

# KIC 006426507

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006426507-01	OBS	No	286.958131	295.586621	596.8	2.497	14.2	8.7	0.68	5415	1.75	0.65
006426507-02	OBS	No	362.583670	239.638802	616.2	4.514	14.2	7.1	0.68	5415	2.15	0.47
006426507-03	OBS	No	503.545141	417.500123	554.3	4.609	12.1	5.6	0.68	5415	1.68	0.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006426507-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
006426507-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006426507-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS

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

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

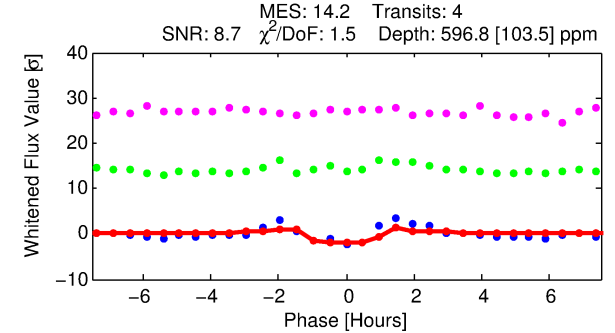
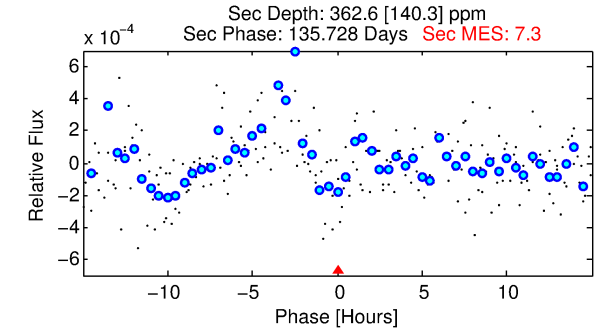
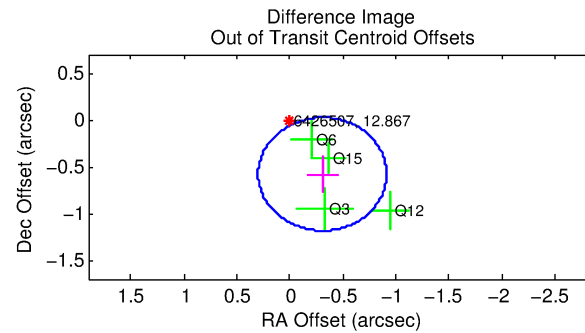
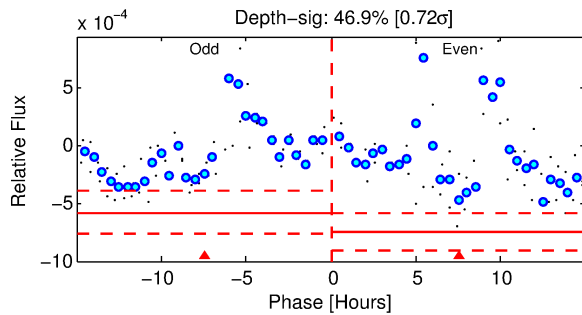
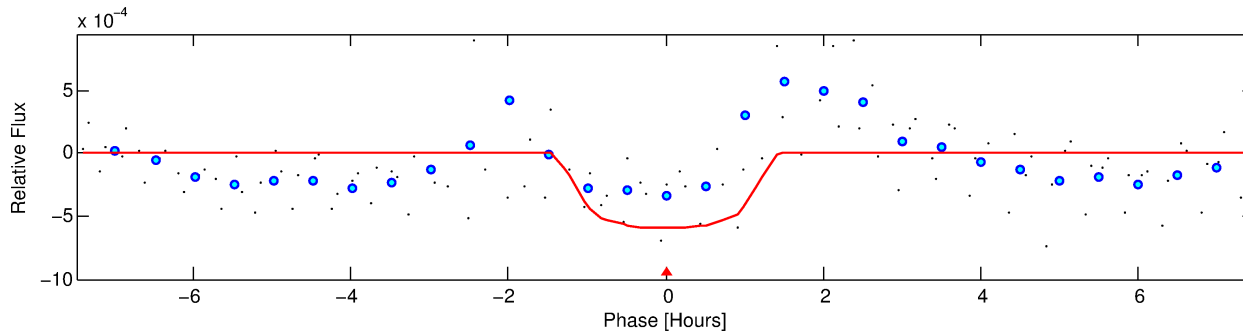
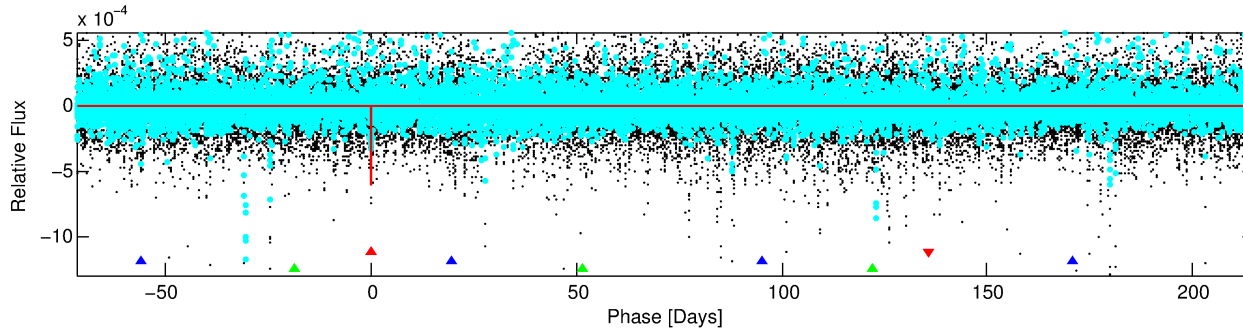
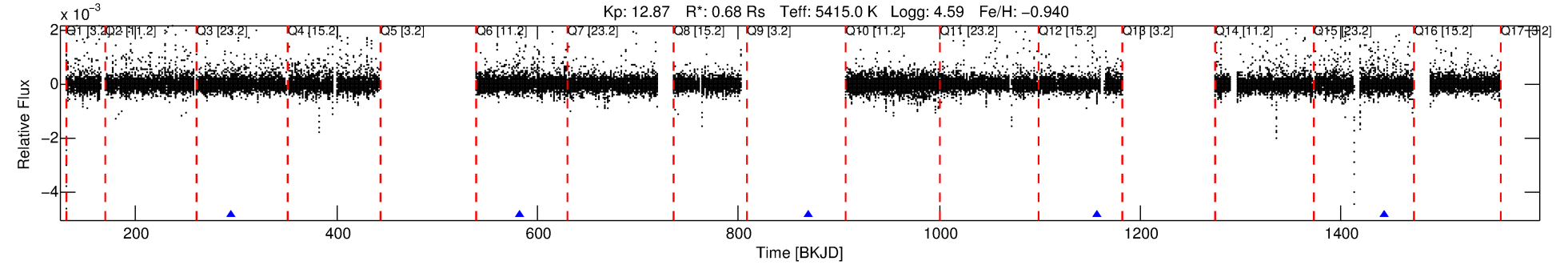
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006426507-01

No Significant Match Found

# DV One-Page Summary

KIC: 6426507 Candidate: 1 of 3 Period: 286.958 d



## DV Fit Results:

Period = 286.95813 [0.00205] d  
Epoch = 295.5866 [0.0059] BKJD  
Rp/R\* = 0.0237 [0.0286]  
a/R\* = 680.56 [3742.66]  
b = 0.67 [4.60]  
Seff = 0.65 [0.12]  
Teq = 229 [10] K  
Rp = 1.75 [2.11] Re  
a = 0.7383 [0.0638] AU  
Ag = 35487.07 [86663.07] [0.41 $\sigma$ ]  
Teffp = 4851 [2961] K [1.56 $\sigma$ ]

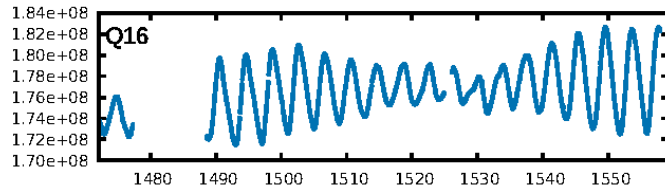
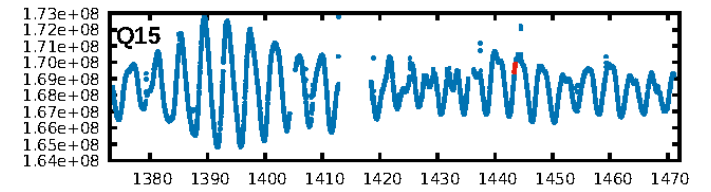
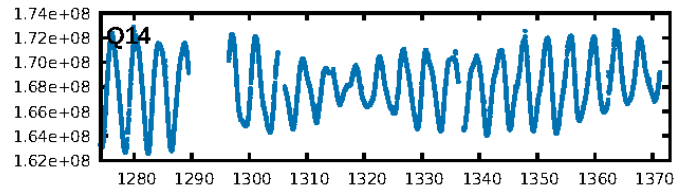
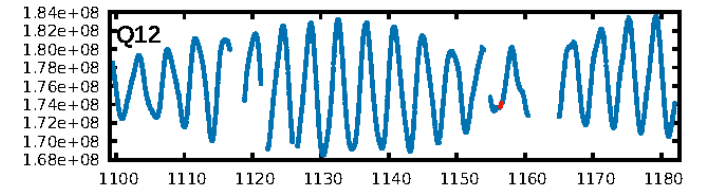
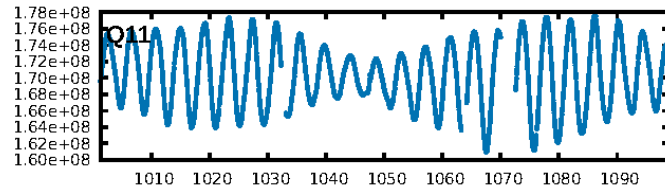
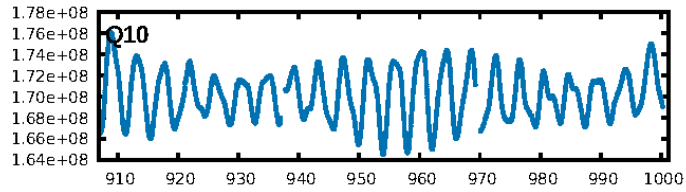
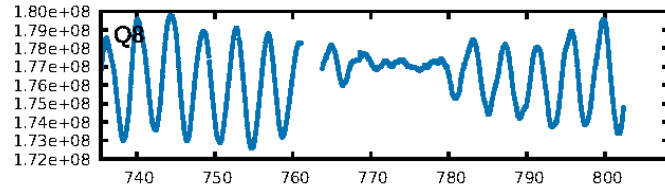
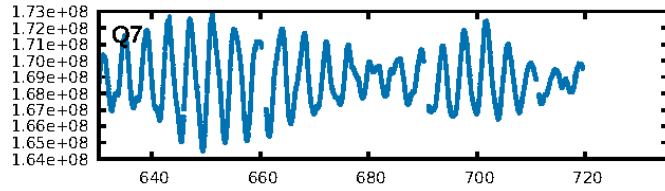
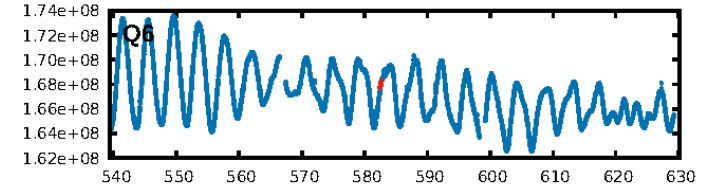
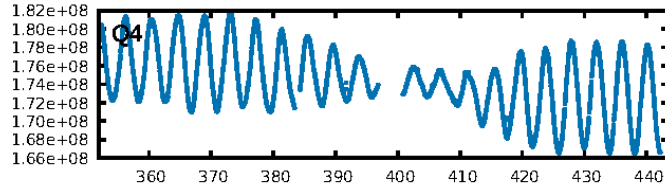
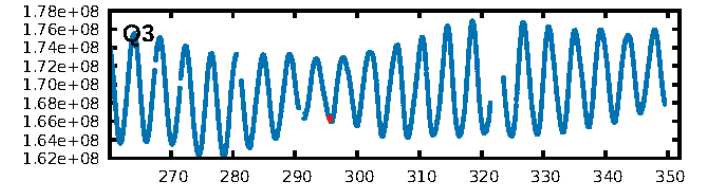
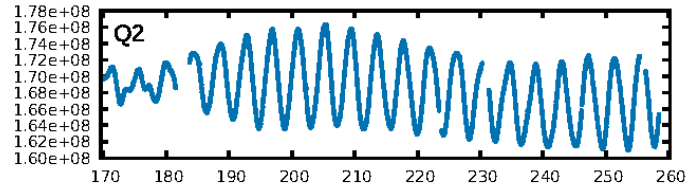
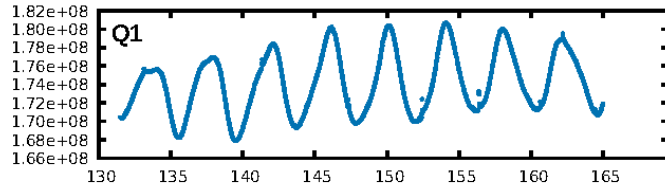
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [351.85 $\sigma$ ]  
ModelChiSquare2-sig: 3.3%  
ModelChiSquareGof-sig: 85.3%  
Bootstrap-pfa: 1.63e-11  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -2.571  
Centroid-sig: 0.5%  
Centroid-so: 1.188 arcsec [1.93 $\sigma$ ]  
OotOffset-rm: 0.657 arcsec [3.26 $\sigma$ ]  
KicOffset-rm: 0.768 arcsec [4.22 $\sigma$ ]  
OotOffset-st: 1/2/1/0 [4]  
KicOffset-st: 1/2/1/0 [4]  
DiffImageQuality-fgm: 0.50 [2/4]  
DiffImageOverlap-fno: 1.00 [4/4]

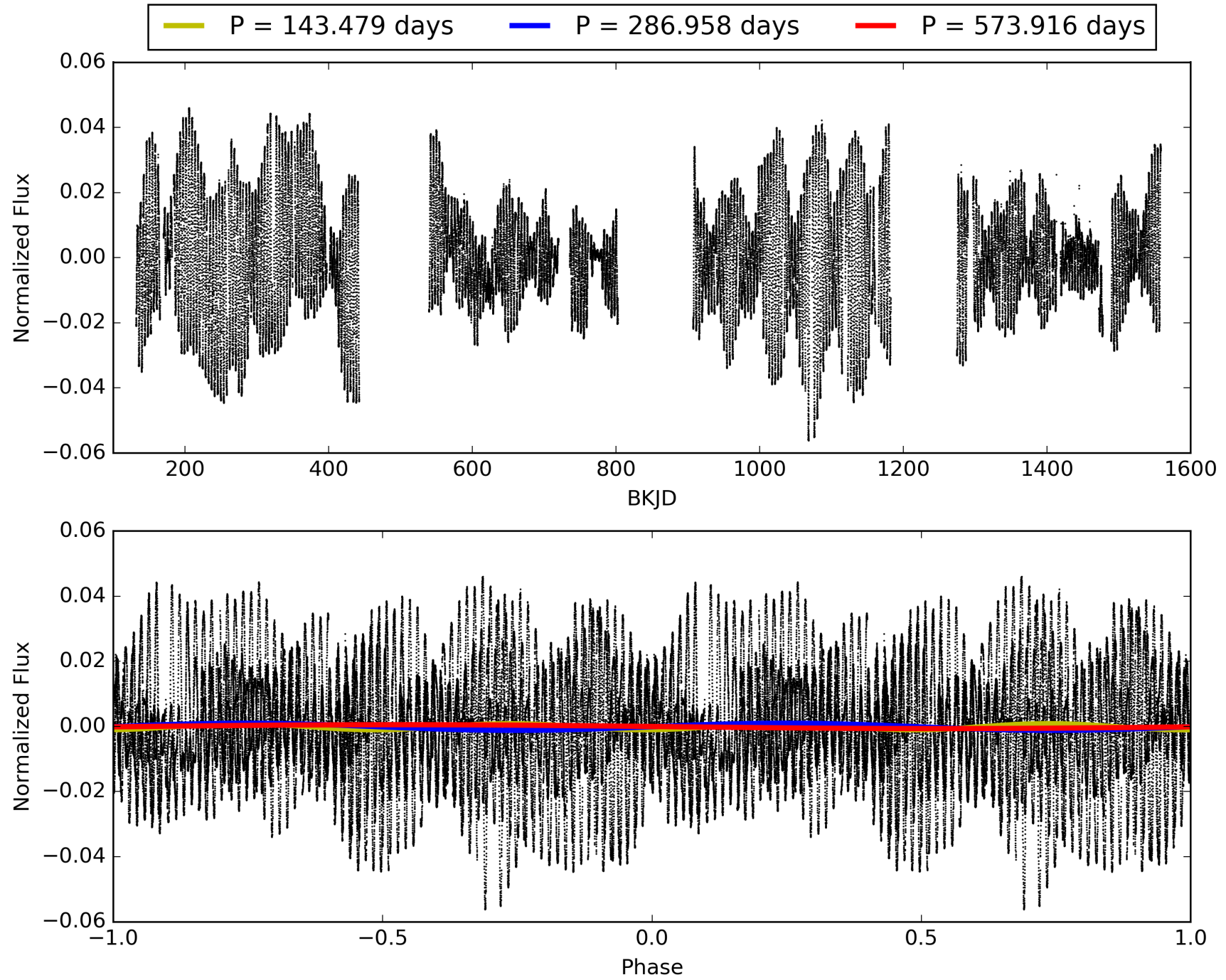
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:47:01 Z

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

# TCE 006426507-01, PDC Light Curves

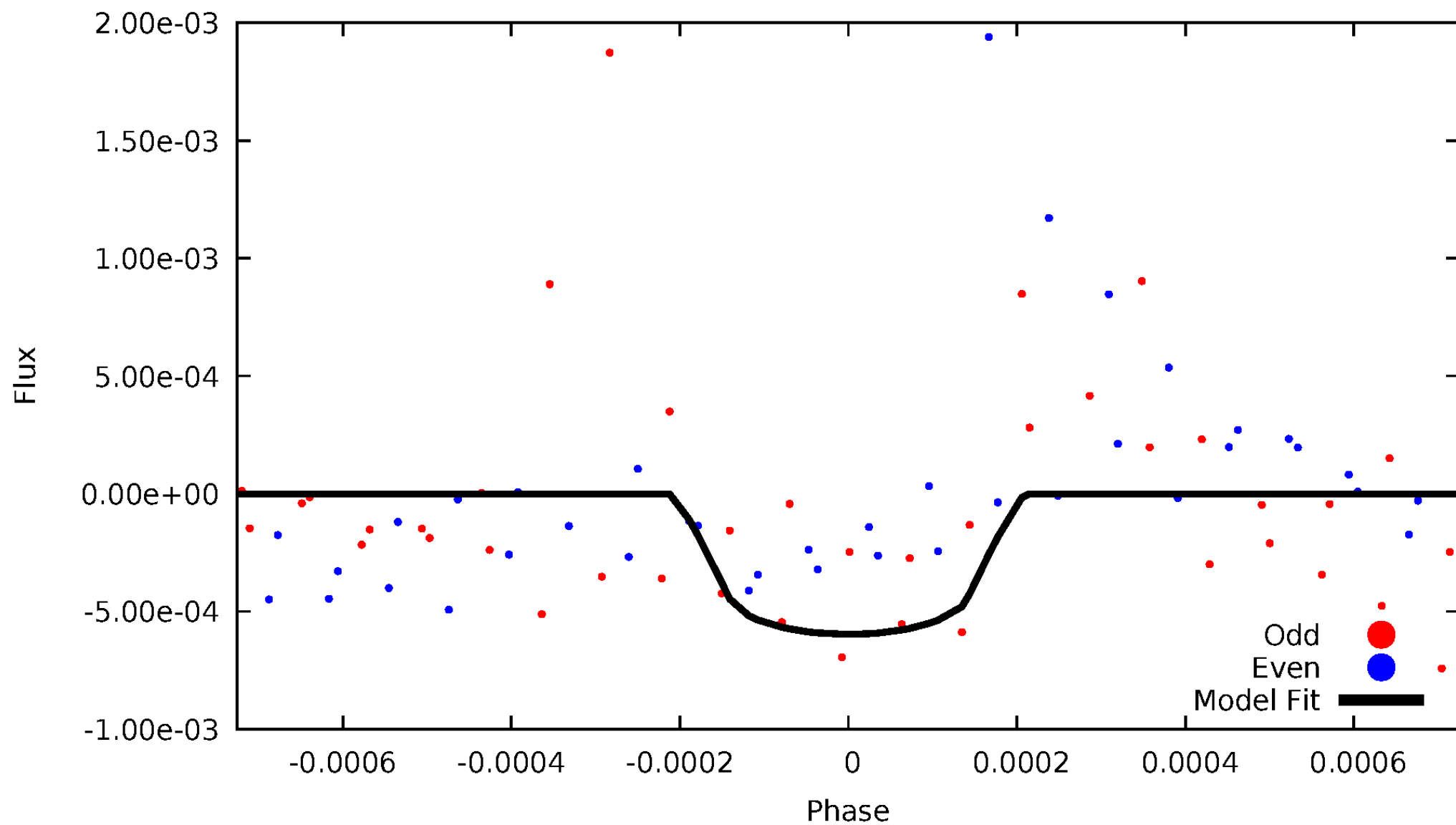


TCE 006426507-01



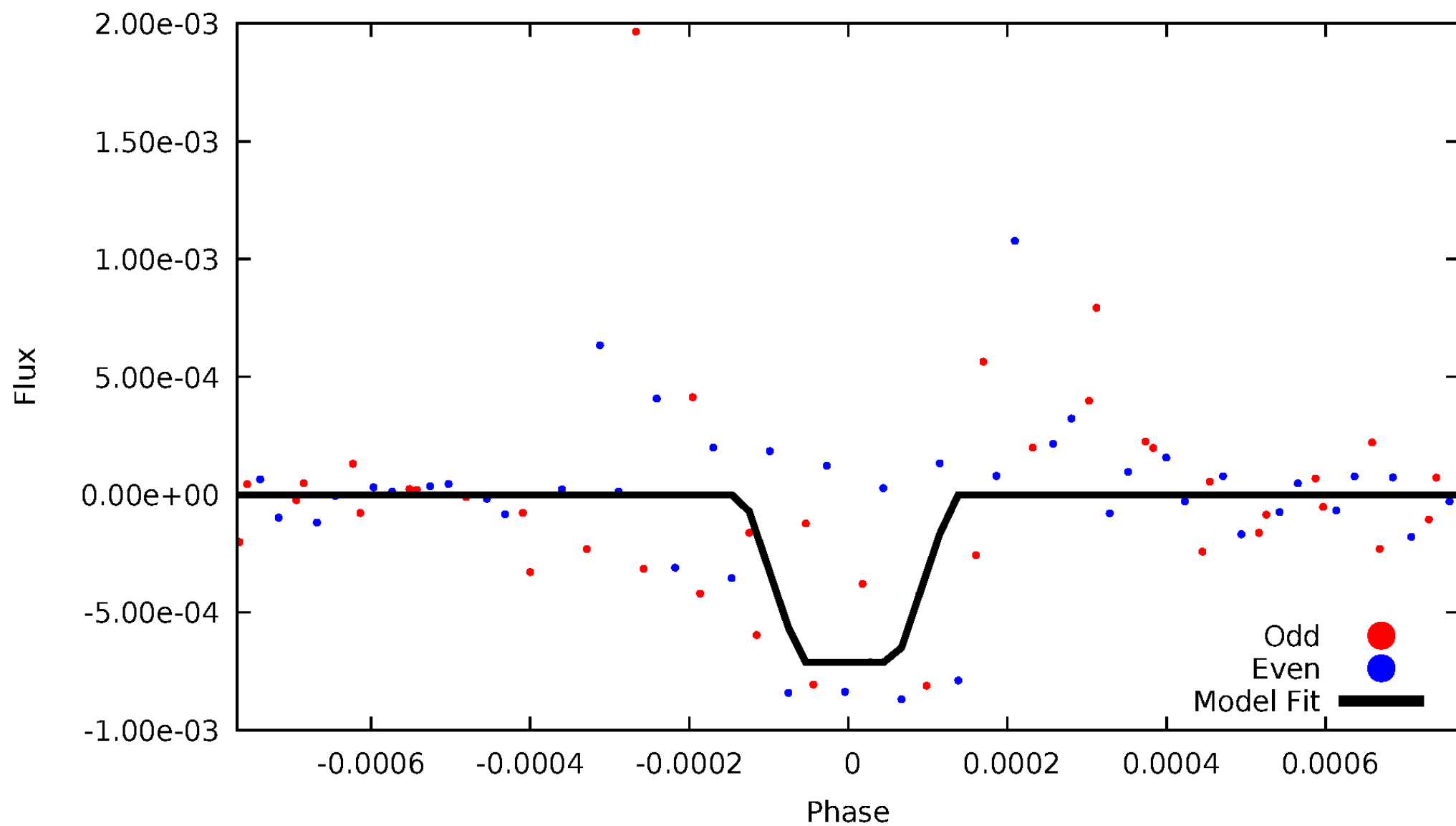
# DV Odd/Even

TCE 006426507-01



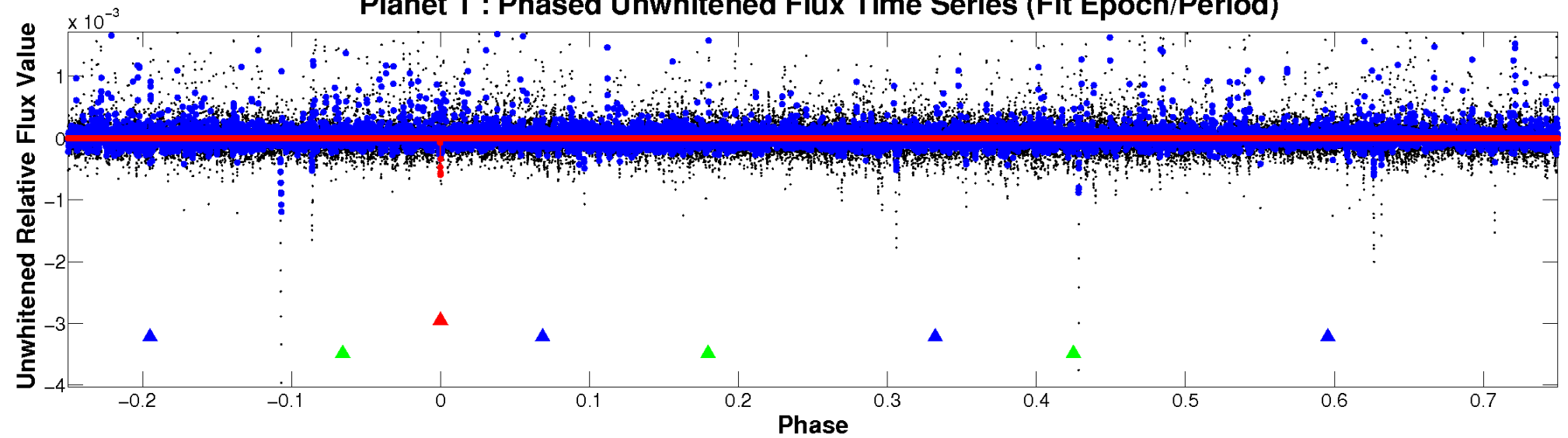
# ALT Odd/Even

TCE 006426507-01

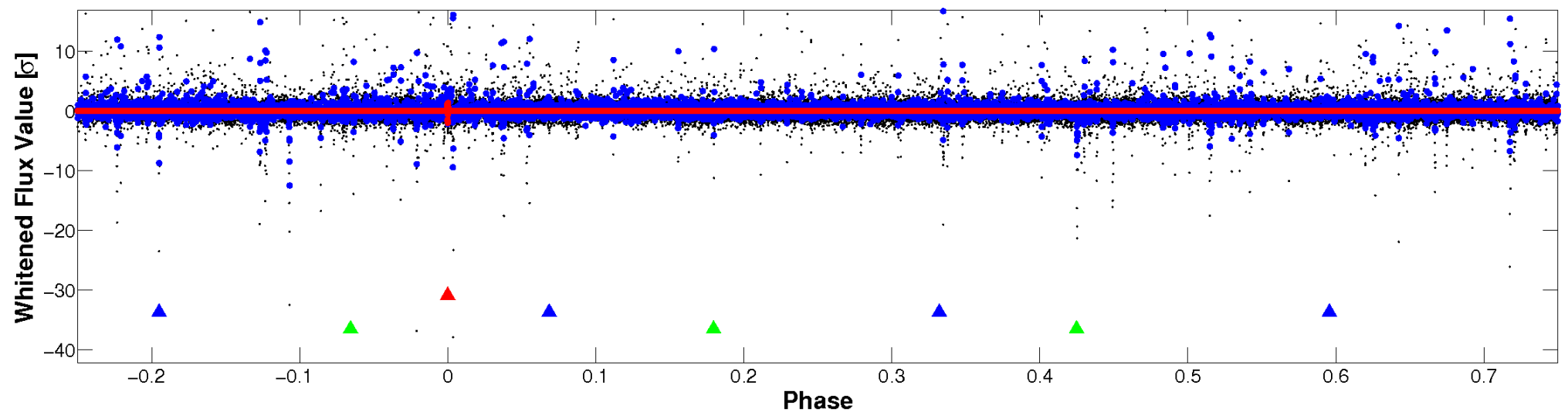


# Non-Whitened Vs. Whitened Light Curve

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

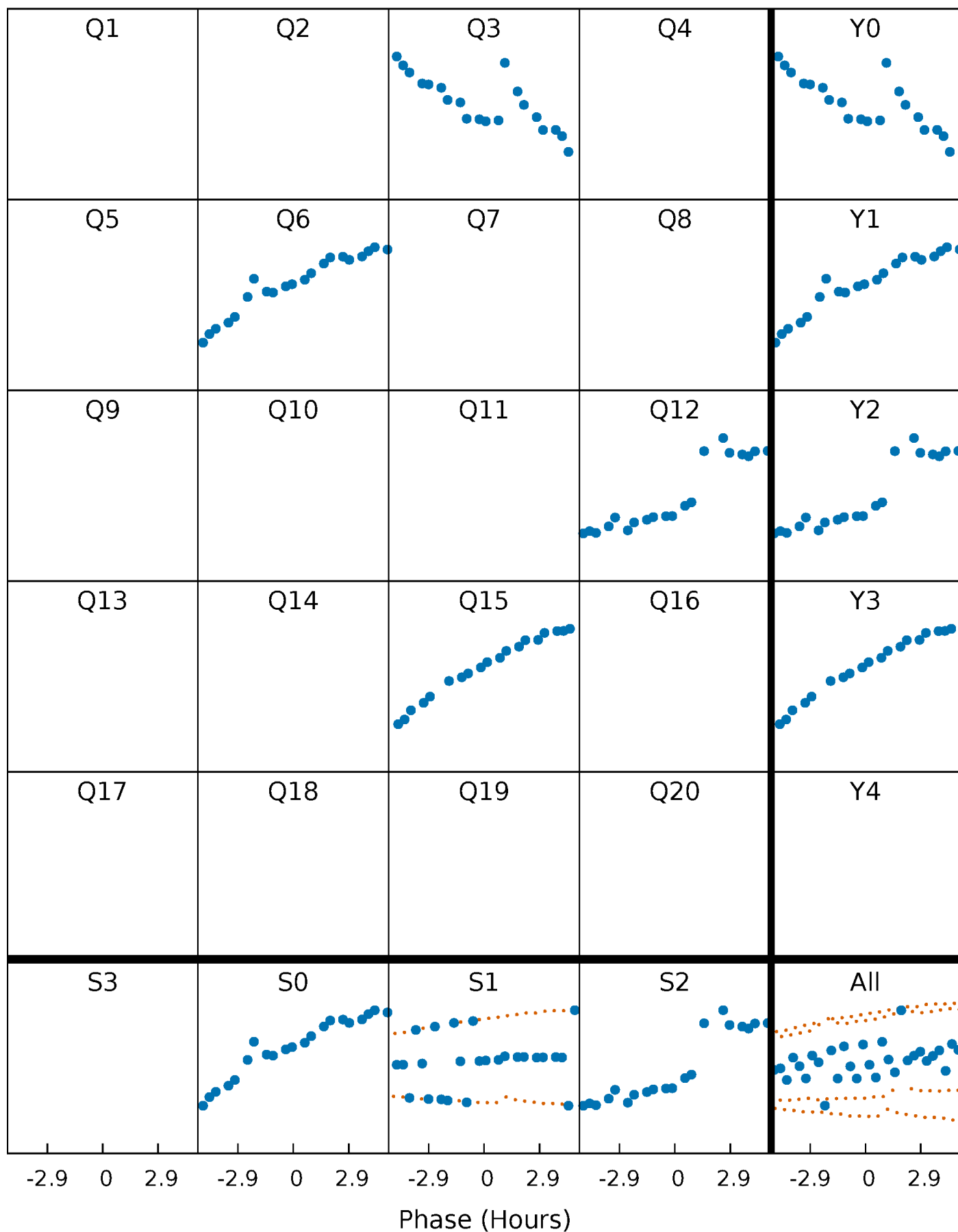


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

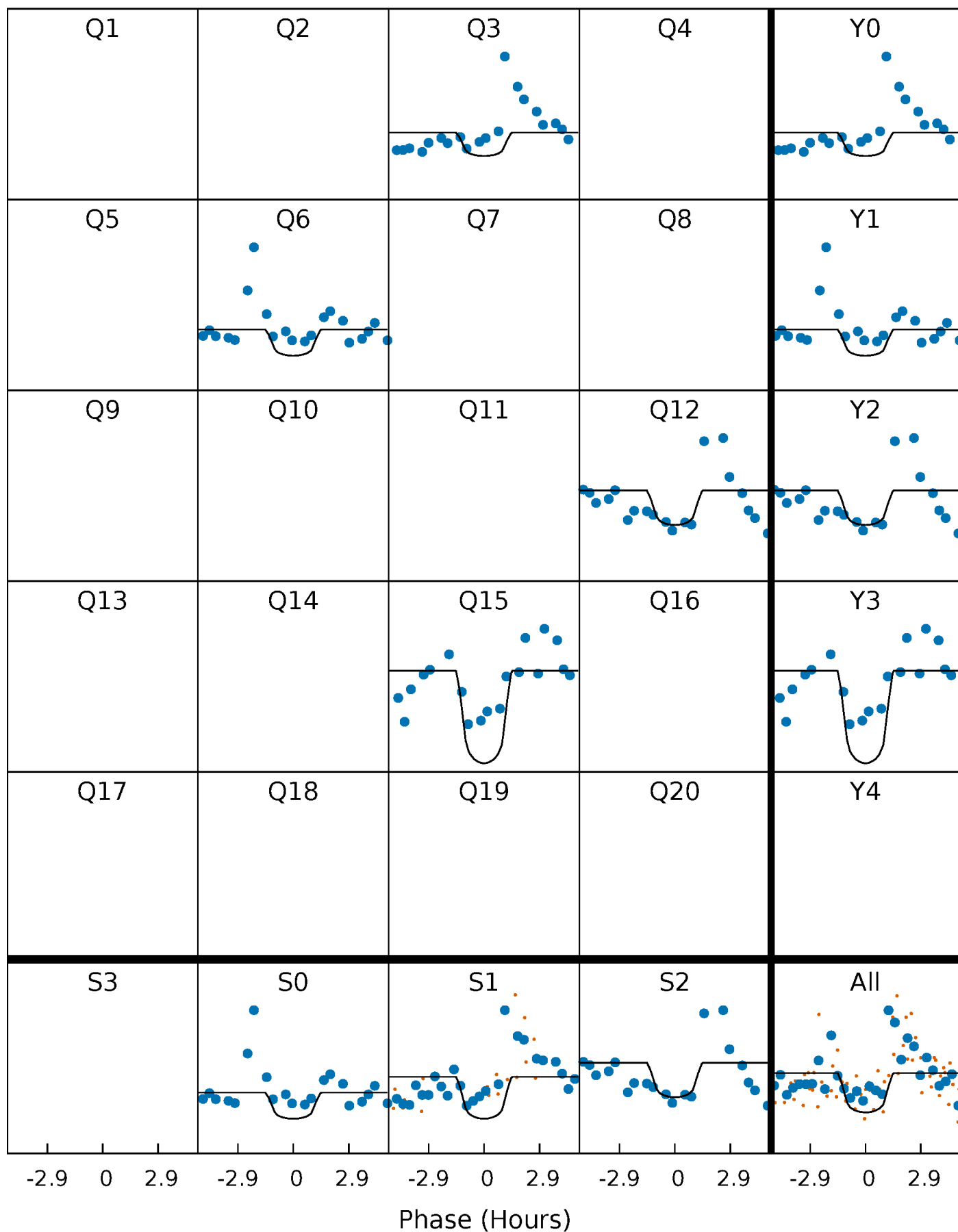
TCE 006426507-01 P=286.958131 Days  $T_0=295.586621$  (BKJD)





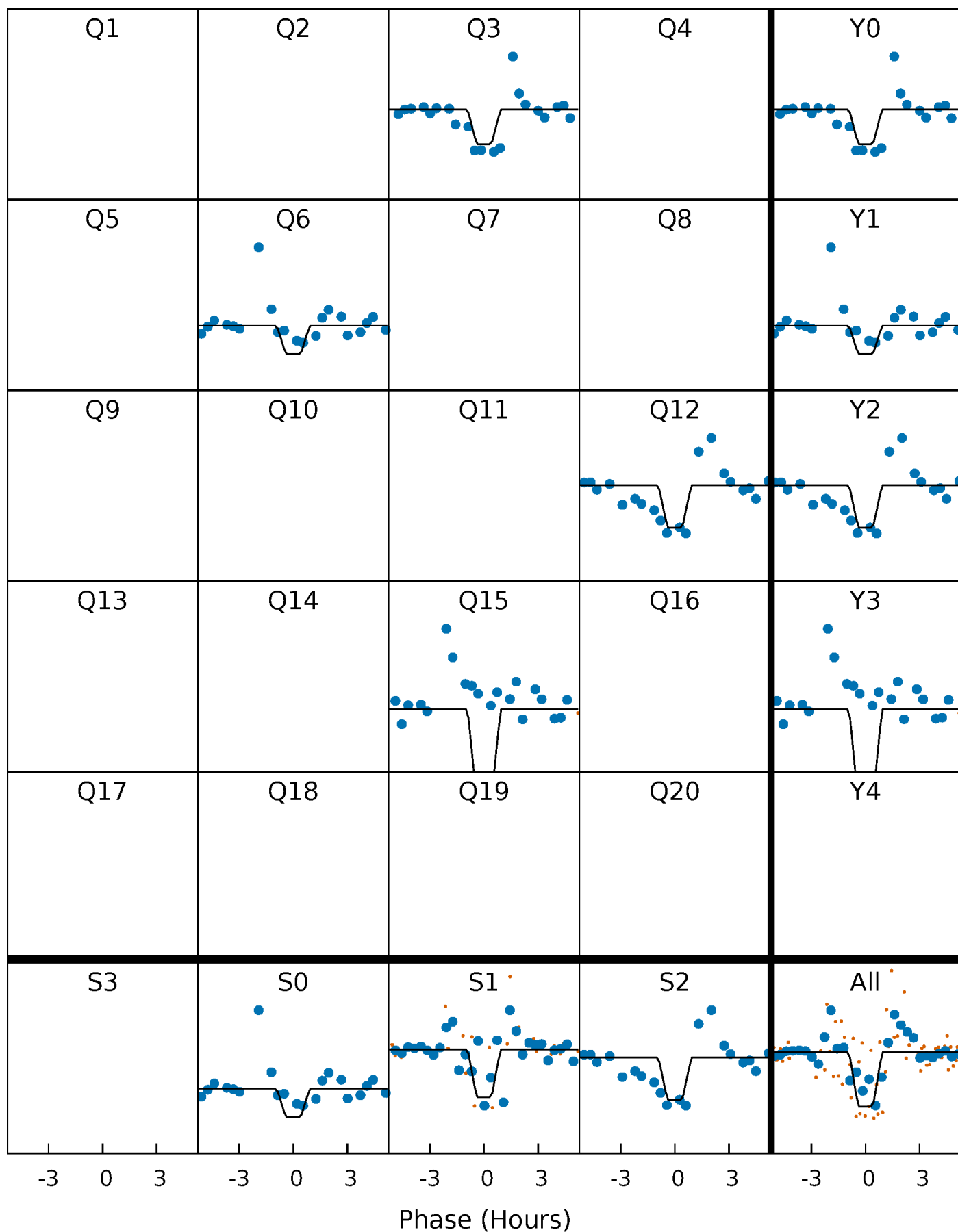
# DV Quarter-Phased Transit Curves

TCE 006426507-01 P=286.958131 Days  $T_0=295.586621$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

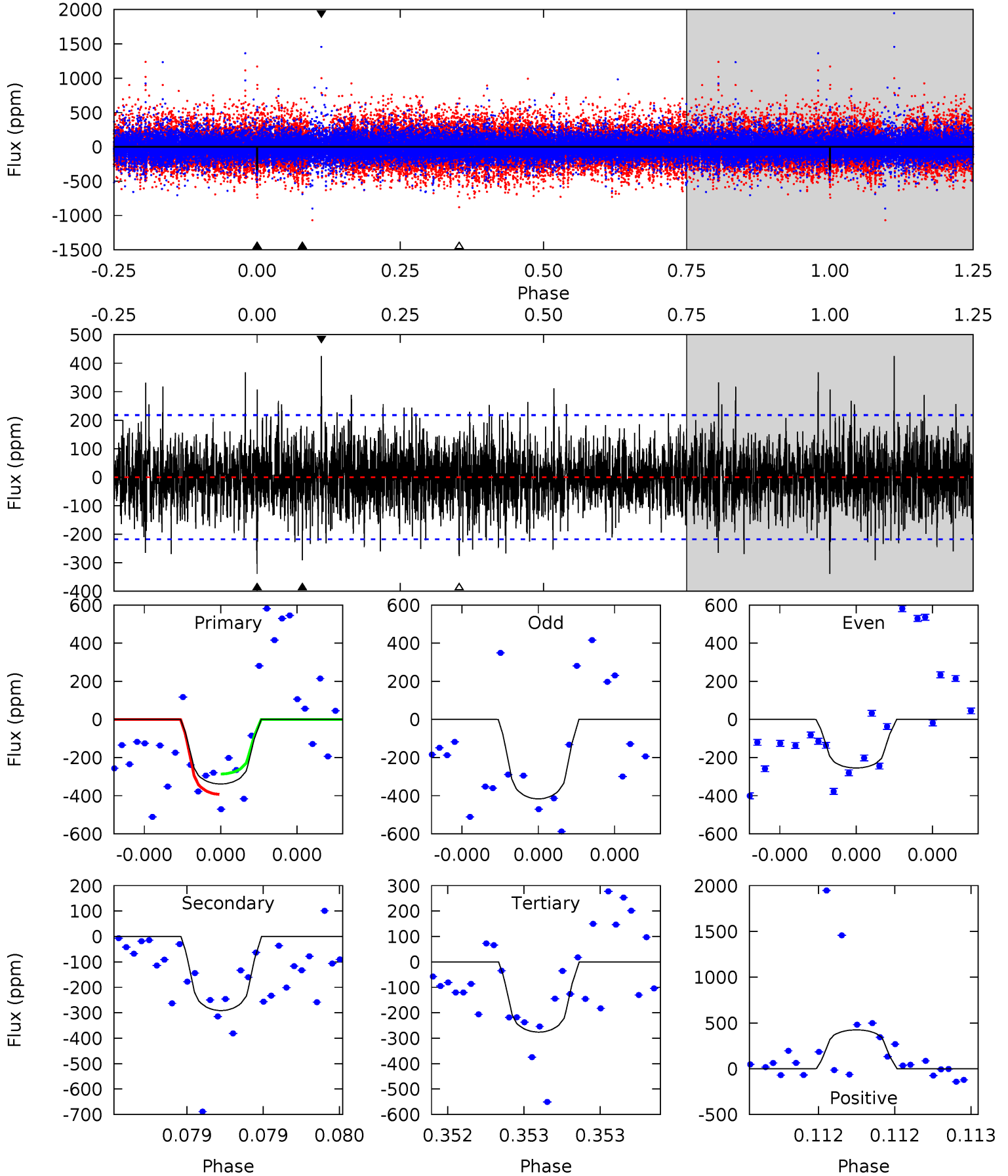
TCE 006426507-01 P=286.965668 Days  $T_0=295.574396$  (BKJD)



# DV Model-Shift Uniqueness Test

006426507-01, P = 286.958131 Days, E = 8.628490 Days

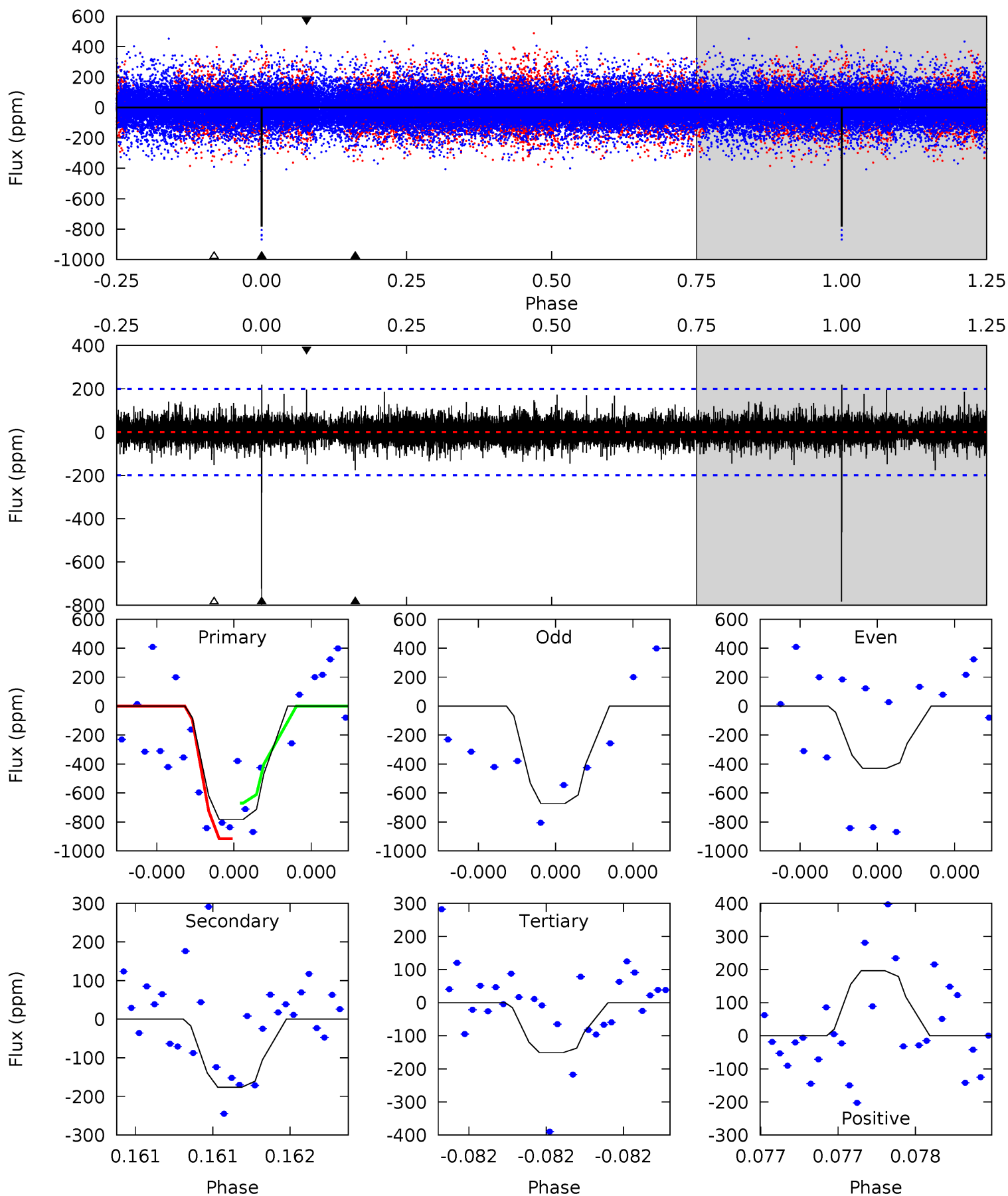
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.73	7.51	7.12	10.9	5.61	3.54	1.90	1.61	-2.21	0.39	-3.43	1.88	1.10	0.56	1.39



# Alt Model-Shift Uniqueness Test

006426507-01, P = 286.965668 Days, E = 8.608728 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
22.4	5.04	4.31	5.61	5.71	3.68	1.00	18.1	16.8	0.73	-0.57	4.05	0.83	0.22	3.53



### Stellar Parameters For KIC 006426507

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5415^{+163}_{-146}$	$4.592^{+0.077}_{-0.056}$	$-0.940^{+0.300}_{-0.300}$	$0.676^{+0.064}_{-0.057}$	$0.652^{+0.071}_{-0.024}$	$2.968^{+0.906}_{-0.581}$
	+3%/-3%	+2%/-1%	+32%/-32%	+9%/-8%	+11%/-4%	+31%/-20%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 006426507-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-291 \pm 39$	$2.23^{+1.76}_{-1.49}$	$318^{+12}_{-12}$	$4293^{+2777}_{-805}$	$17569^{+138825}_{-12146}$
Alt.	$-176 \pm 35$	$2.45^{+2.07}_{-1.50}$	$318^{+12}_{-12}$	$3732^{+1740}_{-610}$	$8369^{+54601}_{-5786}$

$T_{\text{max}}$  = 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

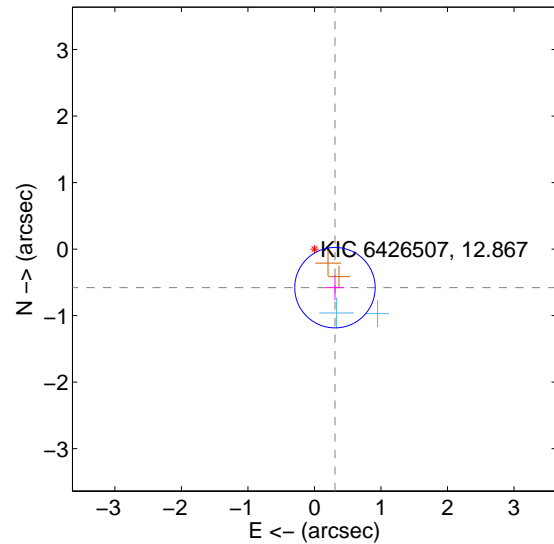
Supplemental centroid analysis for 006426507-01. Kepler magnitude: 12.87. Transit SNR 8.74

There are 2 quarters with good PRF difference image offsets

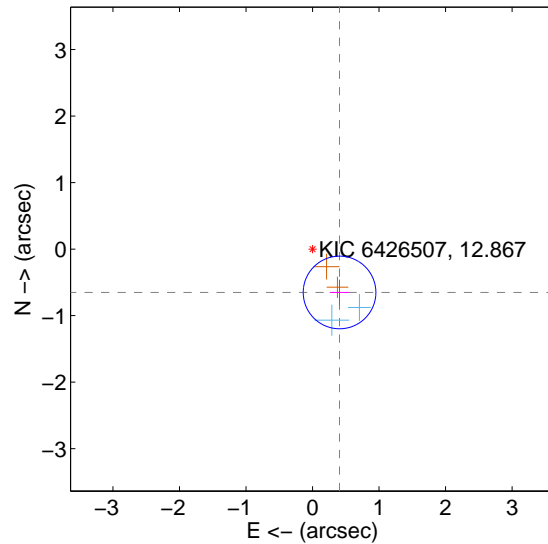
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.657 \pm 0.202$	3.26	$-0.308 \pm 0.140$	$-0.580 \pm 0.183$
PRF-fit source offset from KIC position	$0.768 \pm 0.182$	4.22	$-0.406 \pm 0.148$	$-0.652 \pm 0.194$
photometric centroid source offset	$1.19 \pm 0.61$	1.93	$0.89 \pm 0.58$	$-0.79 \pm 0.65$

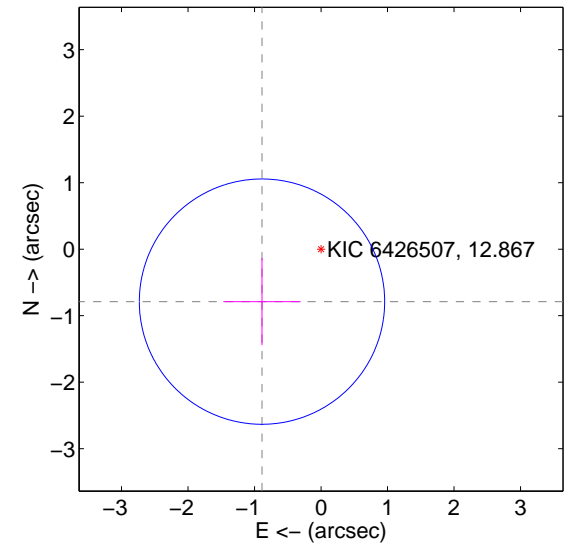
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

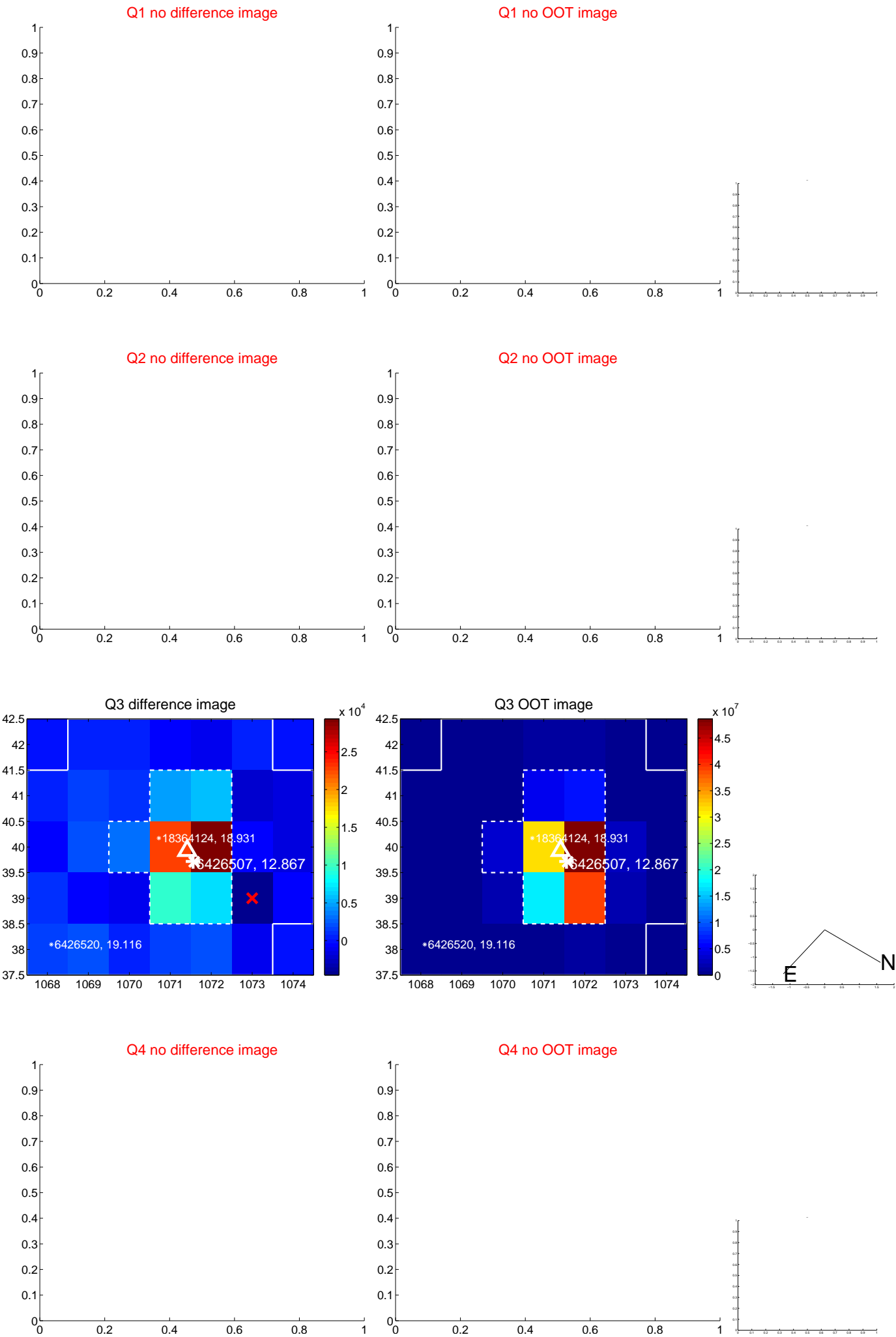


offset from photometric centroids

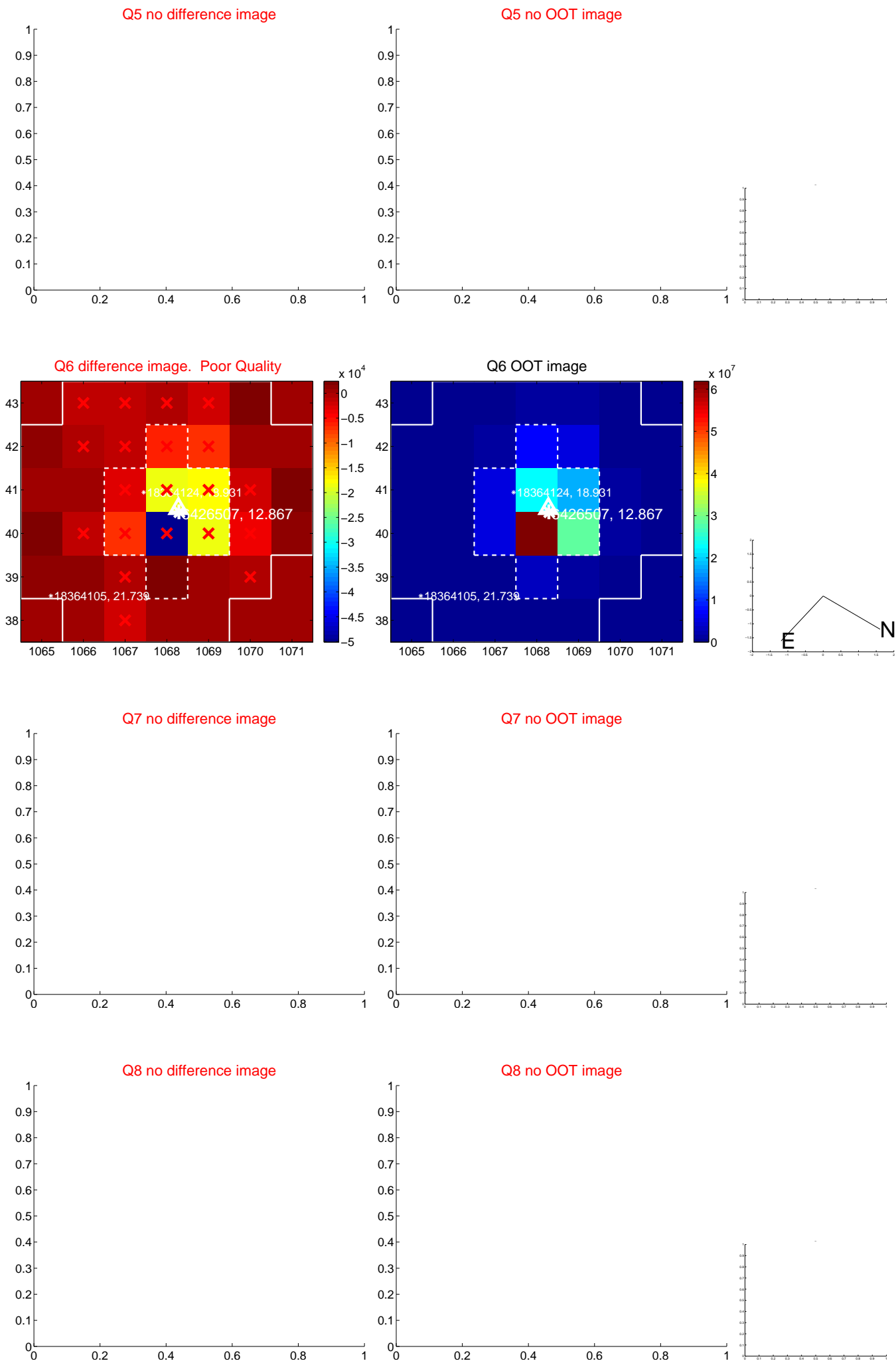


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

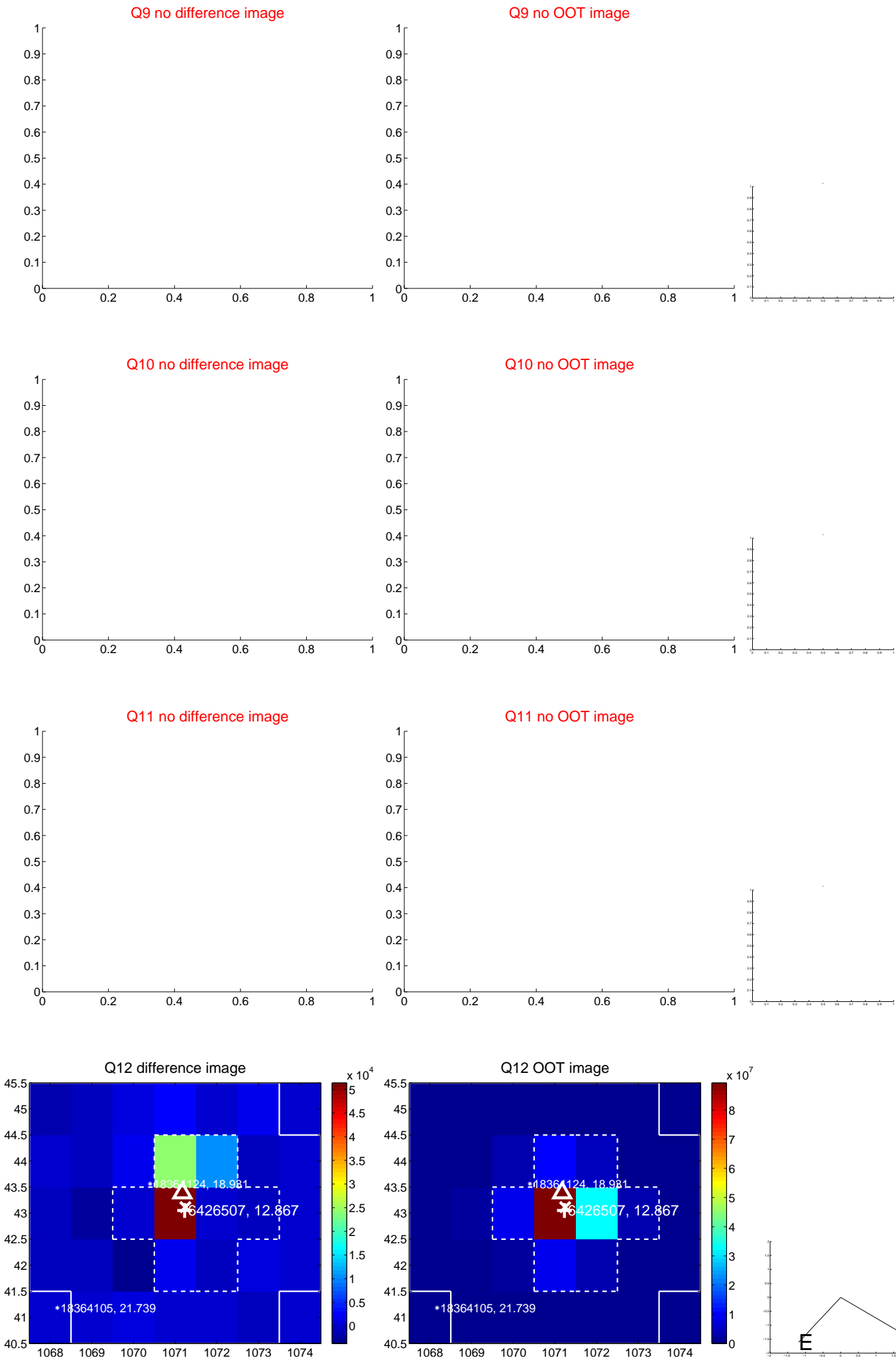


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

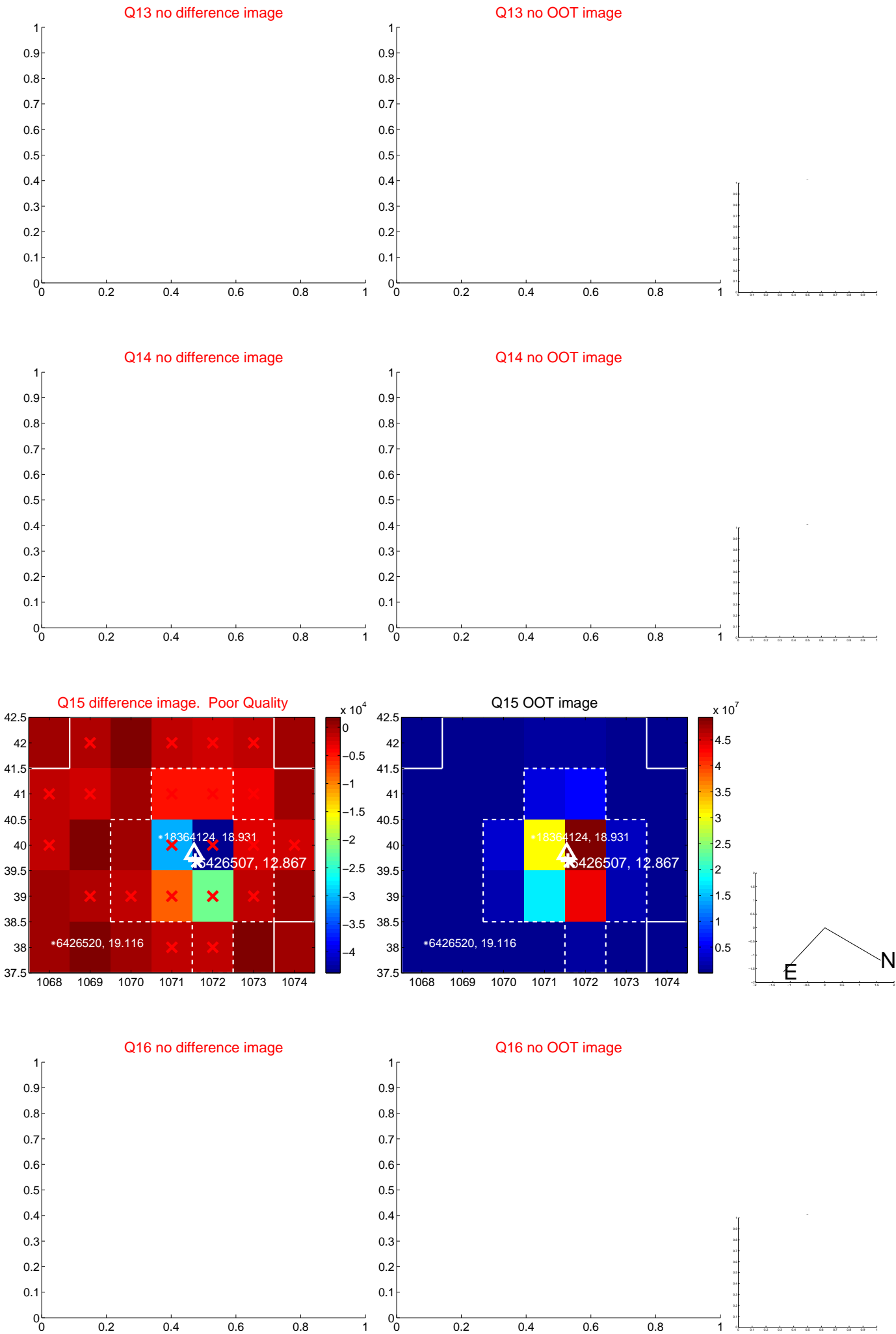




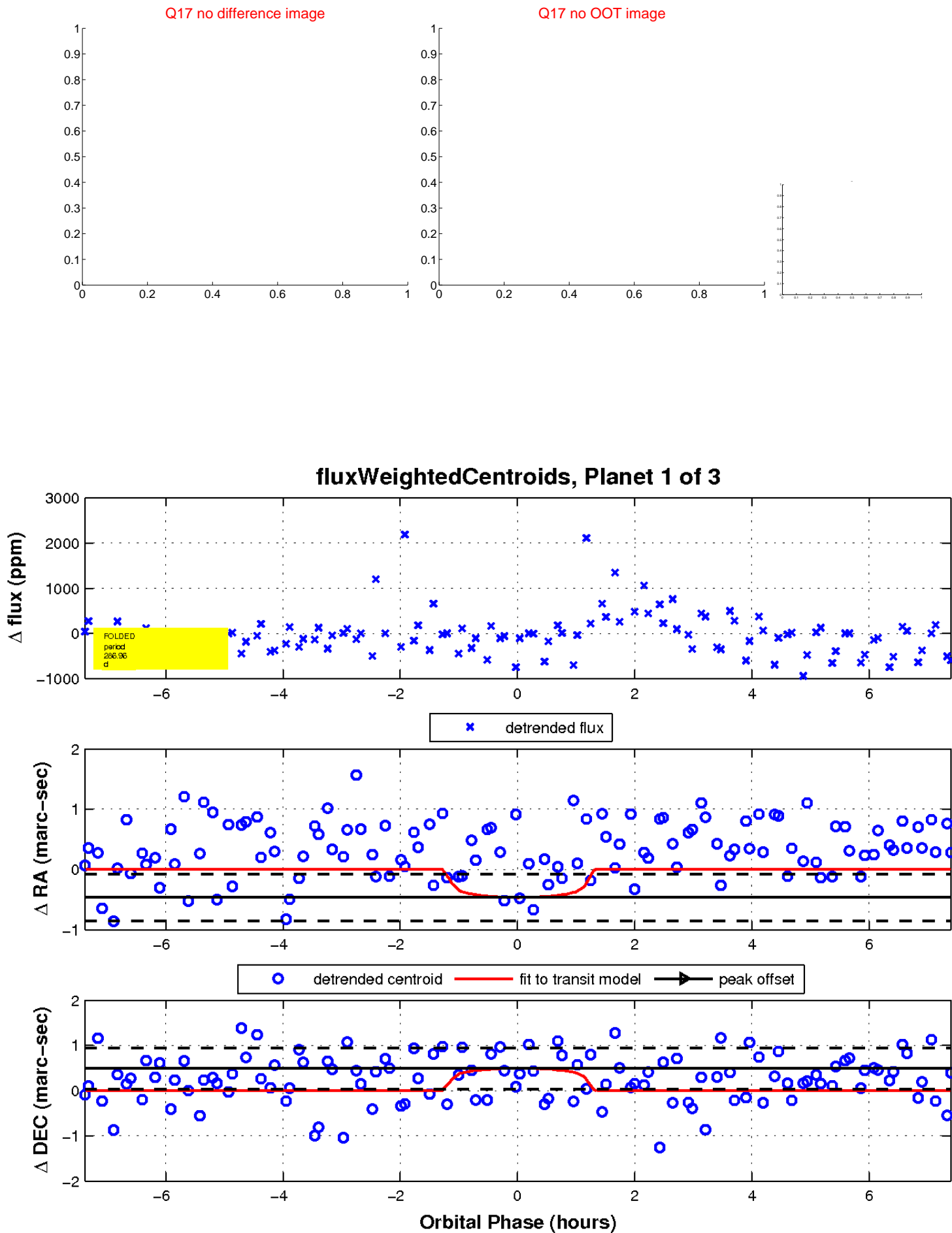
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

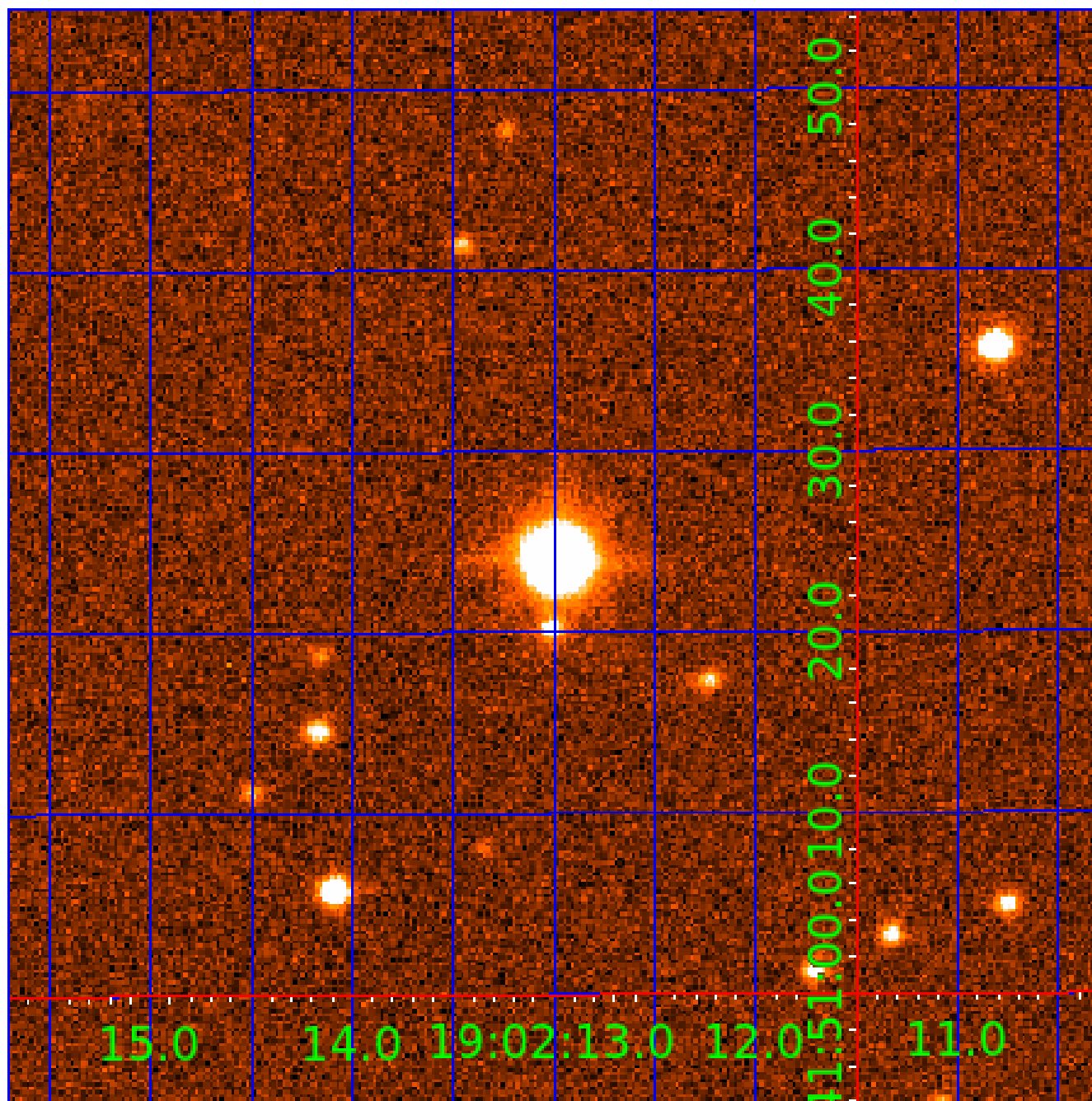


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 006426507

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006426507-01	OBS	No	286.958131	295.586621	596.8	2.497	14.2	8.7	0.68	5415	1.75	0.65
006426507-02	OBS	No	362.583670	239.638802	616.2	4.514	14.2	7.1	0.68	5415	2.15	0.47
006426507-03	OBS	No	503.545141	417.500123	554.3	4.609	12.1	5.6	0.68	5415	1.68	0.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006426507-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
006426507-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006426507-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS

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

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

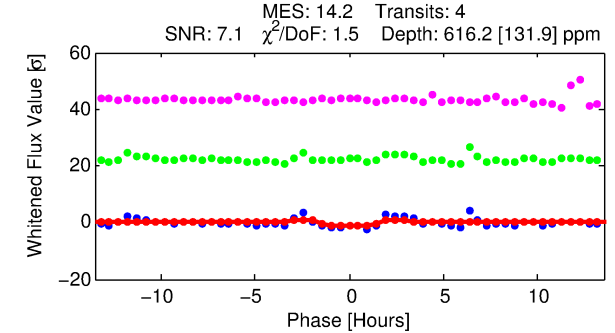
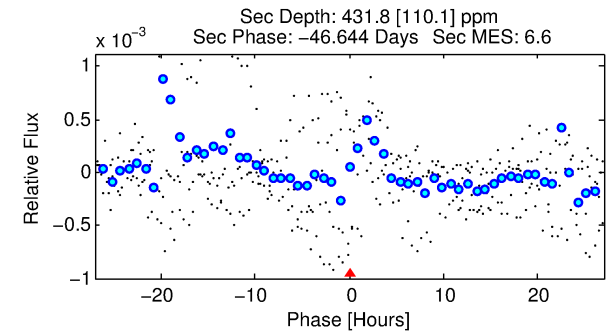
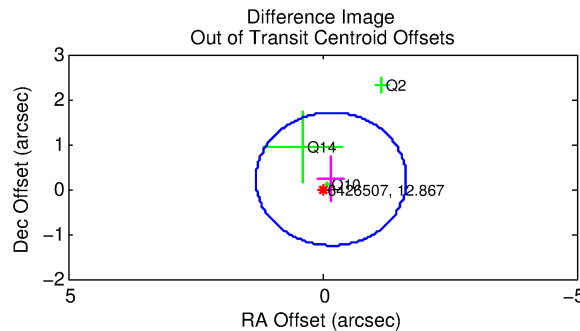
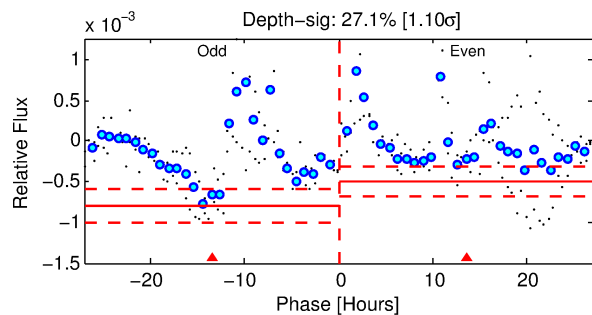
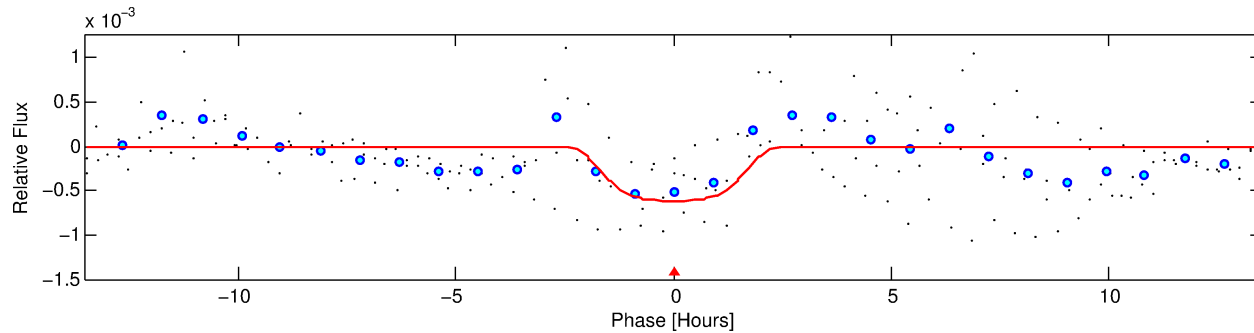
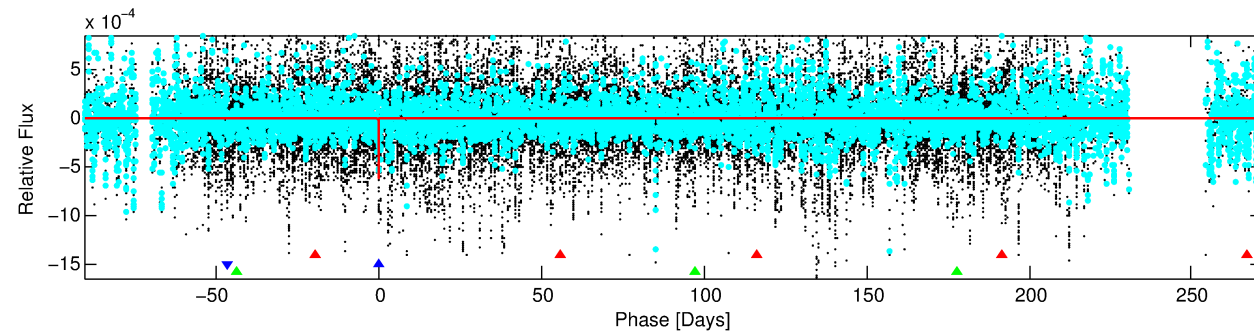
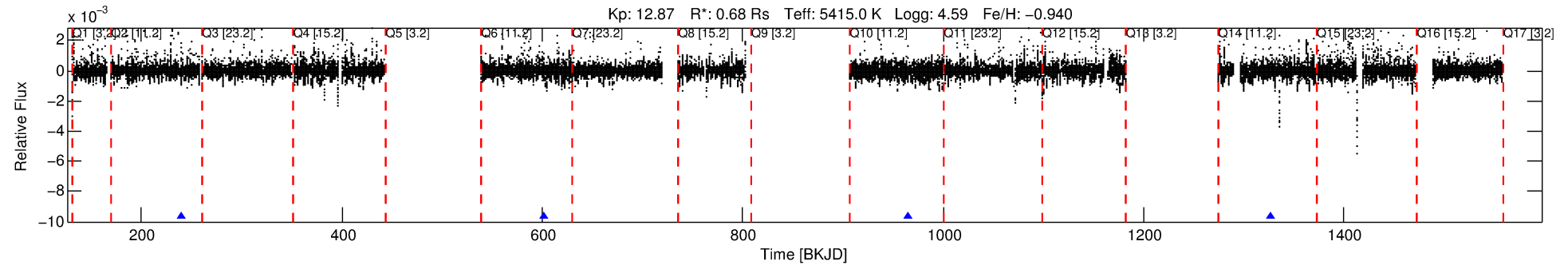
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006426507-02

No Significant Match Found

# DV One-Page Summary

KIC: 6426507 Candidate: 2 of 3 Period: 362.584 d



## DV Fit Results:

Period = 362.58367 [0.00523] d  
Epoch = 239.6388 [0.0094] BKJD  
Rp/R\* = 0.0292 [0.0036]  
a/R\* = 233.28 [45.43]  
b = 0.96 [0.02]  
Seff = 0.47 [0.09]  
Teq = 211 [10] K  
Rp = 2.15 [0.33] Re  
a = 0.8628 [0.0746] AU  
Ag = 38240.18 [14496.62] [2.64 $\sigma$ ]  
Teffp = 4572 [428] K [10.18 $\sigma$ ]

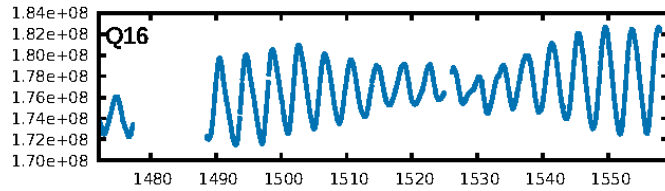
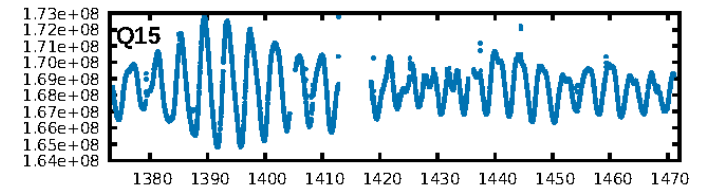
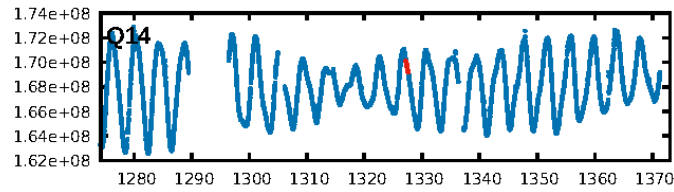
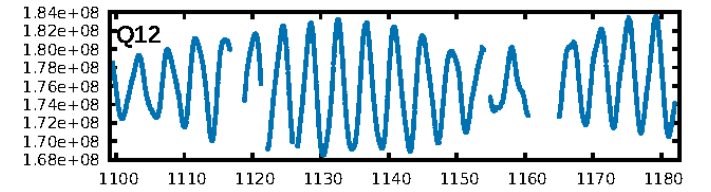
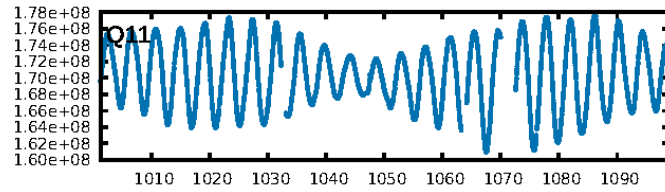
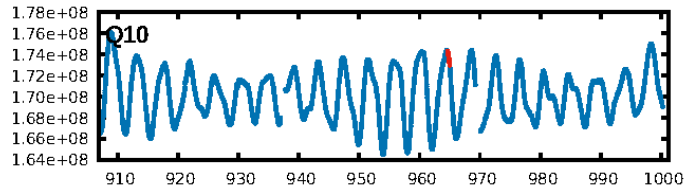
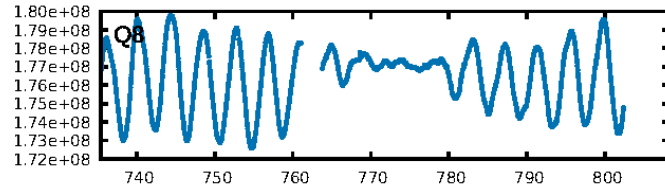
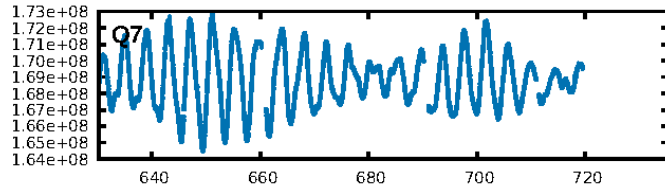
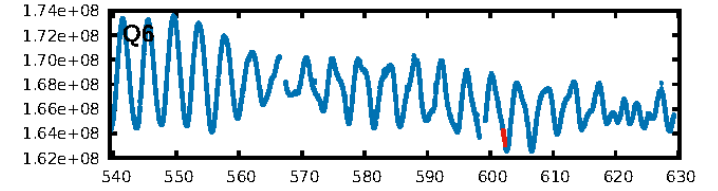
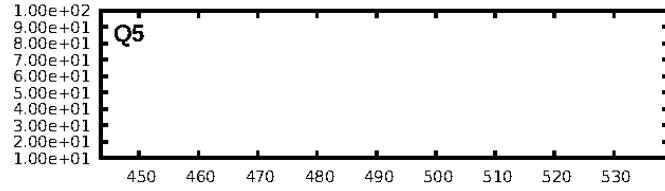
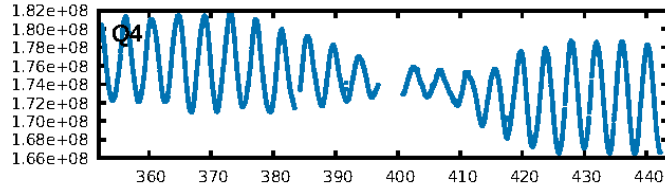
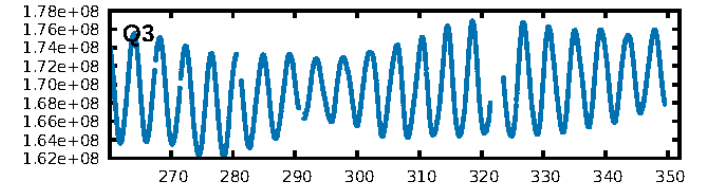
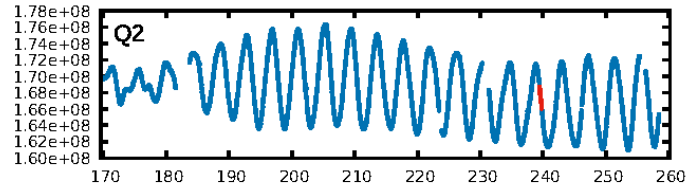
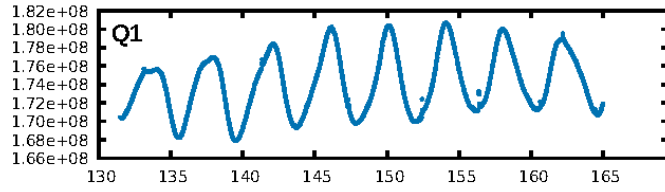
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [351.85 $\sigma$ ]  
LongPeriod-sig: 100.0% [524.43 $\sigma$ ]  
ModelChiSquare2-sig: 0.2%  
ModelChiSquareGof-sig: 48.0%  
Bootstrap-pfa: 7.81e-11  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 1.059  
Centroid-sig: 30.5%  
Centroid-so: 0.585 arcsec [0.98 $\sigma$ ]  
OotOffset-rm: 0.282 arcsec [0.57 $\sigma$ ]  
KicOffset-rm: 0.306 arcsec [0.85 $\sigma$ ]  
OotOffset-st: 3/0/0/0 [3]  
KicOffset-st: 3/0/0/0 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 1.00 [4/4]

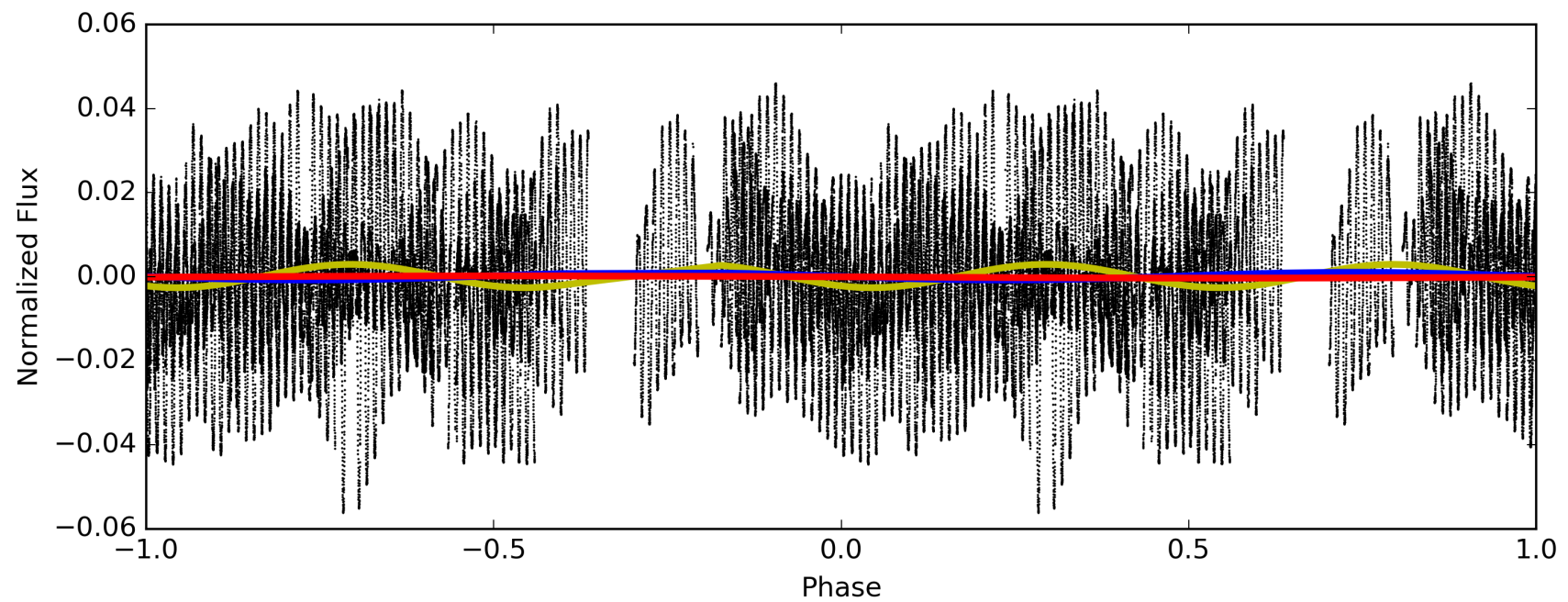
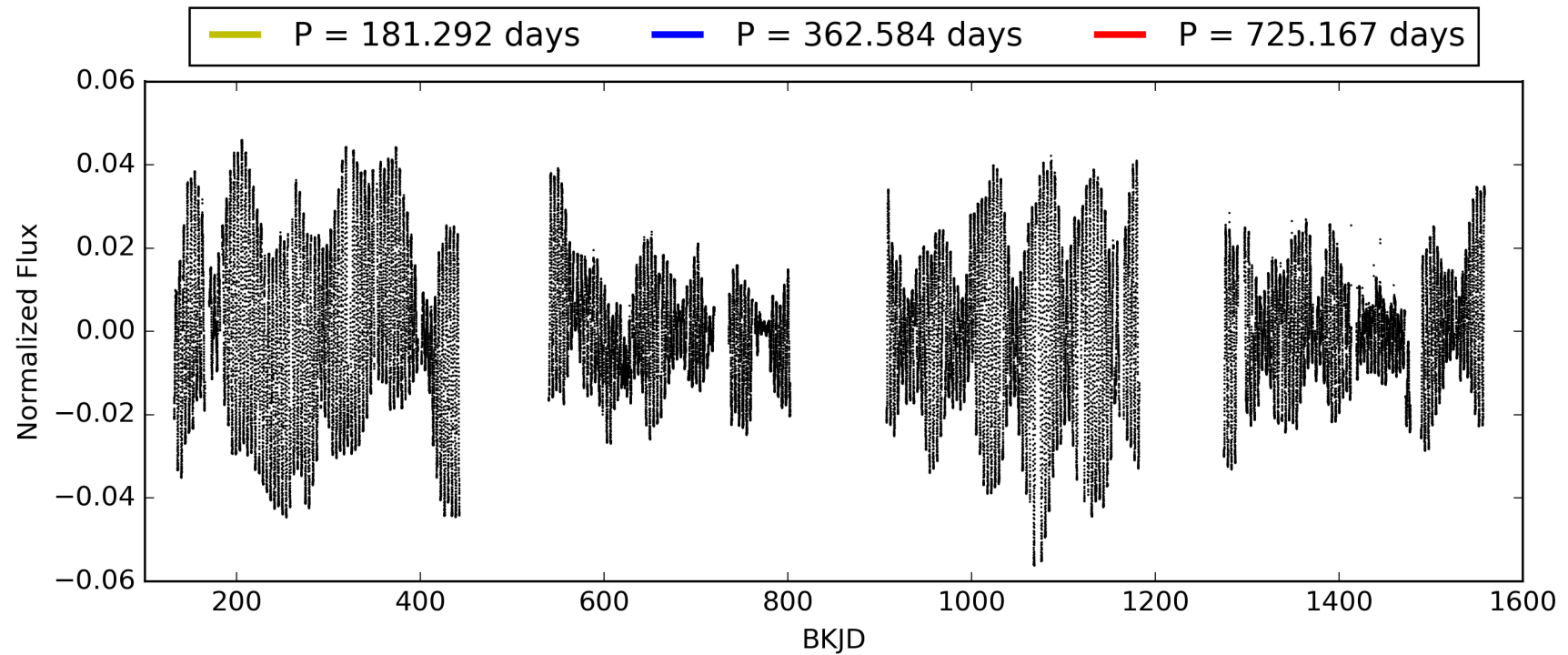
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:47:13 Z

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

# TCE 006426507-02, PDC Light Curves



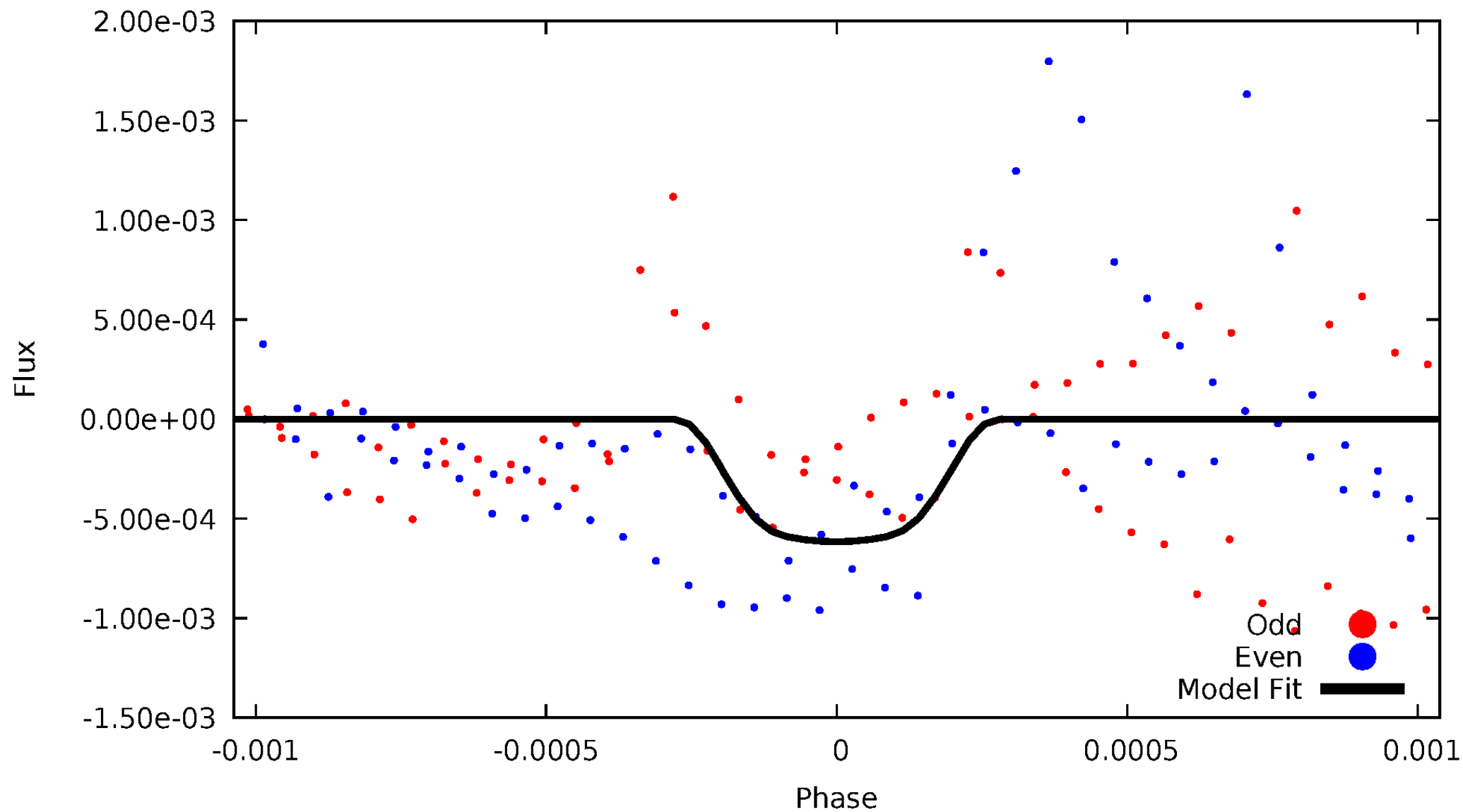
TCE 006426507-02





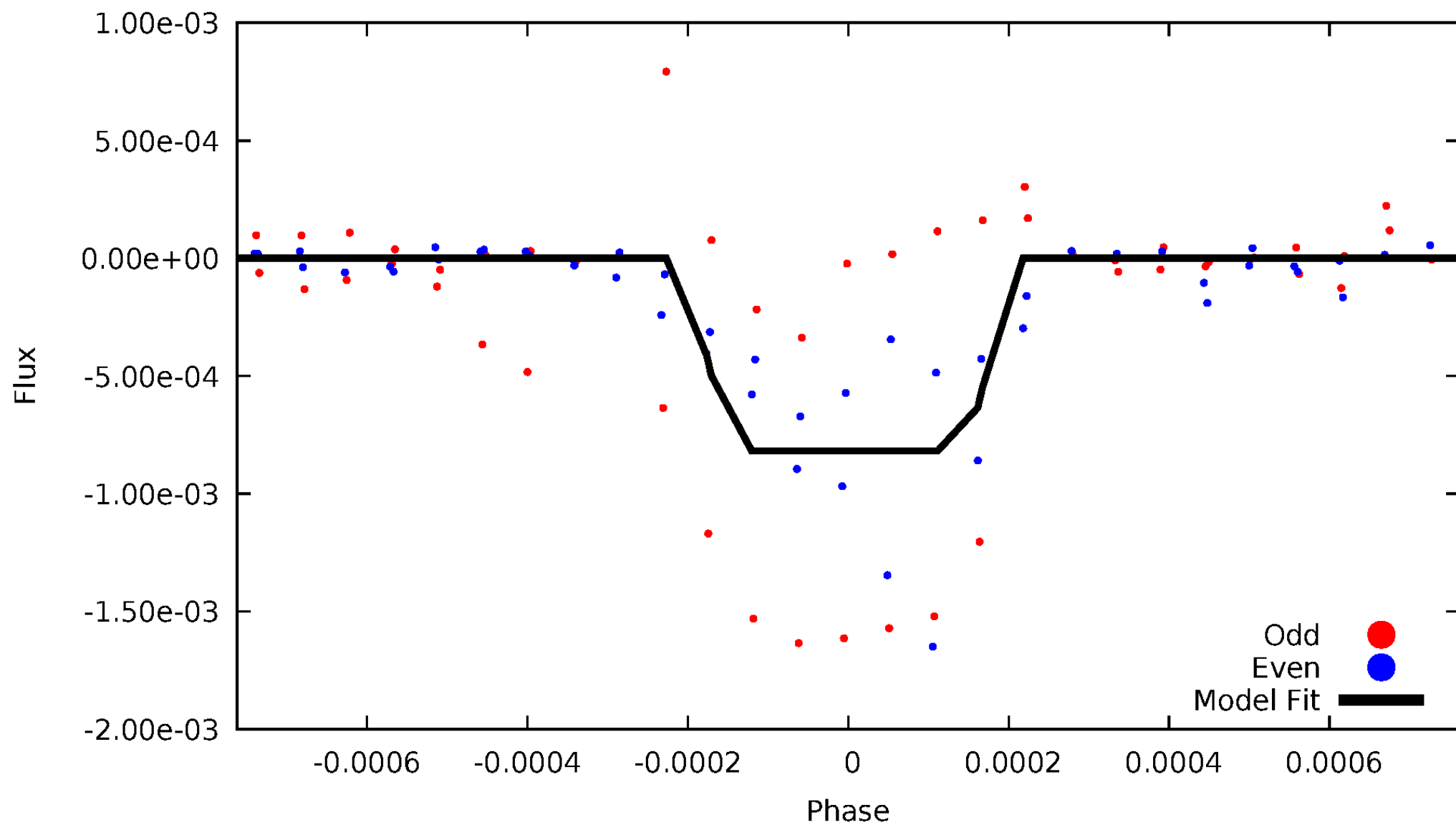
# DV Odd/Even

TCE 006426507-02



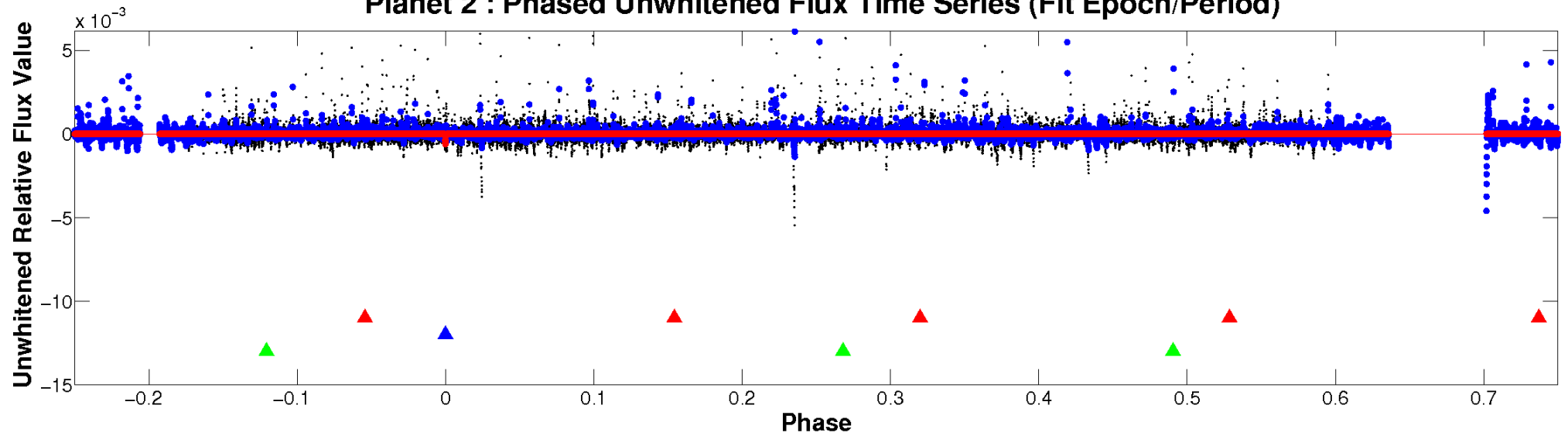
# ALT Odd/Even

TCE 006426507-02

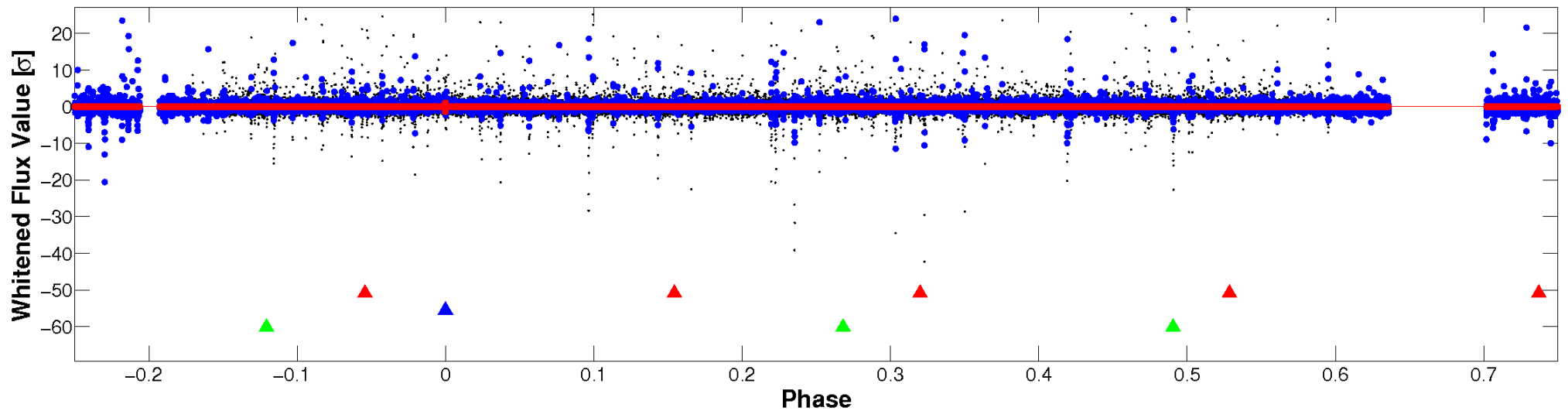


# Non-Whitened Vs. Whitened Light Curve

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

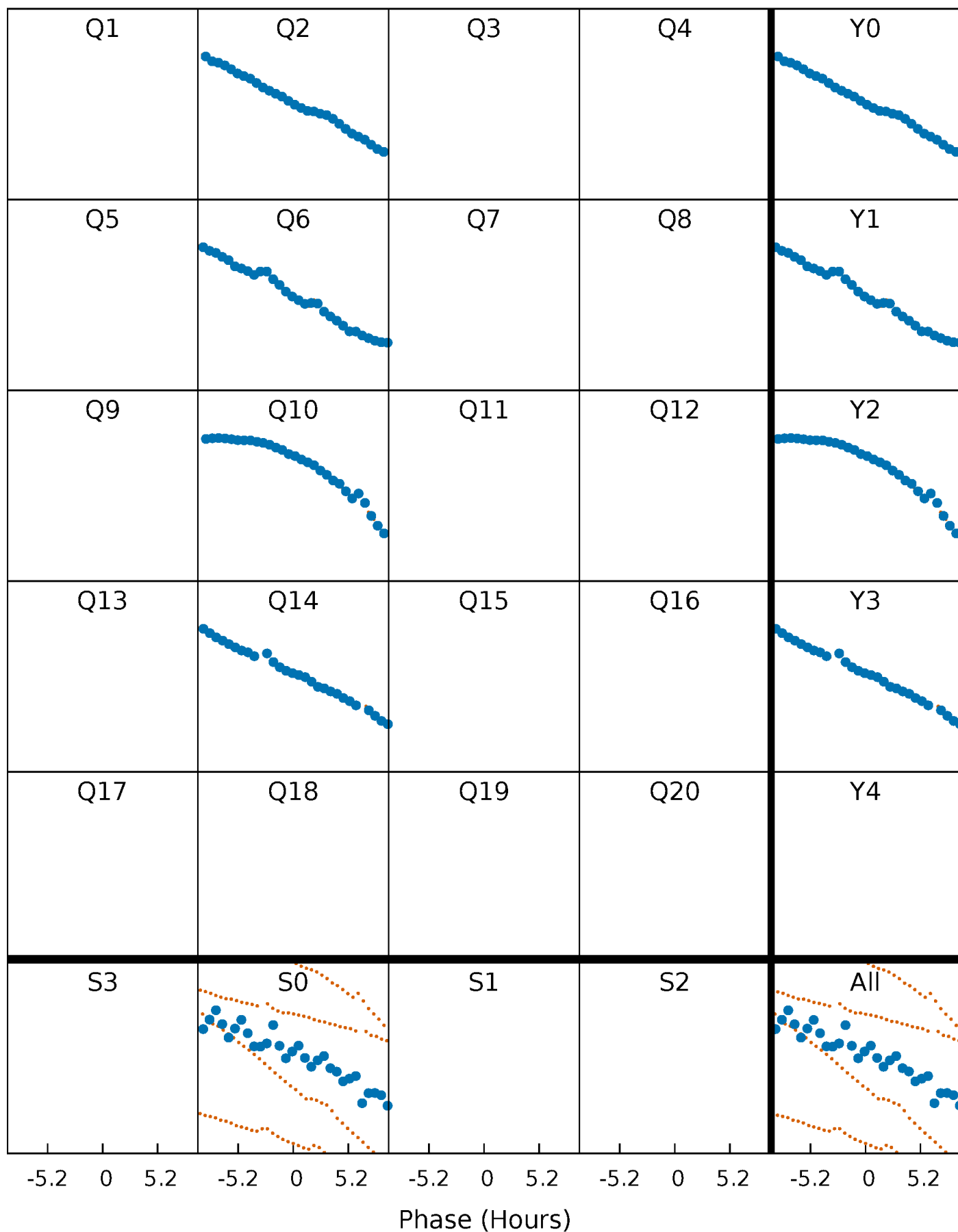


**Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



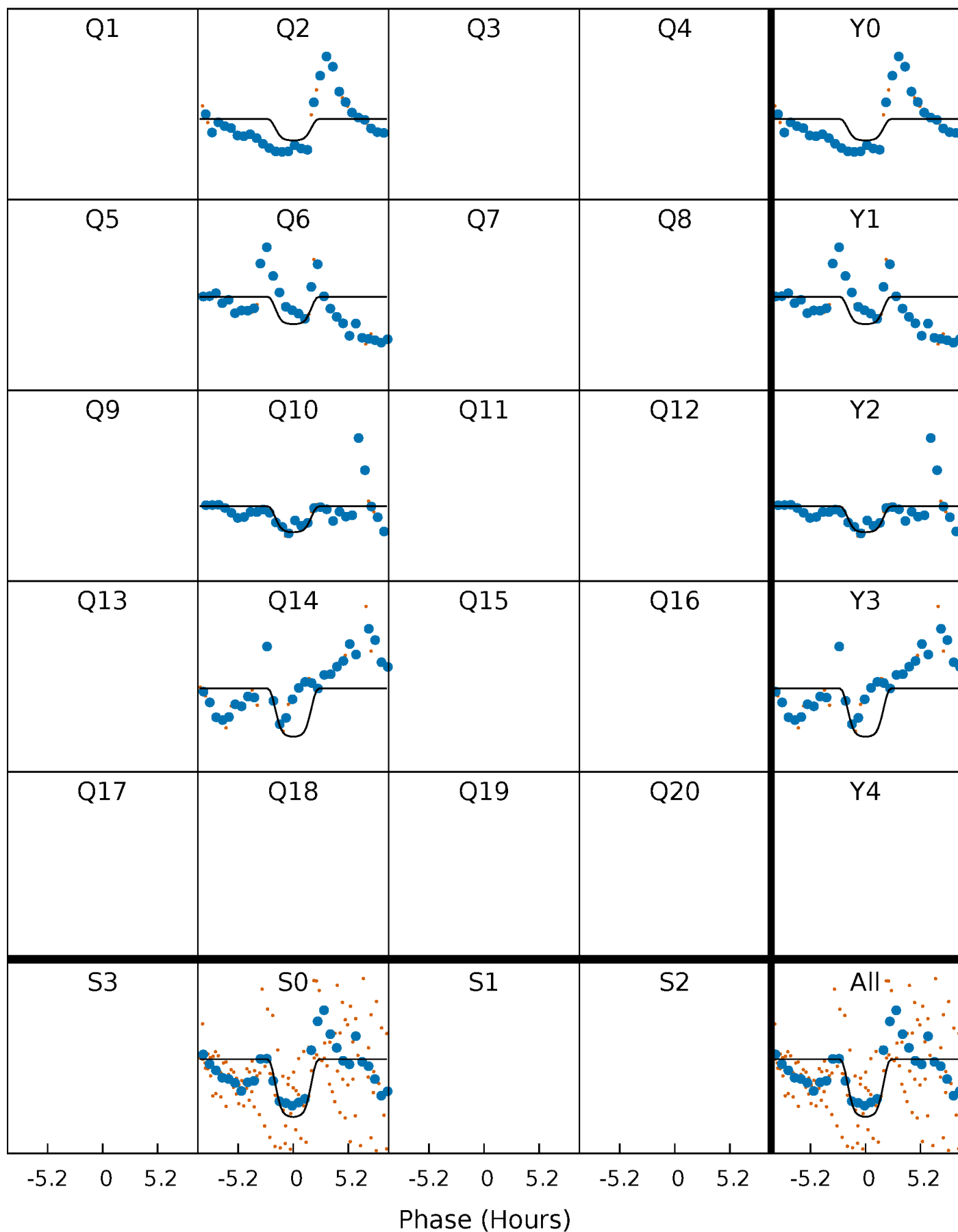
# PDC Quarter-Phased Transit Curves

TCE 006426507-02 P=362.583670 Days  $T_0=239.638802$  (BKJD)



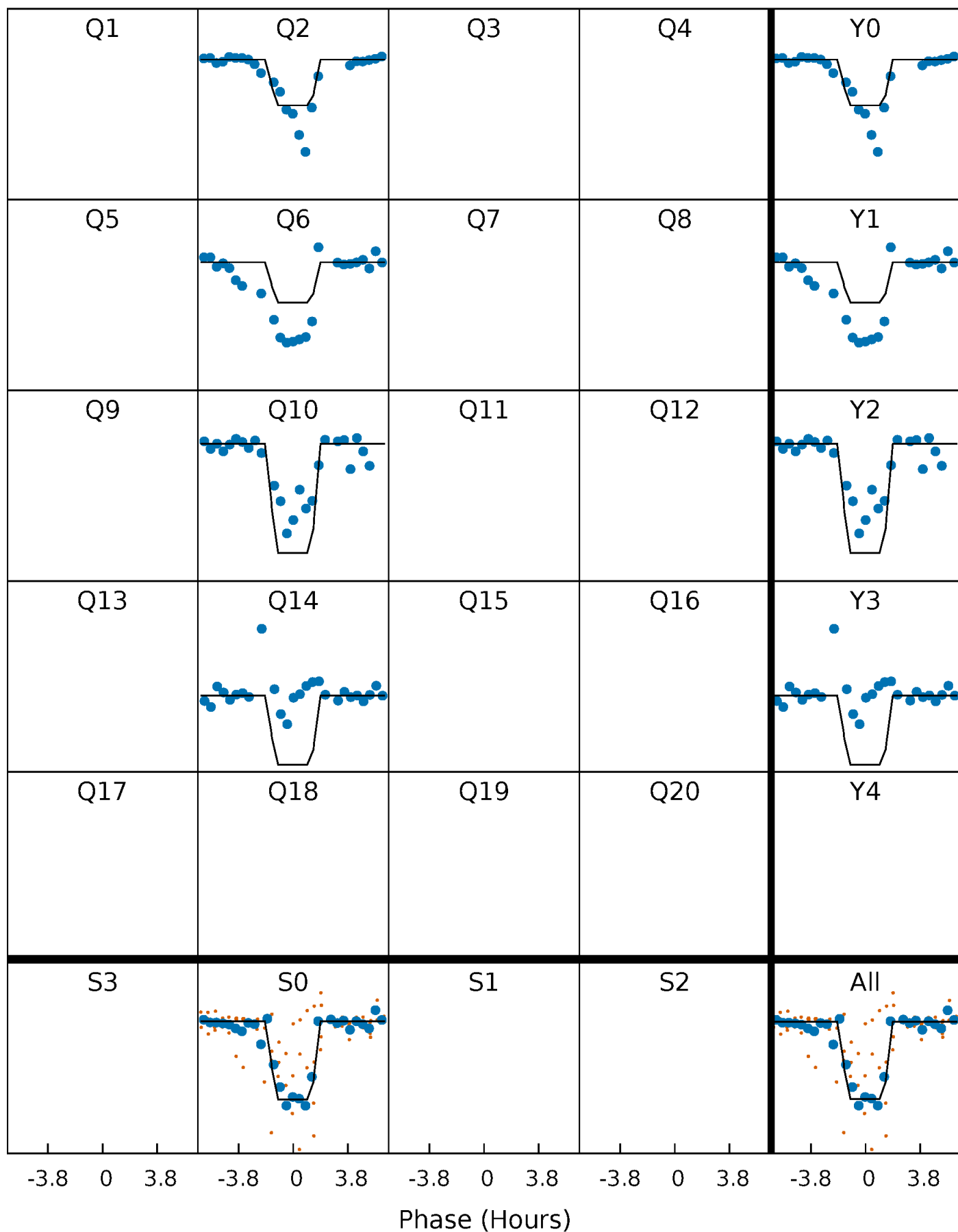
# DV Quarter-Phased Transit Curves

TCE 006426507-02 P=362.583670 Days  $T_0=239.638802$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

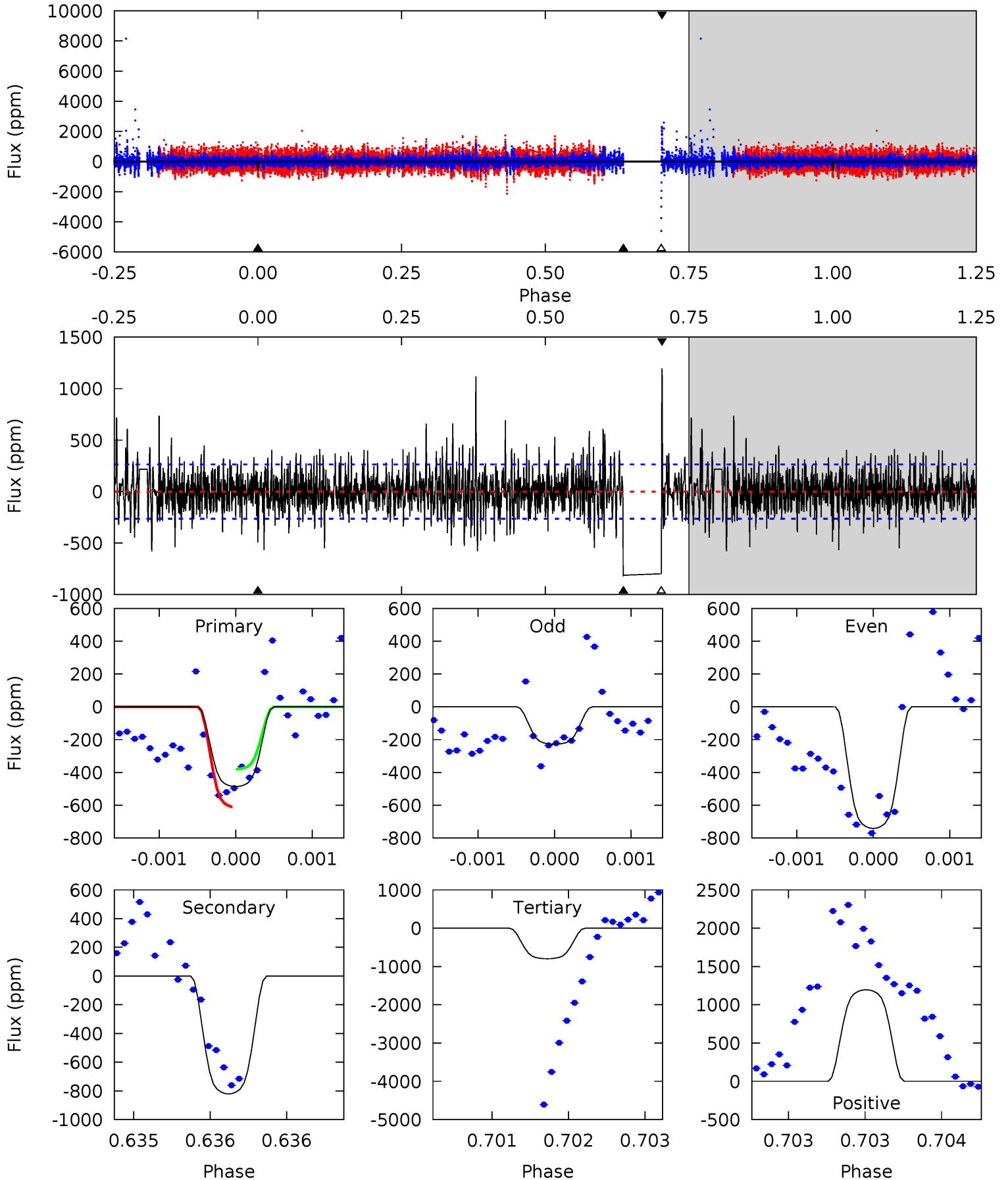
TCE 006426507-02 P=362.573186 Days  $T_0=239.651296$  (BKJD)



# DV Model-Shift Uniqueness Test

006426507-02, P = 362.583670 Days, E = 239.638802 Days

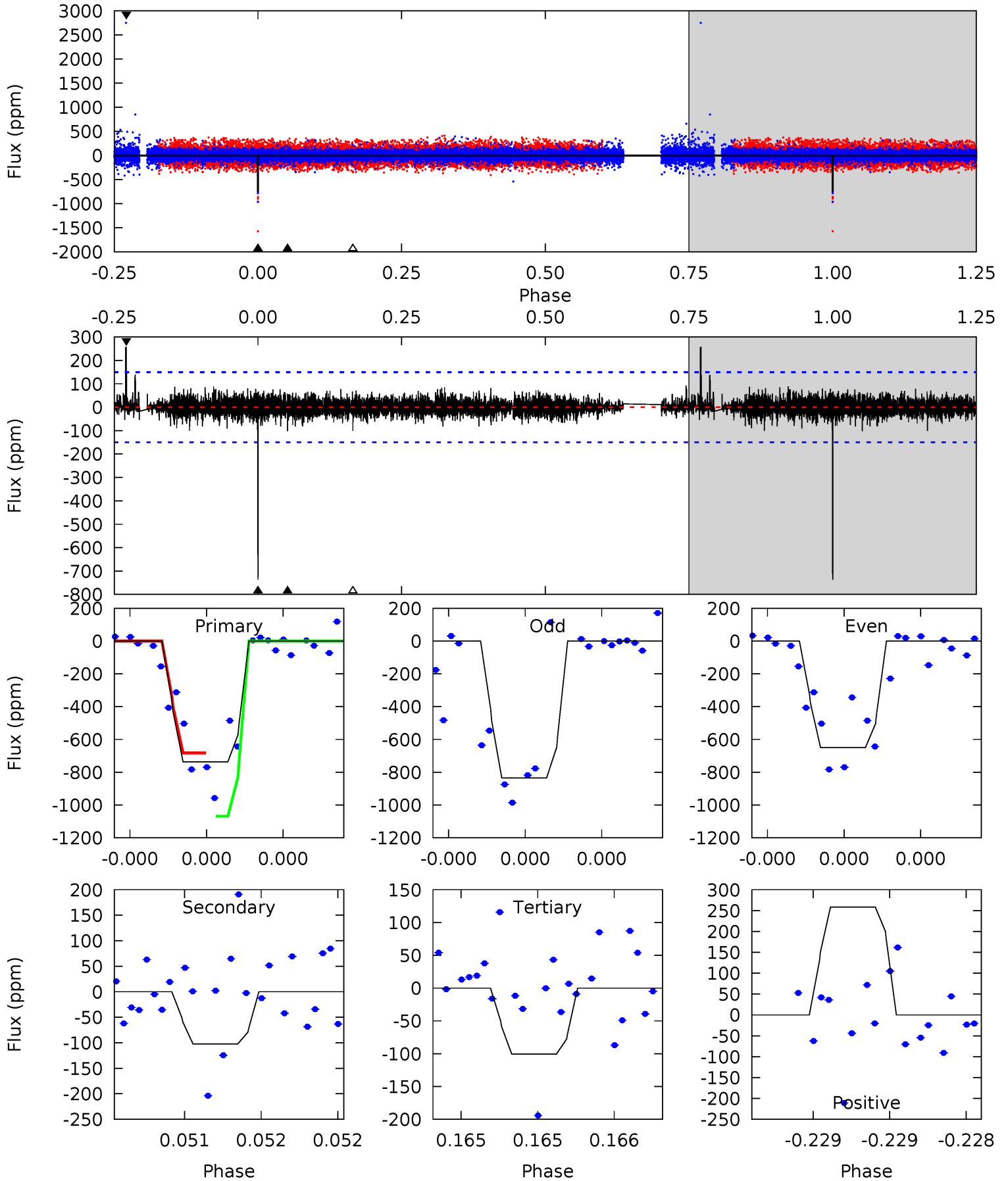
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	17.3	16.8	25.2	5.55	3.45	3.34	-6.55	-14.9	0.49	-7.90	4.94	1.19	0.59	2.43



# Alt Model-Shift Uniqueness Test

006426507-02, P = 362.573186 Days, E = 239.651296 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
27.7	3.84	3.77	9.70	5.62	3.55	0.80	23.9	18.0	0.07	-5.86	4.62	1.02	0.26	0





### Stellar Parameters For KIC 006426507

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5415^{+163}_{-146}$	$4.592^{+0.077}_{-0.056}$	$-0.940^{+0.300}_{-0.300}$	$0.676^{+0.064}_{-0.057}$	$0.652^{+0.071}_{-0.024}$	$2.968^{+0.906}_{-0.581}$
	+3%/-3%	+2%/-1%	+32%/-32%	+9%/-8%	+11%/-4%	+31%/-20%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 006426507-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-821 \pm 47$	$2.13^{+0.31}_{-0.29}$	$294^{+11}_{-11}$	$5403^{+382}_{-338}$	$75524^{+24953}_{-17510}$
Alt.	$-102 \pm 27$	$2.11^{+0.31}_{-0.28}$	$295^{+11}_{-11}$	$3641^{+256}_{-236}$	$9493^{+4410}_{-3069}$

$T_{\text{max}}$  = 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

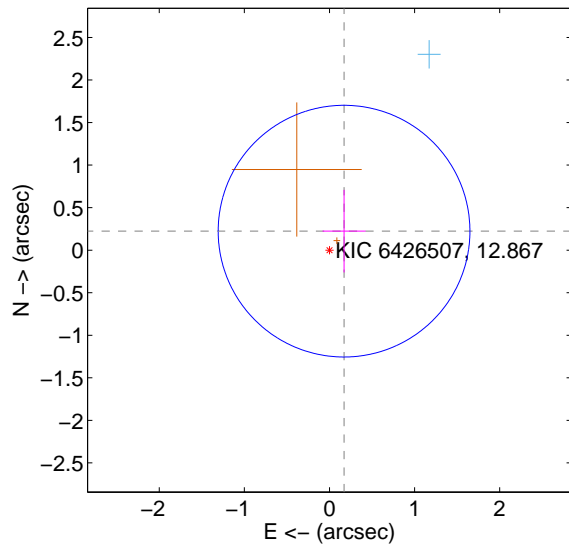
Supplemental centroid analysis for 006426507-02. Kepler magnitude: 12.87. Transit SNR 7.15

There are 1 quarters with good PRF difference image offsets

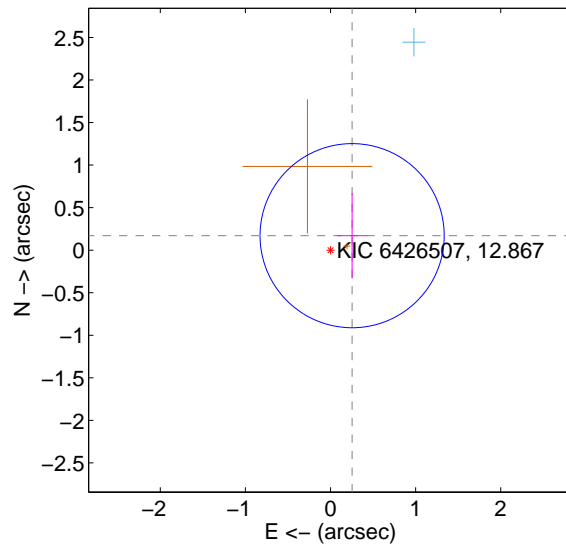
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.282 \pm 0.493$	0.57	$-0.171 \pm 0.253$	$0.224 \pm 0.486$
PRF-fit source offset from KIC position	$0.306 \pm 0.361$	0.85	$-0.254 \pm 0.179$	$0.170 \pm 0.501$
photometric centroid source offset	$0.58 \pm 0.60$	0.98	$0.47 \pm 0.60$	$-0.34 \pm 0.59$

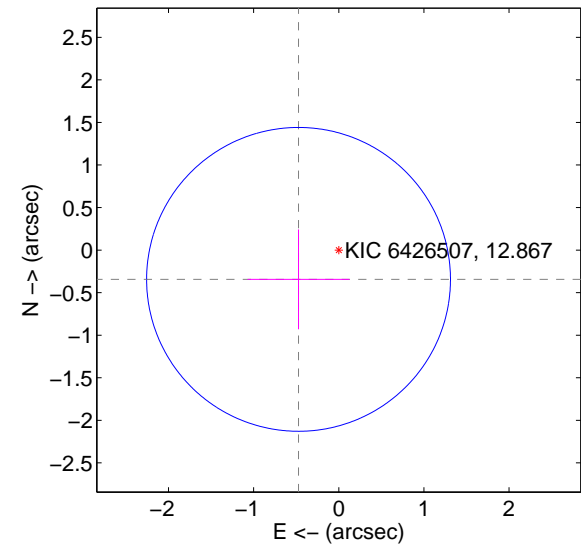
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

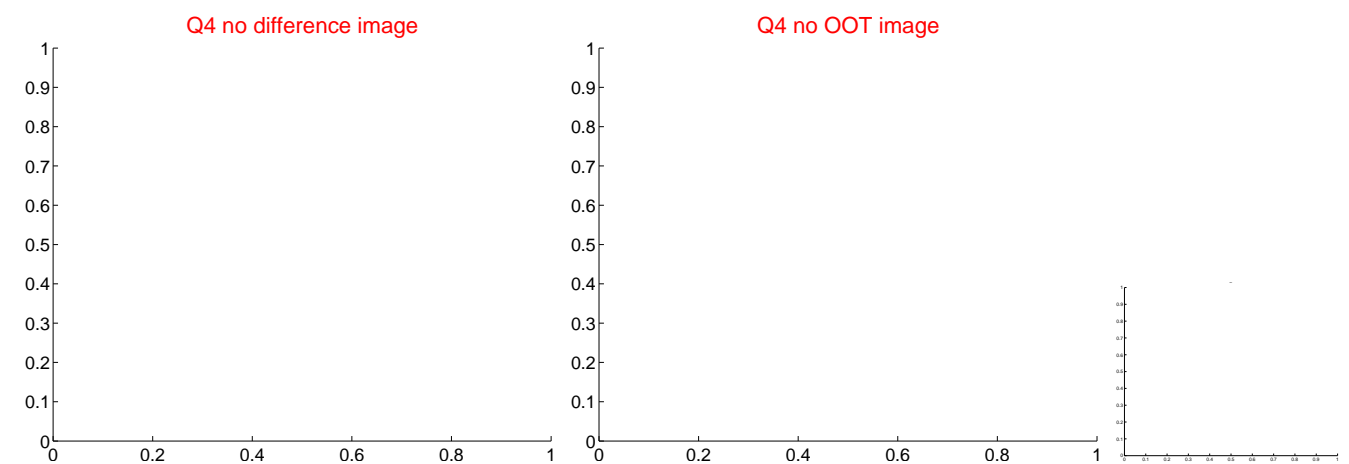
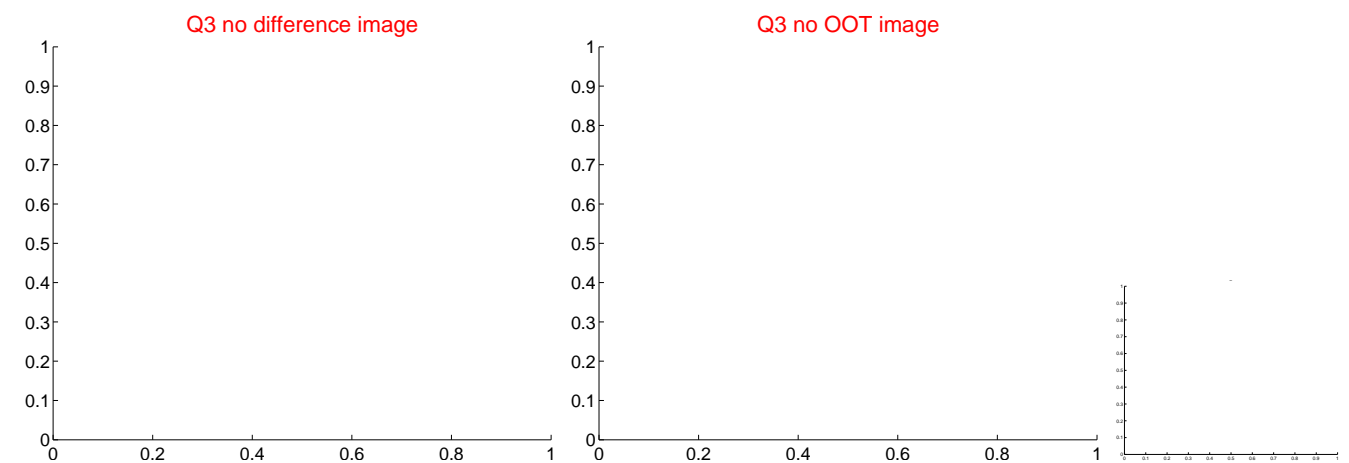
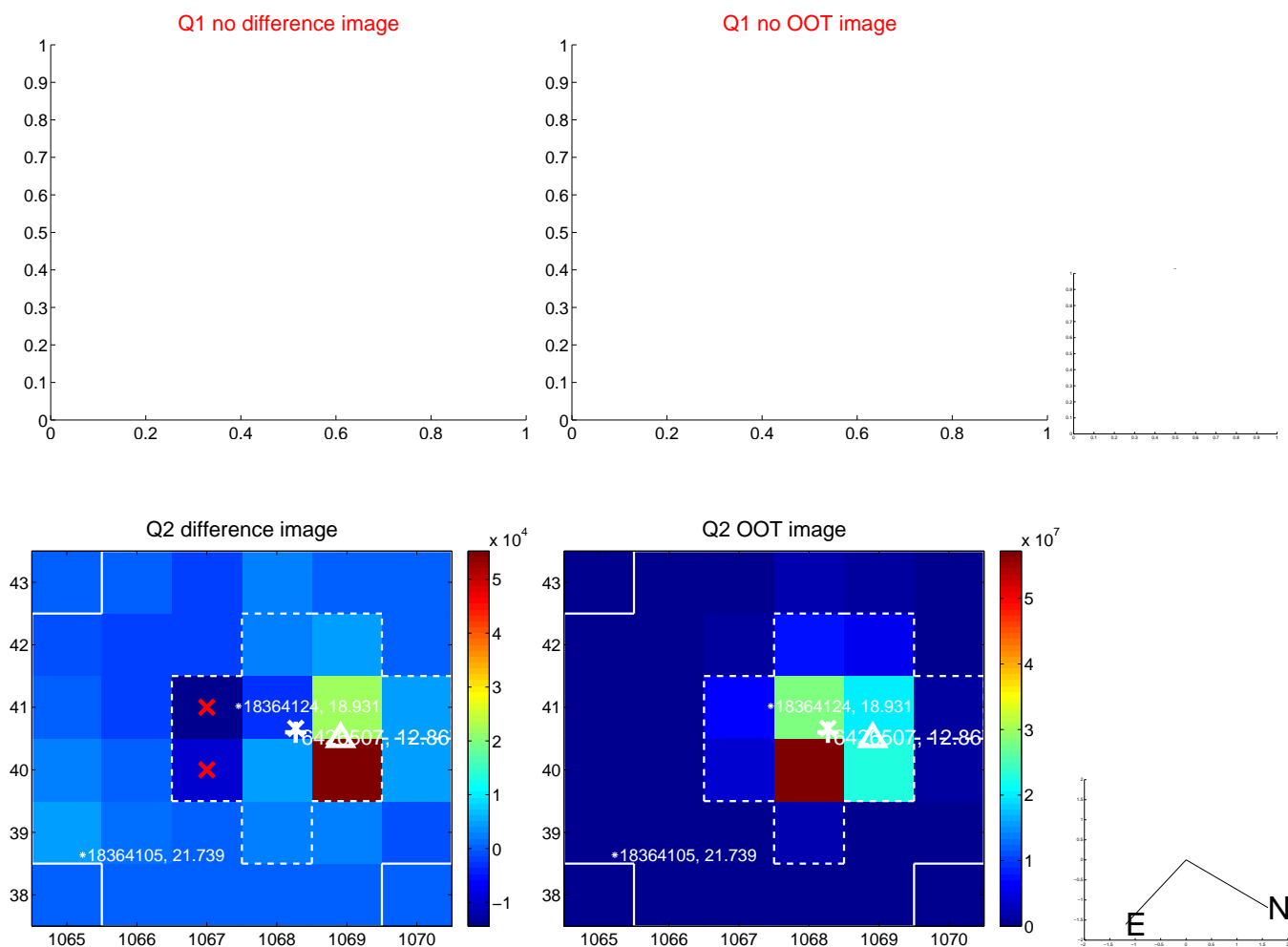


offset from photometric centroids

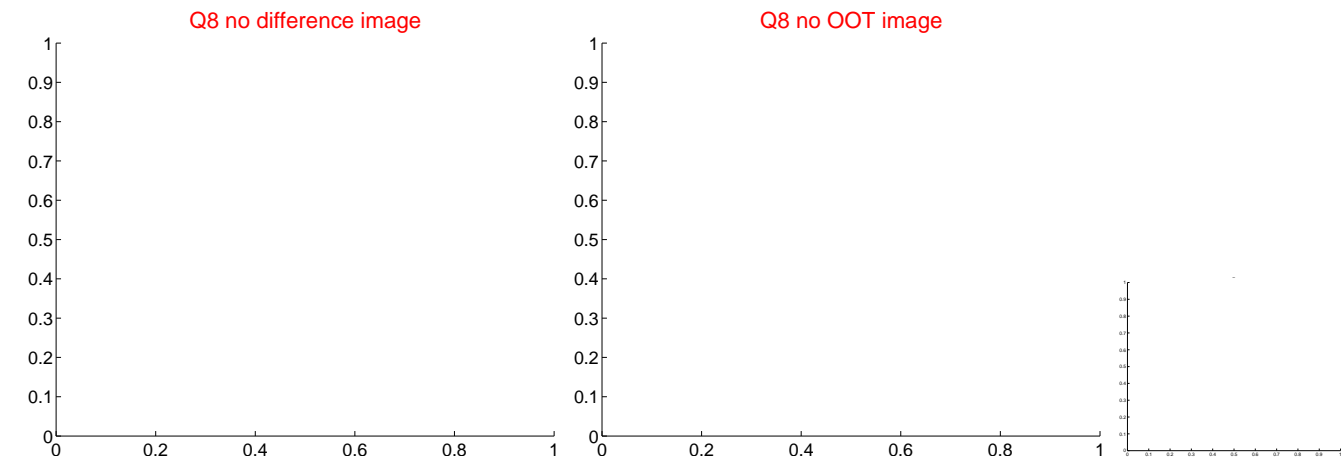
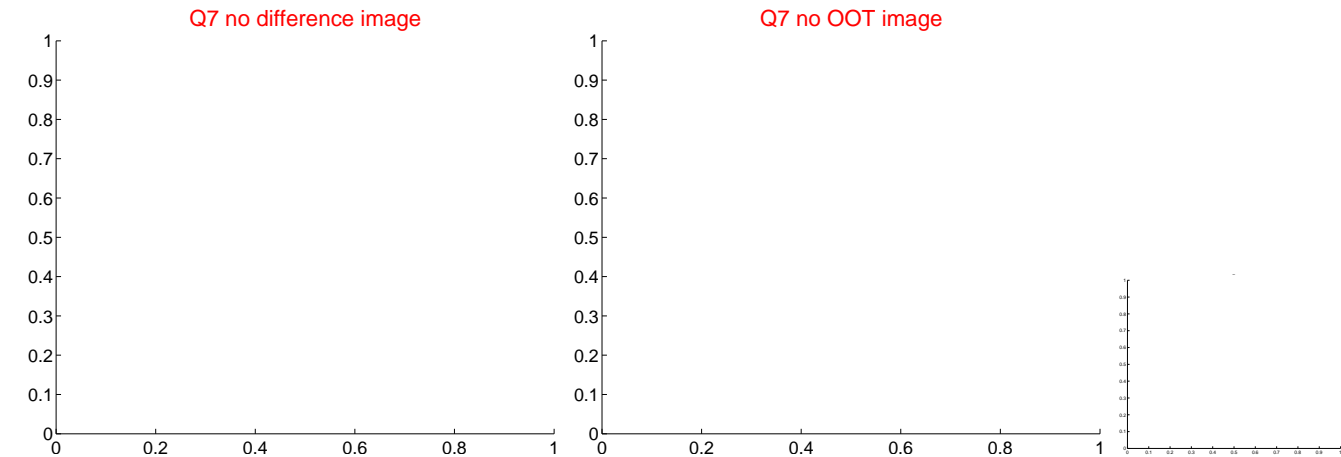
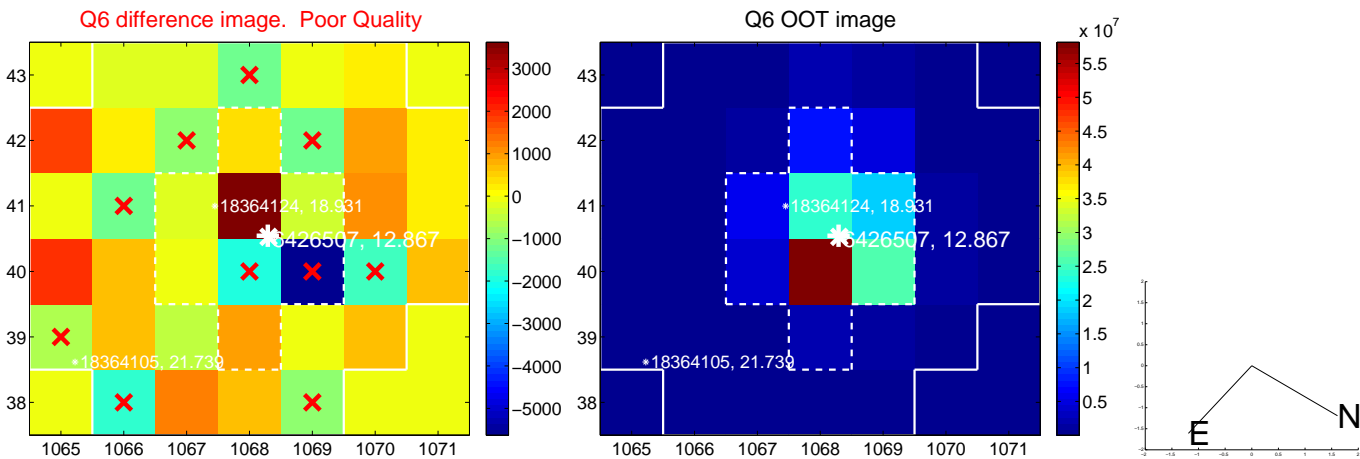


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

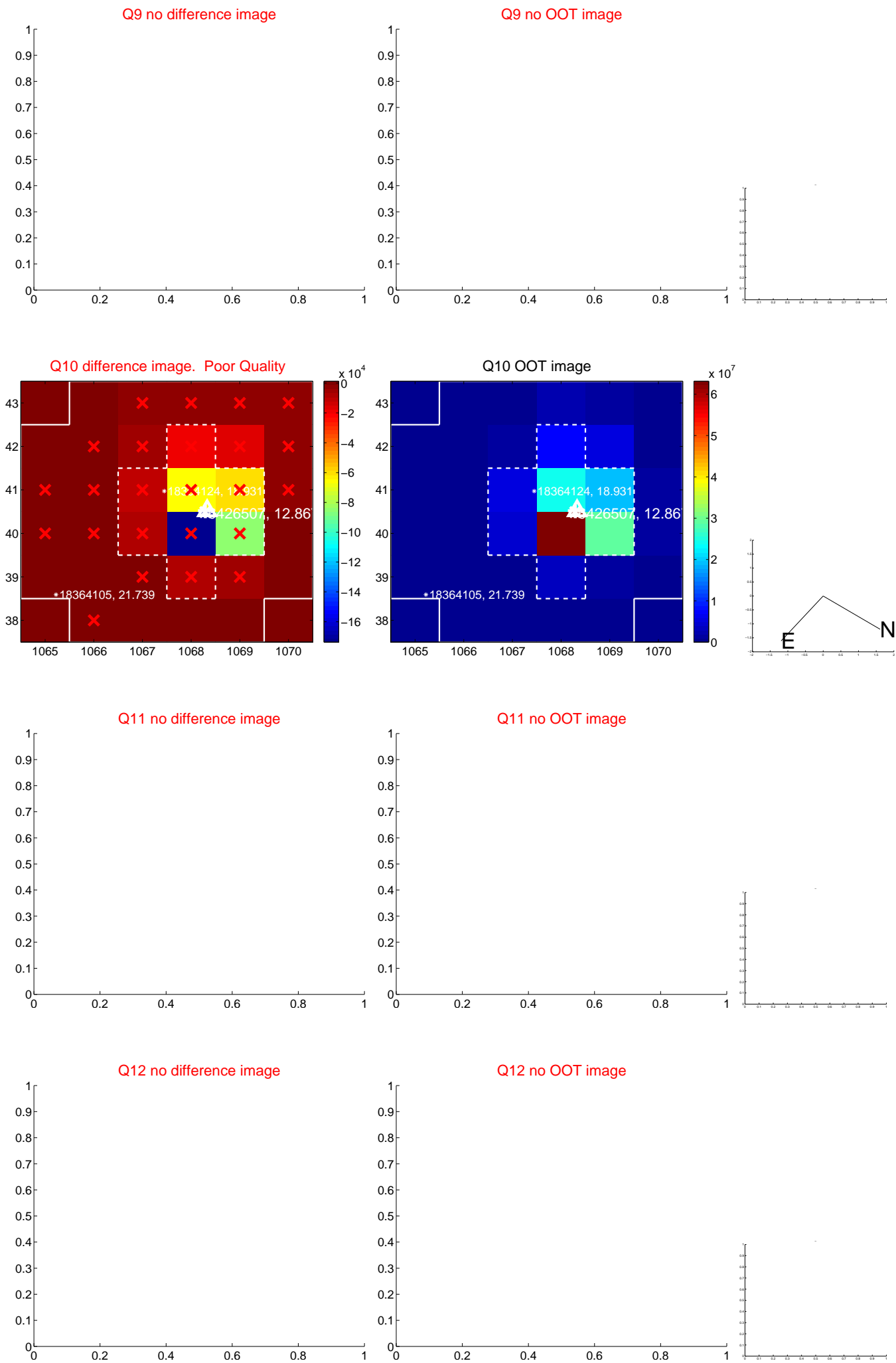
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



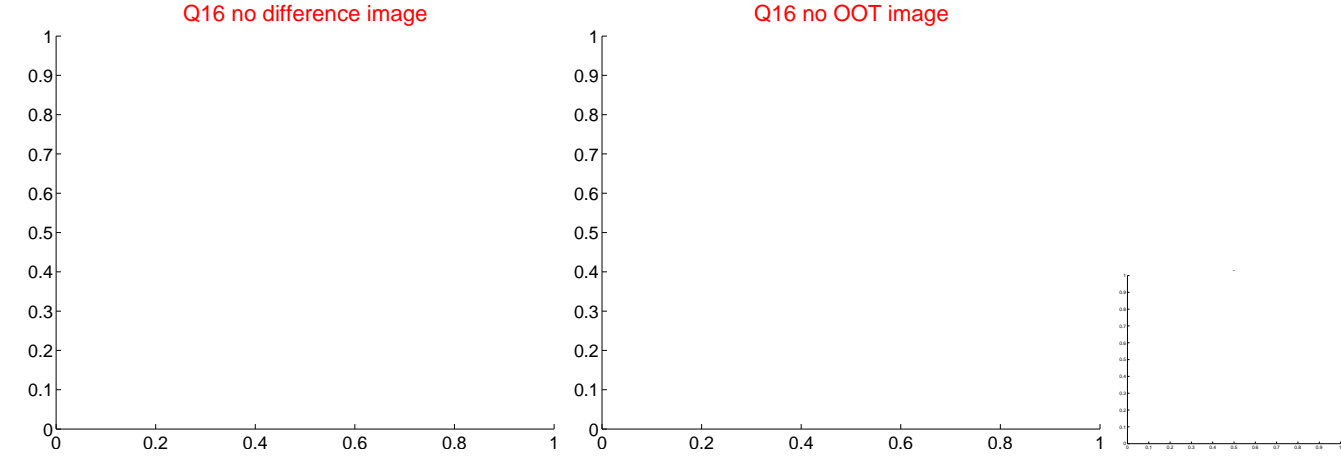
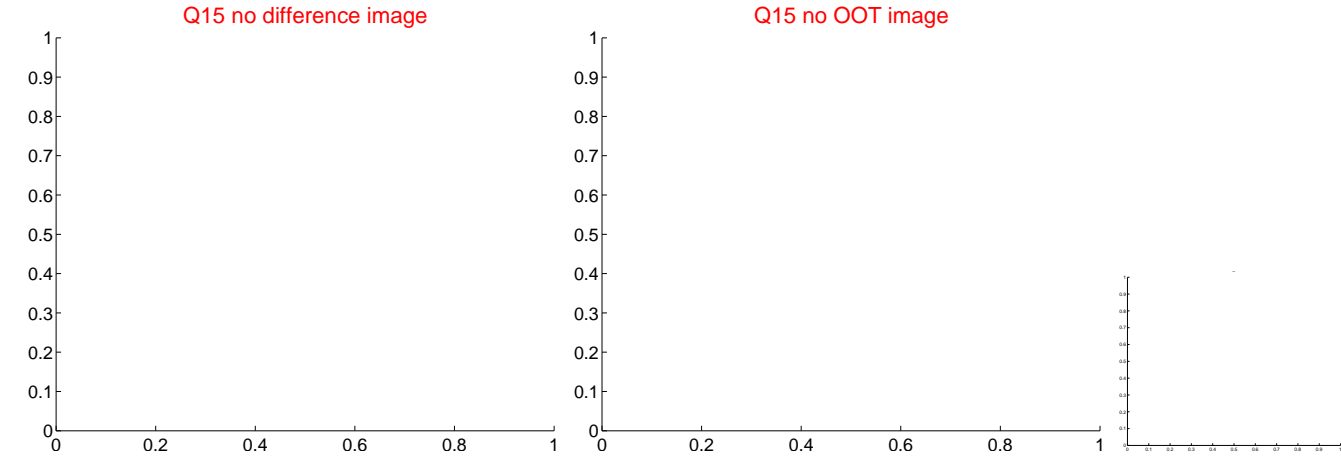
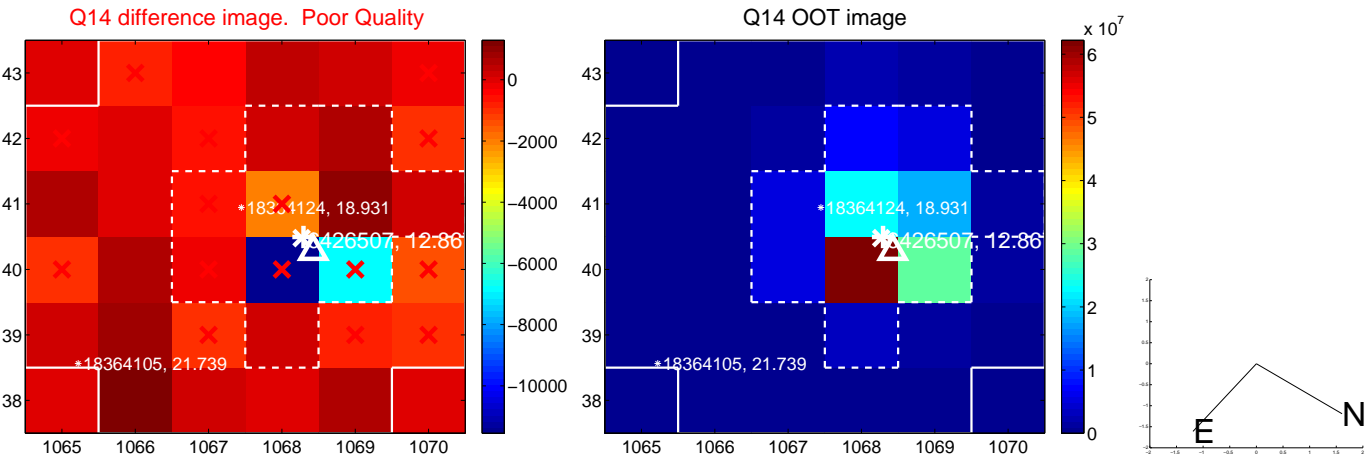
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



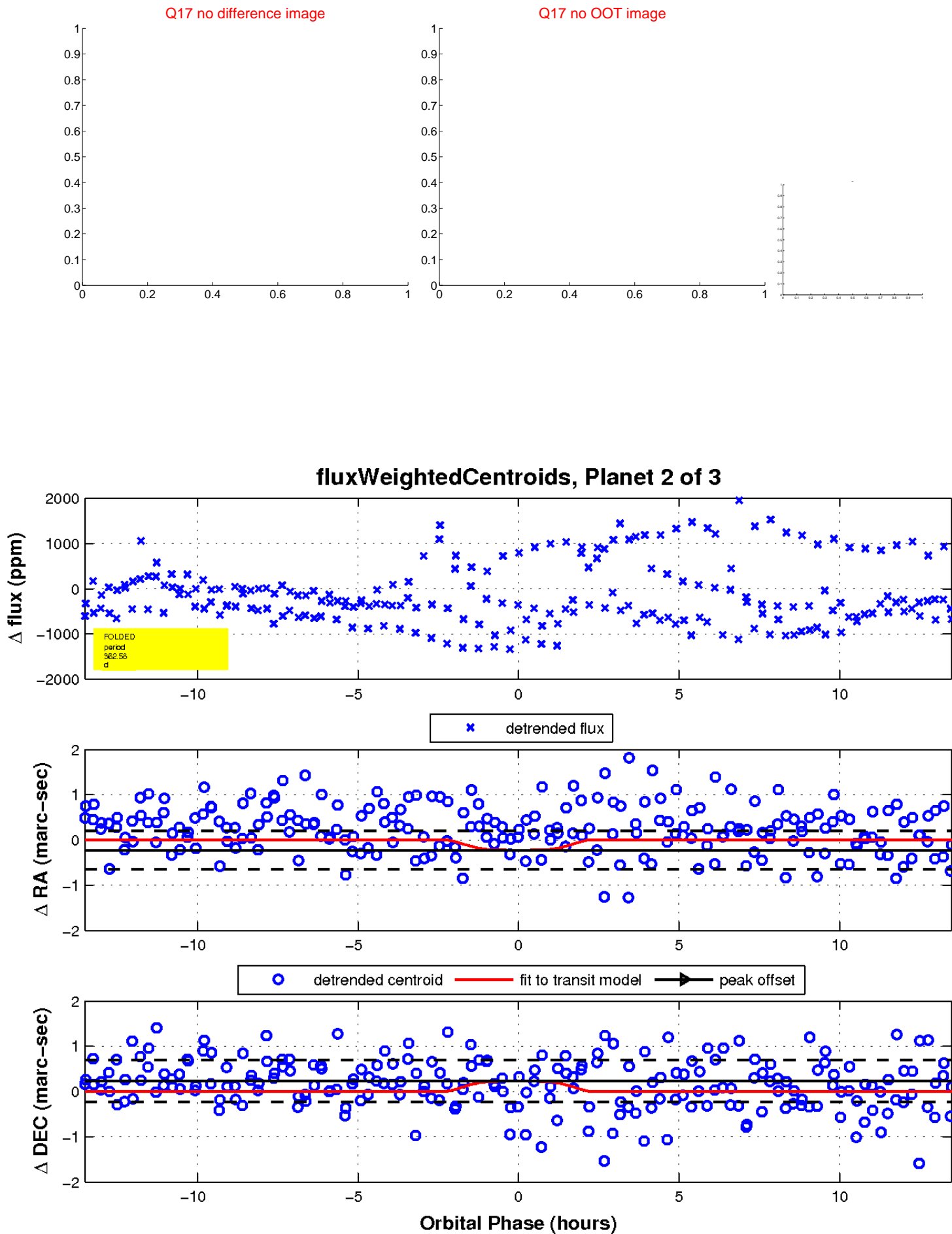
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

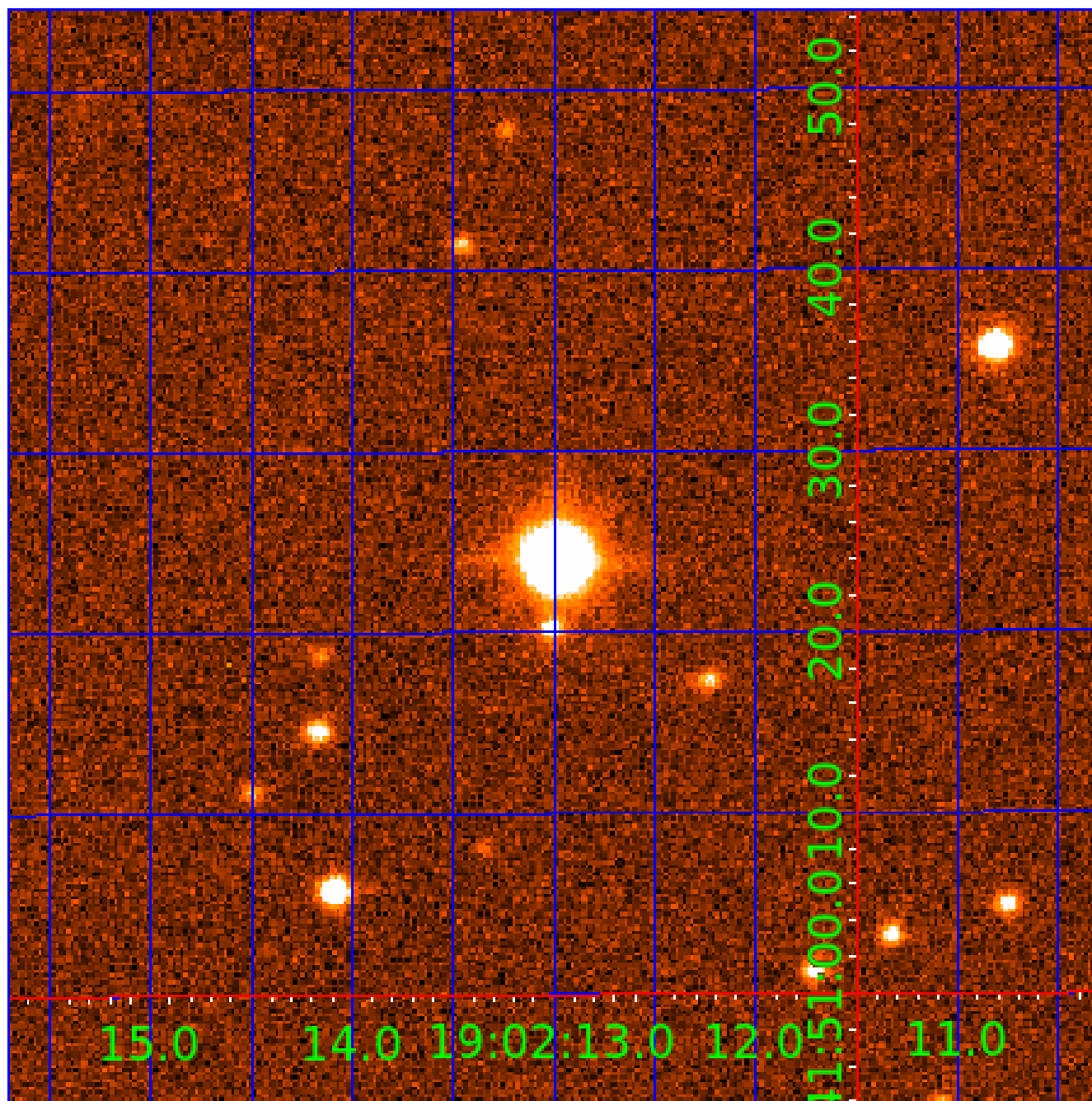


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





# KIC 006426507

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006426507-01	OBS	No	286.958131	295.586621	596.8	2.497	14.2	8.7	0.68	5415	1.75	0.65
006426507-02	OBS	No	362.583670	239.638802	616.2	4.514	14.2	7.1	0.68	5415	2.15	0.47
006426507-03	OBS	No	503.545141	417.500123	554.3	4.609	12.1	5.6	0.68	5415	1.68	0.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006426507-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
006426507-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
006426507-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS

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

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

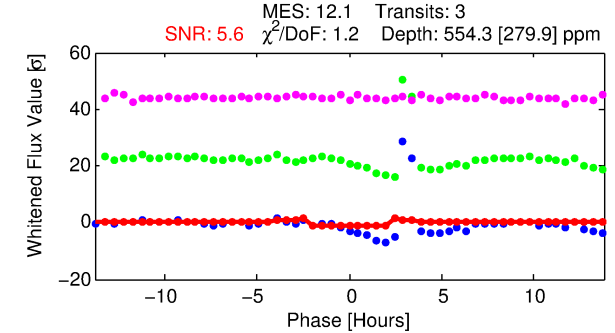
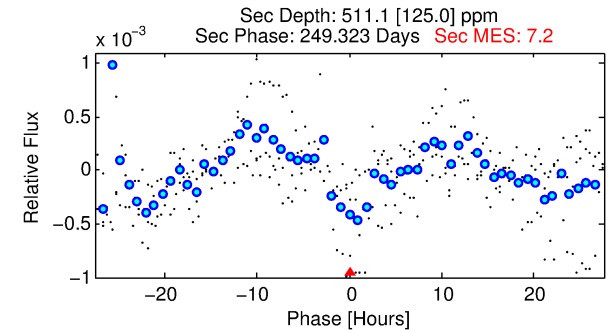
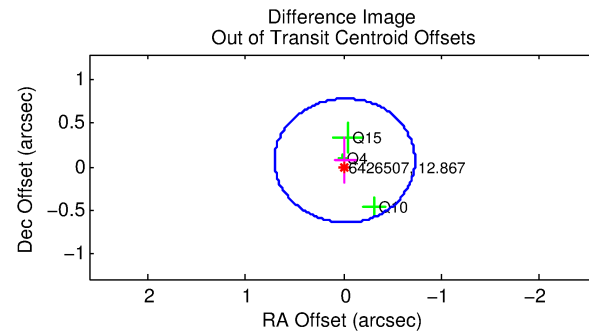
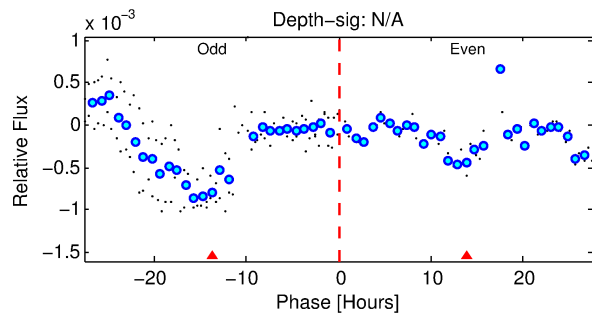
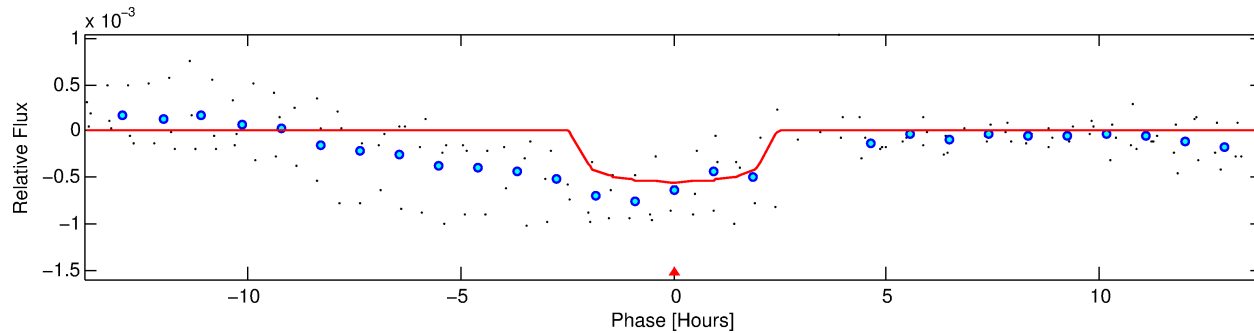
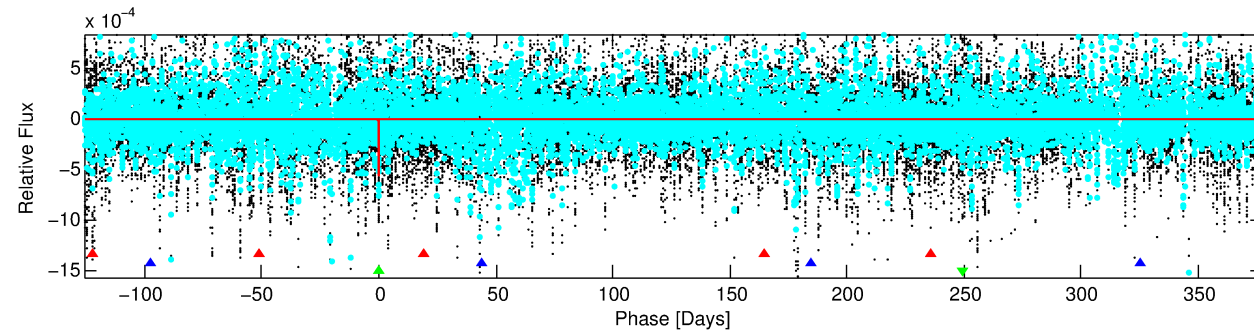
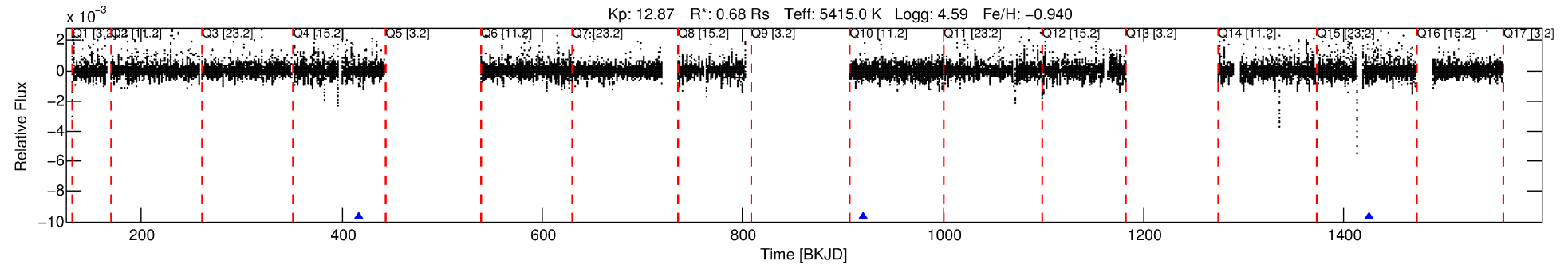
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 006426507-03

No Significant Match Found

# DV One-Page Summary

KIC: 6426507 Candidate: 3 of 3 Period: 503.545 d



## DV Fit Results:

Period = 503.54514 [0.01484] d  
Epoch = 417.5001 [0.0174] BKJD  
Rp/R\* = 0.0227 [0.0417]  
a/R\* = 661.73 [5379.13]  
b = 0.65 [7.36]  
Seff = 0.31 [0.05]  
Teq = 190 [9] K  
Rp = 1.68 [3.08] Re  
a = 1.0740 [0.0929] AU  
Ag = 115533.58 [425542.08] [0.27σ]  
Teffp = 5402 [4974] K [1.05σ]

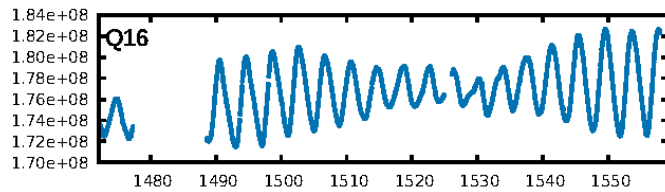
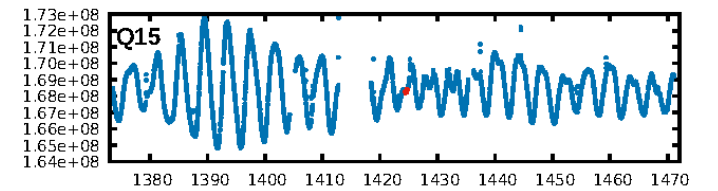
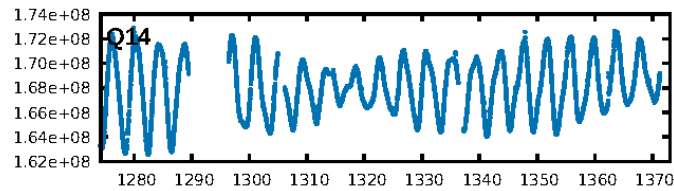
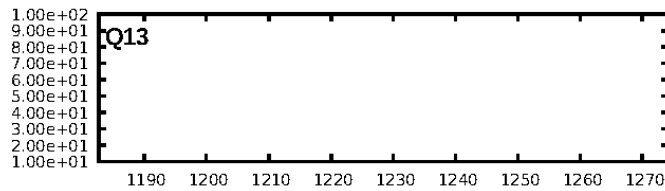
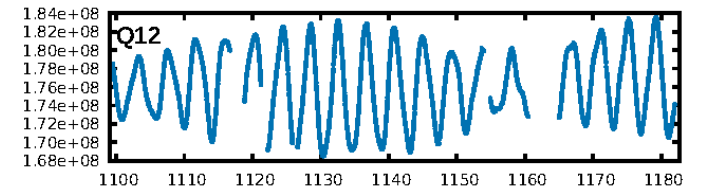
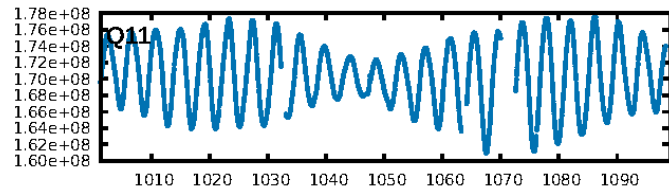
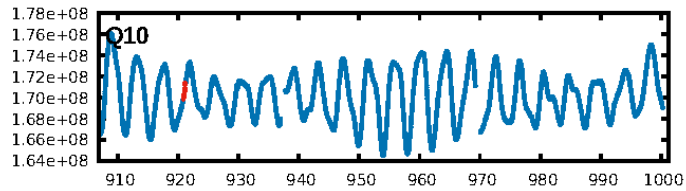
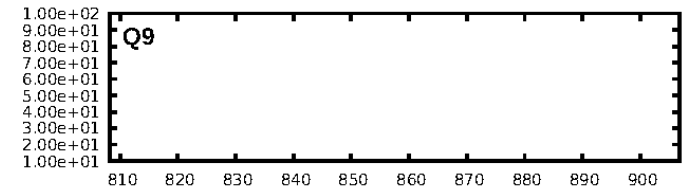
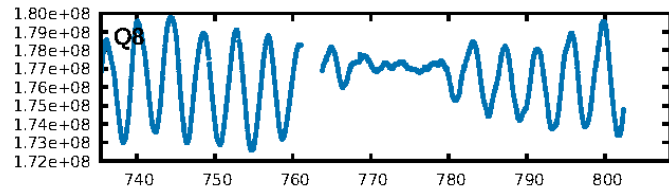
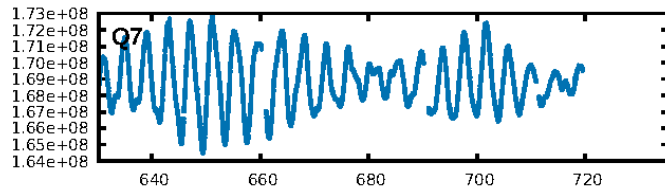
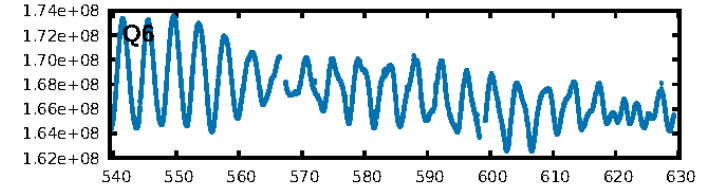
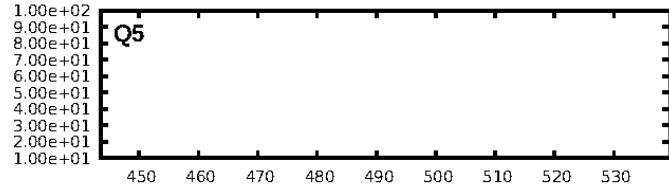
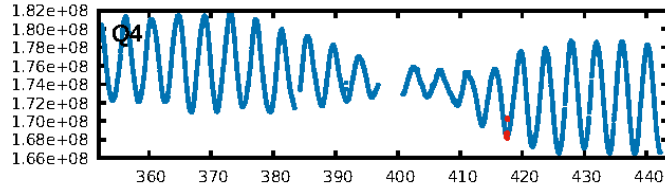
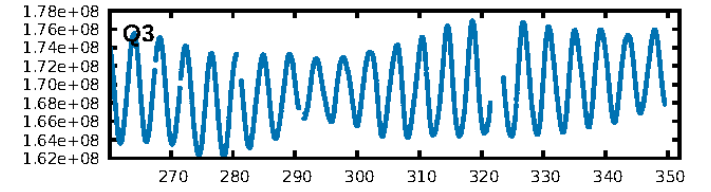
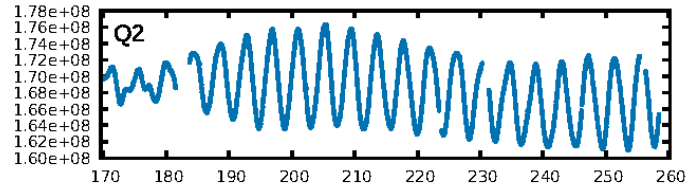
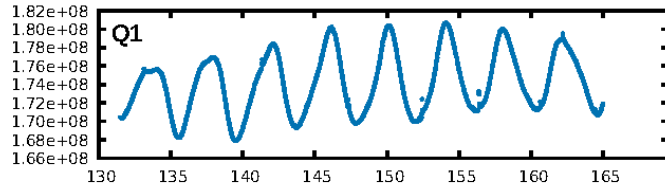
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [524.43σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 35.3%  
ModelChiSquareGof-sig: 74.3%  
Bootstrap-pfa: 6.94e-09  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 0.5078  
Centroid-sig: 38.0%  
Centroid-so: 0.449 arcsec [0.67σ]  
OotOffset-rm: 0.072 arcsec [0.30σ]  
KicOffset-rm: 0.591 arcsec [1.95σ]  
OotOffset-st: 1/1/1/0 [3]  
KicOffset-st: 1/1/1/0 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

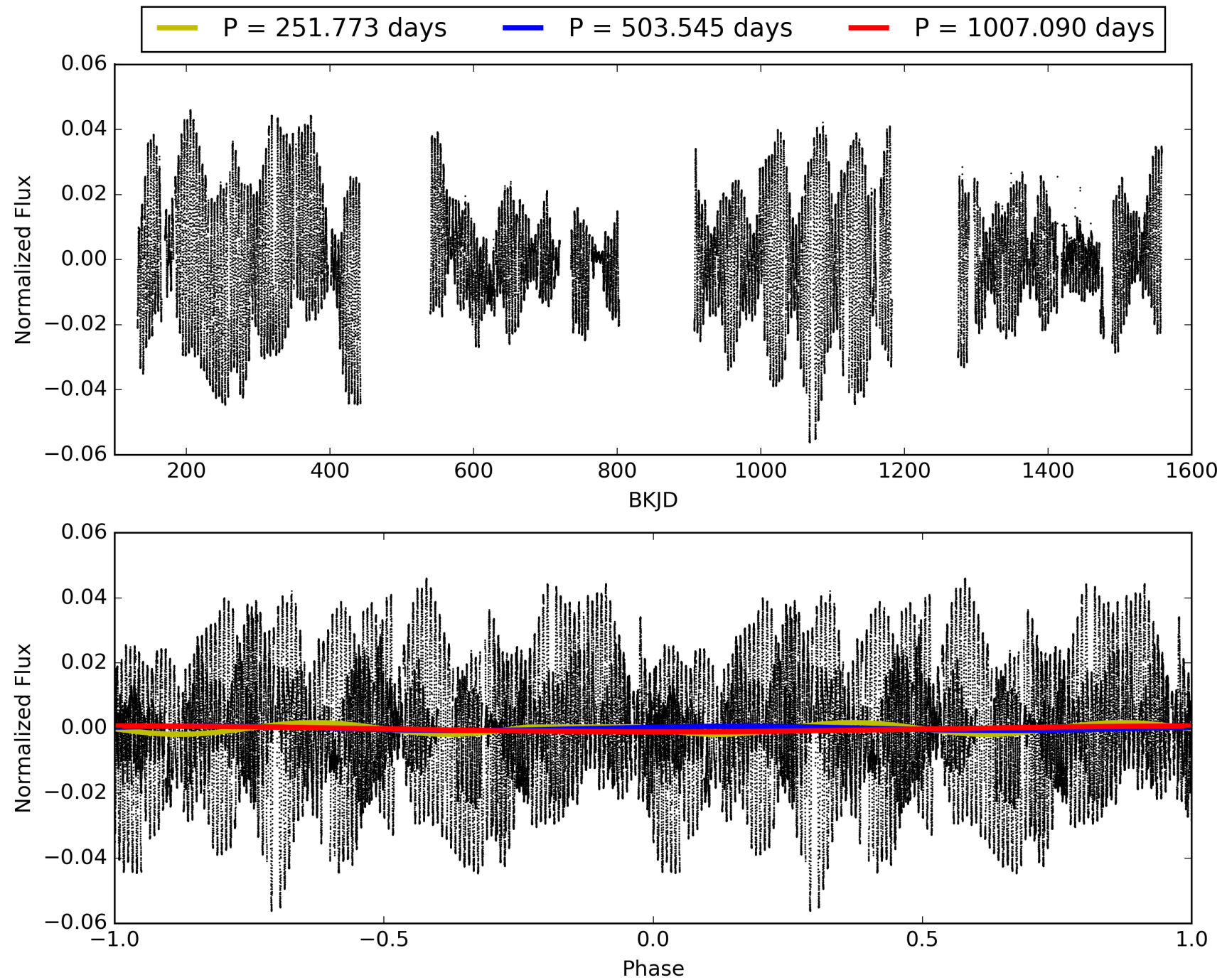
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:47:26 Z

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

# TCE 006426507-03, PDC Light Curves

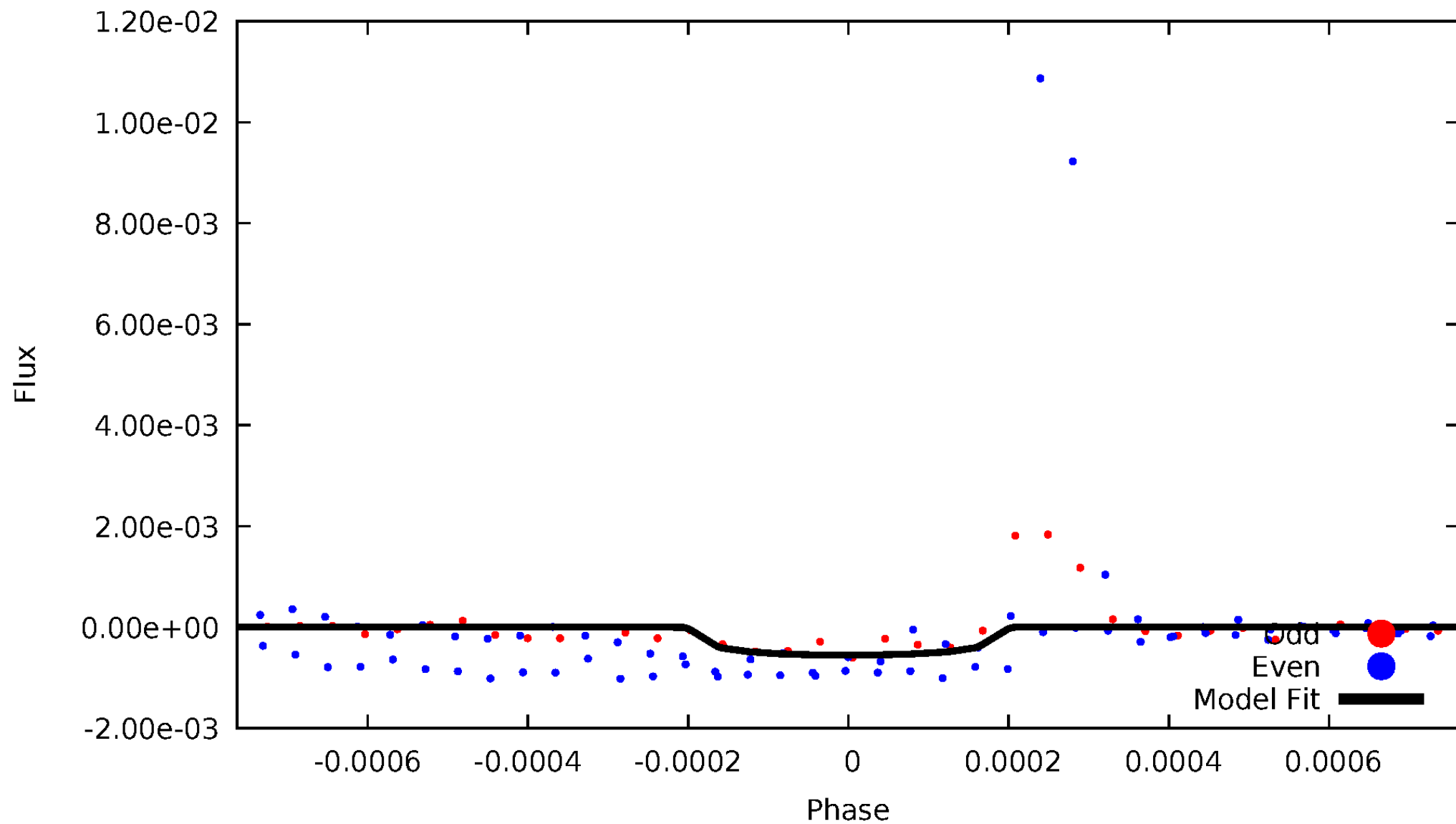


TCE 006426507-03



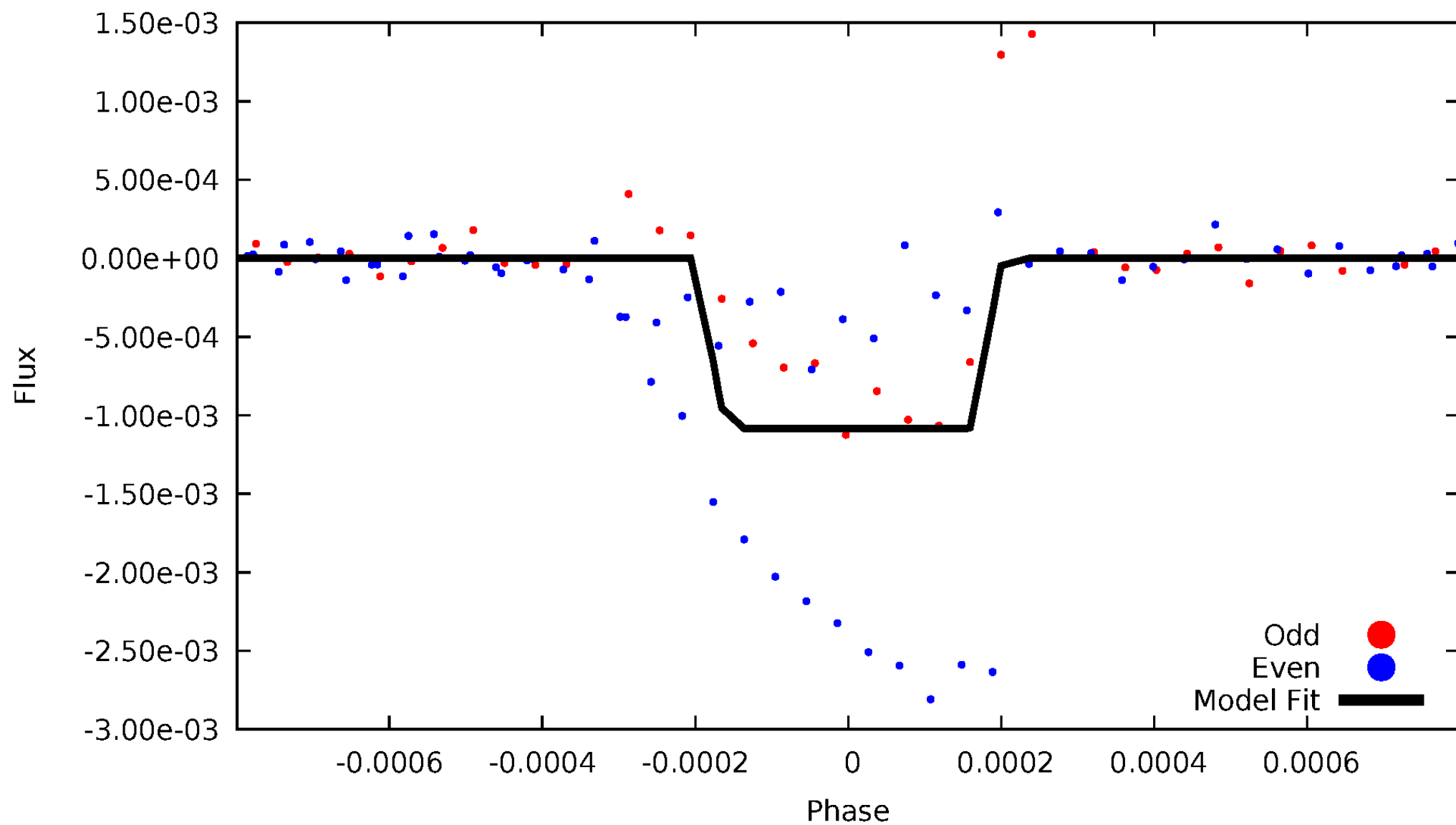
# DV Odd/Even

TCE 006426507-03



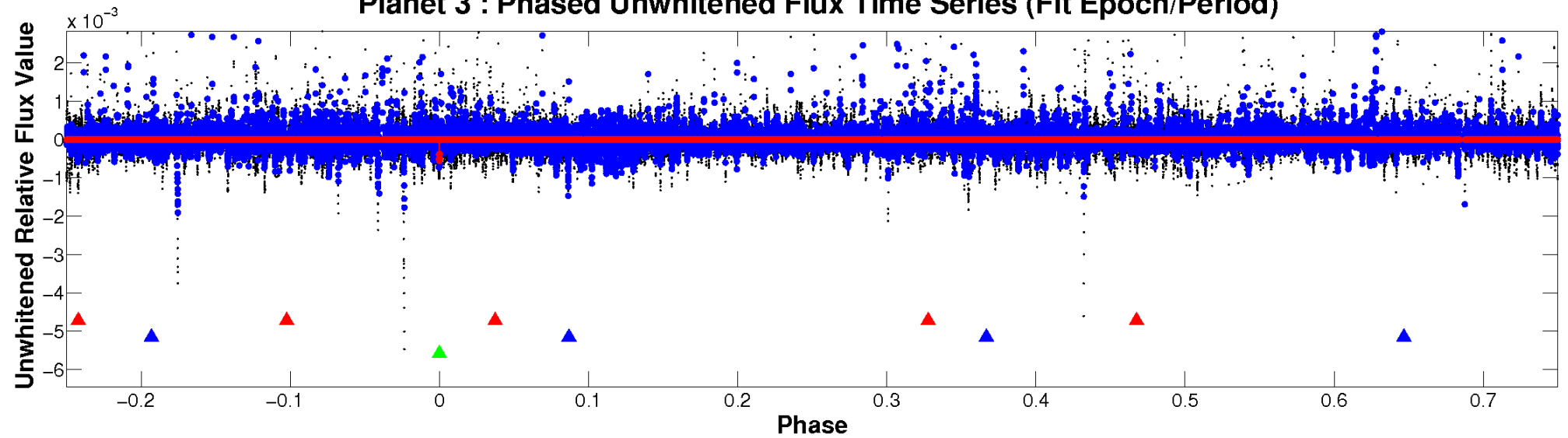
# ALT Odd/Even

TCE 006426507-03

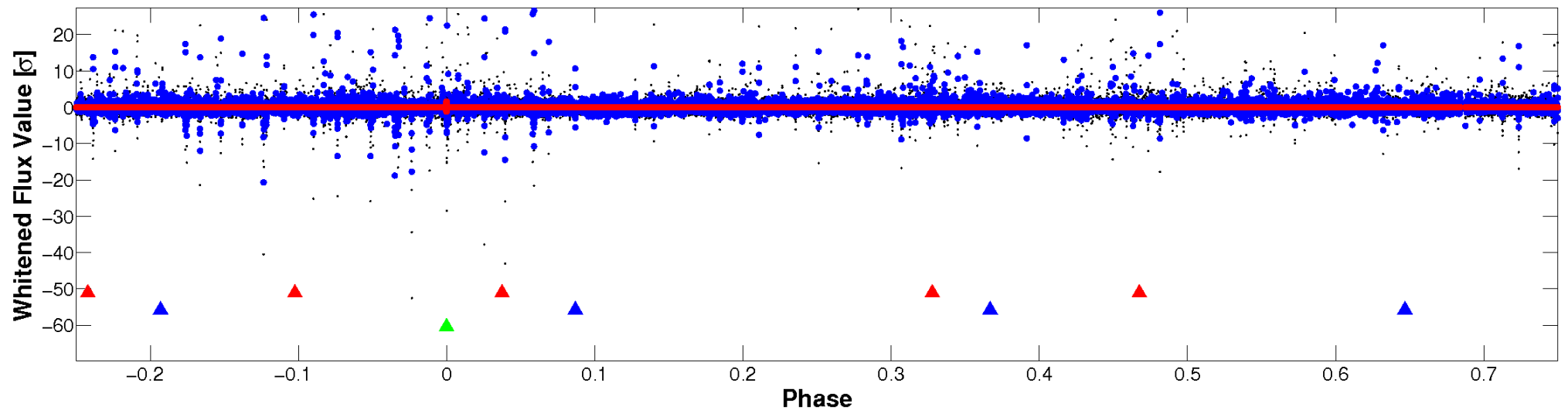


# Non-Whitened Vs. Whitened Light Curve

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

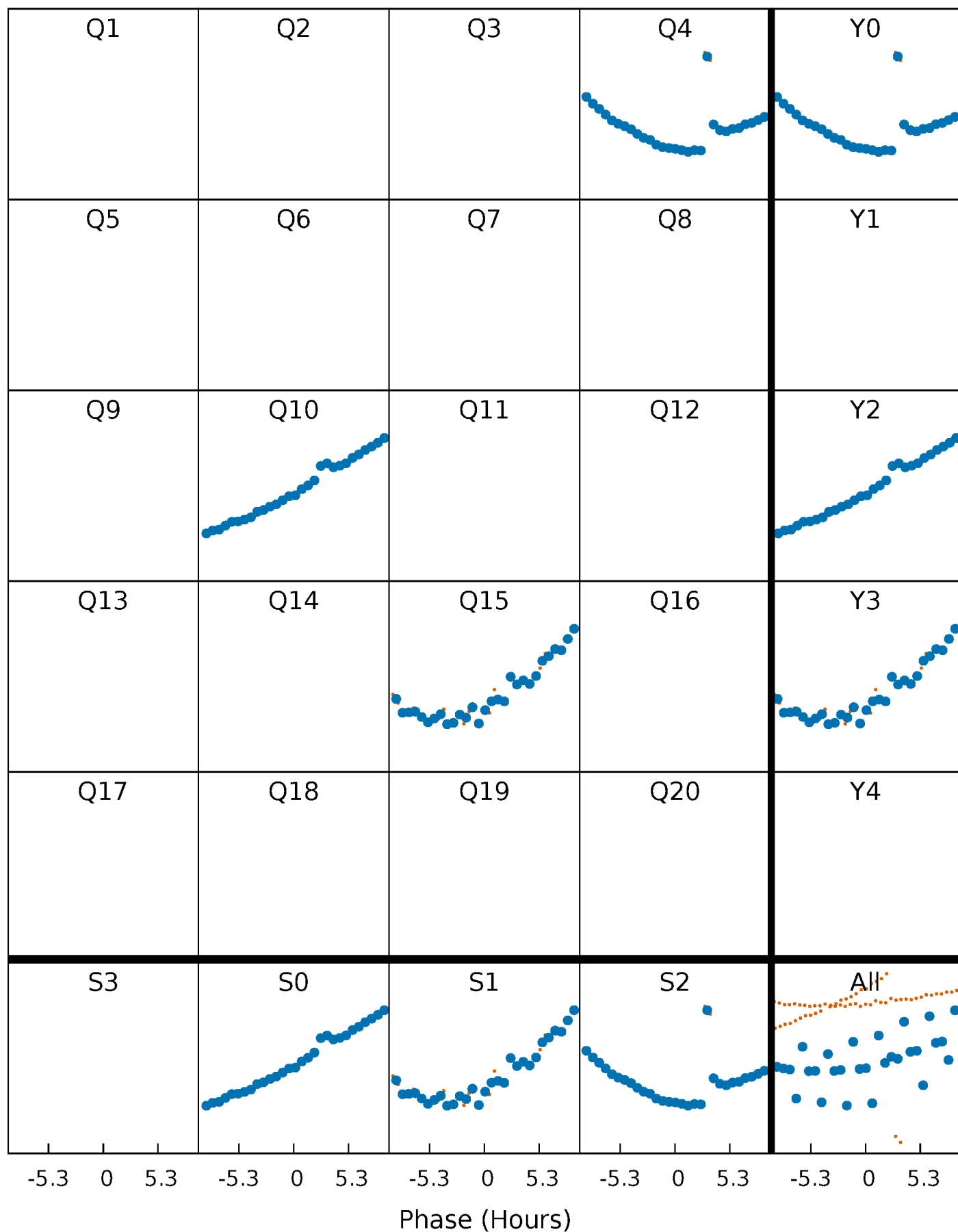


**Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

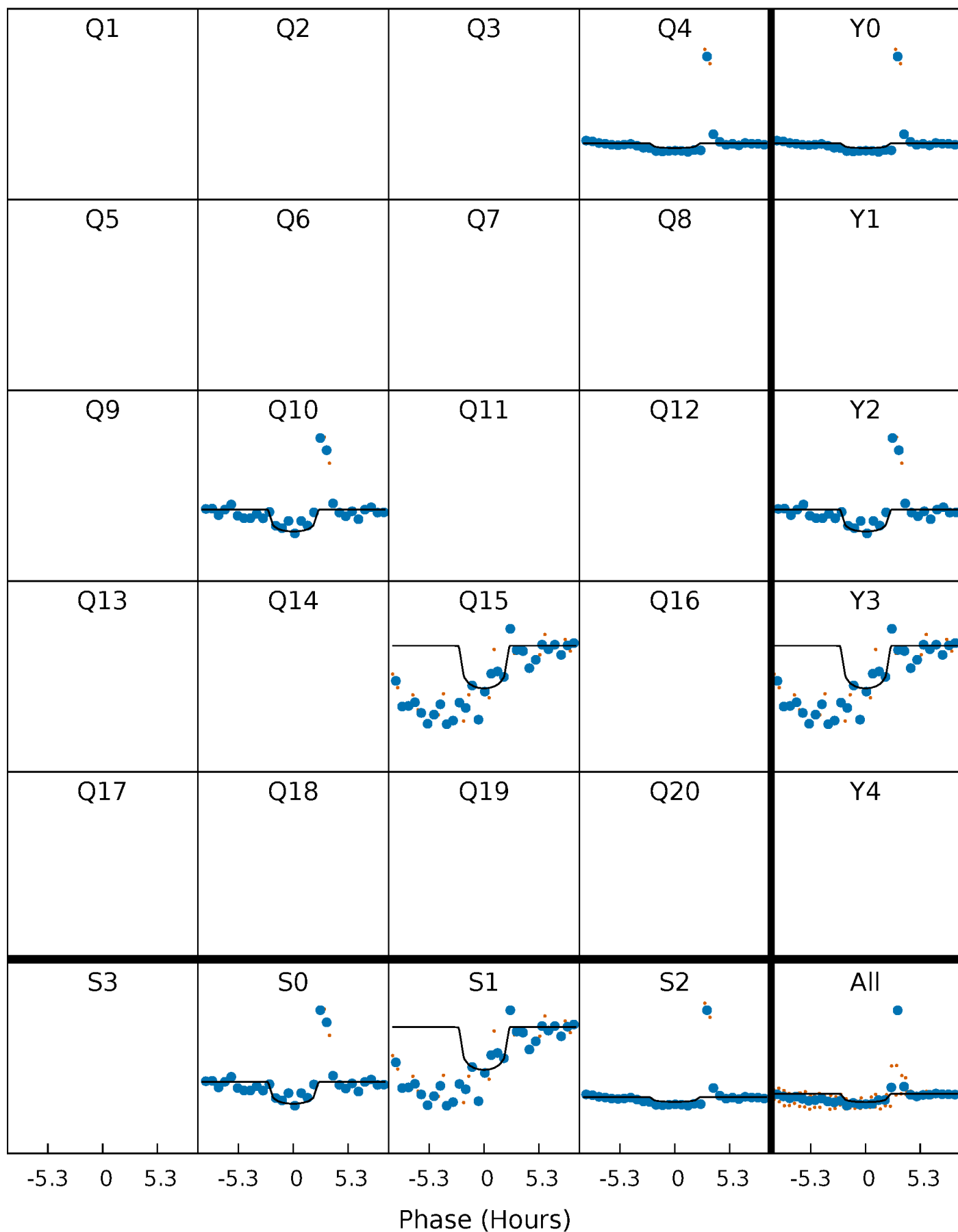
TCE 006426507-03     $P=503.545141$  Days     $T_0=417.500123$  (BKJD)





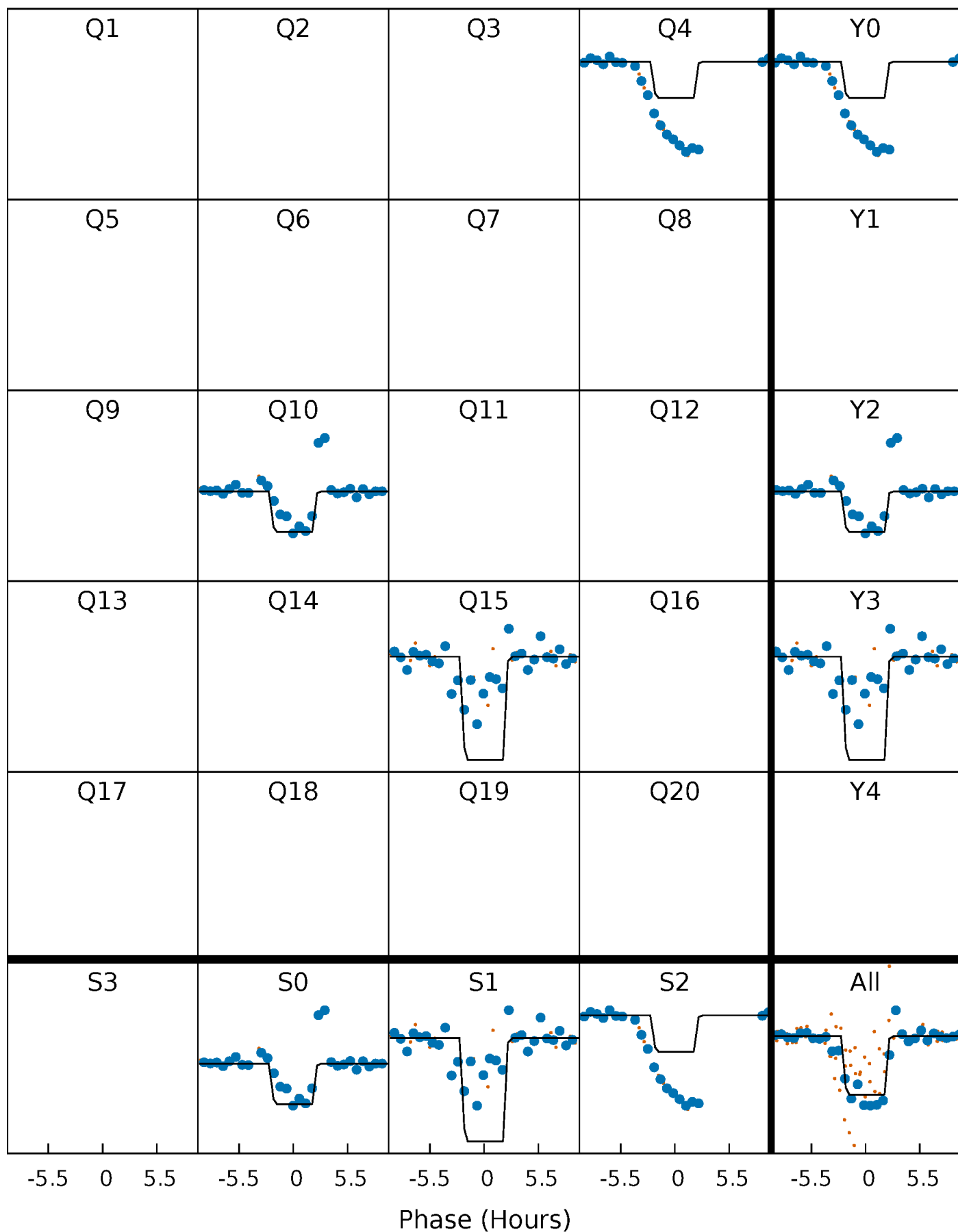
# DV Quarter-Phased Transit Curves

TCE 006426507-03     $P=503.545141$  Days     $T_0=417.500123$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

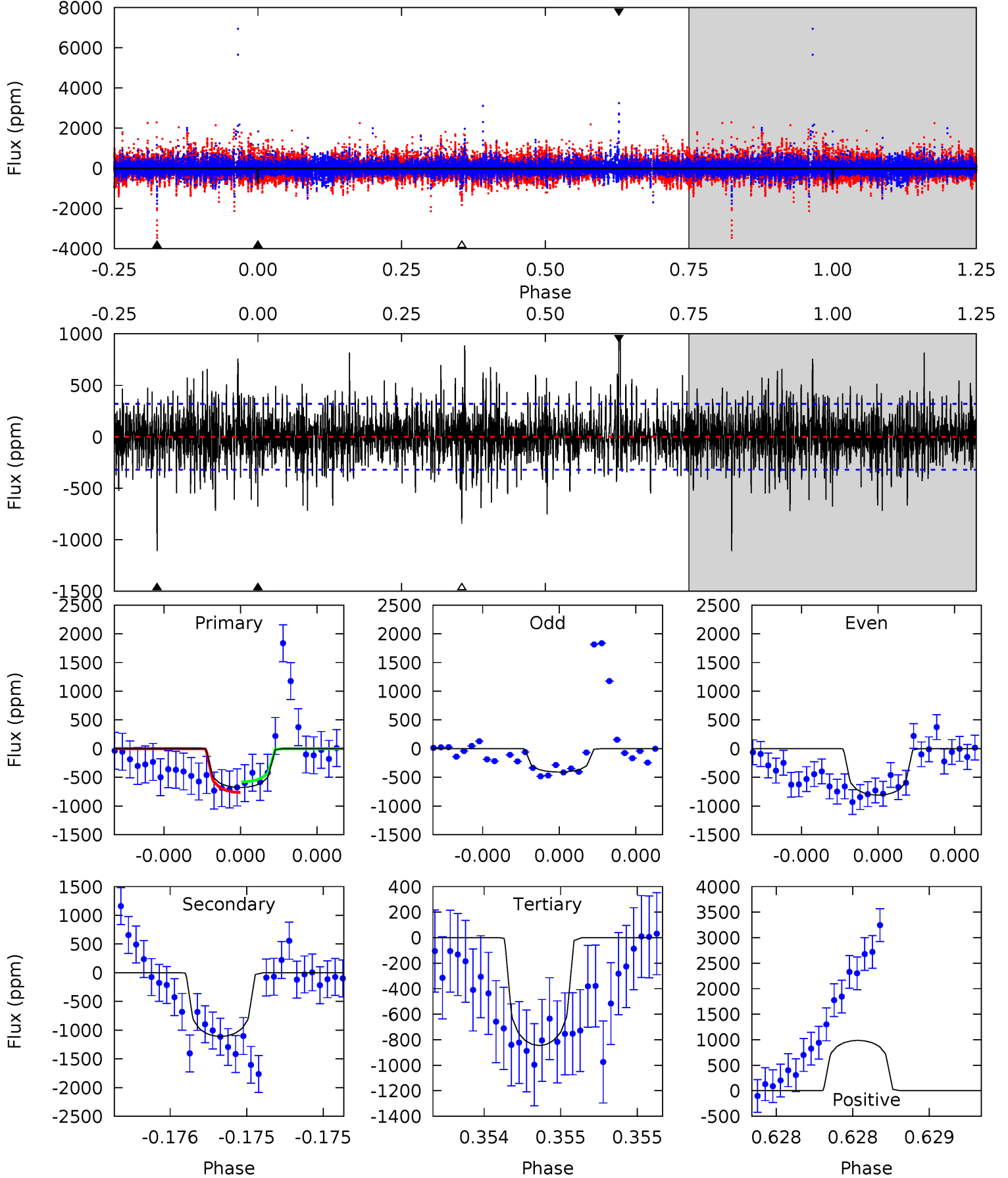
TCE 006426507-03 P=503.544219 Days  $T_0=417.505398$  (BKJD)



# DV Model-Shift Uniqueness Test

006426507-03, P = 503.545141 Days, E = 417.500123 Days

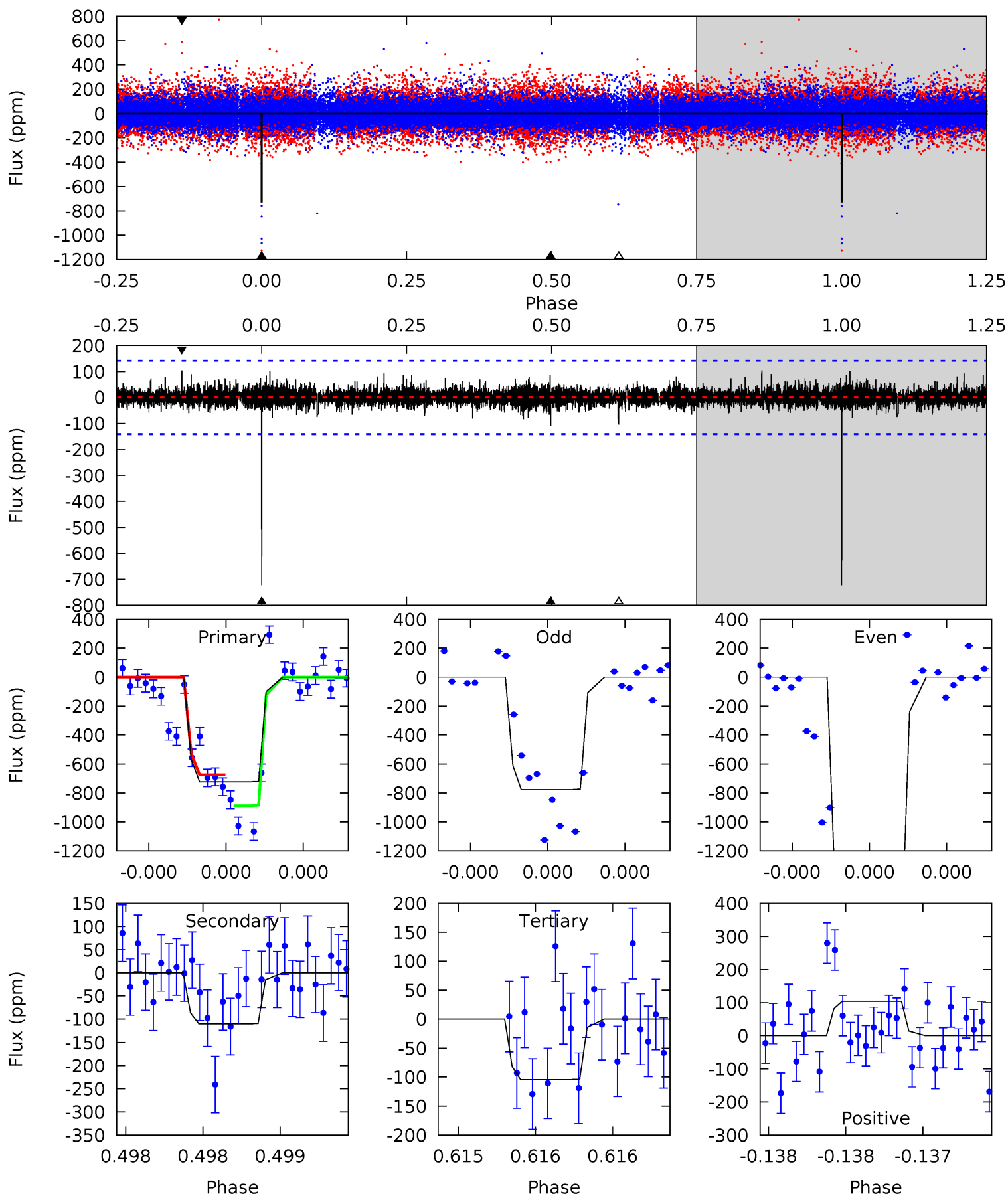
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	19.4	14.8	17.2	5.59	3.51	3.03	-2.94	-5.41	4.61	2.14	3.26	1.08	0.47	1.62



# Alt Model-Shift Uniqueness Test

006426507-03, P = 503.544219 Days, E = 417.505398 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
28.7	4.37	4.14	4.14	5.62	3.56	0.68	24.6	24.6	0.23	0.23	24.3	1.53	0.13	4.06



### Stellar Parameters For KIC 006426507

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5415^{+163}_{-146}$	$4.592^{+0.077}_{-0.056}$	$-0.940^{+0.300}_{-0.300}$	$0.676^{+0.064}_{-0.057}$	$0.652^{+0.071}_{-0.024}$	$2.968^{+0.906}_{-0.581}$
	+3%/-3%	+2%/-1%	+32%/-32%	+9%/-8%	+11%/-4%	+31%/-20%
Source	PHO1	KIC0	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 006426507-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-1109 \pm 57$	$2.82^{+2.64}_{-1.89}$	$264^{+10}_{-10}$	$5136^{+4346}_{-1197}$	$91998^{+755910}_{-68668}$
Alt.	$-110 \pm 25$	$3.22^{+2.71}_{-2.09}$	$265^{+9}_{-10}$	$3219^{+1444}_{-523}$	$6529^{+53104}_{-4619}$

$T_{\text{max}}$  = 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

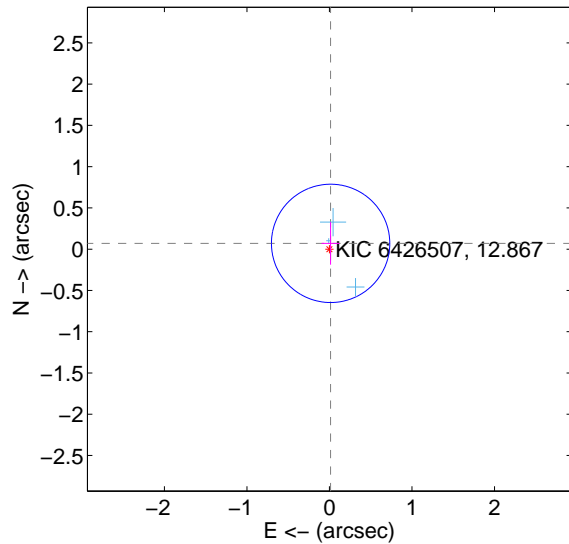
Supplemental centroid analysis for 006426507-03. Kepler magnitude: 12.87. Transit SNR 5.63

There are 3 quarters with good PRF difference image offsets

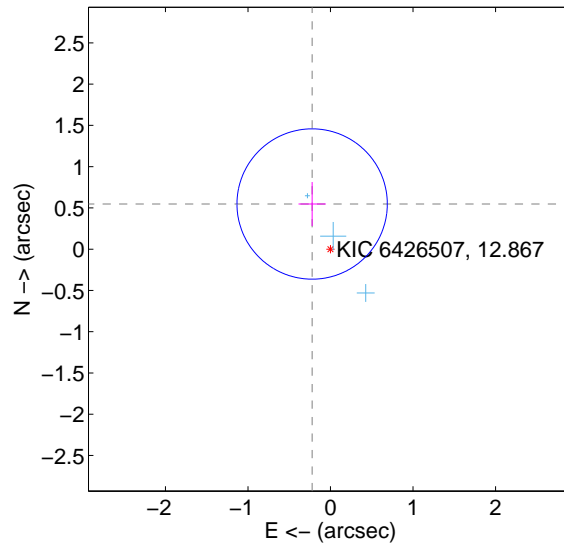
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.072 \pm 0.239$	0.30	$-0.014 \pm 0.108$	$0.070 \pm 0.258$
PRF-fit source offset from KIC position	$0.591 \pm 0.304$	1.95	$0.223 \pm 0.165$	$0.547 \pm 0.267$
photometric centroid source offset	$0.45 \pm 0.66$	0.67	$-0.19 \pm 0.59$	$0.41 \pm 0.68$

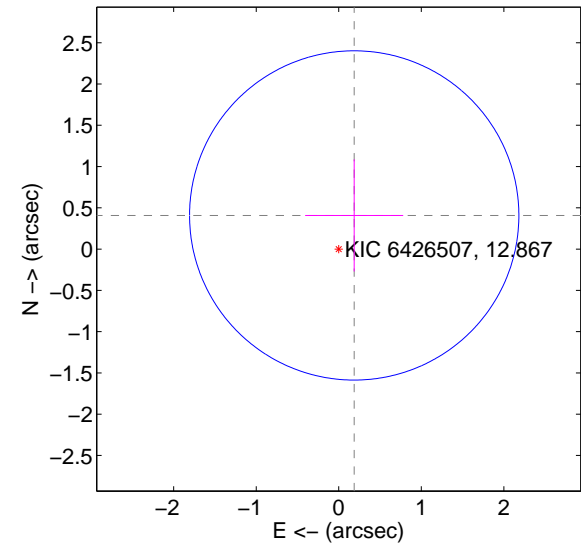
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

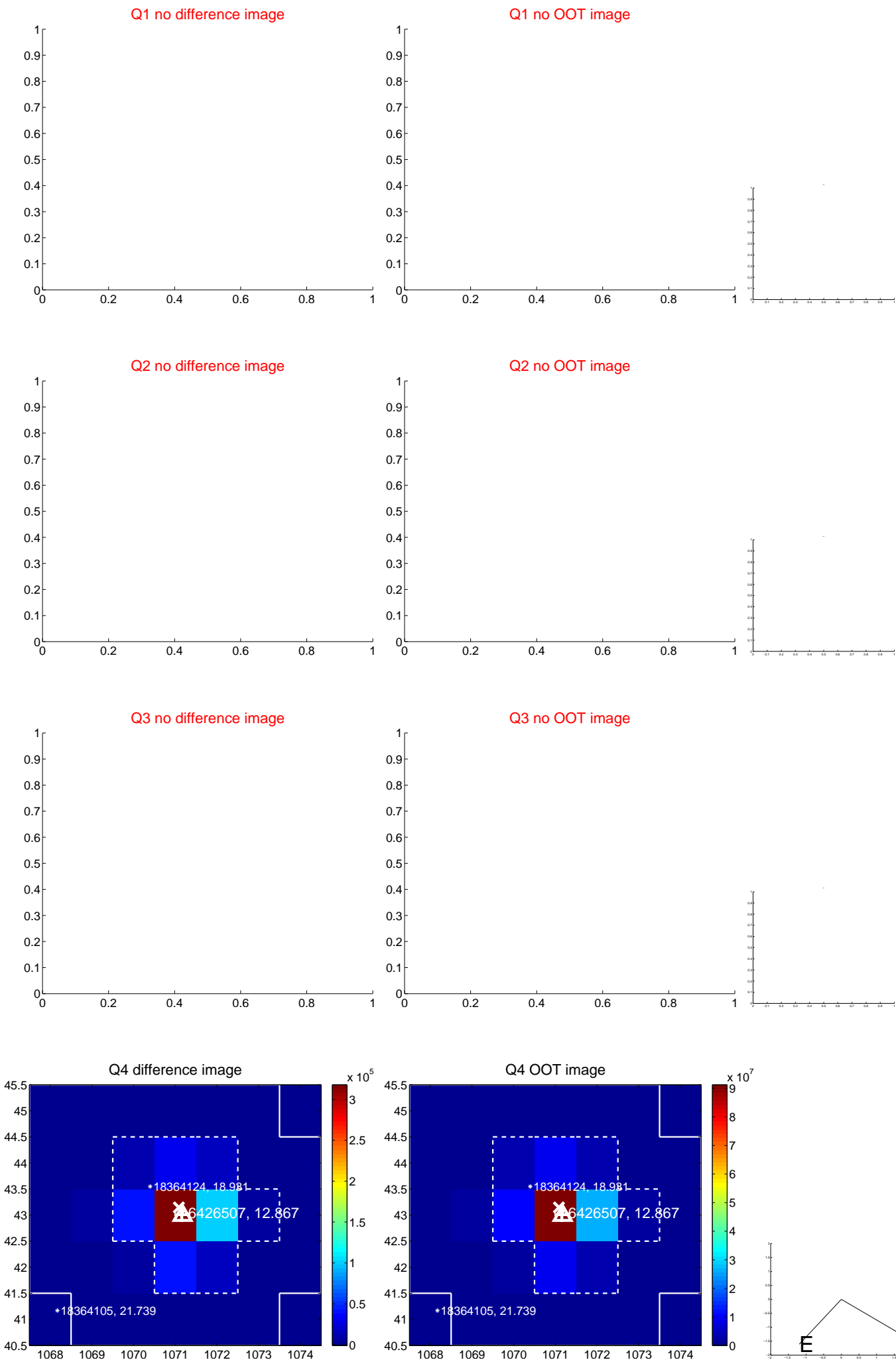


offset from photometric centroids



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.

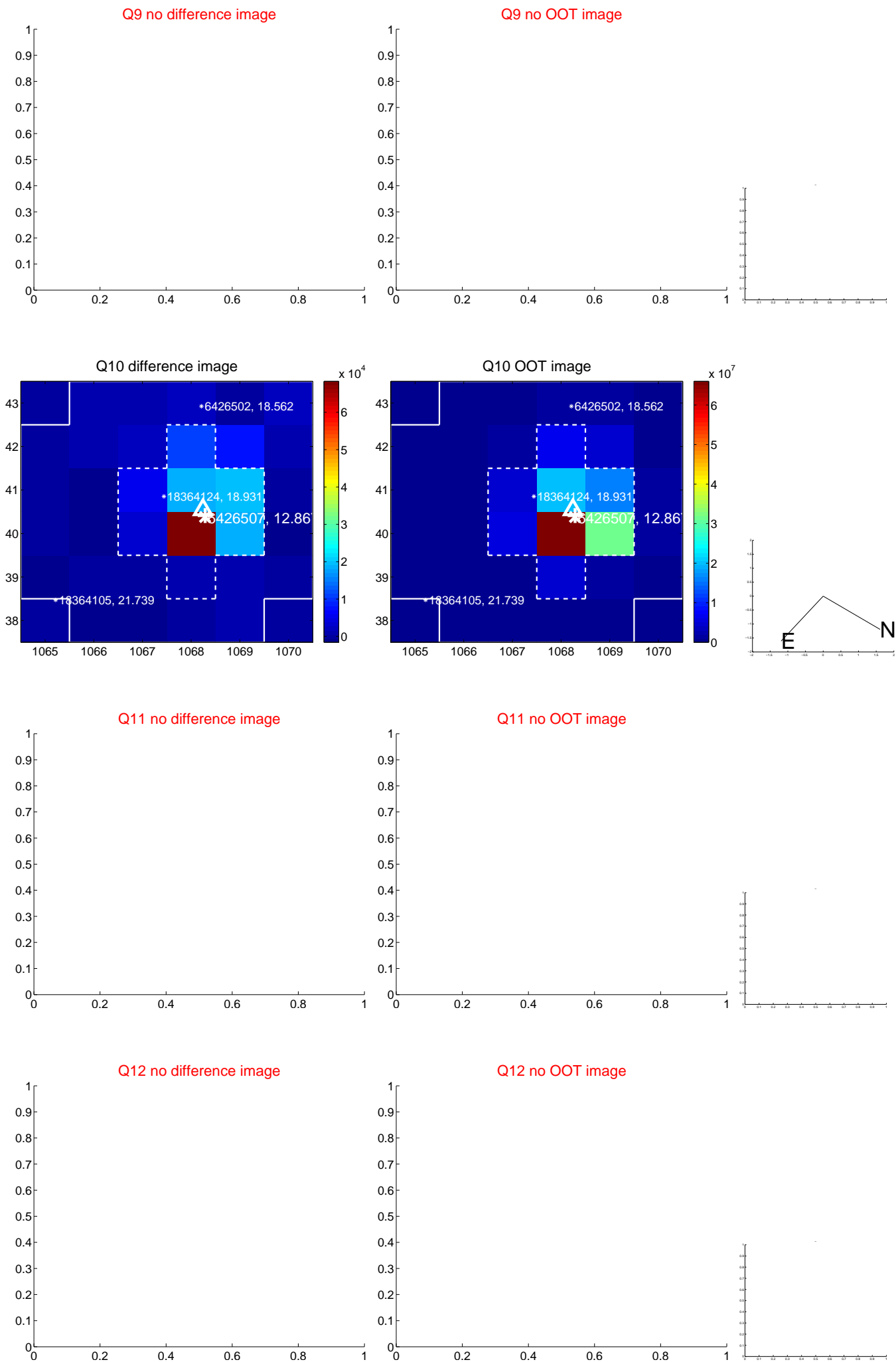


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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.

Q13 no difference image



Q13 no OOT image



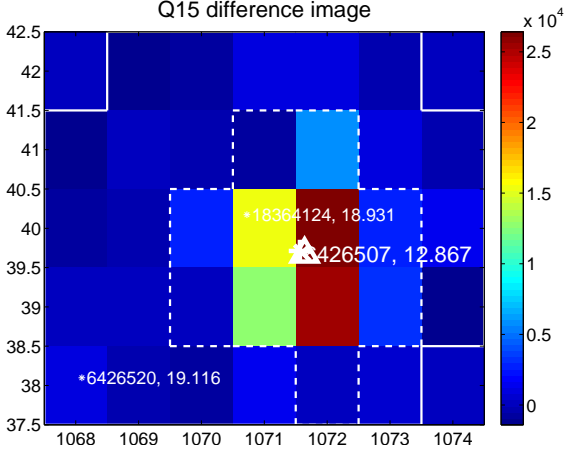
Q14 no difference image



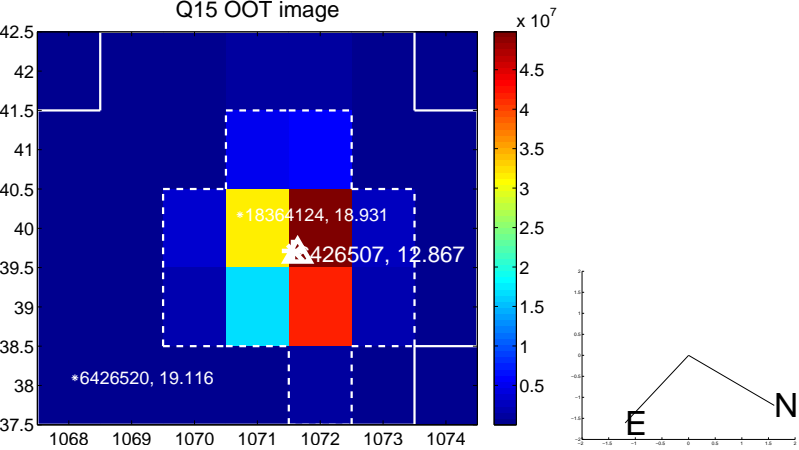
Q14 no OOT image



Q15 difference image



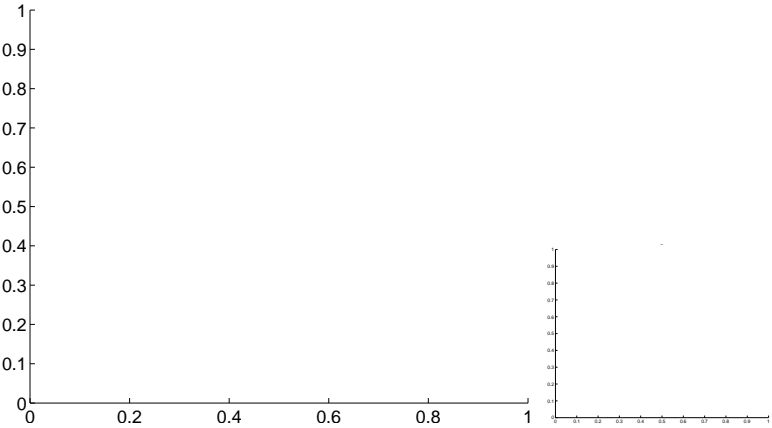
Q15 OOT image



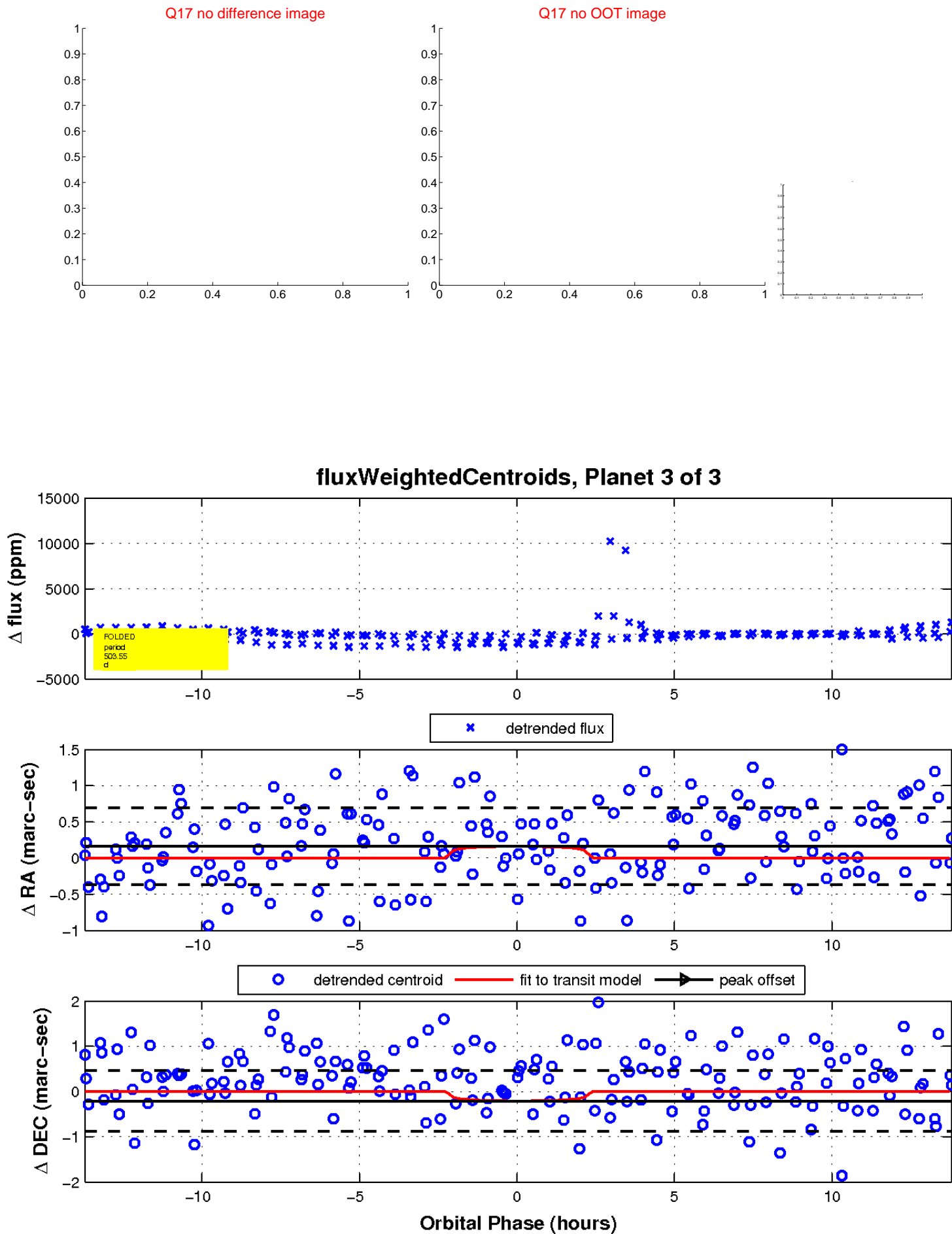
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

