

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003542119-01	OBS	No	2.201670	132.421943	16.8	11.223	9.5	4.9	4.12	6257	2.09	14506.69
003542119-02	OBS	No	177.830213	166.028806	348.6	3.155	9.8	8.1	4.12	6257	8.77	41.55
003542119-03	OBS	No	46.045765	160.209140	195.1	4.733	9.7	8.8	4.12	6257	6.73	251.76
003542119-04	OBS	No	161.792595	208.618920	119.2	13.018	9.4	4.1	4.12	6257	4.93	47.13
003542119-05	OBS	No	144.797709	136.024202	372.3	3.559	8.9	9.3	4.12	6257	9.30	54.65
003542119-06	OBS	No	405.130706	193.166102	270.1	7.652	8.7	6.0	4.12	6257	7.27	13.86
003542119-07	OBS	No	211.002675	175.479319	277.5	5.845	8.9	6.9	4.12	6257	7.39	33.08
003542119-08	OBS	No	155.456868	215.297961	265.2	7.935	8.7	8.0	4.12	6257	7.38	49.71
003542119-09	OBS	No	106.310124	190.178583	229.9	7.393	8.0	7.4	4.12	6257	6.90	82.50
003542119-10	OBS	No	79.537459	169.217320	368.5	1.912	7.9	7.7	4.12	6257	8.72	121.47

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003542119-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003542119-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
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003542119-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003542119-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003542119-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
003542119-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS
003542119-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003542119-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

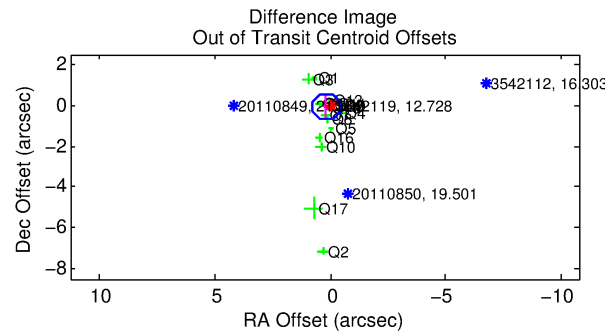
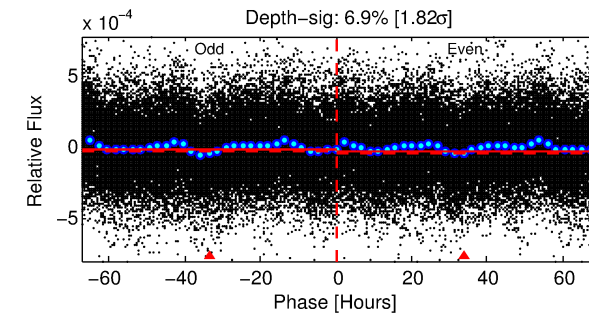
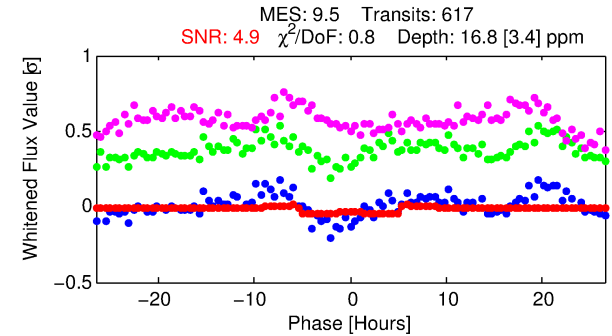
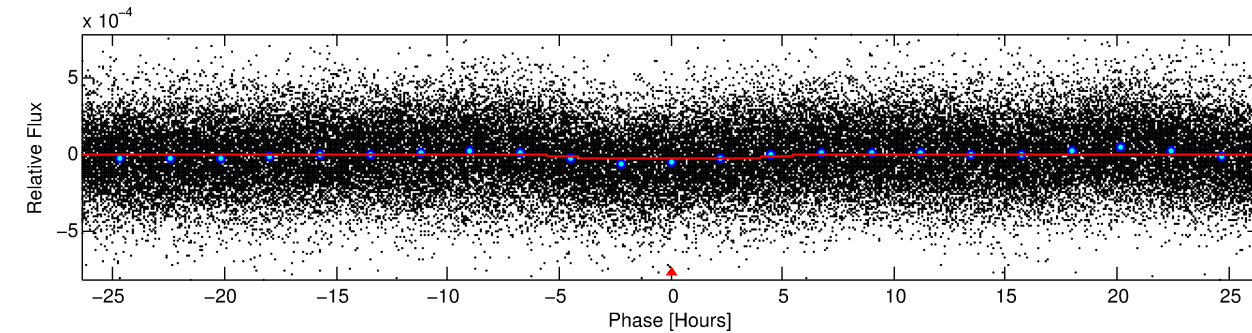
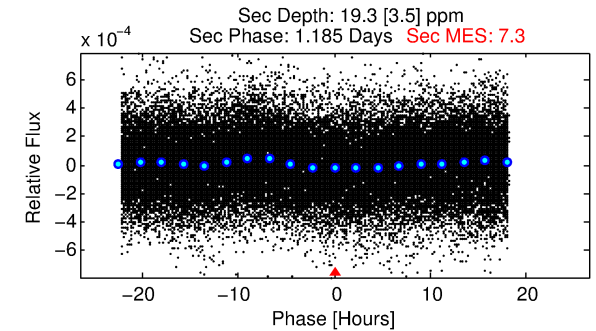
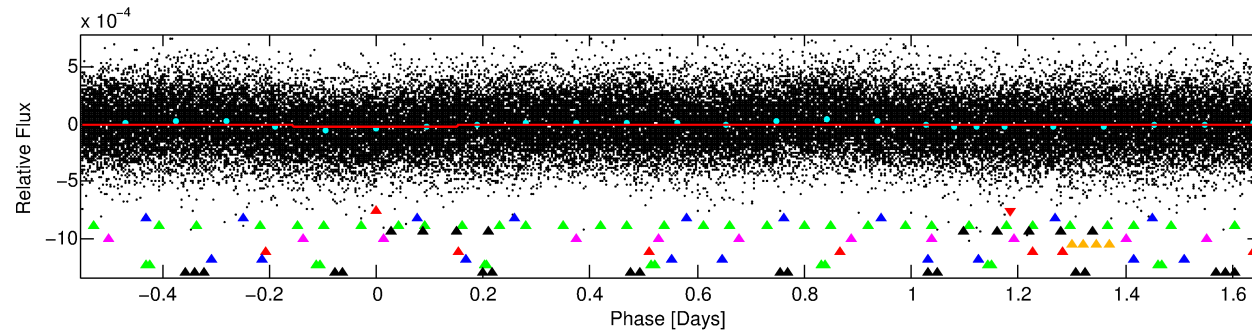
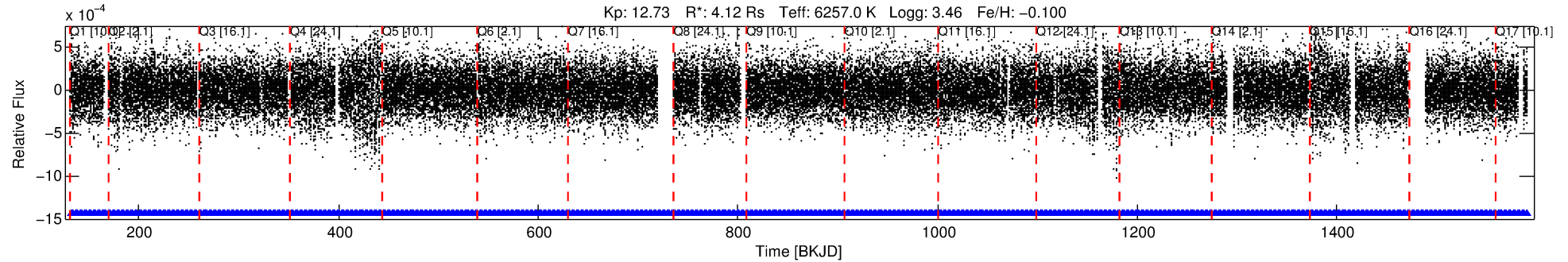
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 003542119-01

No Significant Match Found

# DV One-Page Summary

KIC: 3542119 Candidate: 1 of 10 Period: 2.202 d



## DV Fit Results:

Period = 2.20167 [0.00005] d  
Epoch = 132.4219 [0.0116] BKJD  
Rp/R\* = 0.0046 [0.0009]  
a/R\* = 1.09 [0.17]  
b = 0.95 [0.11]  
Seff = 14506.69 [9597.20]  
Teq = 2798 [463] K  
Rp = 2.09 [0.95] Re  
a = 0.0401 [0.0162] AU  
Ag = 3.92 [3.06] [0.95σ]  
Teffp = 6090 [682] K [3.99σ]

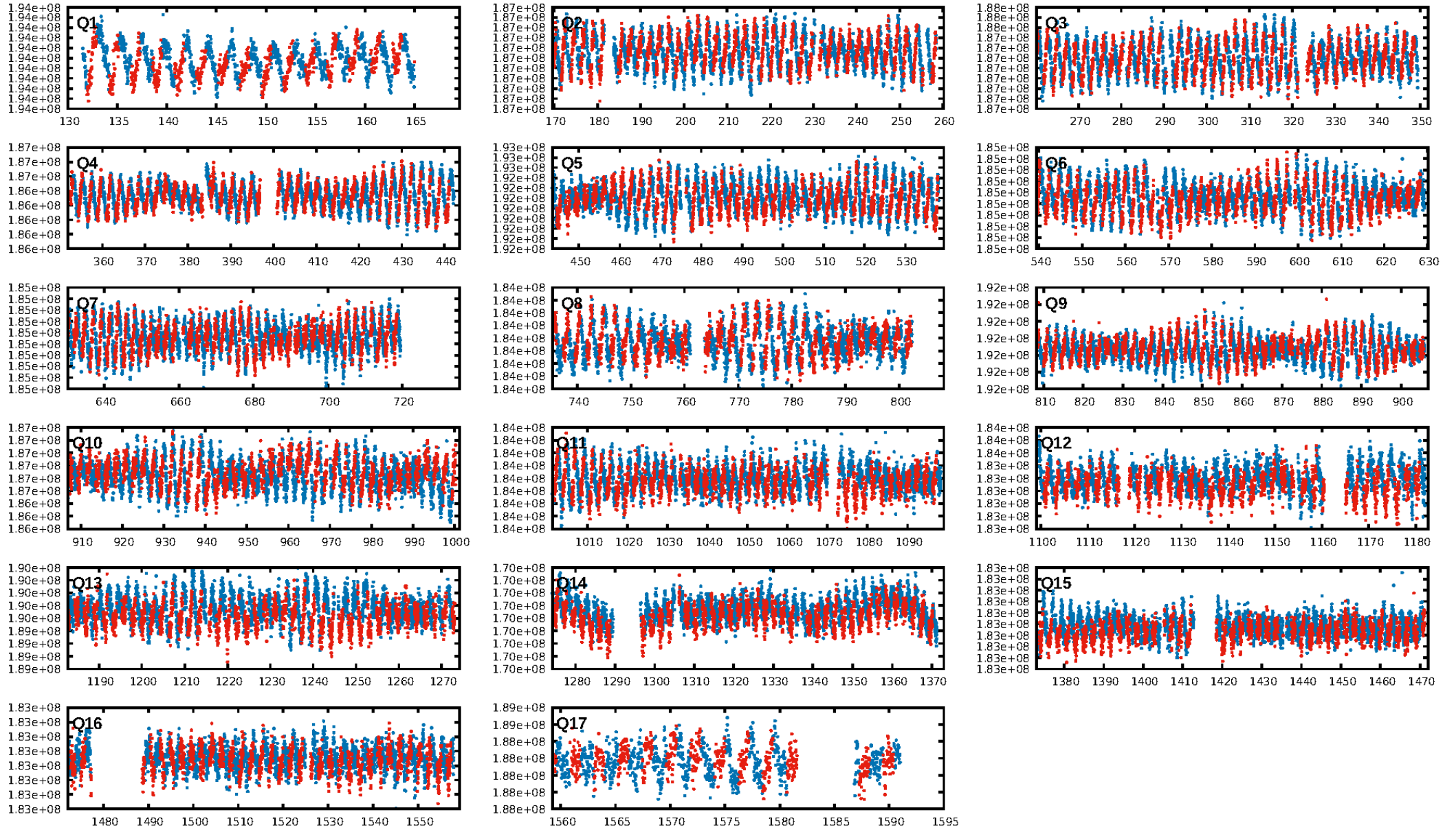
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [86.39σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [589/589]  
GhostDiagnostic-chr: 0.6858  
Centroid-sig: 0.3%  
Centroid-so: 1.736 arcsec [2.00σ]  
OotOffset-rm: 0.196 arcsec [0.93σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 0.221 arcsec [1.70σ]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.88 [15/17]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:15:25 Z

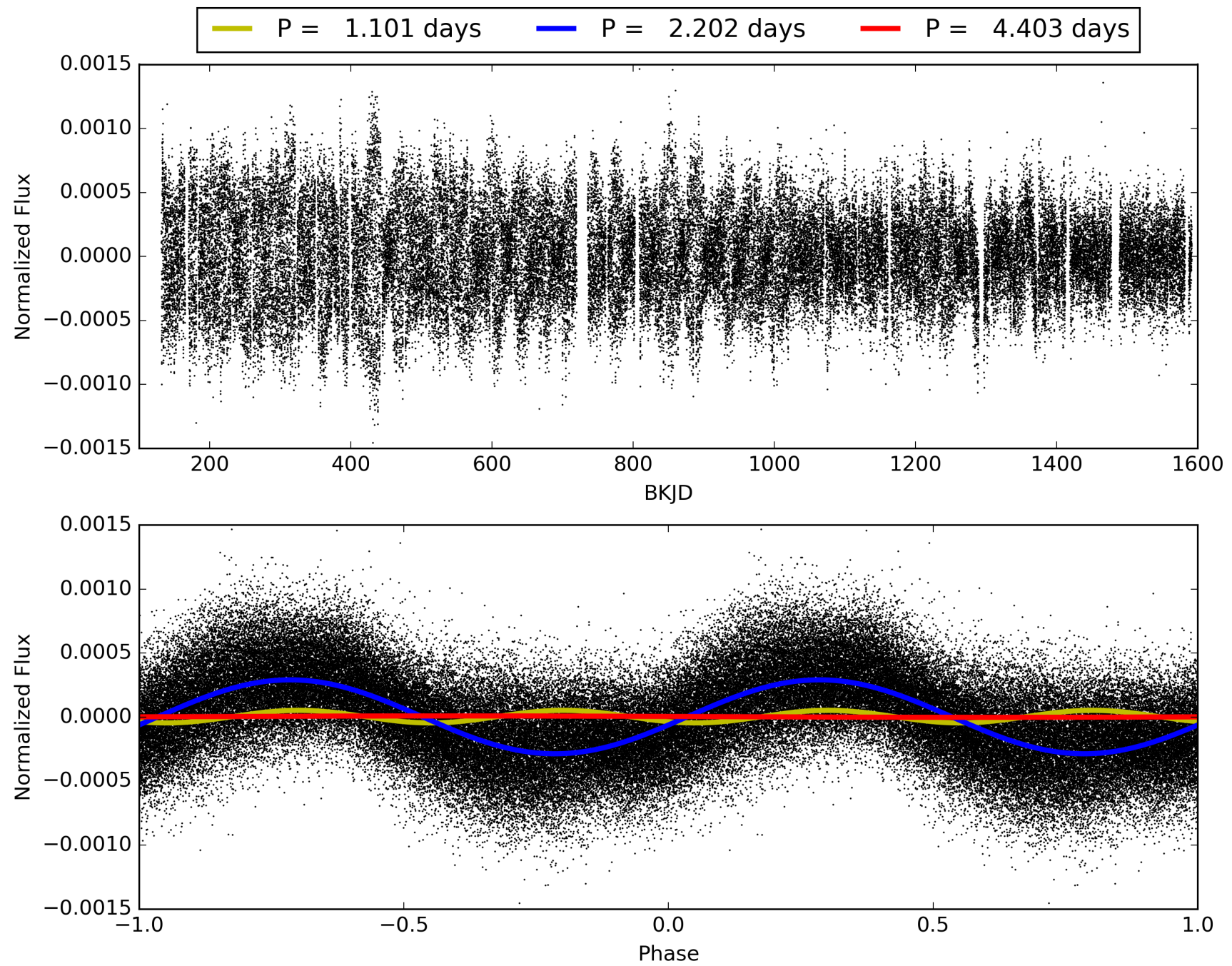
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003542119-01, PDC Light Curves





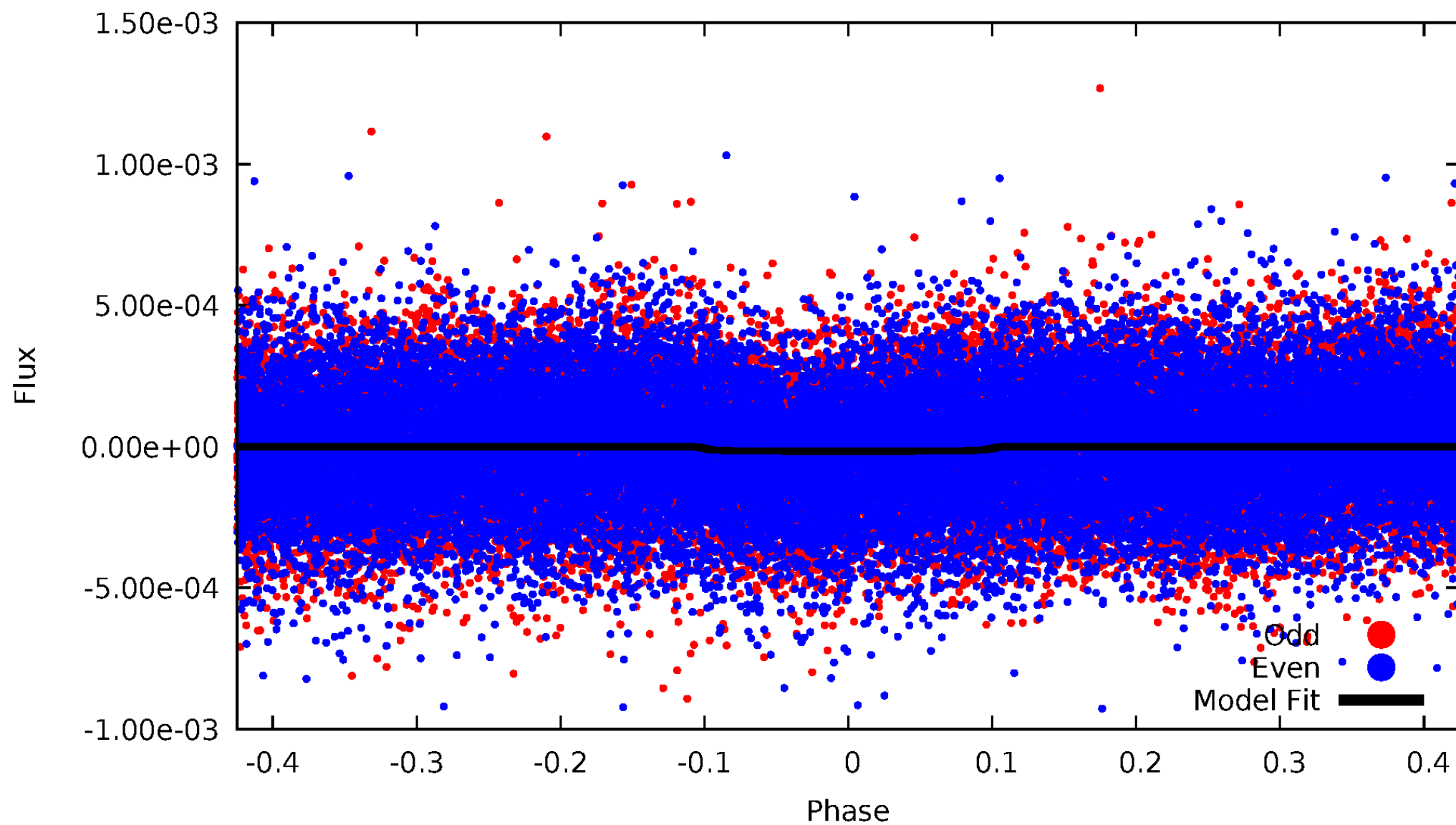
TCE 003542119-01





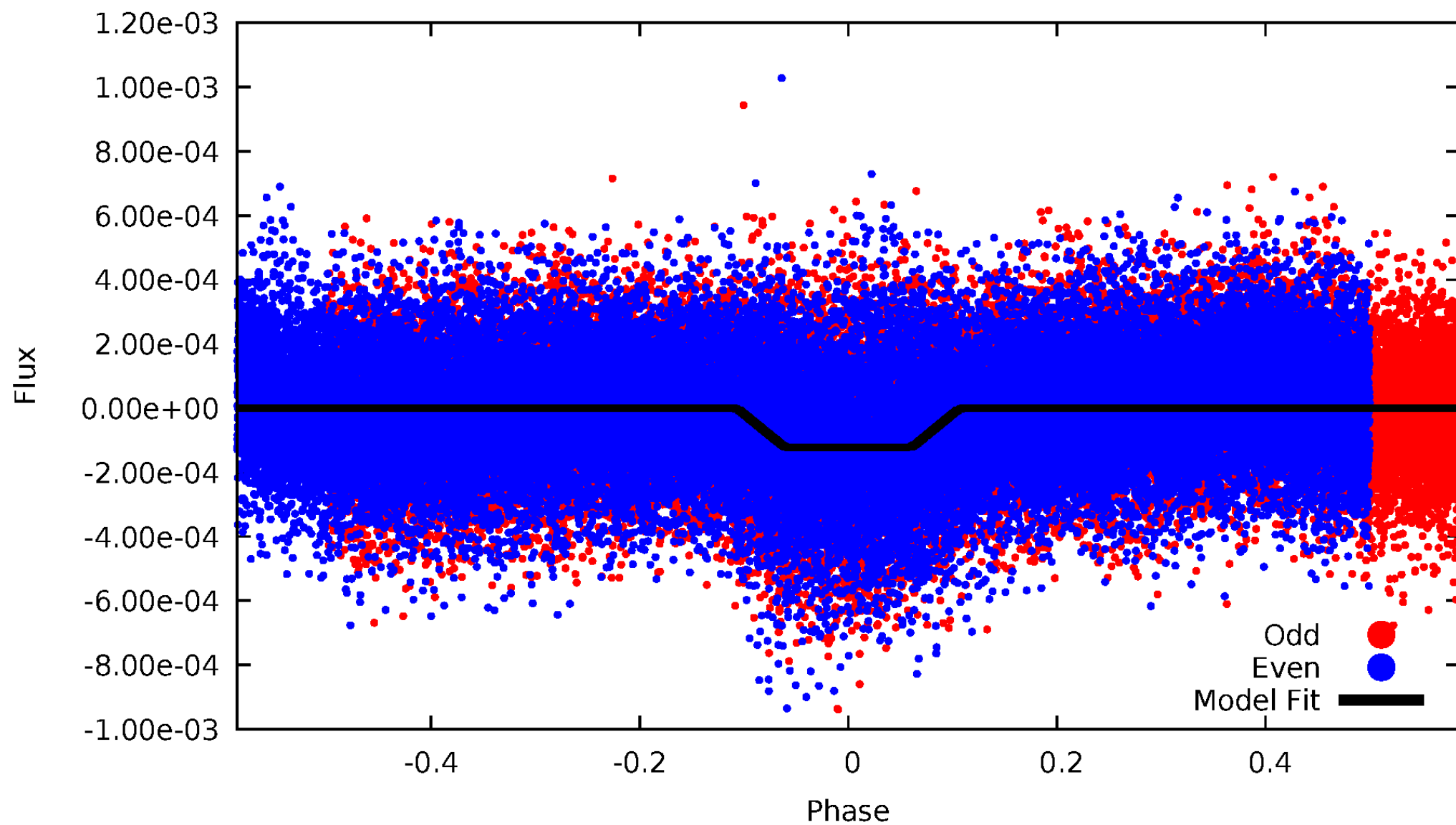
# DV Odd/Even

TCE 003542119-01

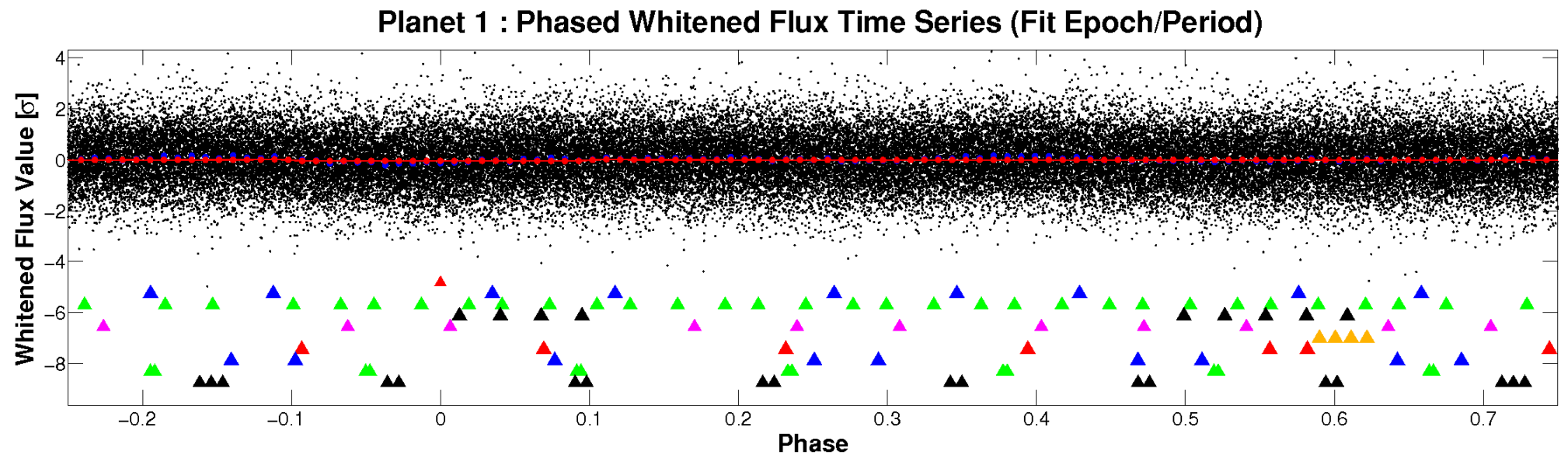
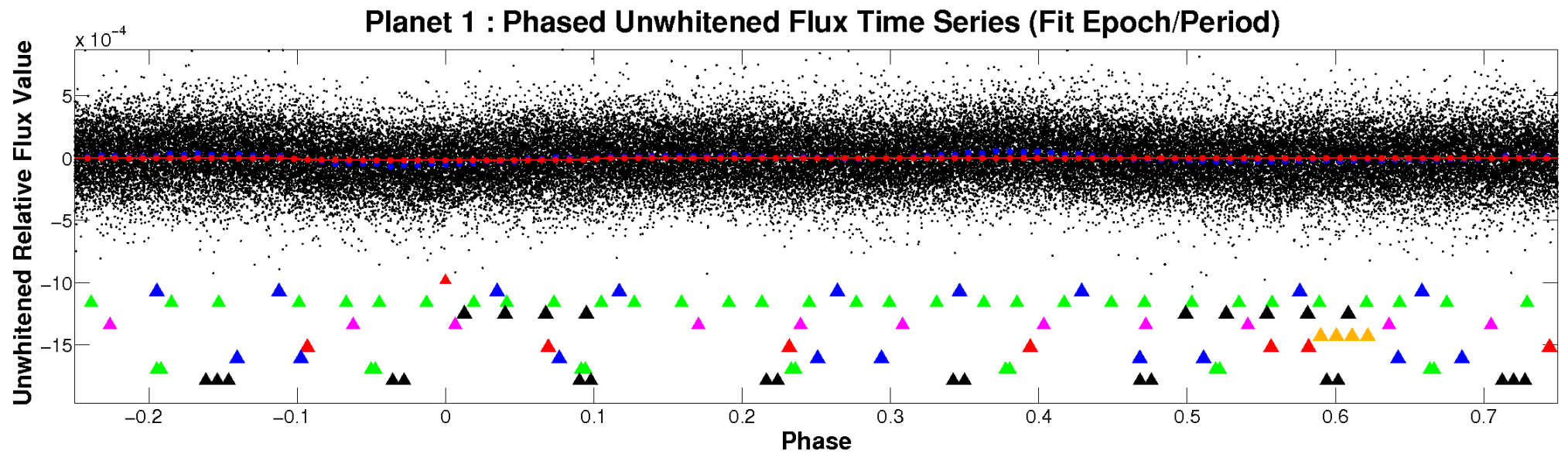


# ALT Odd/Even

TCE 003542119-01



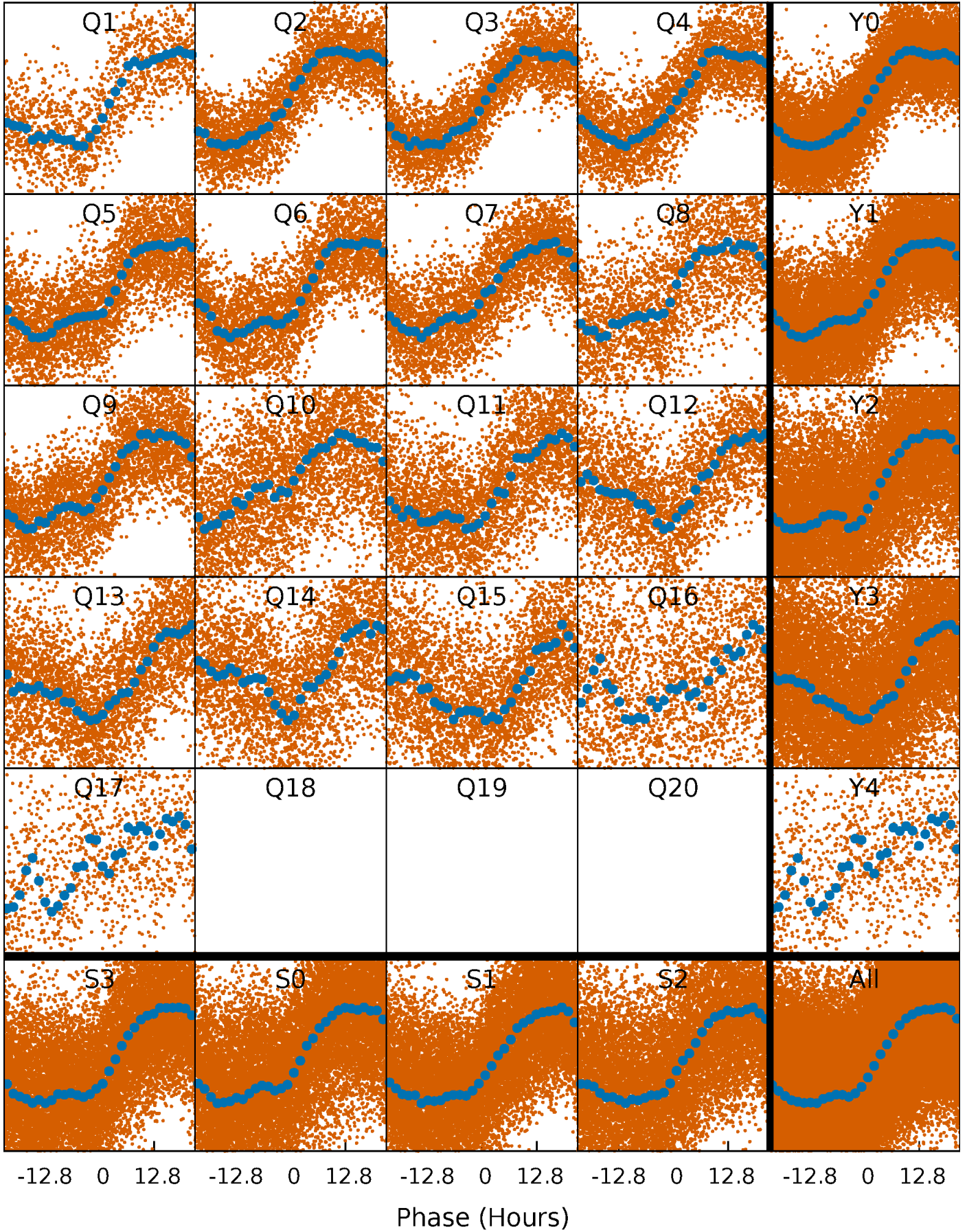
# Non-Whitened Vs. Whitened Light Curve





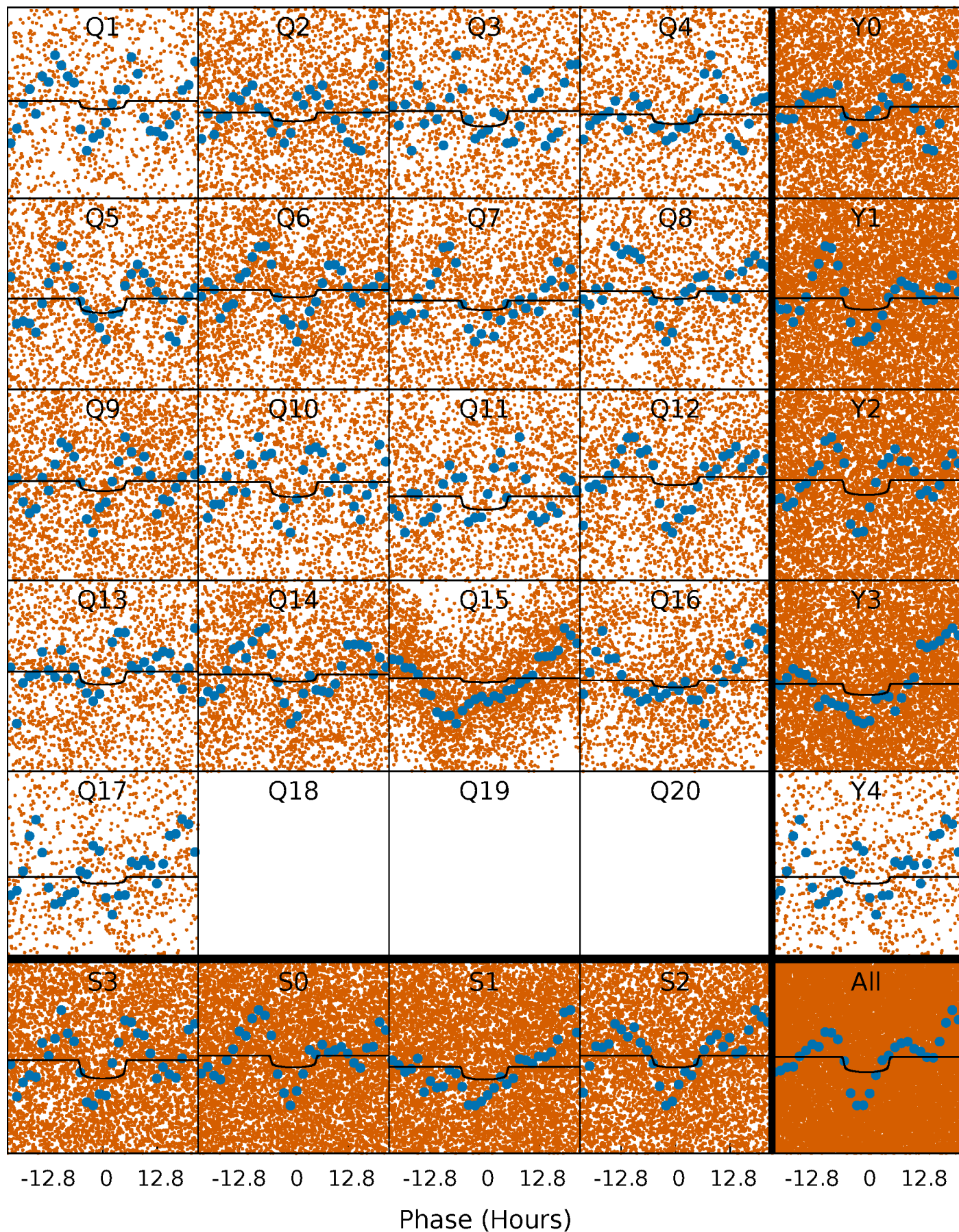
# PDC Quarter-Phased Transit Curves

TCE 003542119-01 P= 2.201670 Days  $T_0=132.421943$  (BKJD)



# DV Quarter-Phased Transit Curves

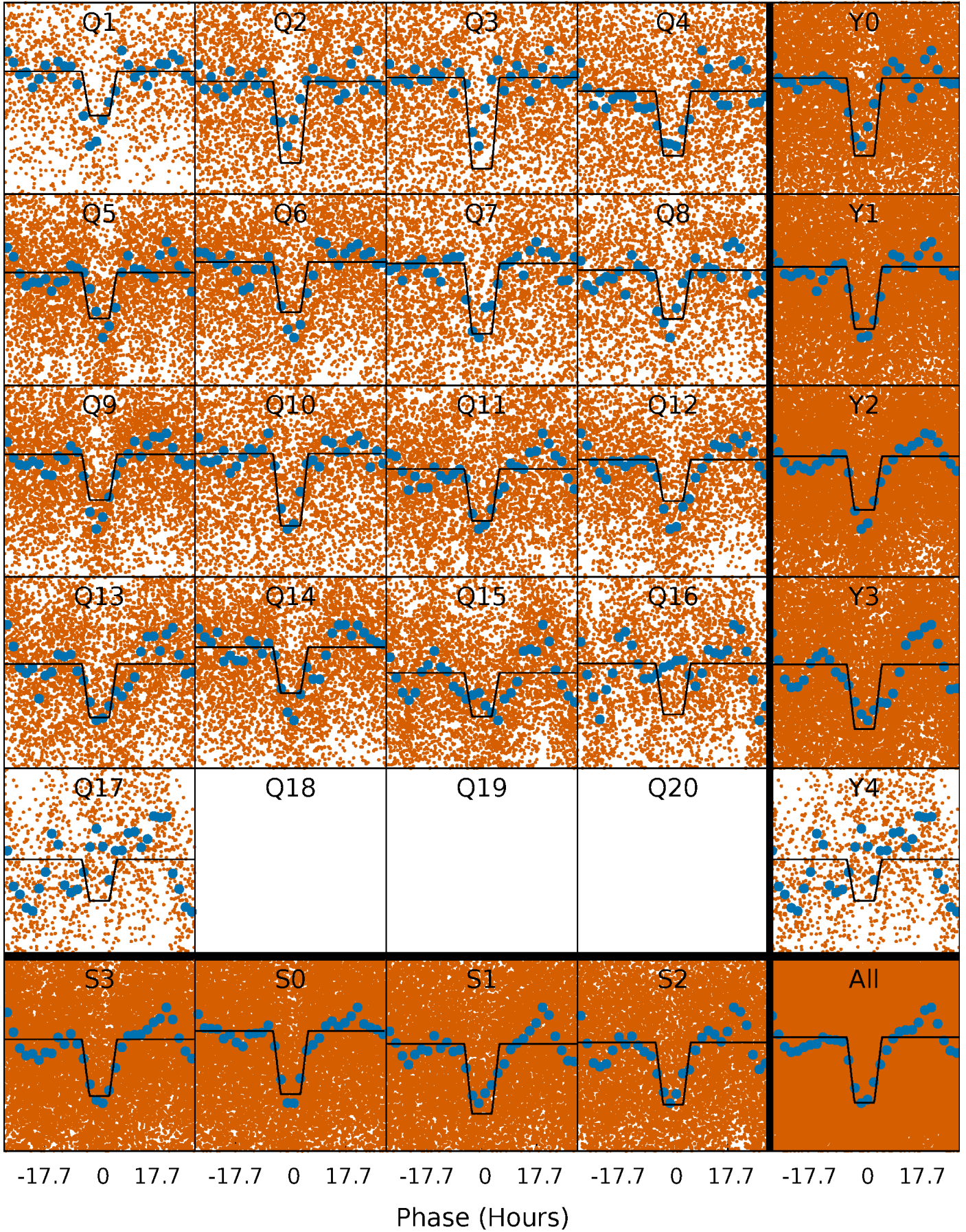
TCE 003542119-01 P= 2.201670 Days  $T_0=132.421943$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 003542119-01 P= 2.201642 Days  $T_0=132.393924$  (BKJD)

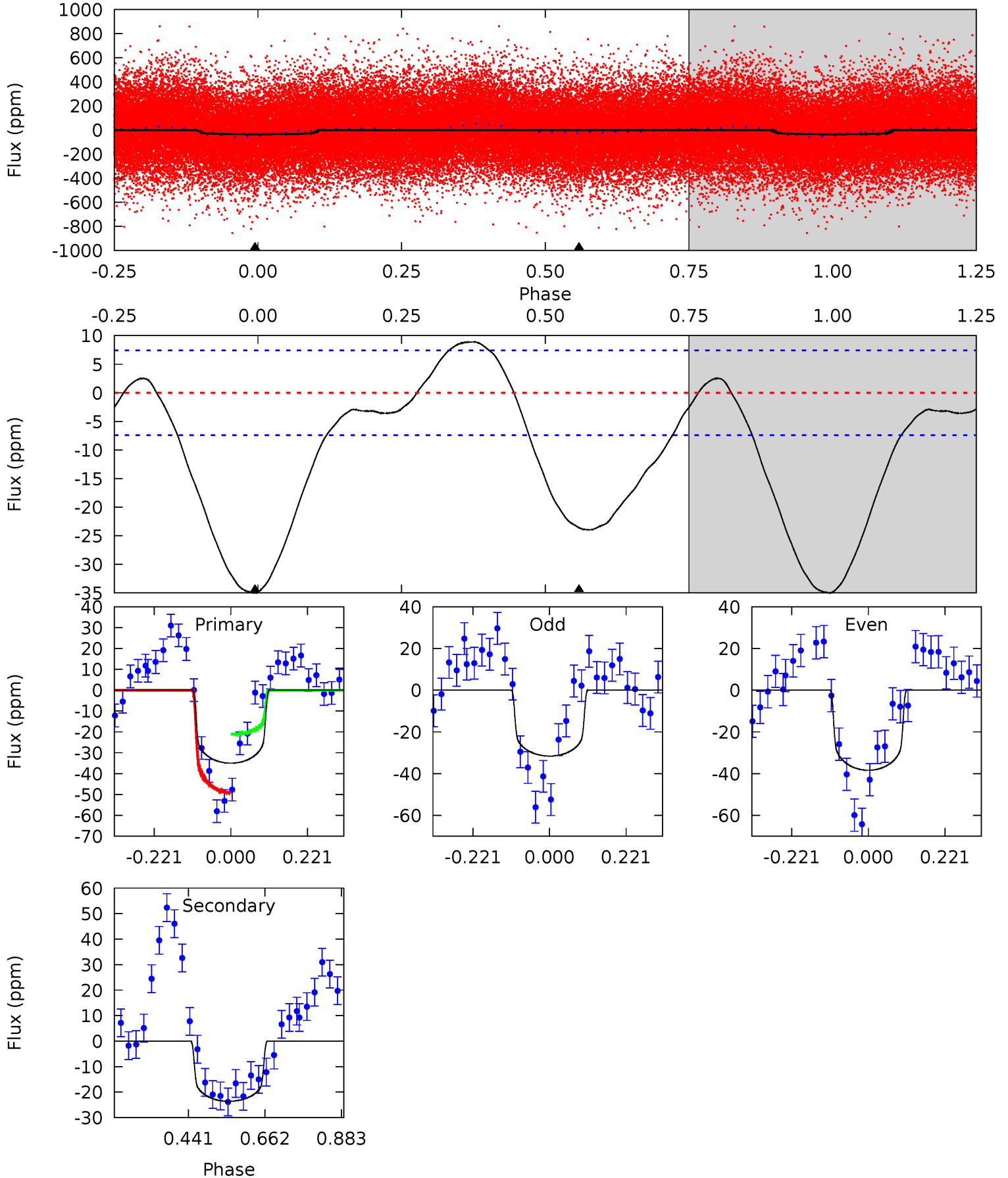




# DV Model-Shift Uniqueness Test

003542119-01, P = 2.201670 Days, E = 130.220273 Days

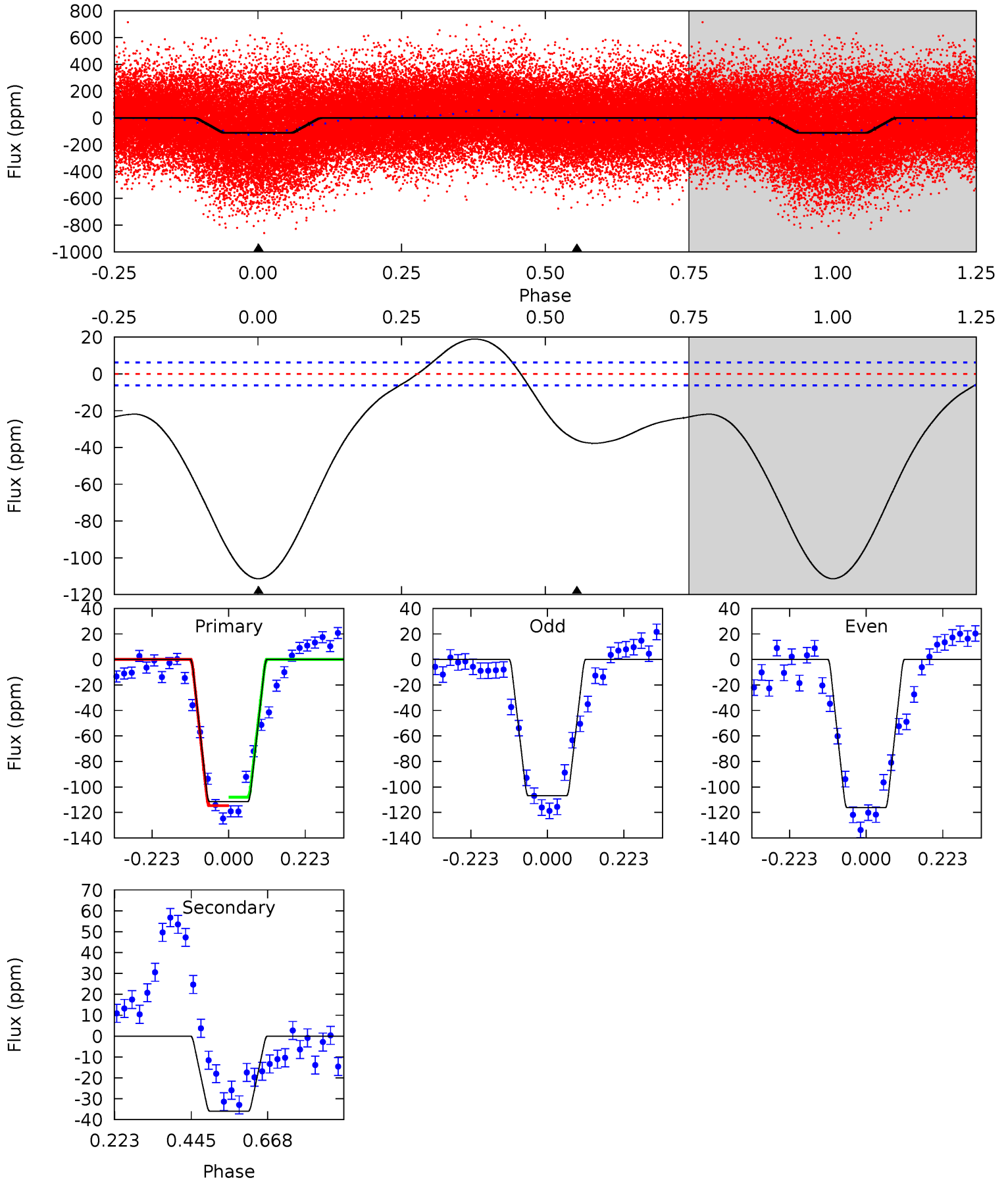
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.8	14.0	0	0	4.40	1.22	2.28	20.8	20.8	14.0	14.0	2.02	0.95	0.20	8.26



# Alt Model-Shift Uniqueness Test

003542119-01, P = 2.201642 Days, E = 130.192282 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
78.8	25.5	0	0	4.39	1.22	5.23	78.8	78.8	25.5	25.5	3.28	0.98	0.15	2.35



### Stellar Parameters For KIC 003542119

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6257^{+189}_{-151}$	$3.457^{+0.384}_{-0.096}$	$-0.100^{+0.350}_{-0.300}$	$4.124^{+0.608}_{-1.701}$	$1.777^{+0.178}_{-0.415}$	$0.036^{+0.119}_{-0.011}$
	+3%/-2%	+11%/-3%	+350%/-300%	+15%/-41%	+10%/-23%	+333%/-31%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 003542119-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-24 \pm 2$	$1.90^{+0.52}_{-0.50}$	$3831^{+219}_{-386}$	$6352^{+832}_{-624}$	$5.669^{+4.490}_{-2.141}$
Alt.	$-36 \pm 1$	$4.72^{+0.84}_{-1.01}$	$3836^{+242}_{-398}$	$4531^{+229}_{-219}$	$1.437^{+0.732}_{-0.386}$

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



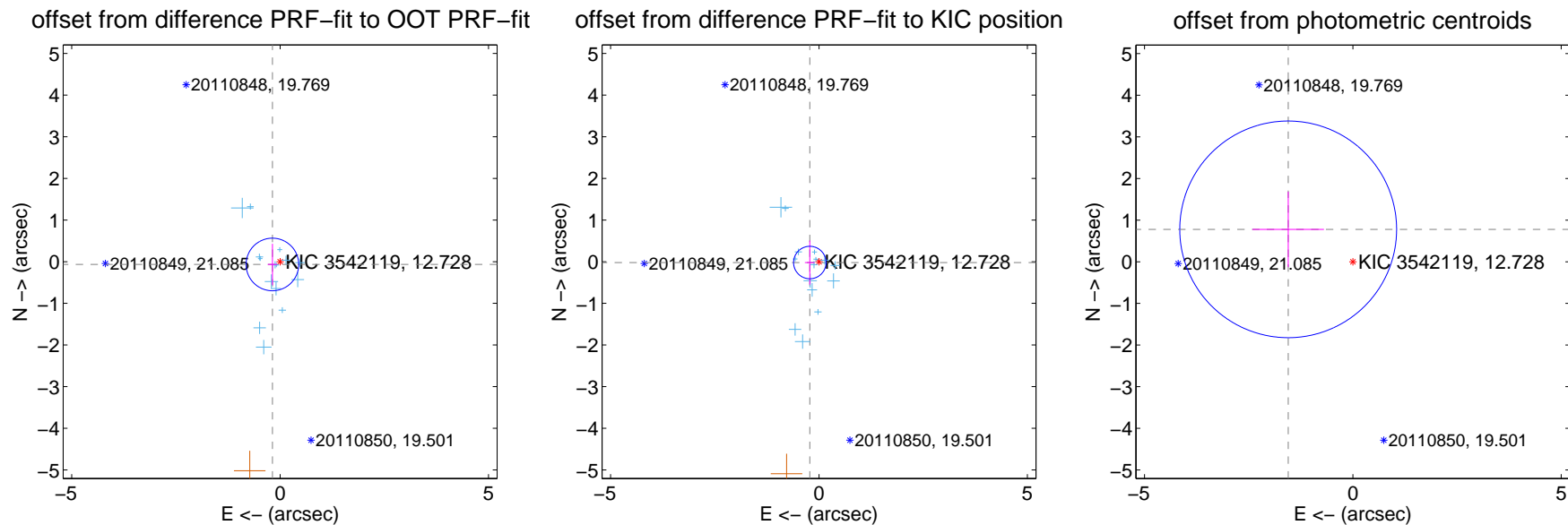
## DV Centroid Data

Supplemental centroid analysis for 003542119-01. Kepler magnitude: 12.73. Transit SNR 4.90

There are 15 quarters with good PRF difference image offsets

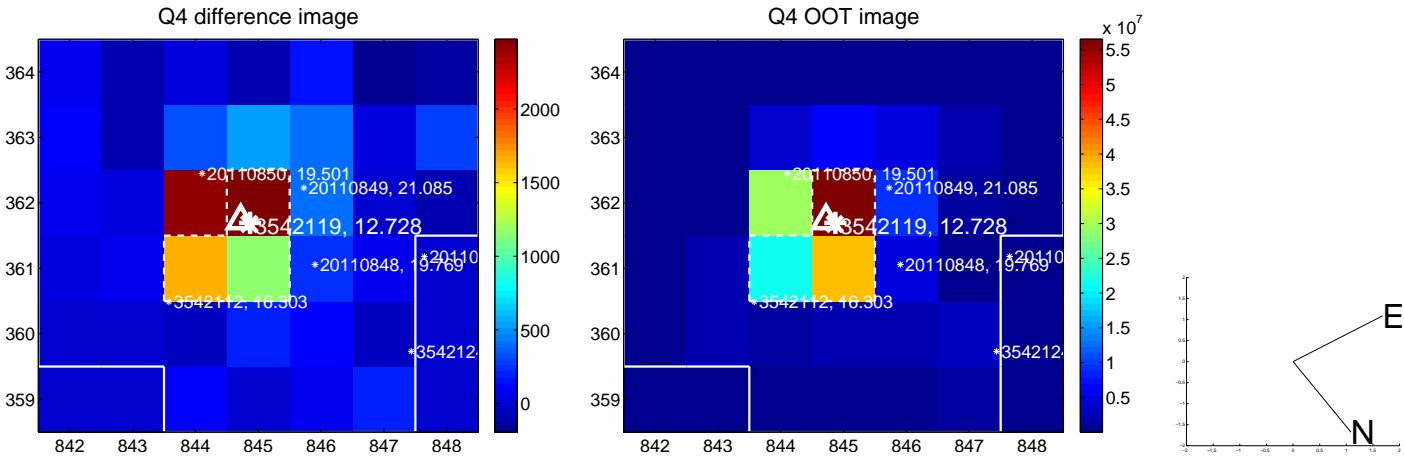
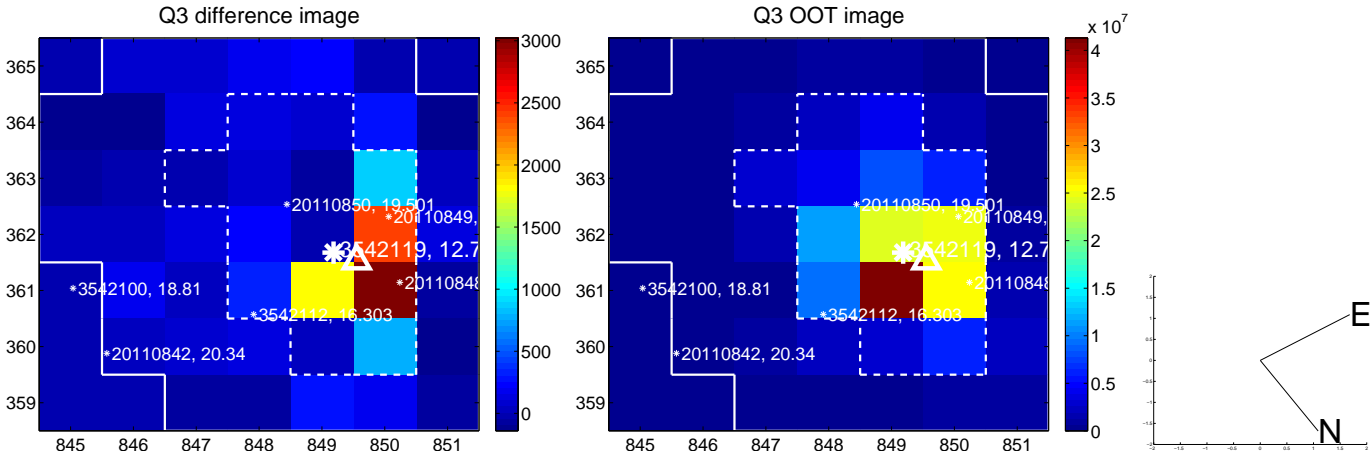
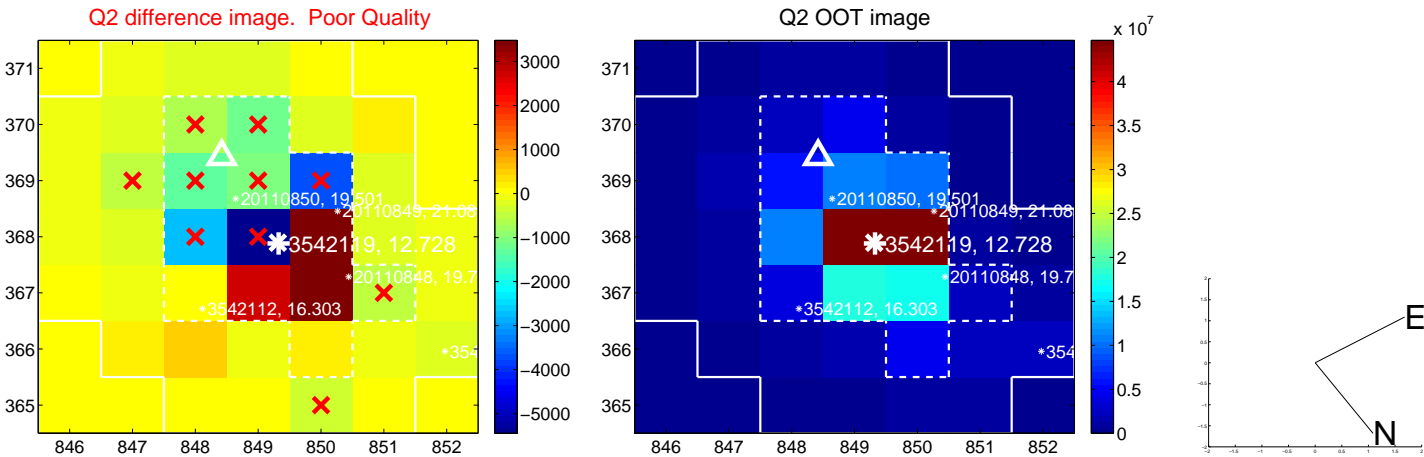
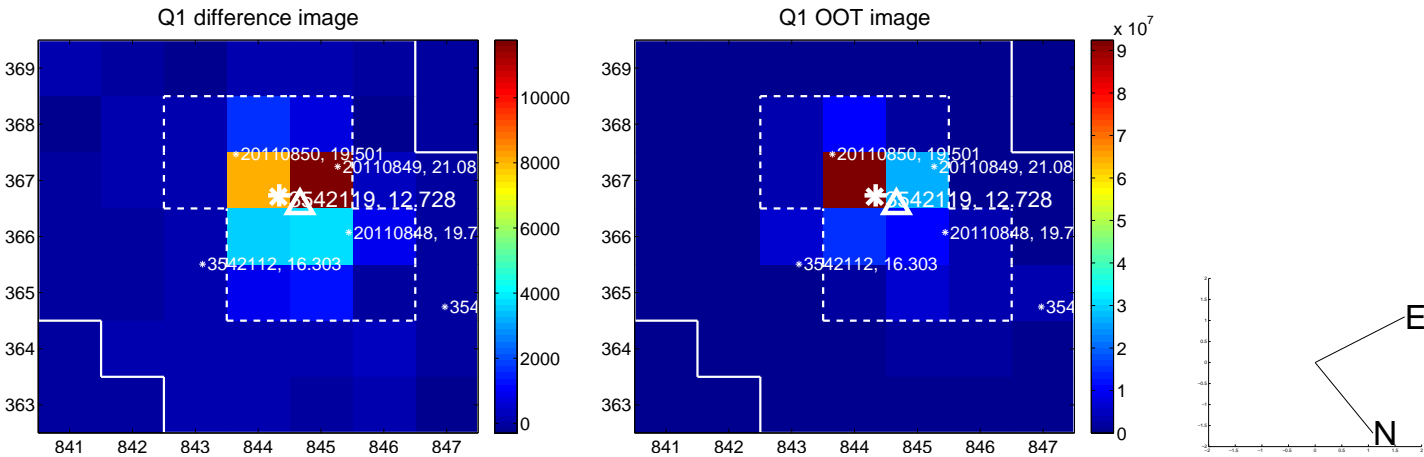
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.196 \pm 0.210$	0.93	$0.185 \pm 0.112$	$-0.066 \pm 0.495$
PRF-fit source offset from KIC position	$0.221 \pm 0.130$	1.70	$0.220 \pm 0.118$	$-0.020 \pm 0.530$
photometric centroid source offset	$1.74 \pm 0.87$	2.00	$1.55 \pm 0.86$	$0.78 \pm 0.90$

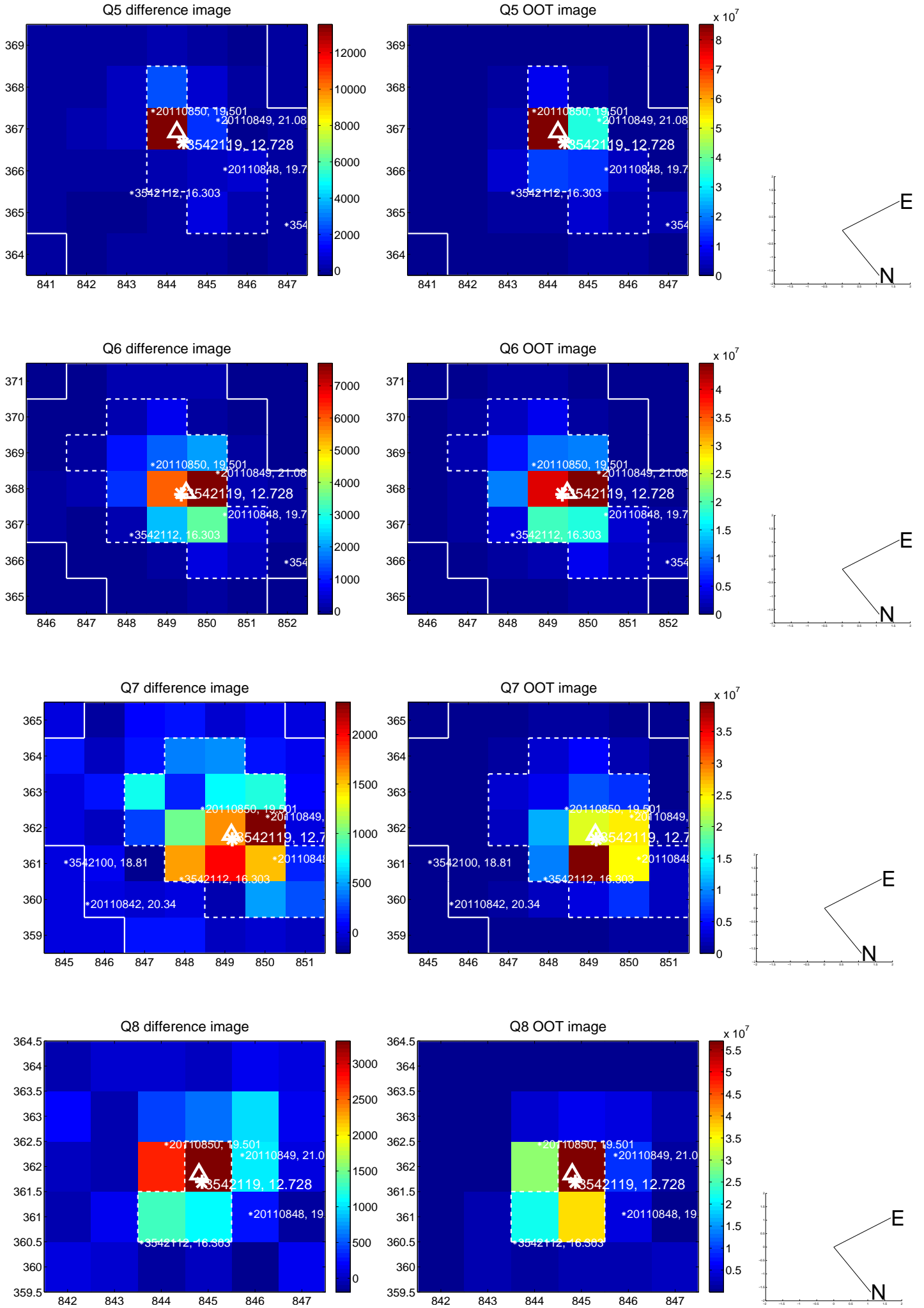


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

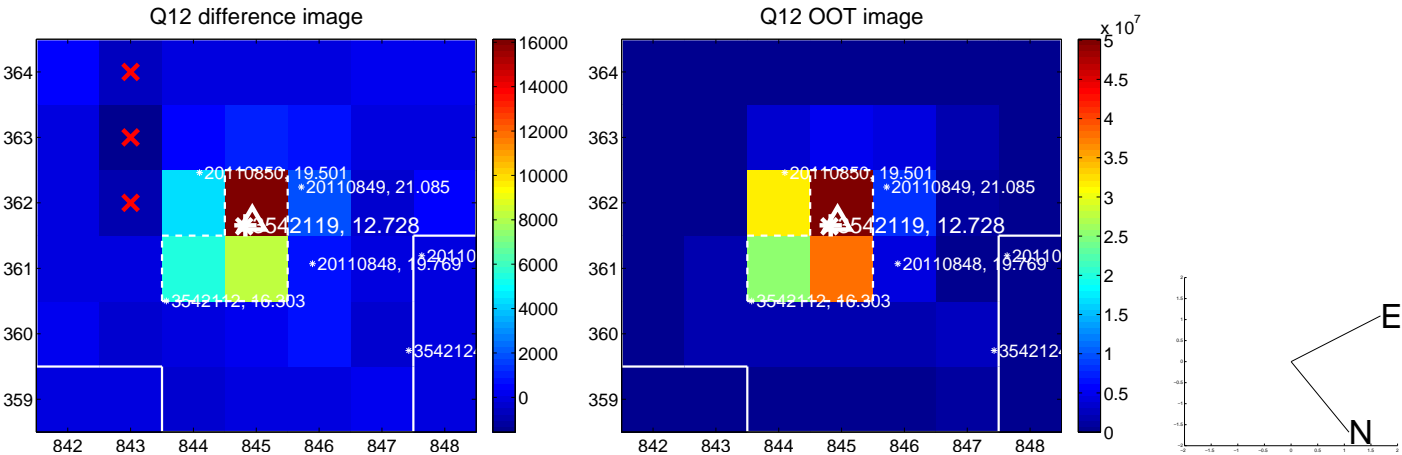
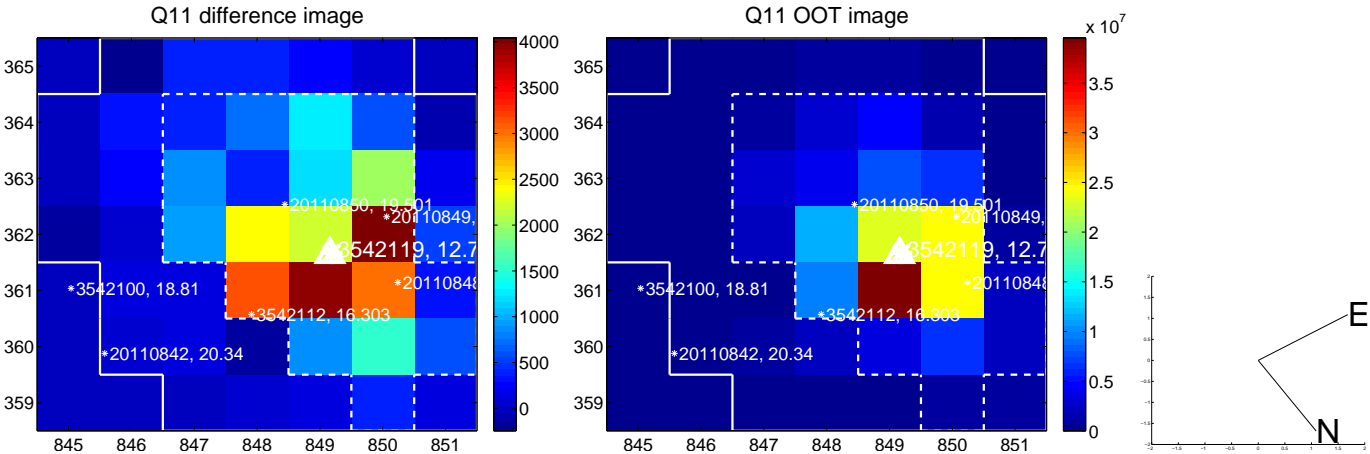
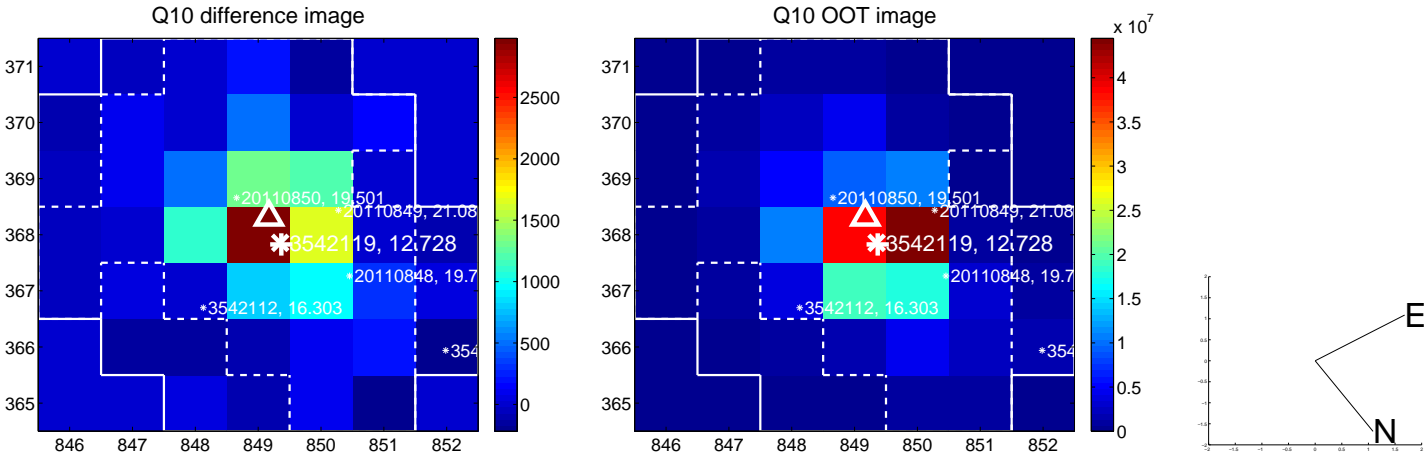
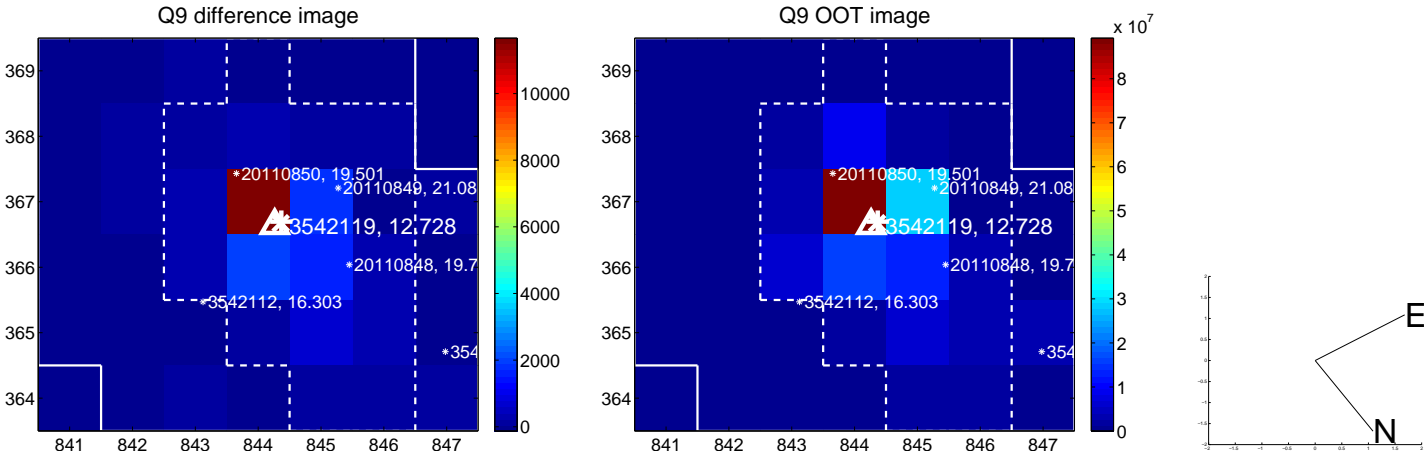


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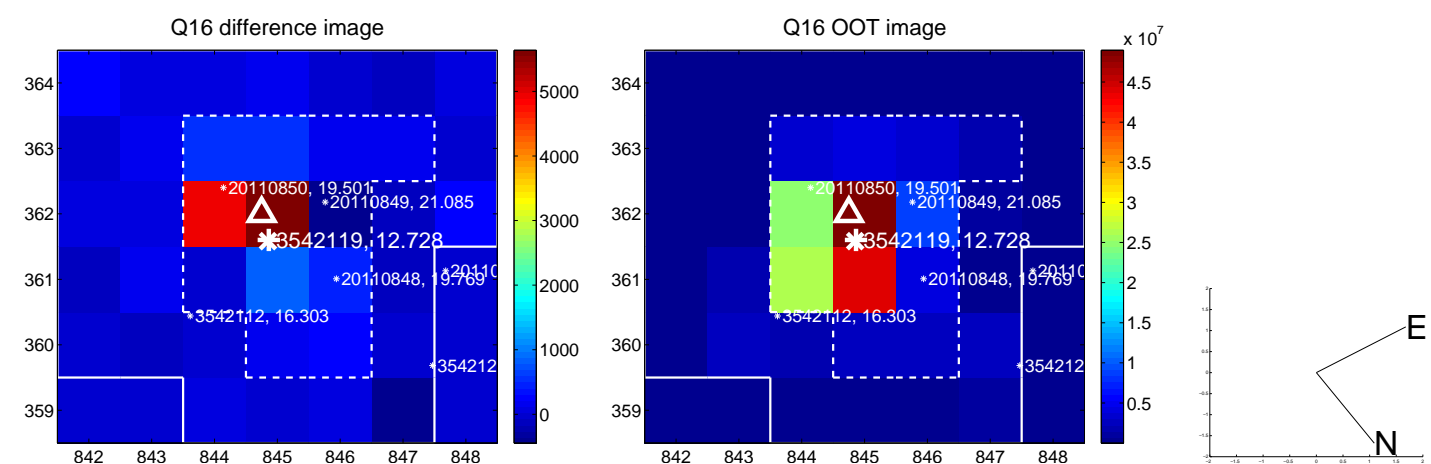
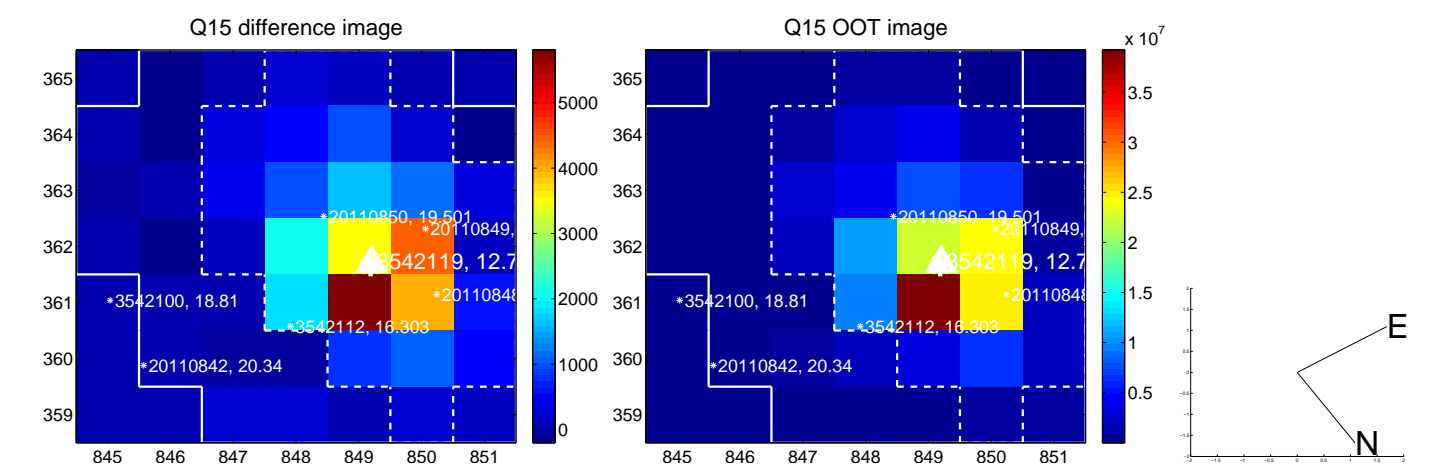
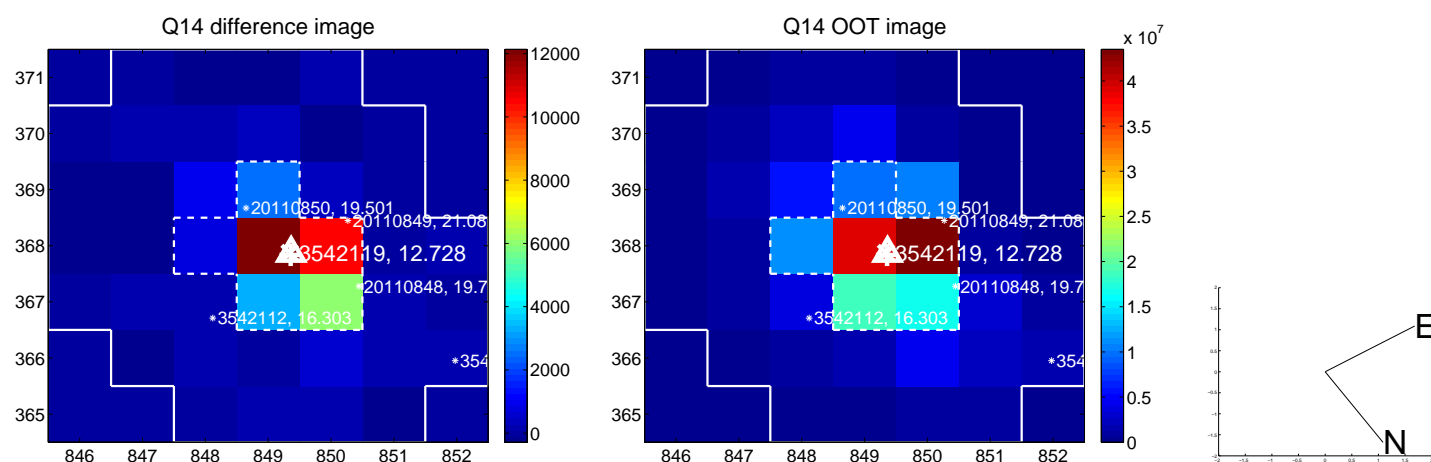
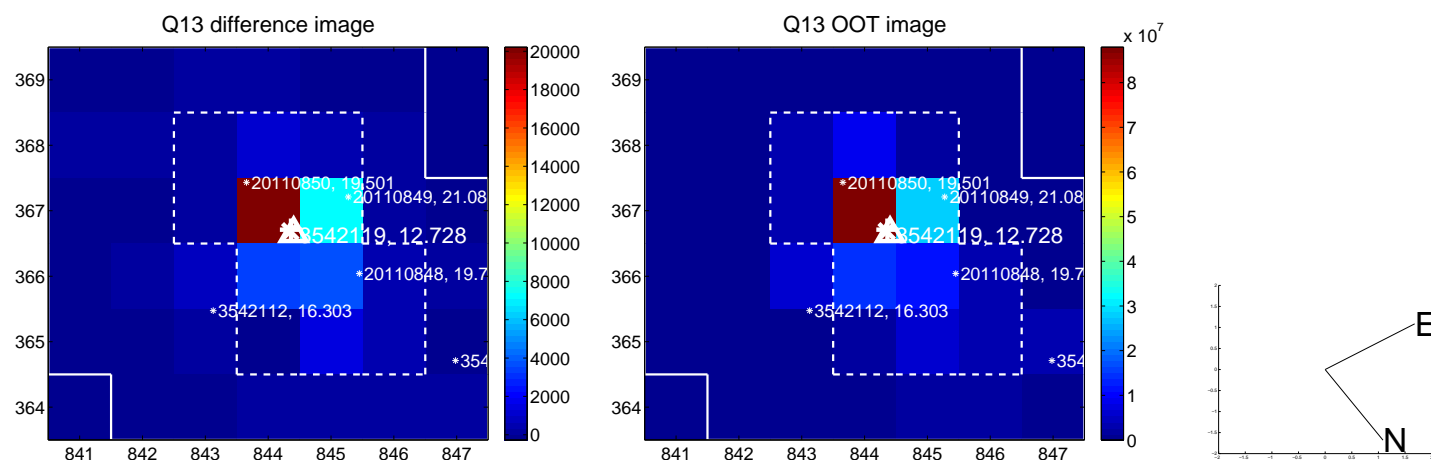




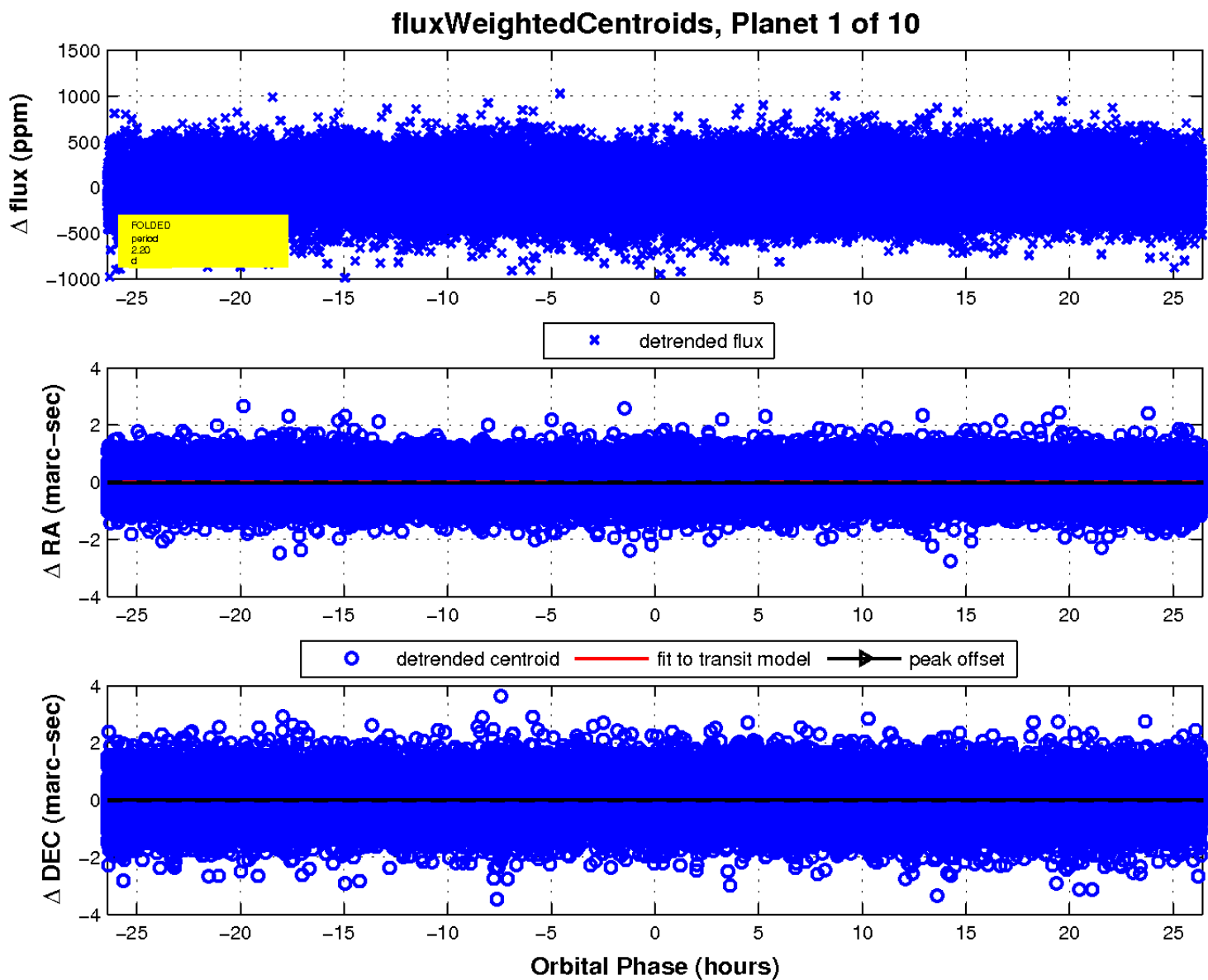
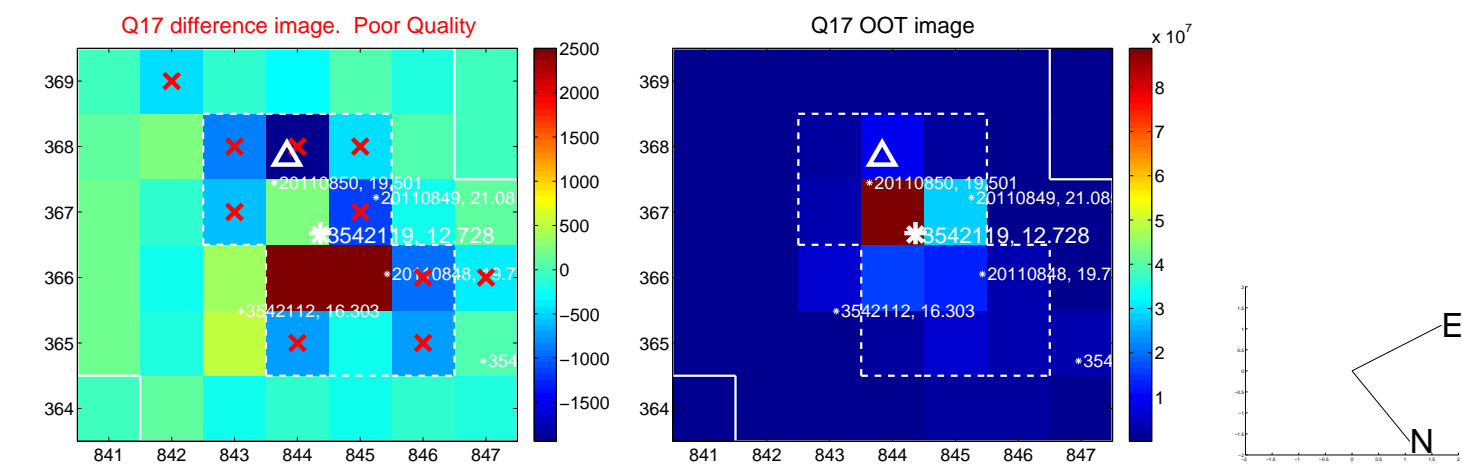
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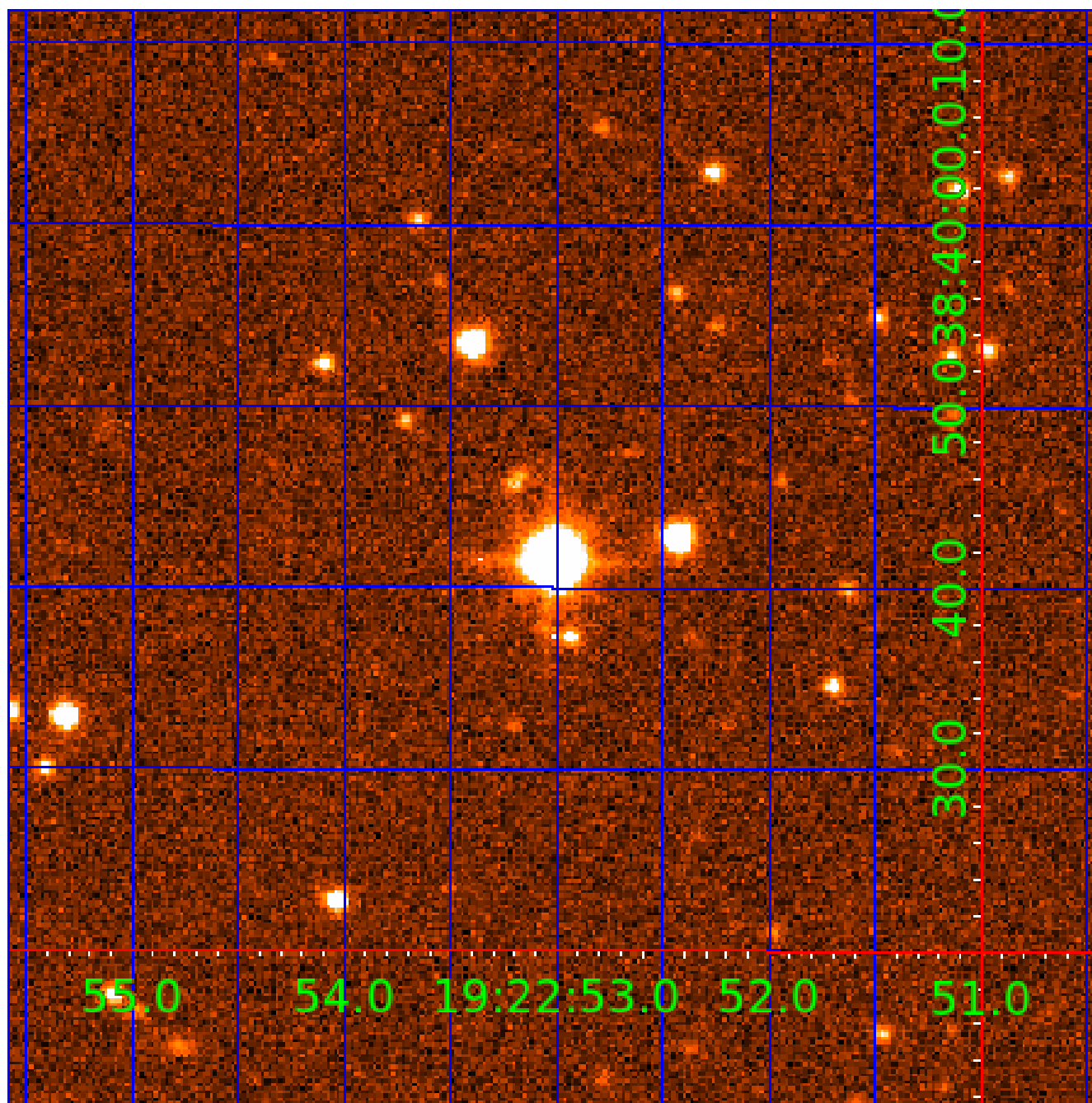


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# UKIRT Image

Declination



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003542119-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
003542119-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS
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003542119-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

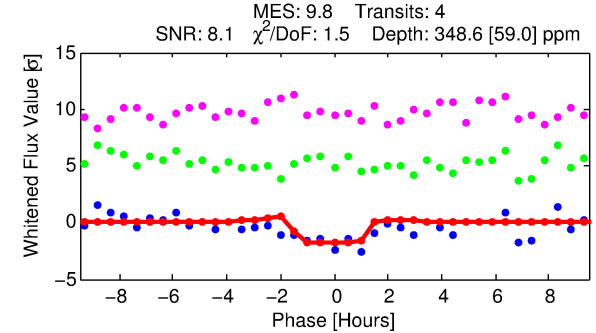
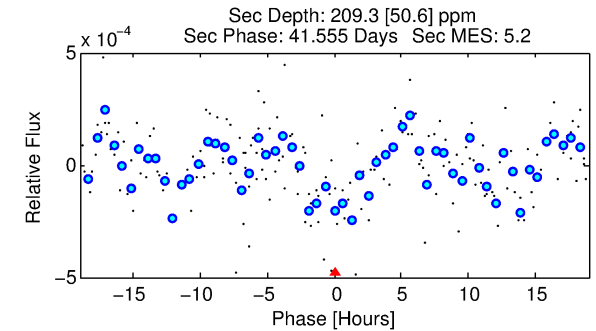
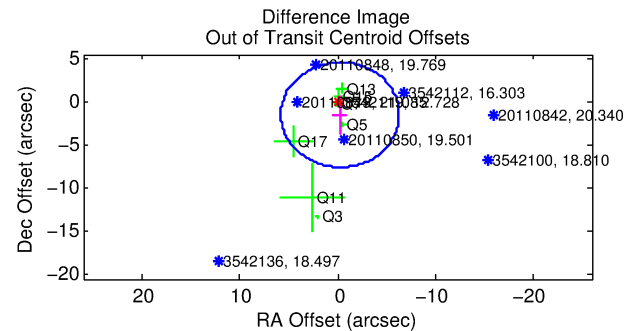
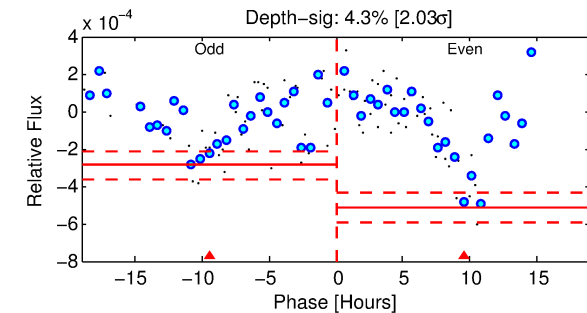
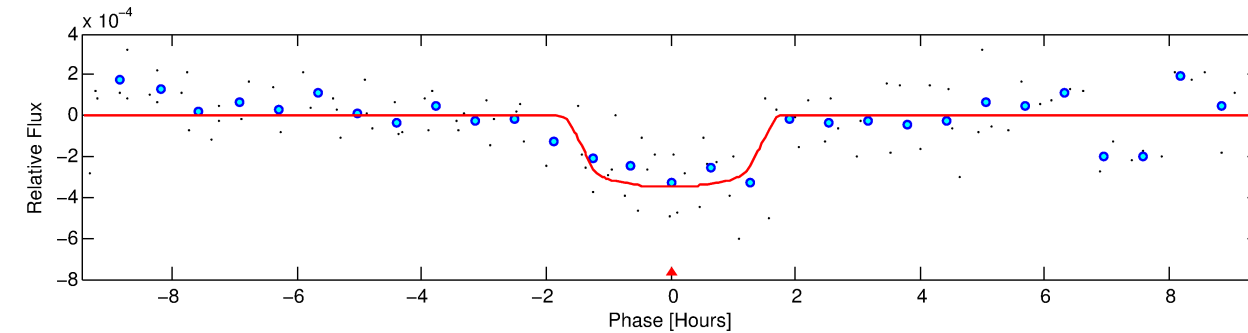
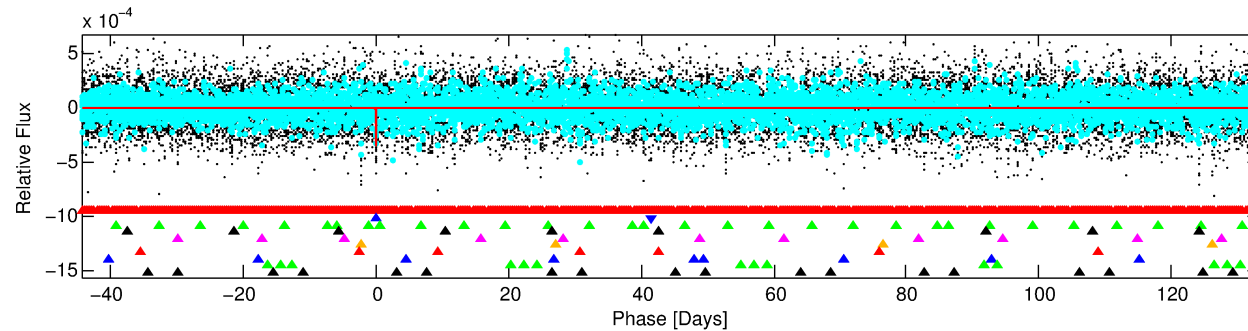
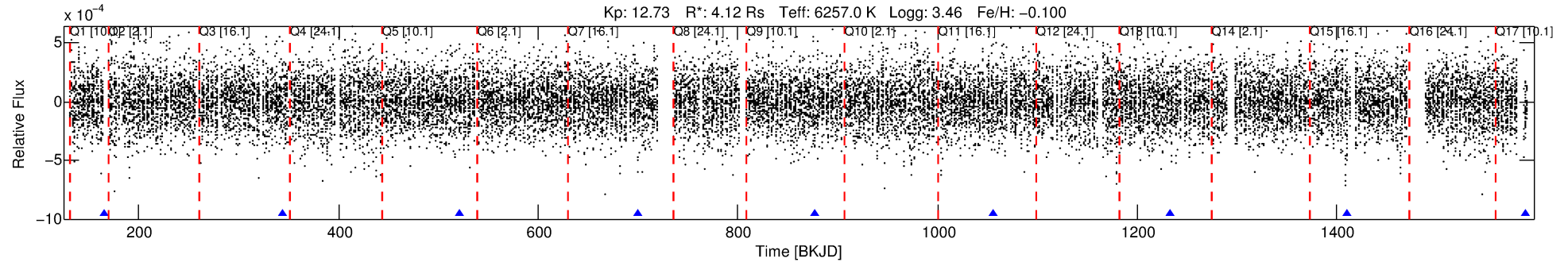
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 003542119-02

No Significant Match Found

# DV One-Page Summary

KIC: 3542119 Candidate: 2 of 10 Period: 177.830 d



## DV Fit Results:

Period = 177.83021 [0.00254] d  
Epoch = 166.0288 [0.0161] BKJD  
Rp/R\* = 0.0195 [0.0137]  
a/R\* = 237.19 [912.79]  
b = 0.86 [1.19]  
Seff = 41.55 [27.49]  
Teq = 647 [107] K  
Rp = 8.77 [7.15] Re  
a = 0.7497 [0.3022] AU  
Ag = 842.32 [1320.96] [0.64σ]  
Teffp = 5392 [1931] K [2.45σ]

## DV Diagnostic Results:

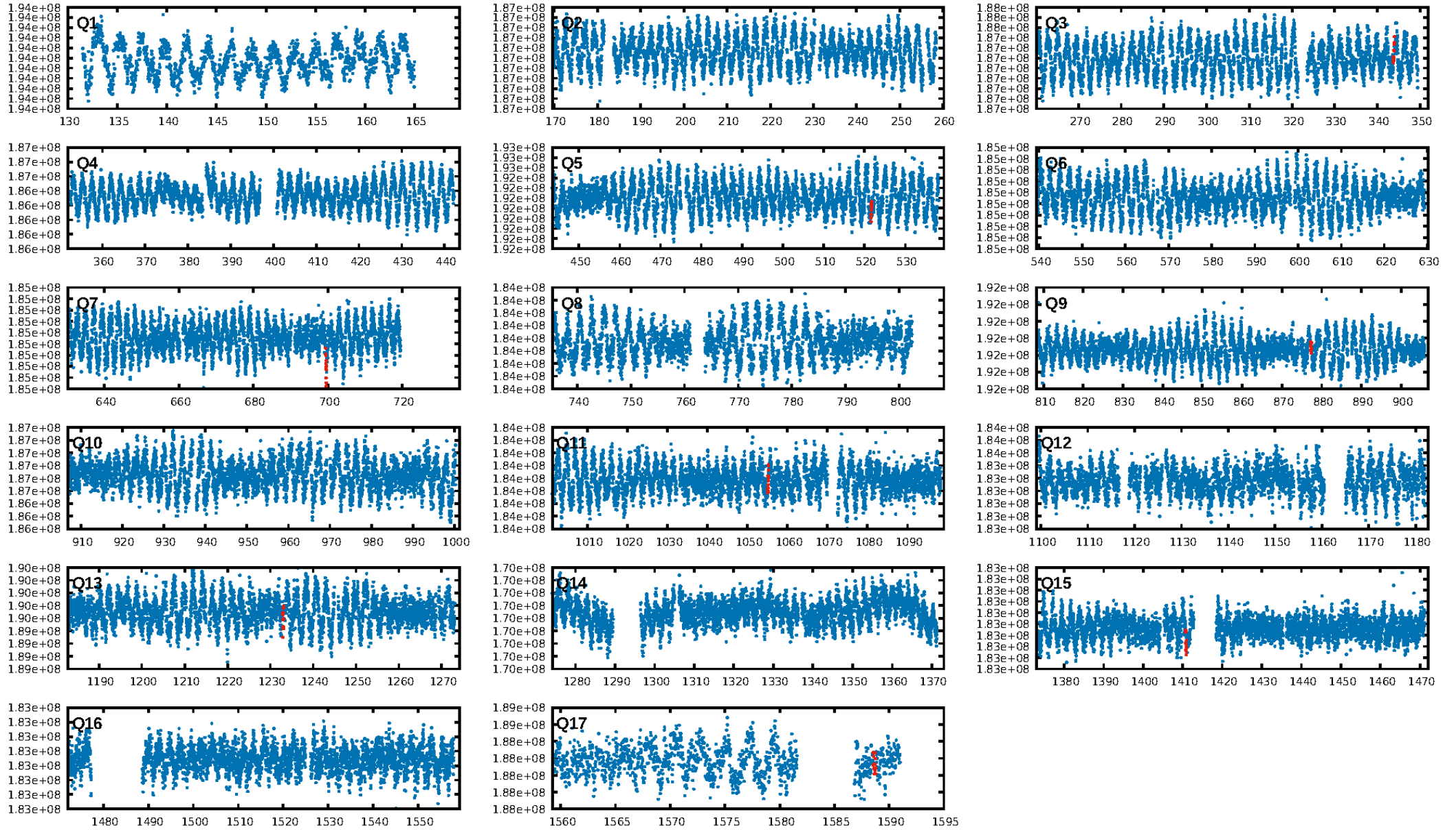
ShortPeriod-sig: 100.0% [28.74σ]  
LongPeriod-sig: 100.0% [119.87σ]  
ModelChiSquare2-sig: 46.8%  
ModelChiSquareGof-sig: 76.3%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 2.497  
Centroid-sig: 54.9%  
Centroid-so: 0.521 arcsec [0.61σ]  
OotOffset-rm: 1.519 arcsec [0.75σ]  
KicOffset-rm: 1.543 arcsec [0.71σ]  
OotOffset-st: 0/4/0/3 [7]  
KicOffset-st: 0/4/0/3 [7]  
DiffImageQuality-fgm: 0.43 [3/7]  
DiffImageOverlap-fno: 0.50 [4/8]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:15:37 Z

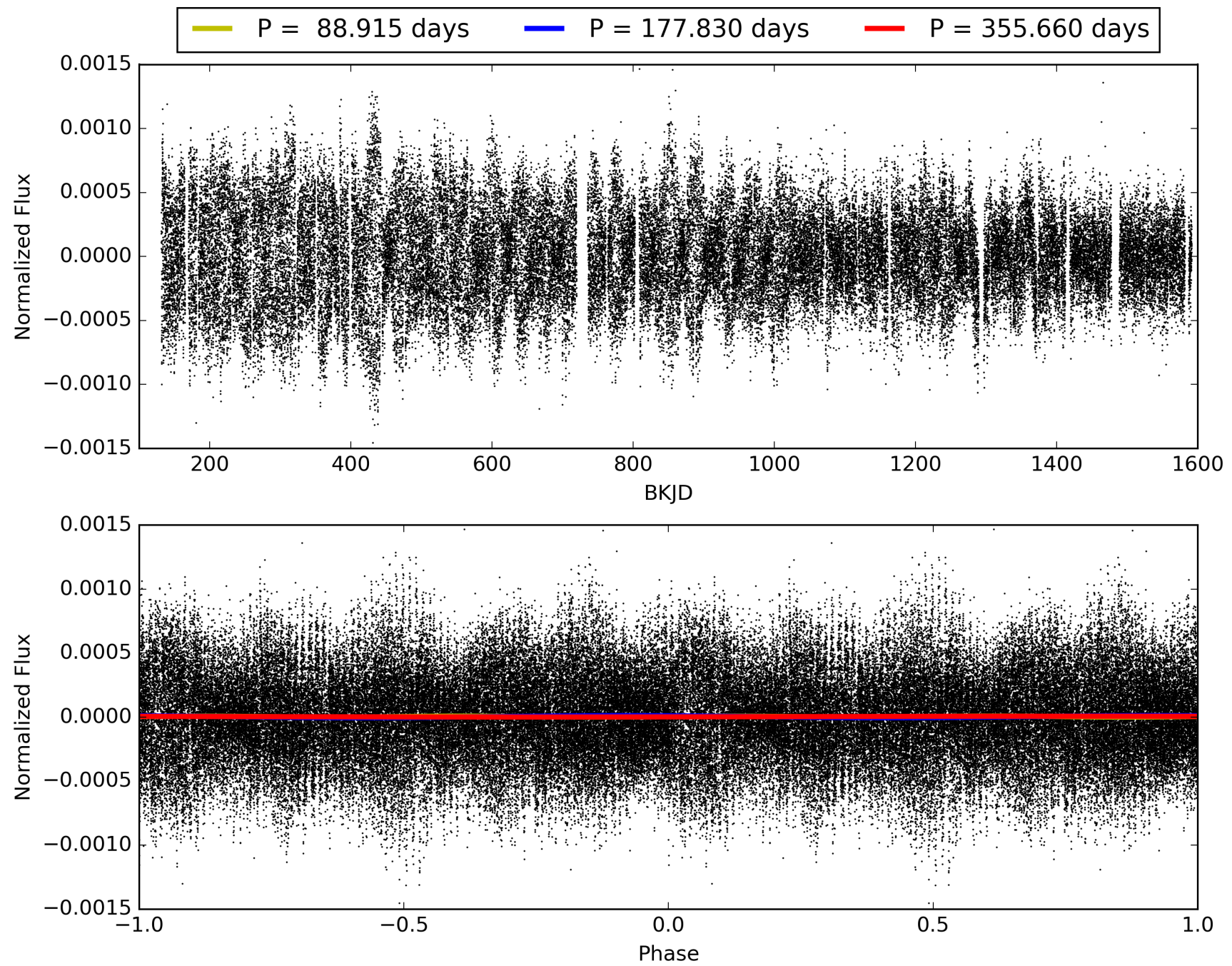
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 003542119-02, PDC Light Curves

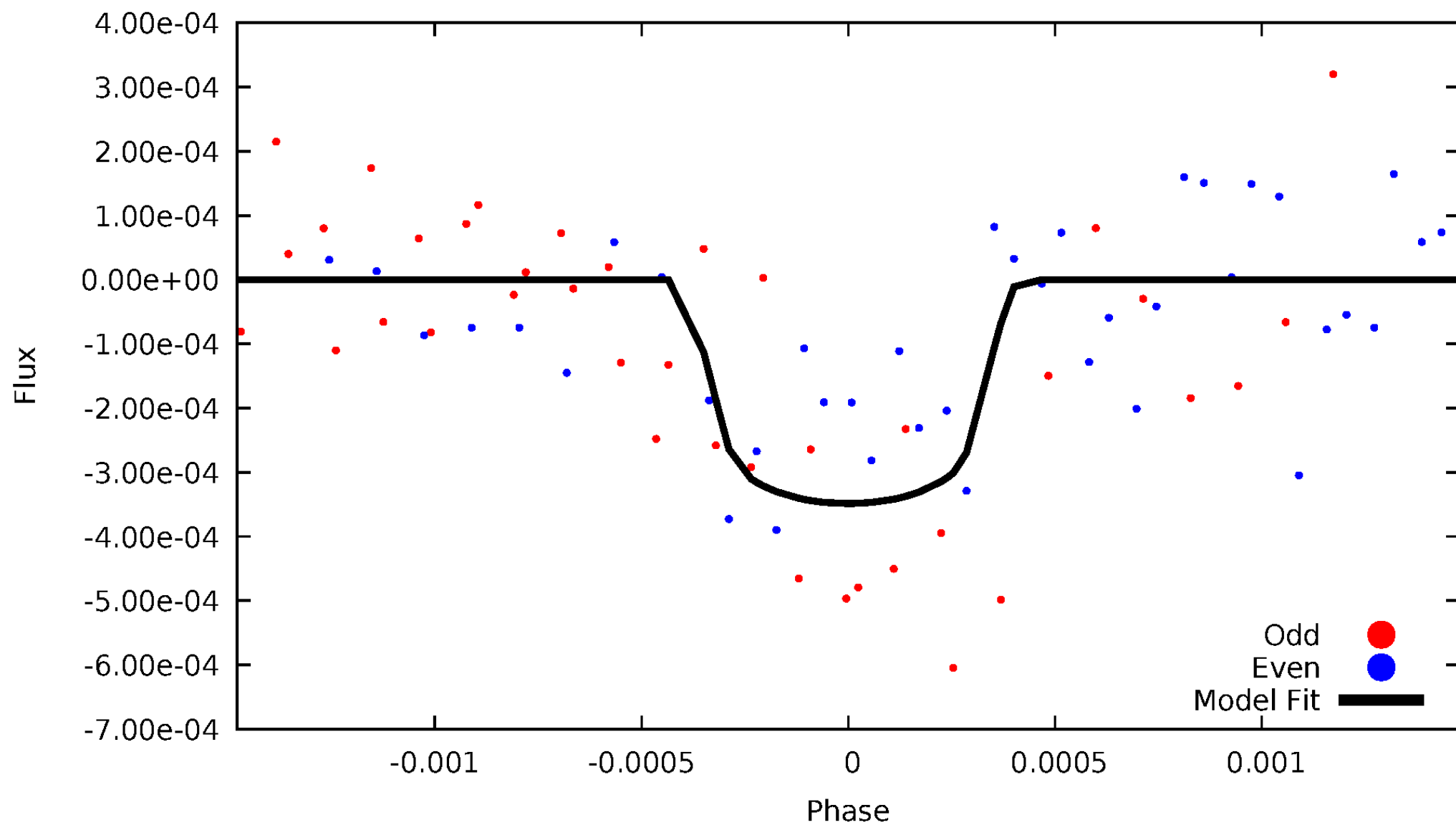


TCE 003542119-02



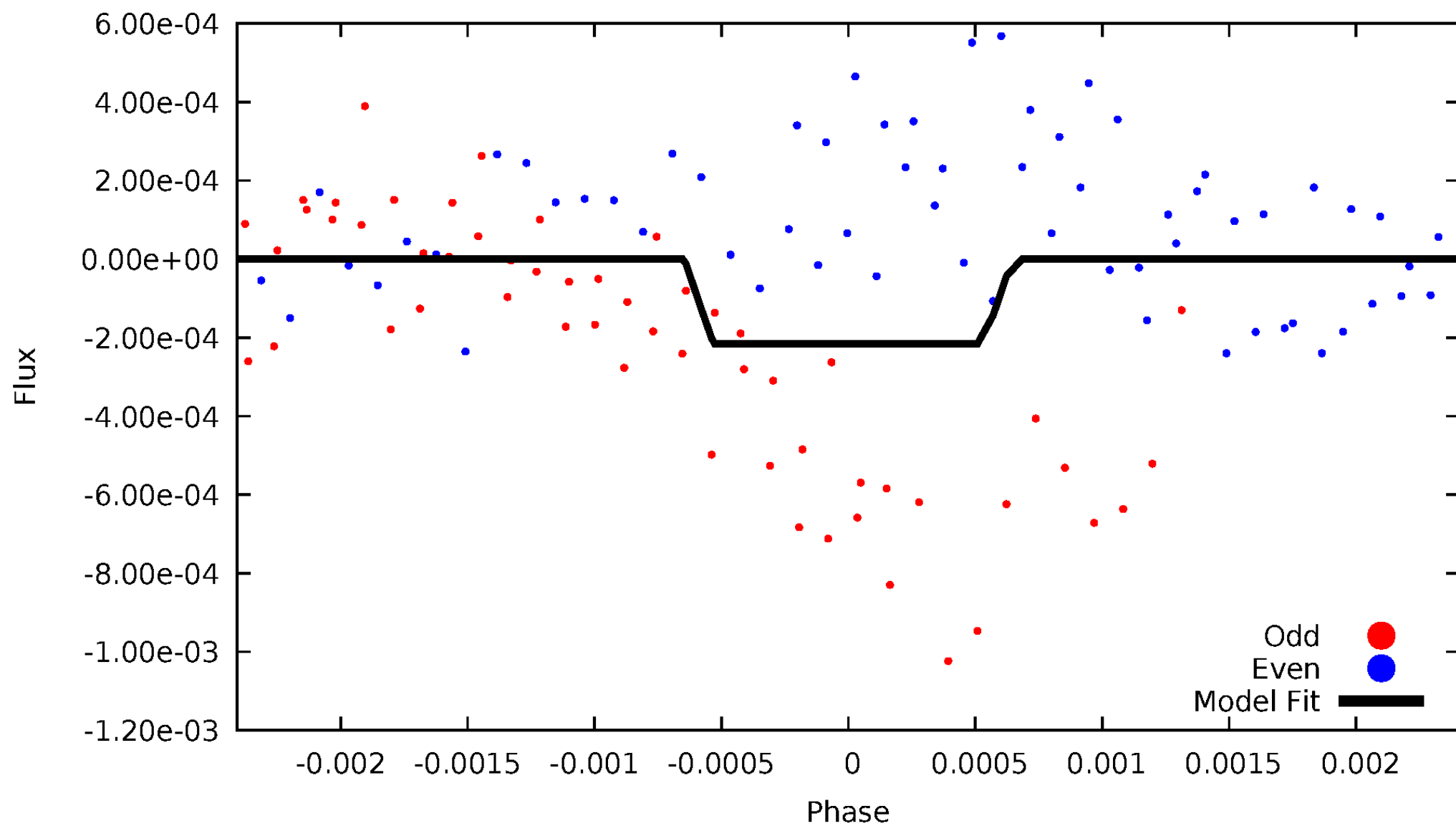
# DV Odd/Even

TCE 003542119-02



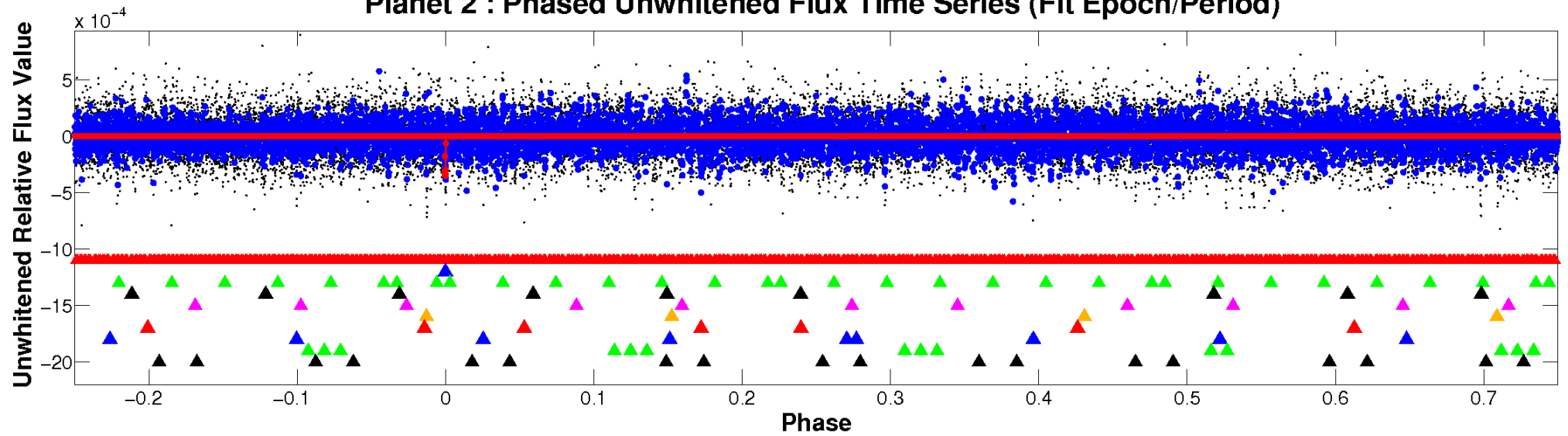
# ALT Odd/Even

TCE 003542119-02

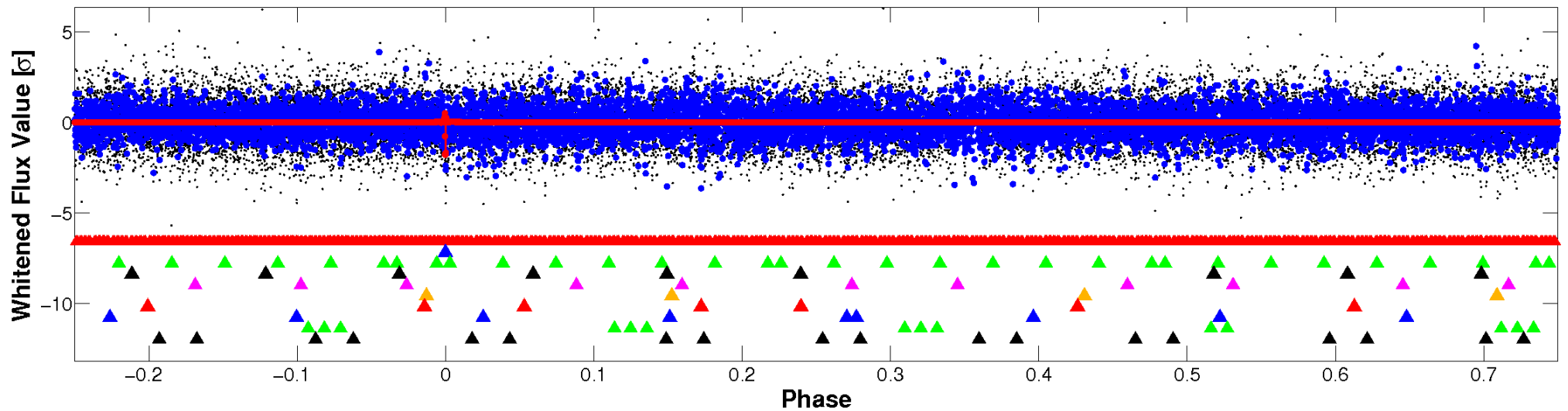


# Non-Whitened Vs. Whitened Light Curve

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

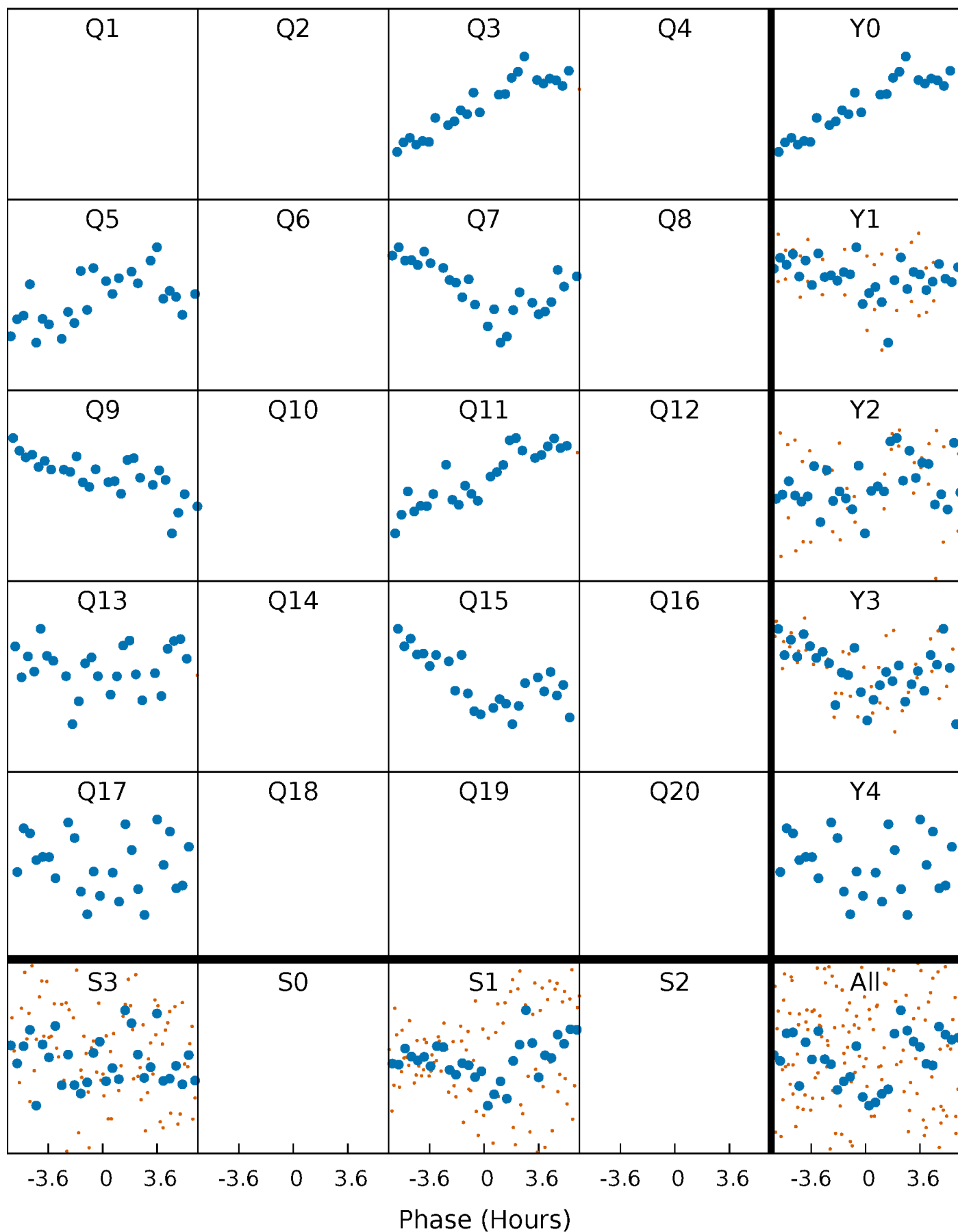


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

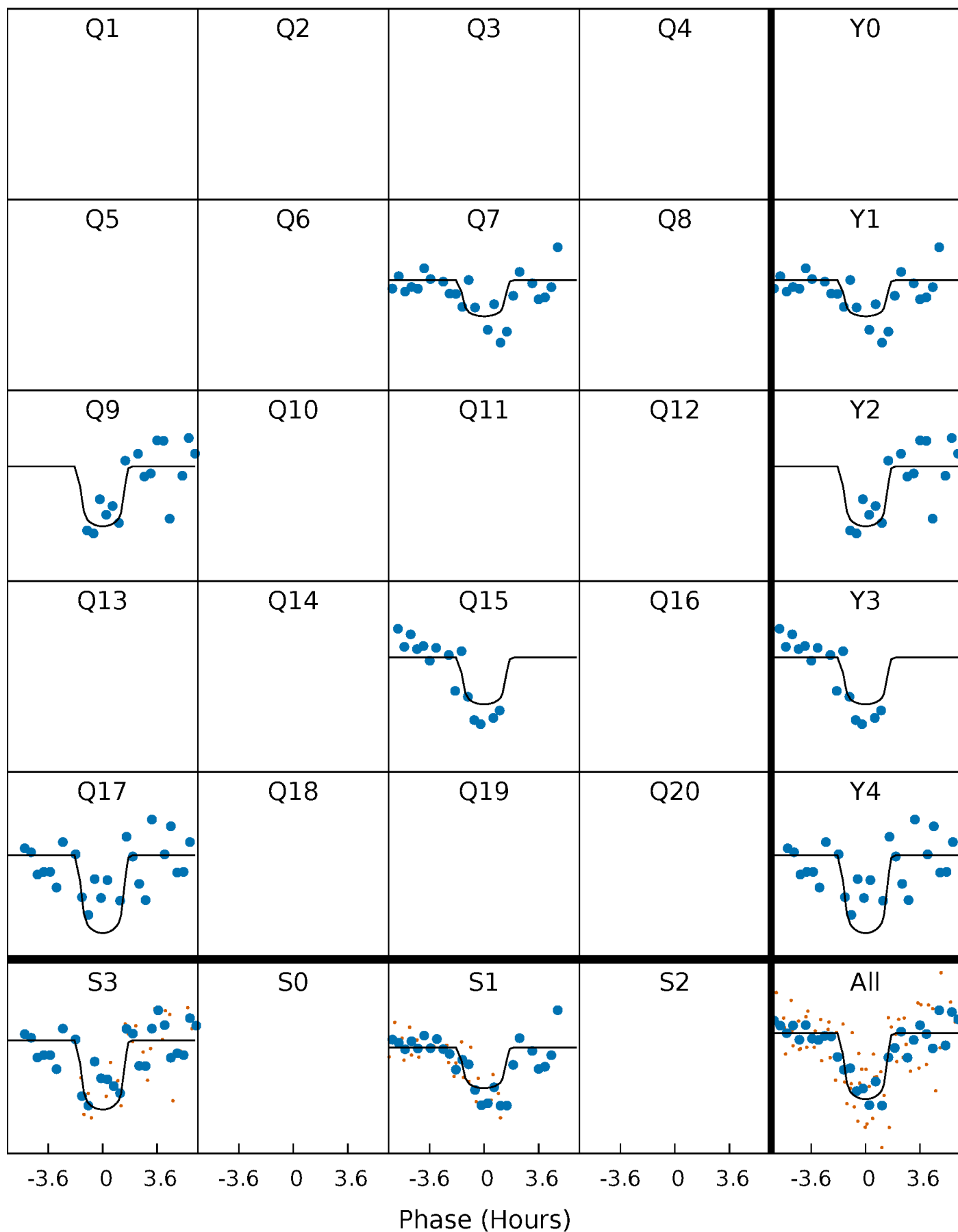
TCE 003542119-02   P=177.830213 Days    $T_0=166.028806$  (BKJD)





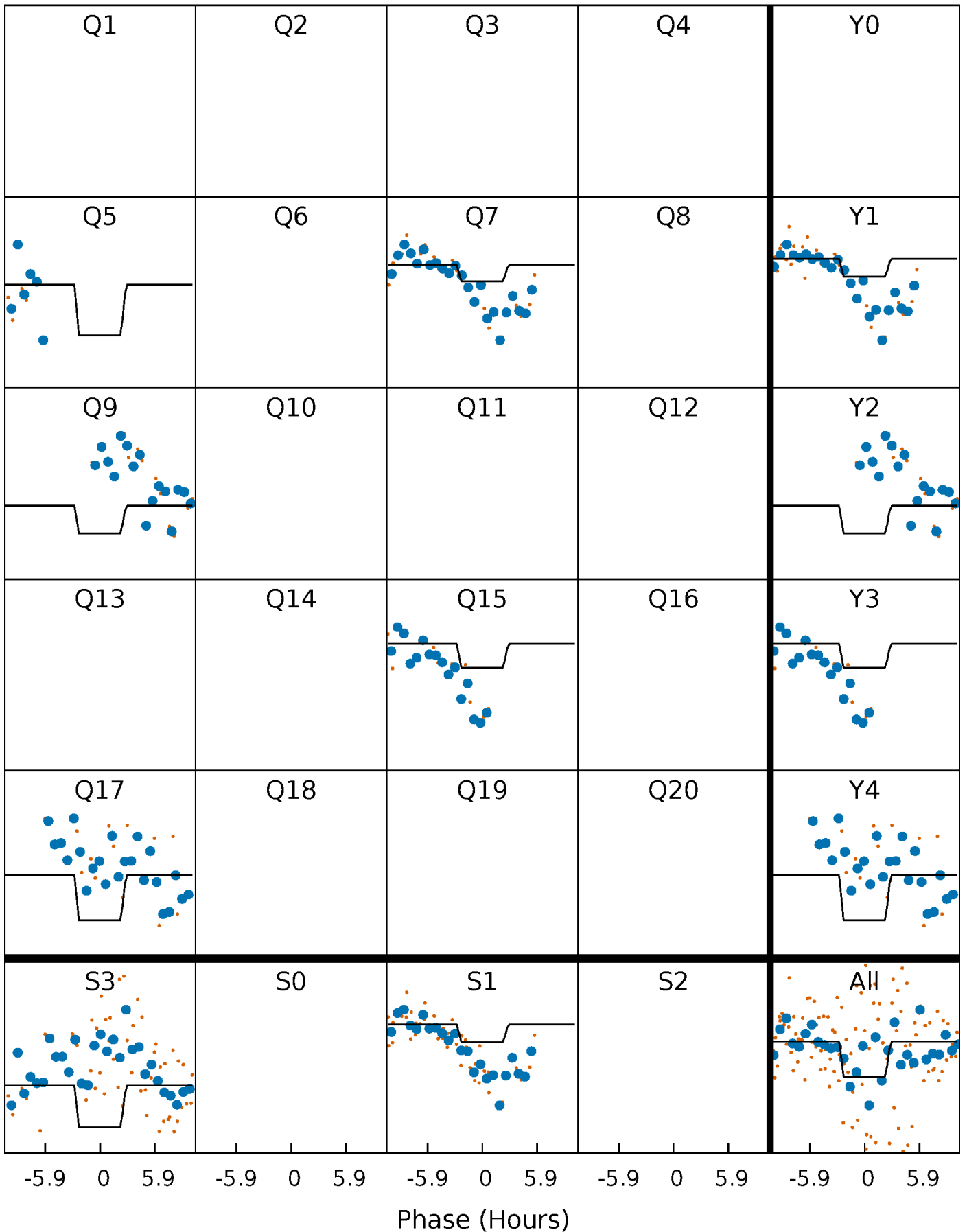
# DV Quarter-Phased Transit Curves

TCE 003542119-02 P=177.830213 Days  $T_0=166.028806$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

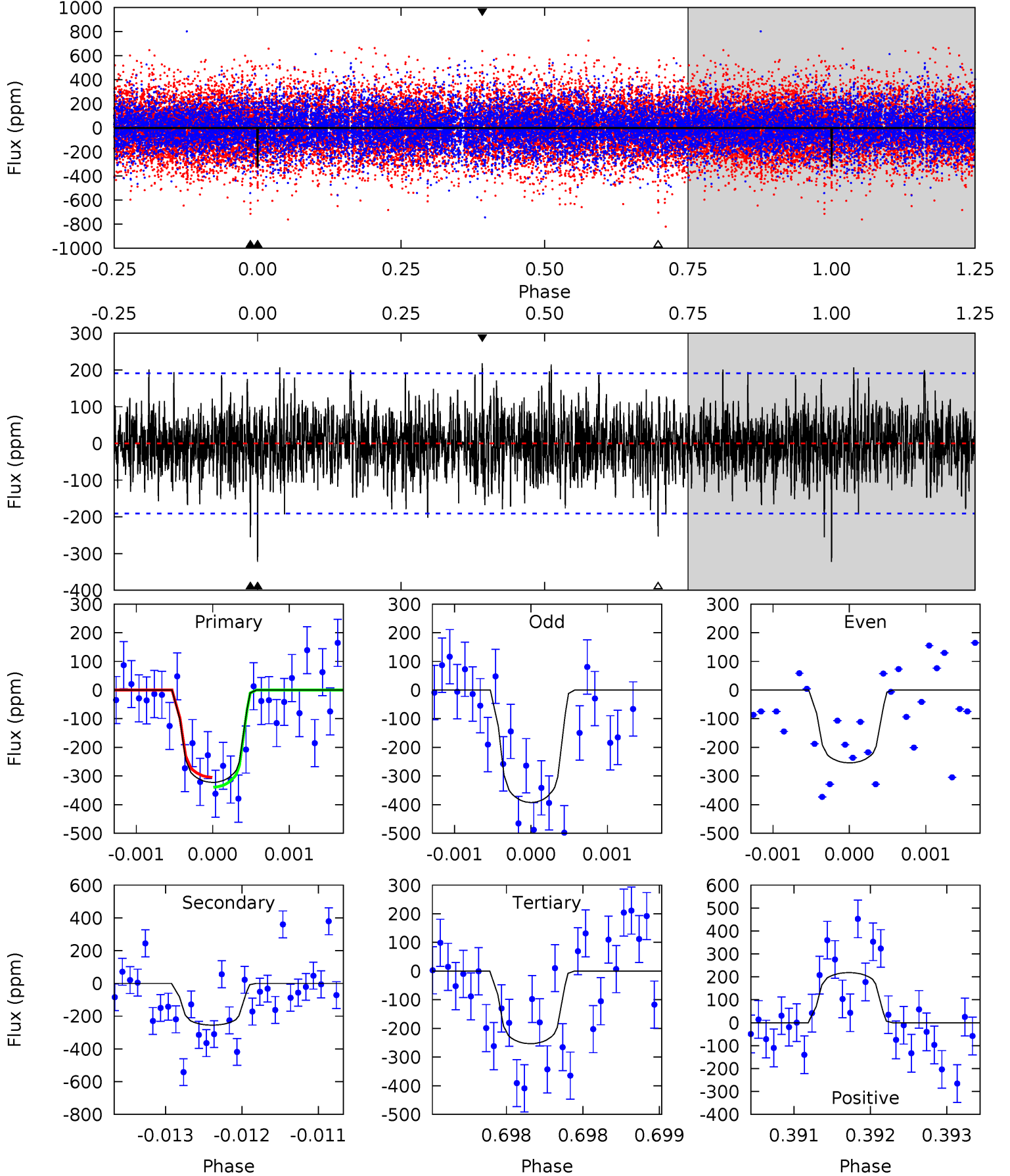
TCE 003542119-02 P=177.839712 Days  $T_0=165.975462$  (BKJD)



# DV Model-Shift Uniqueness Test

003542119-02, P = 177.830213 Days, E = 166.028806 Days

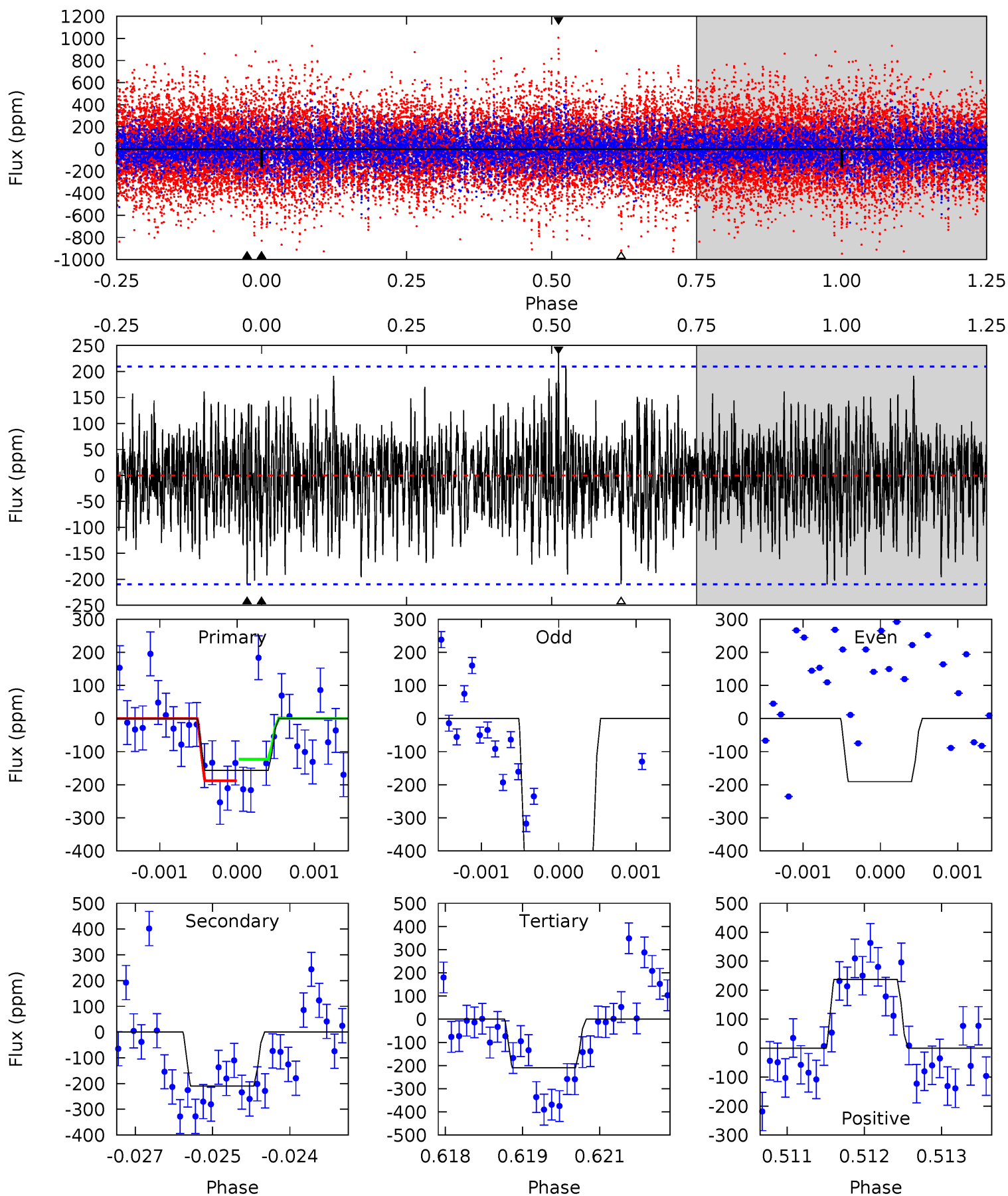
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.27	7.33	7.28	6.28	5.49	3.35	1.77	1.99	2.99	0.05	1.05	1.98	0.95	0.40	0.49



# Alt Model-Shift Uniqueness Test

003542119-02, P = 177.839712 Days, E = 165.975462 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
4.05	5.41	5.40	6.13	5.41	3.22	1.63	-1.35	-2.08	0.01	-0.73	4.79	0.66	0.53	0.83





### Stellar Parameters For KIC 003542119

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6257^{+189}_{-151}$	$3.457^{+0.384}_{-0.096}$	$-0.100^{+0.350}_{-0.300}$	$4.124^{+0.608}_{-1.701}$	$1.777^{+0.178}_{-0.415}$	$0.036^{+0.119}_{-0.011}$
	+3%/-2%	+11%/-3%	+350%/-300%	+15%/-41%	+10%/-23%	+333%/-31%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 003542119-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-255 \pm 35$	$8.15^{+6.11}_{-4.62}$	$886^{+57}_{-91}$	$5668^{+3100}_{-1181}$	$1206^{+5072}_{-819}$
Alt.	$-209 \pm 39$	$6.99^{+5.77}_{-4.38}$	$886^{+55}_{-94}$	$5761^{+4264}_{-1251}$	$1366^{+7454}_{-953}$

$T_{\text{max}}$  = 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

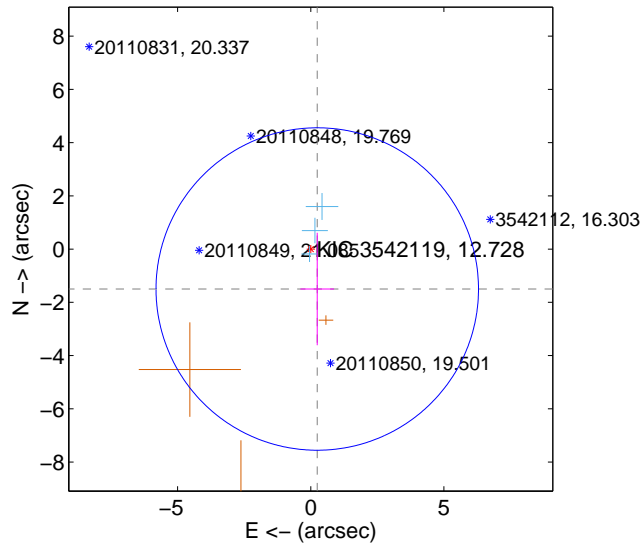
Supplemental centroid analysis for 003542119-02. Kepler magnitude: 12.73. Transit SNR 8.10

There are 3 quarters with good PRF difference image offsets

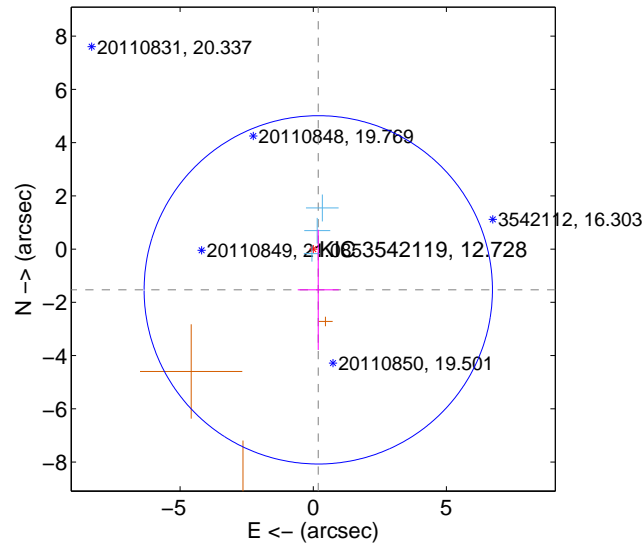
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.519 \pm 2.019$	0.75	$-0.244 \pm 0.632$	$-1.500 \pm 2.112$
PRF-fit source offset from KIC position	$1.543 \pm 2.181$	0.71	$-0.189 \pm 0.771$	$-1.531 \pm 2.259$
photometric centroid source offset	$0.52 \pm 0.85$	0.61	$-0.01 \pm 0.63$	$-0.52 \pm 0.85$

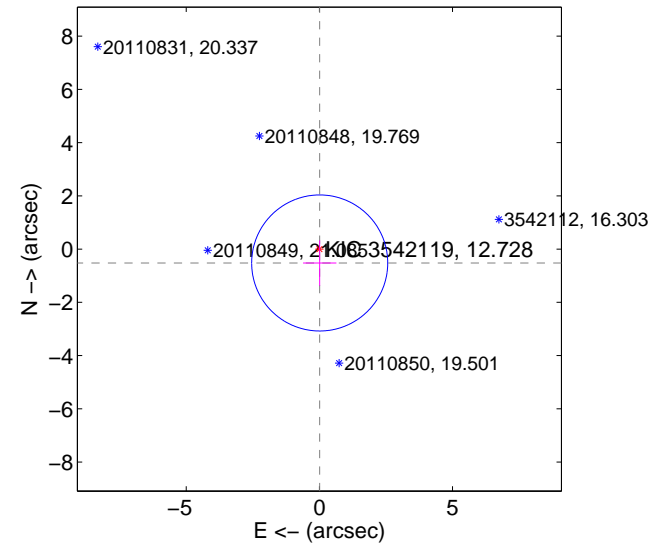
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

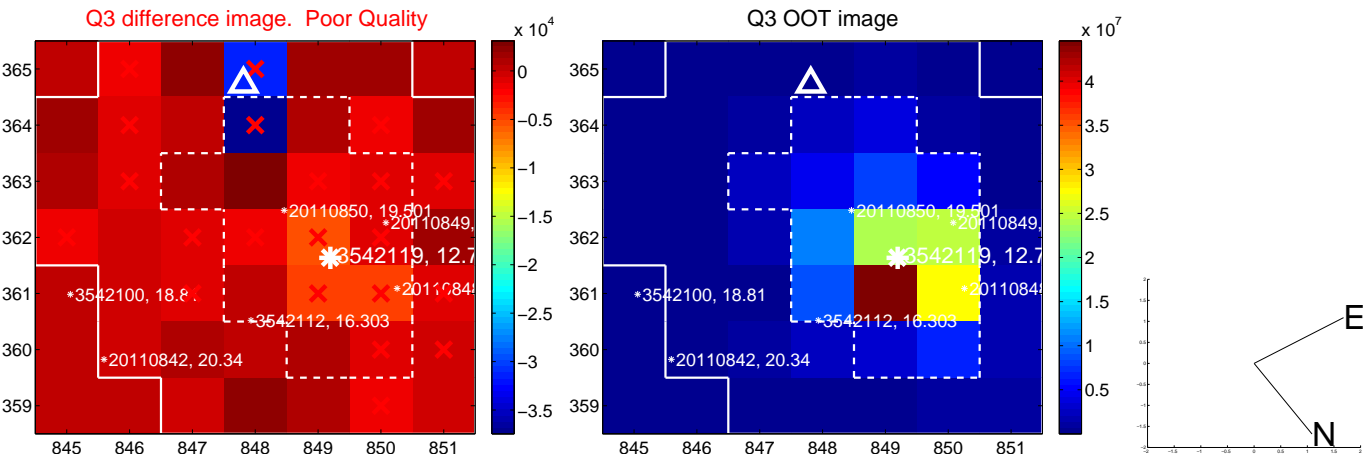


offset from photometric centroids

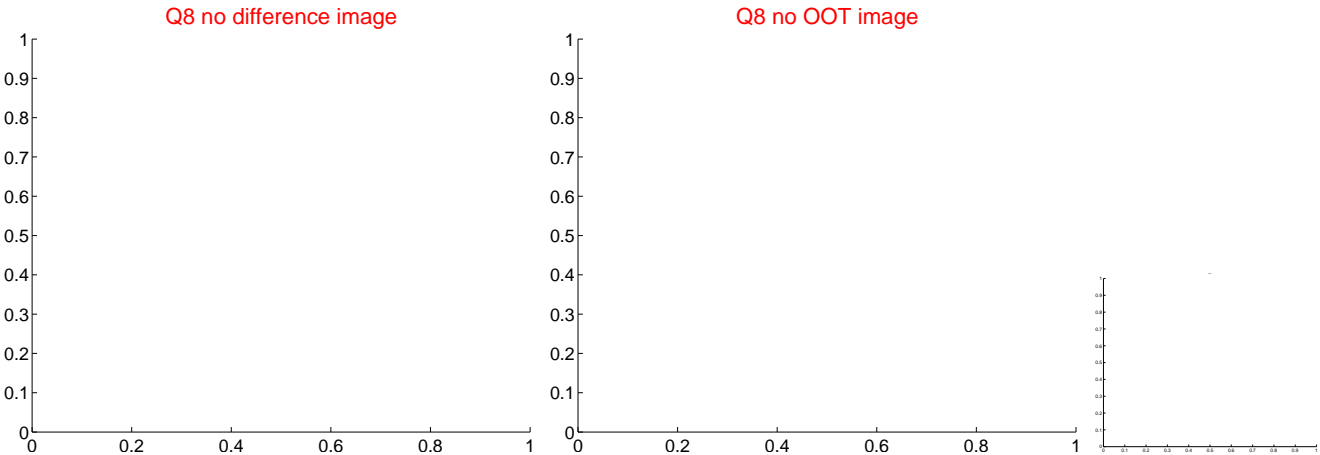
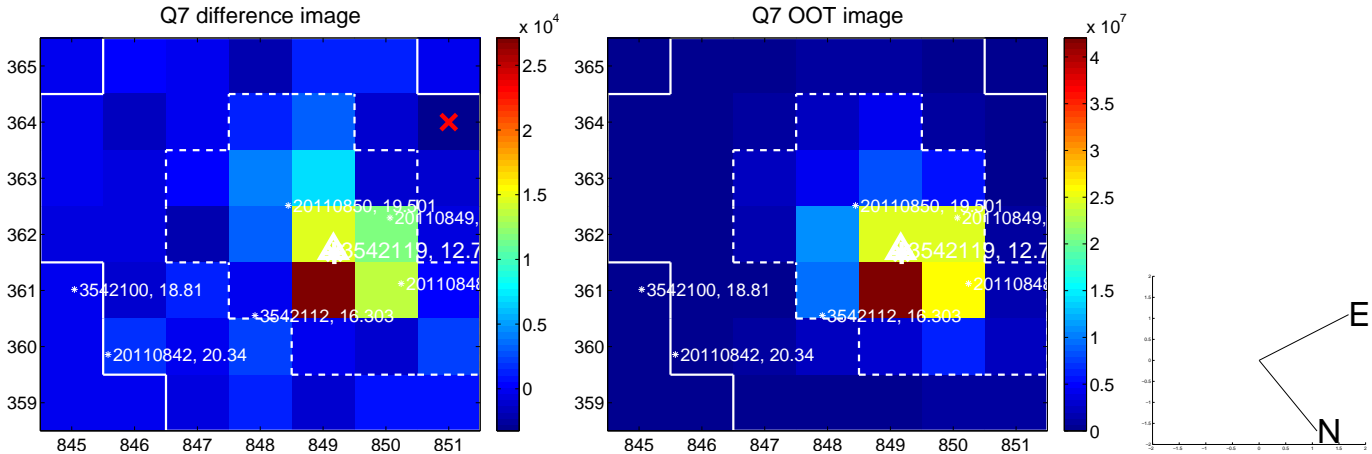
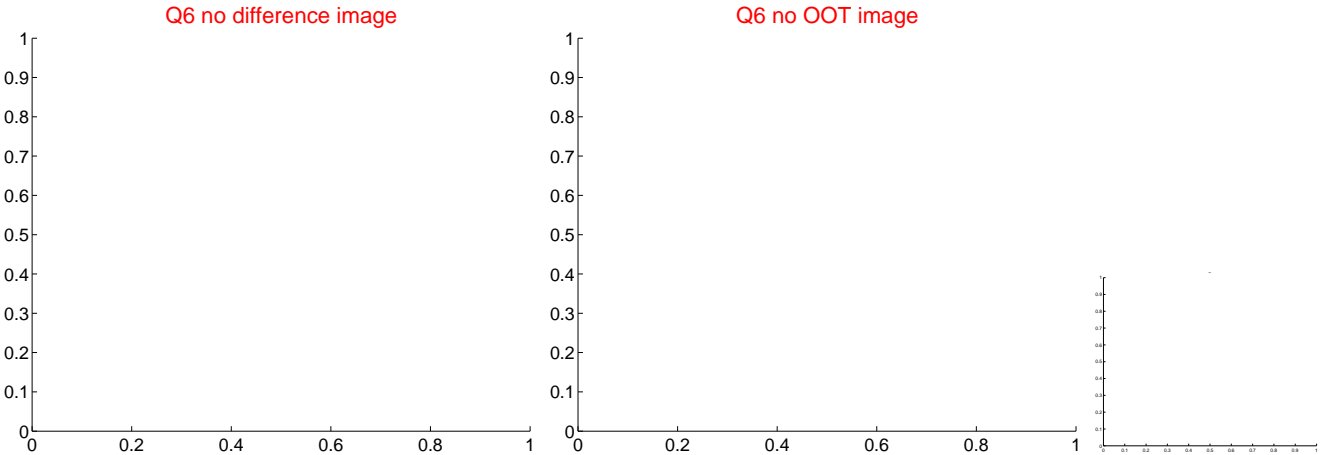
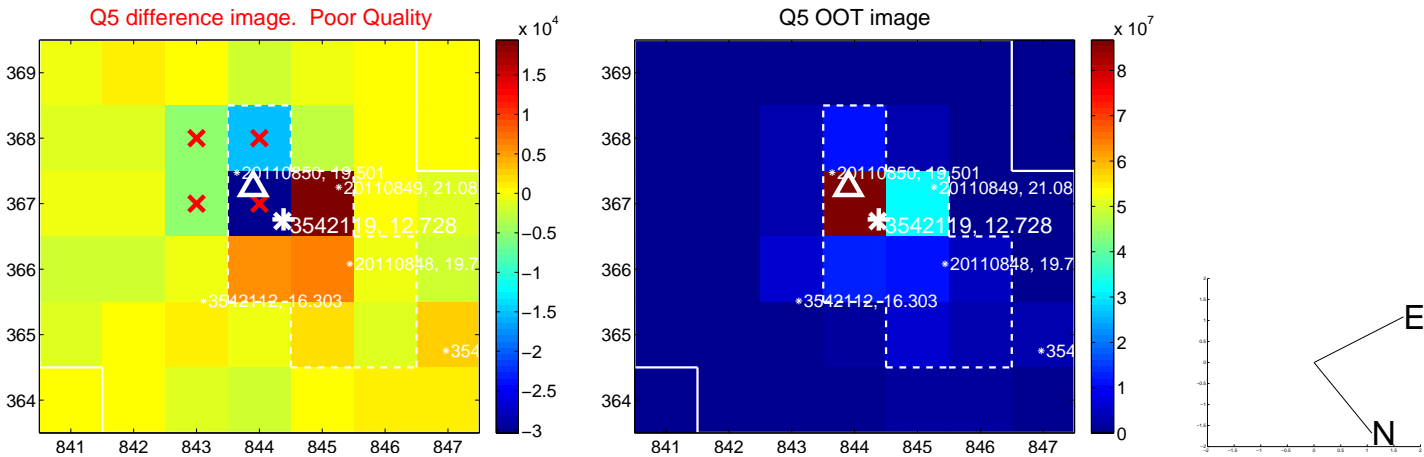


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

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

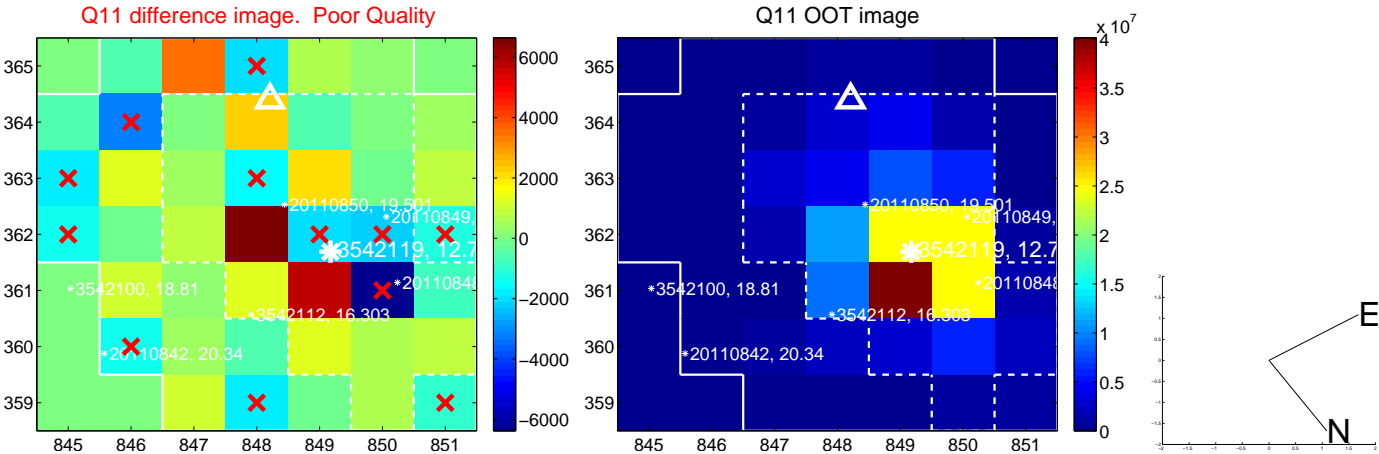
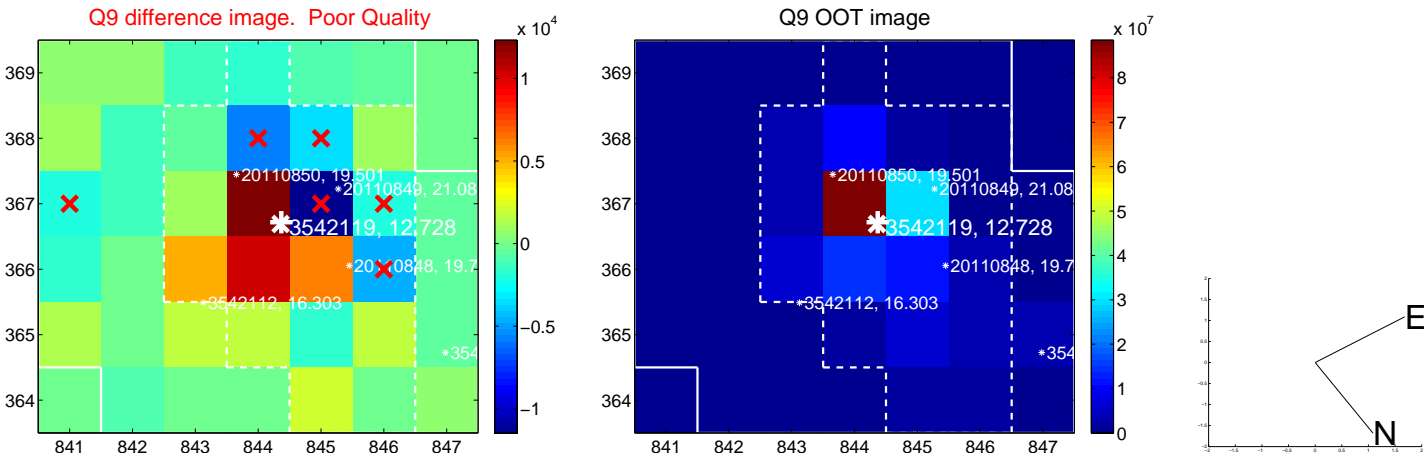


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

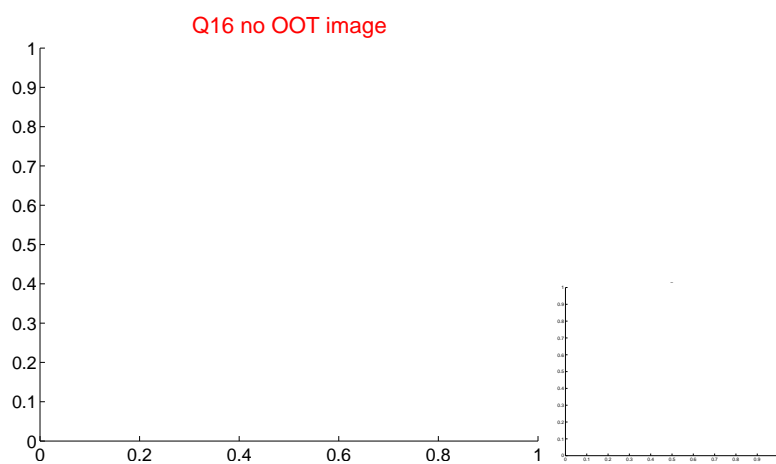
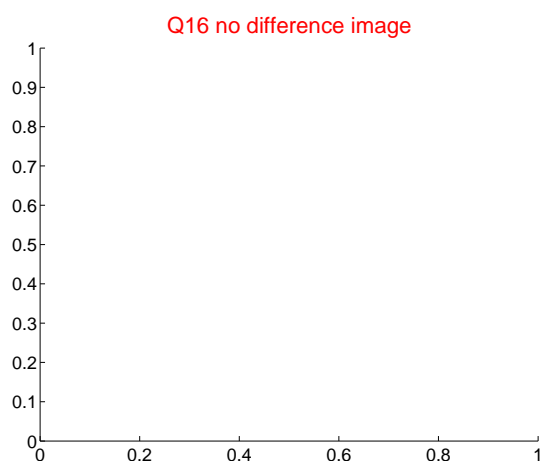
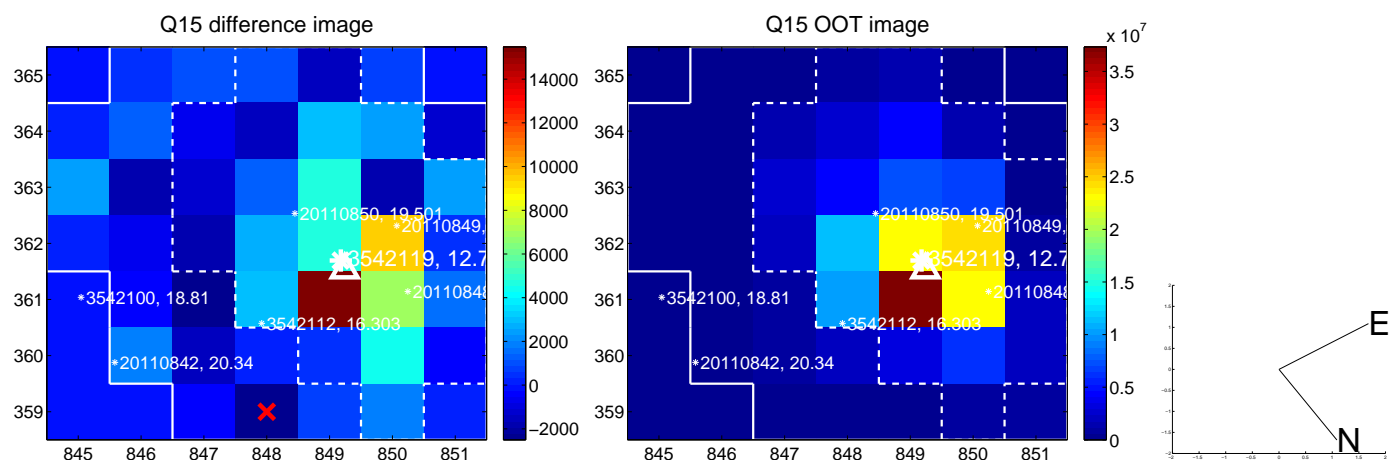
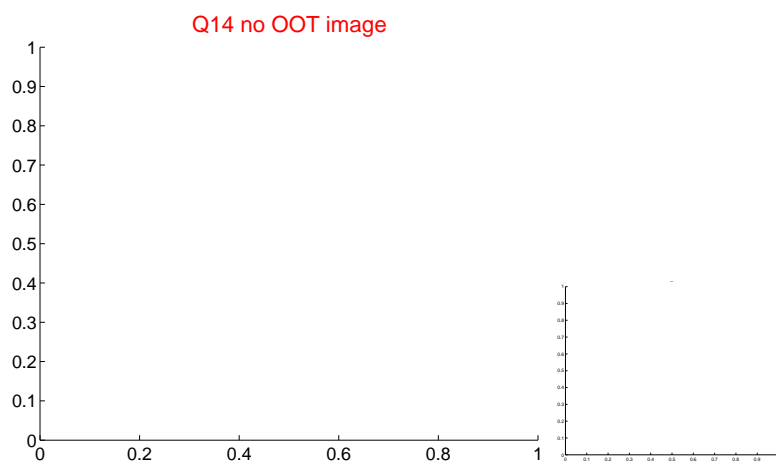
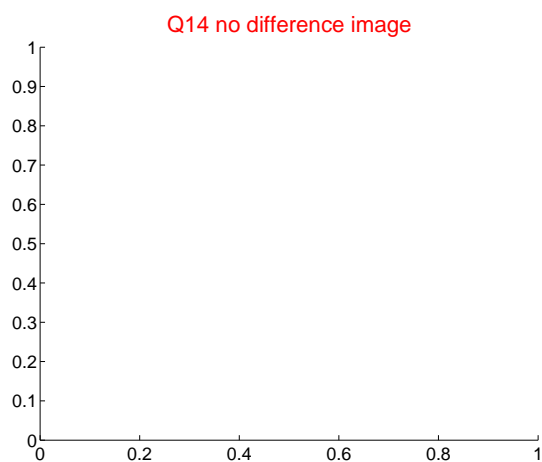
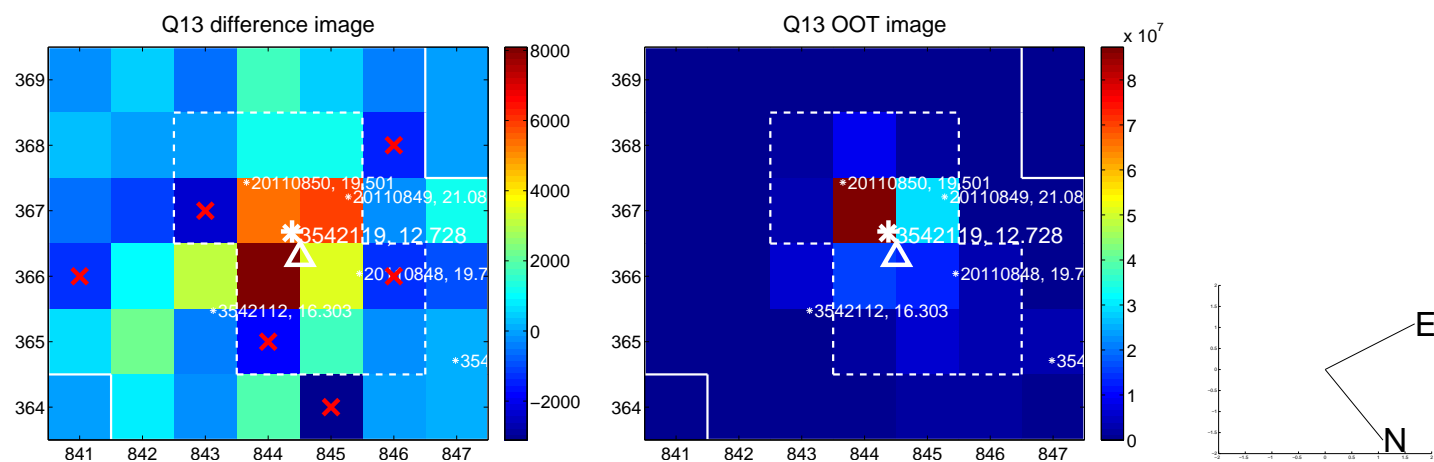




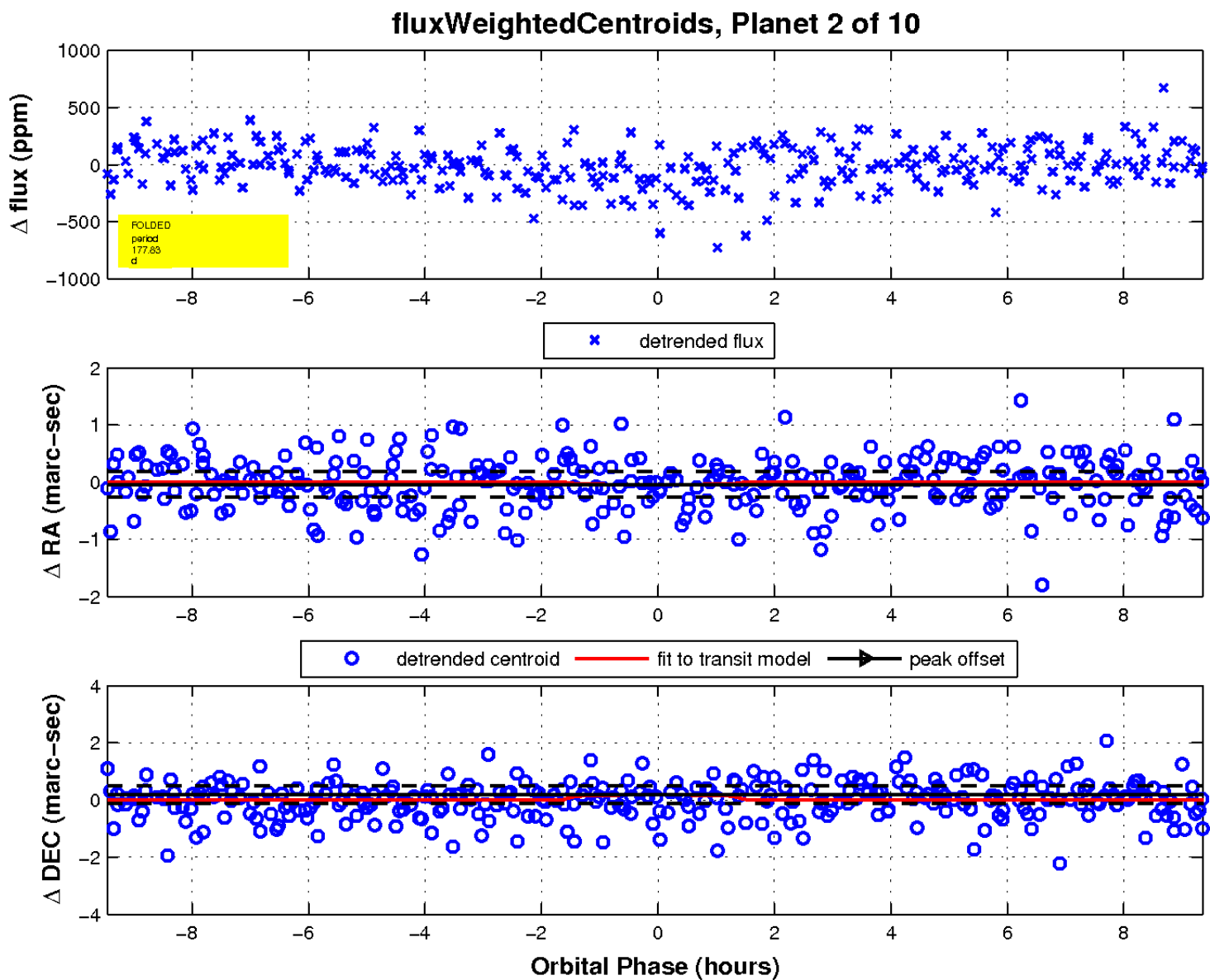
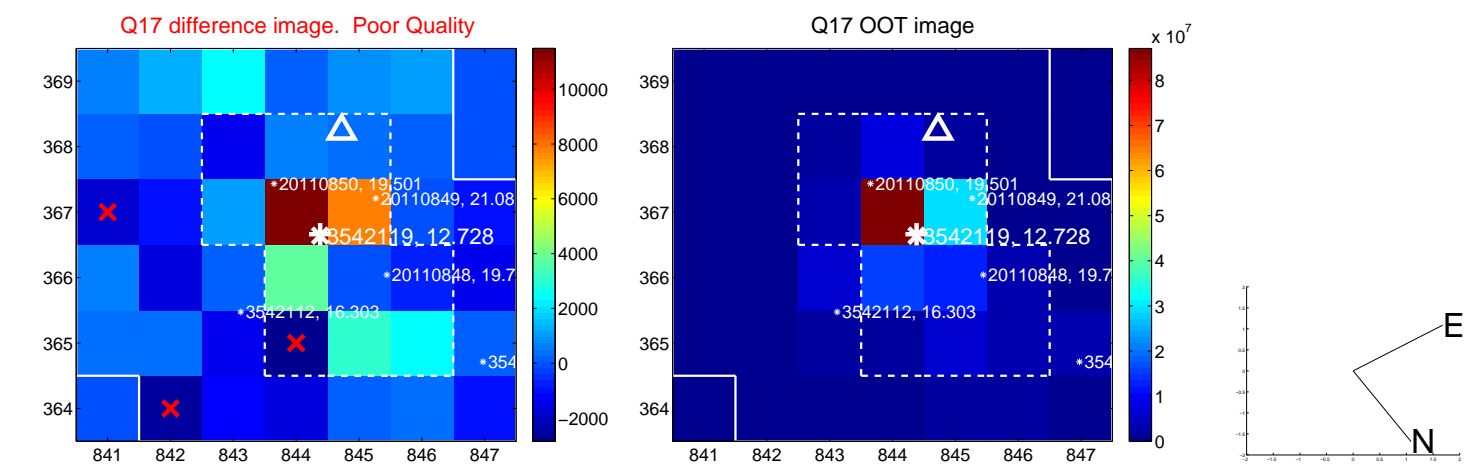
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

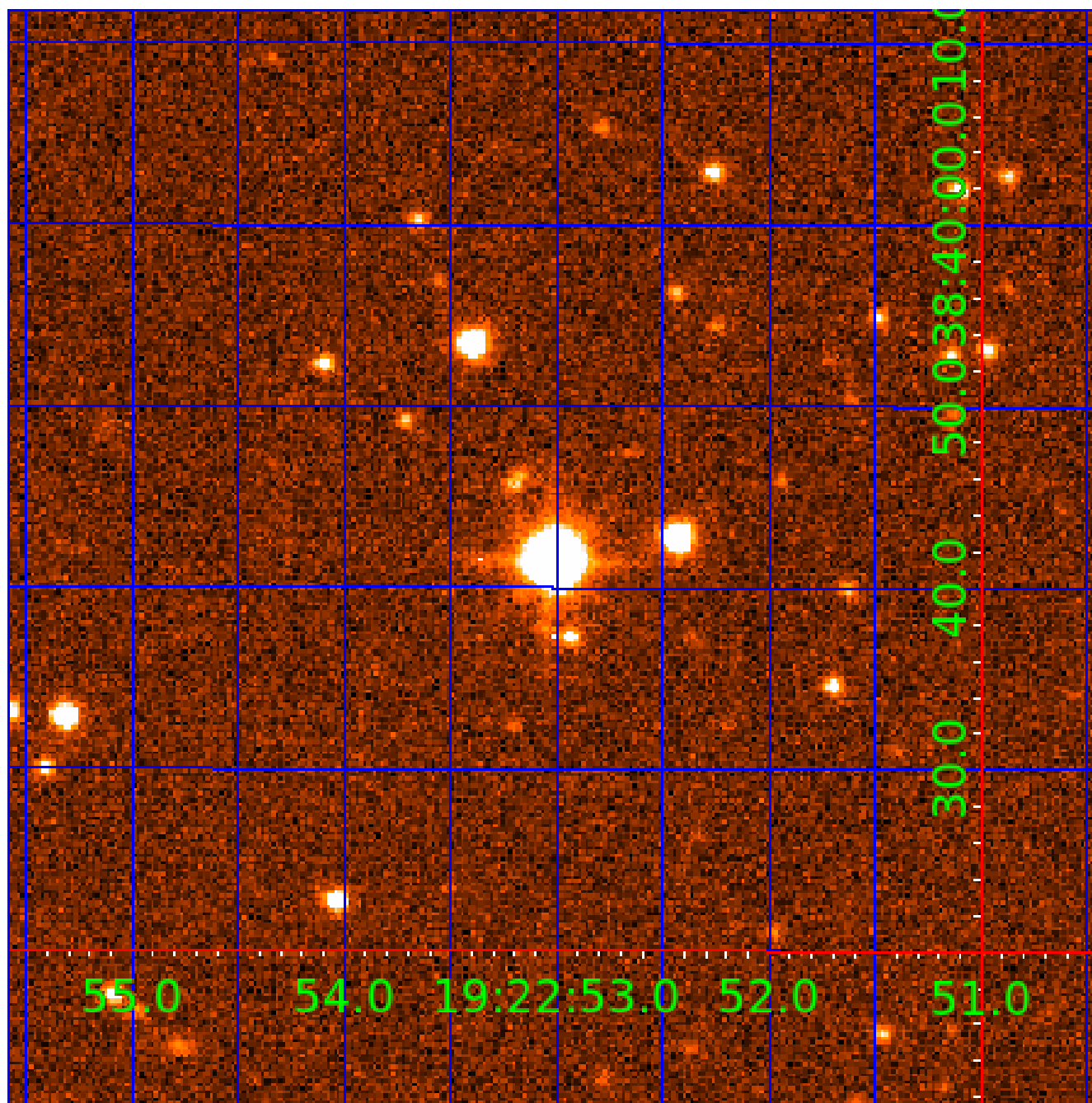


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003542119-01	OBS	No	2.201670	132.421943	16.8	11.223	9.5	4.9	4.12	6257	2.09	14506.69
003542119-02	OBS	No	177.830213	166.028806	348.6	3.155	9.8	8.1	4.12	6257	8.77	41.55
003542119-03	OBS	No	46.045765	160.209140	195.1	4.733	9.7	8.8	4.12	6257	6.73	251.76
003542119-04	OBS	No	161.792595	208.618920	119.2	13.018	9.4	4.1	4.12	6257	4.93	47.13
003542119-05	OBS	No	144.797709	136.024202	372.3	3.559	8.9	9.3	4.12	6257	9.30	54.65
003542119-06	OBS	No	405.130706	193.166102	270.1	7.652	8.7	6.0	4.12	6257	7.27	13.86
003542119-07	OBS	No	211.002675	175.479319	277.5	5.845	8.9	6.9	4.12	6257	7.39	33.08
003542119-08	OBS	No	155.456868	215.297961	265.2	7.935	8.7	8.0	4.12	6257	7.38	49.71
003542119-09	OBS	No	106.310124	190.178583	229.9	7.393	8.0	7.4	4.12	6257	6.90	82.50
003542119-10	OBS	No	79.537459	169.217320	368.5	1.912	7.9	7.7	4.12	6257	8.72	121.47

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003542119-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003542119-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003542119-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT
003542119-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003542119-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003542119-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003542119-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
003542119-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS
003542119-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003542119-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

**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.

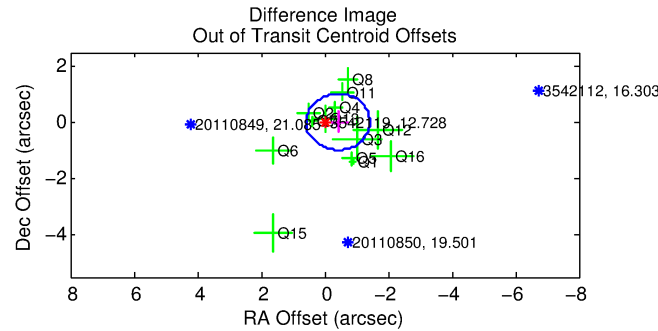
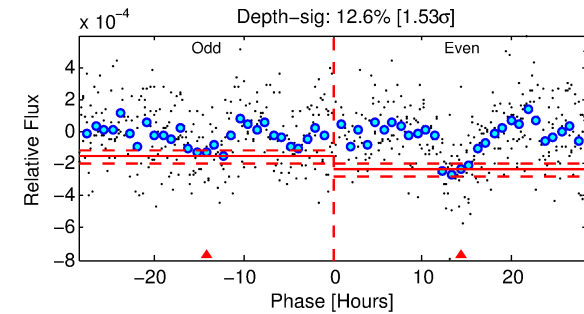
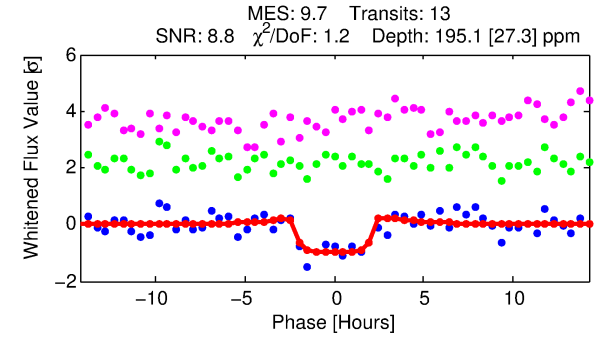
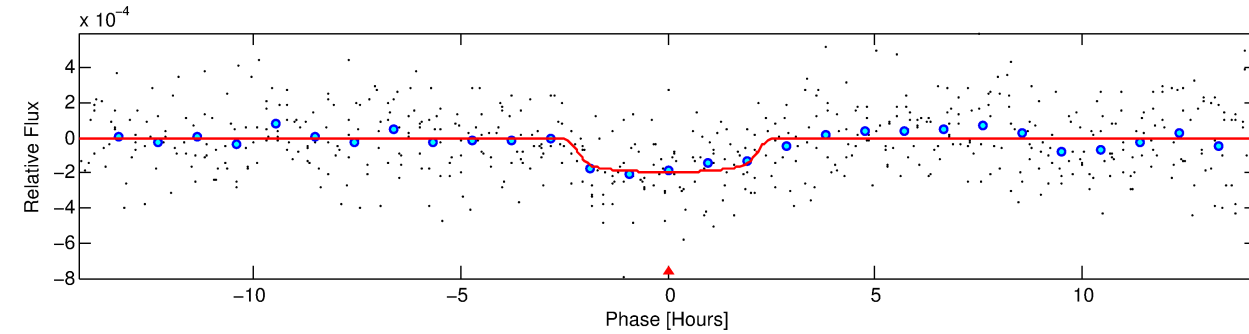
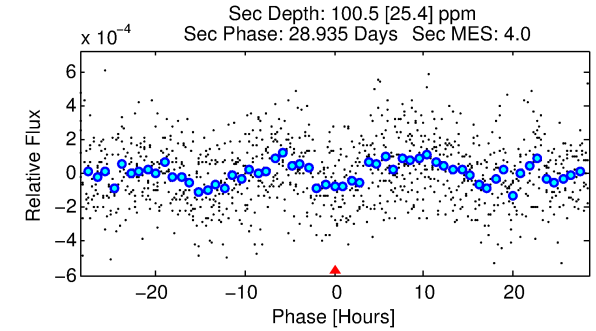
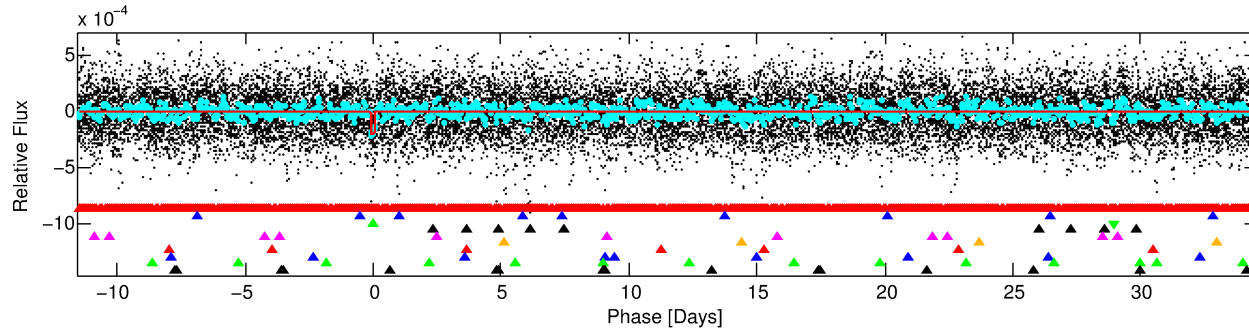
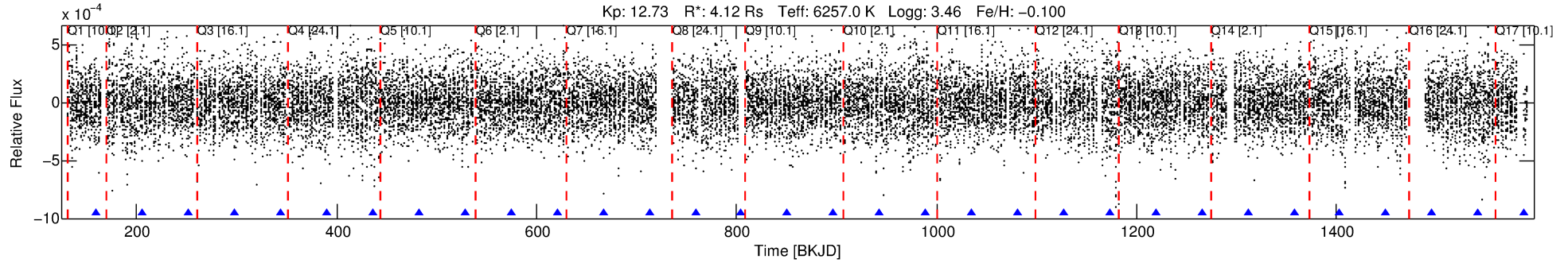
Ephemeris Match Information For 003542119-03

No Significant Match Found



# DV One-Page Summary

KIC: 3542119 Candidate: 3 of 10 Period: 46.046 d



## DV Fit Results:

Period = 46.04576 [0.00051] d  
Epoch = 160.2091 [0.0086] BKJD  
Rp/R\* = 0.0149 [0.0051]  
a/R\* = 35.48 [64.43]  
b = 0.90 [0.41]  
Seff = 251.76 [166.56]  
Teq = 1016 [168] K  
Rp = 6.73 [3.60] Re  
a = 0.3046 [0.1228] AU  
Ag = 113.42 [110.62] [1.02σ]  
Teffp = 5125 [944] K [4.29σ]

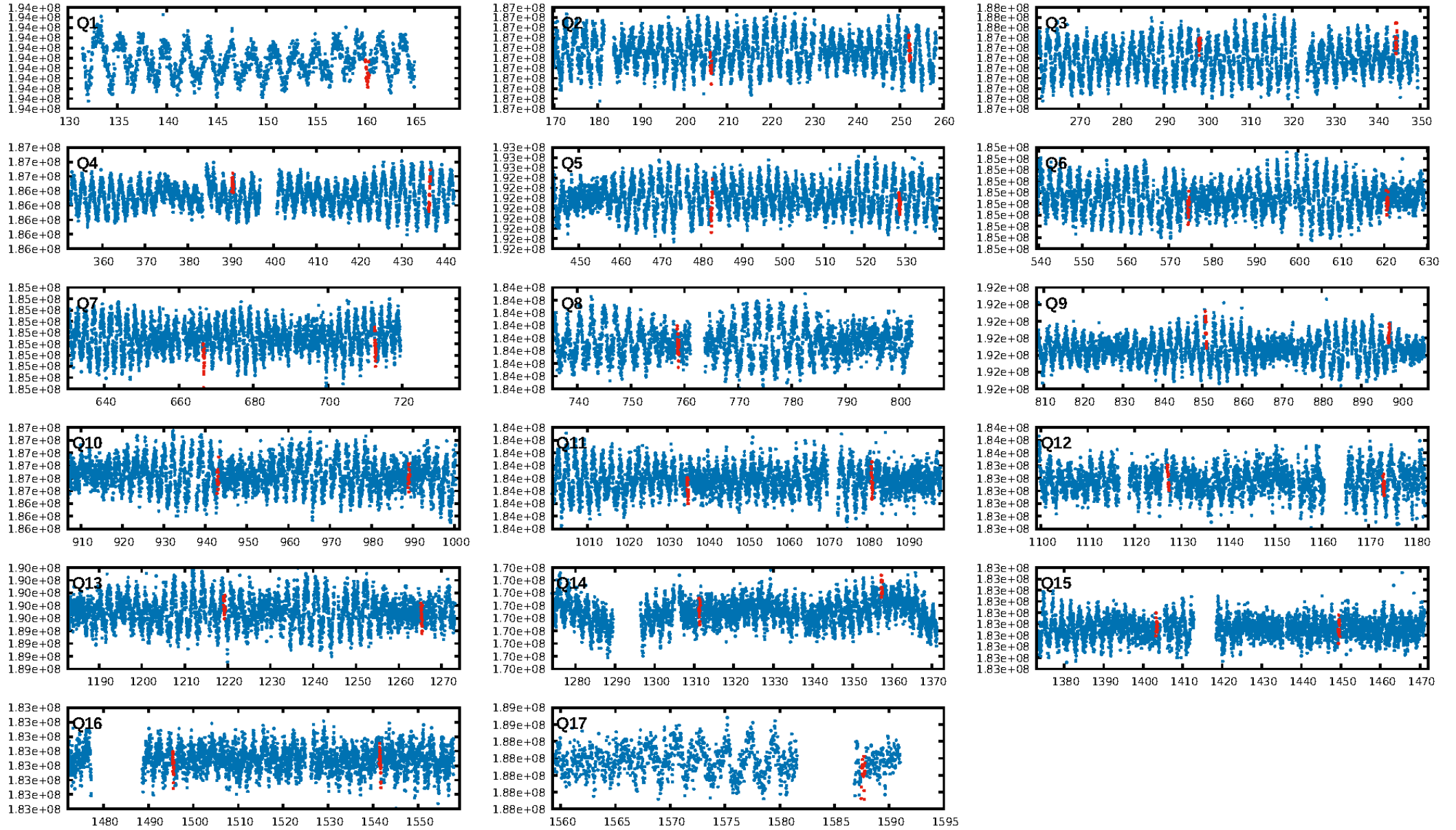
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [86.39σ]  
LongPeriod-sig: 100.0% [157.46σ]  
ModelChiSquare2-sig: 2.2%  
ModelChiSquareGof-sig: 99.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [12/12]  
GhostDiagnostic-chr: 2.328  
Centroid-sig: 1.2%  
Centroid-so: 1.079 arcsec [2.21σ]  
OotOffset-rm: 0.420 arcsec [1.26σ]  
KicOffset-rm: 0.351 arcsec [1.14σ]  
OotOffset-st: 2/4/4/3 [13]  
KicOffset-st: 2/4/4/3 [13]  
DiffImageQuality-fgm: 0.77 [10/13]  
DiffImageOverlap-fno: 0.56 [9/16]

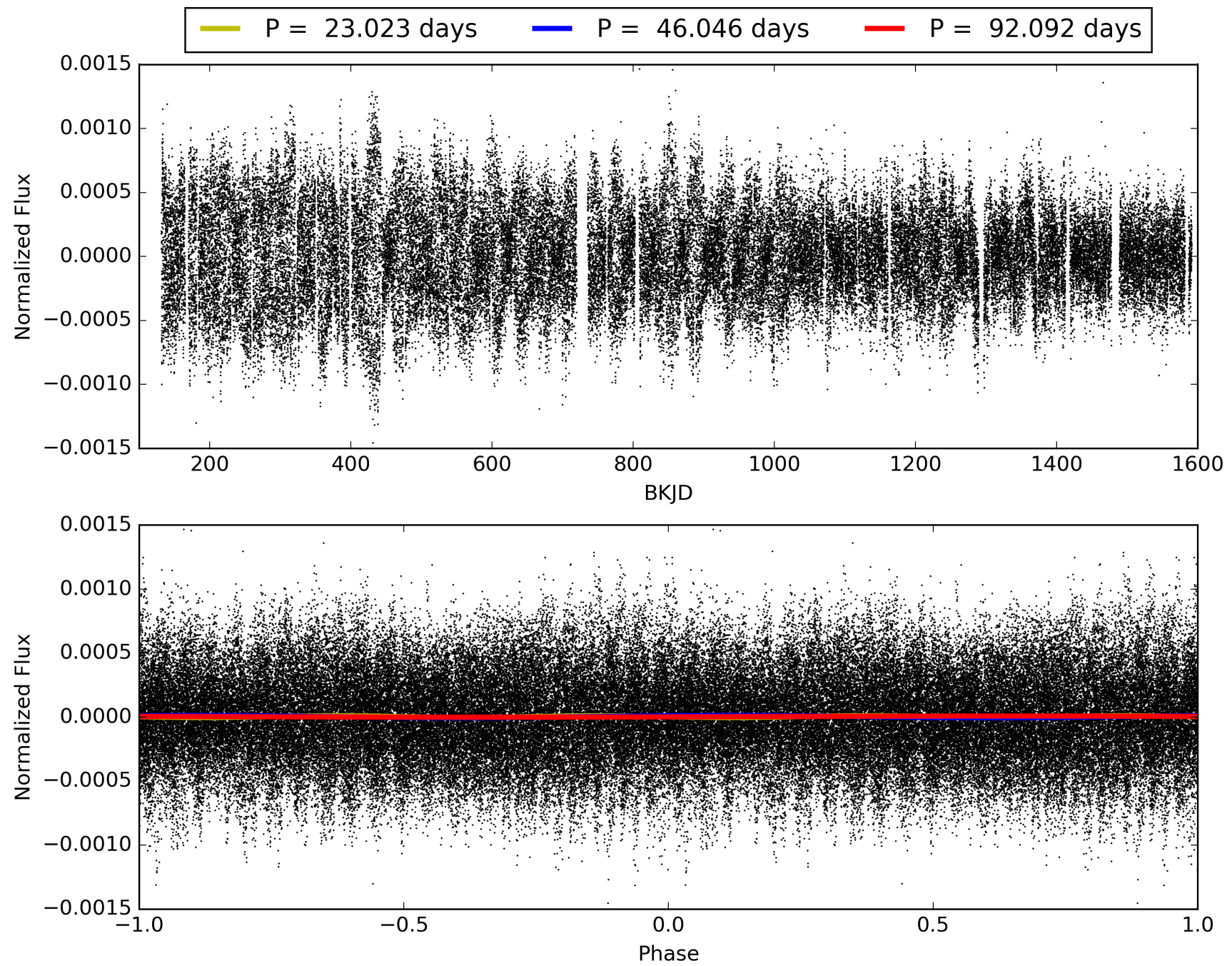
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:15:42 Z

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

# TCE 003542119-03, PDC Light Curves

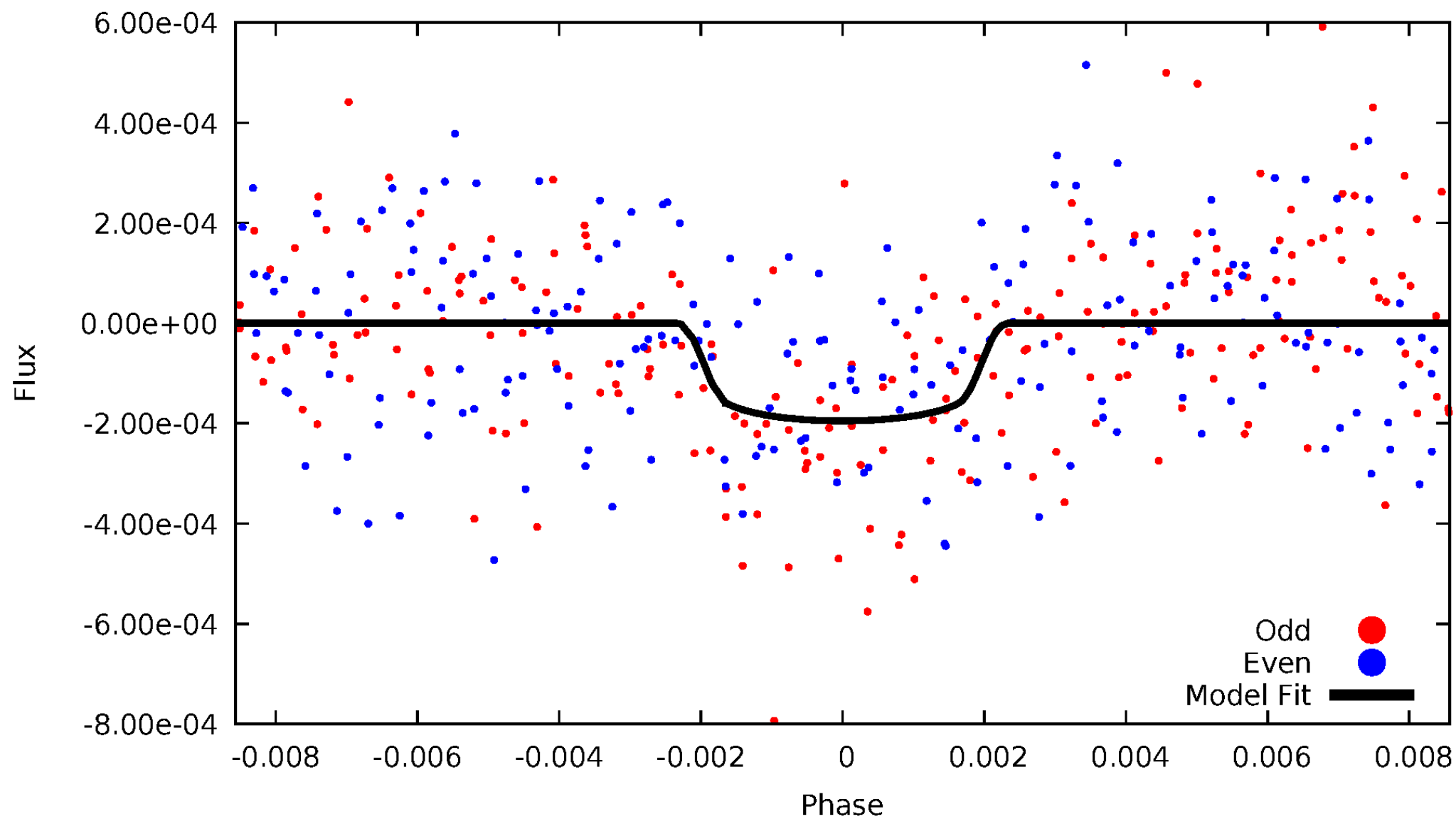


TCE 003542119-03



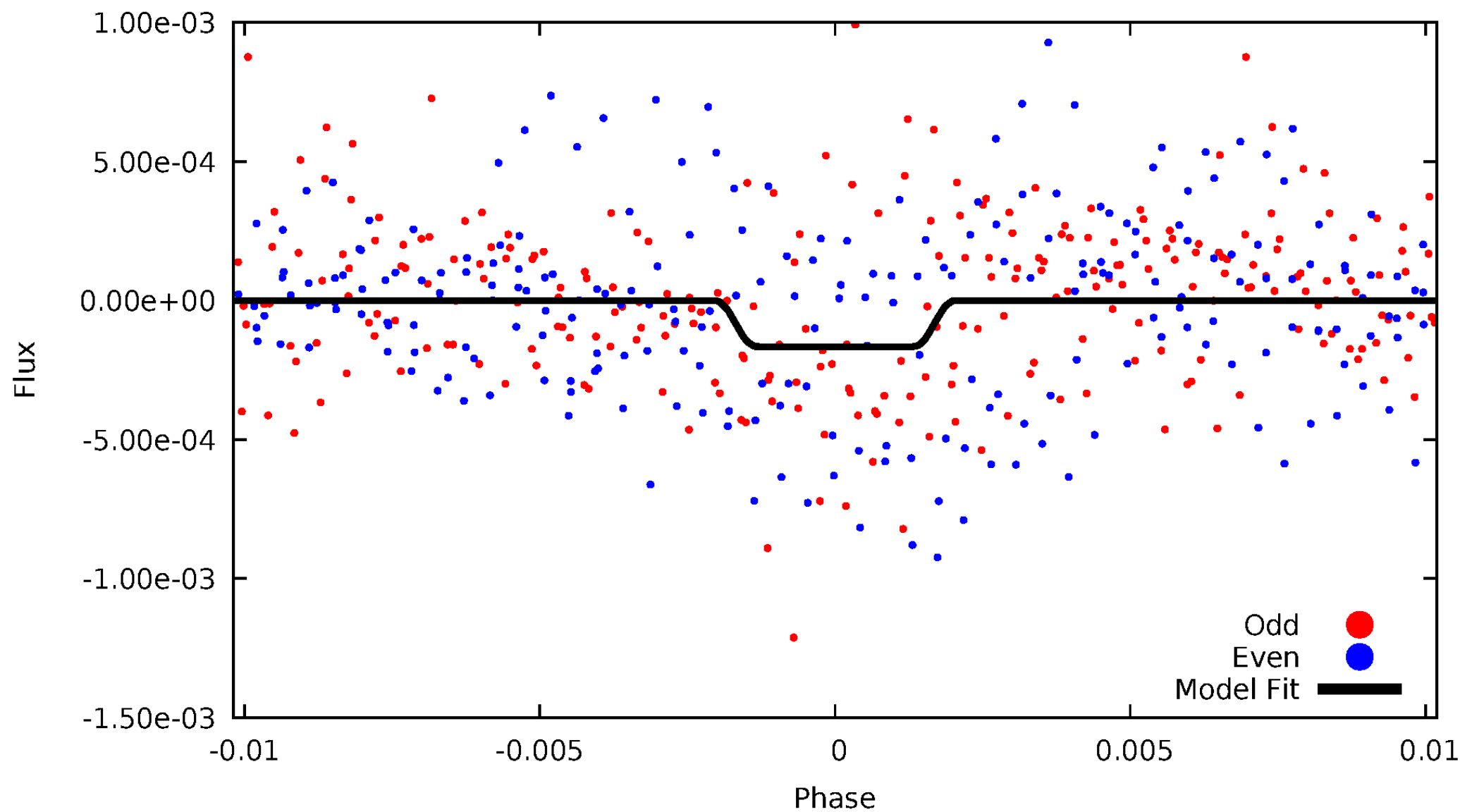
# DV Odd/Even

TCE 003542119-03



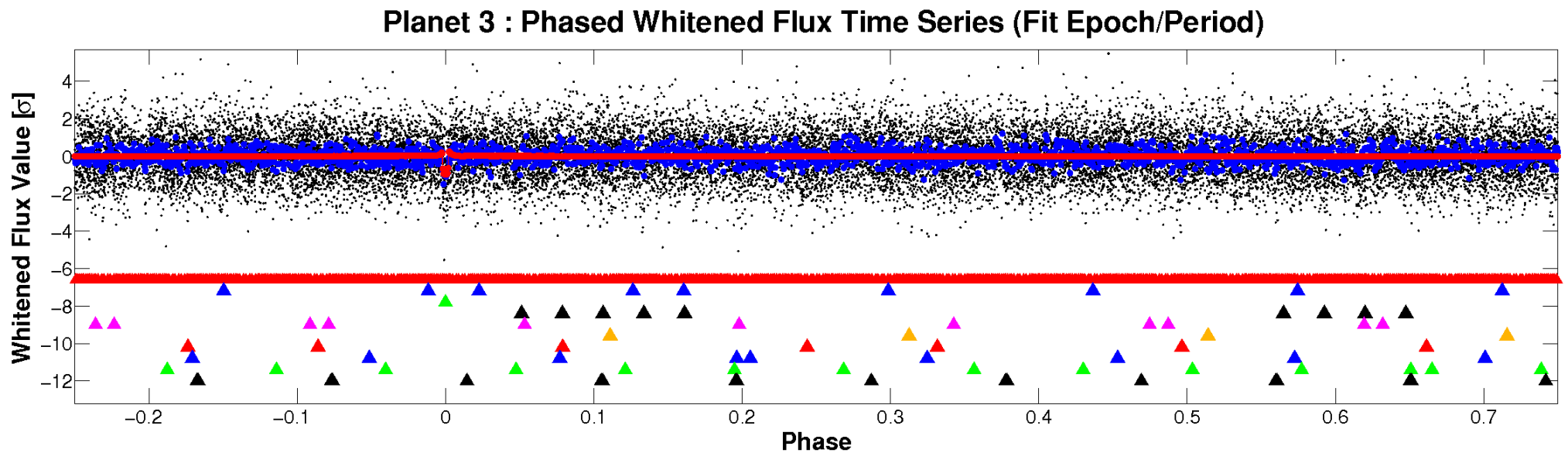
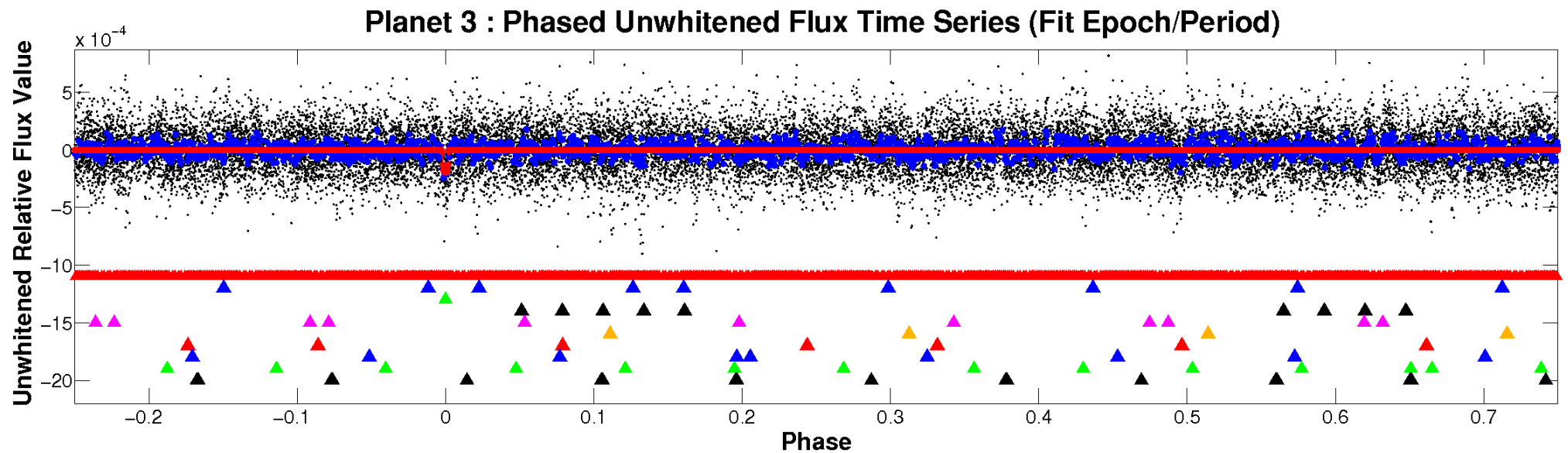
# ALT Odd/Even

TCE 003542119-03





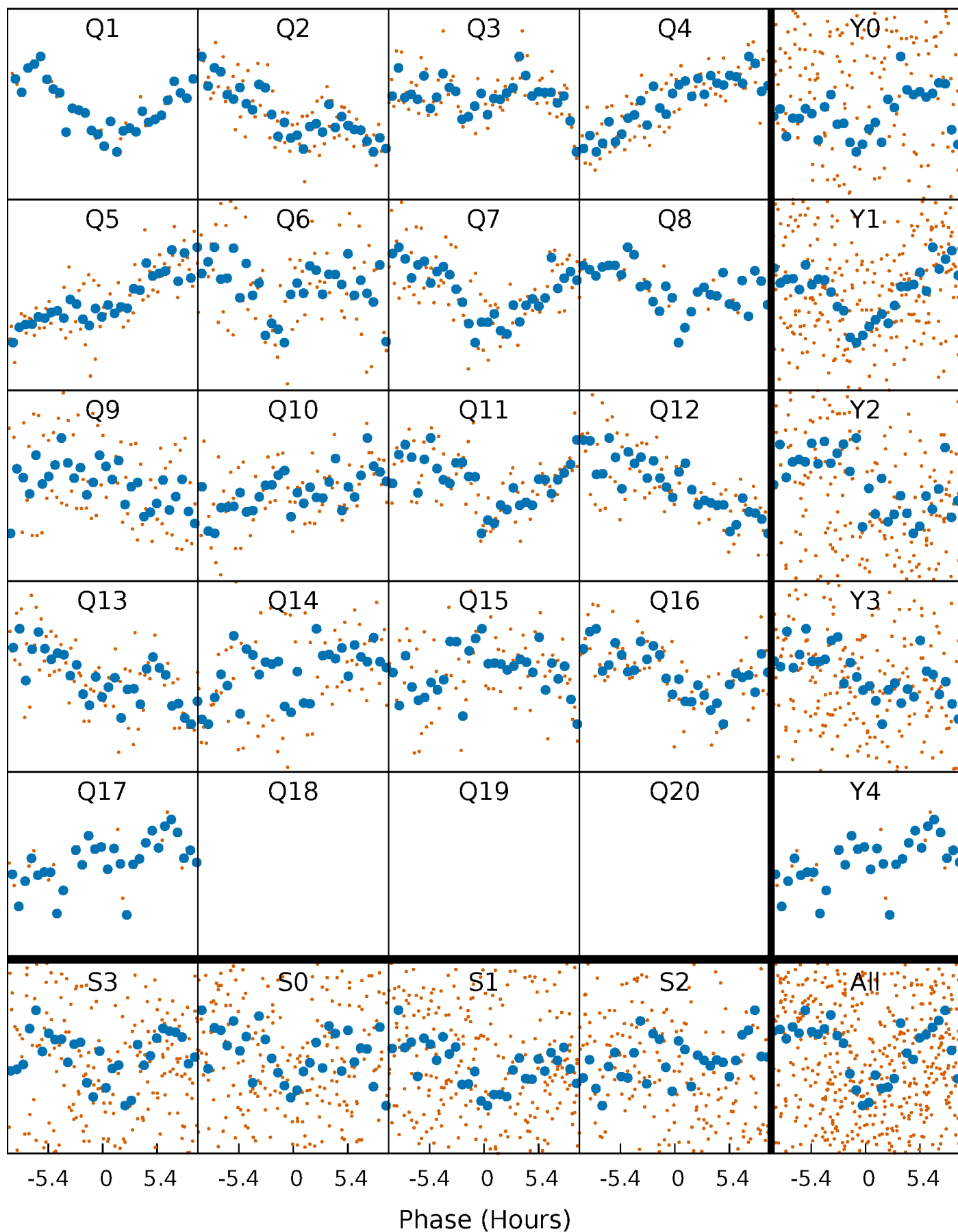
# Non-Whitened Vs. Whitened Light Curve





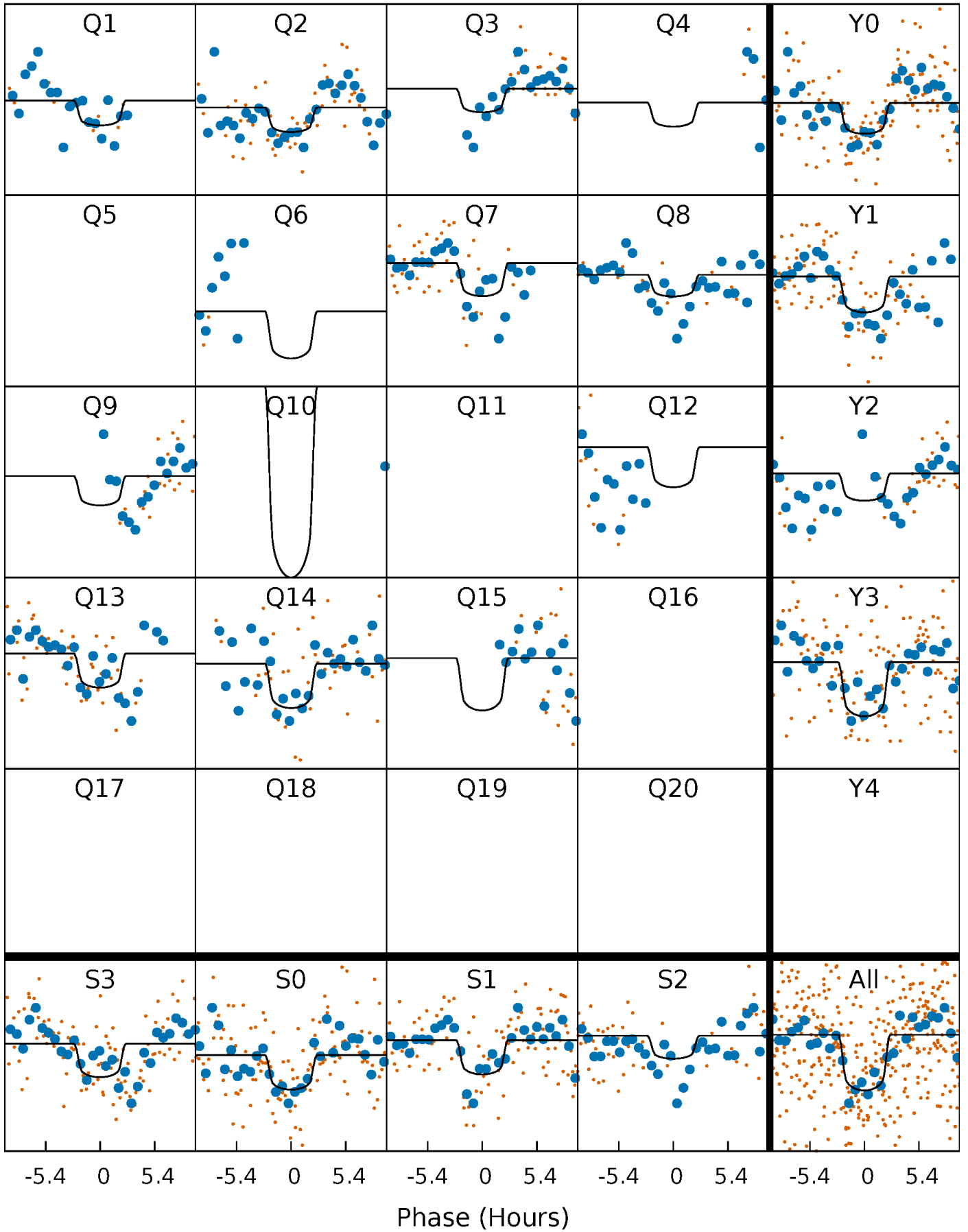
# PDC Quarter-Phased Transit Curves

TCE 003542119-03 P= 46.045765 Days  $T_0=160.209140$  (BKJD)



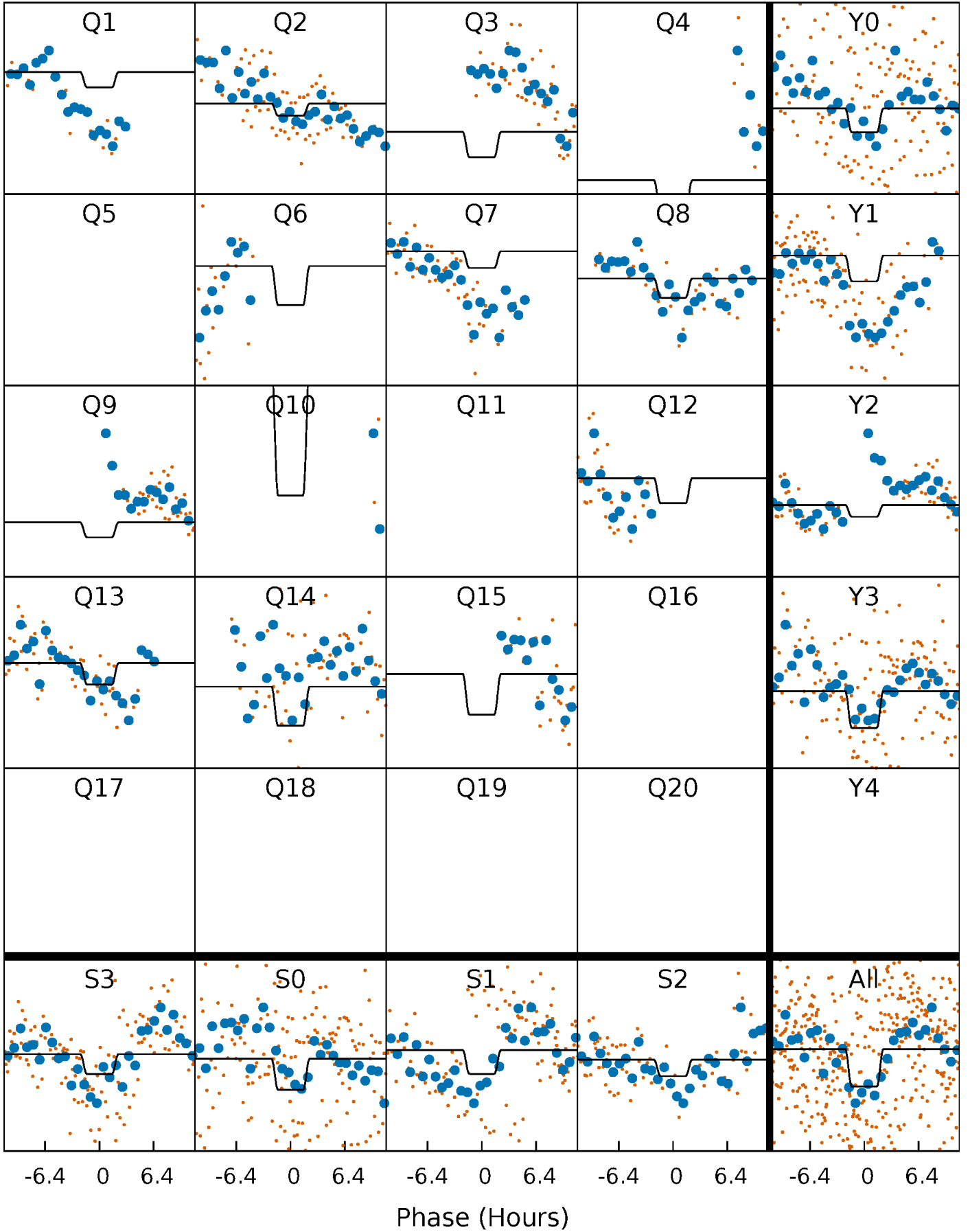
# DV Quarter-Phased Transit Curves

TCE 003542119-03 P= 46.045765 Days  $T_0=160.209140$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

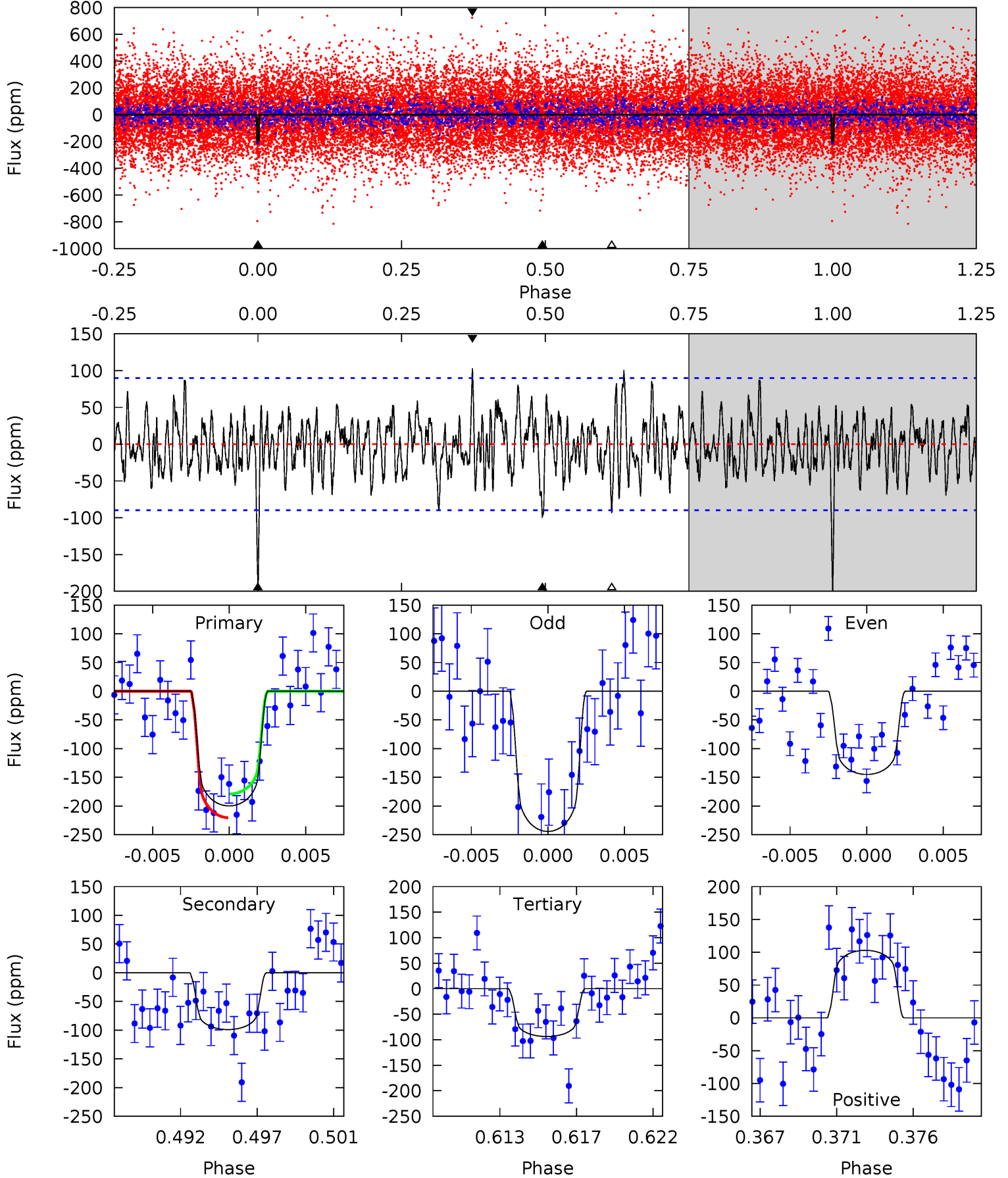
TCE 003542119-03 P= 46.045170 Days  $T_0=160.203517$  (BKJD)



# DV Model-Shift Uniqueness Test

003542119-03, P = 46.045765 Days, E = 114.163375 Days

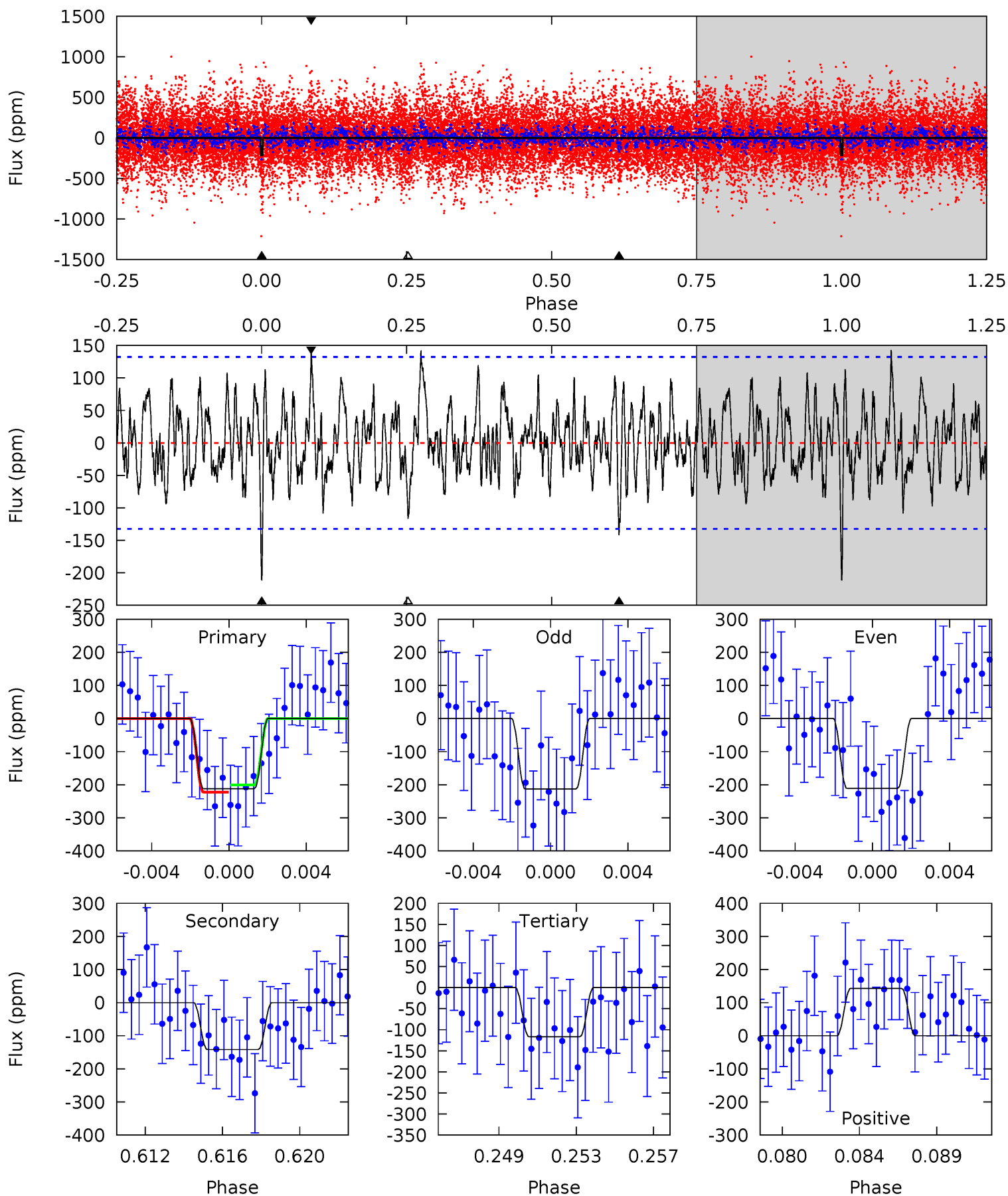
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.5	5.70	5.39	5.92	5.17	2.83	1.81	6.11	5.58	0.30	-0.23	2.86	1.02	0.34	1.19



# Alt Model-Shift Uniqueness Test

003542119-03, P = 46.045170 Days, E = 114.158347 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
8.33	5.57	4.58	5.62	5.20	2.88	1.77	3.74	2.71	0.99	-0.05	0.03	0.65	0.40	0.42



### Stellar Parameters For KIC 003542119

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6257^{+189}_{-151}$	$3.457^{+0.384}_{-0.096}$	$-0.100^{+0.350}_{-0.300}$	$4.124^{+0.608}_{-1.701}$	$1.777^{+0.178}_{-0.415}$	$0.036^{+0.119}_{-0.011}$
	+3%/-2%	+11%/-3%	+350%/-300%	+15%/-41%	+10%/-23%	+333%/-31%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 003542119-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-99 \pm 17$	$6.12^{+2.57}_{-2.32}$	$1395^{+83}_{-145}$	$5176^{+1189}_{-601}$	$136^{+212}_{-68}$
Alt.	$-142 \pm 25$	$5.28^{+2.48}_{-2.16}$	$1397^{+85}_{-151}$	$6026^{+1900}_{-894}$	$255^{+480}_{-140}$

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



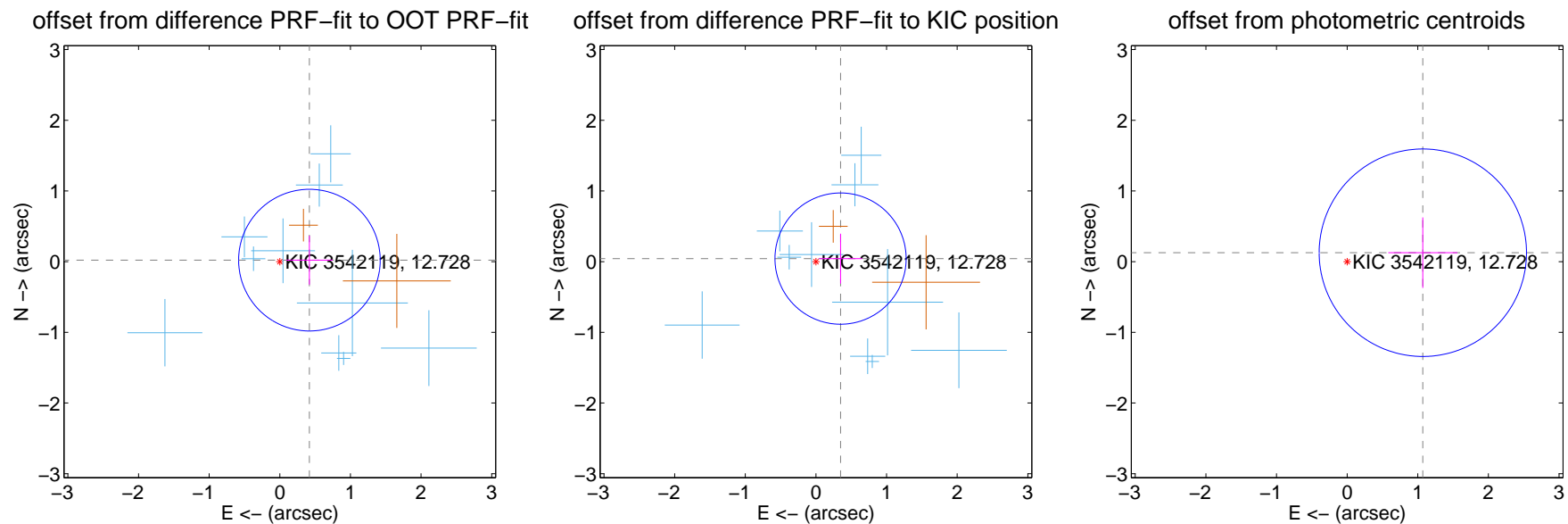
## DV Centroid Data

Supplemental centroid analysis for 003542119-03. Kepler magnitude: 12.73. Transit SNR 8.84

There are 10 quarters with good PRF difference image offsets

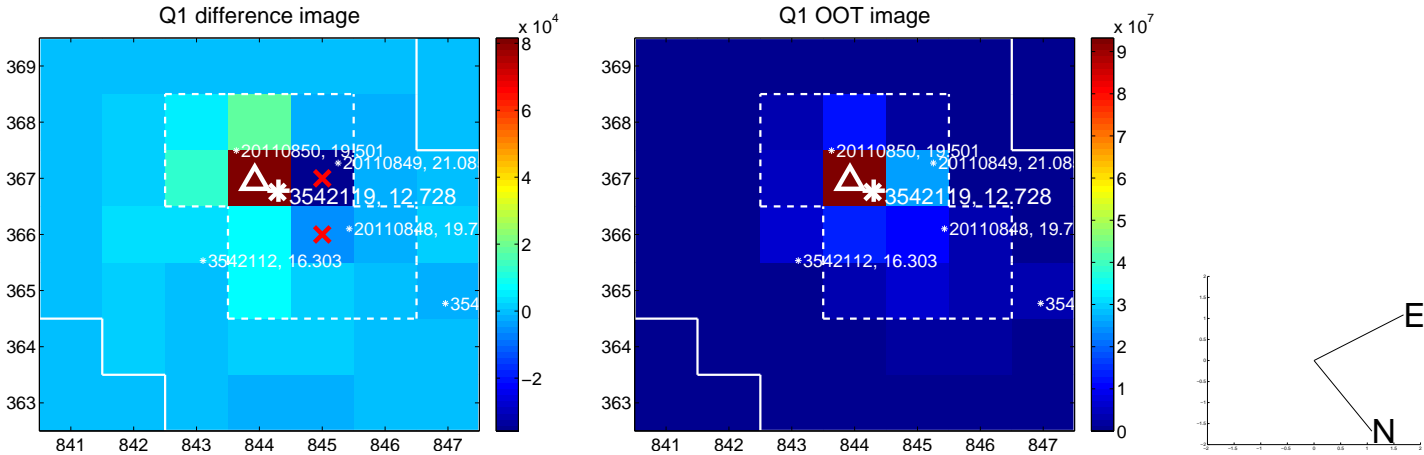
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.420 \pm 0.334$	1.26	$-0.419 \pm 0.329$	$0.021 \pm 0.346$
PRF-fit source offset from KIC position	$0.351 \pm 0.310$	1.14	$-0.349 \pm 0.305$	$0.043 \pm 0.353$
photometric centroid source offset	$1.08 \pm 0.49$	2.21	$-1.07 \pm 0.49$	$0.13 \pm 0.50$

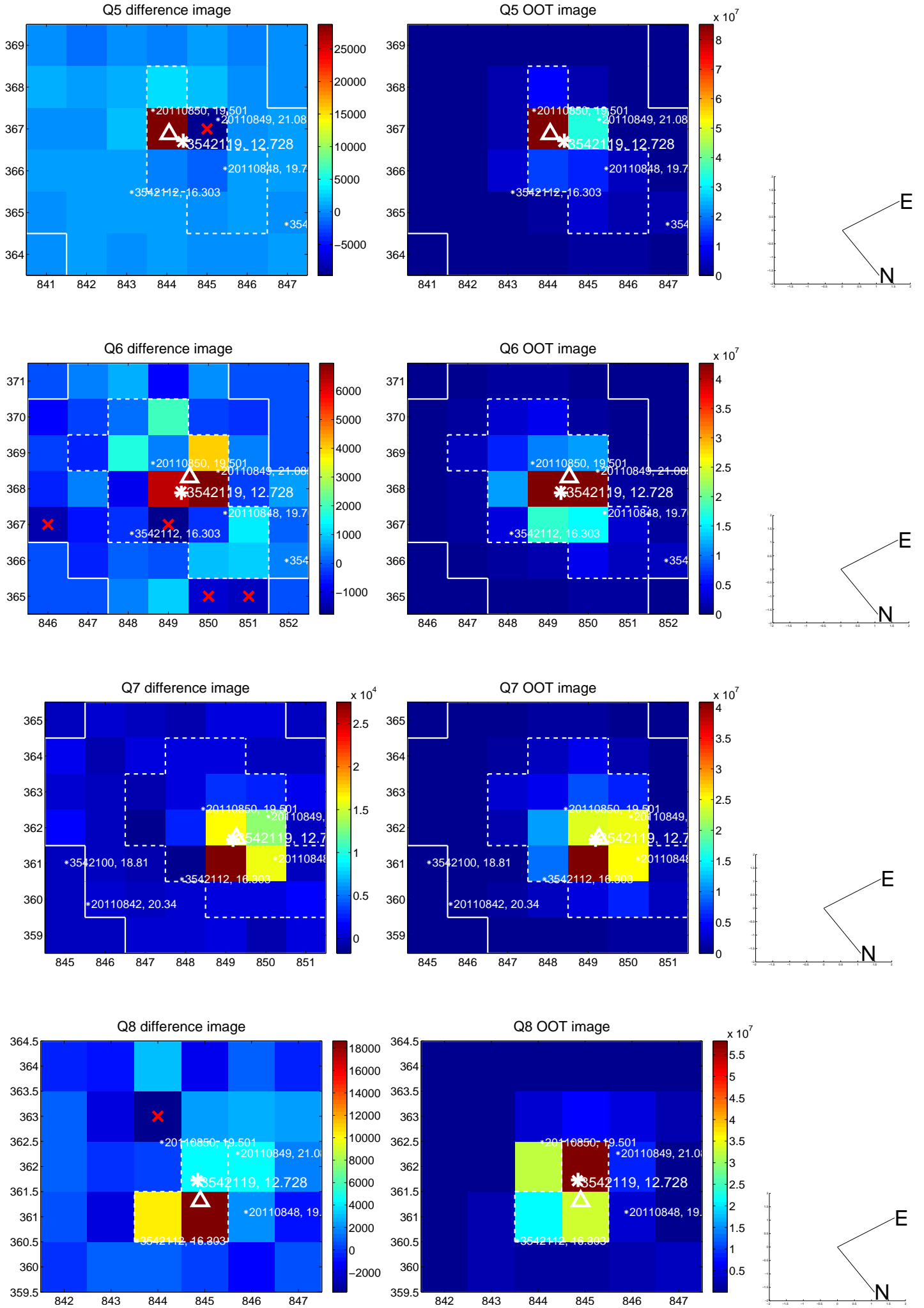


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

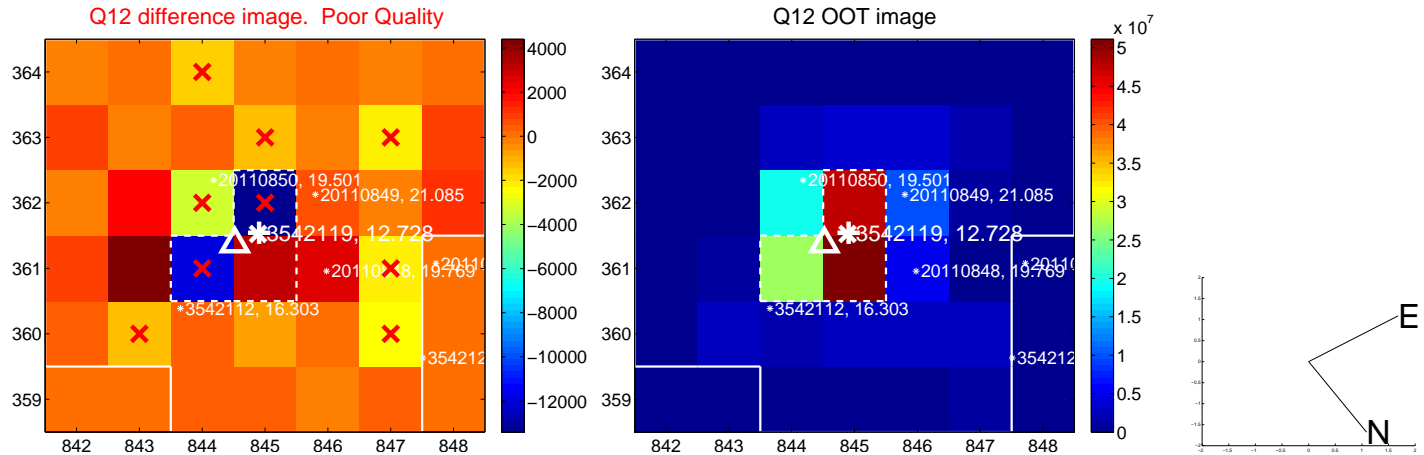
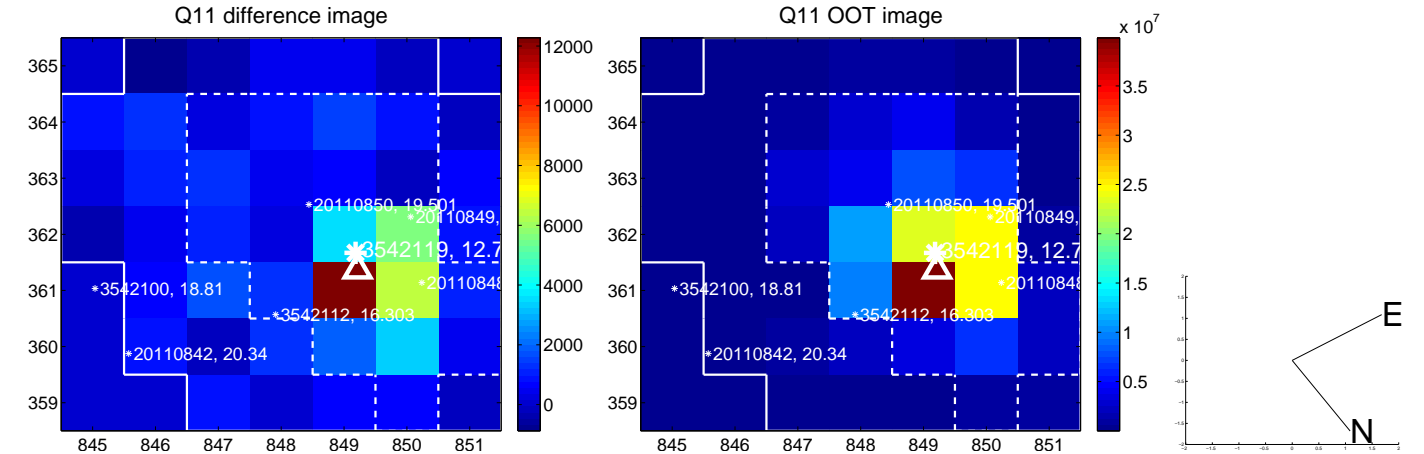
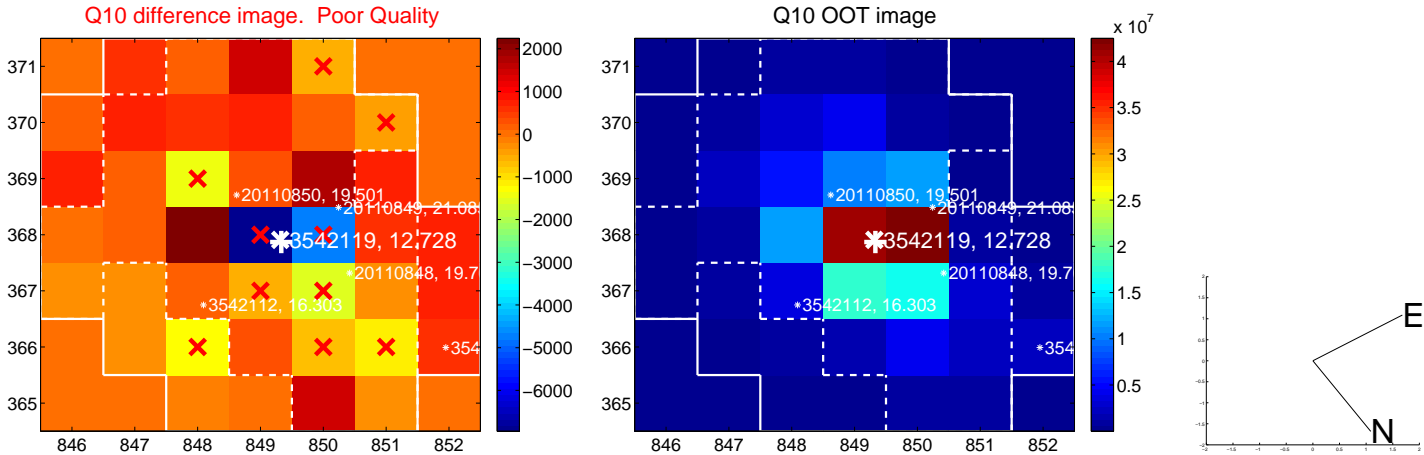
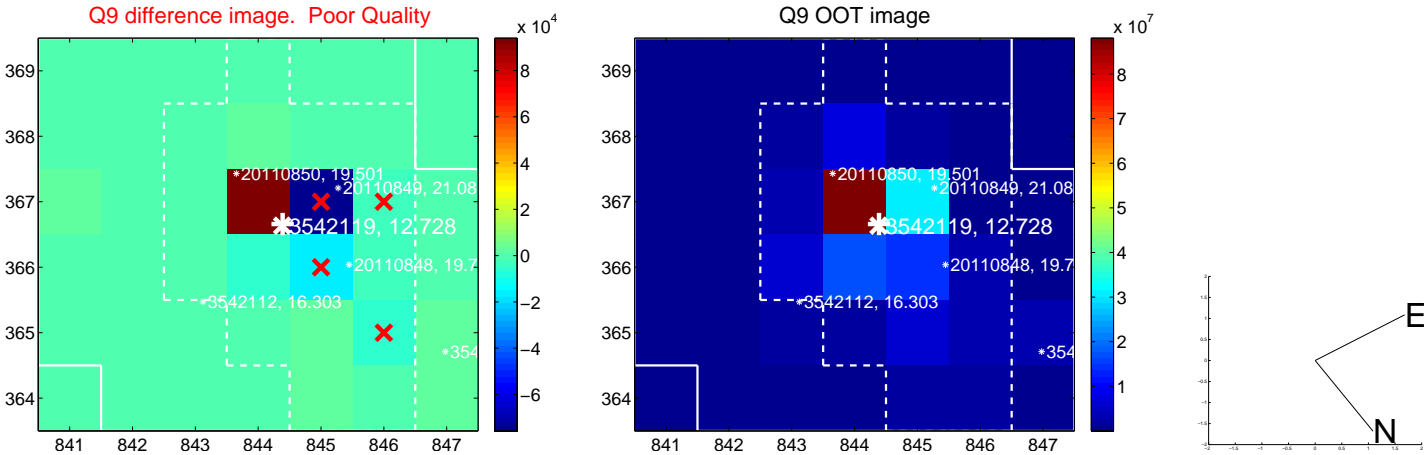
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



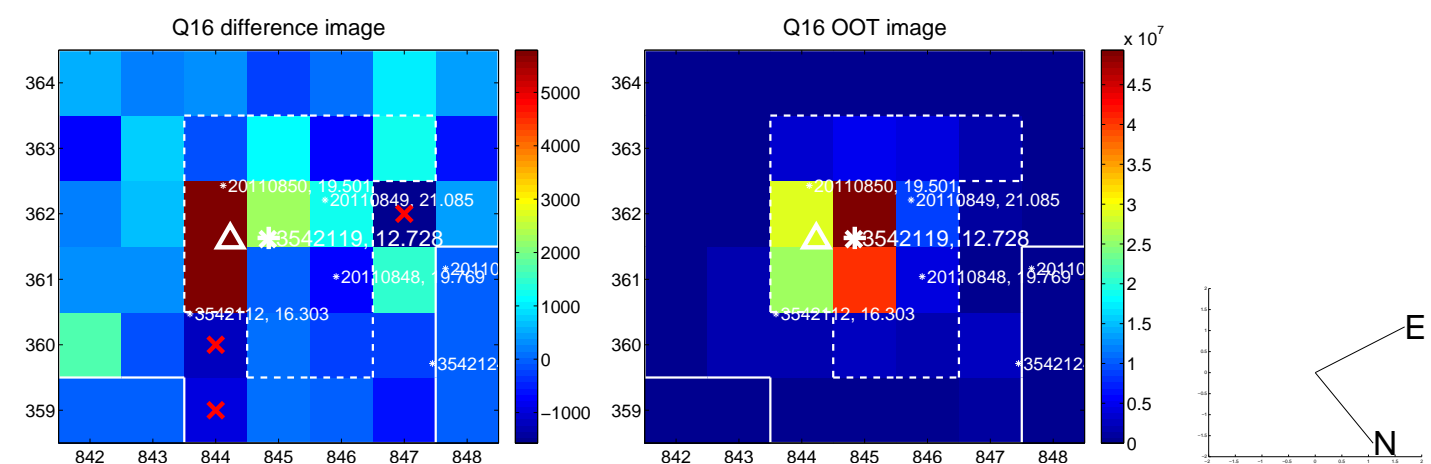
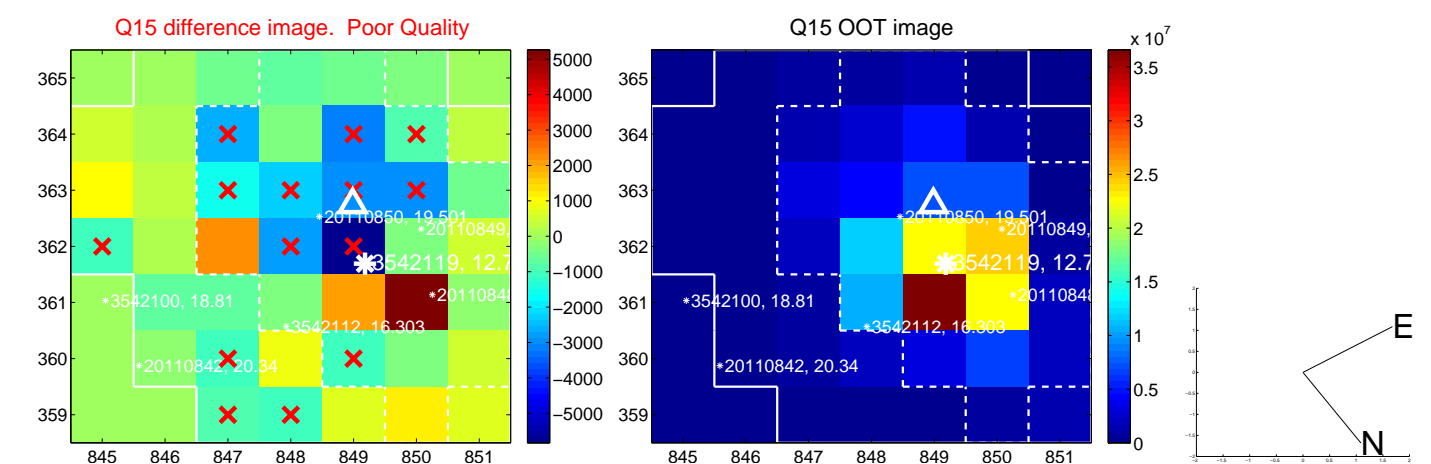
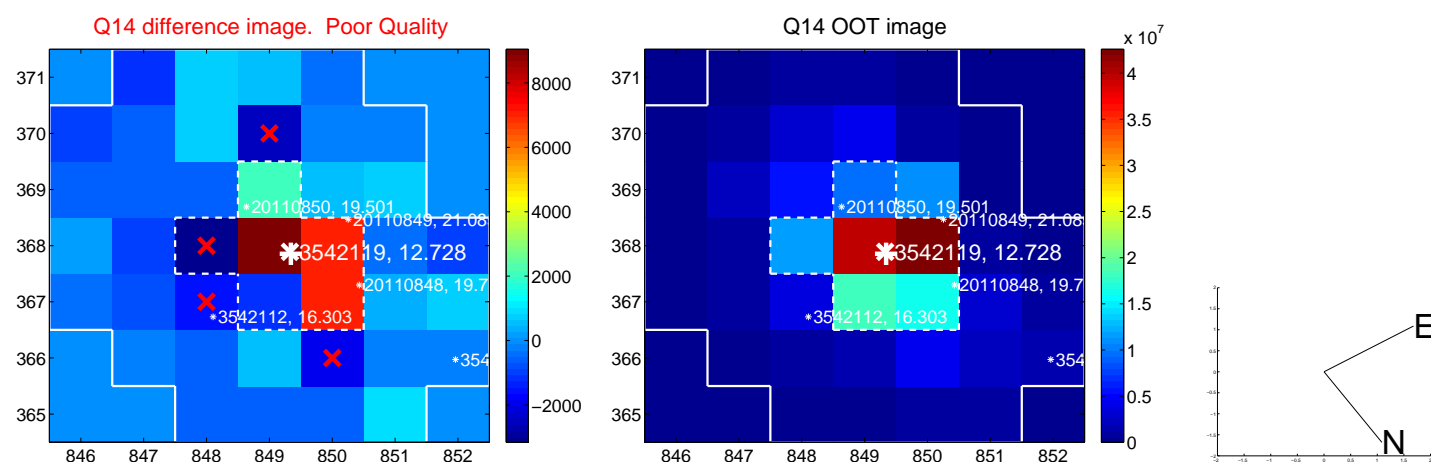
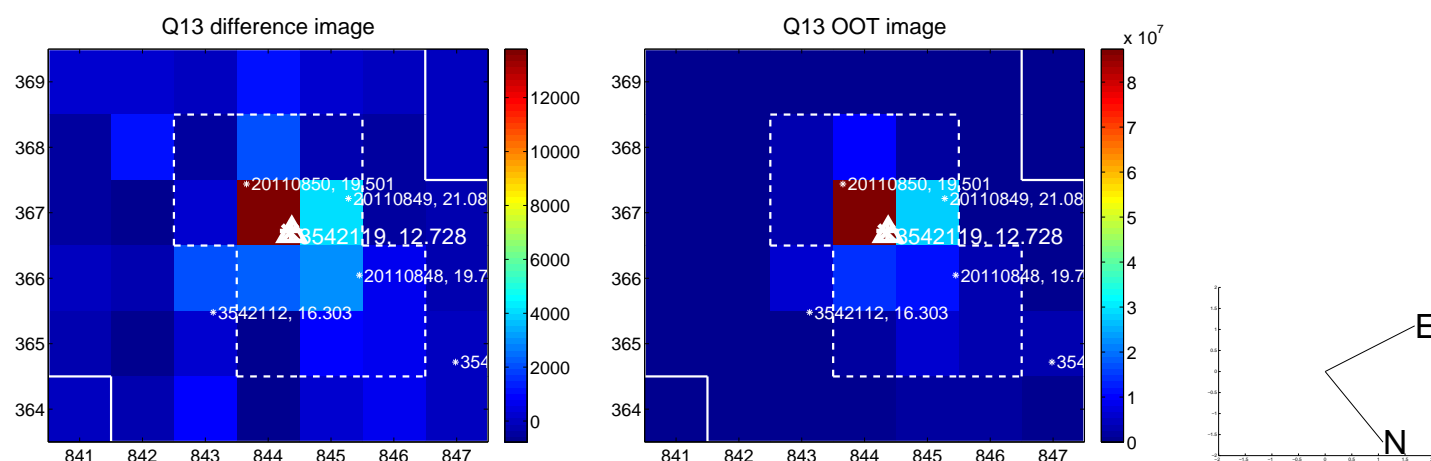
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



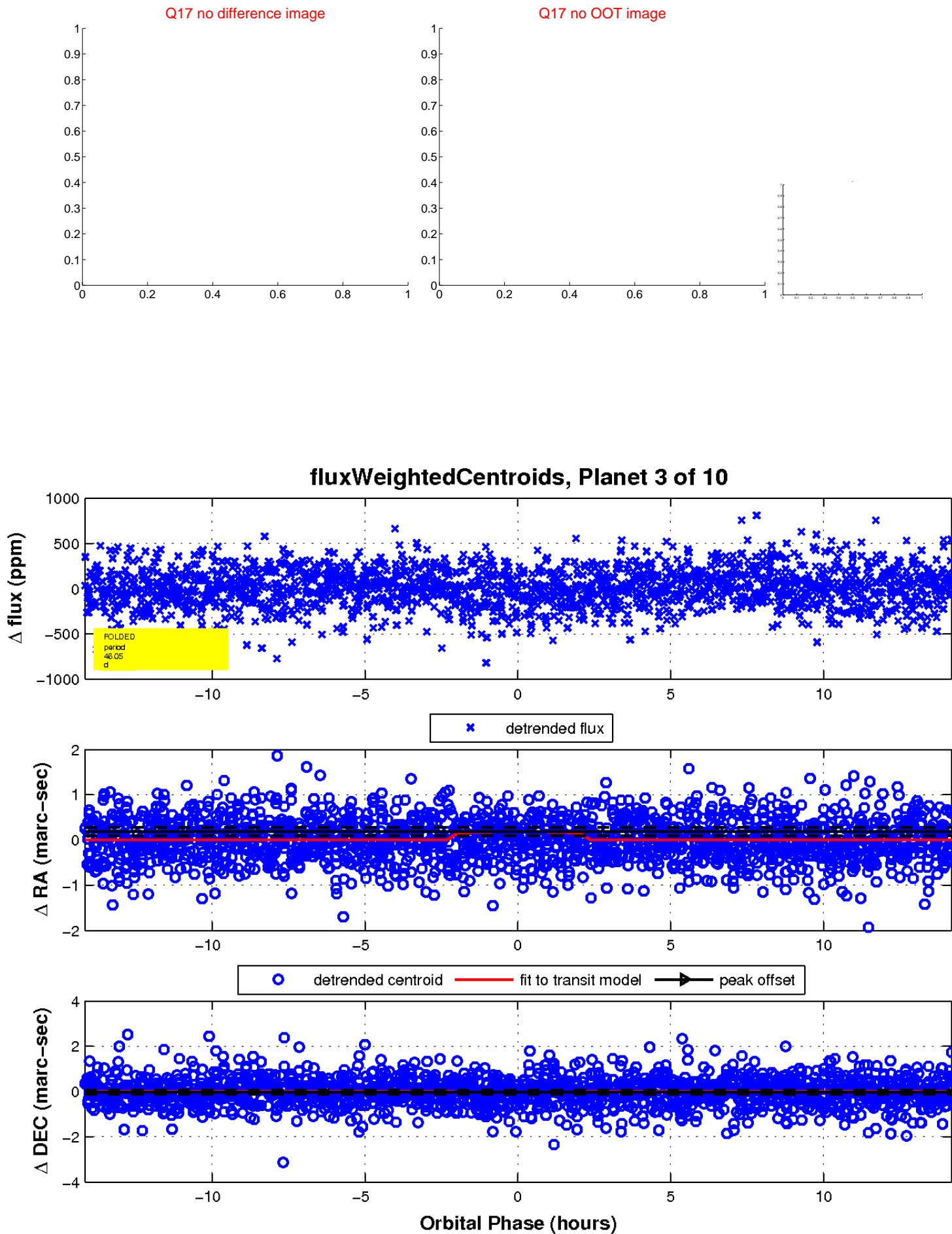
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



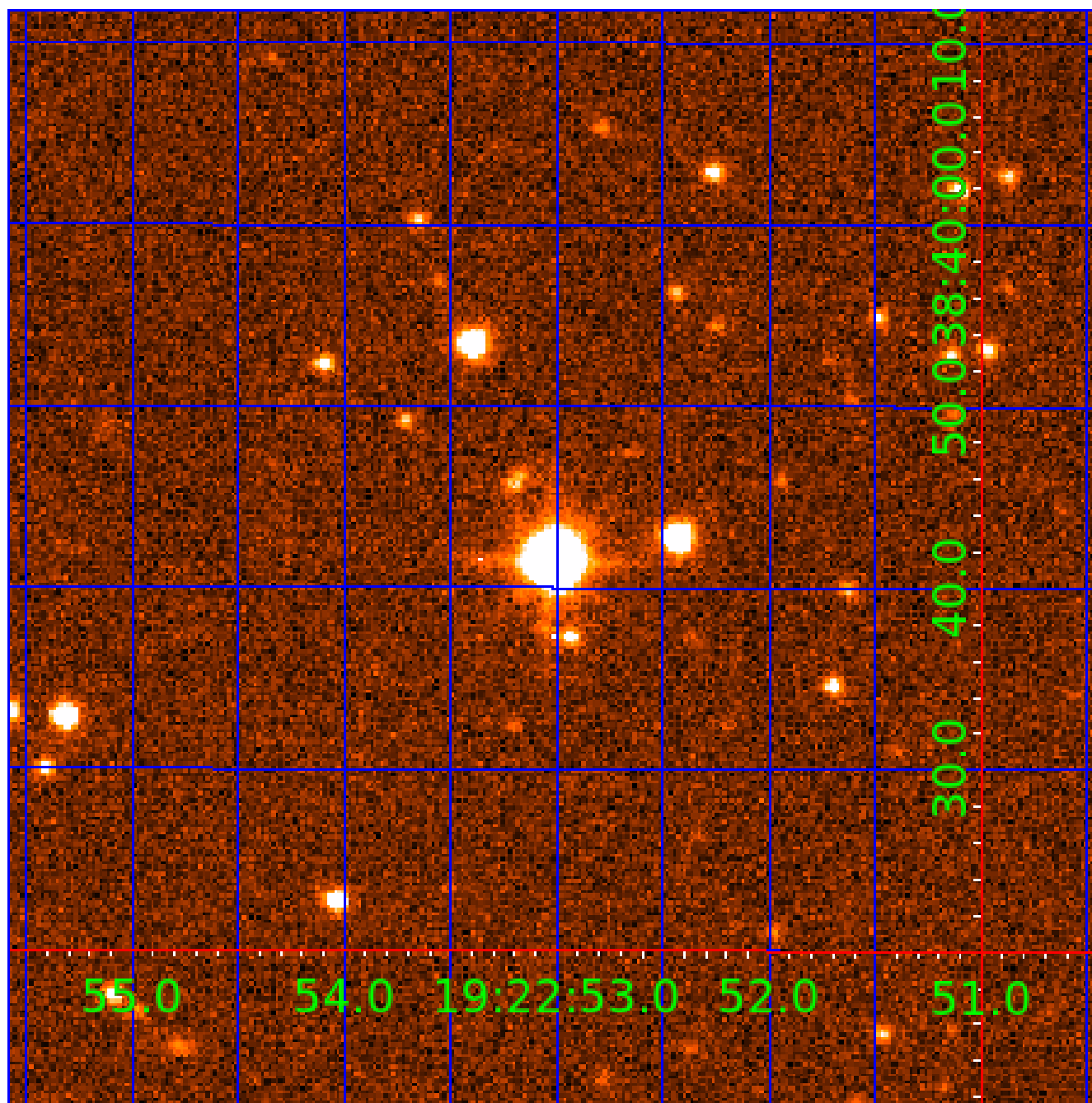
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image

Declination



## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003542119-01	OBS	No	2.201670	132.421943	16.8	11.223	9.5	4.9	4.12	6257	2.09	14506.69
003542119-02	OBS	No	177.830213	166.028806	348.6	3.155	9.8	8.1	4.12	6257	8.77	41.55
003542119-03	OBS	No	46.045765	160.209140	195.1	4.733	9.7	8.8	4.12	6257	6.73	251.76
003542119-04	OBS	No	161.792595	208.618920	119.2	13.018	9.4	4.1	4.12	6257	4.93	47.13
003542119-05	OBS	No	144.797709	136.024202	372.3	3.559	8.9	9.3	4.12	6257	9.30	54.65
003542119-06	OBS	No	405.130706	193.166102	270.1	7.652	8.7	6.0	4.12	6257	7.27	13.86
003542119-07	OBS	No	211.002675	175.479319	277.5	5.845	8.9	6.9	4.12	6257	7.39	33.08
003542119-08	OBS	No	155.456868	215.297961	265.2	7.935	8.7	8.0	4.12	6257	7.38	49.71
003542119-09	OBS	No	106.310124	190.178583	229.9	7.393	8.0	7.4	4.12	6257	6.90	82.50
003542119-10	OBS	No	79.537459	169.217320	368.5	1.912	7.9	7.7	4.12	6257	8.72	121.47

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003542119-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003542119-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003542119-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT
003542119-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003542119-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003542119-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003542119-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
003542119-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS
003542119-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003542119-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

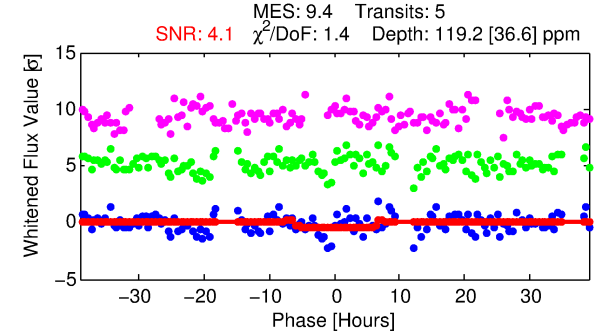
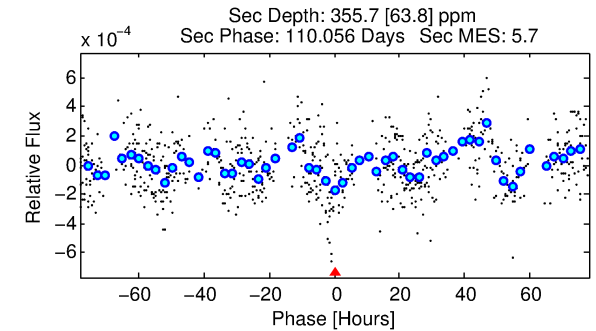
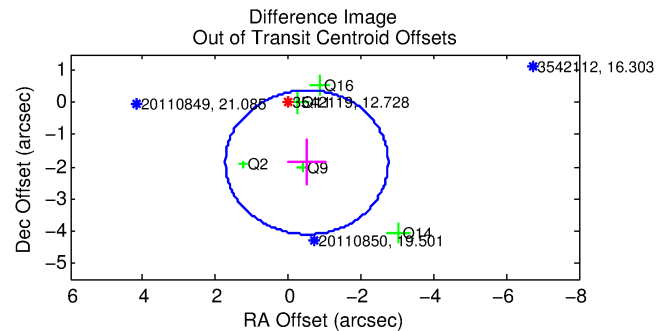
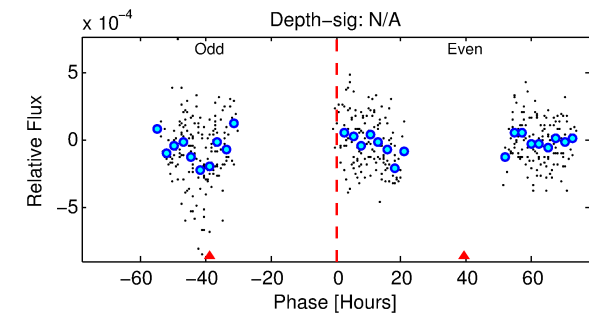
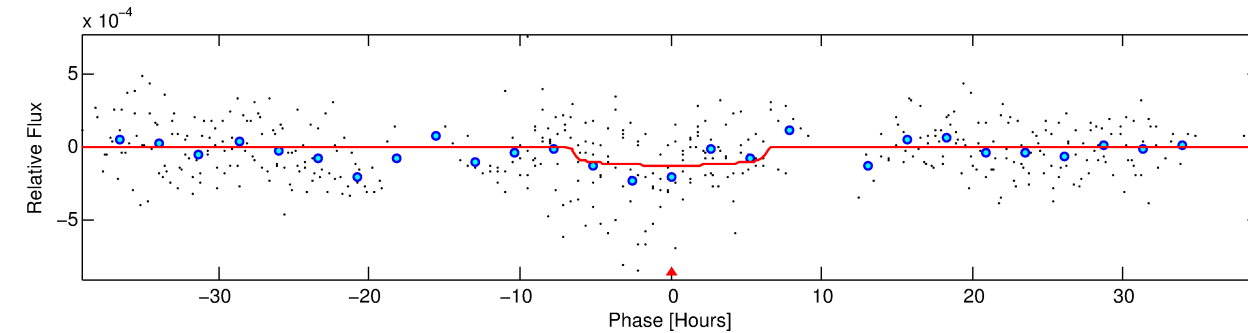
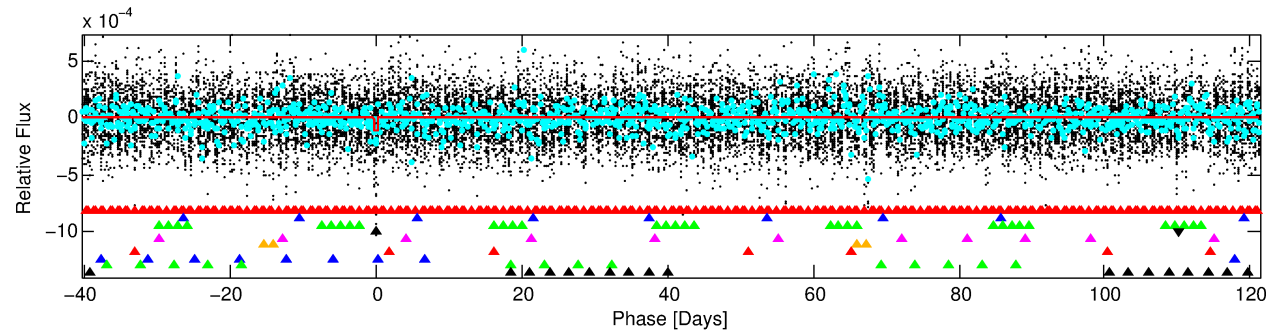
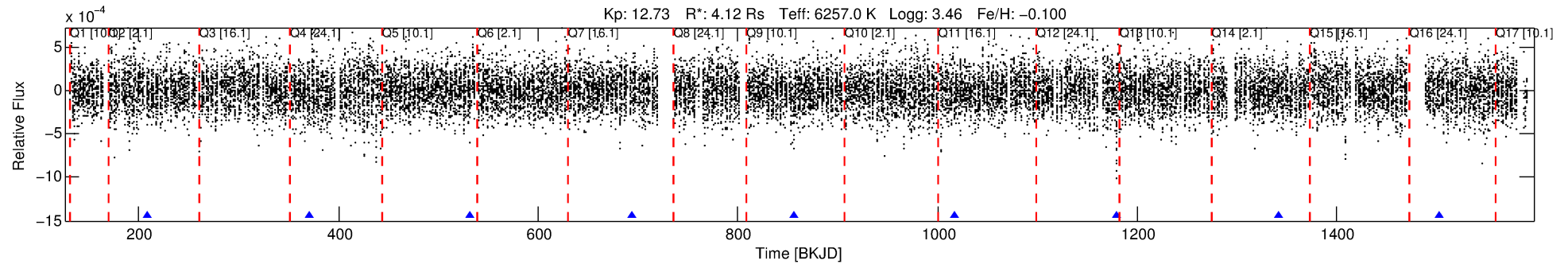
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 003542119-04

No Significant Match Found

# DV One-Page Summary

KIC: 3542119 Candidate: 4 of 10 Period: 161.793 d



## DV Fit Results:

Period = 161.79260 [0.00891] d  
Epoch = 208.6189 [0.0487] BKJD  
Rp/R\* = 0.0110 [0.0054]  
a/R\* = 61.65 [151.73]  
b = 0.77 [1.27]  
Seff = 47.13 [31.18]  
Teq = 668 [111] K  
Rp = 4.93 [3.17] Re  
a = 0.7040 [0.2838] AU  
Ag = 3989.92 [4762.01] [0.84σ]  
Teffp = 8210 [2069] K [3.64σ]

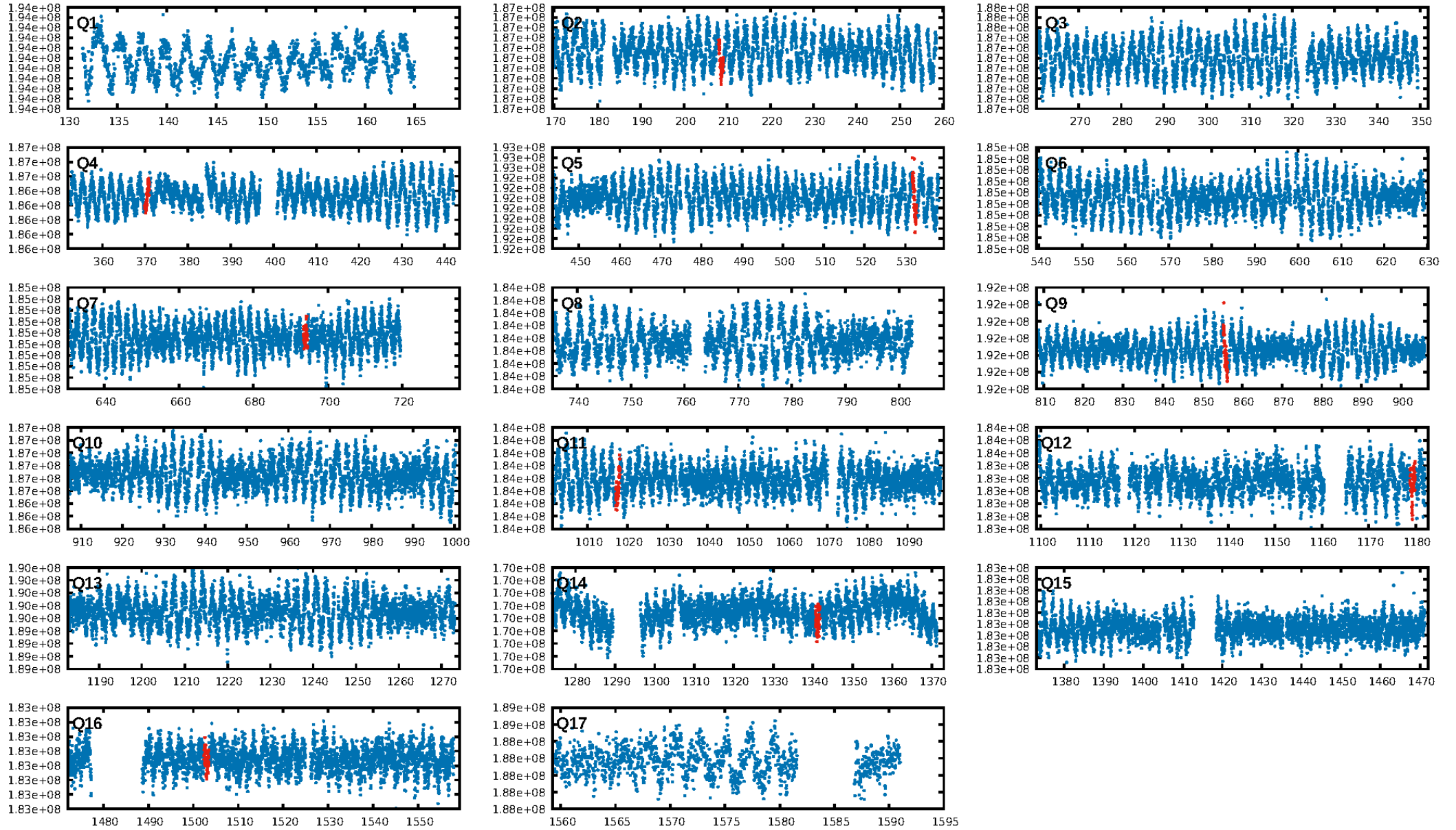
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [9.97σ]  
LongPeriod-sig: 100.0% [28.74σ]  
ModelChiSquare2-sig: 8.9%  
ModelChiSquareGof-sig: 74.7%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 3.104  
Centroid-sig: 73.2%  
Centroid-so: 0.587 arcsec [0.56σ]  
OotOffset-rm: 1.934 arcsec [2.59σ]  
KicOffset-rm: 1.895 arcsec [3.21σ]  
OotOffset-st: 2/1/1/1 [5]  
KicOffset-st: 2/1/1/1 [5]  
DiffImageQuality-fgm: 0.80 [4/5]  
DiffImageOverlap-fno: 0.00 [0/8]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:15:47 Z

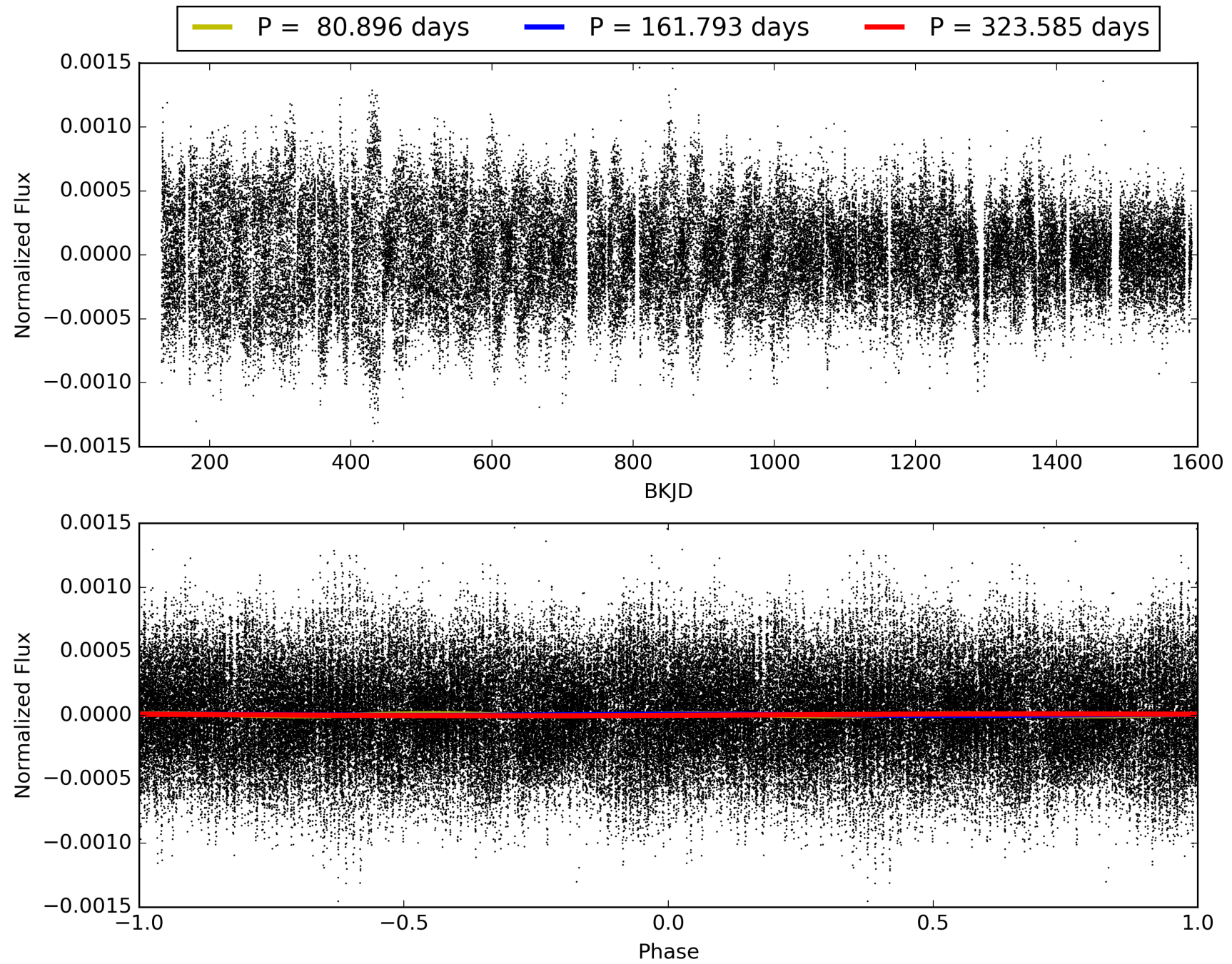
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003542119-04, PDC Light Curves



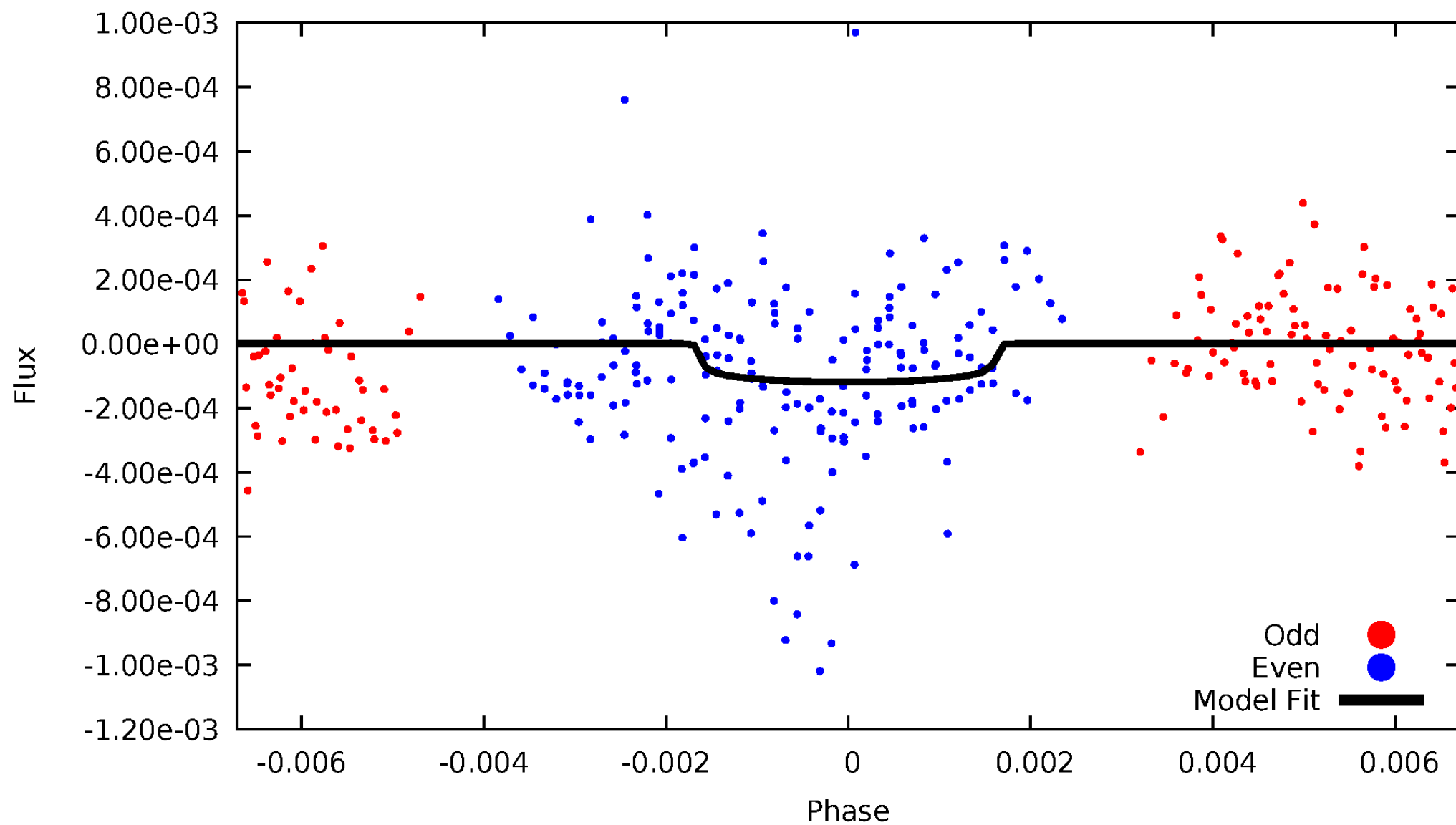


TCE 003542119-04



# DV Odd/Even

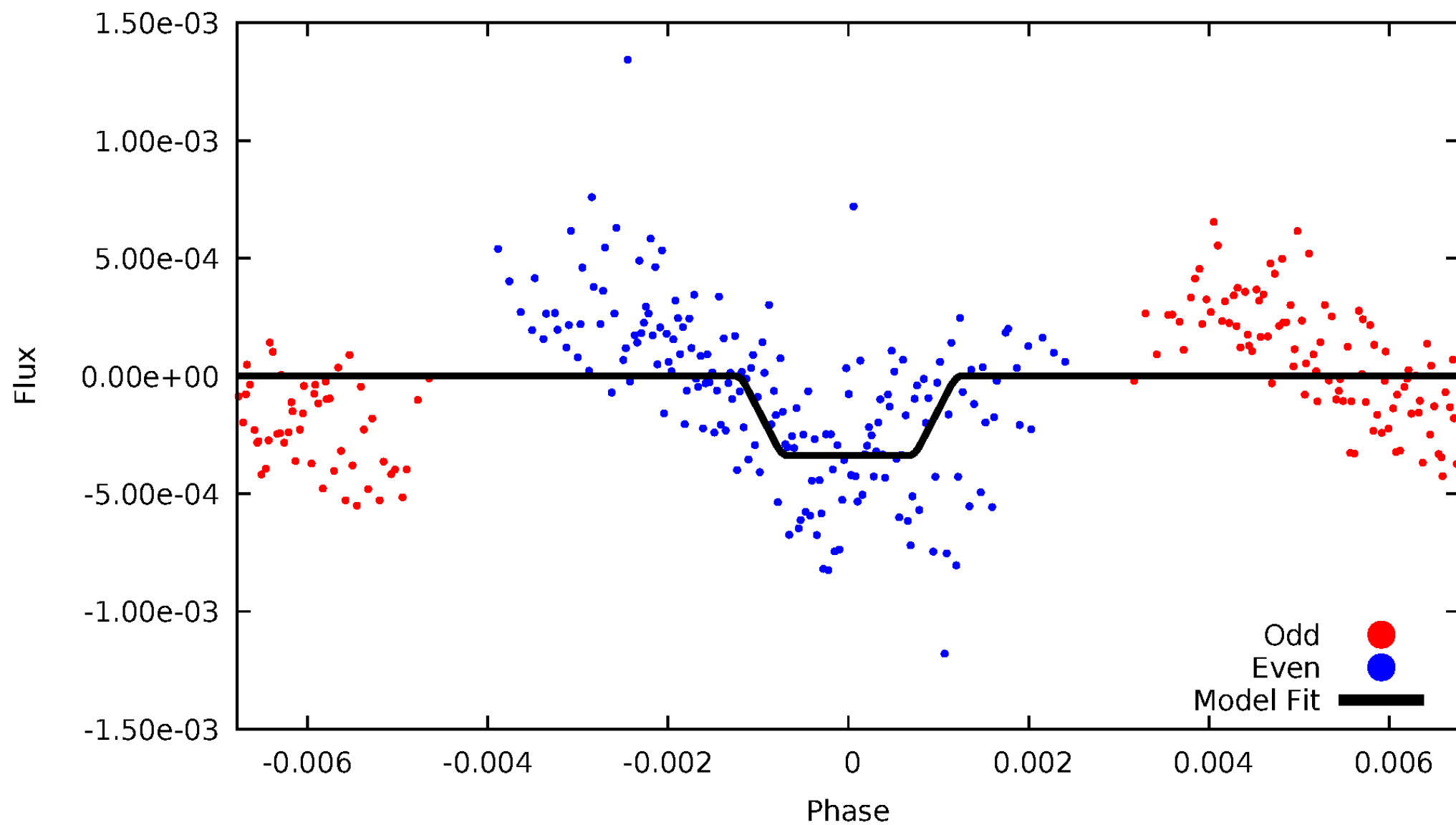
TCE 003542119-04





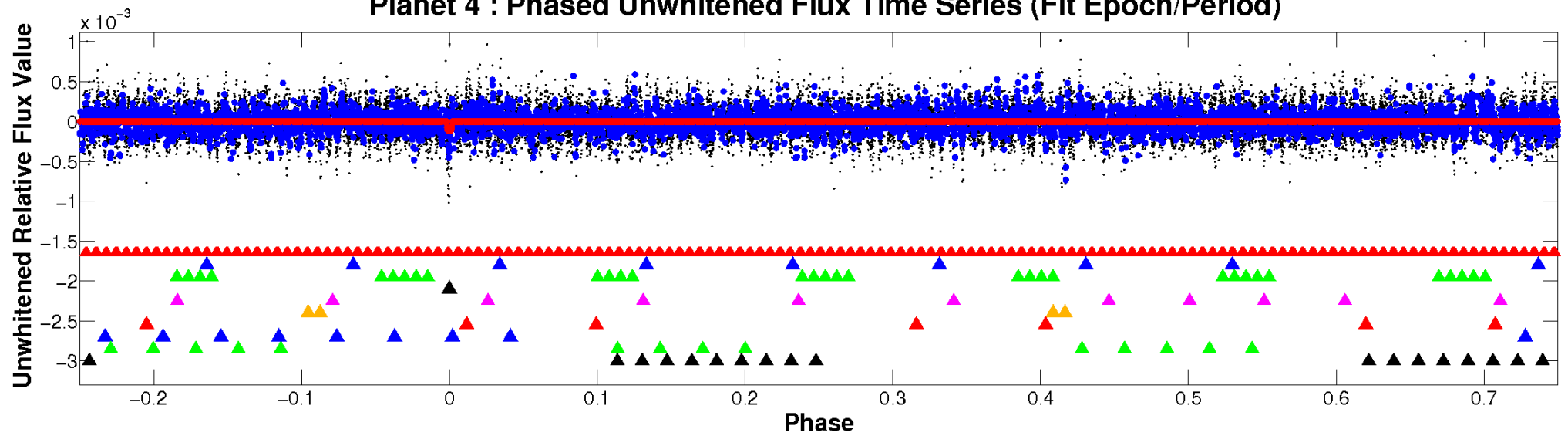
# ALT Odd/Even

TCE 003542119-04

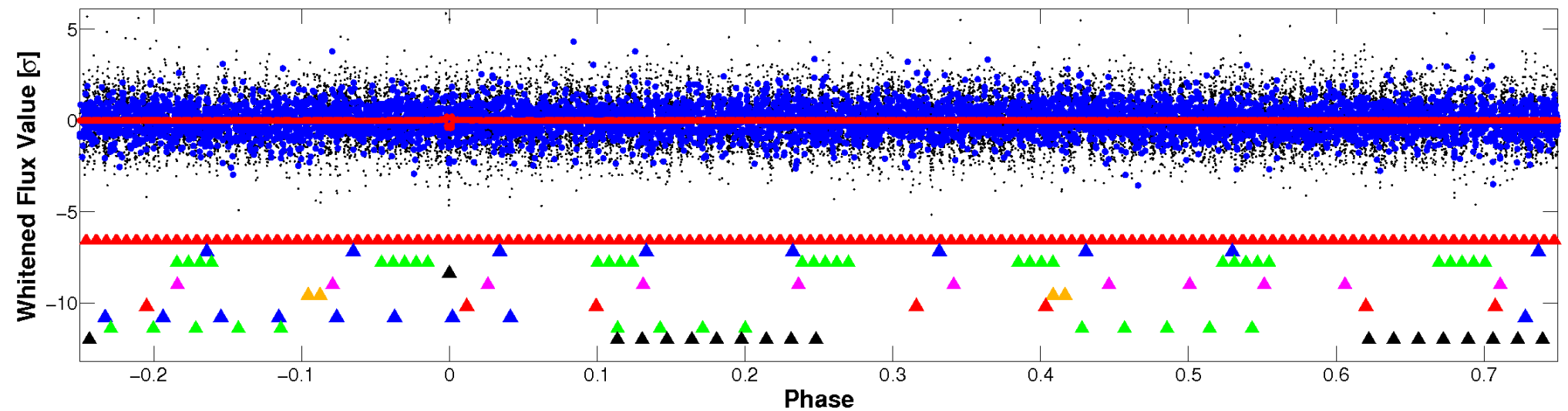


# Non-Whitened Vs. Whitened Light Curve

## Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

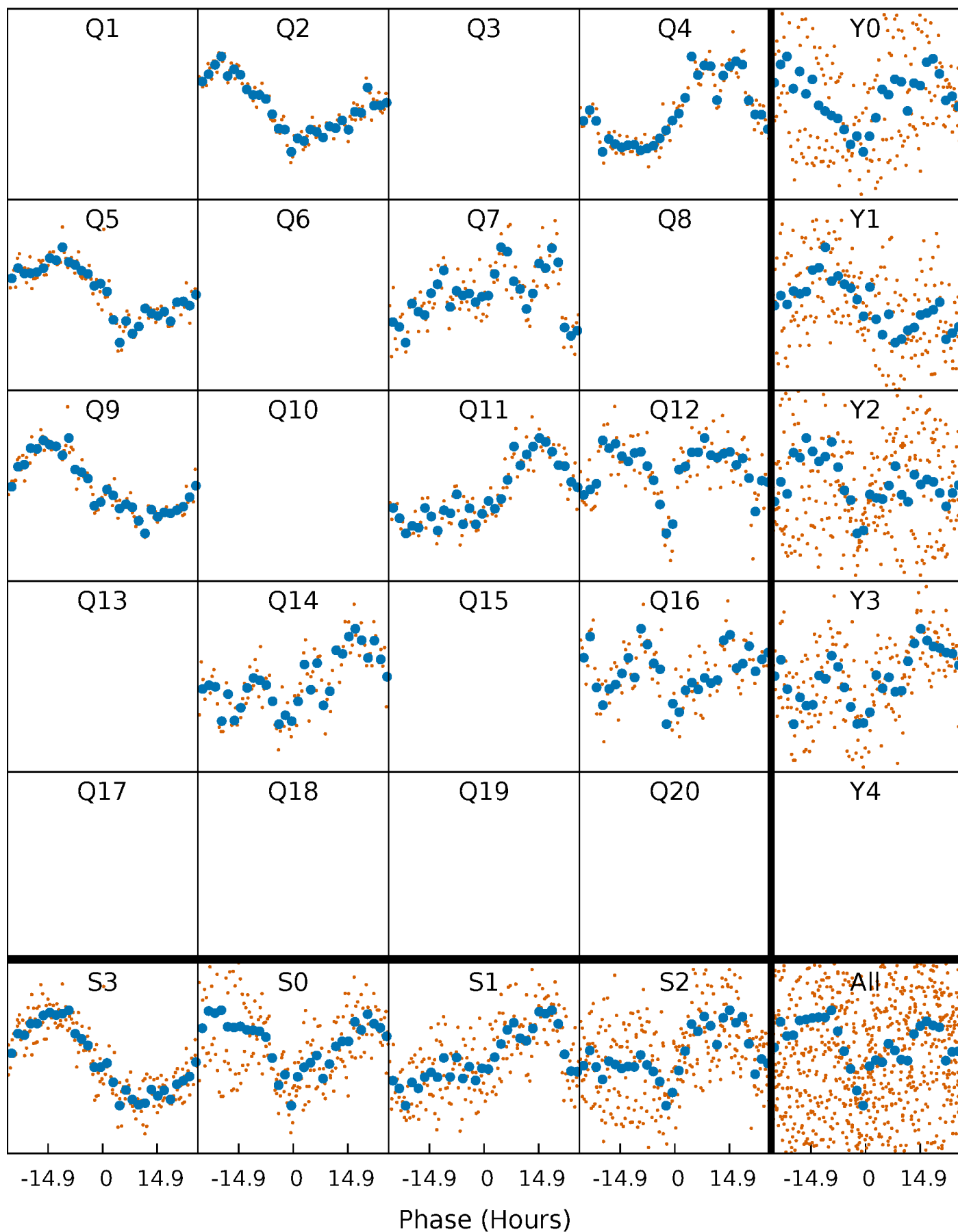


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



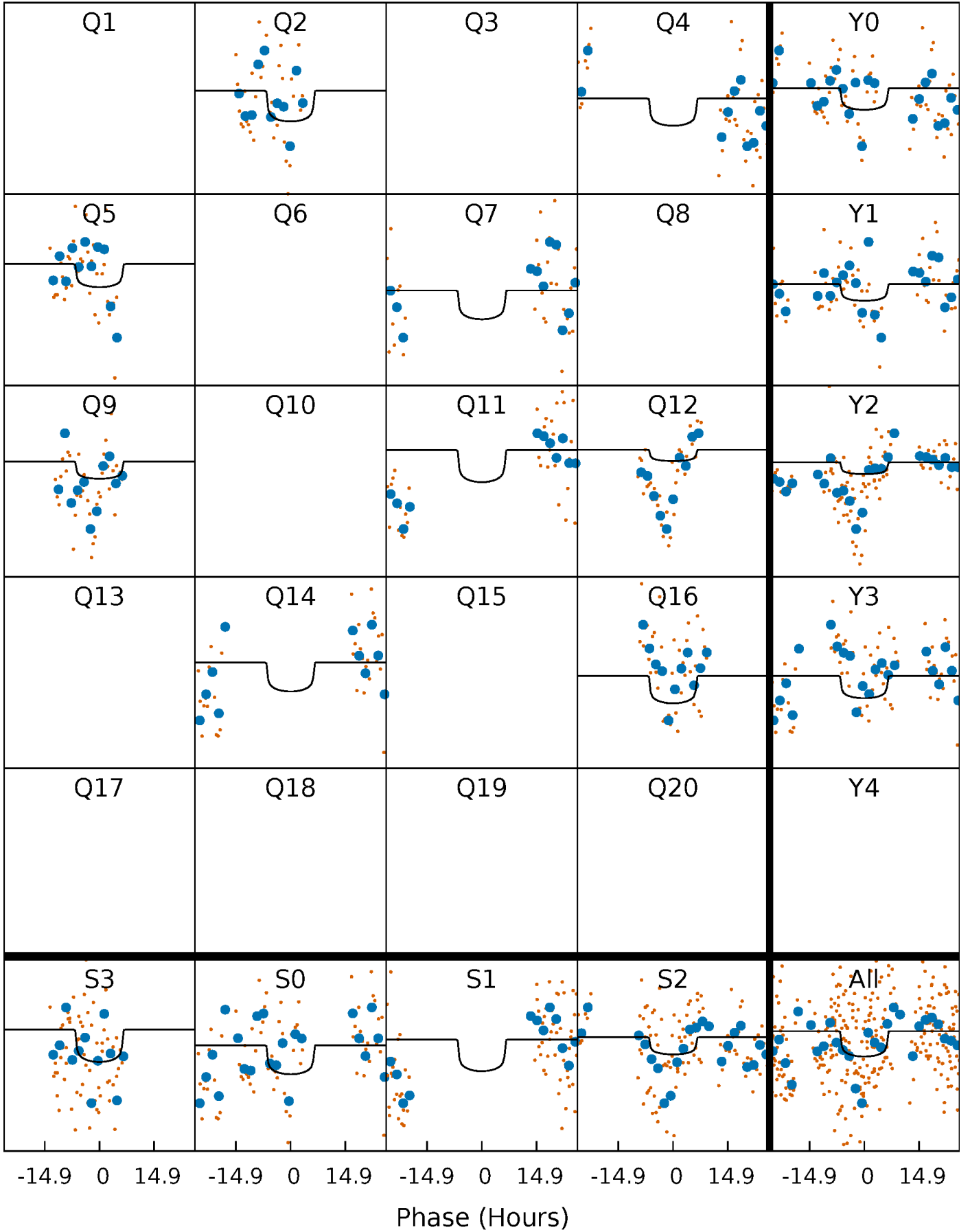
# PDC Quarter-Phased Transit Curves

TCE 003542119-04 P=161.792595 Days  $T_0=208.618920$  (BKJD)



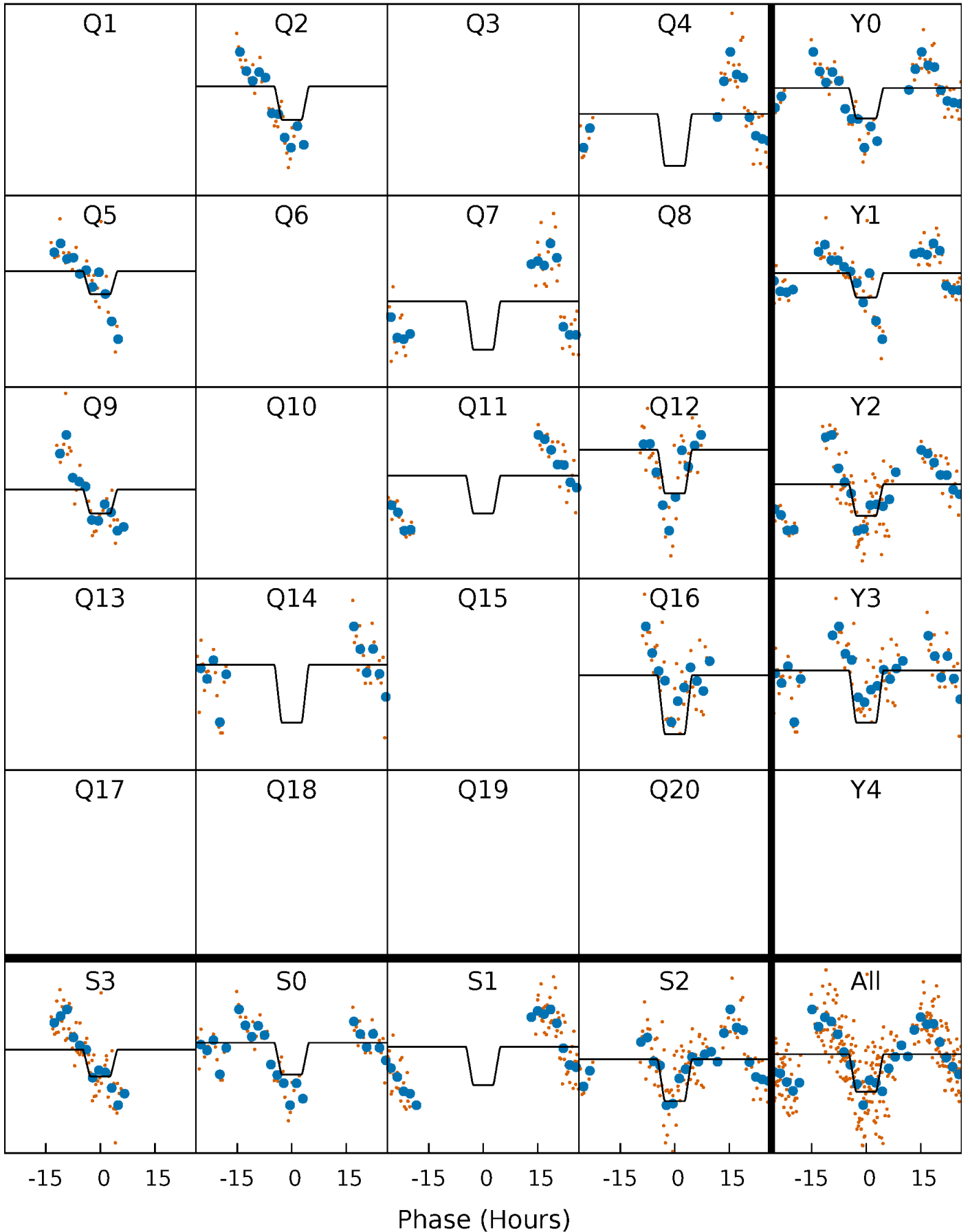
# DV Quarter-Phased Transit Curves

TCE 003542119-04 P=161.792595 Days  $T_0=208.618920$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

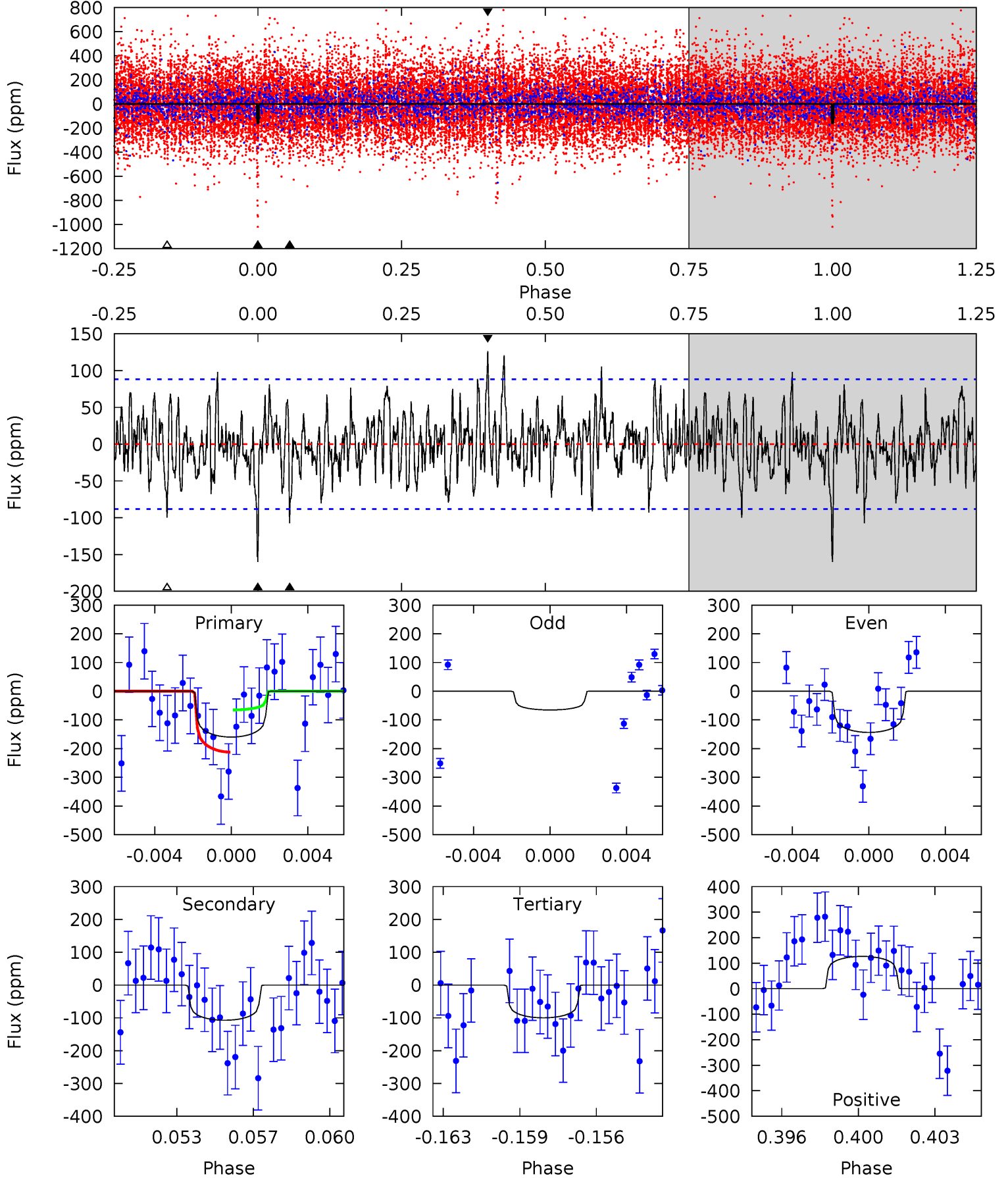
TCE 003542119-04 P=161.790420 Days  $T_0=208.626421$  (BKJD)



# DV Model-Shift Uniqueness Test

003542119-04, P = 161.792595 Days, E = 46.826325 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
9.45	6.34	5.91	7.48	5.22	2.92	1.95	3.55	1.97	0.44	-1.13	2.57	2.24	0.44	4.30

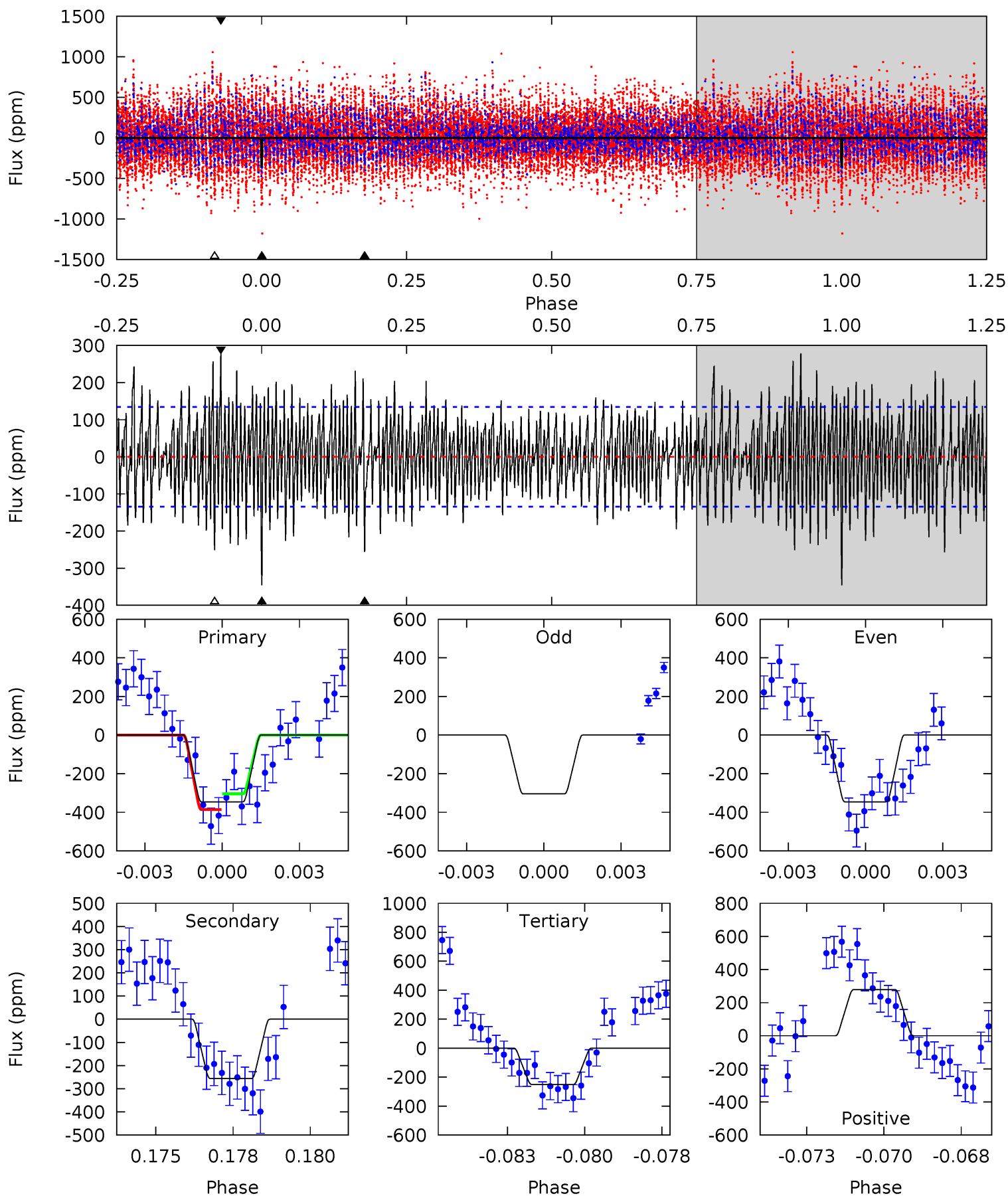




# Alt Model-Shift Uniqueness Test

003542119-04, P = 161.790420 Days, E = 46.836001 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
13.6	10.1	9.88	11.0	5.29	3.02	3.47	3.73	2.64	0.20	-0.89	0.93	0.94	0.45	1.60



### Stellar Parameters For KIC 003542119

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6257^{+189}_{-151}$	$3.457^{+0.384}_{-0.096}$	$-0.100^{+0.350}_{-0.300}$	$4.124^{+0.608}_{-1.701}$	$1.777^{+0.178}_{-0.415}$	$0.036^{+0.119}_{-0.011}$
	+3%/-2%	+11%/-3%	+350%/-300%	+15%/-41%	+10%/-23%	+333%/-31%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 003542119-04 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-107 \pm 17$	$4.49^{+2.63}_{-2.16}$	$914^{+60}_{-97}$	$6110^{+2816}_{-1130}$	$1429^{+3800}_{-865}$
Alt.	$-256 \pm 25$	$7.57^{+2.62}_{-2.48}$	$915^{+54}_{-93}$	$5867^{+1154}_{-696}$	$1216^{+1458}_{-562}$

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

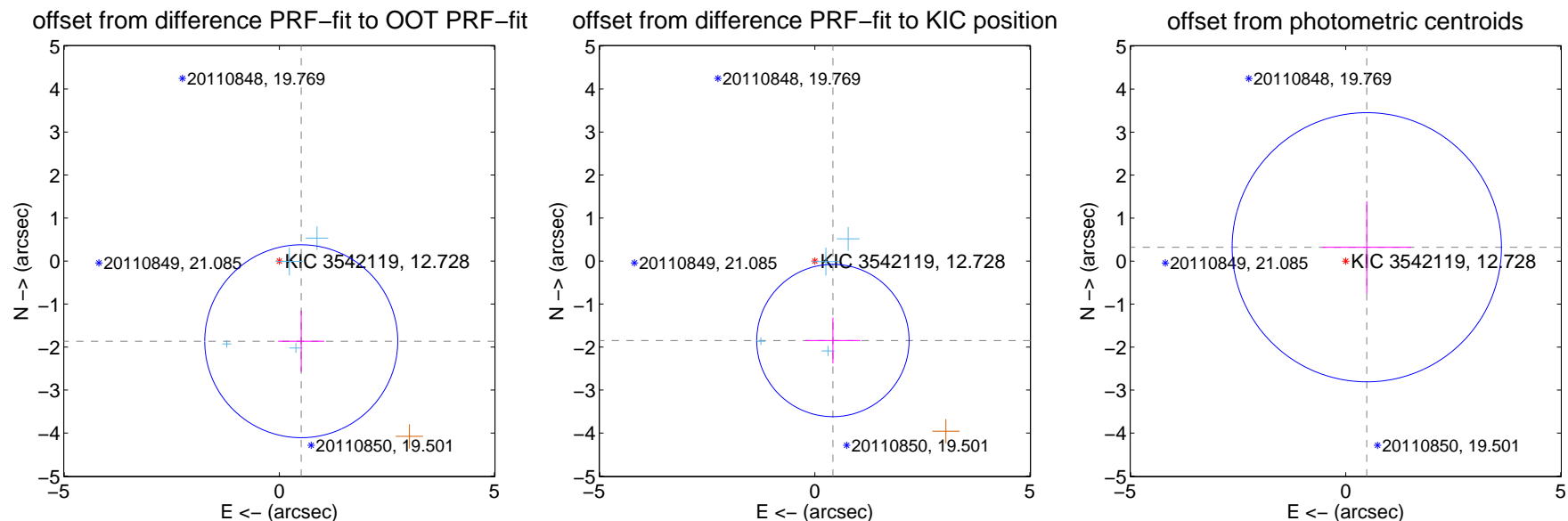
## DV Centroid Data

Supplemental centroid analysis for 003542119-04. Kepler magnitude: 12.73. Transit SNR 4.11

There are 4 quarters with good PRF difference image offsets

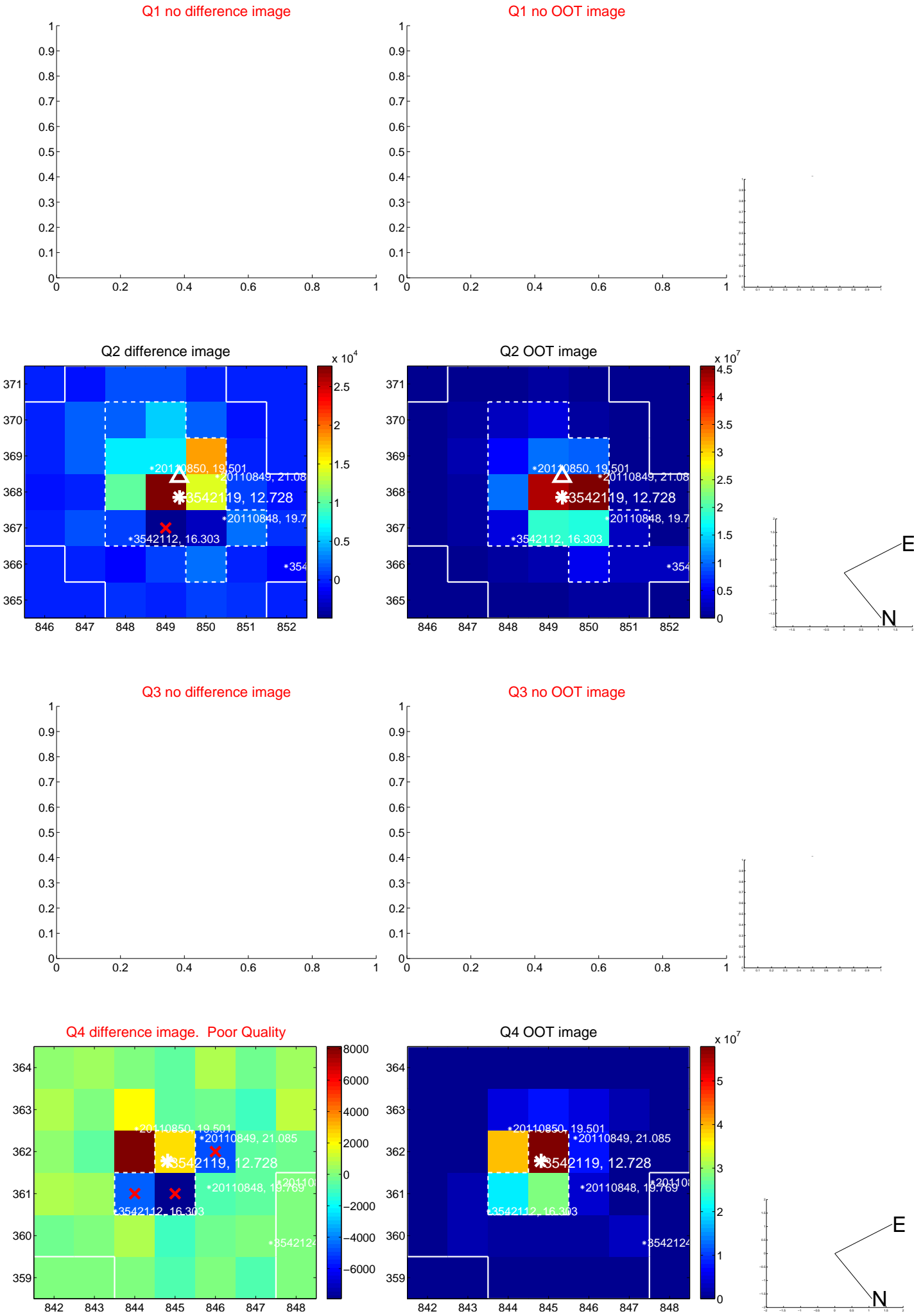
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.934 \pm 0.748$	2.59	$-0.510 \pm 0.536$	$-1.865 \pm 0.711$
PRF-fit source offset from KIC position	$1.895 \pm 0.590$	3.21	$-0.421 \pm 0.639$	$-1.848 \pm 0.533$
photometric centroid source offset	$0.59 \pm 1.04$	0.56	$-0.49 \pm 1.03$	$0.32 \pm 1.07$

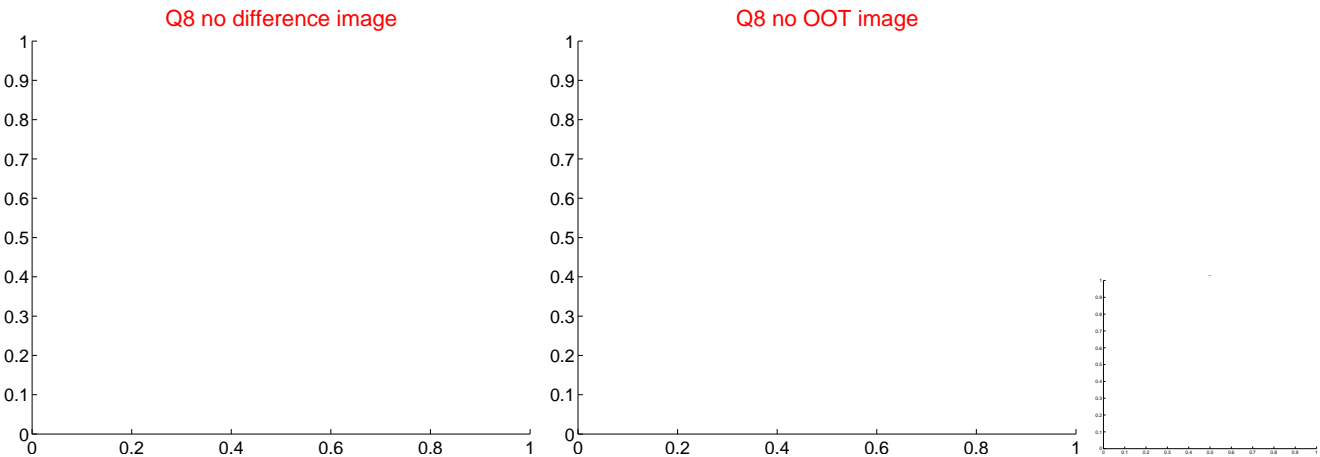
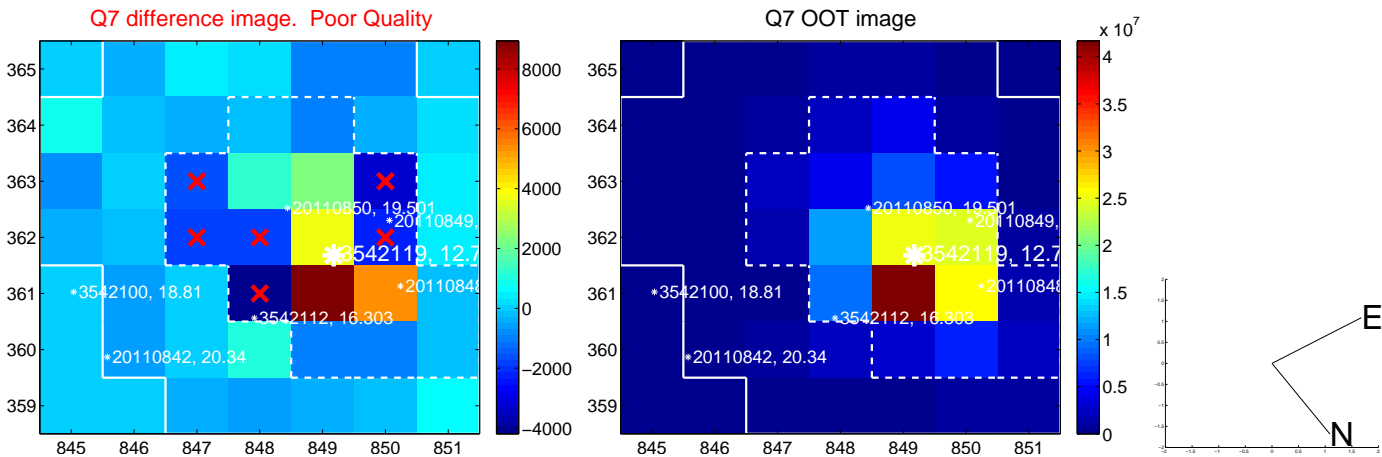
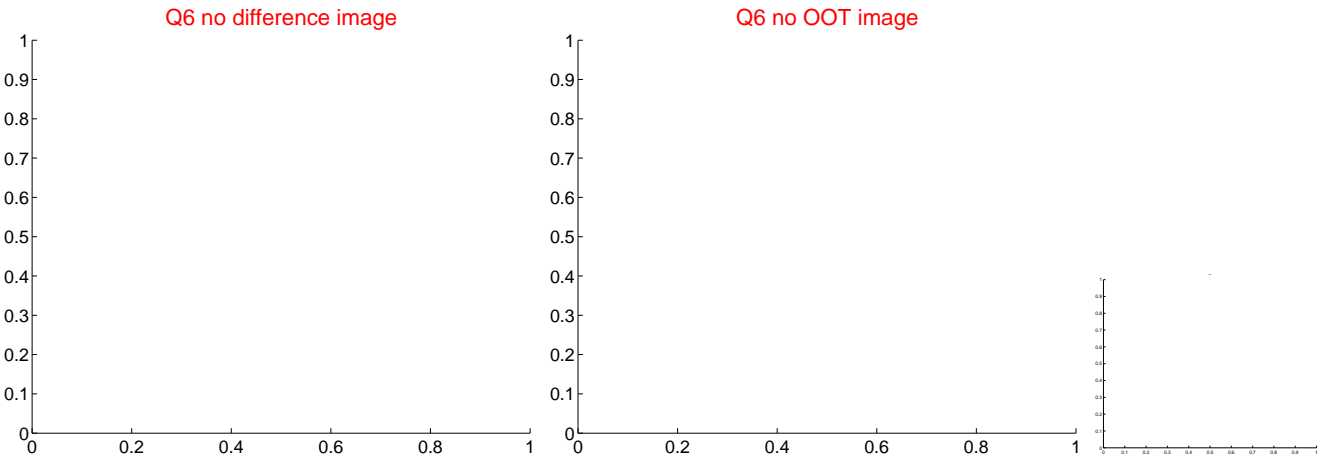
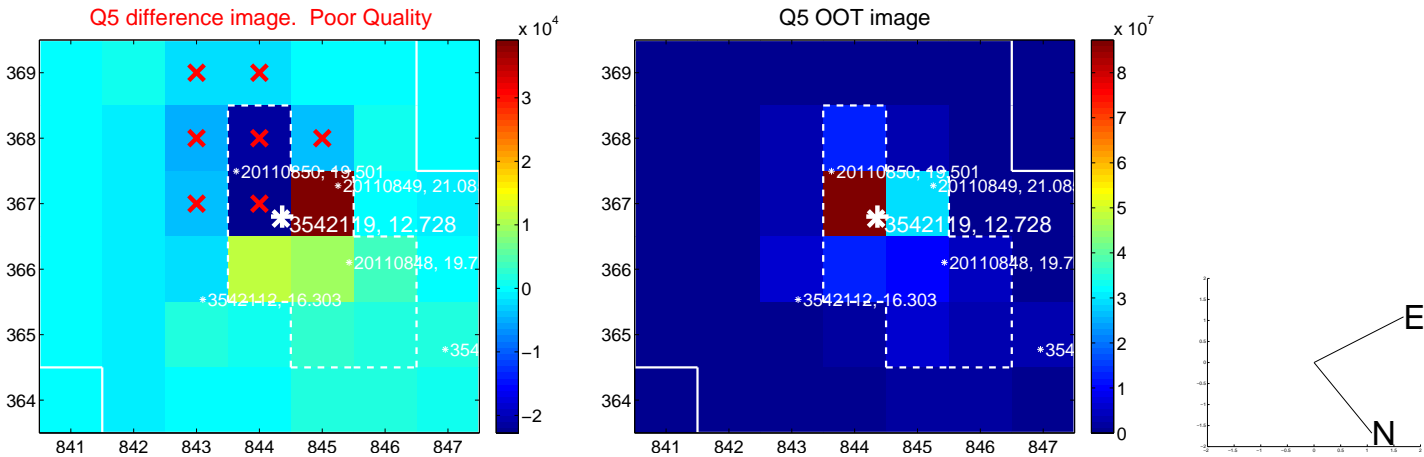


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

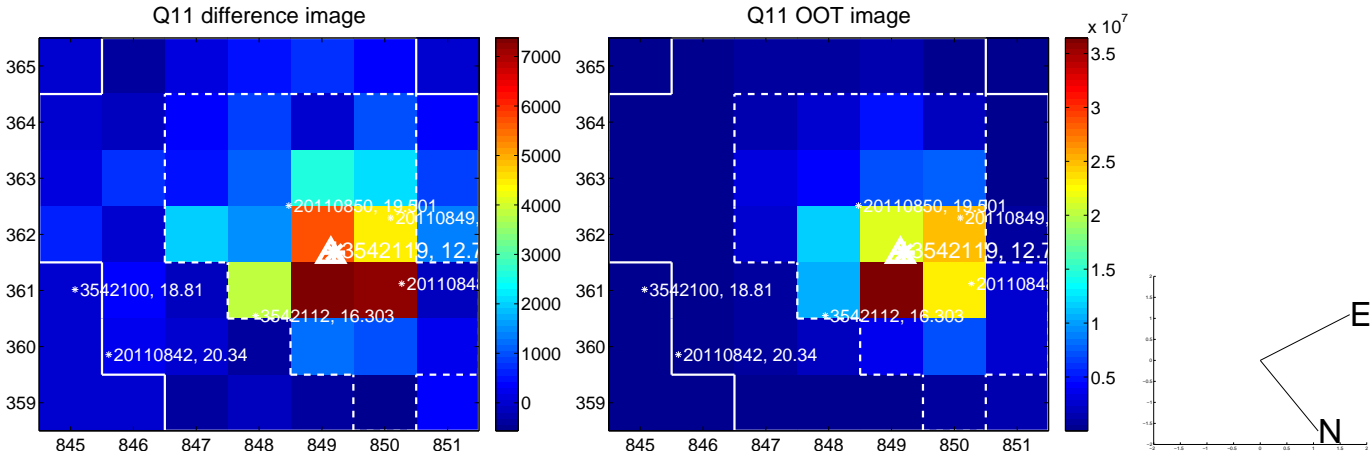
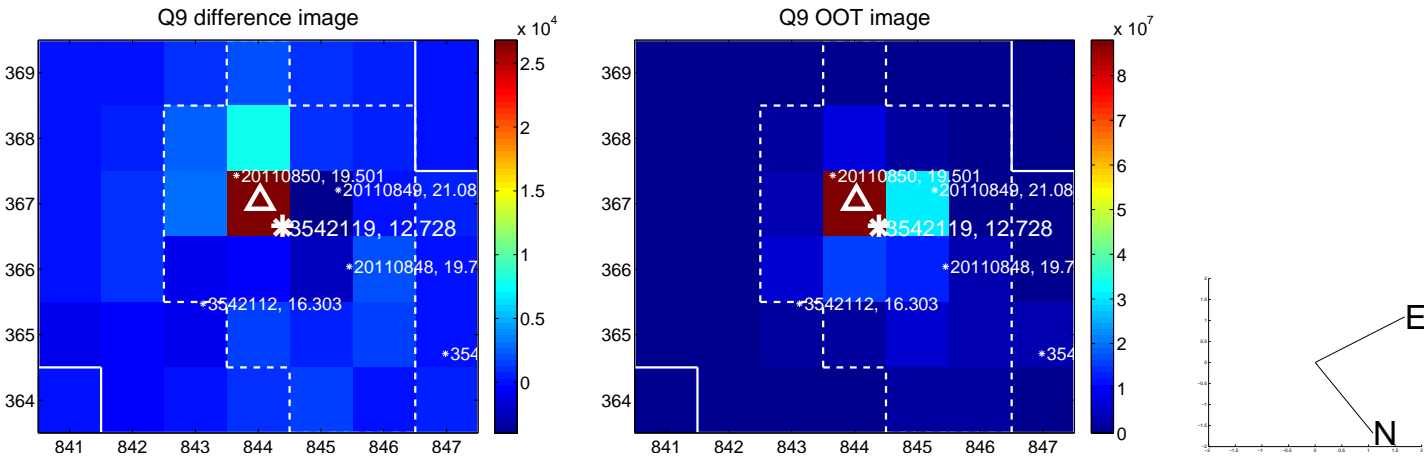
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



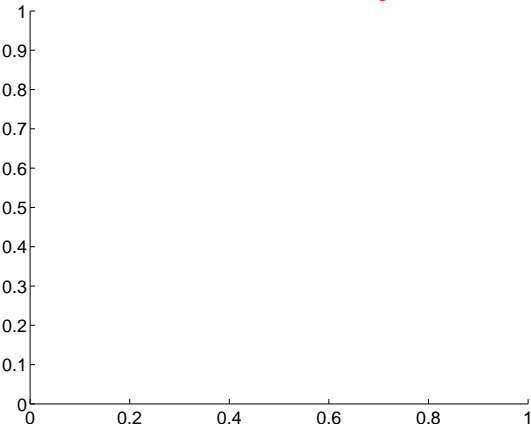
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



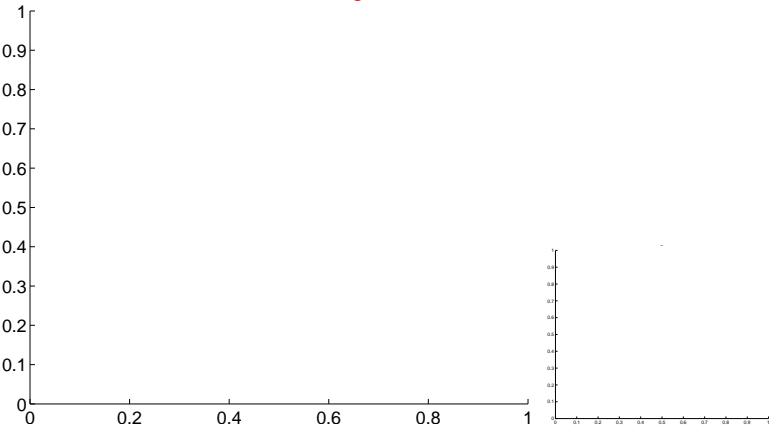


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

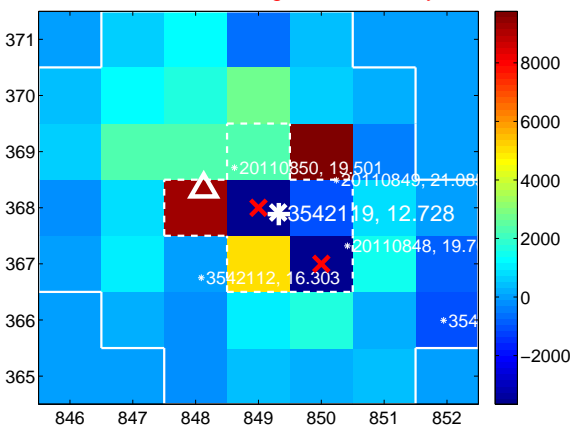
Q13 no difference image



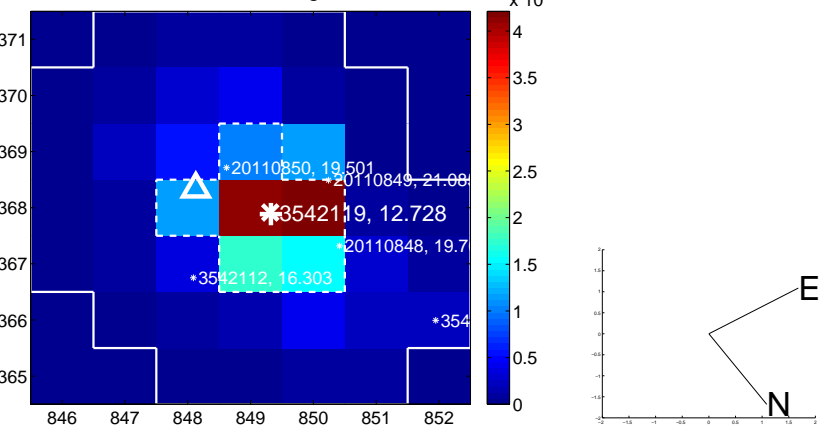
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



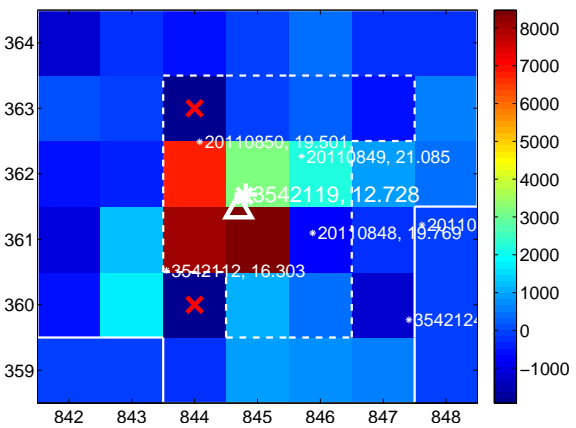
Q15 no difference image



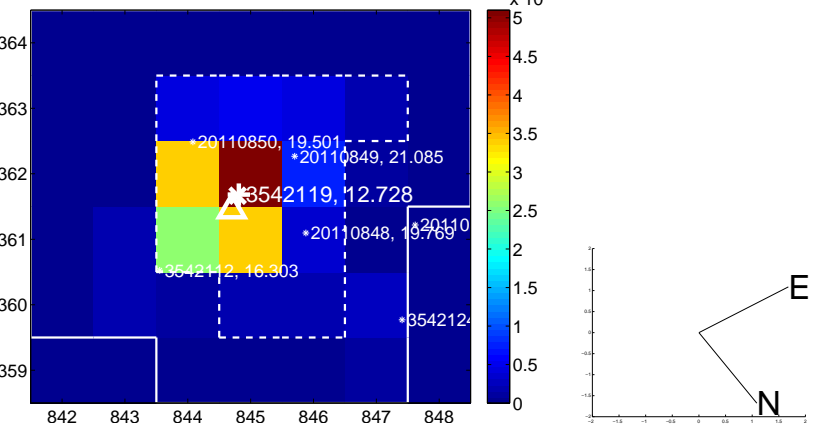
Q15 no OOT image



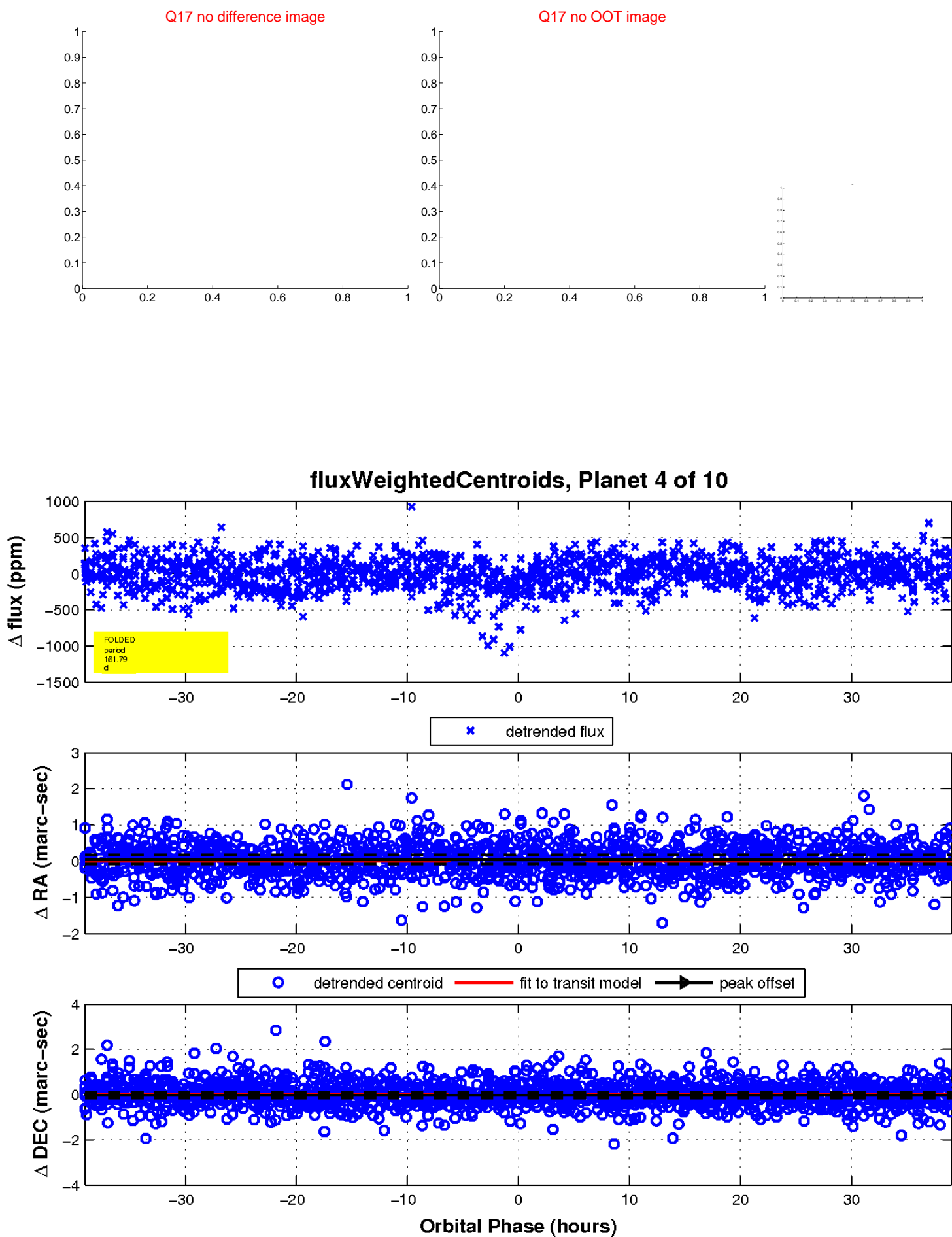
Q16 difference image



Q16 OOT image

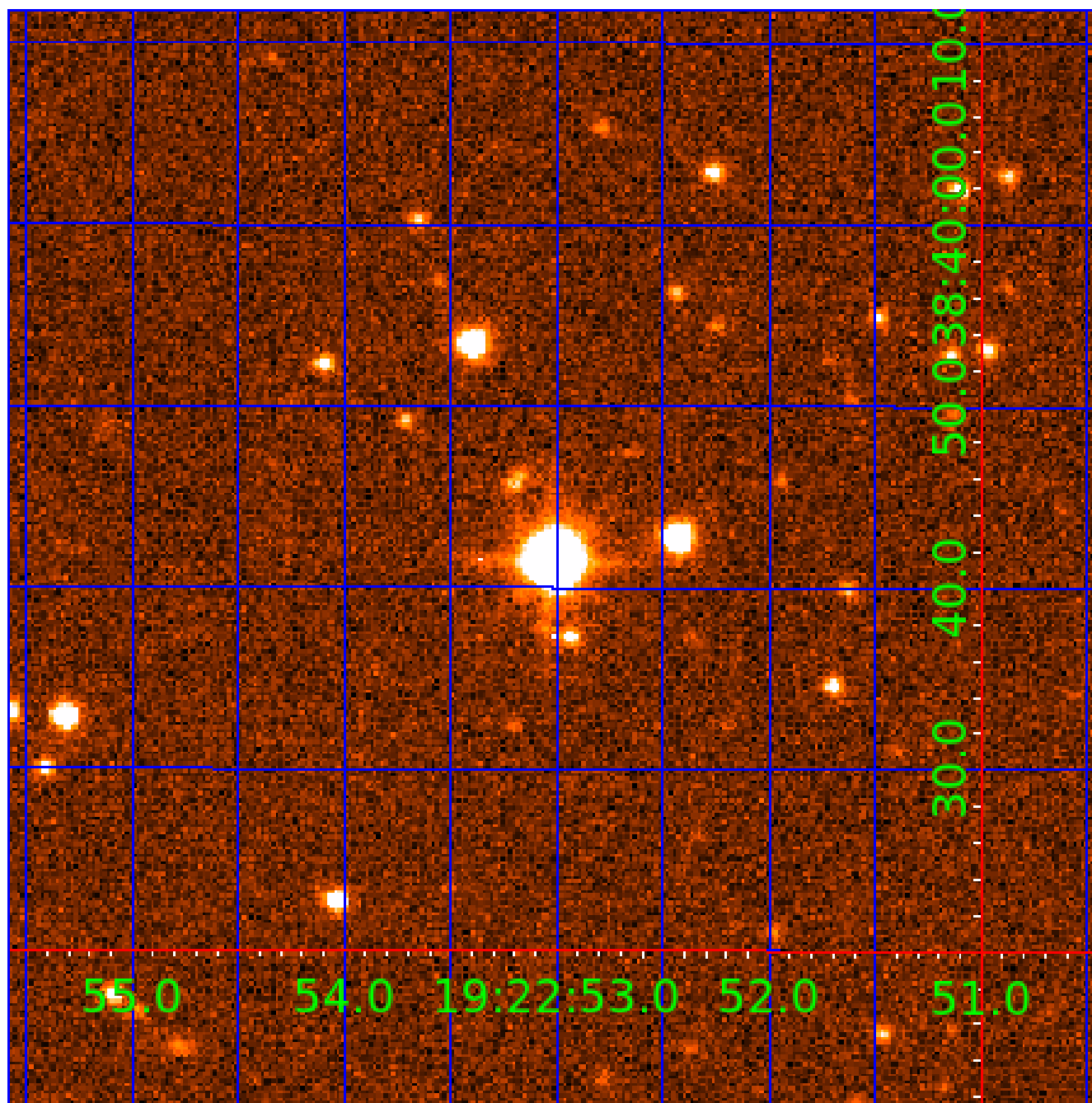


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination



## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003542119-01	OBS	No	2.201670	132.421943	16.8	11.223	9.5	4.9	4.12	6257	2.09	14506.69
003542119-02	OBS	No	177.830213	166.028806	348.6	3.155	9.8	8.1	4.12	6257	8.77	41.55
003542119-03	OBS	No	46.045765	160.209140	195.1	4.733	9.7	8.8	4.12	6257	6.73	251.76
003542119-04	OBS	No	161.792595	208.618920	119.2	13.018	9.4	4.1	4.12	6257	4.93	47.13
003542119-05	OBS	No	144.797709	136.024202	372.3	3.559	8.9	9.3	4.12	6257	9.30	54.65
003542119-06	OBS	No	405.130706	193.166102	270.1	7.652	8.7	6.0	4.12	6257	7.27	13.86
003542119-07	OBS	No	211.002675	175.479319	277.5	5.845	8.9	6.9	4.12	6257	7.39	33.08
003542119-08	OBS	No	155.456868	215.297961	265.2	7.935	8.7	8.0	4.12	6257	7.38	49.71
003542119-09	OBS	No	106.310124	190.178583	229.9	7.393	8.0	7.4	4.12	6257	6.90	82.50
003542119-10	OBS	No	79.537459	169.217320	368.5	1.912	7.9	7.7	4.12	6257	8.72	121.47

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003542119-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003542119-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003542119-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT
003542119-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003542119-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003542119-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003542119-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
003542119-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS
003542119-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003542119-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

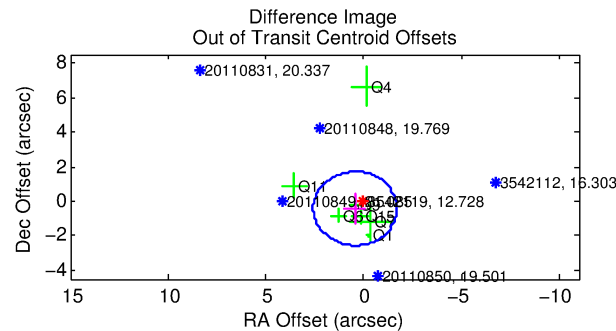
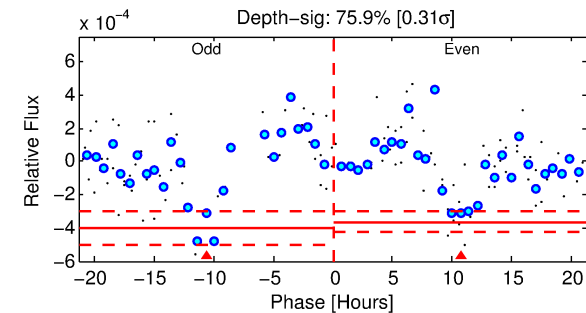
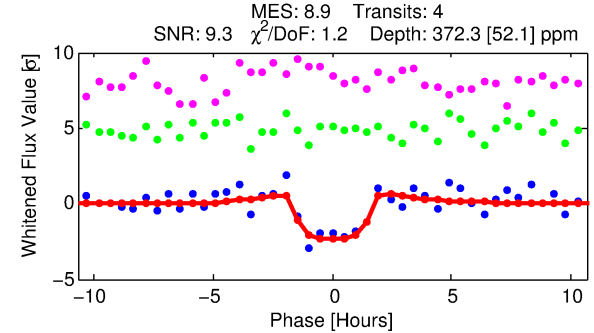
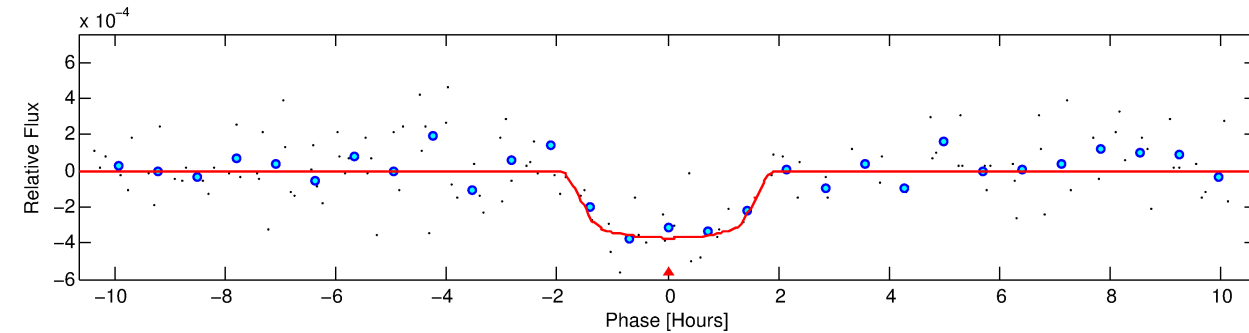
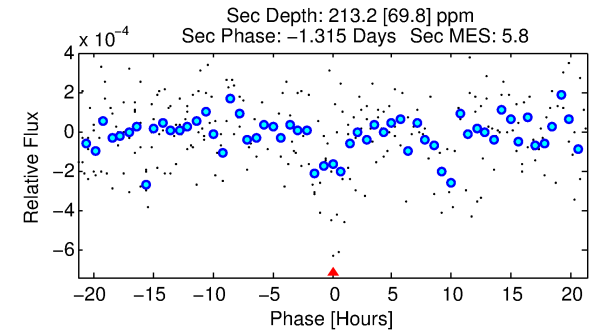
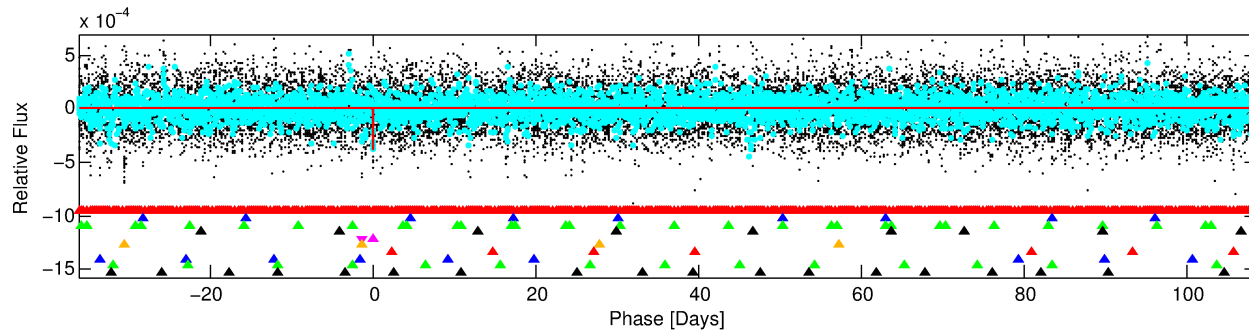
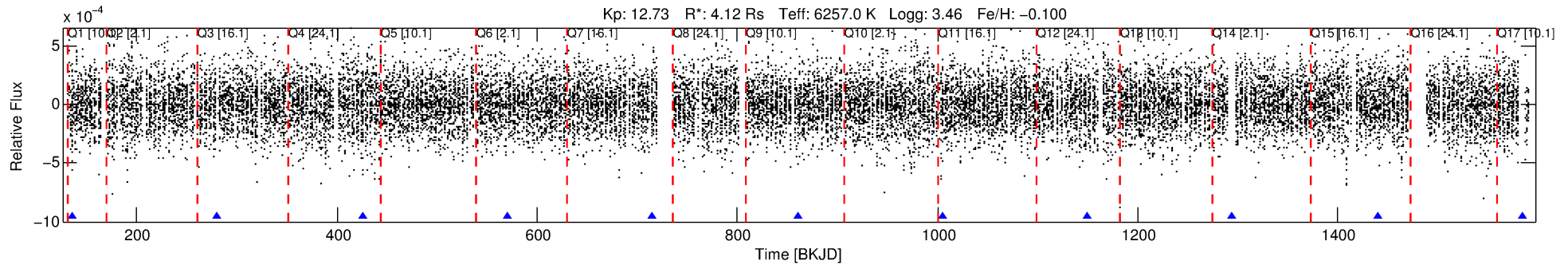
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 003542119-05

No Significant Match Found

# DV One-Page Summary

KIC: 3542119 Candidate: 5 of 10 Period: 144.798 d



## DV Fit Results:

Period = 144.79771 [0.00137] d  
Epoch = 136.0242 [0.0079] BKJD  
Rp/R\* = 0.0207 [0.0067]  
a/R\* = 151.95 [260.25]  
b = 0.90 [0.38]  
Seff = 54.65 [36.15]  
Teq = 693 [115] K  
Rp = 9.30 [4.88] Re  
a = 0.6538 [0.2635] AU  
Ag = 580.12 [566.43] [1.02σ]  
Teffp = 5261 [971] K [4.67σ]

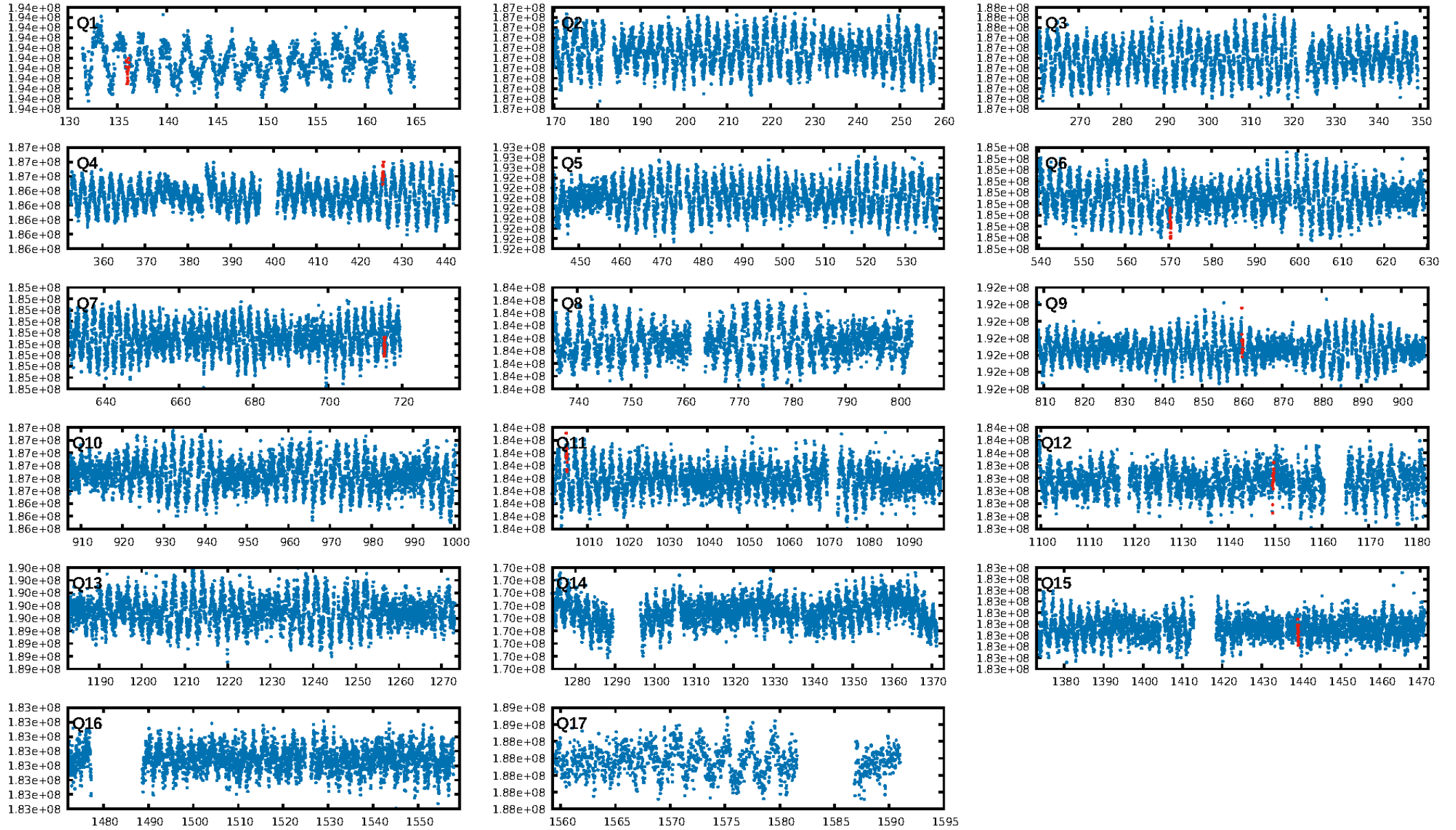
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [112.58σ]  
LongPeriod-sig: 100.0% [29.41σ]  
ModelChiSquare2-sig: 9.2%  
ModelChiSquareGof-sig: 99.7%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -0.5619  
Centroid-sig: 0.2%  
Centroid-so: 1.175 arcsec [2.10σ]  
OotOffset-rm: 0.618 arcsec [0.87σ]  
KicOffset-rm: 0.722 arcsec [1.01σ]  
OotOffset-st: 1/3/1/2 [7]  
KicOffset-st: 1/3/1/2 [7]  
DiffImageQuality-fgm: 0.57 [4/7]  
DiffImageOverlap-fno: 0.50 [4/8]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:15:53 Z

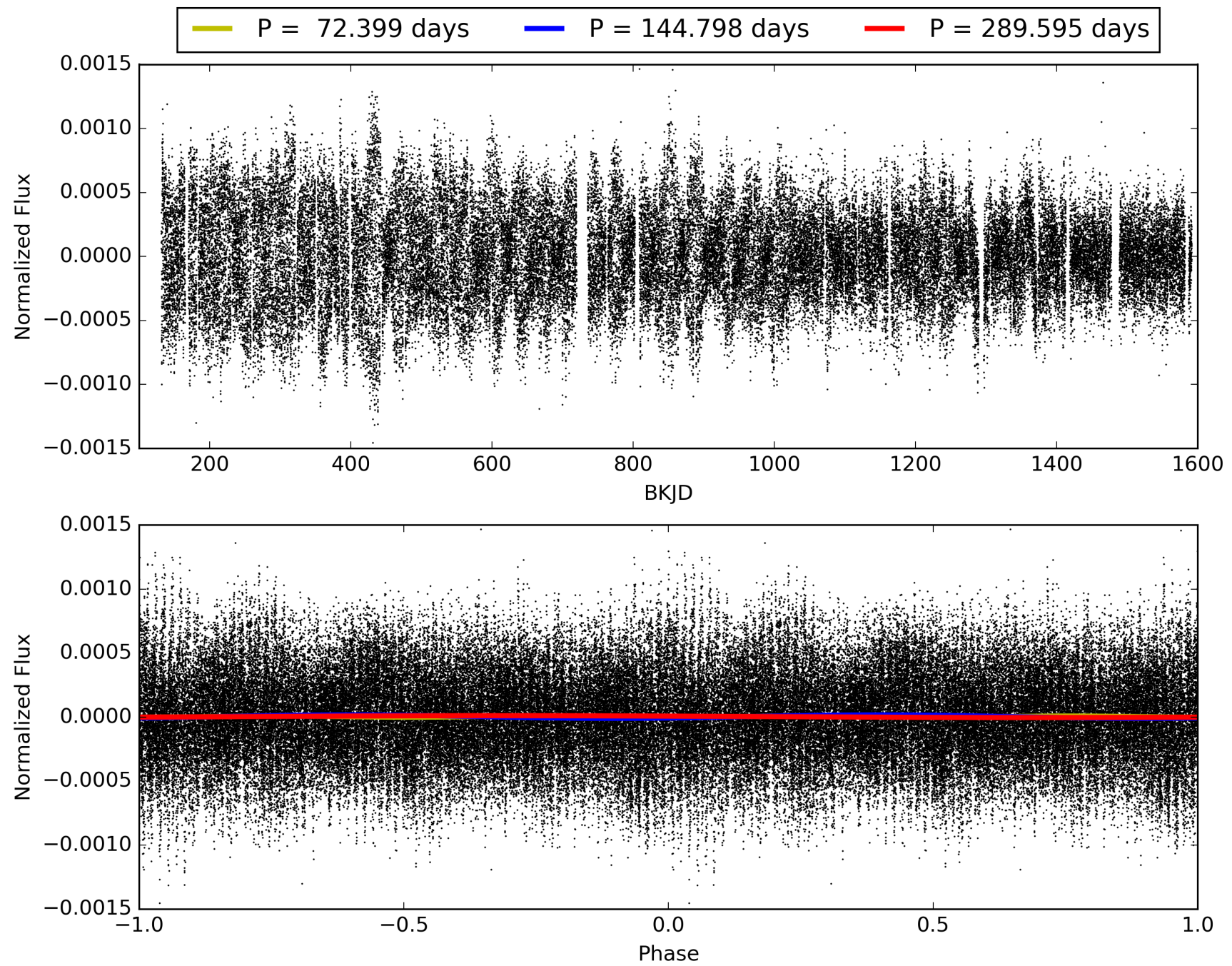
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003542119-05, PDC Light Curves



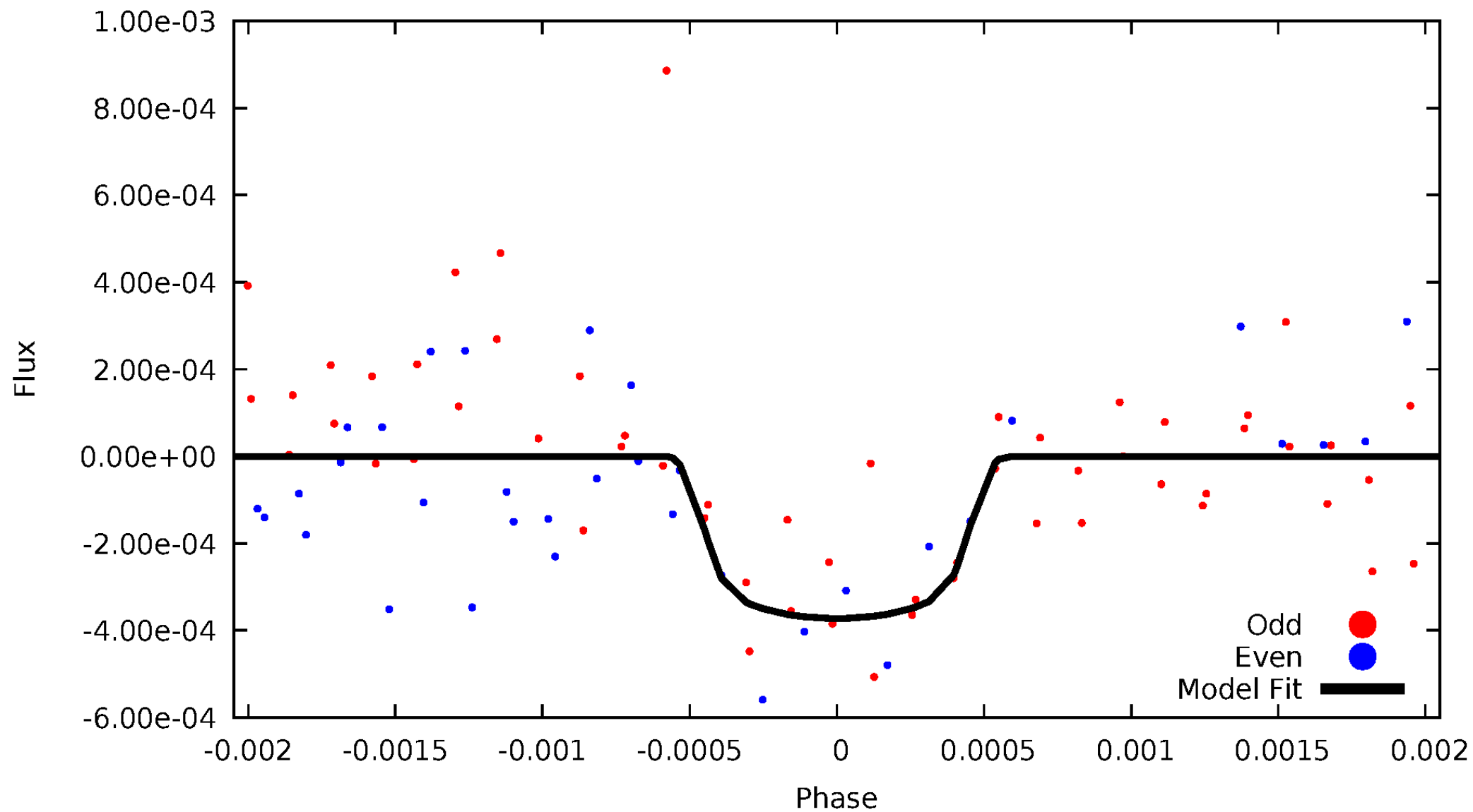


TCE 003542119-05



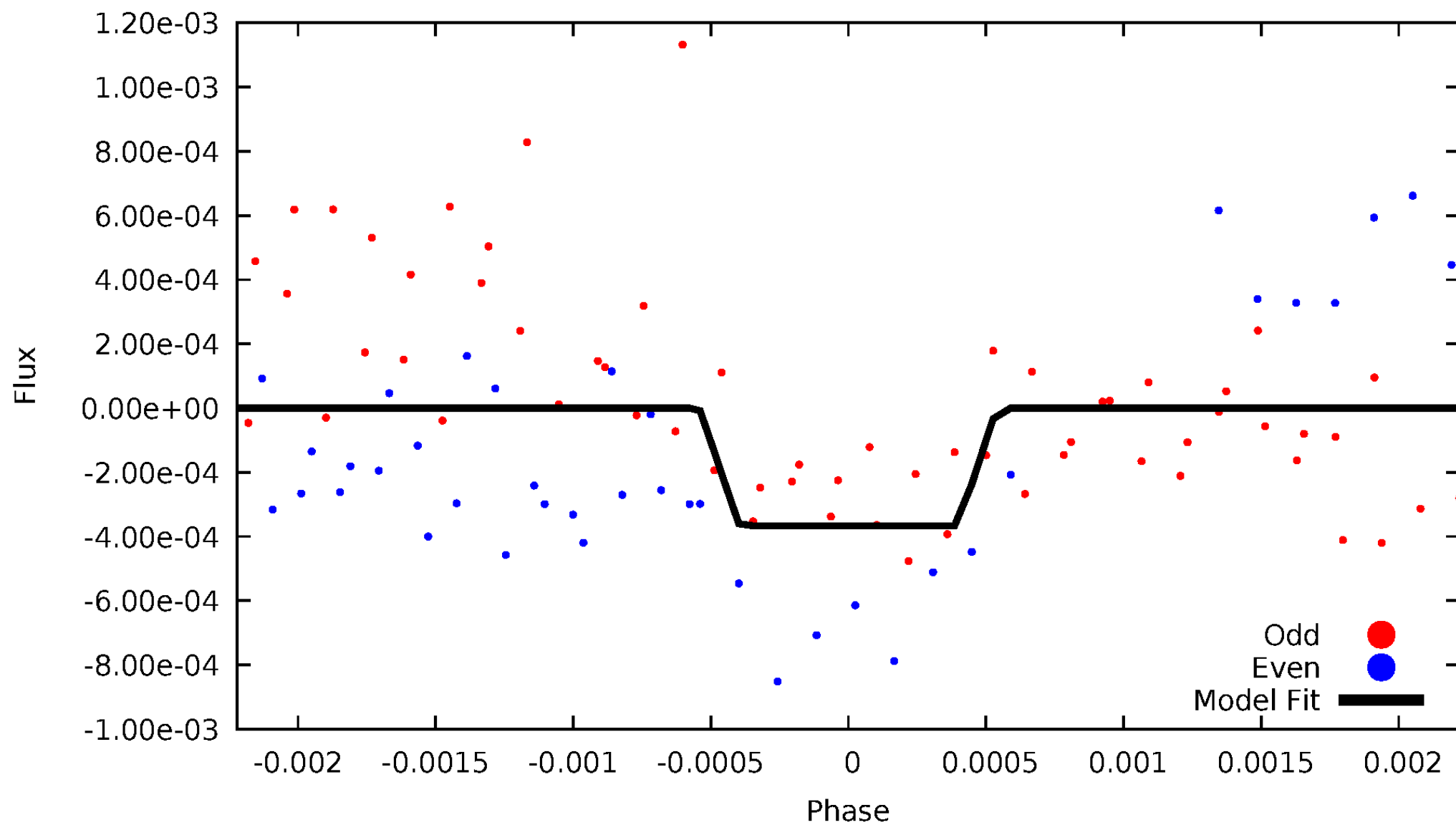
# DV Odd/Even

TCE 003542119-05



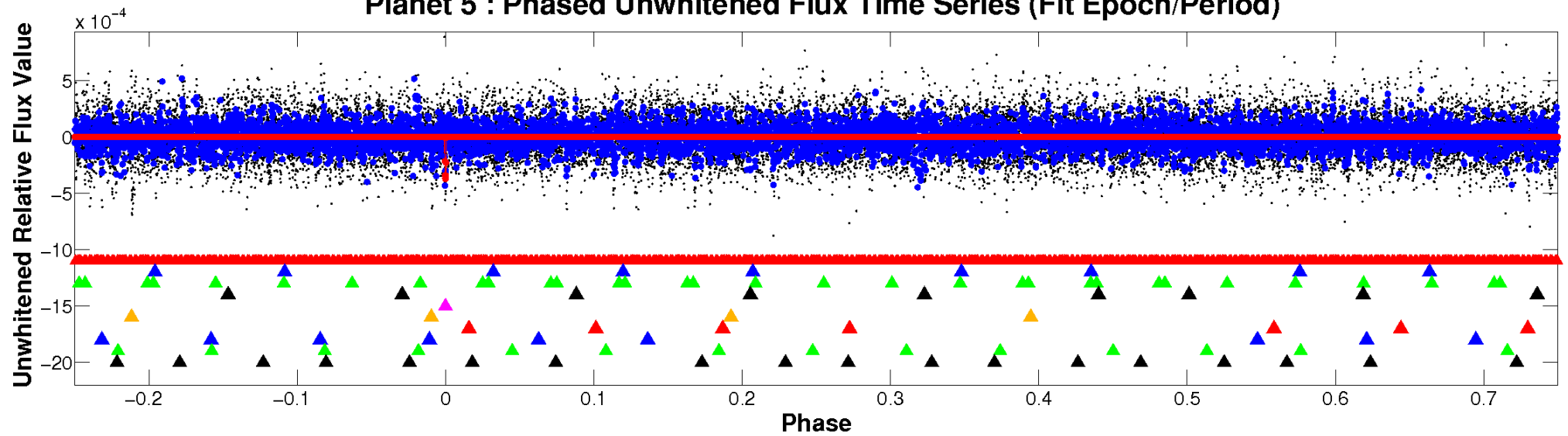
# ALT Odd/Even

TCE 003542119-05

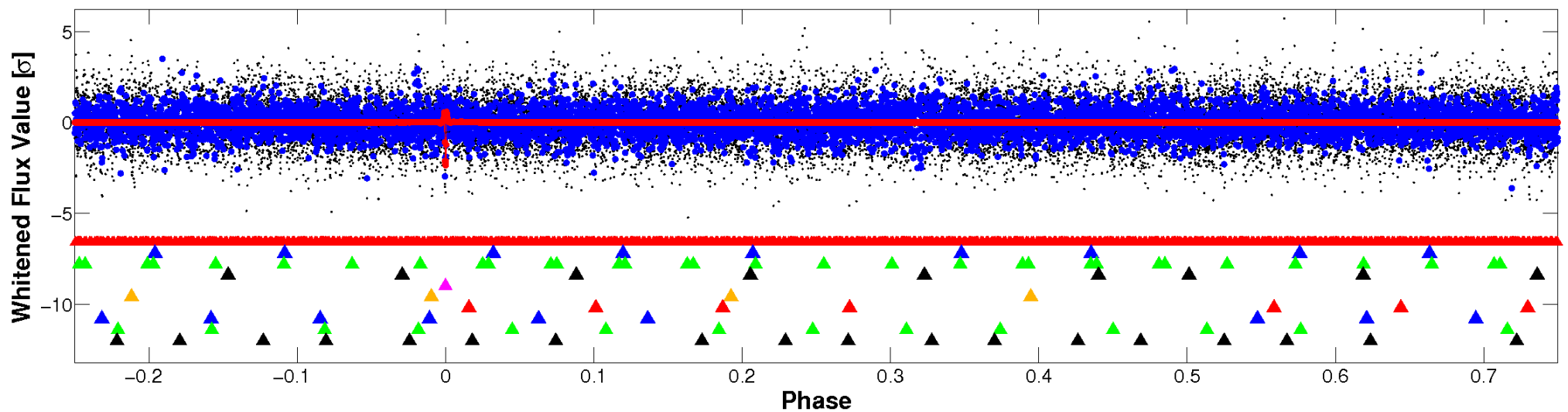


# Non-Whitened Vs. Whitened Light Curve

## Planet 5 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

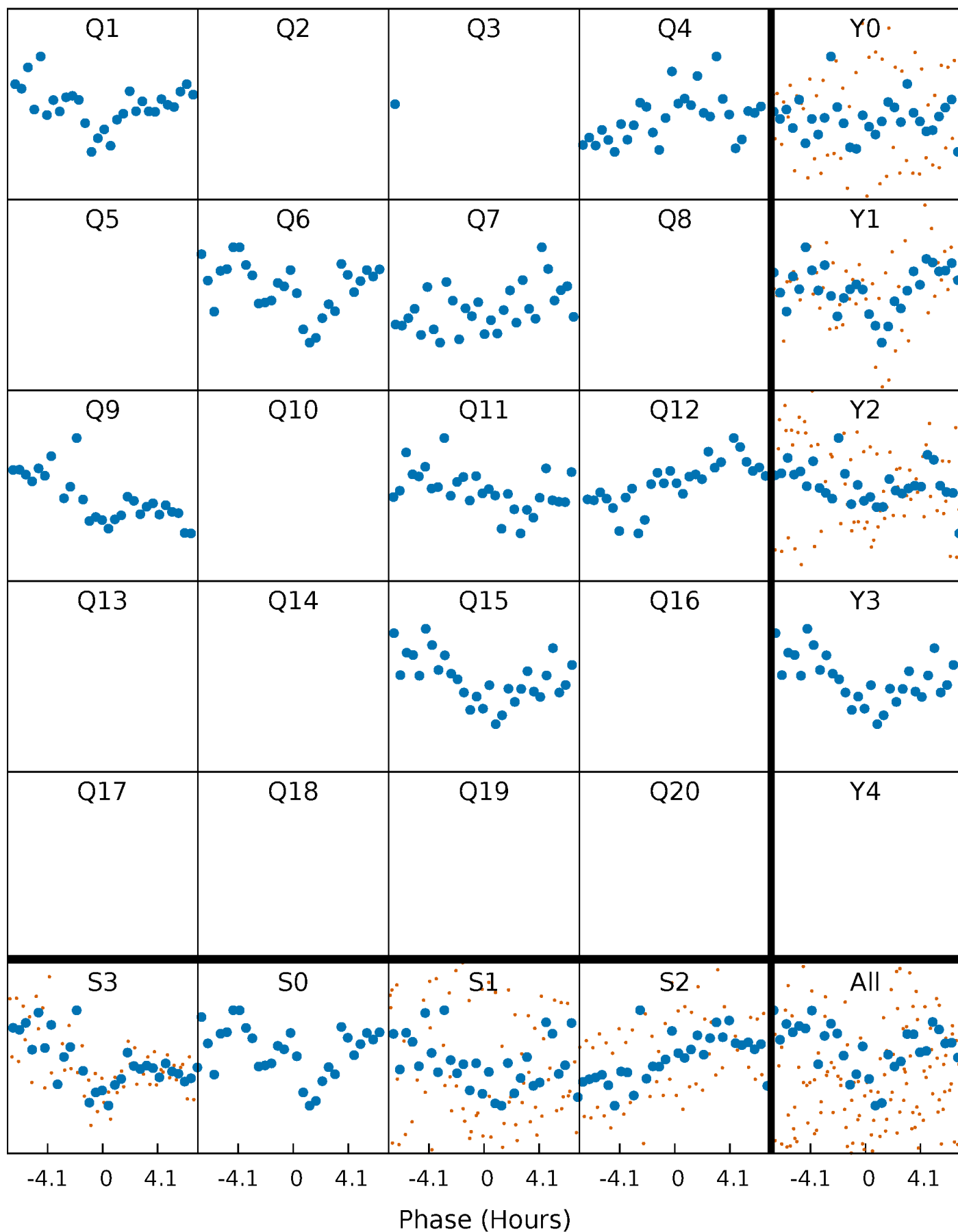


## Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



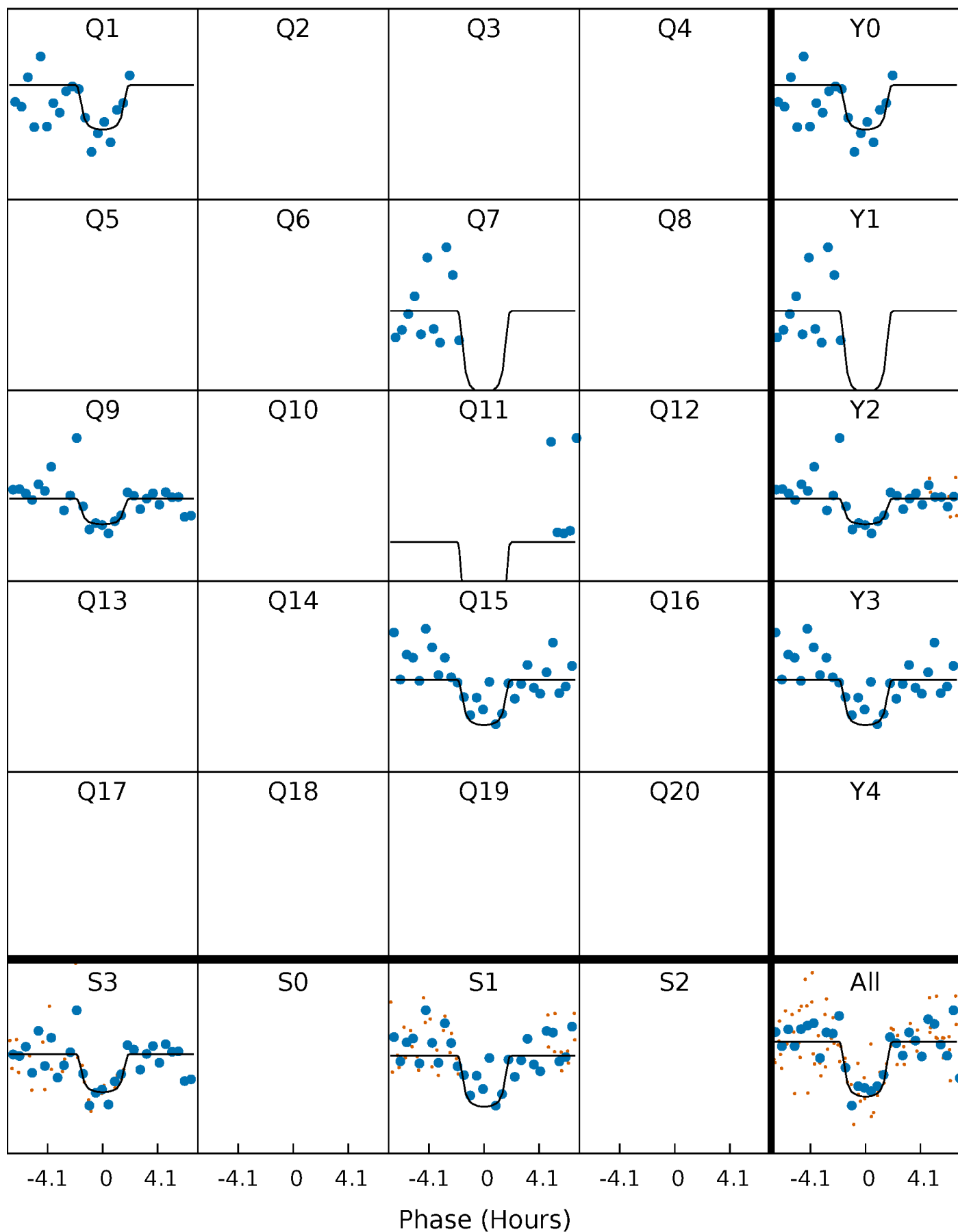
# PDC Quarter-Phased Transit Curves

TCE 003542119-05 P=144.797709 Days  $T_0=136.024202$  (BKJD)



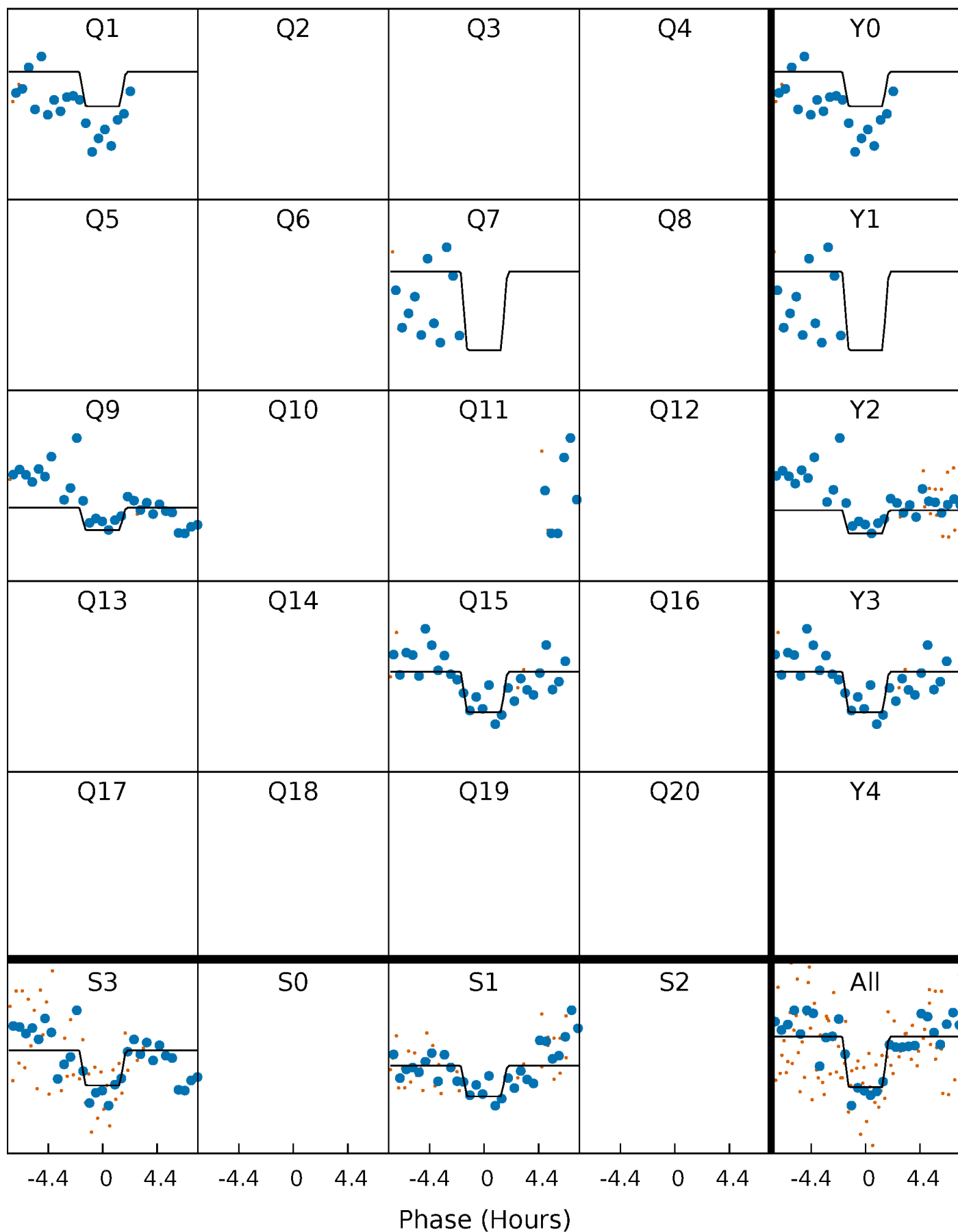
# DV Quarter-Phased Transit Curves

TCE 003542119-05     $P=144.797709$  Days     $T_0=136.024202$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 003542119-05     $P=144.798223$  Days     $T_0=136.024989$  (BKJD)

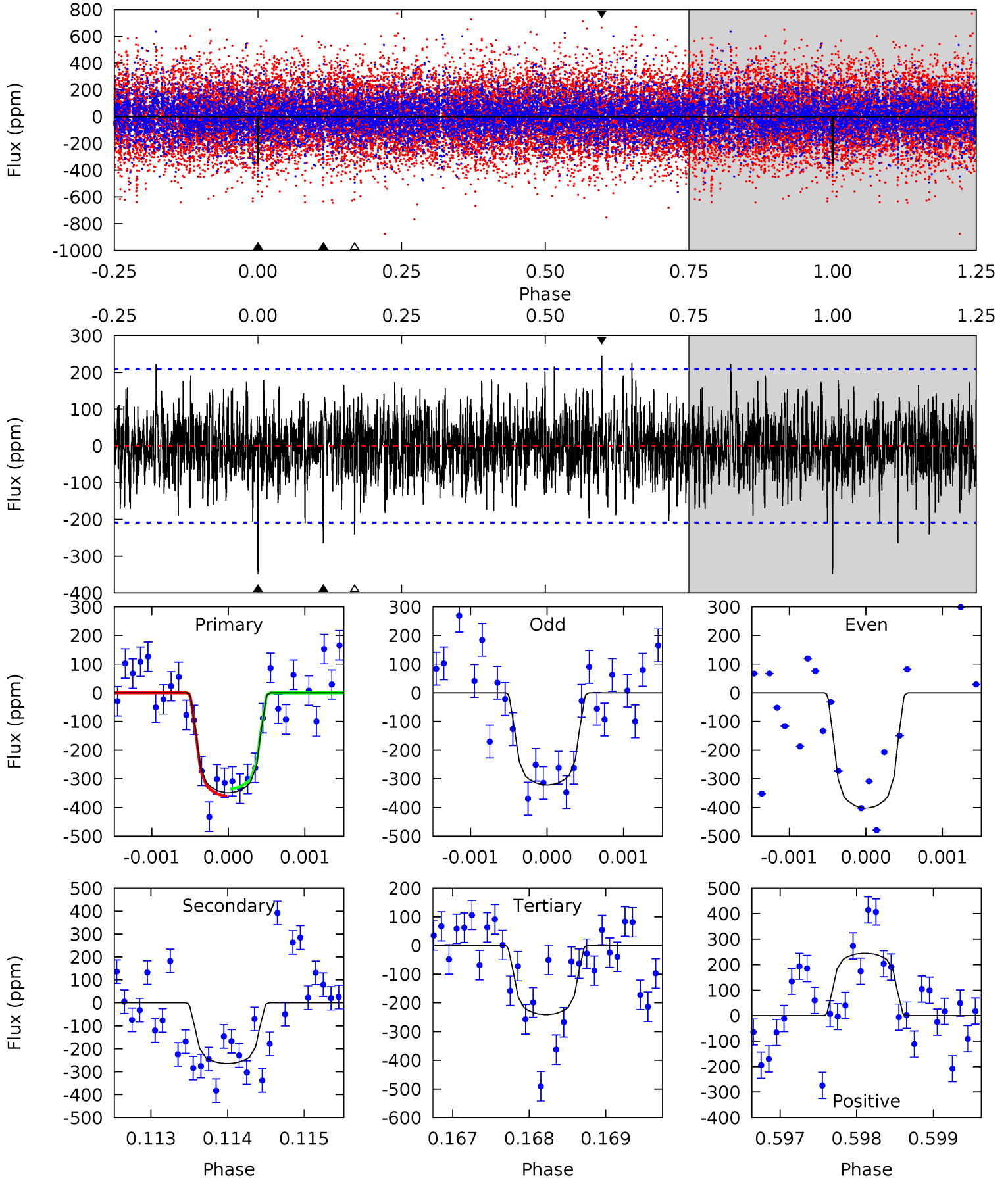




# DV Model-Shift Uniqueness Test

003542119-05, P = 144.797709 Days, E = 136.024202 Days

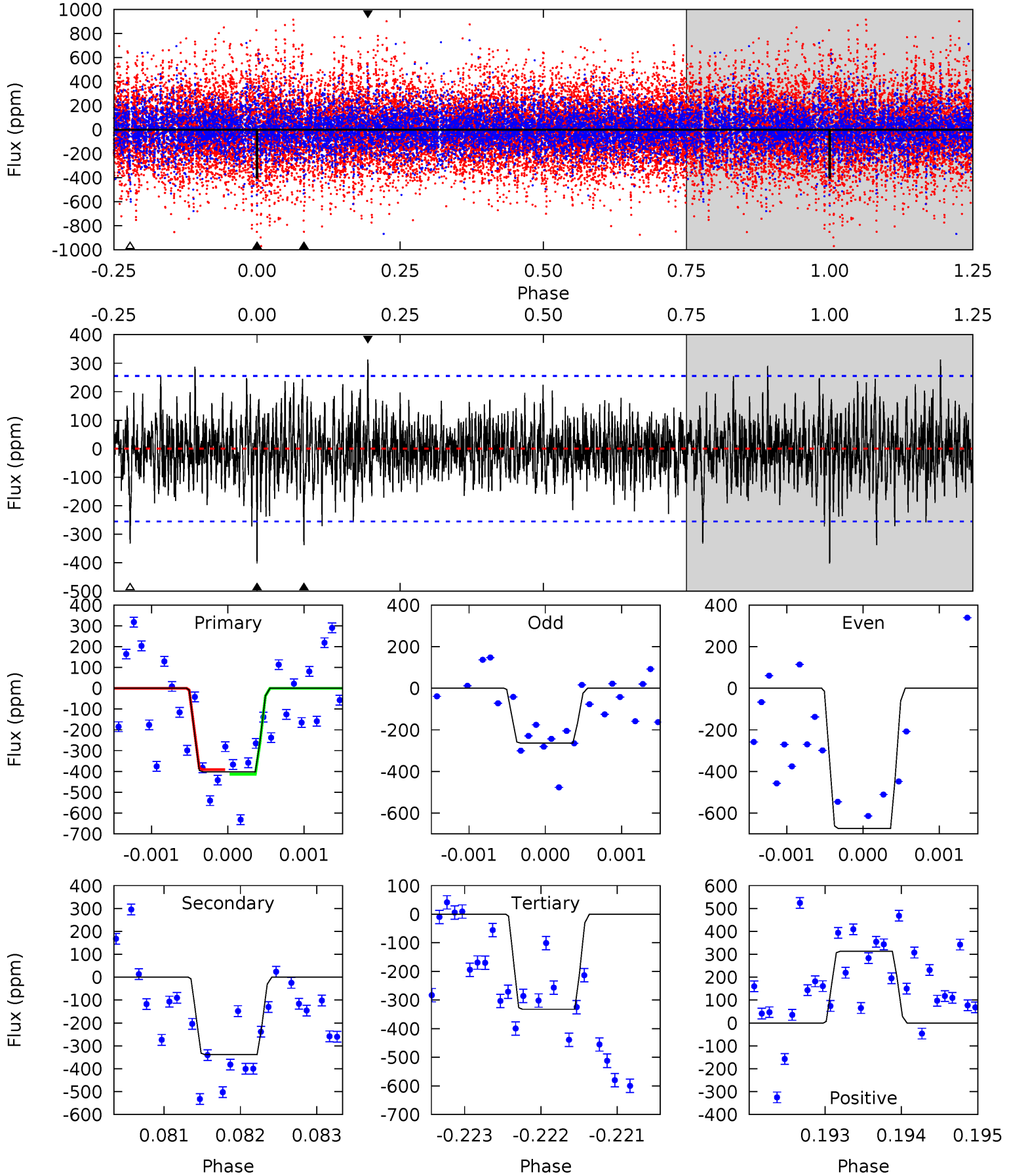
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.08	6.88	6.28	6.38	5.44	3.27	1.71	2.80	2.70	0.60	0.51	0.97	0.87	0.41	0.32



# Alt Model-Shift Uniqueness Test

003542119-05, P = 144.798223 Days, E = 136.024989 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
8.57	7.21	7.08	6.67	5.44	3.27	1.61	1.49	1.90	0.12	0.54	4.21	1.23	0.44	0.24



### Stellar Parameters For KIC 003542119

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6257^{+189}_{-151}$	$3.457^{+0.384}_{-0.096}$	$-0.100^{+0.350}_{-0.300}$	$4.124^{+0.608}_{-1.701}$	$1.777^{+0.178}_{-0.415}$	$0.036^{+0.119}_{-0.011}$
	+3%/-2%	+11%/-3%	+350%/-300%	+15%/-41%	+10%/-23%	+333%/-31%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 003542119-05 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-264 \pm 38$	$8.50^{+3.68}_{-3.04}$	$957^{+55}_{-93}$	$5582^{+1331}_{-692}$	$841^{+1278}_{-433}$
Alt.	$-338 \pm 47$	$7.84^{+3.28}_{-2.92}$	$952^{+60}_{-94}$	$6166^{+1608}_{-874}$	$1258^{+1927}_{-652}$

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

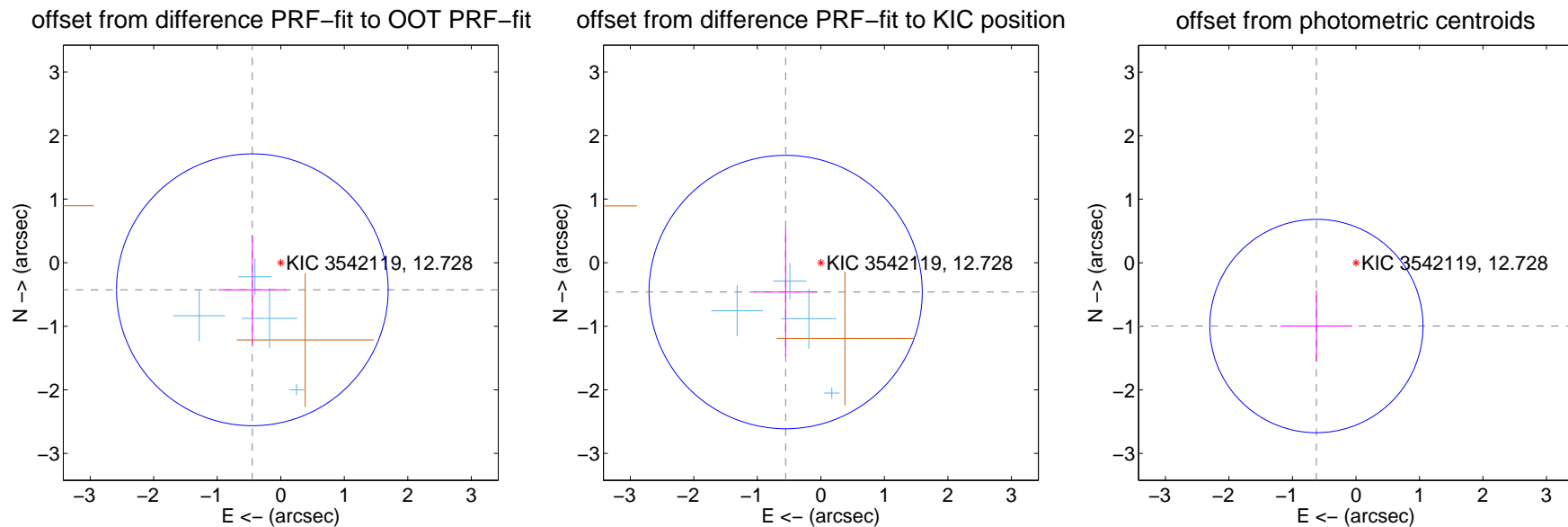
## DV Centroid Data

Supplemental centroid analysis for 003542119-05. Kepler magnitude: 12.73. Transit SNR 9.27

There are 4 quarters with good PRF difference image offsets

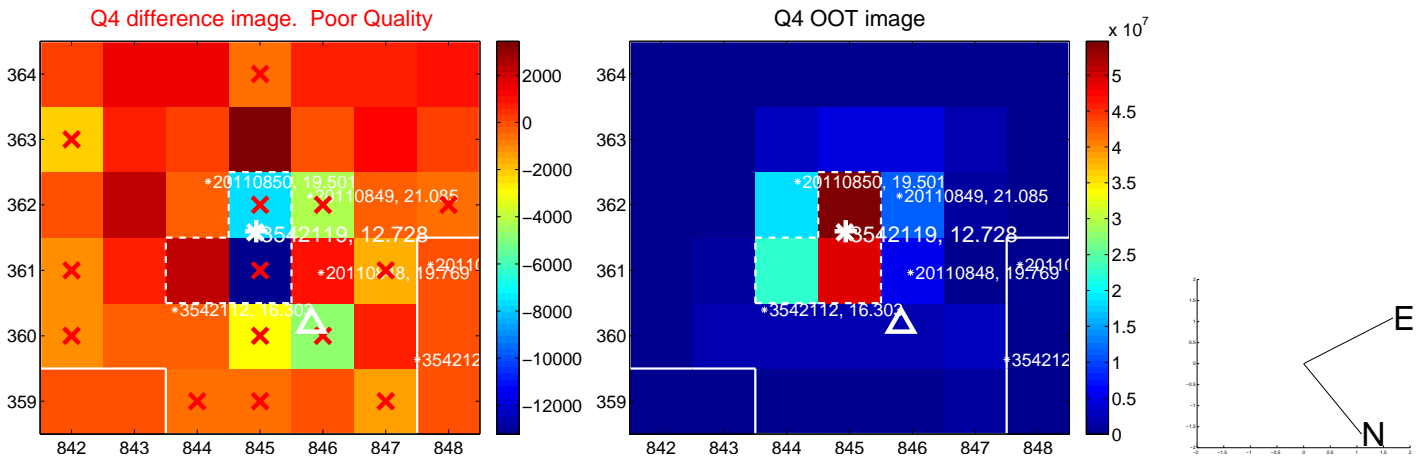
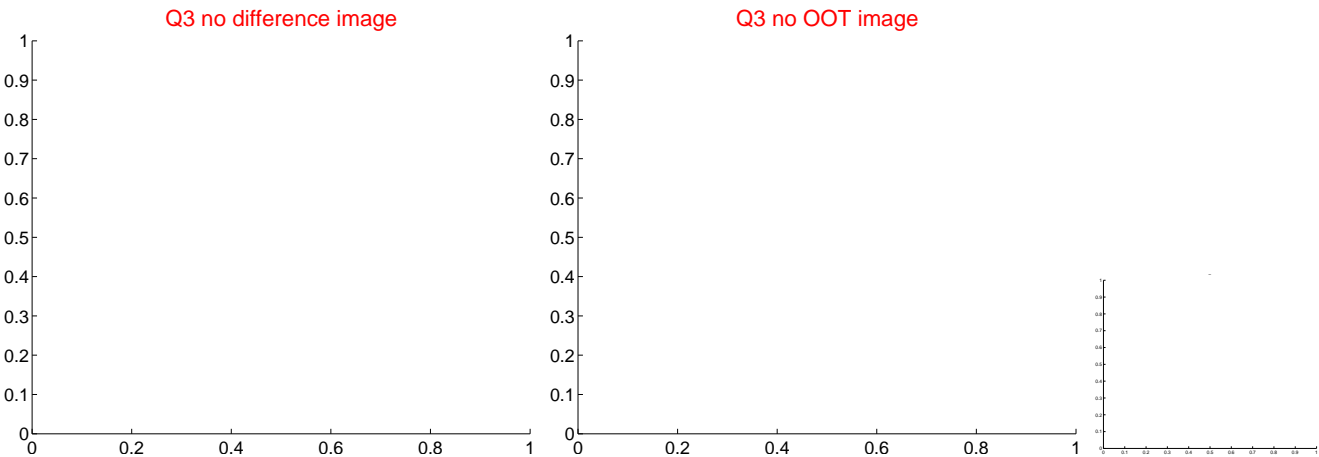
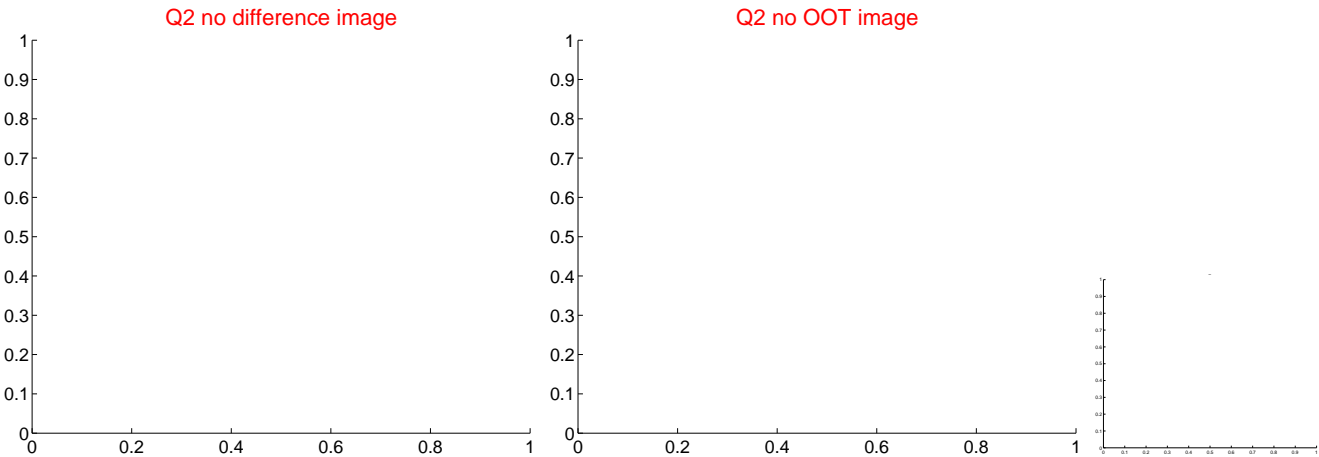
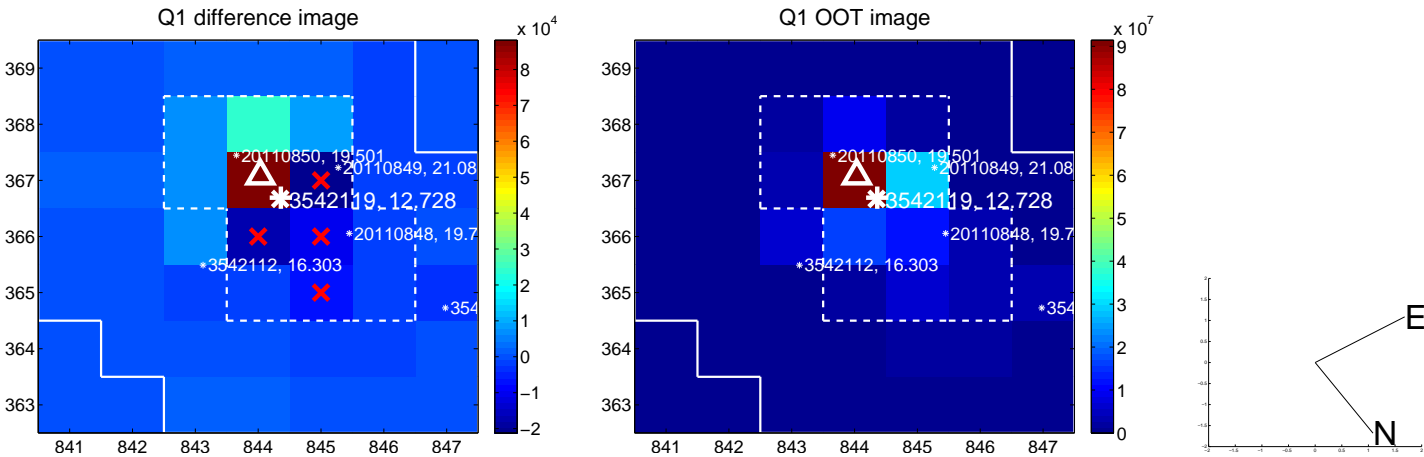
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.618 \pm 0.713$	0.87	$0.447 \pm 0.535$	$-0.426 \pm 0.863$
PRF-fit source offset from KIC position	$0.722 \pm 0.717$	1.01	$0.555 \pm 0.505$	$-0.462 \pm 1.005$
photometric centroid source offset	$1.17 \pm 0.56$	2.10	$0.62 \pm 0.57$	$-1.00 \pm 0.56$



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.

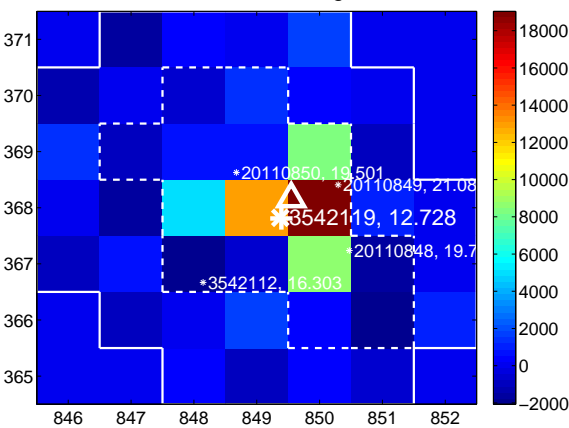
Q5 no difference image



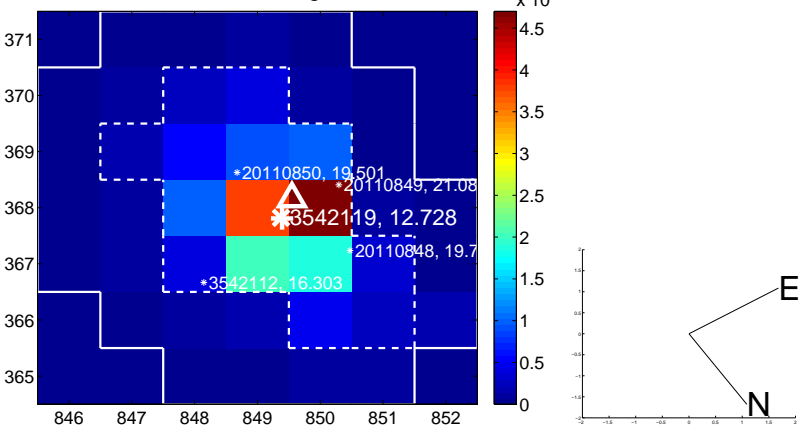
Q5 no OOT image



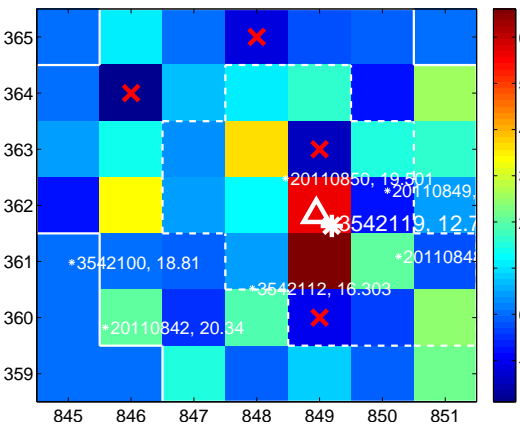
Q6 difference image



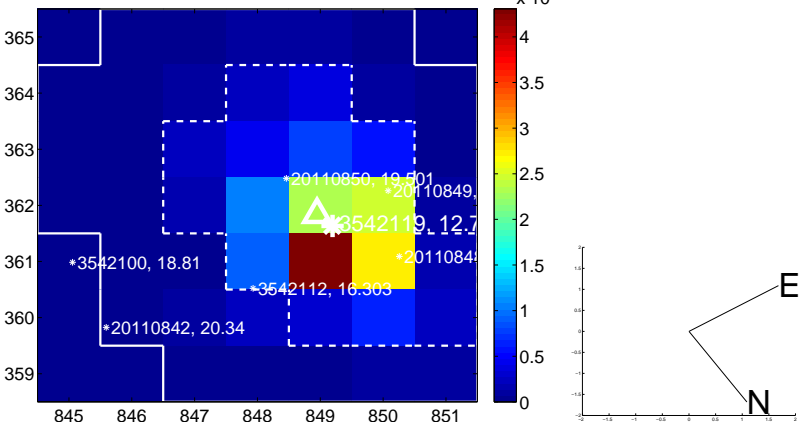
Q6 OOT image



Q7 difference image. Poor Quality



Q7 OOT image



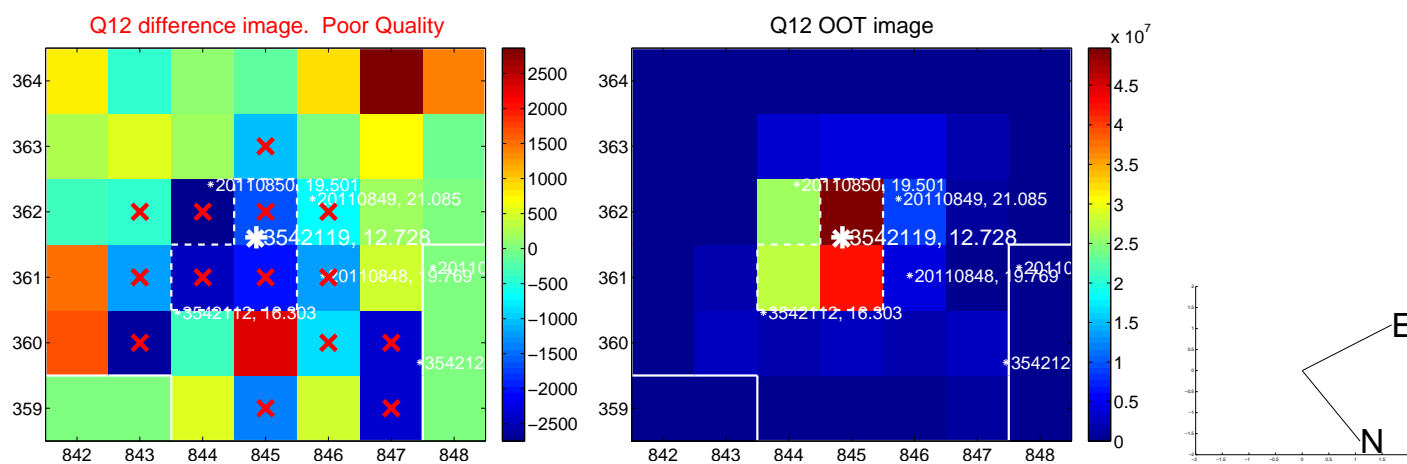
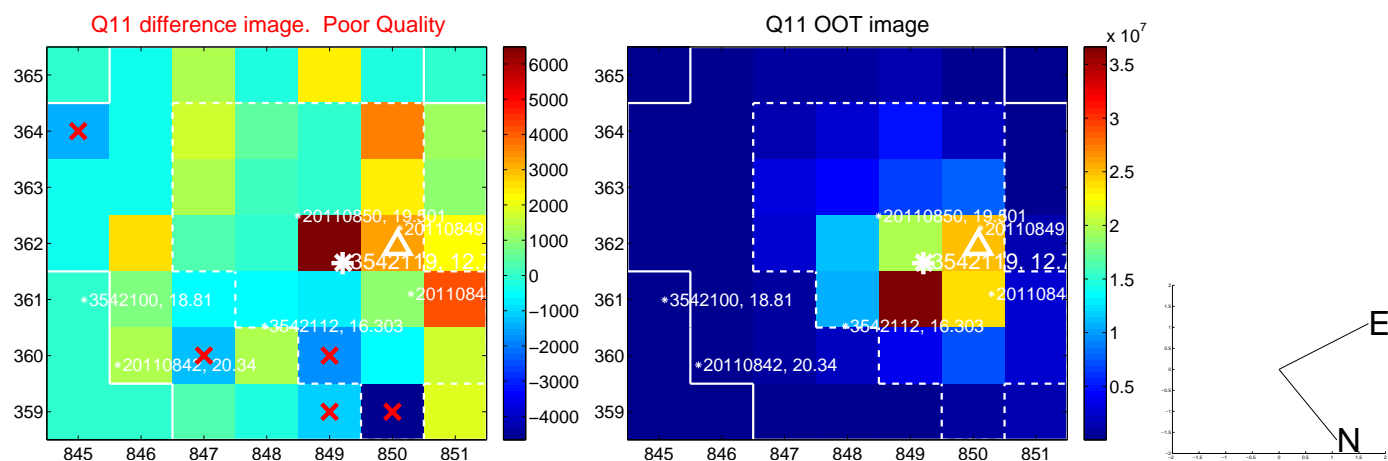
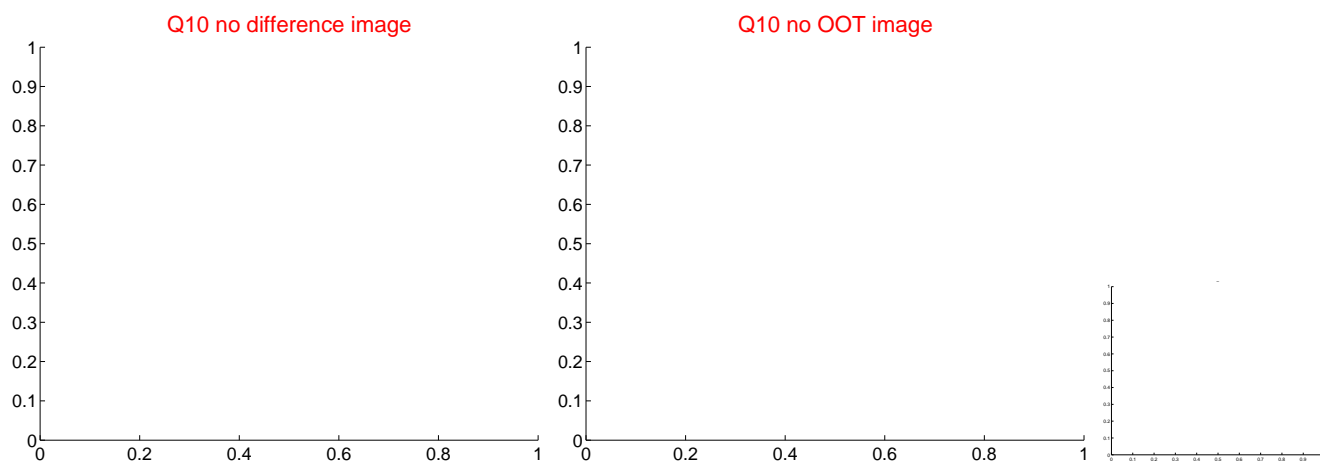
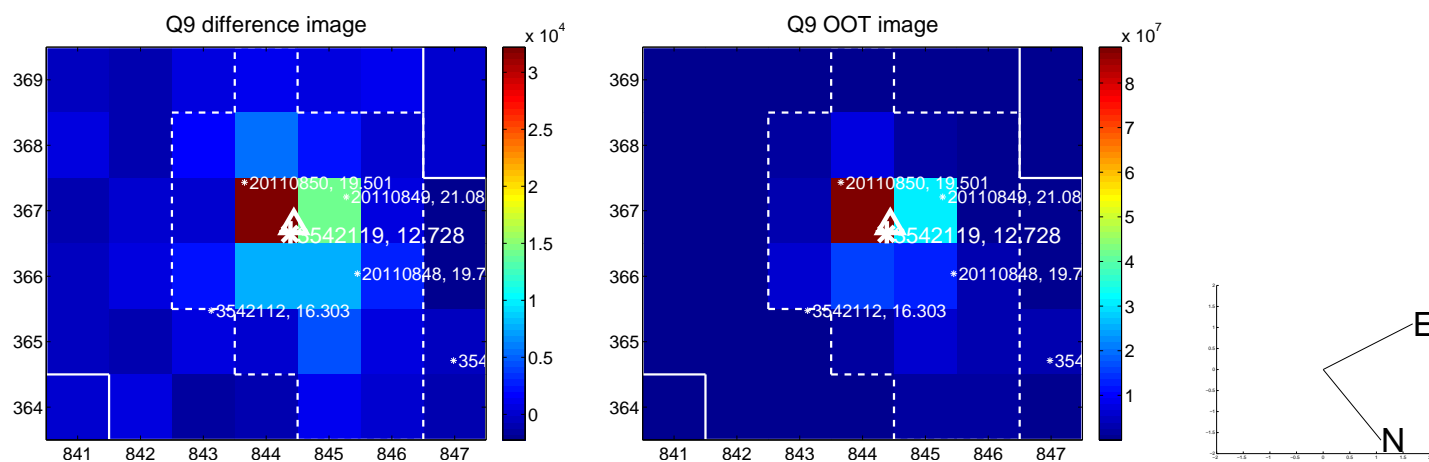
Q8 no difference image



Q8 no OOT image



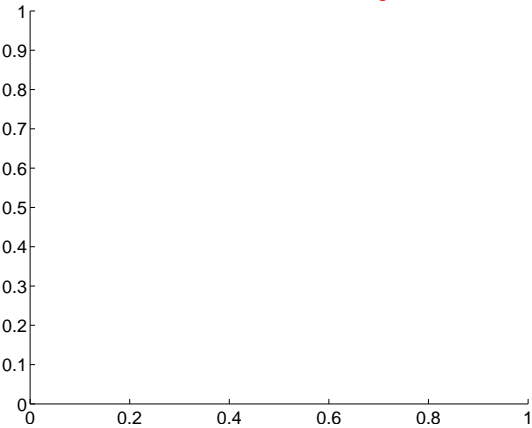
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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

Q13 no difference image



Q13 no OOT image



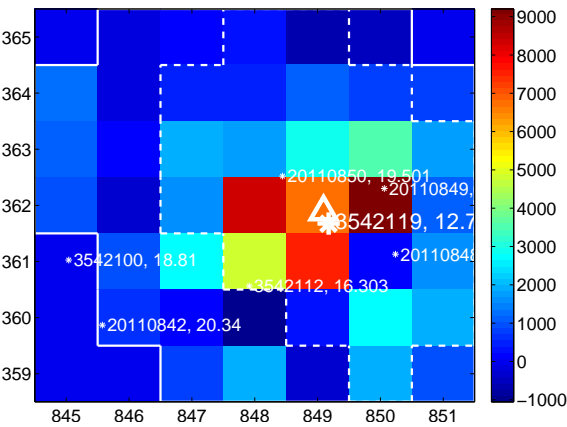
Q14 no difference image



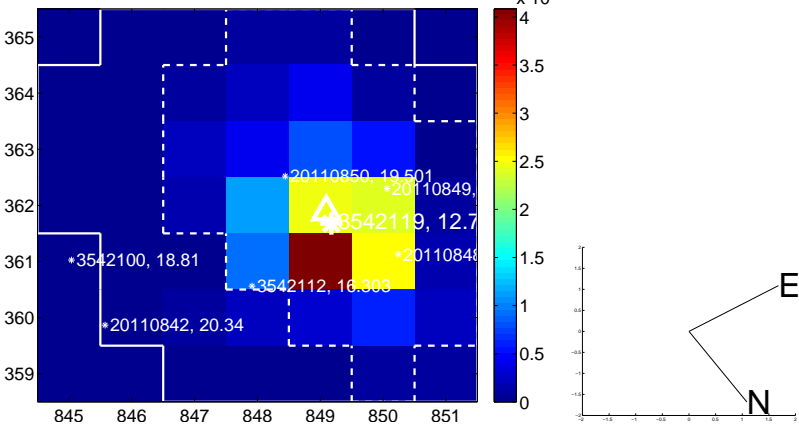
Q14 no OOT image



Q15 difference image



Q15 OOT image



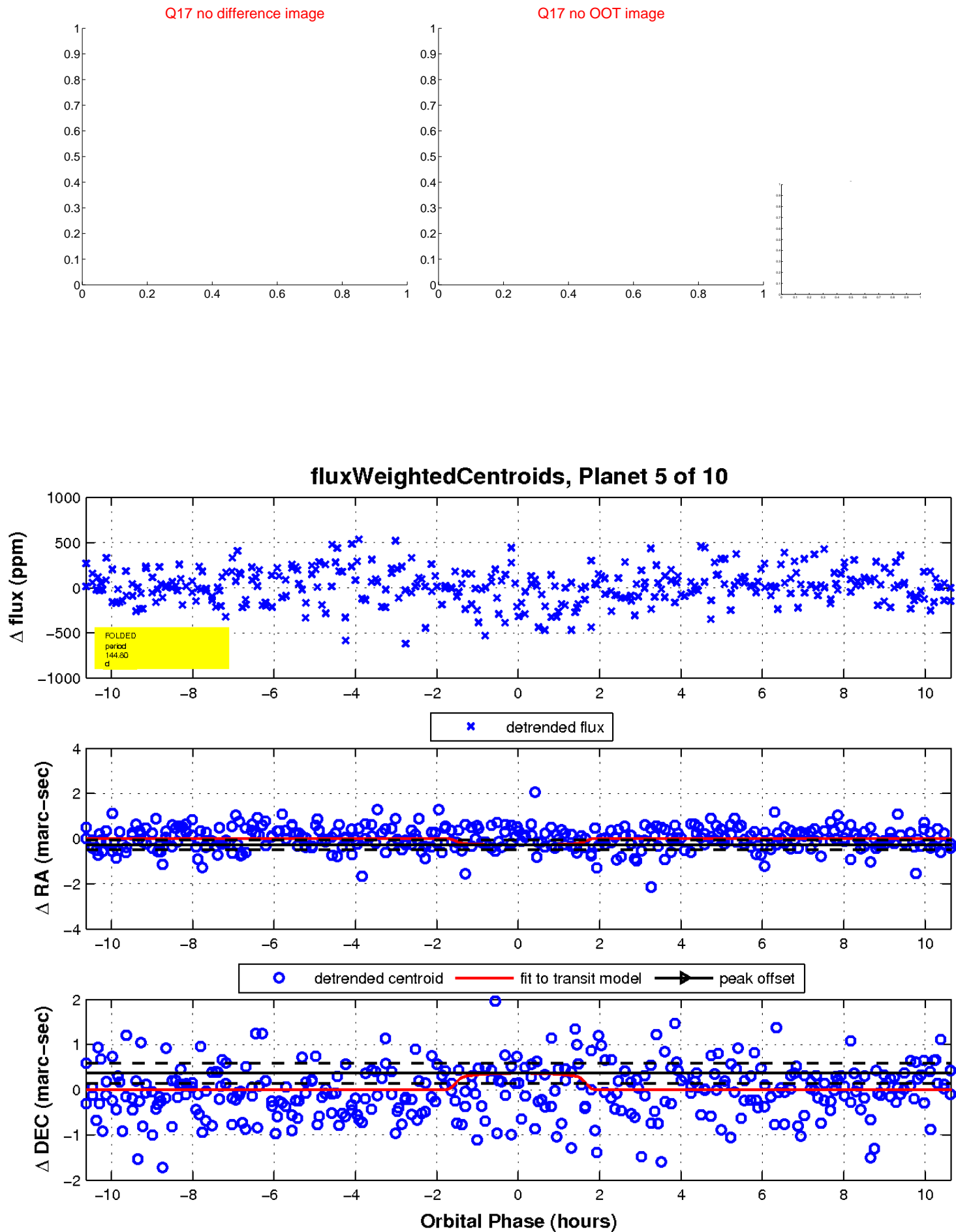
Q16 no difference image



Q16 no OOT image

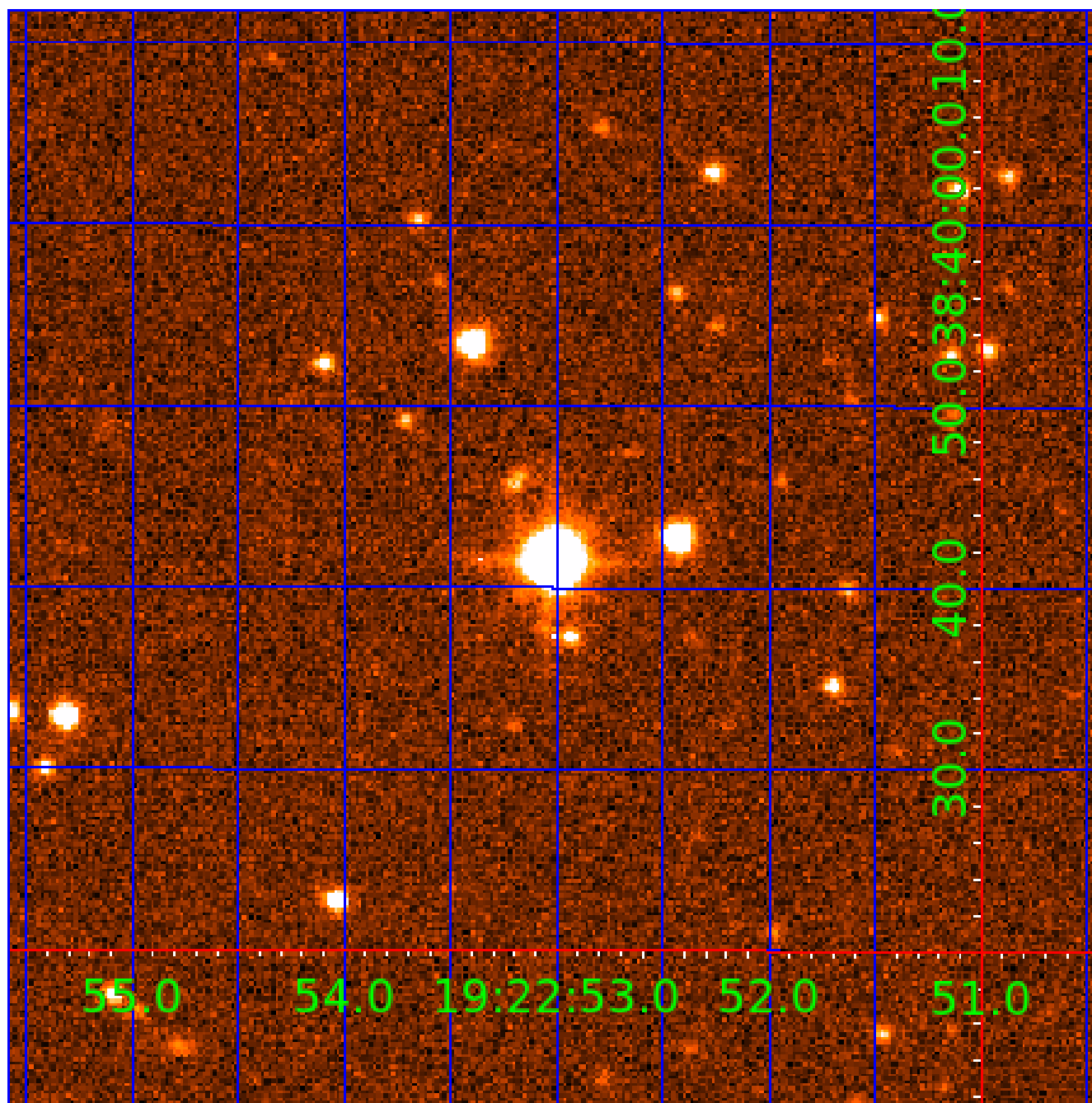


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination



## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003542119-01	OBS	No	2.201670	132.421943	16.8	11.223	9.5	4.9	4.12	6257	2.09	14506.69
003542119-02	OBS	No	177.830213	166.028806	348.6	3.155	9.8	8.1	4.12	6257	8.77	41.55
003542119-03	OBS	No	46.045765	160.209140	195.1	4.733	9.7	8.8	4.12	6257	6.73	251.76
003542119-04	OBS	No	161.792595	208.618920	119.2	13.018	9.4	4.1	4.12	6257	4.93	47.13
003542119-05	OBS	No	144.797709	136.024202	372.3	3.559	8.9	9.3	4.12	6257	9.30	54.65
003542119-06	OBS	No	405.130706	193.166102	270.1	7.652	8.7	6.0	4.12	6257	7.27	13.86
003542119-07	OBS	No	211.002675	175.479319	277.5	5.845	8.9	6.9	4.12	6257	7.39	33.08
003542119-08	OBS	No	155.456868	215.297961	265.2	7.935	8.7	8.0	4.12	6257	7.38	49.71
003542119-09	OBS	No	106.310124	190.178583	229.9	7.393	8.0	7.4	4.12	6257	6.90	82.50
003542119-10	OBS	No	79.537459	169.217320	368.5	1.912	7.9	7.7	4.12	6257	8.72	121.47

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003542119-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003542119-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003542119-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT
003542119-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003542119-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003542119-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003542119-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
003542119-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS
003542119-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003542119-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

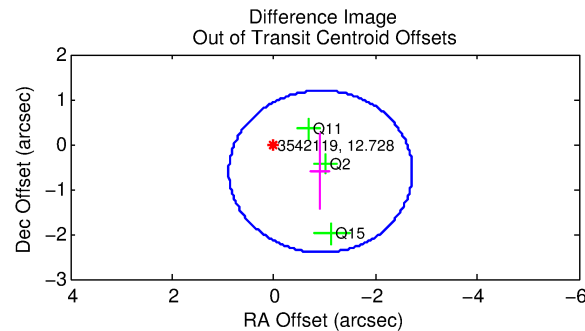
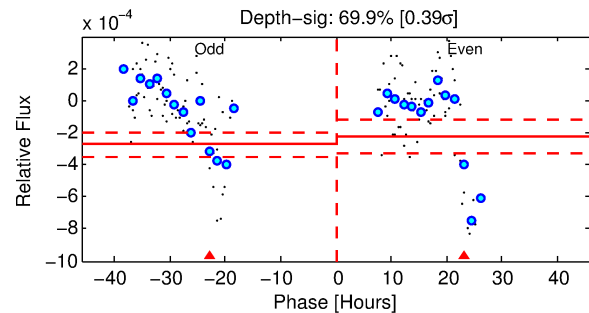
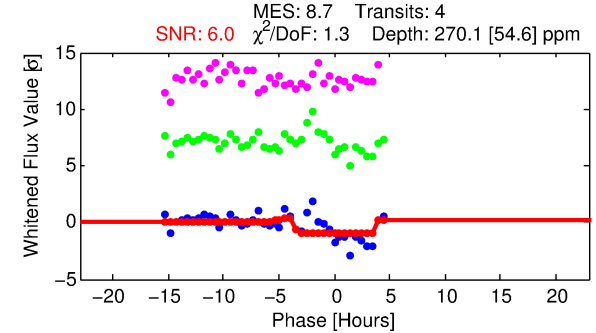
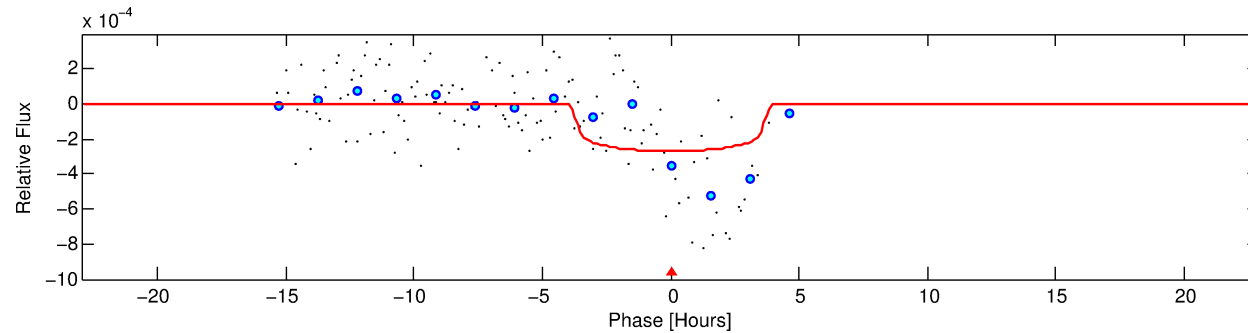
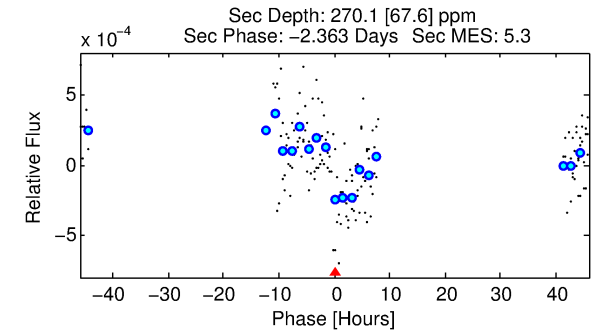
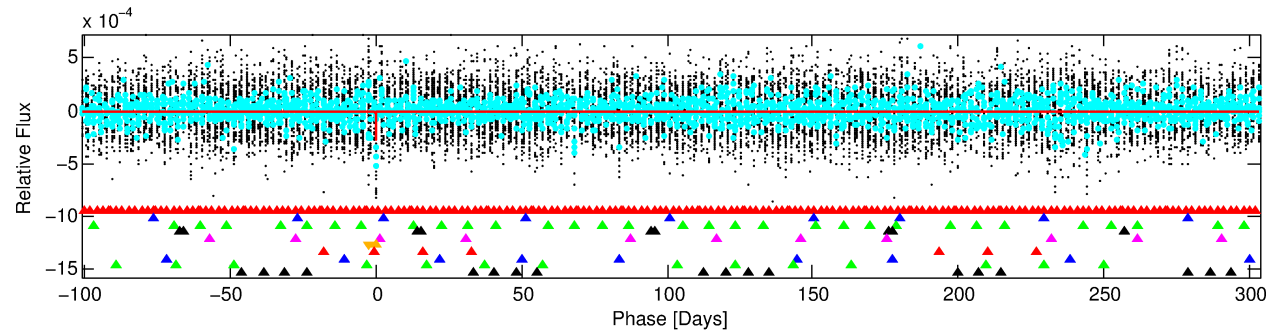
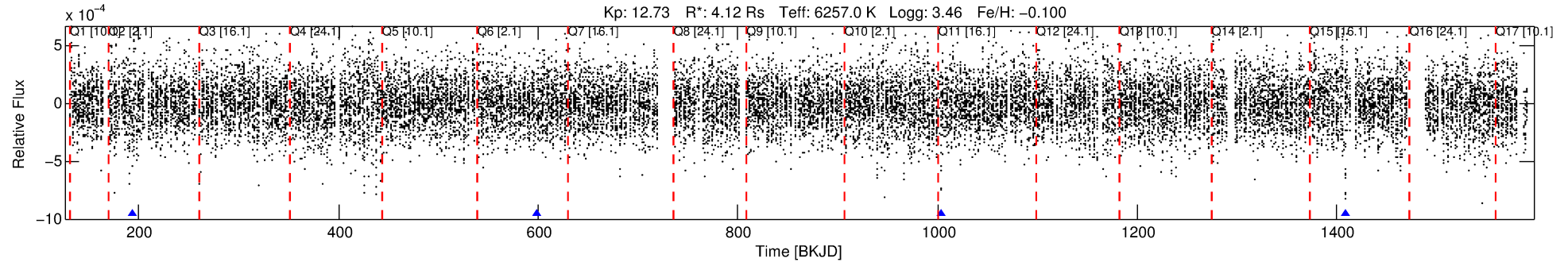
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 003542119-06

No Significant Match Found

# DV One-Page Summary

KIC: 3542119 Candidate: 6 of 10 Period: 405.131 d



## DV Fit Results:

Period = 405.13071 [0.00895] d  
Epoch = 193.1661 [0.0141] BKJD  
Rp/R\* = 0.0162 [0.0112]  
a/R\* = 294.00 [1055.36]  
b = 0.71 [2.52]  
Seff = 13.86 [9.17]  
Teq = 492 [81] K  
Rp = 7.27 [5.85] Re  
a = 1.2981 [0.5232] AU  
Ag = 4735.64 [7327.78] [0.65 $\sigma$ ]  
Teffp = 6310 [2223] K [2.62 $\sigma$ ]

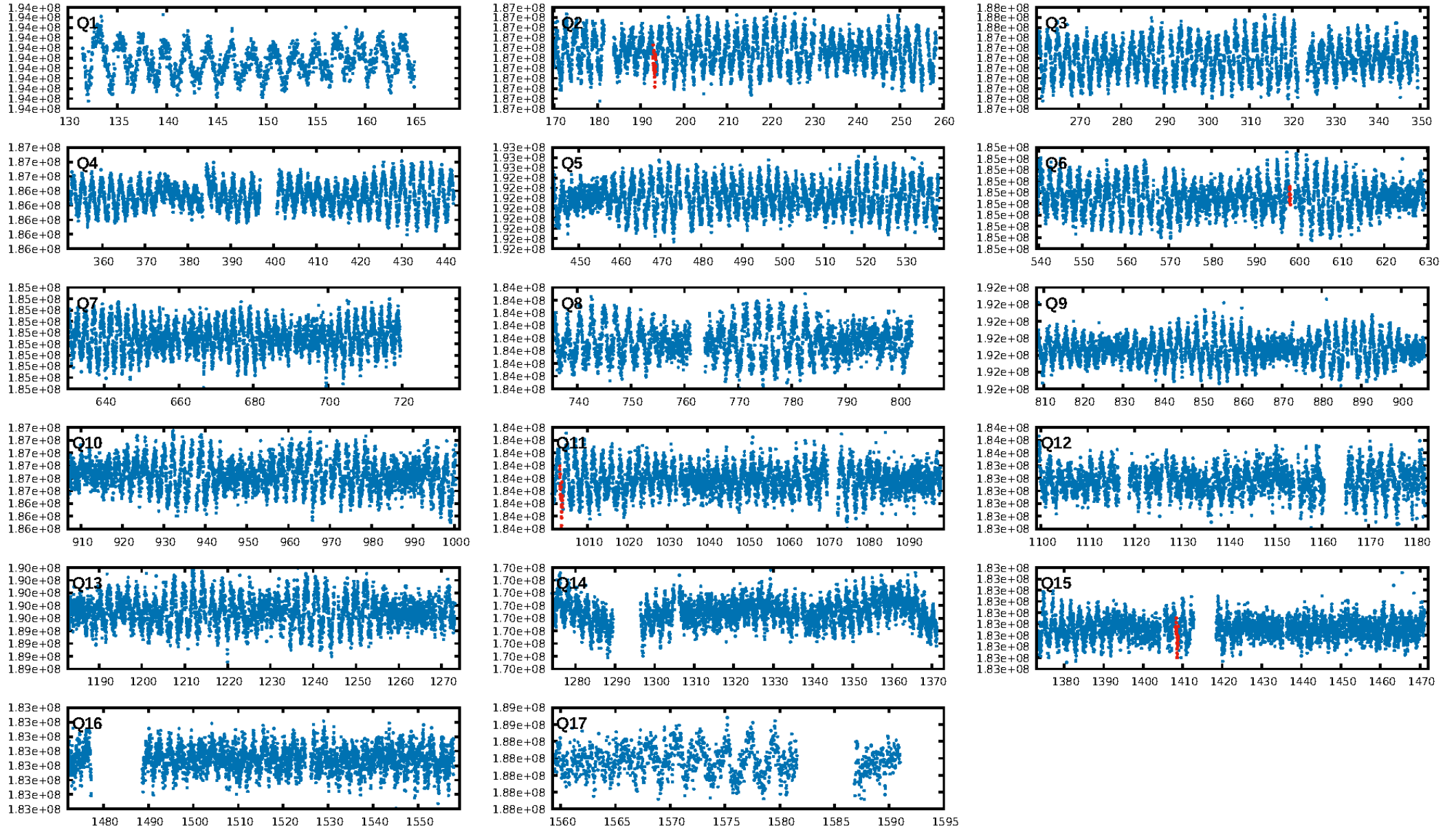
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [483.87 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 10.0%  
ModelChiSquareGof-sig: 86.6%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 1.401  
Centroid-sig: 29.9%  
Centroid-so: 1.020 arcsec [0.85 $\sigma$ ]  
OotOffset-rm: 1.105 arcsec [1.84 $\sigma$ ]  
KicOffset-rm: 1.081 arcsec [2.63 $\sigma$ ]  
OotOffset-st: 1/2/0/0 [3]  
KicOffset-st: 1/2/0/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 0.67 [2/3]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:15:59 Z

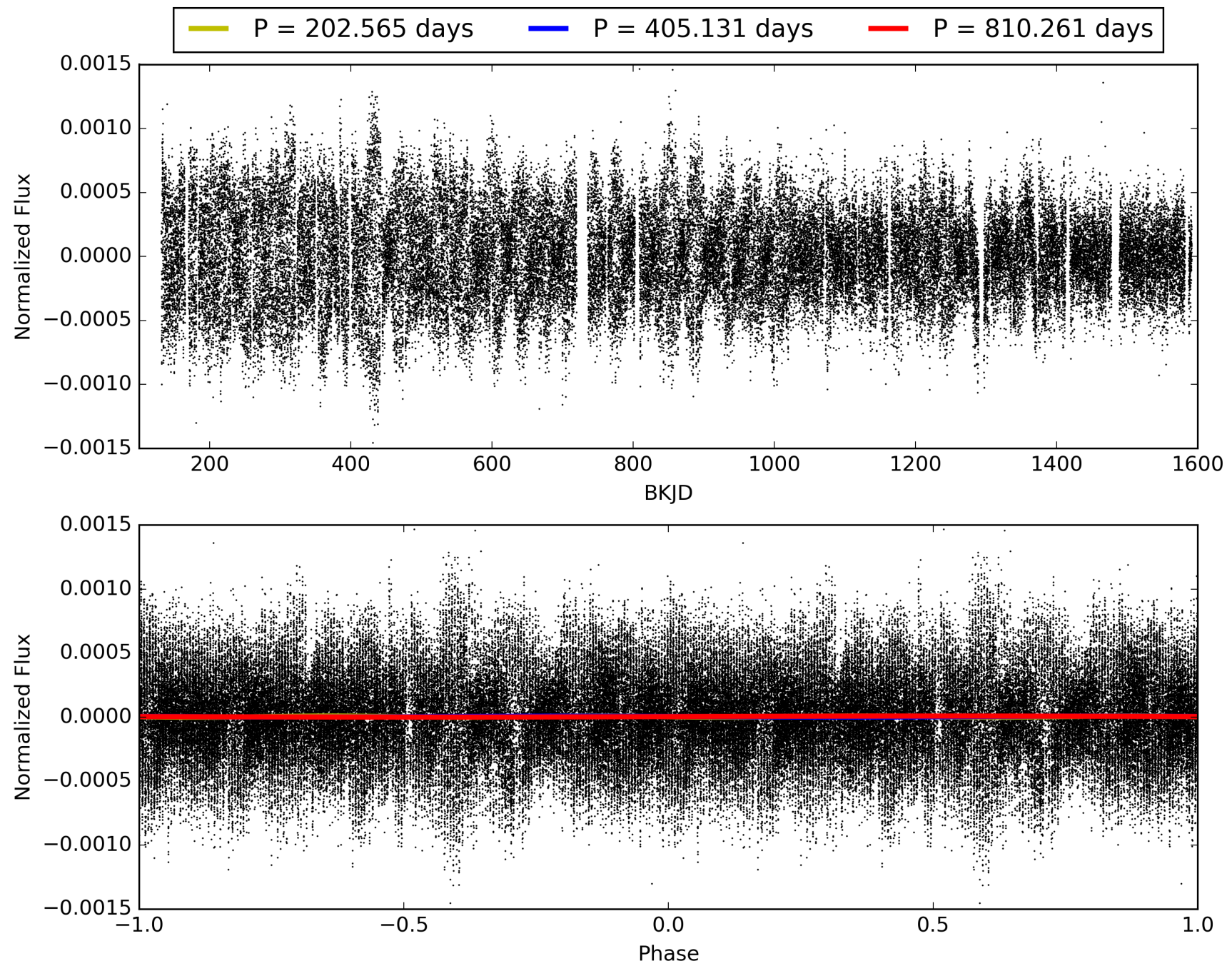
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003542119-06, PDC Light Curves





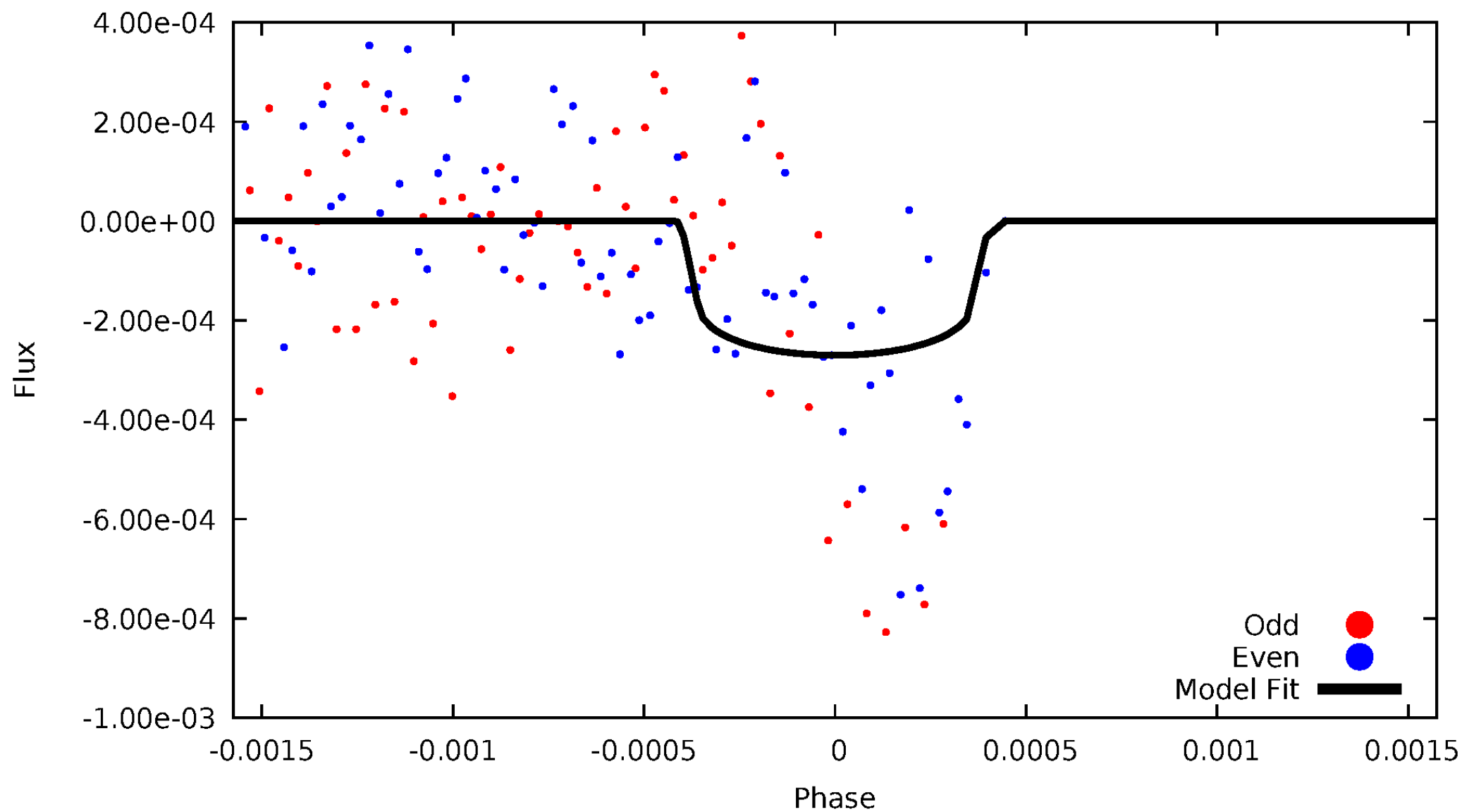
TCE 003542119-06





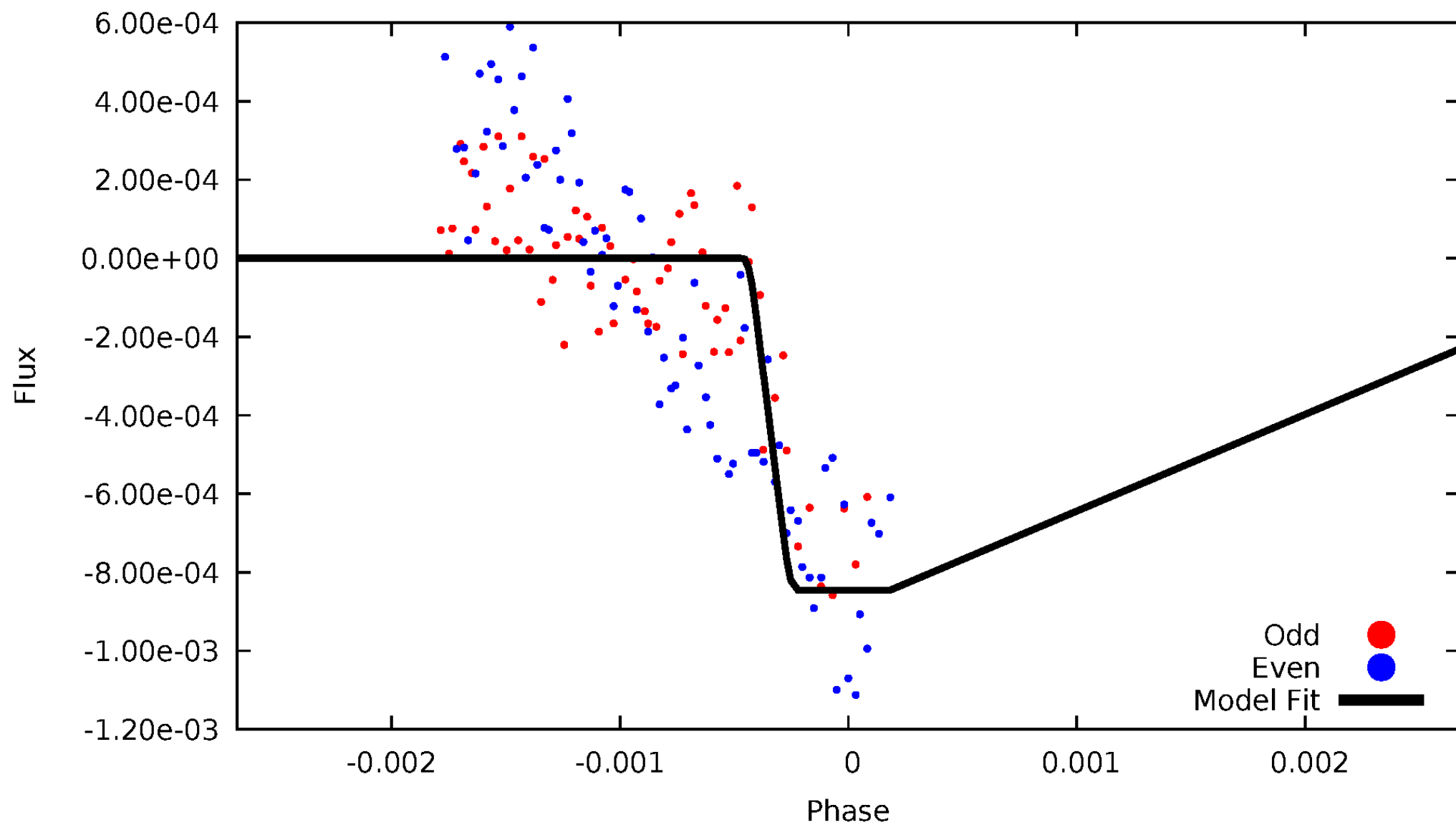
# DV Odd/Even

TCE 003542119-06



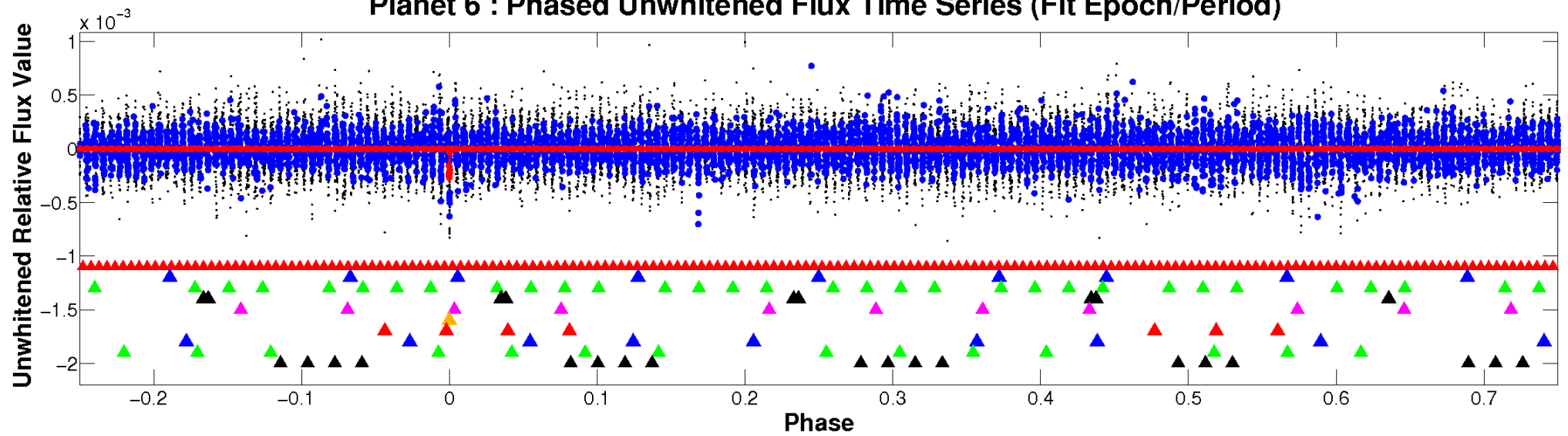
# ALT Odd/Even

TCE 003542119-06

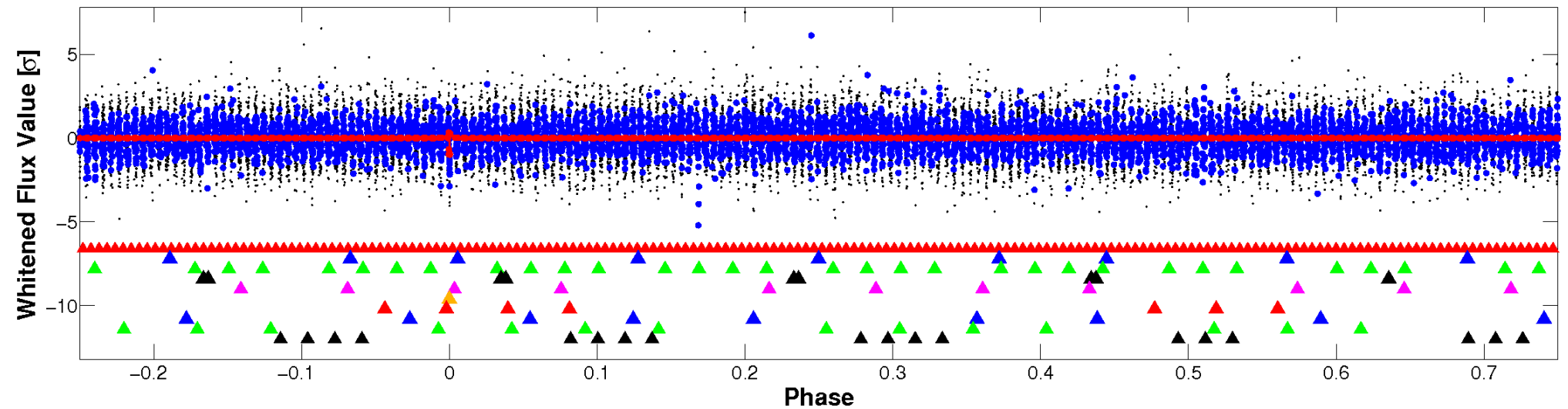


# Non-Whitened Vs. Whitened Light Curve

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

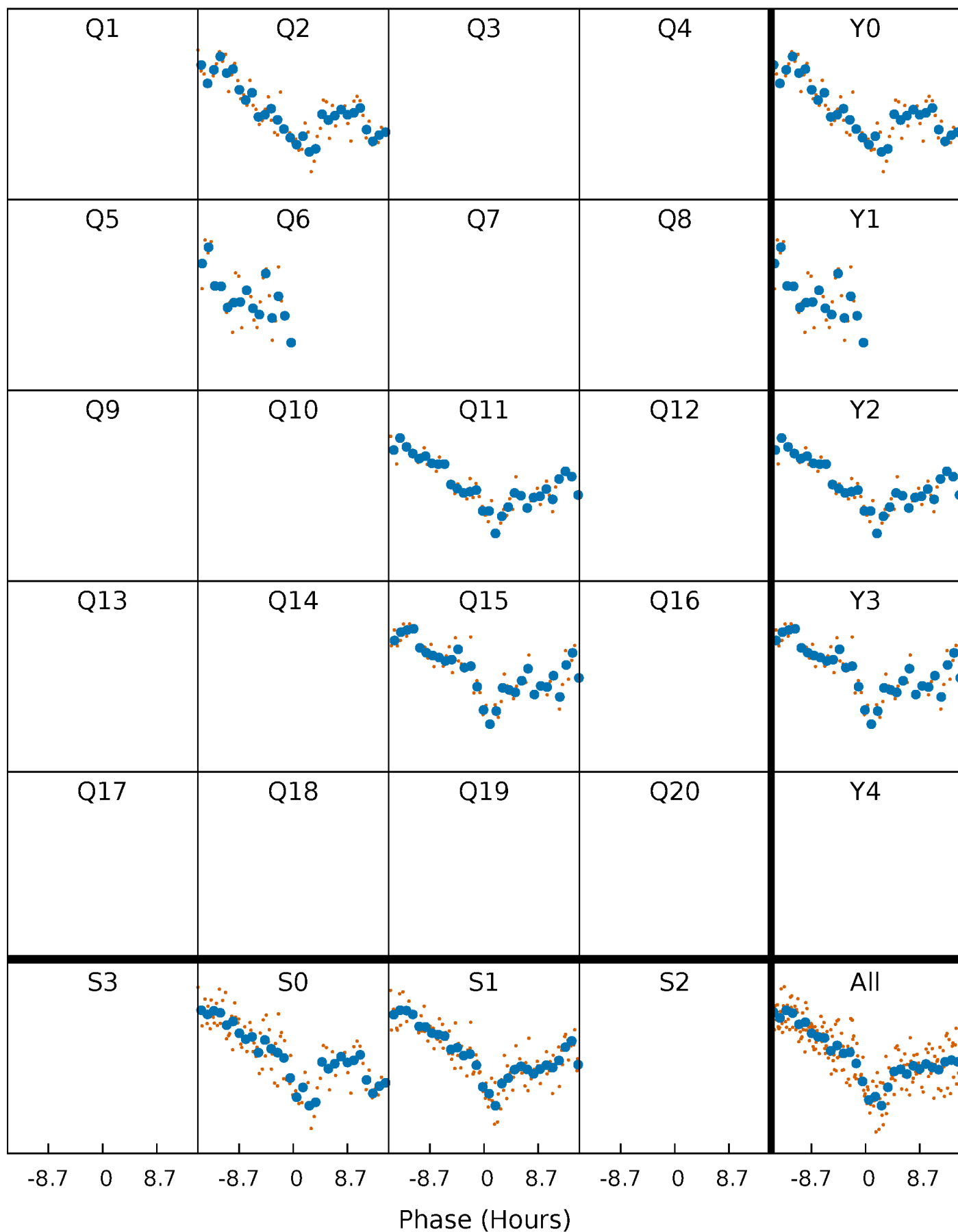


## Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



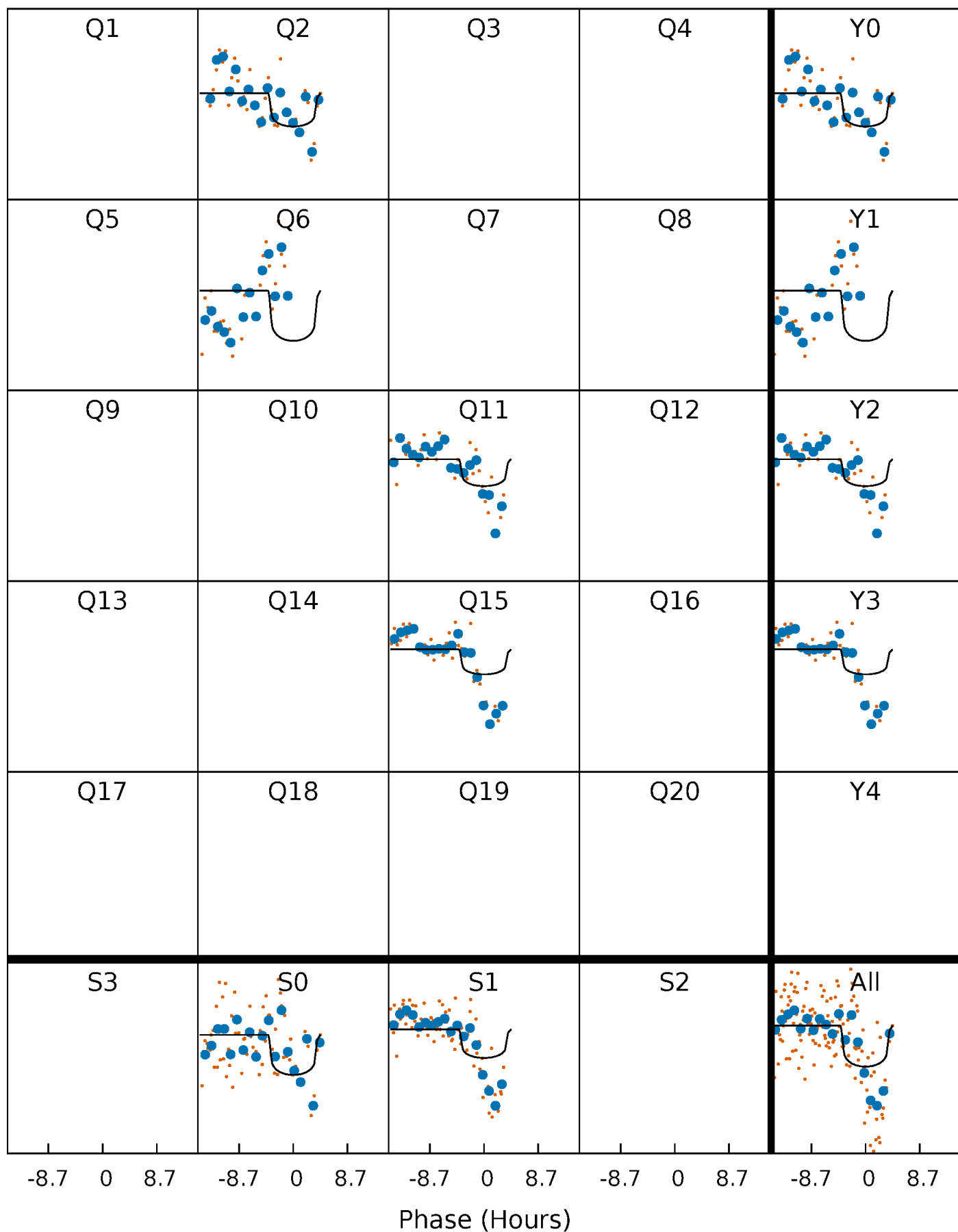
# PDC Quarter-Phased Transit Curves

TCE 003542119-06 P=405.130706 Days  $T_0=193.166102$  (BKJD)



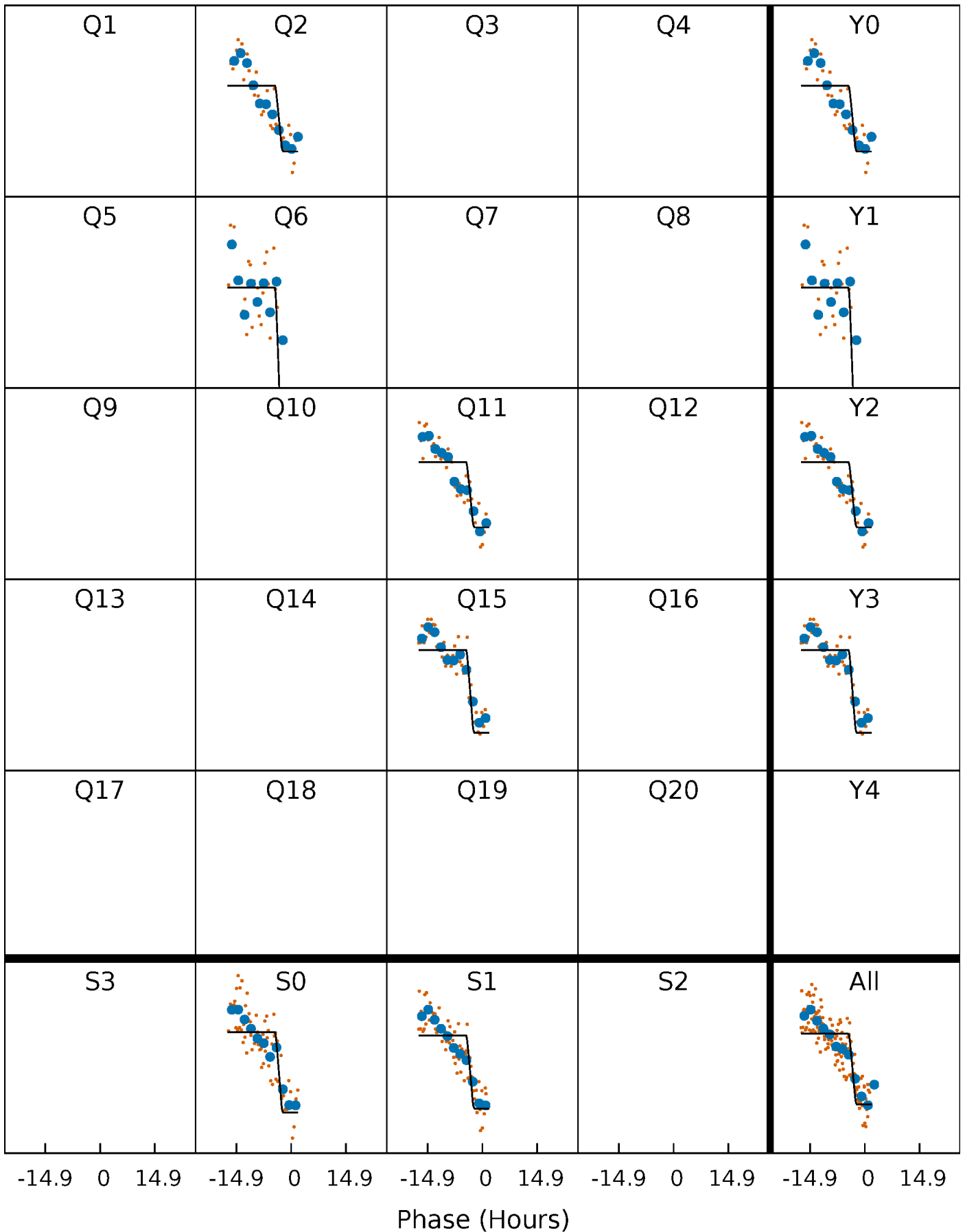
# DV Quarter-Phased Transit Curves

TCE 003542119-06 P=405.130706 Days  $T_0=193.166102$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

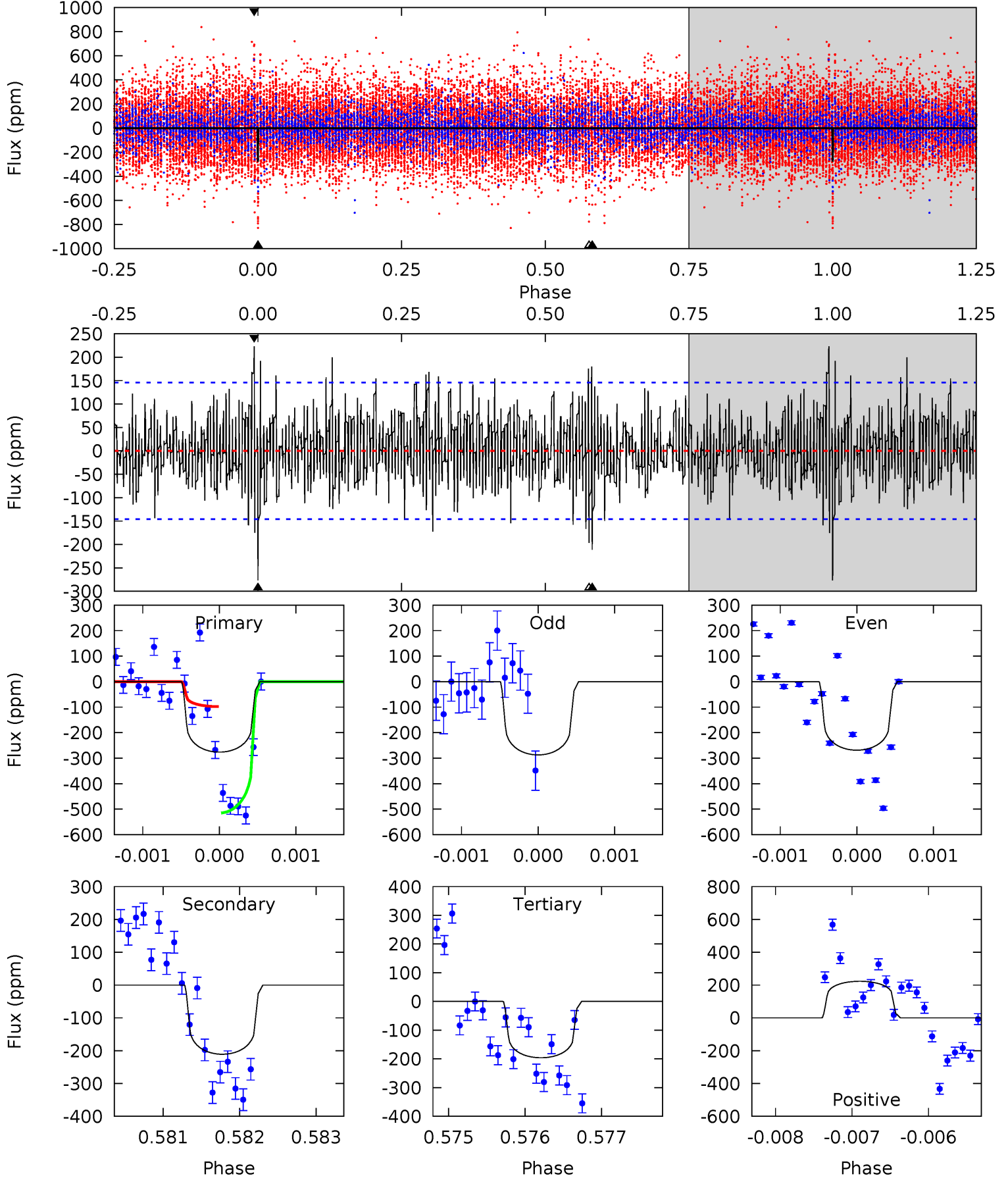
TCE 003542119-06 P=405.122572 Days  $T_0=193.272371$  (BKJD)



# DV Model-Shift Uniqueness Test

003542119-06, P = 405.130706 Days, E = 193.166102 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
10.4	7.92	7.36	8.37	5.48	3.34	2.13	3.01	2.00	0.55	-0.45	0.34	0.81	0.45	7.73

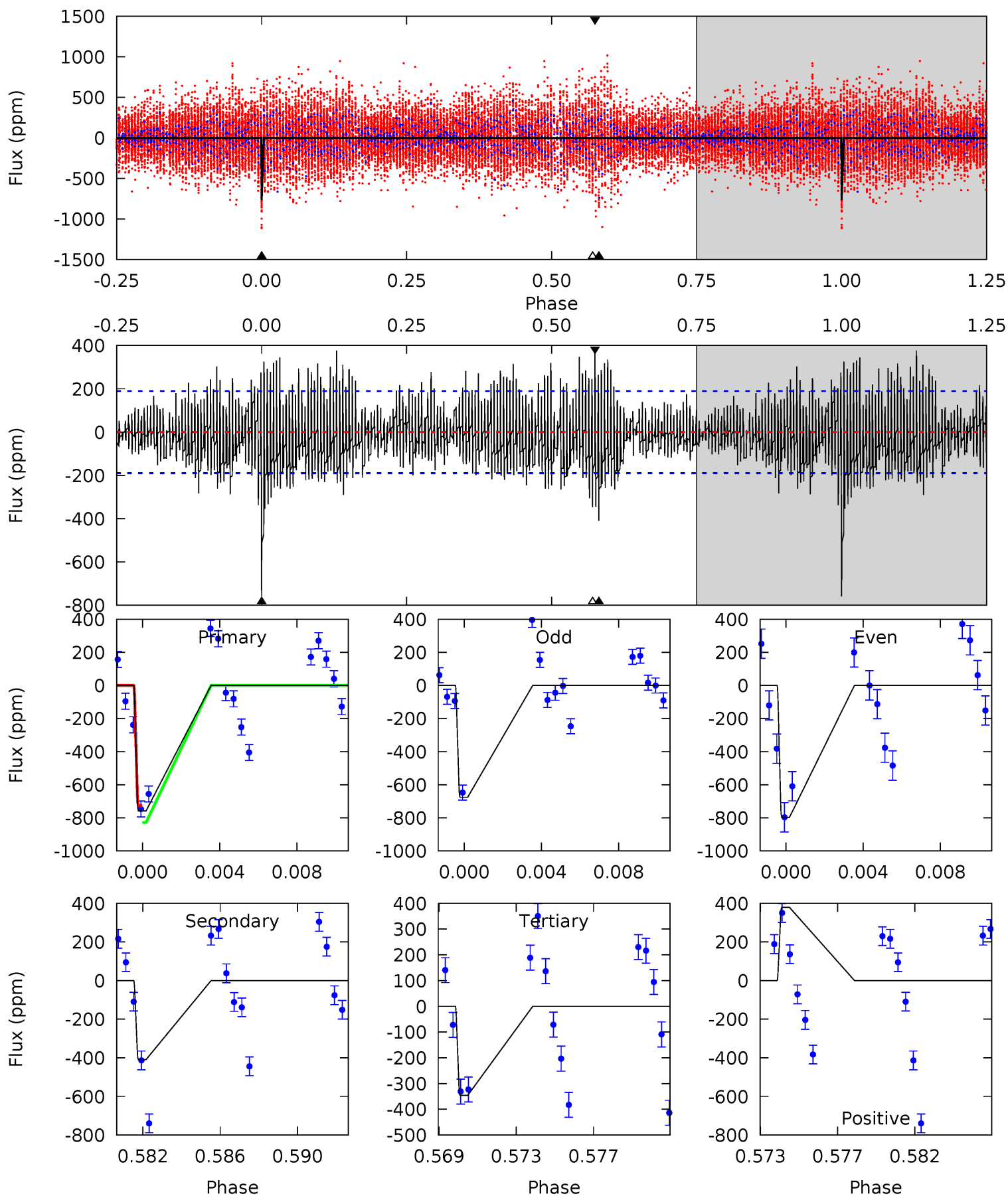




# Alt Model-Shift Uniqueness Test

003542119-06, P = 405.122572 Days, E = 193.272371 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
20.8	11.2	9.49	10.4	5.20	2.87	3.14	11.3	10.4	1.74	0.83	1.63	0.88	0.33	1.19



### Stellar Parameters For KIC 003542119

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6257^{+189}_{-151}$	$3.457^{+0.384}_{-0.096}$	$-0.100^{+0.350}_{-0.300}$	$4.124^{+0.608}_{-1.701}$	$1.777^{+0.178}_{-0.415}$	$0.036^{+0.119}_{-0.011}$
	+3%/-2%	+11%/-3%	+350%/-300%	+15%/-41%	+10%/-23%	+333%/-31%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 003542119-06 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-211 \pm 27$	$7.10^{+4.95}_{-3.91}$	$670^{+46}_{-69}$	$5758^{+3003}_{-1134}$	$3864^{+15174}_{-2550}$
Alt.	$-410 \pm 36$	$12.00^{+5.68}_{-4.80}$	$676^{+43}_{-71}$	$5260^{+1282}_{-684}$	$2539^{+4565}_{-1324}$

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

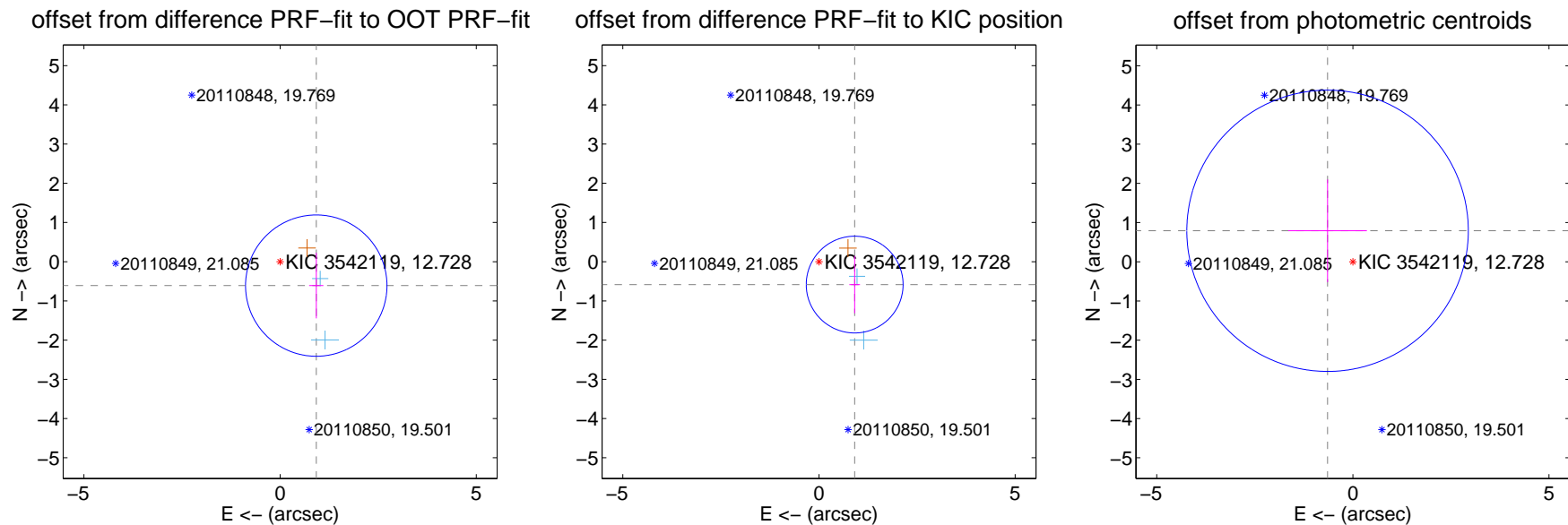
## DV Centroid Data

Supplemental centroid analysis for 003542119-06. Kepler magnitude: 12.73. Transit SNR 6.05

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.105 \pm 0.601$	1.84	$-0.921 \pm 0.181$	$-0.610 \pm 0.837$
PRF-fit source offset from KIC position	$1.081 \pm 0.411$	2.63	$-0.910 \pm 0.135$	$-0.584 \pm 0.732$
photometric centroid source offset	$1.02 \pm 1.20$	0.85	$0.64 \pm 1.00$	$0.79 \pm 1.31$



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.

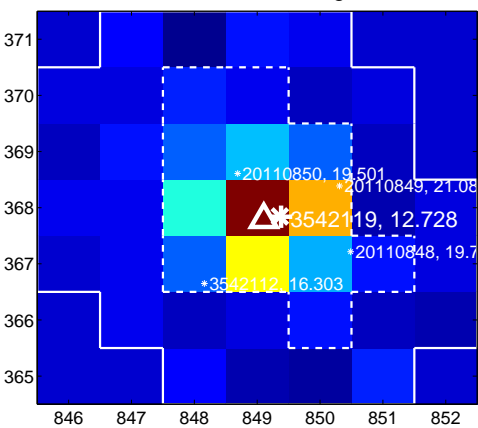
Q1 no difference image



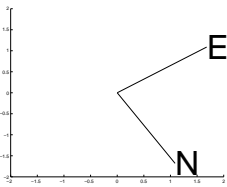
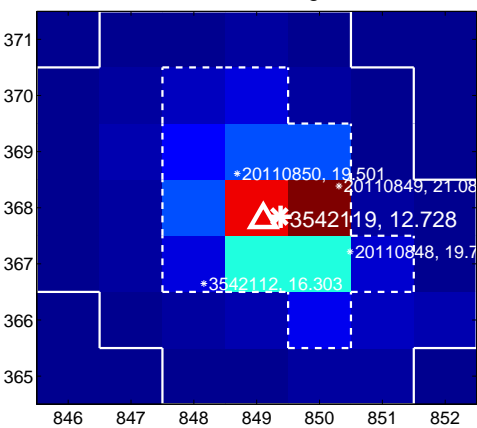
Q1 no OOT image



Q2 difference image



Q2 OOT image



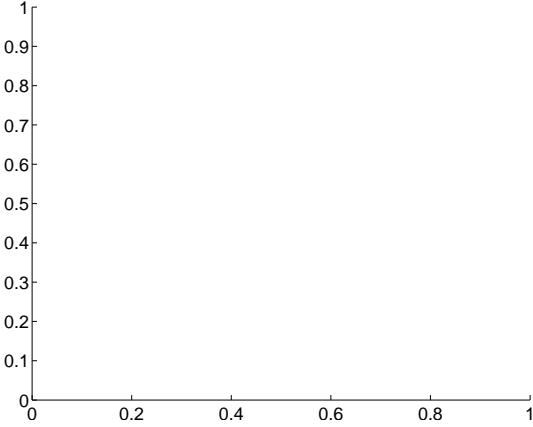
Q3 no difference image



Q3 no OOT image



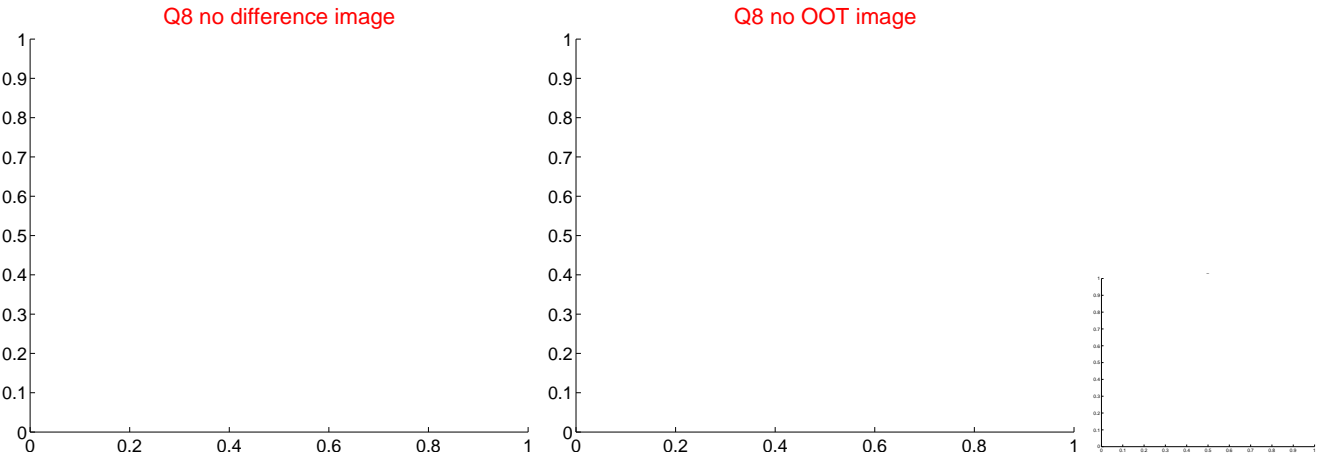
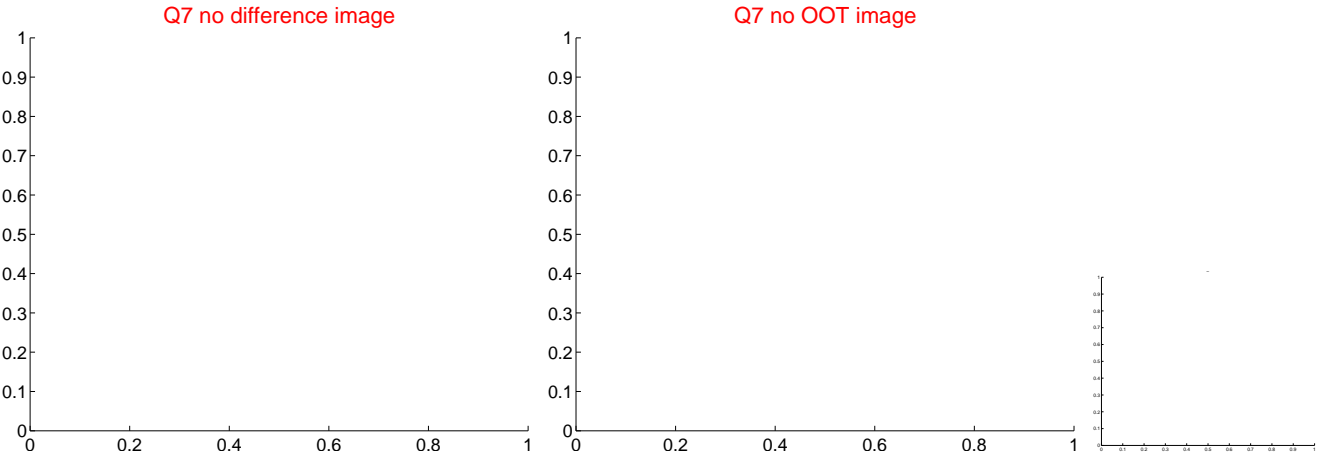
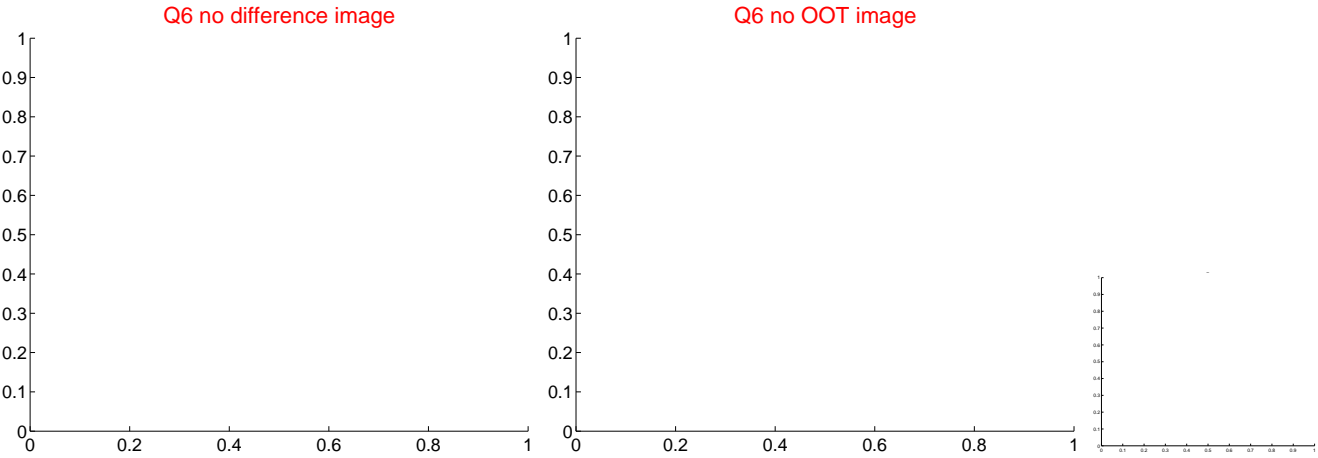
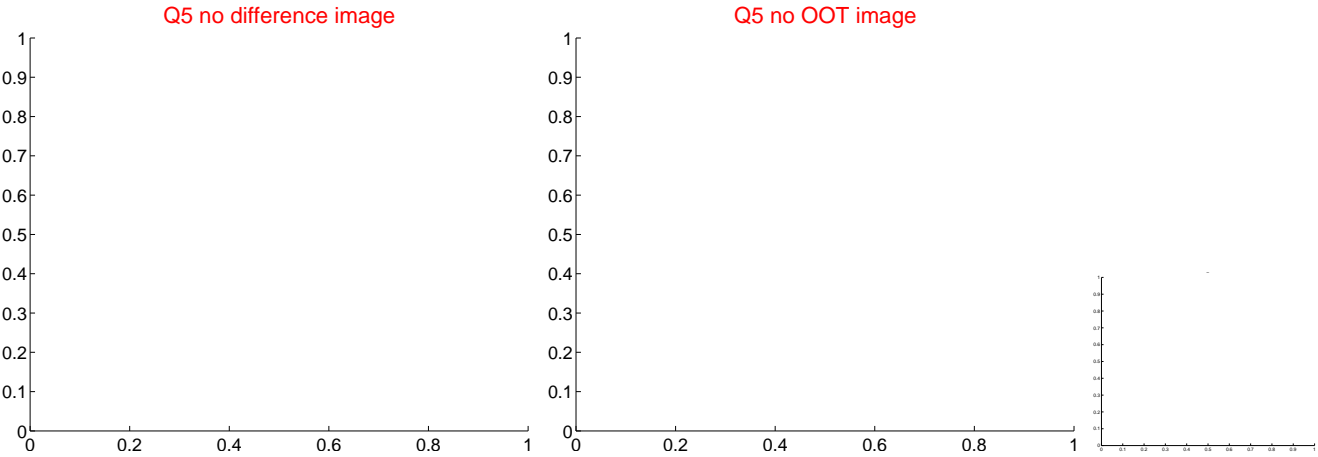
Q4 no difference image



Q4 no OOT image



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.

Q9 no difference image



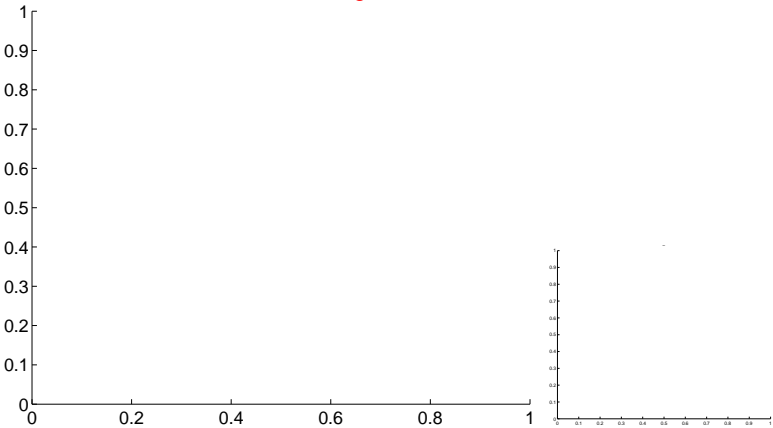
Q9 no OOT image



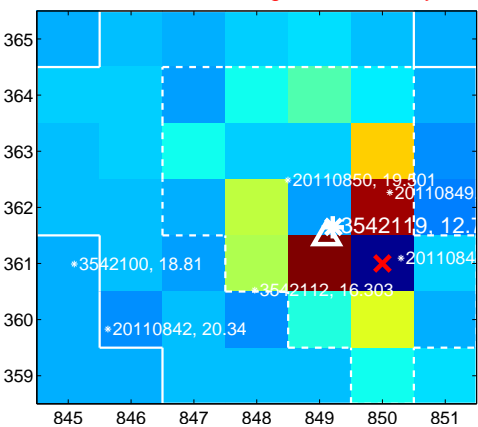
Q10 no difference image



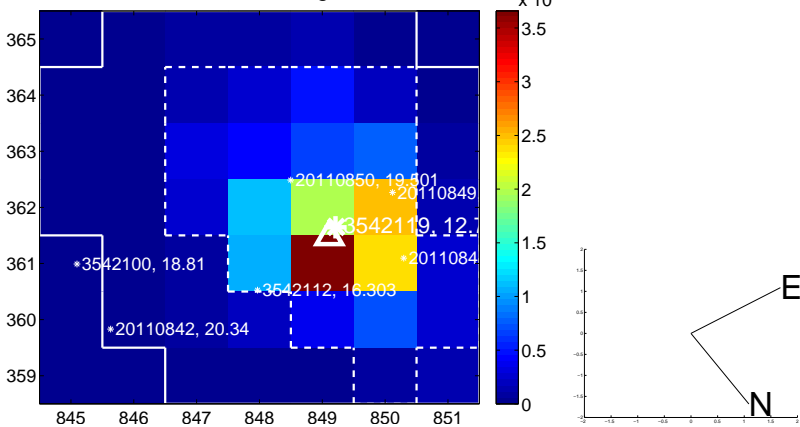
Q10 no OOT image



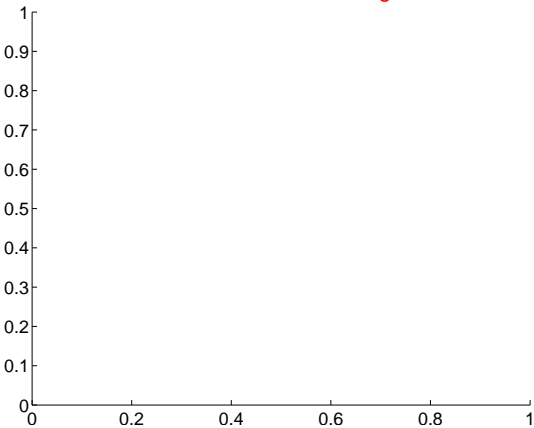
Q11 difference image. Poor Quality



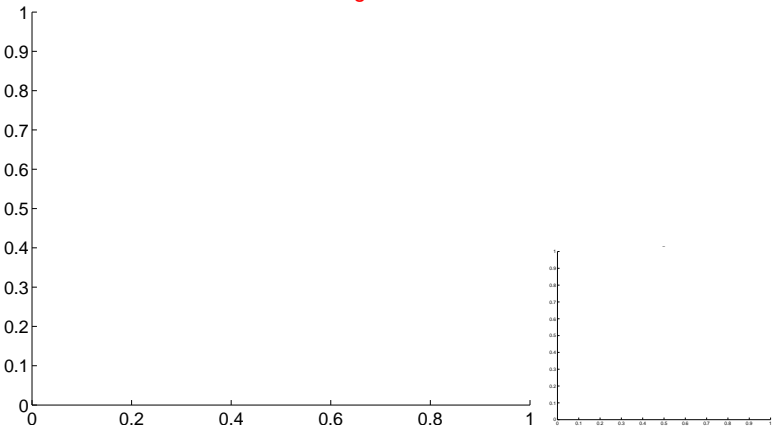
Q11 OOT image



Q12 no difference image

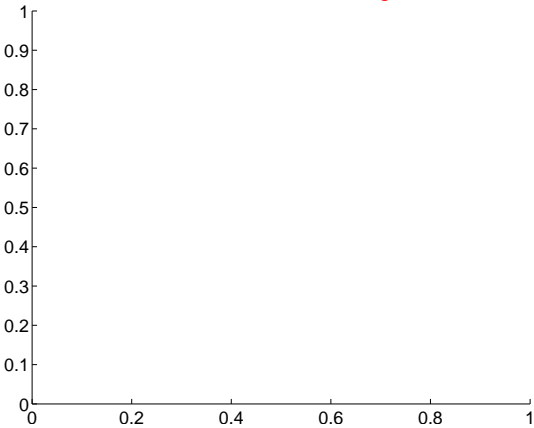


Q12 no OOT image

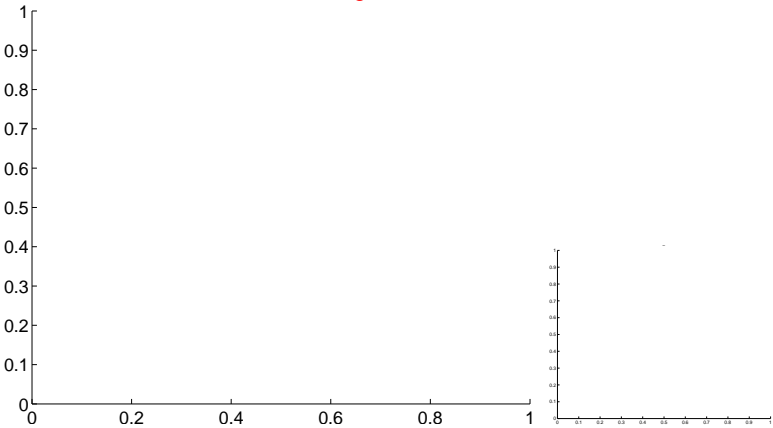


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

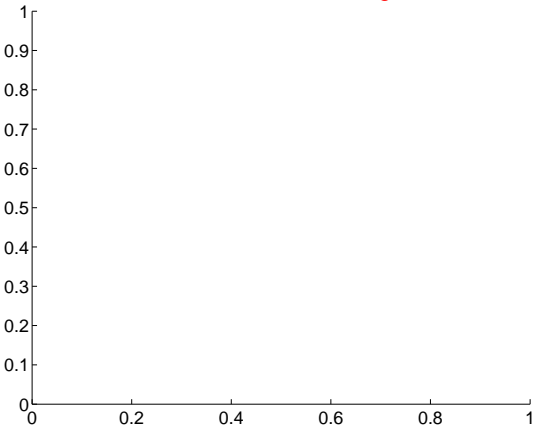
Q13 no difference image



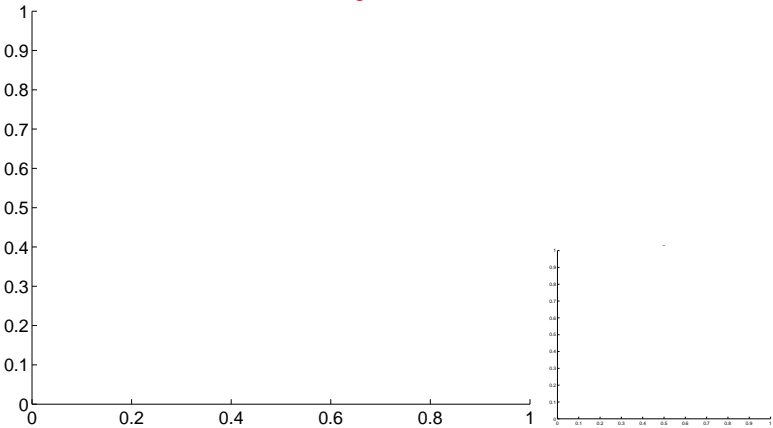
Q13 no OOT image



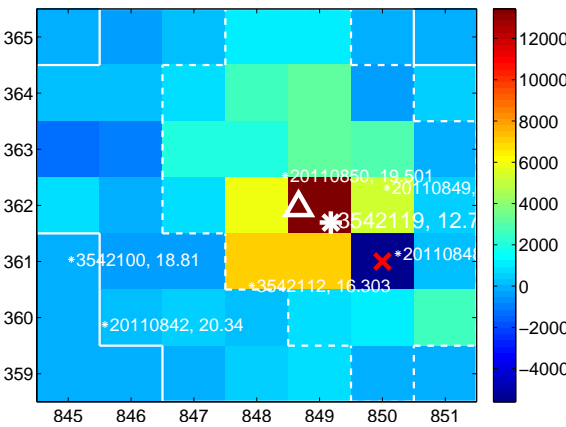
Q14 no difference image



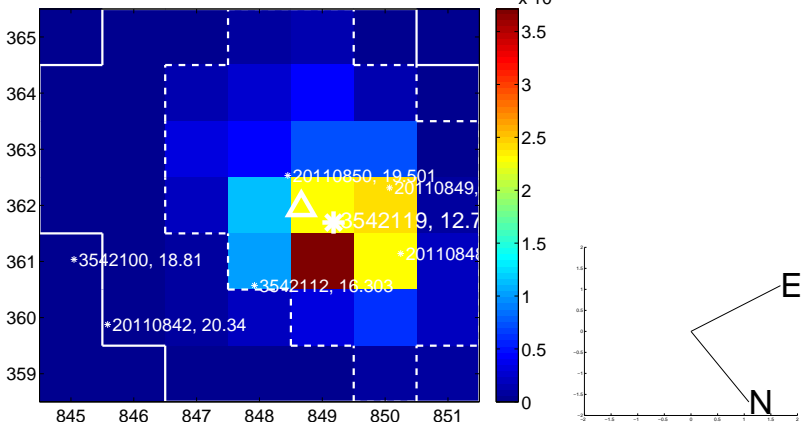
Q14 no OOT image



Q15 difference image



Q15 OOT image



Q16 no difference image

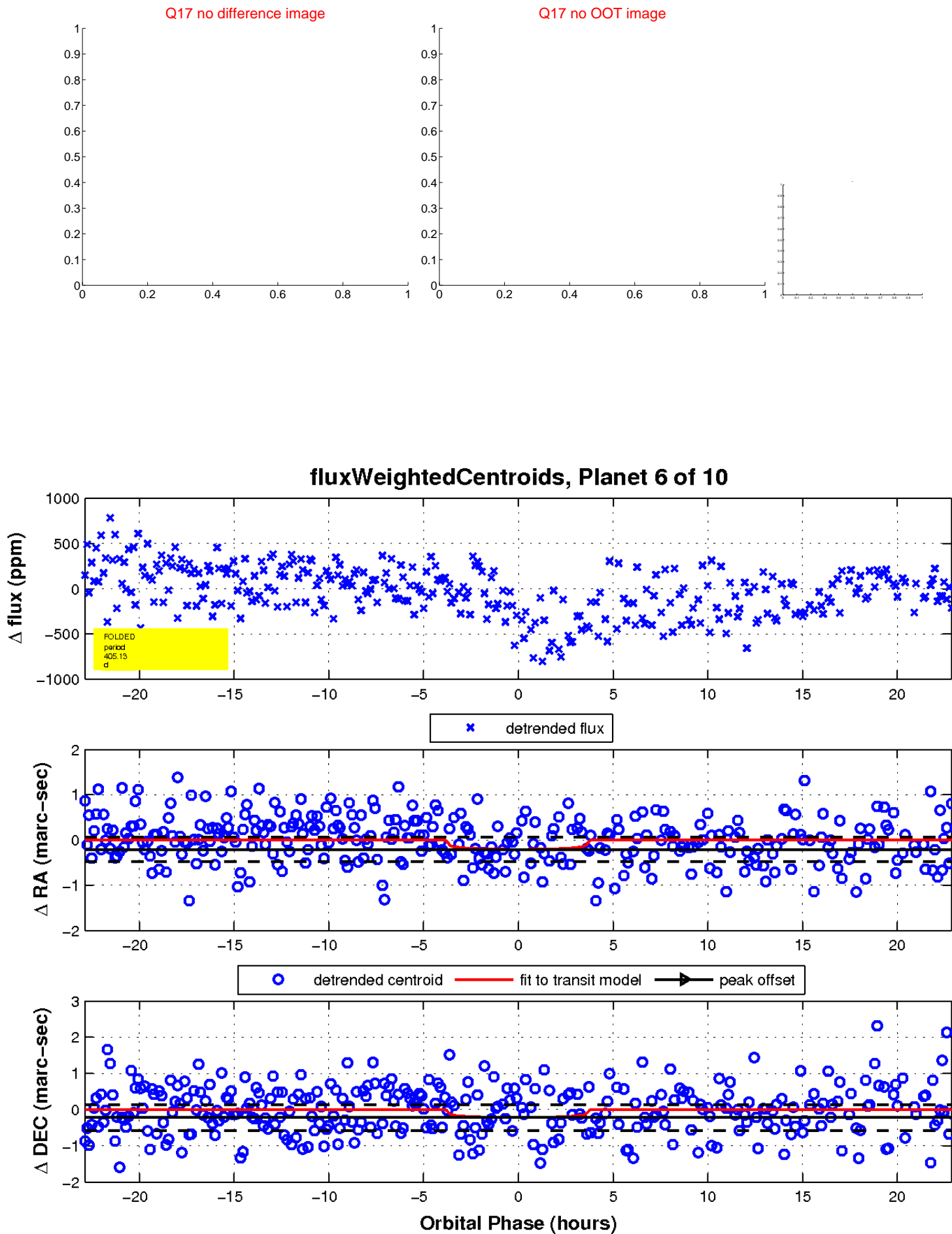


Q16 no OOT image



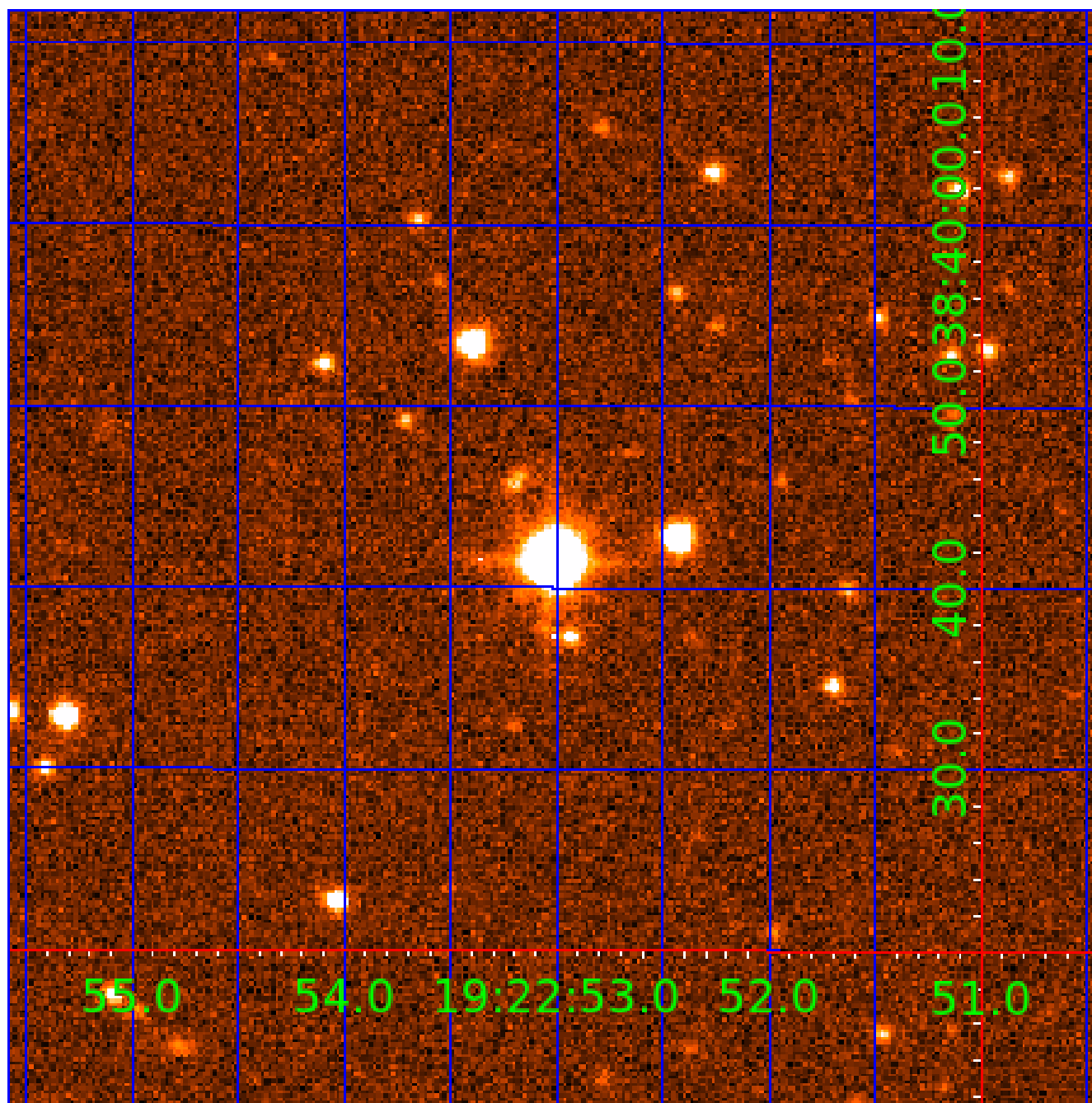


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003542119-01	OBS	No	2.201670	132.421943	16.8	11.223	9.5	4.9	4.12	6257	2.09	14506.69
003542119-02	OBS	No	177.830213	166.028806	348.6	3.155	9.8	8.1	4.12	6257	8.77	41.55
003542119-03	OBS	No	46.045765	160.209140	195.1	4.733	9.7	8.8	4.12	6257	6.73	251.76
003542119-04	OBS	No	161.792595	208.618920	119.2	13.018	9.4	4.1	4.12	6257	4.93	47.13
003542119-05	OBS	No	144.797709	136.024202	372.3	3.559	8.9	9.3	4.12	6257	9.30	54.65
003542119-06	OBS	No	405.130706	193.166102	270.1	7.652	8.7	6.0	4.12	6257	7.27	13.86
003542119-07	OBS	No	211.002675	175.479319	277.5	5.845	8.9	6.9	4.12	6257	7.39	33.08
003542119-08	OBS	No	155.456868	215.297961	265.2	7.935	8.7	8.0	4.12	6257	7.38	49.71
003542119-09	OBS	No	106.310124	190.178583	229.9	7.393	8.0	7.4	4.12	6257	6.90	82.50
003542119-10	OBS	No	79.537459	169.217320	368.5	1.912	7.9	7.7	4.12	6257	8.72	121.47

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003542119-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003542119-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003542119-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT
003542119-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003542119-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003542119-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003542119-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
003542119-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS
003542119-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003542119-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

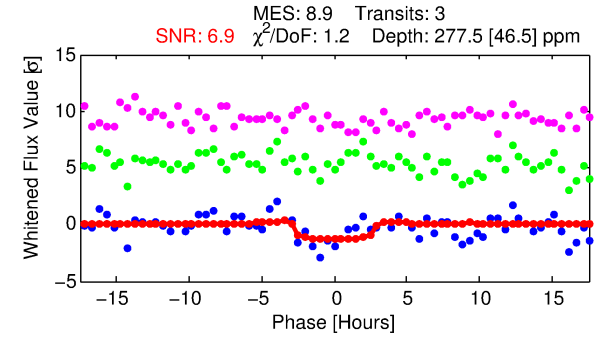
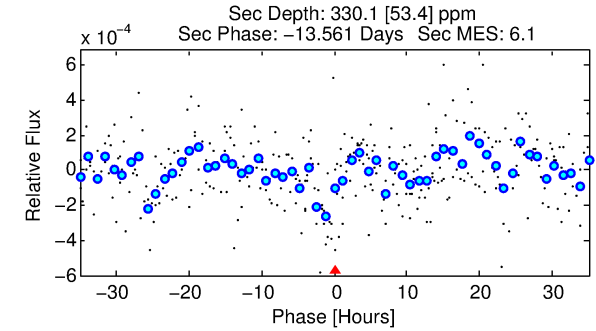
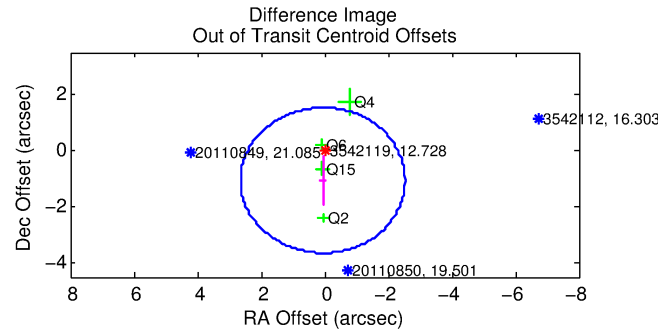
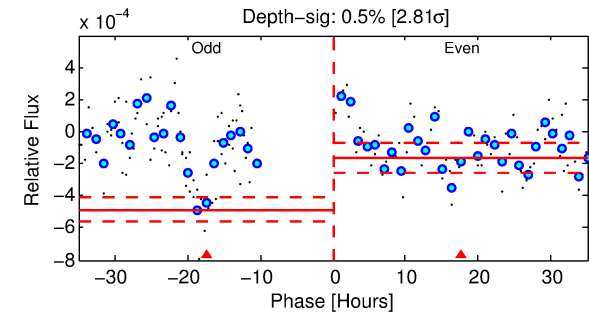
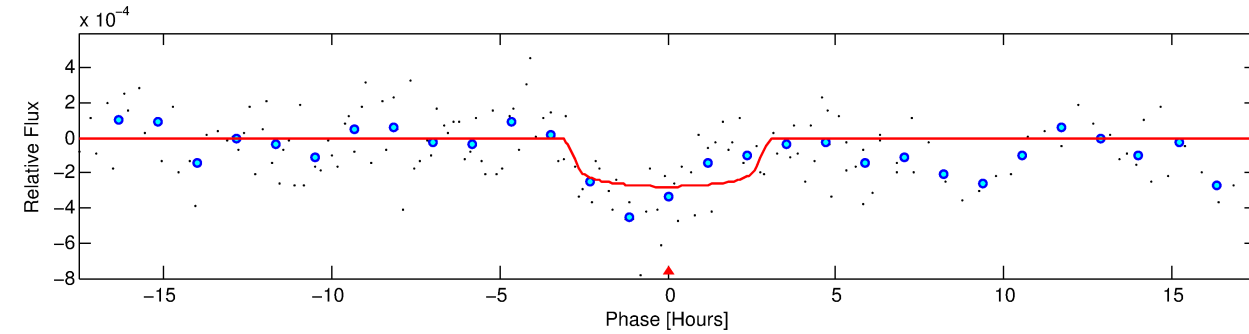
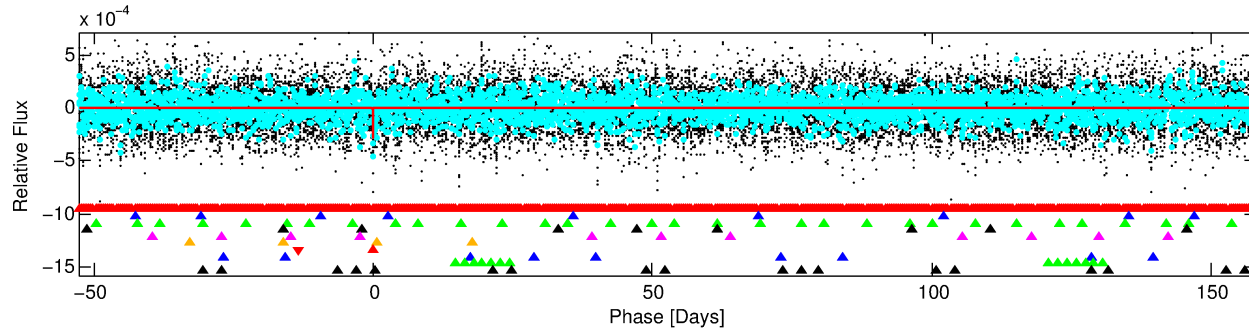
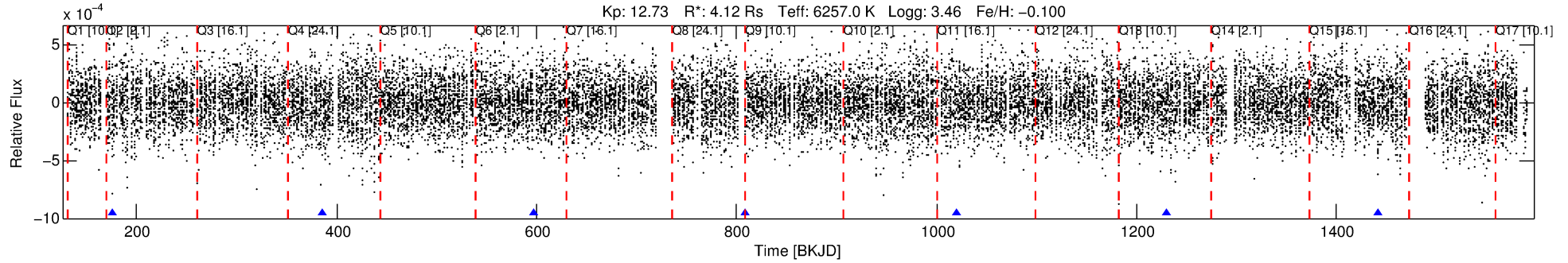
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 003542119-07

No Significant Match Found

# DV One-Page Summary

KIC: 3542119 Candidate: 7 of 10 Period: 211.003 d



## DV Fit Results:

Period = 211.00267 [0.00279] d  
Epoch = 175.4793 [0.0113] BKJD  
Rp/R\* = 0.0164 [0.0165]  
a/R\* = 198.39 [1047.17]  
b = 0.72 [3.58]  
Seff = 33.08 [21.88]  
Teq = 612 [101] K  
Rp = 7.39 [8.03] Re  
a = 0.8403 [0.3387] AU  
Ag = 2350.18 [4984.25] [0.47 $\sigma$ ]  
Teffp = 6583 [3328] K [1.79 $\sigma$ ]

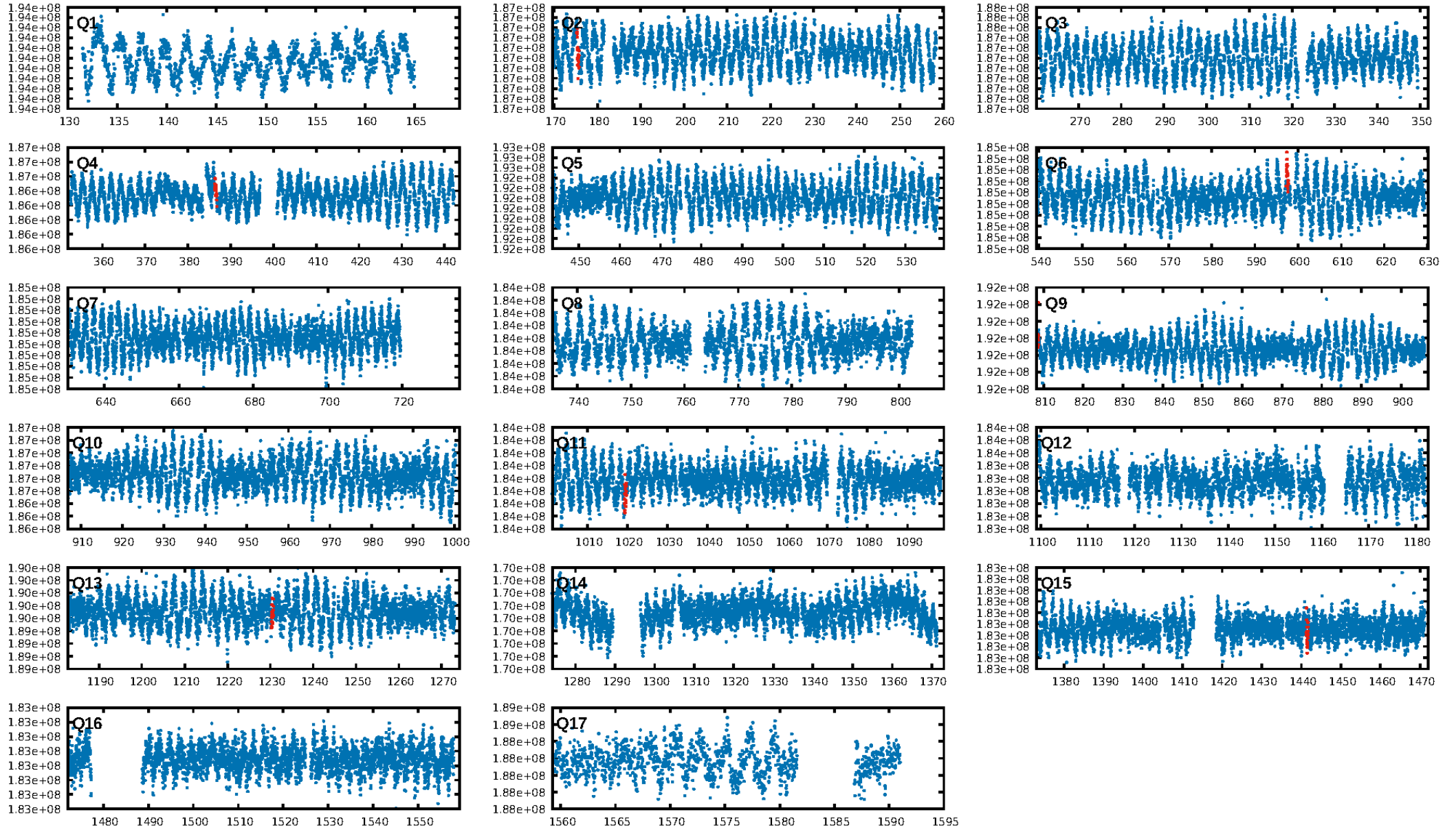
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [119.87 $\sigma$ ]  
LongPeriod-sig: 100.0% [483.87 $\sigma$ ]  
ModelChiSquare2-sig: 14.1%  
ModelChiSquareGof-sig: 69.1%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -0.5849  
Centroid-sig: 6.0%  
Centroid-so: 0.916 arcsec [1.23 $\sigma$ ]  
OotOffset-rm: 1.060 arcsec [1.23 $\sigma$ ]  
KicOffset-rm: 1.029 arcsec [1.18 $\sigma$ ]  
OotOffset-st: 2/1/1/0 [4]  
KicOffset-st: 2/1/1/0 [4]  
DiffImageQuality-fgm: 0.50 [2/4]  
DiffImageOverlap-fno: 0.33 [2/6]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:16:04 Z

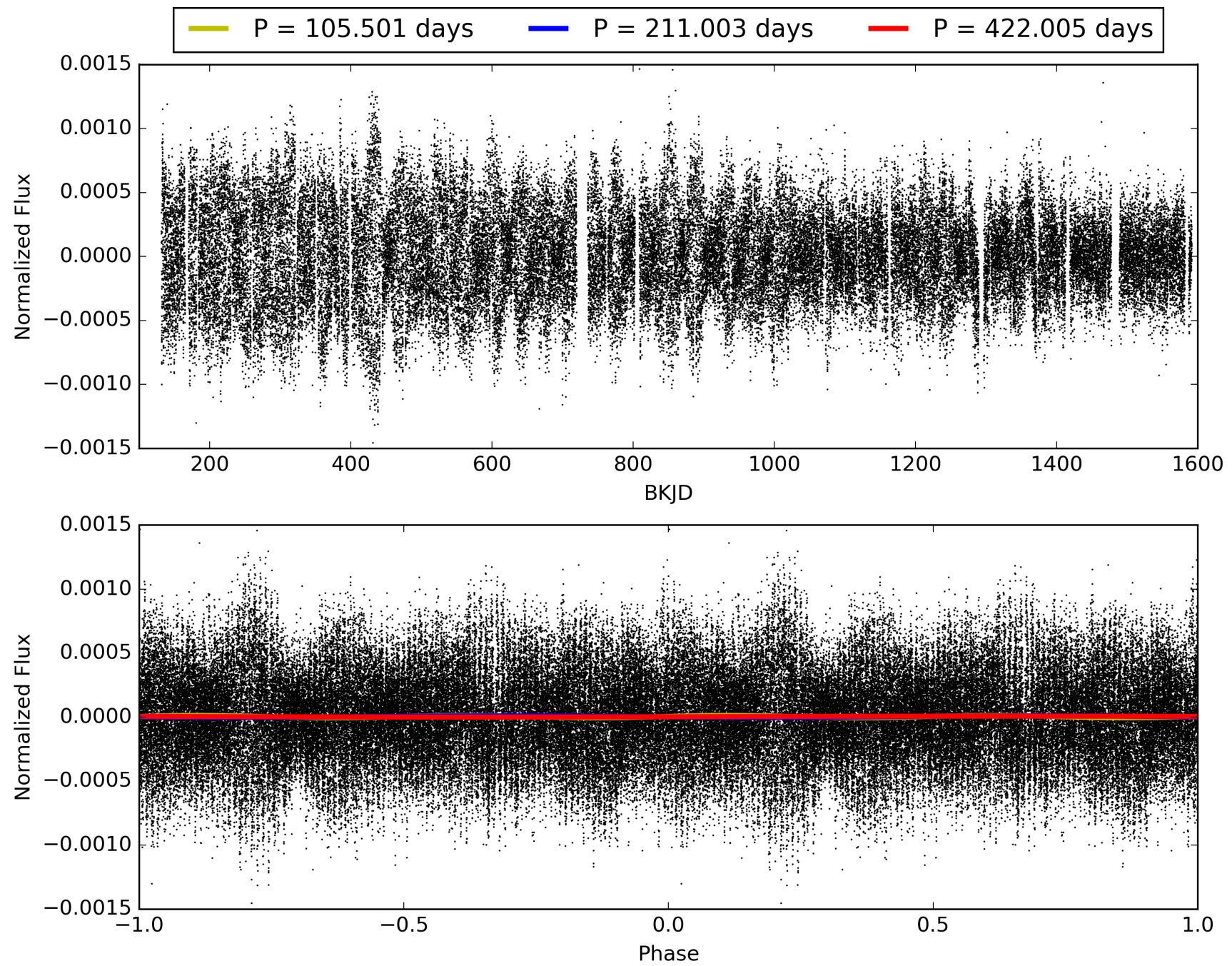
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003542119-07, PDC Light Curves



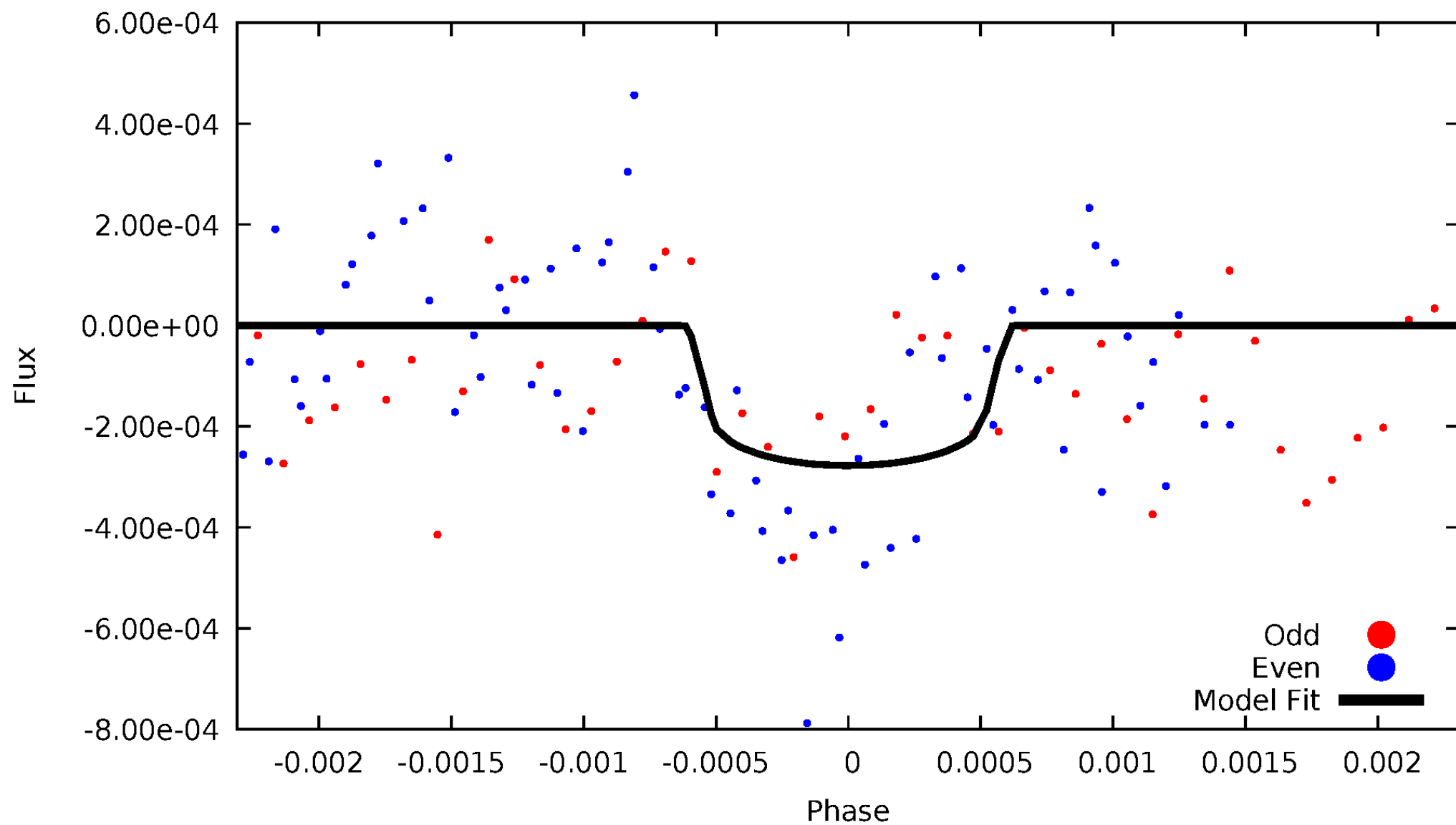


TCE 003542119-07



# DV Odd/Even

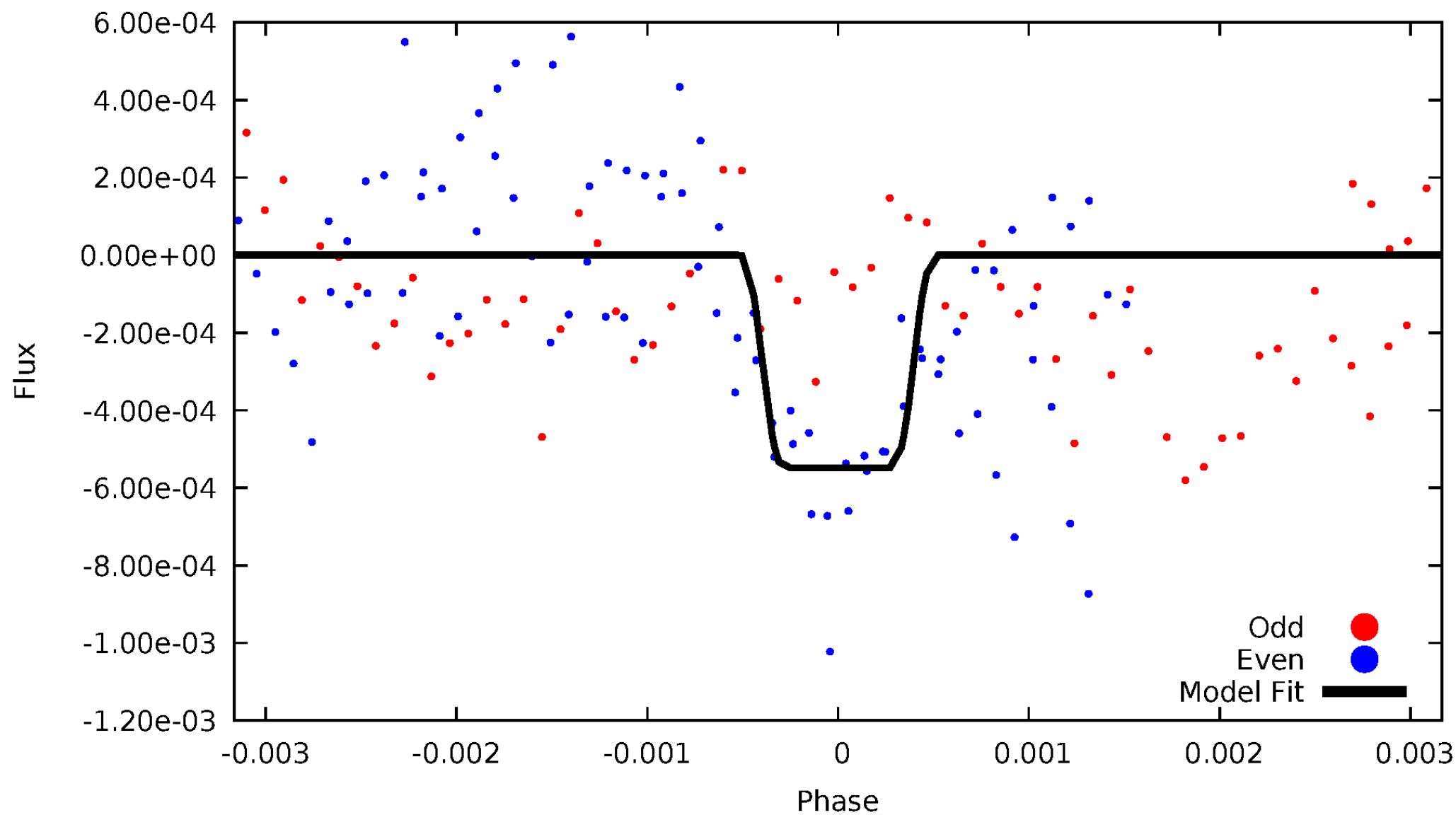
TCE 003542119-07





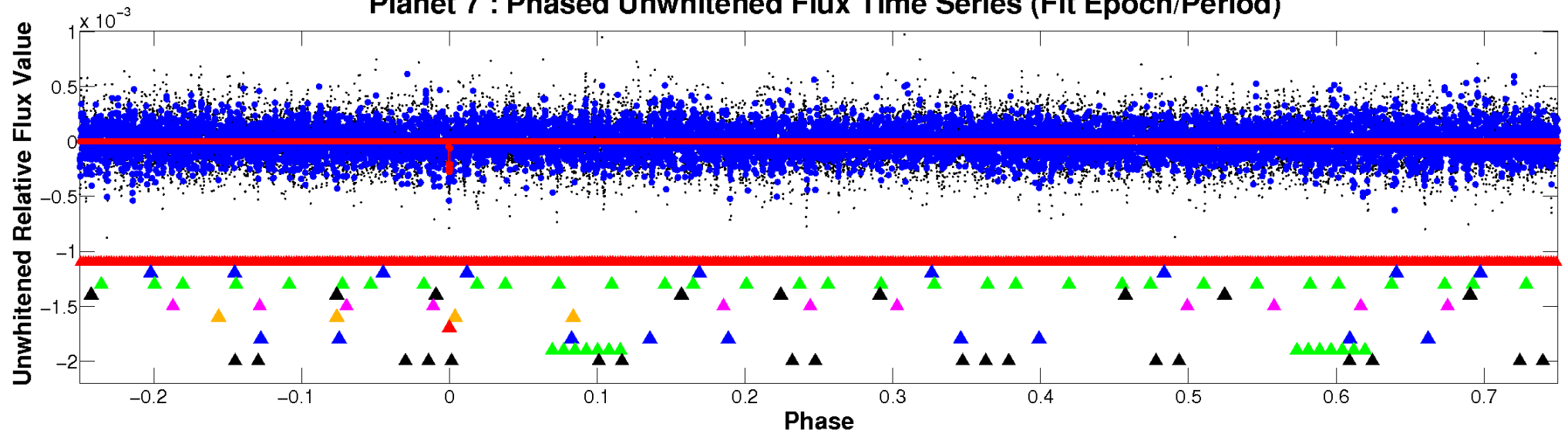
# ALT Odd/Even

TCE 003542119-07

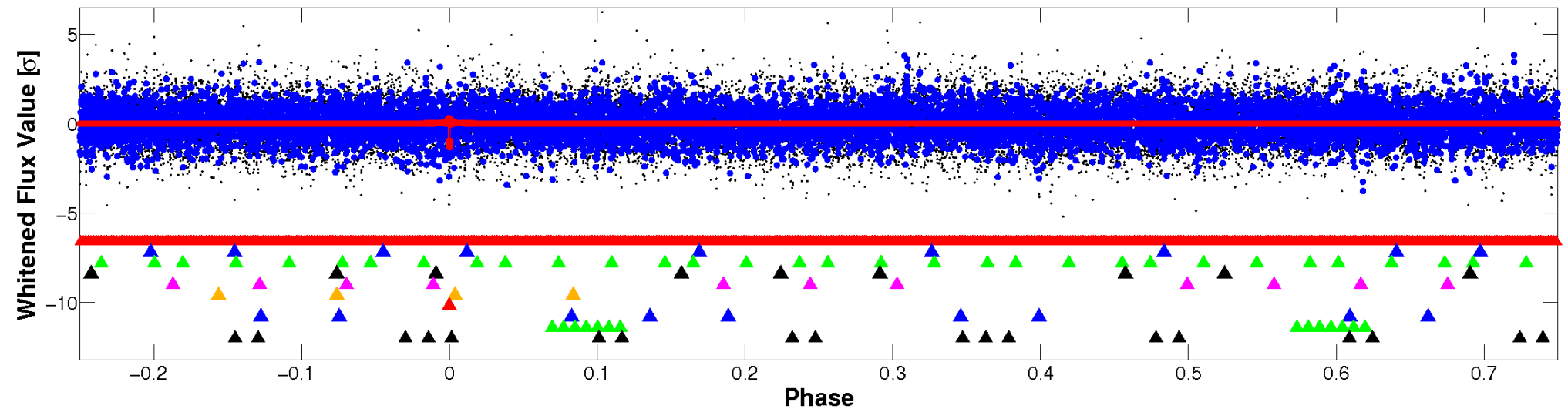


# Non-Whitened Vs. Whitened Light Curve

Planet 7 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

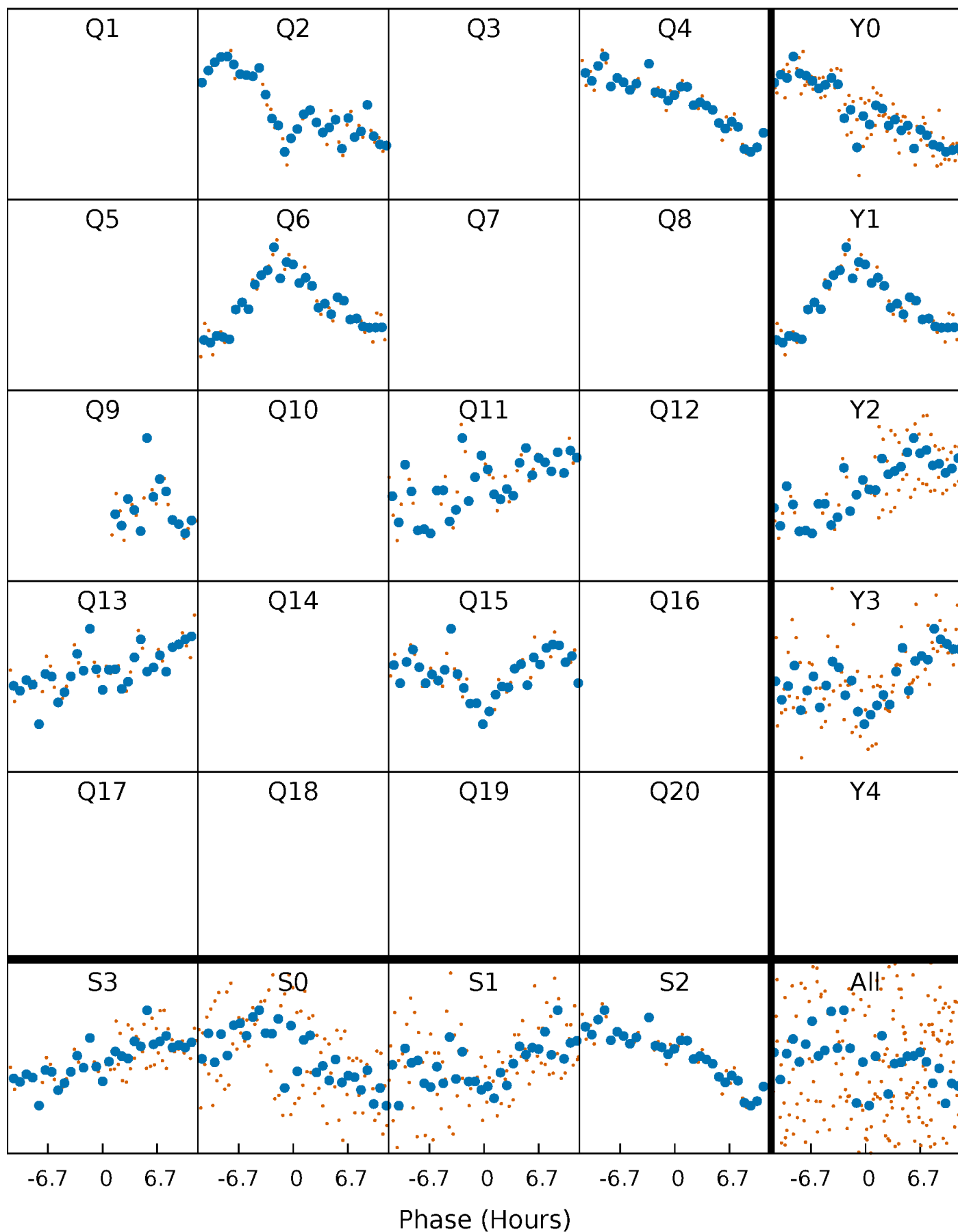


Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



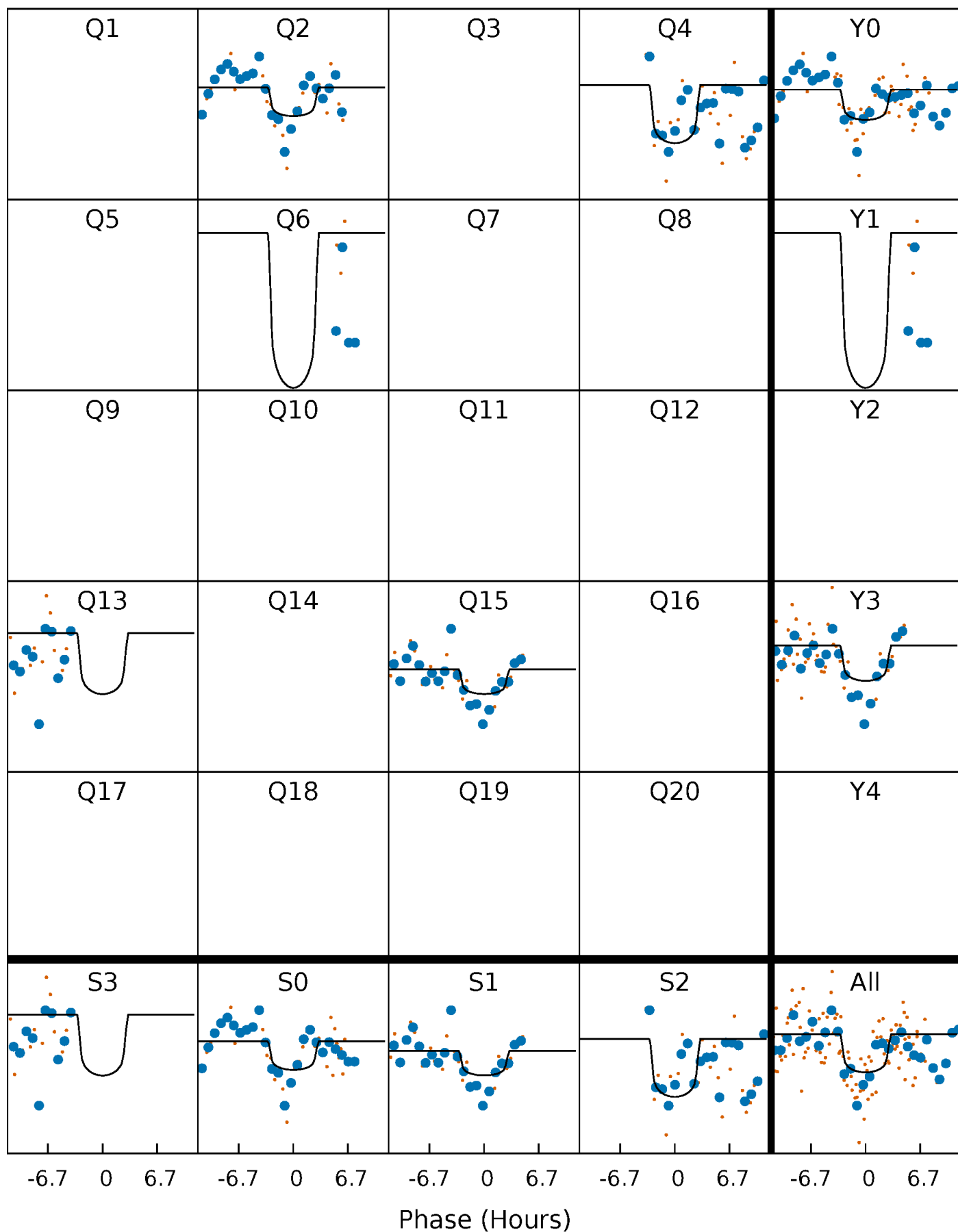
# PDC Quarter-Phased Transit Curves

TCE 003542119-07 P=211.002675 Days  $T_0=175.479319$  (BKJD)



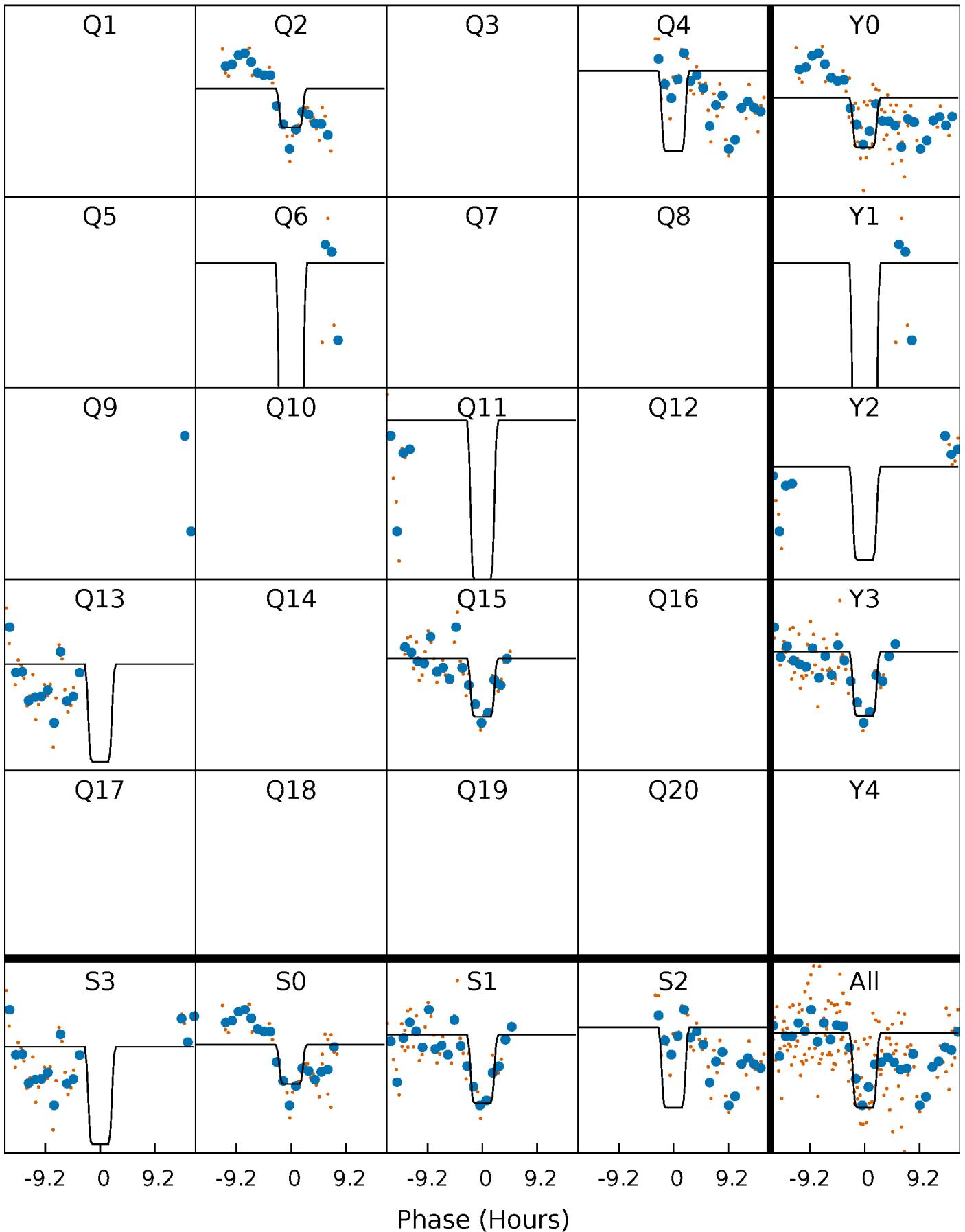
# DV Quarter-Phased Transit Curves

TCE 003542119-07     $P=211.002675$  Days     $T_0=175.479319$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

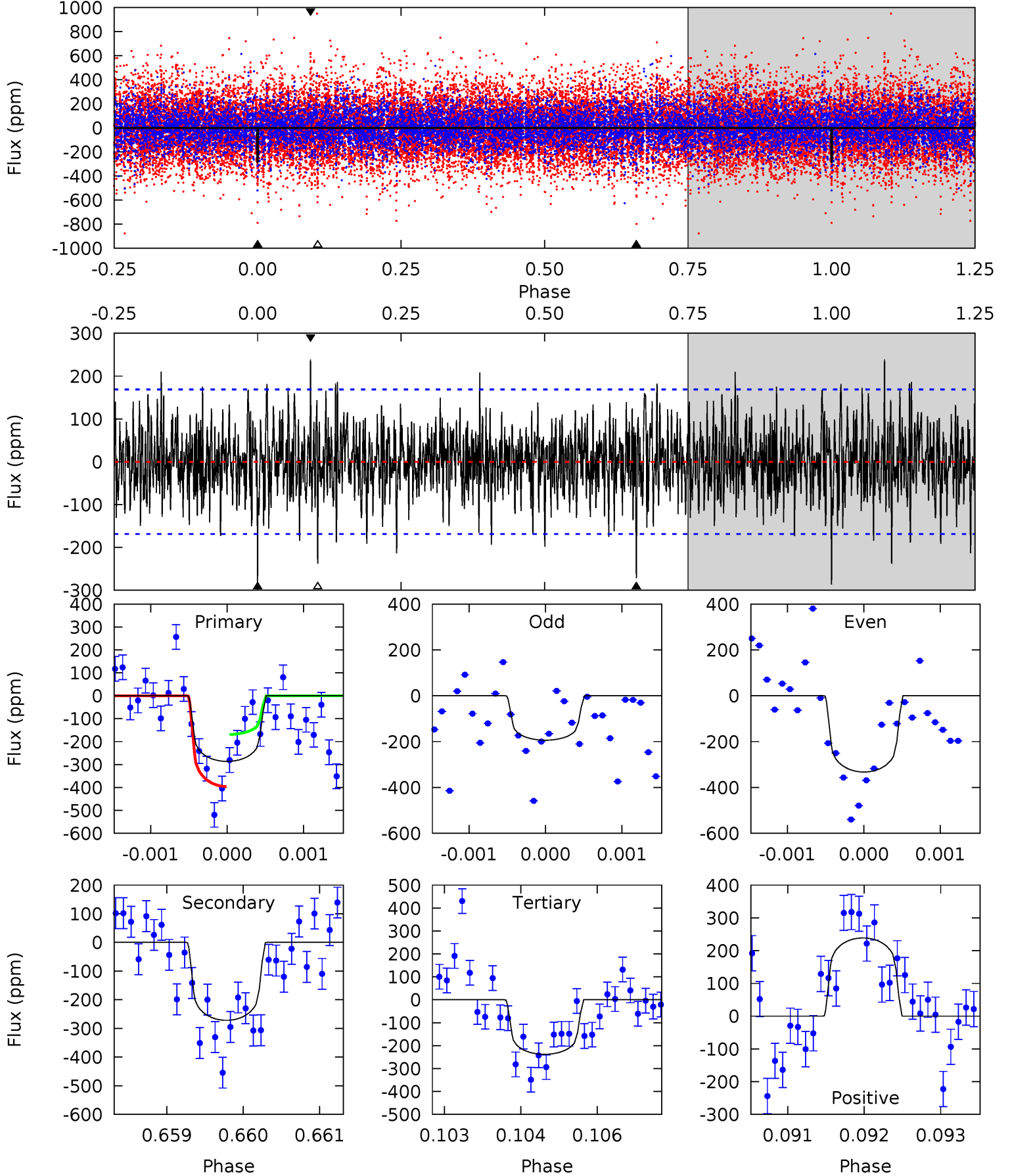
TCE 003542119-07 P=211.007377 Days  $T_0=175.455584$  (BKJD)



# DV Model-Shift Uniqueness Test

003542119-07,  $P = 211.002675$  Days,  $E = 175.479319$  Days

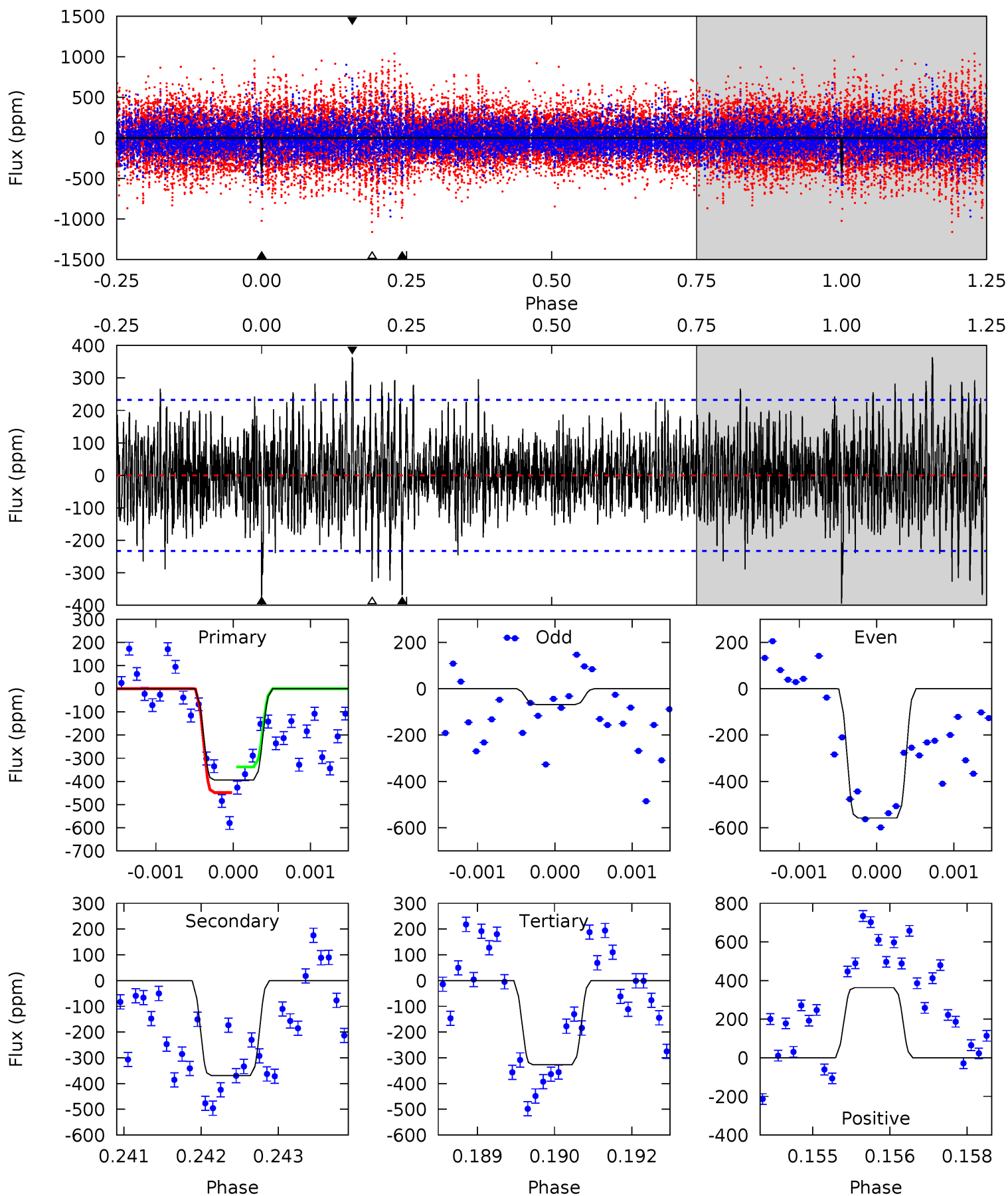
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.19	8.72	7.64	7.66	5.42	3.24	2.01	1.56	1.53	1.09	1.06	2.11	1.03	0.45	3.65



# Alt Model-Shift Uniqueness Test

003542119-07, P = 211.007377 Days, E = 175.455584 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
9.24	8.65	7.67	8.52	5.45	3.28	2.02	1.58	0.73	0.98	0.13	5.47	0.81	0.48	1.30





### Stellar Parameters For KIC 003542119

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6257^{+189}_{-151}$	$3.457^{+0.384}_{-0.096}$	$-0.100^{+0.350}_{-0.300}$	$4.124^{+0.608}_{-1.701}$	$1.777^{+0.178}_{-0.415}$	$0.036^{+0.119}_{-0.011}$
	+3%/-2%	+11%/-3%	+350%/-300%	+15%/-41%	+10%/-23%	+333%/-31%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 003542119-07 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-272 \pm 31$	$8.13^{+6.97}_{-5.08}$	$836^{+55}_{-91}$	$5767^{+4302}_{-1324}$	$1657^{+10111}_{-1204}$
Alt.	$-369 \pm 43$	$10.53^{+7.40}_{-6.17}$	$843^{+48}_{-89}$	$5430^{+2849}_{-1021}$	$1285^{+5641}_{-858}$

$T_{max}$  = 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

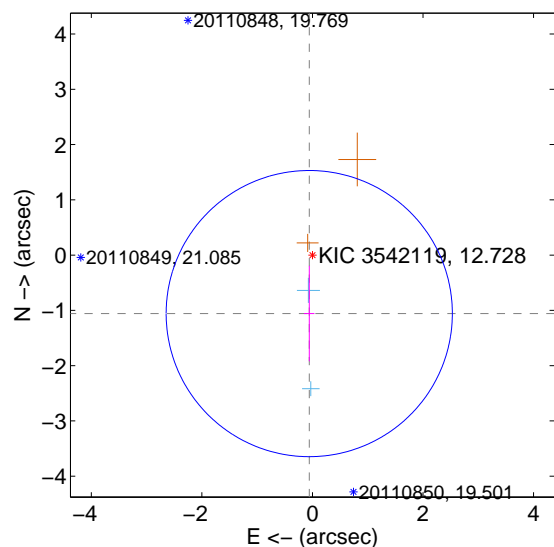
Supplemental centroid analysis for 003542119-07. Kepler magnitude: 12.73. Transit SNR 6.86

There are 2 quarters with good PRF difference image offsets

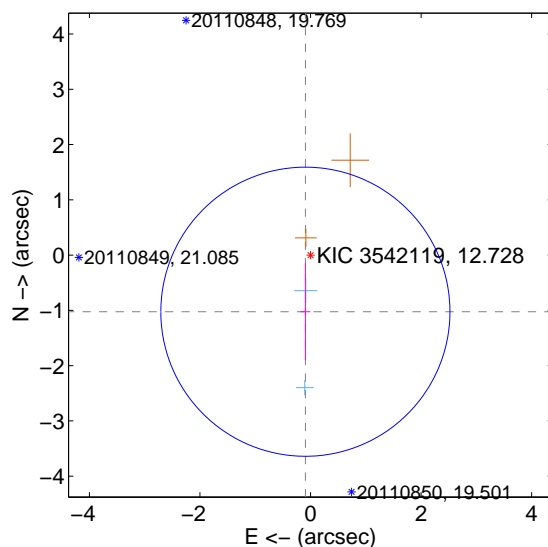
The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.060 \pm 0.863$	1.23	$0.058 \pm 0.094$	$-1.058 \pm 0.864$
PRF-fit source offset from KIC position	$1.029 \pm 0.872$	1.18	$0.093 \pm 0.090$	$-1.025 \pm 0.875$
photometric centroid source offset	$0.92 \pm 0.74$	1.23	$0.16 \pm 0.71$	$-0.90 \pm 0.74$

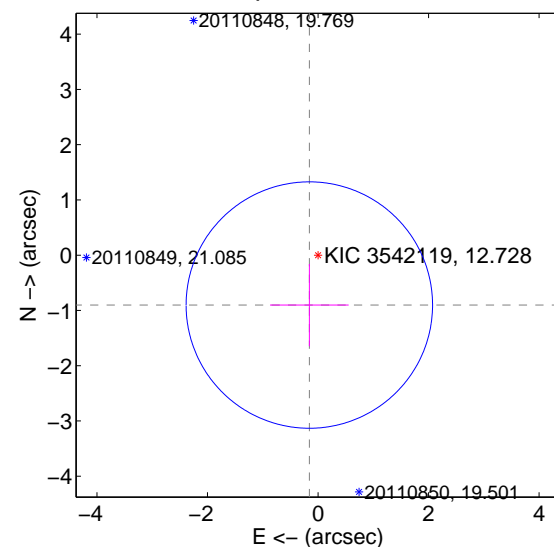
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

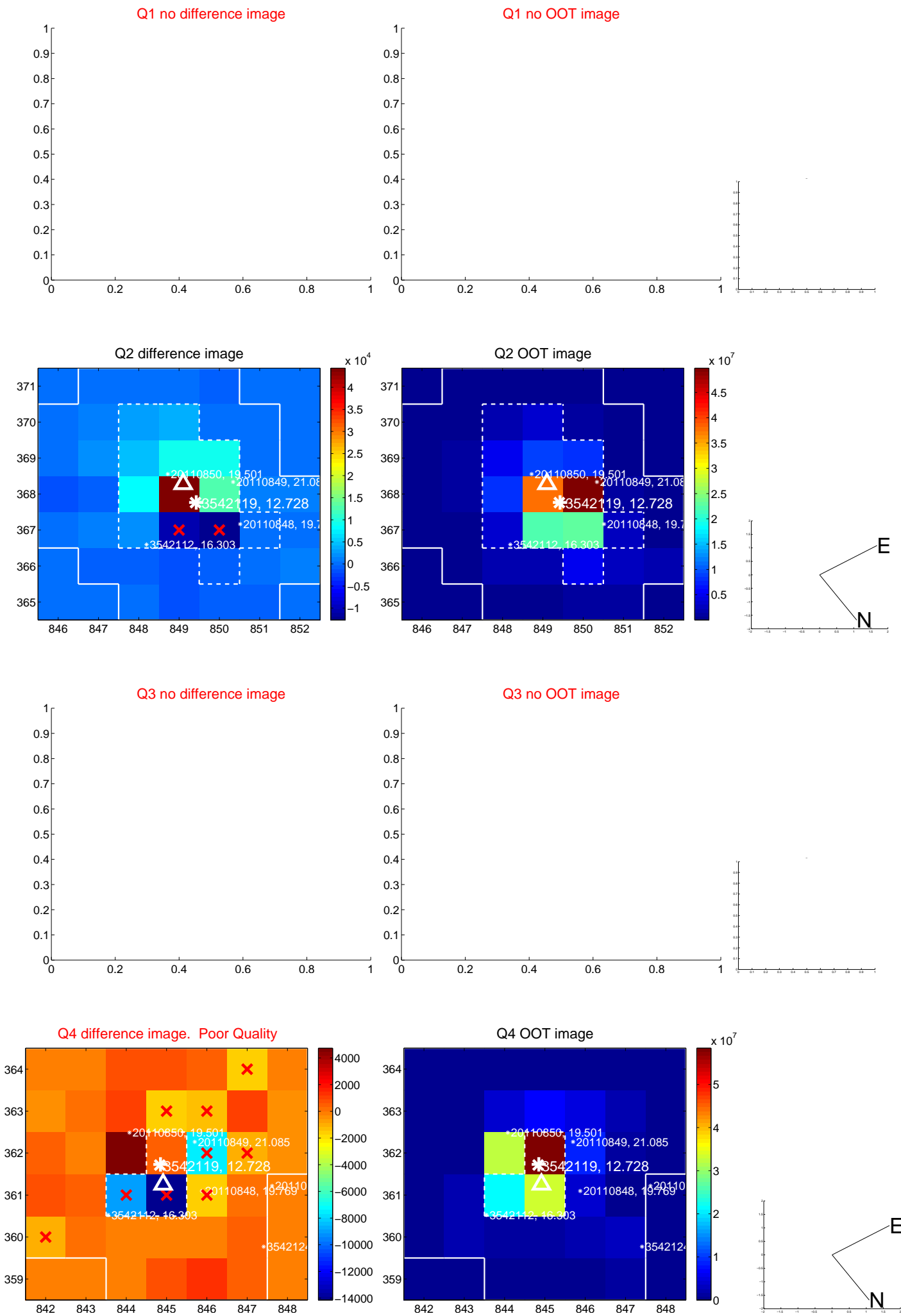


offset from photometric centroids



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.

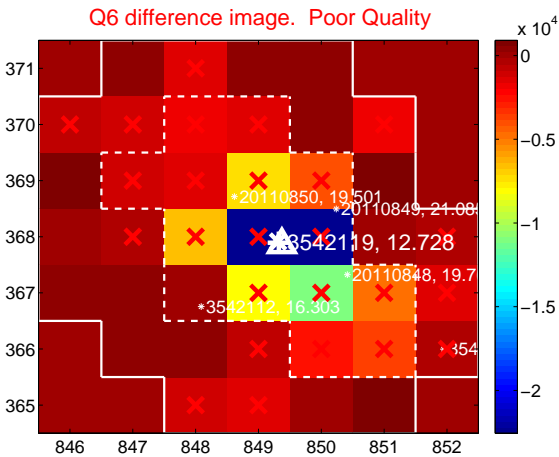
Q5 no difference image



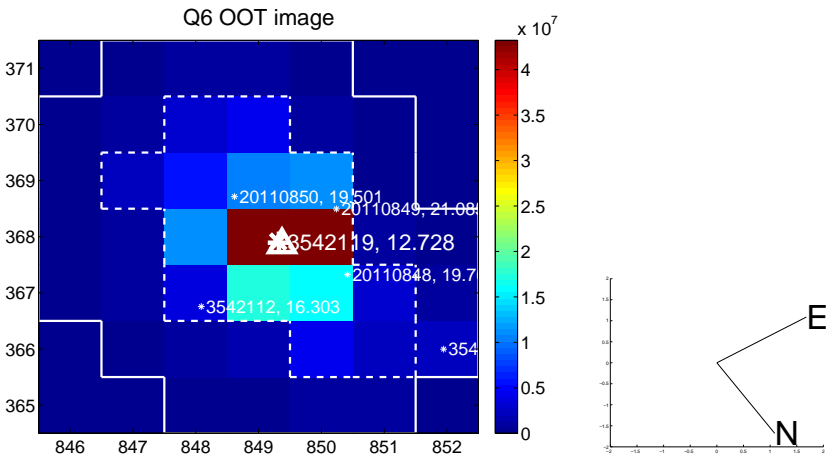
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



Q7 no difference image



Q7 no OOT image



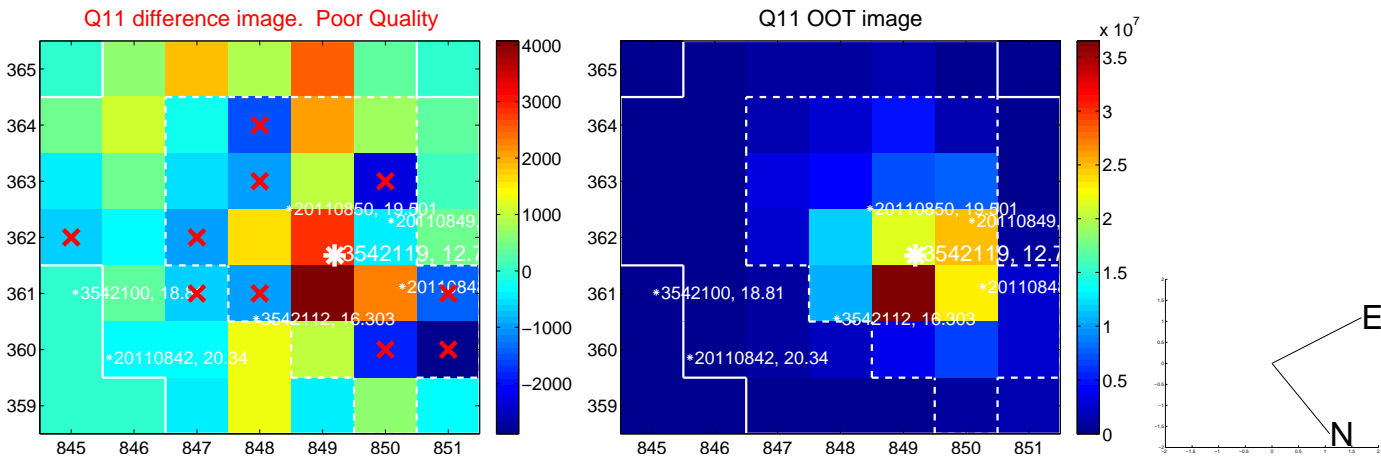
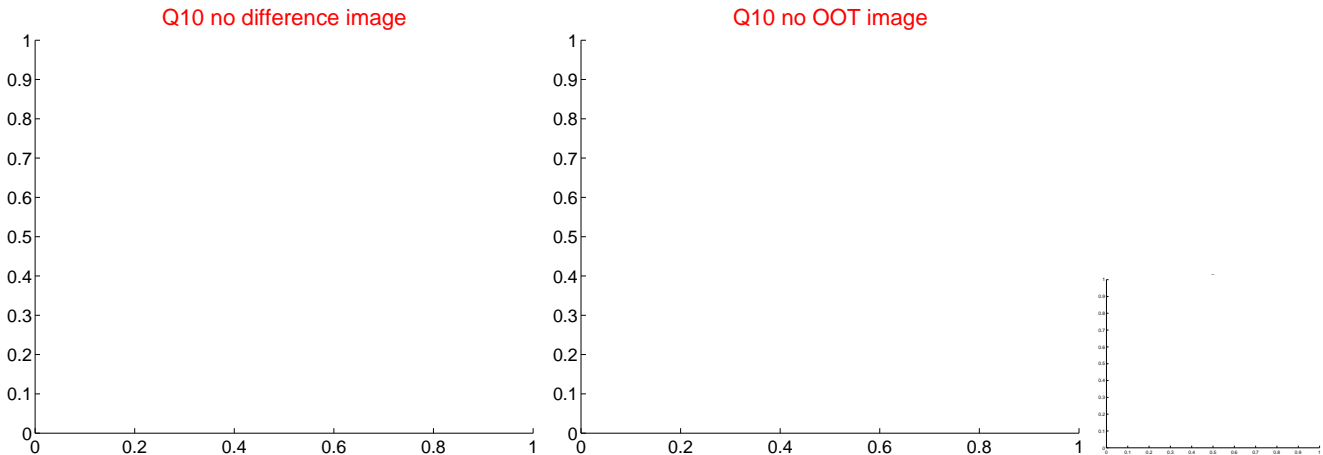
Q8 no difference image



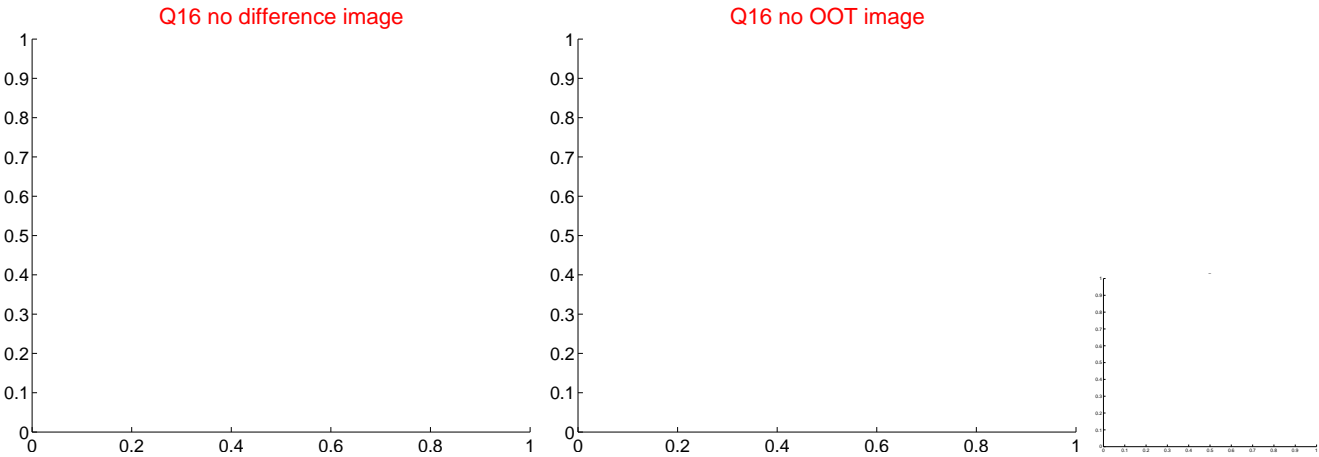
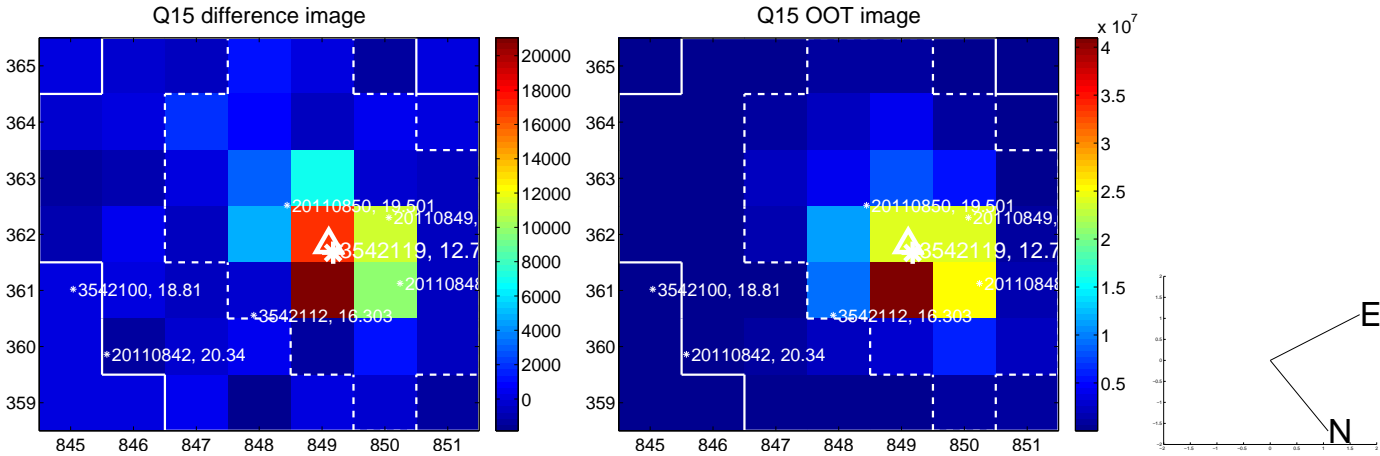
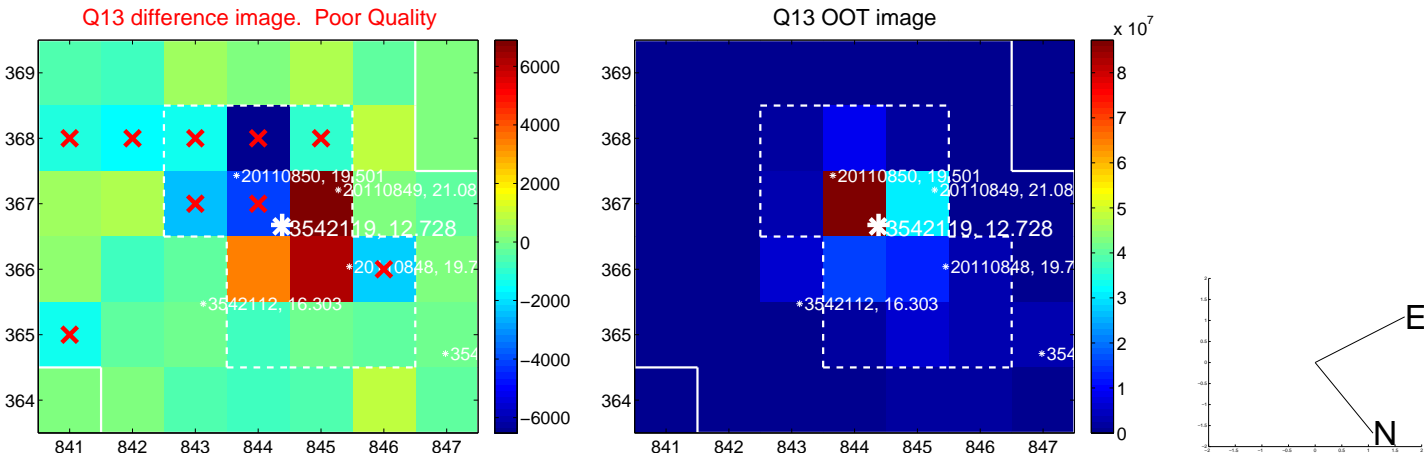
Q8 no OOT image



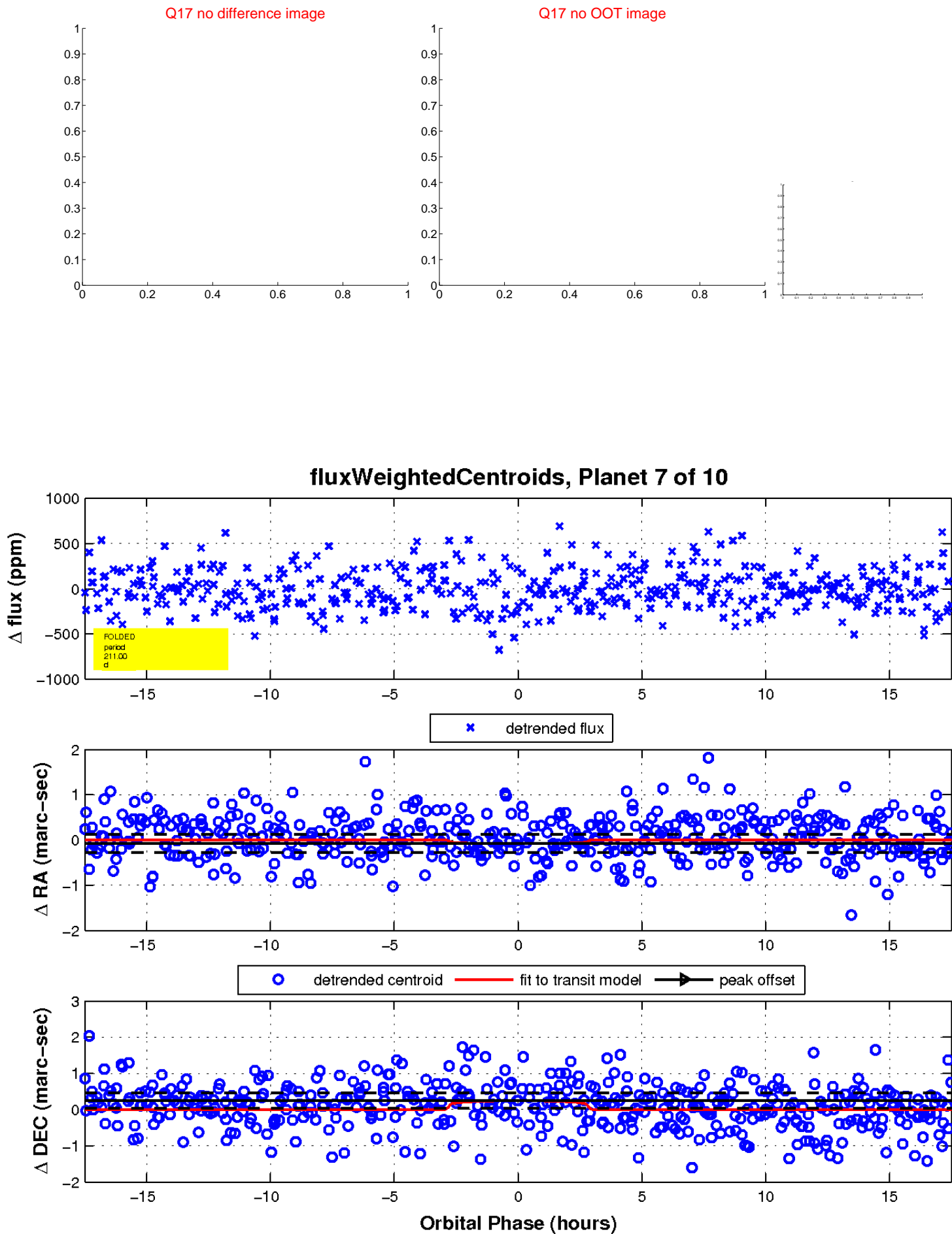
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



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



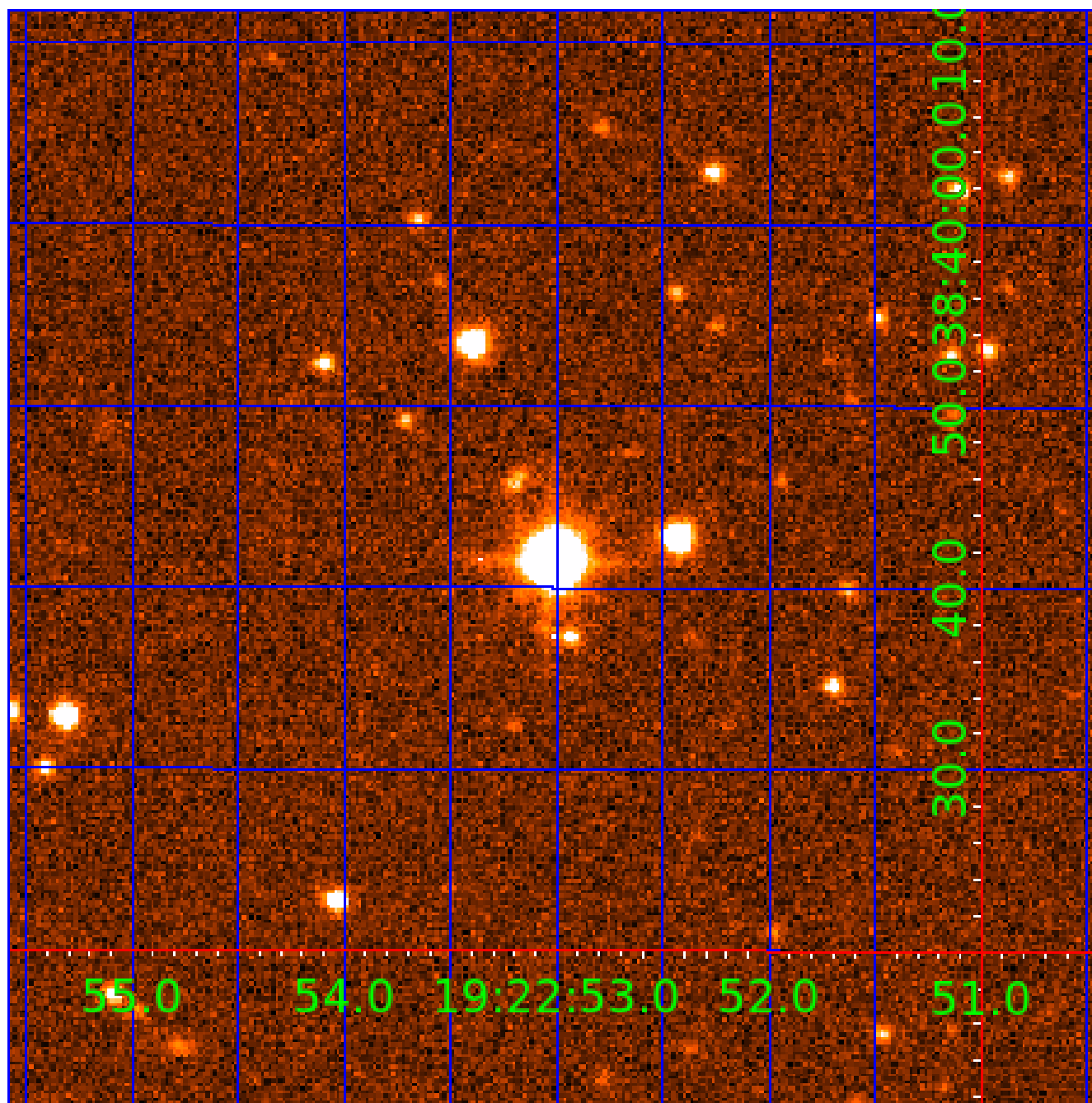
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image

Declination



## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
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003542119-02	OBS	No	177.830213	166.028806	348.6	3.155	9.8	8.1	4.12	6257	8.77	41.55
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003542119-04	OBS	No	161.792595	208.618920	119.2	13.018	9.4	4.1	4.12	6257	4.93	47.13
003542119-05	OBS	No	144.797709	136.024202	372.3	3.559	8.9	9.3	4.12	6257	9.30	54.65
003542119-06	OBS	No	405.130706	193.166102	270.1	7.652	8.7	6.0	4.12	6257	7.27	13.86
003542119-07	OBS	No	211.002675	175.479319	277.5	5.845	8.9	6.9	4.12	6257	7.39	33.08
003542119-08	OBS	No	155.456868	215.297961	265.2	7.935	8.7	8.0	4.12	6257	7.38	49.71
003542119-09	OBS	No	106.310124	190.178583	229.9	7.393	8.0	7.4	4.12	6257	6.90	82.50
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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003542119-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003542119-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003542119-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT
003542119-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003542119-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003542119-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003542119-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
003542119-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS
003542119-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003542119-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

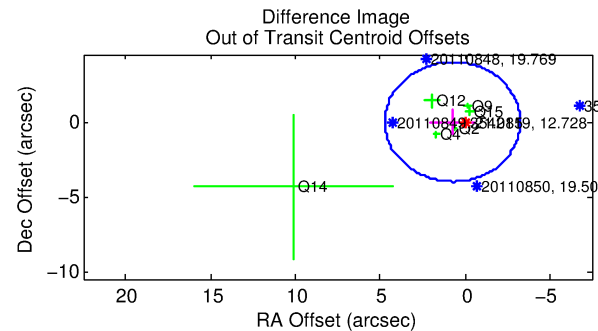
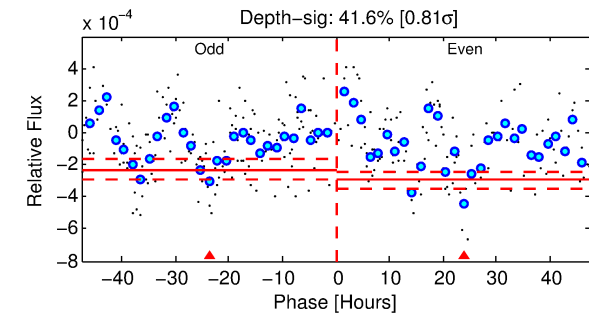
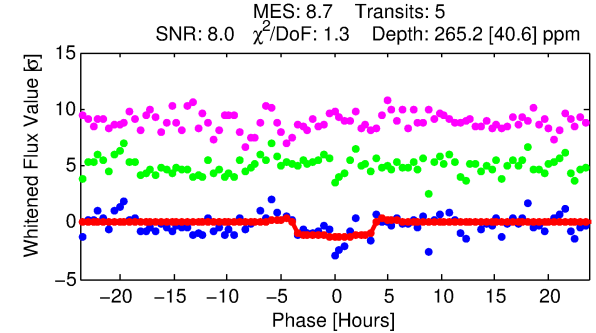
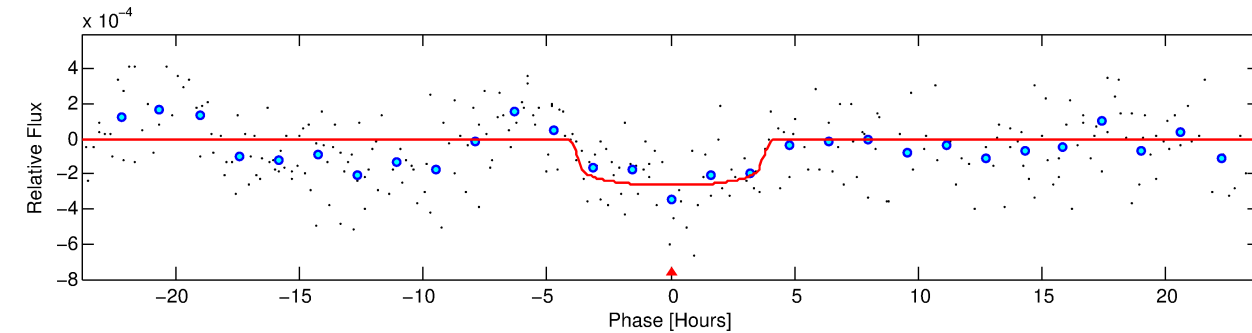
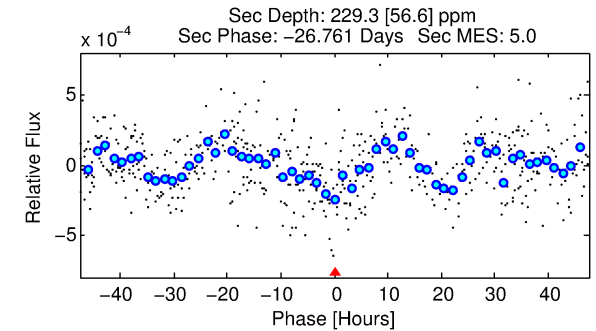
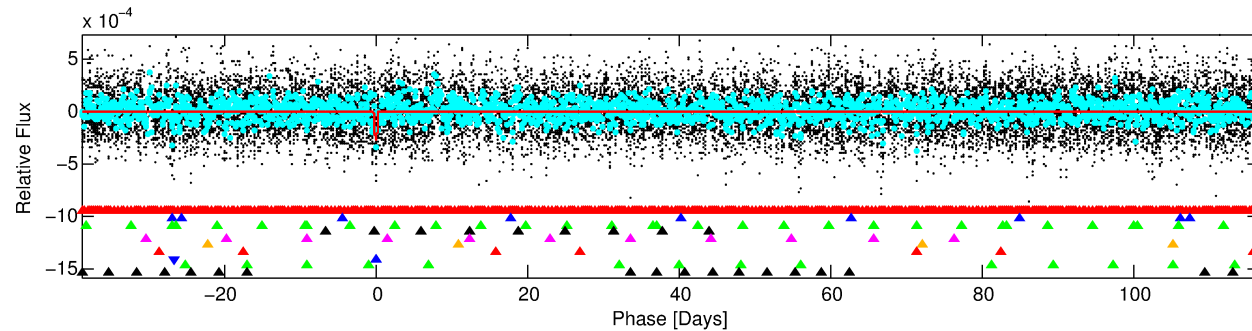
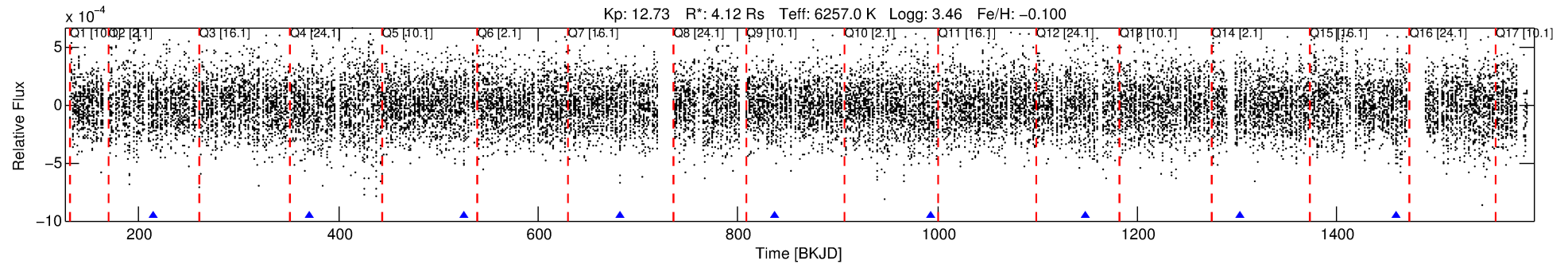
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 003542119-08

No Significant Match Found

# DV One-Page Summary

KIC: 3542119 Candidate: 8 of 10 Period: 155.457 d



## DV Fit Results:

Period = 155.45687 [0.00310] d  
Epoch = 215.2980 [0.0167] BKJD  
Rp/R\* = 0.0164 [0.0066]  
a/R\* = 96.53 [200.08]  
b = 0.79 [1.02]  
Seff = 49.71 [32.89]  
Teq = 677 [112] K  
Rp = 7.38 [4.24] Re  
a = 0.6855 [0.2763] AU  
Ag = 1087.47 [1151.79] [0.94σ]  
Teffp = 6011 [1269] K [4.19σ]

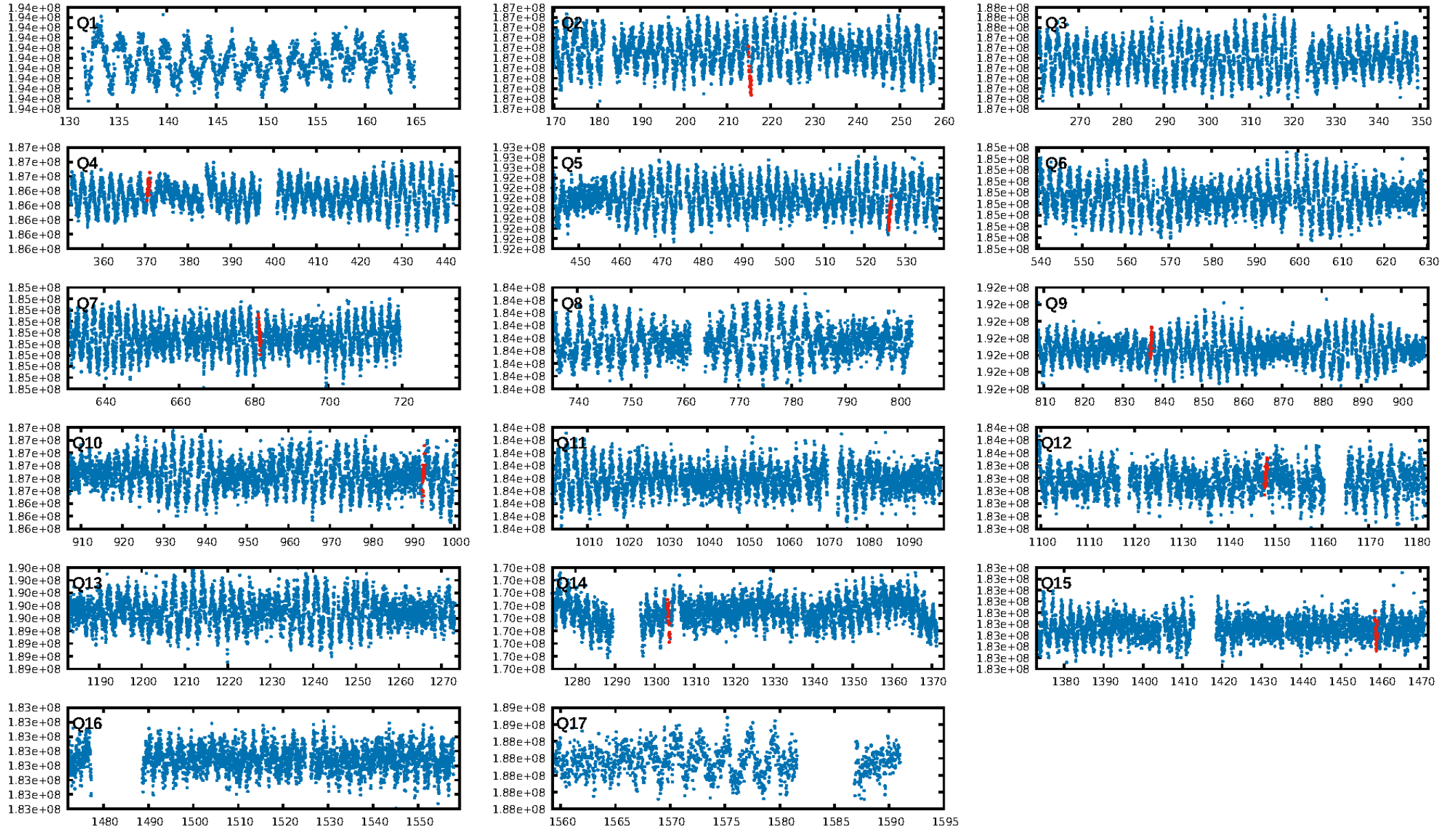
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [29.41σ]  
LongPeriod-sig: 100.0% [9.97σ]  
ModelChiSquare2-sig: 45.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [5/5]  
**GhostDiagnostic-chr: 1.708**  
Centroid-sig: 0.5%  
Centroid-so: 1.158 arcsec [2.13σ]  
OotOffset-rm: 0.726 arcsec [0.55σ]  
KicOffset-rm: 0.779 arcsec [0.54σ]  
OotOffset-st: 2/1/2/1 [6]  
KicOffset-st: 2/1/2/1 [6]  
DiffImageQuality-fgm: 0.33 [2/6]  
DiffImageOverlap-fno: 0.22 [2/9]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:16:09 Z

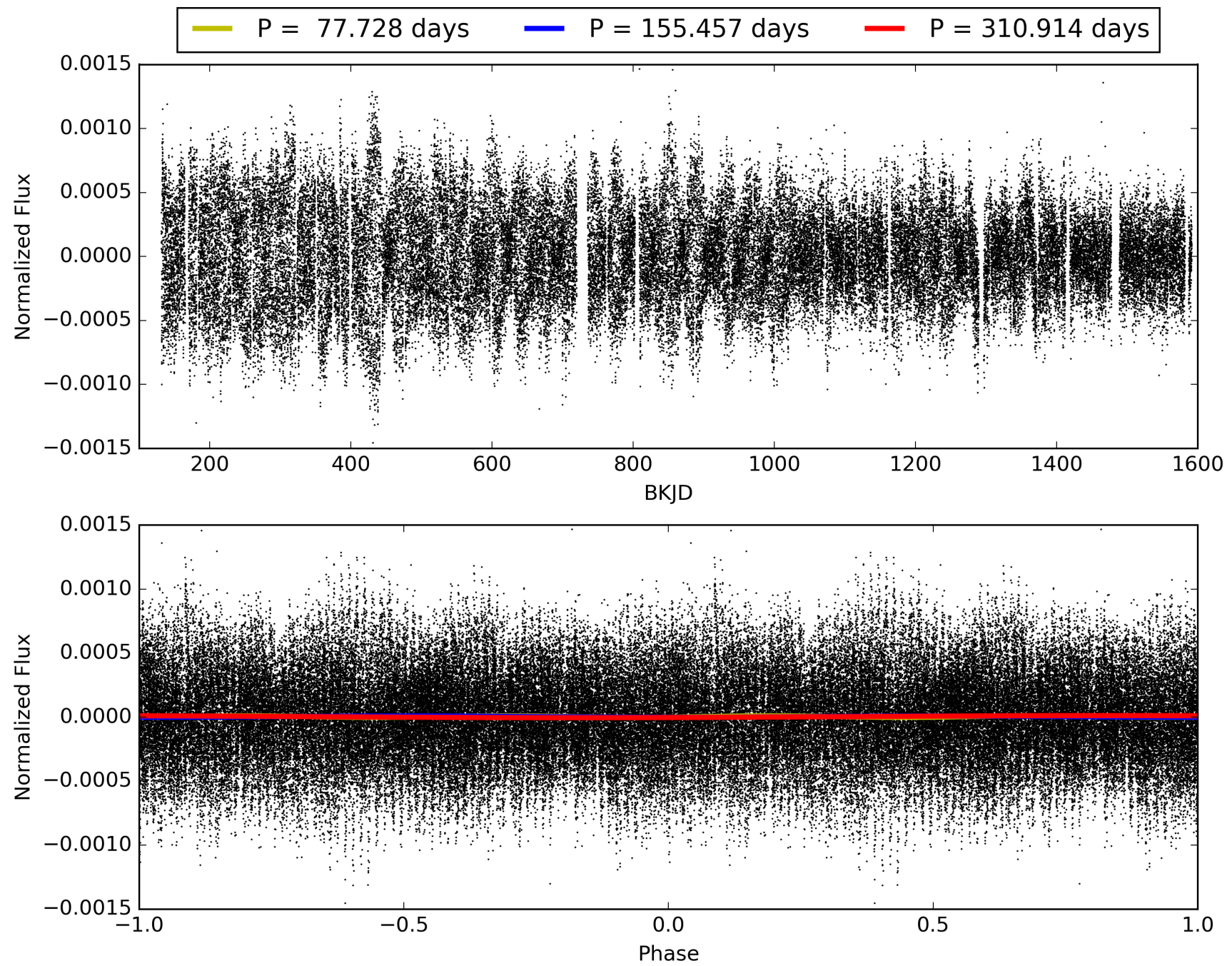
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003542119-08, PDC Light Curves



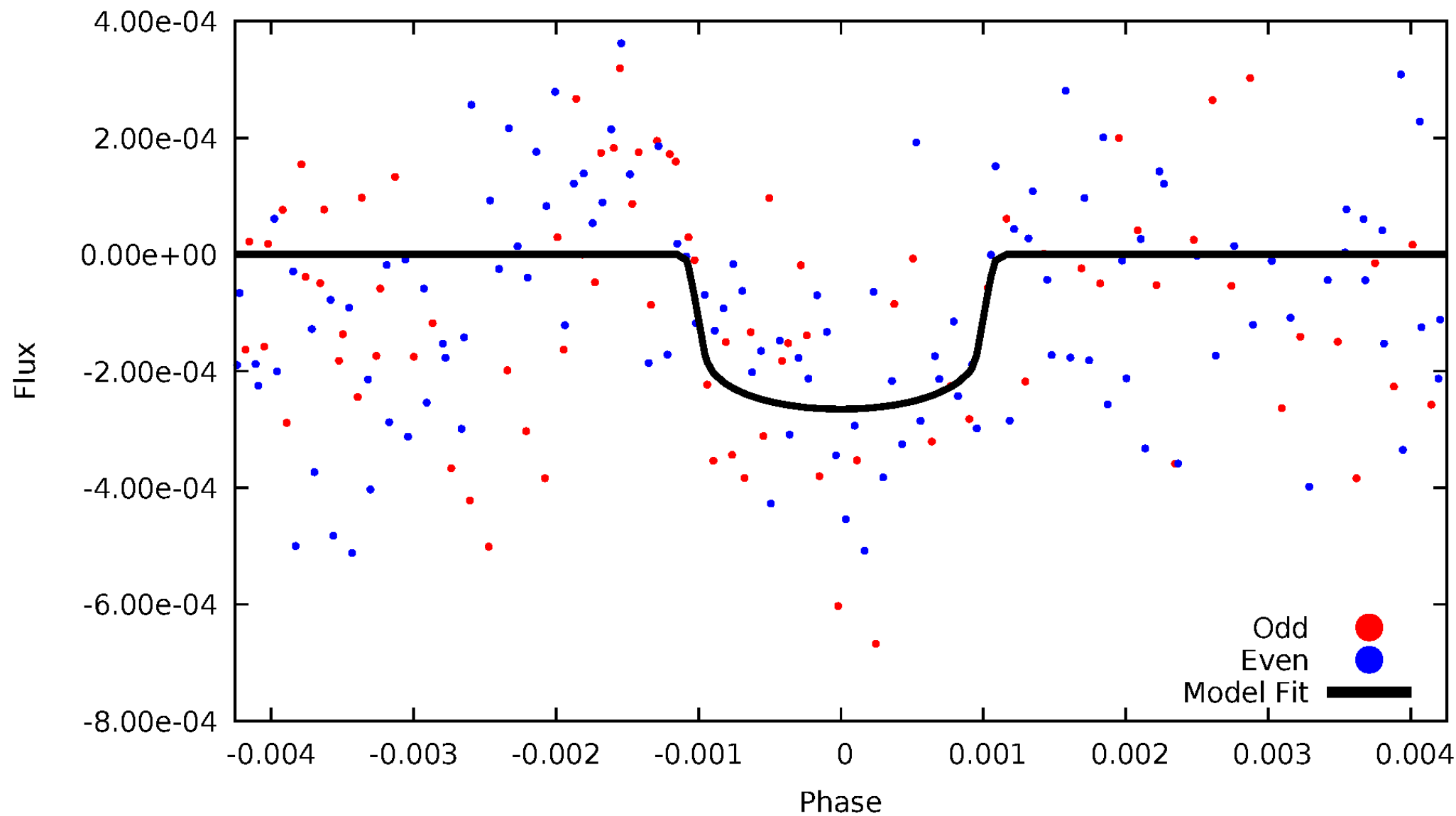


TCE 003542119-08



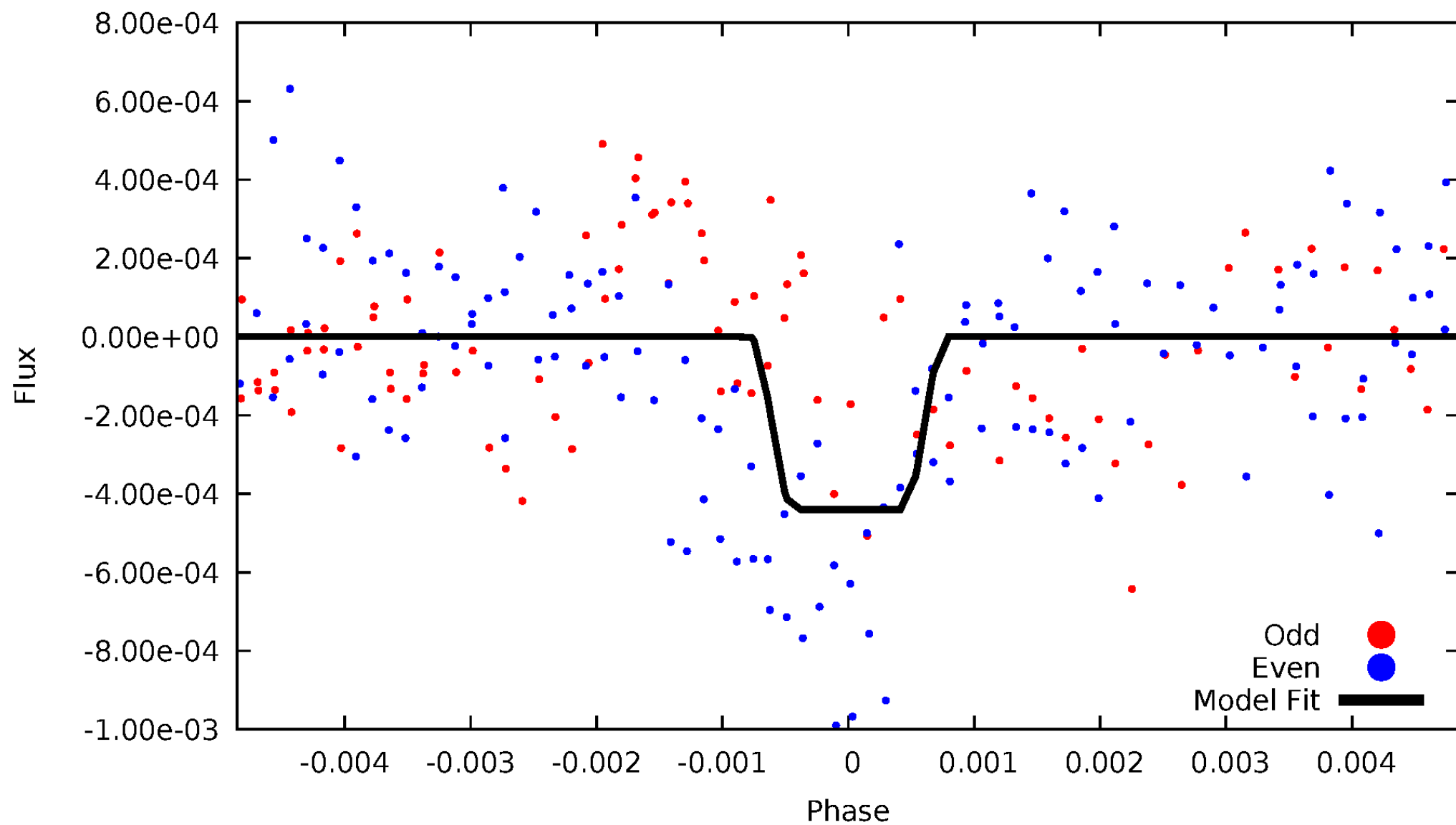
# DV Odd/Even

TCE 003542119-08



# ALT Odd/Even

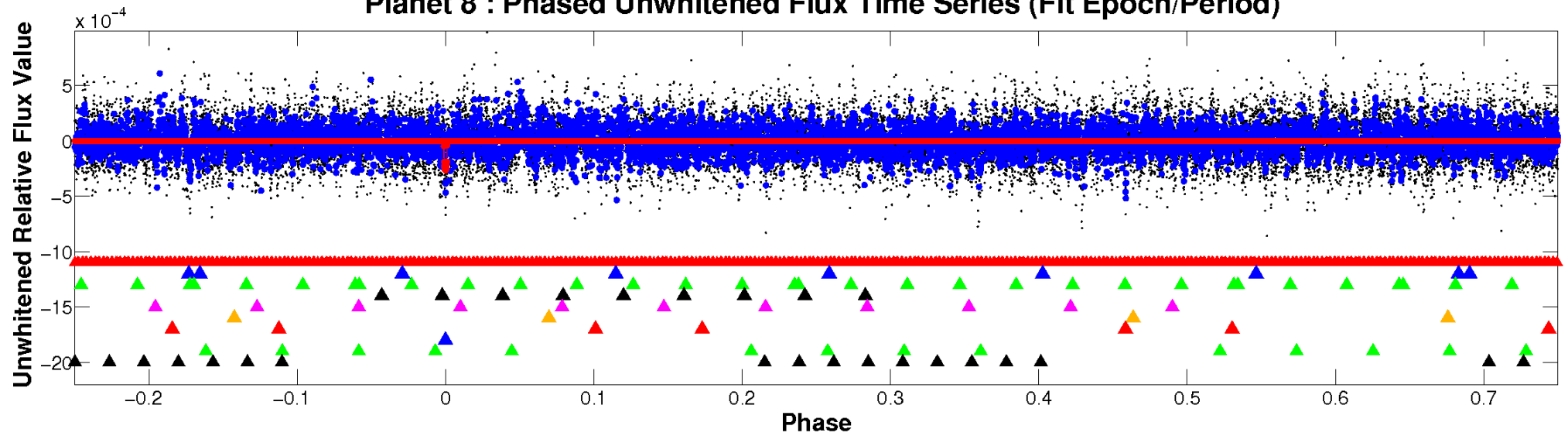
TCE 003542119-08



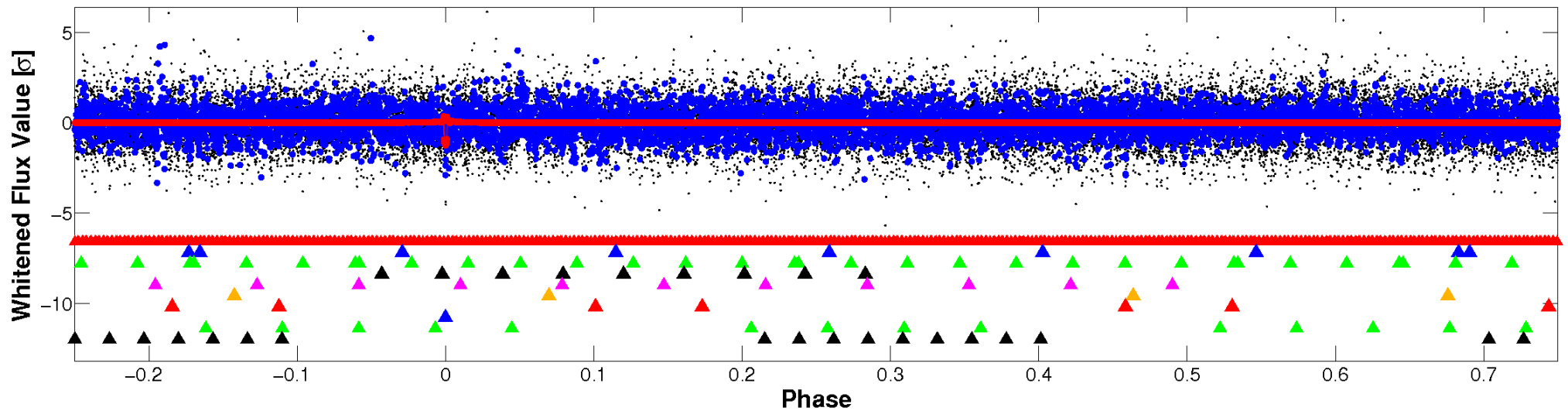


# Non-Whitened Vs. Whitened Light Curve

## Planet 8 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

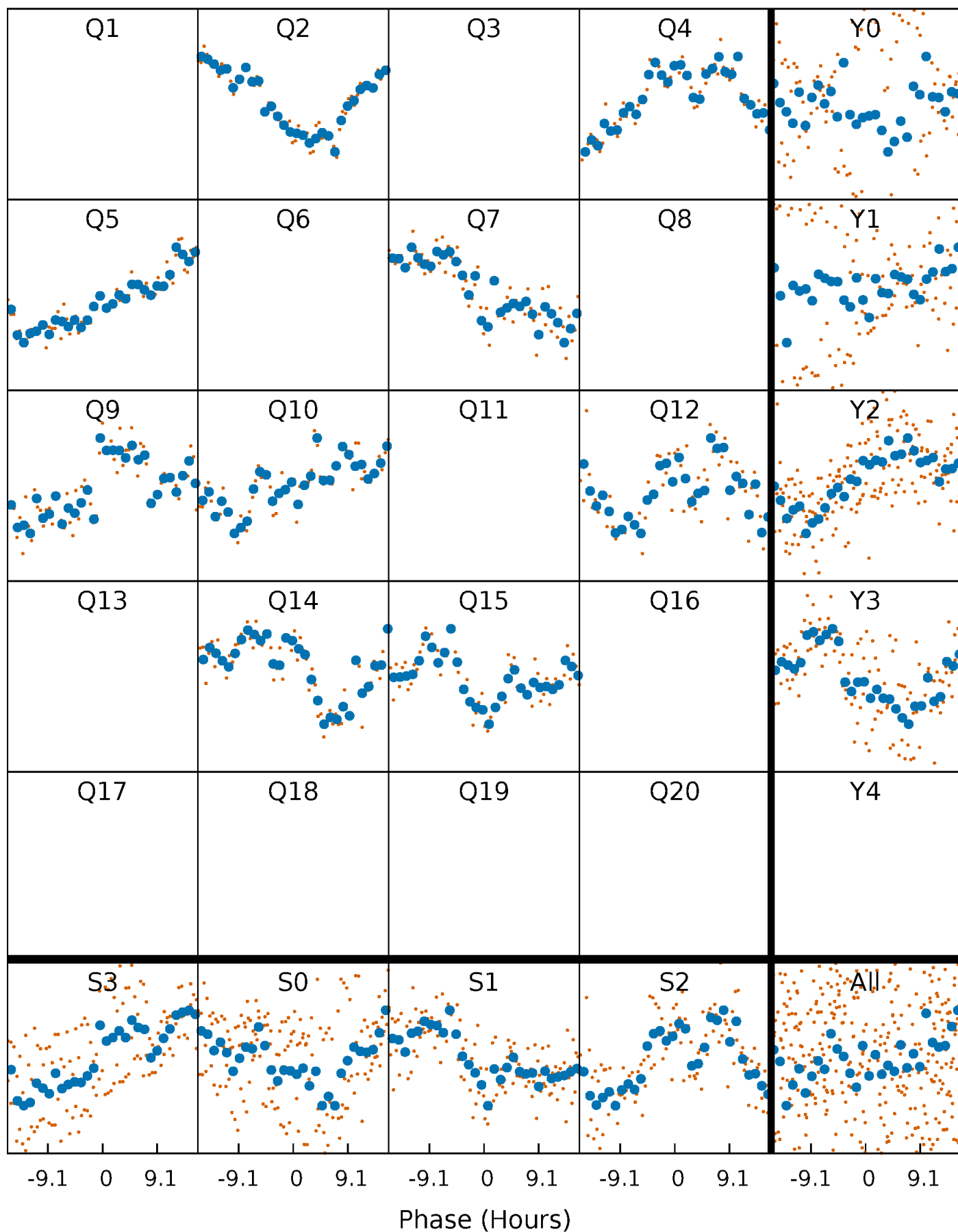


## Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



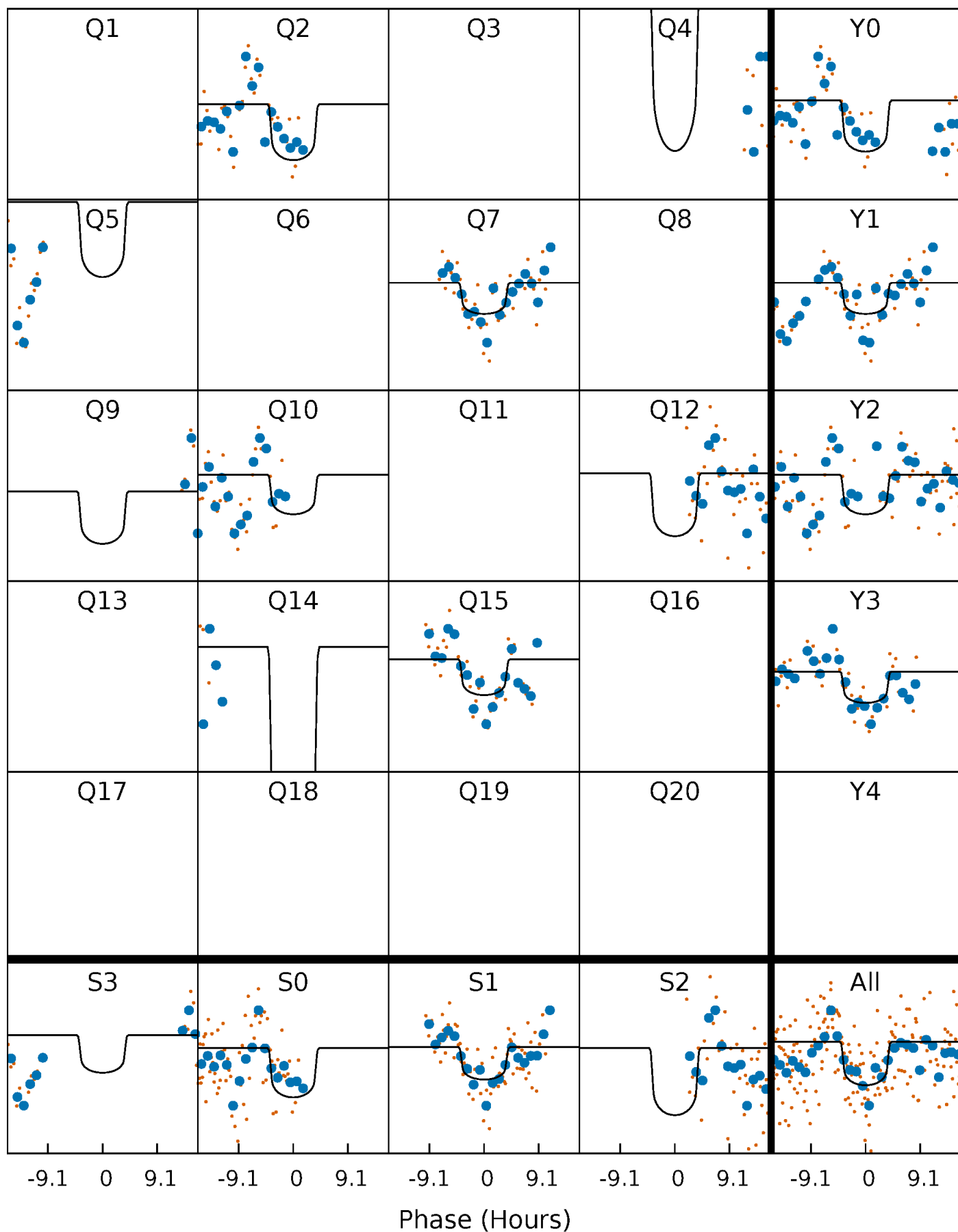
# PDC Quarter-Phased Transit Curves

TCE 003542119-08 P=155.456868 Days  $T_0=215.297960$  (BKJD)



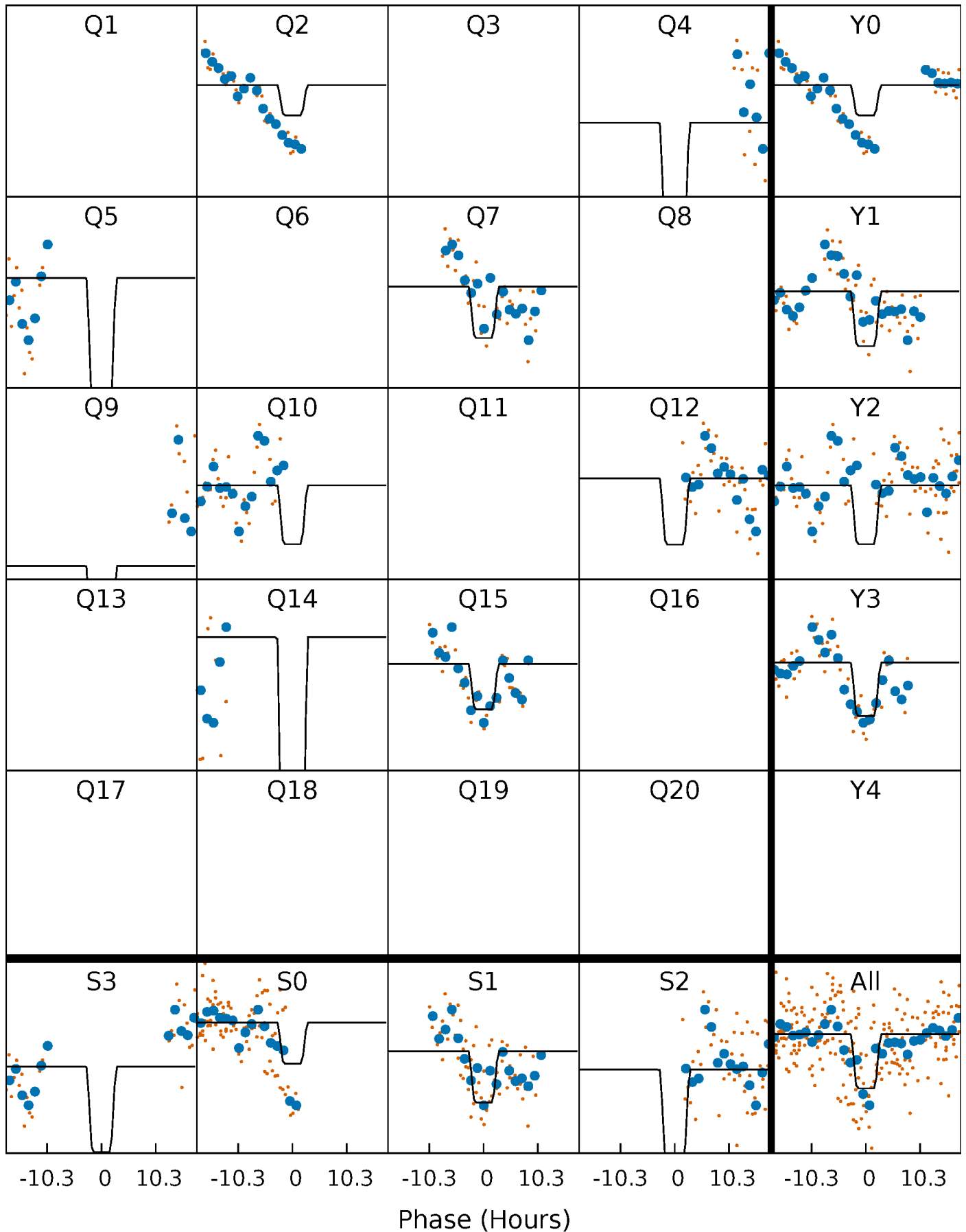
# DV Quarter-Phased Transit Curves

TCE 003542119-08 P=155.456868 Days  $T_0=215.297960$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

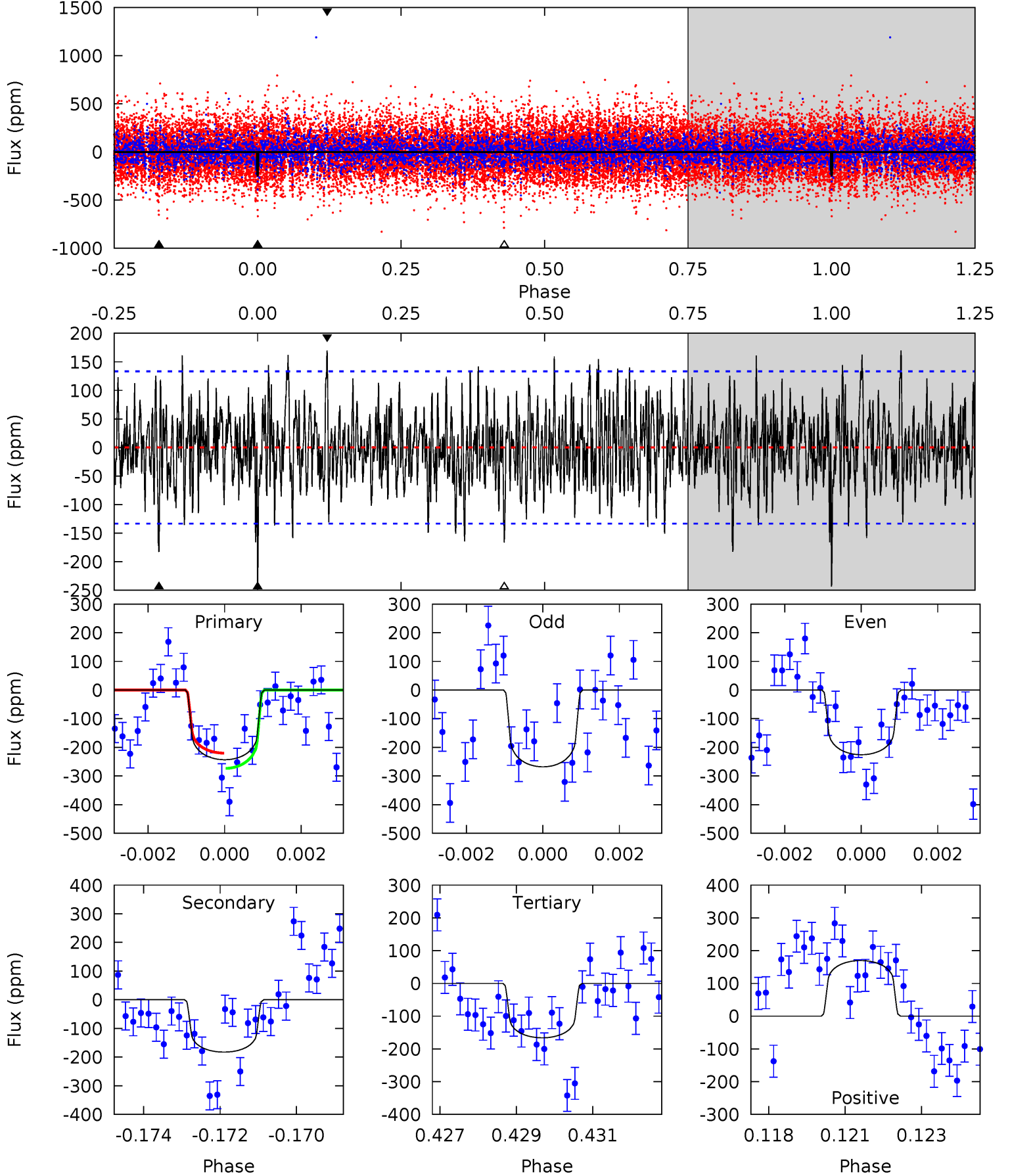
TCE 003542119-08 P=155.458531 Days  $T_0=215.307644$  (BKJD)



# DV Model-Shift Uniqueness Test

003542119-08,  $P = 155.456868$  Days,  $E = 59.841092$  Days

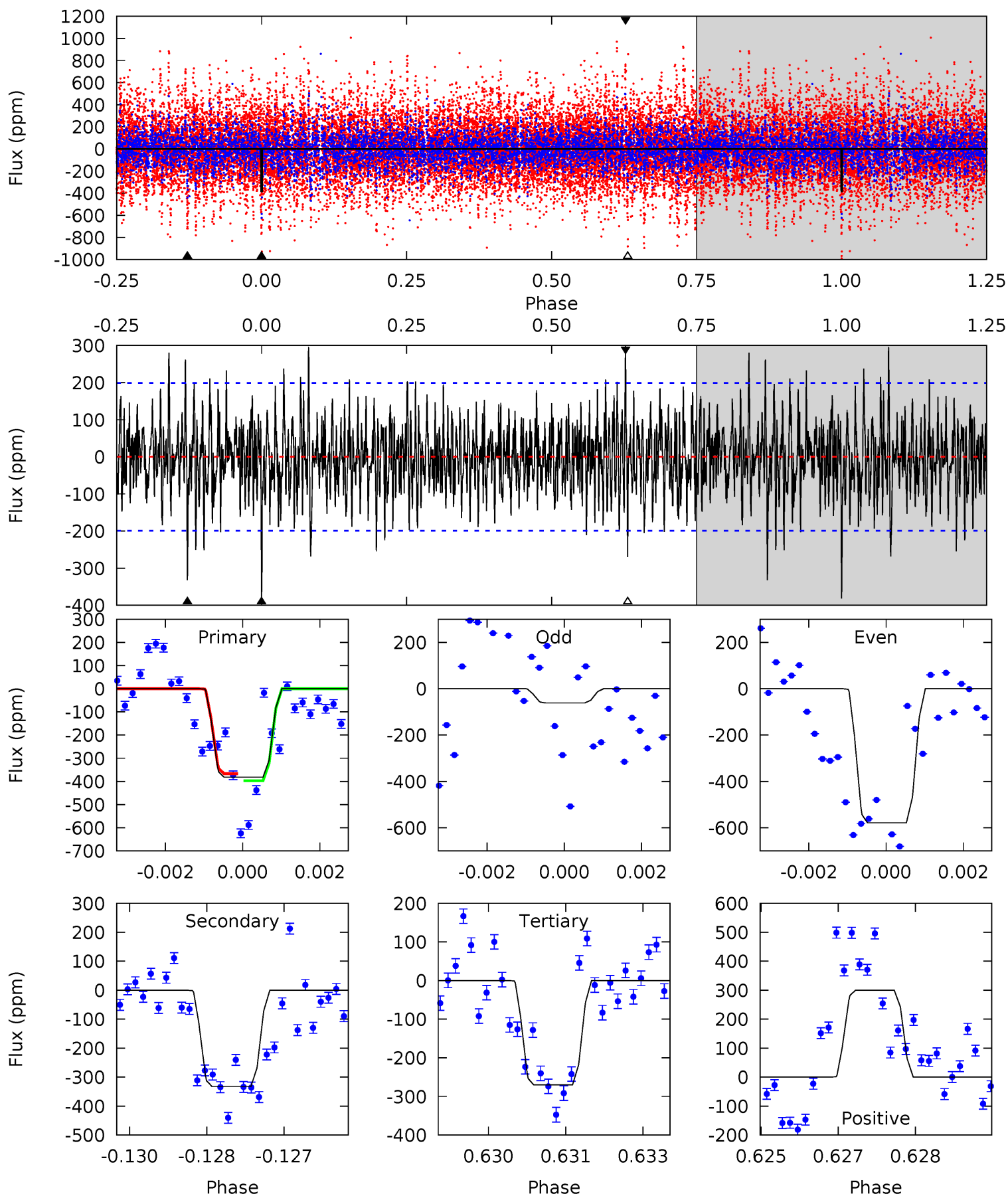
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.67	7.27	6.61	6.75	5.31	3.06	2.18	3.07	2.93	0.66	0.52	0.82	1.17	0.41	1.05



# Alt Model-Shift Uniqueness Test

003542119-08, P = 155.458531 Days, E = 59.849113 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
10.3	8.97	7.28	8.09	5.37	3.16	2.17	3.02	2.22	1.69	0.88	6.80	1.85	0.44	0.41



### Stellar Parameters For KIC 003542119

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6257^{+189}_{-151}$	$3.457^{+0.384}_{-0.096}$	$-0.100^{+0.350}_{-0.300}$	$4.124^{+0.608}_{-1.701}$	$1.777^{+0.178}_{-0.415}$	$0.036^{+0.119}_{-0.011}$
	+3%/-2%	+11%/-3%	+350%/-300%	+15%/-41%	+10%/-23%	+333%/-31%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 003542119-08 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-183 \pm 25$	$6.82^{+3.05}_{-2.76}$	$932^{+58}_{-93}$	$5665^{+1688}_{-776}$	$1009^{+1783}_{-540}$
Alt.	$-332 \pm 37$	$8.48^{+3.27}_{-2.85}$	$929^{+56}_{-111}$	$5848^{+1246}_{-695}$	$1183^{+1595}_{-564}$

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



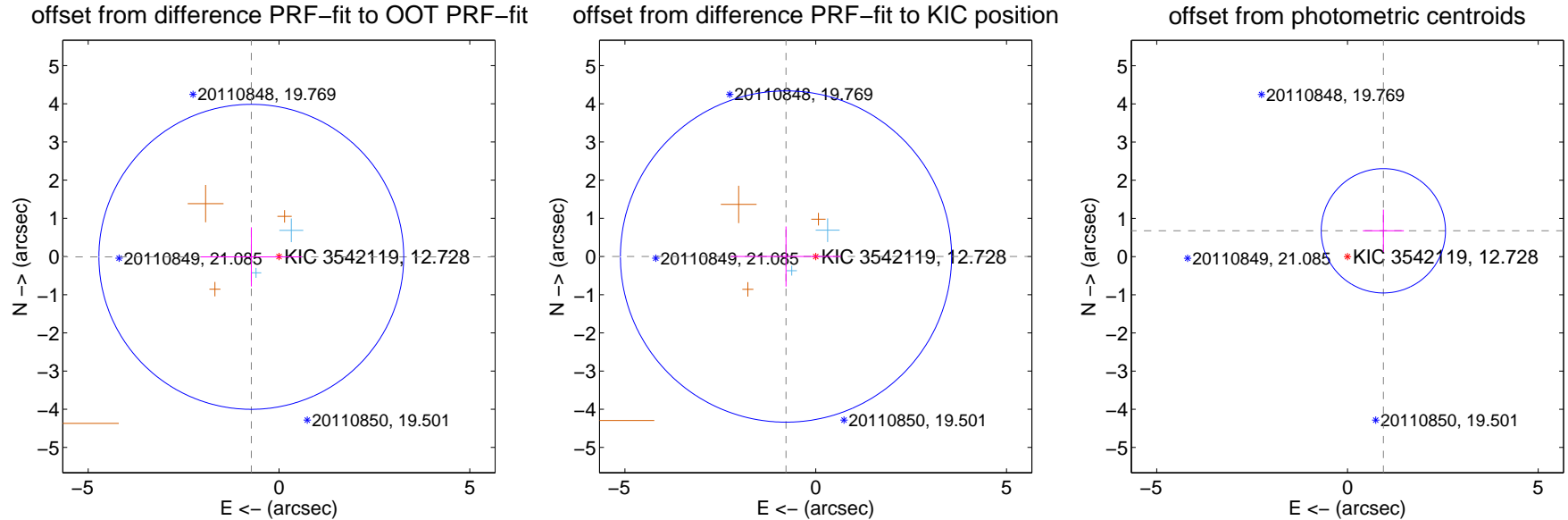
## DV Centroid Data

Supplemental centroid analysis for 003542119-08. Kepler magnitude: 12.73. Transit SNR 7.96

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.01 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.726 \pm 1.331$	0.55	$0.726 \pm 1.324$	$-0.008 \pm 0.775$
PRF-fit source offset from KIC position	$0.779 \pm 1.446$	0.54	$0.779 \pm 1.446$	$0.000 \pm 0.787$
photometric centroid source offset	$1.16 \pm 0.54$	2.13	$-0.94 \pm 0.54$	$0.68 \pm 0.55$



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.

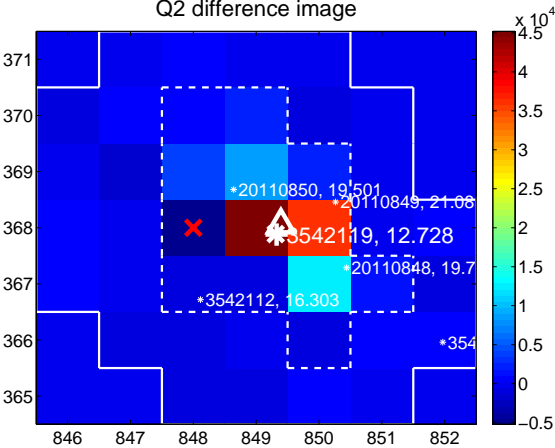
Q1 no difference image



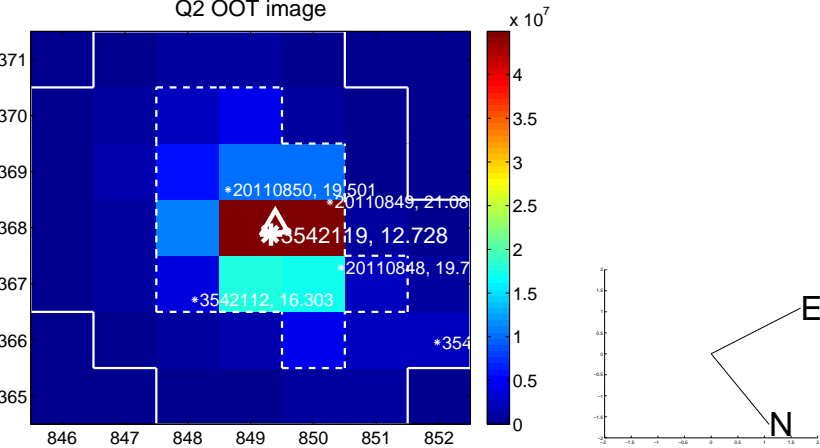
Q1 no OOT image



Q2 difference image



Q2 OOT image



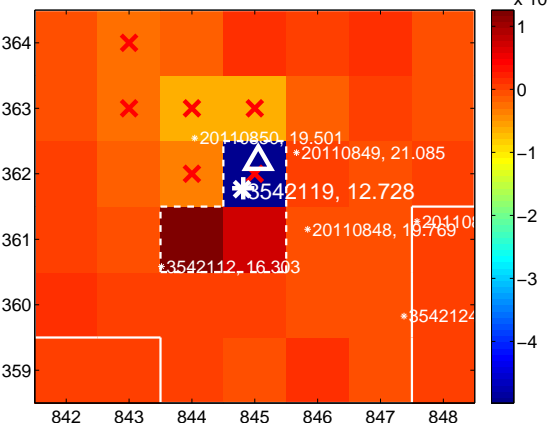
Q3 no difference image



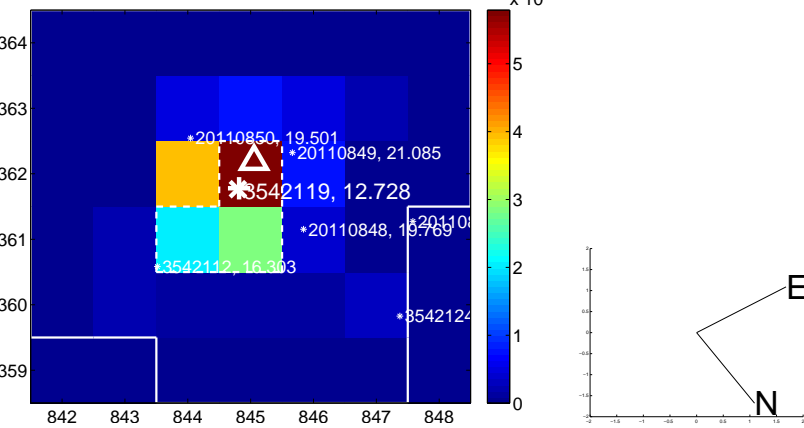
Q3 no OOT image



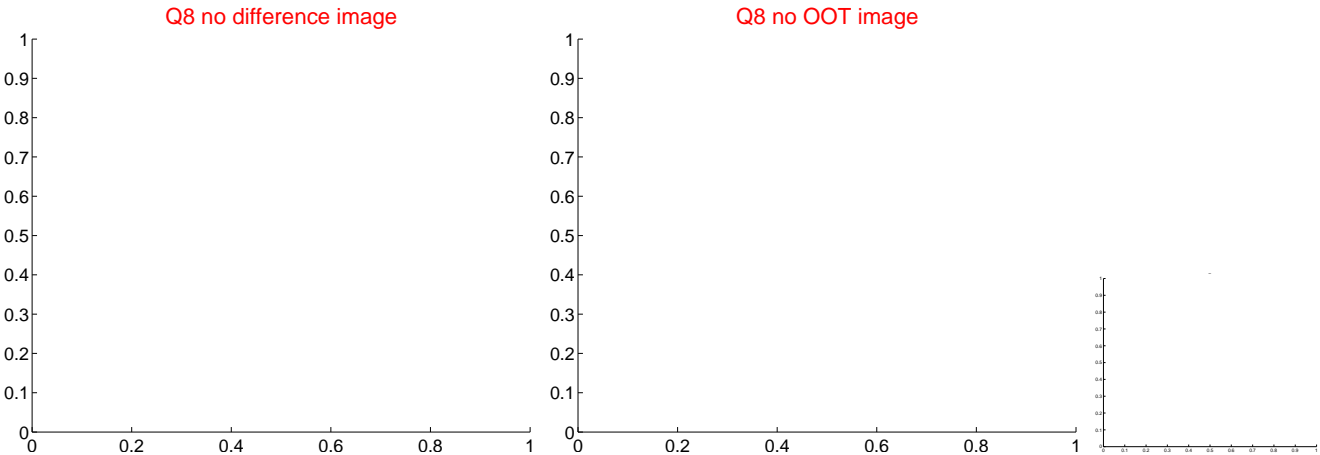
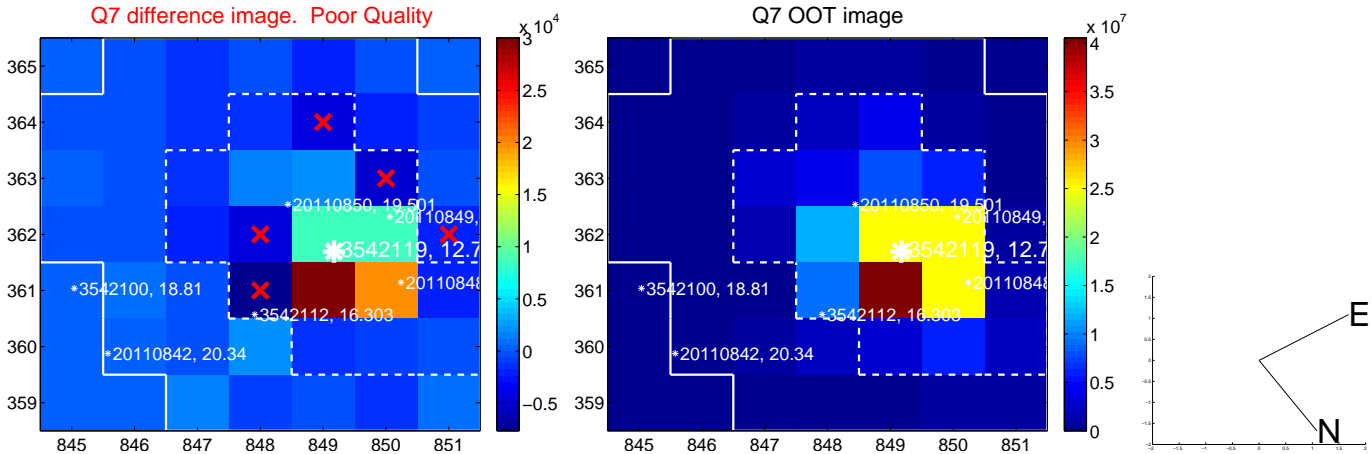
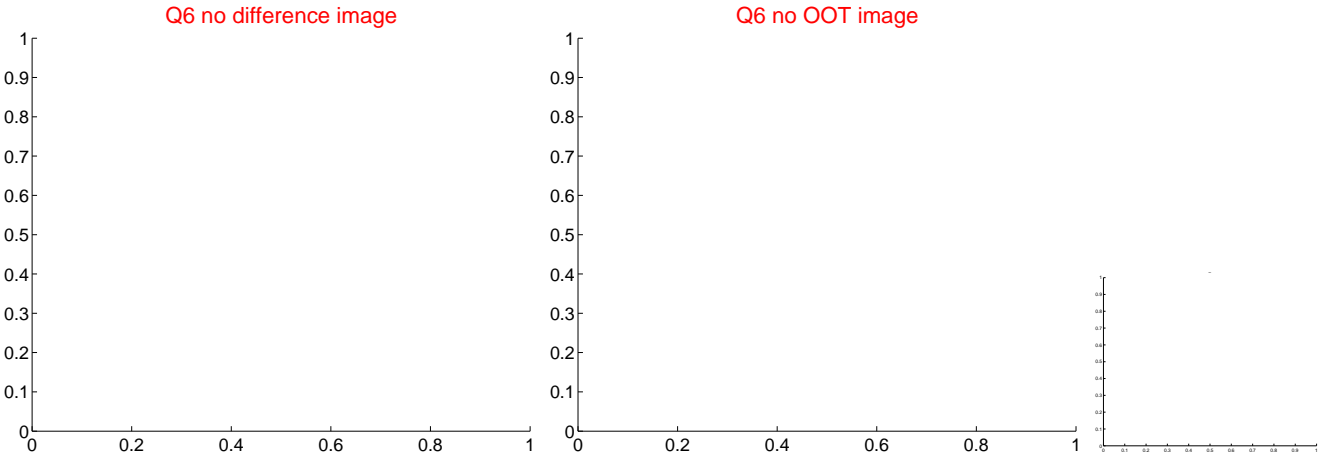
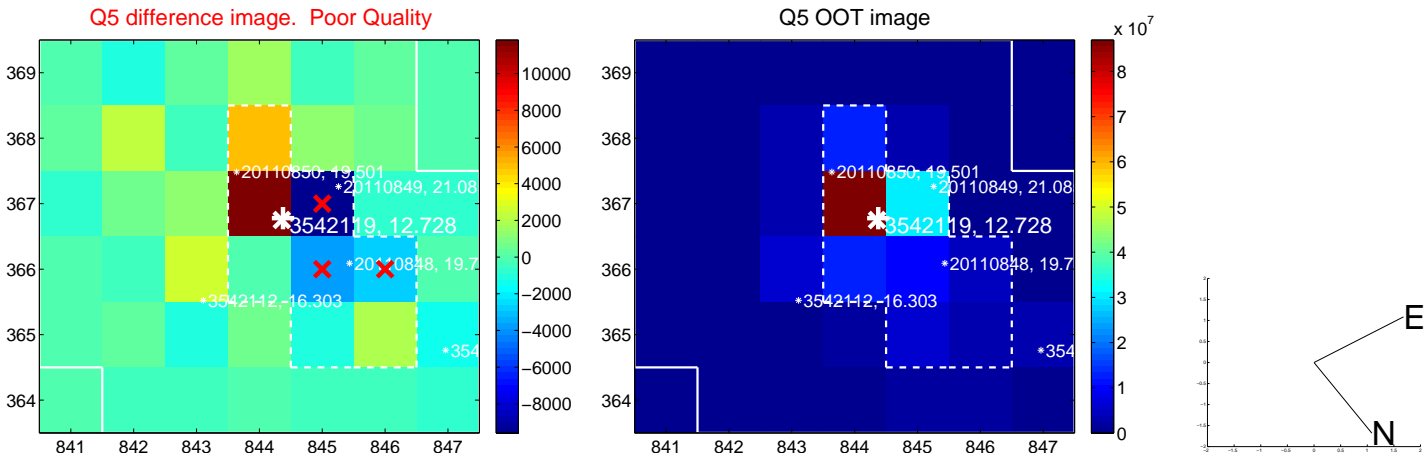
Q4 difference image. Poor Quality



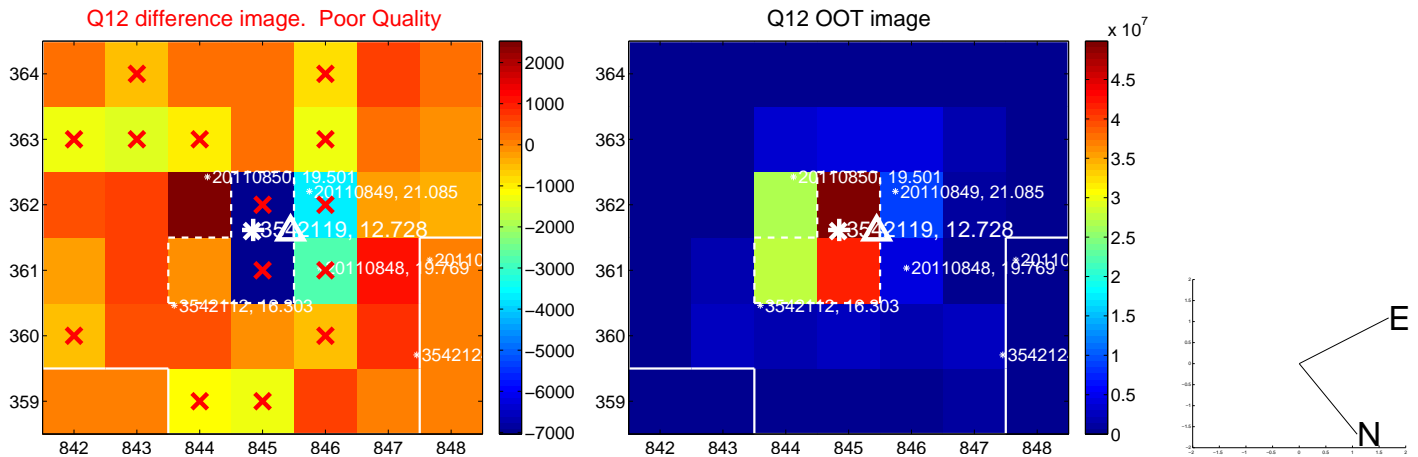
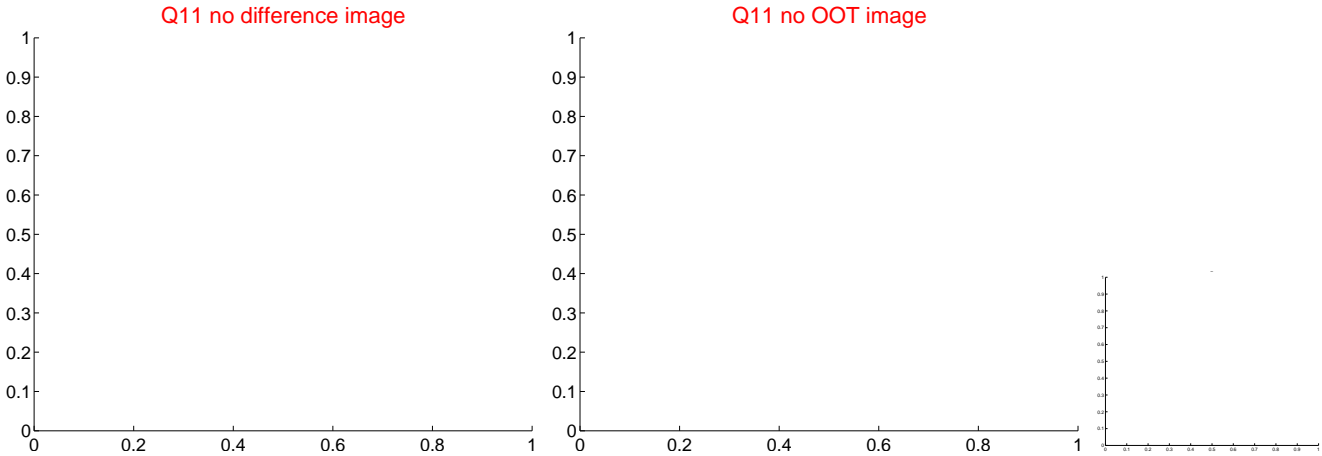
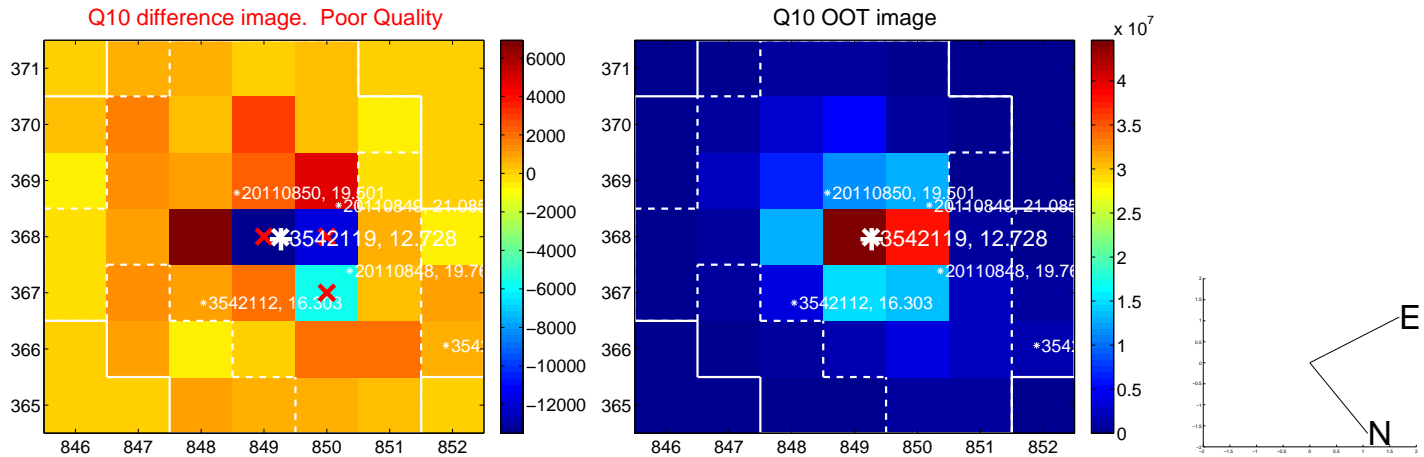
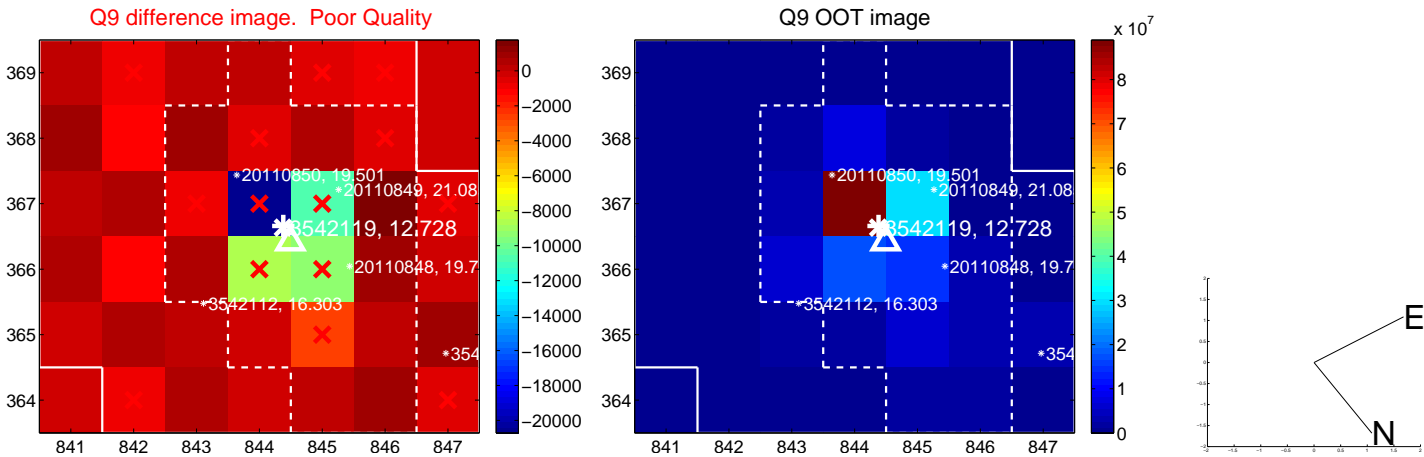
Q4 OOT image



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.

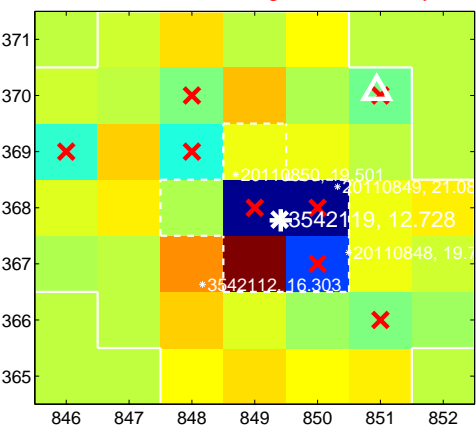
Q13 no difference image



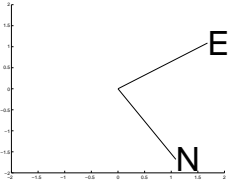
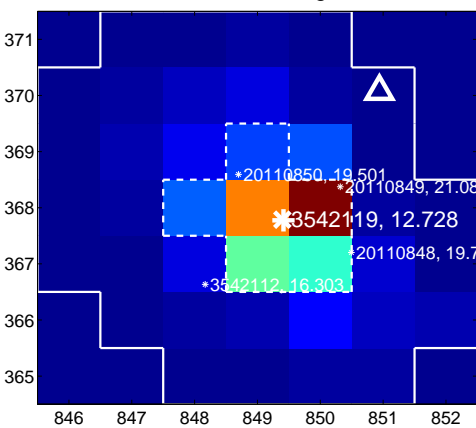
Q13 no OOT image



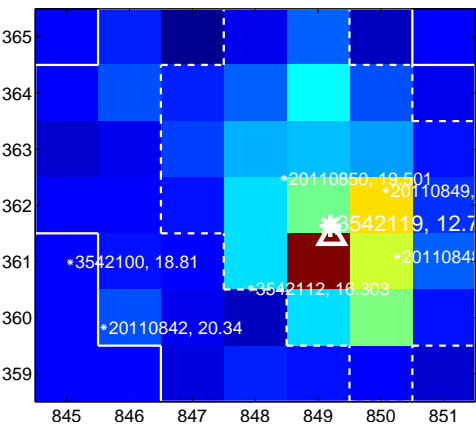
Q14 difference image. Poor Quality



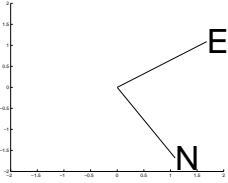
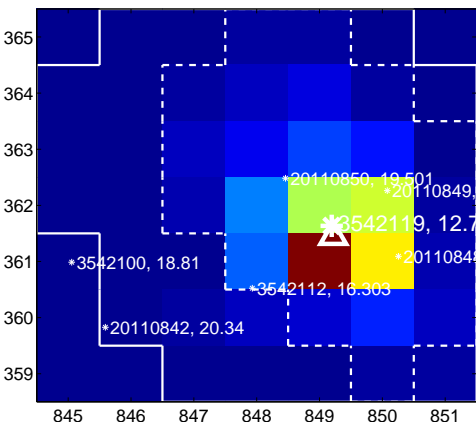
Q14 OOT image



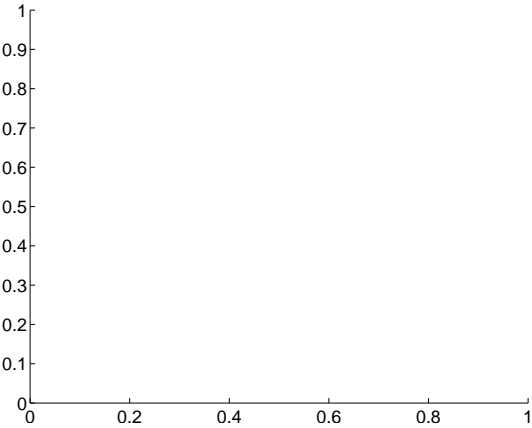
Q15 difference image



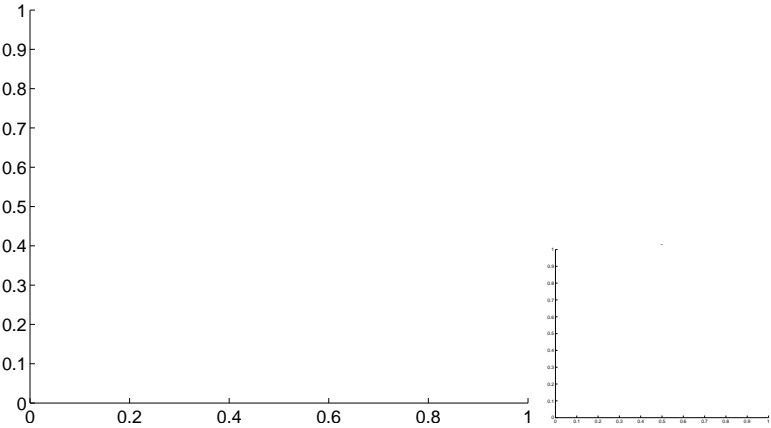
Q15 OOT image



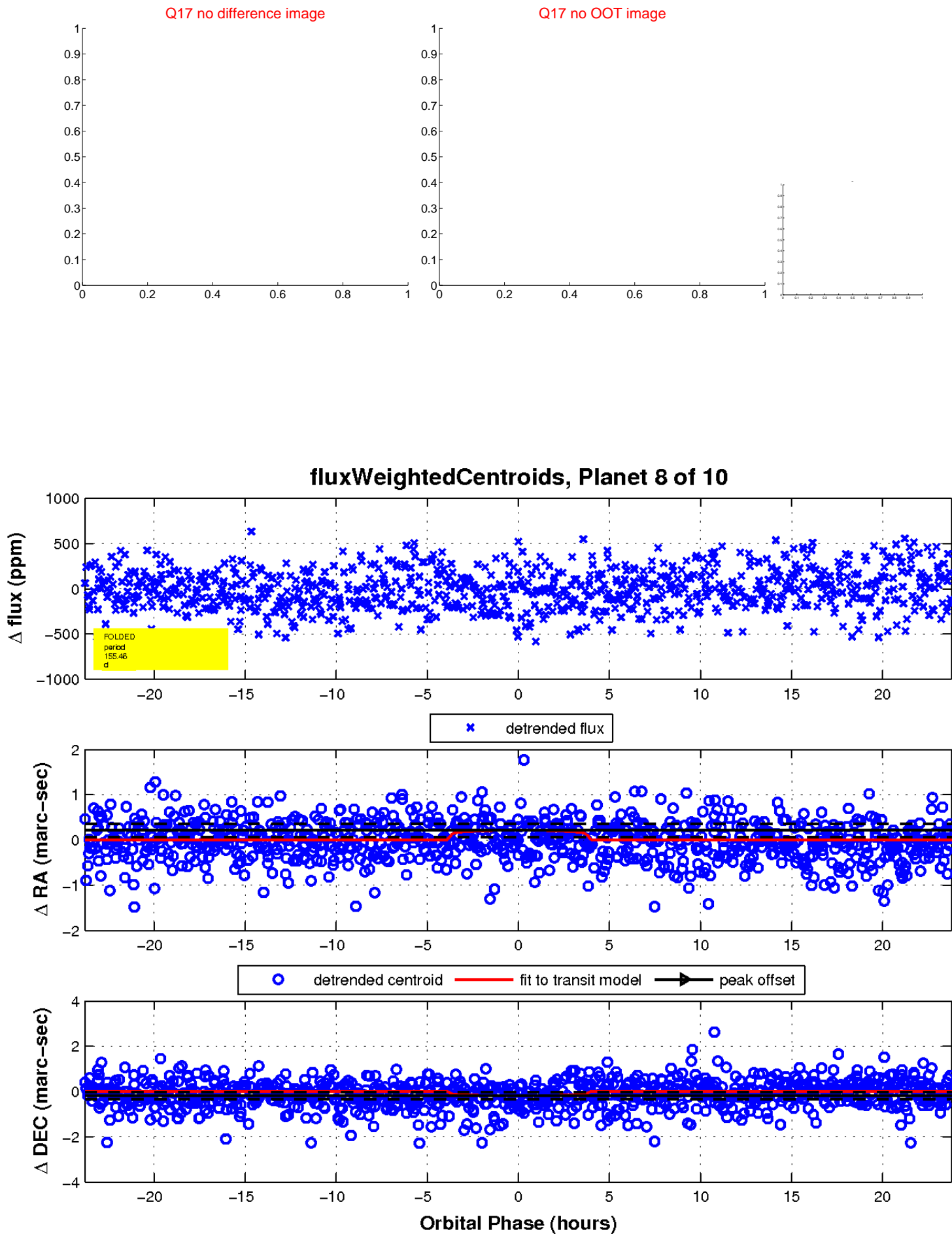
Q16 no difference image



Q16 no OOT image

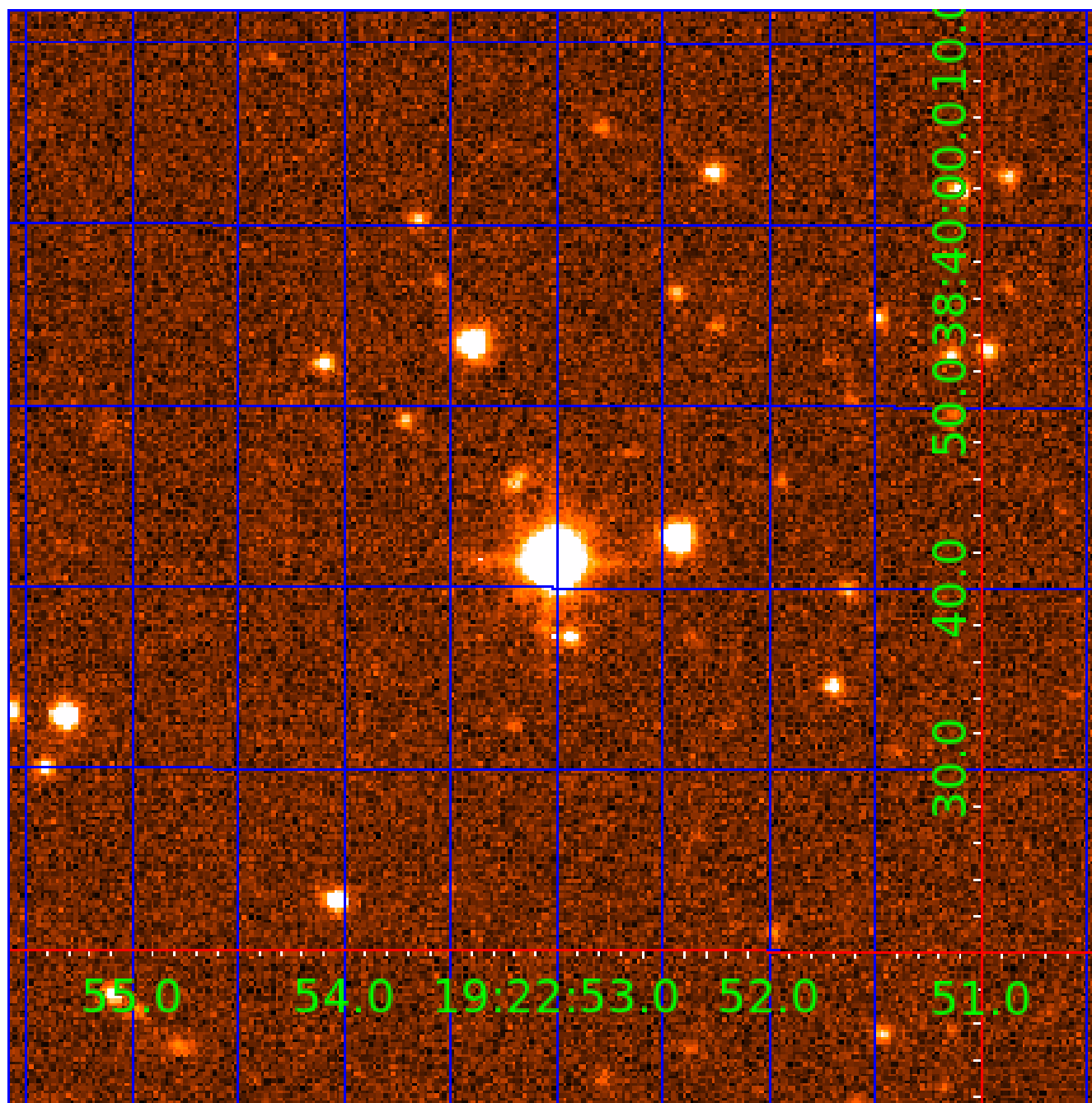


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination





## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003542119-01	OBS	No	2.201670	132.421943	16.8	11.223	9.5	4.9	4.12	6257	2.09	14506.69
003542119-02	OBS	No	177.830213	166.028806	348.6	3.155	9.8	8.1	4.12	6257	8.77	41.55
003542119-03	OBS	No	46.045765	160.209140	195.1	4.733	9.7	8.8	4.12	6257	6.73	251.76
003542119-04	OBS	No	161.792595	208.618920	119.2	13.018	9.4	4.1	4.12	6257	4.93	47.13
003542119-05	OBS	No	144.797709	136.024202	372.3	3.559	8.9	9.3	4.12	6257	9.30	54.65
003542119-06	OBS	No	405.130706	193.166102	270.1	7.652	8.7	6.0	4.12	6257	7.27	13.86
003542119-07	OBS	No	211.002675	175.479319	277.5	5.845	8.9	6.9	4.12	6257	7.39	33.08
003542119-08	OBS	No	155.456868	215.297961	265.2	7.935	8.7	8.0	4.12	6257	7.38	49.71
003542119-09	OBS	No	106.310124	190.178583	229.9	7.393	8.0	7.4	4.12	6257	6.90	82.50
003542119-10	OBS	No	79.537459	169.217320	368.5	1.912	7.9	7.7	4.12	6257	8.72	121.47

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003542119-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003542119-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003542119-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT
003542119-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003542119-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003542119-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003542119-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
003542119-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS
003542119-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003542119-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

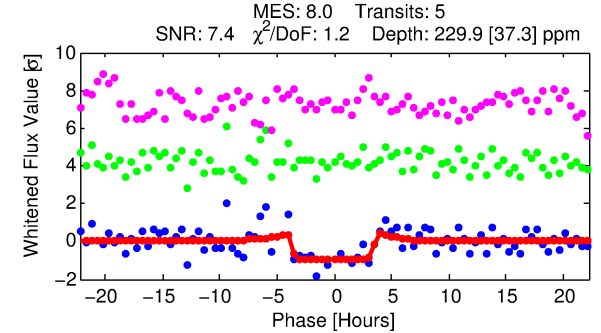
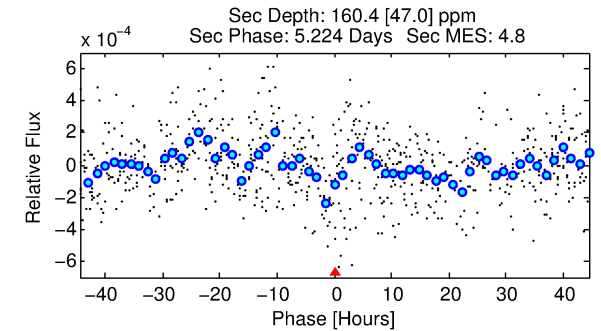
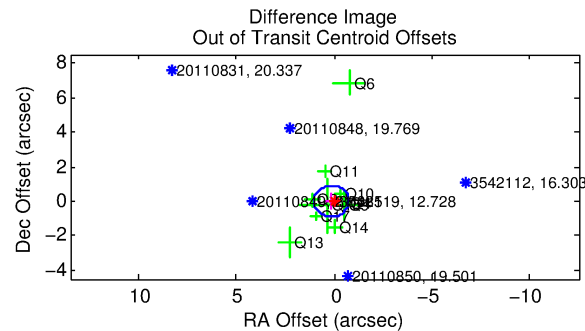
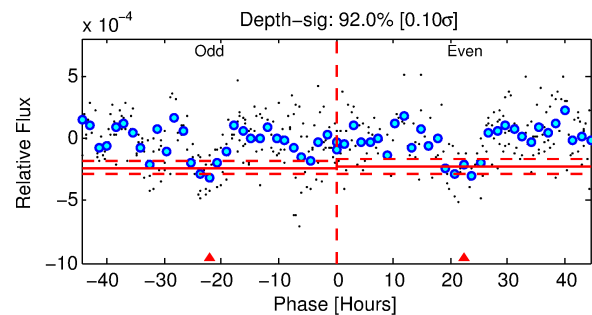
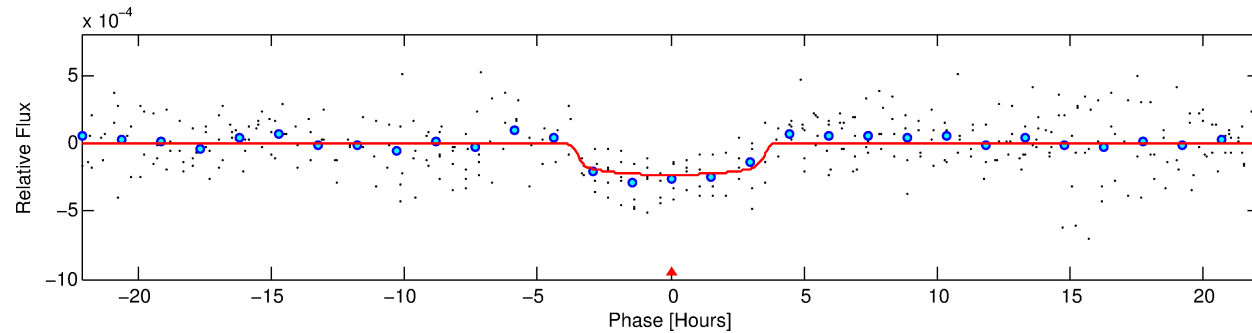
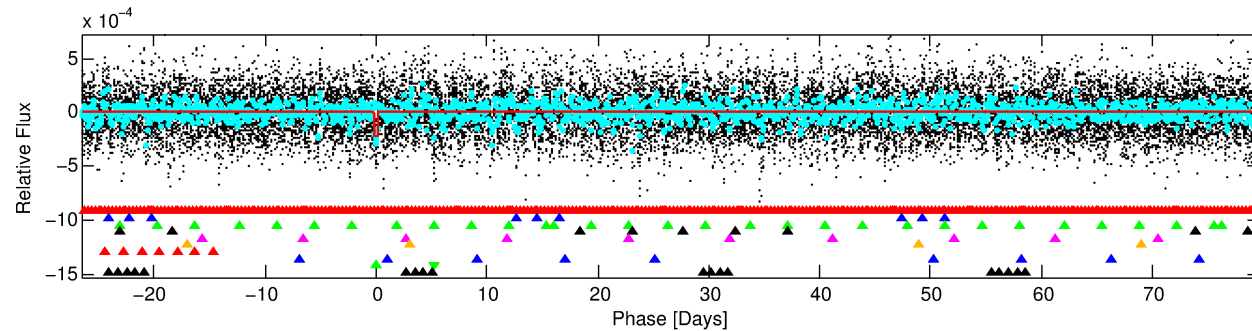
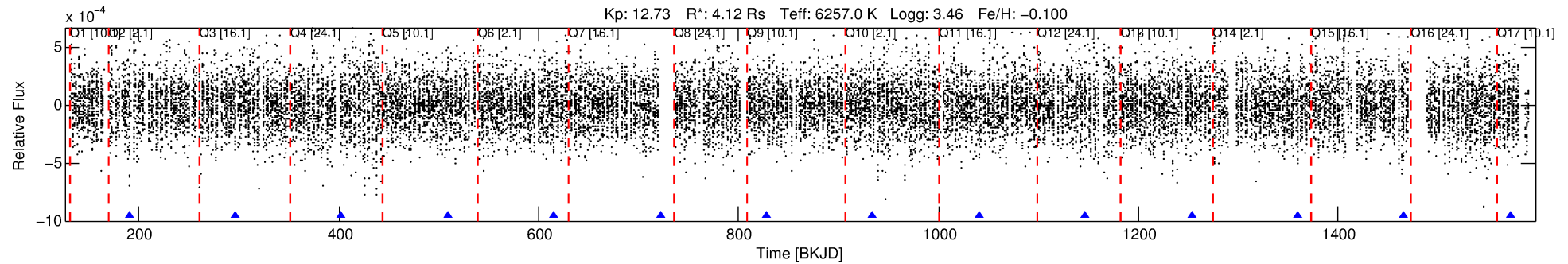
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 003542119-09

No Significant Match Found

# DV One-Page Summary

KIC: 3542119 Candidate: 9 of 10 Period: 106.310 d



## DV Fit Results:

Period = 106.31012 [0.00204] d  
Epoch = 190.1786 [0.0158] BKJD  
Rp/R\* = 0.0153 [0.0080]  
a/R\* = 69.24 [193.77]  
b = 0.80 [1.29]  
Seff = 82.50 [54.58]  
Teq = 769 [127] K  
Rp = 6.90 [4.61] Re  
a = 0.5321 [0.2145] AU  
Ag = 524.25 [665.15] [0.79 $\sigma$ ]  
Teffp = 5686 [1558] K [3.15 $\sigma$ ]

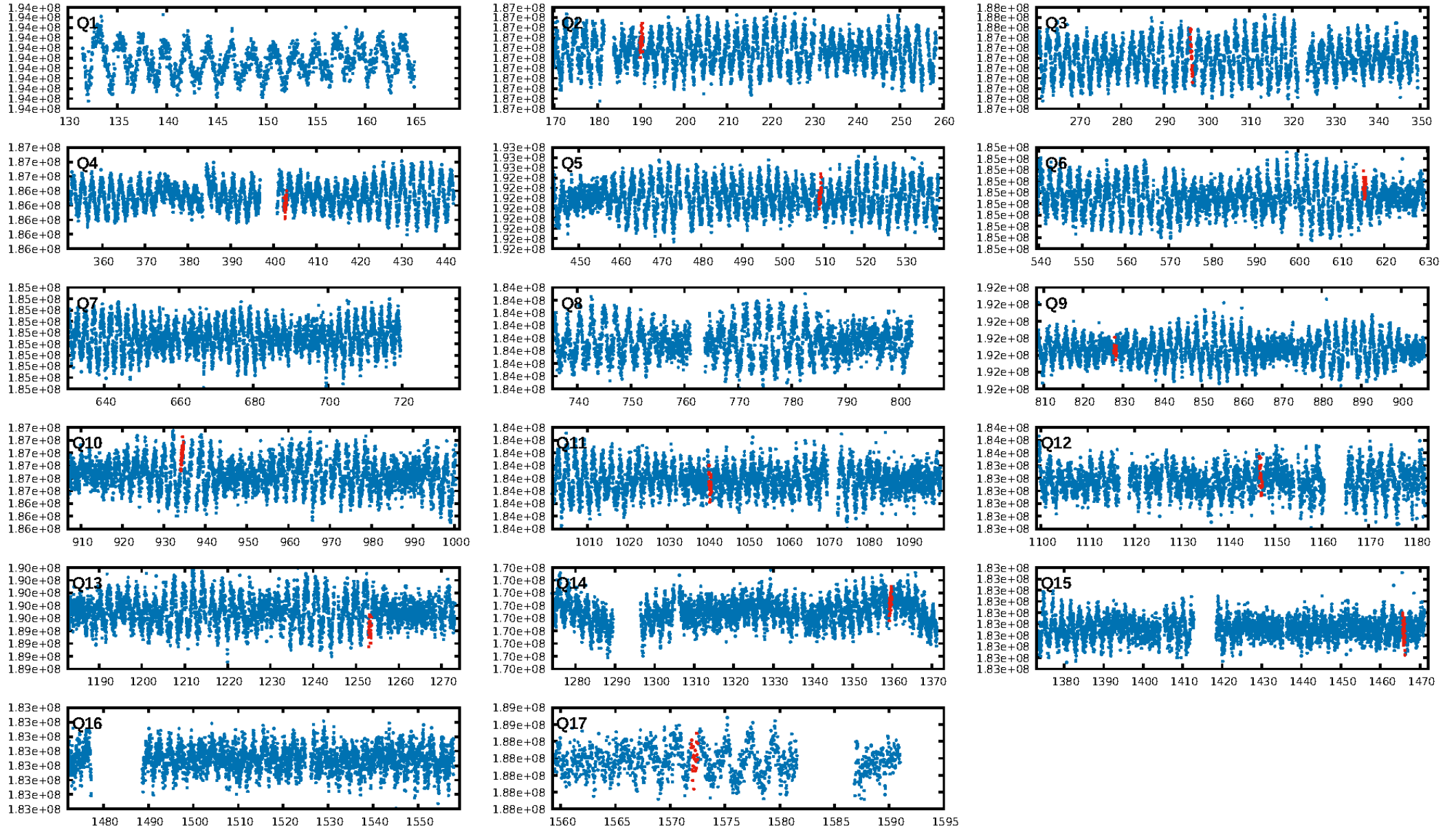
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [84.15 $\sigma$ ]  
LongPeriod-sig: 100.0% [112.58 $\sigma$ ]  
ModelChiSquare2-sig: 45.1%  
ModelChiSquareGof-sig: 99.6%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 0.2789  
Centroid-sig: 6.0%  
Centroid-so: 0.668 arcsec [1.19 $\sigma$ ]  
OotOffset-rm: 0.157 arcsec [0.53 $\sigma$ ]  
KicOffset-rm: 0.159 arcsec [0.51 $\sigma$ ]  
OotOffset-st: 4/2/1/3 [10]  
KicOffset-st: 4/2/1/3 [10]  
DiffImageQuality-fgm: 0.40 [4/10]  
DiffImageOverlap-fno: 0.23 [3/13]

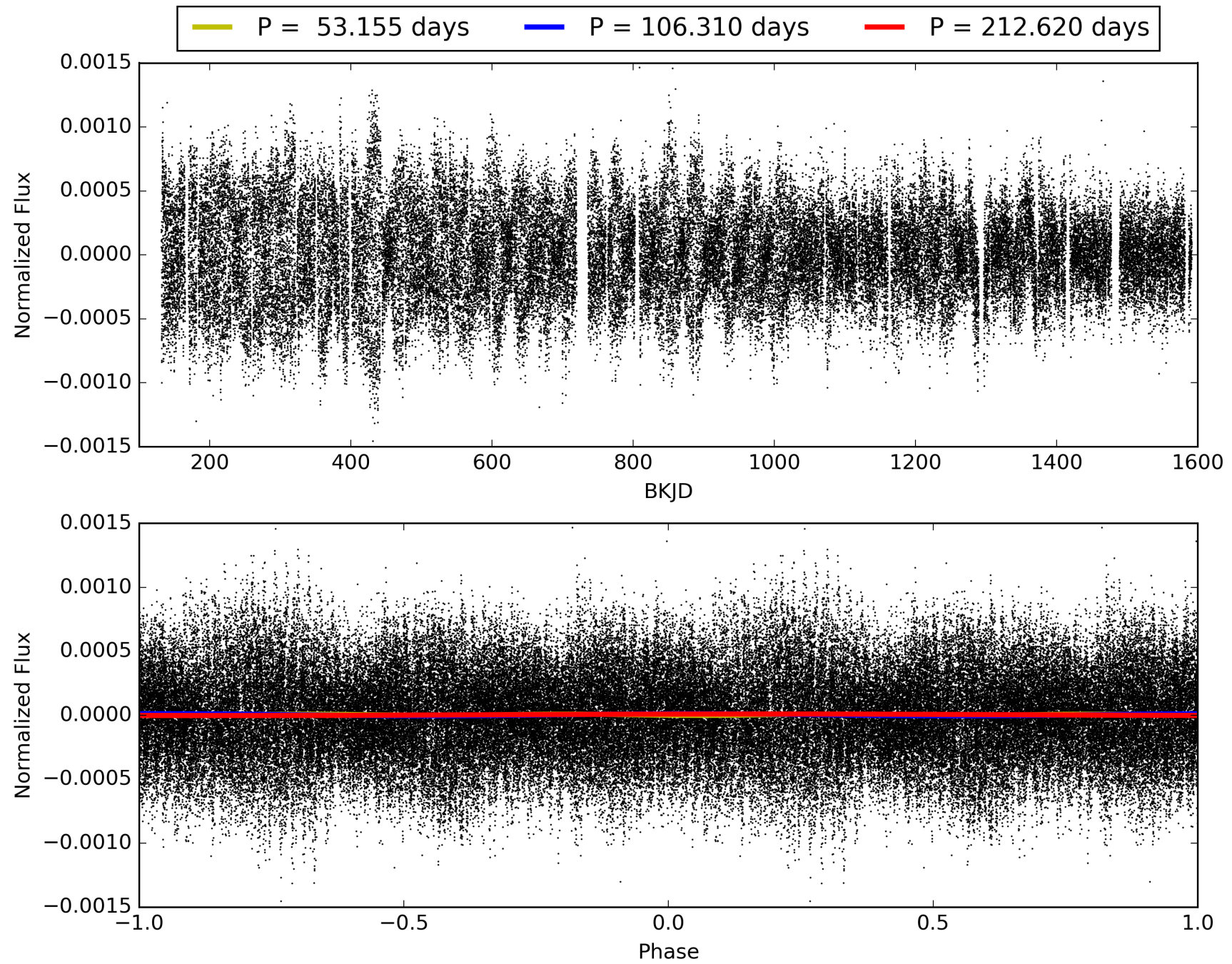
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:16:14 Z

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

# TCE 003542119-09, PDC Light Curves



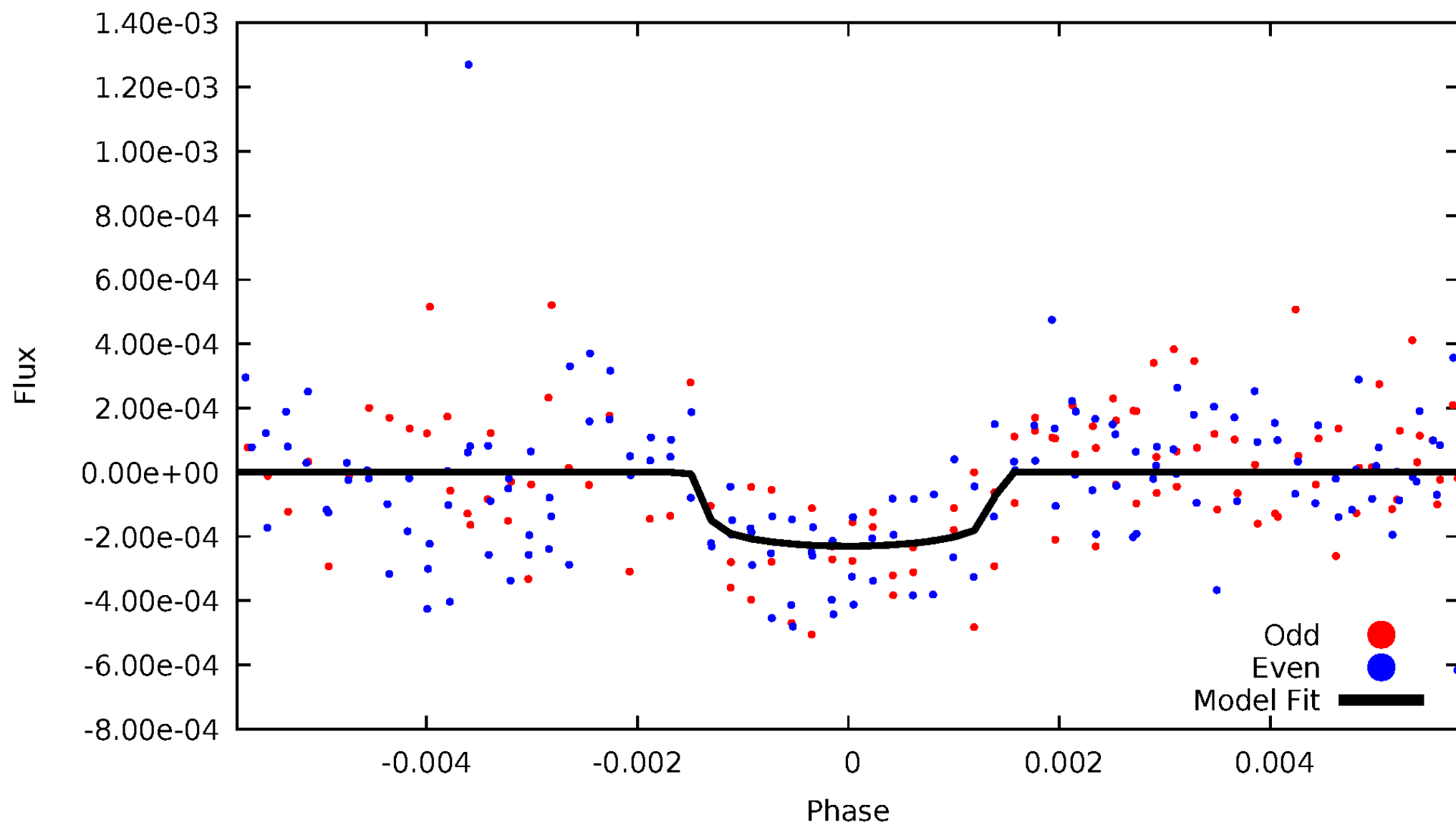
TCE 003542119-09





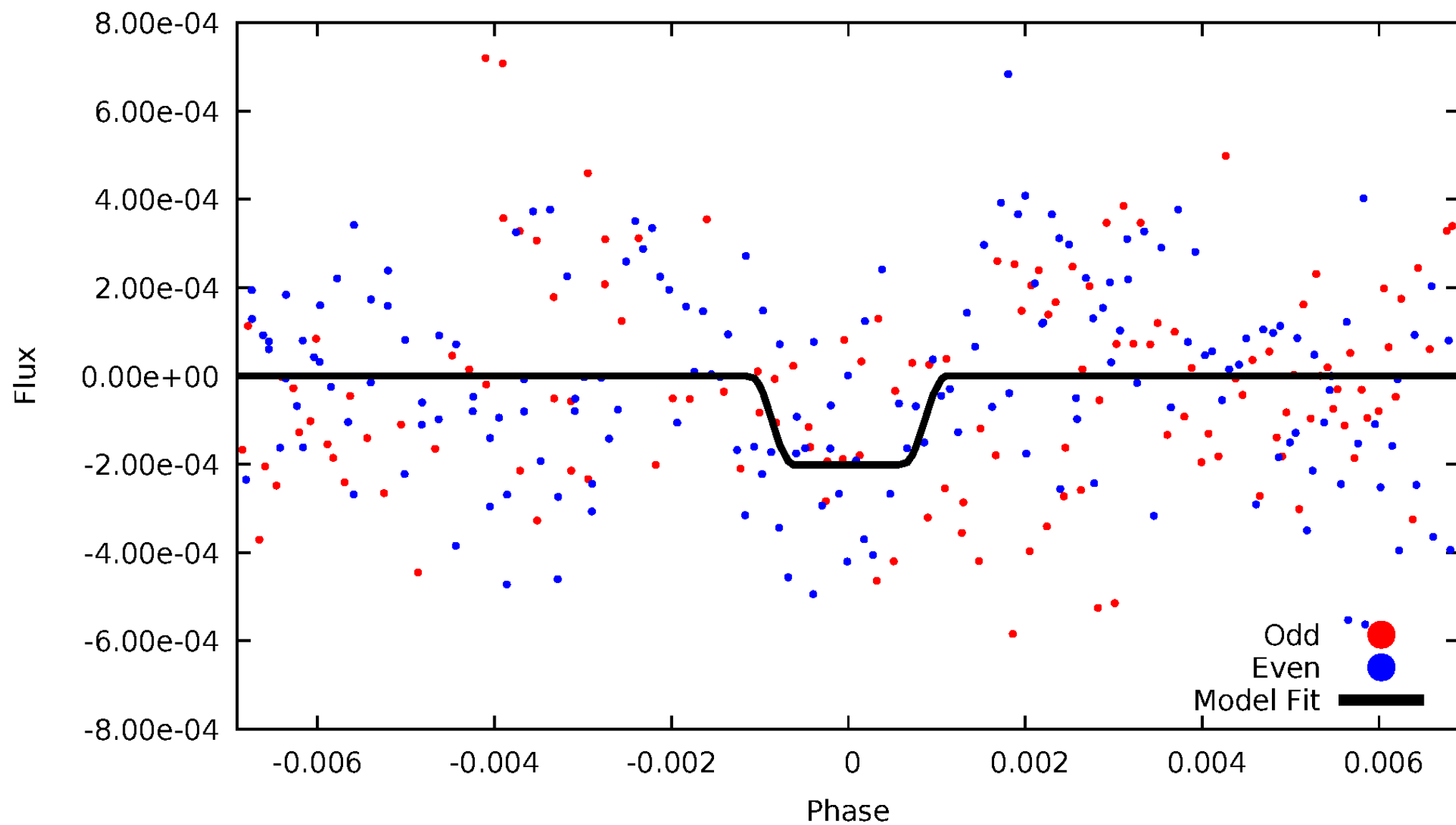
# DV Odd/Even

TCE 003542119-09



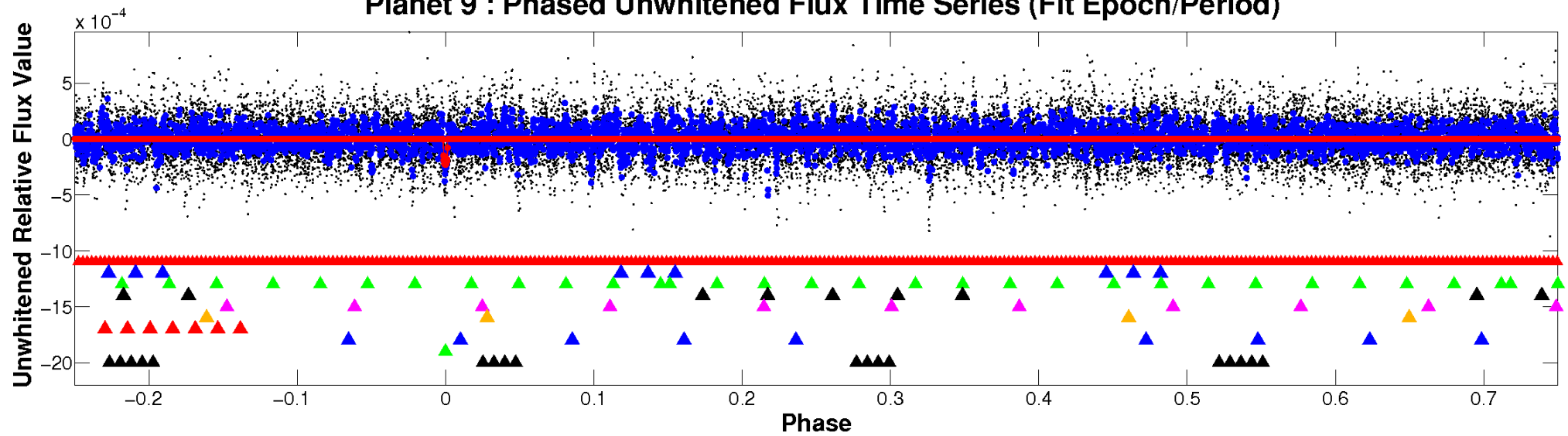
# ALT Odd/Even

TCE 003542119-09

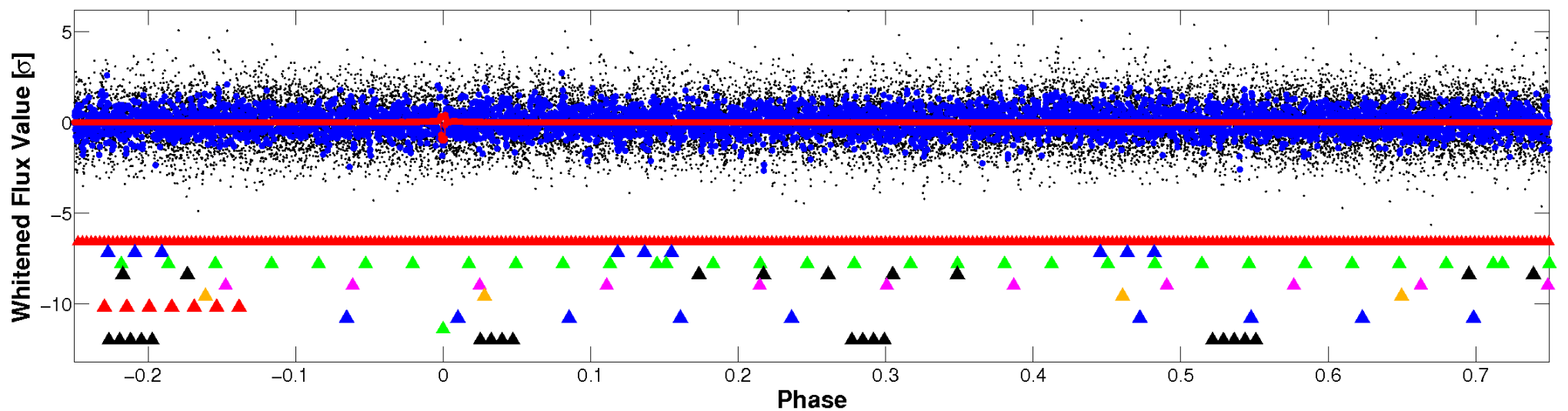


# Non-Whitened Vs. Whitened Light Curve

## Planet 9 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

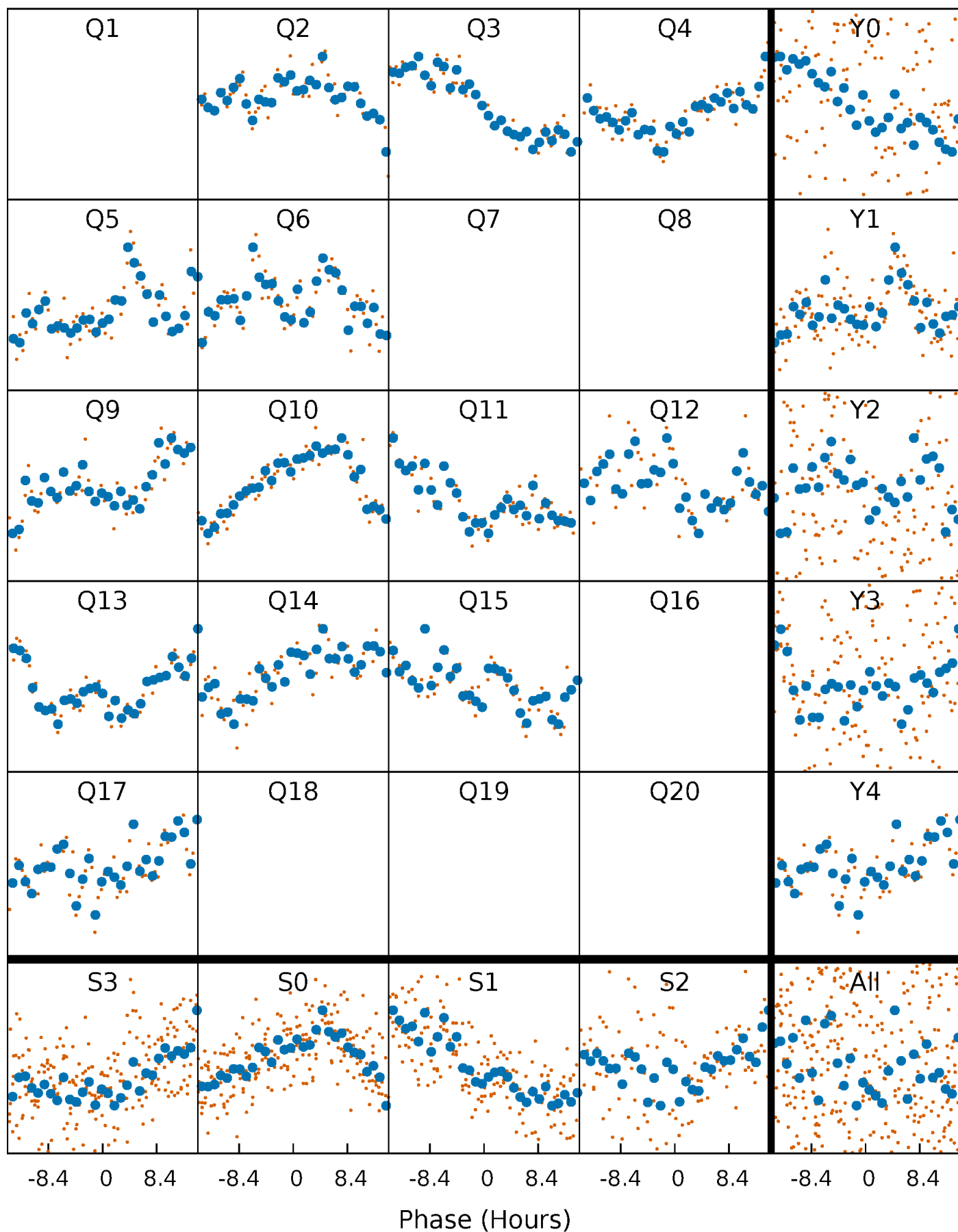


## Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

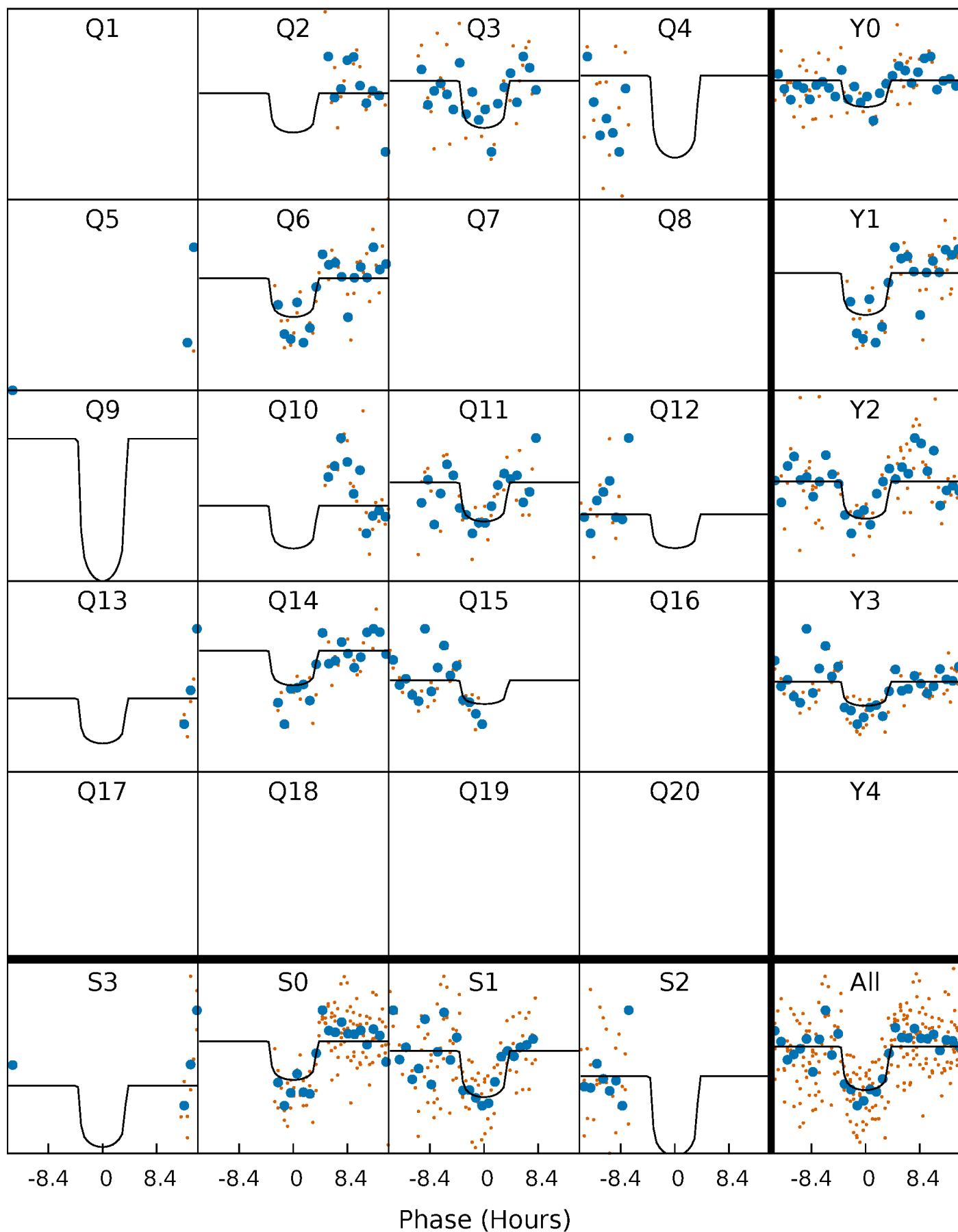
TCE 003542119-09 P=106.310124 Days  $T_0=190.178583$  (BKJD)





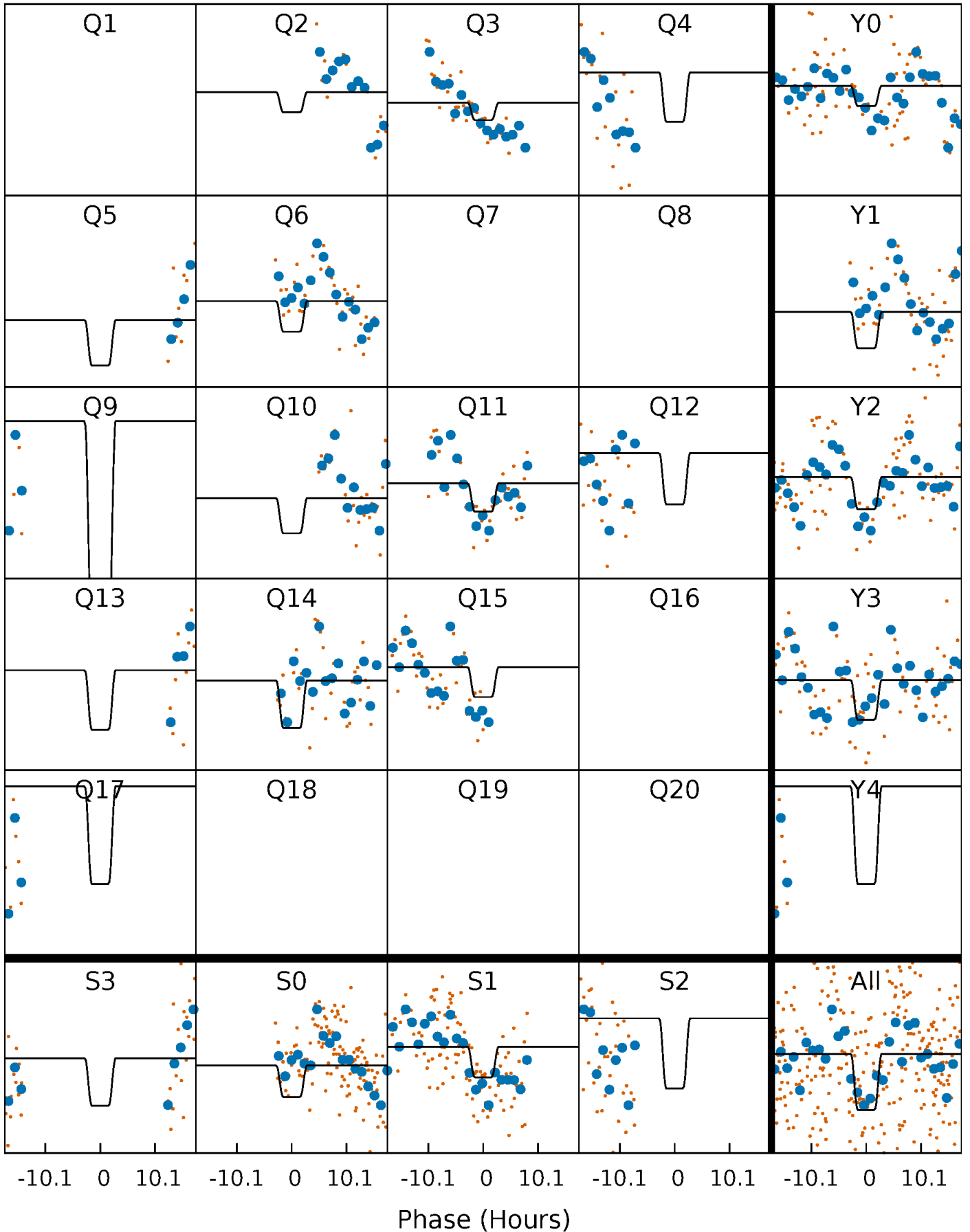
# DV Quarter-Phased Transit Curves

TCE 003542119-09 P=106.310124 Days  $T_0=190.178583$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

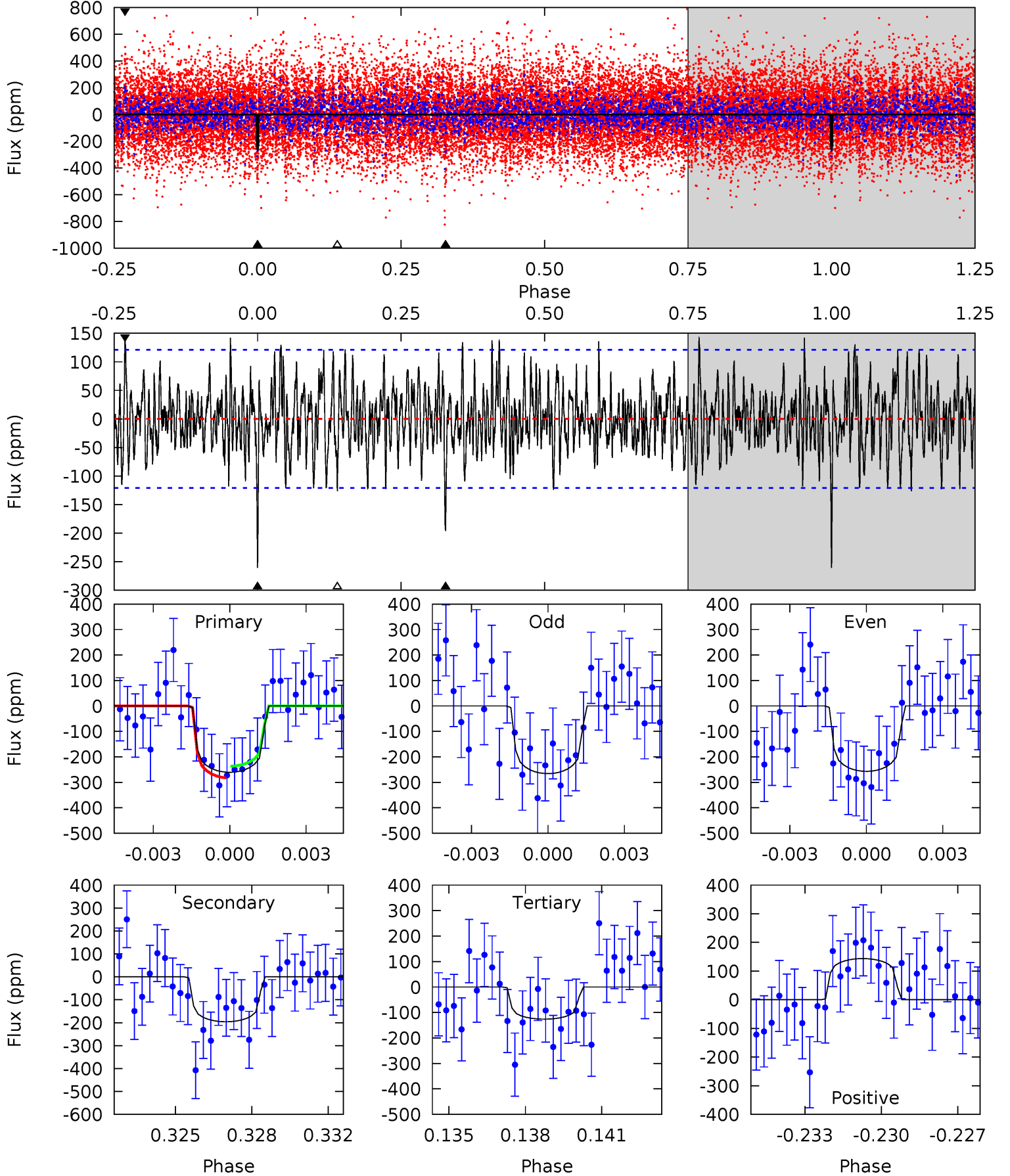
TCE 003542119-09 P=106.307878 Days  $T_0=190.191771$  (BKJD)



# DV Model-Shift Uniqueness Test

003542119-09, P = 106.310124 Days, E = 83.868459 Days

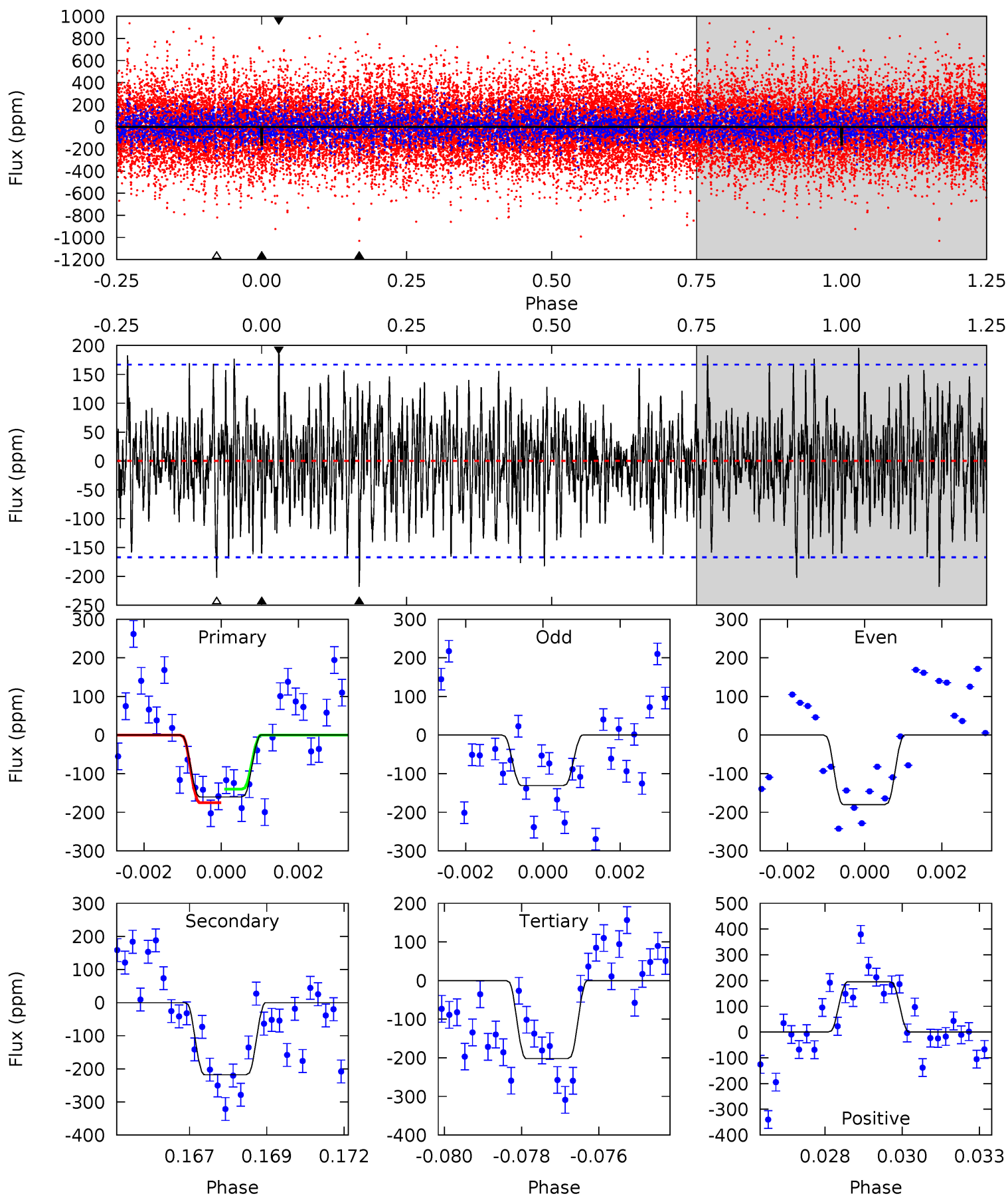
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.3	8.51	5.48	6.23	5.25	2.96	1.98	5.83	5.08	3.03	2.27	0.19	0.91	0.36	1.00



# Alt Model-Shift Uniqueness Test

003542119-09, P = 106.307878 Days, E = 83.883893 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
5.10	6.93	6.43	6.23	5.31	3.07	1.88	-1.33	-1.13	0.50	0.71	0.78	0.65	0.47	0.55



### Stellar Parameters For KIC 003542119

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6257^{+189}_{-151}$	$3.457^{+0.384}_{-0.096}$	$-0.100^{+0.350}_{-0.300}$	$4.124^{+0.608}_{-1.701}$	$1.777^{+0.178}_{-0.415}$	$0.036^{+0.119}_{-0.011}$
	+3%/-2%	+11%/-3%	+350%/-300%	+15%/-41%	+10%/-23%	+333%/-31%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 003542119-09 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-196 \pm 23$	$6.11^{+3.97}_{-3.11}$	$1053^{+66}_{-119}$	$5973^{+3026}_{-1061}$	$821^{+2610}_{-526}$
Alt.	$-218 \pm 31$	$6.03^{+3.67}_{-3.05}$	$1056^{+67}_{-114}$	$6257^{+3280}_{-1175}$	$893^{+3176}_{-546}$

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

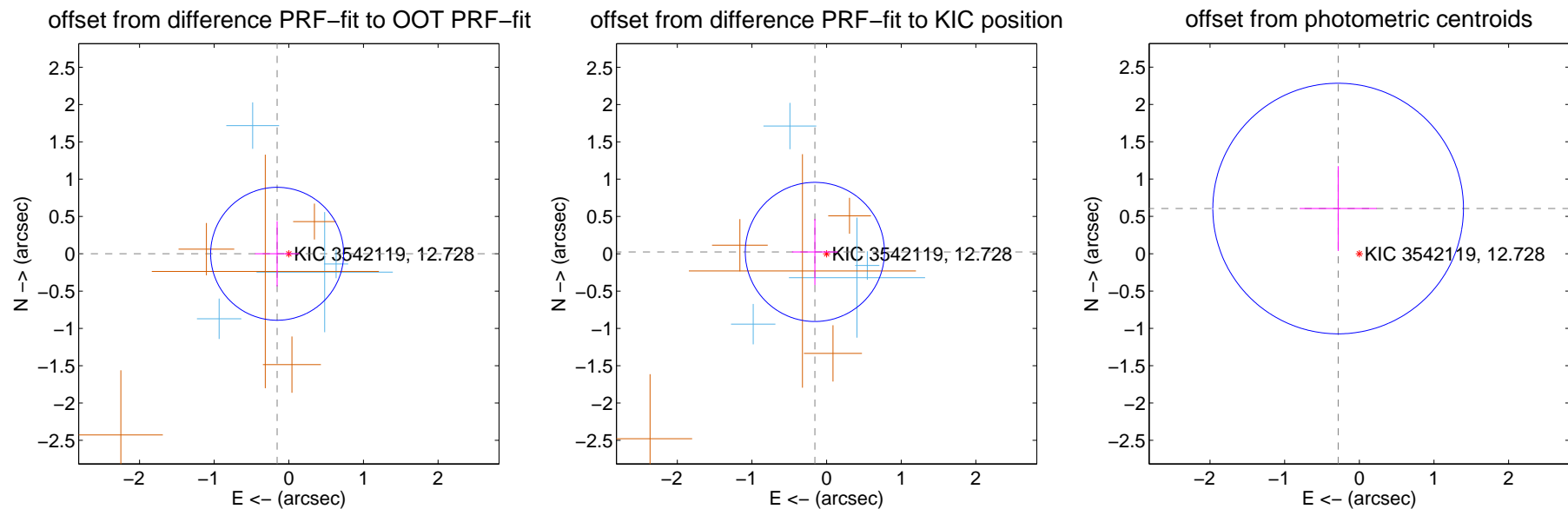
## DV Centroid Data

Supplemental centroid analysis for 003542119-09. Kepler magnitude: 12.73. Transit SNR 7.44

There are 4 quarters with good PRF difference image offsets

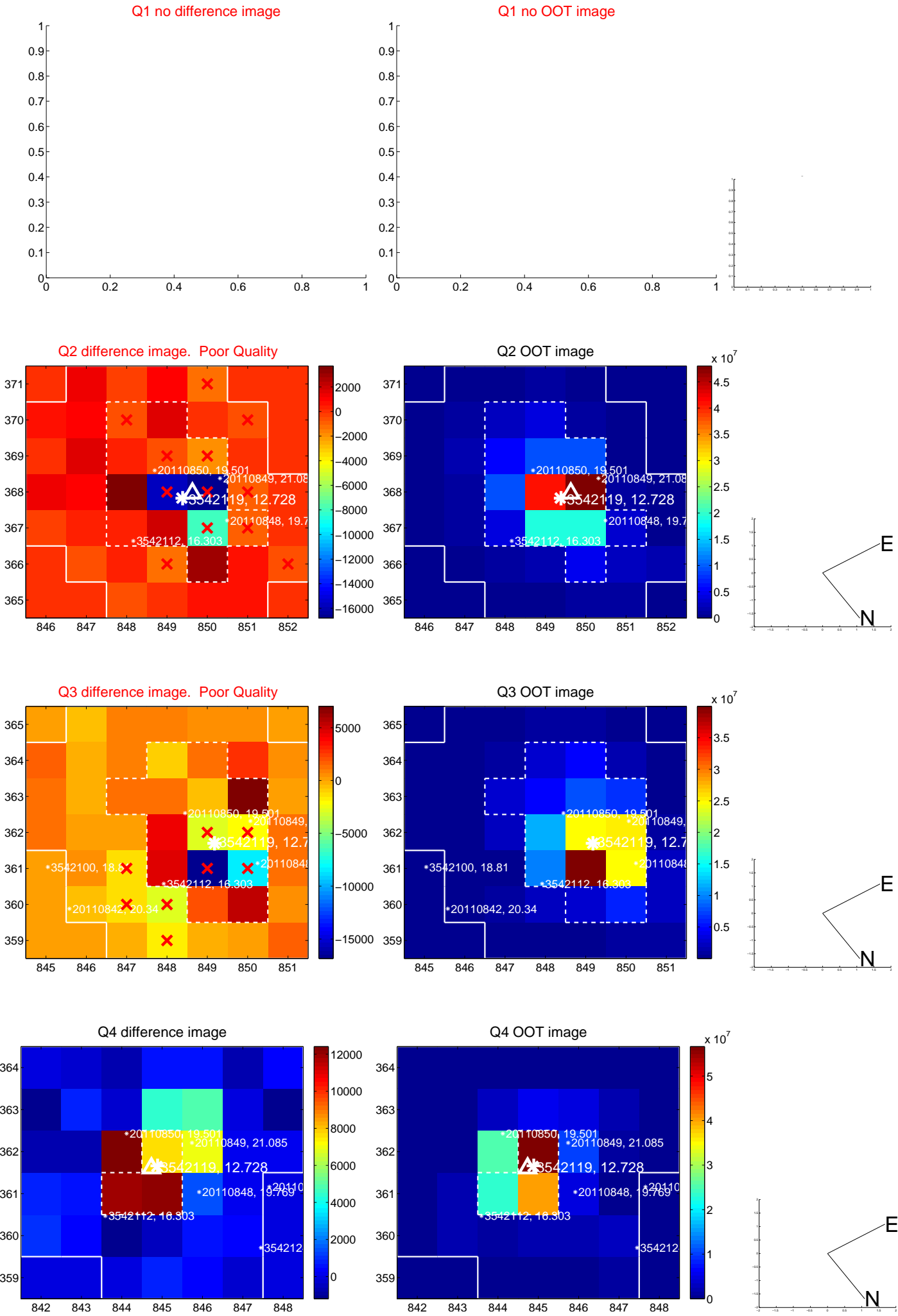
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.157 \pm 0.297$	0.53	$0.157 \pm 0.297$	$0.000 \pm 0.437$
PRF-fit source offset from KIC position	$0.159 \pm 0.311$	0.51	$0.157 \pm 0.307$	$0.025 \pm 0.443$
photometric centroid source offset	$0.67 \pm 0.56$	1.19	$0.28 \pm 0.52$	$0.61 \pm 0.57$



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.

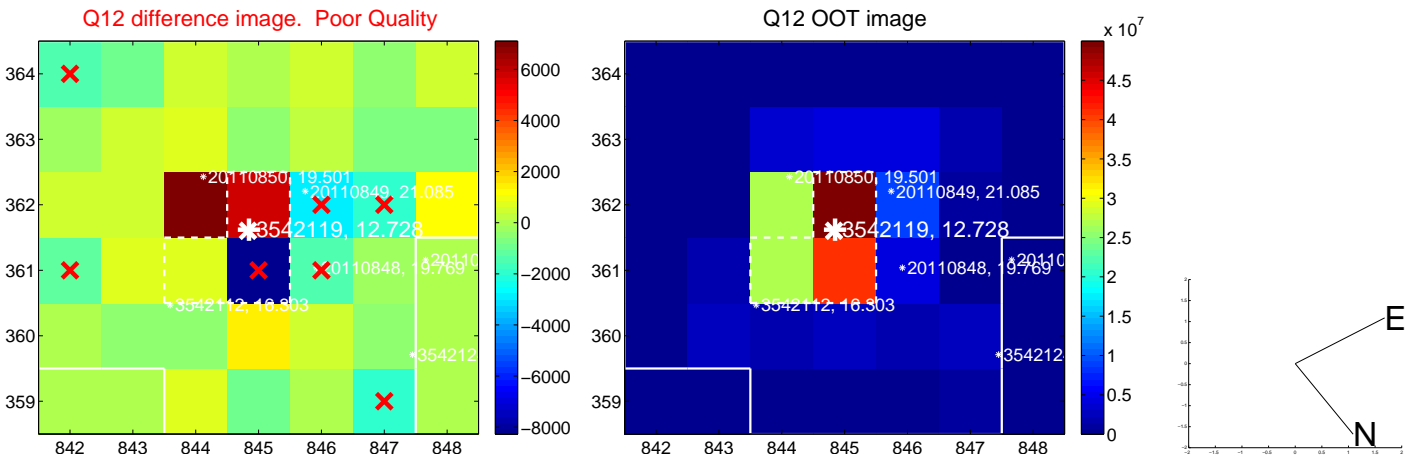
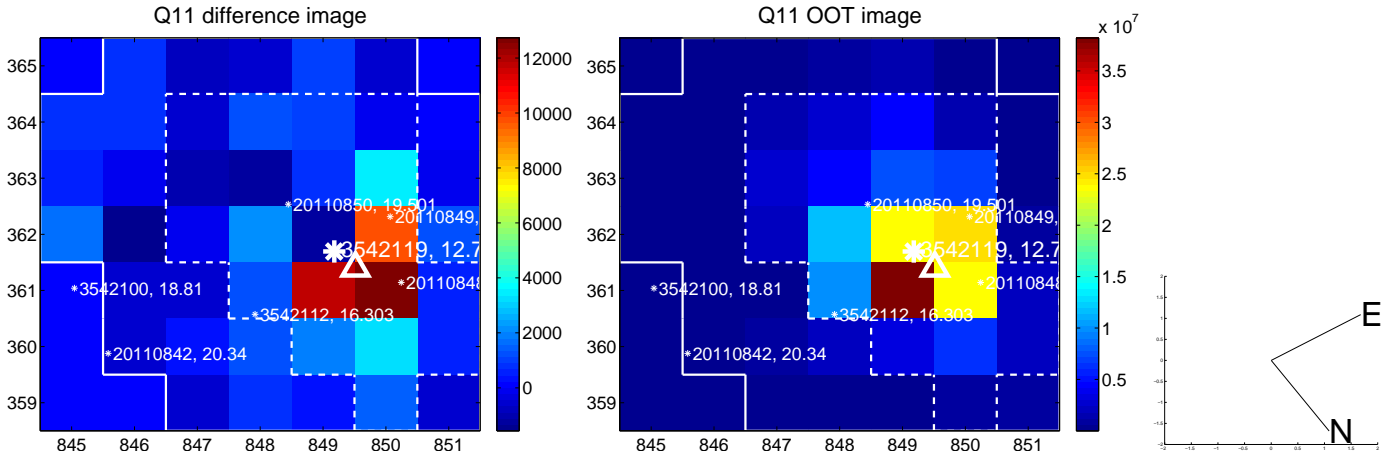
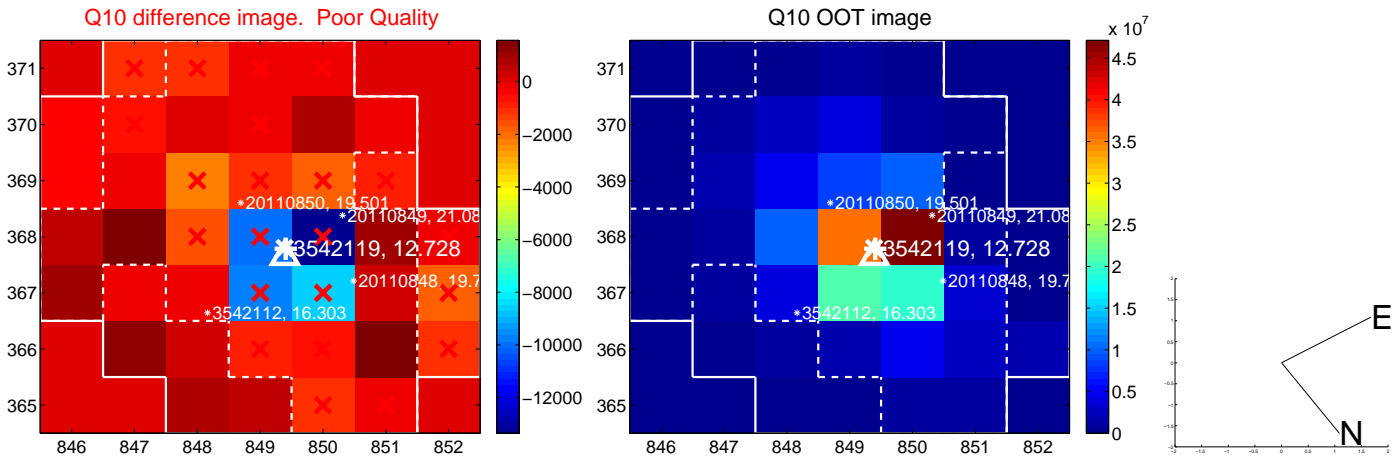
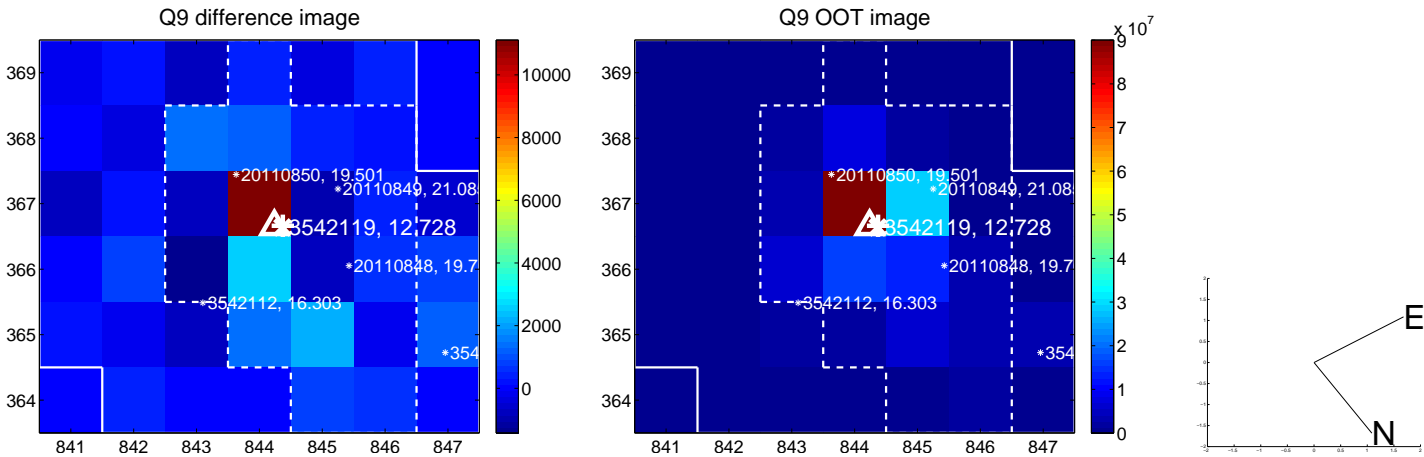
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



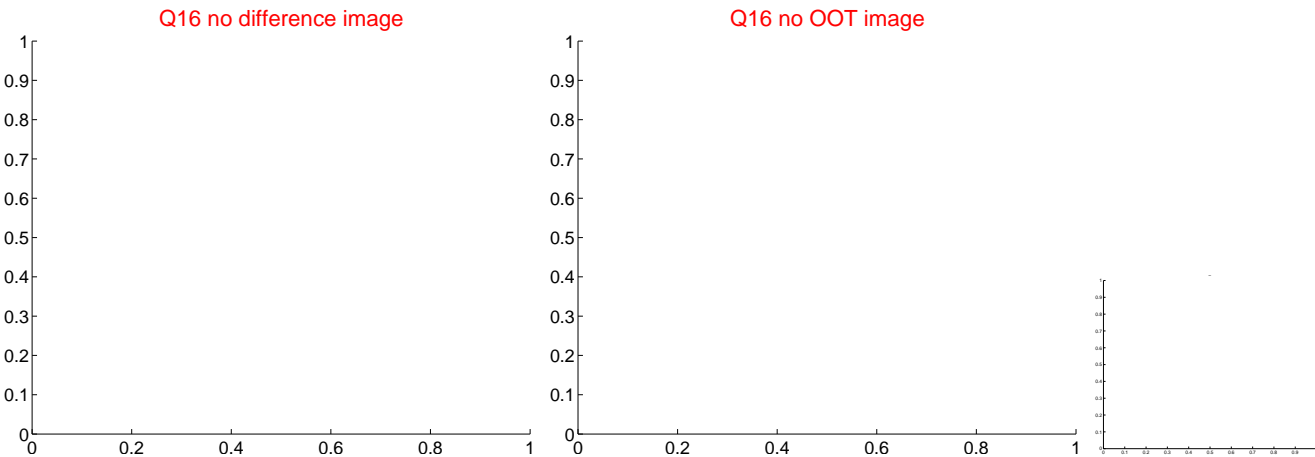
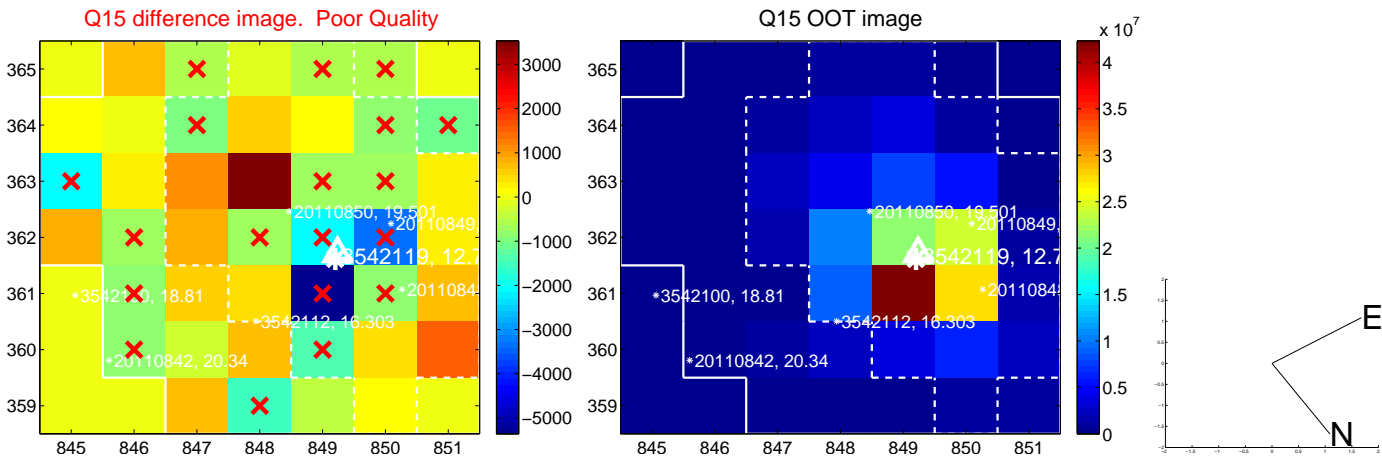
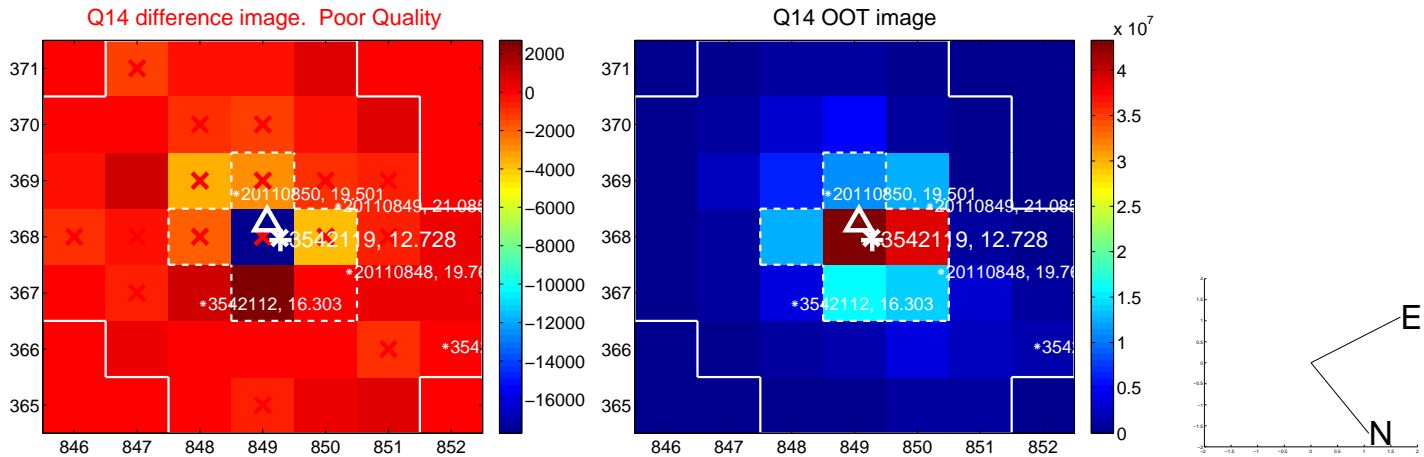
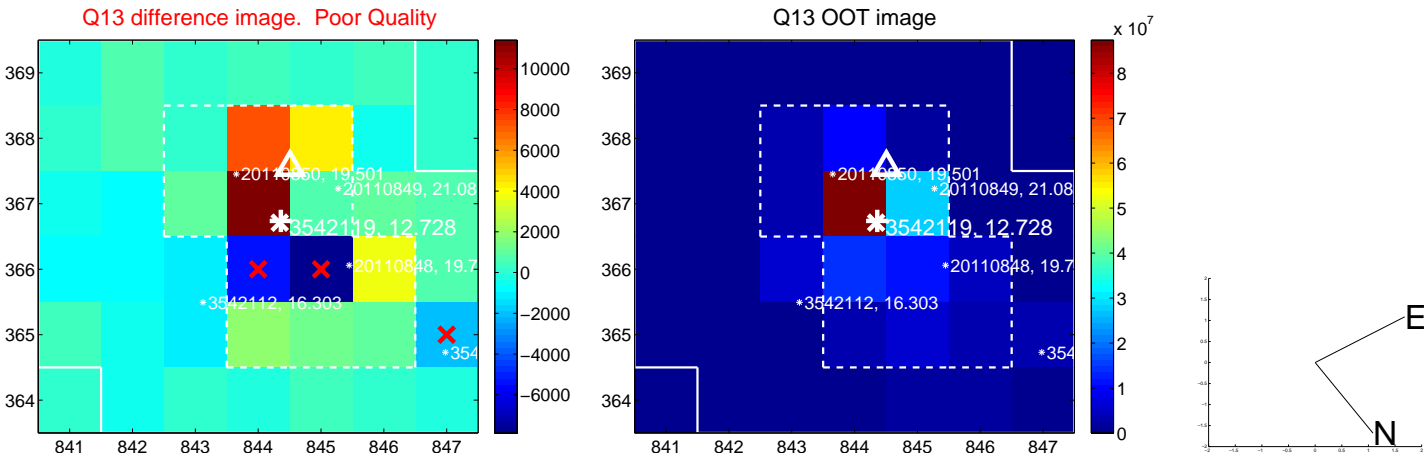




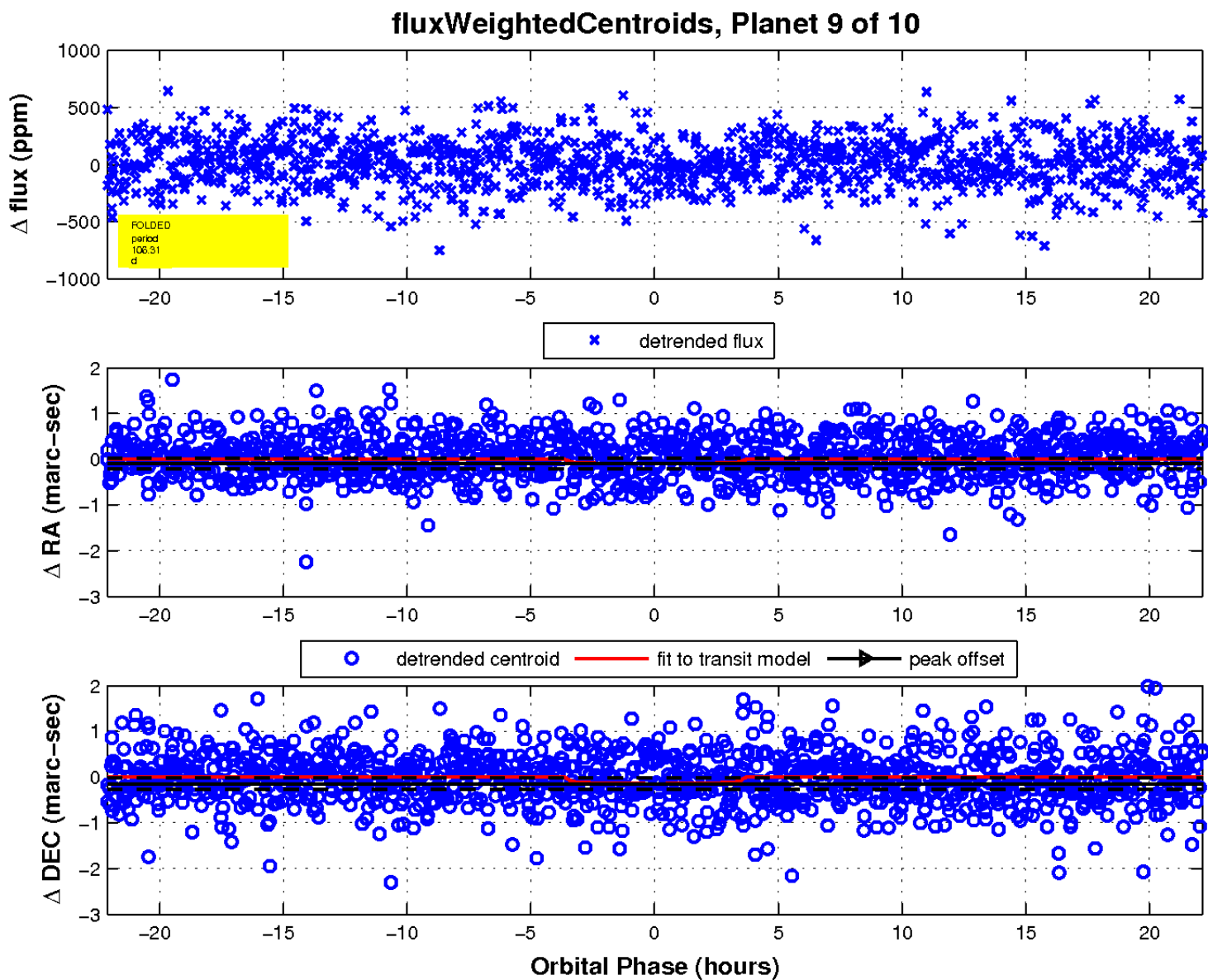
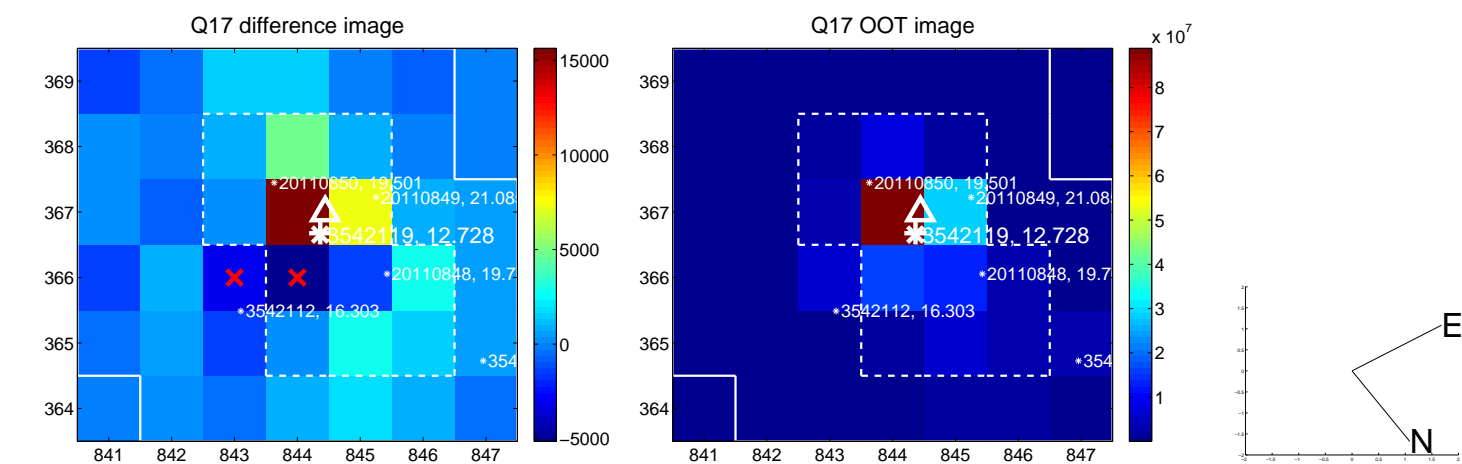
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

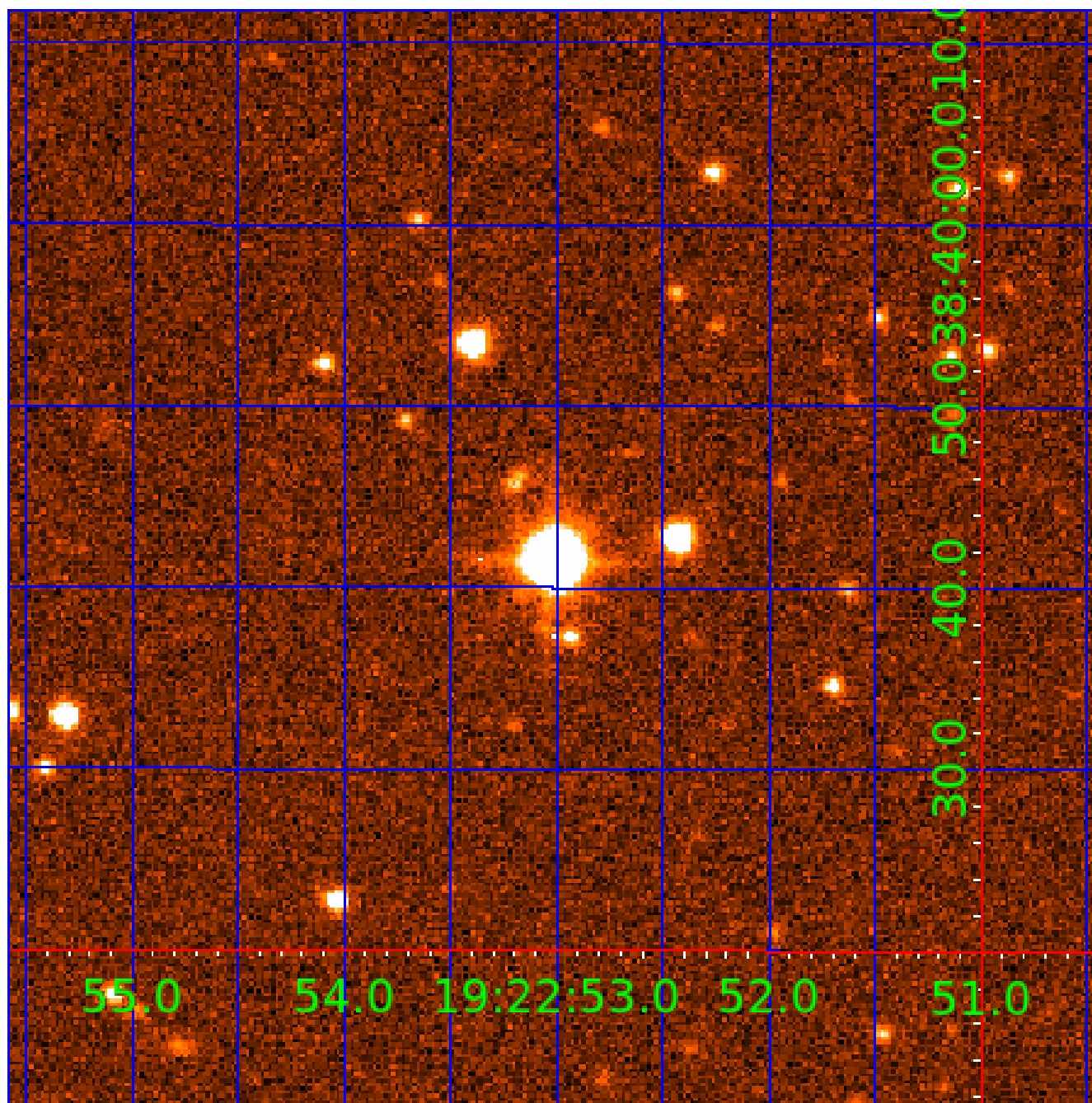


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image

Declination



## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003542119-01	OBS	No	2.201670	132.421943	16.8	11.223	9.5	4.9	4.12	6257	2.09	14506.69
003542119-02	OBS	No	177.830213	166.028806	348.6	3.155	9.8	8.1	4.12	6257	8.77	41.55
003542119-03	OBS	No	46.045765	160.209140	195.1	4.733	9.7	8.8	4.12	6257	6.73	251.76
003542119-04	OBS	No	161.792595	208.618920	119.2	13.018	9.4	4.1	4.12	6257	4.93	47.13
003542119-05	OBS	No	144.797709	136.024202	372.3	3.559	8.9	9.3	4.12	6257	9.30	54.65
003542119-06	OBS	No	405.130706	193.166102	270.1	7.652	8.7	6.0	4.12	6257	7.27	13.86
003542119-07	OBS	No	211.002675	175.479319	277.5	5.845	8.9	6.9	4.12	6257	7.39	33.08
003542119-08	OBS	No	155.456868	215.297961	265.2	7.935	8.7	8.0	4.12	6257	7.38	49.71
003542119-09	OBS	No	106.310124	190.178583	229.9	7.393	8.0	7.4	4.12	6257	6.90	82.50
003542119-10	OBS	No	79.537459	169.217320	368.5	1.912	7.9	7.7	4.12	6257	8.72	121.47

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003542119-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
003542119-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL_SKYE—TRANS_GAPPED—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003542119-03	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—MOD_NONUNIQ_ALT
003542119-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003542119-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS
003542119-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
003542119-07	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_MEAS
003542119-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_FEW_MEAS
003542119-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
003542119-10	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

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

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

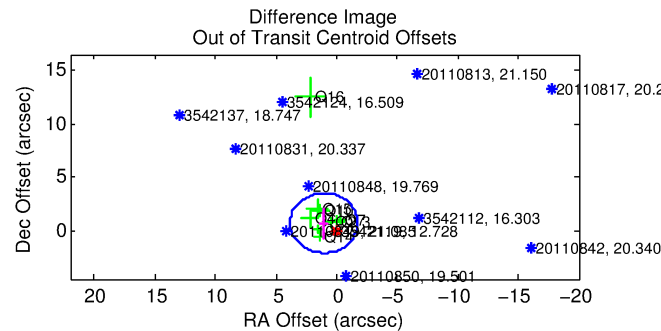
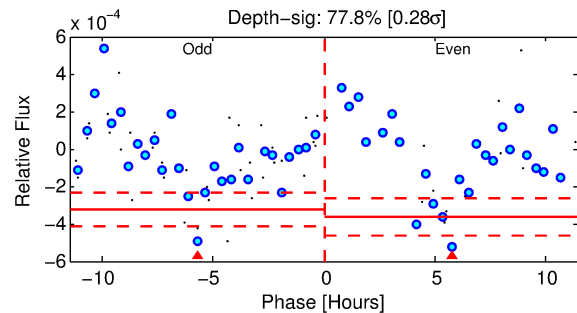
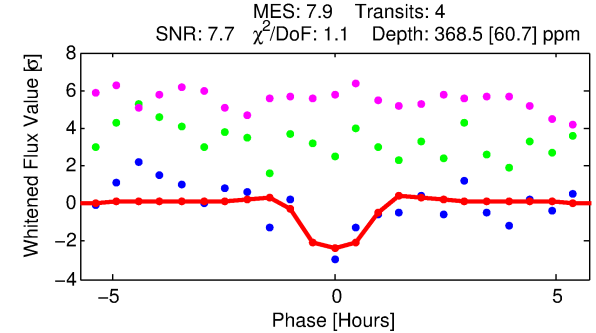
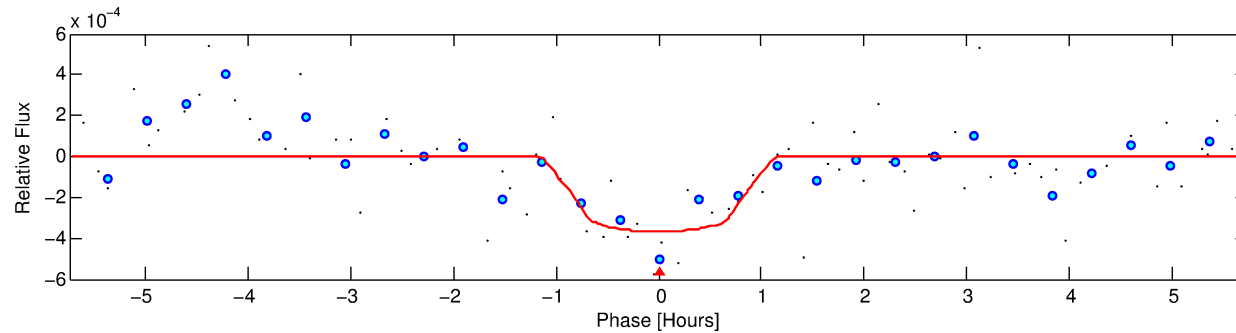
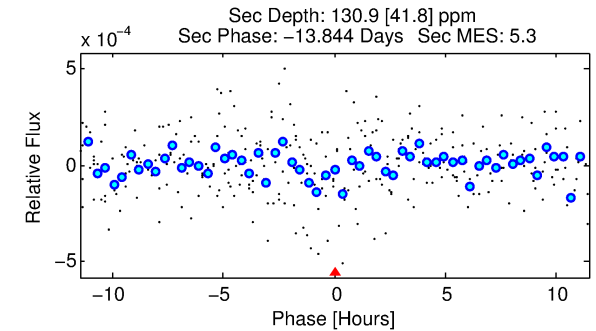
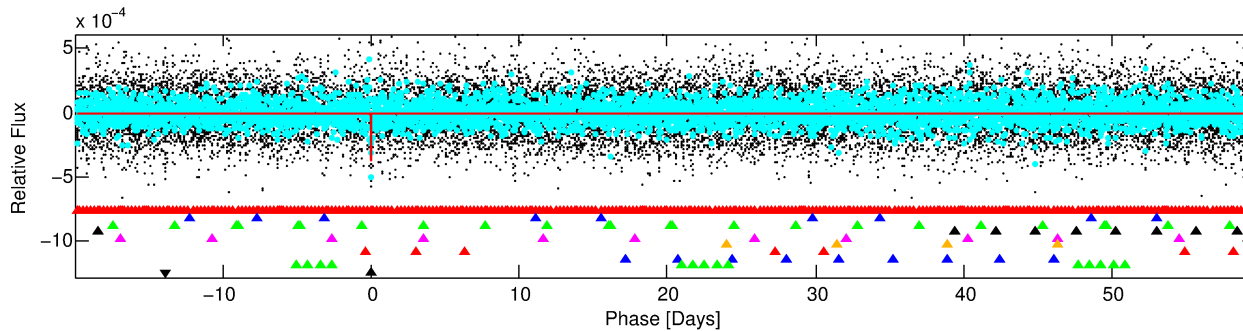
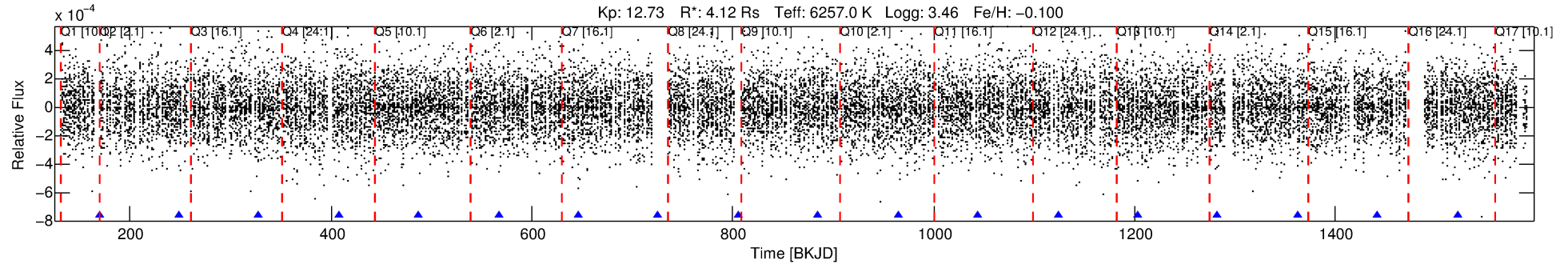
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 003542119-10

No Significant Match Found

# DV One-Page Summary

KIC: 3542119 Candidate: 10 of 10 Period: 79.537 d



## DV Fit Results:

Period = 79.53746 [0.00091] d  
Epoch = 169.2173 [0.0117] BKJD  
Rp/R\* = 0.0194 [0.0237]  
a/R\* = 206.93 [1344.39]  
b = 0.78 [3.21]  
Seff = 121.47 [80.36]  
Teq = 847 [140] K  
Rp = 8.72 [11.25] Re  
a = 0.4385 [0.1767] AU  
Ag = 182.19 [464.67] [0.39σ]  
Teffp = 4809 [2968] K [1.33σ]

## DV Diagnostic Results:

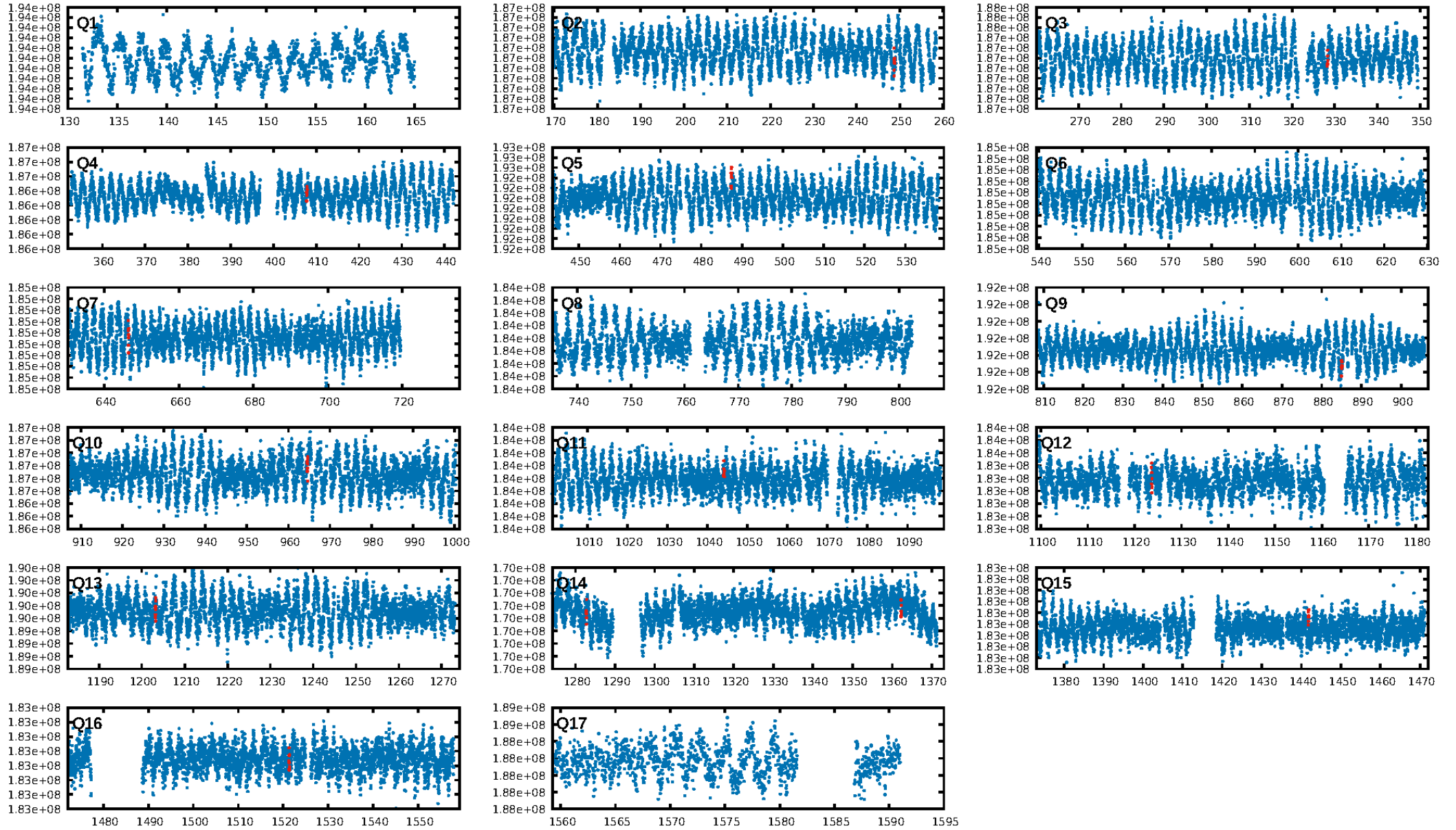
ShortPeriod-sig: 100.0% [157.46σ]  
LongPeriod-sig: 100.0% [84.15σ]  
ModelChiSquare2-sig: 78.9%  
ModelChiSquareGof-sig: 97.4%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 1.625  
Centroid-sig: 69.5%  
Centroid-so: 0.236 arcsec [0.41σ]  
OotOffset-rm: 1.288 arcsec [1.38σ]  
KicOffset-rm: 1.320 arcsec [1.61σ]  
OotOffset-st: 3/2/2 [9]  
KicOffset-st: 3/2/2 [9]  
DiffImageQuality-fgm: 0.44 [4/9]  
DiffImageOverlap-fno: 0.25 [3/12]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:16:19 Z

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

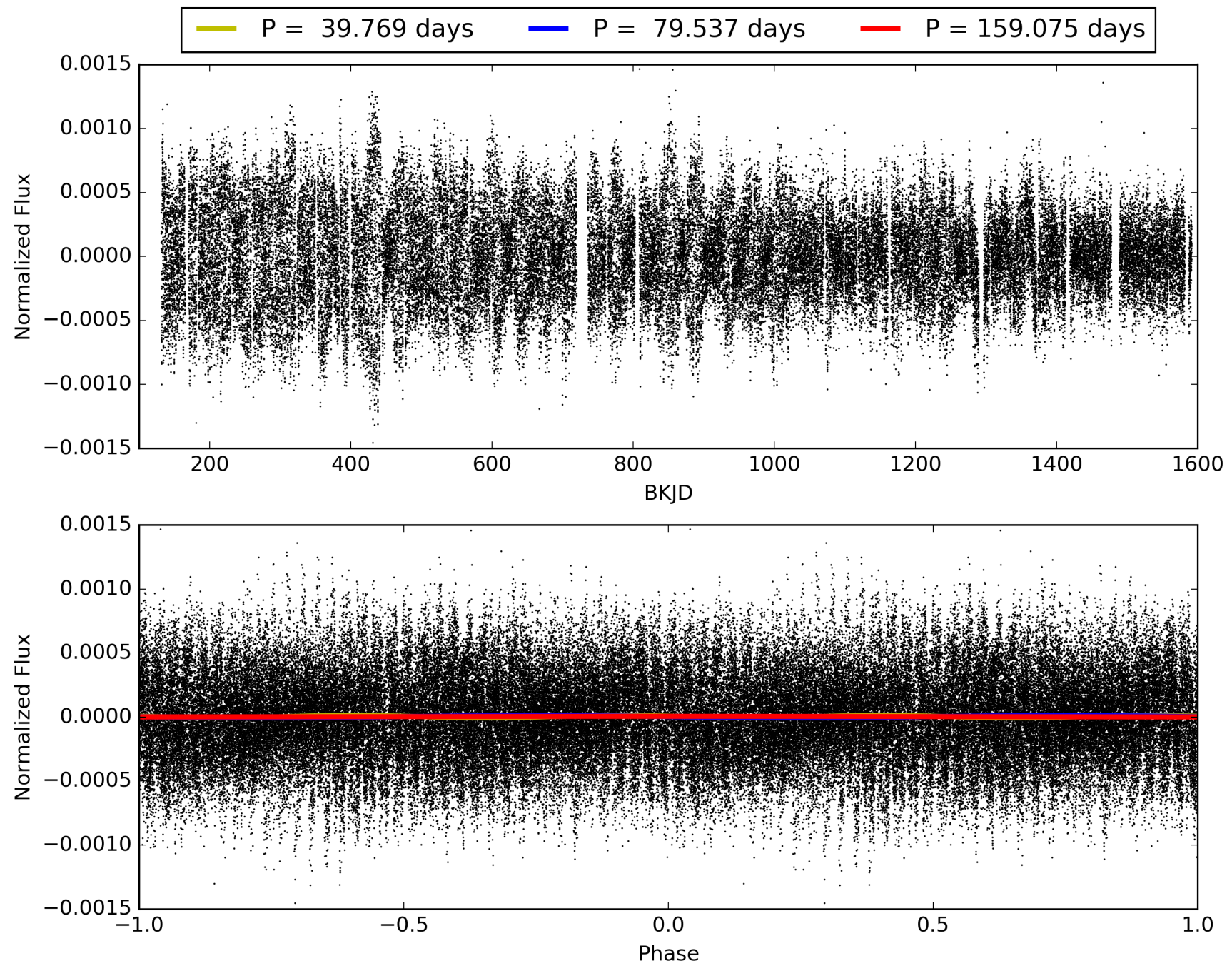


# TCE 003542119-10, PDC Light Curves



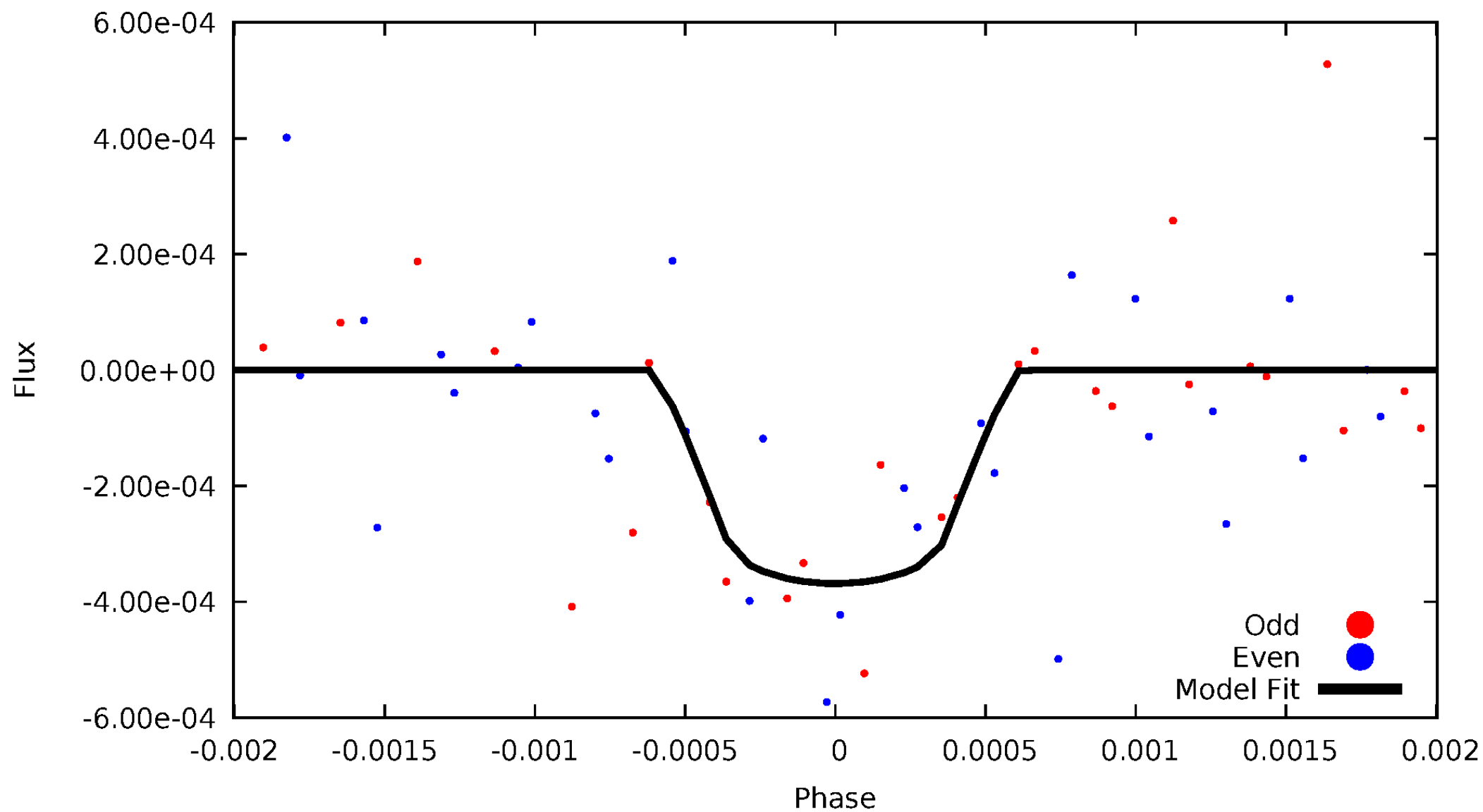


# TCE 003542119-10



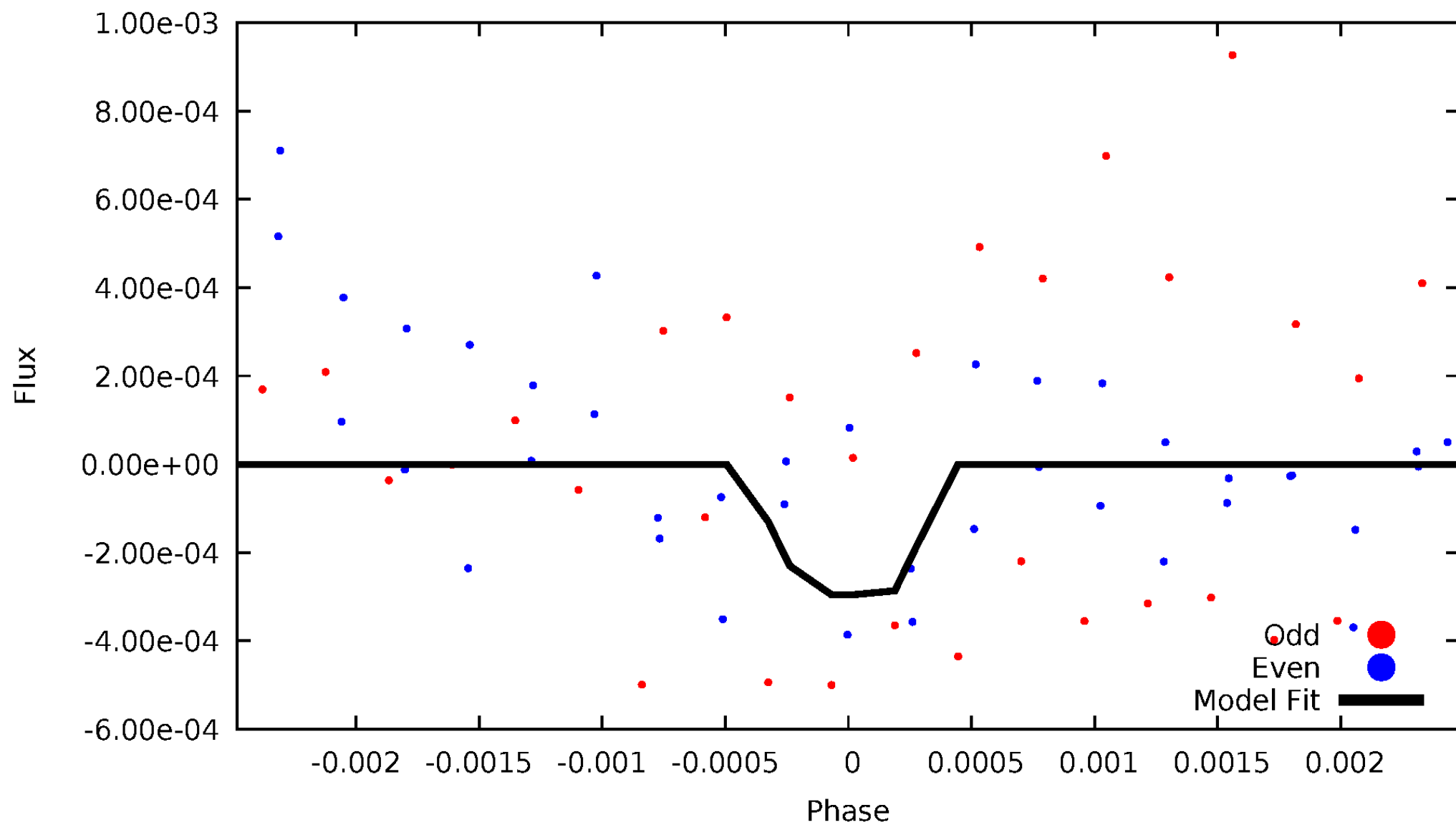
# DV Odd/Even

TCE 003542119-10



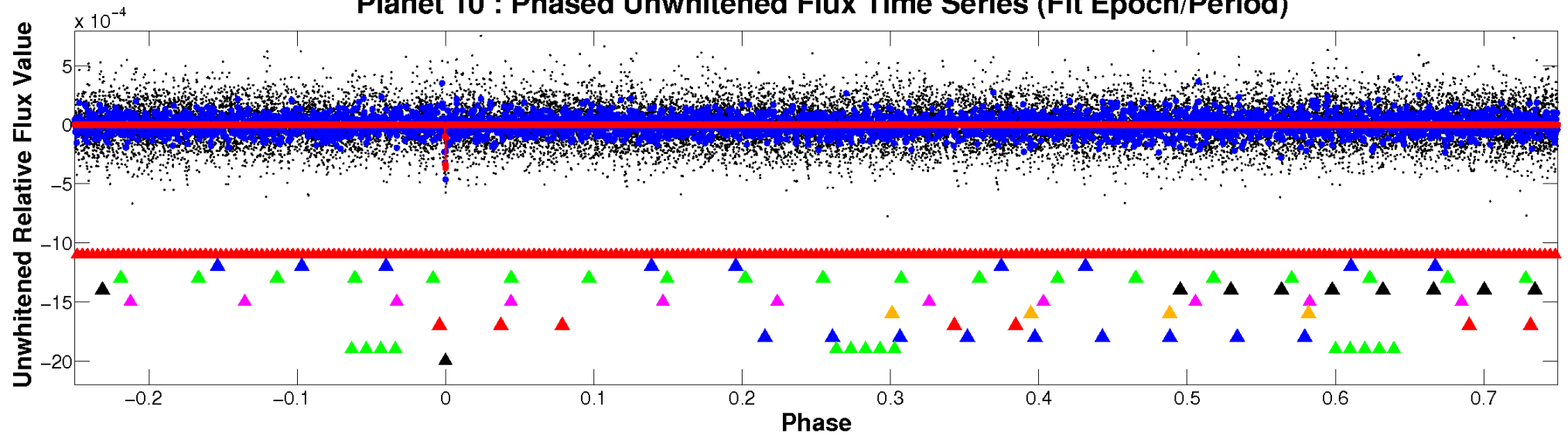
# ALT Odd/Even

TCE 003542119-10

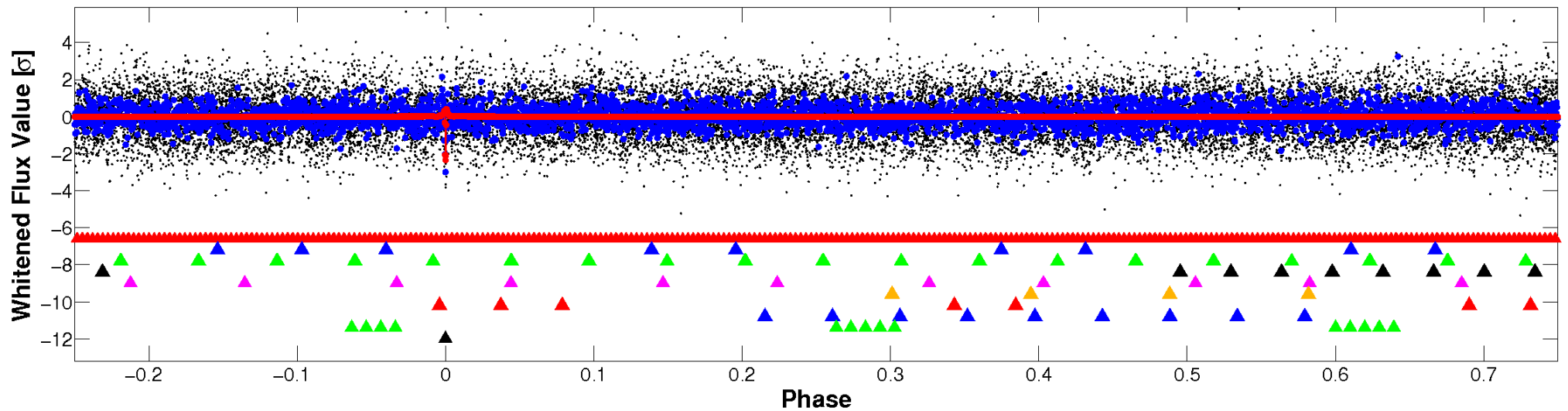


# Non-Whitened Vs. Whitened Light Curve

Planet 10 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

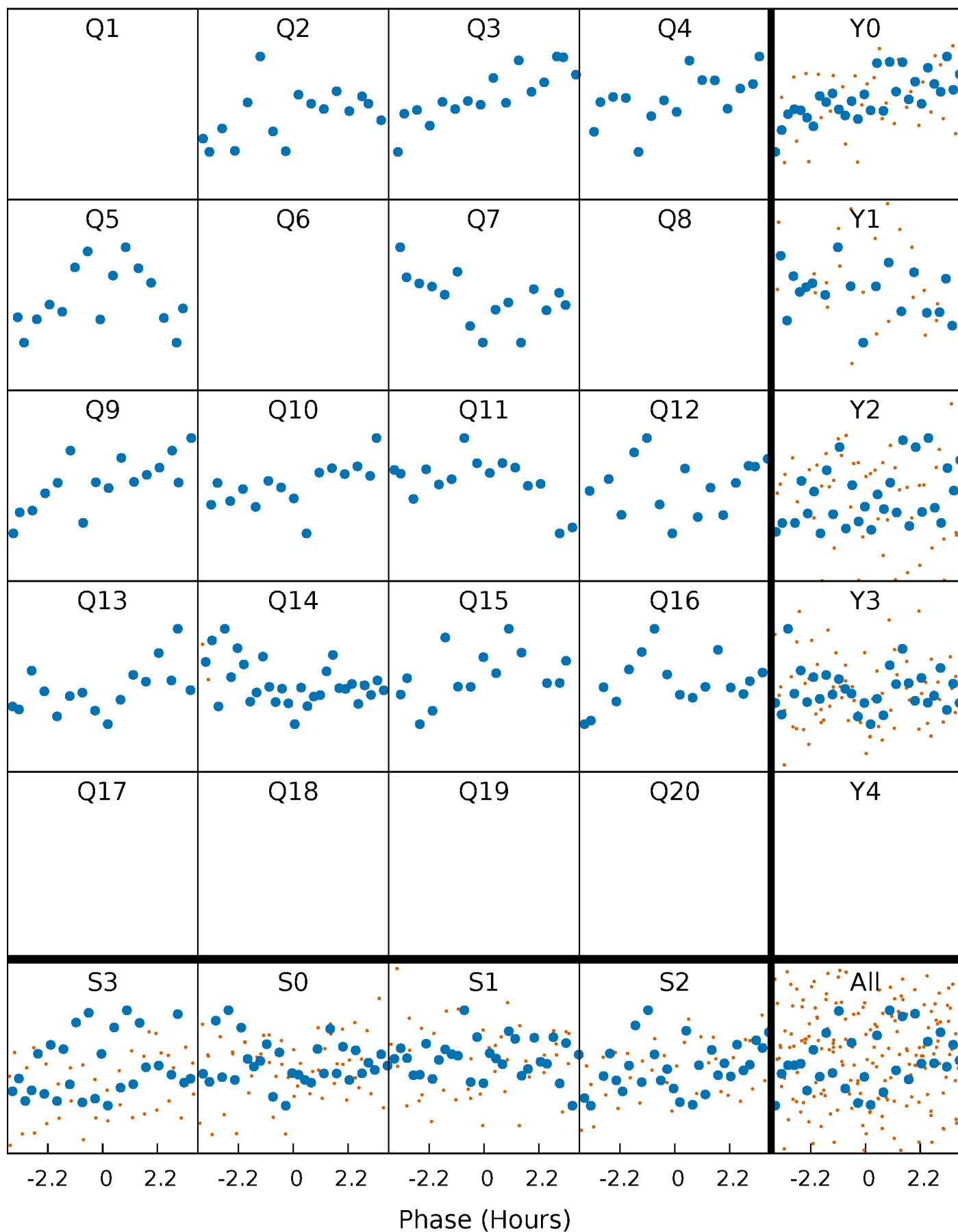


Planet 10 : Phased Whitened Flux Time Series (Fit Epoch/Period)



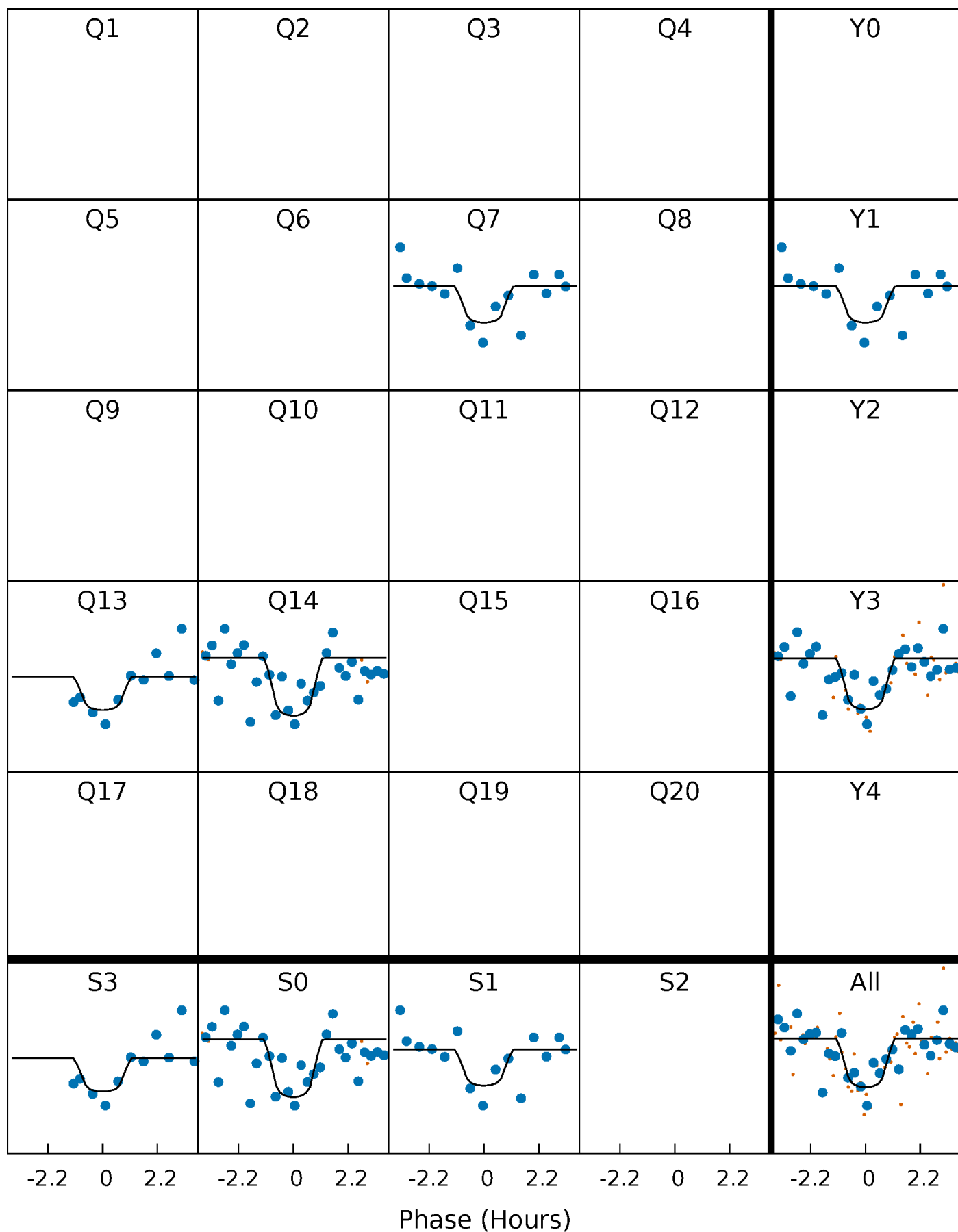
# PDC Quarter-Phased Transit Curves

TCE 003542119-10 P= 79.537459 Days  $T_0=169.217320$  (BKJD)



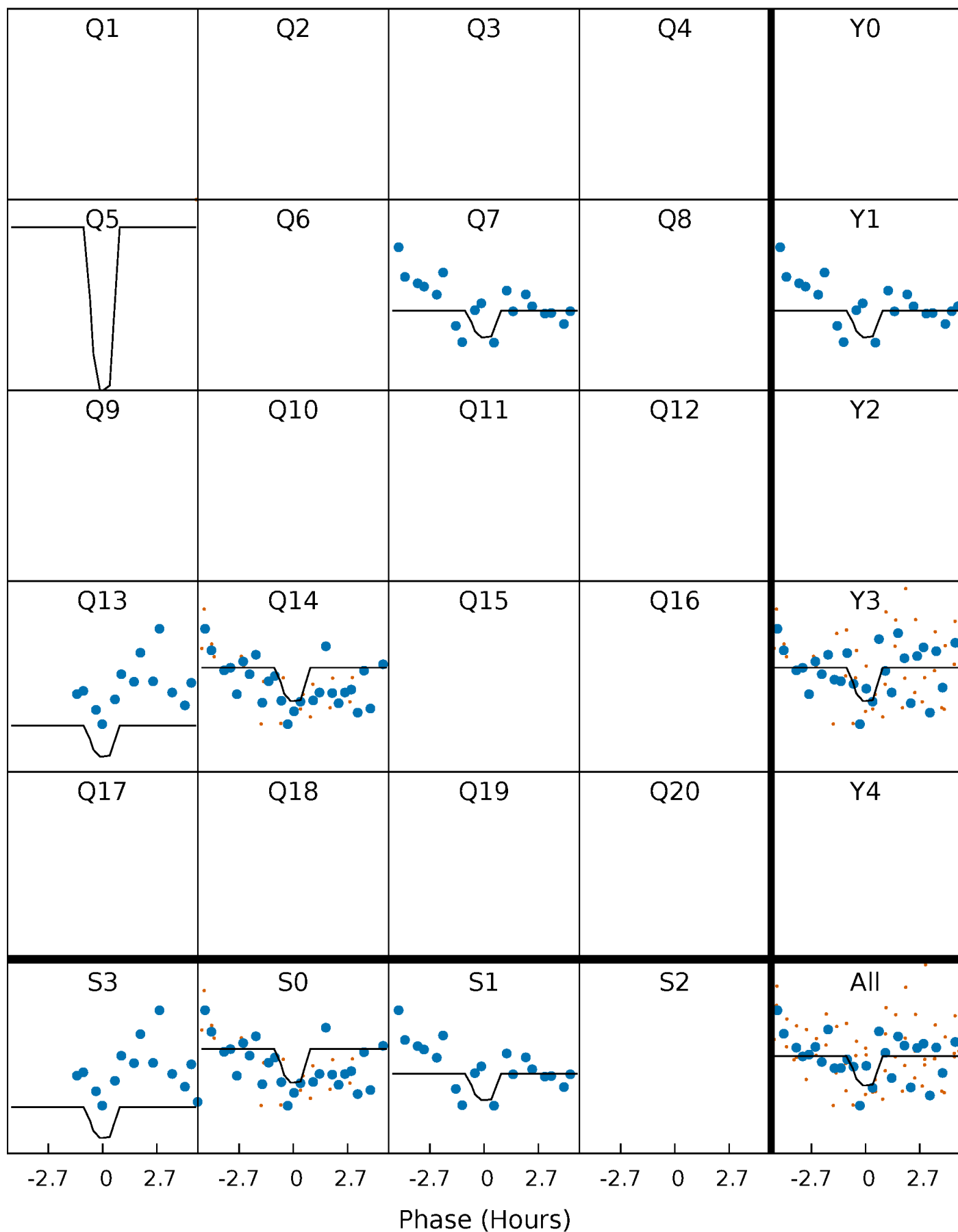
# DV Quarter-Phased Transit Curves

TCE 003542119-10   P= 79.537459 Days    $T_0=169.217320$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 003542119-10 P= 79.532866 Days  $T_0=169.283182$  (BKJD)

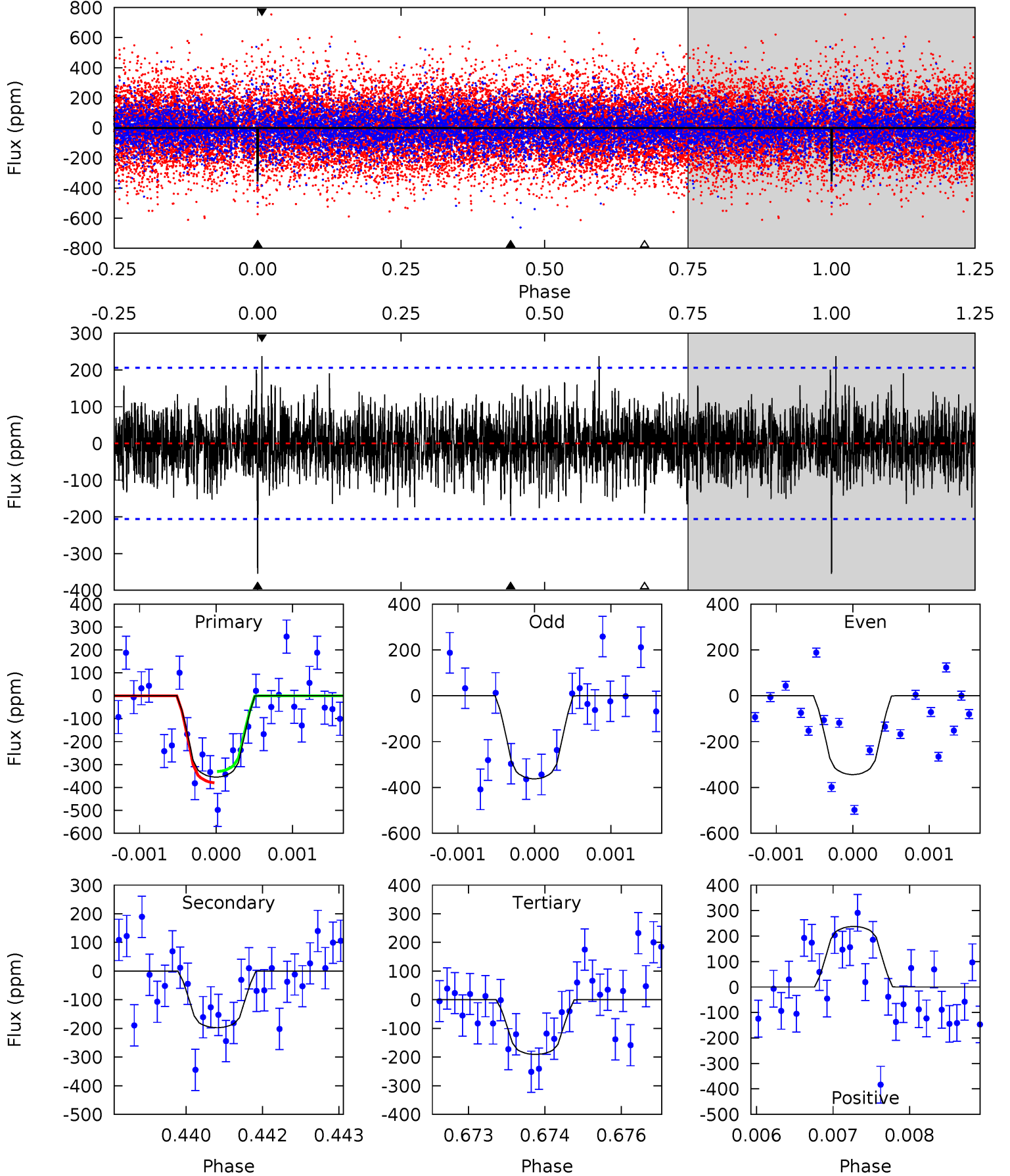




# DV Model-Shift Uniqueness Test

003542119-10, P = 79.537459 Days, E = 89.679861 Days

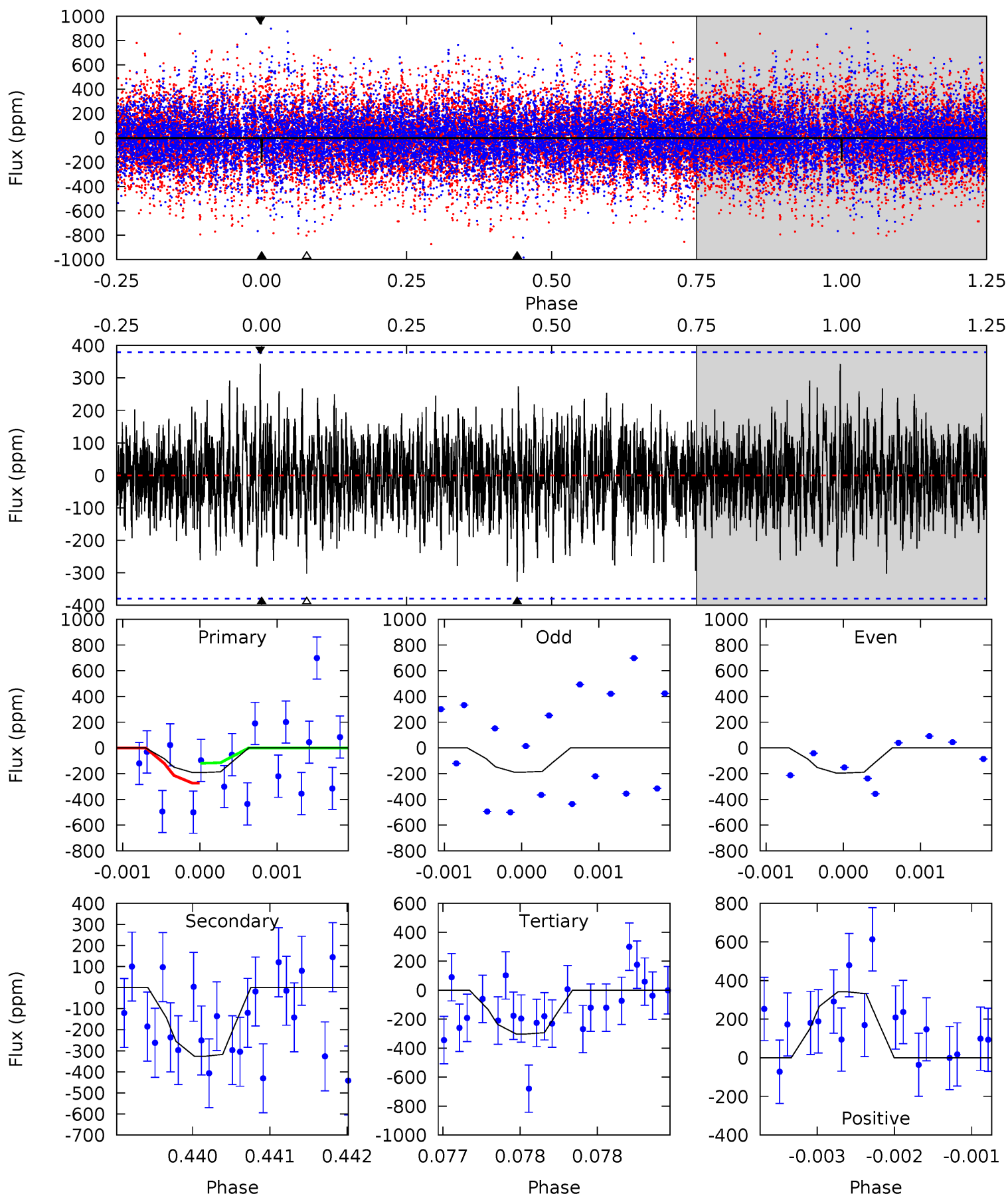
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.35	5.20	5.02	6.26	5.42	3.24	1.48	4.33	3.09	0.18	-1.06	0.25	1.01	0.40	0.64



# Alt Model-Shift Uniqueness Test

003542119-10, P = 79.532866 Days, E = 89.750316 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.78	4.75	4.40	4.97	5.51	3.39	1.25	-1.62	-2.19	0.35	-0.22	0.05	0.96	0.51	1.11



### Stellar Parameters For KIC 003542119

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6257^{+189}_{-151}$	$3.457^{+0.384}_{-0.096}$	$-0.100^{+0.350}_{-0.300}$	$4.124^{+0.608}_{-1.701}$	$1.777^{+0.178}_{-0.415}$	$0.036^{+0.119}_{-0.011}$
	+3%/-2%	+11%/-3%	+350%/-300%	+15%/-41%	+10%/-23%	+333%/-31%
Source	PHO1	FLK73	KIC0	DSEP		

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

### Secondary Eclipse Parameters for KIC 003542119-10 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-197 \pm 38$	$10.10^{+9.84}_{-6.34}$	$1152^{+78}_{-118}$	$4818^{+3001}_{-1033}$	$198^{+1215}_{-146}$
Alt.	$-327 \pm 69$	$9.36^{+9.58}_{-5.97}$	$1160^{+70}_{-125}$	$5520^{+4373}_{-1292}$	$374^{+2392}_{-279}$

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

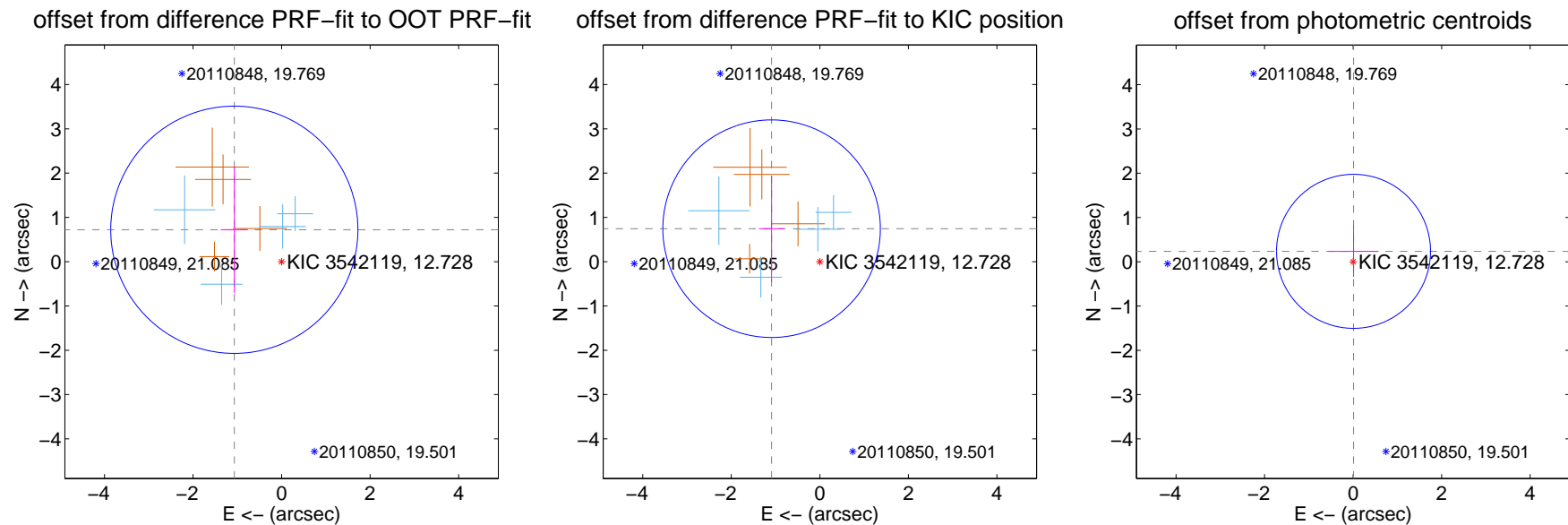
## DV Centroid Data

Supplemental centroid analysis for 003542119-10. Kepler magnitude: 12.73. Transit SNR 7.73

There are 4 quarters with good PRF difference image offsets

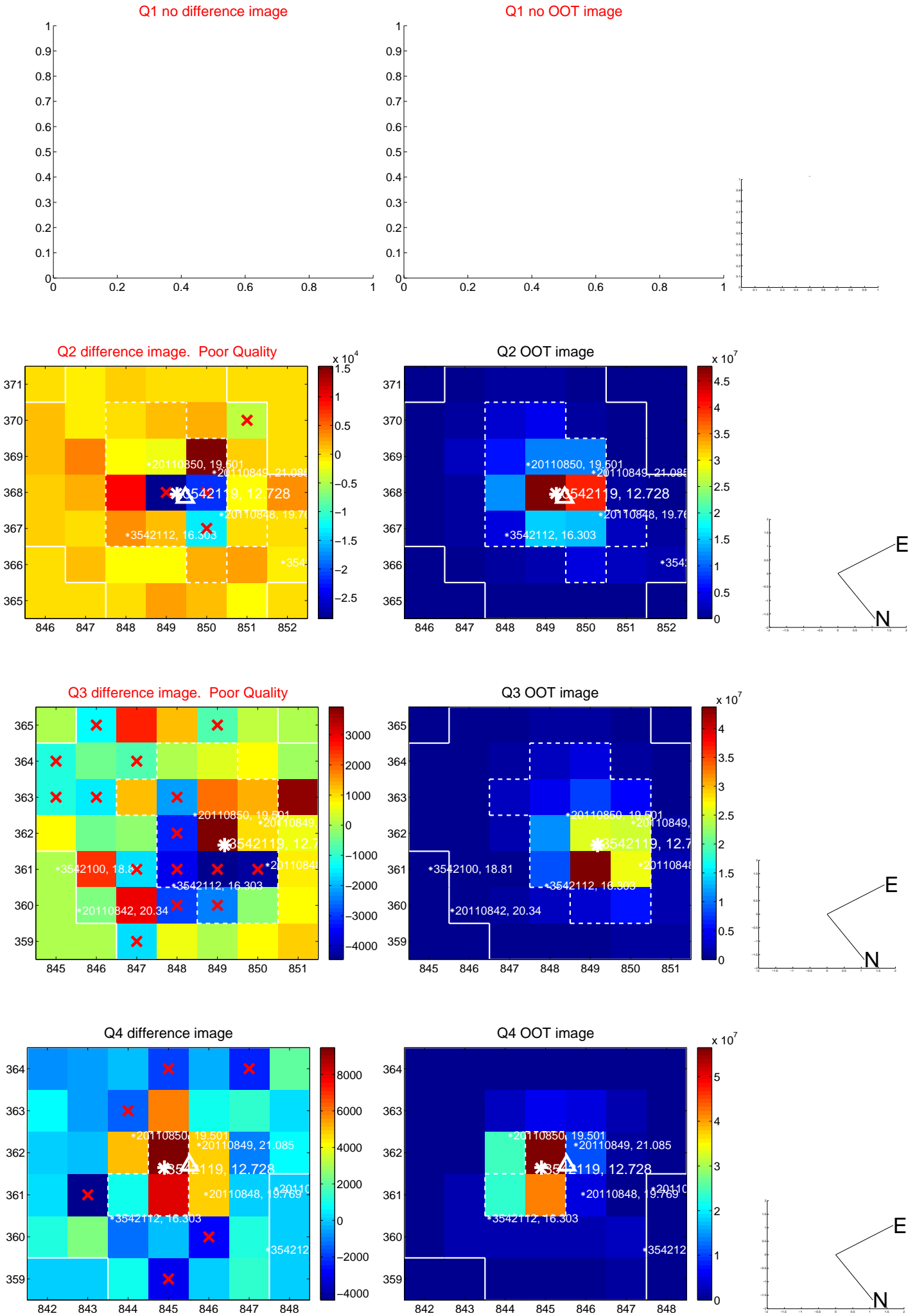
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.288 \pm 0.930$	1.38	$1.067 \pm 0.307$	$0.721 \pm 1.424$
PRF-fit source offset from KIC position	$1.320 \pm 0.819$	1.61	$1.090 \pm 0.282$	$0.745 \pm 1.198$
photometric centroid source offset	$0.24 \pm 0.58$	0.41	$-0.01 \pm 0.56$	$0.24 \pm 0.58$

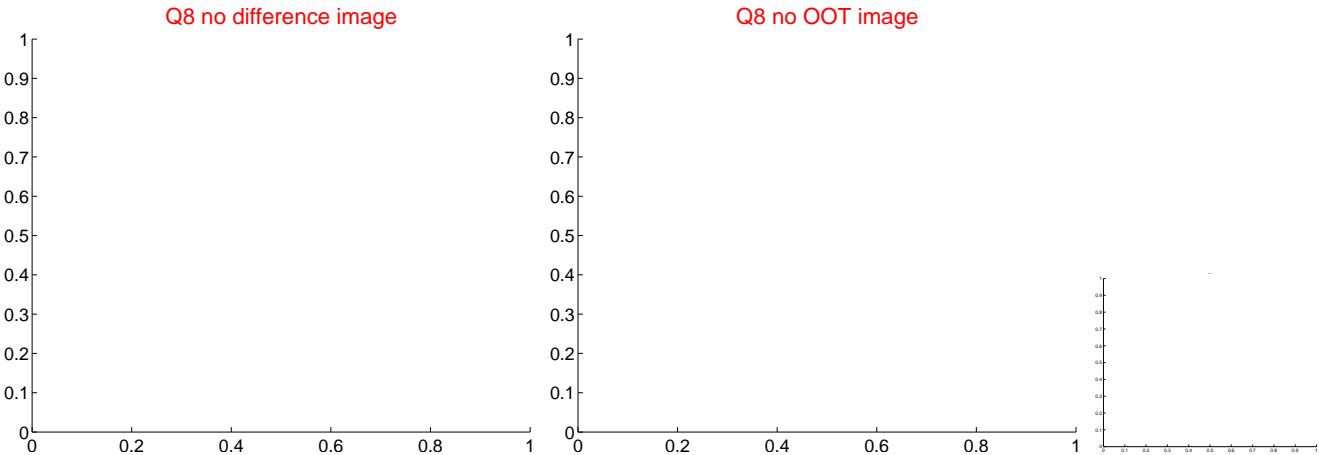
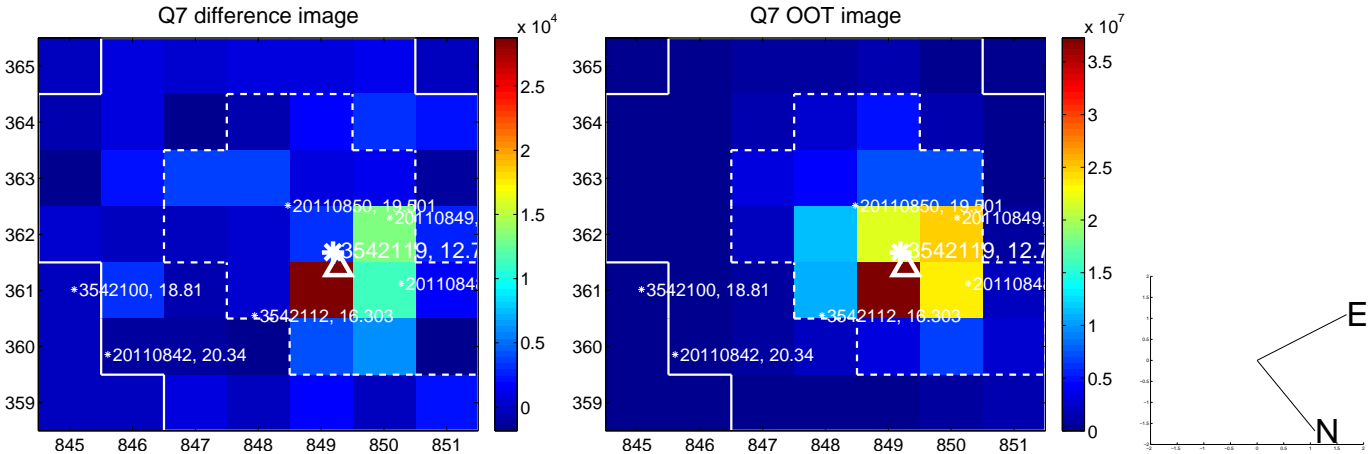
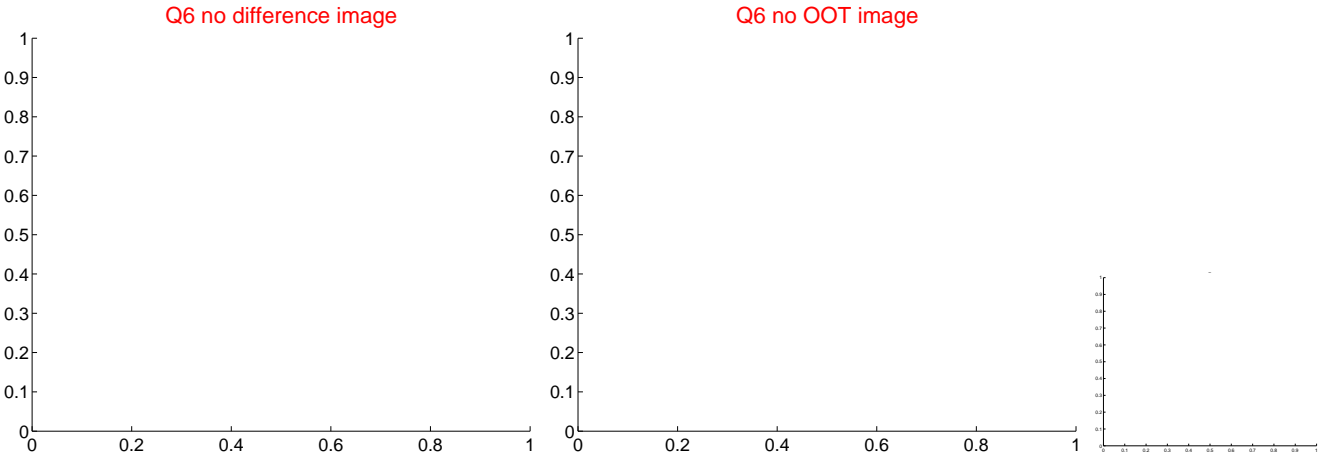
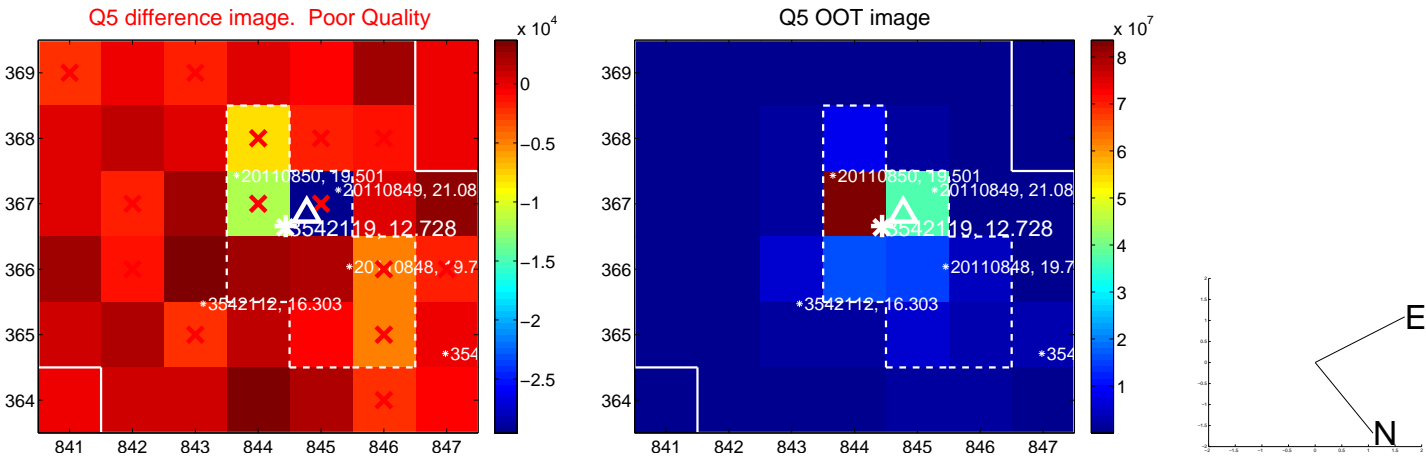


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

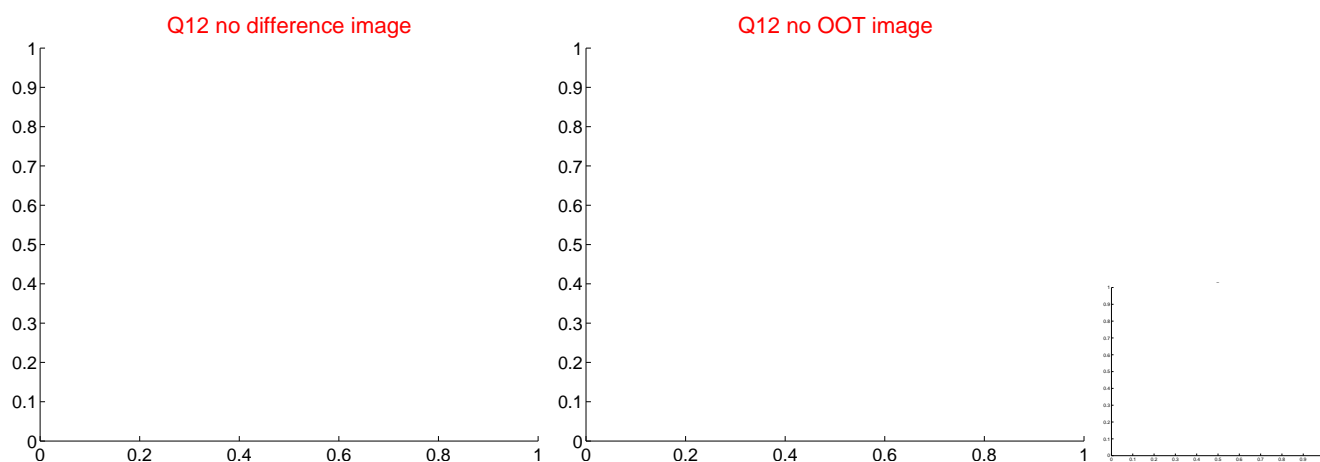
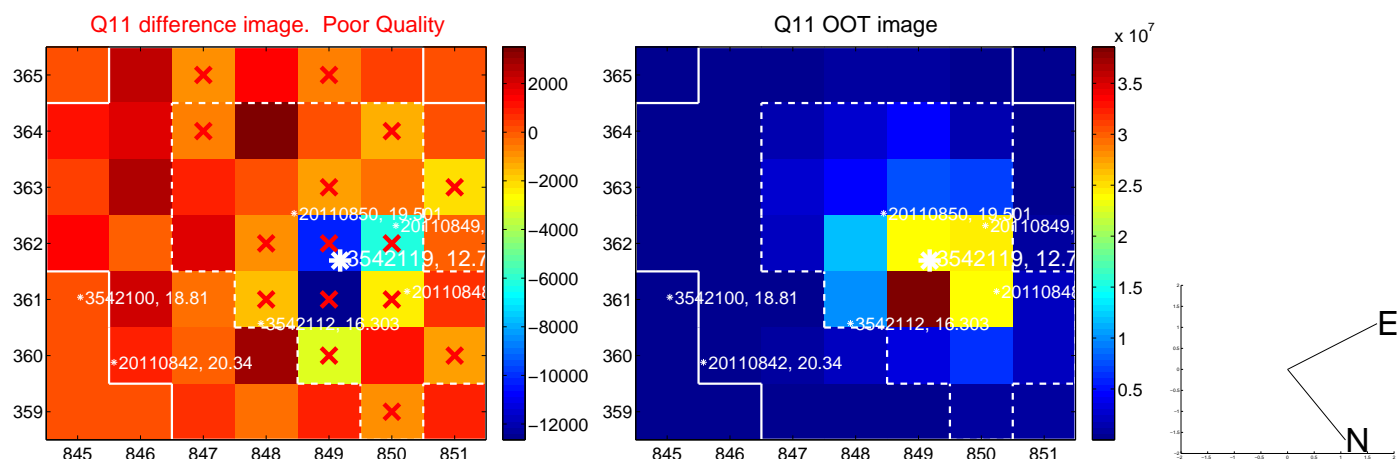
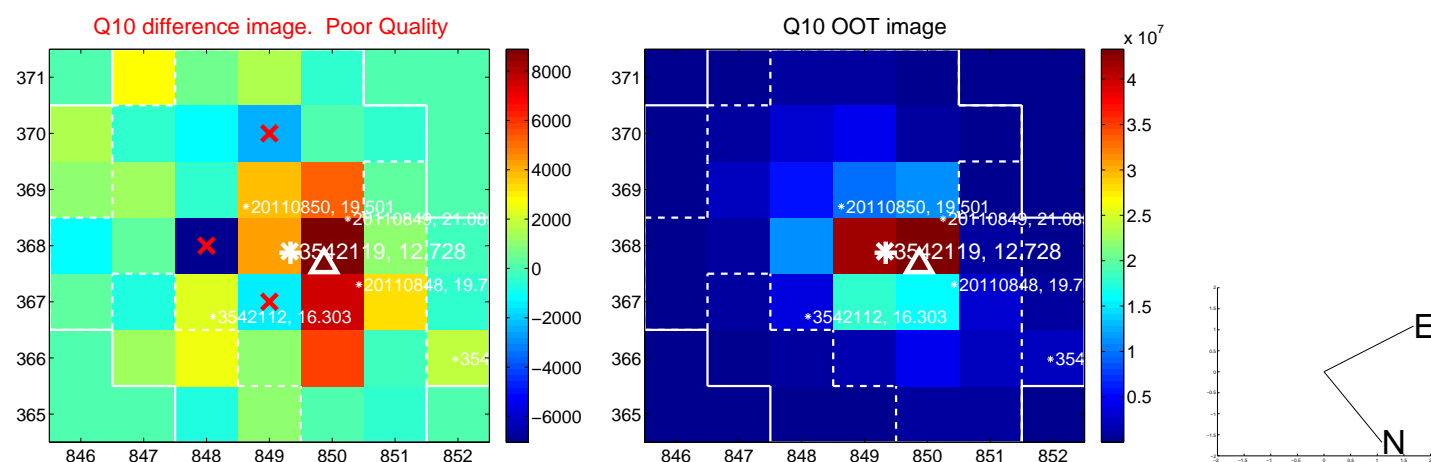
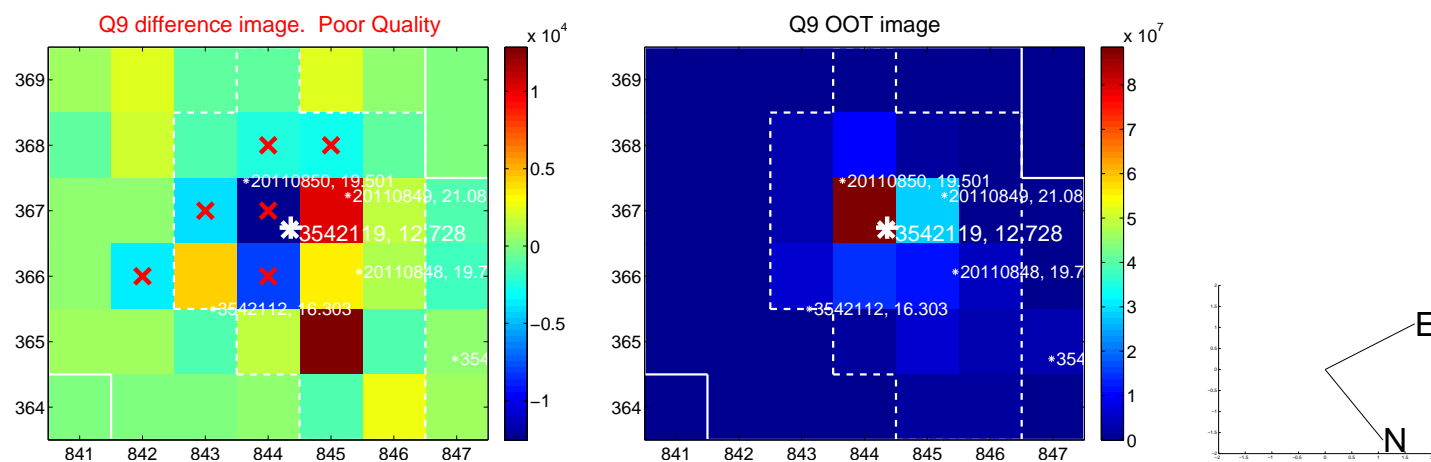
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



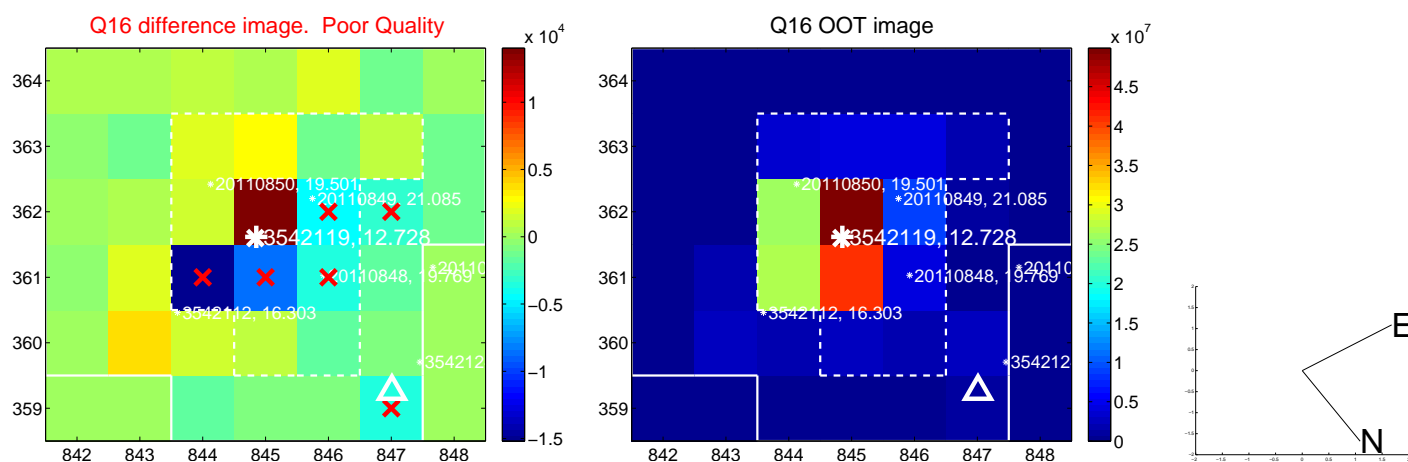
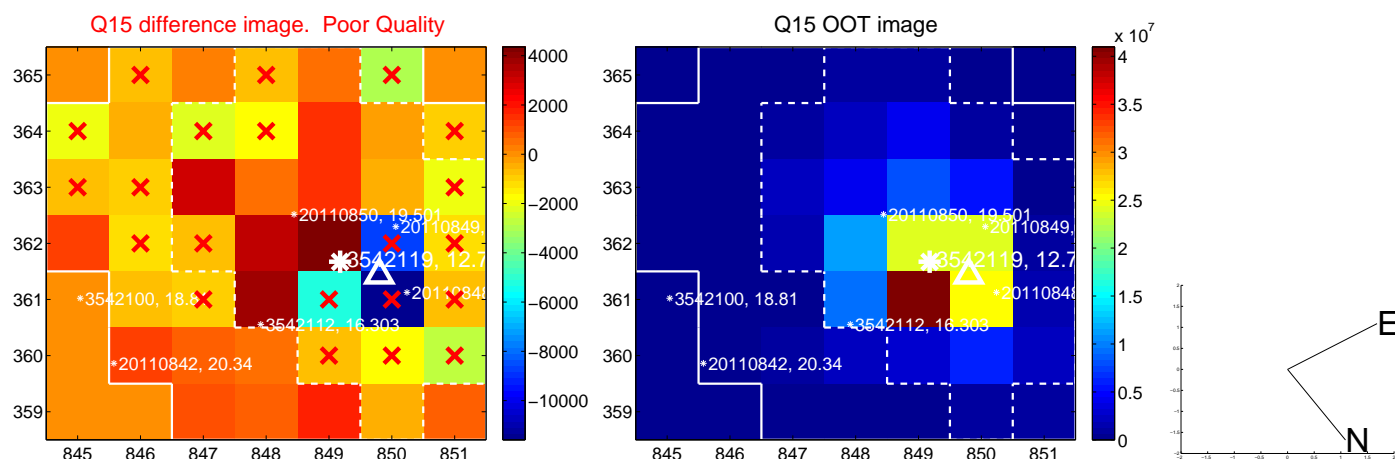
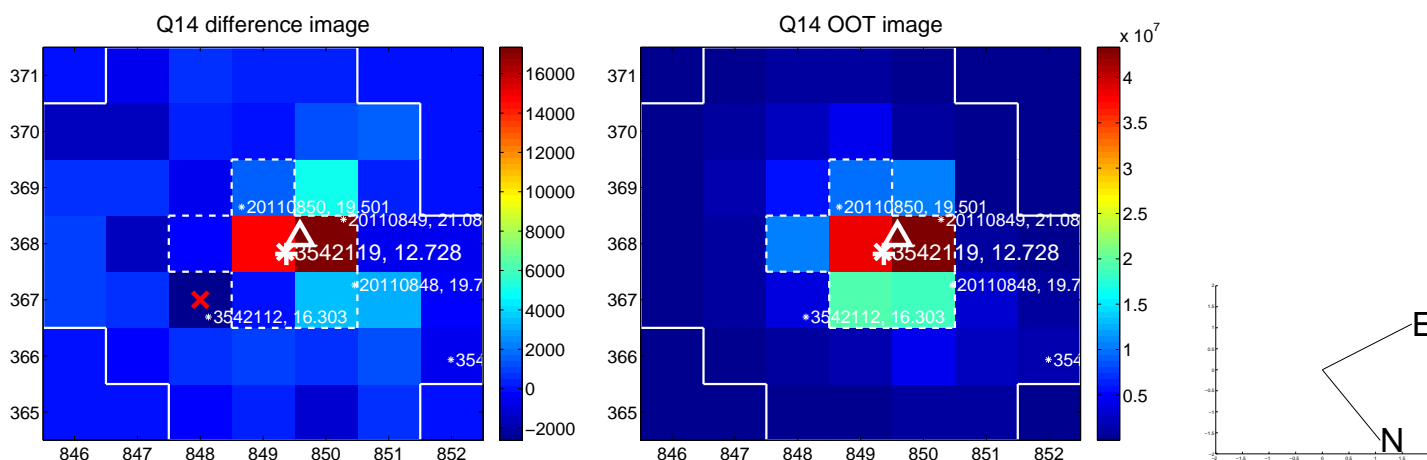
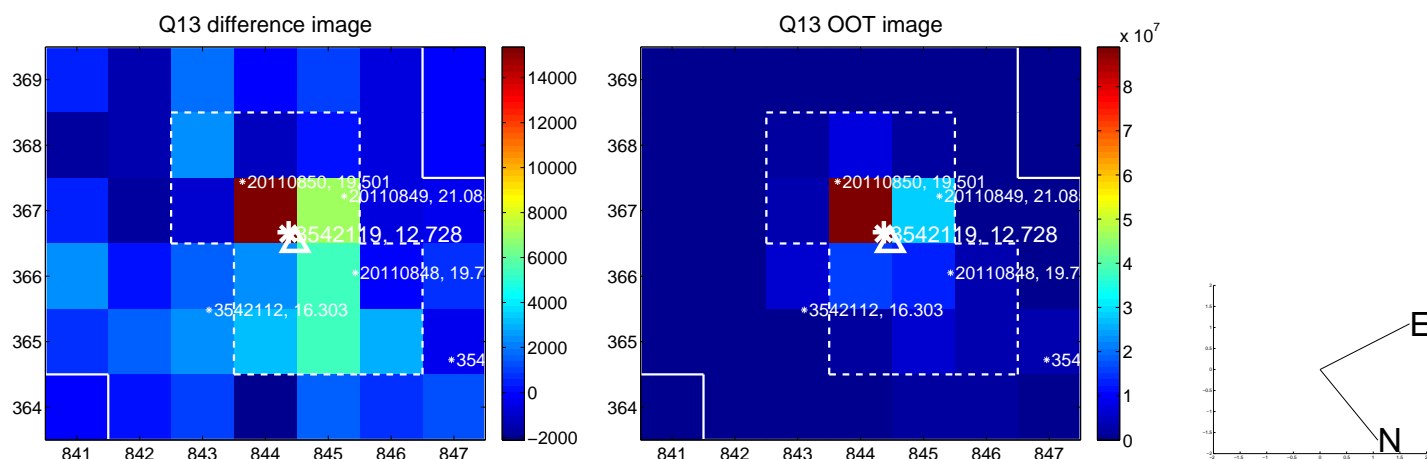
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

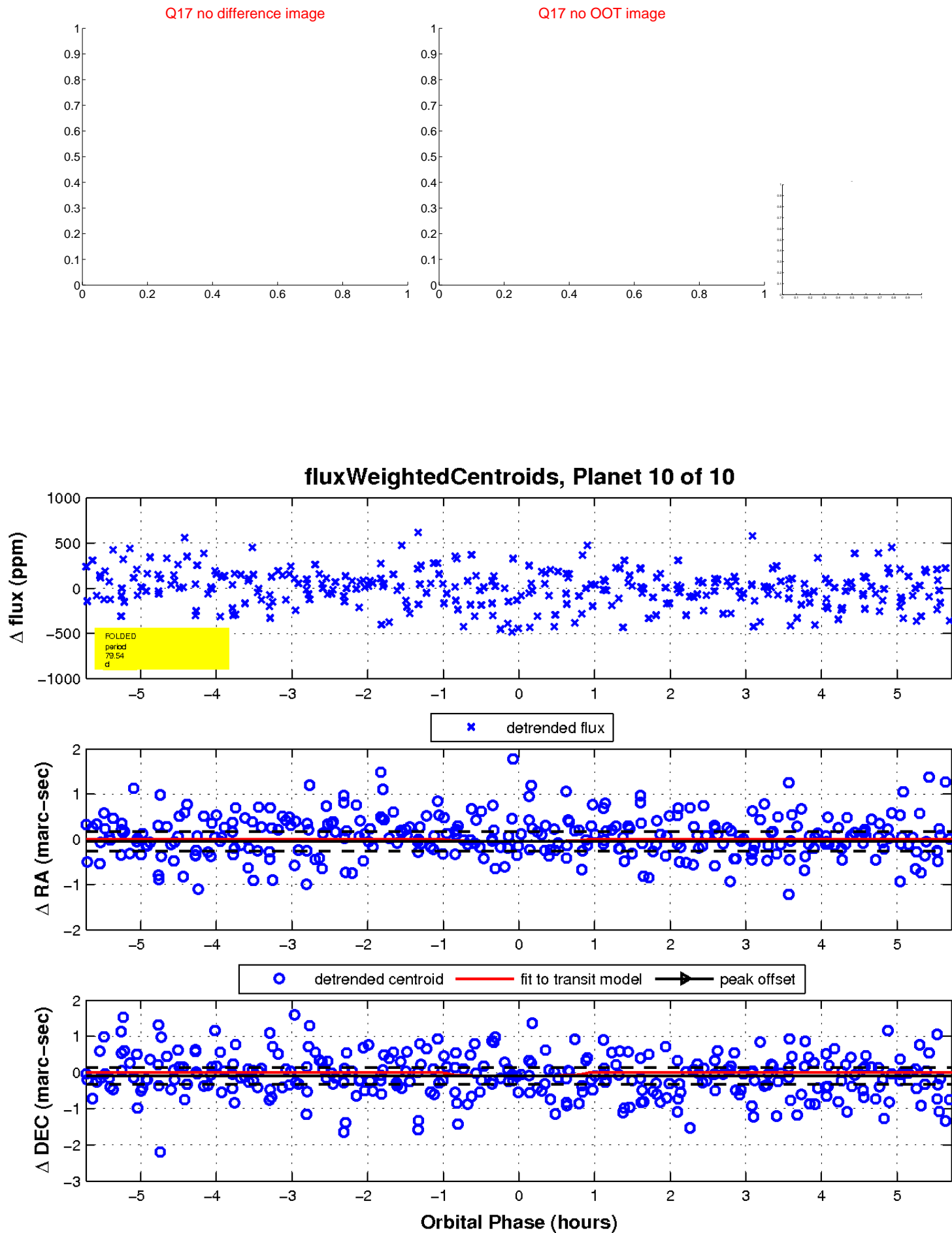


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



# UKIRT Image

Declination

