

# KIC 006449358

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006449358-01	OBS	6147.01	5.776795	133.627418	121469.6	6.332	24308.7	16180.8	3.60	7666	129.23	6060.88
006449358-02	OBS	No	5.776794	136.515189	10898.9	6.176	2199.9	1657.4	3.60	7666	41.64	6060.88
006449358-03	OBS	No	194.627259	318.827086	1341.7	21.788	25.3	16.9	3.60	7666	24.37	55.70

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006449358-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
006449358-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
006449358-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

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

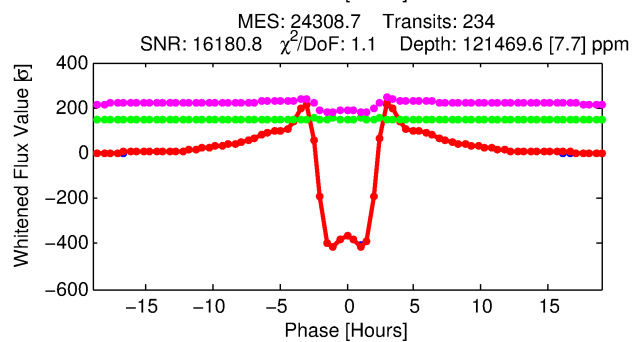
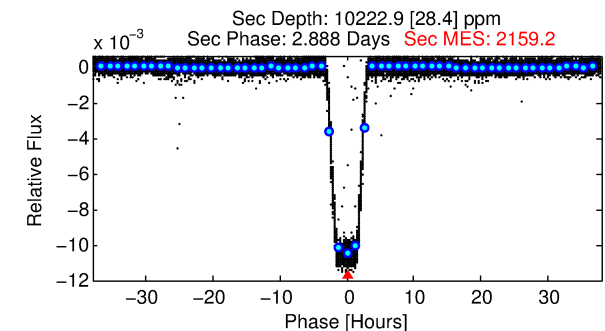
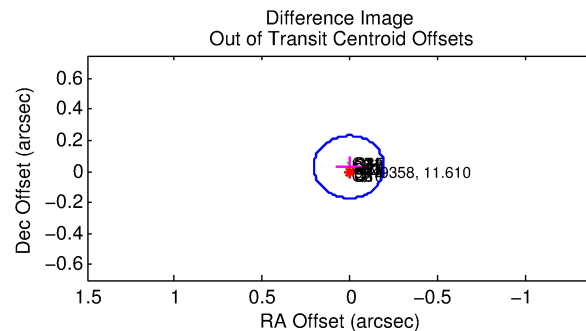
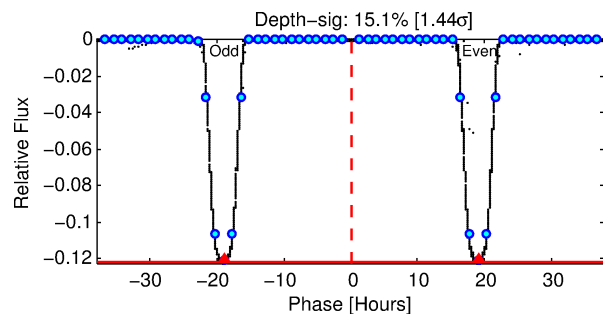
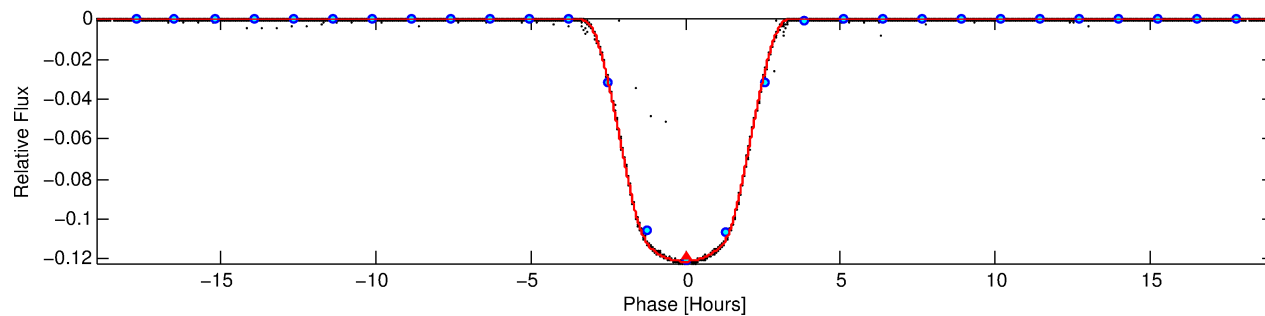
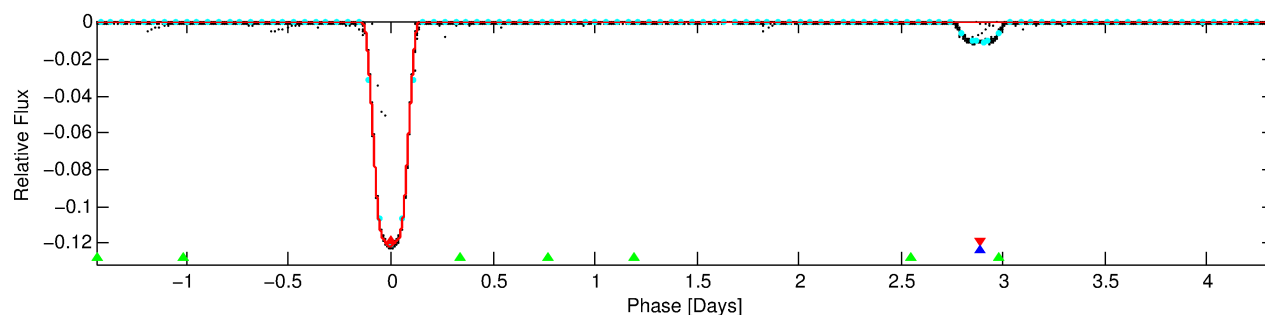
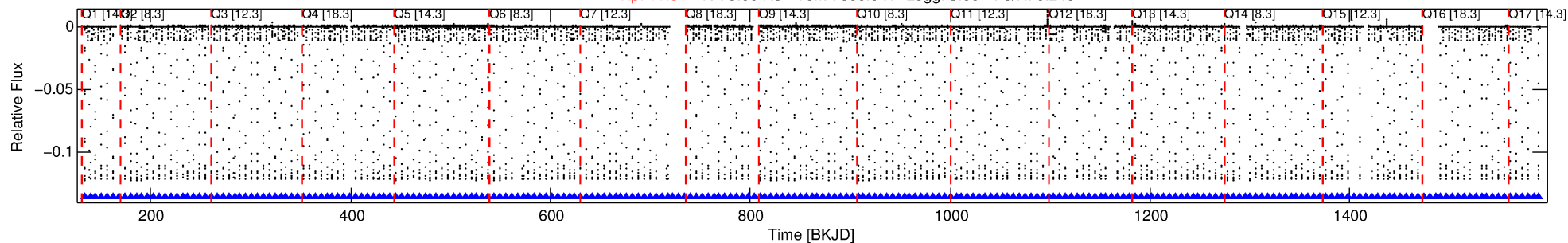
## Ephemeris Match Information For 006449358-01

No Significant Match Found

# DV One-Page Summary

KIC: 6449358 Candidate: 1 of 3 Period: 5.777 d  
KOI: K06147.01 Corr: 1.000

Kp: 11.61 R\*: 3.60 Rs Teff: 7666.0 K Logg: 3.66 Fe/H: 0.240



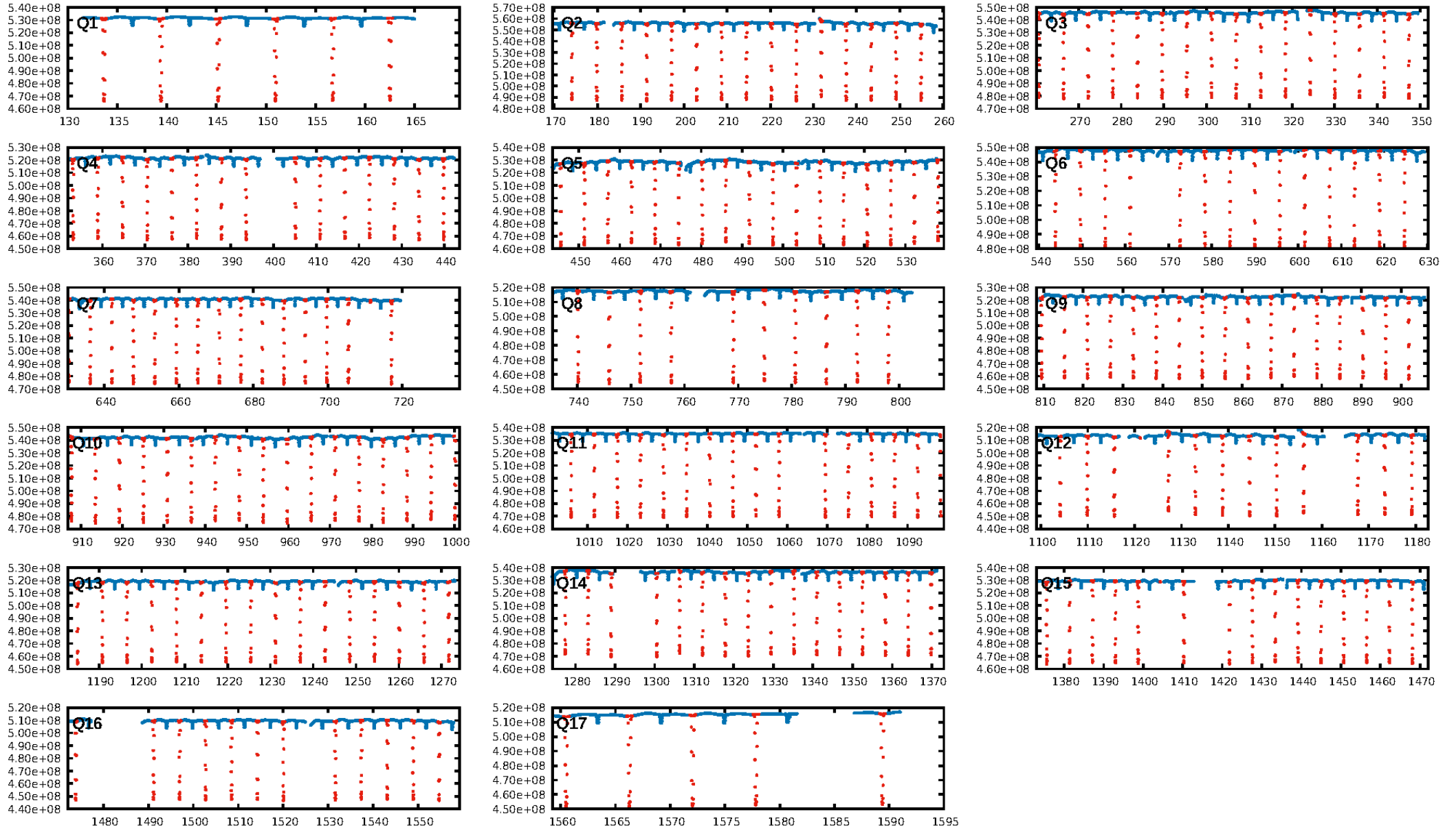
## DV Fit Results:

Period = 5.77680 [0.00000] d  
Epoch = 133.6274 [0.0000] BKJD  
Rp/R\* = 0.3289 [0.0000]  
a/R\* = 8.93 [0.00]  
b = 0.37 [0.00]  
Seff = 6060.88 [4514.13]  
Teq = 2250 [419] K  
Rp = 129.23 [56.38] Re  
a = 0.0814 [0.0359] AU  
Ag = 2.23 [1.61] [0.76σ]  
Teffp = 4251 [185] K [4.37σ]

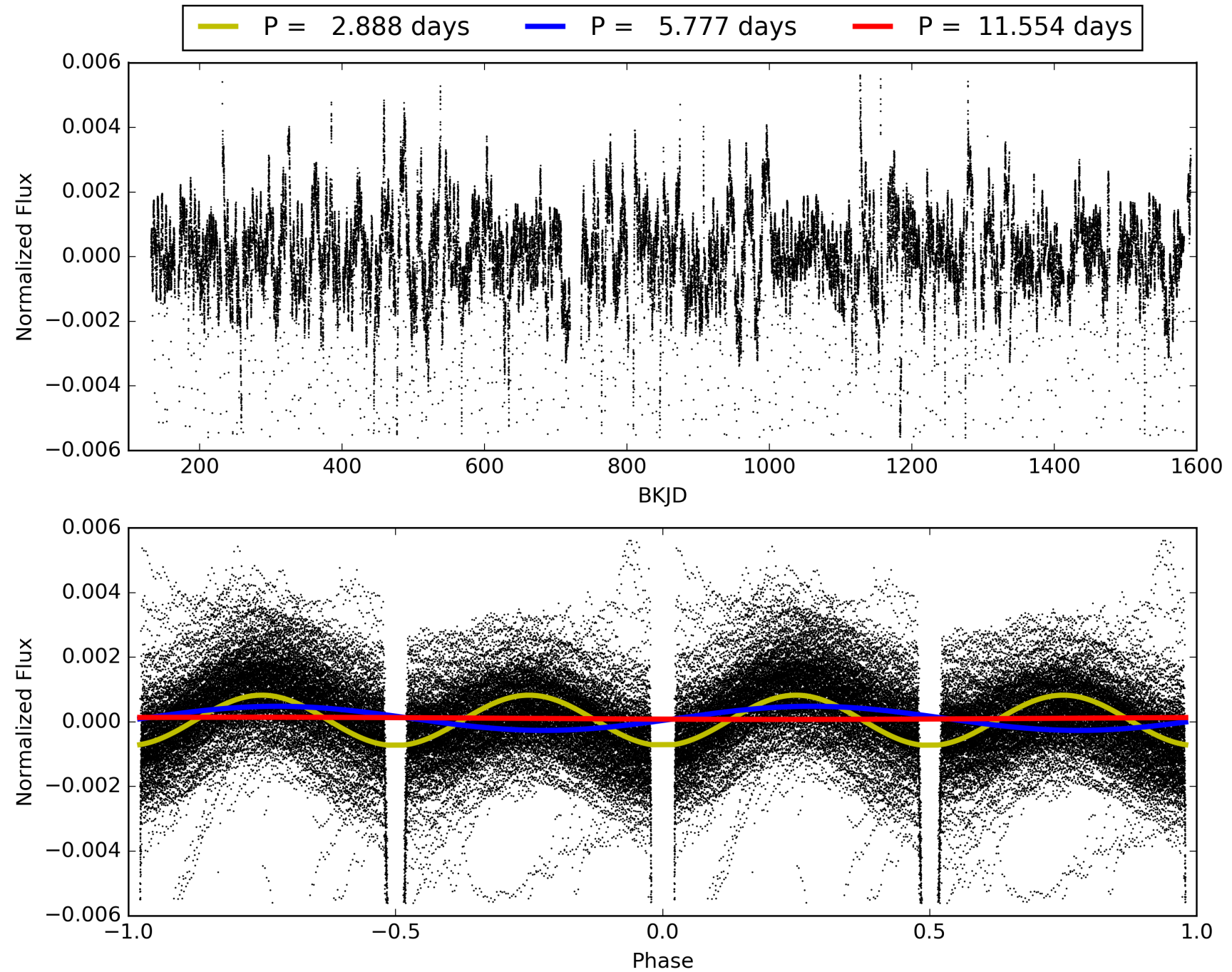
## DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: 100.0% [199.76σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [223/223]  
GhostDiagnostic-chr: 7.107  
Centroid-sig: 0.0%  
Centroid-so: 0.085 arcsec [404.62σ]  
OotOffset-rm: 0.030 arcsec [0.45σ]  
KicOffset-rm: 0.077 arcsec [1.12σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006449358-01, PDC Light Curves

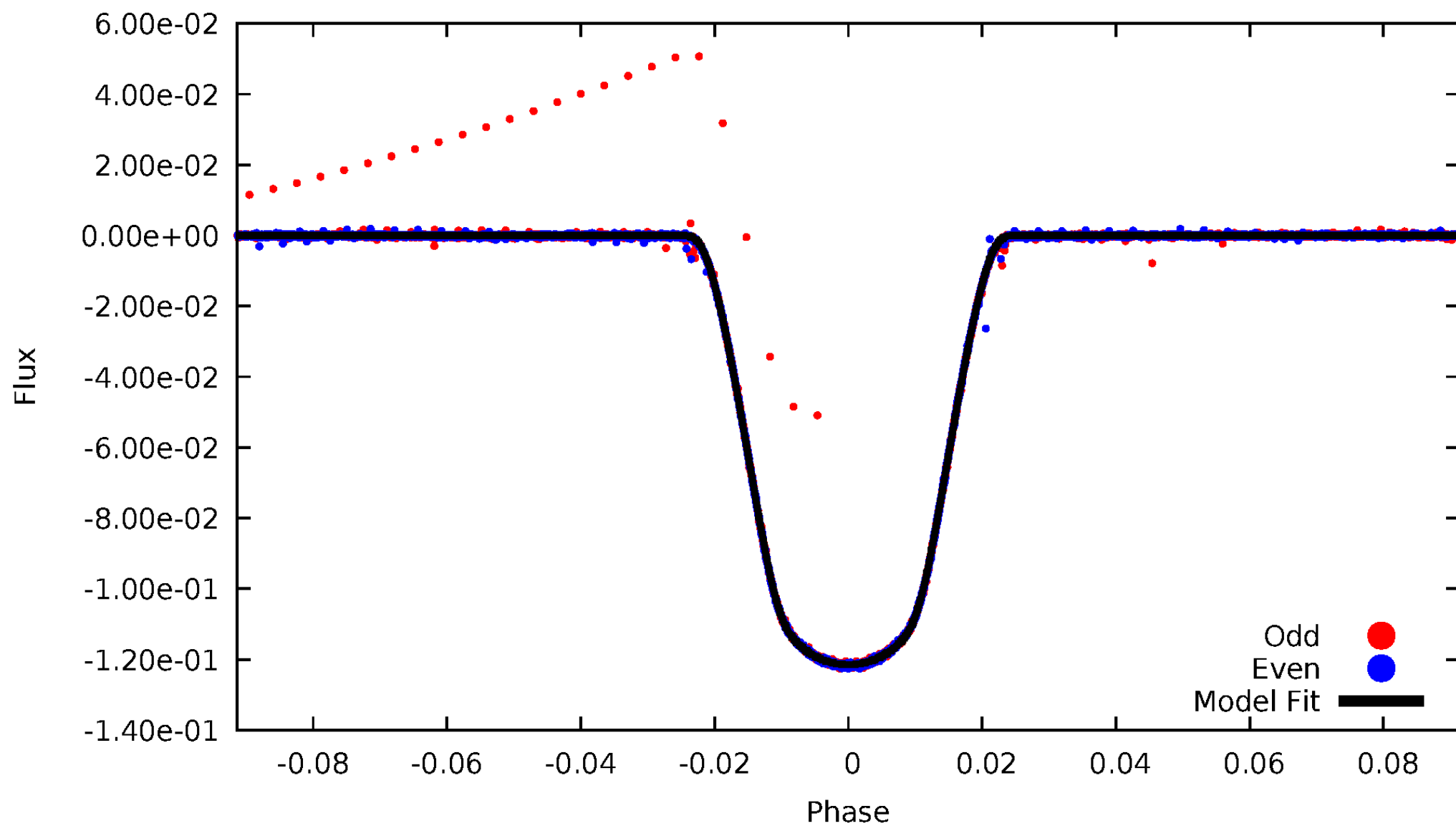


TCE 006449358-01



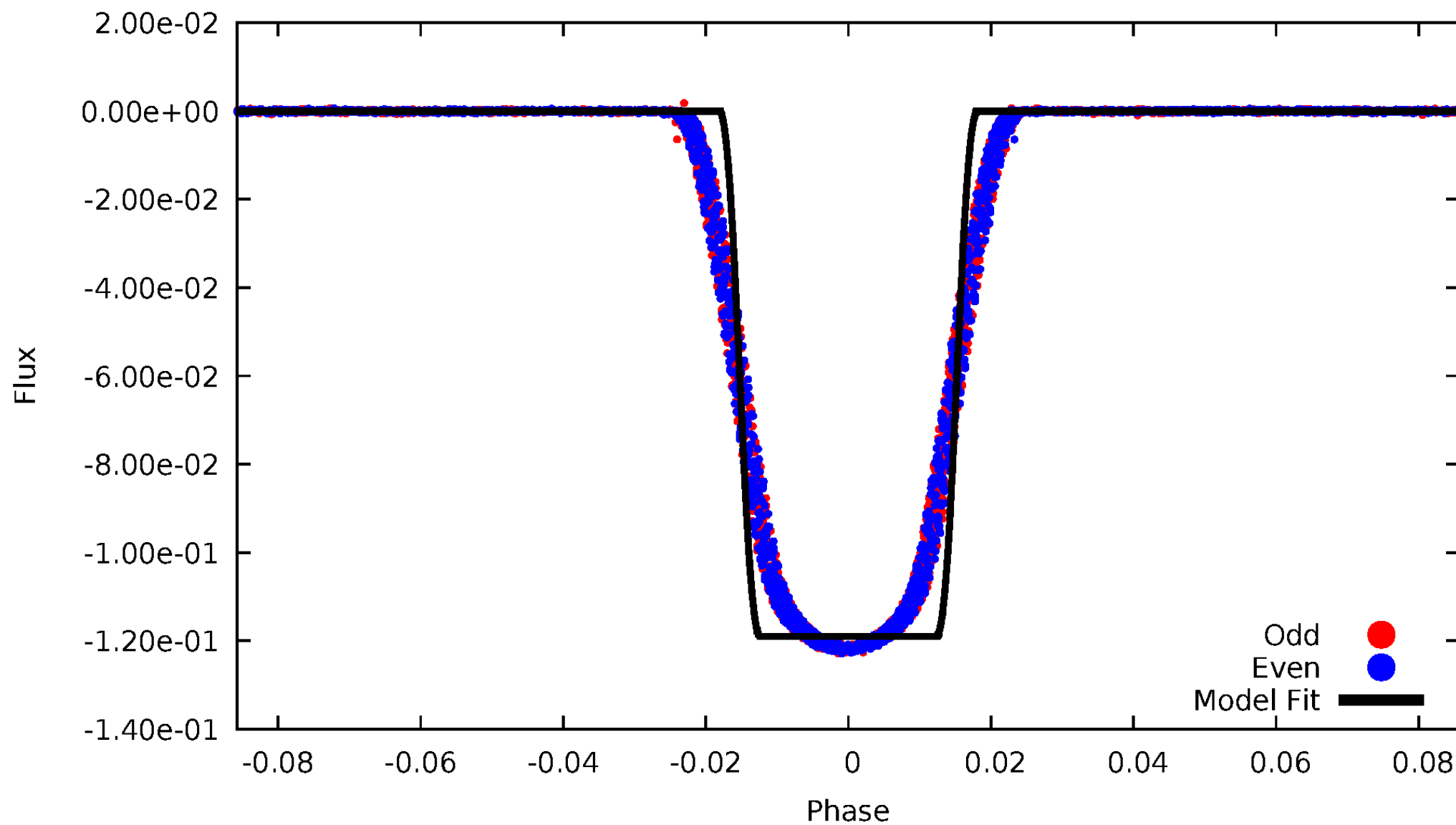
# DV Odd/Even

TCE 006449358-01



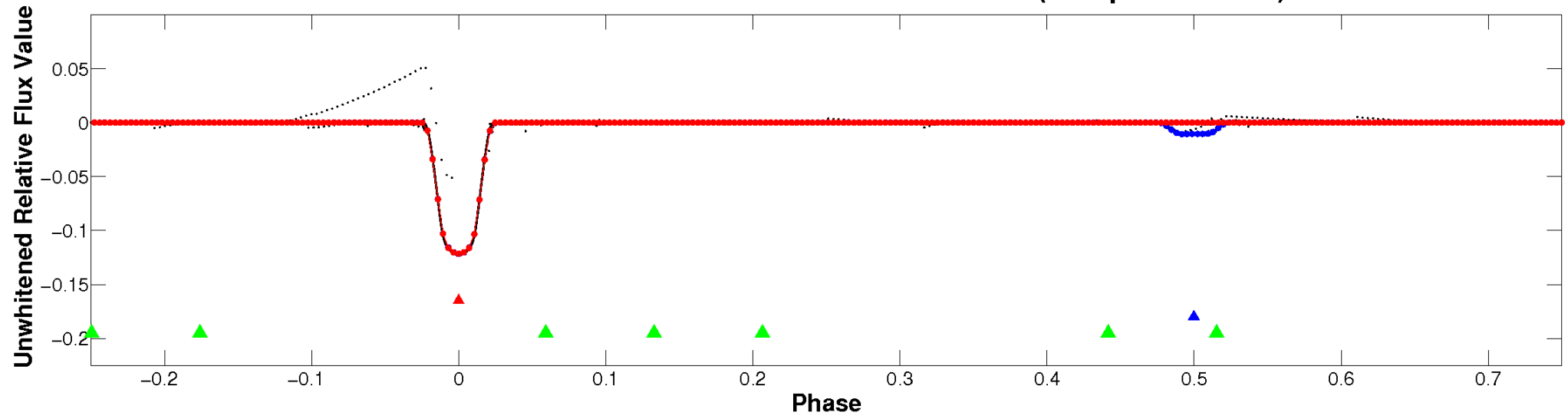
# ALT Odd/Even

TCE 006449358-01

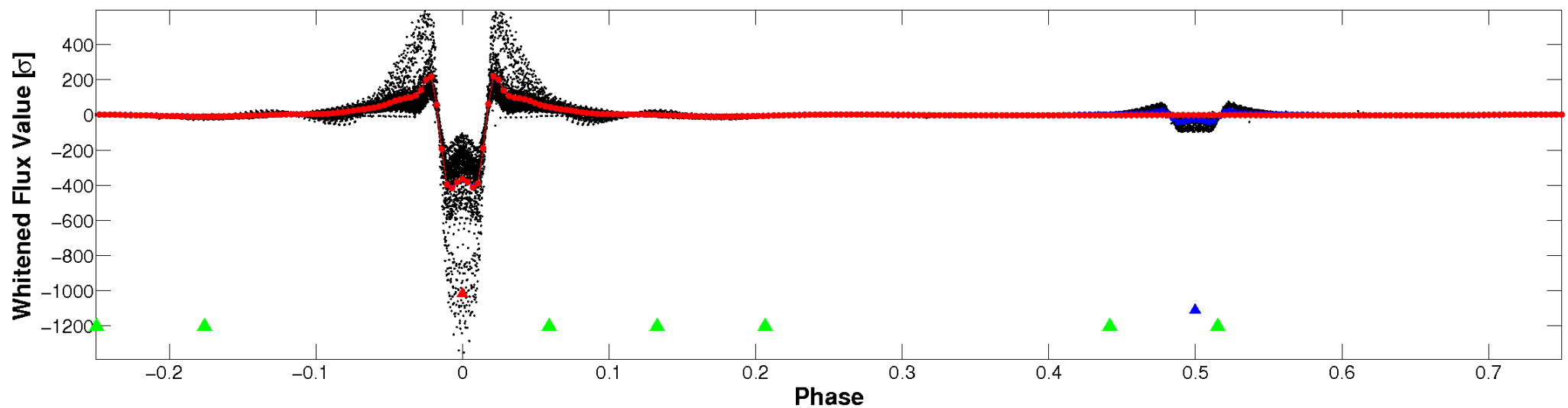


# Non-Whitened Vs. Whitened Light Curve

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

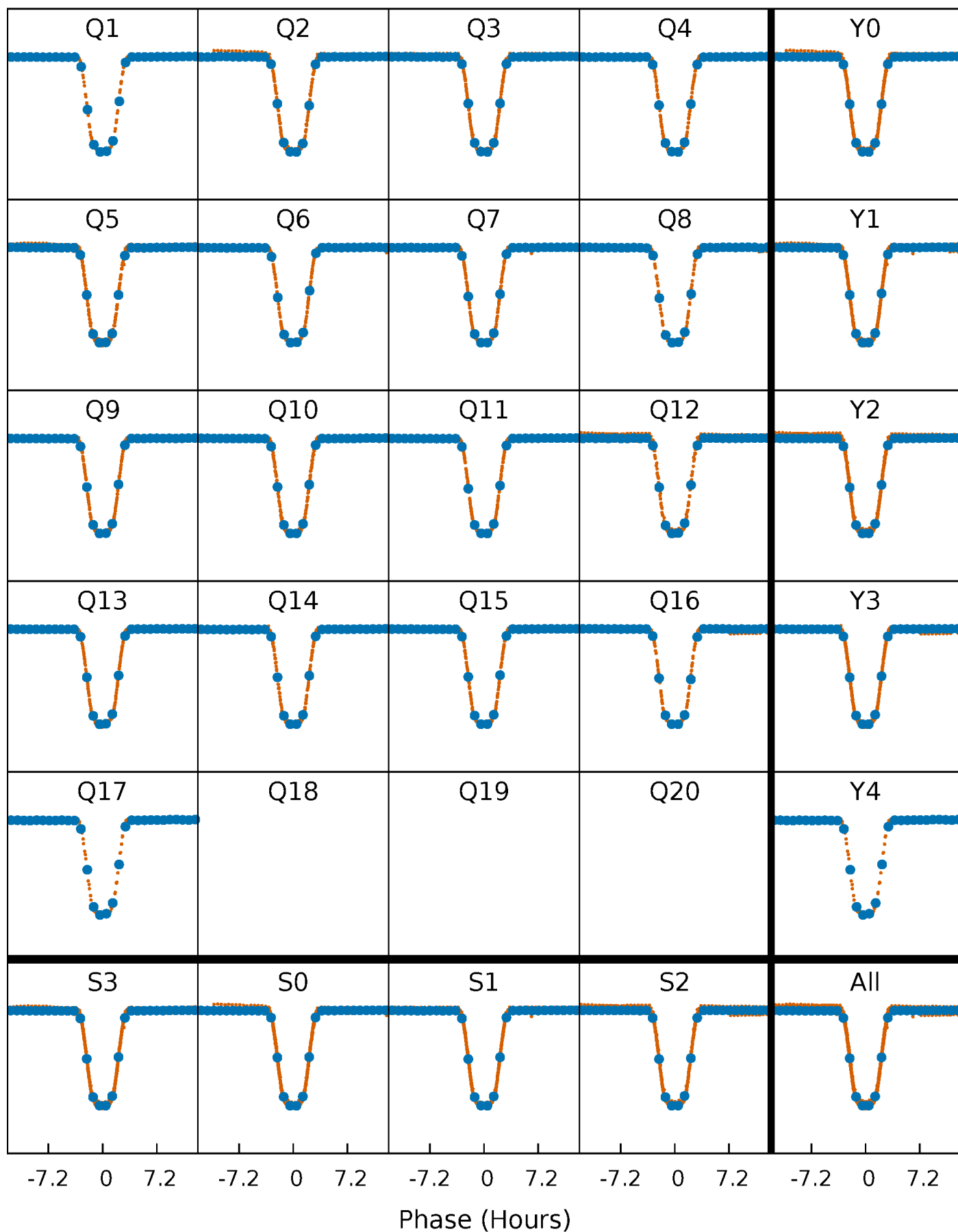


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

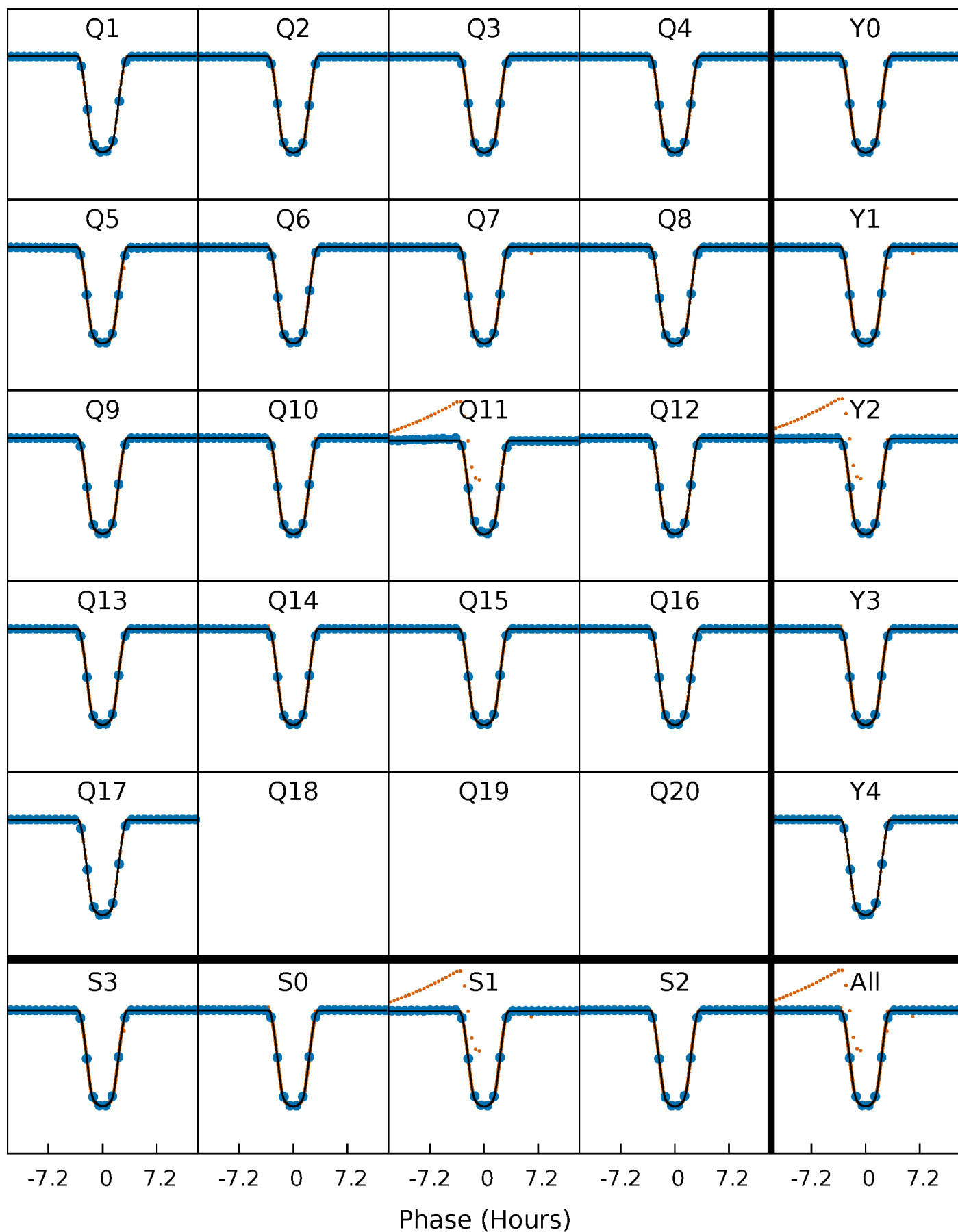
TCE 006449358-01 P= 5.776795 Days  $T_0=133.627418$  (BKJD)





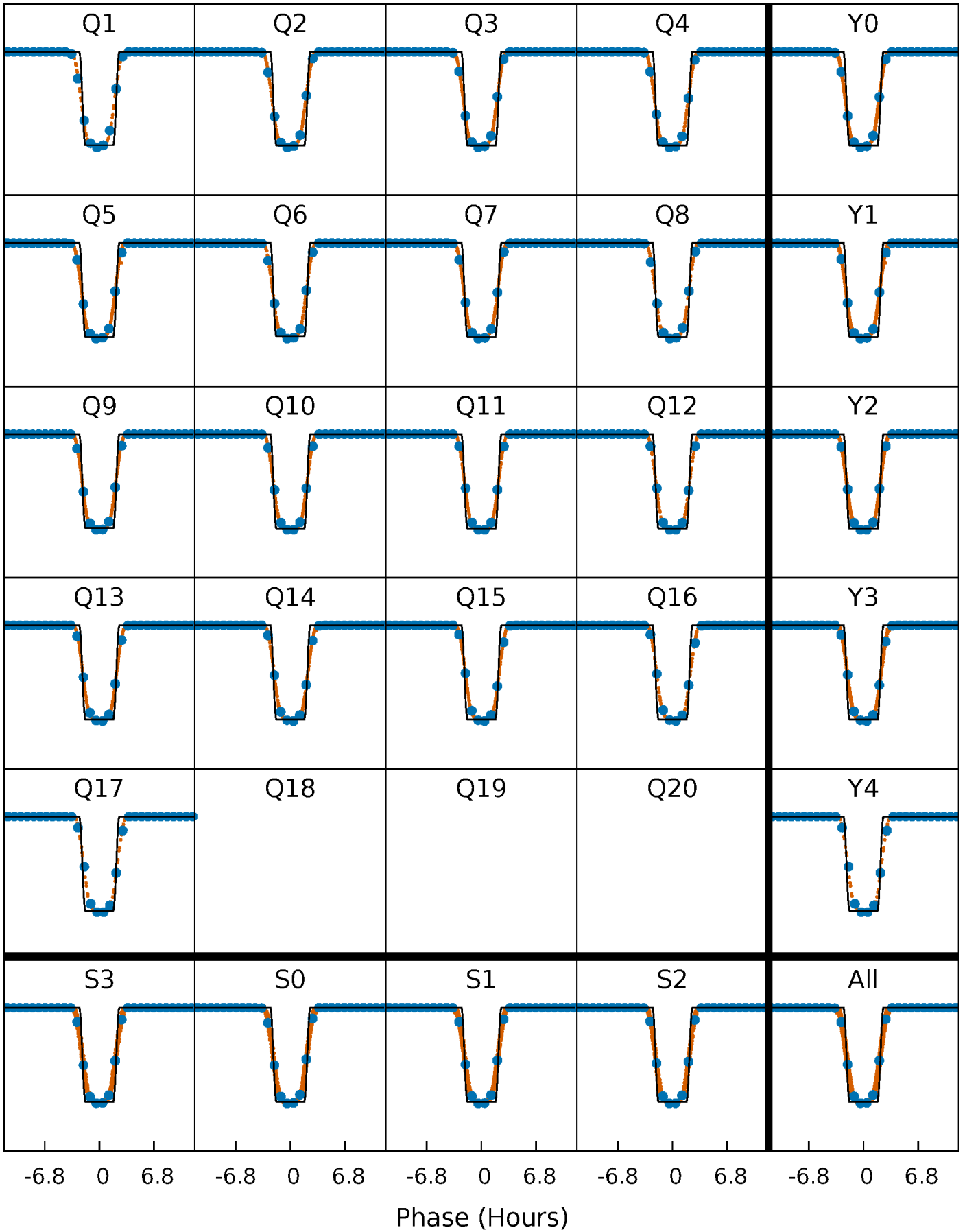
# DV Quarter-Phased Transit Curves

TCE 006449358-01 P= 5.776795 Days  $T_0=133.627418$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

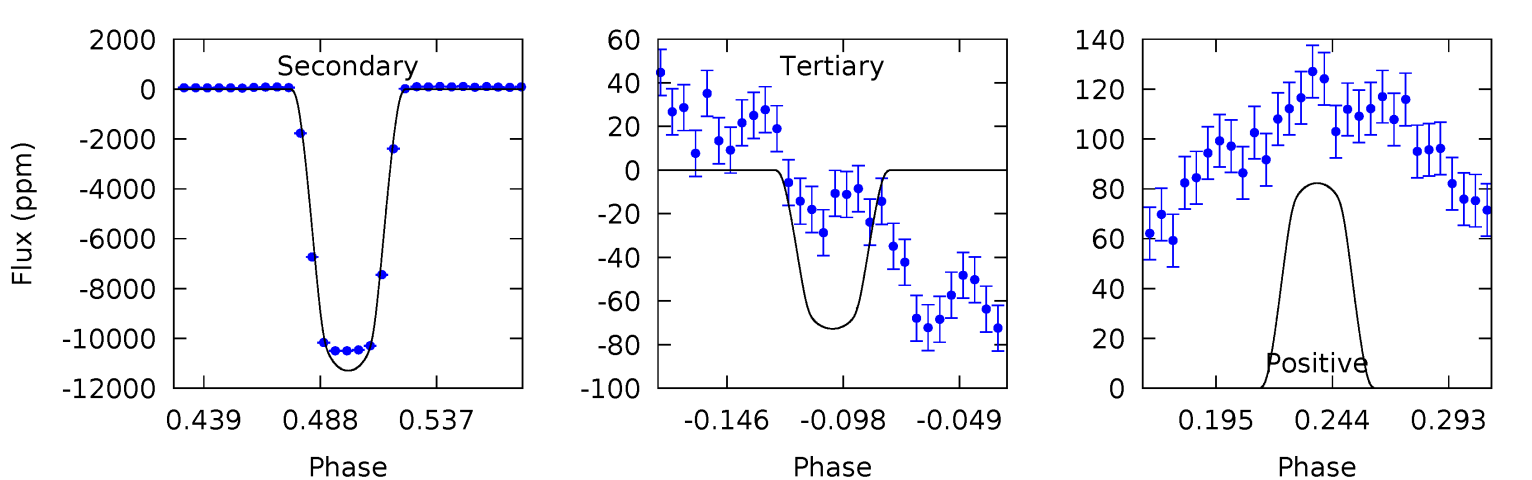
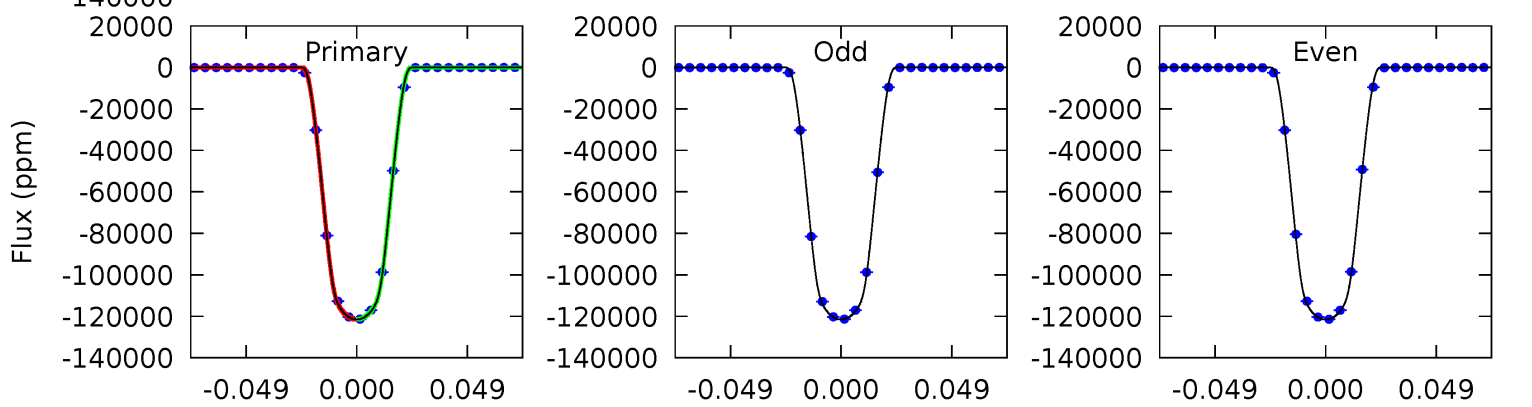
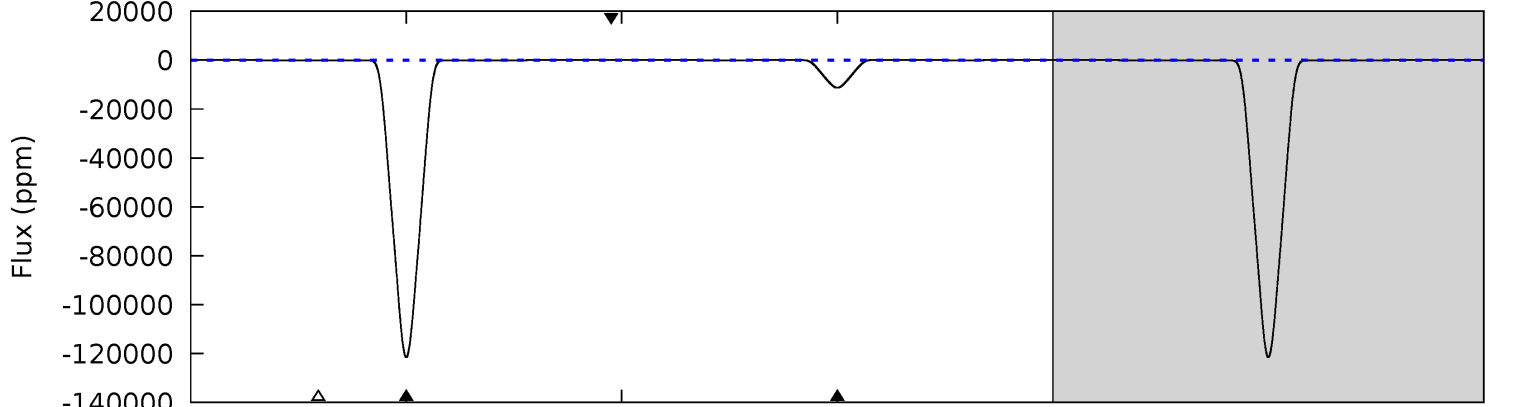
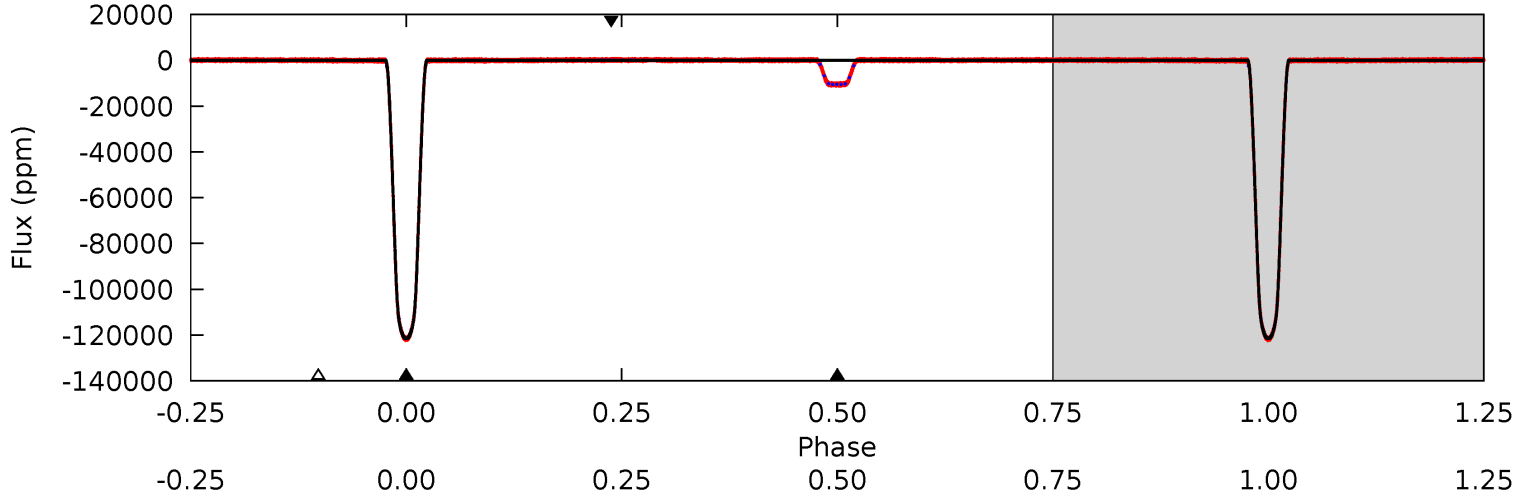
TCE 006449358-01 P= 5.776738 Days  $T_0=133.635880$  (BKJD)



# DV Model-Shift Uniqueness Test

006449358-01, P = 5.776795 Days, E = 127.850623 Days

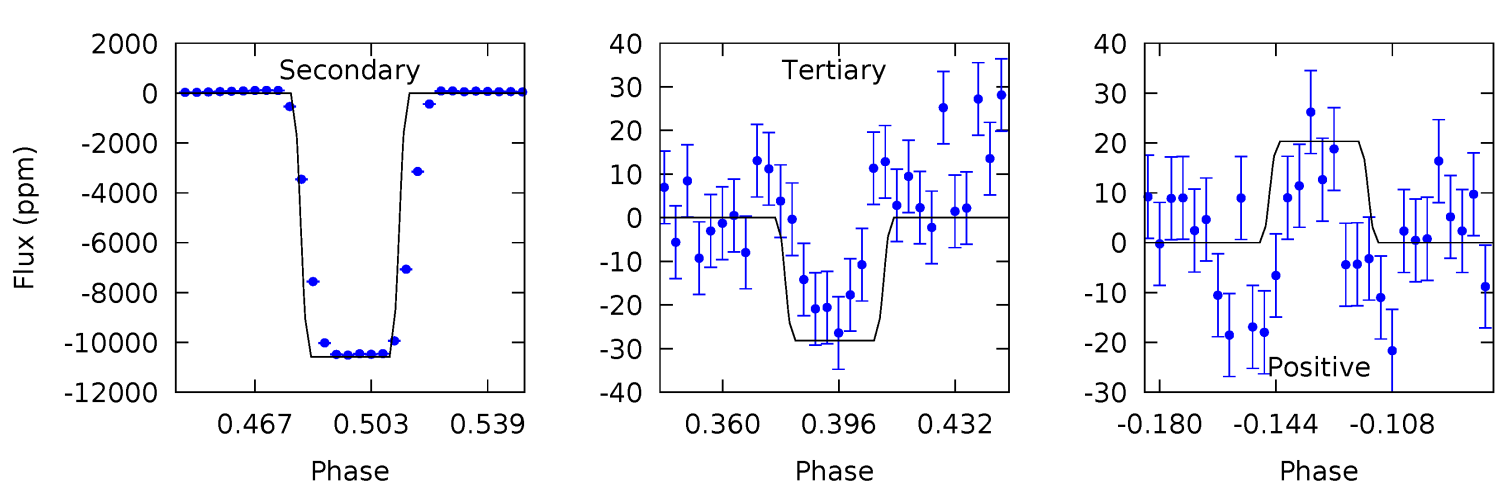
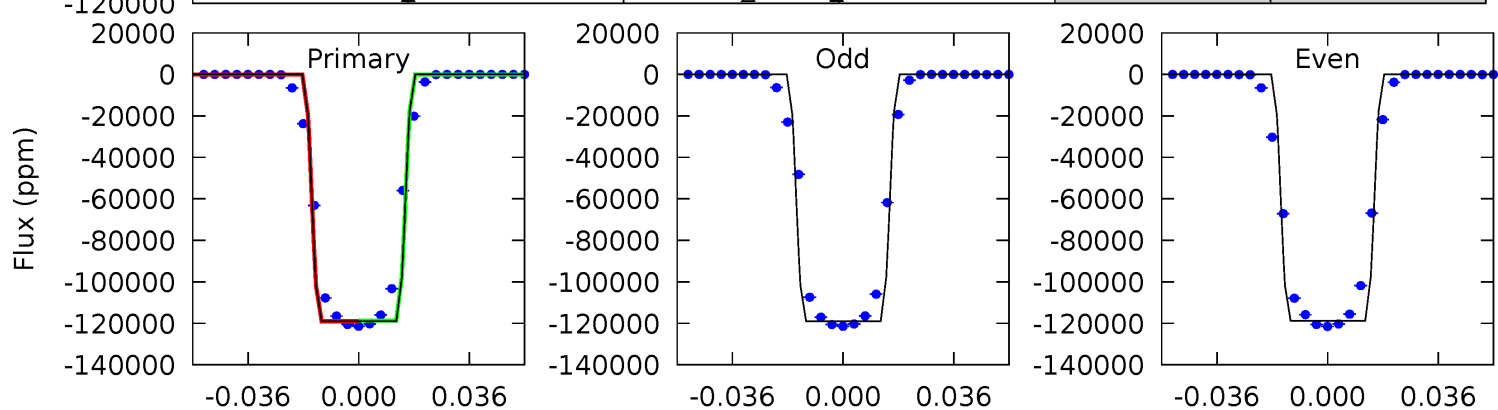
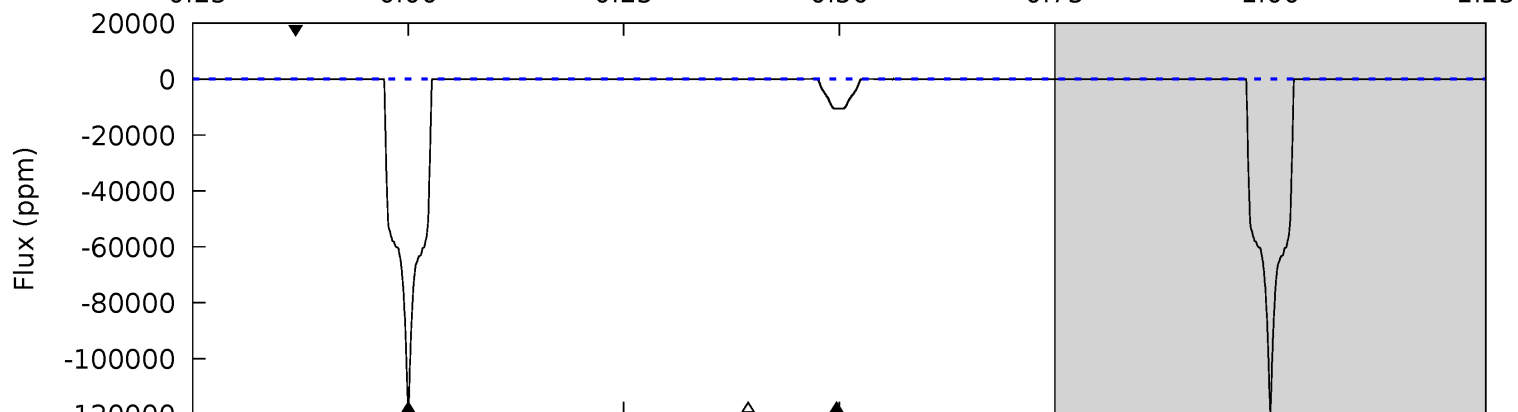
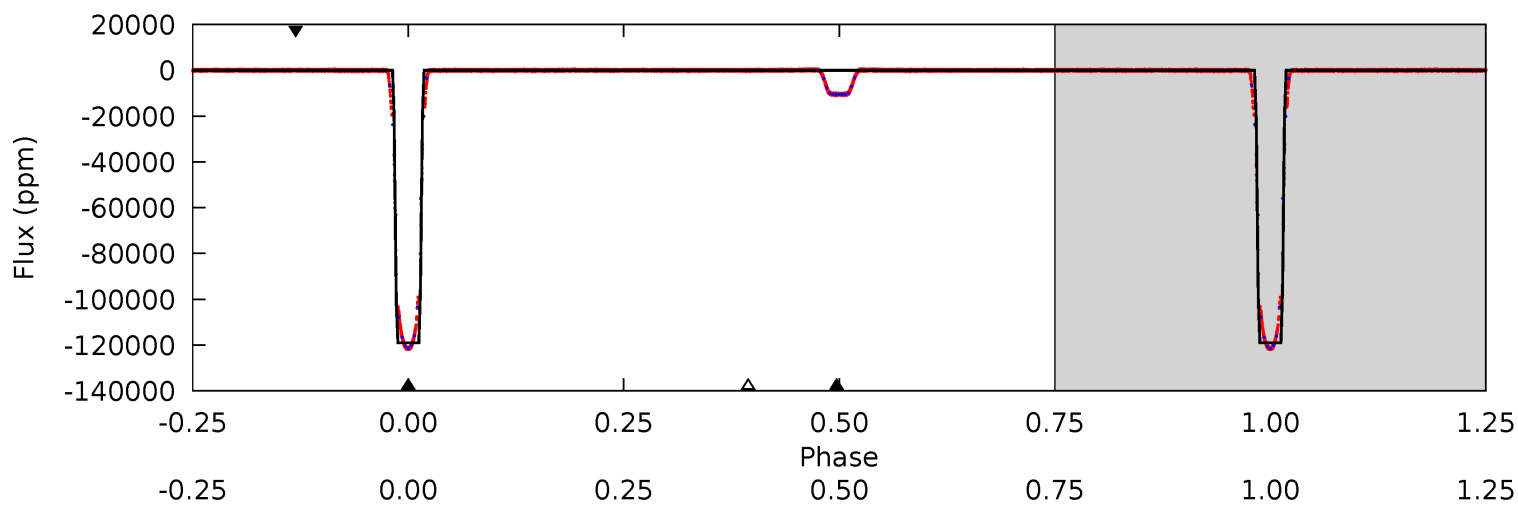
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34913	3246	20.9	23.6	4.71	1.97	13.6	34892	34889	3225	3222	3.08	1.00	0.00	0



# Alt Model-Shift Uniqueness Test

006449358-01, P = 5.776738 Days, E = 127.859142 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
21488	1910	5.09	3.67	4.77	2.10	2.49	21483	21484	1905	1907	13.7	1.00	0.00	36.1



### Stellar Parameters For KIC 006449358

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7666^{+212}_{-334}$	$3.658^{+0.432}_{-0.108}$	$0.240^{+0.100}_{-0.400}$	$3.601^{+0.725}_{-1.571}$	$2.153^{+0.276}_{-0.512}$	$0.065^{+0.259}_{-0.021}$
	+3%/-4%	+12%/-3%	+42%/-167%	+20%/-44%	+13%/-24%	+400%/-33%
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 006449358-01 / KOI 6147.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-11298 \pm 3$	$121.01^{+20.07}_{-28.39}$	$3020^{+239}_{-338}$	$4382^{+96}_{-126}$	$2.779^{+1.828}_{-0.615}$
Alt.	$-10579 \pm 6$	$129.07^{+18.96}_{-28.35}$	$3038^{+223}_{-333}$	$4225^{+92}_{-116}$	$2.325^{+1.344}_{-0.475}$

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

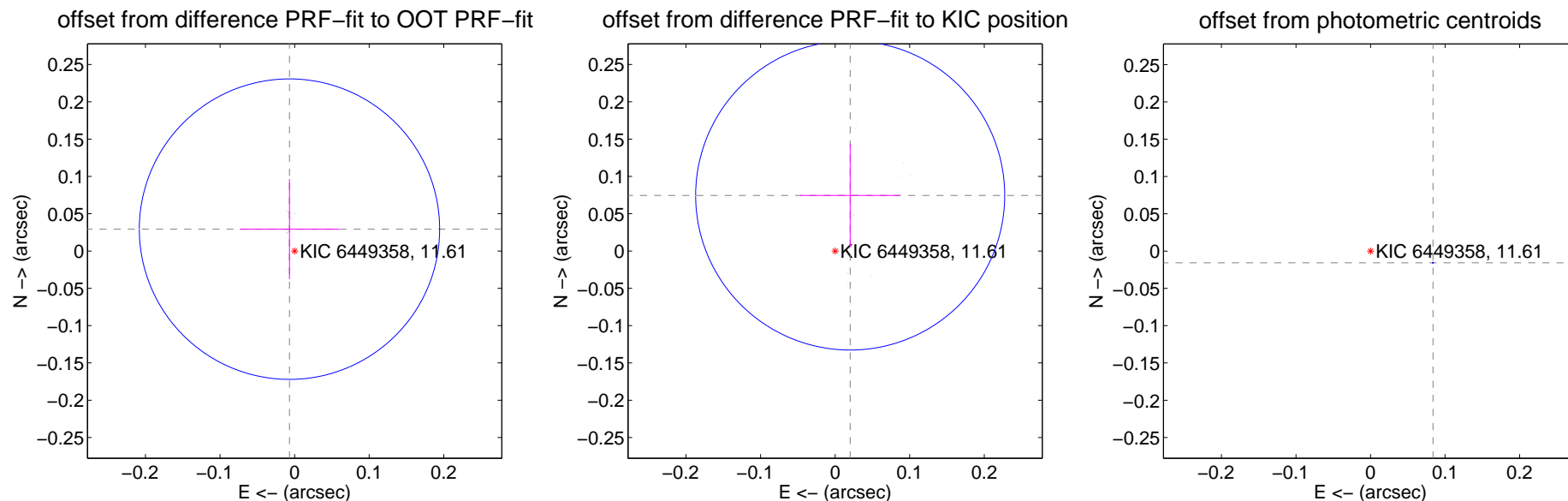
## DV Centroid Data

Supplemental centroid analysis for 006449358-01. **Kepler magnitude: 11.61.** Transit SNR 16180.77

There are 17 quarters with good PRF difference image offsets

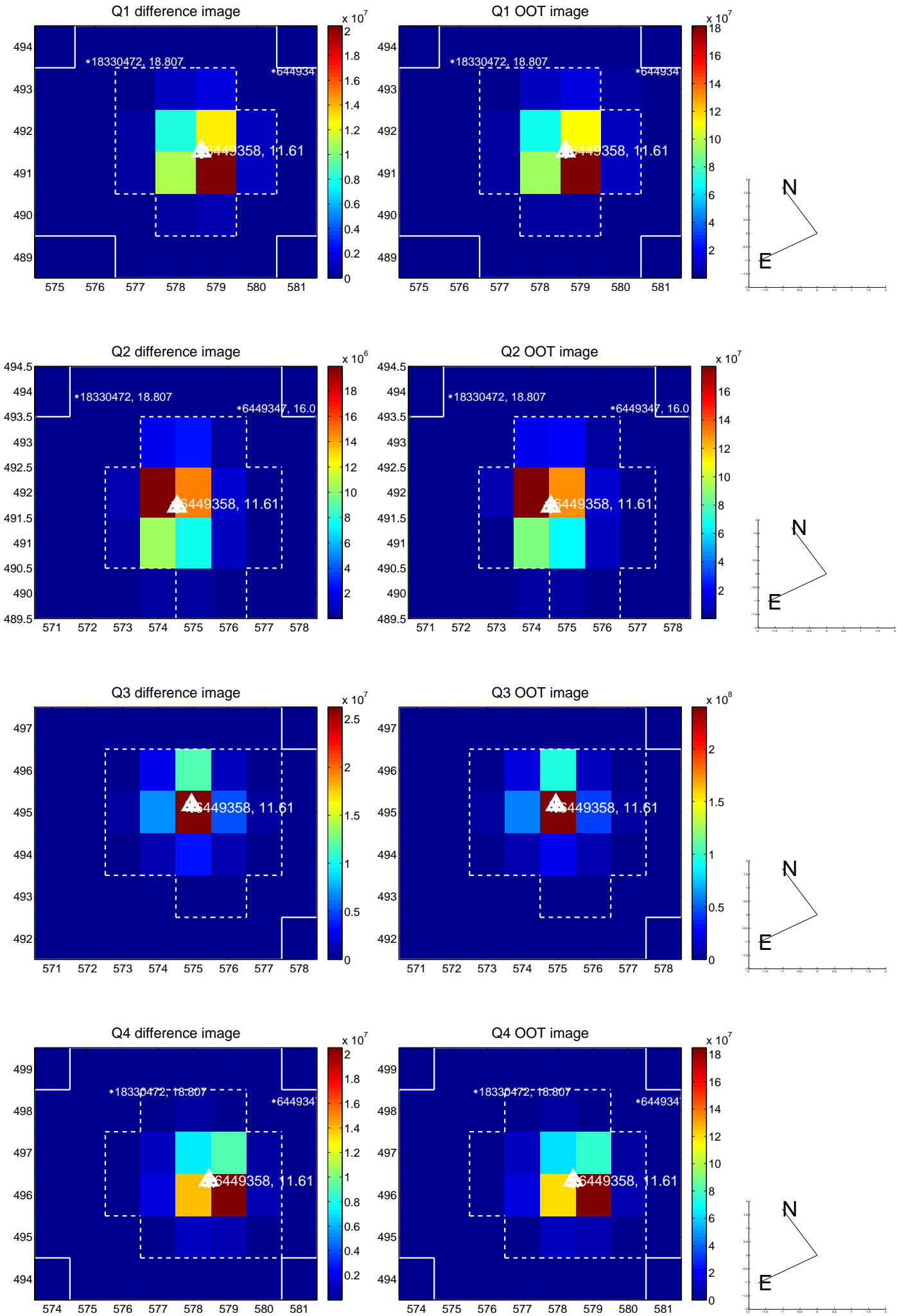
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.030 \pm 0.067$	0.45	$0.007 \pm 0.067$	$0.029 \pm 0.067$
PRF-fit source offset from KIC position	$0.077 \pm 0.069$	1.12	$-0.020 \pm 0.067$	$0.075 \pm 0.069$
photometric centroid source offset	<b><math>0.09 \pm 0.00</math></b>	<b>404.62</b>	$-0.08 \pm 0.00$	$-0.02 \pm 0.00$

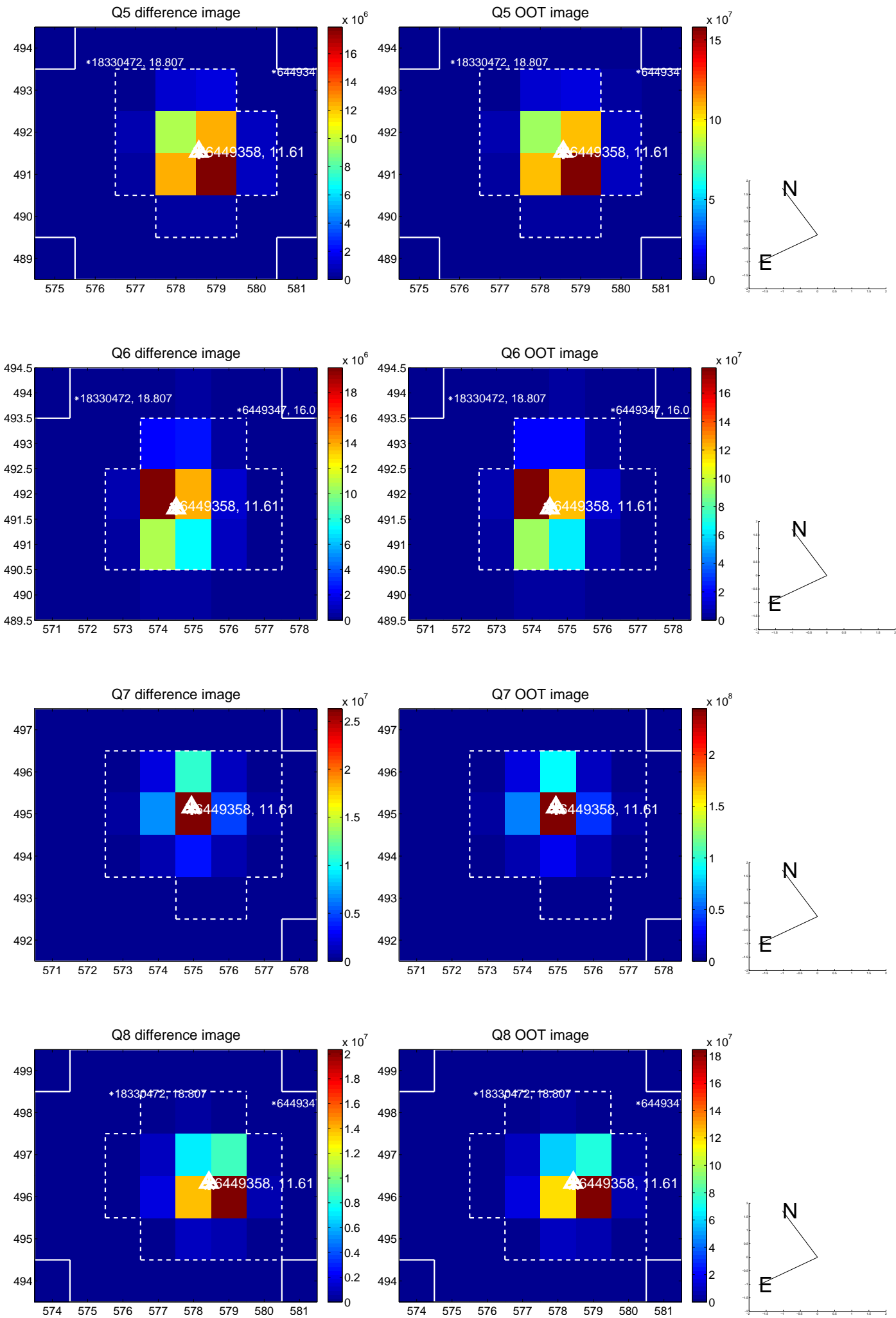


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

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

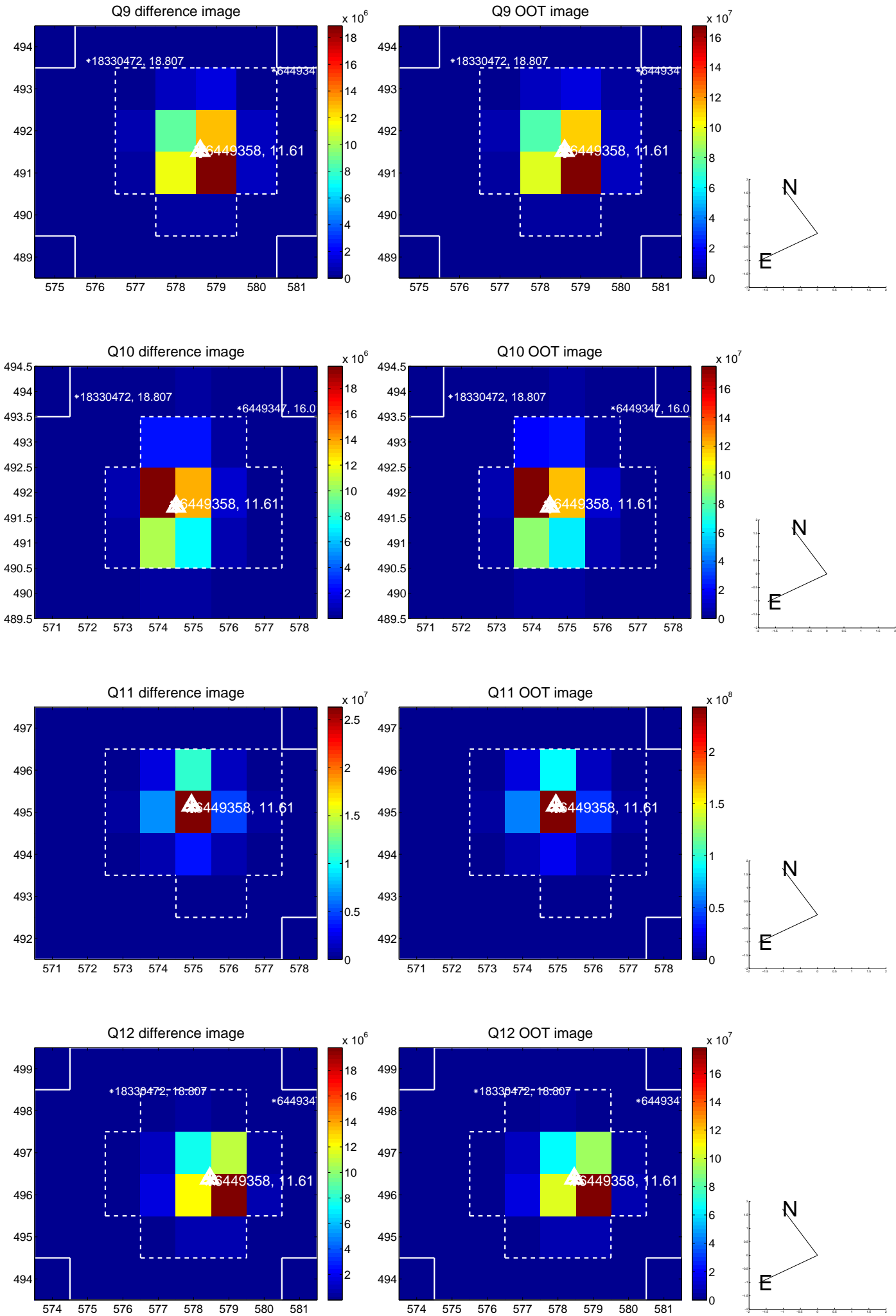


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

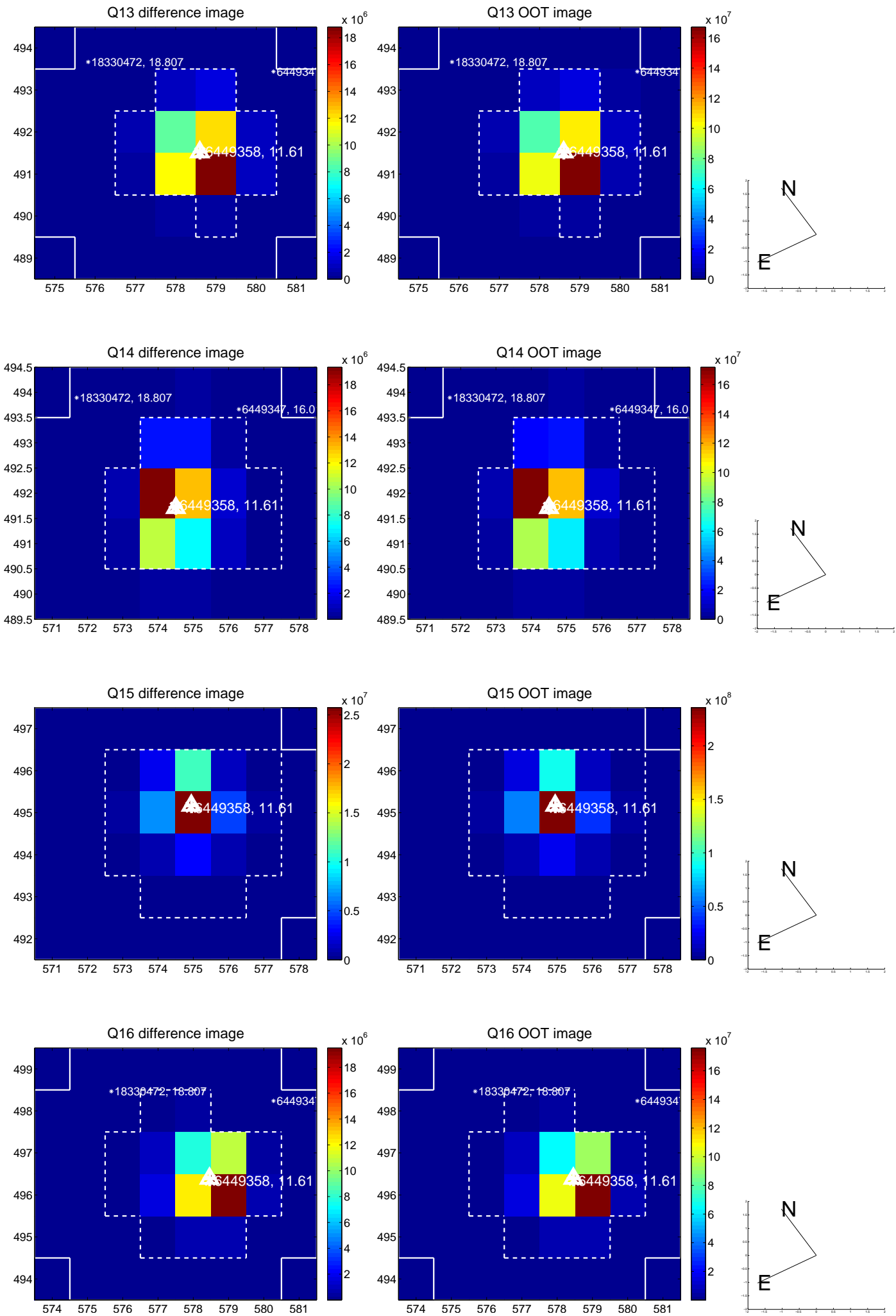




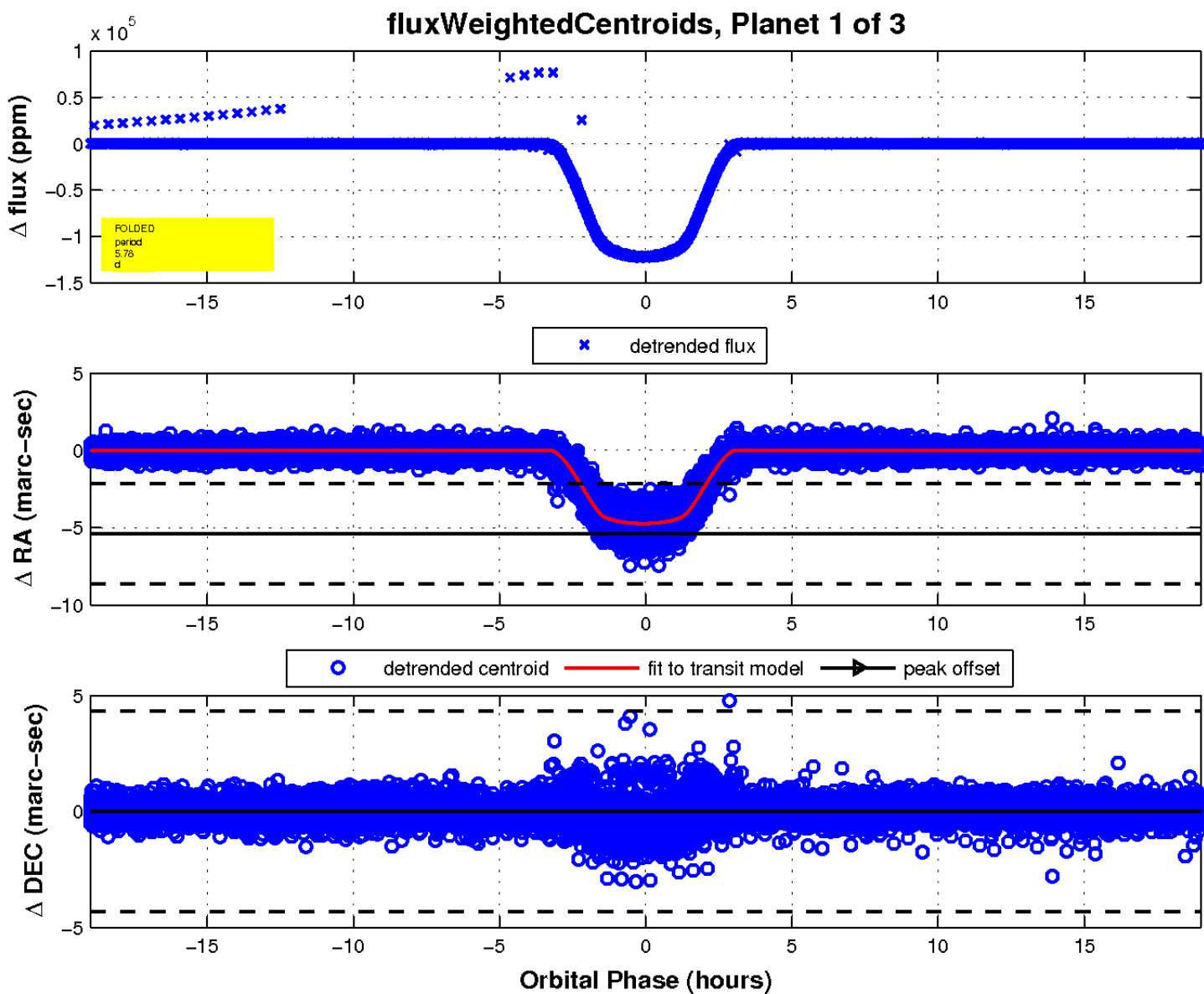
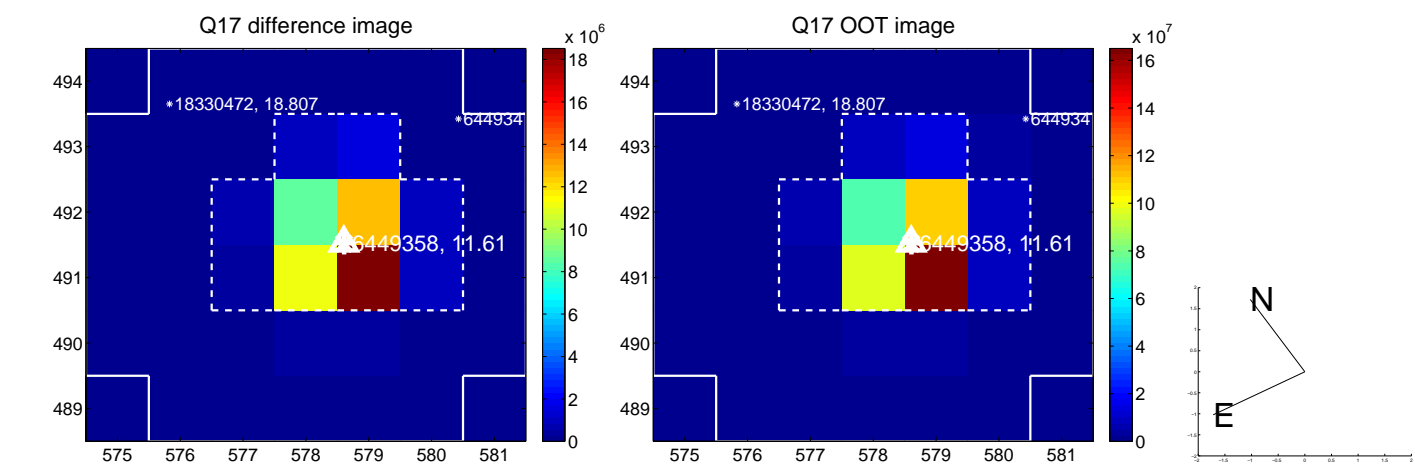
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

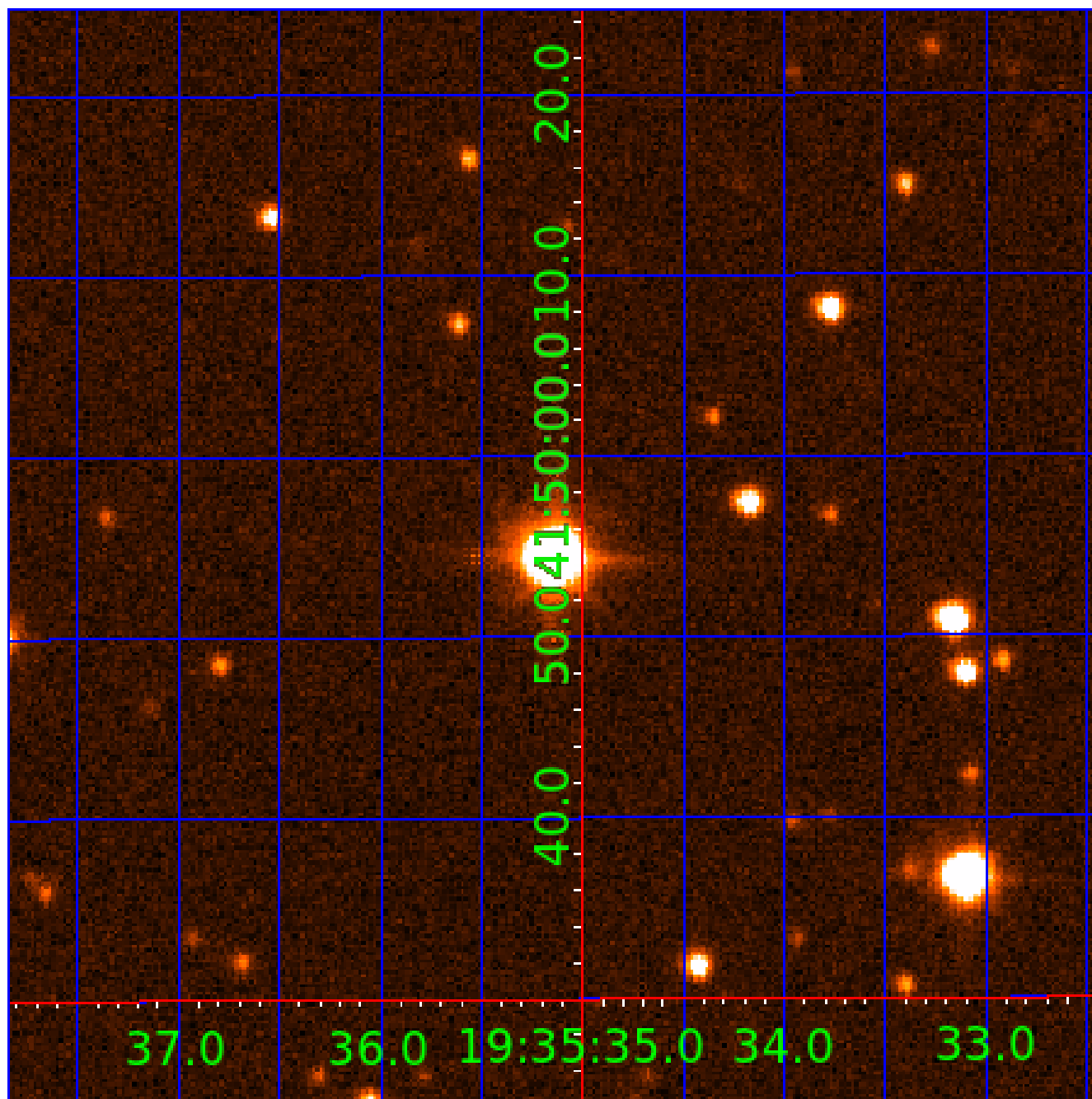


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



# KIC 006449358

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006449358-01	OBS	6147.01	5.776795	133.627418	121469.6	6.332	24308.7	16180.8	3.60	7666	129.23	6060.88
006449358-02	OBS	No	5.776794	136.515189	10898.9	6.176	2199.9	1657.4	3.60	7666	41.64	6060.88
006449358-03	OBS	No	194.627259	318.827086	1341.7	21.788	25.3	16.9	3.60	7666	24.37	55.70

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006449358-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
006449358-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
006449358-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

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

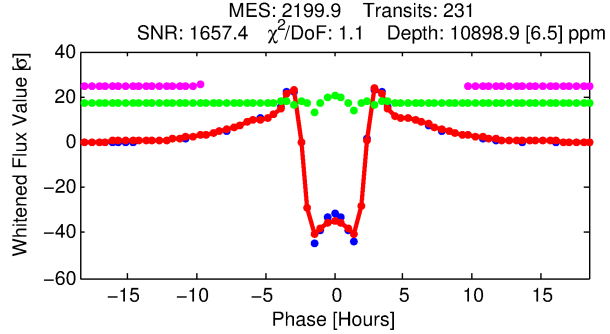
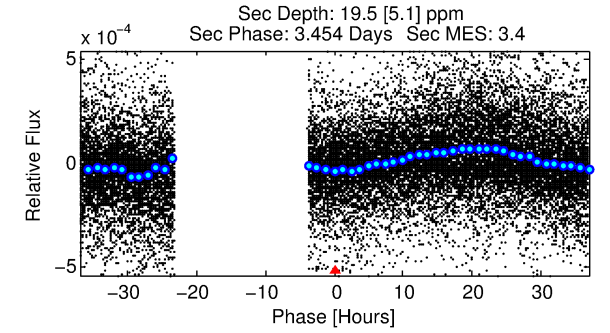
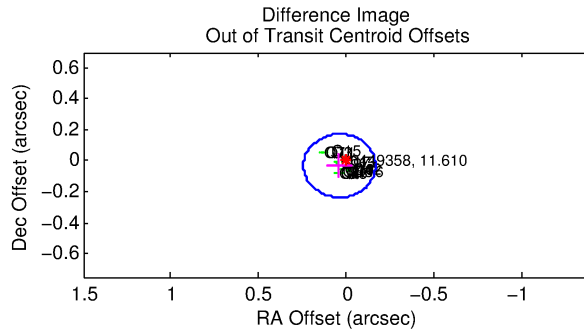
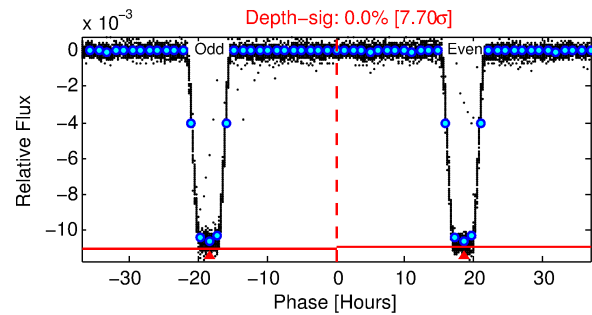
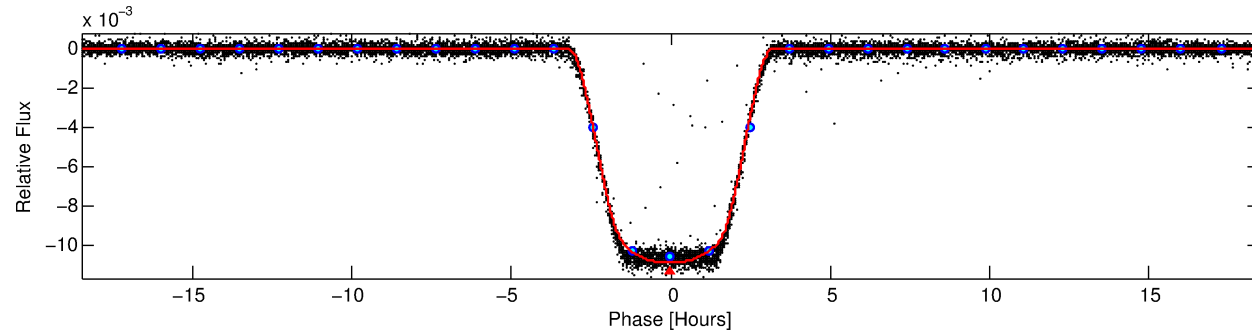
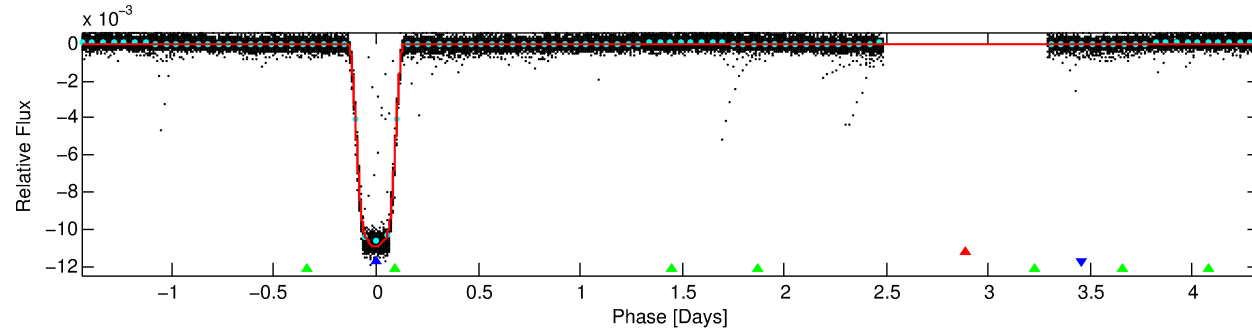
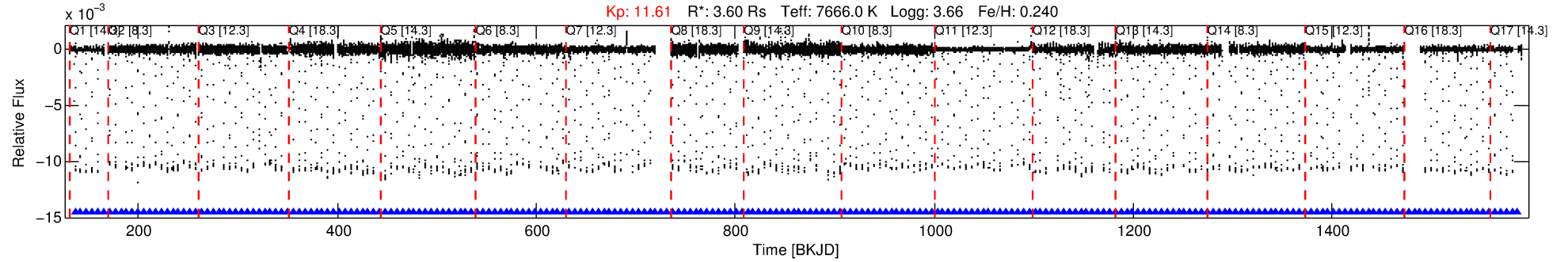
## Ephemeris Match Information For 006449358-02

No Significant Match Found

# DV One-Page Summary

KIC: 6449358 Candidate: 2 of 3 Period: 5.777 d

KOI: K06147 Corr: No Ephemeris Match



## DV Fit Results:

Period = 5.77679 [0.00000] d  
Epoch = 136.5152 [0.0000] BKJD  
Rp/R\* = 0.1060 [0.0000]  
a/R\* = 5.53 [0.00]  
b = 0.80 [0.00]  
Seff = 6060.88 [4514.13]  
Teff = 2250 [419] K  
Rp = 41.64 [18.17] Re  
a = 0.0814 [0.0359] AU  
Ag = 0.04 [0.03] [-30.41 $\sigma$ ]  
Teffp = 1565 [122] K [-1.57 $\sigma$ ]

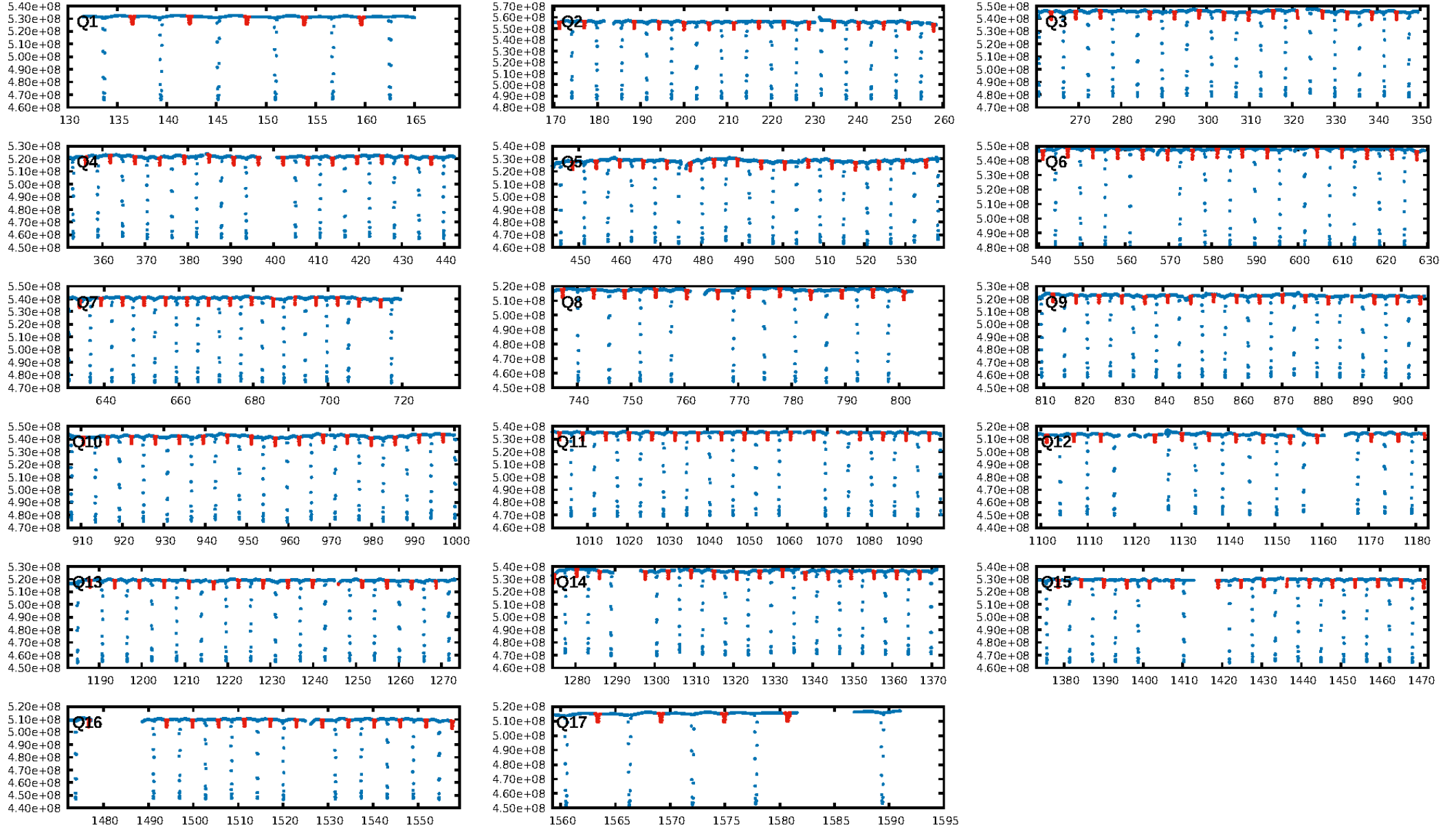
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 0.0% [0.00 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [222/222]  
GhostDiagnostic-chr: 4.293  
Centroid-sig: 0.0%  
Centroid-so: 0.066 arcsec [35.16 $\sigma$ ]  
OotOffset-rm: 0.051 arcsec [0.75 $\sigma$ ]  
KicOffset-rm: 0.021 arcsec [0.30 $\sigma$ ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

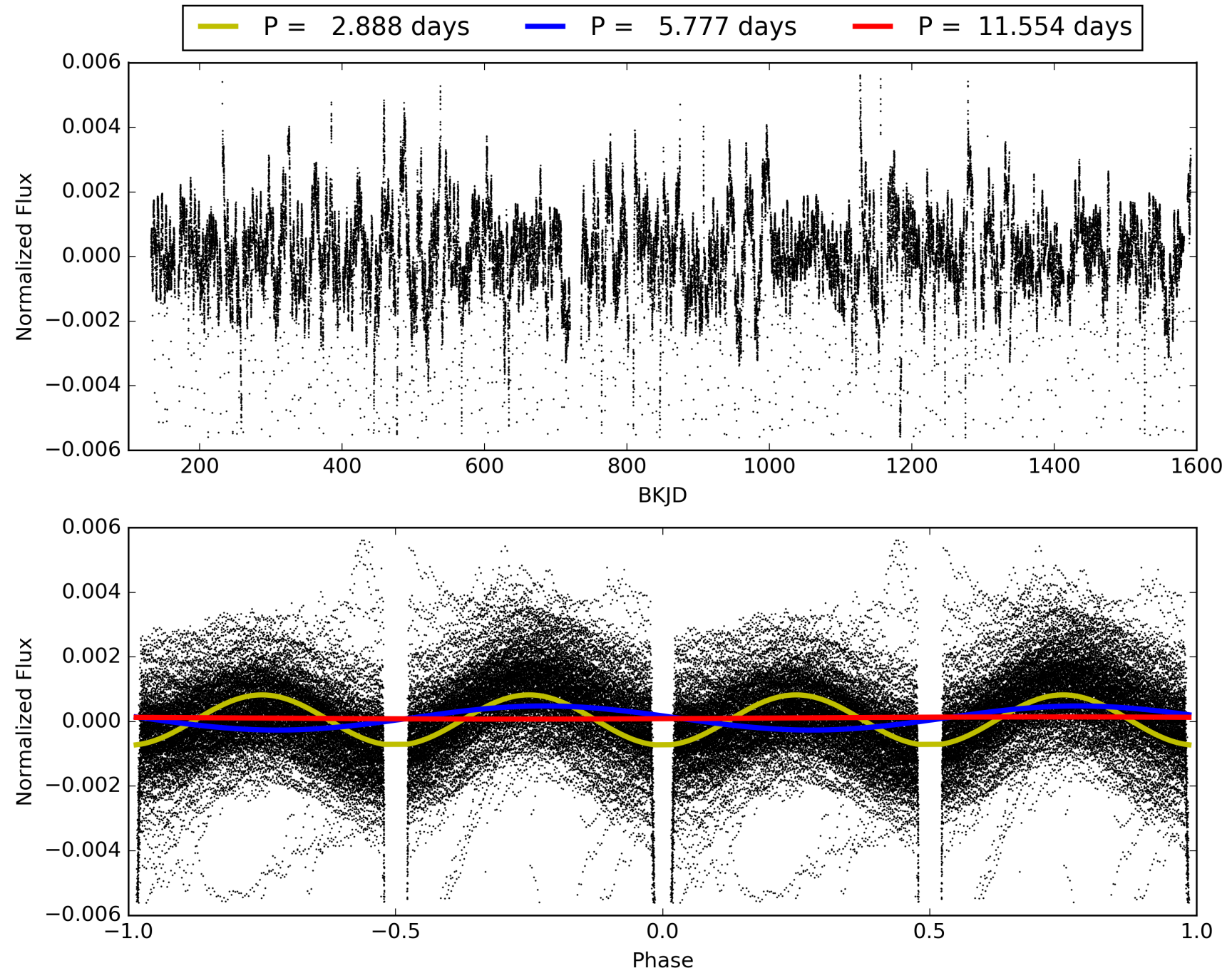
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 06:06:35 Z

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

# TCE 006449358-02, PDC Light Curves



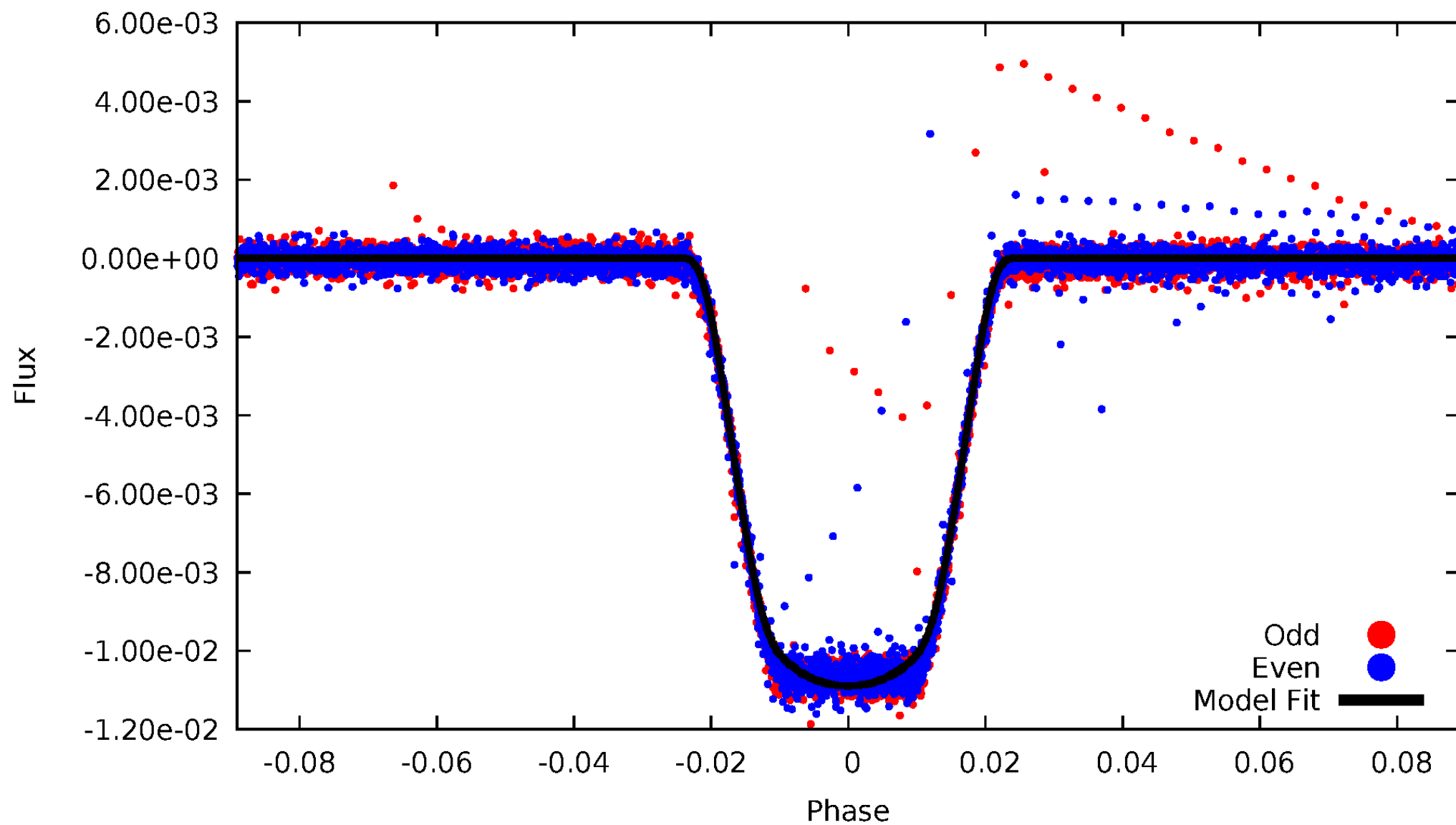
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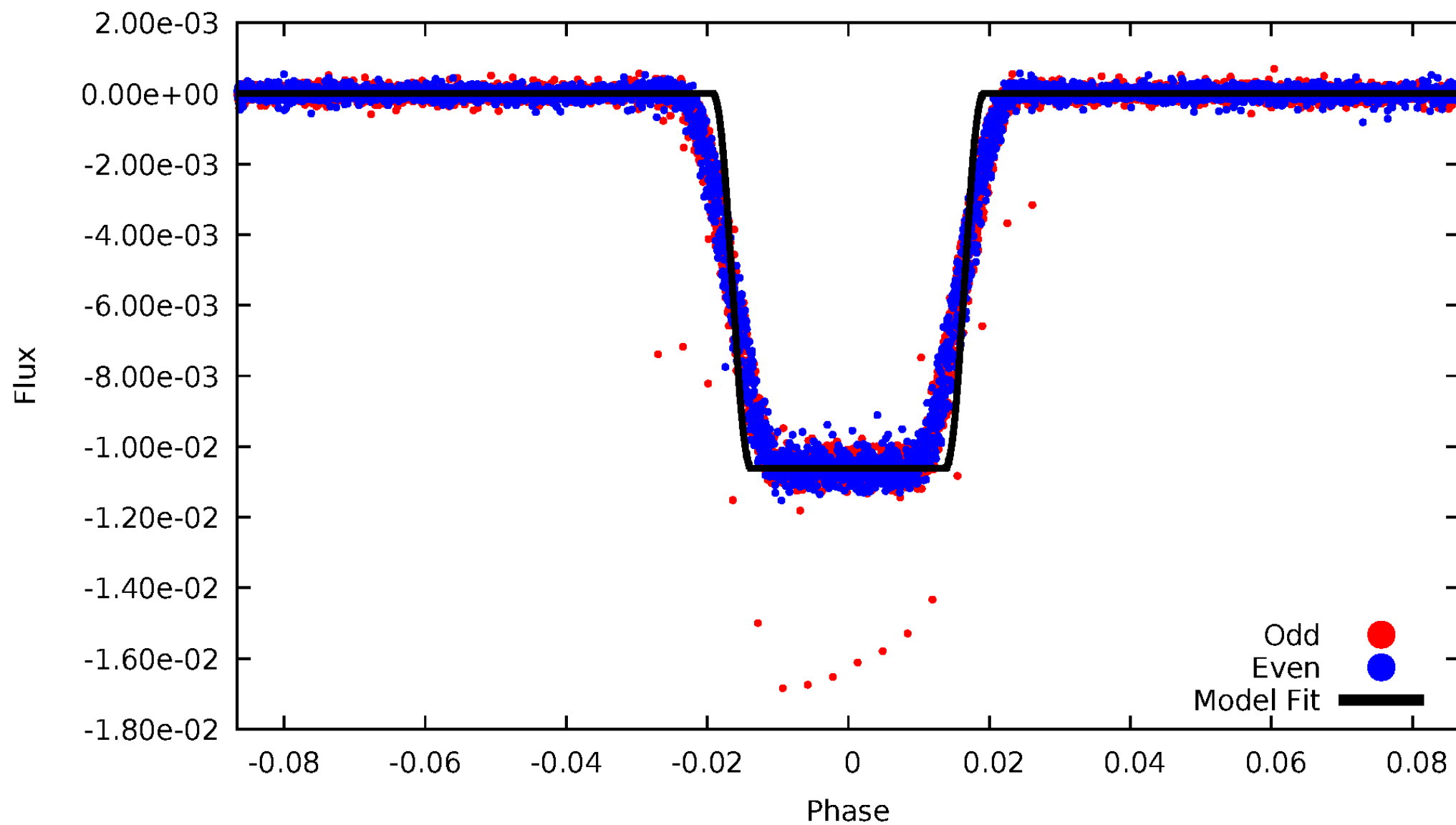
# DV Odd/Even

TCE 006449358-02



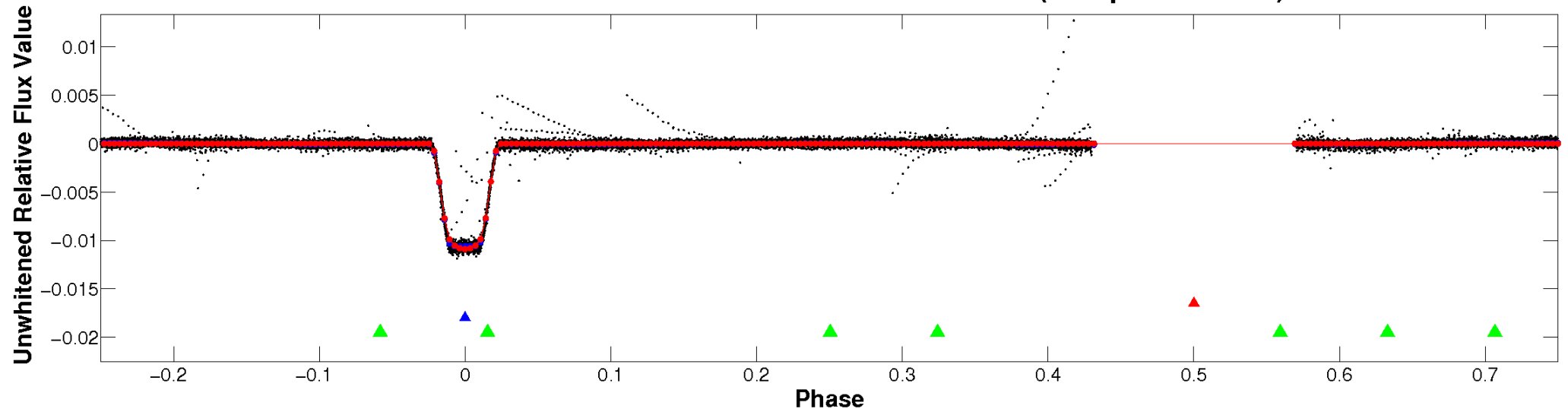
# ALT Odd/Even

TCE 006449358-02

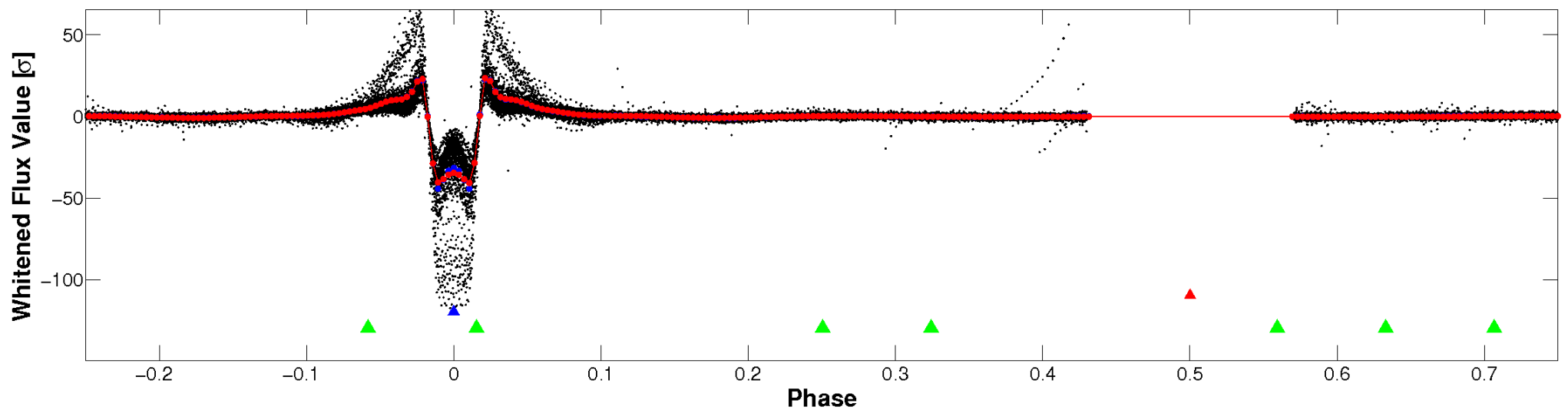


# Non-Whitened Vs. Whitened Light Curve

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

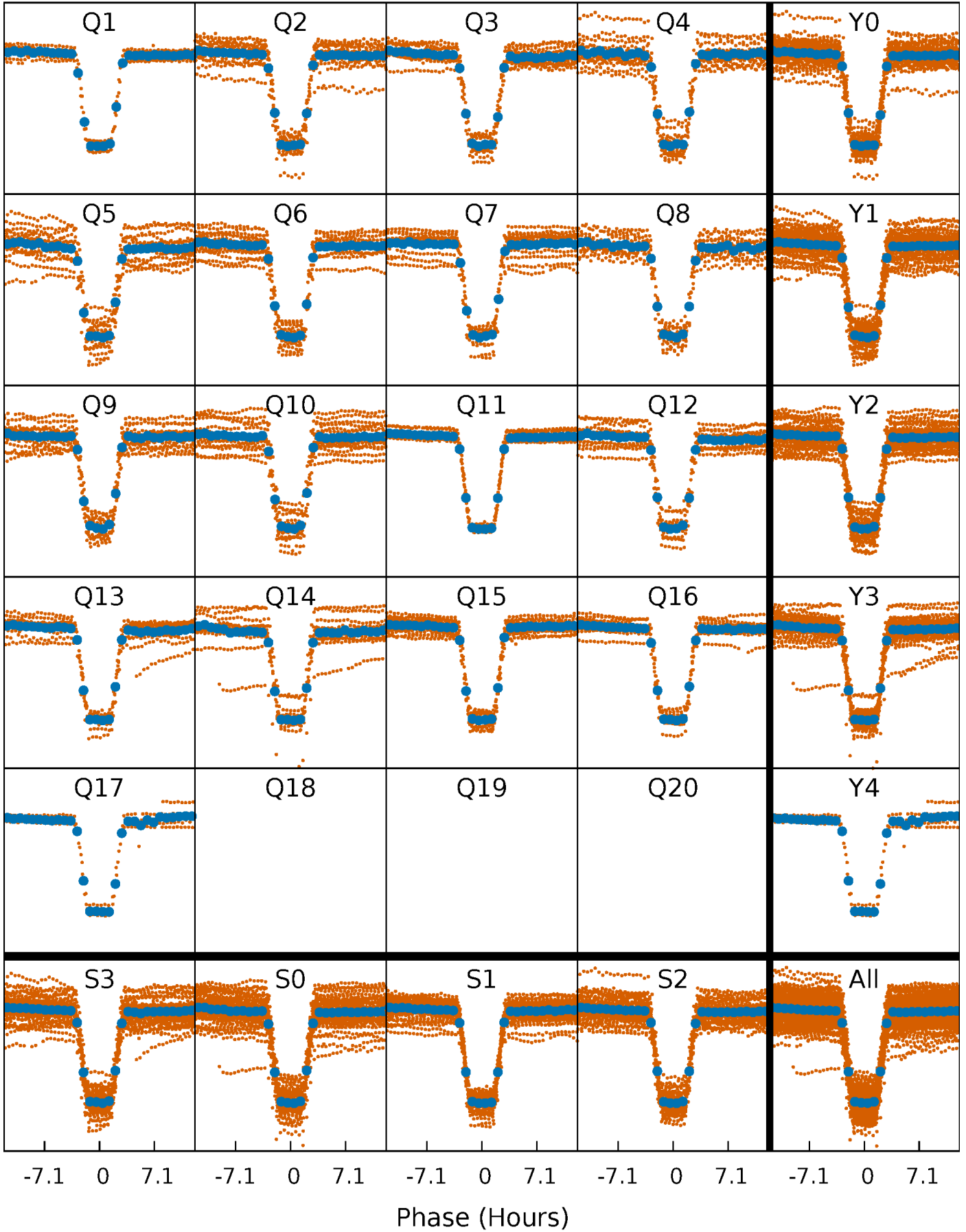


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



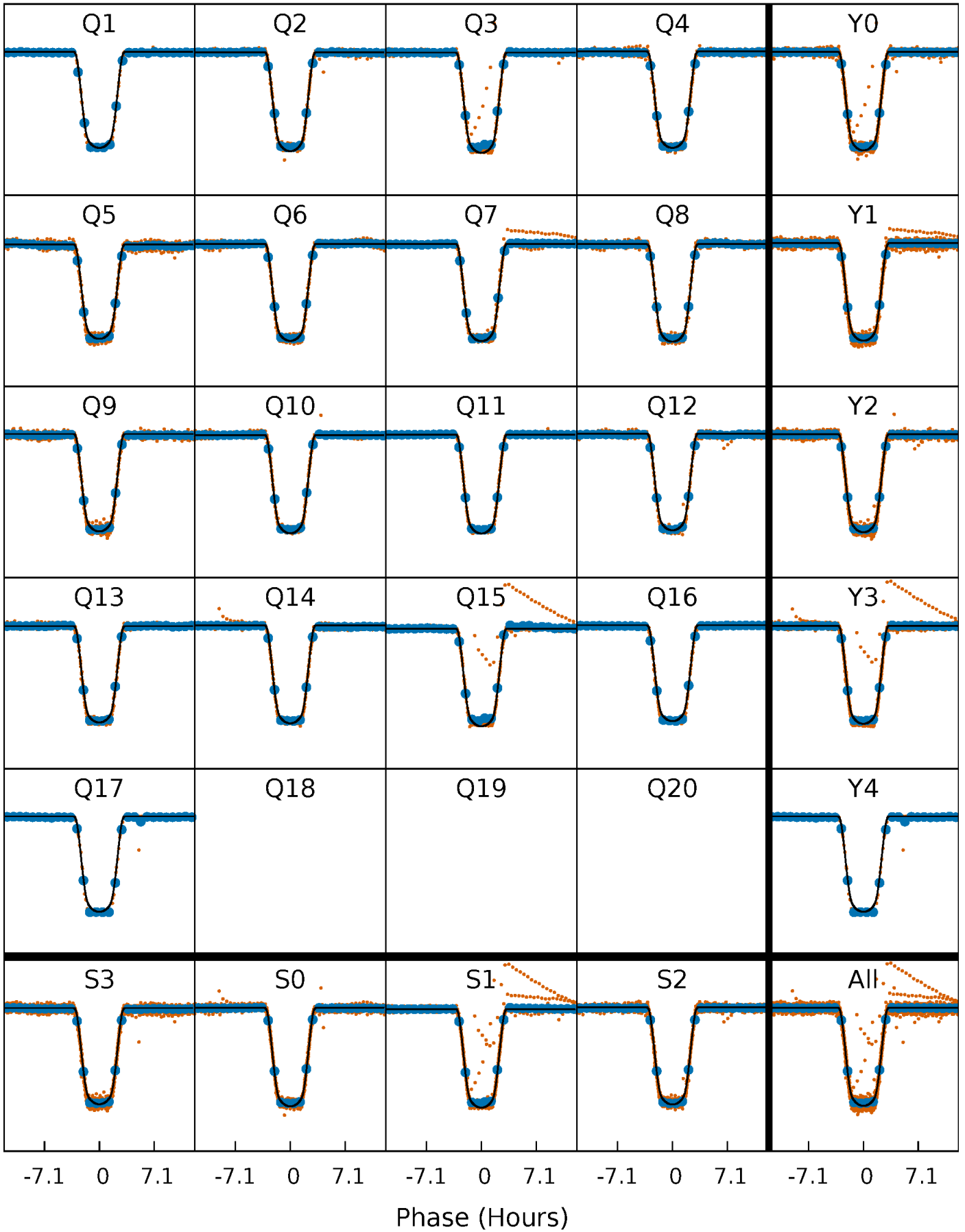
# PDC Quarter-Phased Transit Curves

TCE 006449358-02 P= 5.776794 Days  $T_0=136.515189$  (BKJD)



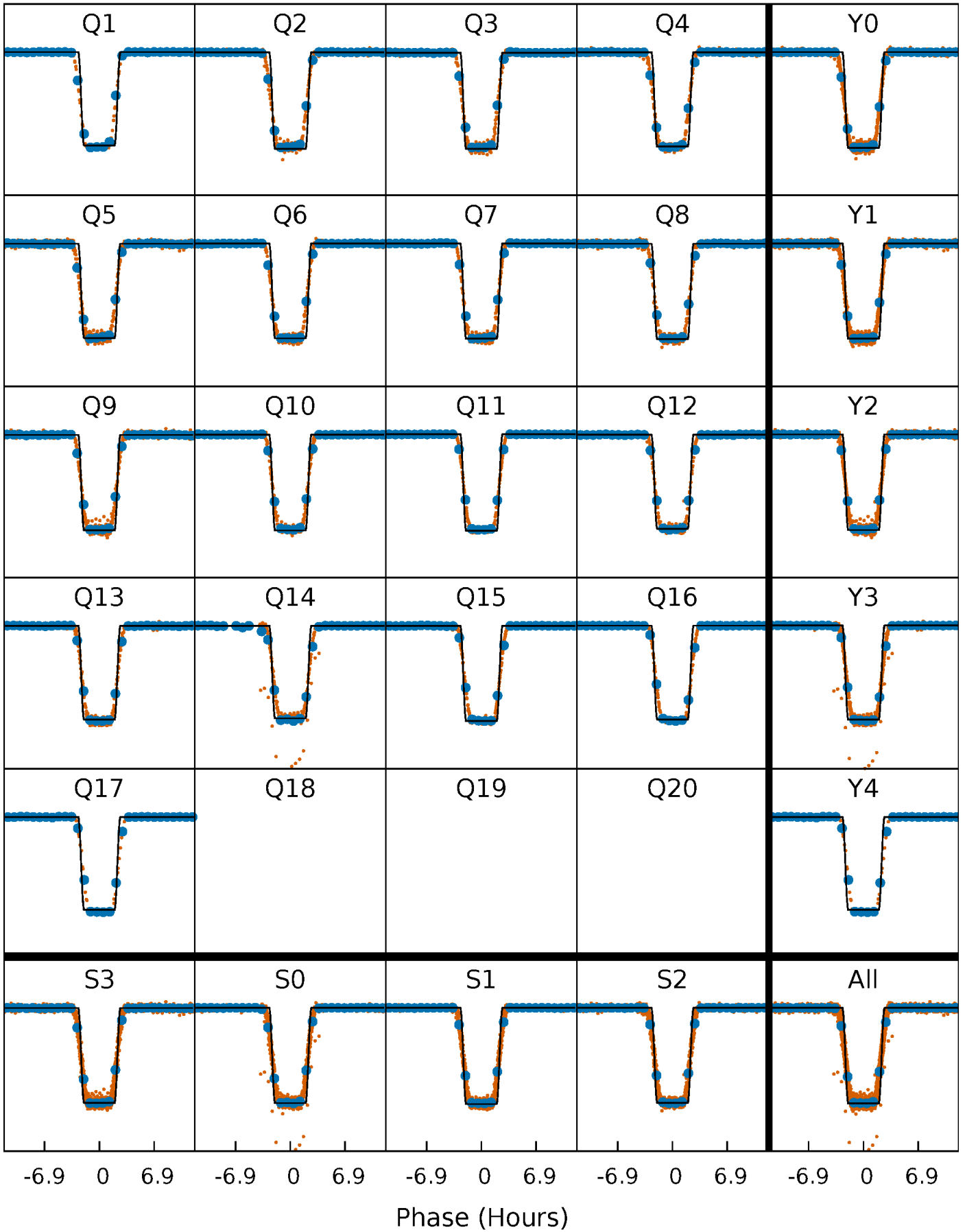
# DV Quarter-Phased Transit Curves

TCE 006449358-02   P= 5.776794 Days    $T_0=136.515189$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

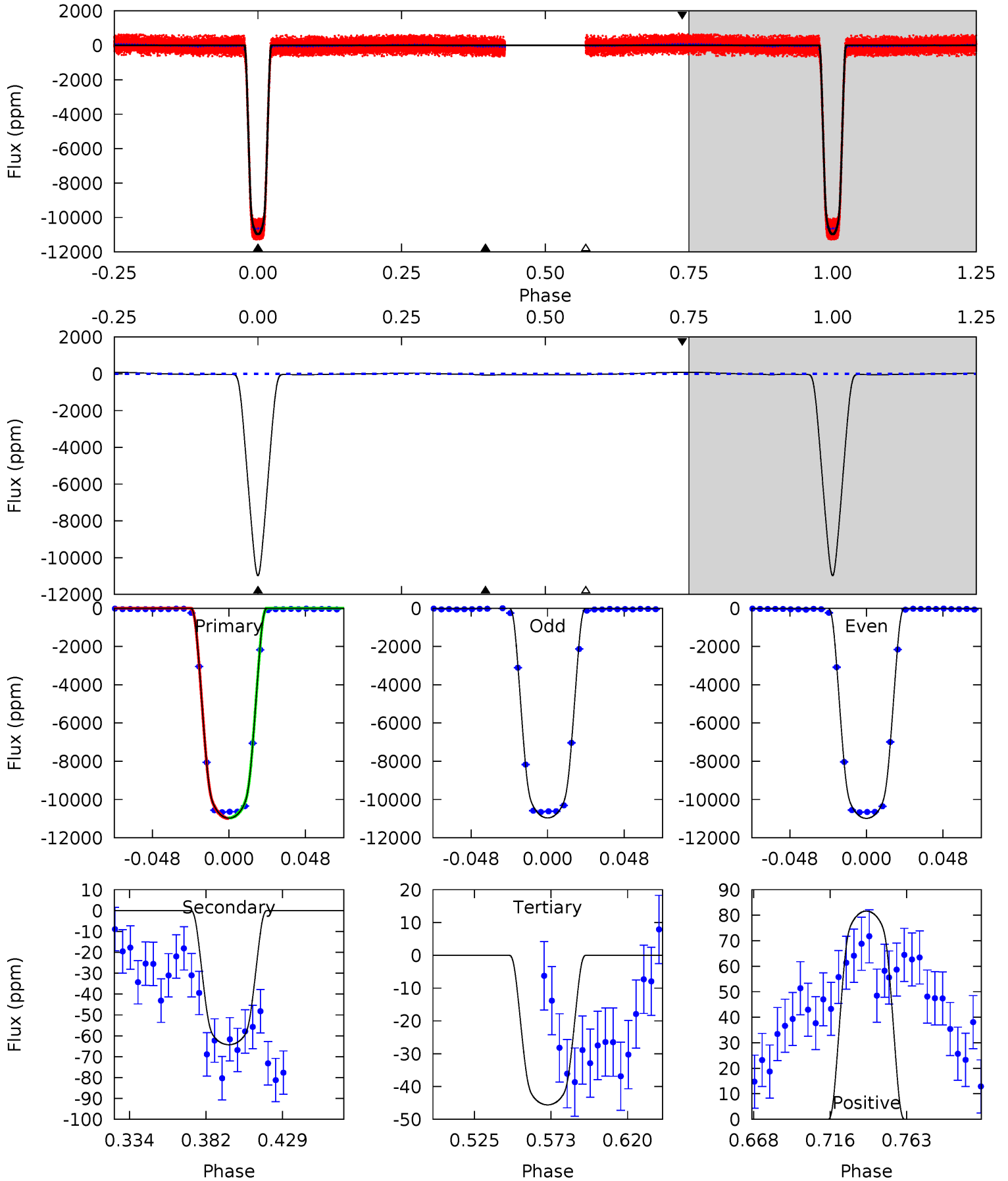
TCE 006449358-02 P= 5.776737 Days  $T_0=136.523643$  (BKJD)



# DV Model-Shift Uniqueness Test

006449358-02, P = 5.776794 Days, E = 130.738395 Days

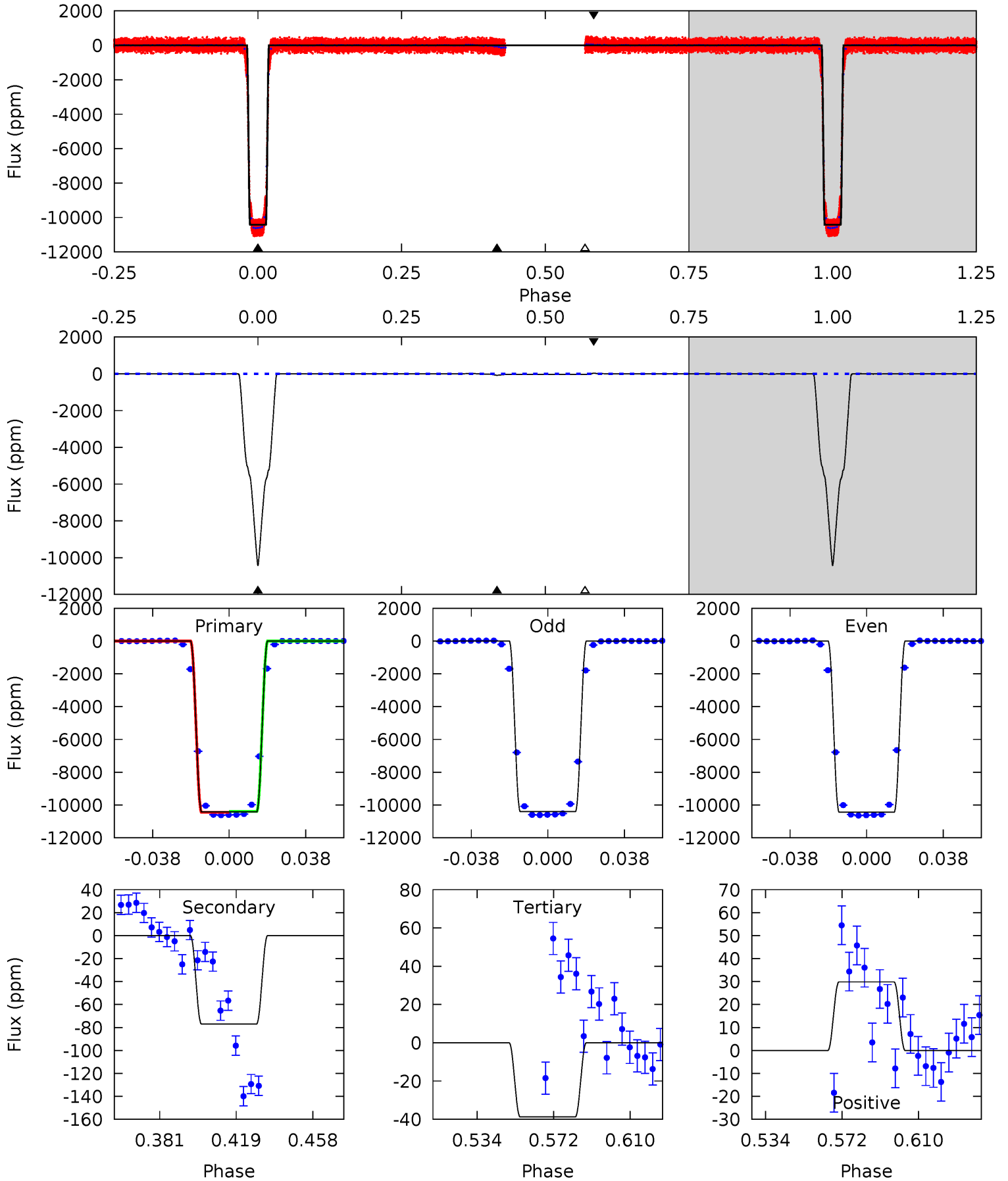
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3460	20.3	14.4	25.7	4.72	1.98	12.2	3446	3435	5.88	-5.46	3.74	1.00	0.01	3.23



# Alt Model-Shift Uniqueness Test

006449358-02, P = 5.776737 Days, E = 130.746906 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
3301	24.4	12.3	9.45	4.76	2.07	1.87	3289	3292	12.1	14.9	3.63	1.00	0.00	10.8





### Stellar Parameters For KIC 006449358

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7666^{+212}_{-334}$	$3.658^{+0.432}_{-0.108}$	$0.240^{+0.100}_{-0.400}$	$3.601^{+0.725}_{-1.571}$	$2.153^{+0.276}_{-0.512}$	$0.065^{+0.259}_{-0.021}$
	+3%/-4%	+12%/-3%	+42%/-167%	+20%/-44%	+13%/-24%	+400%/-33%
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 006449358-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-64 \pm 3$	$40.00^{+5.49}_{-9.91}$	$3039^{+229}_{-360}$	$-2823^{+469}_{-162}$	$0.146^{+0.096}_{-0.029}$
Alt.	$-77 \pm 3$	$38.80^{+5.23}_{-9.77}$	$3044^{+217}_{-389}$	$-2700^{+4773}_{-210}$	$0.186^{+0.132}_{-0.039}$

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

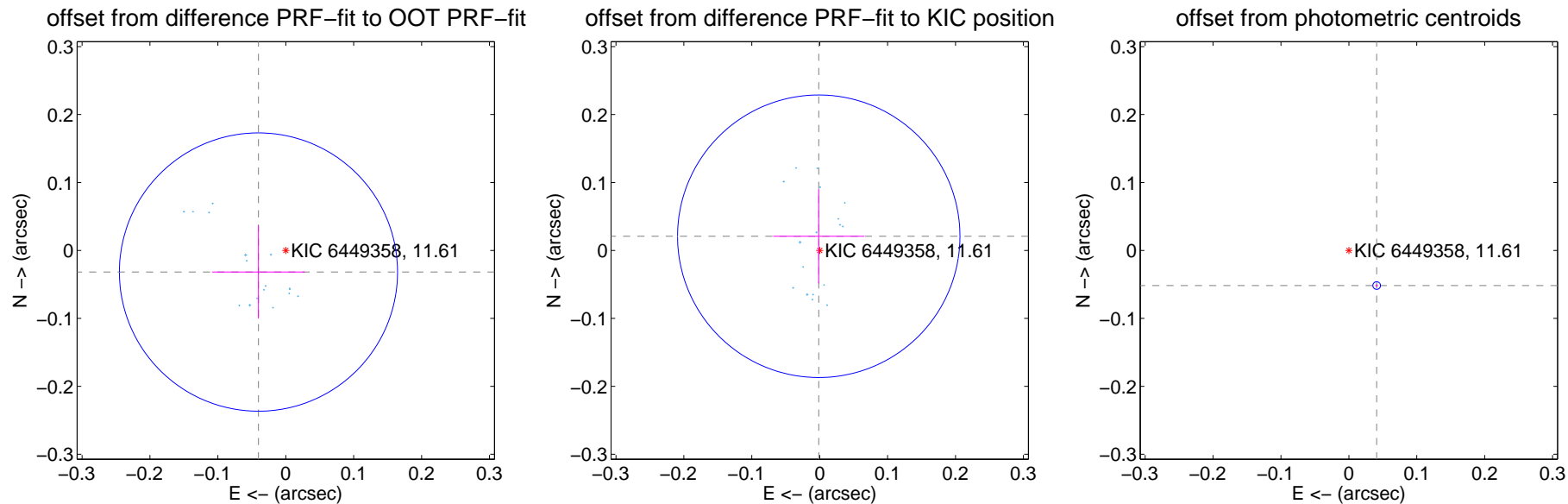
## DV Centroid Data

Supplemental centroid analysis for 006449358-02. **Kepler magnitude: 11.61.** Transit SNR 1657.43

There are 17 quarters with good PRF difference image offsets

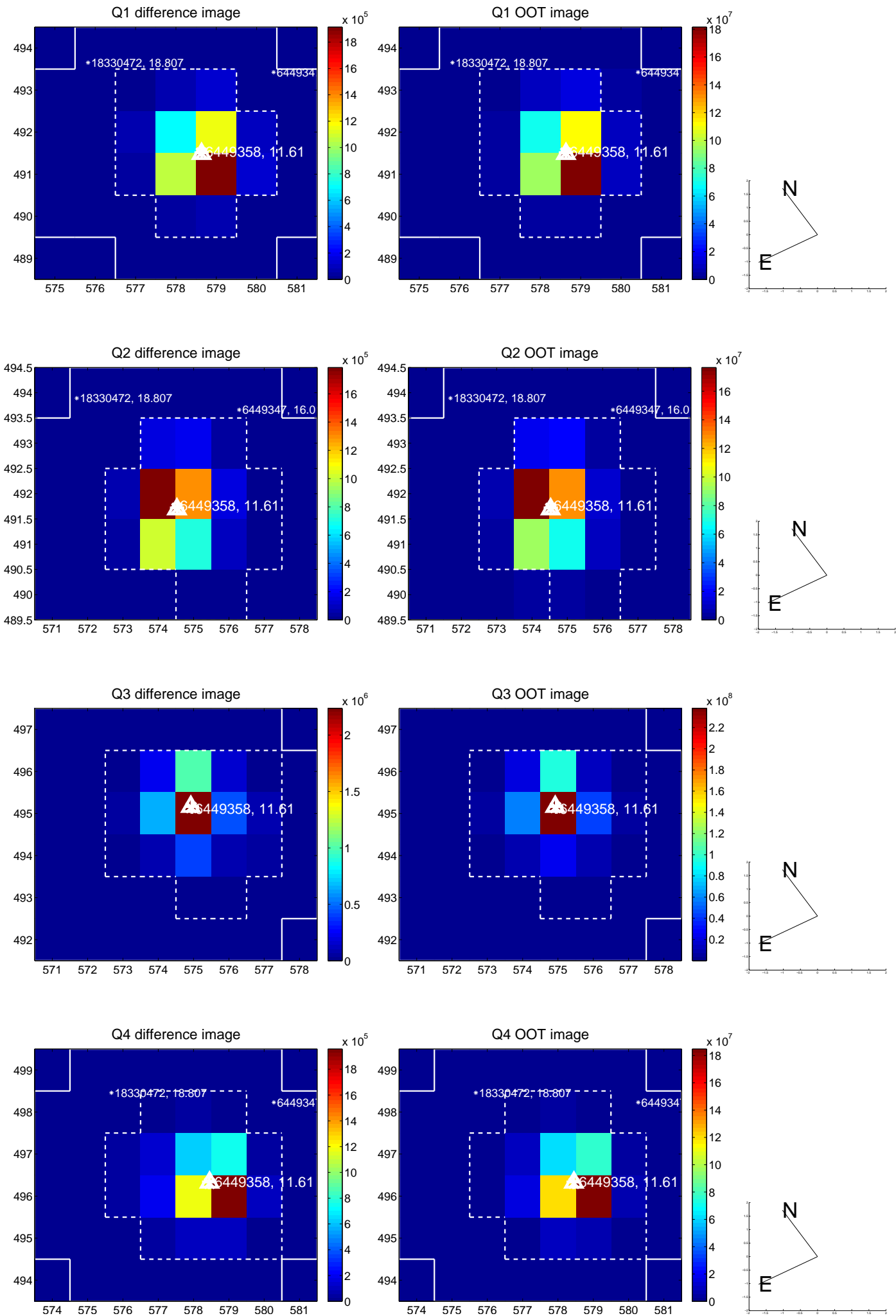
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.051 \pm 0.068$	0.75	$0.040 \pm 0.068$	$-0.032 \pm 0.068$
PRF-fit source offset from KIC position	$0.021 \pm 0.069$	0.30	$0.001 \pm 0.067$	$0.021 \pm 0.069$
photometric centroid source offset	<b><math>0.07 \pm 0.00</math></b>	<b>35.16</b>	$-0.04 \pm 0.00$	$-0.05 \pm 0.00$

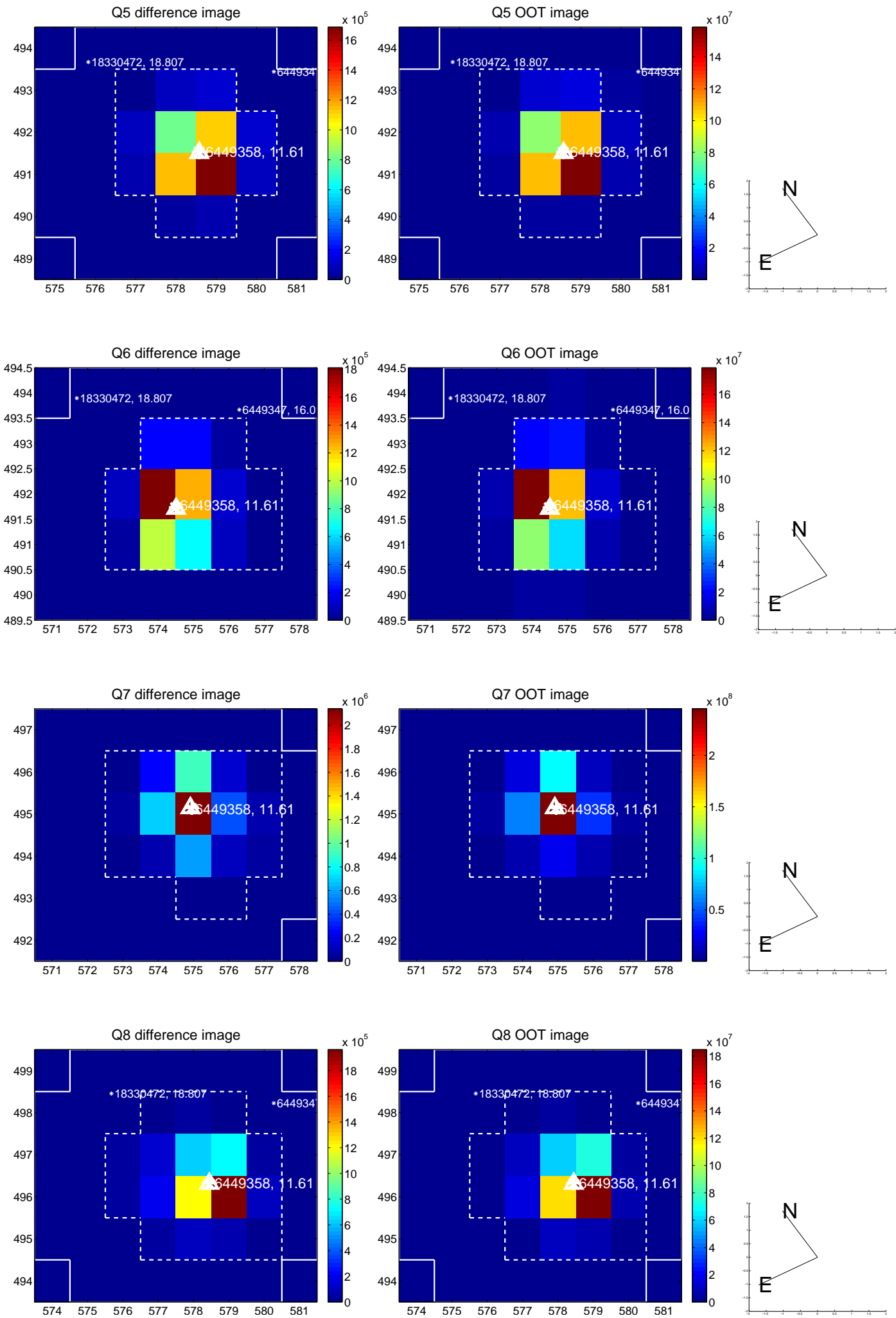


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

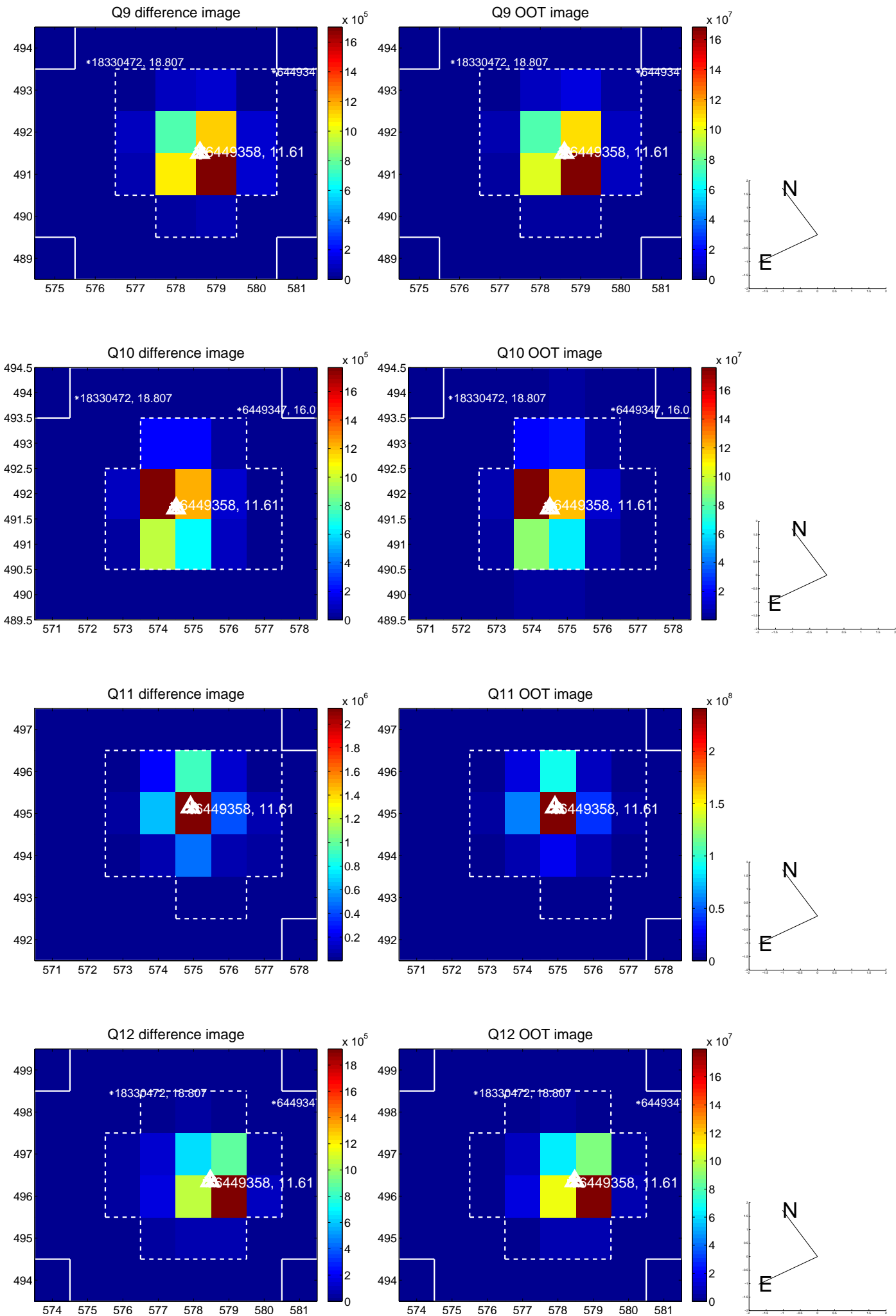
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



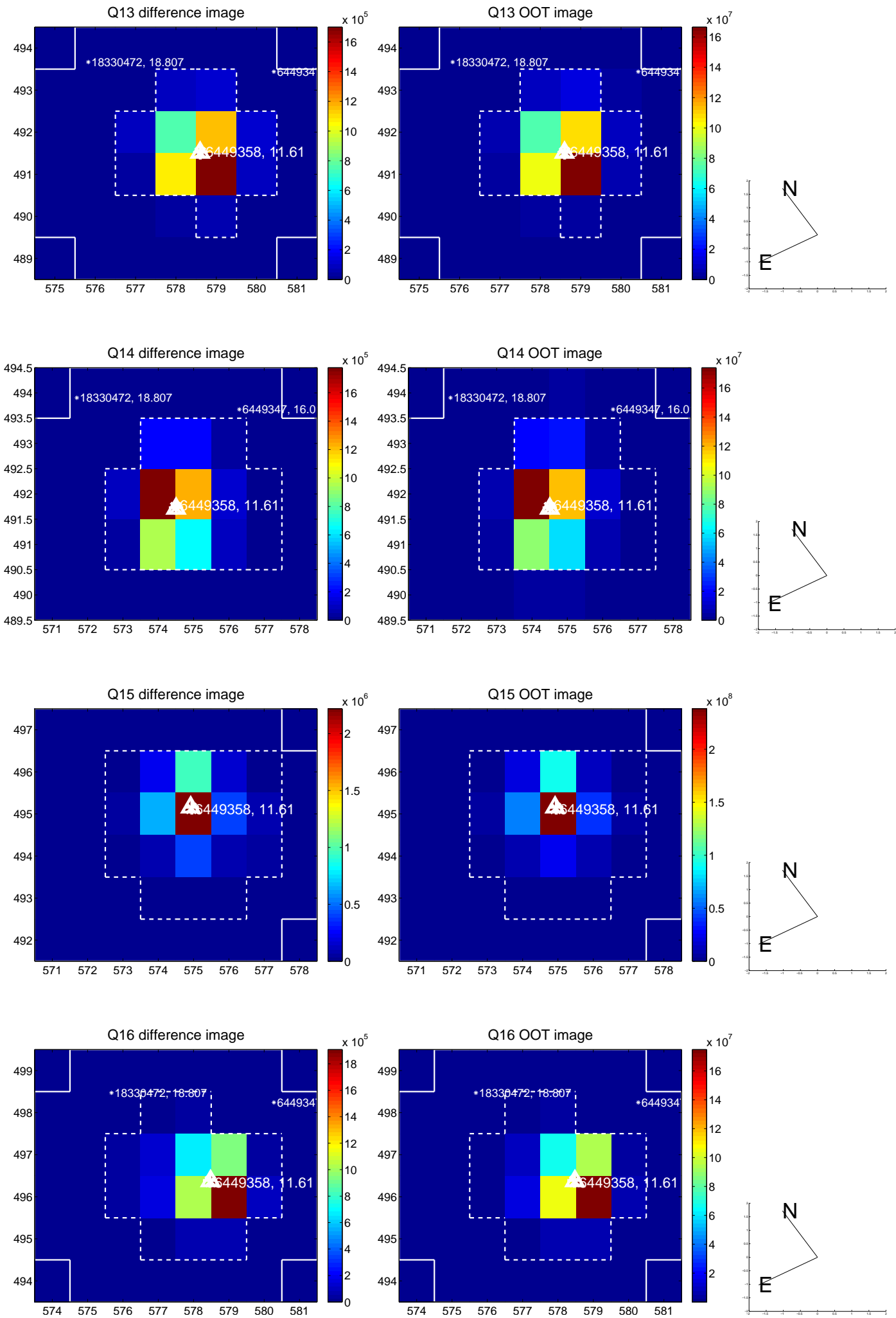
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



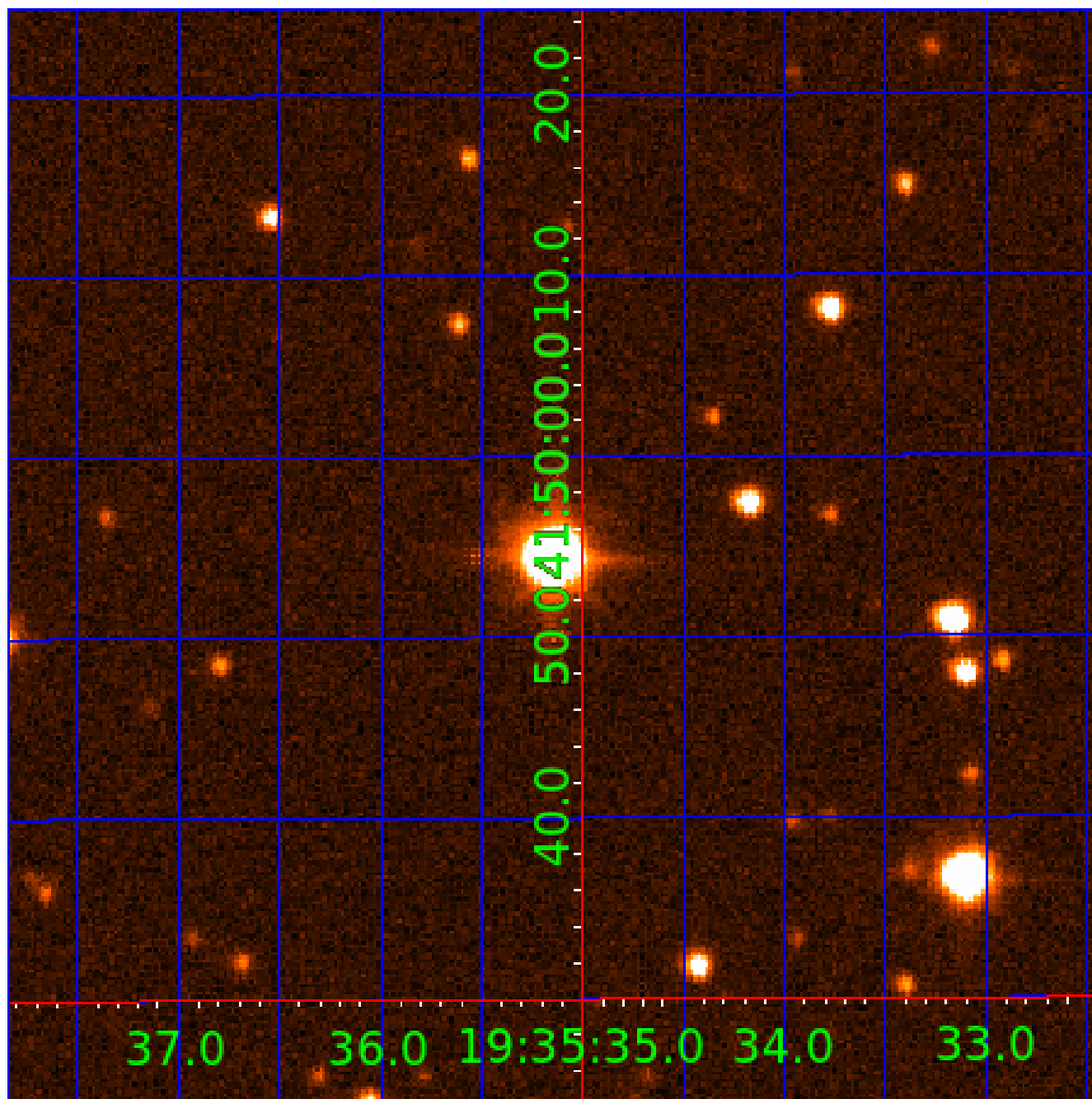
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image

Declination





# KIC 006449358

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006449358-01	OBS	6147.01	5.776795	133.627418	121469.6	6.332	24308.7	16180.8	3.60	7666	129.23	6060.88
006449358-02	OBS	No	5.776794	136.515189	10898.9	6.176	2199.9	1657.4	3.60	7666	41.64	6060.88
006449358-03	OBS	No	194.627259	318.827086	1341.7	21.788	25.3	16.9	3.60	7666	24.37	55.70

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006449358-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
006449358-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE
006449358-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

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

## Ephemeris Match Information For 006449358-03

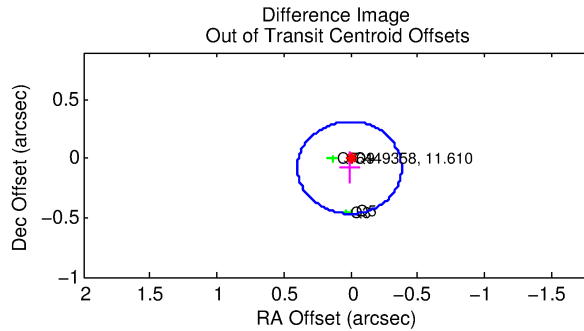
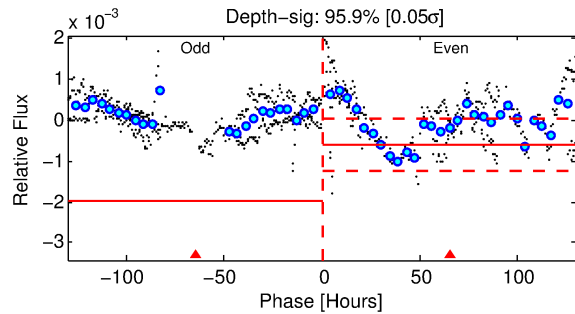
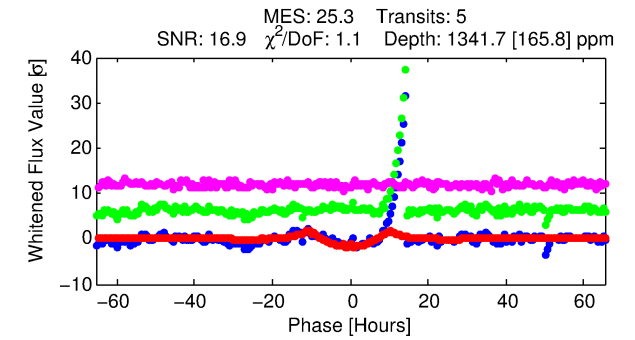
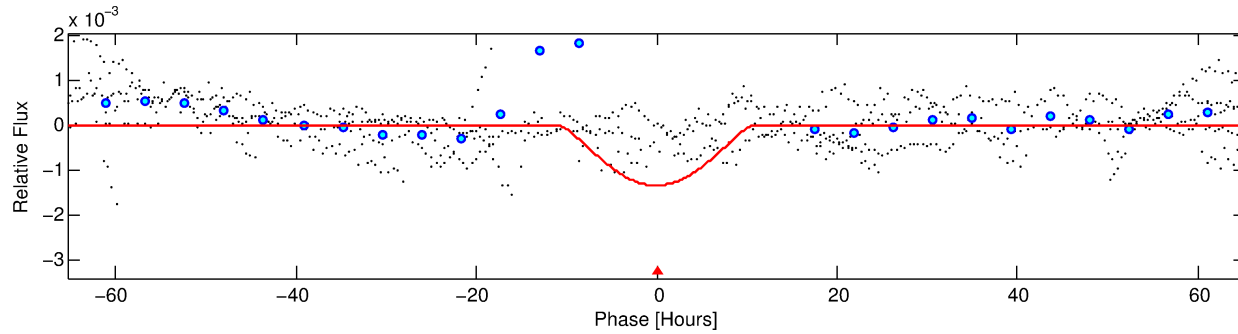
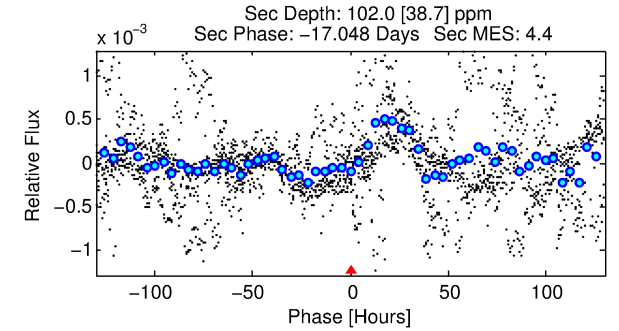
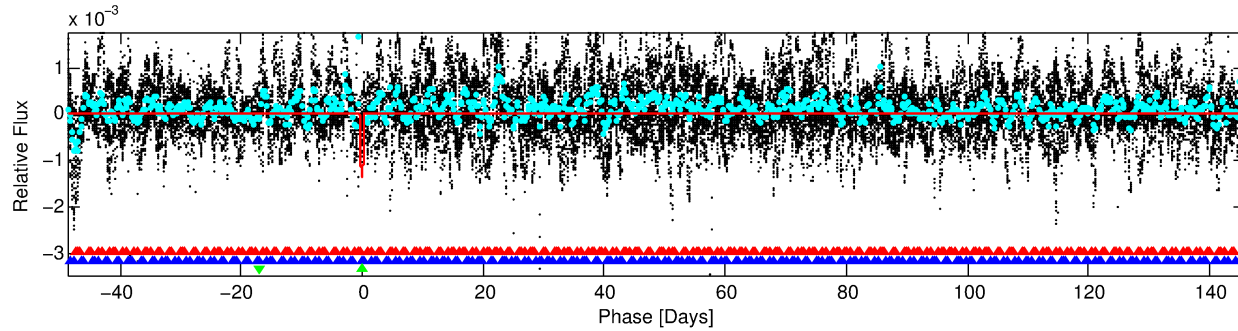
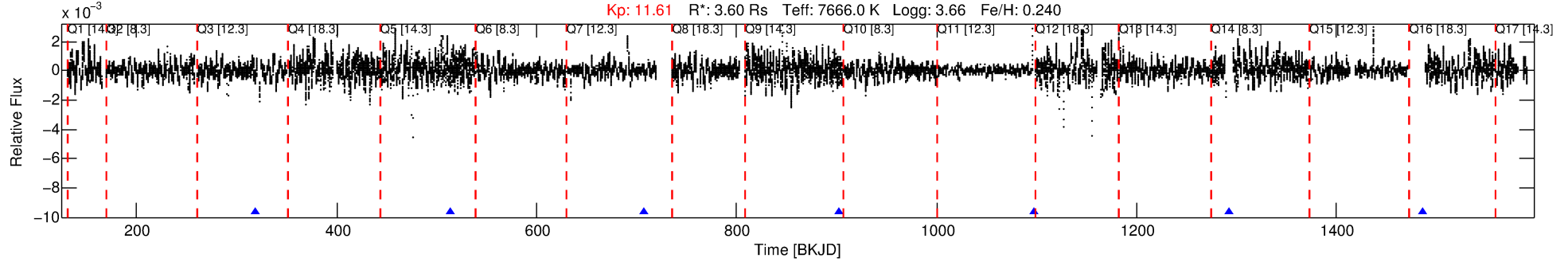
No Significant Match Found

# DV One-Page Summary

KIC: 6449358 Candidate: 3 of 3 Period: 194.627 d

KOI: K06147 Corr: No Ephemeris Match

Kp: 11.61 R\*: 3.60 Rs Teff: 7666.0 K Logg: 3.66 Fe/H: 0.240



## DV Fit Results:

Period = 194.62726 [0.00929] d  
Epoch = 318.8271 [0.0330] BKJD  
Rp/R\* = 0.0620 [0.0565]  
a/R\* = 24.46 [5.10]  
b = 1.00 [0.09]  
Seff = 55.70 [41.48]  
Teff = 697 [130] K  
Rp = 24.37 [24.60] Re  
a = 0.8488 [0.3743] AU  
Ag = 68.10 [135.93] [0.49 sigma]  
Teffp = 3094 [1445] K [1.65 sigma]

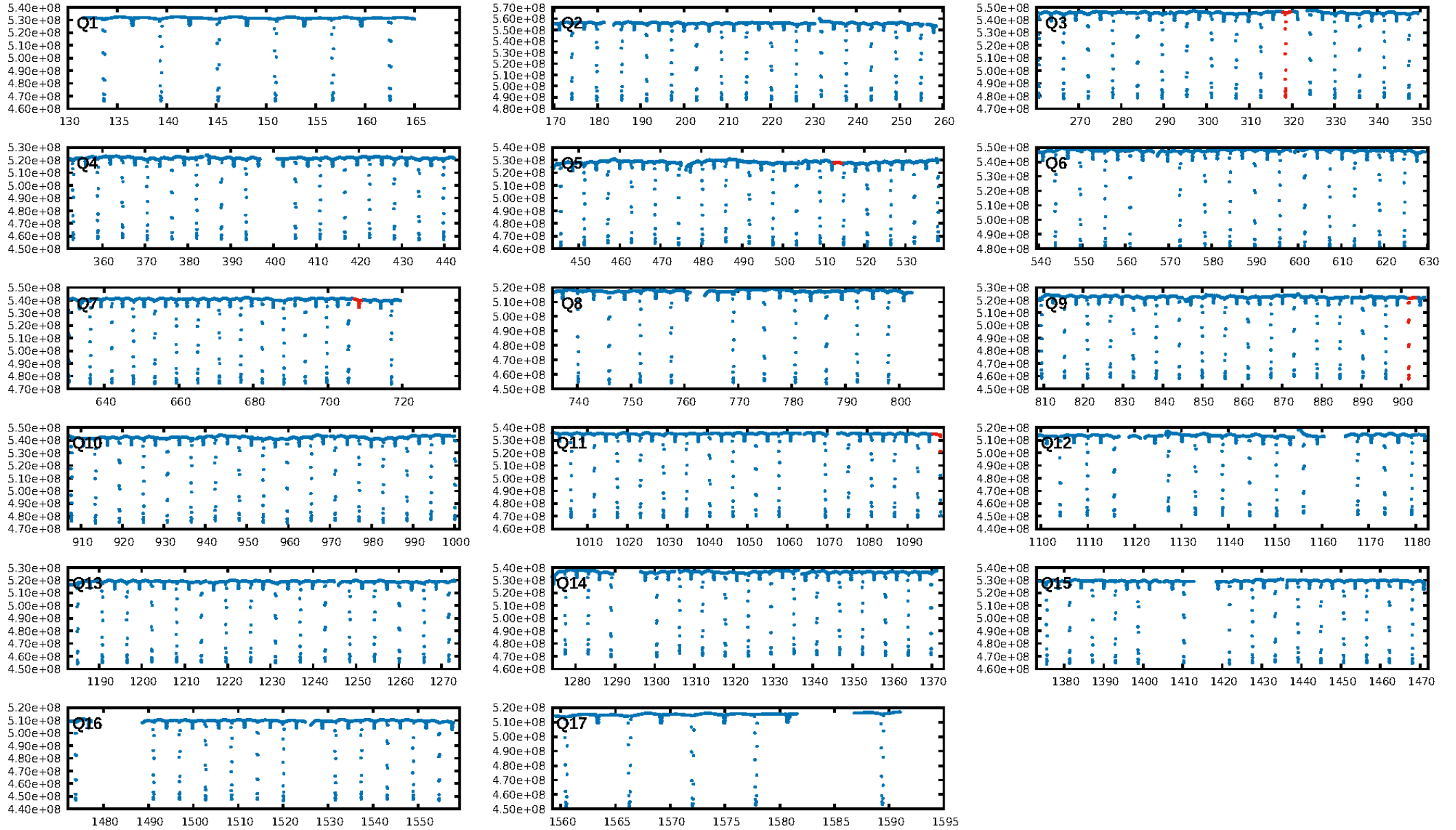
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [199.76 sigma]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.38e-45  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 1.534  
Centroid-sig: 42.3%  
Centroid-so: 0.082 arcsec [0.85 sigma]  
OotOffset-rm: 0.077 arcsec [0.59 sigma]  
KicOffset-rm: 0.092 arcsec [0.72 sigma]  
OotOffset-st: 0/2/0/2 [4]  
KicOffset-st: 0/2/0/2 [4]  
DiffImageQuality-fgm: 0.50 [2/4]  
DiffImageOverlap-fno: 0.00 [0/4]

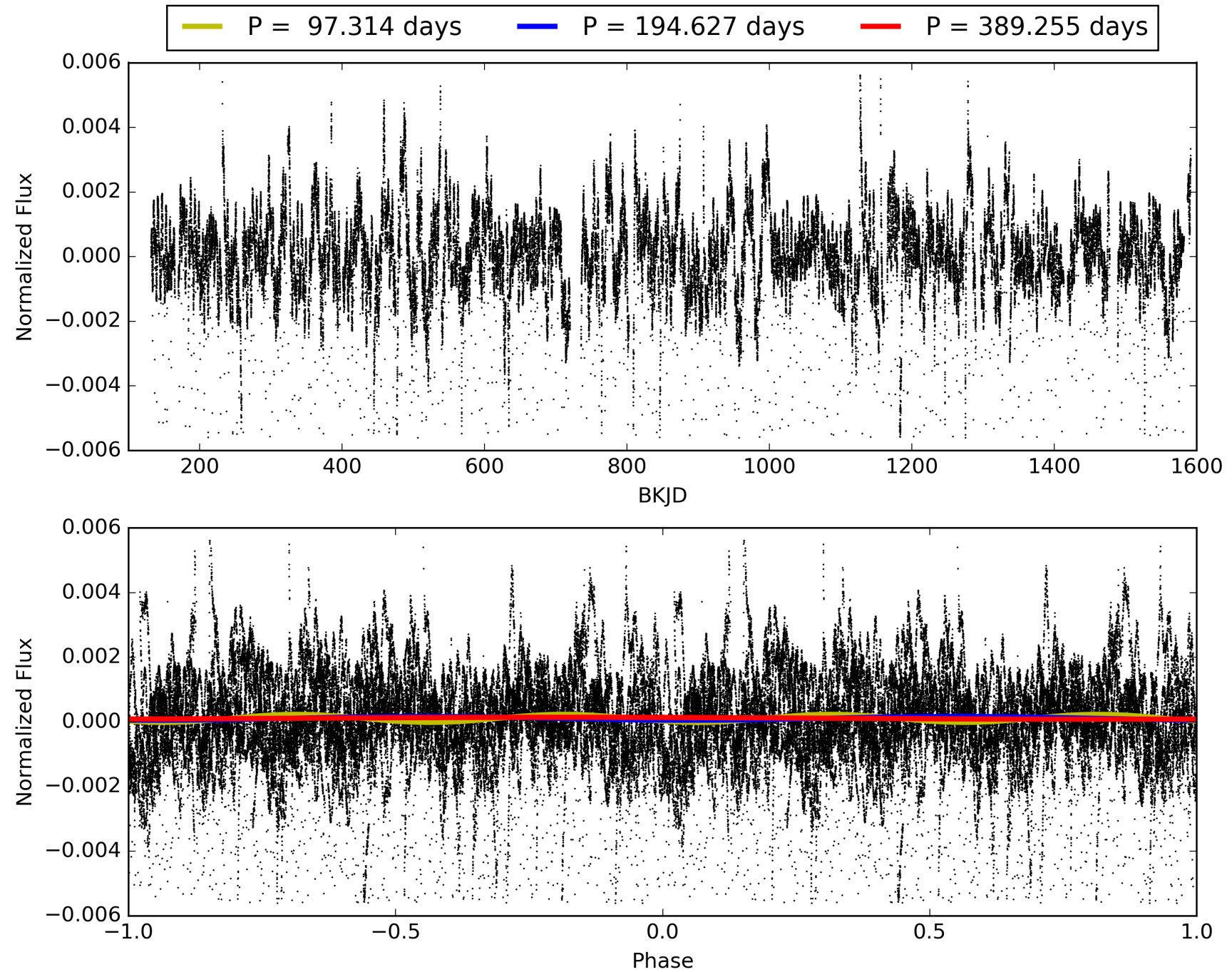
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 03-Feb-2016 06:06:42 Z

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

# TCE 006449358-03, PDC Light Curves

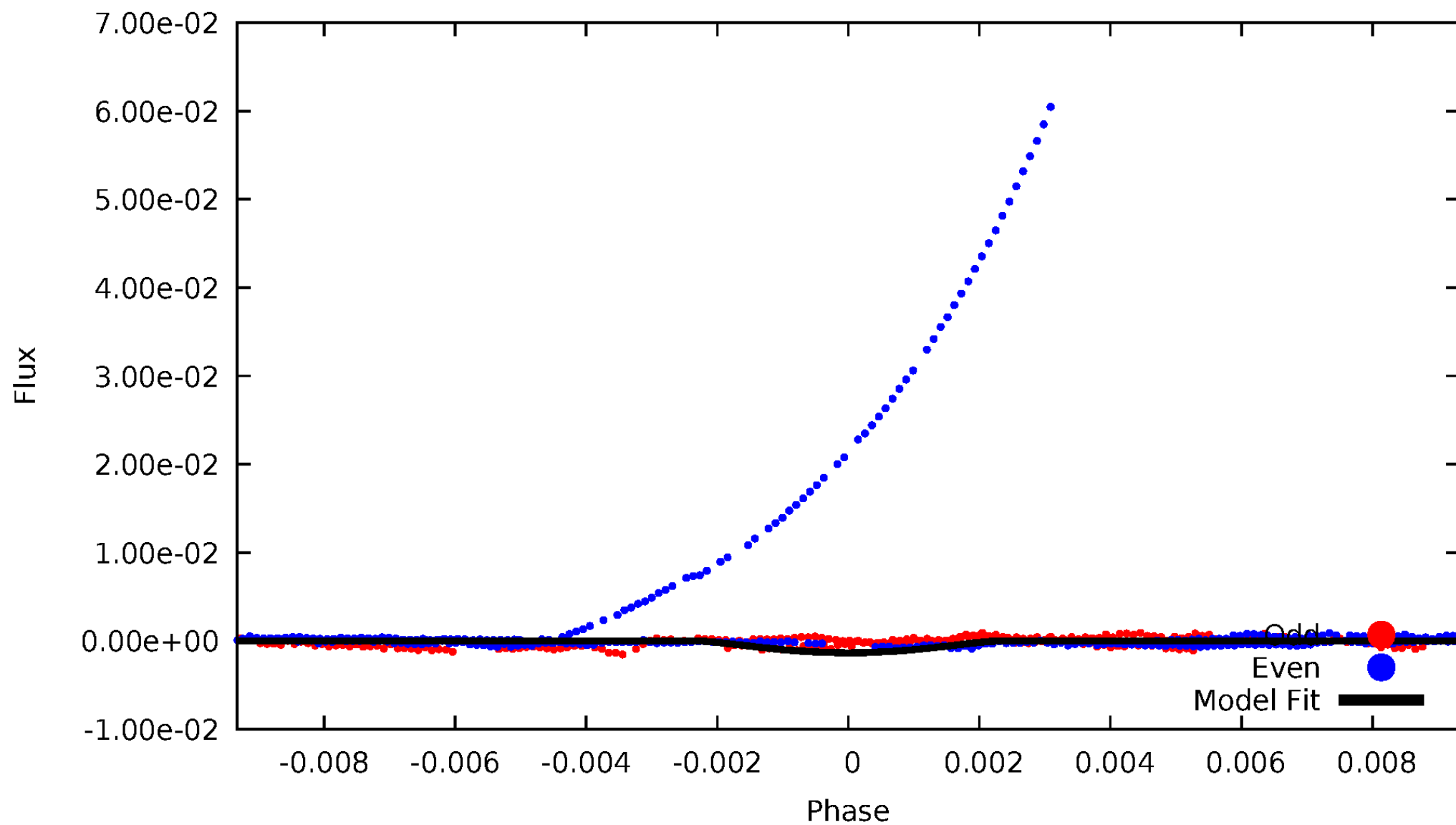


TCE 006449358-03



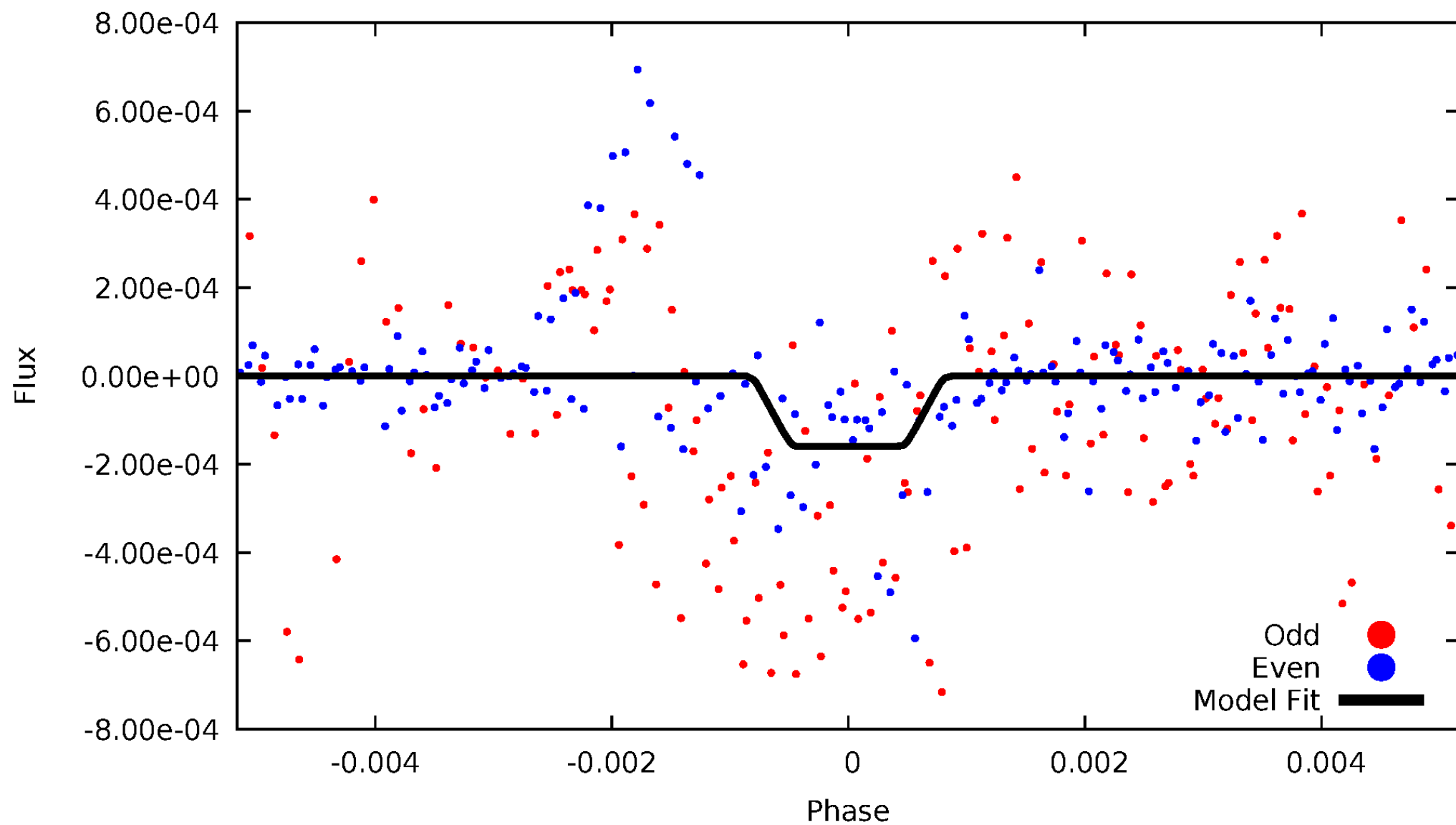
# DV Odd/Even

TCE 006449358-03



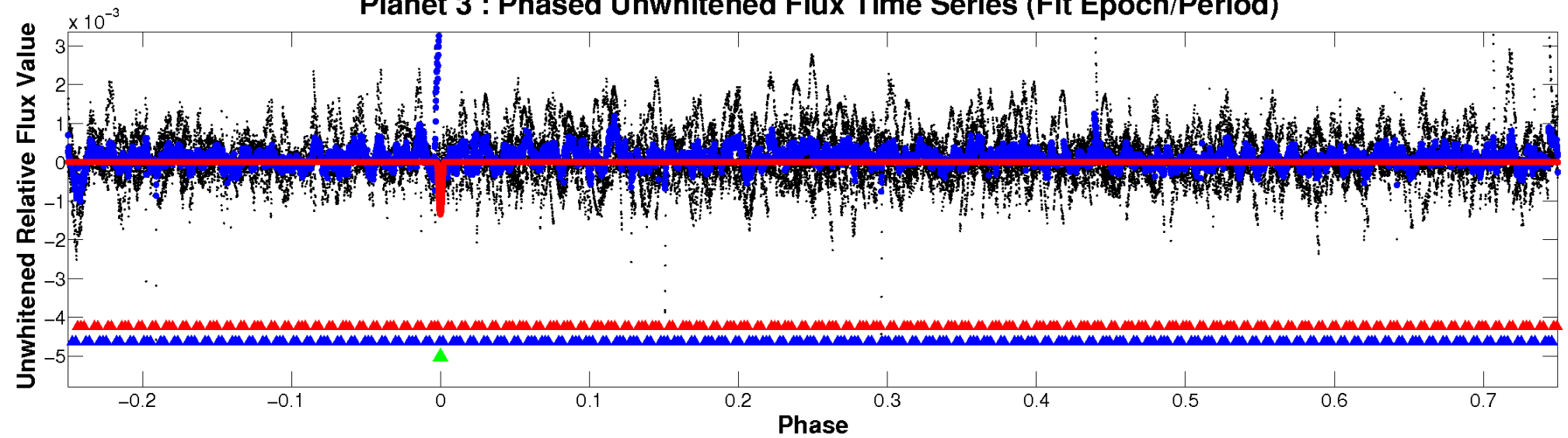
# ALT Odd/Even

TCE 006449358-03

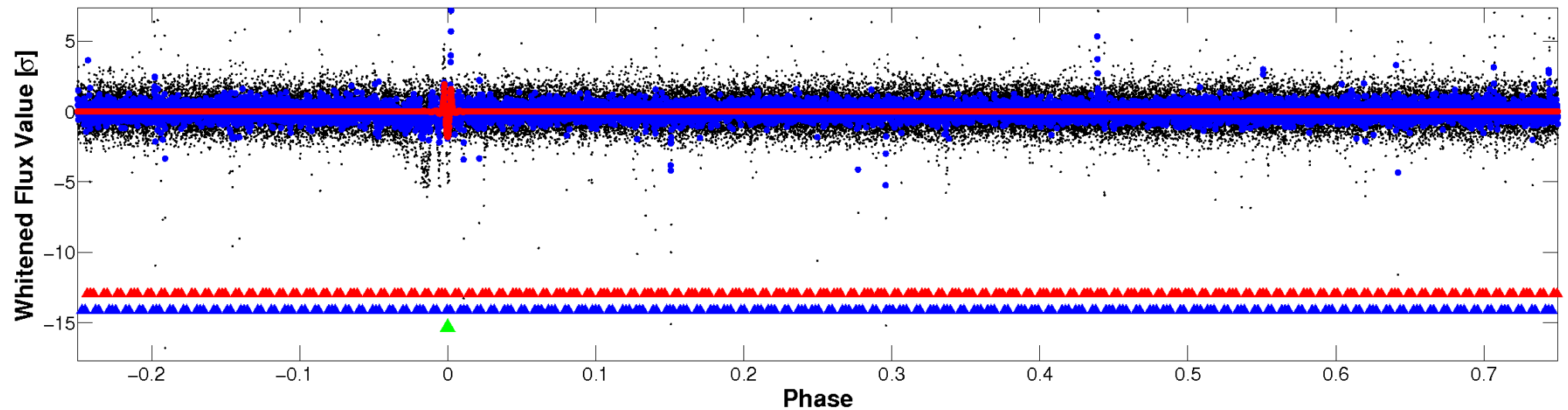


# Non-Whitened Vs. Whitened Light Curve

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

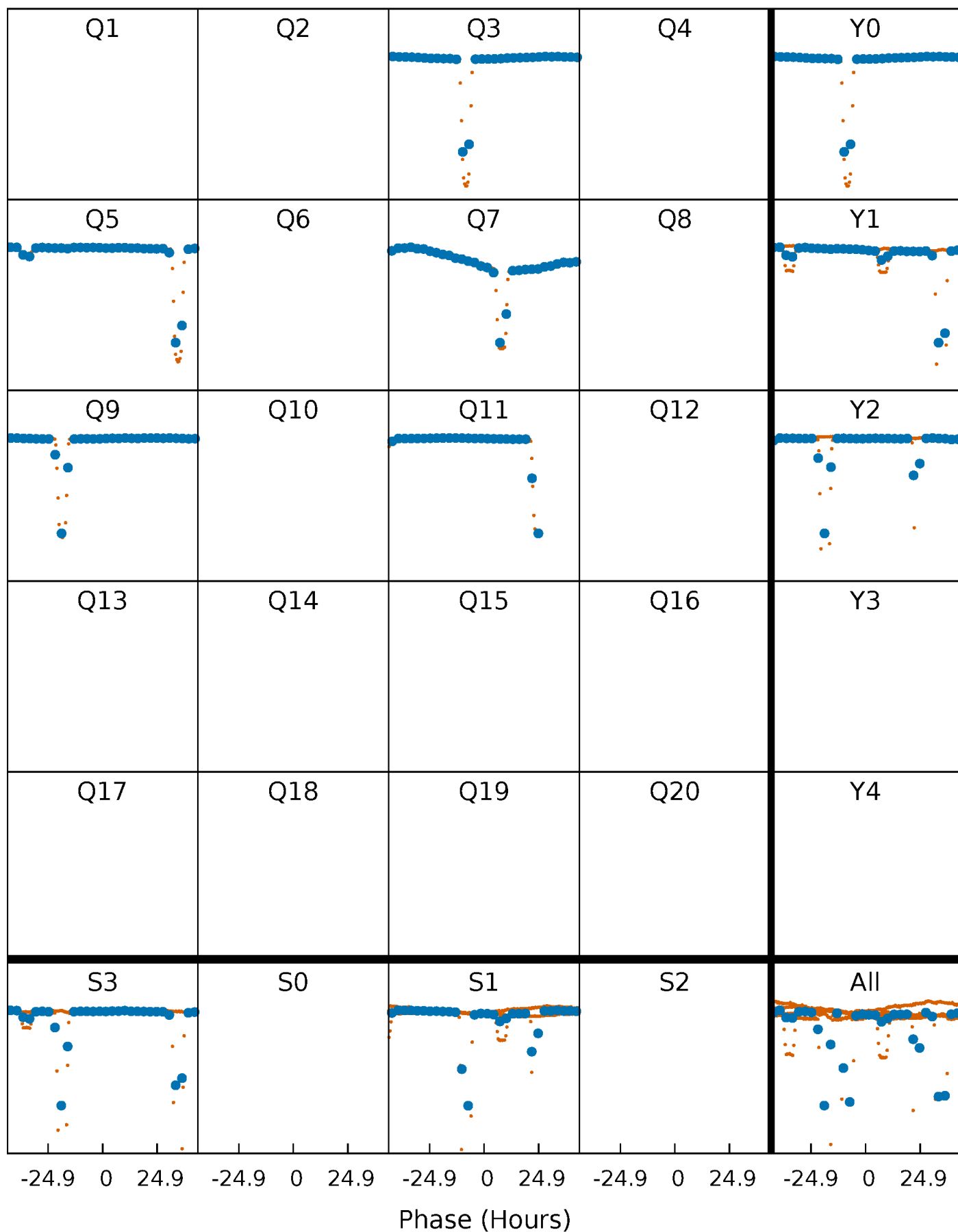


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

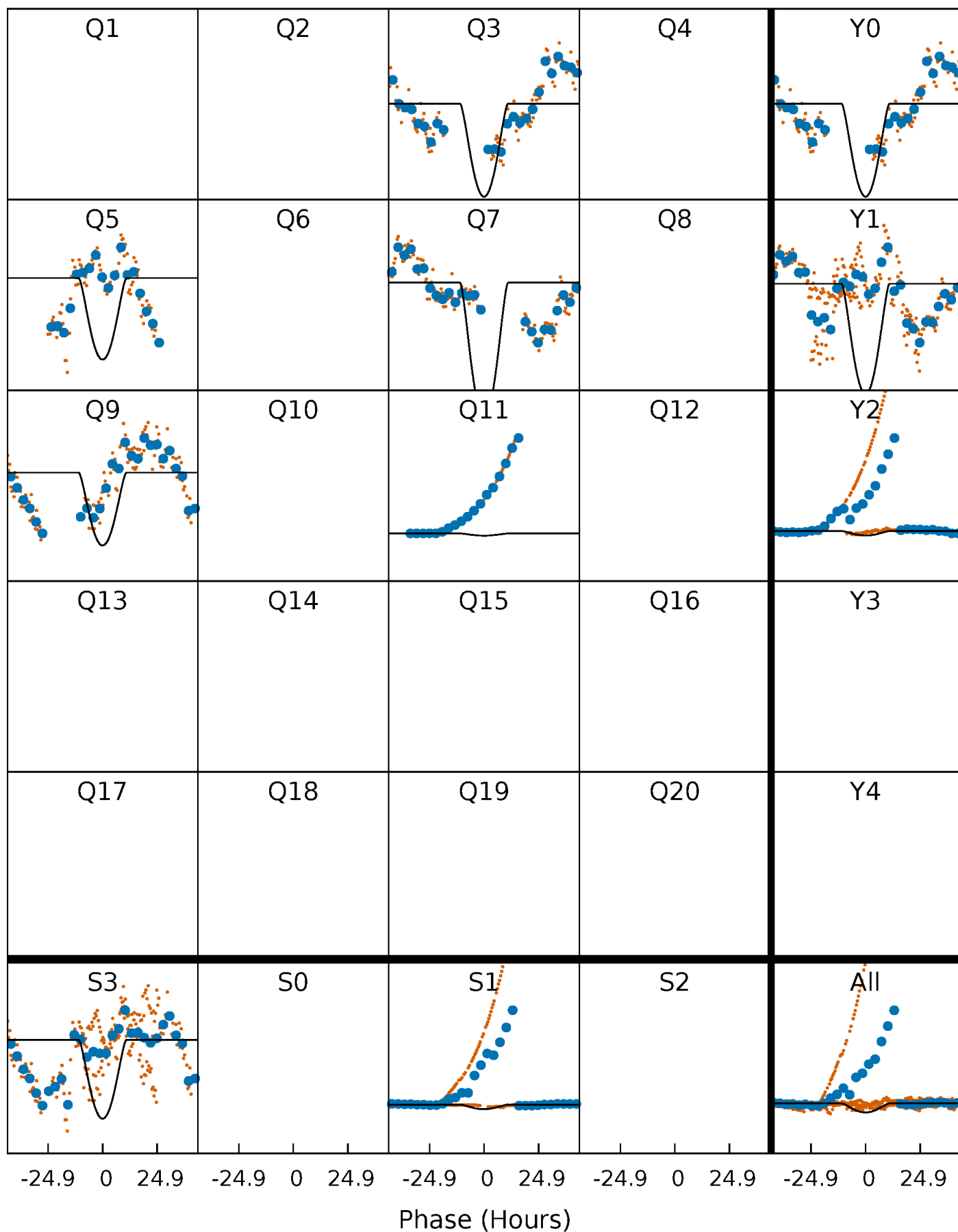
TCE 006449358-03     $P=194.627259$  Days     $T_0=318.827086$  (BKJD)





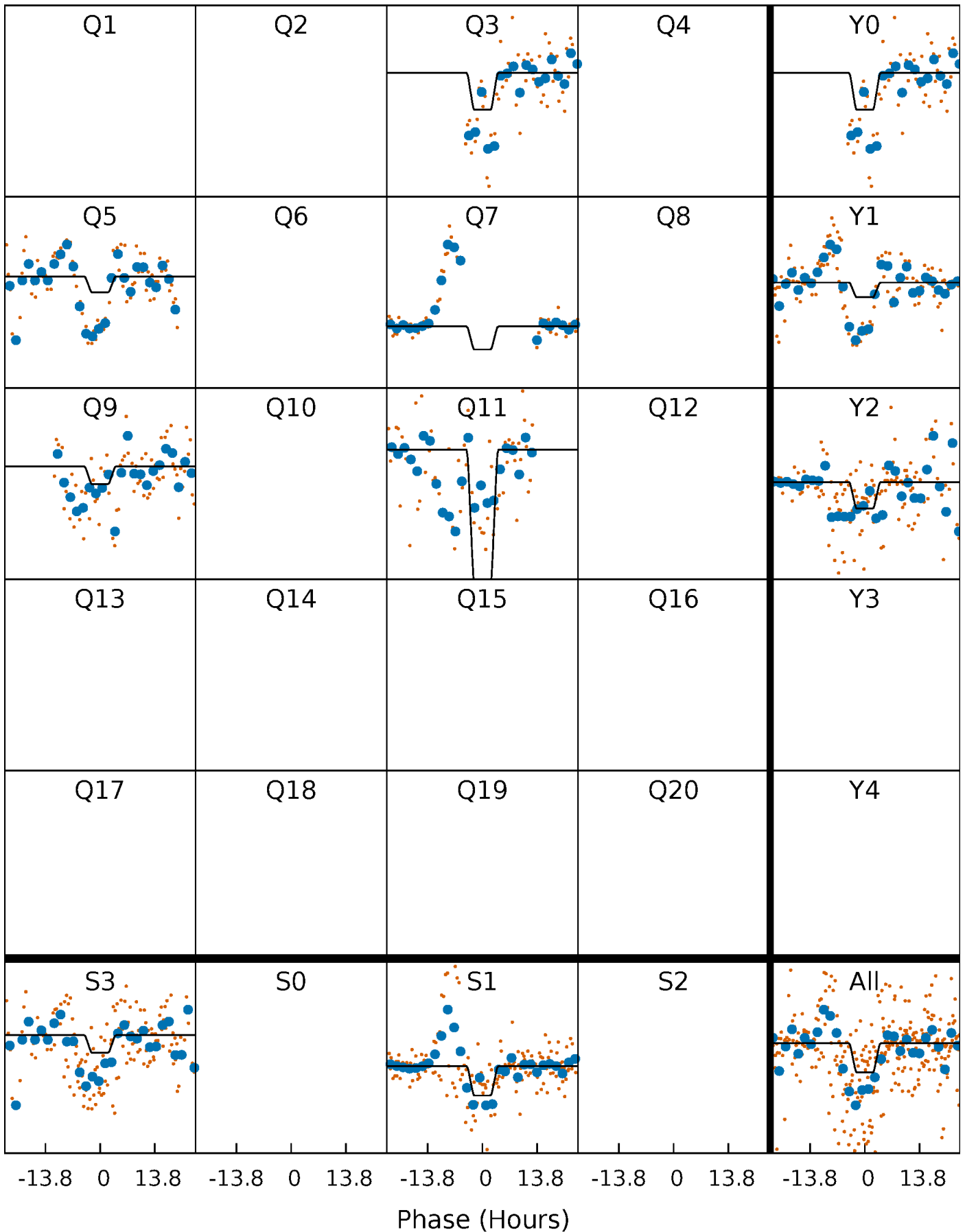
# DV Quarter-Phased Transit Curves

TCE 006449358-03     $P=194.627259$  Days     $T_0=318.827086$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

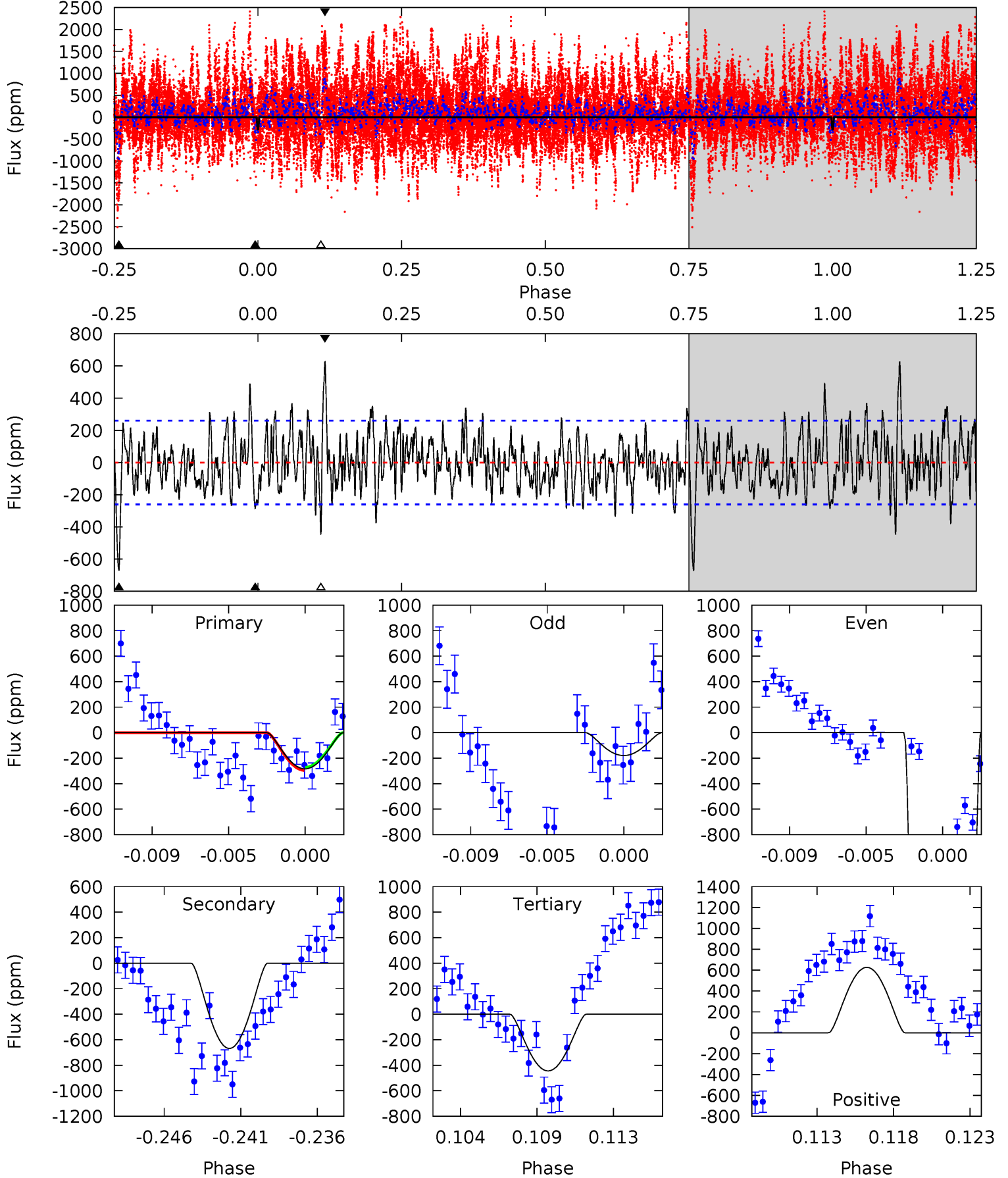
TCE 006449358-03 P=194.581981 Days  $T_0=319.084217$  (BKJD)



# DV Model-Shift Uniqueness Test

006449358-03, P = 194.627259 Days, E = 124.199827 Days

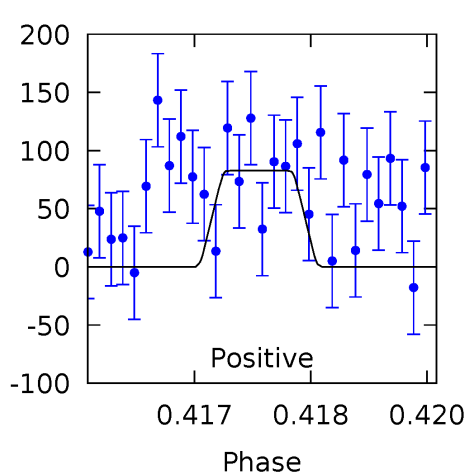
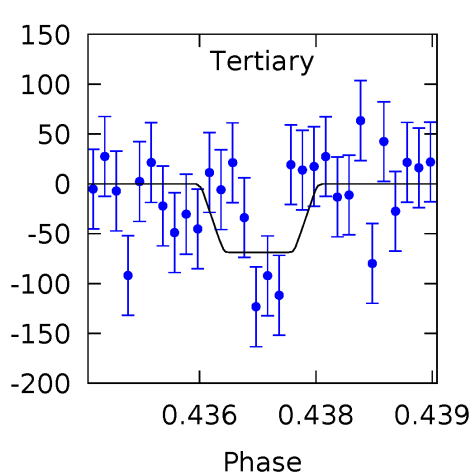
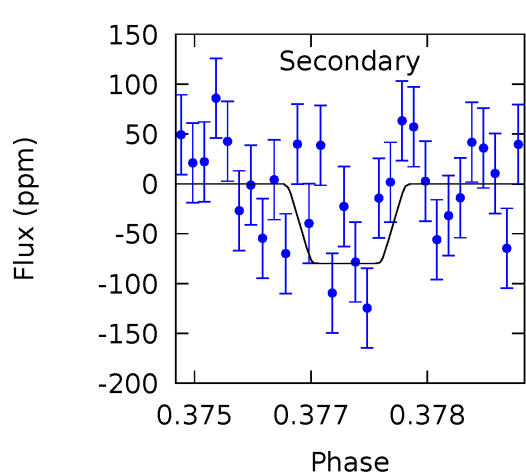
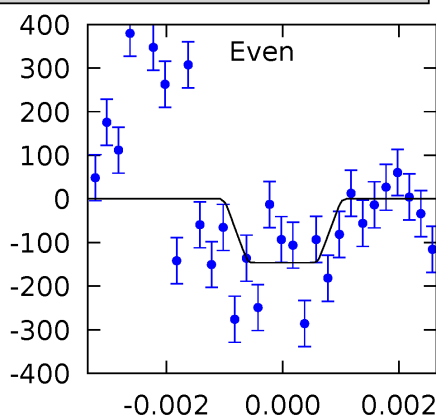
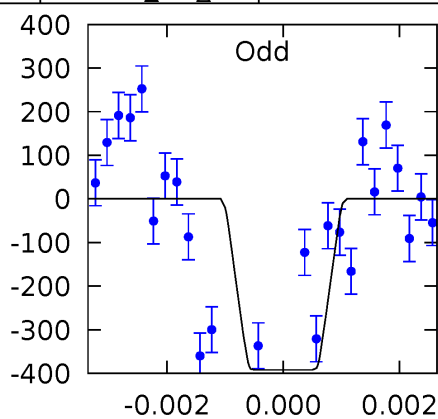
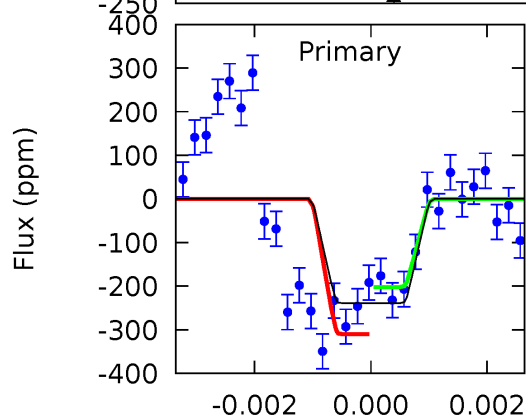
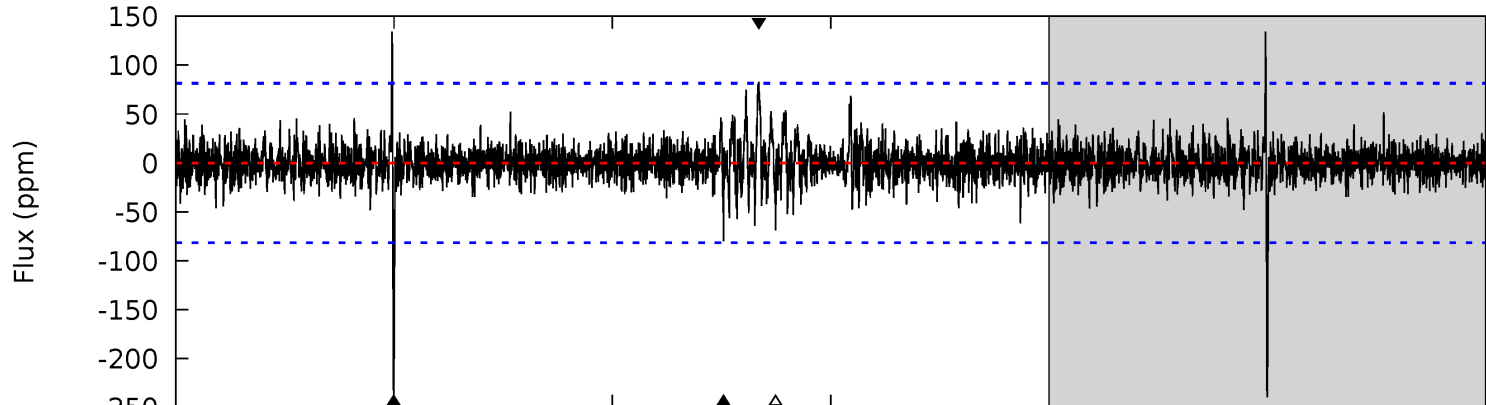
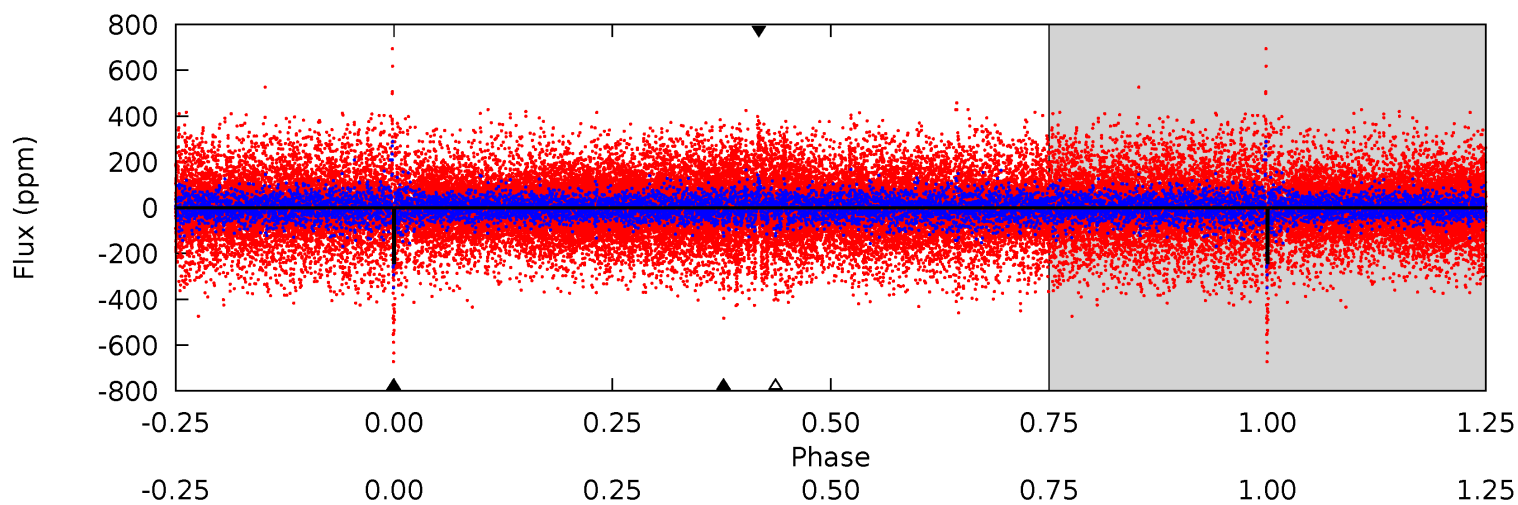
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.63	13.3	8.81	12.4	5.17	2.82	2.75	-3.18	-6.81	4.45	0.82	119.1	-22.3	0.48	0.25



# Alt Model-Shift Uniqueness Test

006449358-03, P = 194.581981 Days, E = 124.502236 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
15.8	5.26	4.54	5.45	5.37	3.16	1.04	11.2	10.3	0.73	-0.19	7.93	1.08	0.36	3.59



### Stellar Parameters For KIC 006449358

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7666^{+212}_{-334}$	$3.658^{+0.432}_{-0.108}$	$0.240^{+0.100}_{-0.400}$	$3.601^{+0.725}_{-1.571}$	$2.153^{+0.276}_{-0.512}$	$0.065^{+0.259}_{-0.021}$
	+3%/-4%	+12%/-3%	+42%/-167%	+20%/-44%	+13%/-24%	+400%/-33%
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 006449358-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-668 \pm 50$	$25.68^{+18.85}_{-15.96}$	$936^{+78}_{-117}$	$4610^{+2735}_{-803}$	$401^{+2527}_{-269}$
Alt.	$-80 \pm 15$	$15.13^{+17.99}_{-10.97}$	$942^{+70}_{-113}$	$3766^{+2659}_{-757}$	$133^{+1566}_{-104}$

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

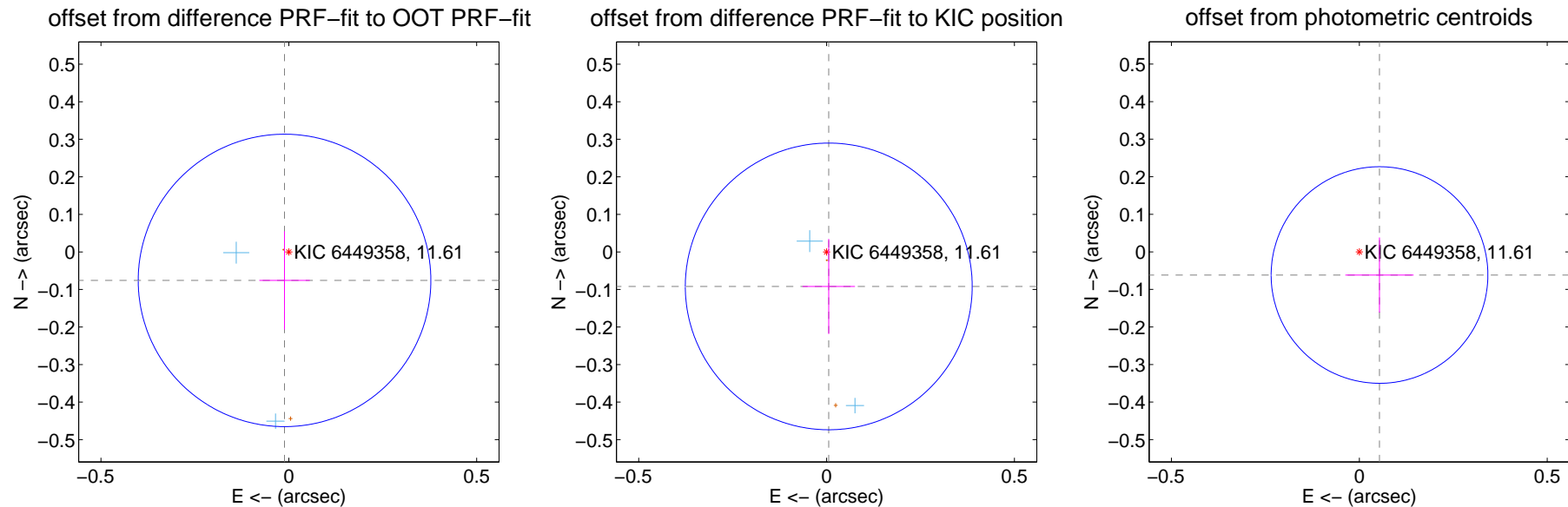
## DV Centroid Data

Supplemental centroid analysis for 006449358-03. **Kepler magnitude: 11.61.** Transit SNR 16.92

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

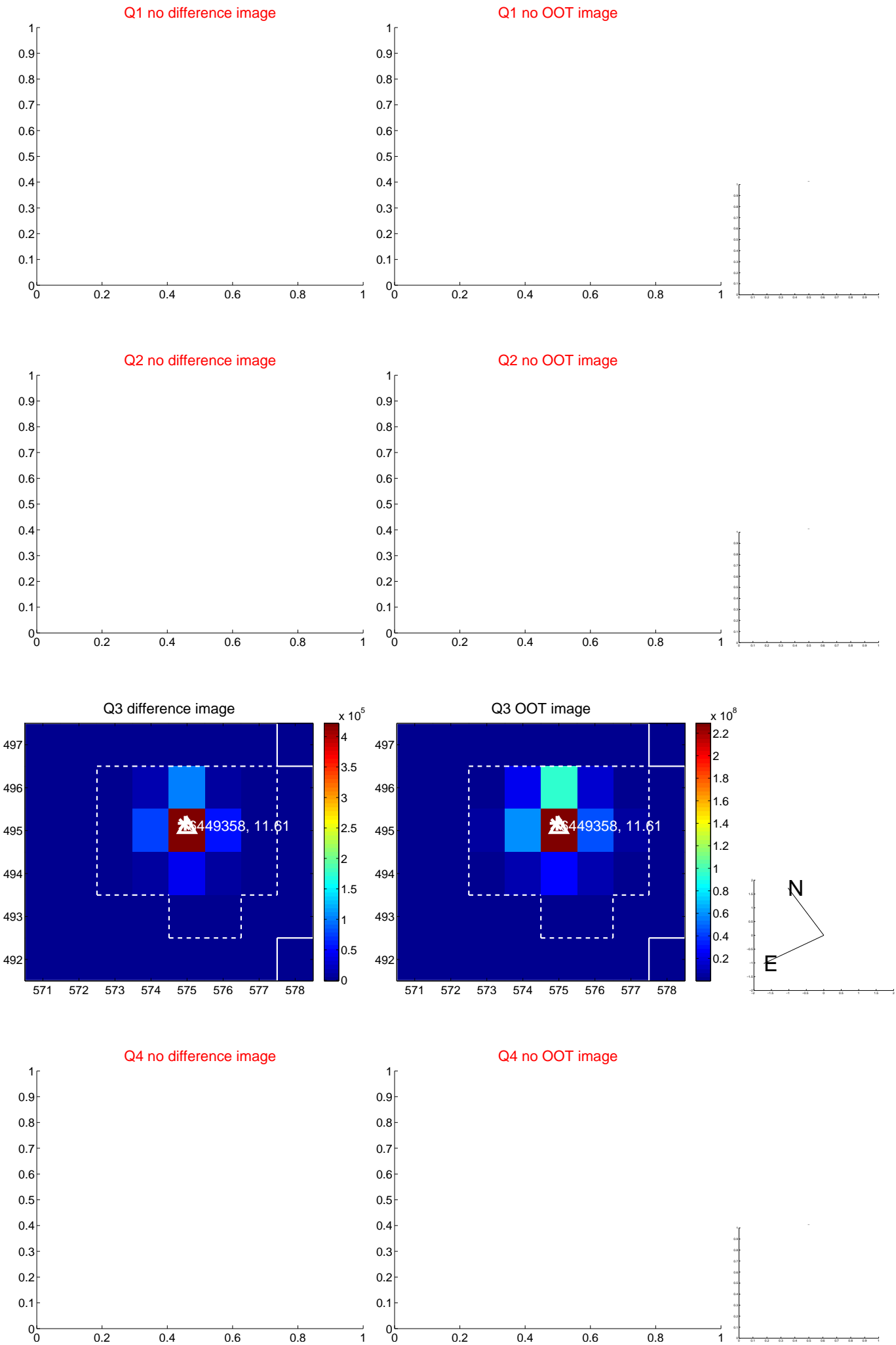
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.077 \pm 0.130$	0.59	$0.011 \pm 0.067$	$-0.076 \pm 0.131$
PRF-fit source offset from KIC position	$0.092 \pm 0.127$	0.72	$-0.006 \pm 0.070$	$-0.092 \pm 0.127$
photometric centroid source offset	$0.08 \pm 0.10$	0.85	$-0.05 \pm 0.09$	$-0.06 \pm 0.10$

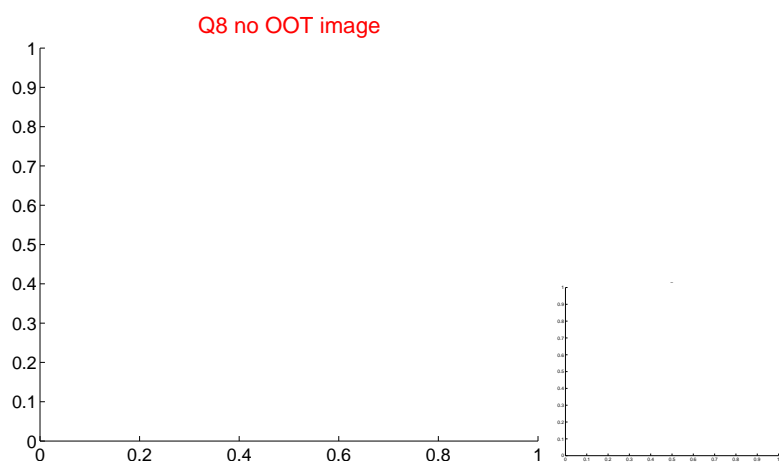
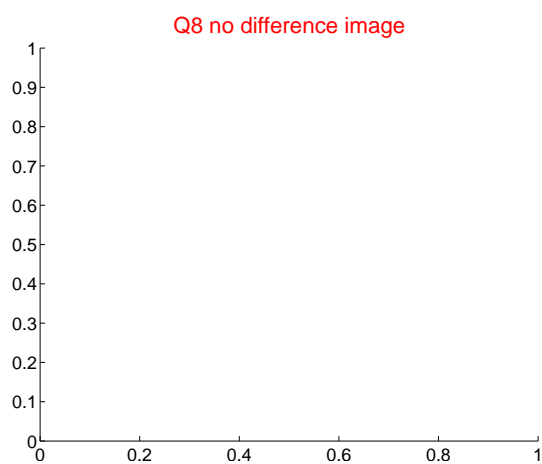
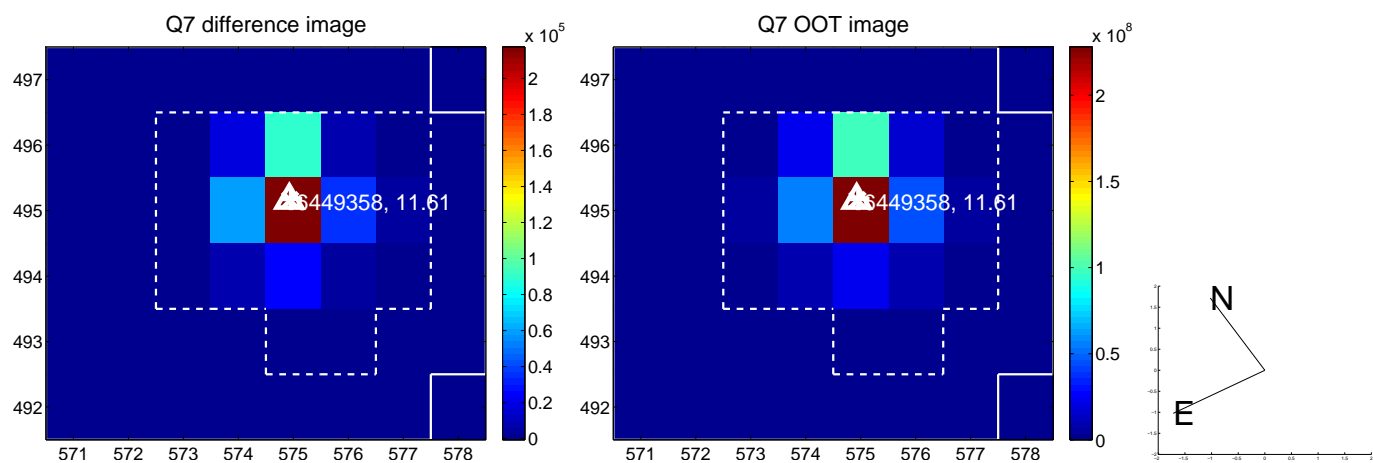
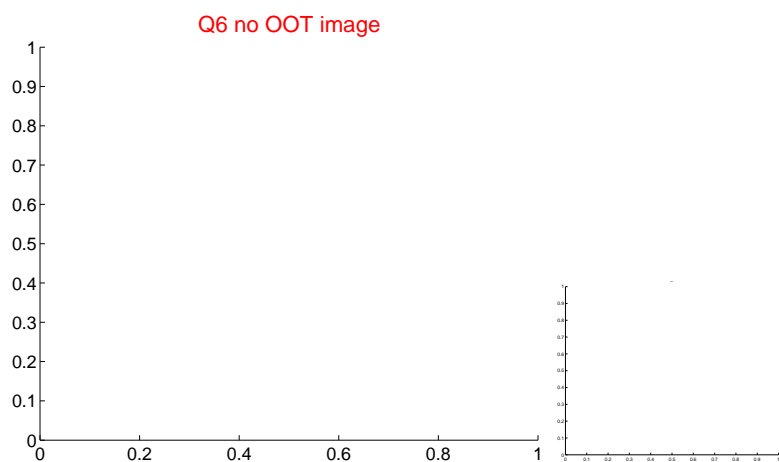
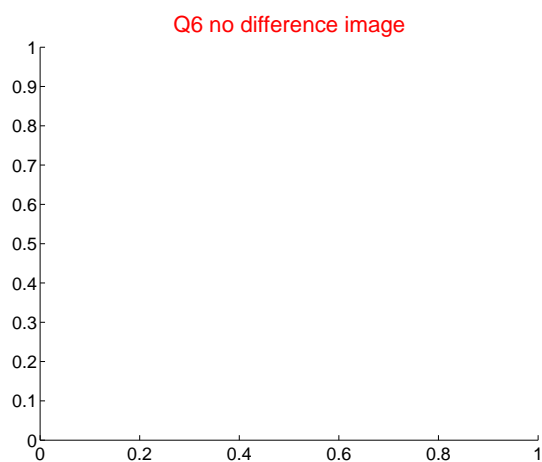
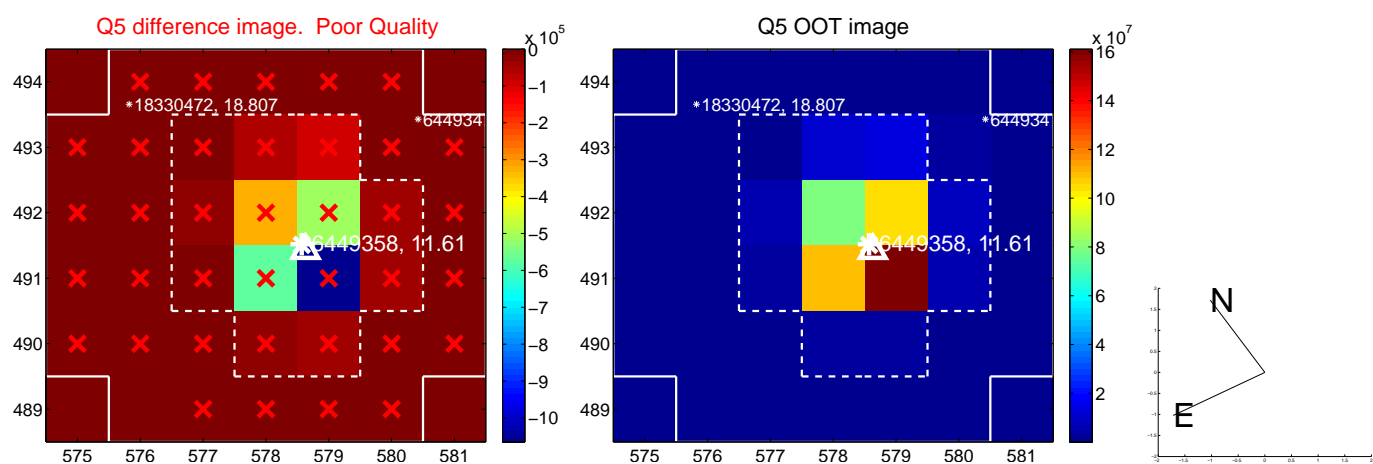


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

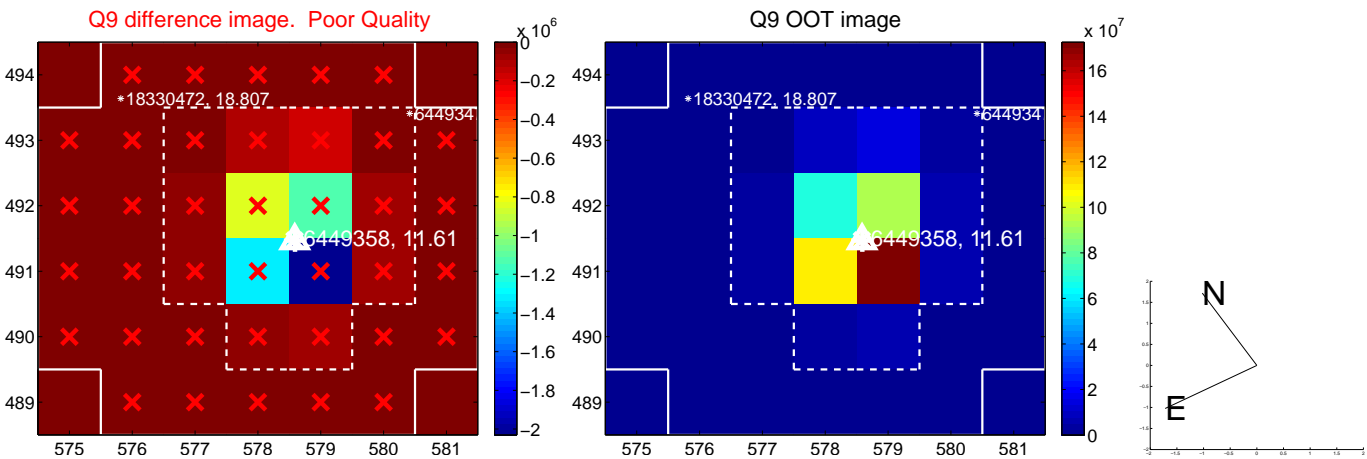


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value





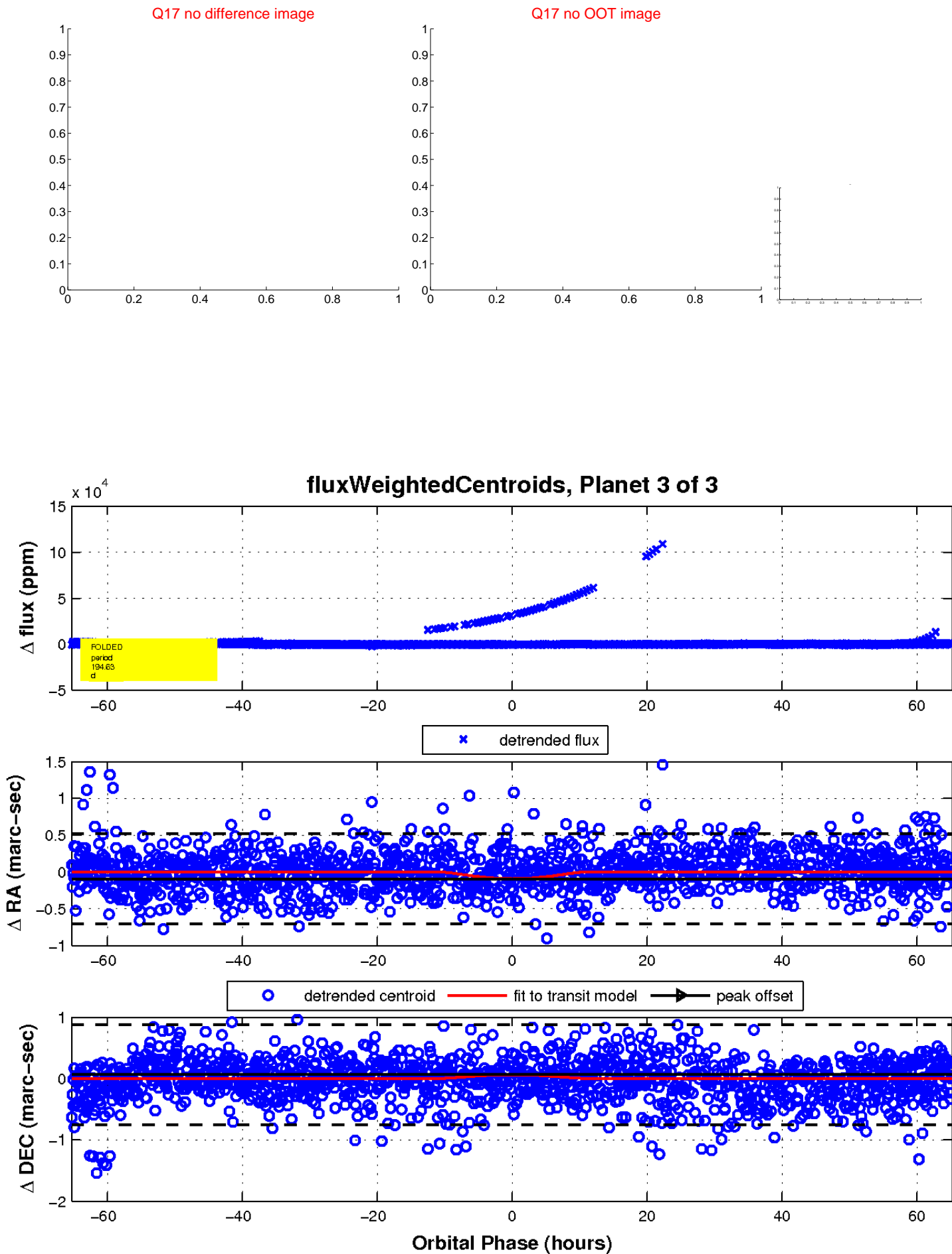
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

