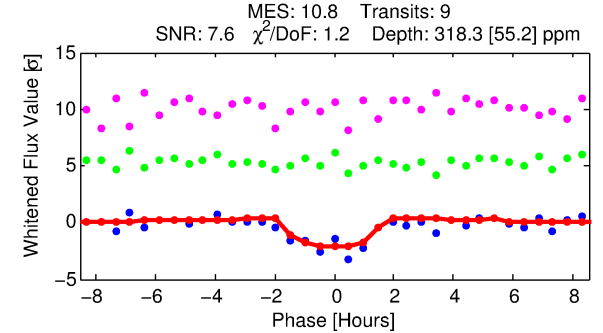
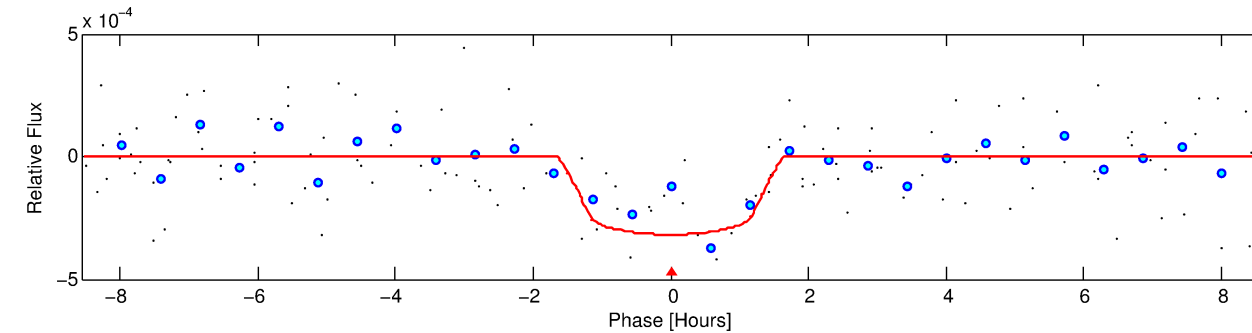
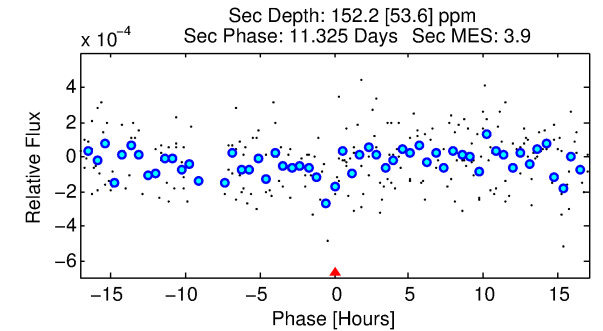
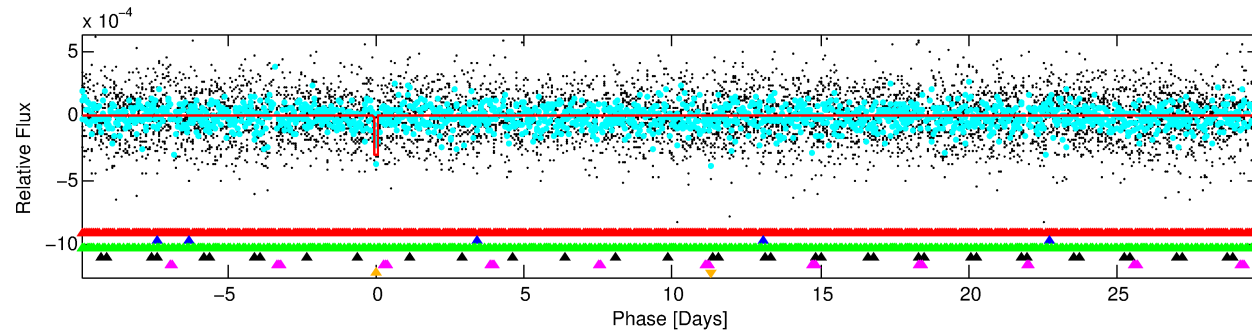
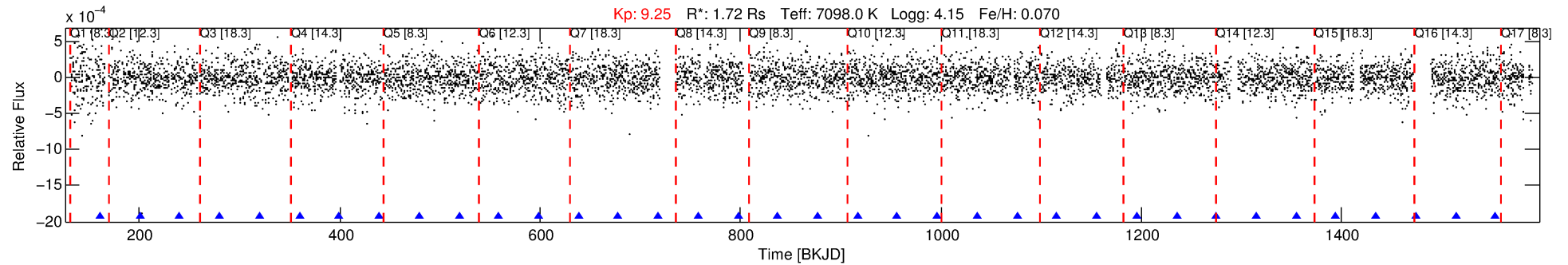
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006273239-06

No Significant Match Found

# DV One-Page Summary

KIC: 6273239 Candidate: 6 of 6 Period: 39.788 d



## DV Fit Results:

Period = 39.78761 [0.00055] d  
Epoch = 161.0267 [0.0112] BKJD  
Rp/R\* = 0.0167 [0.0359]  
a/R\* = 101.14 [1240.55]  
b = 0.37 [29.46]  
Seff = 97.19 [41.05]  
Teq = 801 [85] K  
Rp = 3.14 [6.79] Re  
a = 0.2626 [0.0699] AU  
Ag = 586.40 [2528.43] [0.23σ]  
Teffp = 6091 [6548] K [0.81σ]

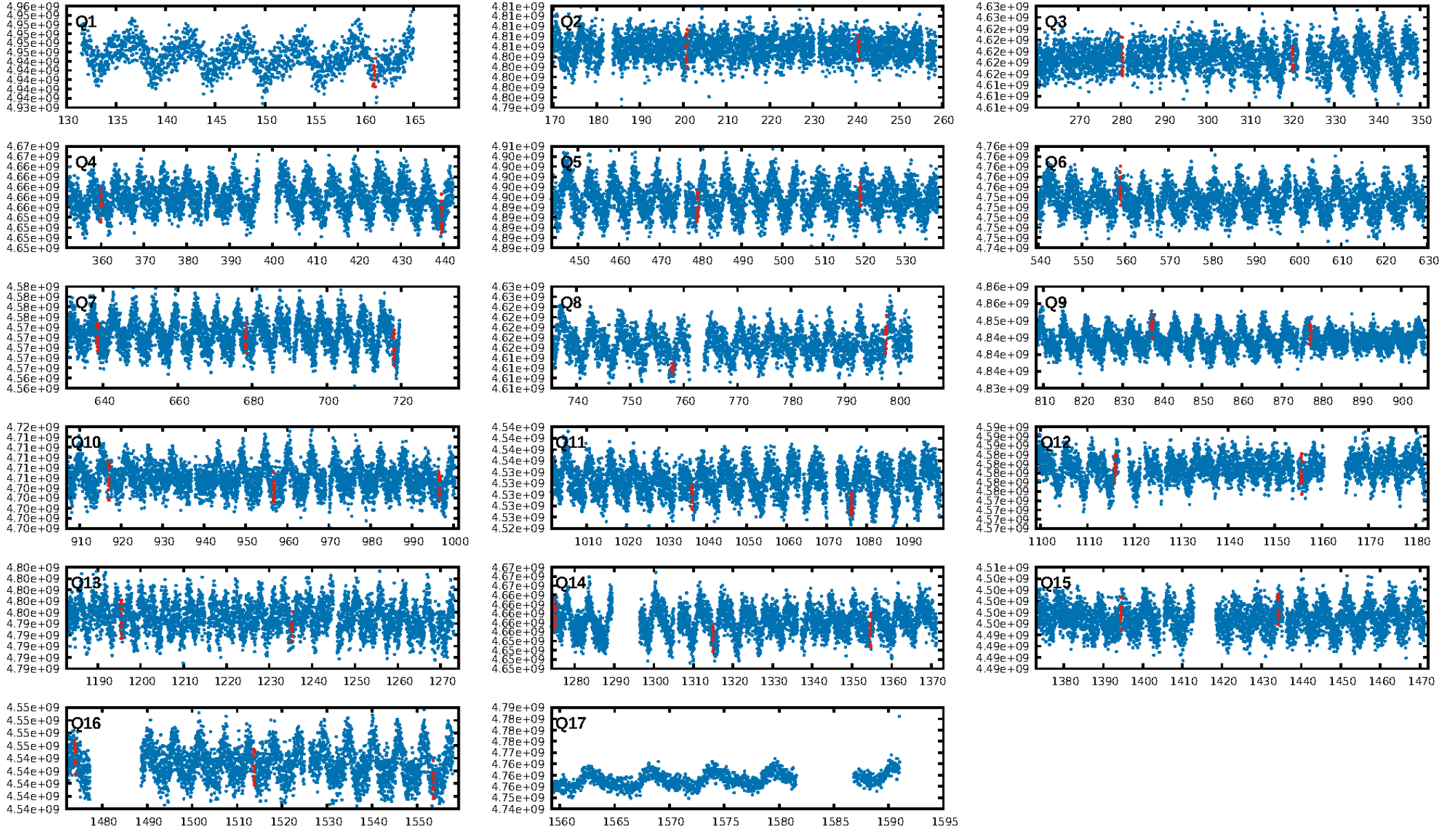
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [7.83σ]  
LongPeriod-sig: 100.0% [971.14σ]  
ModelChiSquare2-sig: 9.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 9.11e-15  
RollingBand-fgt: 1.00 [9/9]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 25.2%  
Centroid-so: 0.832 arcsec [2.36σ]  
OotOffset-rm: 2.348 arcsec [1.71σ]  
OotOffset-st: 4/3/4/4 [15]  
KicOffset-rm: 3.194 arcsec [2.33σ]  
KicOffset-st: 4/3/4/4 [15]  
DiffImageQuality-fgm: 0.07 [1/15]  
DiffImageOverlap-fno: 0.00 [0/16]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 20:13:45 Z

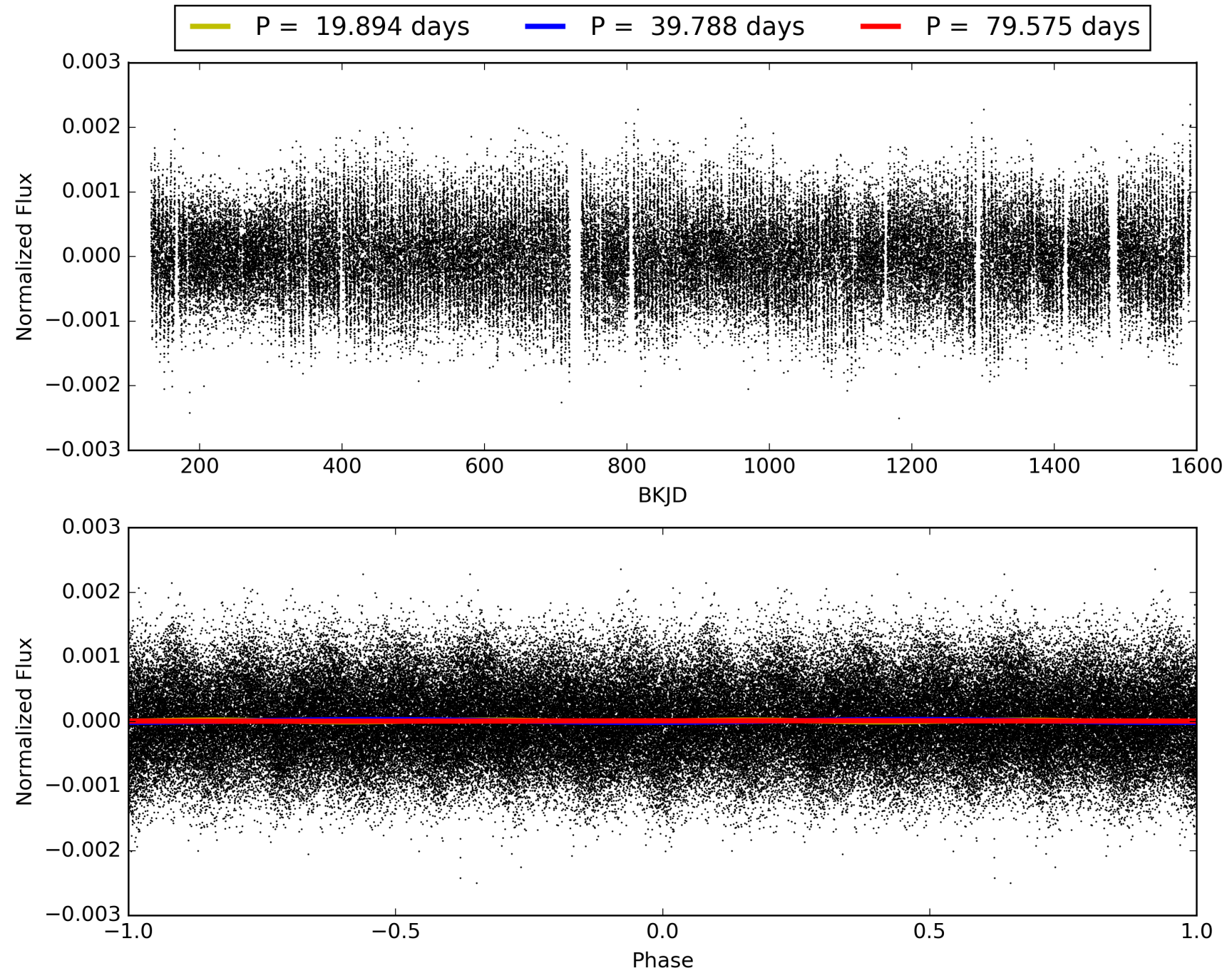
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006273239-06, PDC Light Curves





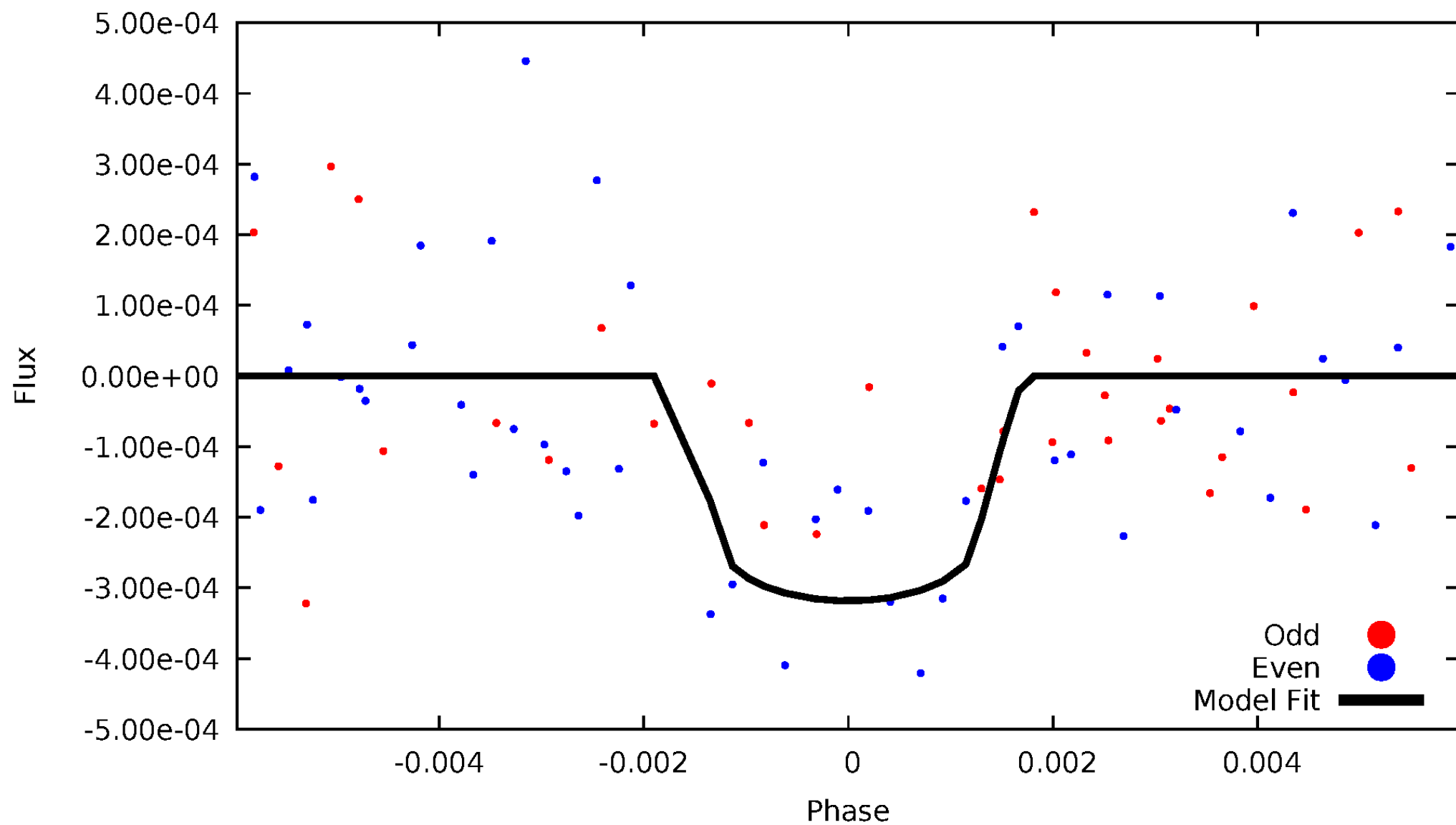
TCE 006273239-06





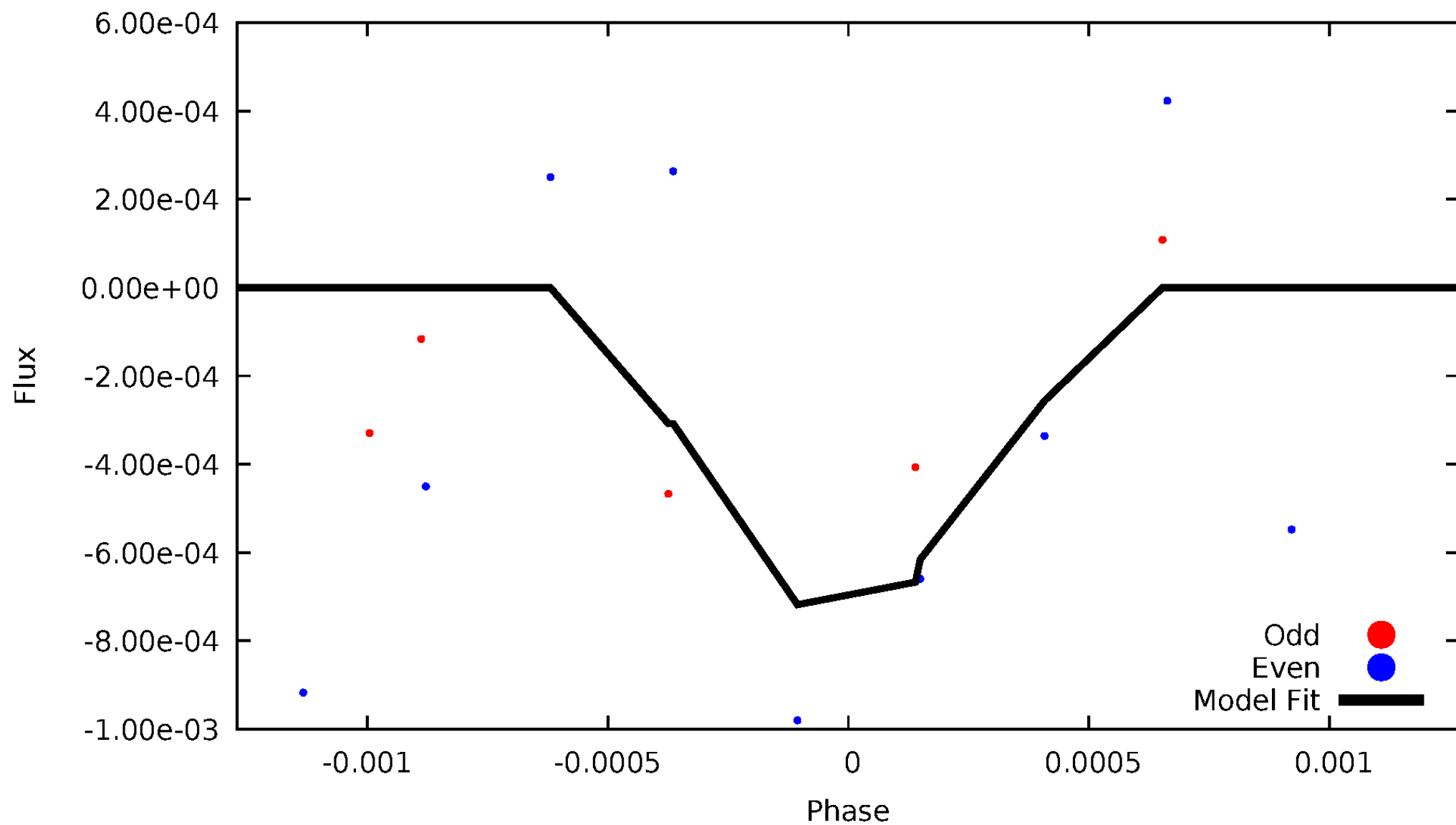
# DV Odd/Even

TCE 006273239-06



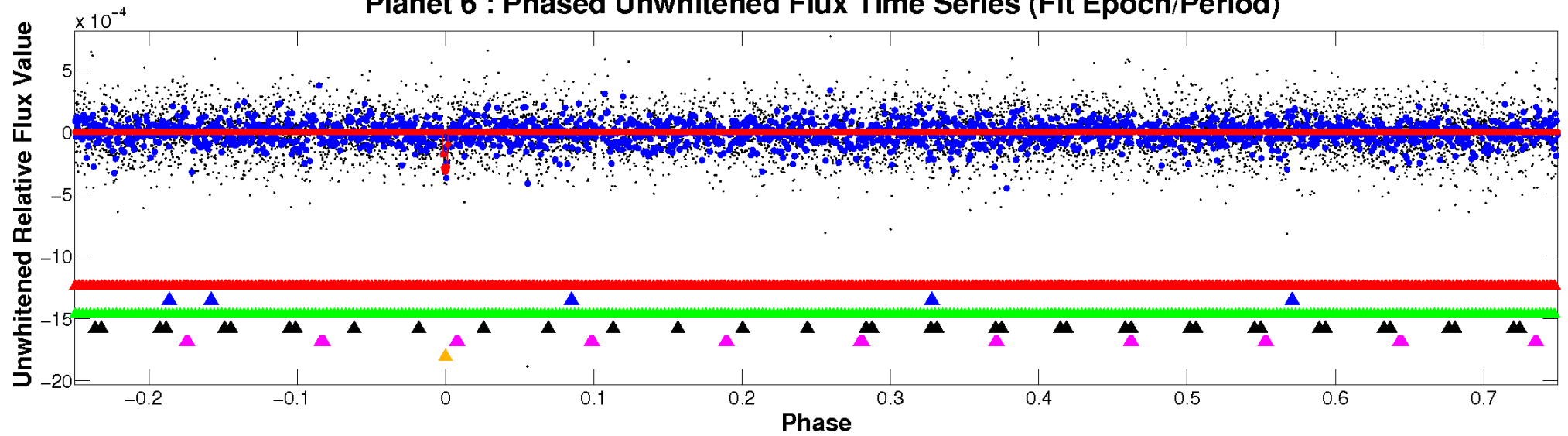
# ALT Odd/Even

TCE 006273239-06

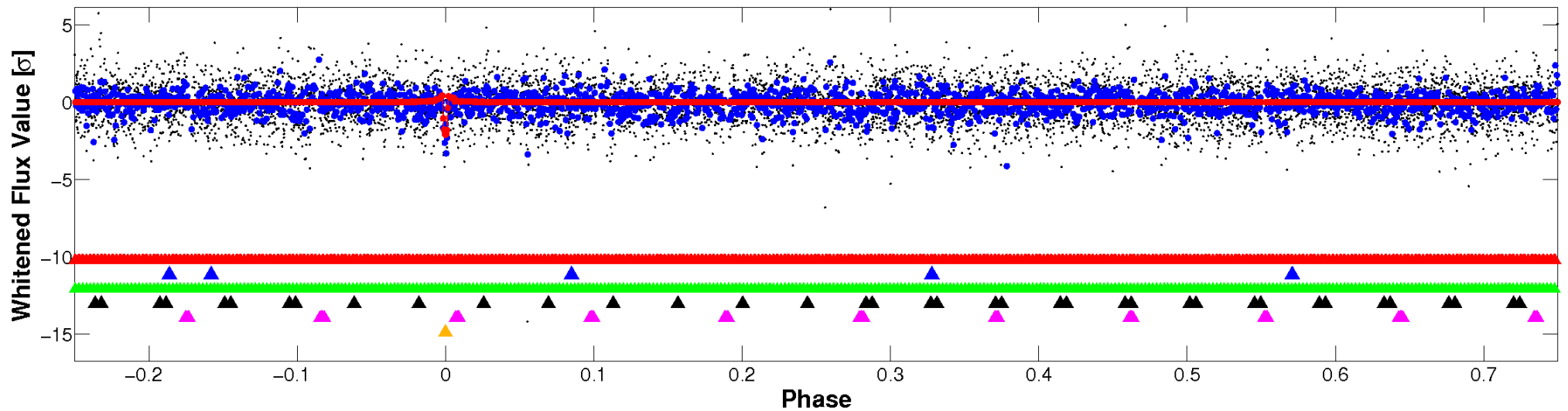


# Non-Whitened Vs. Whitened Light Curve

## Planet 6 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

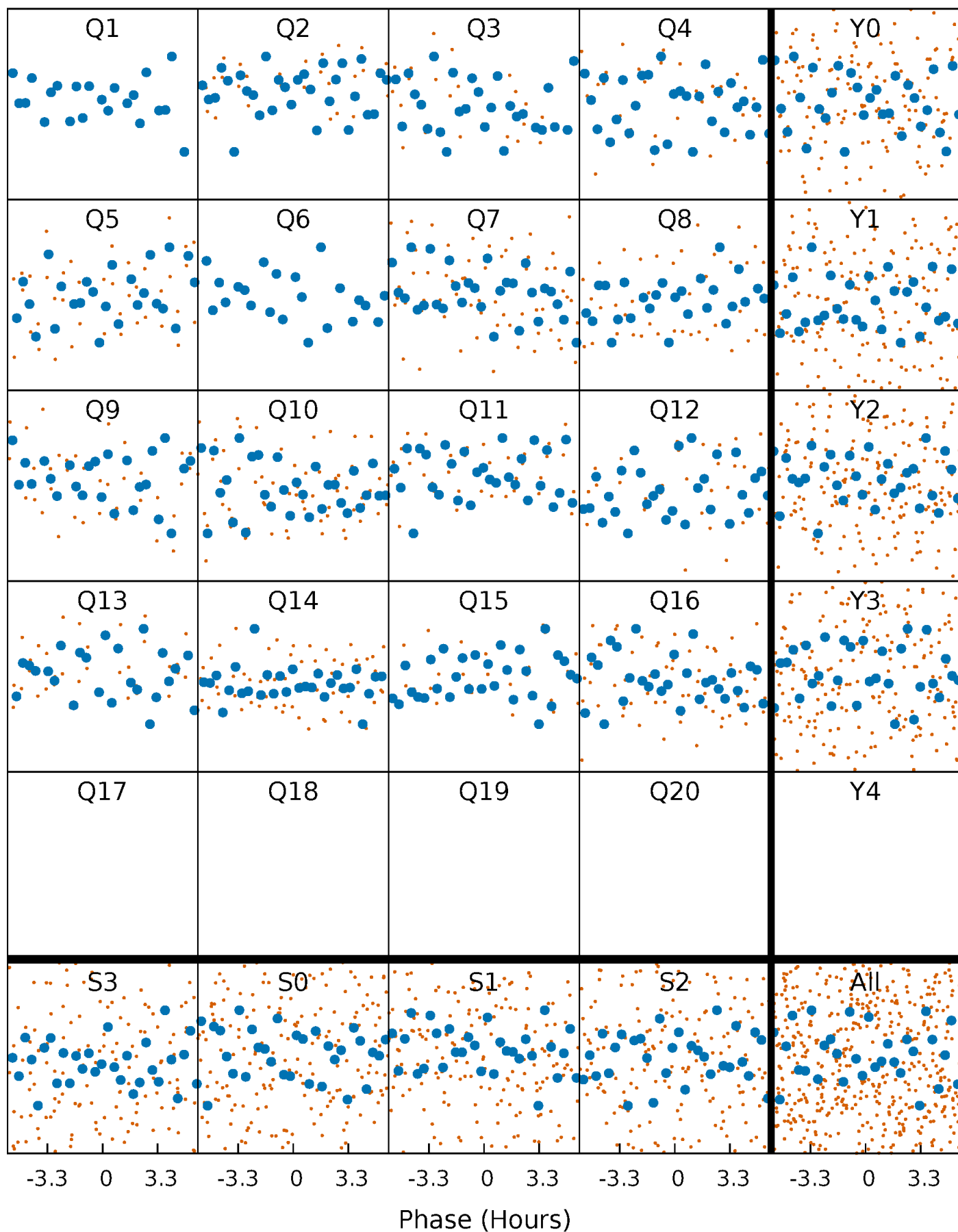


## Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



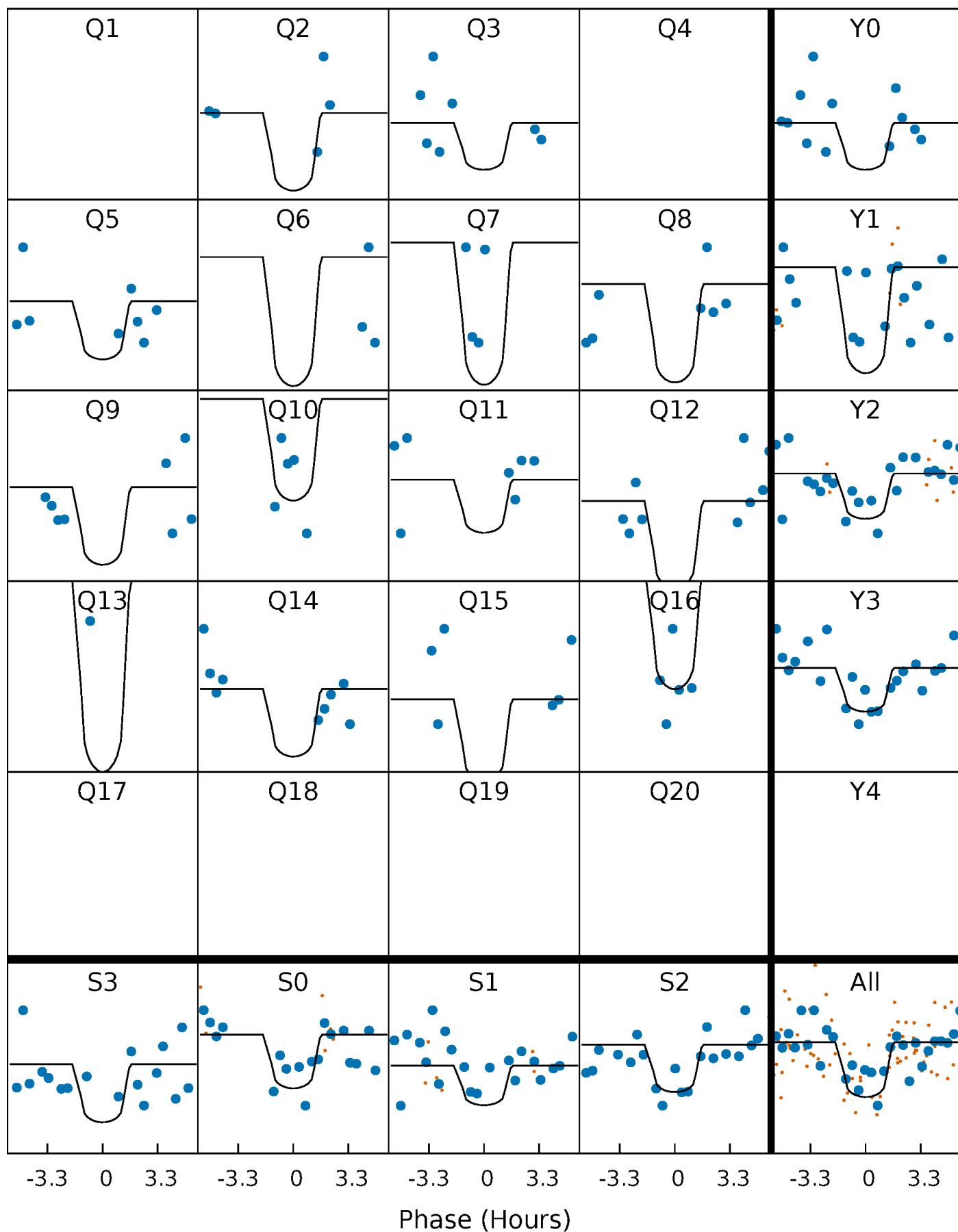
# PDC Quarter-Phased Transit Curves

TCE 006273239-06 P= 39.787611 Days  $T_0=161.026669$  (BKJD)



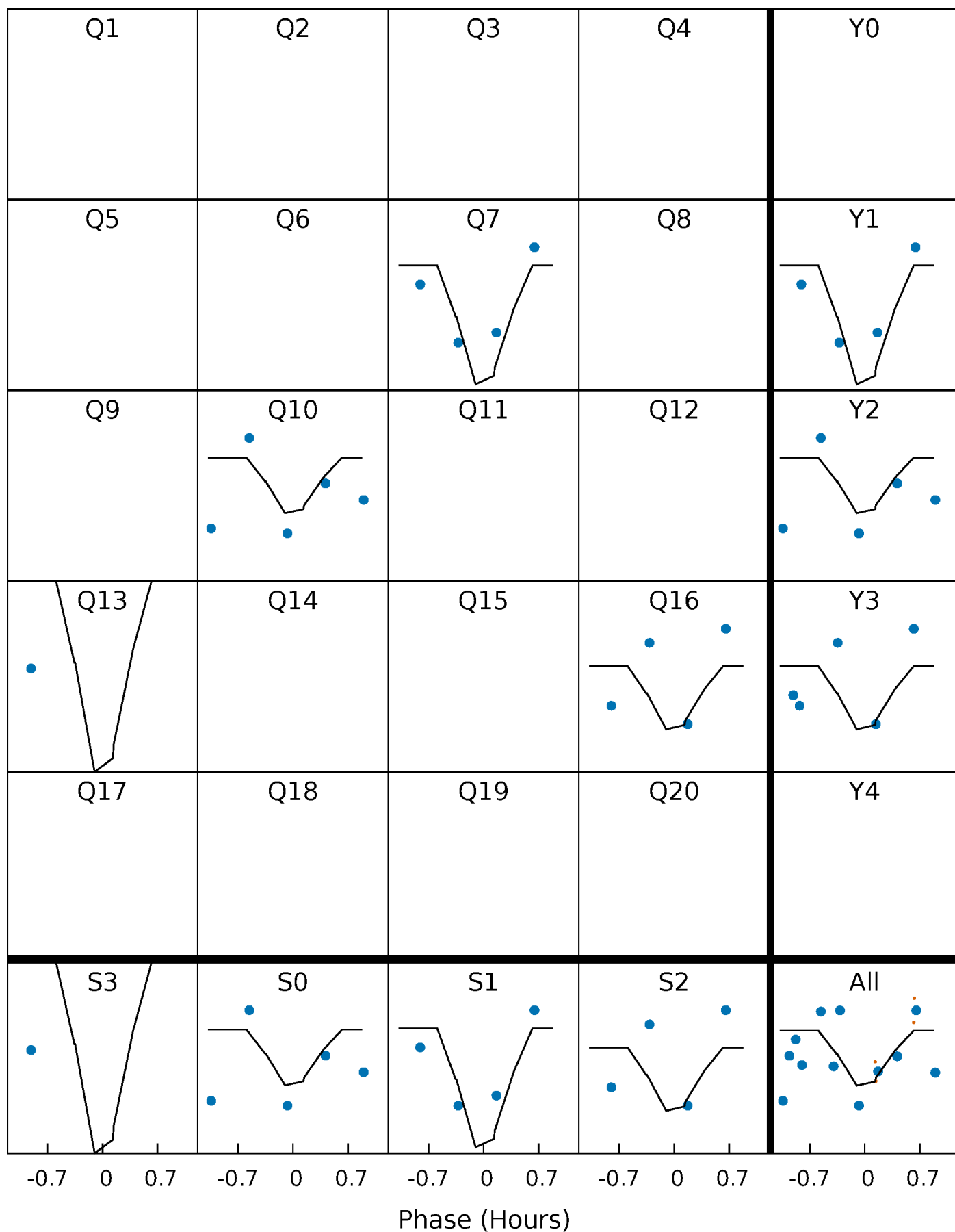
# DV Quarter-Phased Transit Curves

TCE 006273239-06 P= 39.787611 Days  $T_0=161.026669$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006273239-06 P= 39.788954 Days  $T_0=160.991301$  (BKJD)

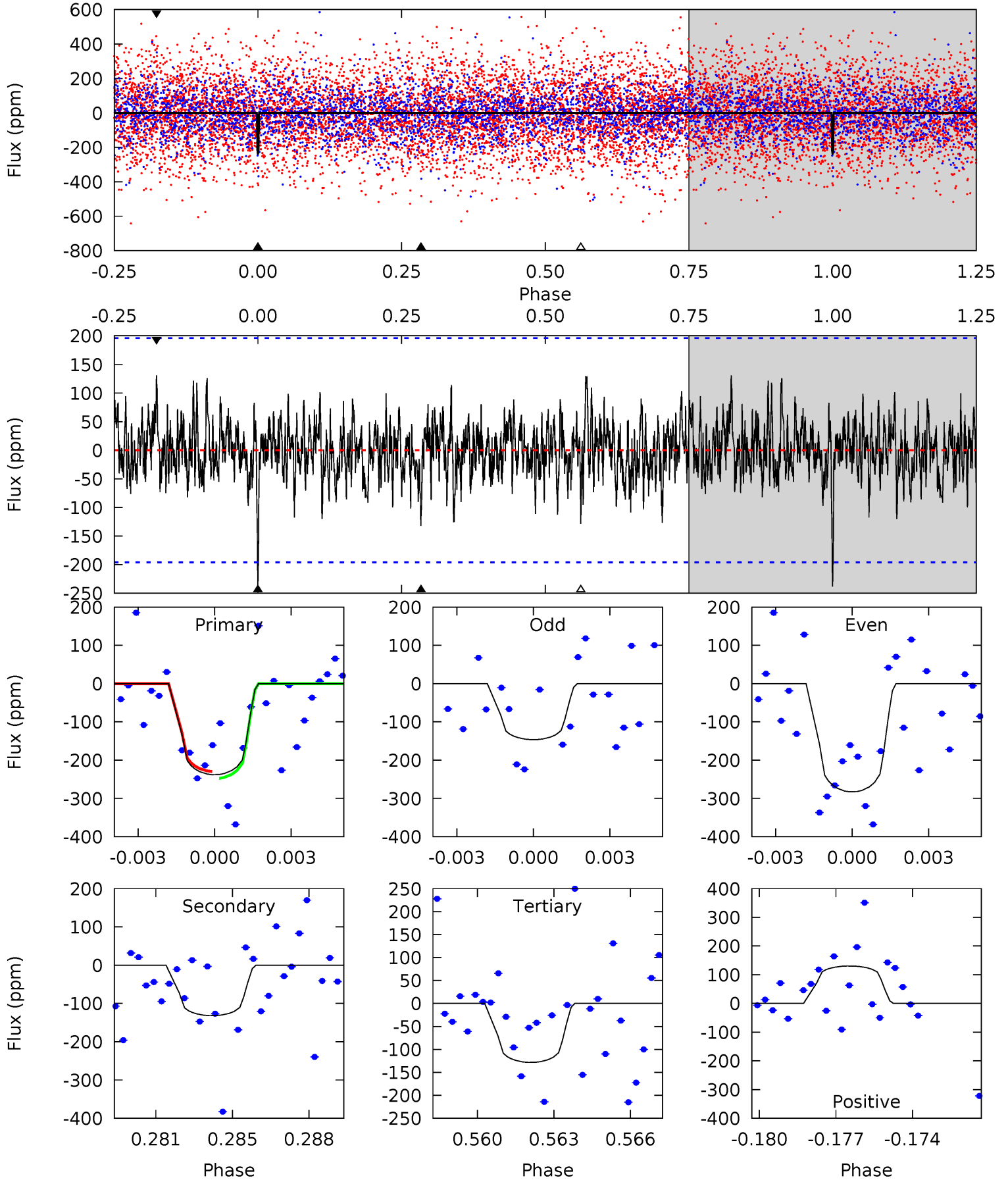




# DV Model-Shift Uniqueness Test

006273239-06, P = 39.787611 Days, E = 121.239058 Days

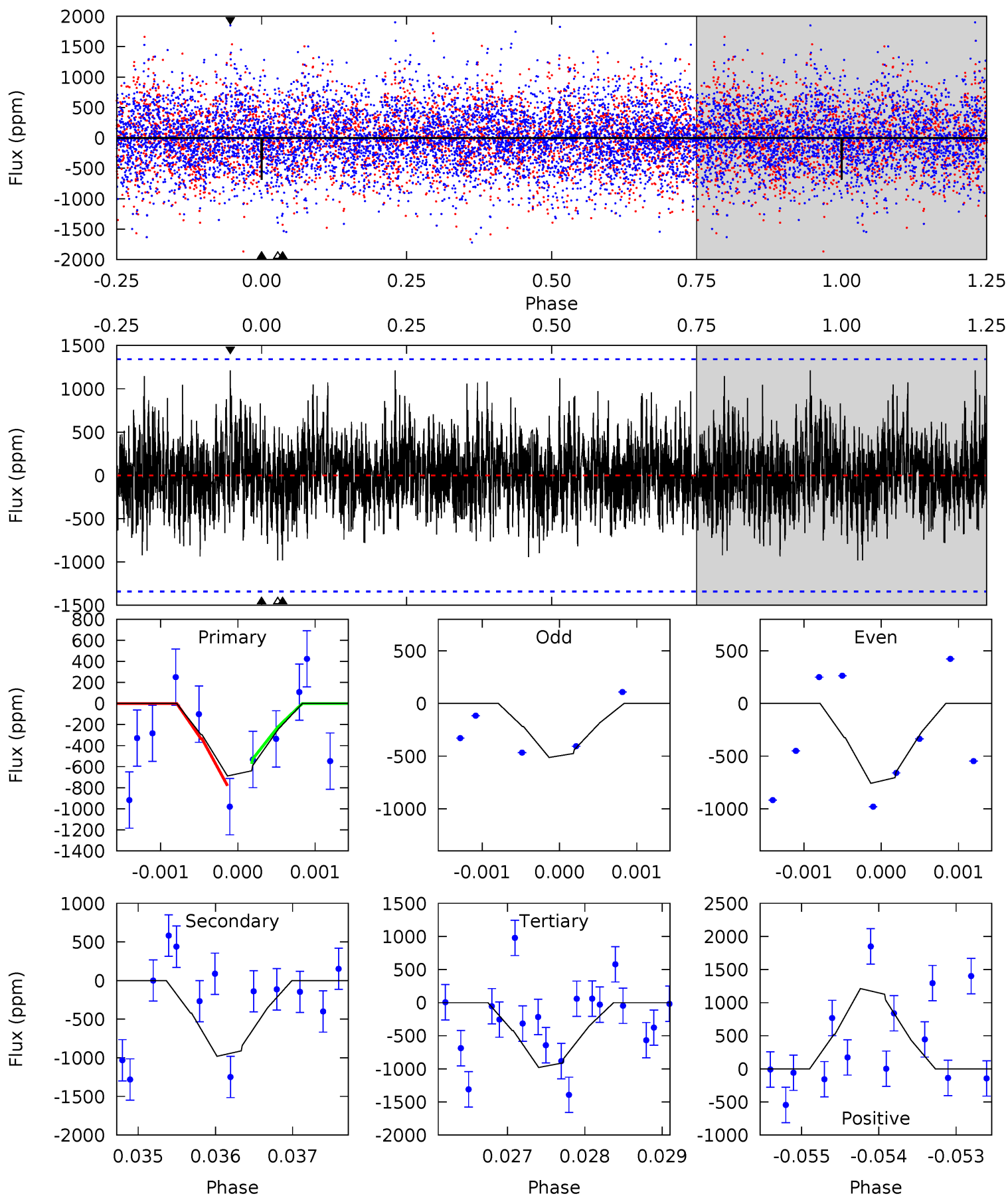
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.36	3.53	3.43	3.49	5.24	2.95	1.07	2.93	2.87	0.09	0.04	1.81	0.98	0.35	0.24



# Alt Model-Shift Uniqueness Test

006273239-06, P = 39.788954 Days, E = 121.202347 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
2.82	4.02	4.02	4.97	5.49	3.36	1.26	-1.19	-2.15	0.00	-0.95	0.44	1.22	0.55	0.43



### Stellar Parameters For KIC 006273239

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7098^{+197}_{-338}$	$4.152^{+0.108}_{-0.201}$	$0.070^{+0.200}_{-0.350}$	$1.717^{+0.558}_{-0.300}$	$1.527^{+0.206}_{-0.229}$	$0.425^{+0.264}_{-0.220}$
	+3%/-5%	+3%/-5%	+286%/-500%	+32%/-17%	+13%/-15%	+62%/-52%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 006273239-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-132 \pm 37$	$6.25^{+5.87}_{-4.32}$	$1124^{+83}_{-71}$	$4365^{+3290}_{-914}$	$122^{+1194}_{-91}$
Alt.	$-980 \pm 244$	$7.20^{+6.39}_{-4.59}$	$1124^{+91}_{-71}$	$6398^{+5884}_{-1637}$	$696^{+4677}_{-512}$

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

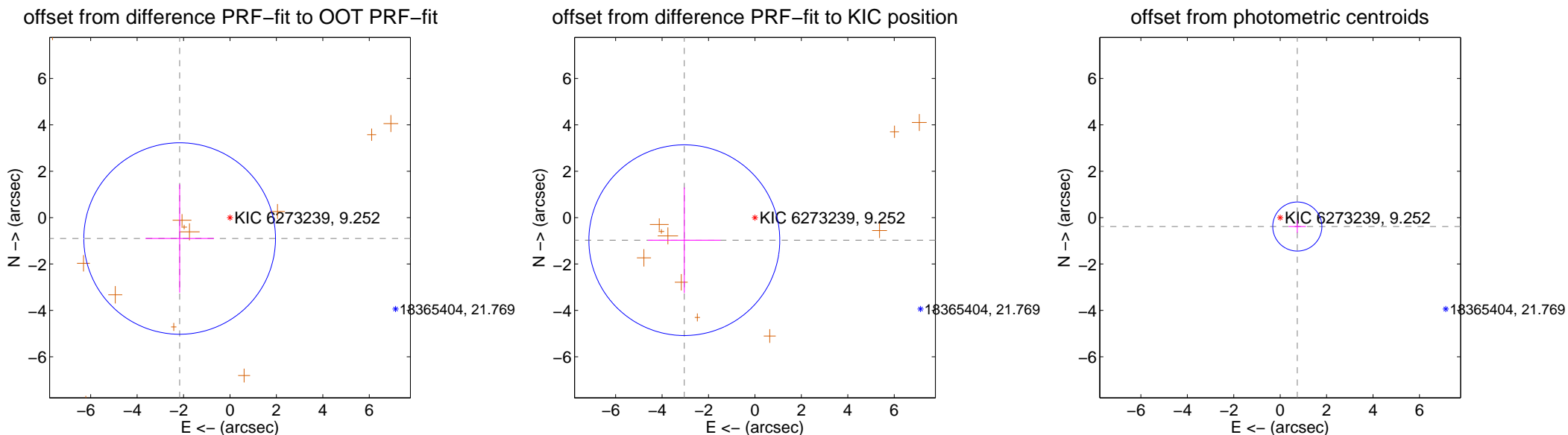
## DV Centroid Data

Supplemental centroid analysis for 006273239-06. **Kepler magnitude: 9.25.** Transit SNR 7.60

There are 1 quarters with good PRF difference image offsets

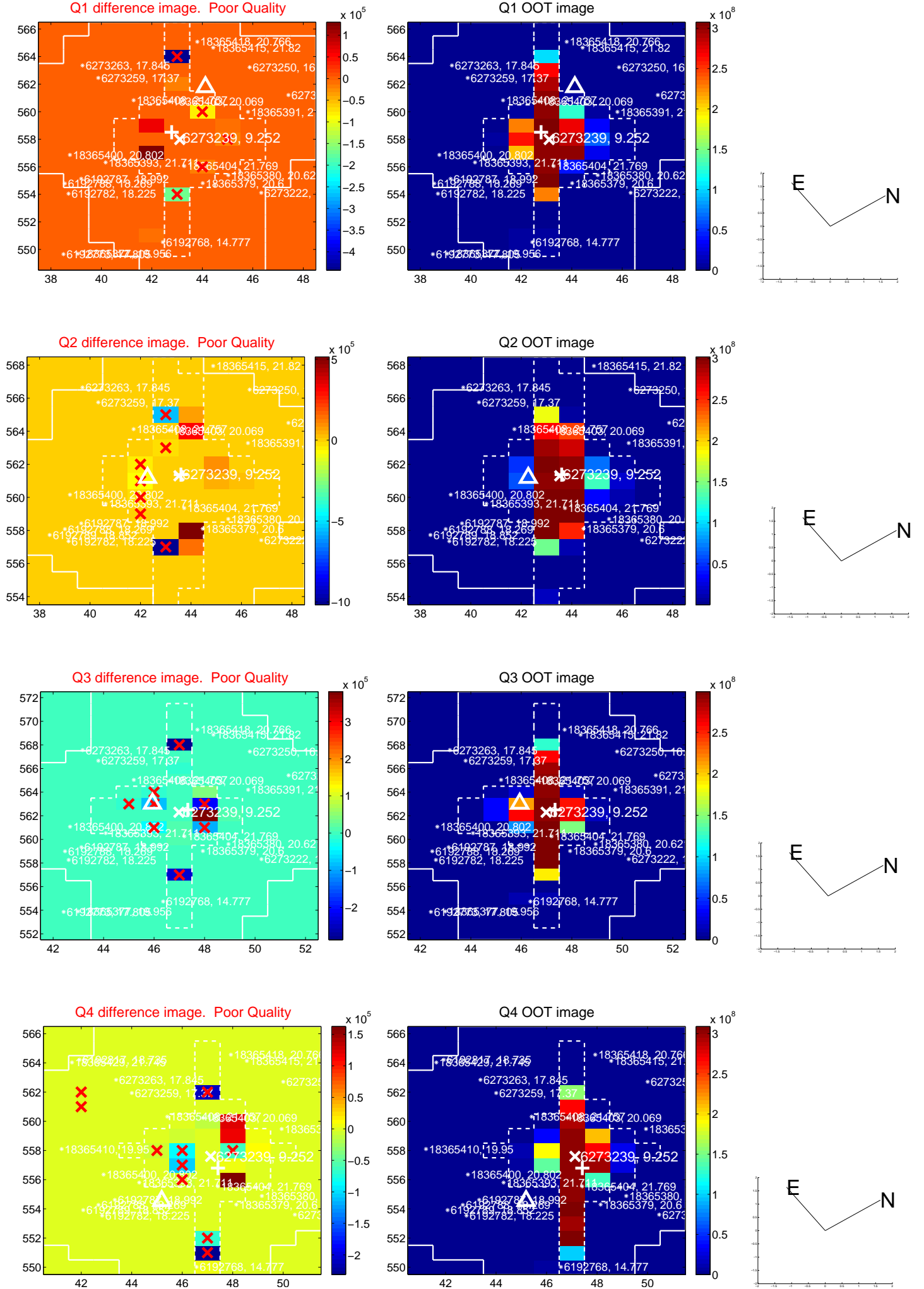
The OOT PRF centroid is offset from the target star catalog position by about 3.57 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.348 \pm 1.376$	1.71	$2.168 \pm 1.480$	$-0.901 \pm 2.335$
PRF-fit source offset from KIC position	$3.194 \pm 1.371$	2.33	$3.042 \pm 1.567$	$-0.973 \pm 2.277$
photometric centroid source offset	$0.83 \pm 0.35$	2.36	$-0.74 \pm 0.37$	$-0.38 \pm 0.27$

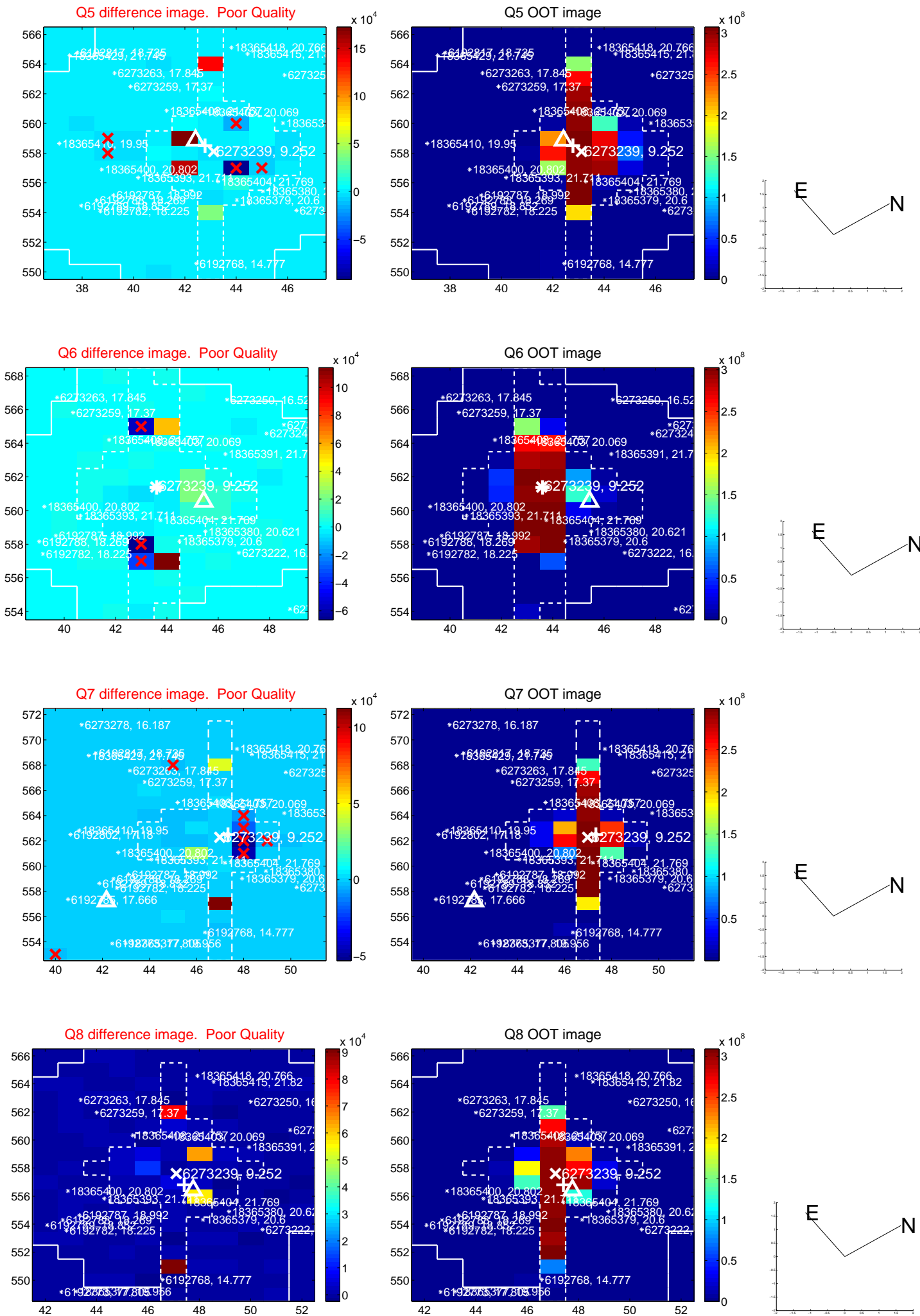


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

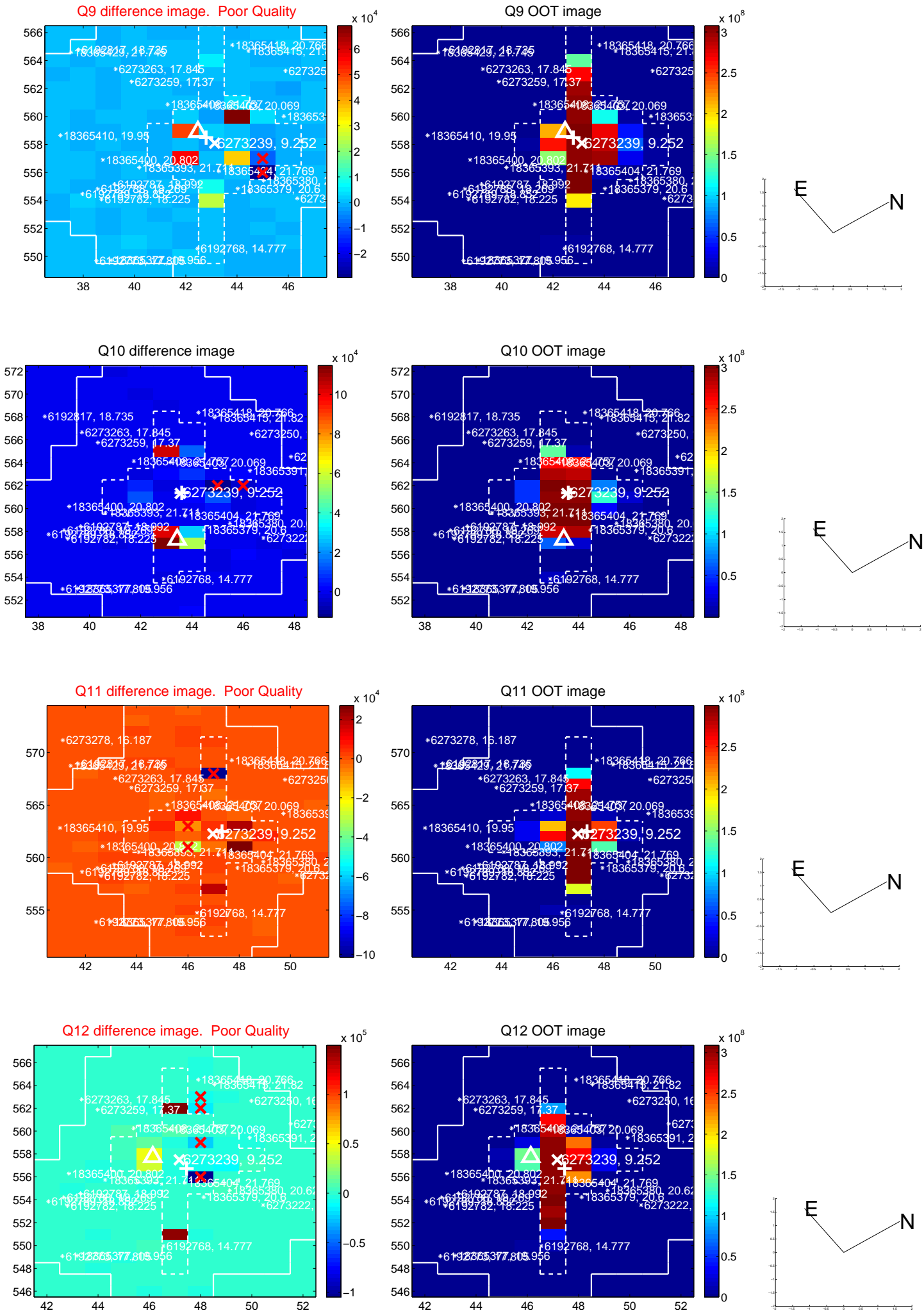


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

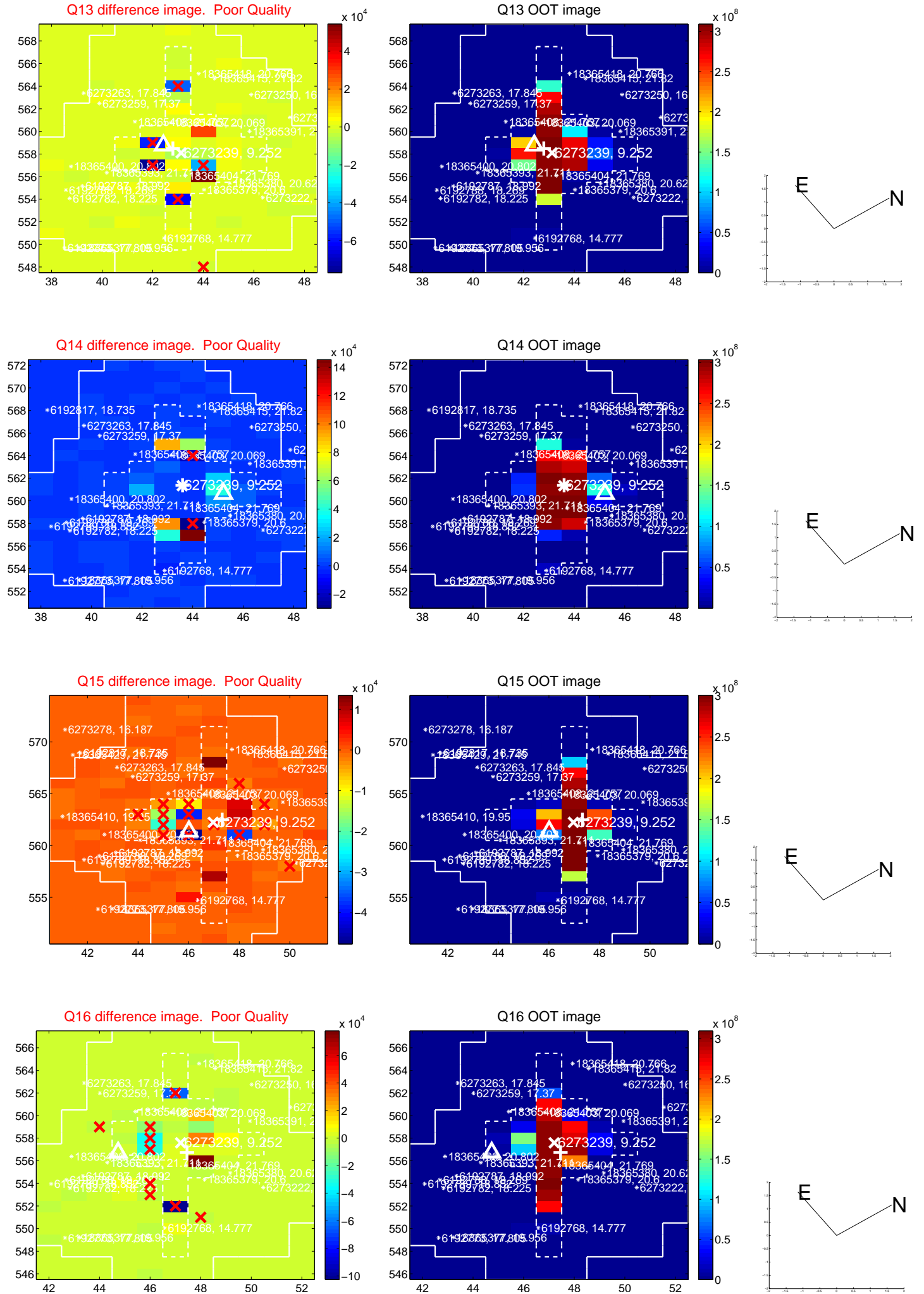




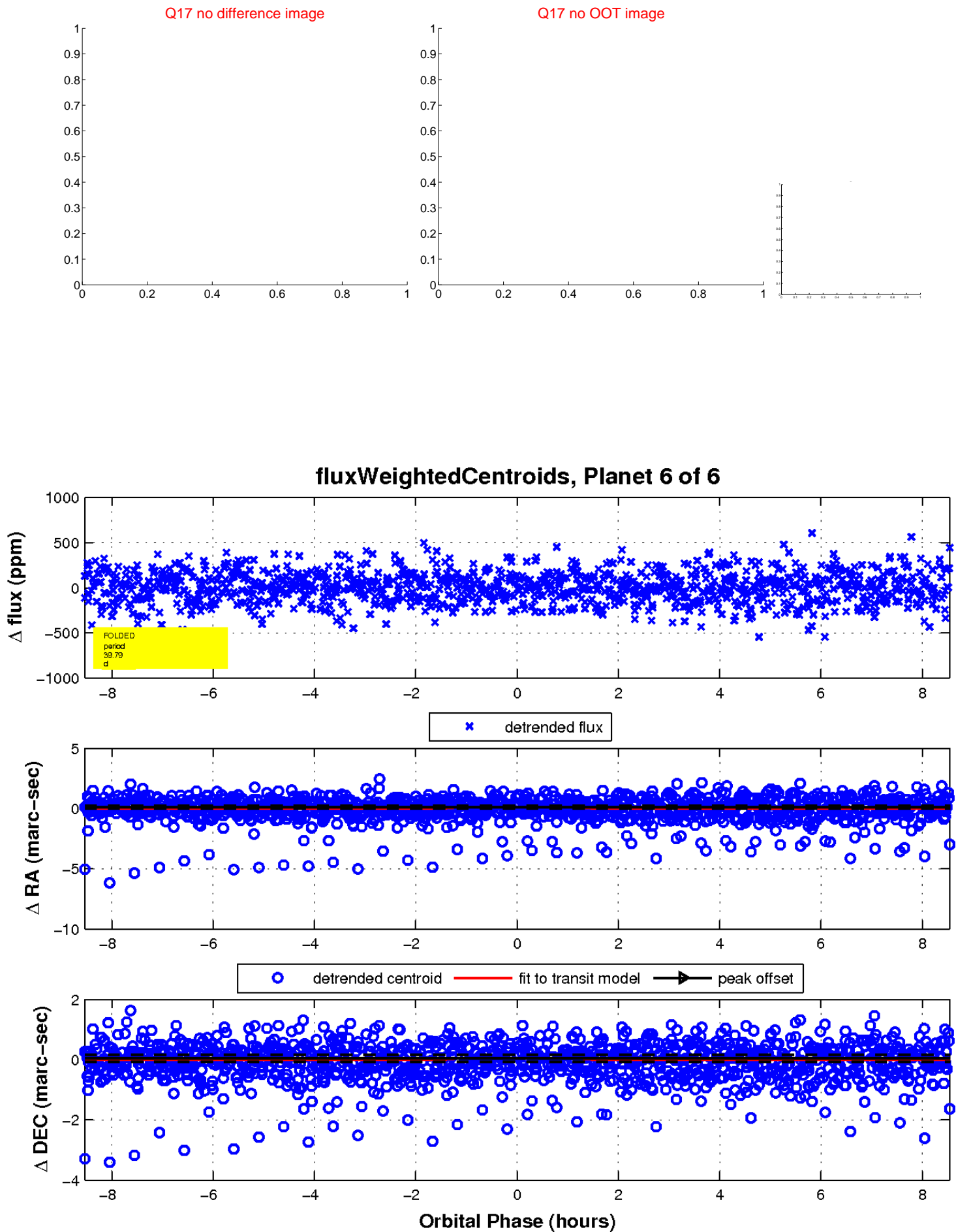
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

