

# KIC 012314750

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
012314750-01	OBS	No	3.344905	132.513718	8.7	5.798	11.5	9.6	3.00	7519	1.23	8542.52
012314750-02	OBS	No	3.347165	133.668524	4.9	11.856	8.5	7.3	3.00	7519	0.79	8534.83
012314750-03	OBS	No	375.329934	158.459722	54.2	18.225	7.5	6.7	3.00	7519	2.38	15.78

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012314750-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
012314750-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
012314750-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—CENT_SATURATED

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

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

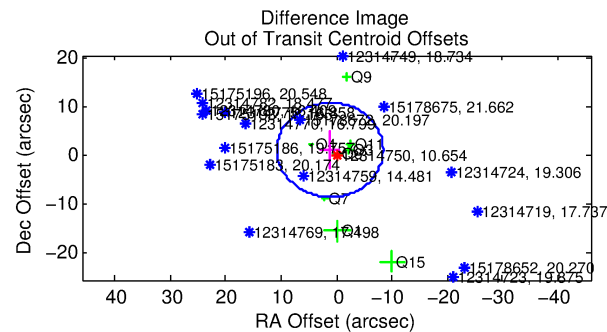
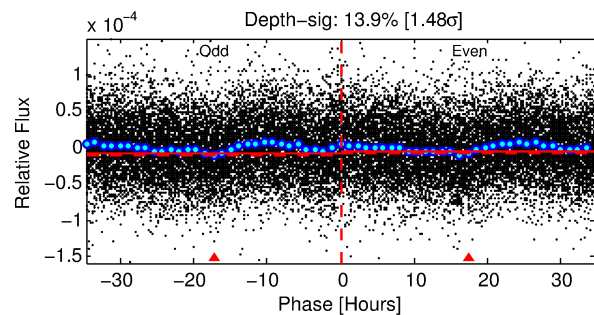
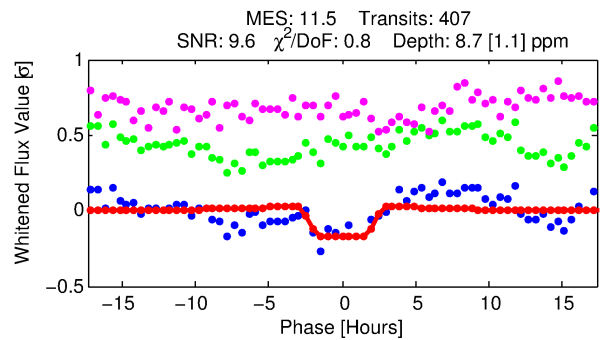
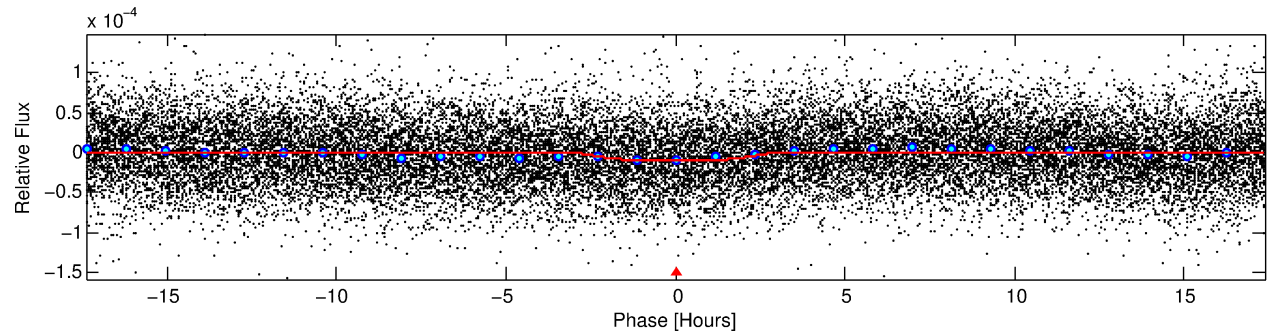
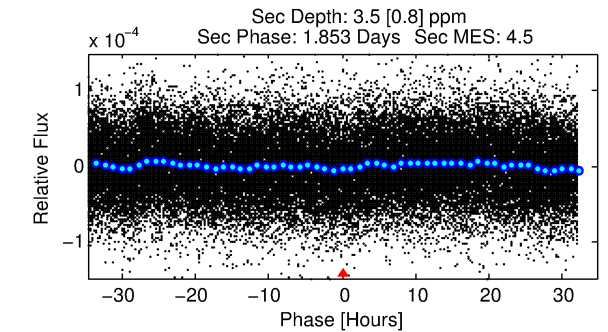
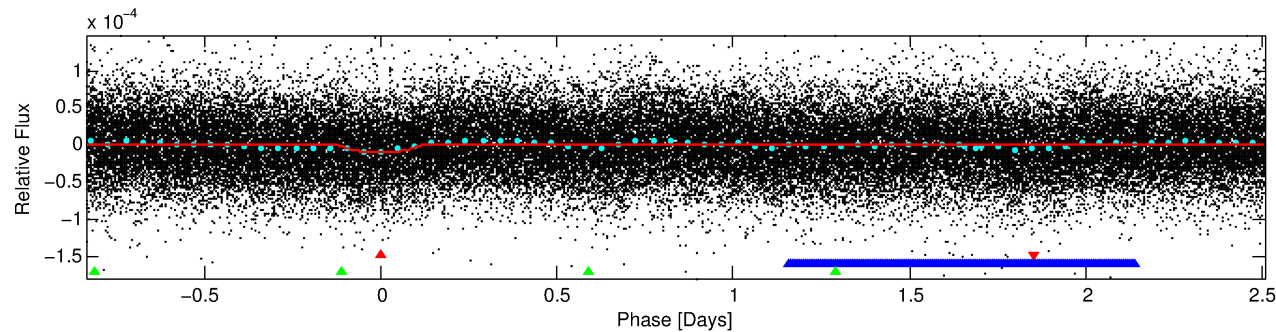
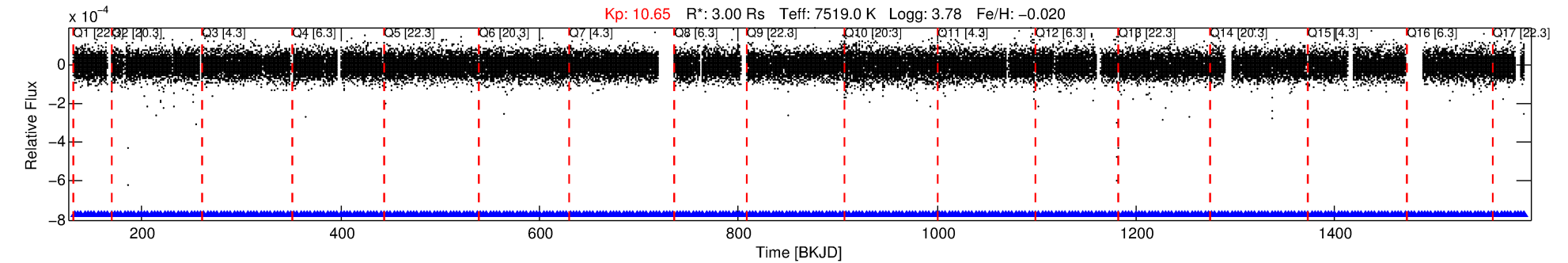
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 012314750-01

No Significant Match Found

# DV One-Page Summary

KIC: 12314750 Candidate: 1 of 3 Period: 3.345 d



## DV Fit Results:

Period = 3.34490 [0.00004] d  
Epoch = 132.5137 [0.0096] BKJD  
Rp/R\* = 0.0038 [0.0003]  
a/R\* = 1.18 [0.09]  
b = 0.99 [0.00]  
Seff = 8542.52 [5630.76]  
Teq = 2451 [404] K  
Rp = 1.23 [0.55] Re  
a = 0.0550 [0.0225] AU  
Ag = 3.80 [2.64] [1.06σ]  
Teffp = 5292 [428] K [4.82σ]

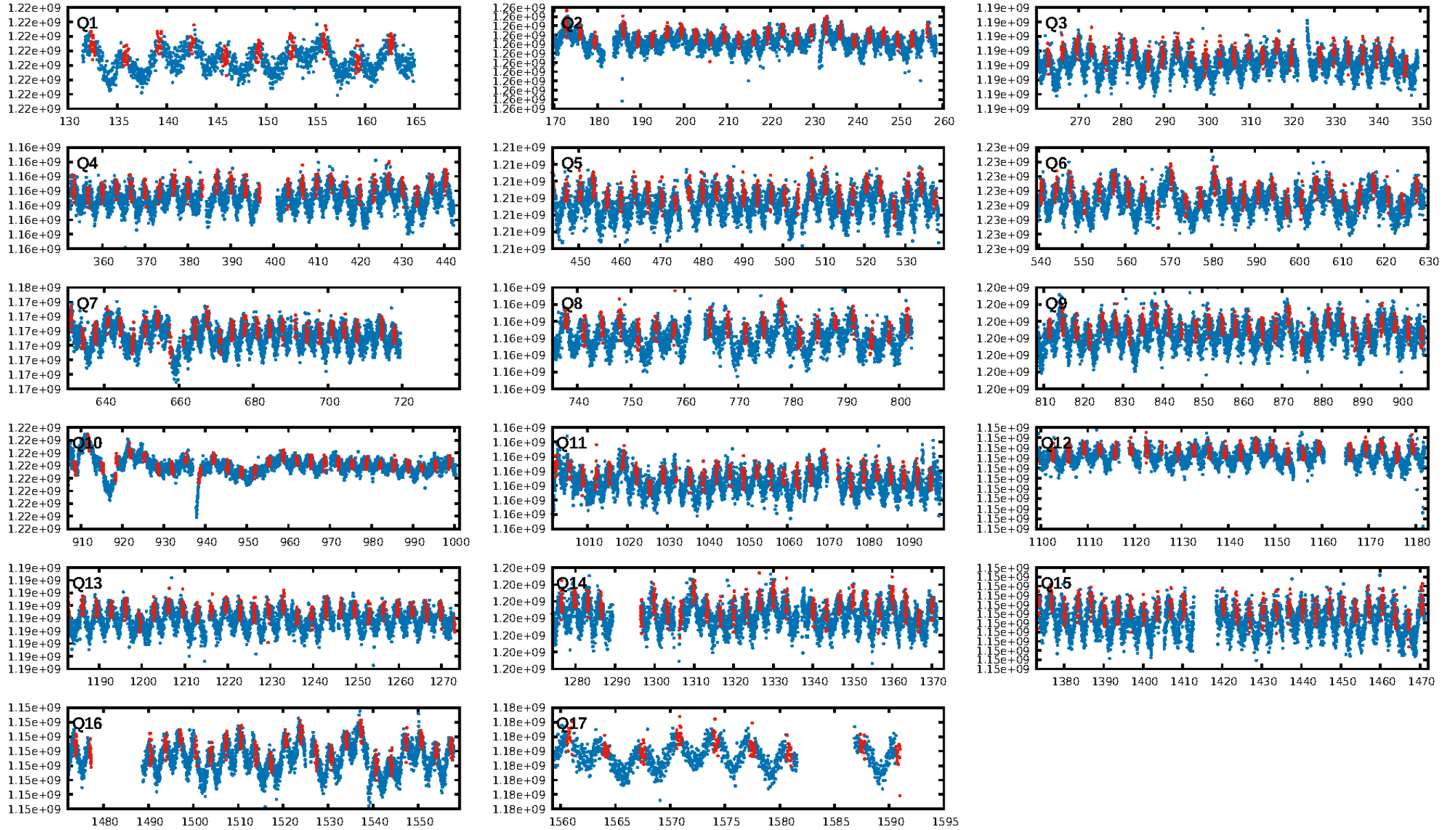
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.3% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.15e-22  
RollingBand-fgt: 1.00 [388/388]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 17.9%  
Centroid-so: 2.559 arcsec [1.24σ]  
OotOffset-rm: 1.607 arcsec [0.50σ]  
KicOffset-rm: 1.401 arcsec [0.43σ]  
OotOffset-st: 1/4/1/2 [8]  
KicOffset-st: 1/4/1/2 [8]  
DiffImageQuality-fgm: 0.00 [0/8]  
DiffImageOverlap-fno: 1.00 [17/17]

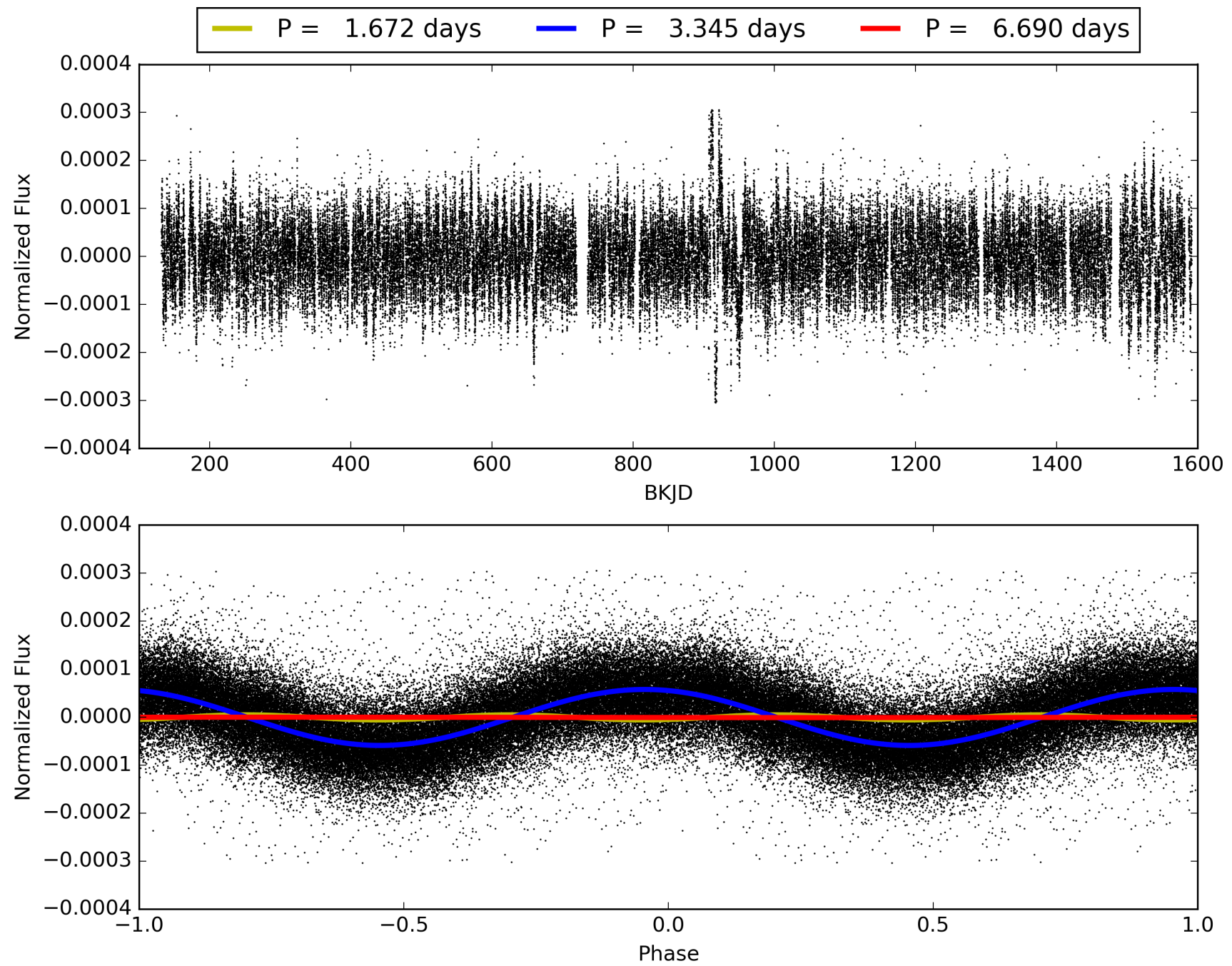
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:39:10 Z

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

# TCE 012314750-01, PDC Light Curves



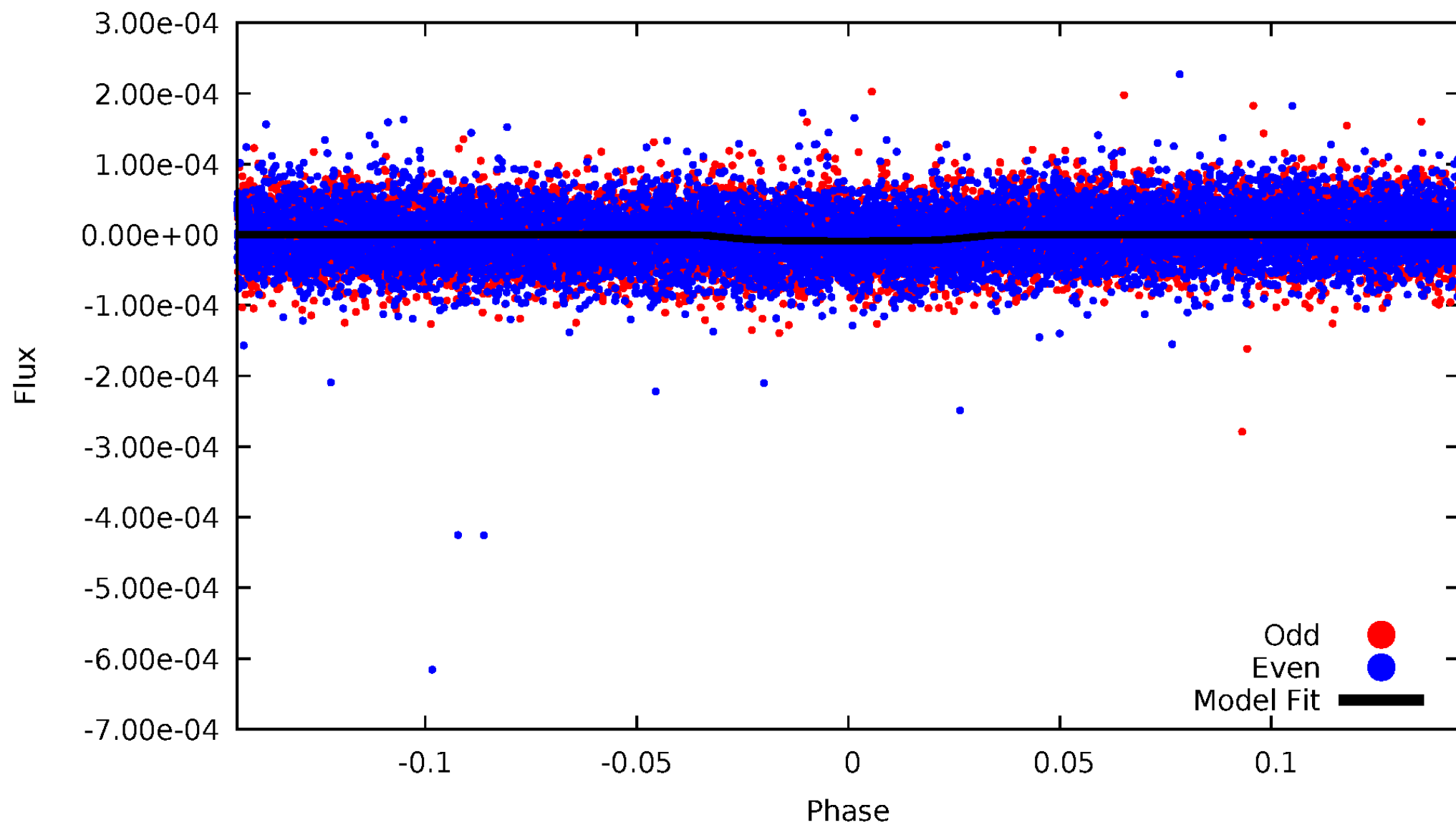
# TCE 012314750-01





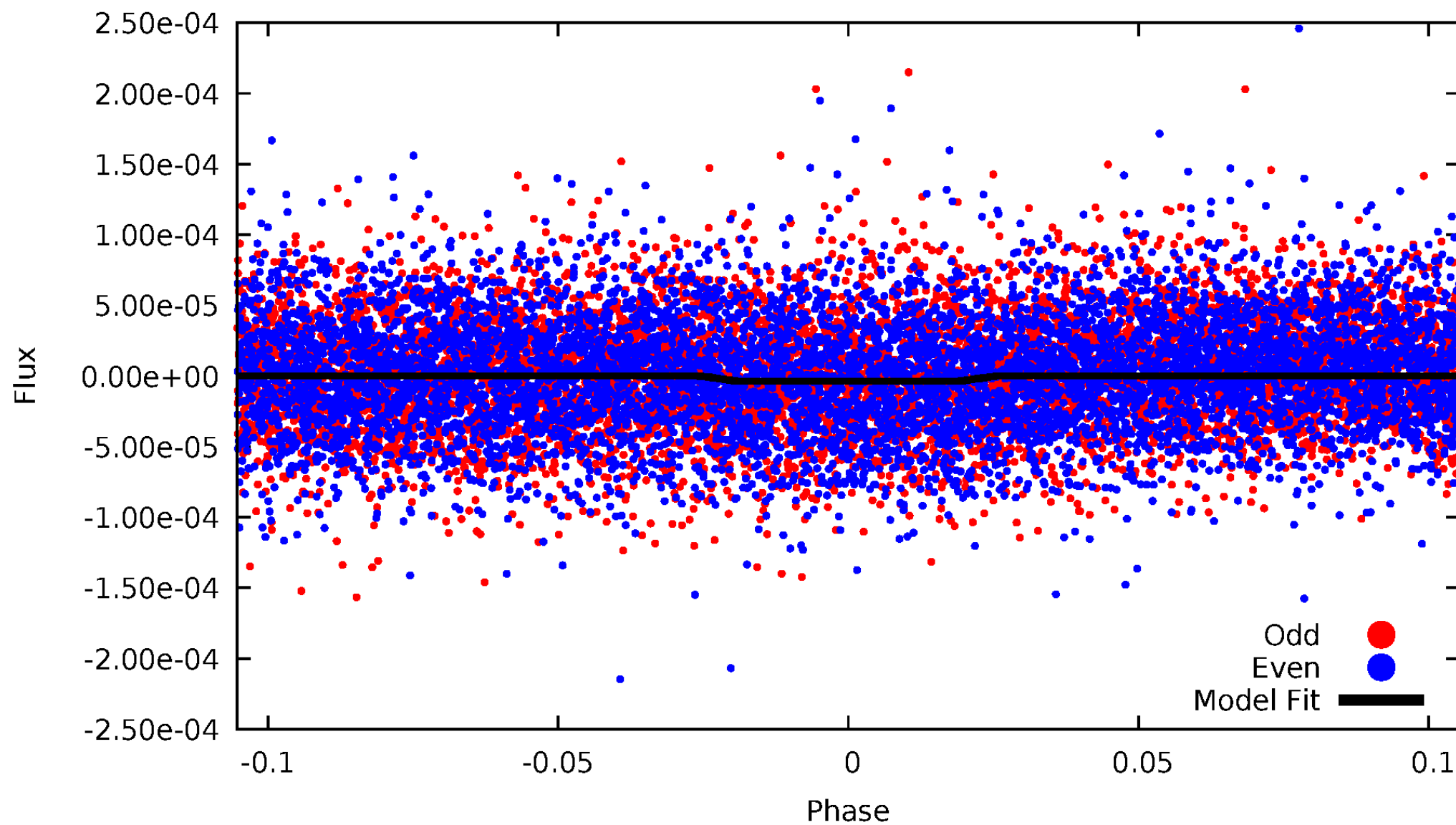
# DV Odd/Even

TCE 012314750-01



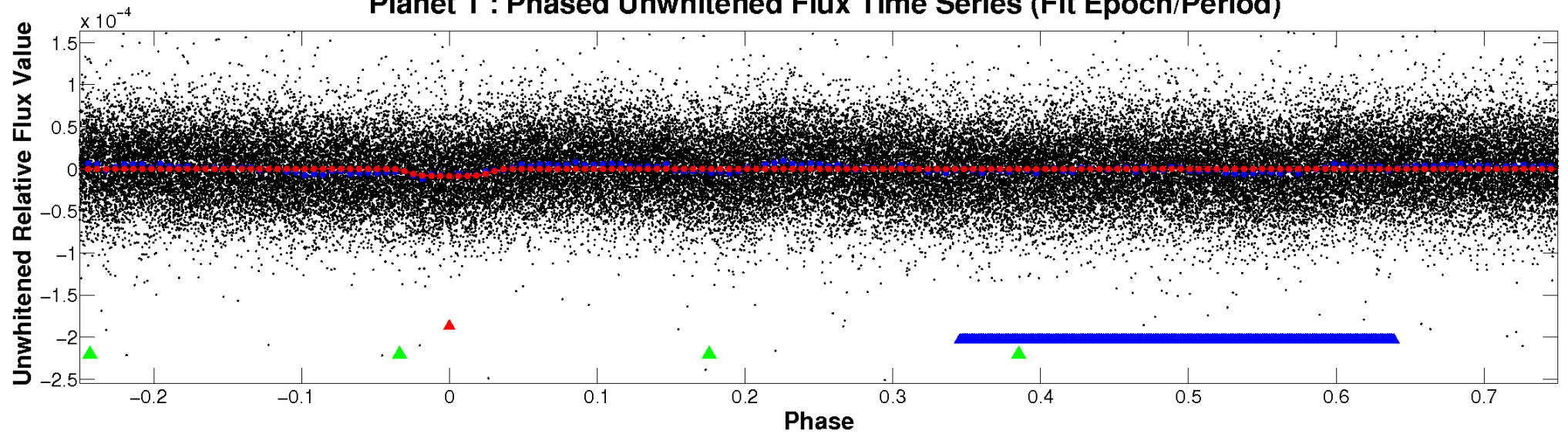
# ALT Odd/Even

TCE 012314750-01

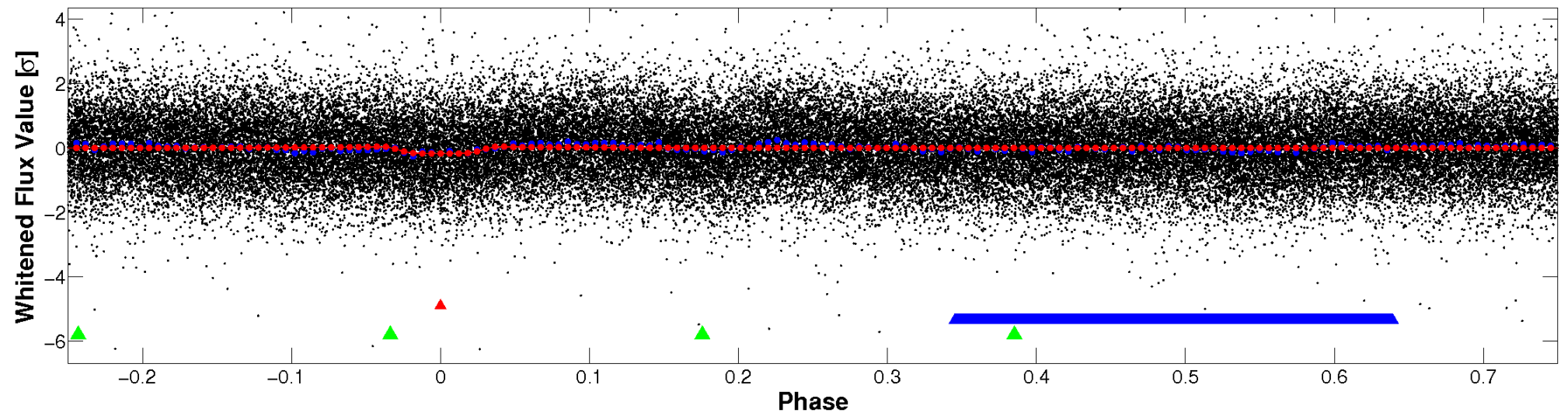


# Non-Whitened Vs. Whitened Light Curve

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

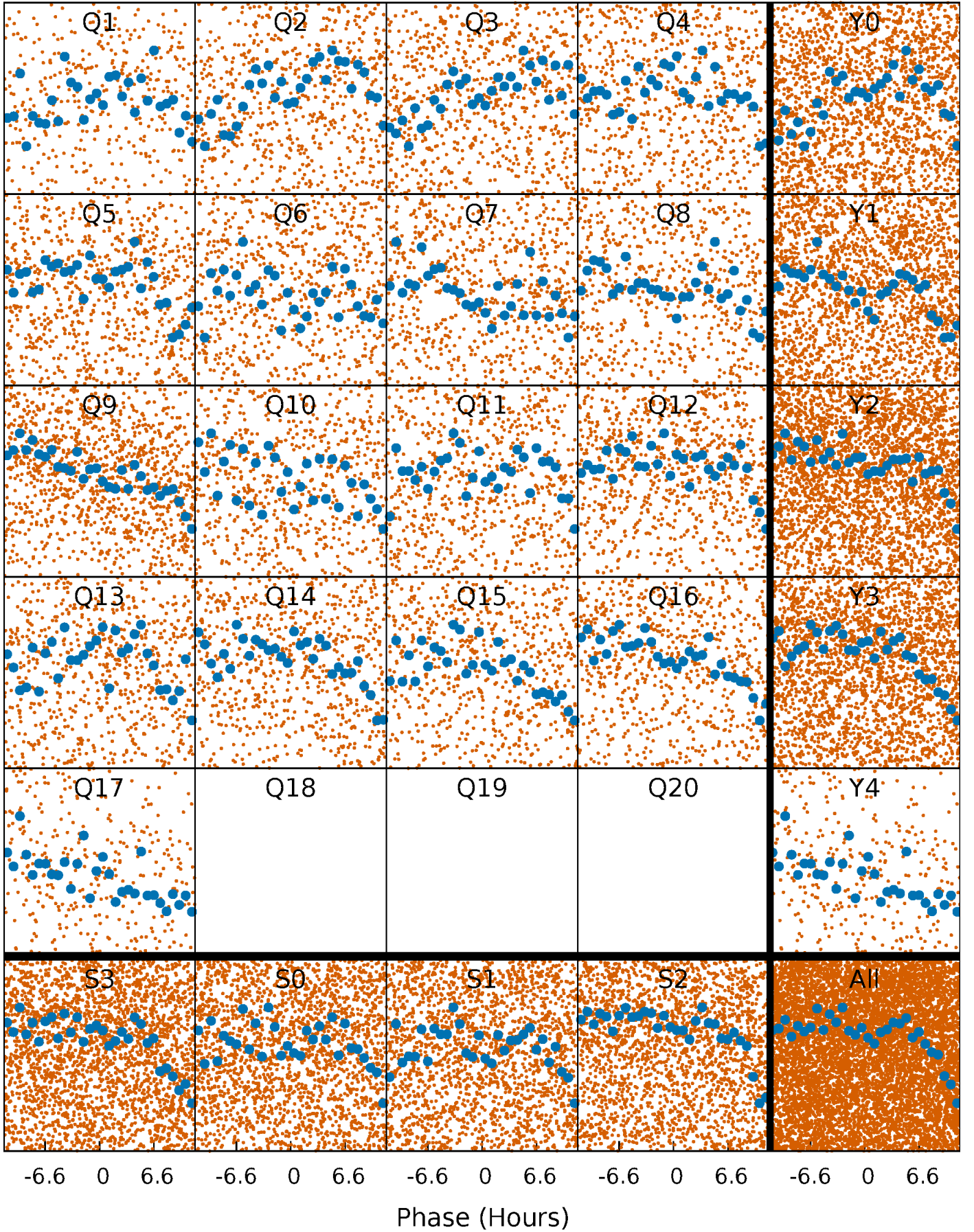


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

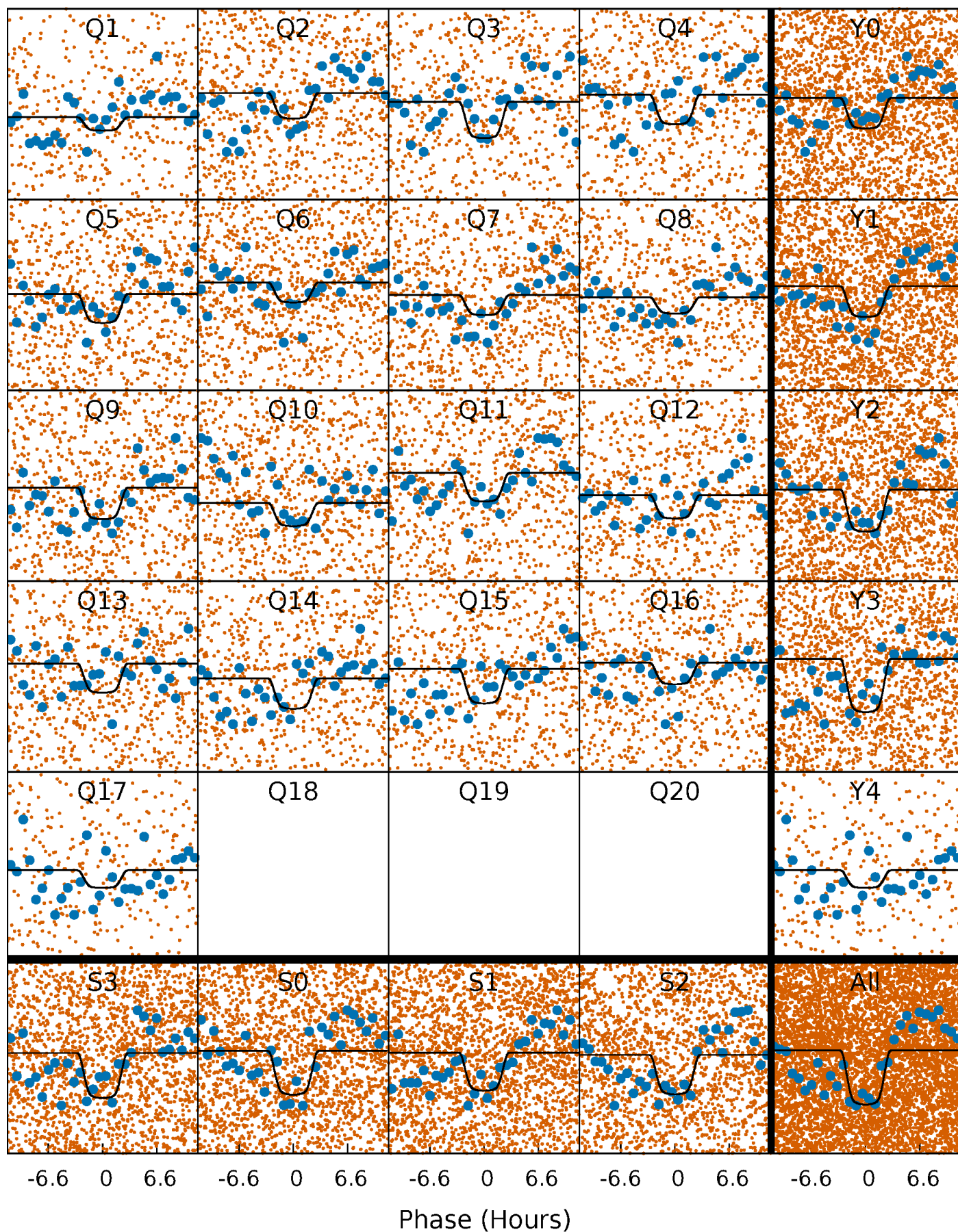
TCE 012314750-01   P= 3.344905 Days    $T_0=132.513718$  (BKJD)





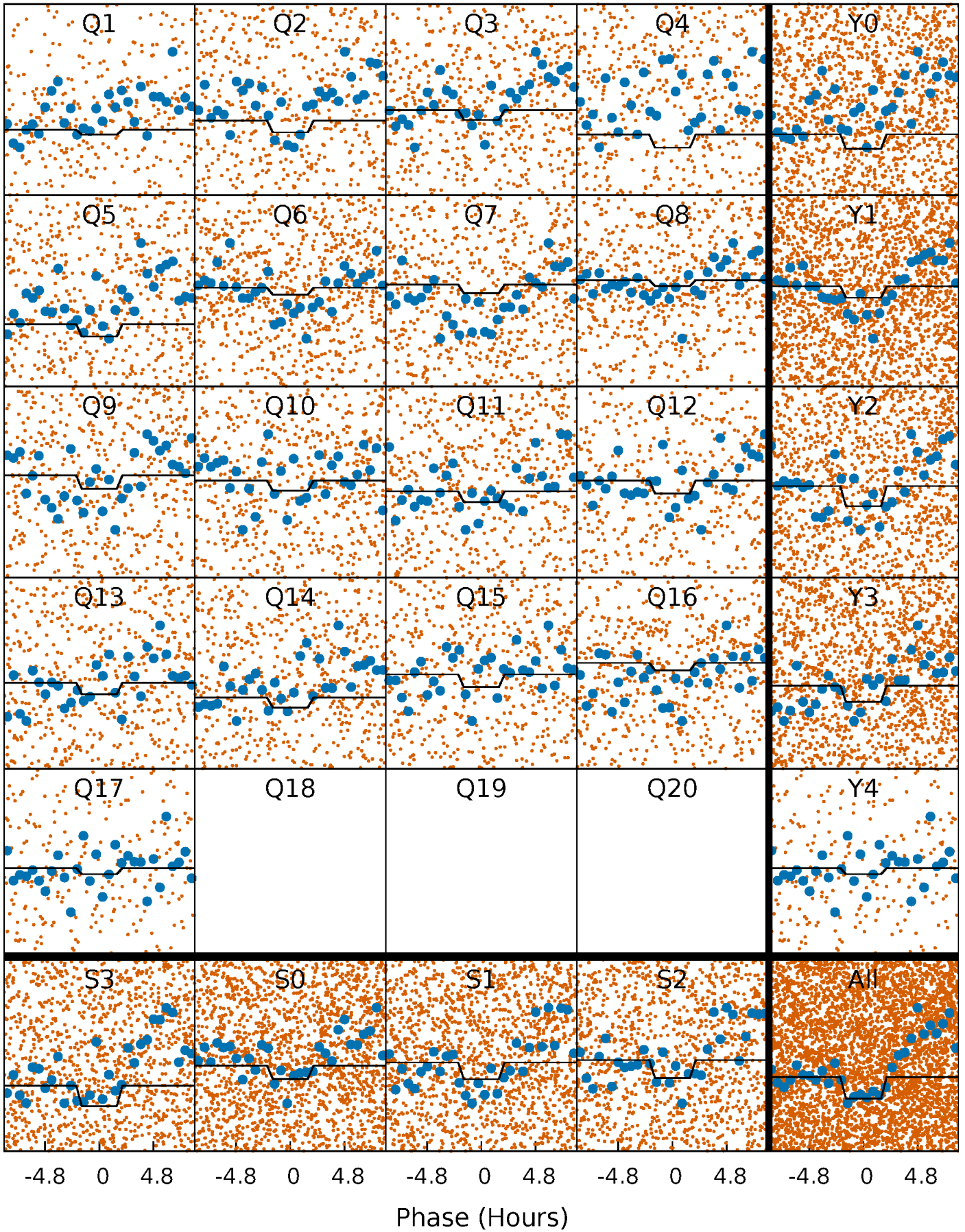
# DV Quarter-Phased Transit Curves

TCE 012314750-01 P= 3.344905 Days  $T_0=132.513718$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

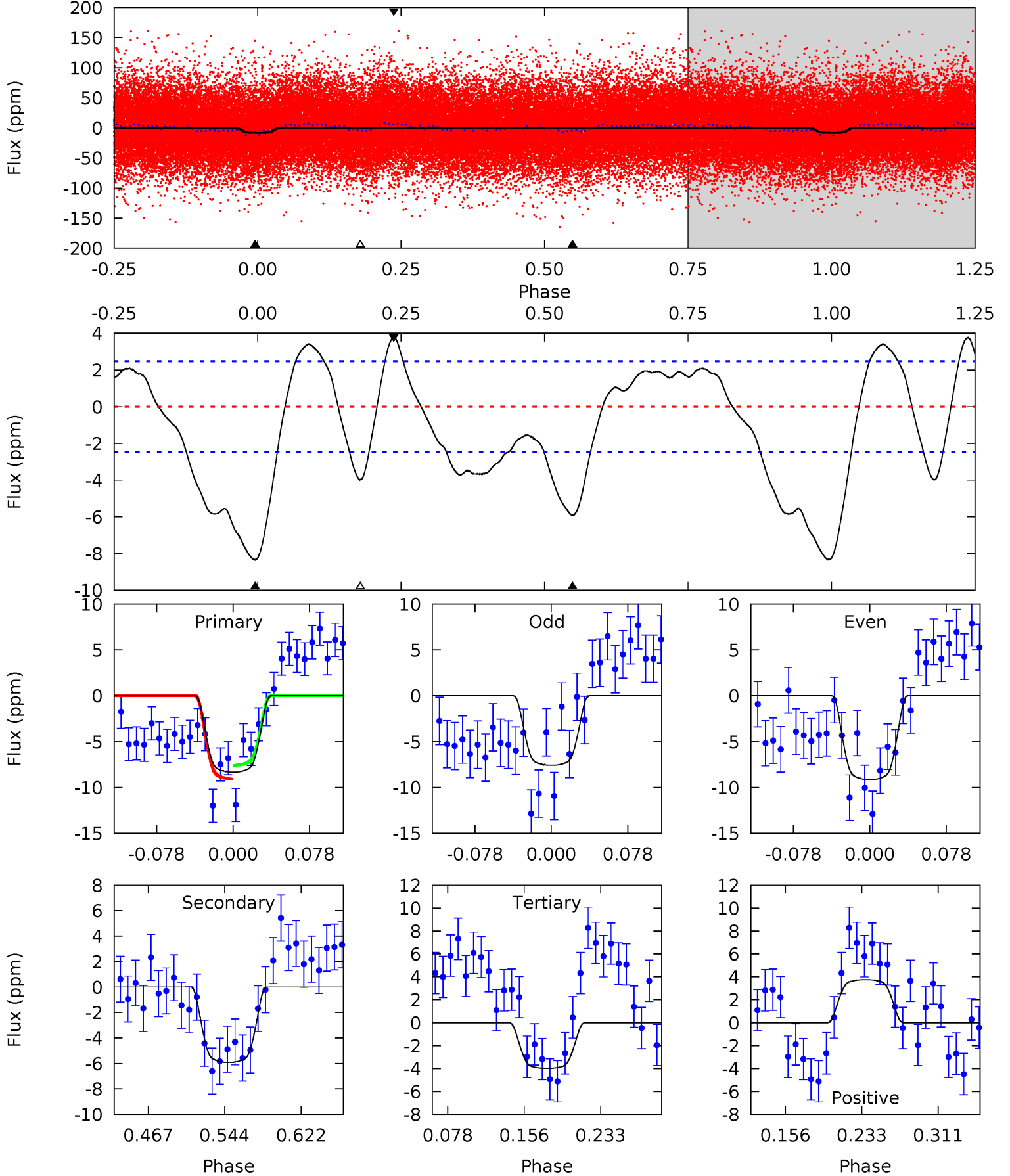
TCE 012314750-01 P= 3.344833 Days  $T_0=132.516333$  (BKJD)



# DV Model-Shift Uniqueness Test

012314750-01, P = 3.344905 Days, E = 129.168813 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	11.0	7.42	6.99	4.62	1.76	4.59	8.10	8.53	3.60	4.03	1.46	0.87	0.31	1.39

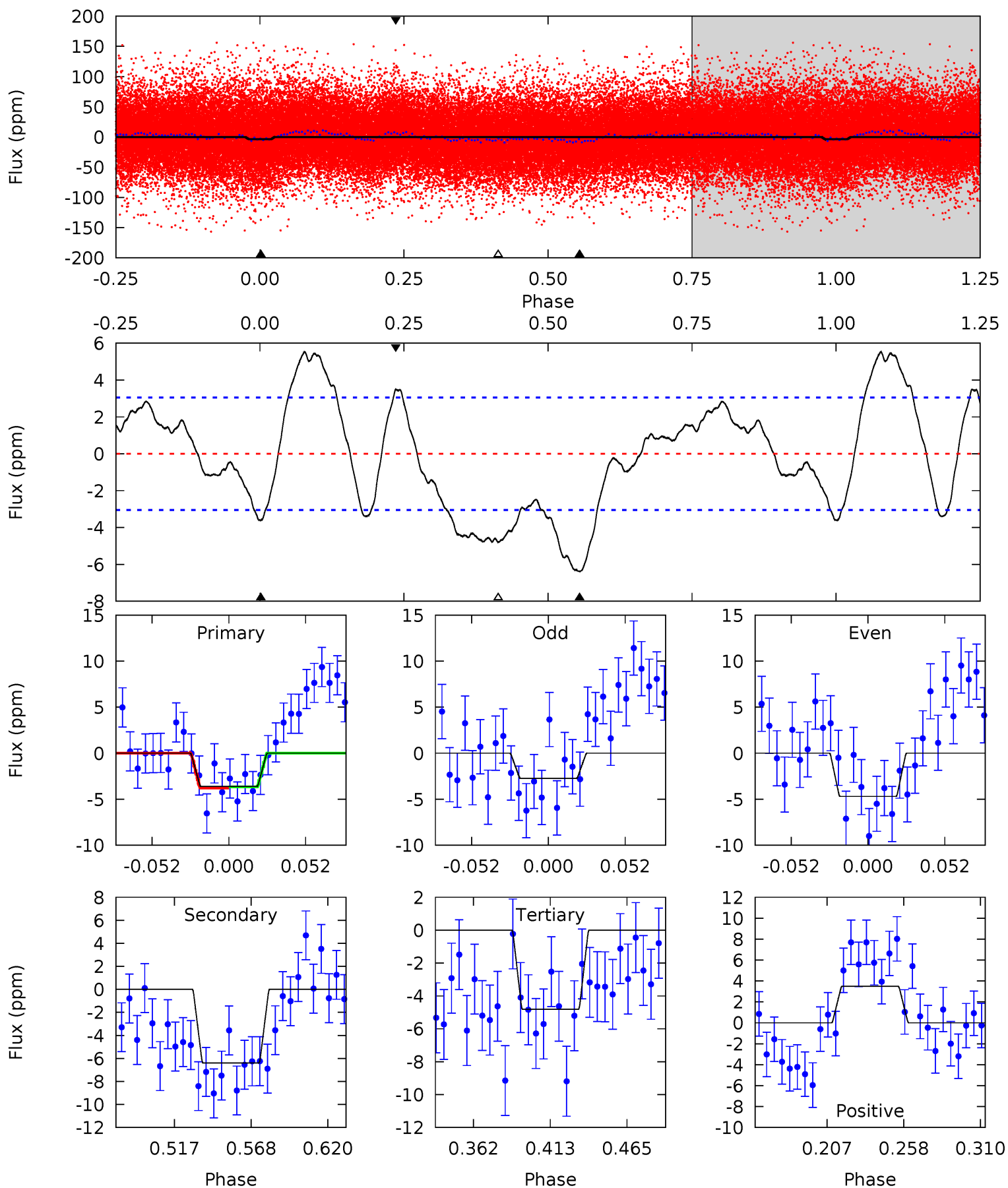




# Alt Model-Shift Uniqueness Test

012314750-01, P = 3.344833 Days, E = 129.171500 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
5.57	9.84	7.40	5.38	4.70	1.95	4.29	-1.83	0.19	2.44	4.46	1.51	1.08	0.46	0.11





### Stellar Parameters For KIC 012314750

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$7519^{+209}_{-314}$	$3.780^{+0.368}_{-0.092}$	$-0.020^{+0.200}_{-0.350}$	$3.005^{+0.417}_{-1.333}$	$1.983^{+0.088}_{-0.500}$	$0.103^{+0.307}_{-0.030}$
	+3%/-4%	+10%/-2%	+1000%/-1750%	+14%/-44%	+4%/-25%	+298%/-29%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 012314750-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-6 \pm 1$	$1.17^{+0.17}_{-0.26}$	$3346^{+225}_{-349}$	$5878^{+310}_{-305}$	$7.037^{+3.963}_{-1.660}$
Alt.	$-6 \pm 1$	$0.57^{+0.13}_{-0.15}$	$3335^{+222}_{-366}$	$8967^{+1238}_{-887}$	$32^{+22}_{-11}$

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

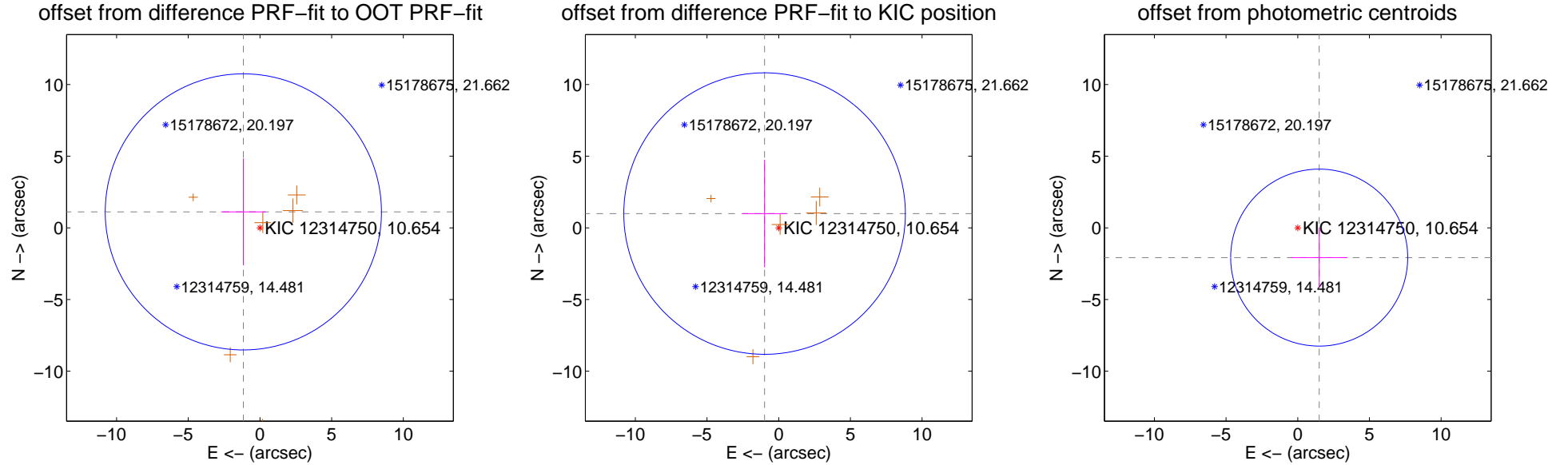
## DV Centroid Data

Supplemental centroid analysis for 012314750-01. **Kepler magnitude: 10.65.** Transit SNR 9.60

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

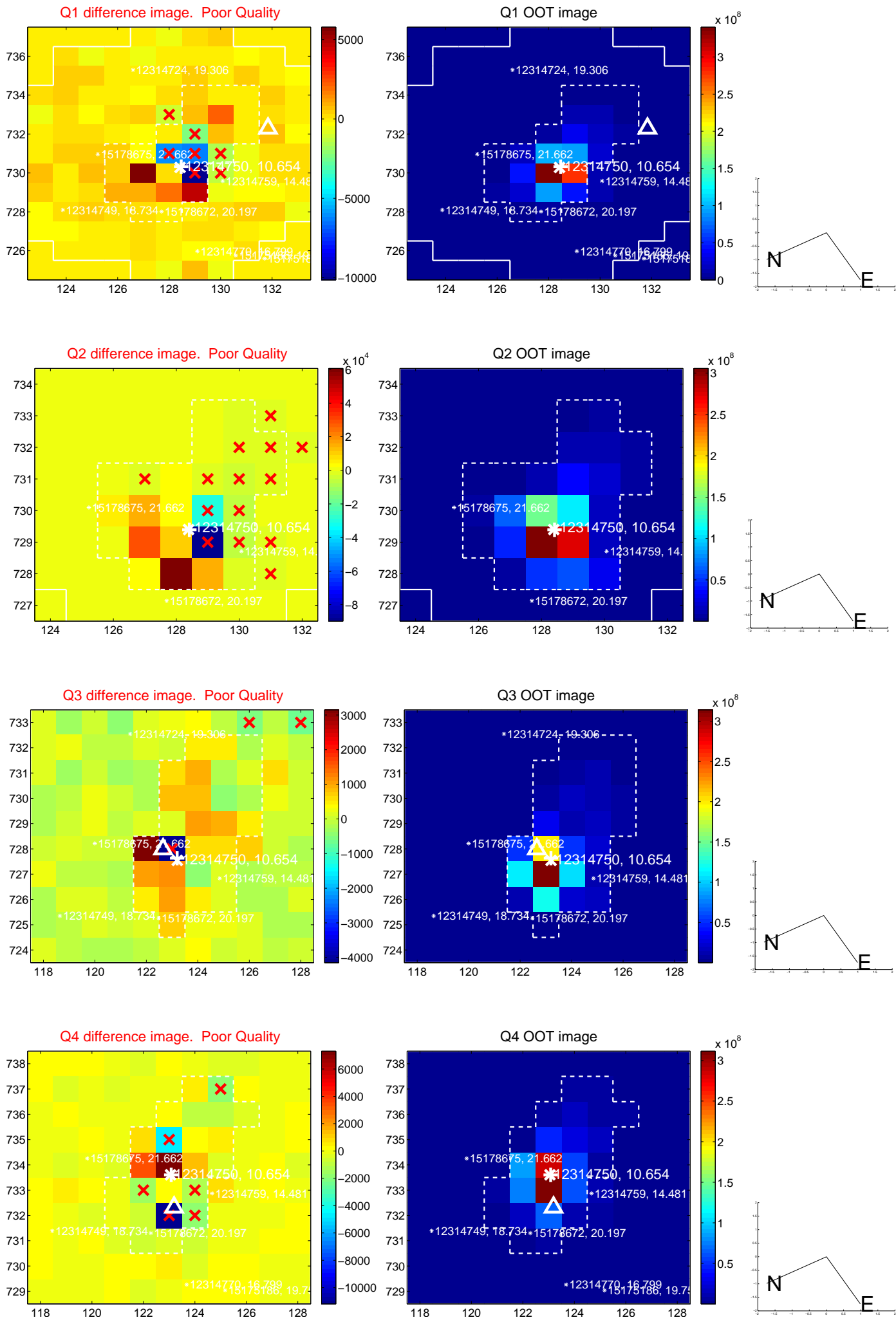
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.607 \pm 3.211$	0.50	$1.158 \pm 1.560$	$1.114 \pm 3.725$
PRF-fit source offset from KIC position	$1.401 \pm 3.273$	0.43	$0.986 \pm 1.540$	$0.995 \pm 3.752$
photometric centroid source offset	$2.56 \pm 2.06$	1.24	$-1.50 \pm 1.97$	$-2.08 \pm 2.10$

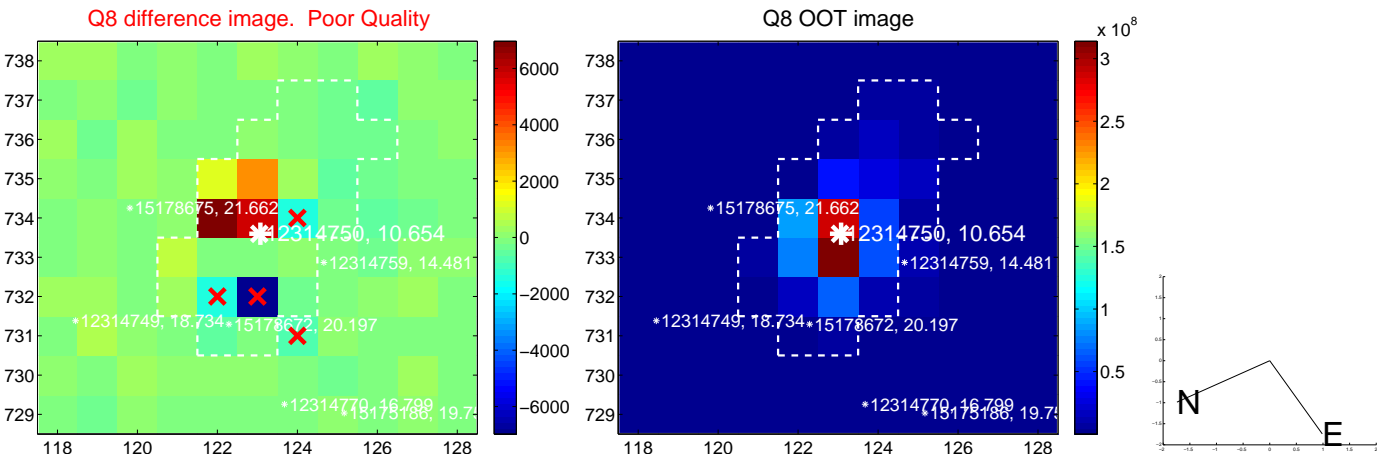
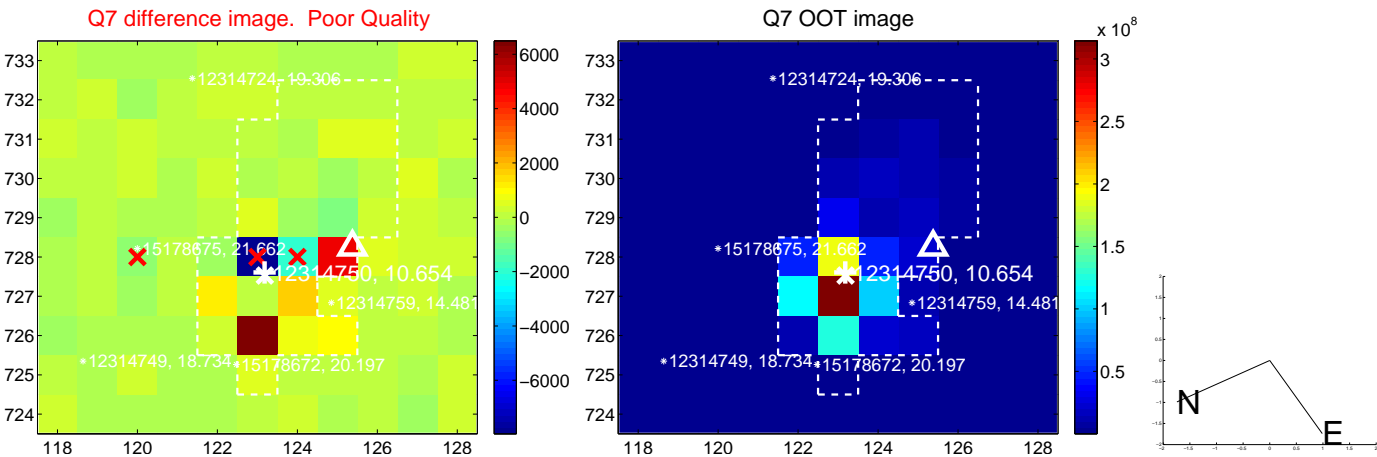
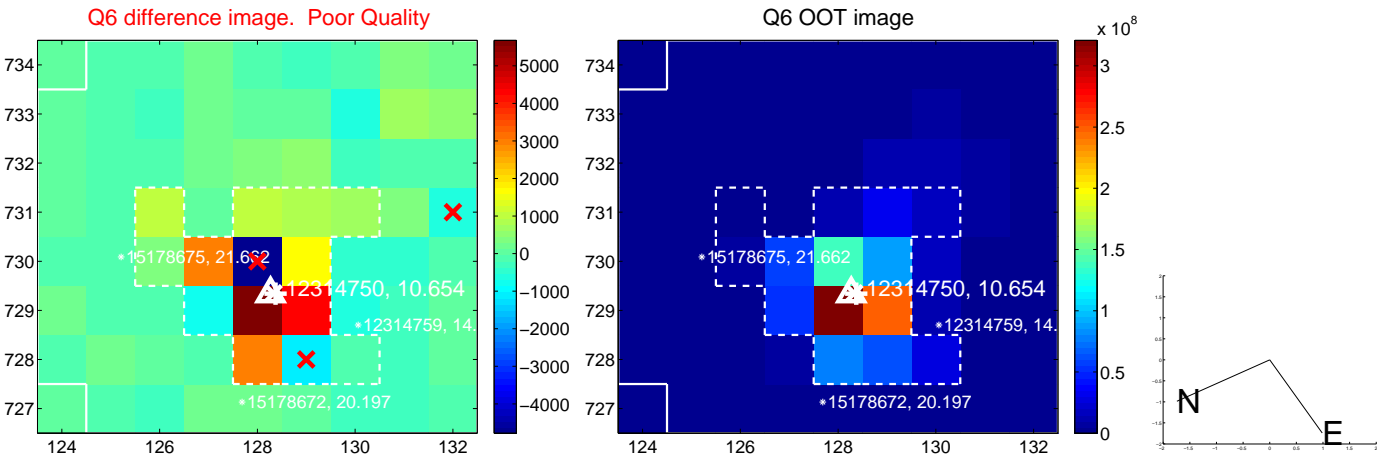
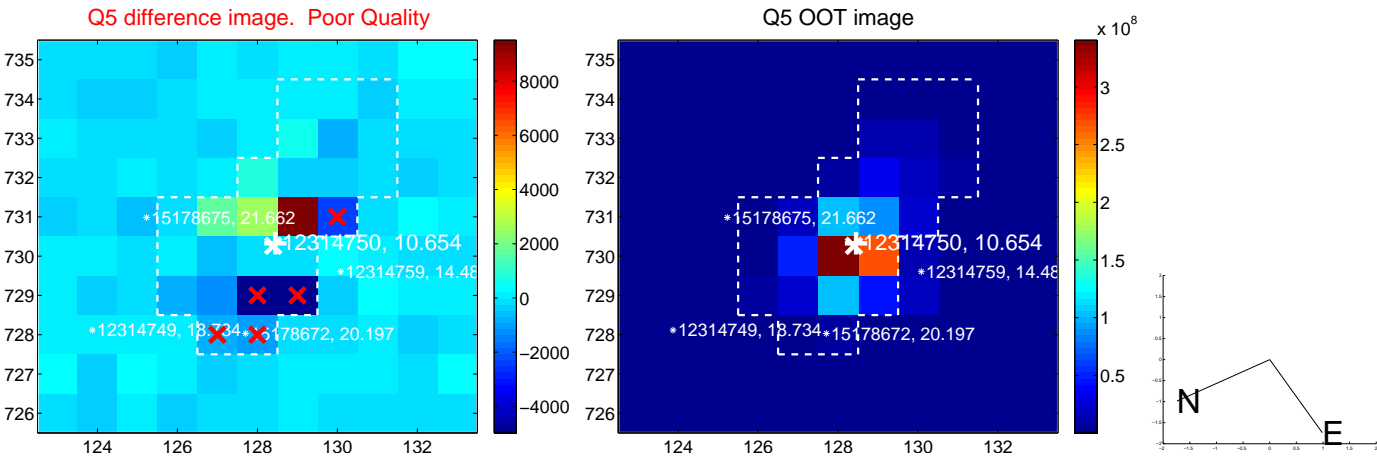


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

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

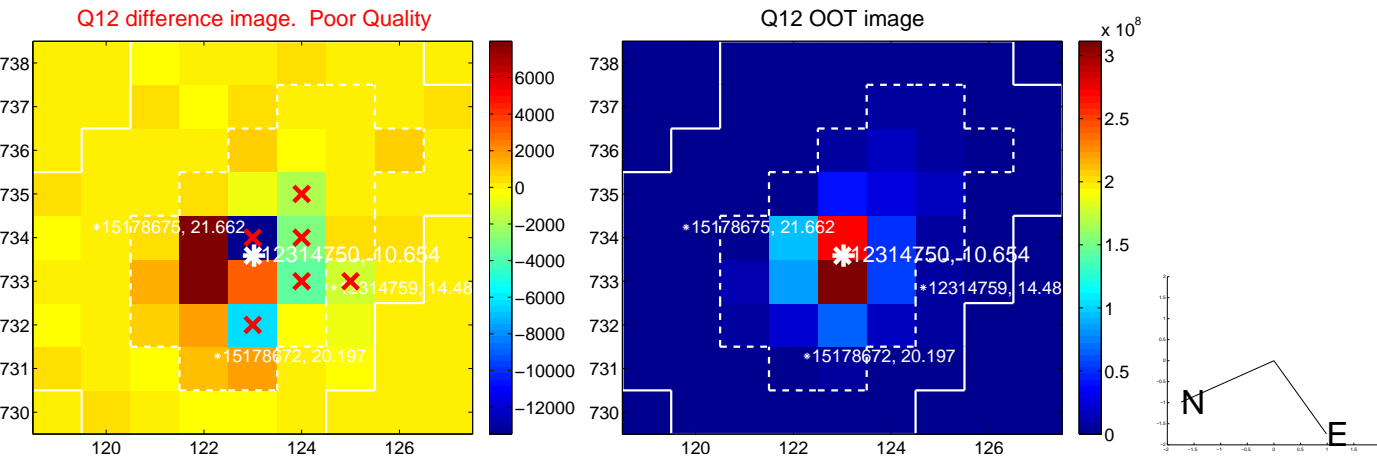
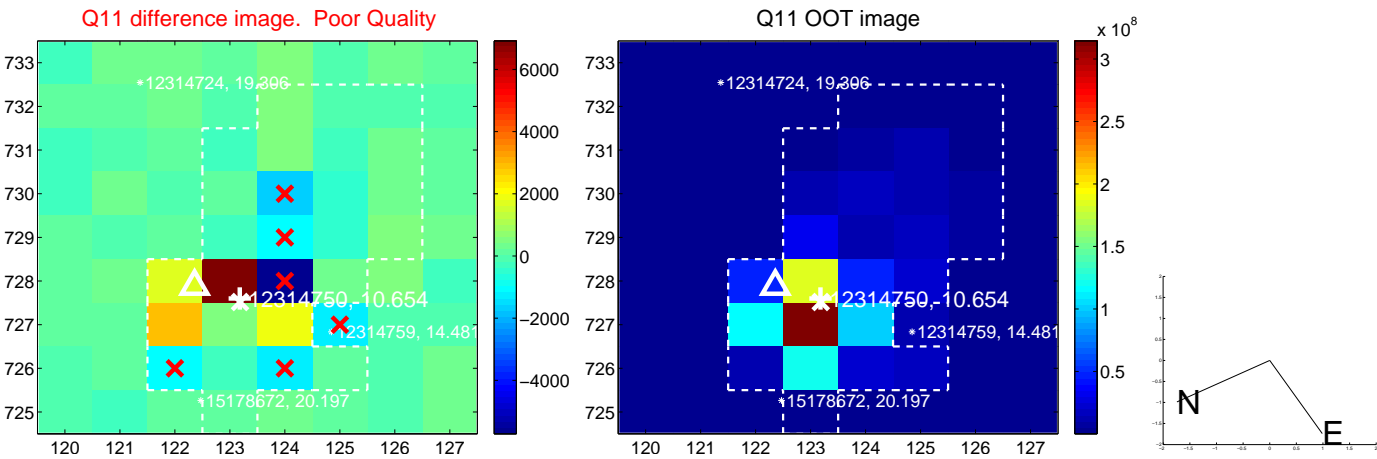
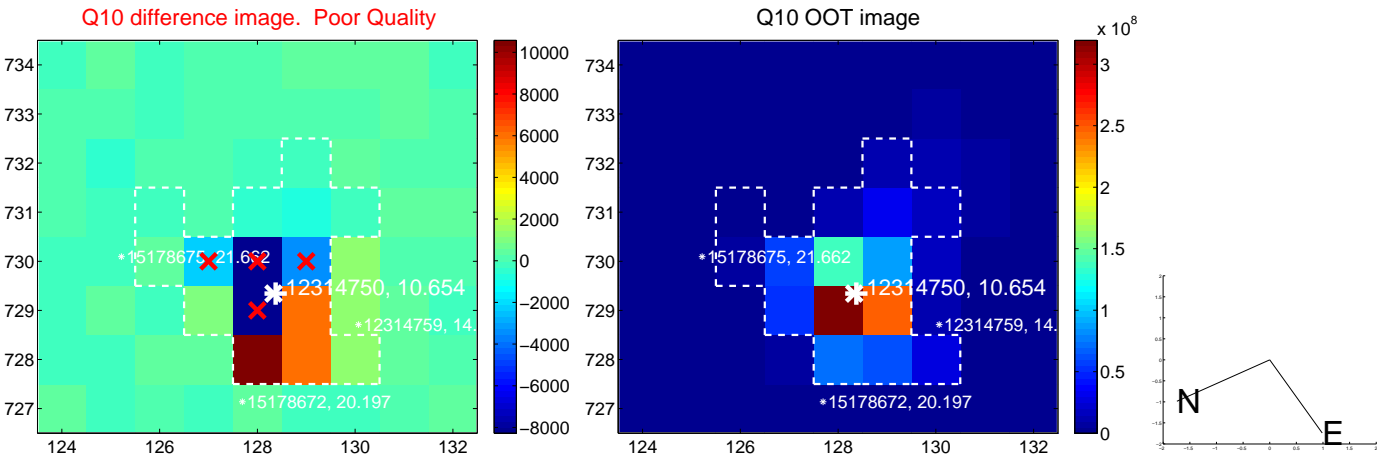
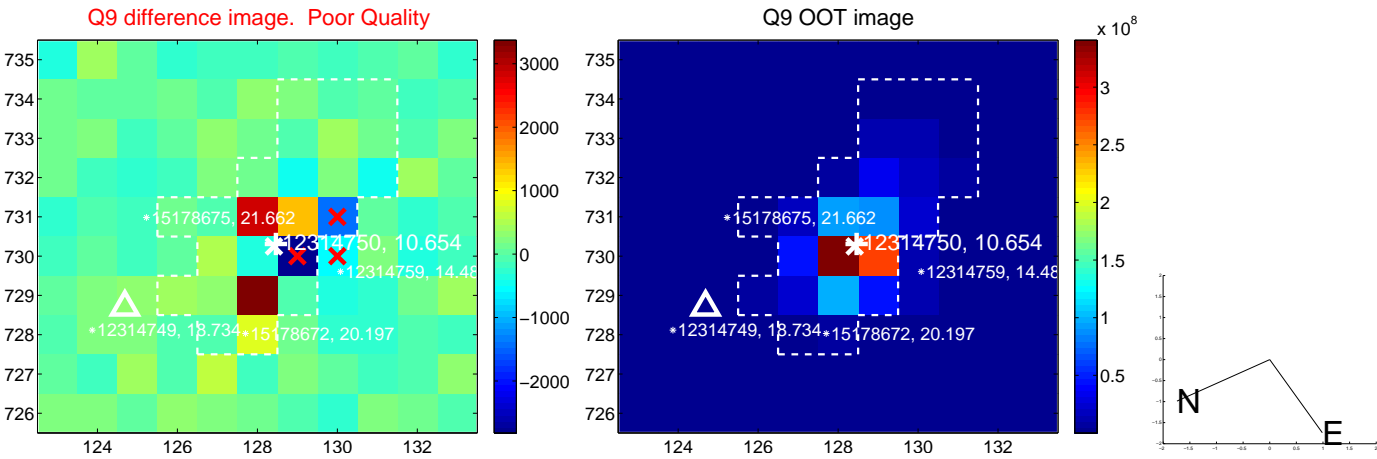


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

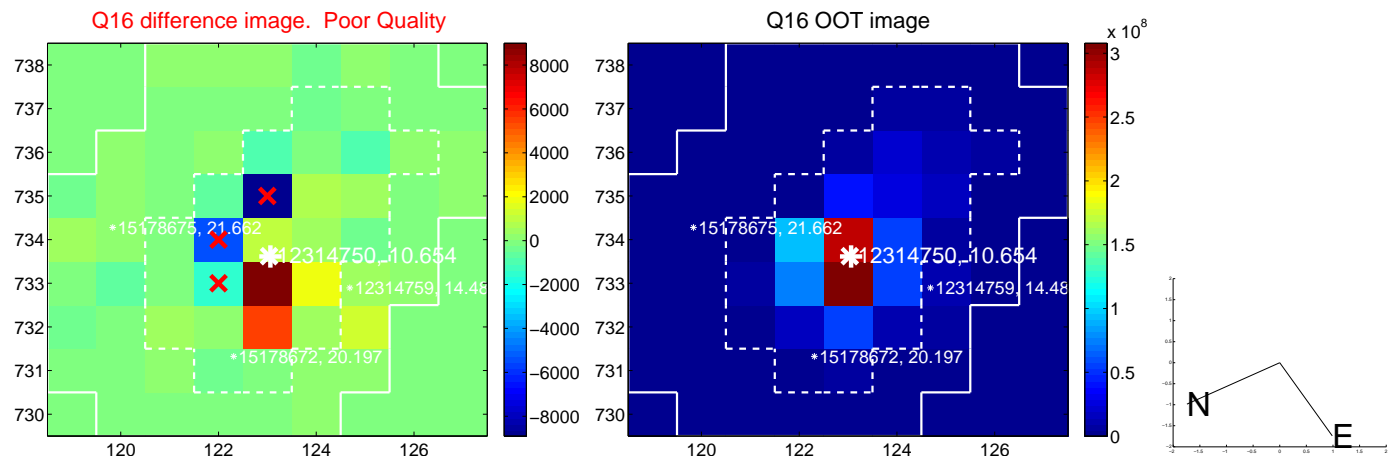
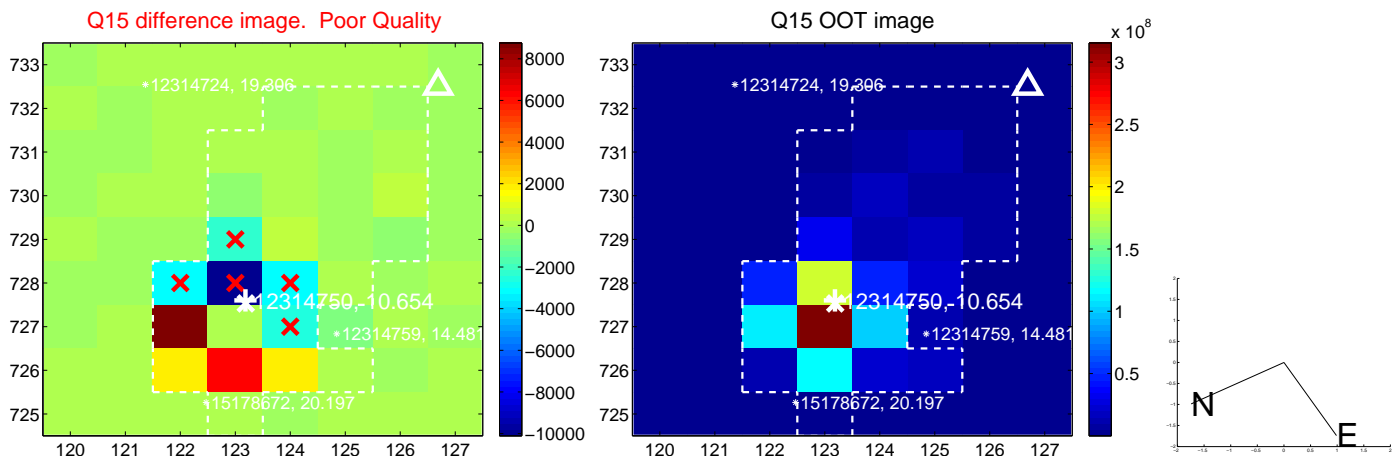
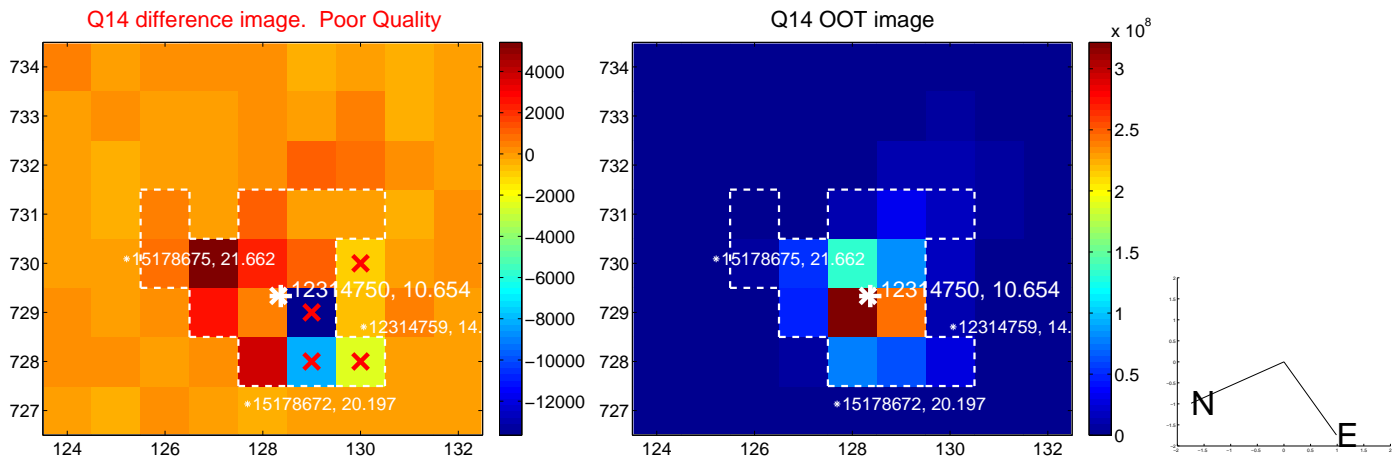
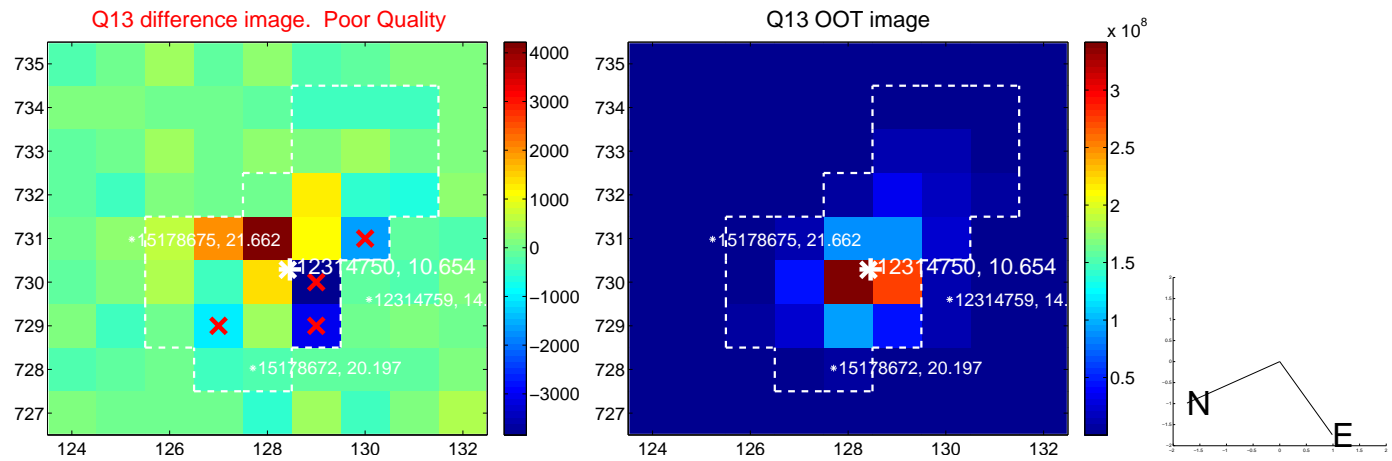




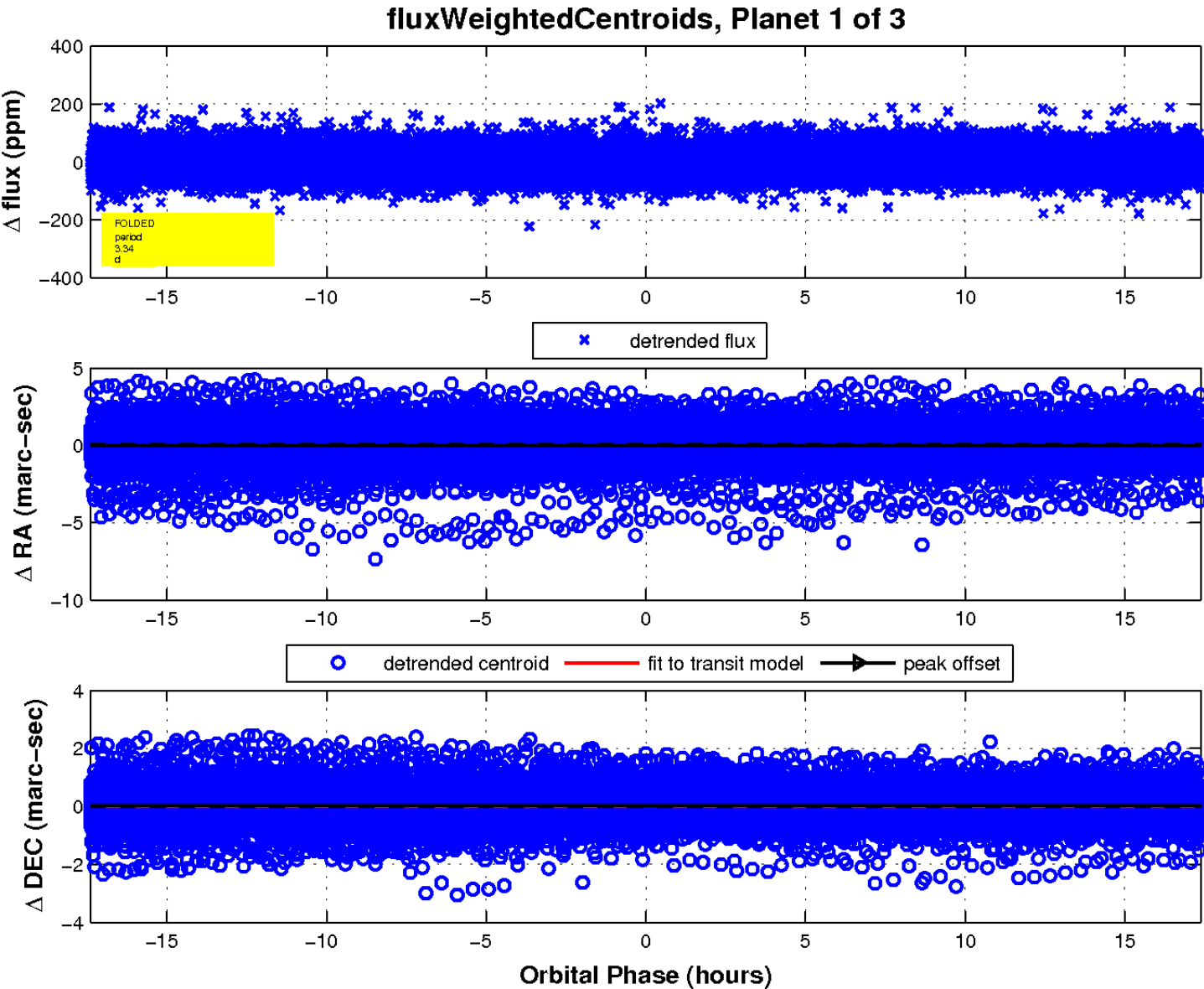
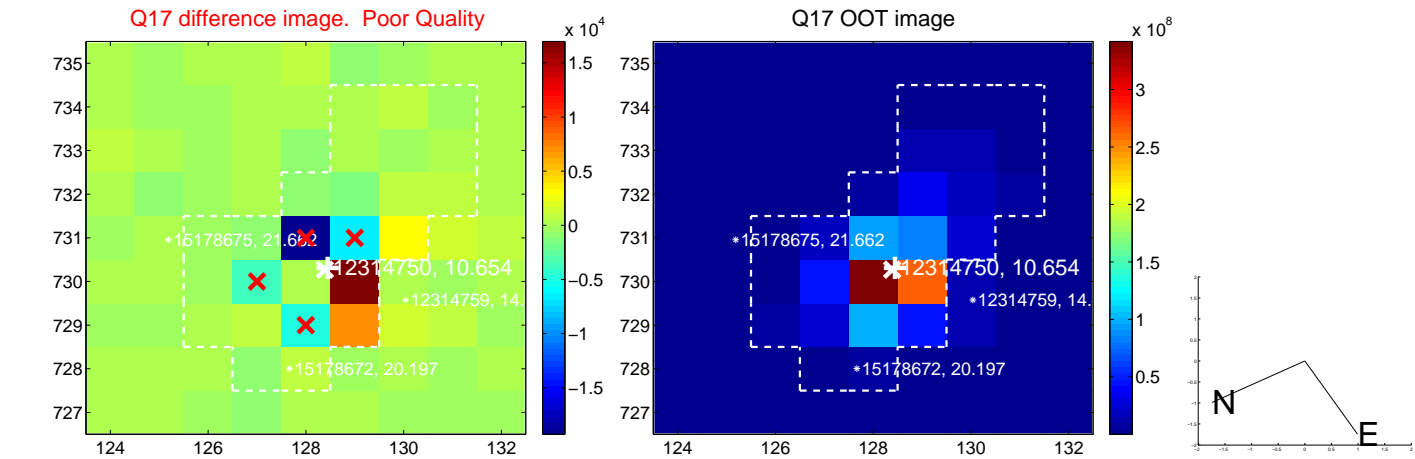
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

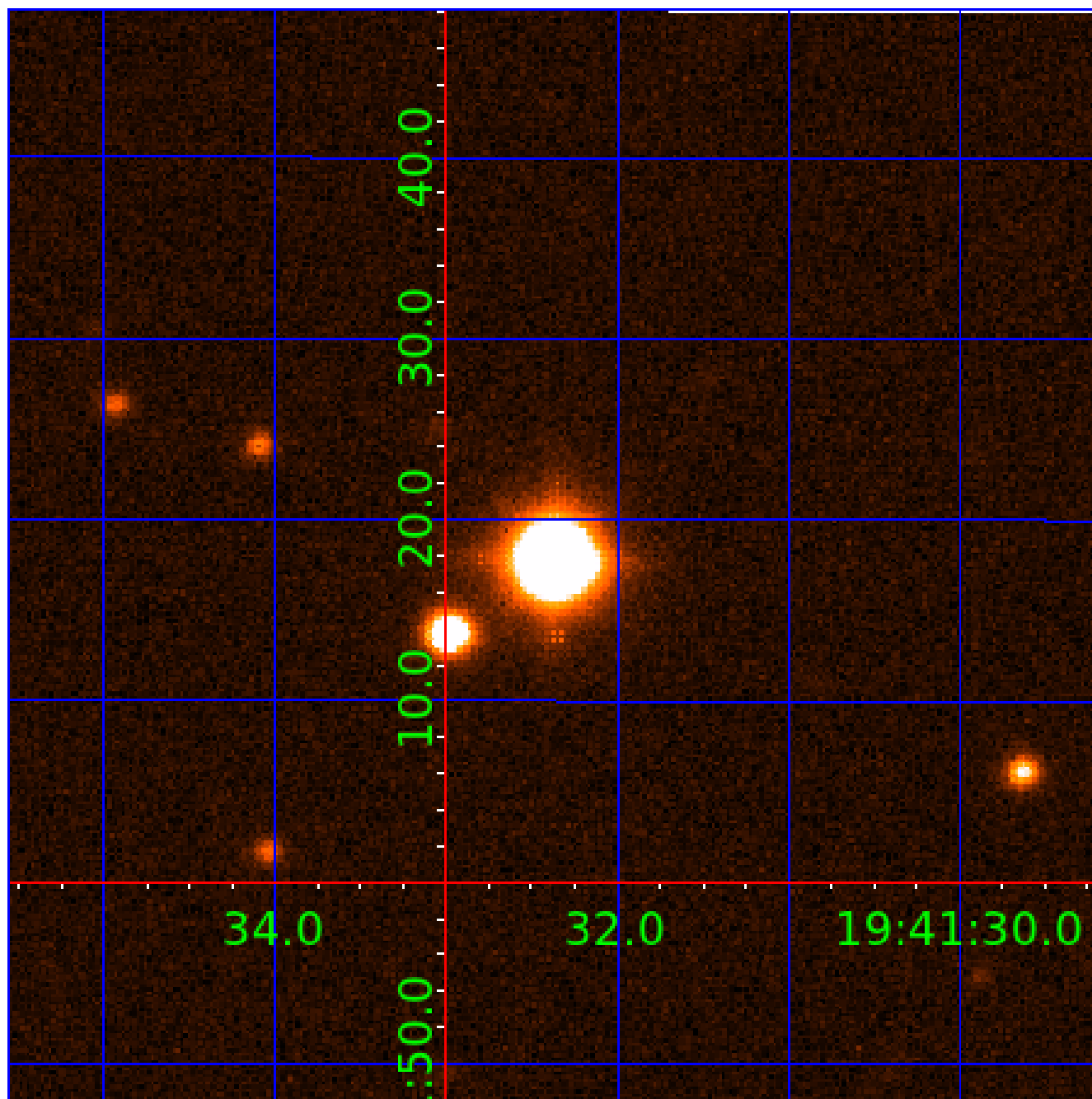


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 012314750

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
012314750-01	OBS	No	3.344905	132.513718	8.7	5.798	11.5	9.6	3.00	7519	1.23	8542.52
012314750-02	OBS	No	3.347165	133.668524	4.9	11.856	8.5	7.3	3.00	7519	0.79	8534.83
012314750-03	OBS	No	375.329934	158.459722	54.2	18.225	7.5	6.7	3.00	7519	2.38	15.78

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012314750-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
012314750-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
012314750-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—CENT_SATURATED

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

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

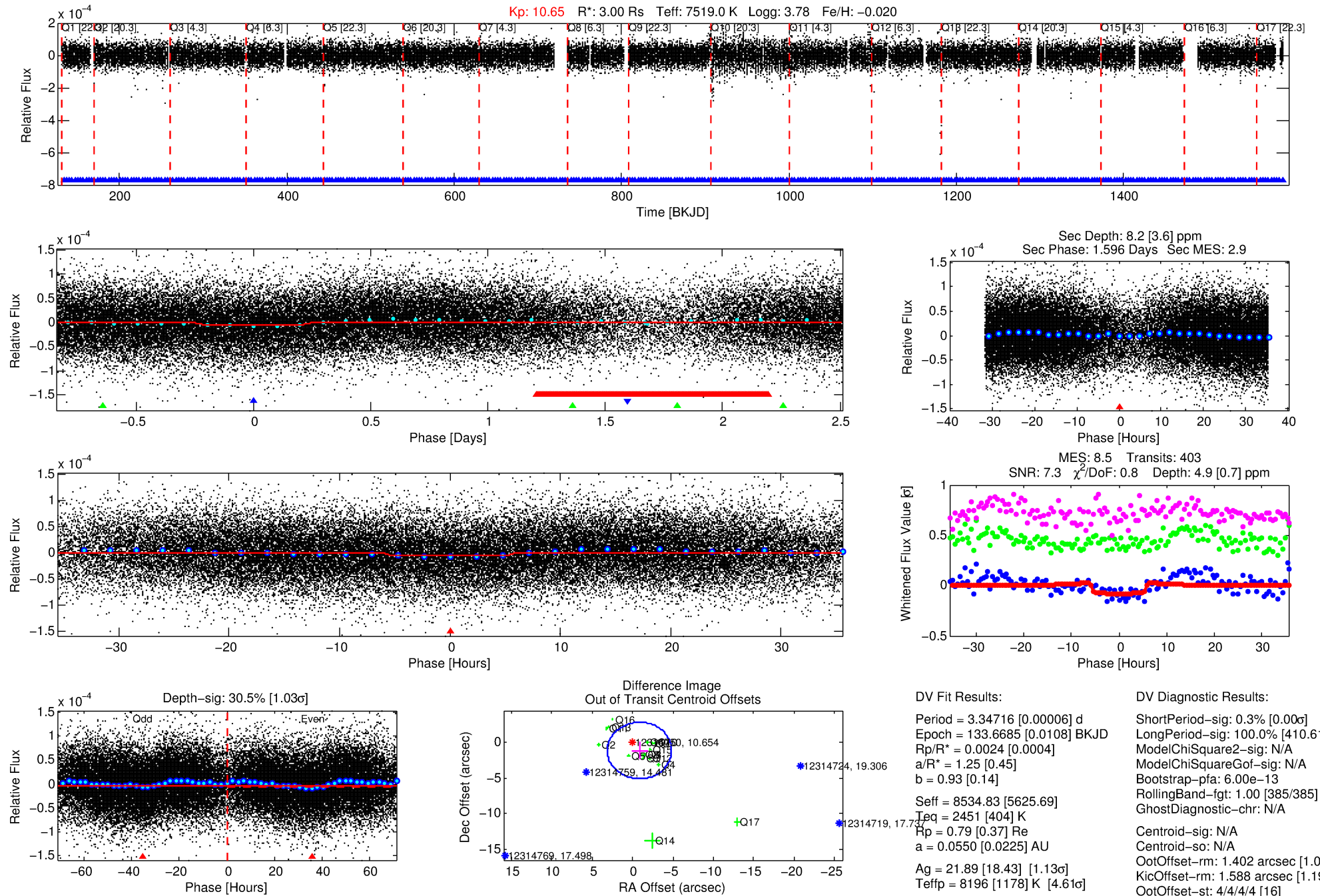
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 012314750-02

No Significant Match Found

# DV One-Page Summary

KIC: 12314750 Candidate: 2 of 3 Period: 3.347 d



## DV Fit Results:

Period = 3.34716 [0.00006] d  
Epoch = 133.6685 [0.0108] BKJD  
 $R_p/R^* = 0.0024$  [0.0004]  
 $a/R^* = 1.25$  [0.45]  
 $b = 0.93$  [0.14]  
 $\text{Seff} = 8534.83$  [5625.69]  
 $T_{\text{eq}} = 2451$  [404] K  
 $R_p = 0.79$  [0.37]  $R_{\text{e}}$   
 $a = 0.0550$  [0.0225] AU  
 $A_g = 21.89$  [18.43] [1.13 $\sigma$ ]  
 $T_{\text{eff}} = 8196$  [1178] K [4.61 $\sigma$ ]

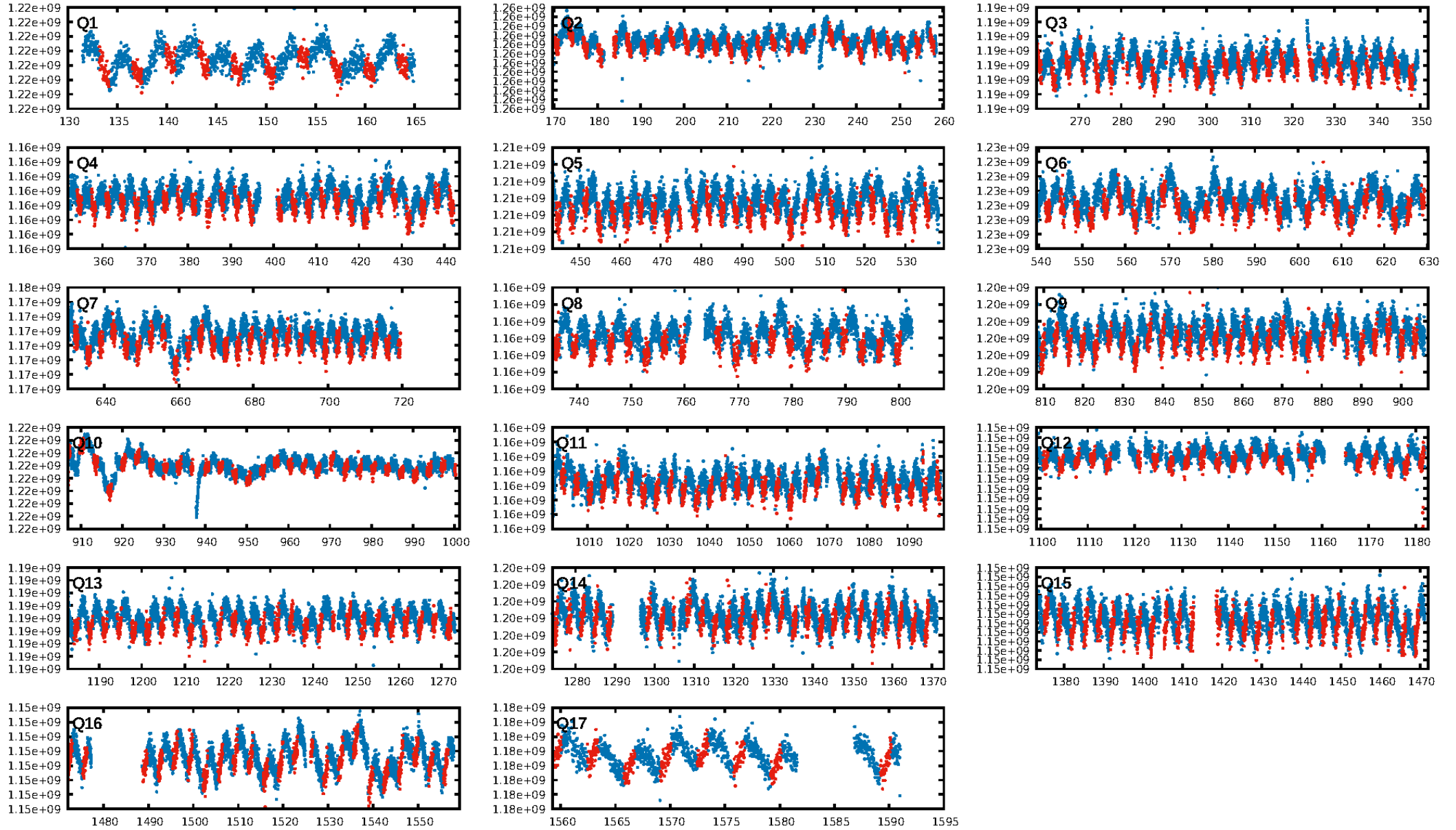
## DV Diagnostic Results:

ShortPeriod-sig: 0.3% [0.00 $\sigma$ ]  
LongPeriod-sig: 100.0% [410.61 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 6.00e-13  
RollingBand-fgt: 1.00 [385/385]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 1.402 arcsec [1.06 $\sigma$ ]  
KicOffset-rm: 1.588 arcsec [1.19 $\sigma$ ]  
OotOffset-st: 4/4/4 [16]  
KicOffset-st: 4/4/4 [16]  
DiffImageQuality-fgm: 0.69 [11/16]  
DiffImageOverlap-fno: 1.00 [17/17]

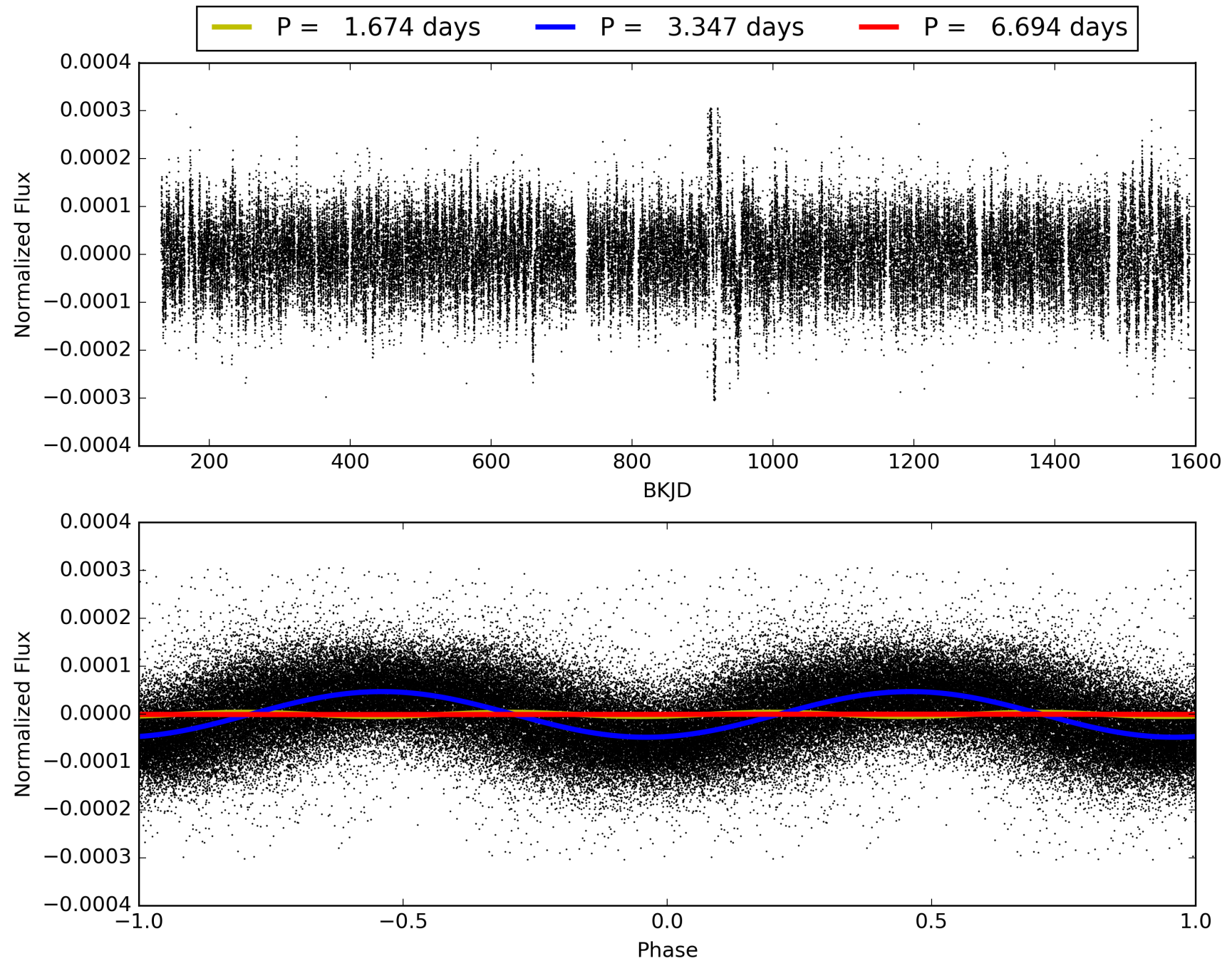
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:39:21 Z

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

# TCE 012314750-02, PDC Light Curves

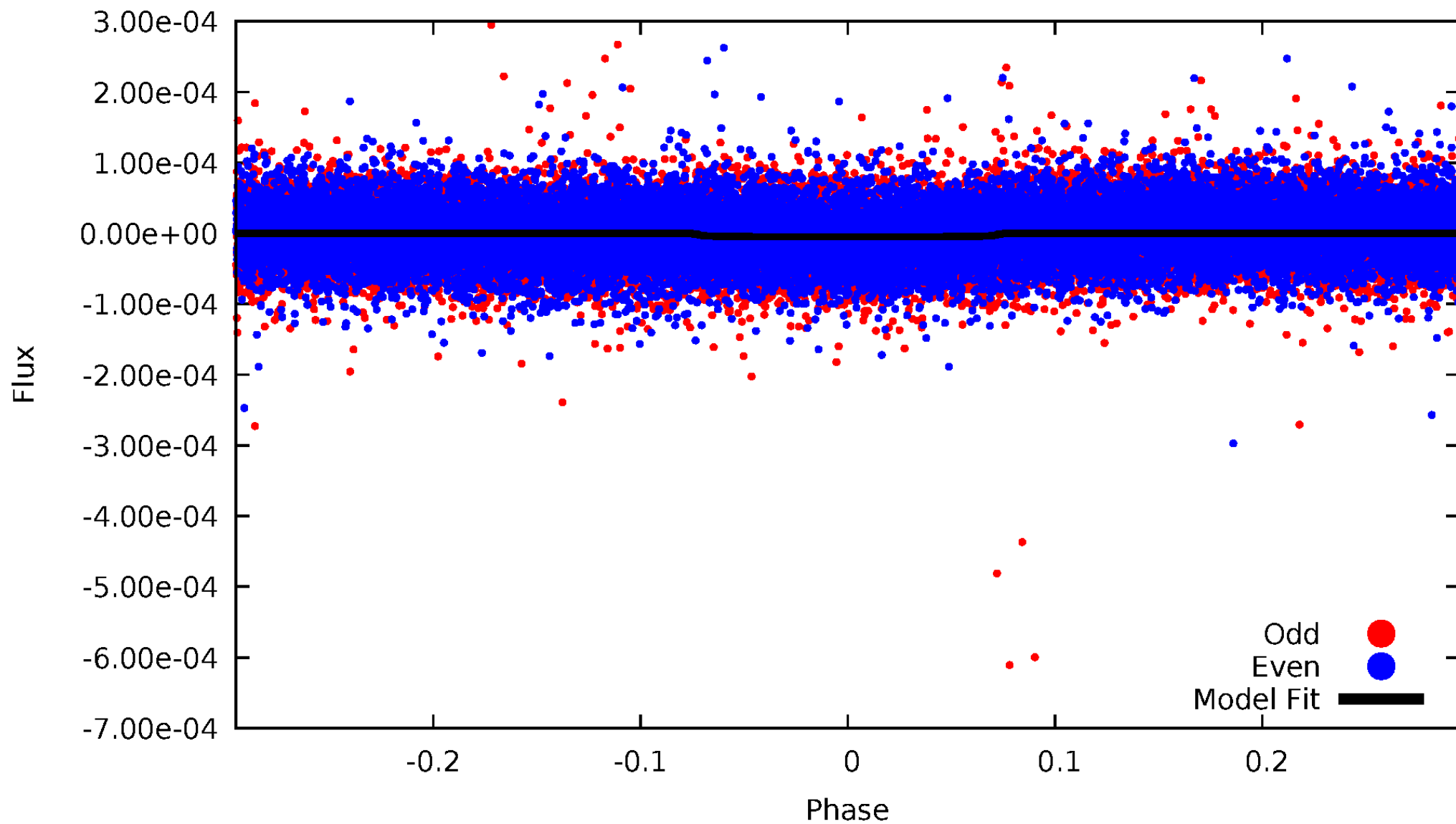


# TCE 012314750-02



# DV Odd/Even

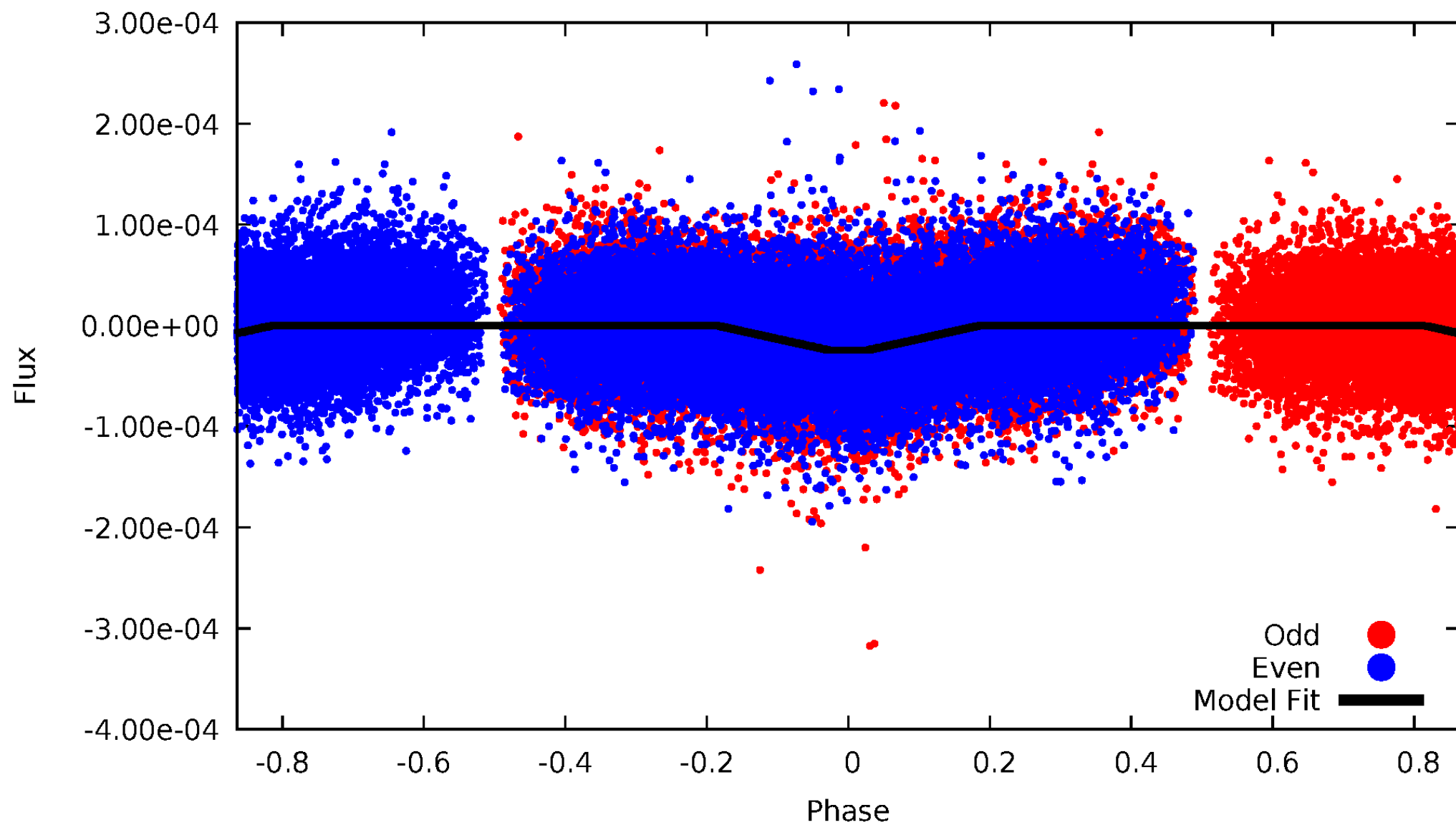
TCE 012314750-02





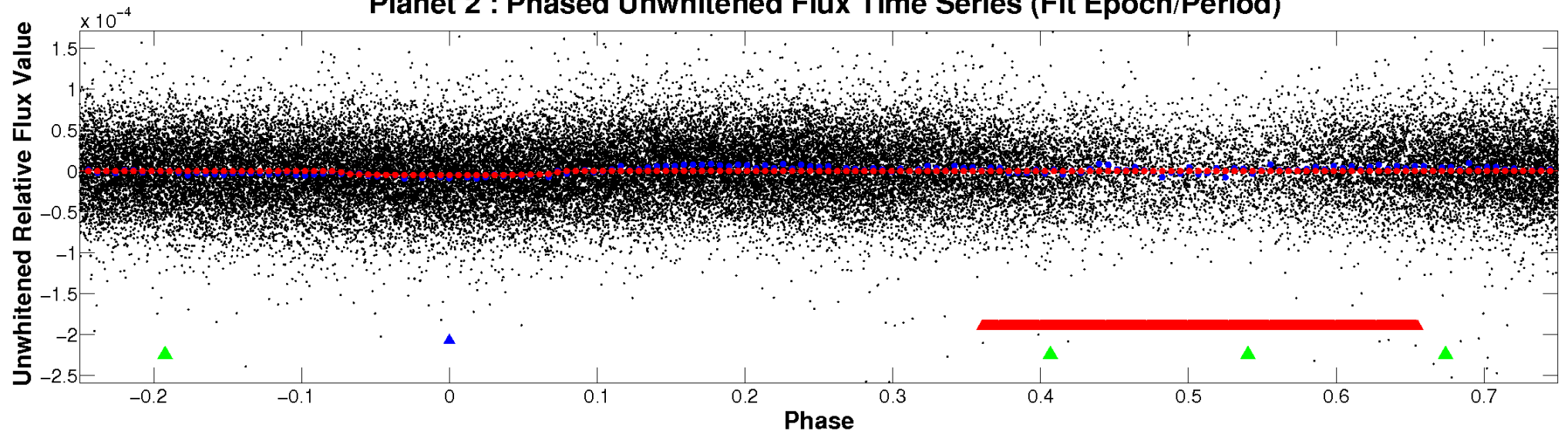
# ALT Odd/Even

TCE 012314750-02

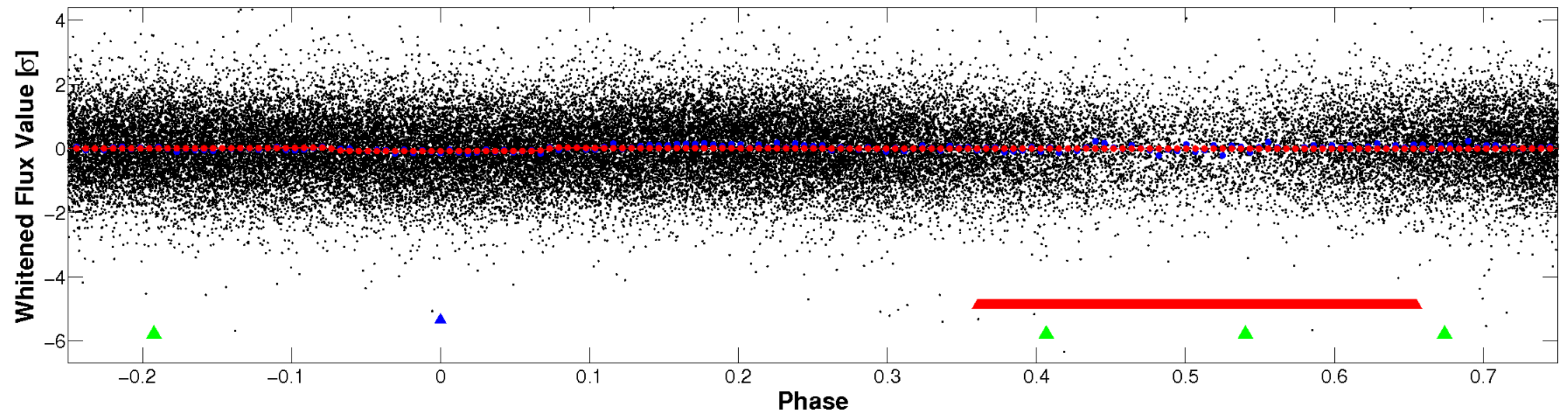


# Non-Whitened Vs. Whitened Light Curve

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

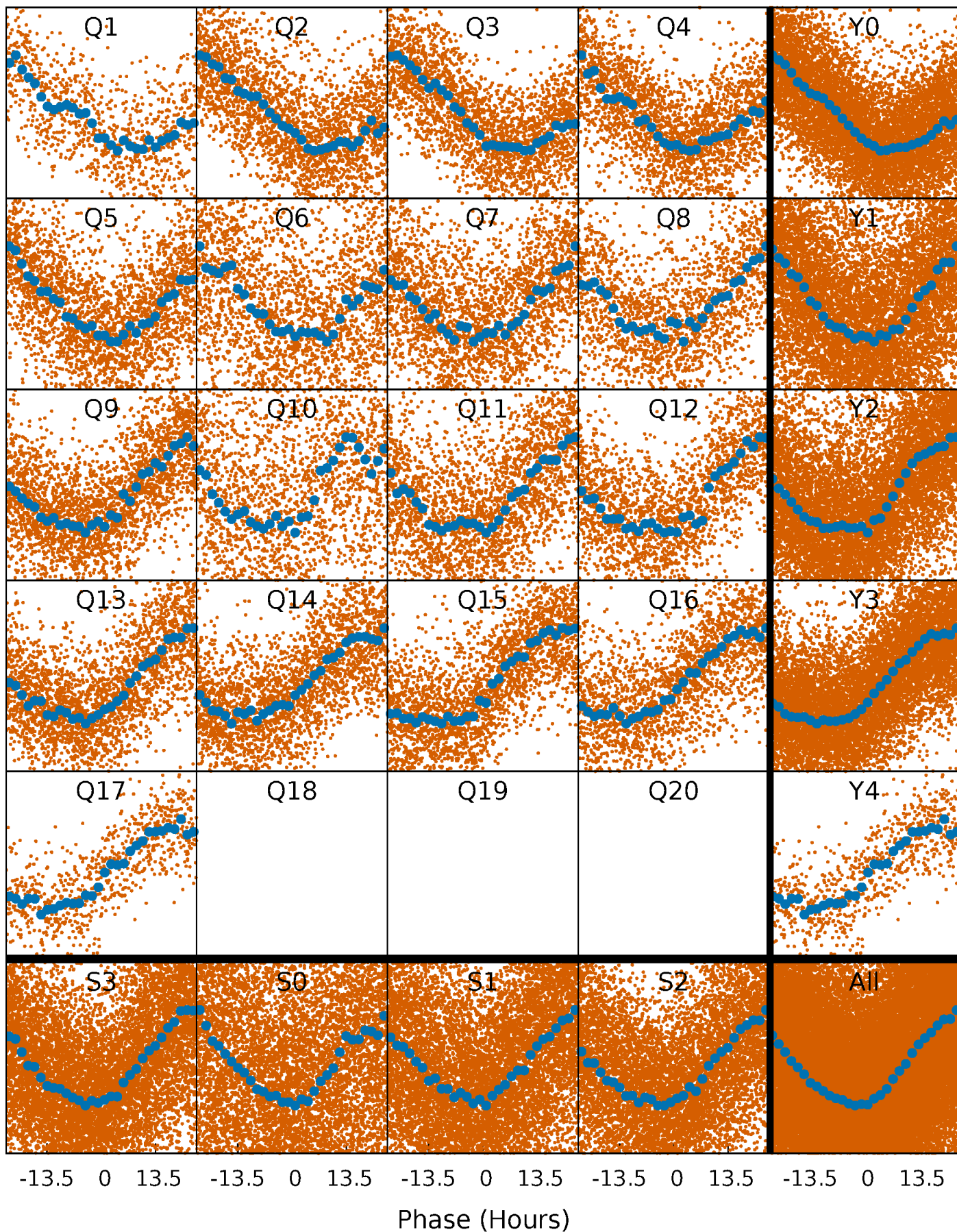


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

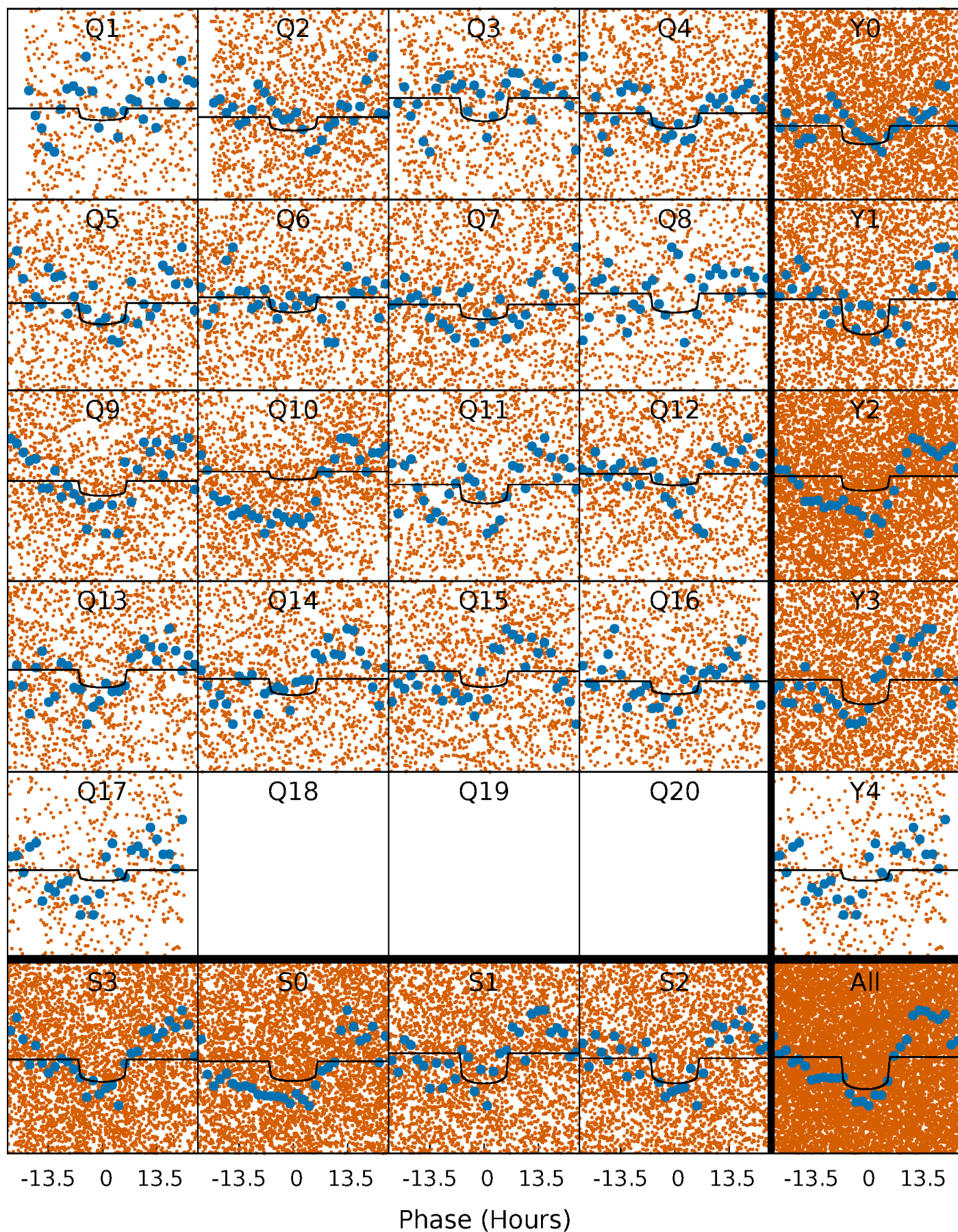
TCE 012314750-02   P= 3.347165 Days    $T_0=133.668524$  (BKJD)





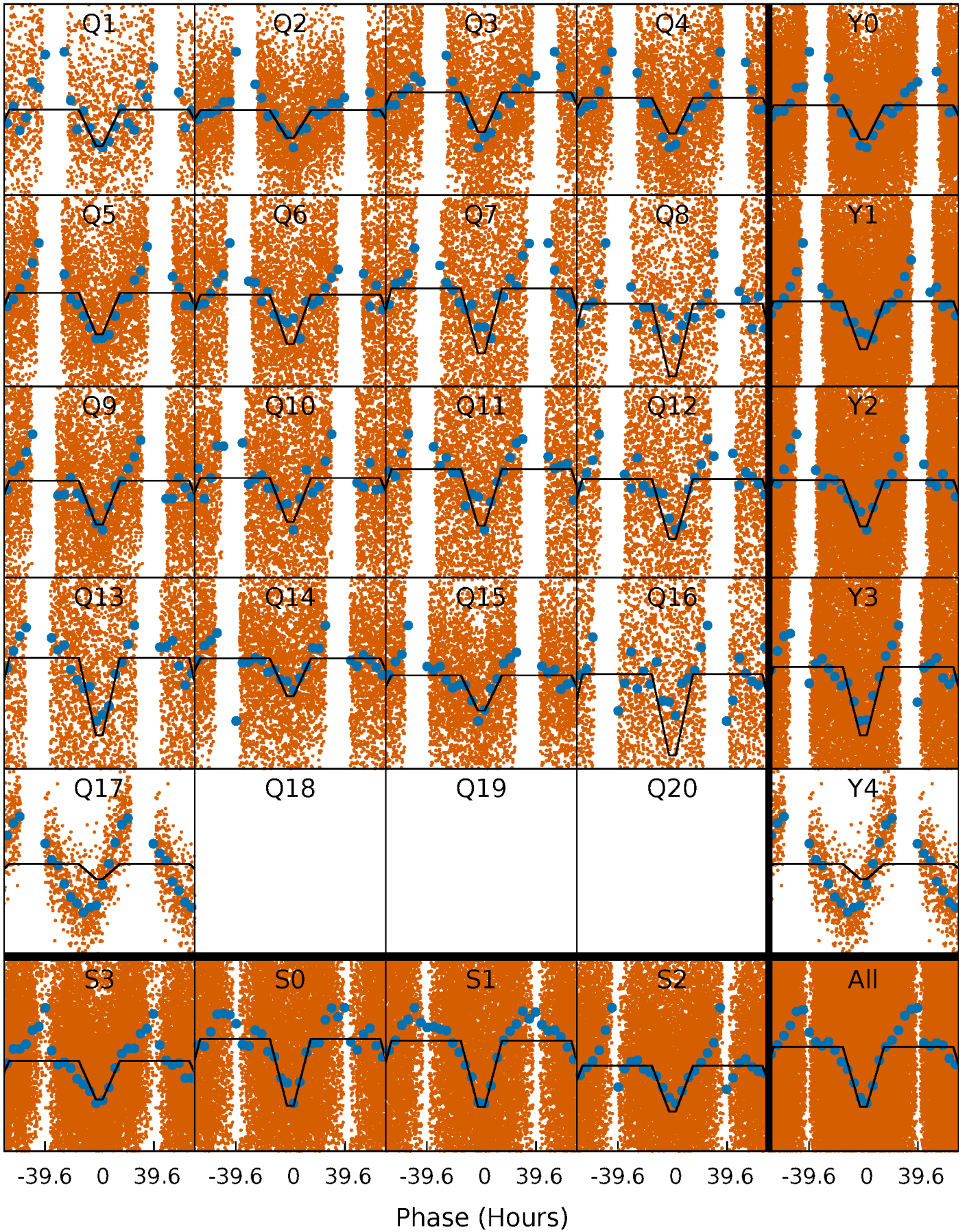
# DV Quarter-Phased Transit Curves

TCE 012314750-02 P= 3.347165 Days  $T_0=133.668524$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 012314750-02   P= 3.346502 Days    $T_0=133.843461$  (BKJD)

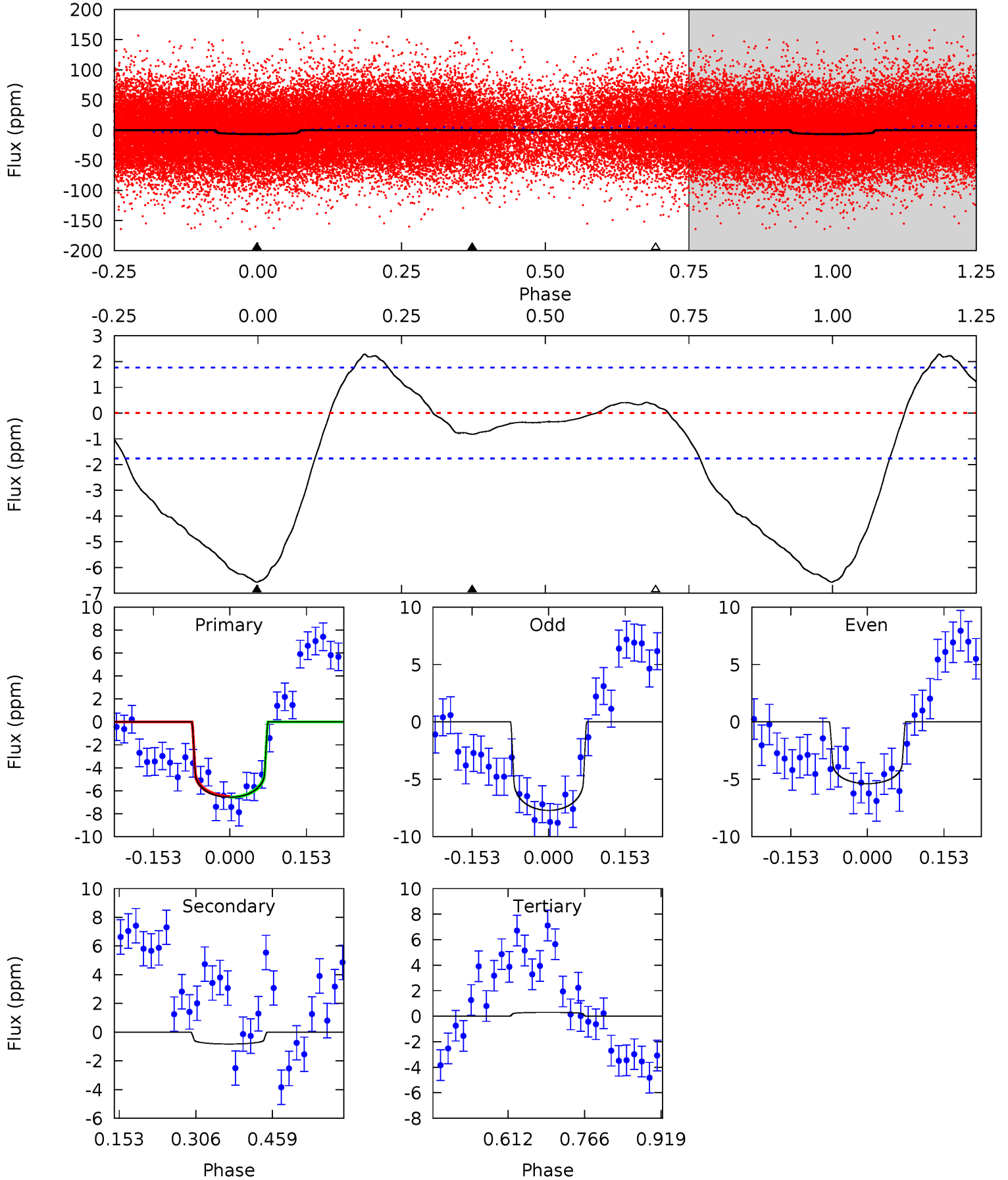




# DV Model-Shift Uniqueness Test

012314750-02, P = 3.347165 Days, E = 130.321359 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
16.6	2.09	-0.77	0	4.47	1.43	4.85	17.4	16.6	2.86	2.09	2.95	1.29	0.26	0.09

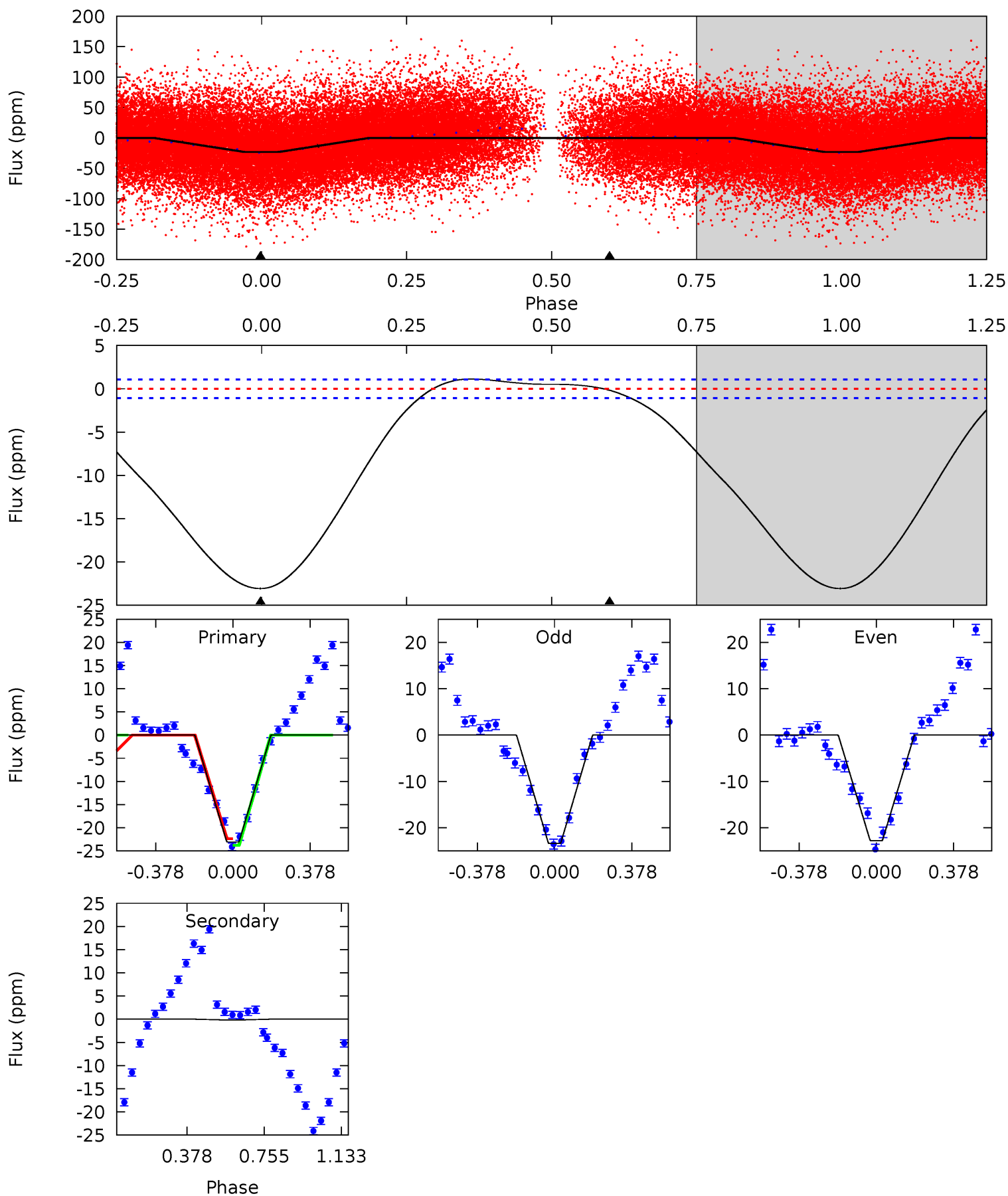




# Alt Model-Shift Uniqueness Test

012314750-02, P = 3.346502 Days, E = 130.496959 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
92.0	0.69	0	0	4.28	0.88	3.71	92.0	92.0	0.69	0.69	1.23	0.69	0.05	2.94



### Stellar Parameters For KIC 012314750

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7519^{+209}_{-314}$	$3.780^{+0.368}_{-0.092}$	$-0.020^{+0.200}_{-0.350}$	$3.005^{+0.417}_{-1.333}$	$1.983^{+0.088}_{-0.500}$	$0.103^{+0.307}_{-0.030}$
	+3%/-4%	+10%/-2%	+1000%/-1750%	+14%/-44%	+4%/-25%	+298%/-29%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 012314750-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-1 \pm 0$	$0.73^{+0.18}_{-0.17}$	$3344^{+227}_{-361}$	$4528^{+643}_{-755}$	$2.406^{+2.179}_{-1.374}$
Alt.	$-0 \pm 0$	$1.50^{+0.24}_{-0.34}$	$3314^{+238}_{-352}$	$-2992^{+5471}_{-352}$	$0.122^{+0.232}_{-0.177}$

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

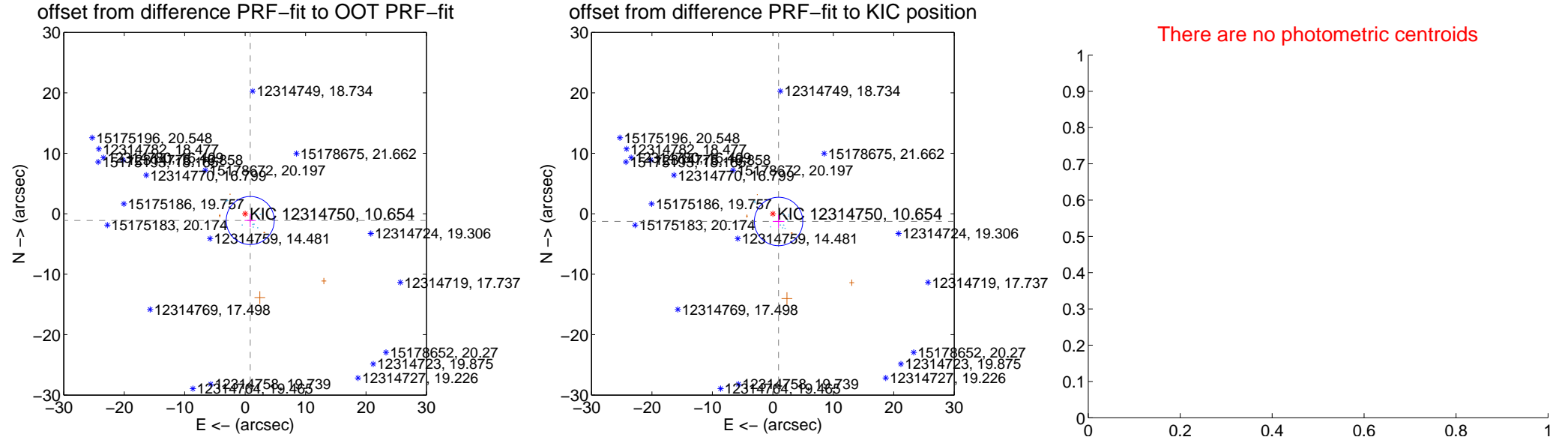
## DV Centroid Data

Supplemental centroid analysis for 012314750-02. **Kepler magnitude: 10.65.** Transit SNR 7.35

There are 11 quarters with good PRF difference image offsets

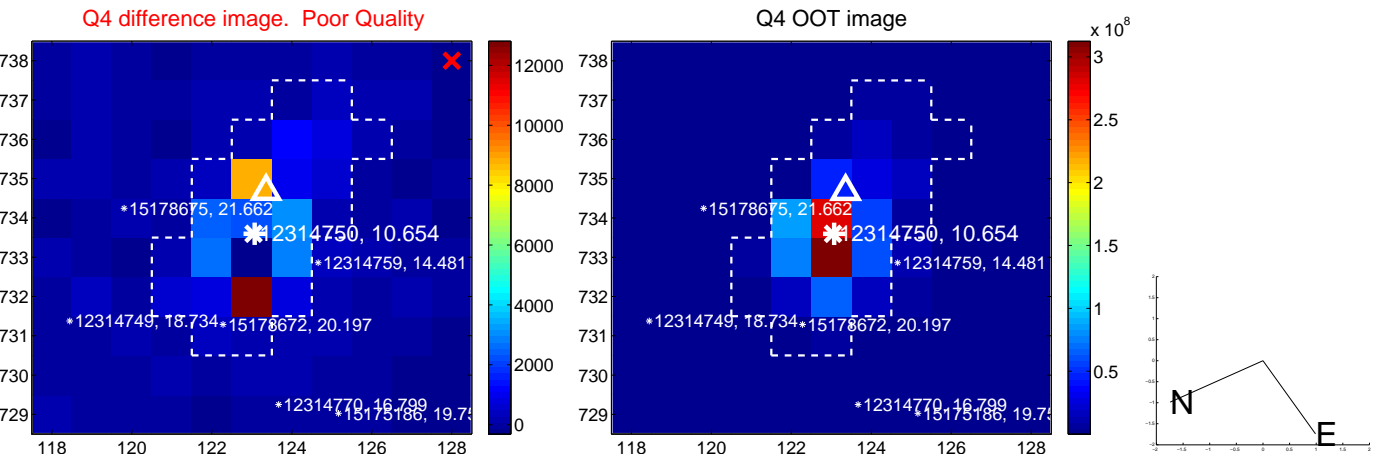
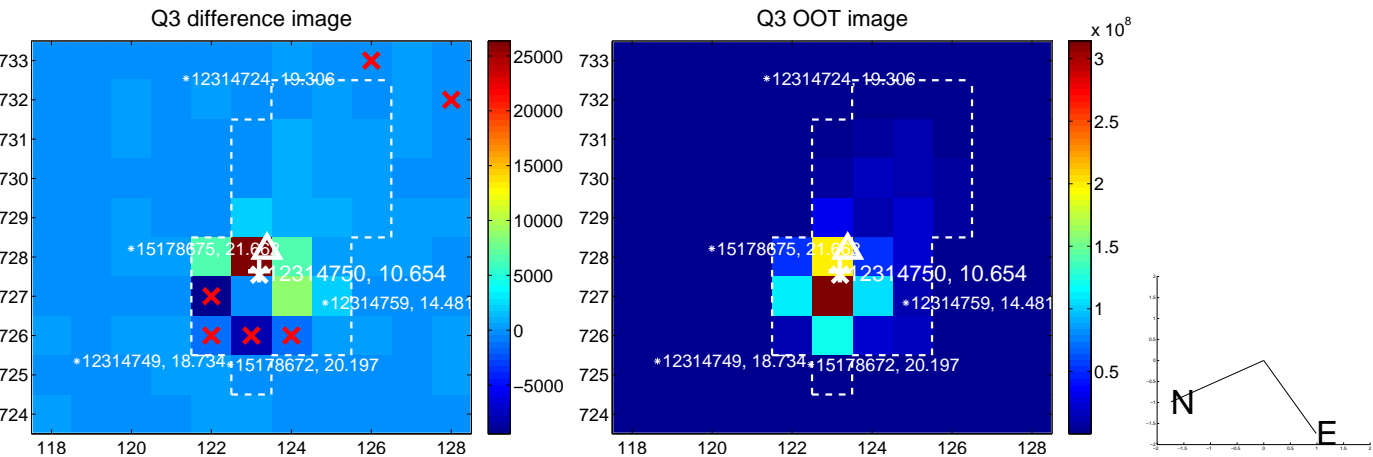
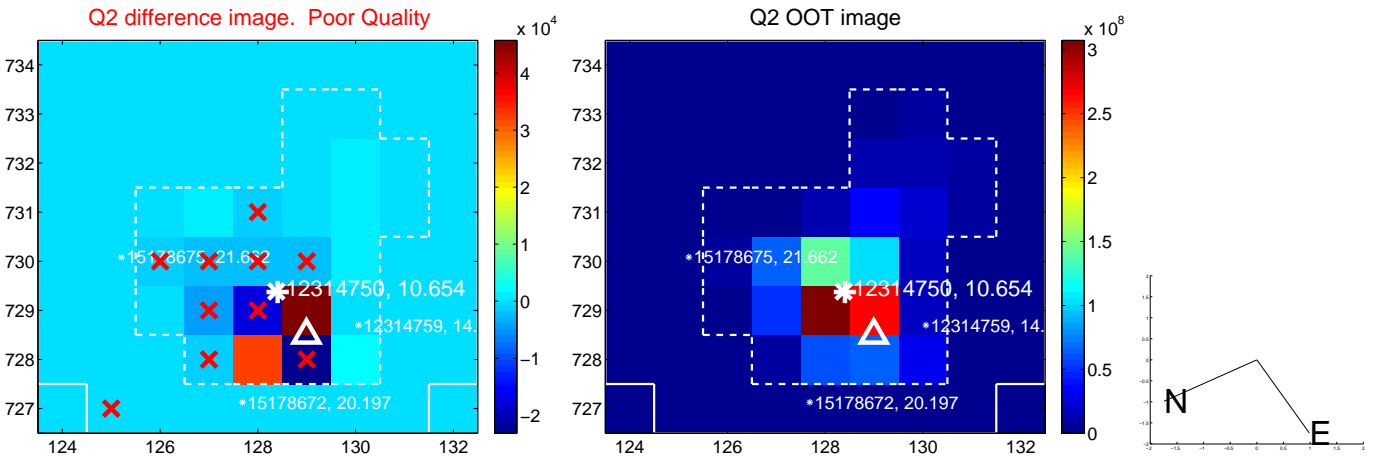
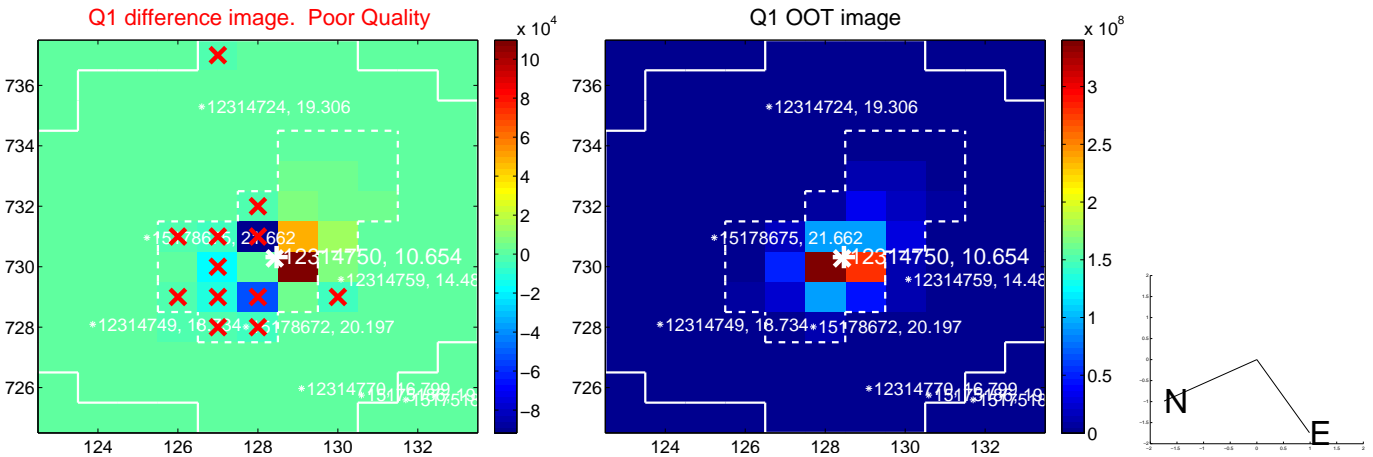
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.402 \pm 1.325$	1.06	$-0.845 \pm 0.934$	$-1.119 \pm 1.107$
PRF-fit source offset from KIC position	$1.588 \pm 1.335$	1.19	$-0.945 \pm 0.970$	$-1.276 \pm 1.098$
photometric centroid source offset	—	—	—	—

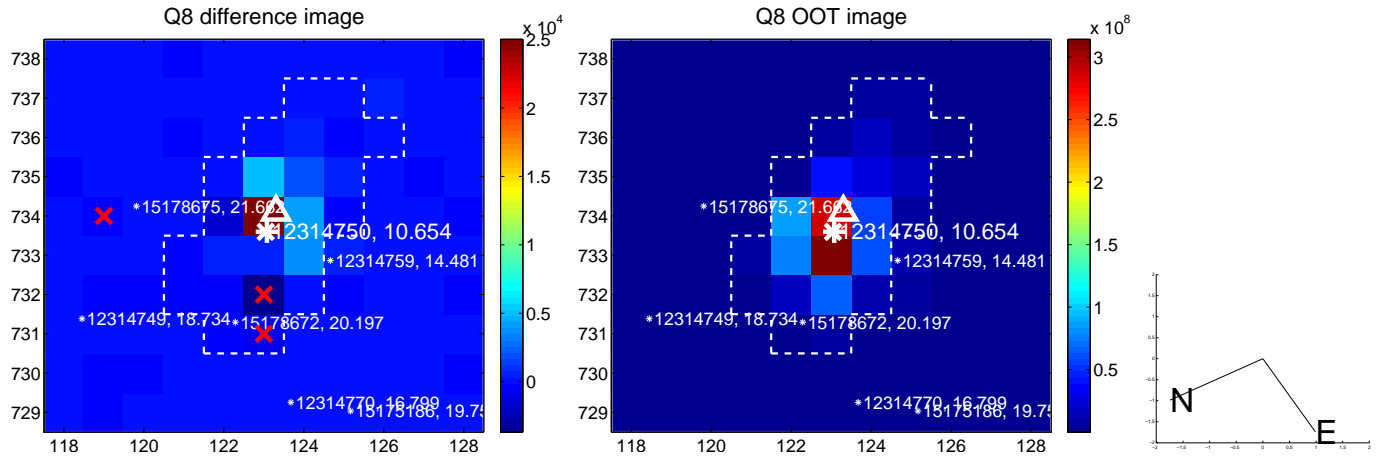
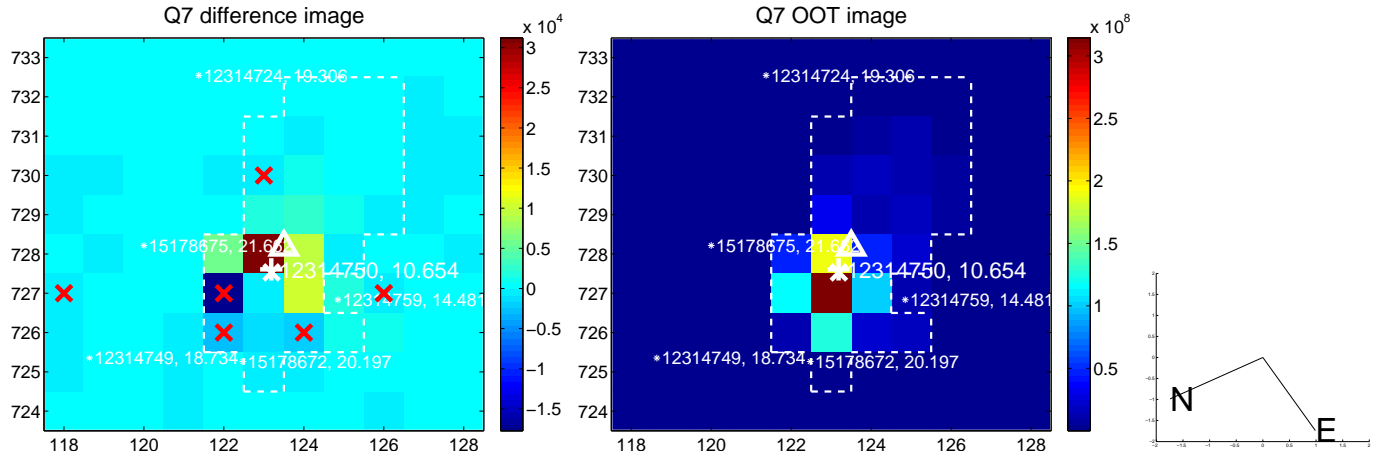
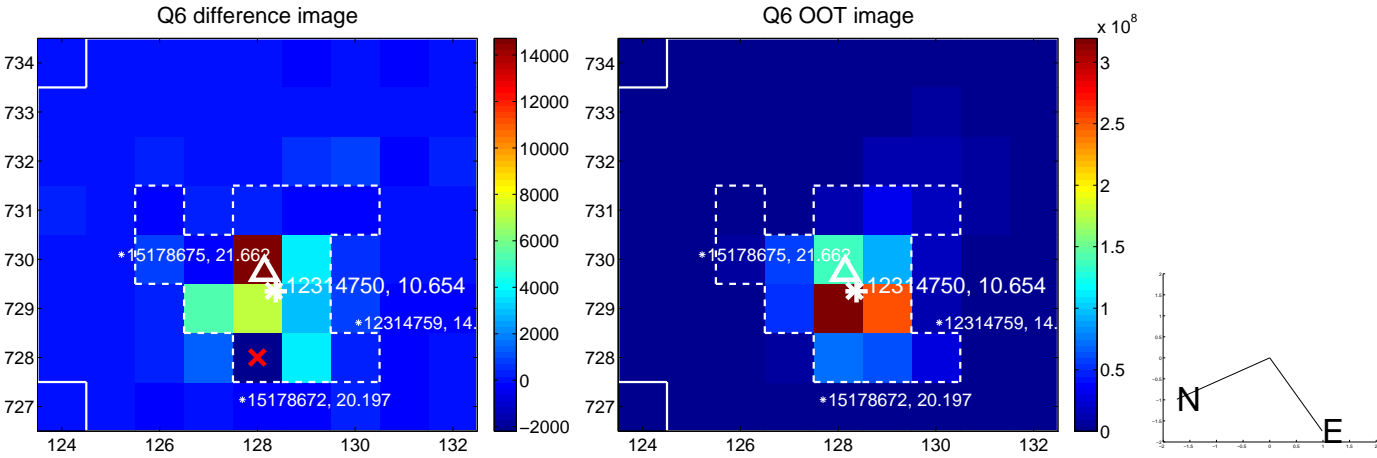
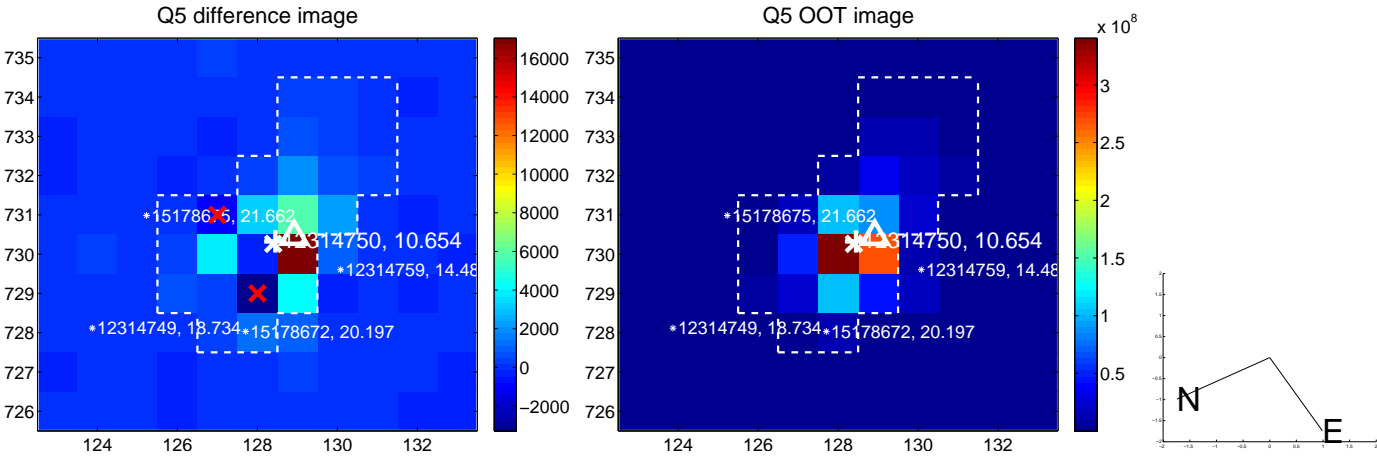


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



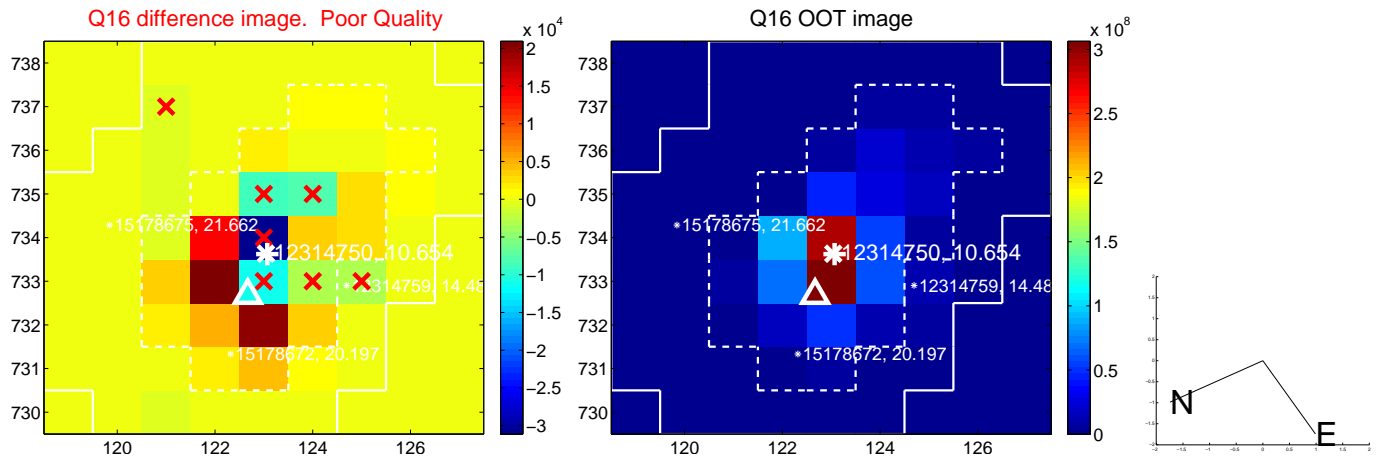
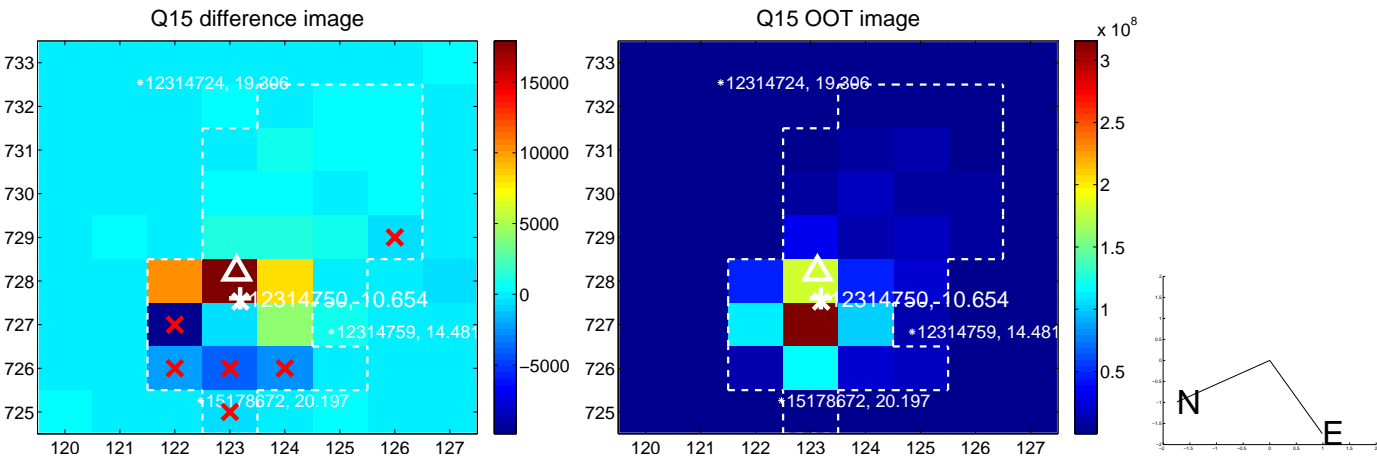
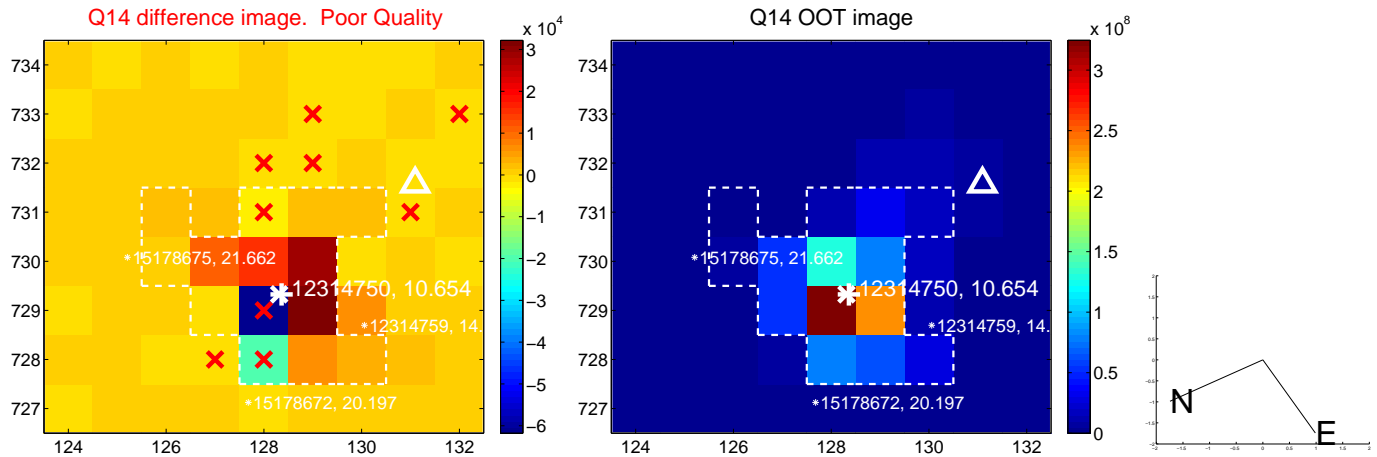
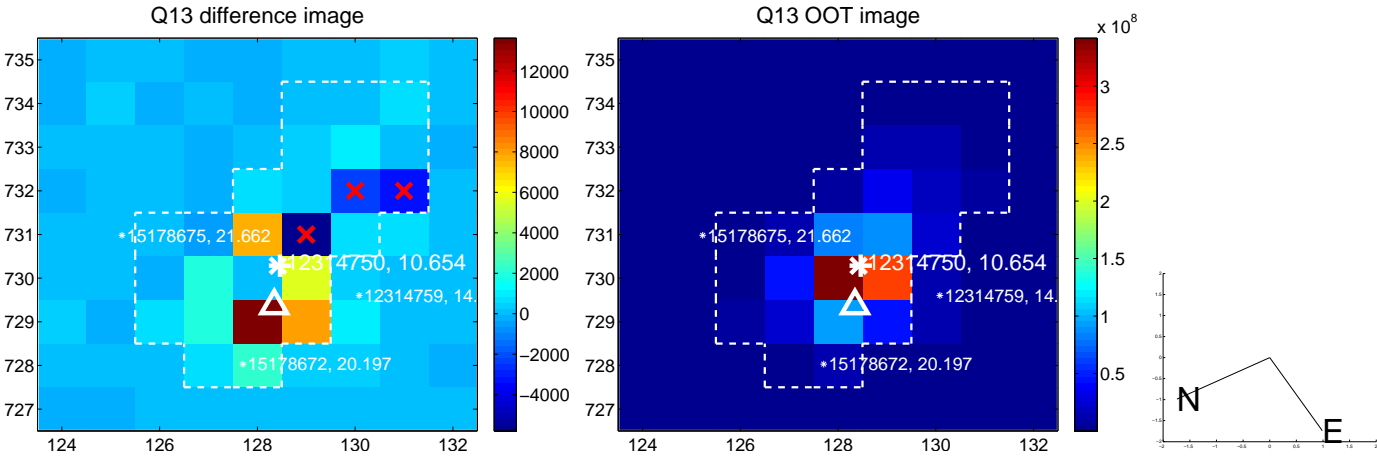
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



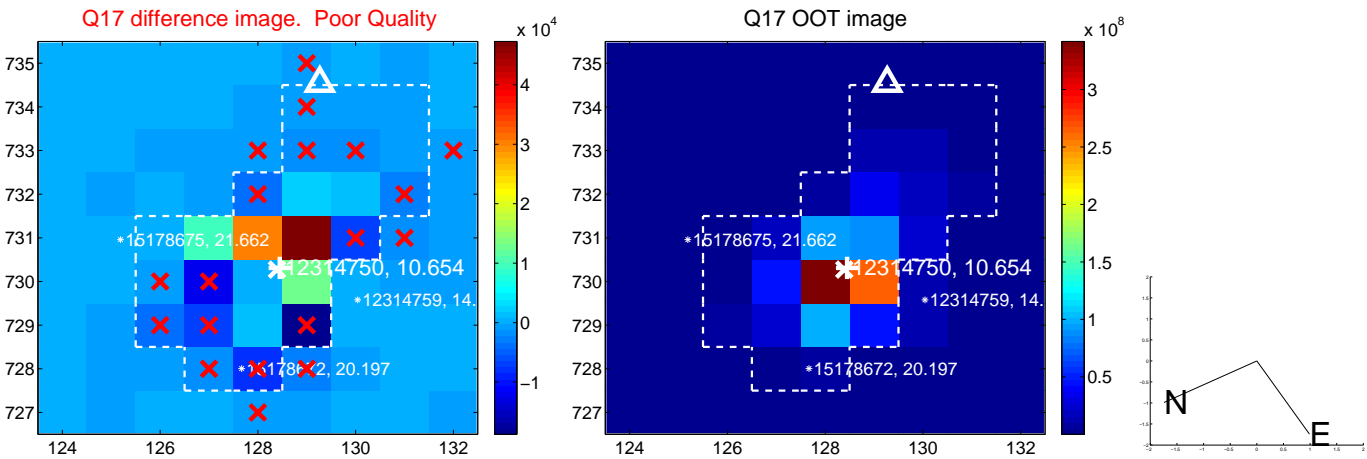




white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



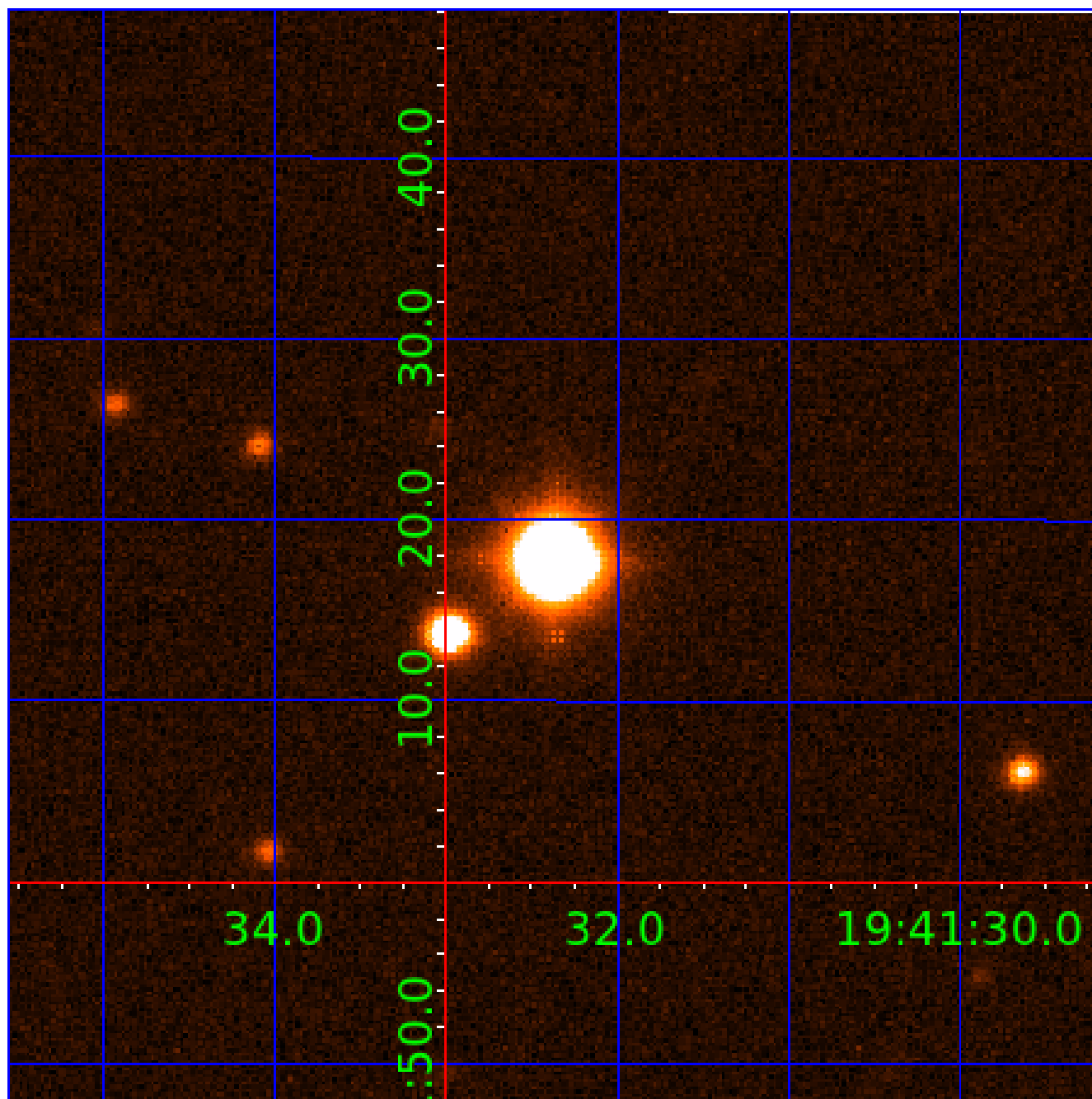
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination



# KIC 012314750

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
012314750-01	OBS	No	3.344905	132.513718	8.7	5.798	11.5	9.6	3.00	7519	1.23	8542.52
012314750-02	OBS	No	3.347165	133.668524	4.9	11.856	8.5	7.3	3.00	7519	0.79	8534.83
012314750-03	OBS	No	375.329934	158.459722	54.2	18.225	7.5	6.7	3.00	7519	2.38	15.78

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012314750-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
012314750-02	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—MOD_NONUNIQ_DV—CENT_SATURATED
012314750-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—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.

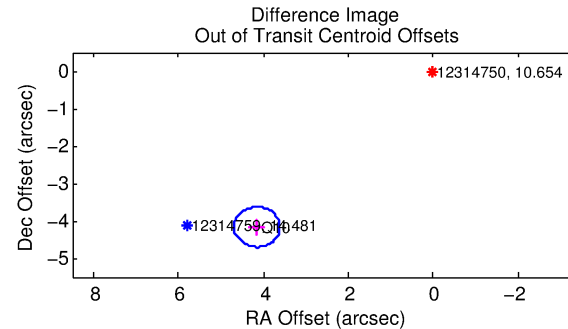
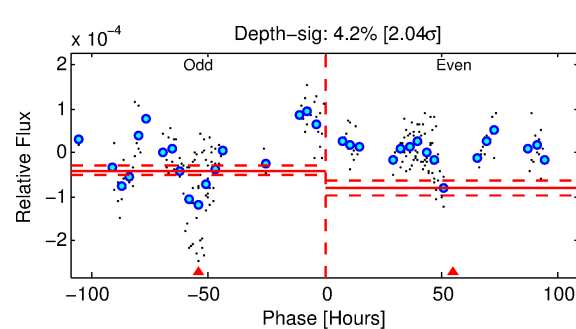
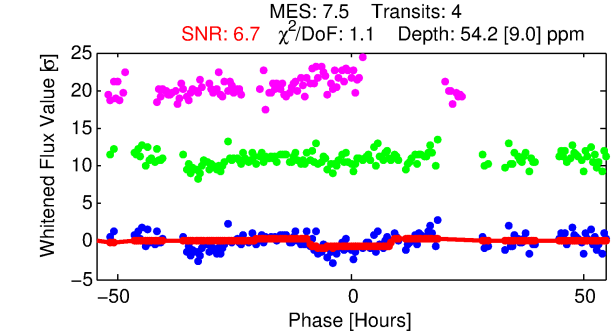
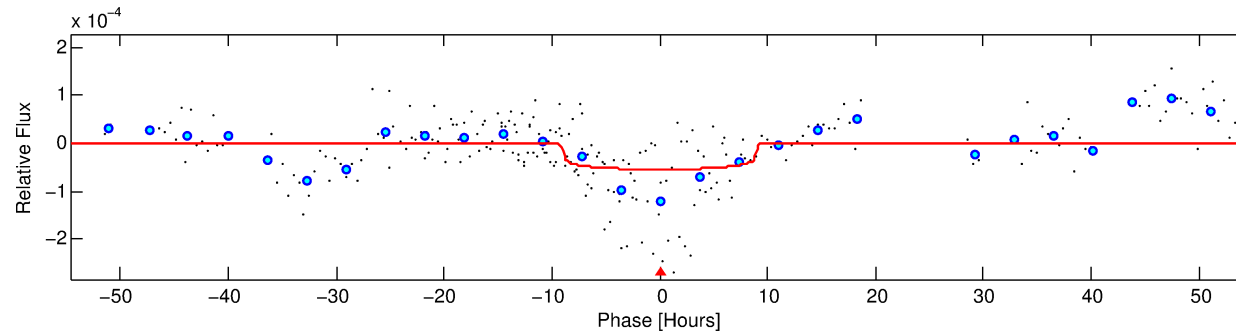
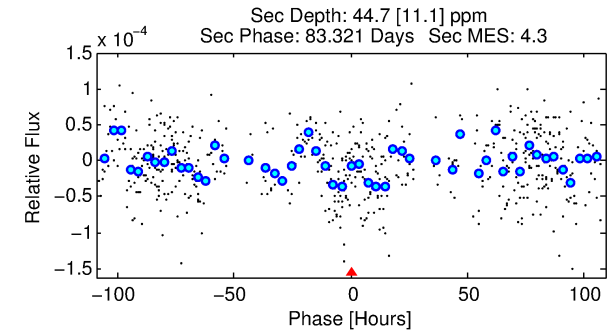
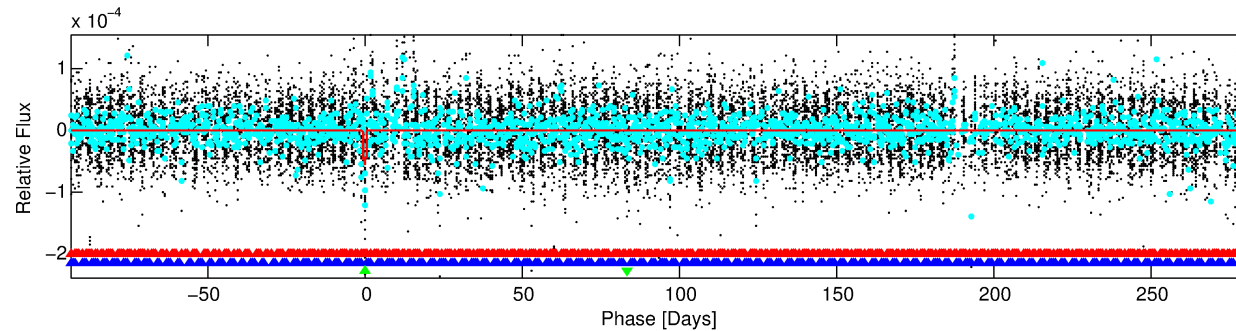
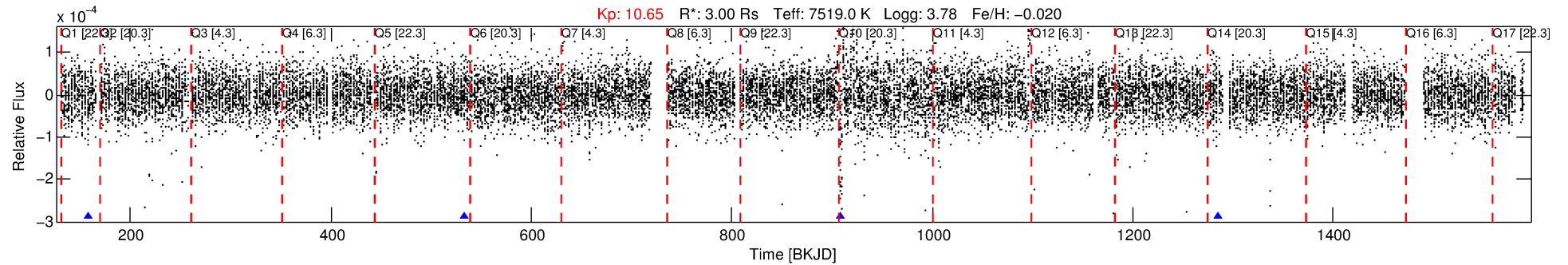
## Ephemeris Match Information For 012314750-03

No Significant Match Found



# DV One-Page Summary

KIC: 12314750 Candidate: 3 of 3 Period: 375.330 d



## DV Fit Results:

Period = 375.32993 [0.01654] d  
Epoch = 158.4597 [0.0164] BKJD  
Rp/R\* = 0.0072 [0.0028]  
a/R\* = 112.78 [263.64]  
b = 0.71 [1.63]  
Seff = 15.78 [10.40]  
Teq = 508 [84] K  
Rp = 2.37 [1.40] Re  
a = 1.2800 [0.5234] AU  
Ag = 7141.03 [7421.84] [0.96σ]  
Teff = 7224 [1513] K [4.43σ]

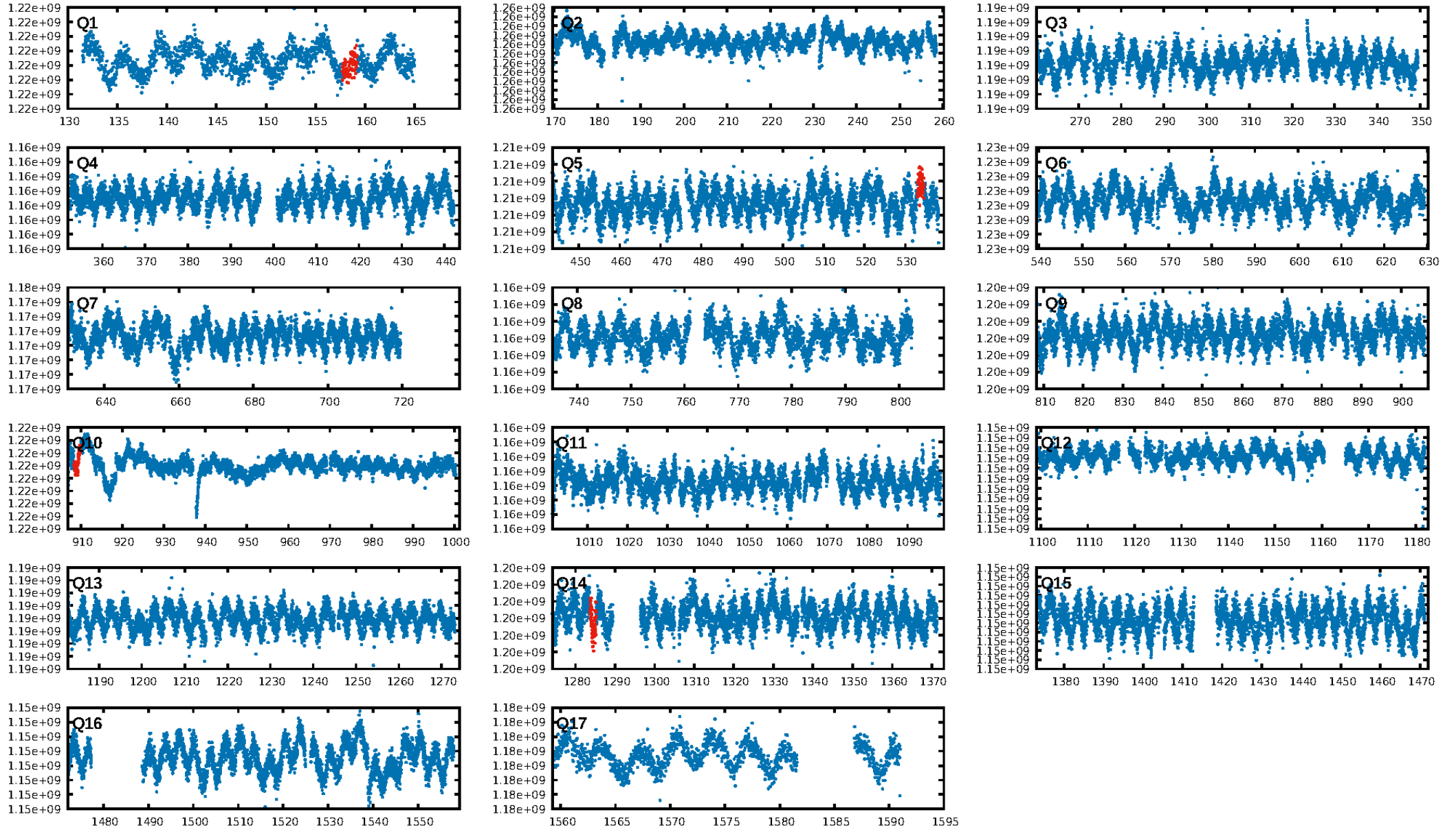
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [410.61σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.6%  
ModelChiSquareGoF-sig: 100.0%  
Bootstrap-pfa: 1.03e-09  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 11.4%  
Centroid-so: 2.790 arcsec [1.37σ]  
OotOffset-rm: 5.881 arcsec [32.83σ]  
KicOffset-rm: 6.030 arcsec [33.65σ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 0.00 [0/3]

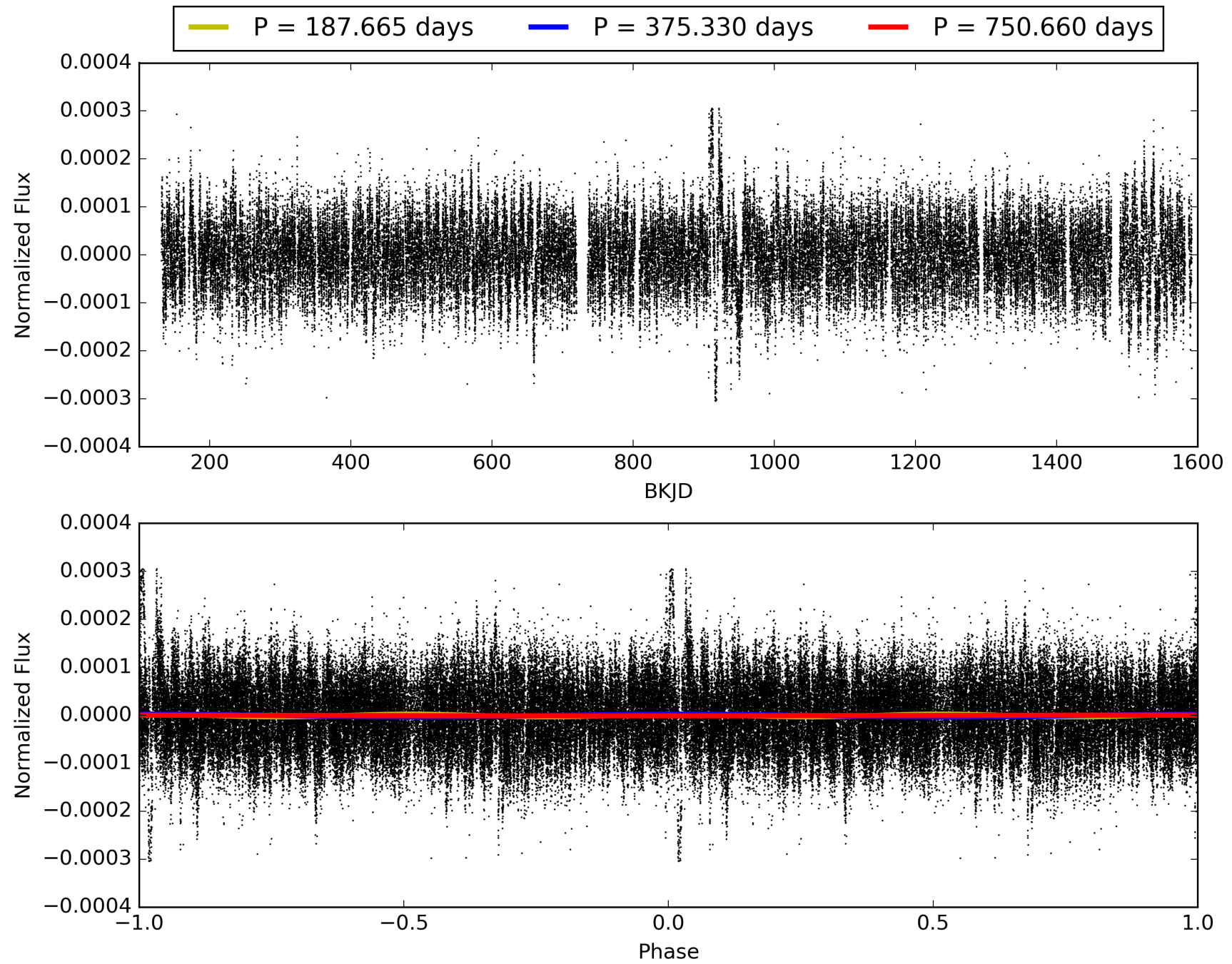
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 08:39:31 Z

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

# TCE 012314750-03, PDC Light Curves

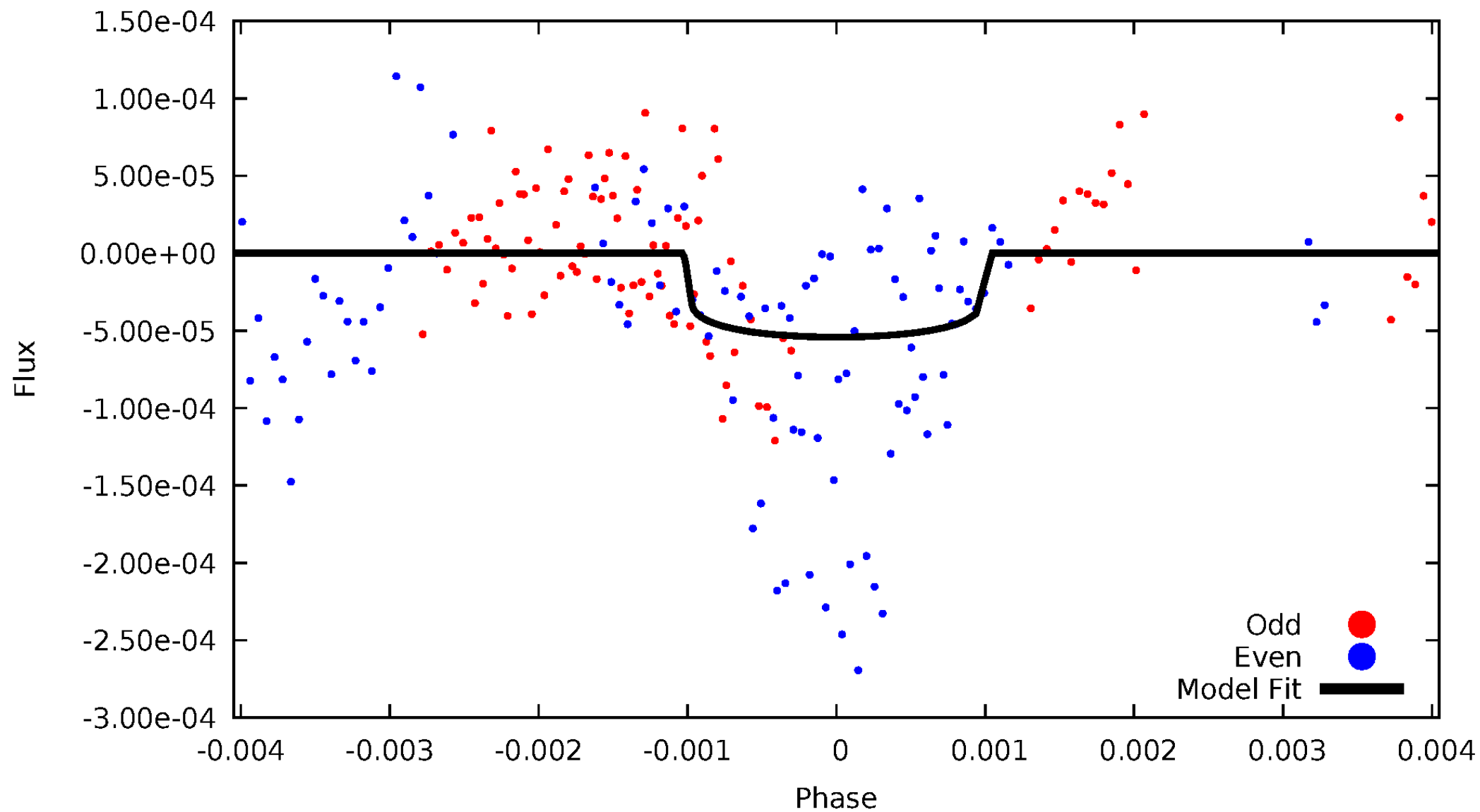


TCE 012314750-03



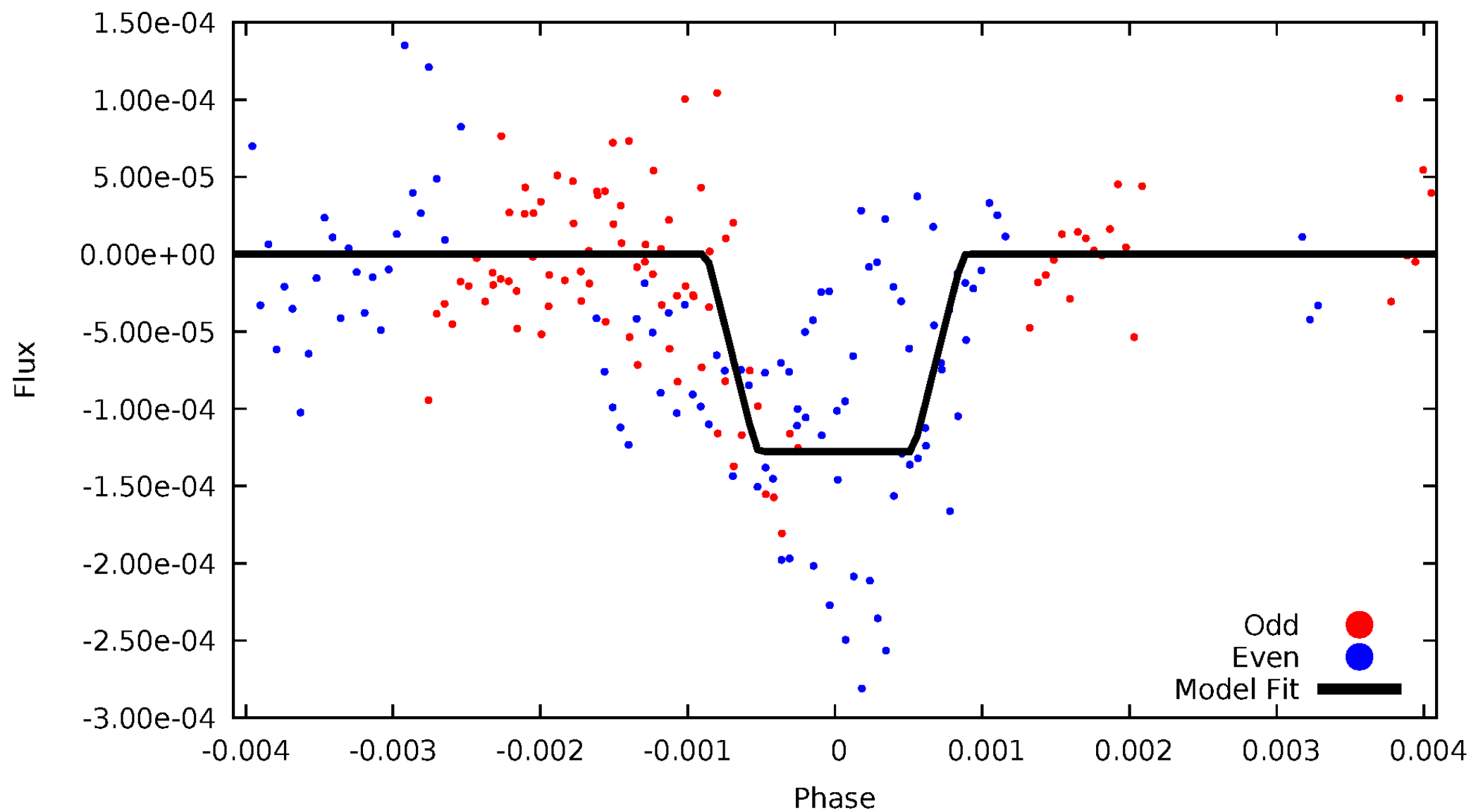
# DV Odd/Even

TCE 012314750-03



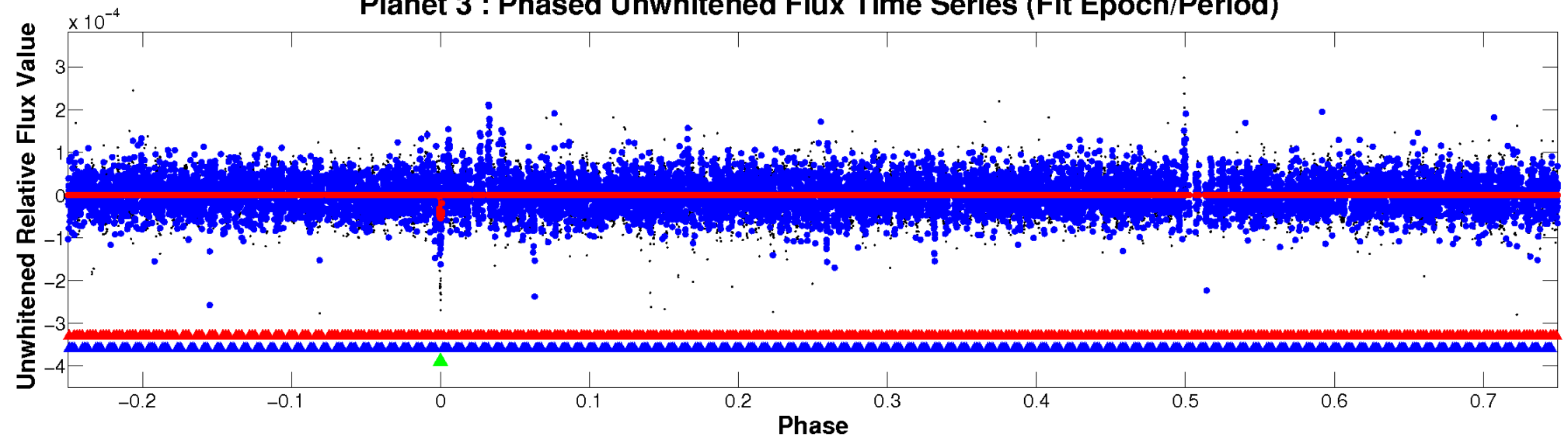
# ALT Odd/Even

TCE 012314750-03

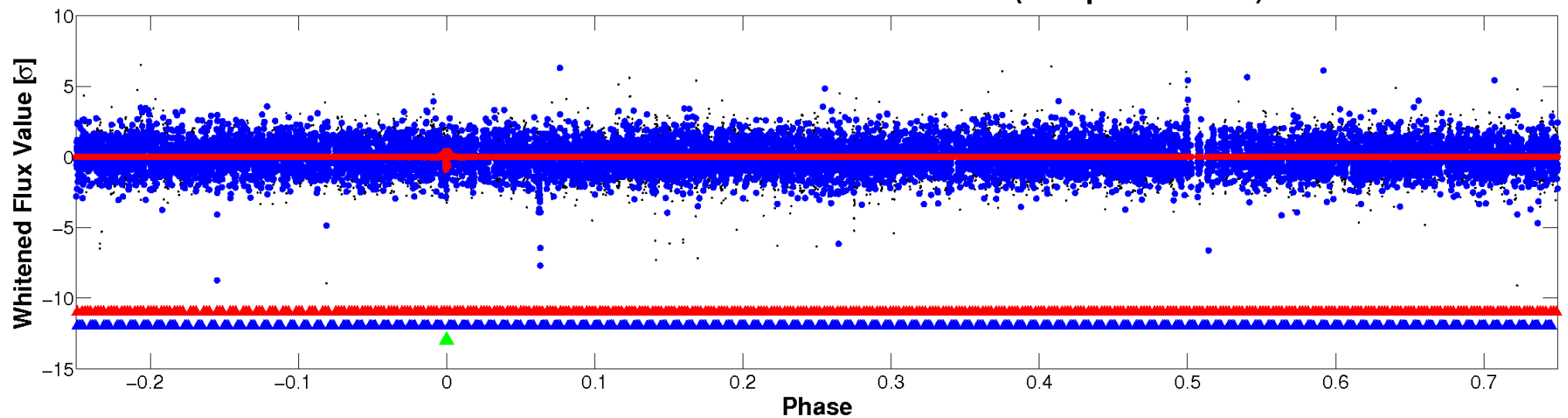


# Non-Whitened Vs. Whitened Light Curve

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



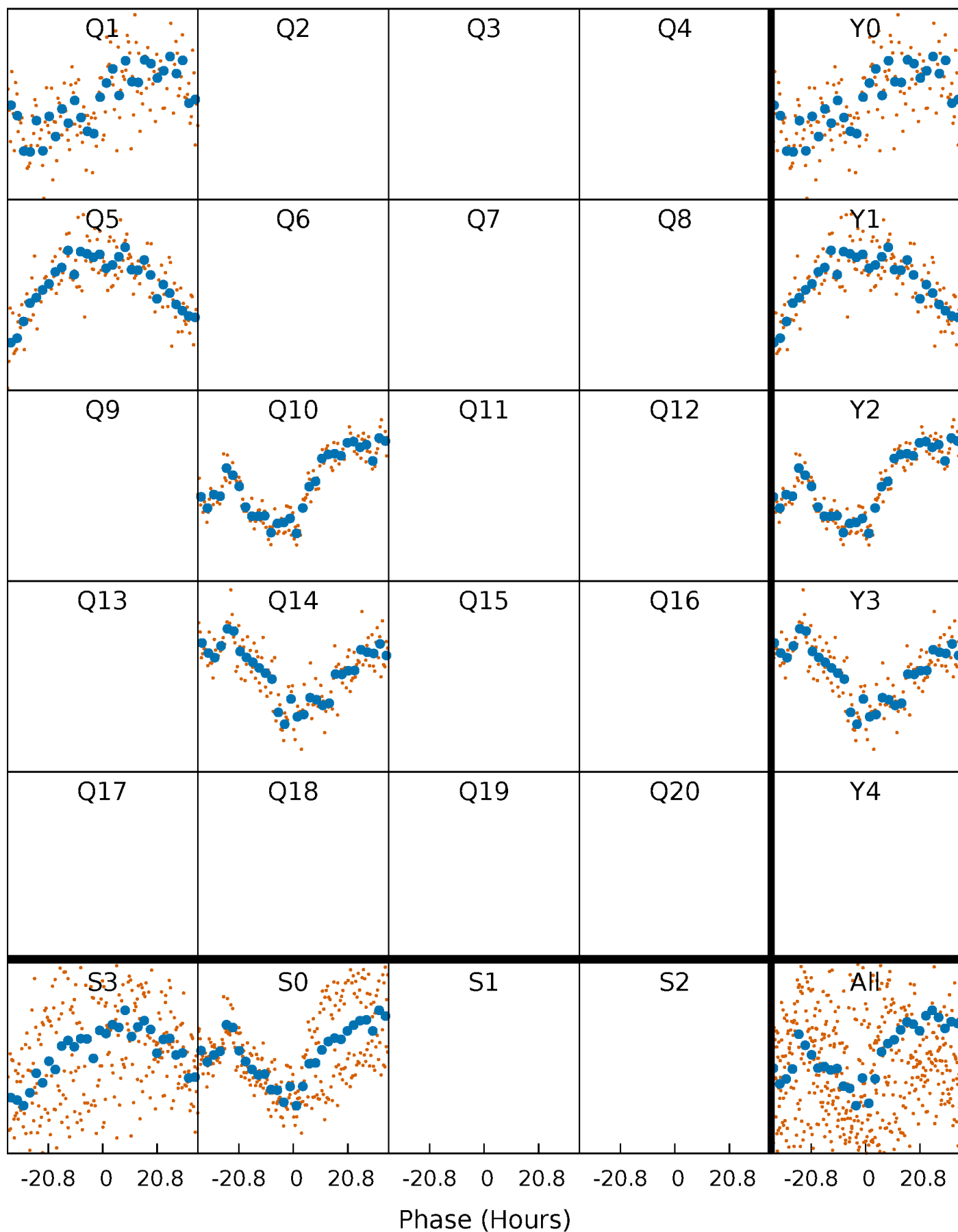
Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)





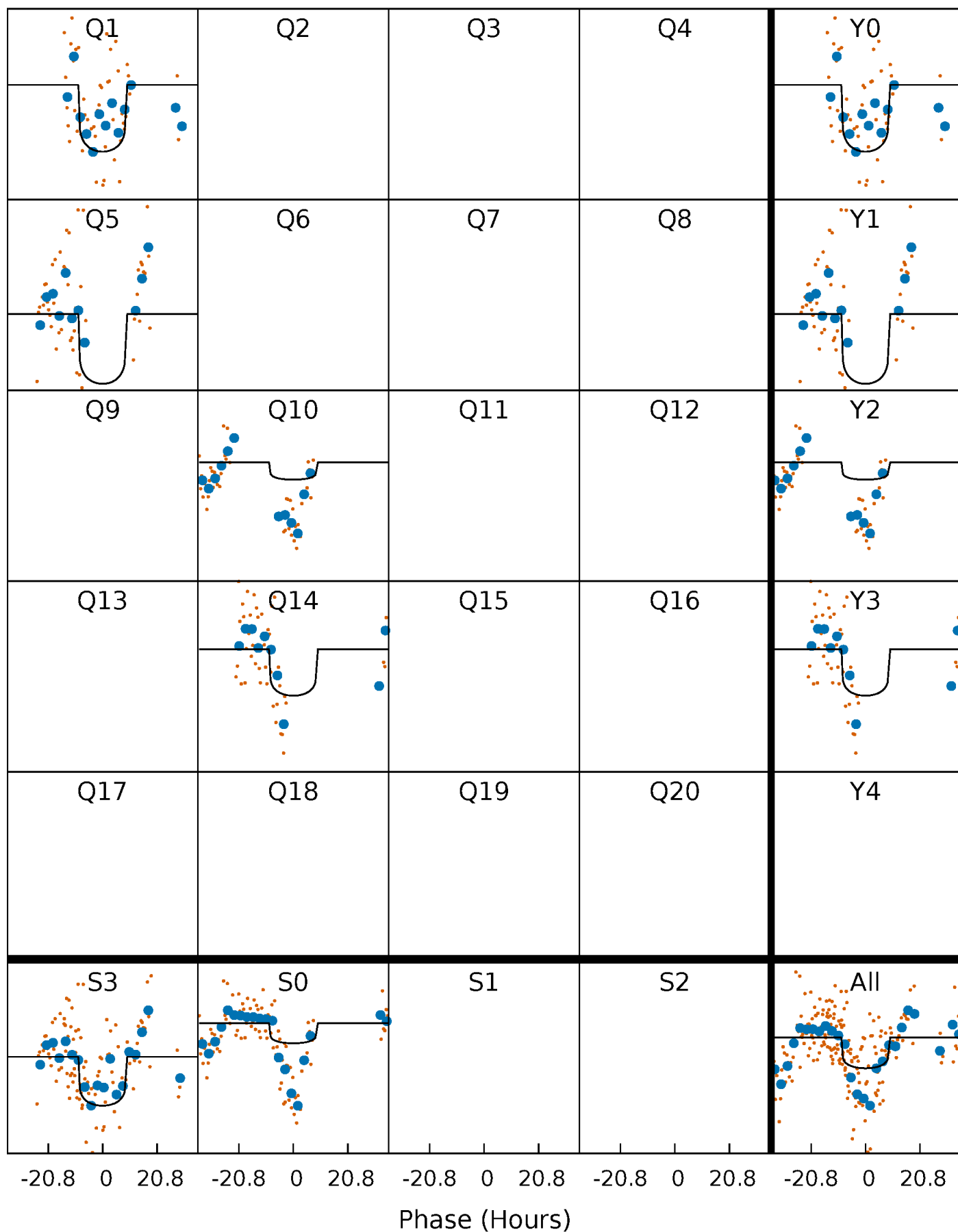
# PDC Quarter-Phased Transit Curves

TCE 012314750-03     $P=375.329934$  Days     $T_0=158.459722$  (BKJD)



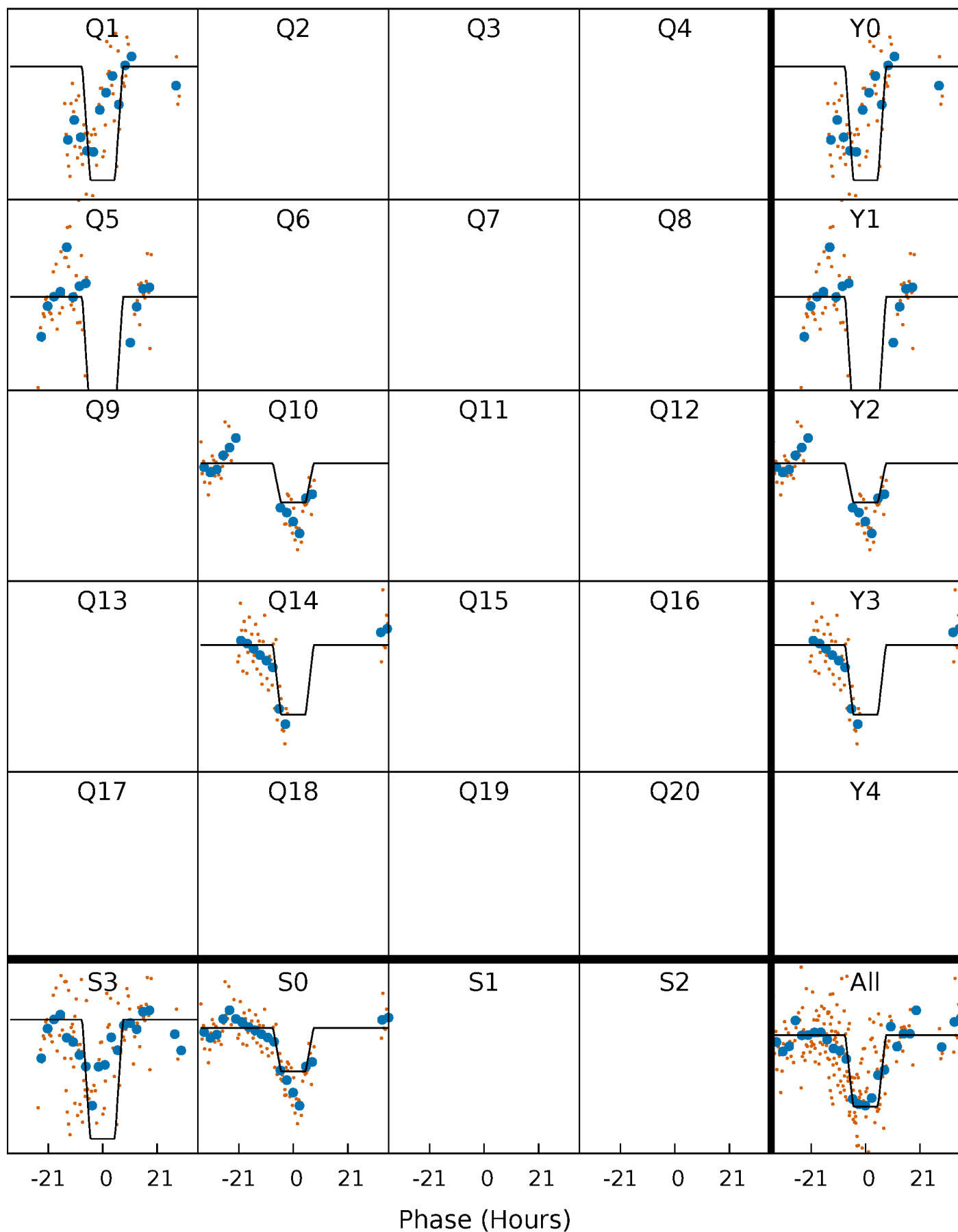
# DV Quarter-Phased Transit Curves

TCE 012314750-03     $P=375.329934$  Days     $T_0=158.459722$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

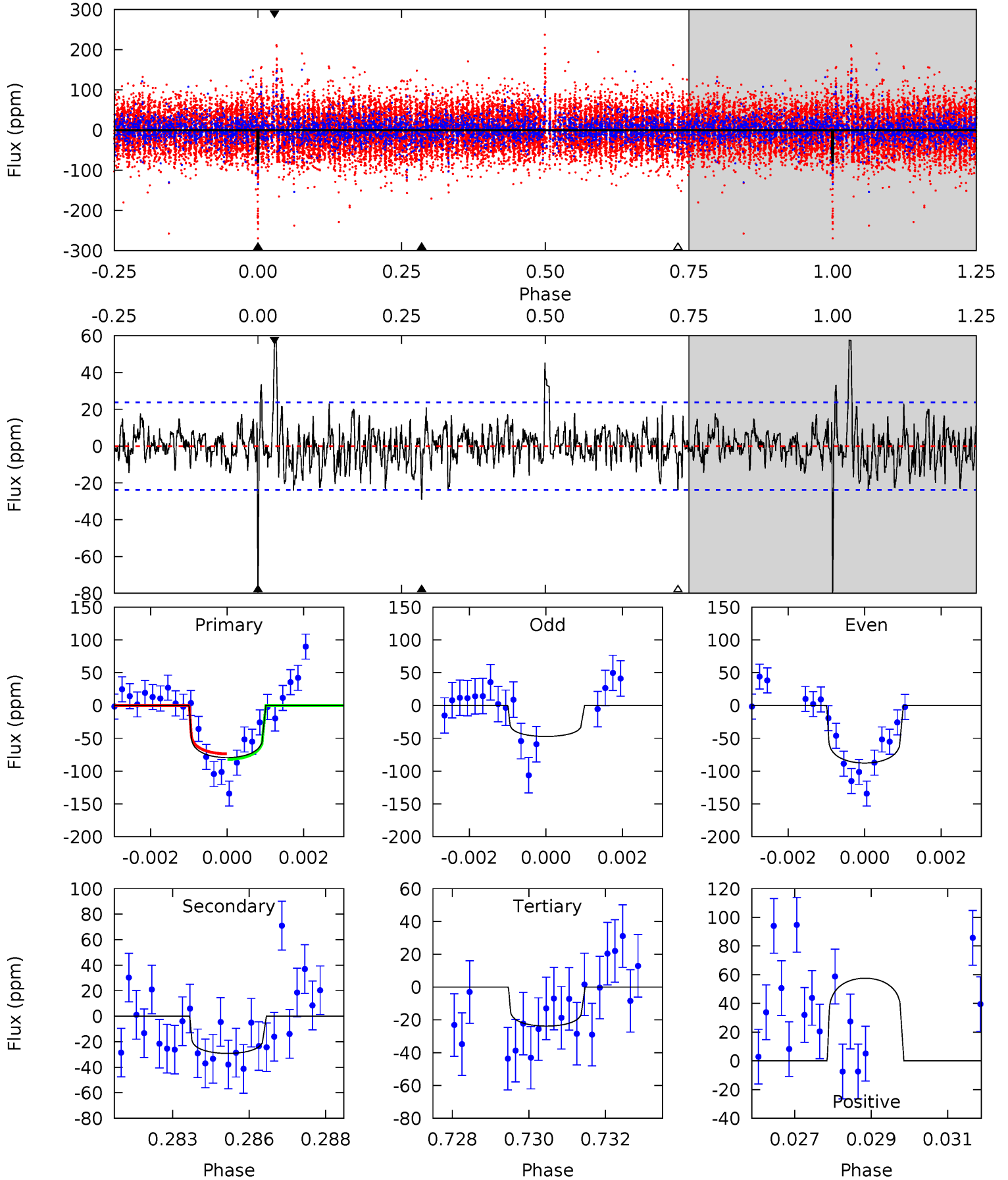
TCE 012314750-03     $P=375.323630$  Days     $T_0=158.458968$  (BKJD)



# DV Model-Shift Uniqueness Test

012314750-03, P = 375.329934 Days, E = 158.459722 Days

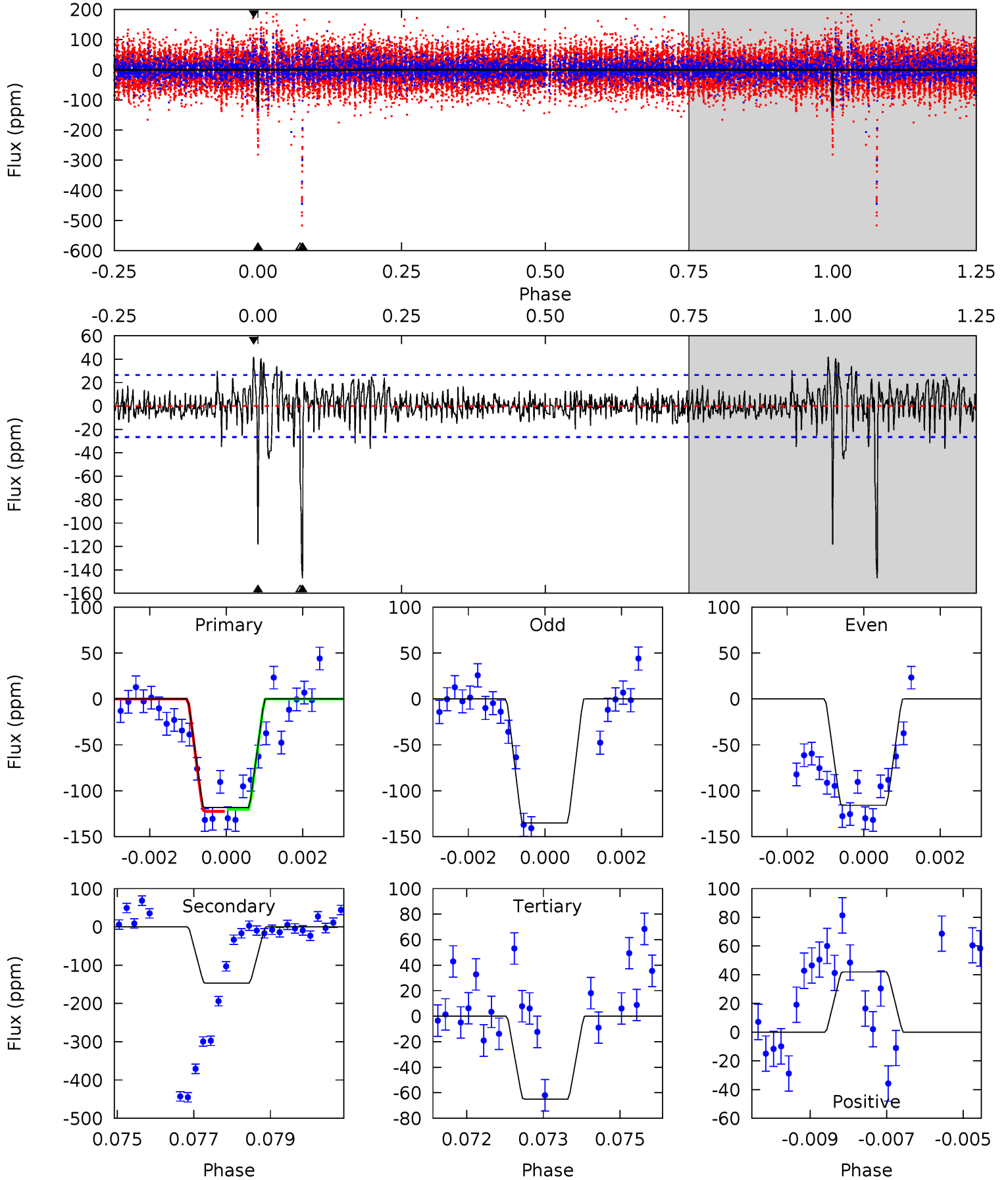
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.8	6.53	5.33	12.9	5.32	3.08	1.91	12.5	4.90	1.20	-6.37	4.00	1.44	0.42	0.95



# Alt Model-Shift Uniqueness Test

012314750-03, P = 375.323630 Days, E = 158.458968 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.9	29.7	13.1	8.46	5.35	3.13	1.92	10.8	15.4	16.6	21.2	1.60	0.96	0.22	0.20



### Stellar Parameters For KIC 012314750

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7519^{+209}_{-314}$	$3.780^{+0.368}_{-0.092}$	$-0.020^{+0.200}_{-0.350}$	$3.005^{+0.417}_{-1.333}$	$1.983^{+0.088}_{-0.500}$	$0.103^{+0.307}_{-0.030}$
	+3%/-4%	+10%/-2%	+1000%/-1750%	+14%/-44%	+4%/-25%	+298%/-29%
Source	KIC0	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 012314750-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-29 \pm 4$	$2.17^{+0.99}_{-1.00}$	$694^{+44}_{-75}$	$6323^{+2240}_{-912}$	$5414^{+11397}_{-2846}$
Alt.	$-147 \pm 5$	$3.39^{+1.11}_{-1.06}$	$694^{+48}_{-73}$	$7880^{+1708}_{-1072}$	$11256^{+11598}_{-4735}$

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



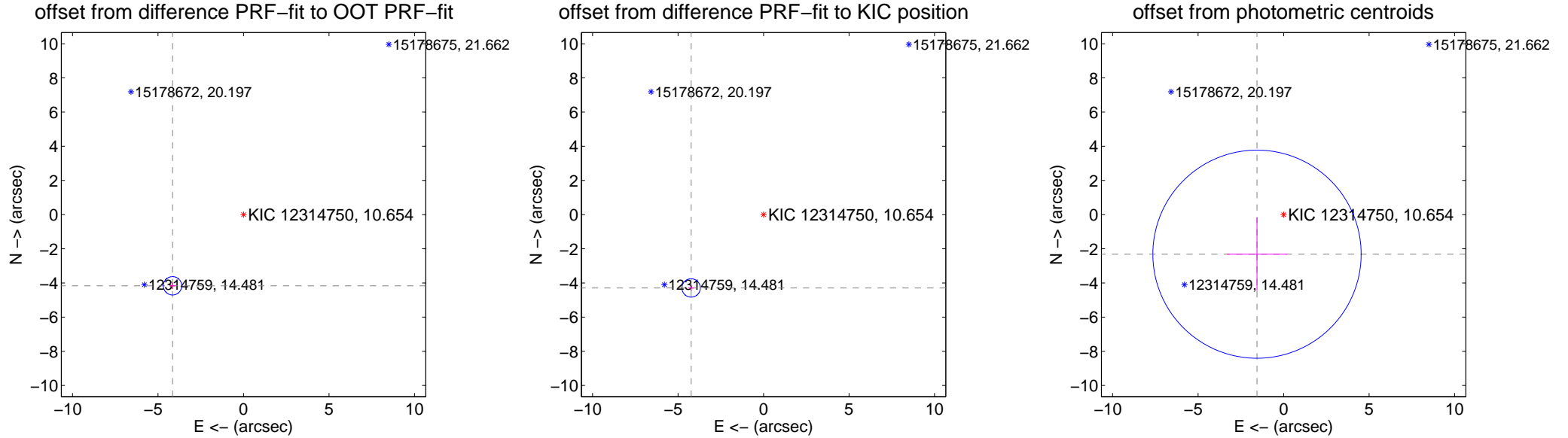
## DV Centroid Data

Supplemental centroid analysis for 012314750-03. **Kepler magnitude: 10.65.** Transit SNR 6.72

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

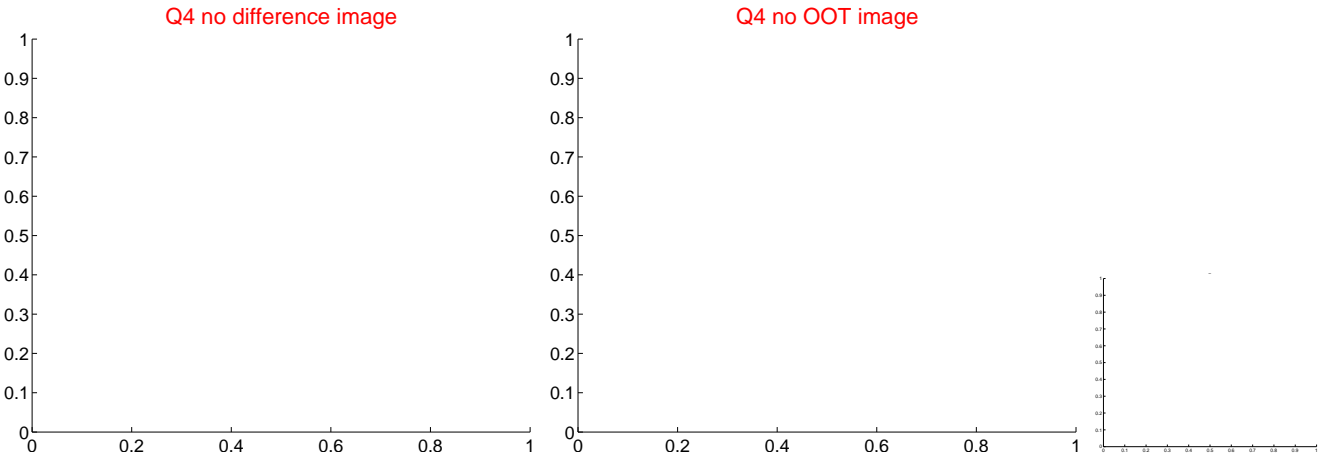
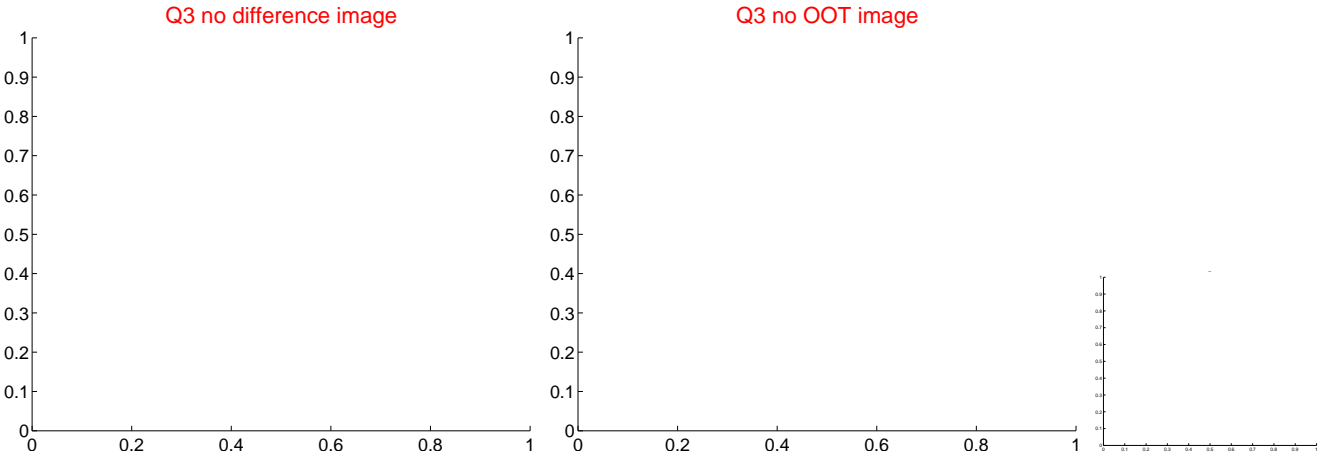
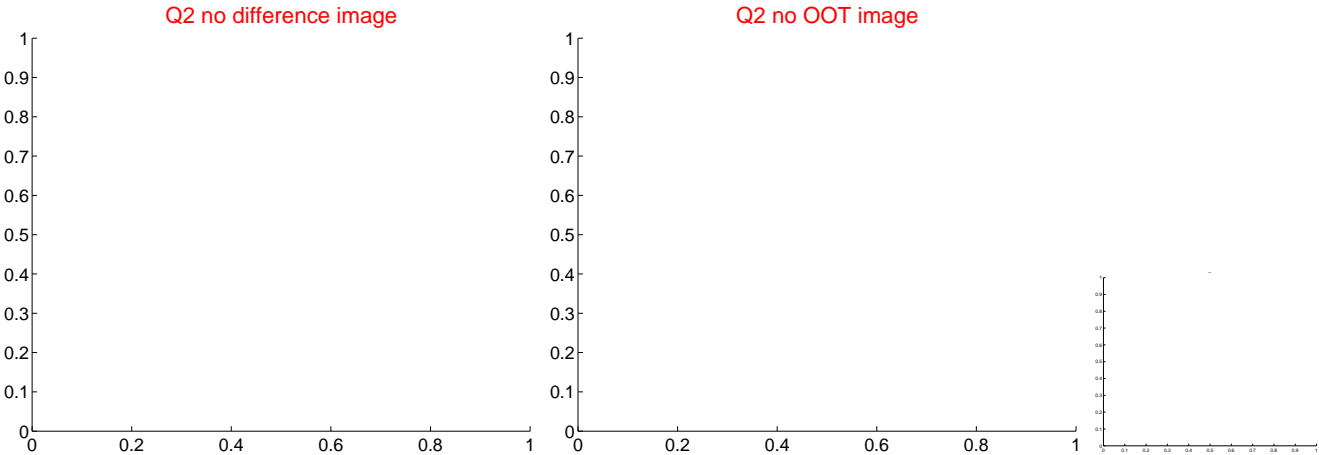
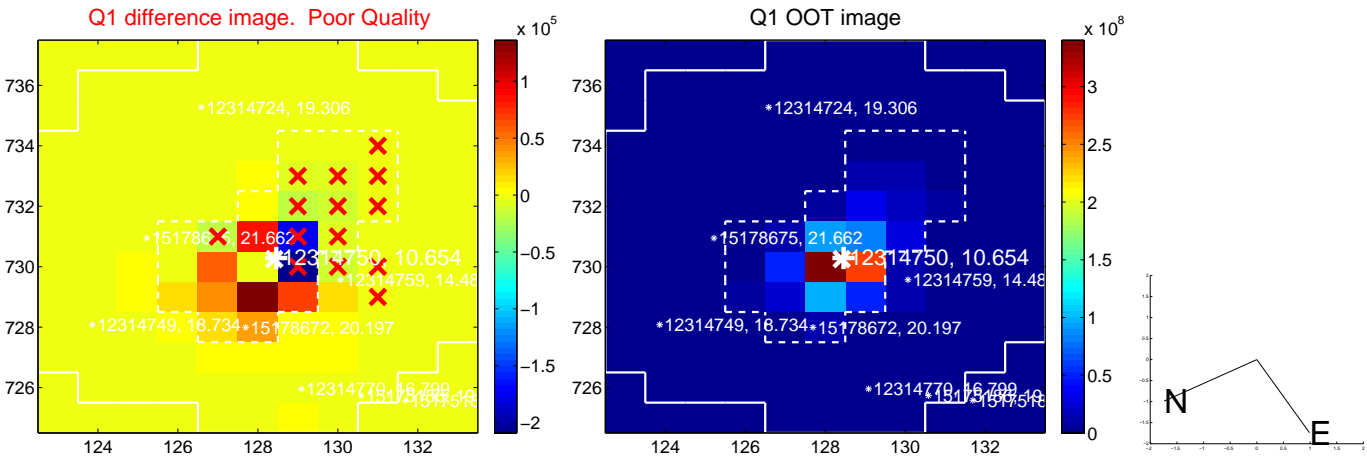
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>5.881 \pm 0.179</math></b>	<b>32.83</b>	$4.150 \pm 0.168$	$-4.166 \pm 0.190$
PRF-fit source offset from KIC position	<b><math>6.030 \pm 0.179</math></b>	<b>33.65</b>	$4.236 \pm 0.168$	$-4.292 \pm 0.190$
photometric centroid source offset	$2.79 \pm 2.03$	1.37	$1.56 \pm 1.77$	$-2.32 \pm 2.14$

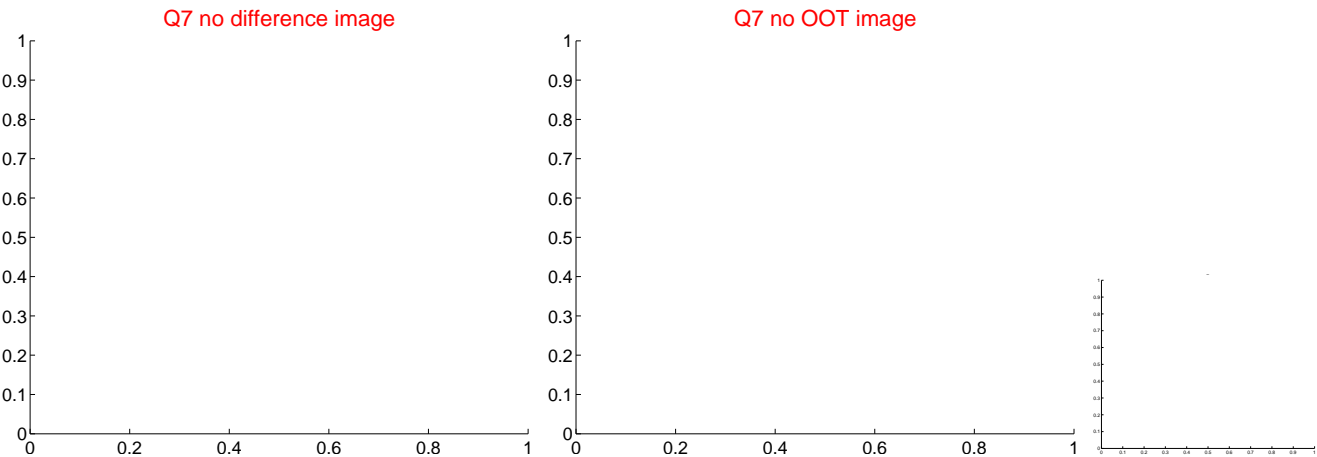
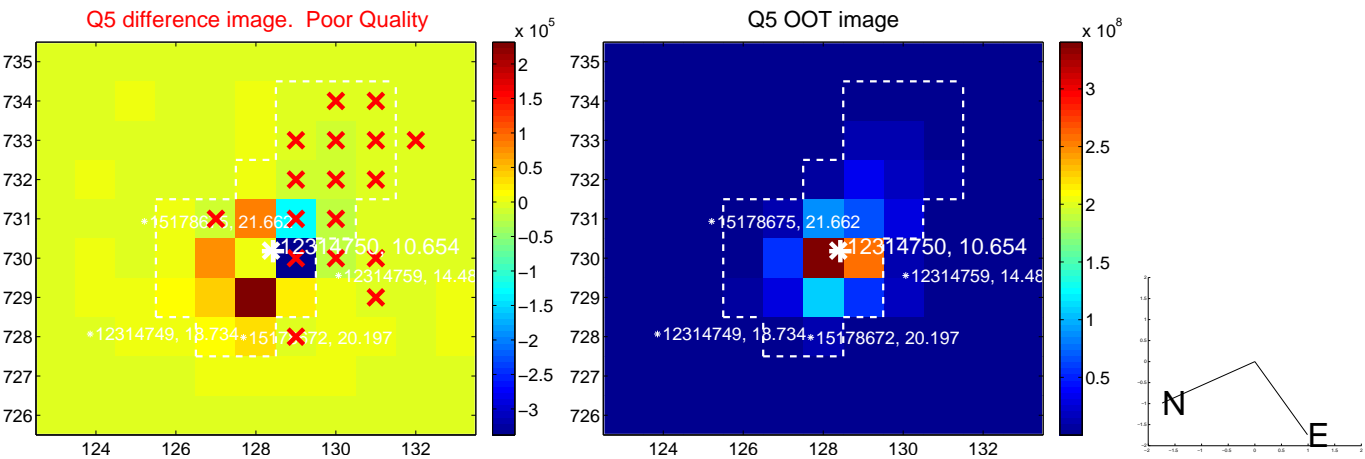


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

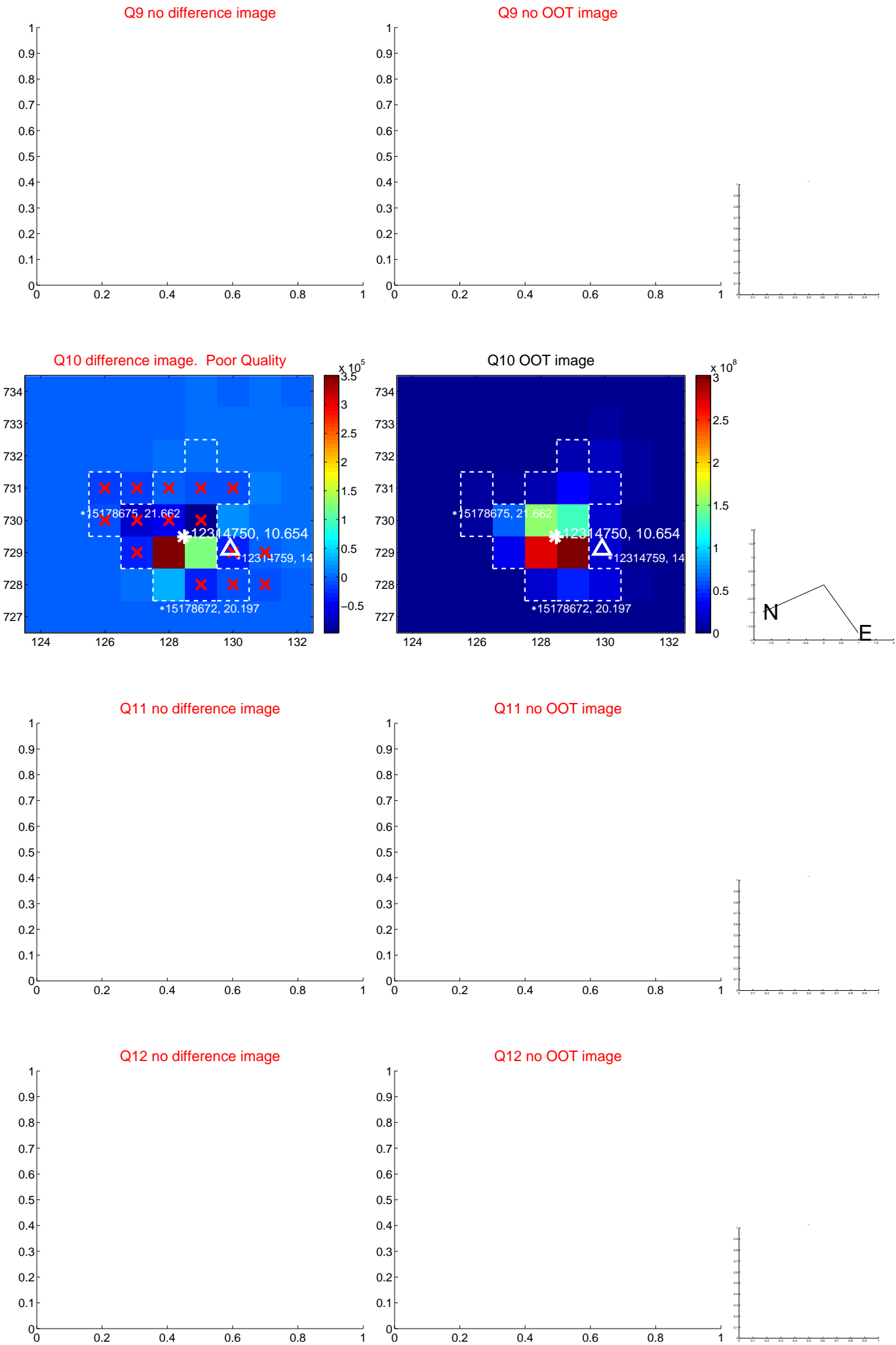
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



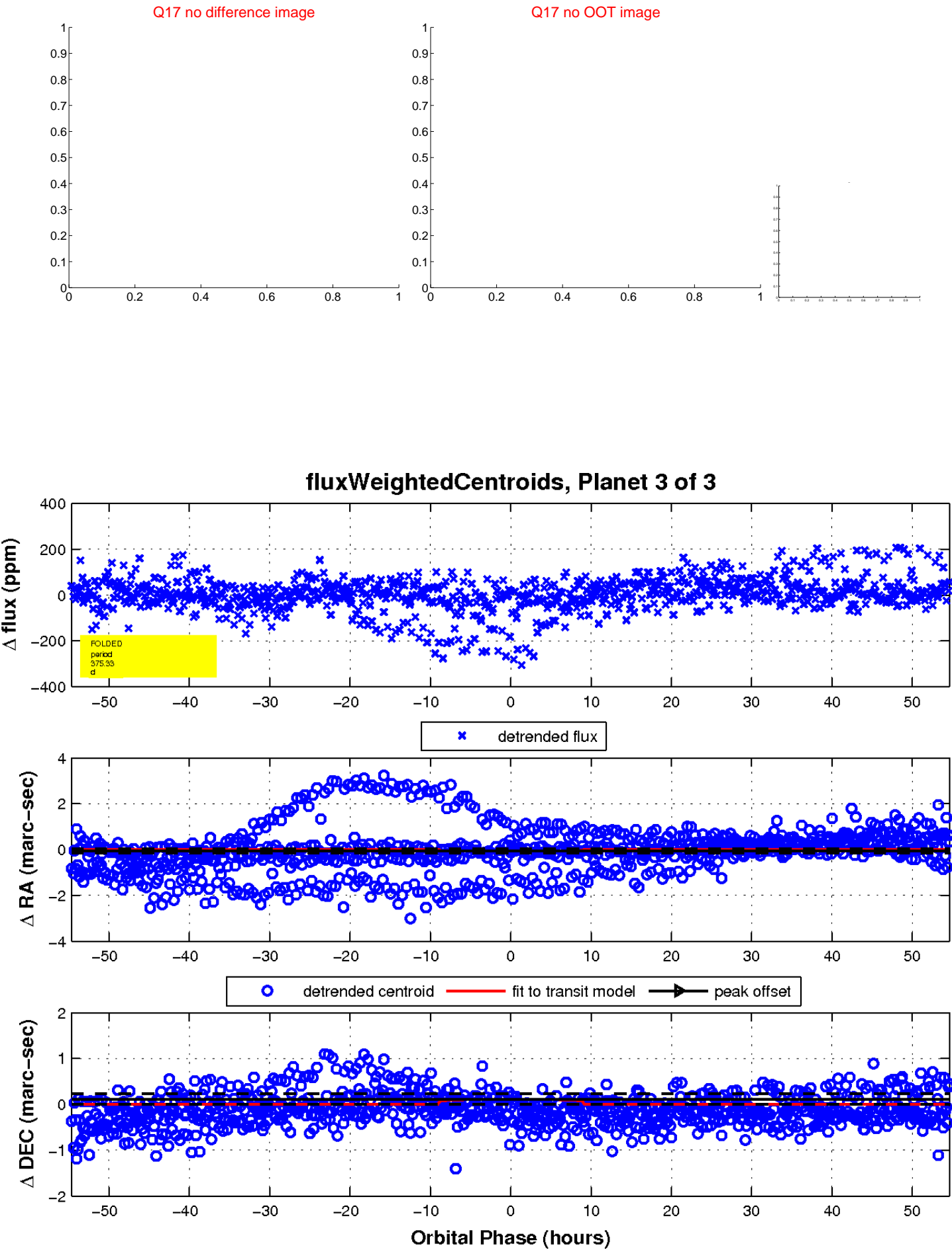
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

