

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008392519-01	OBS	No	2.288770	133.644536	24.1	12.052	10.3	8.2	3.26	6760	1.86	12204.28
008392519-02	OBS	No	126.257214	188.163119	324.8	16.500	22.2	11.2	3.26	6760	7.12	58.12
008392519-03	OBS	No	67.007289	147.064248	230.7	18.688	14.2	11.4	3.26	6760	5.68	135.25
008392519-04	OBS	No	450.749107	554.002125	343.3	19.711	10.3	9.1	3.26	6760	11.57	10.65
008392519-05	OBS	No	111.174093	225.691769	294.9	14.373	10.0	11.9	3.26	6760	5.96	68.86
008392519-06	OBS	No	99.450221	187.886477	206.0	8.756	9.8	6.9	3.26	6760	5.11	79.89
008392519-07	OBS	No	107.865281	206.670817	234.6	7.787	8.8	8.7	3.26	6760	5.67	71.69
008392519-08	OBS	No	199.446436	141.675993	241.9	9.055	8.8	7.4	3.26	6760	5.46	31.59
008392519-09	OBS	No	286.372798	388.504274	259.8	6.875	8.9	6.8	3.26	6760	6.09	19.50
008392519-10	OBS	No	318.071035	240.093446	199.3	9.243	8.7	8.5	3.26	6760	5.45	16.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008392519-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008392519-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008392519-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
008392519-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
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008392519-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008392519-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008392519-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

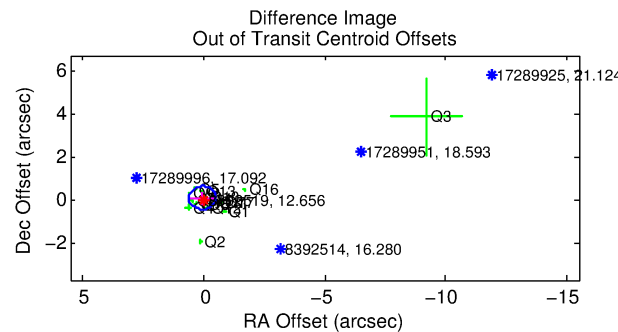
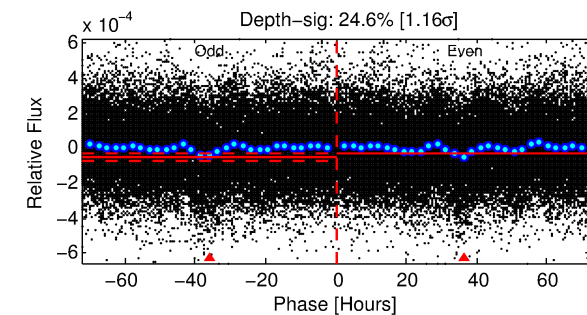
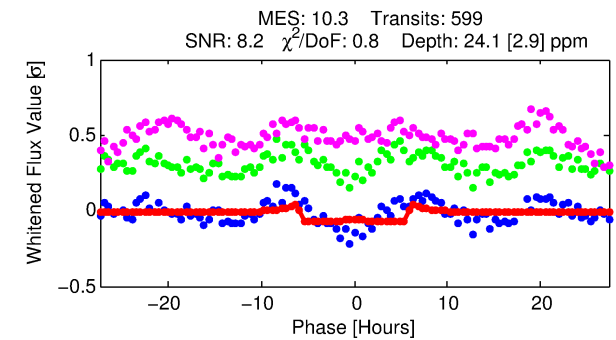
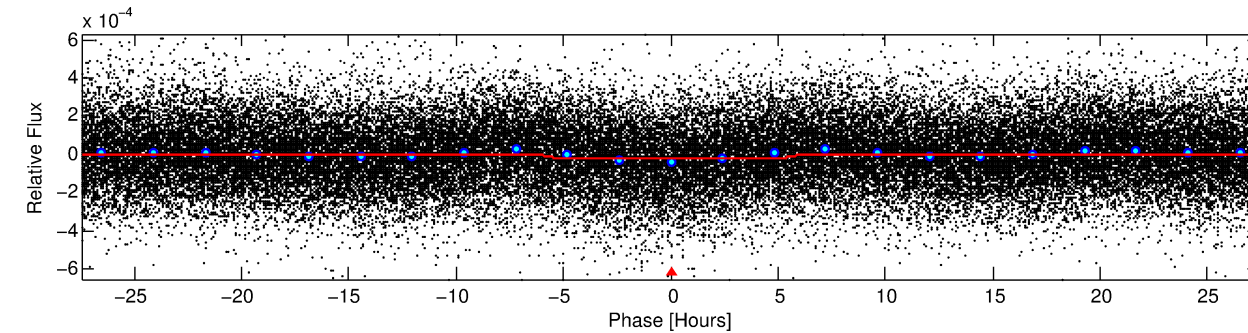
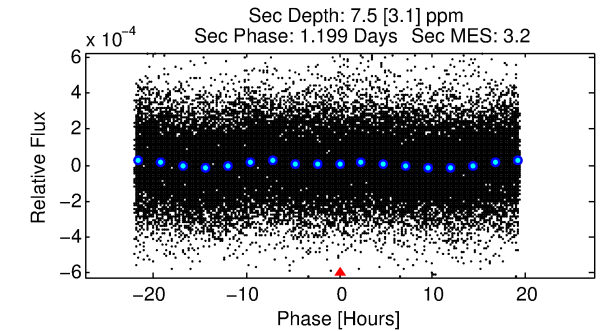
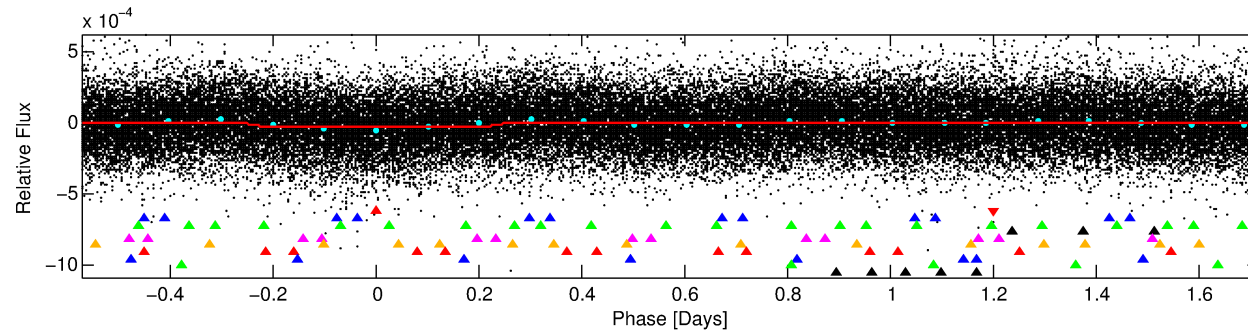
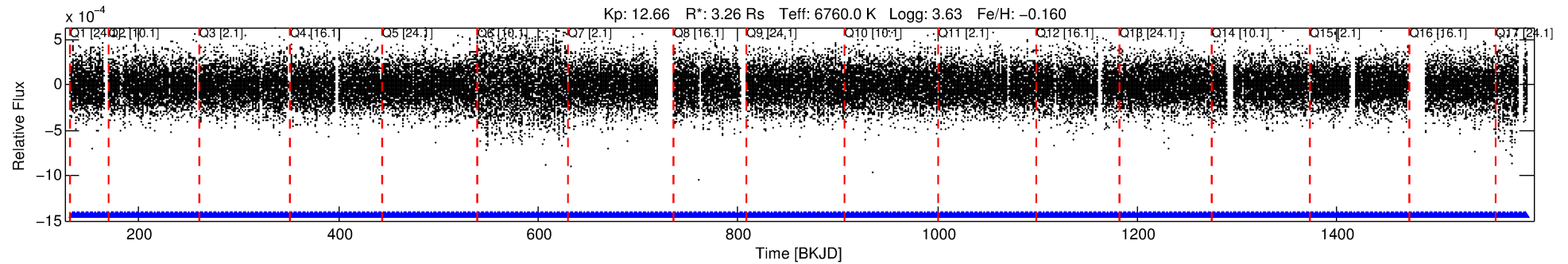
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008392519-01

No Significant Match Found

# DV One-Page Summary

KIC: 8392519 Candidate: 1 of 10 Period: 2.289 d



## DV Fit Results:

Period = 2.28877 [0.00003] d  
Epoch = 133.6445 [0.0064] BKJD  
Rp/R\* = 0.0052 [0.0008]  
a/R\* = 1.14 [0.24]  
b = 0.90 [0.19]  
Seff = 12204.28 [6980.27]  
Teq = 2680 [383] K  
Rp = 1.86 [0.76] Re  
a = 0.0403 [0.0142] AU  
Ag = 1.94 [1.48] [0.63σ]  
Teffp = 4888 [665] K [2.88σ]

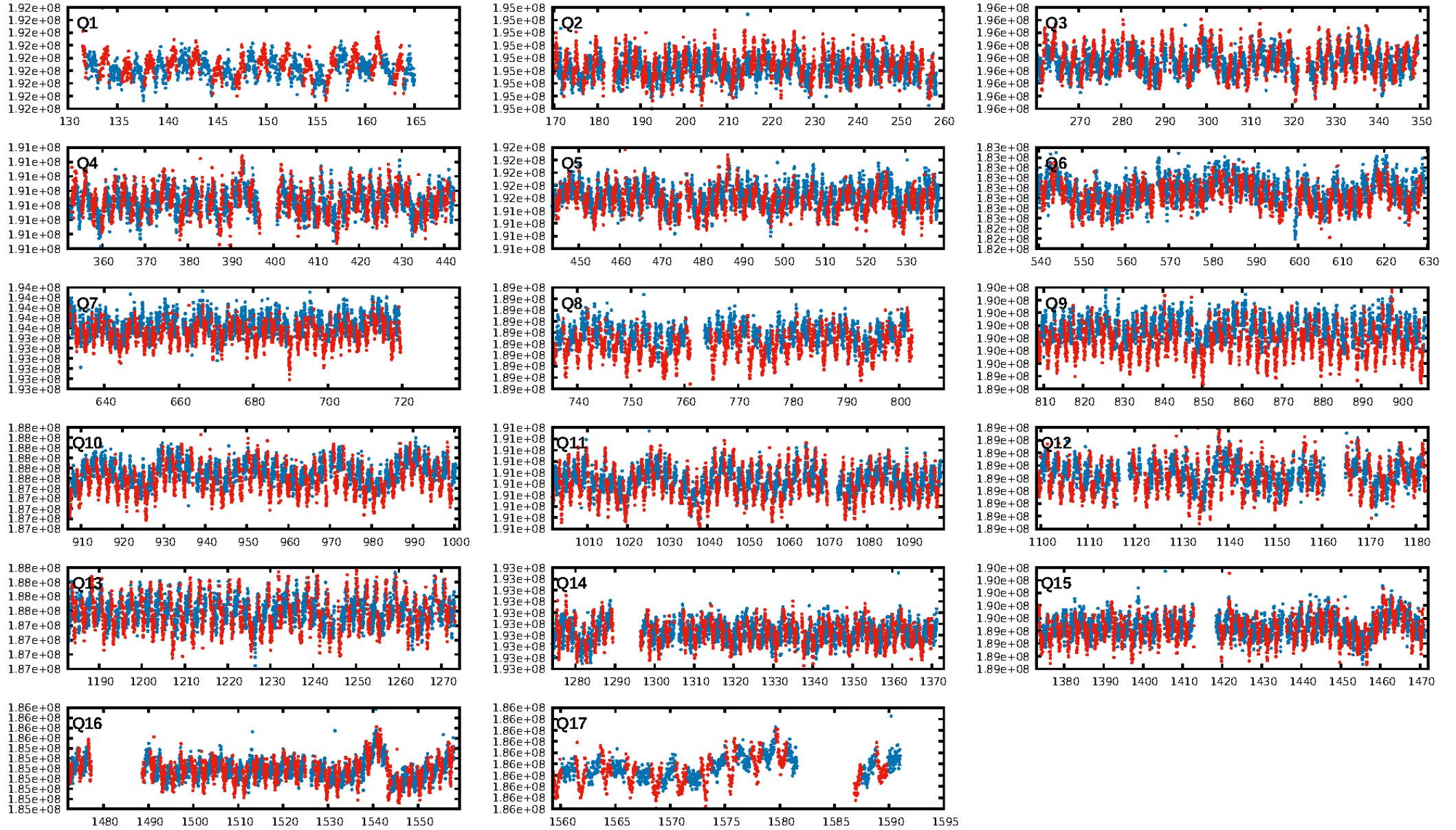
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 100.0% [69.85σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [572/572]  
GhostDiagnostic-chr: 0.7316  
Centroid-sig: 0.0%  
Centroid-so: 2.043 arcsec [3.03σ]  
OotOffset-rm: 0.107 arcsec [0.59σ]  
KicOffset-rm: 0.165 arcsec [1.02σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.82 [14/17]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:17:29 Z

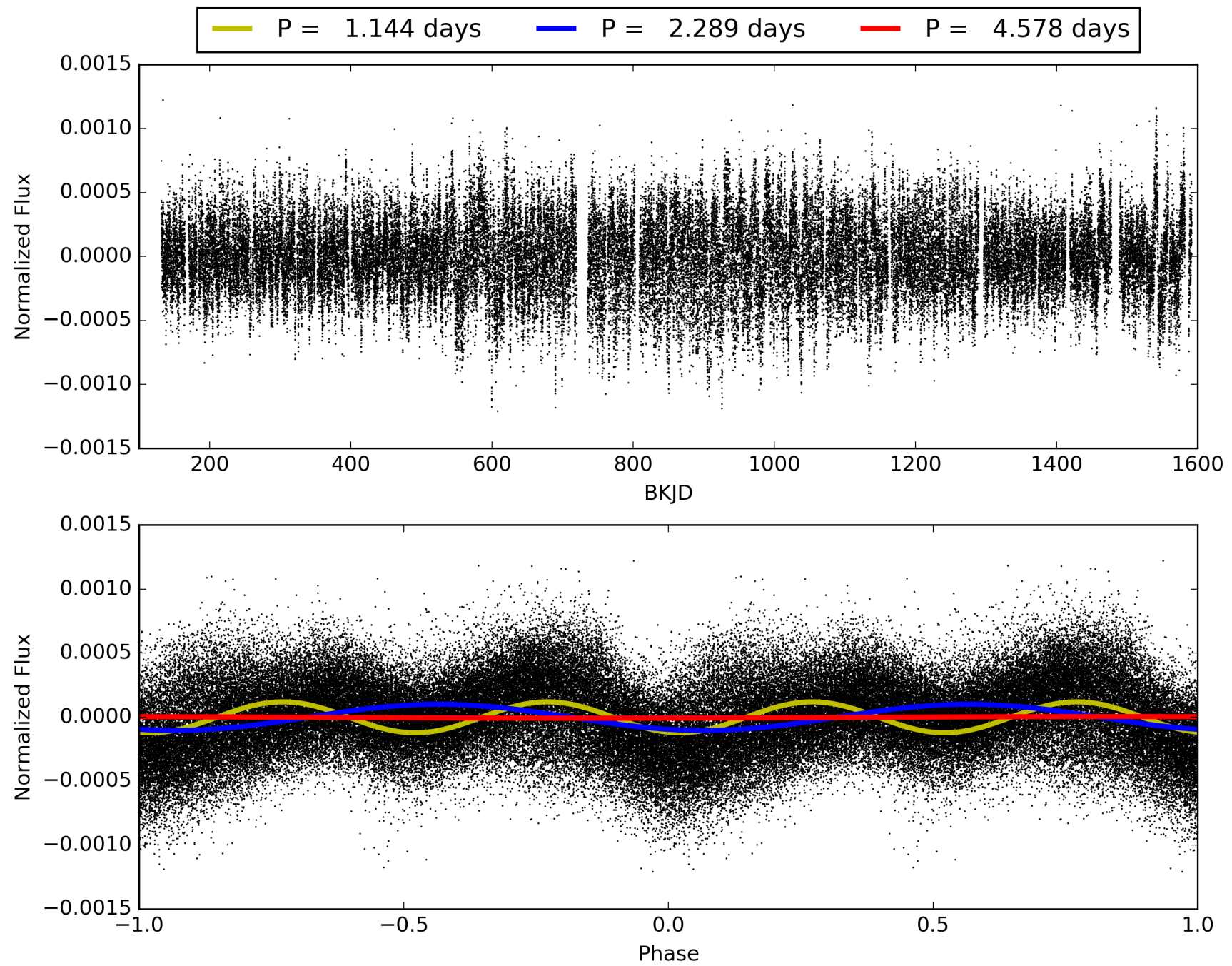
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008392519-01, PDC Light Curves





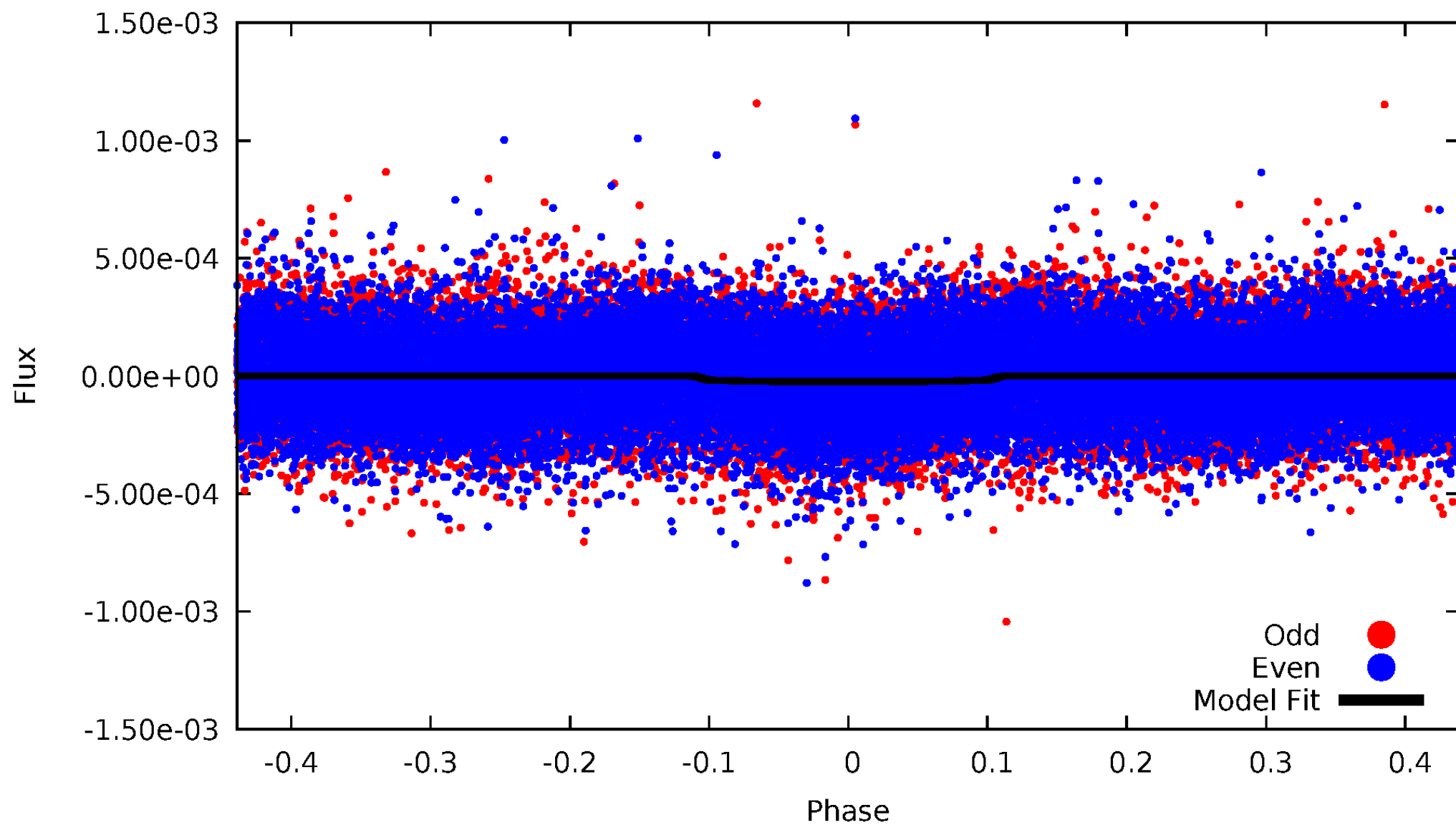
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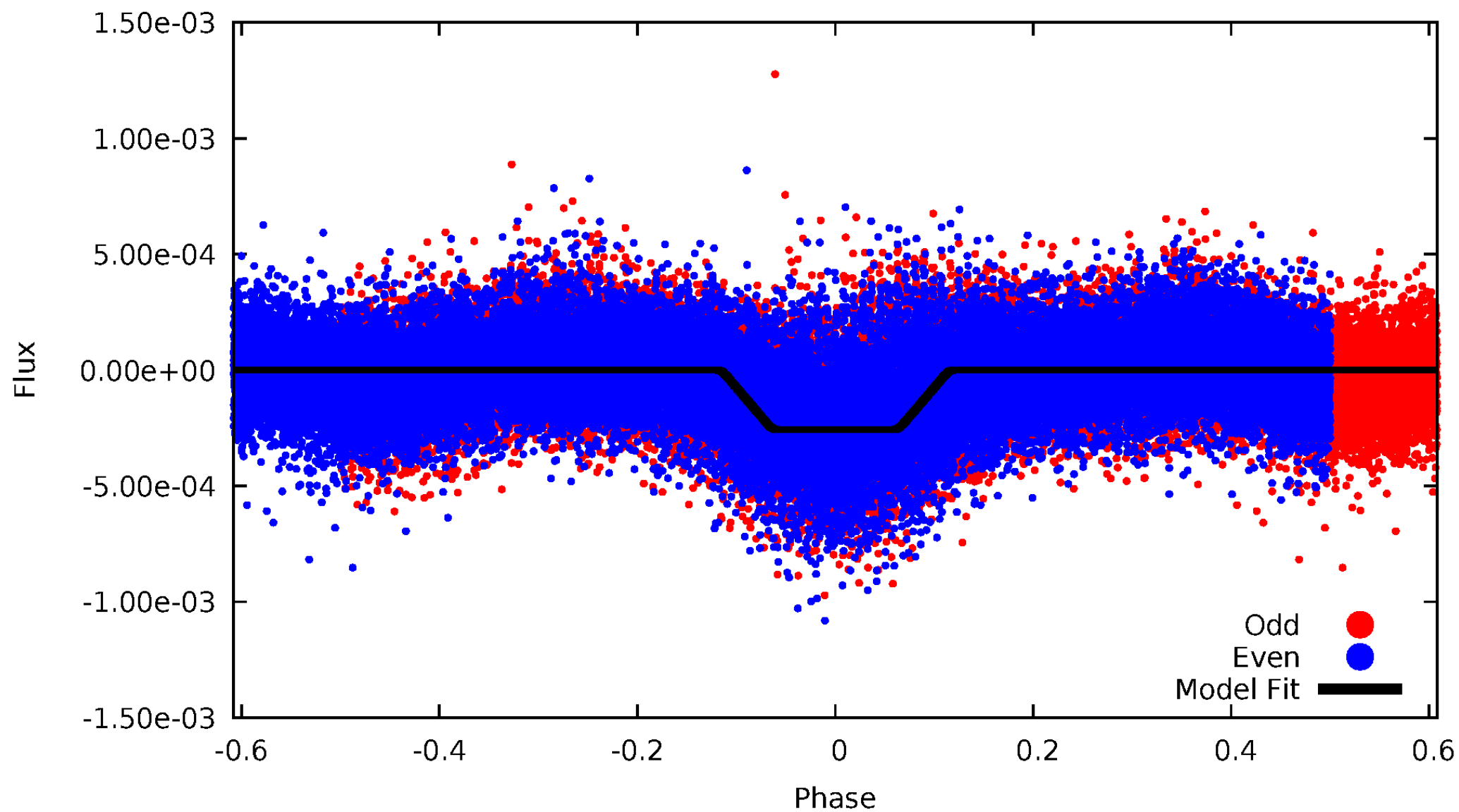
# DV Odd/Even

TCE 008392519-01



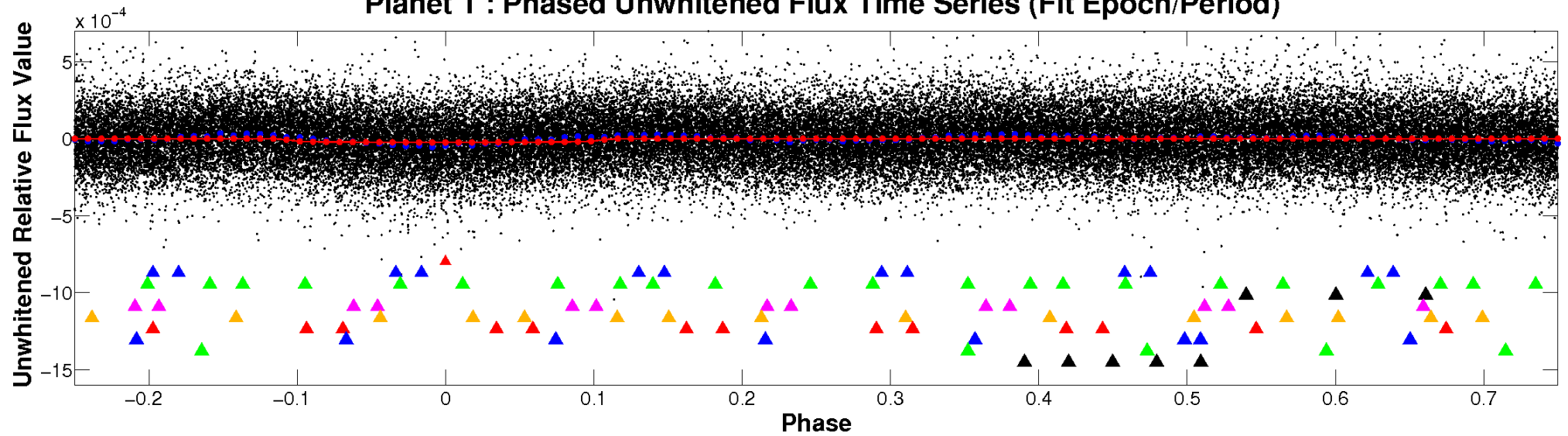
# ALT Odd/Even

TCE 008392519-01

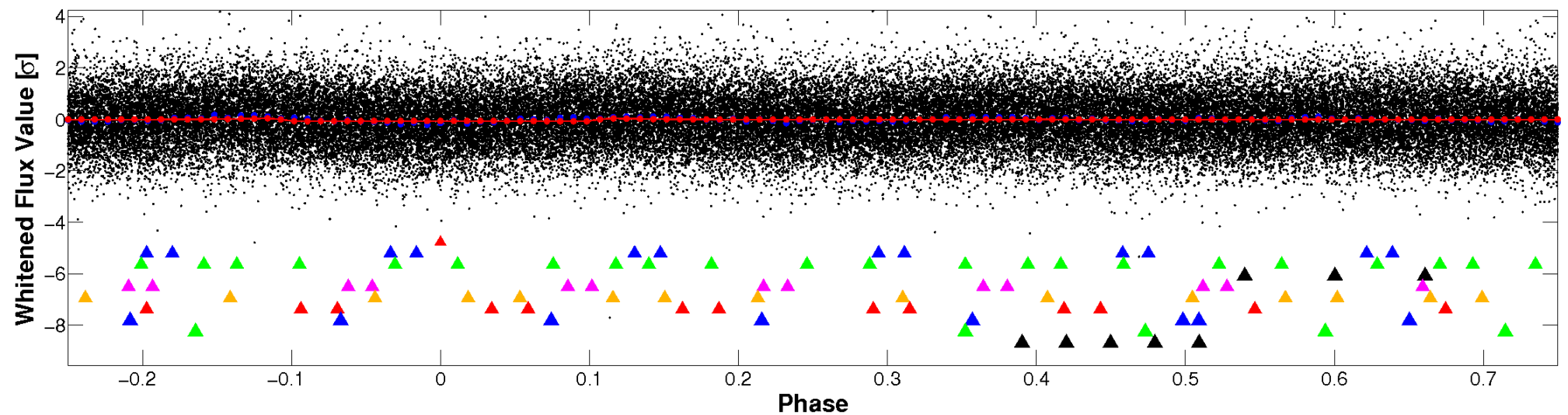


# Non-Whitened Vs. Whitened Light Curve

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



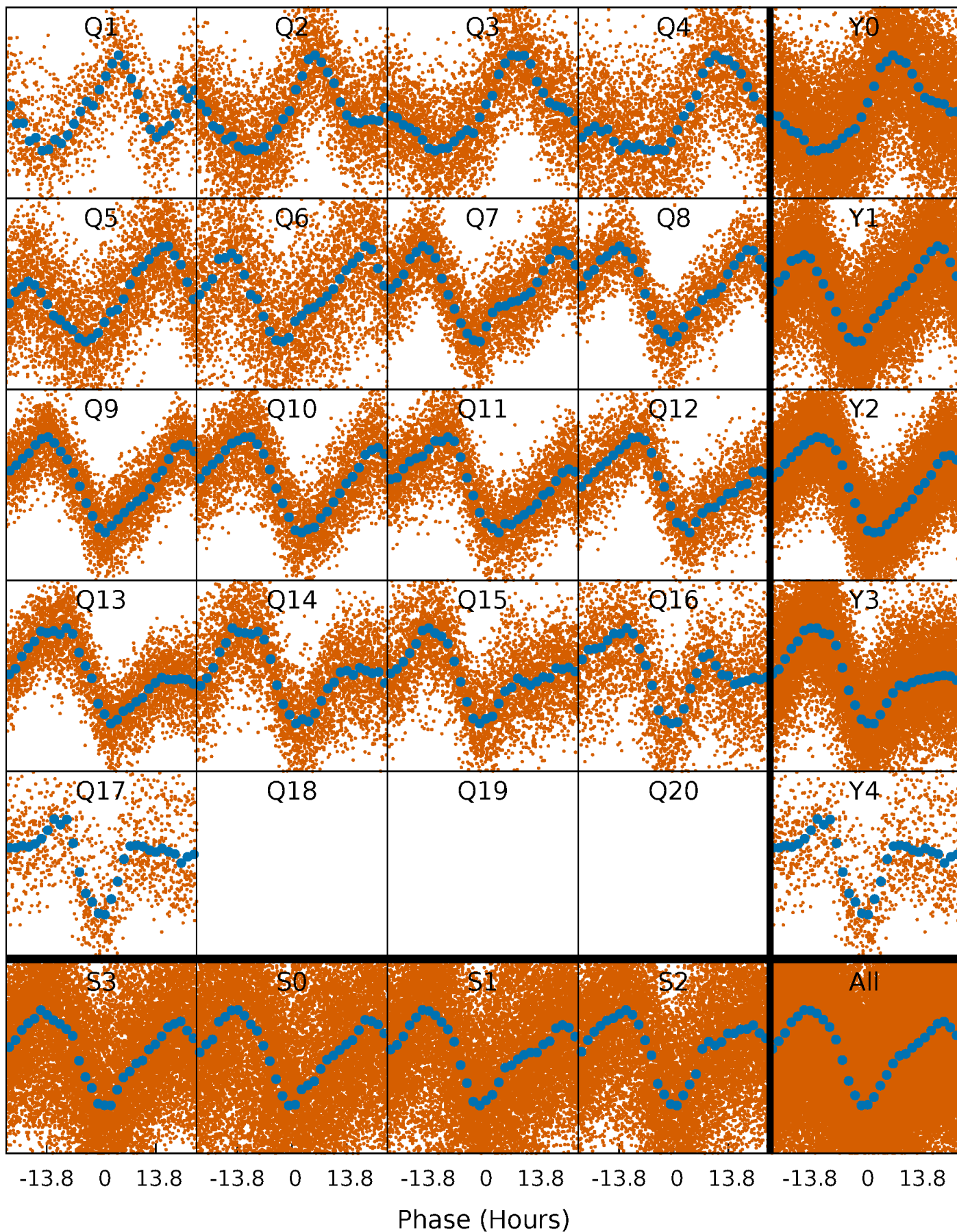
## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





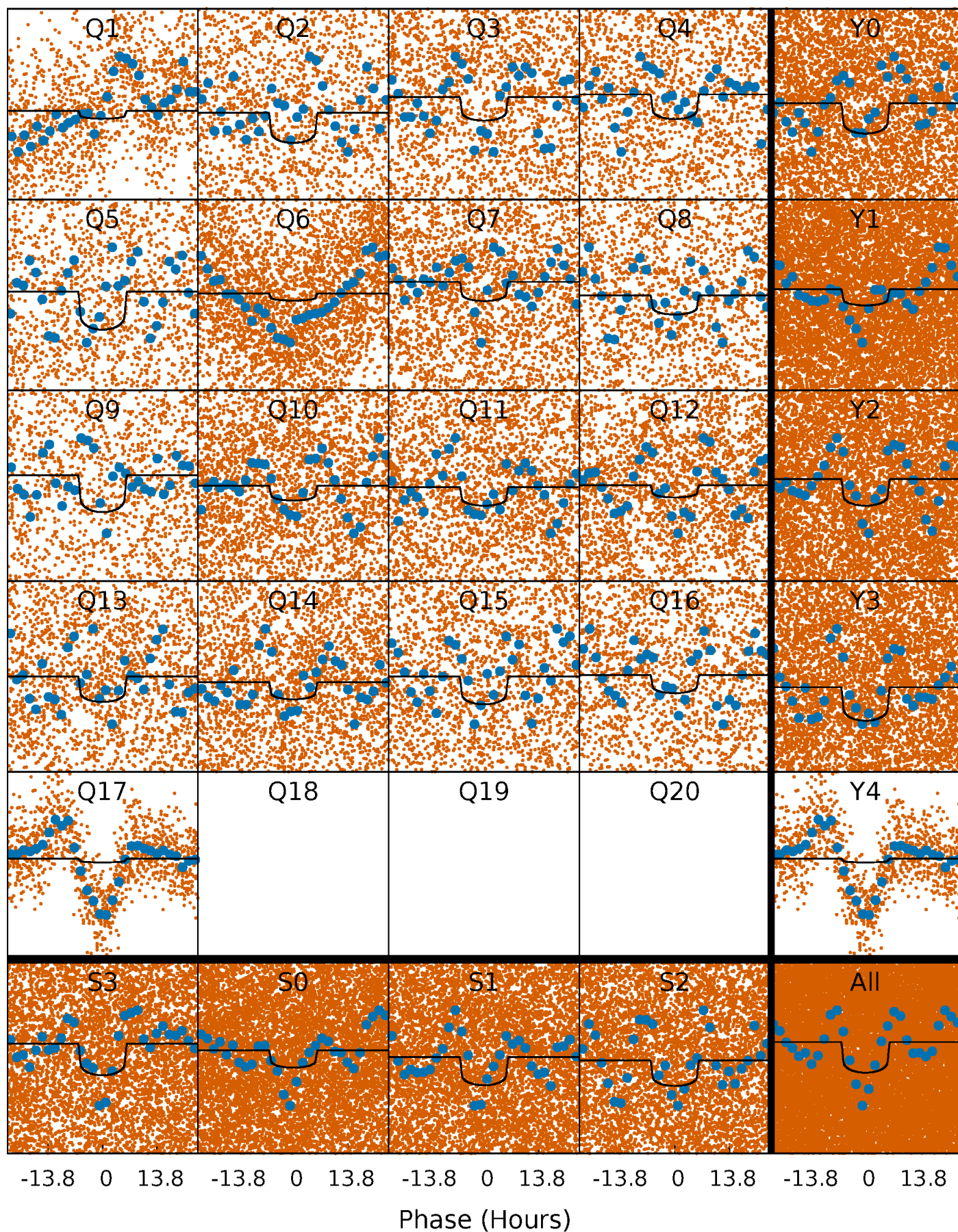
# PDC Quarter-Phased Transit Curves

TCE 008392519-01 P= 2.288770 Days  $T_0=133.644536$  (BKJD)



# DV Quarter-Phased Transit Curves

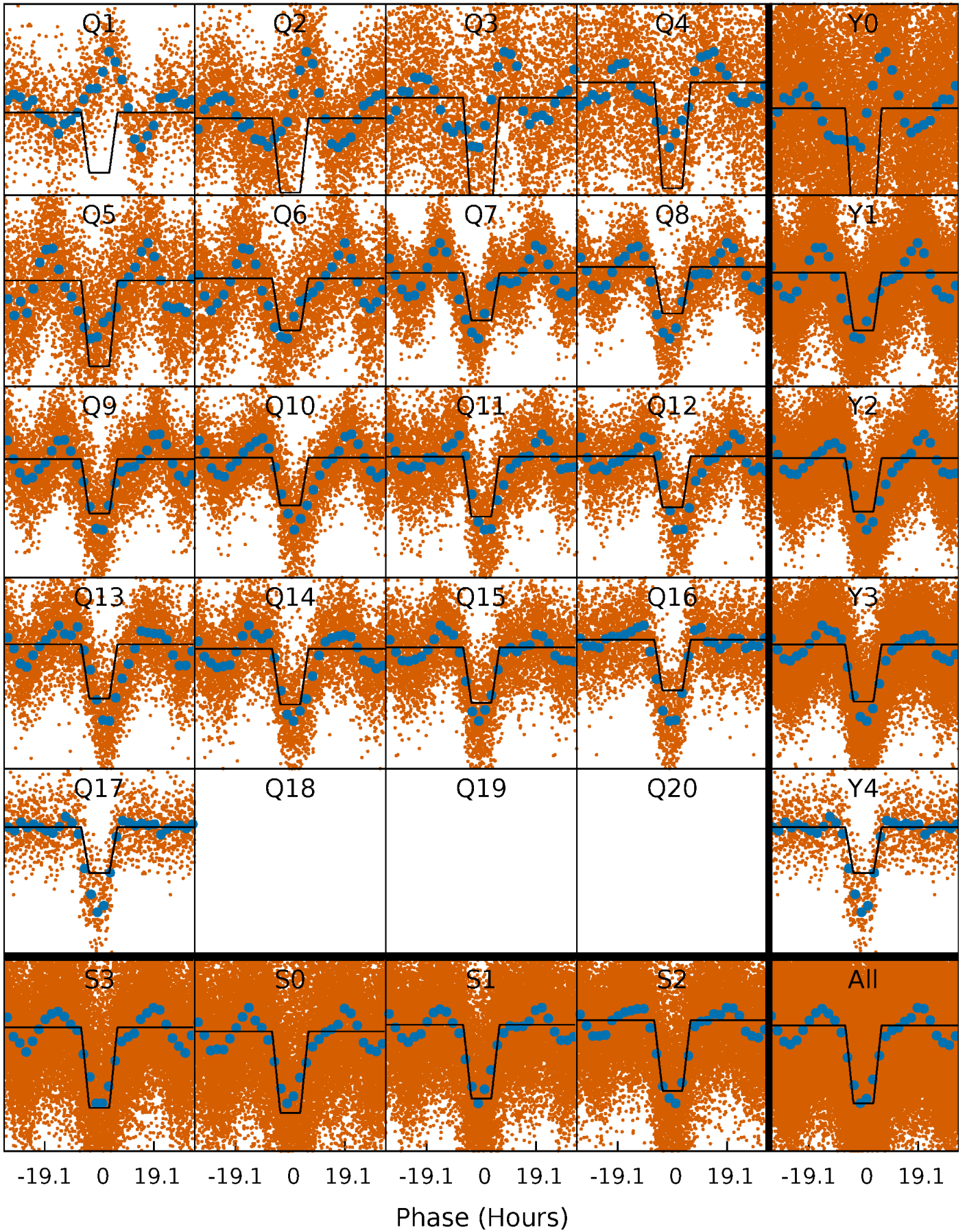
TCE 008392519-01 P= 2.288770 Days  $T_0=133.644536$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

TCE 008392519-01 P= 2.288767 Days  $T_0=133.633195$  (BKJD)

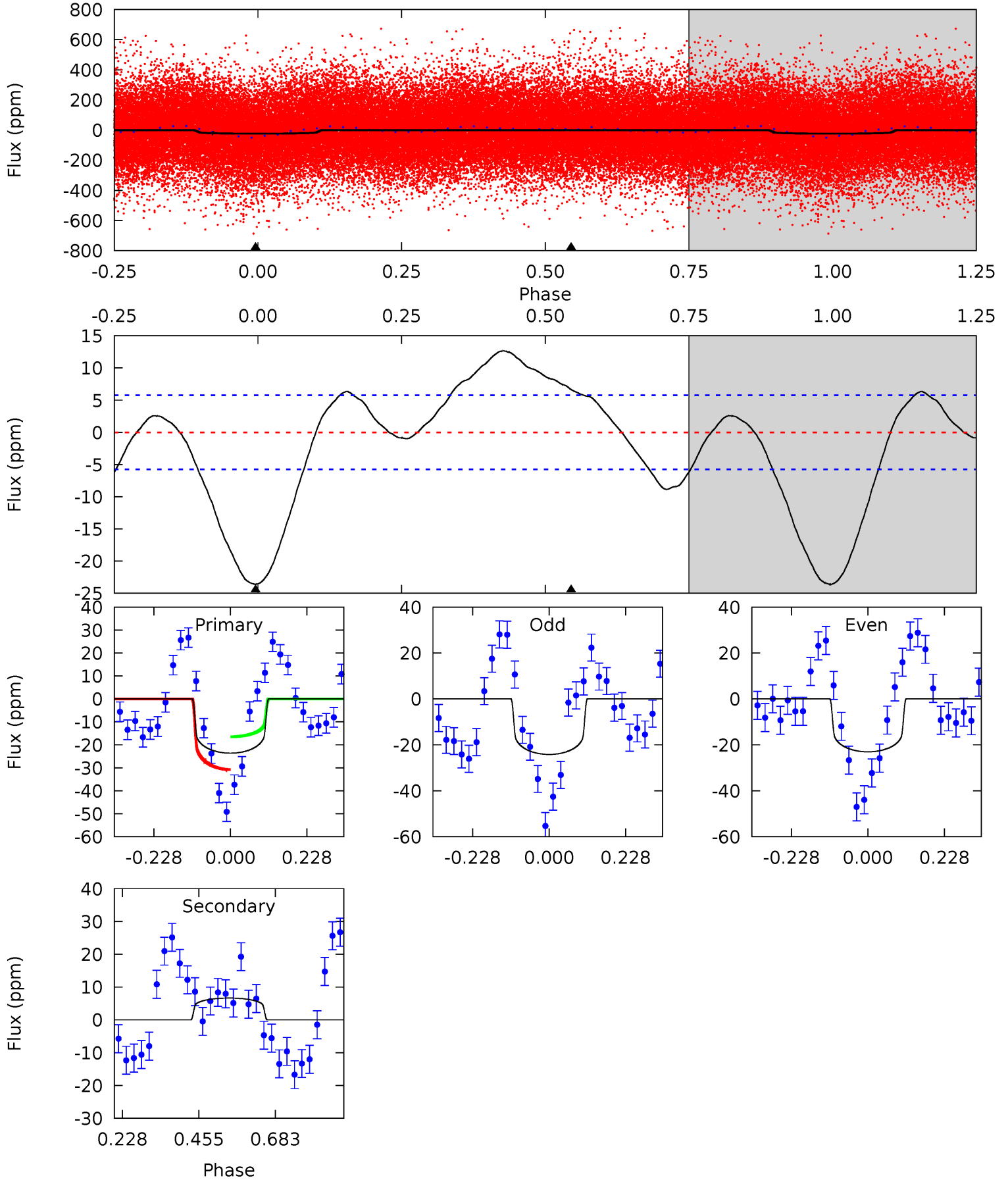




# DV Model-Shift Uniqueness Test

008392519-01, P = 2.288770 Days, E = 131.355766 Days

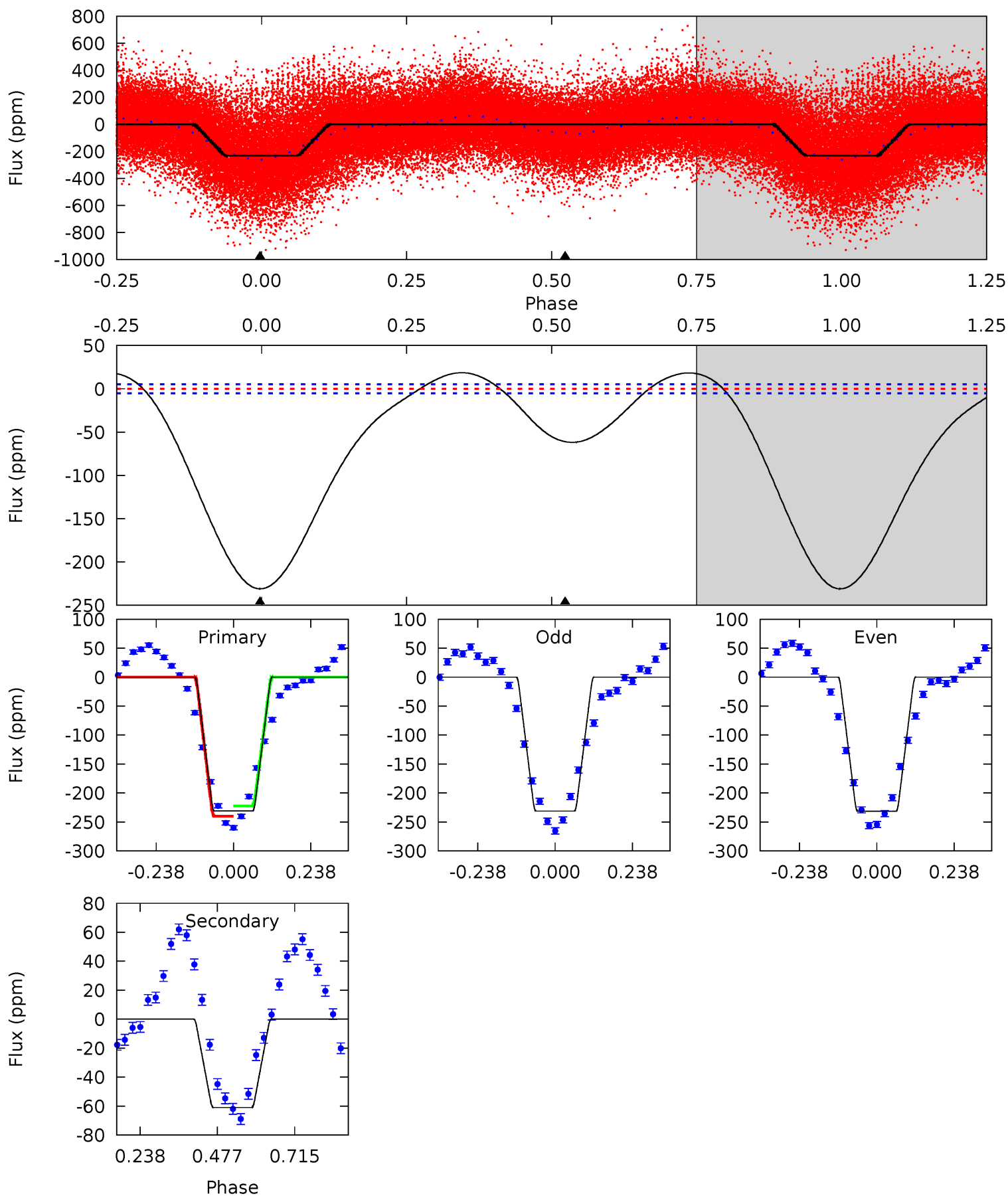
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.0	-5.06	0	0	4.39	1.21	1.17	18.0	18.0	-5.06	-5.06	0.43	1.30	0.35	5.37



# Alt Model-Shift Uniqueness Test

008392519-01, P = 2.288767 Days, E = 131.344428 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
196.2	51.8	0	0	4.38	1.18	10.6	196.2	196.2	51.8	51.8	0.08	0.90	0.07	7.24



### Stellar Parameters For KIC 008392519

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6760^{+187}_{-234}$	$3.635^{+0.323}_{-0.057}$	$-0.160^{+0.300}_{-0.250}$	$3.258^{+0.406}_{-1.218}$	$1.670^{+0.221}_{-0.332}$	$0.068^{+0.157}_{-0.014}$
	+3%/-3%	+9%/-2%	+188%/-156%	+12%/-37%	+13%/-20%	+230%/-20%
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 008392519-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$7 \pm 1$	$1.73^{+0.39}_{-0.39}$	$3625^{+216}_{-339}$	$-4958^{+322}_{-411}$	$-1.966^{+0.676}_{-1.354}$
Alt.	$-61 \pm 1$	$5.46^{+0.66}_{-1.12}$	$3625^{+213}_{-329}$	$4651^{+163}_{-176}$	$1.869^{+0.894}_{-0.344}$

$T_{\text{max}}$  = 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

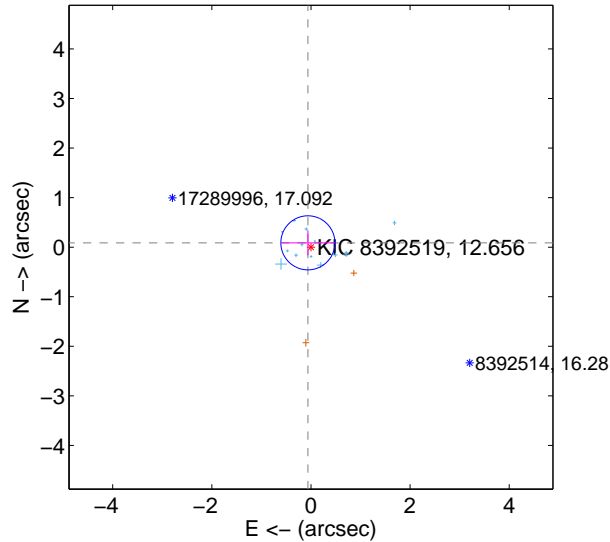
Supplemental centroid analysis for 008392519-01. Kepler magnitude: 12.66. Transit SNR 8.18

There are 14 quarters with good PRF difference image offsets

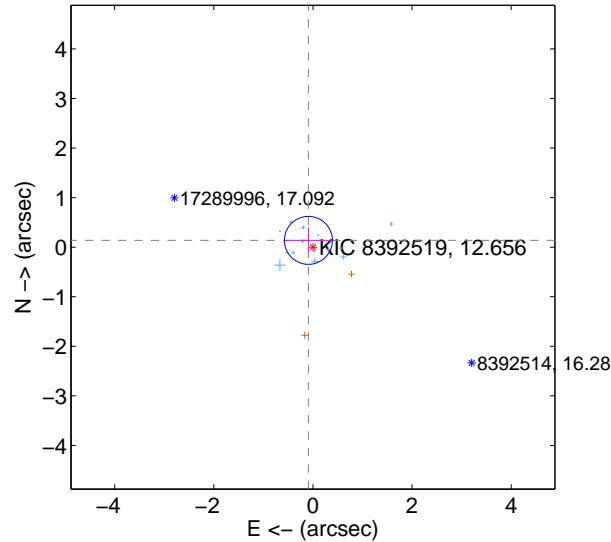
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.107 \pm 0.182$	0.59	$0.062 \pm 0.527$	$0.088 \pm 0.252$
PRF-fit source offset from KIC position	$0.165 \pm 0.161$	1.02	$0.091 \pm 0.501$	$0.137 \pm 0.264$
photometric centroid source offset	$2.04 \pm 0.67$	3.03	$-1.67 \pm 0.70$	$1.17 \pm 0.63$

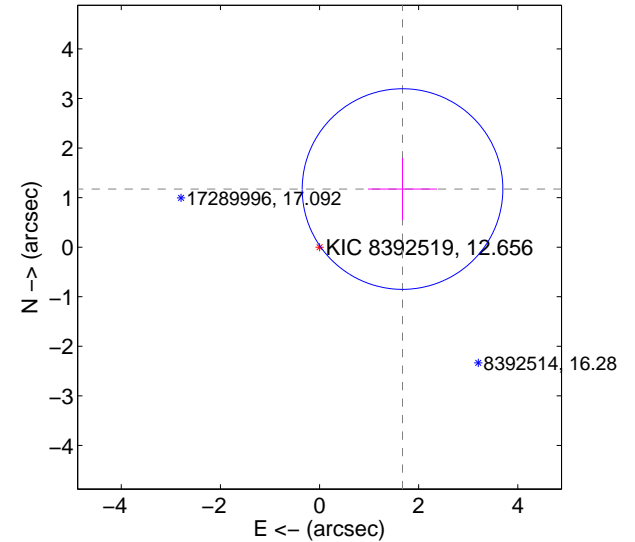
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

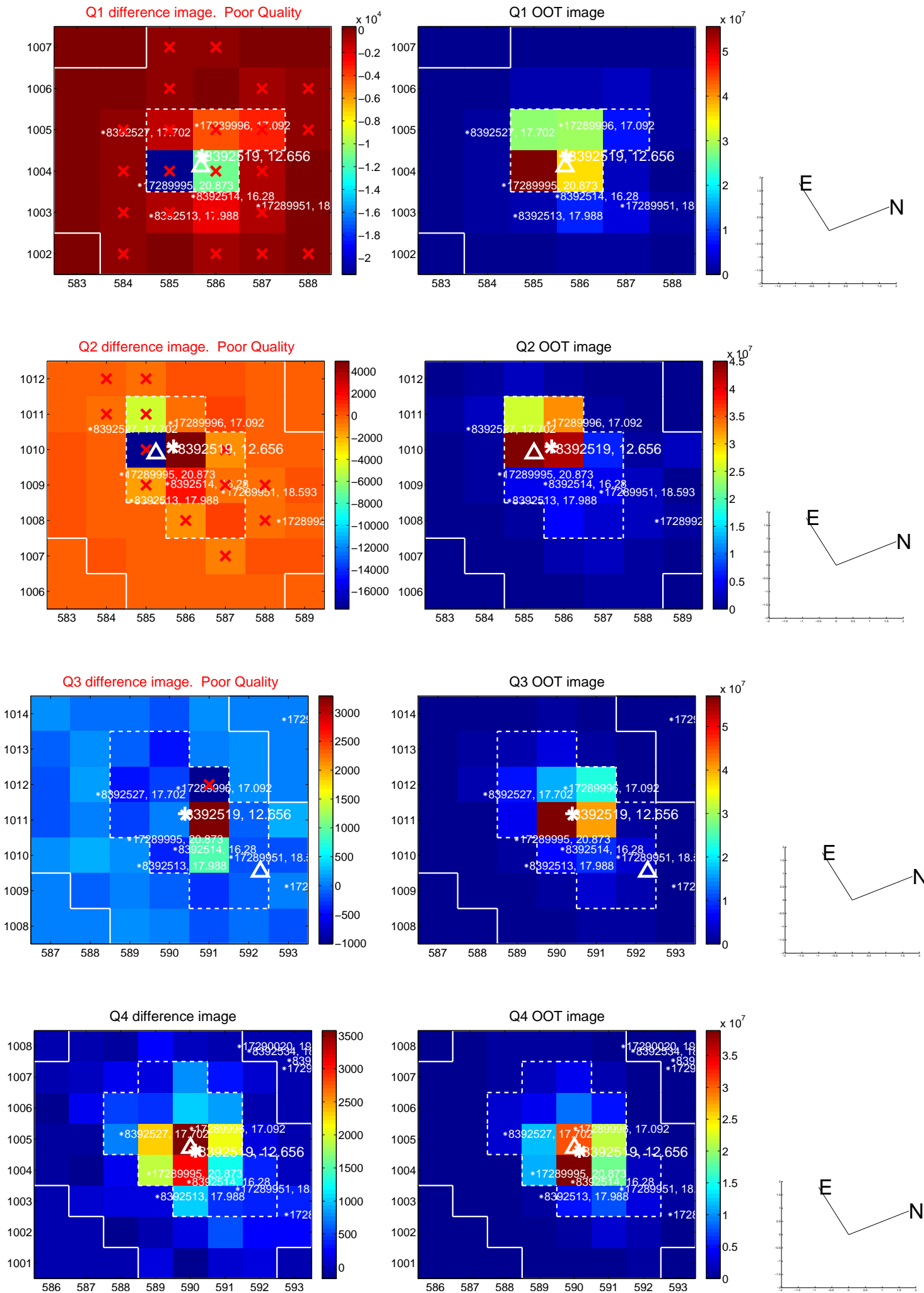


offset from photometric centroids

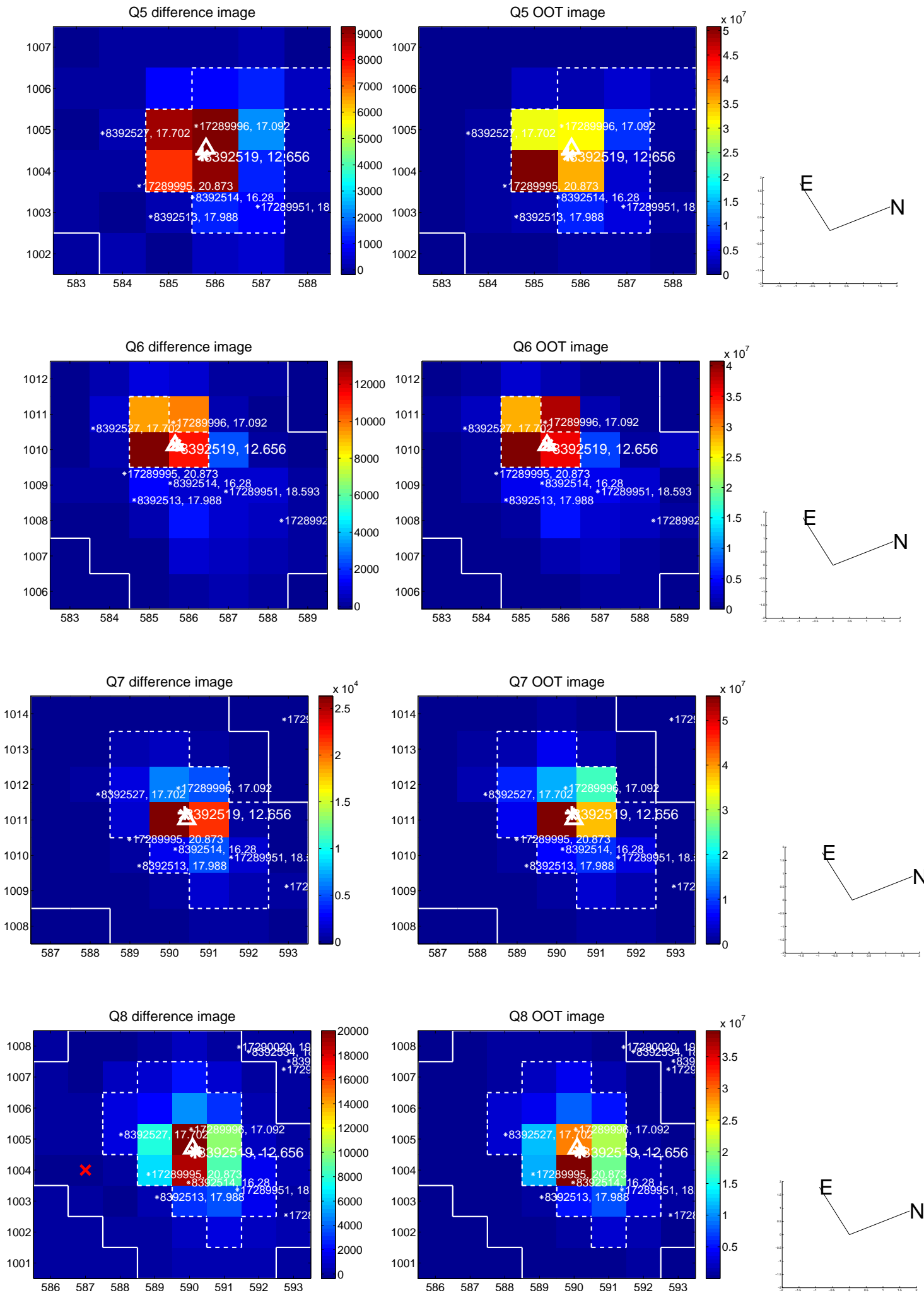


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

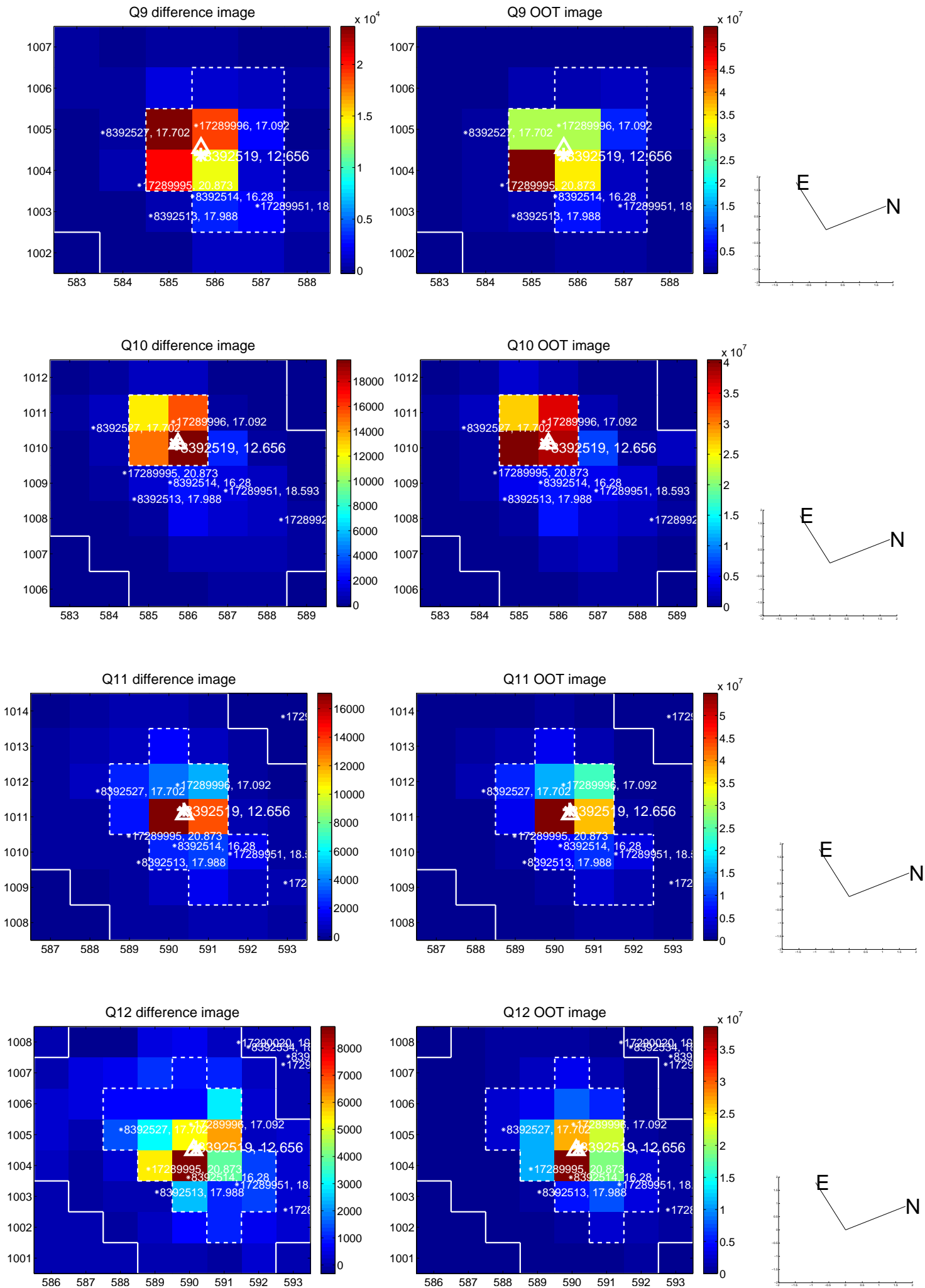


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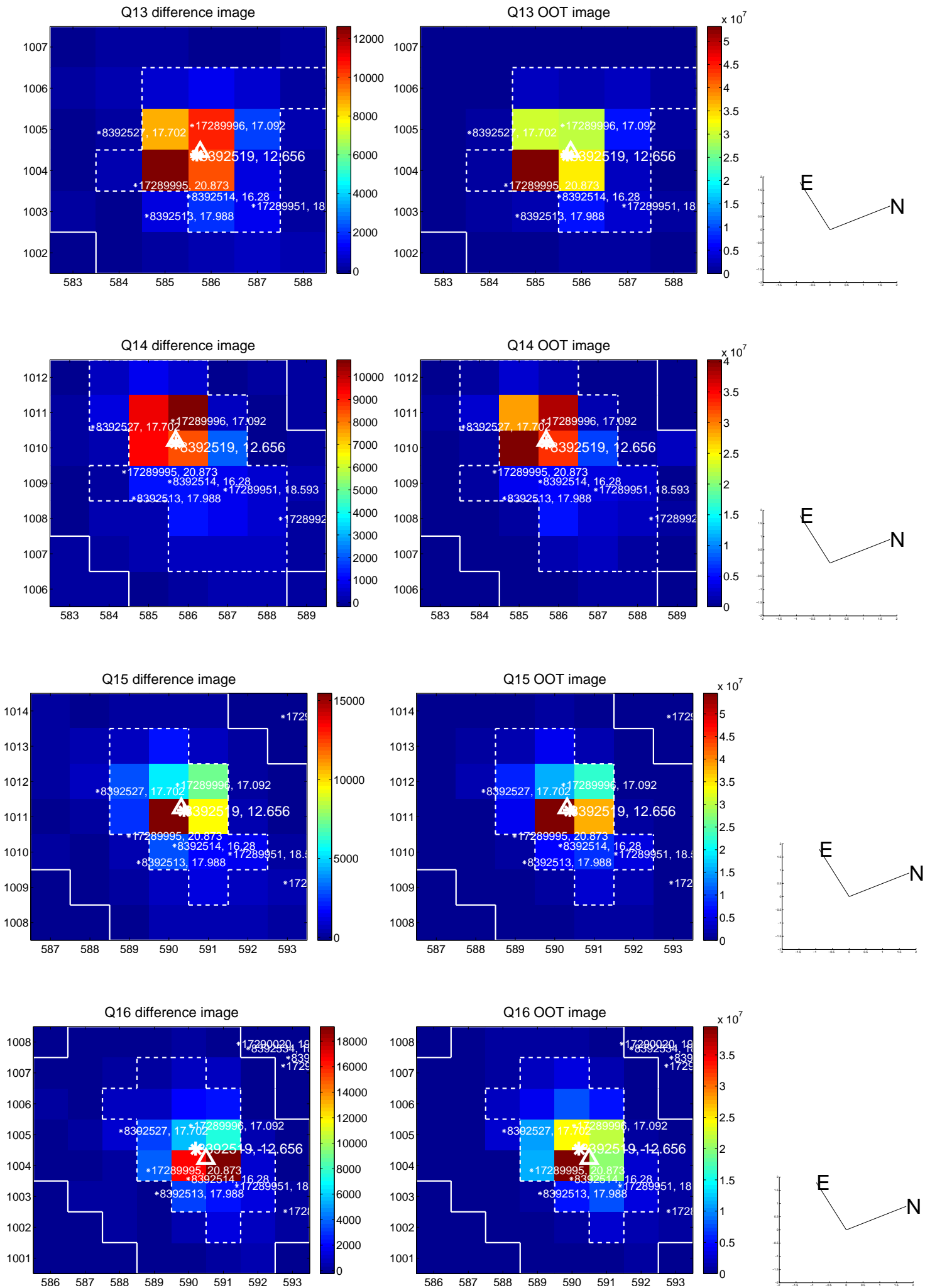




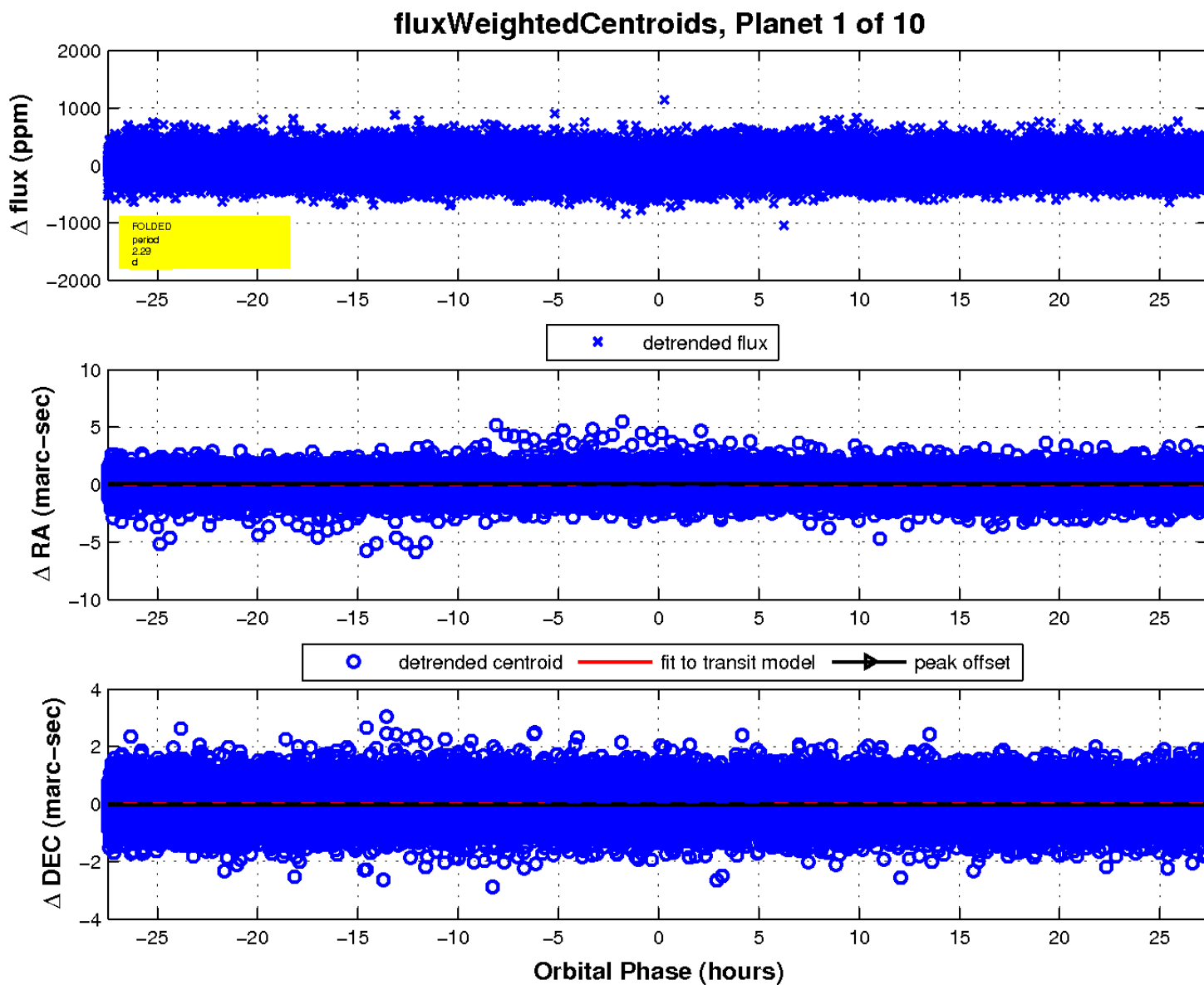
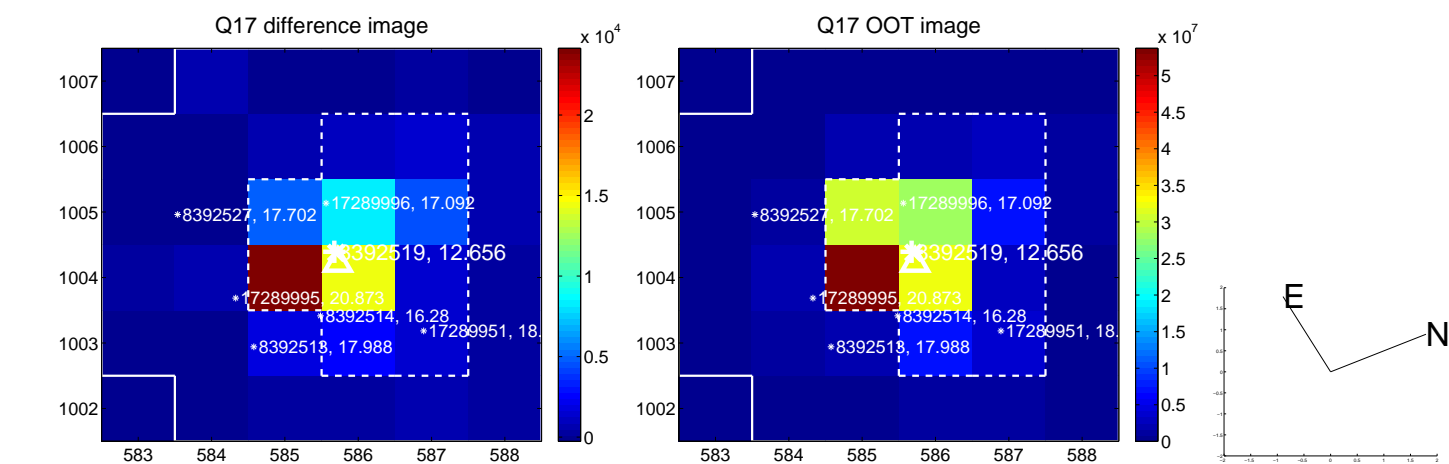
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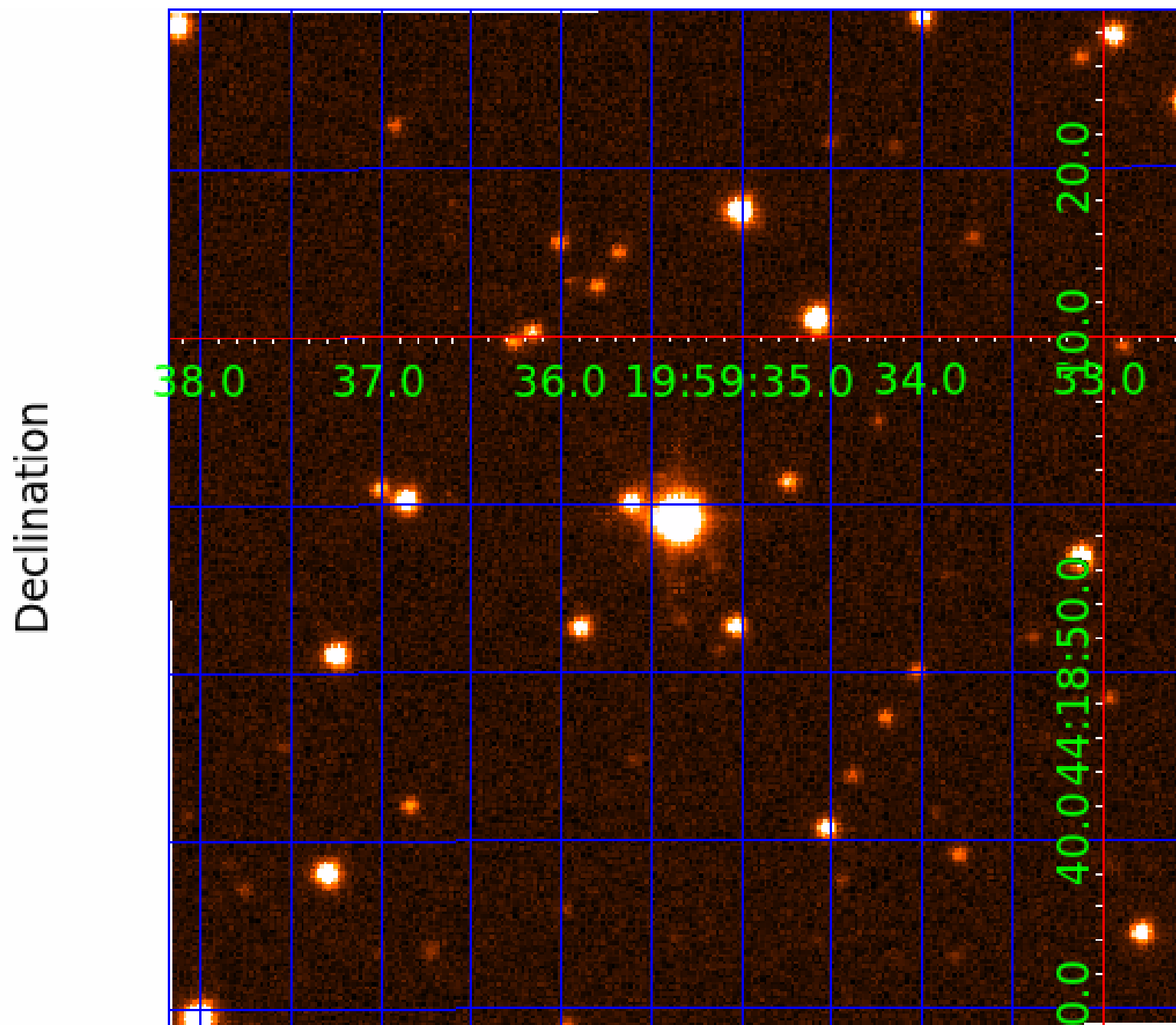
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UKIRT Image





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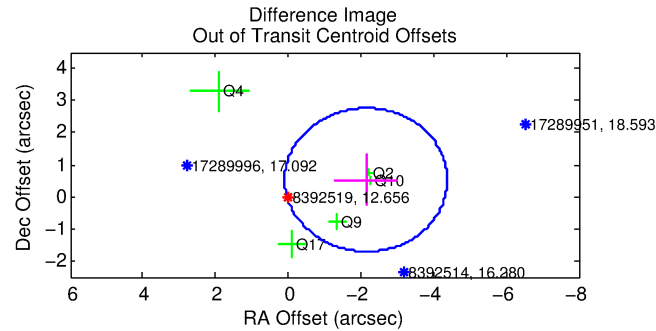
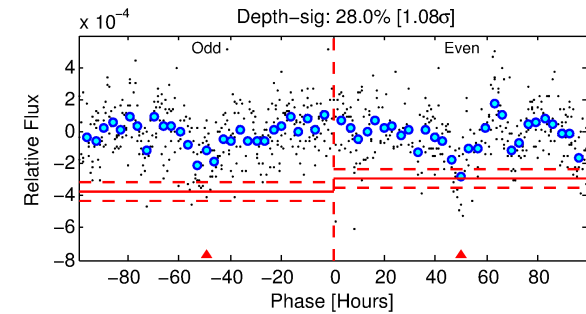
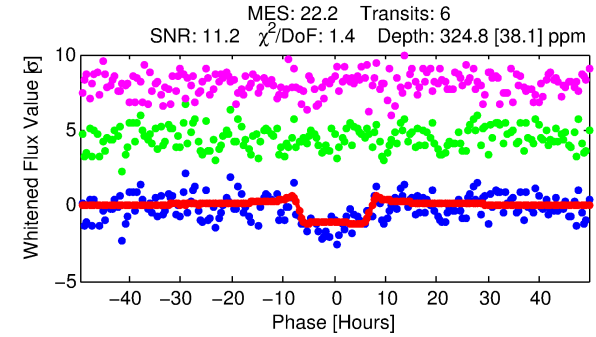
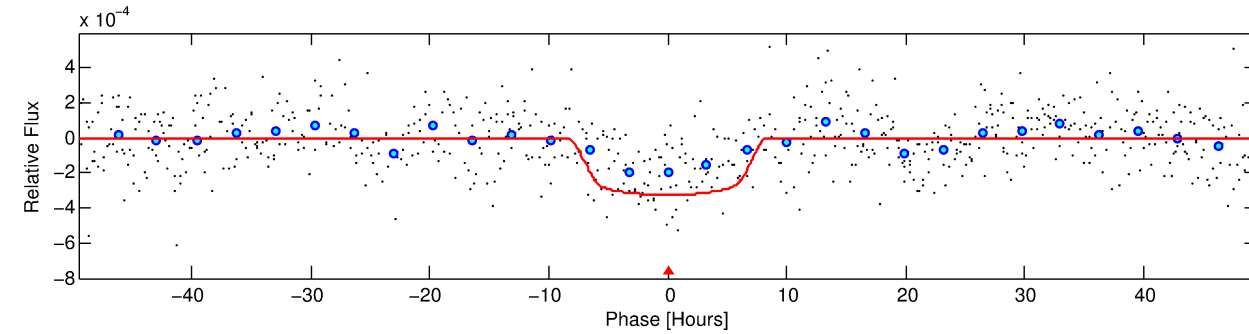
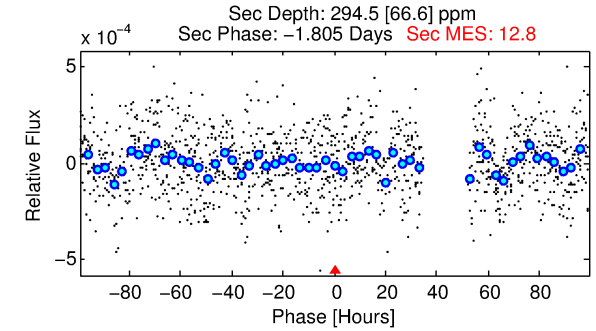
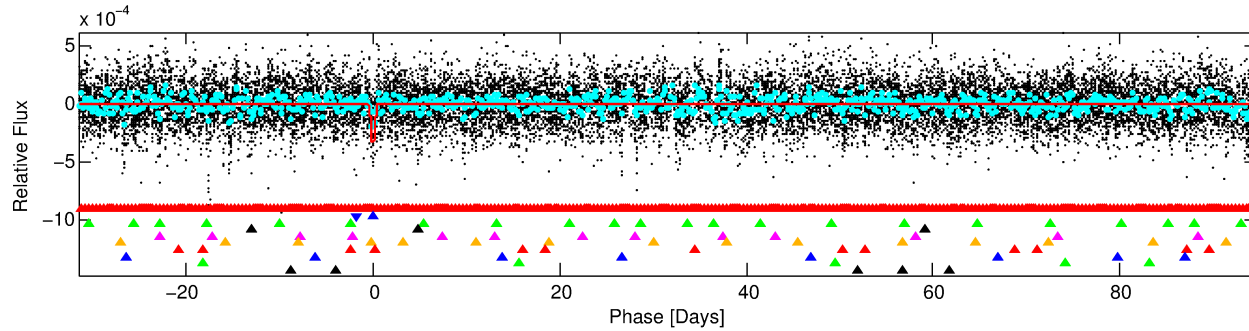
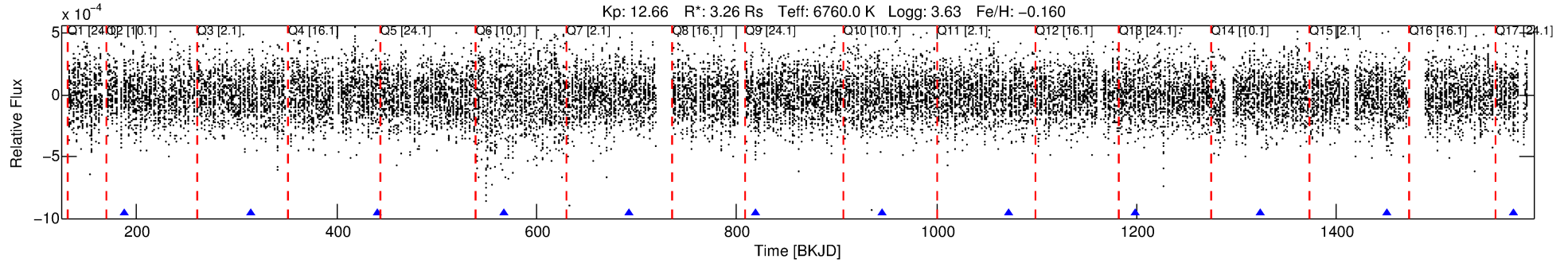
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008392519-02

No Significant Match Found

# DV One-Page Summary

KIC: 8392519 Candidate: 2 of 10 Period: 126.257 d



## DV Fit Results:

Period = 126.25721 [0.00430] d  
Epoch = 188.1631 [0.0335] BKJD  
Rp/R\* = 0.0200 [0.0015]  
a/R\* = 23.13 [5.42]  
b = 0.94 [0.03]  
Seff = 58.12 [33.24]  
Teq = 704 [101] K  
Rp = 7.11 [2.71] Re  
a = 0.5846 [0.2055] AU  
Ag = 1093.96 [675.49] [1.62σ]  
Teffp = 6260 [476] K [11.42σ]

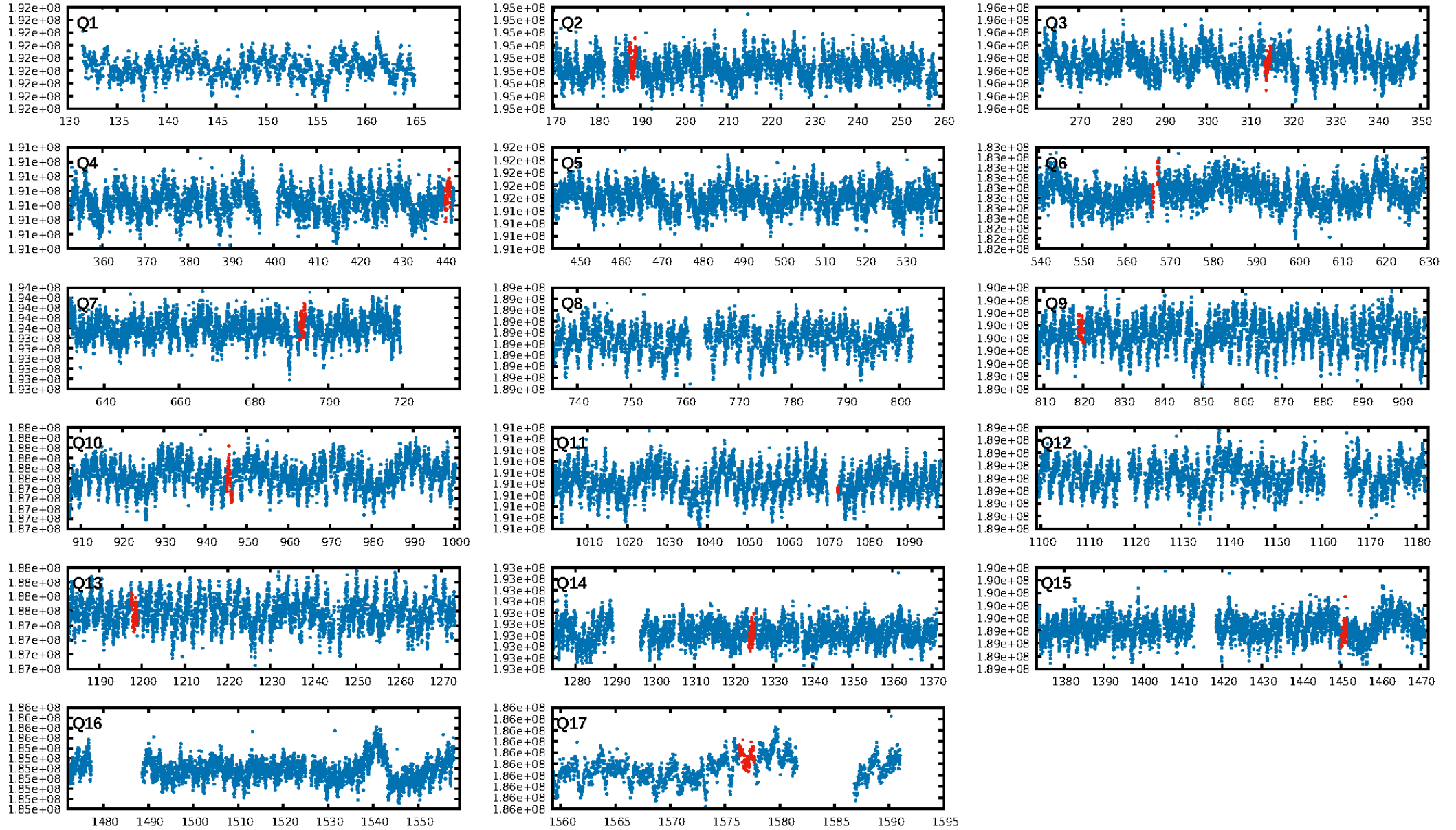
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [16.54σ]  
LongPeriod-sig: 100.0% [93.33σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 0.1408  
Centroid-sig: 69.3%  
Centroid-so: 0.097 arcsec [0.26σ]  
OotOffset-rm: 2.201 arcsec [2.95σ]  
KicOffset-rm: 2.204 arcsec [3.34σ]  
OotOffset-st: 2/0/1/2 [5]  
KicOffset-st: 2/0/1/2 [5]  
DiffImageQuality-fgm: 0.40 [2/5]  
DiffImageOverlap-fno: 0.00 [0/8]

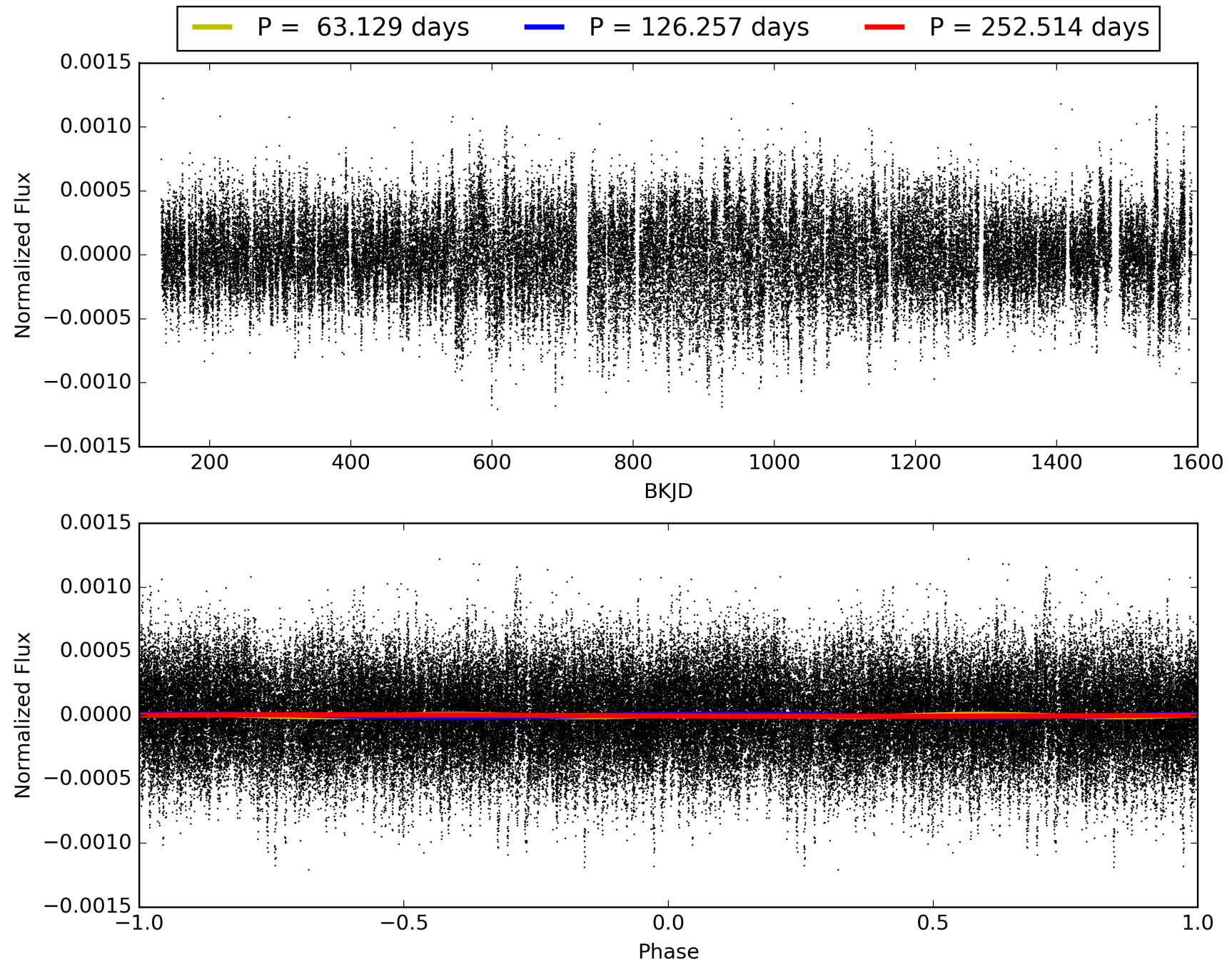
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:17:40 Z

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

# TCE 008392519-02, PDC Light Curves



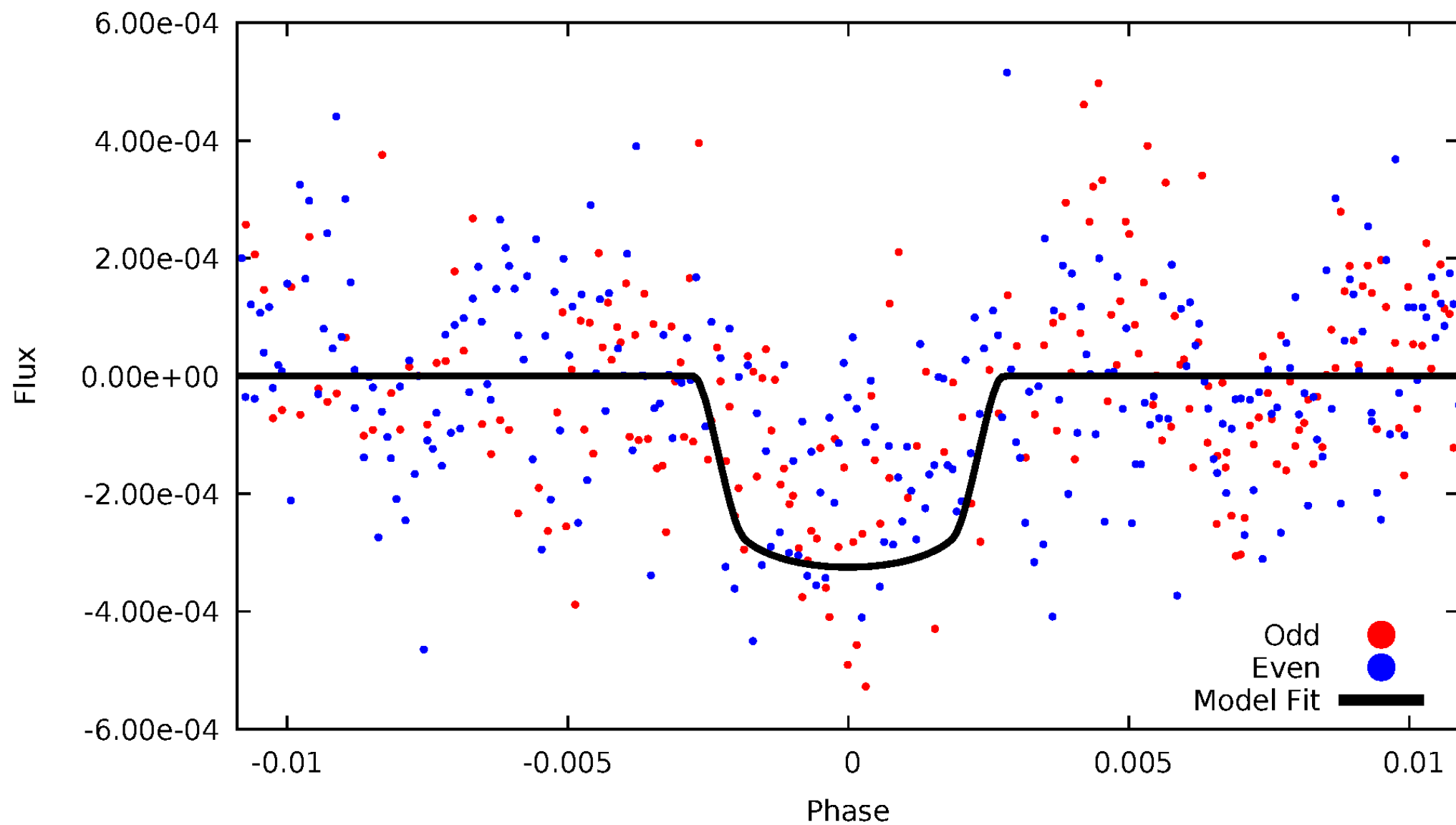
TCE 008392519-02





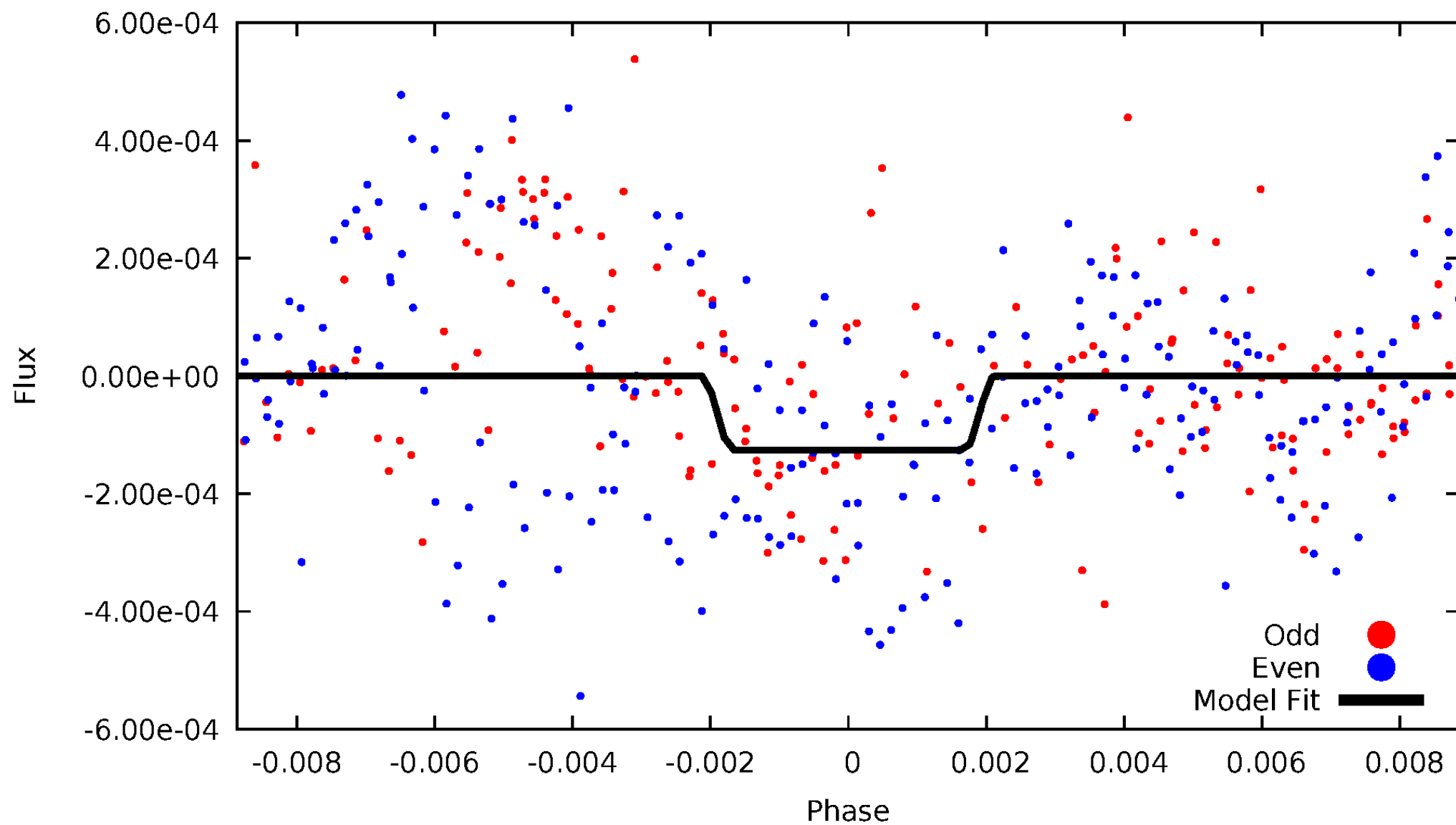
# DV Odd/Even

TCE 008392519-02



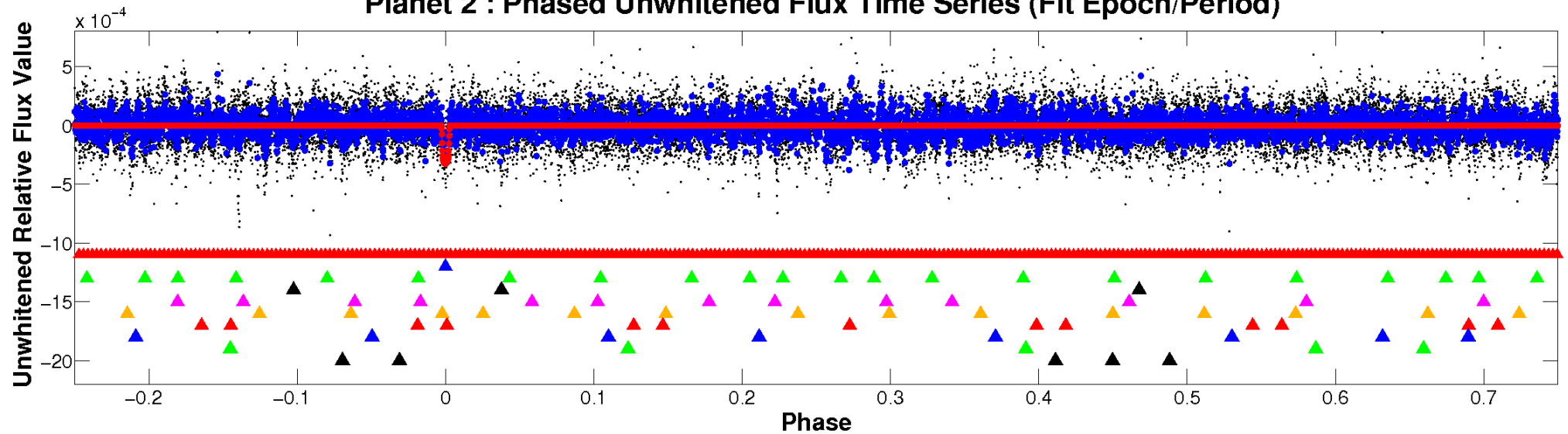
# ALT Odd/Even

TCE 008392519-02

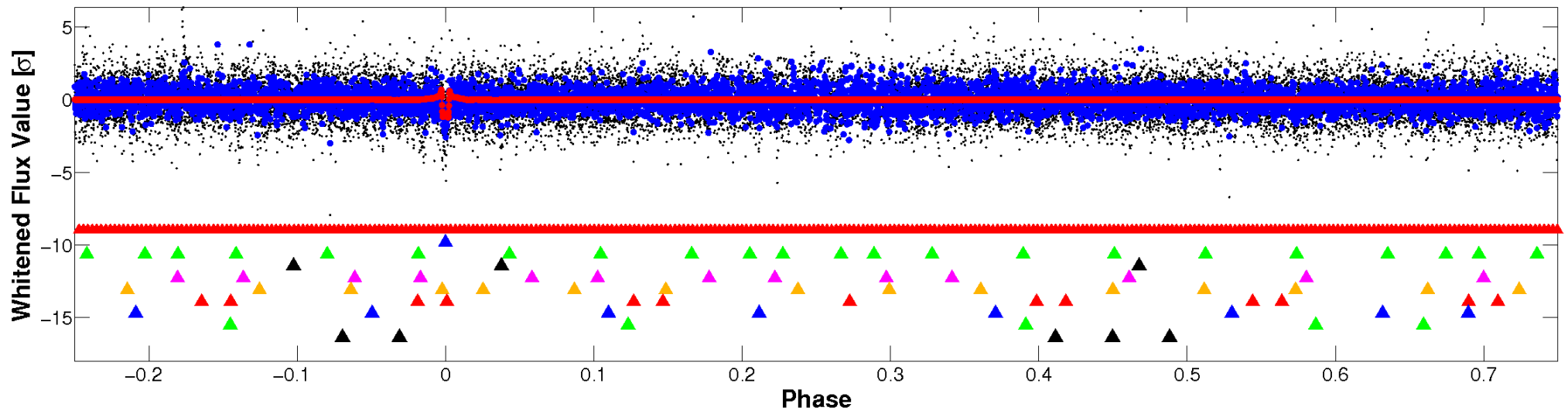


# Non-Whitened Vs. Whitened Light Curve

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

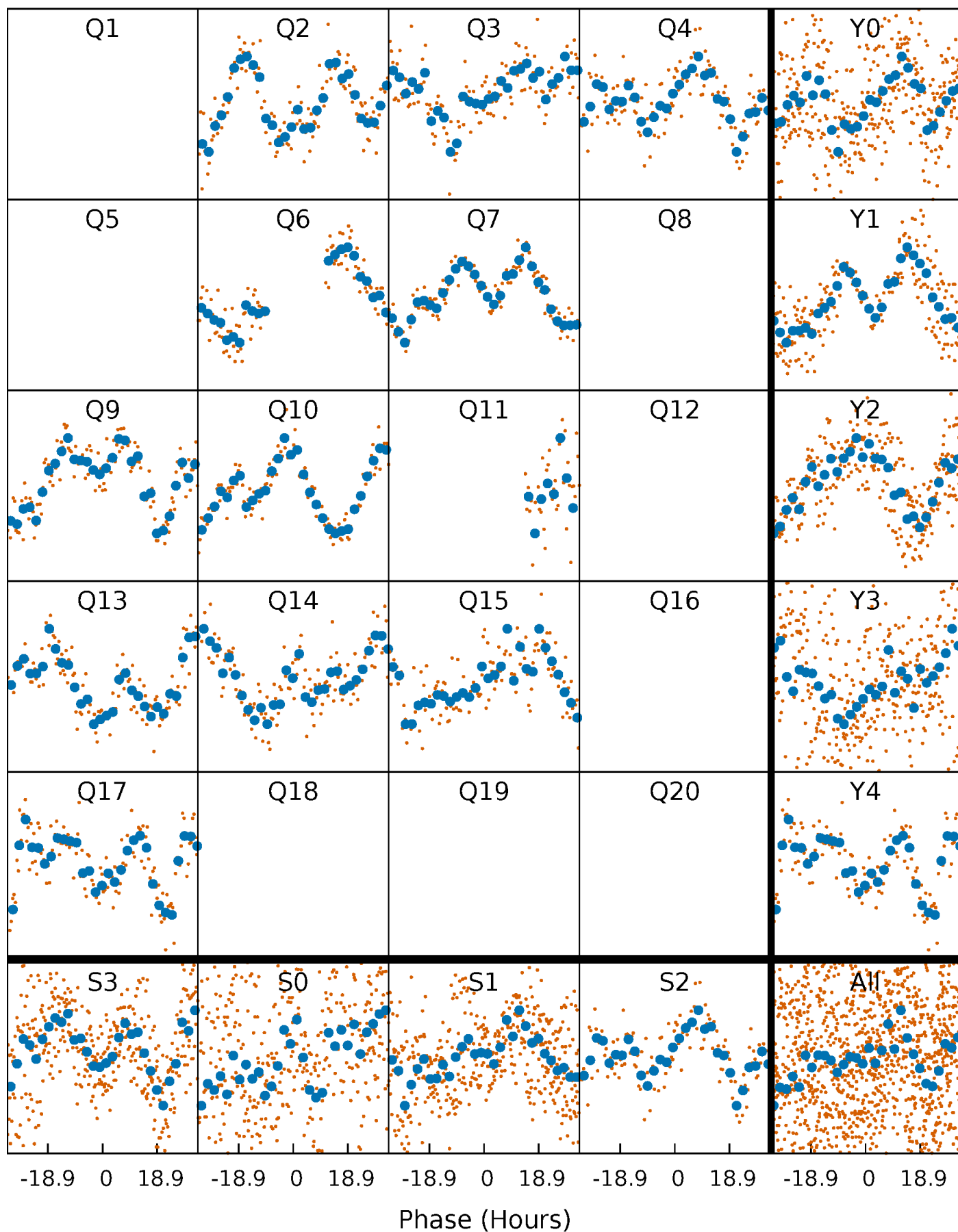


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

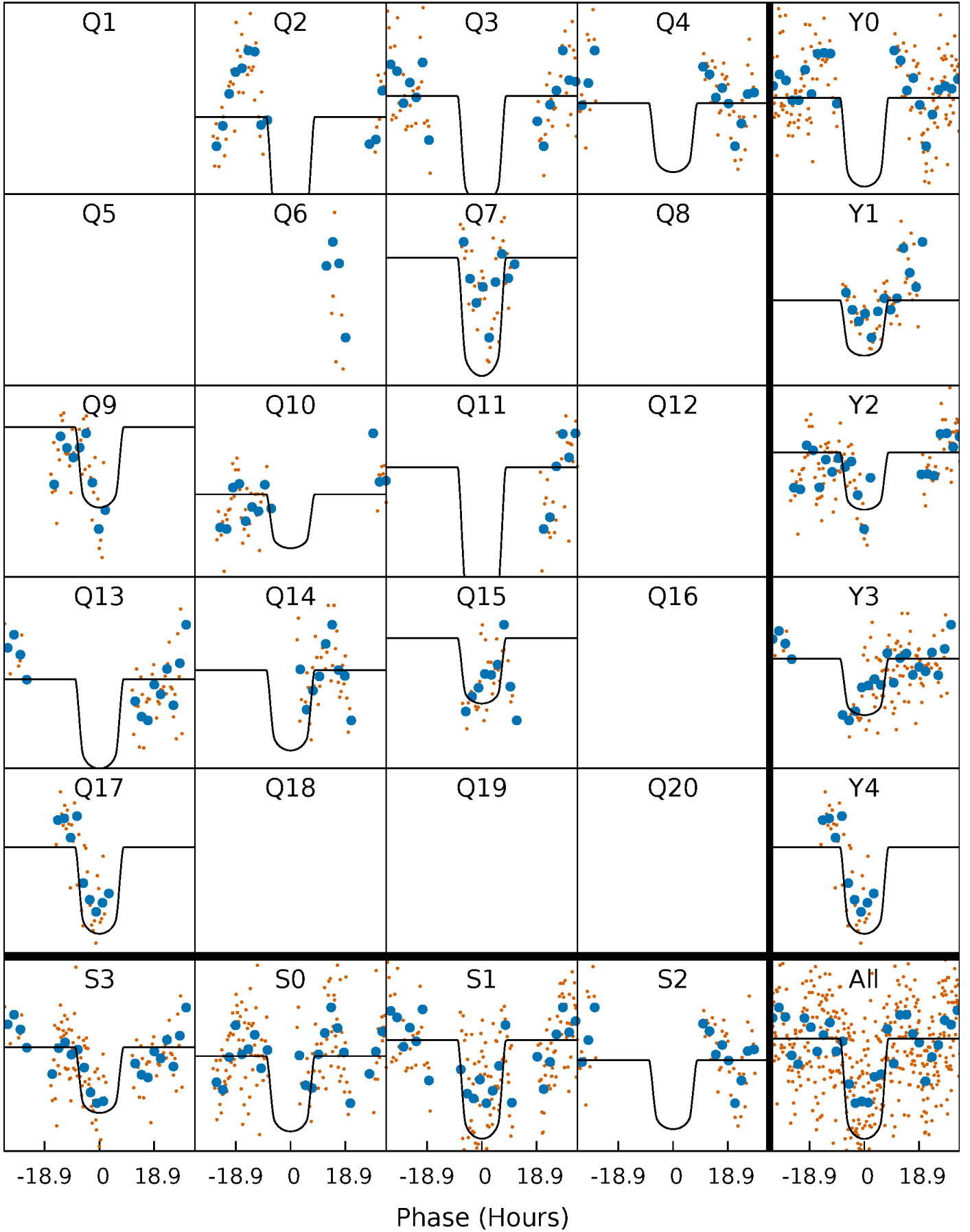
TCE 008392519-02 P=126.257214 Days  $T_0=188.163119$  (BKJD)





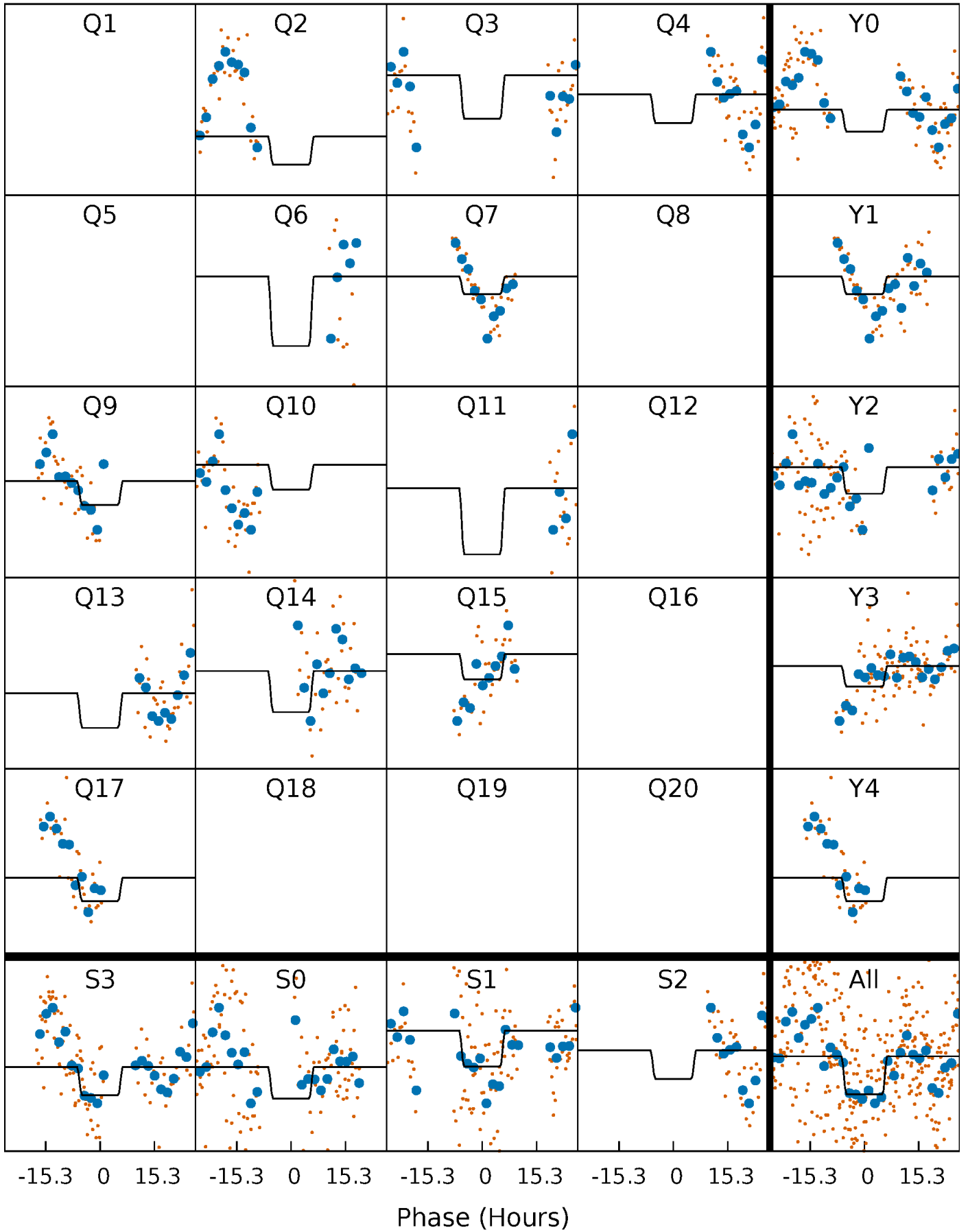
# DV Quarter-Phased Transit Curves

TCE 008392519-02 P=126.257214 Days  $T_0=188.163119$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

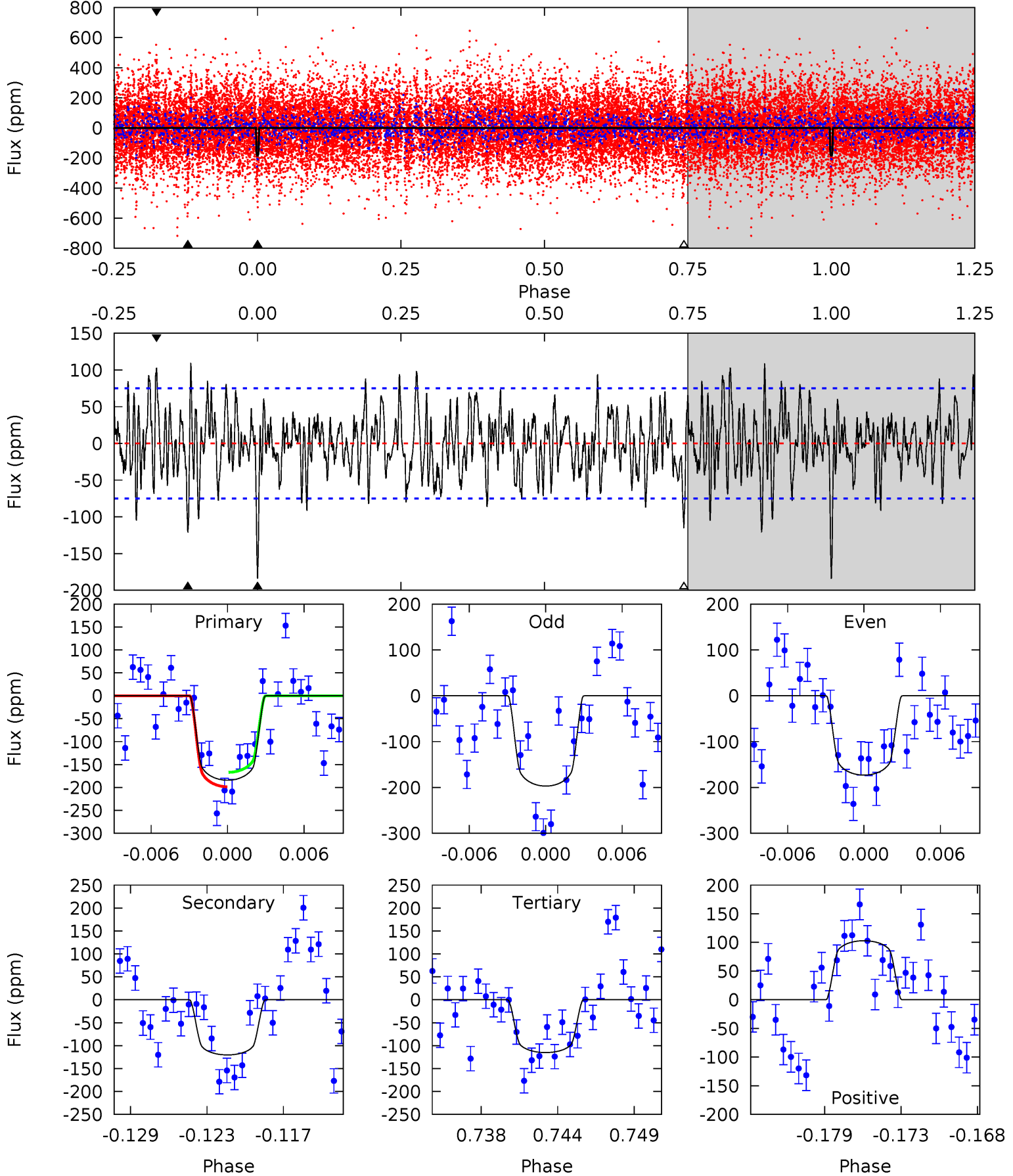
TCE 008392519-02 P=126.258967 Days  $T_0=188.198496$  (BKJD)



# DV Model-Shift Uniqueness Test

008392519-02, P = 126.257214 Days, E = 61.905905 Days

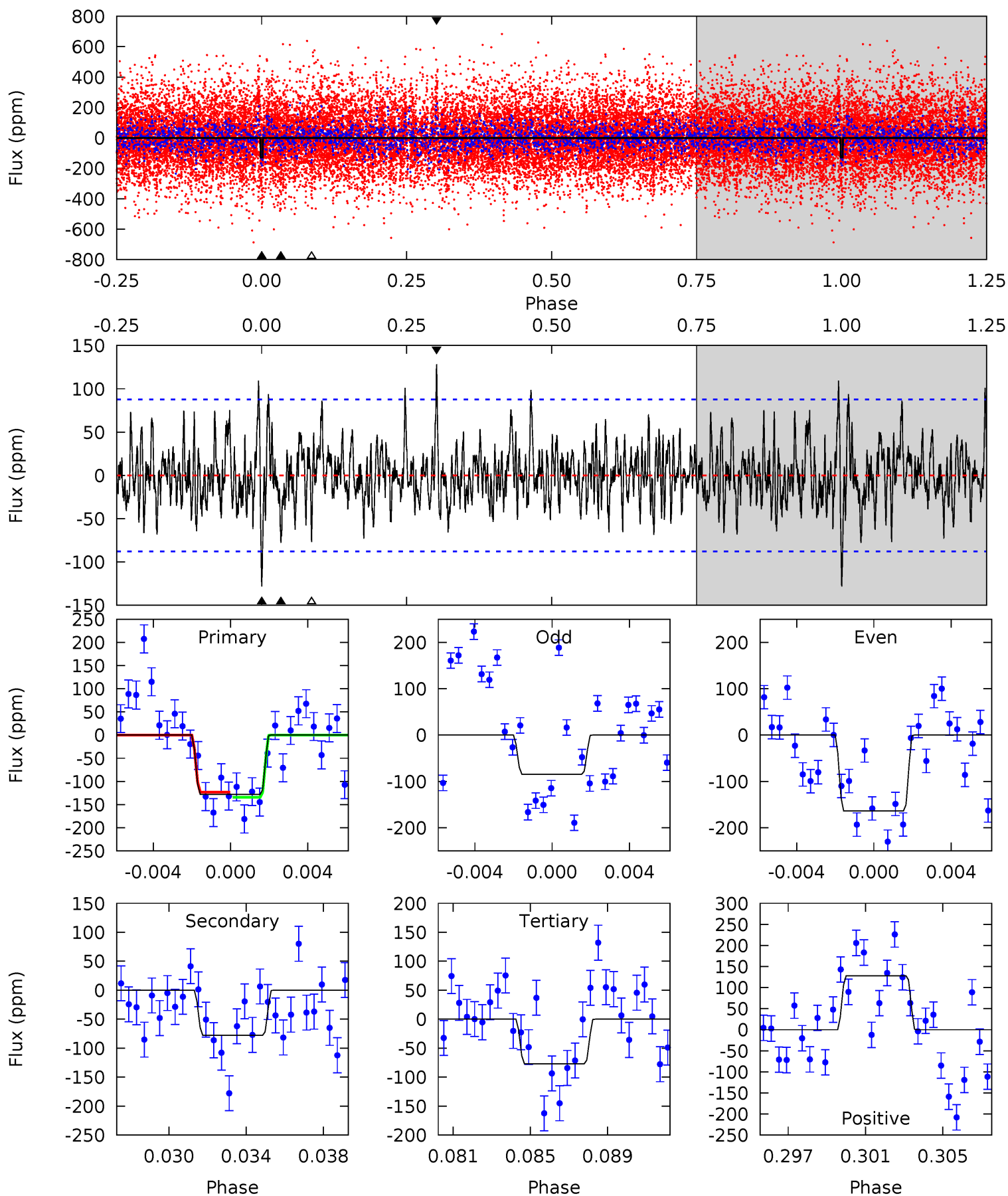
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.6	8.24	7.89	7.05	5.14	2.77	2.49	4.73	5.56	0.35	1.19	0.81	1.09	0.37	1.07



# Alt Model-Shift Uniqueness Test

008392519-02, P = 126.258967 Days, E = 61.939529 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.57	4.60	4.54	7.58	5.19	2.86	1.68	3.03	-0.01	0.06	-2.98	2.31	0.83	0.50	0.32





### Stellar Parameters For KIC 008392519

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6760^{+187}_{-234}$	$3.635^{+0.323}_{-0.057}$	$-0.160^{+0.300}_{-0.250}$	$3.258^{+0.406}_{-1.218}$	$1.670^{+0.221}_{-0.332}$	$0.068^{+0.157}_{-0.014}$
	+3%/-3%	+9%/-2%	+188%/-156%	+12%/-37%	+13%/-20%	+230%/-20%
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 008392519-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-120 \pm 15$	$6.78^{+1.00}_{-1.31}$	$955^{+54}_{-78}$	$5043^{+254}_{-232}$	$504^{+223}_{-123}$
Alt.	$-78 \pm 17$	$3.75^{+0.69}_{-0.79}$	$958^{+51}_{-80}$	$5957^{+568}_{-482}$	$1061^{+623}_{-375}$

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

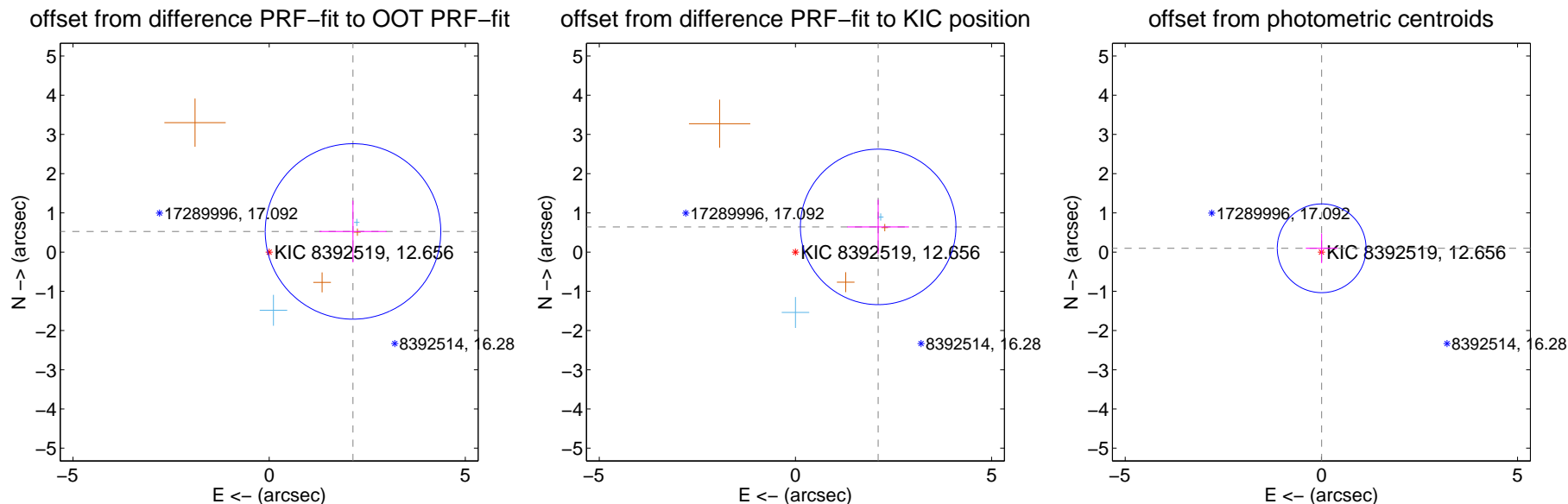
## DV Centroid Data

Supplemental centroid analysis for 008392519-02. Kepler magnitude: 12.66. Transit SNR 11.23

There are 2 quarters with good PRF difference image offsets

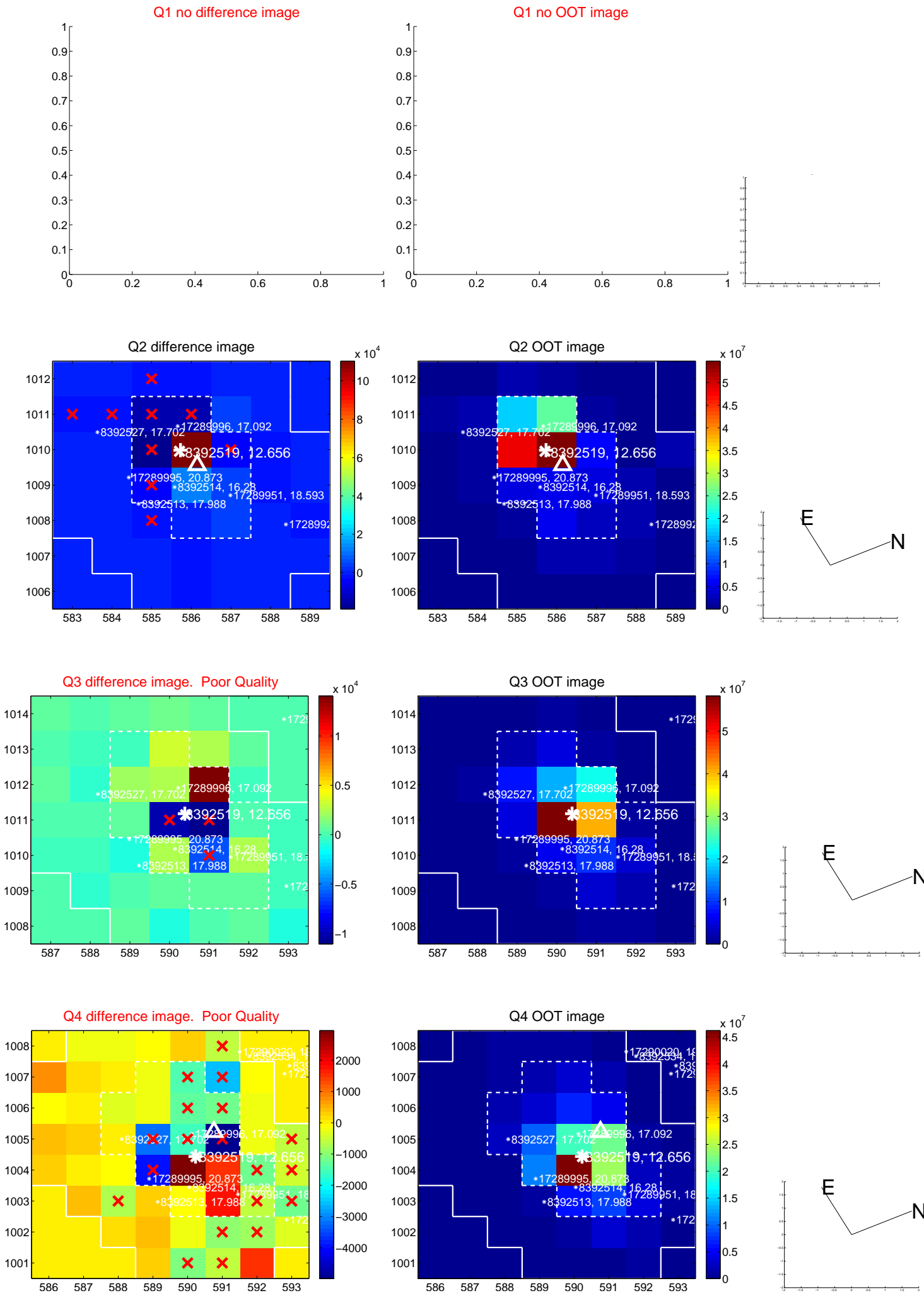
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.201 \pm 0.746$	2.95	$-2.137 \pm 0.855$	$0.526 \pm 0.785$
PRF-fit source offset from KIC position	$2.204 \pm 0.661$	3.34	$-2.108 \pm 0.786$	$0.642 \pm 0.694$
photometric centroid source offset	$0.10 \pm 0.38$	0.26	$-0.01 \pm 0.40$	$0.10 \pm 0.38$

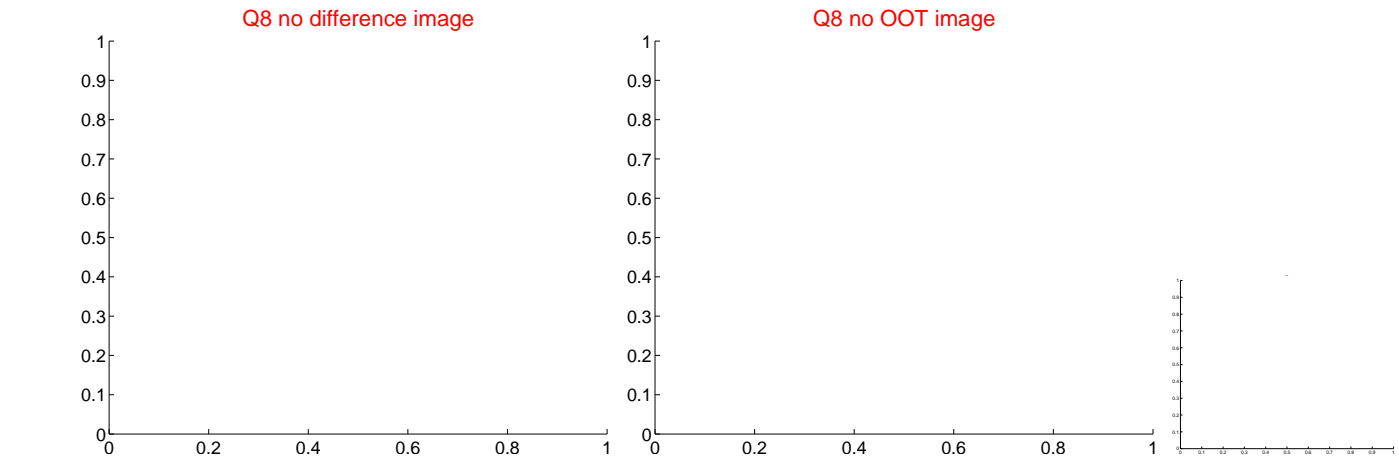
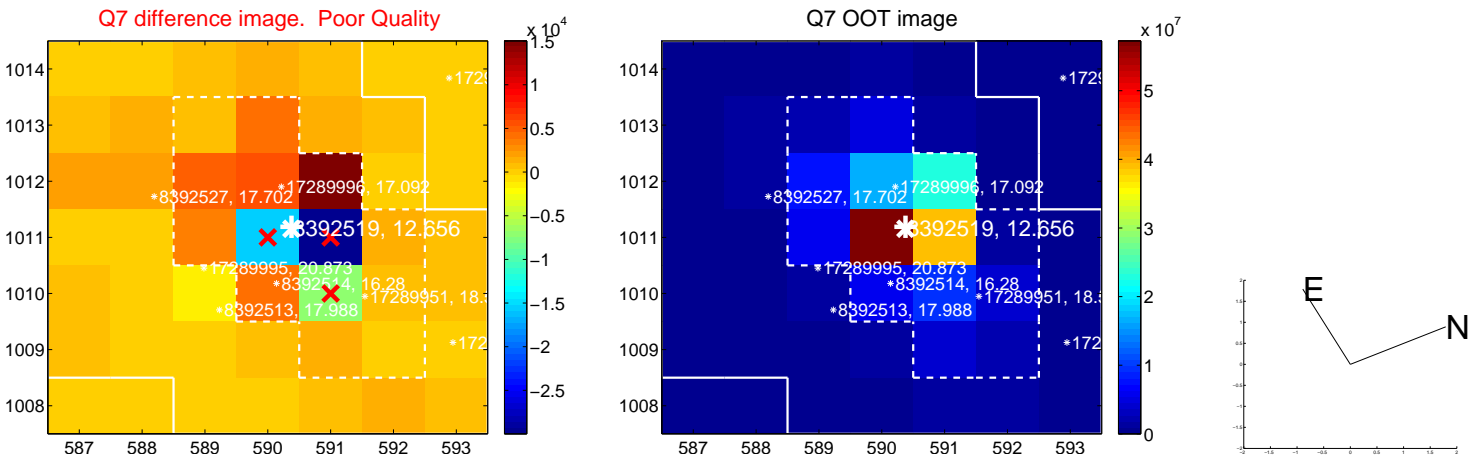
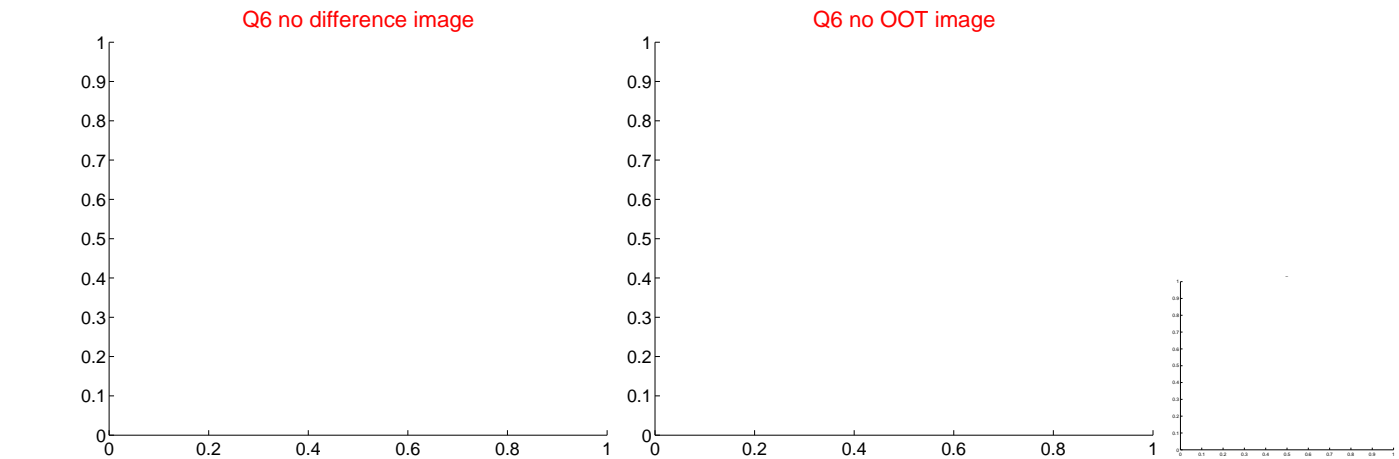
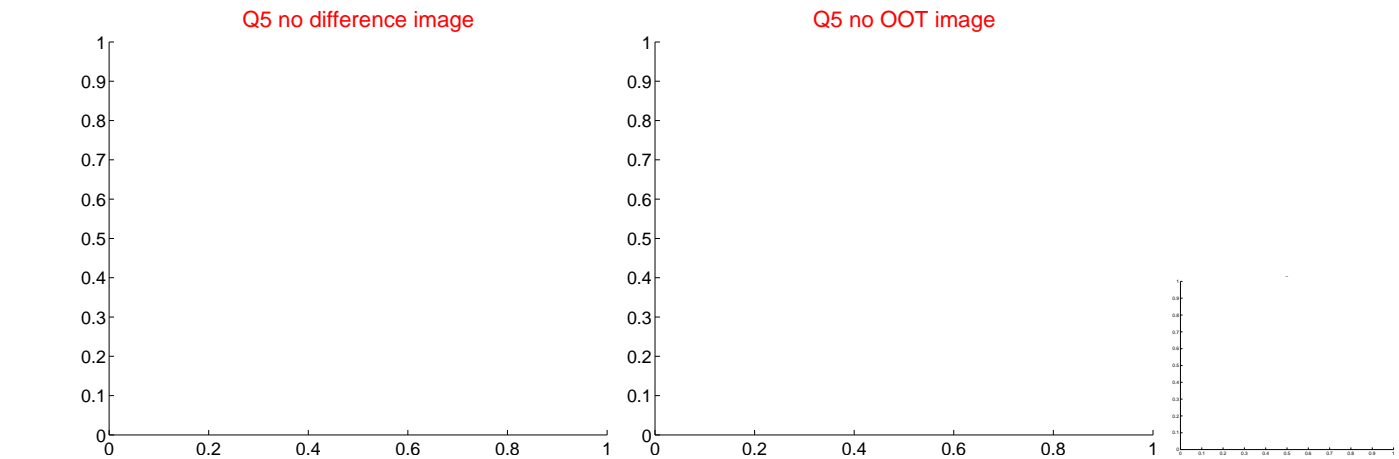


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

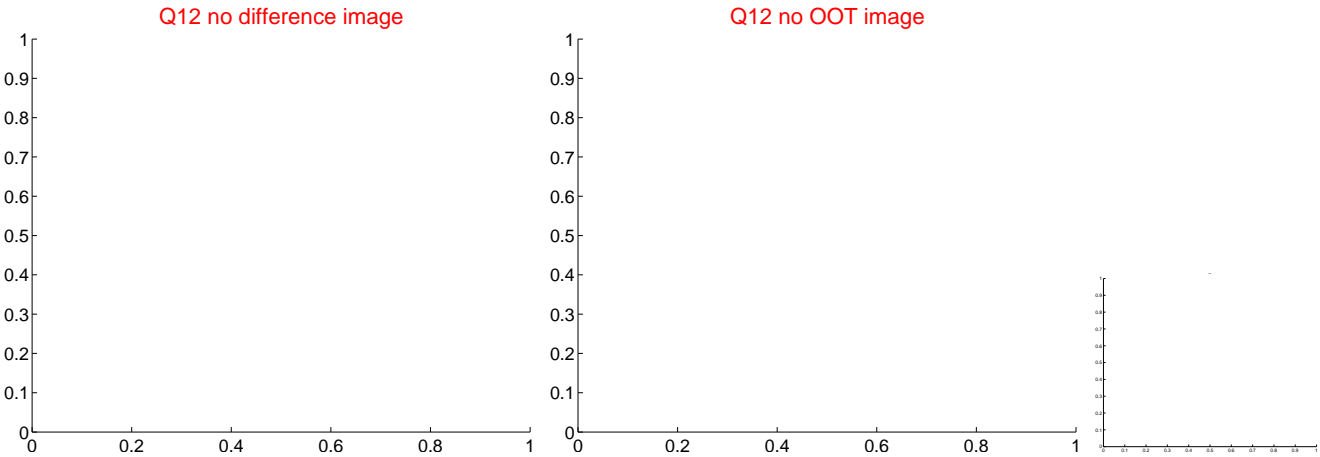
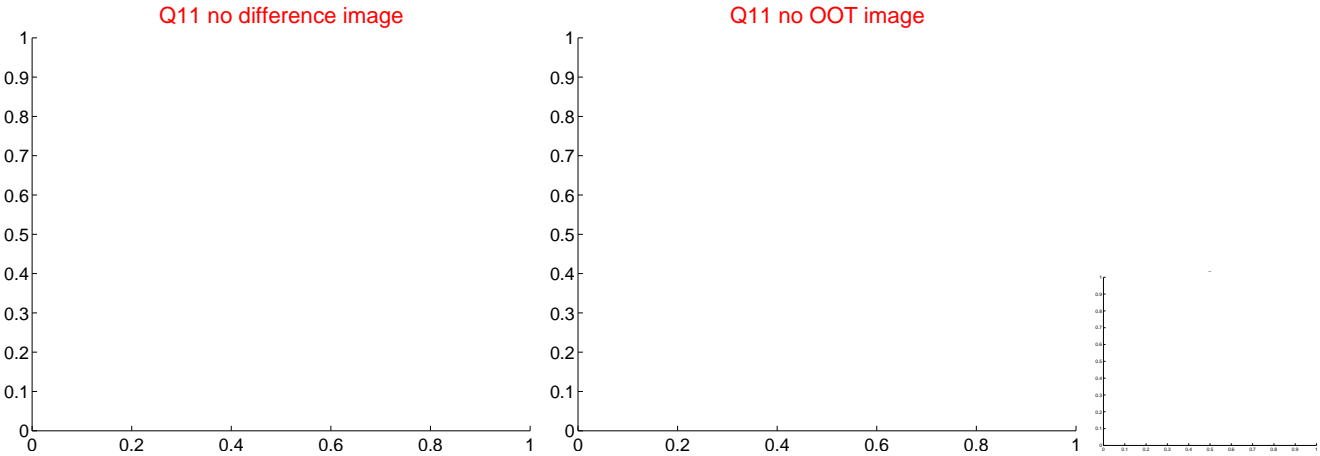
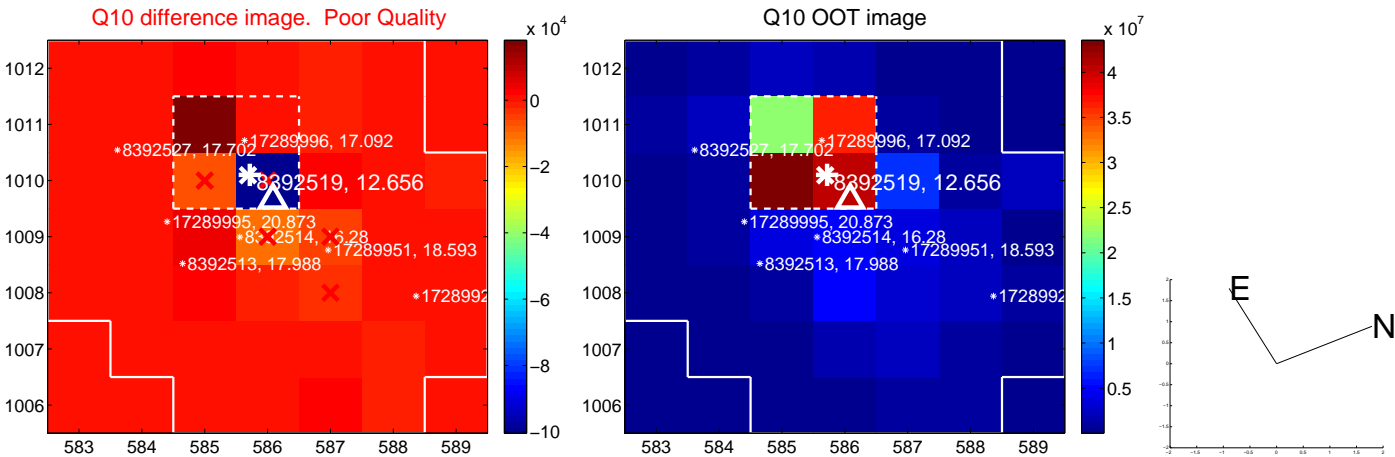
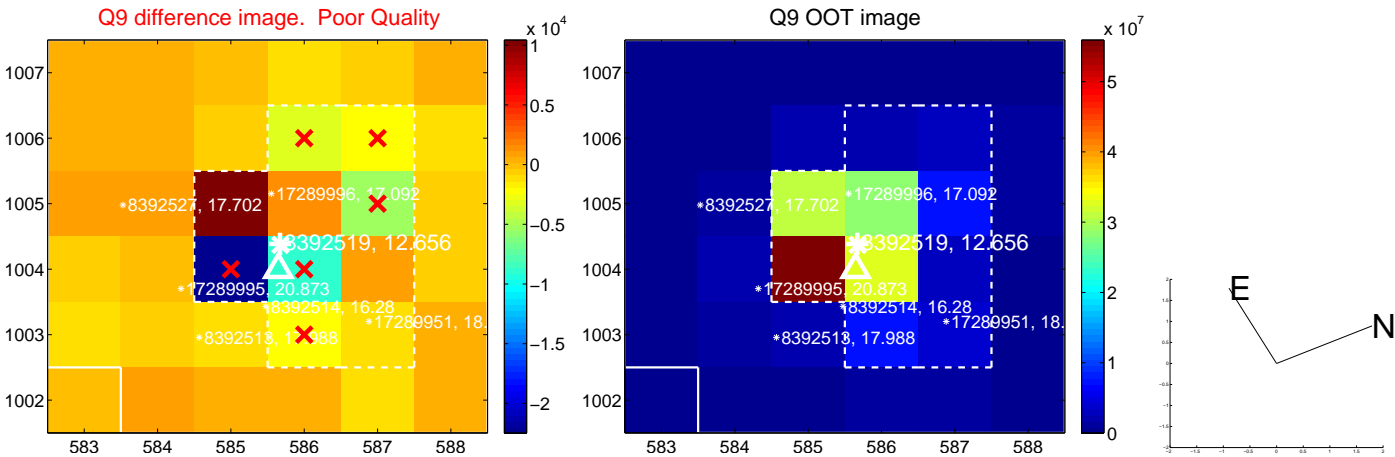
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

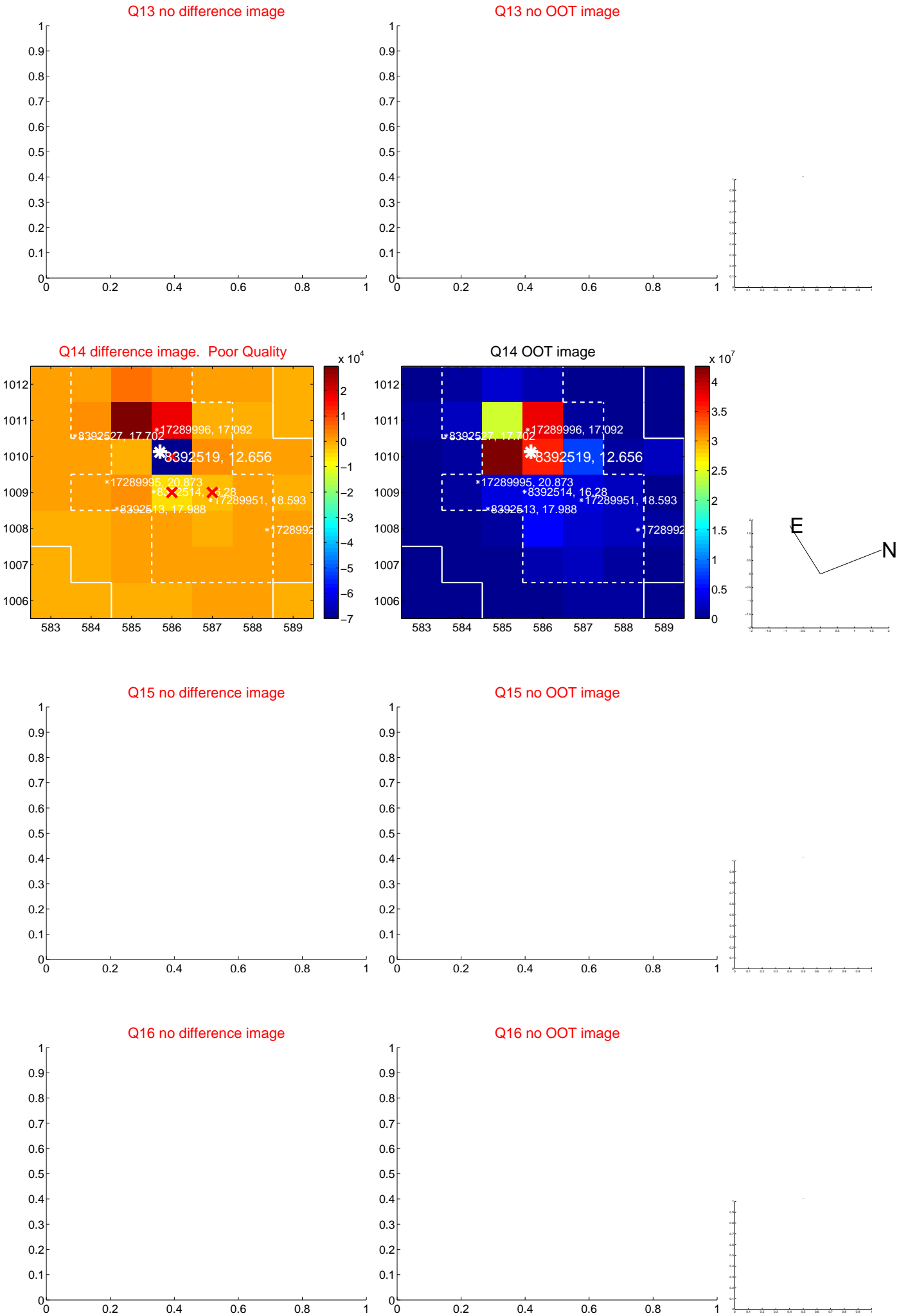


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





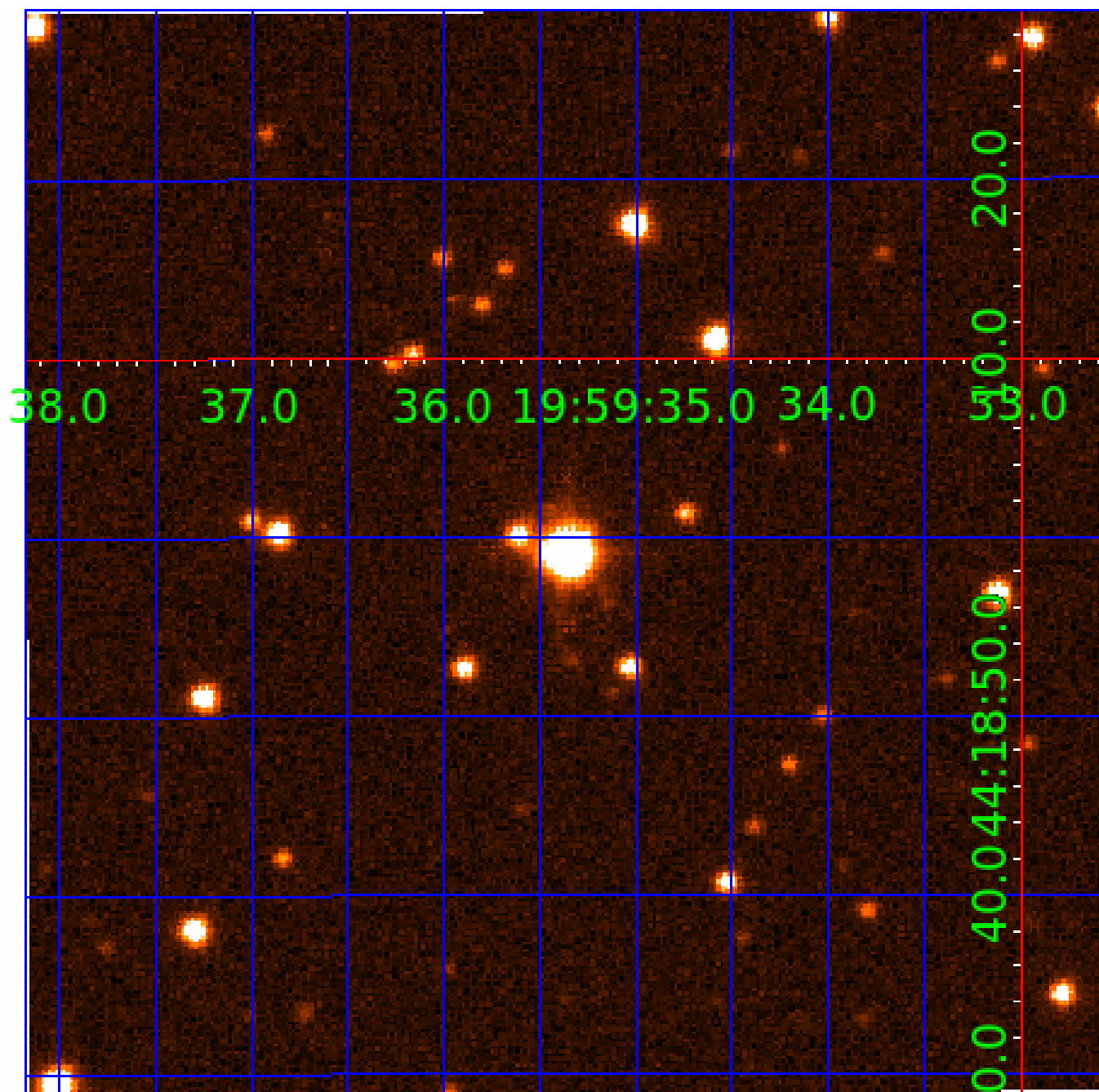
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008392519-01	OBS	No	2.288770	133.644536	24.1	12.052	10.3	8.2	3.26	6760	1.86	12204.28
008392519-02	OBS	No	126.257214	188.163119	324.8	16.500	22.2	11.2	3.26	6760	7.12	58.12
008392519-03	OBS	No	67.007289	147.064248	230.7	18.688	14.2	11.4	3.26	6760	5.68	135.25
008392519-04	OBS	No	450.749107	554.002125	343.3	19.711	10.3	9.1	3.26	6760	11.57	10.65
008392519-05	OBS	No	111.174093	225.691769	294.9	14.373	10.0	11.9	3.26	6760	5.96	68.86
008392519-06	OBS	No	99.450221	187.886477	206.0	8.756	9.8	6.9	3.26	6760	5.11	79.89
008392519-07	OBS	No	107.865281	206.670817	234.6	7.787	8.8	8.7	3.26	6760	5.67	71.69
008392519-08	OBS	No	199.446436	141.675993	241.9	9.055	8.8	7.4	3.26	6760	5.46	31.59
008392519-09	OBS	No	286.372798	388.504274	259.8	6.875	8.9	6.8	3.26	6760	6.09	19.50
008392519-10	OBS	No	318.071035	240.093446	199.3	9.243	8.7	8.5	3.26	6760	5.45	16.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008392519-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008392519-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008392519-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
008392519-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008392519-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008392519-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008392519-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

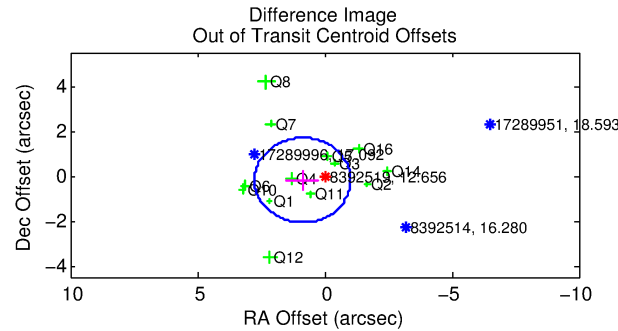
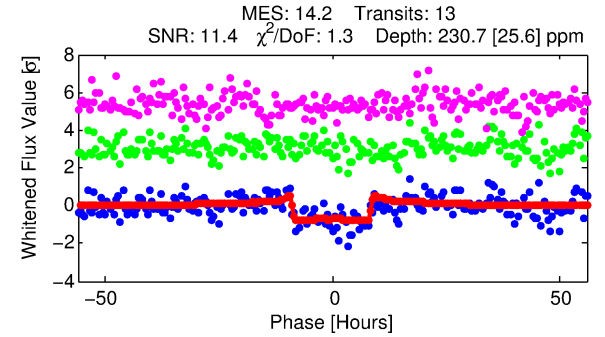
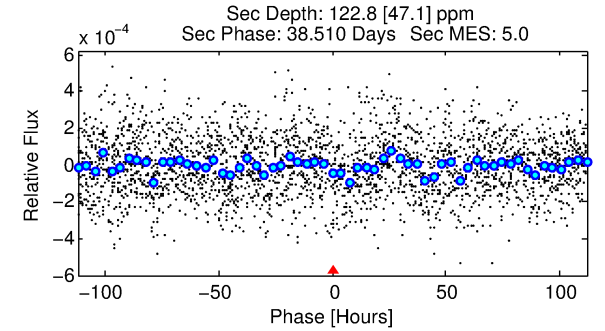
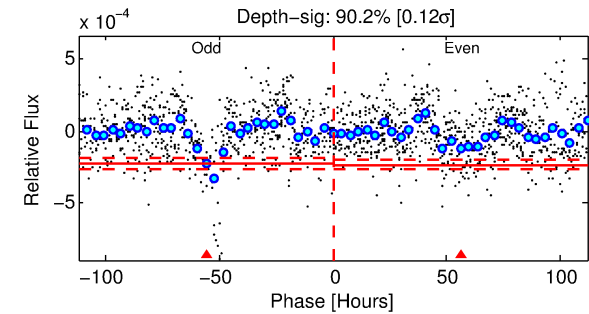
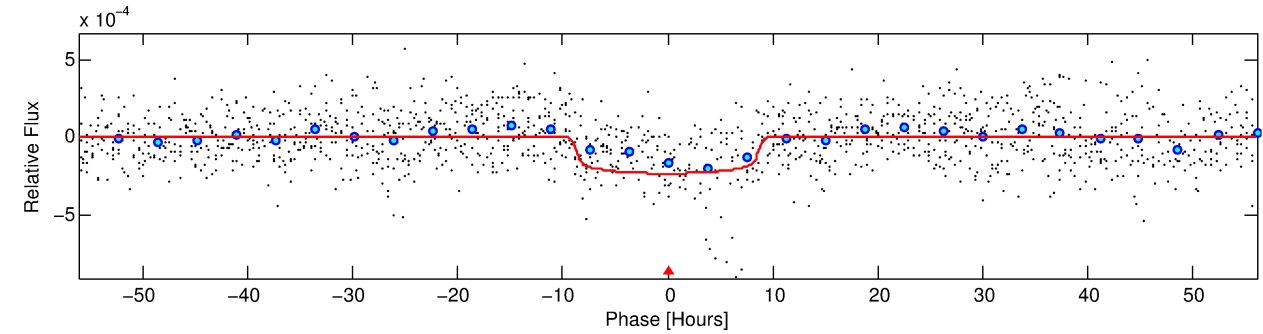
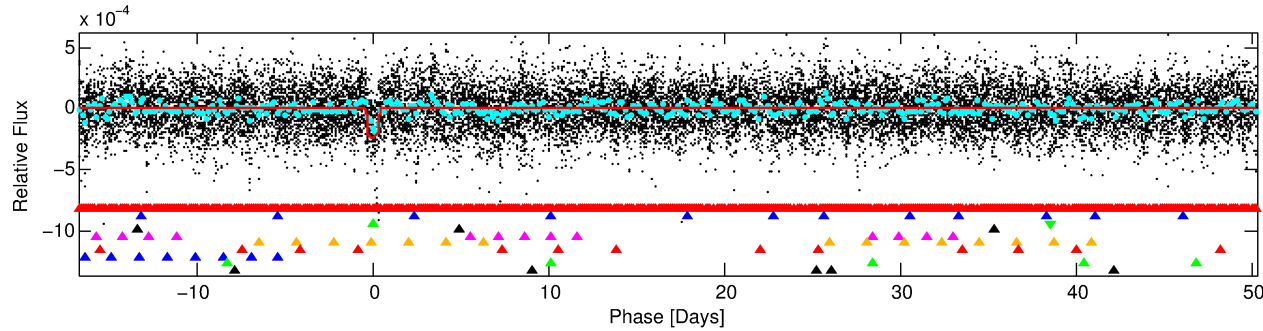
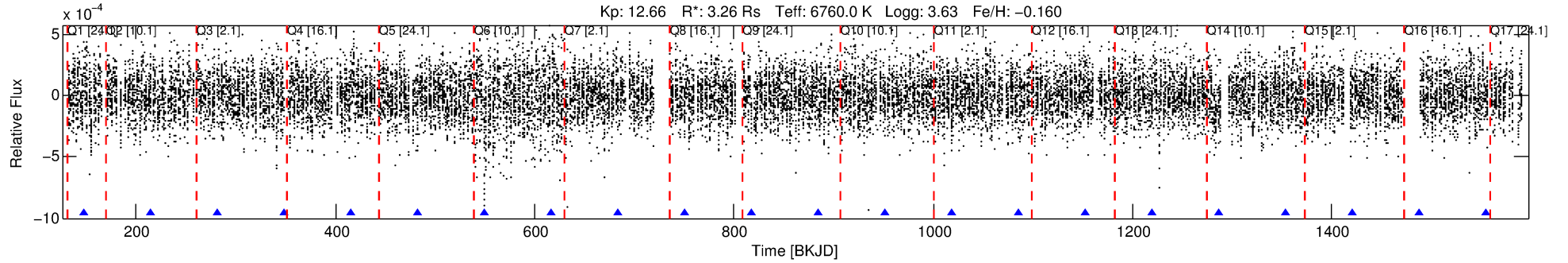
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008392519-03

No Significant Match Found

# DV One-Page Summary

KIC: 8392519 Candidate: 3 of 10 Period: 67.007 d



## DV Fit Results:

Period = 67.00729 [0.00160] d  
Epoch = 147.0642 [0.0195] BKJD  
Rp/R\* = 0.0160 [0.0014]  
a/R\* = 13.95 [4.78]  
b = 0.88 [0.09]  
Seff = 135.25 [77.36]  
Teq = 870 [124] K  
Rp = 5.68 [2.18] Re  
a = 0.3832 [0.1347] AU  
Ag = 307.76 [214.11] [1.43 $\sigma$ ]  
Teffp = 5631 [622] K [7.51 $\sigma$ ]

## DV Diagnostic Results:

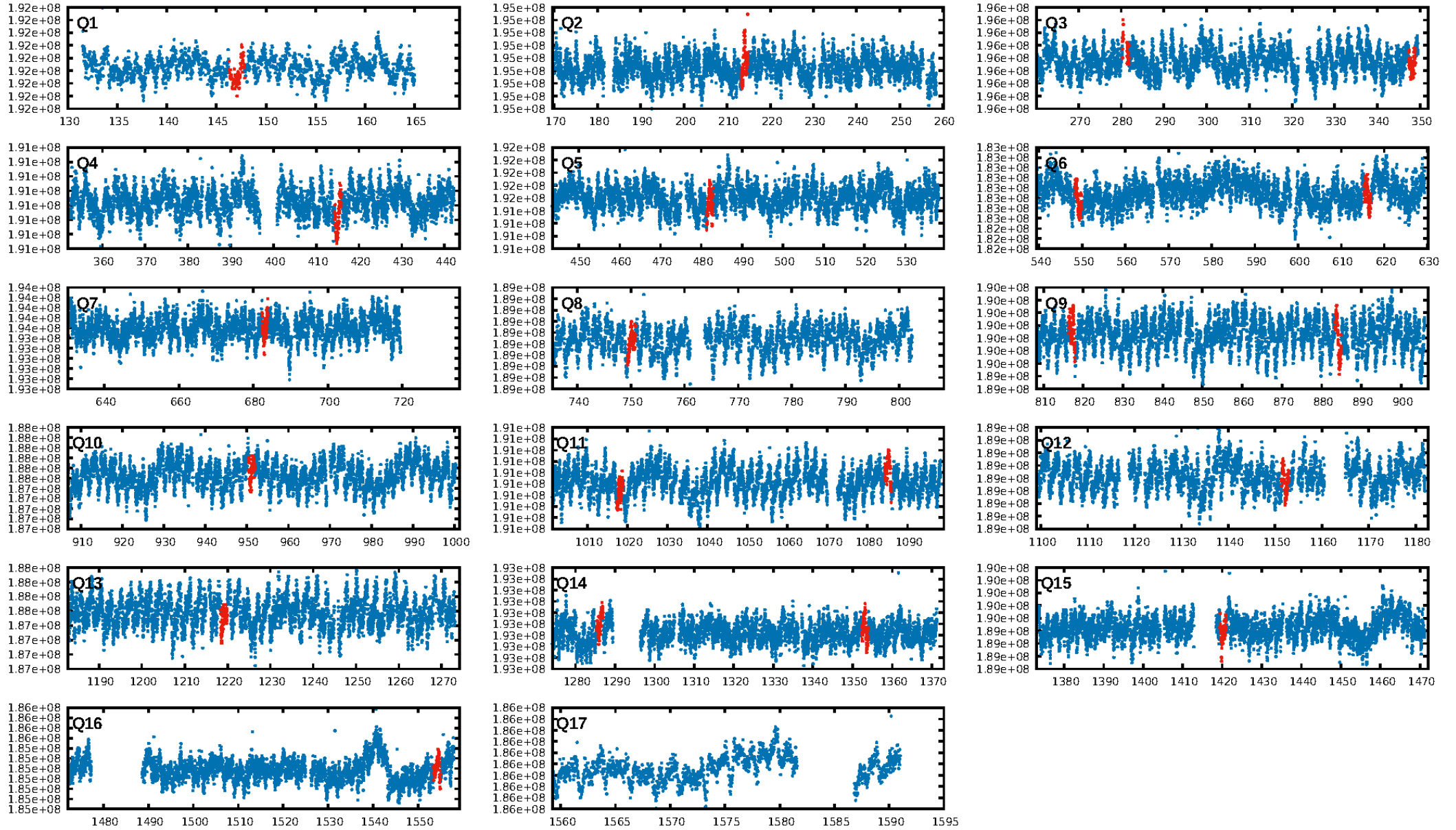
ShortPeriod-sig: 100.0% [69.85 $\sigma$ ]  
LongPeriod-sig: 100.0% [37.73 $\sigma$ ]  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [13/13]  
GhostDiagnostic-chr: -0.02909  
Centroid-sig: 76.1%  
Centroid-so: 0.298 arcsec [0.84 $\sigma$ ]  
OotOffset-rm: 0.892 arcsec [1.42 $\sigma$ ]  
OotOffset-st: 4/3/4/2 [13]  
KicOffset-rm: 0.977 arcsec [1.55 $\sigma$ ]  
KicOffset-st: 4/3/4/2 [13]  
DiffImageQuality-fgm: 0.23 [3/13]  
DiffImageOverlap-fno: 0.00 [0/14]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:17:44 Z

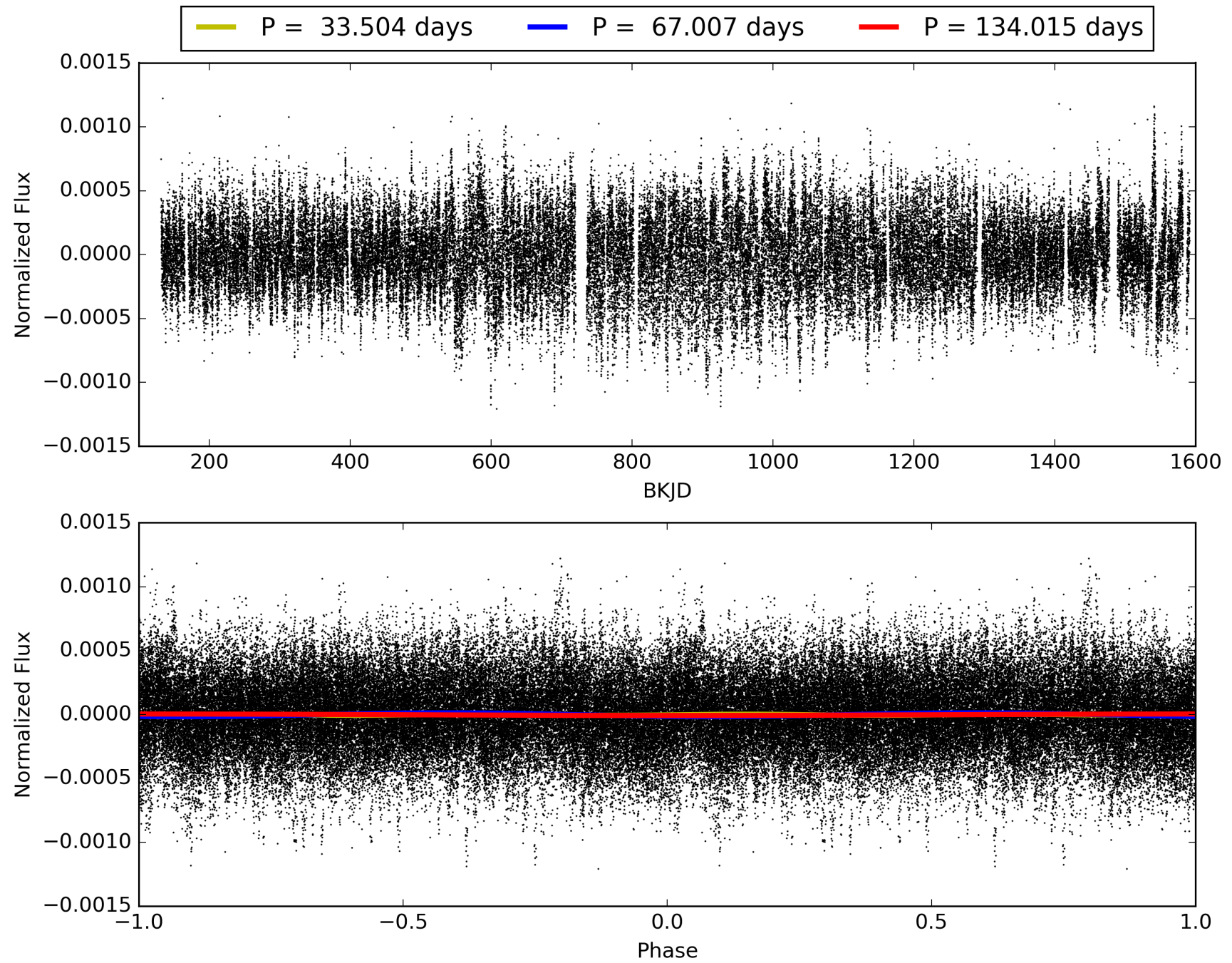
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 008392519-03, PDC Light Curves

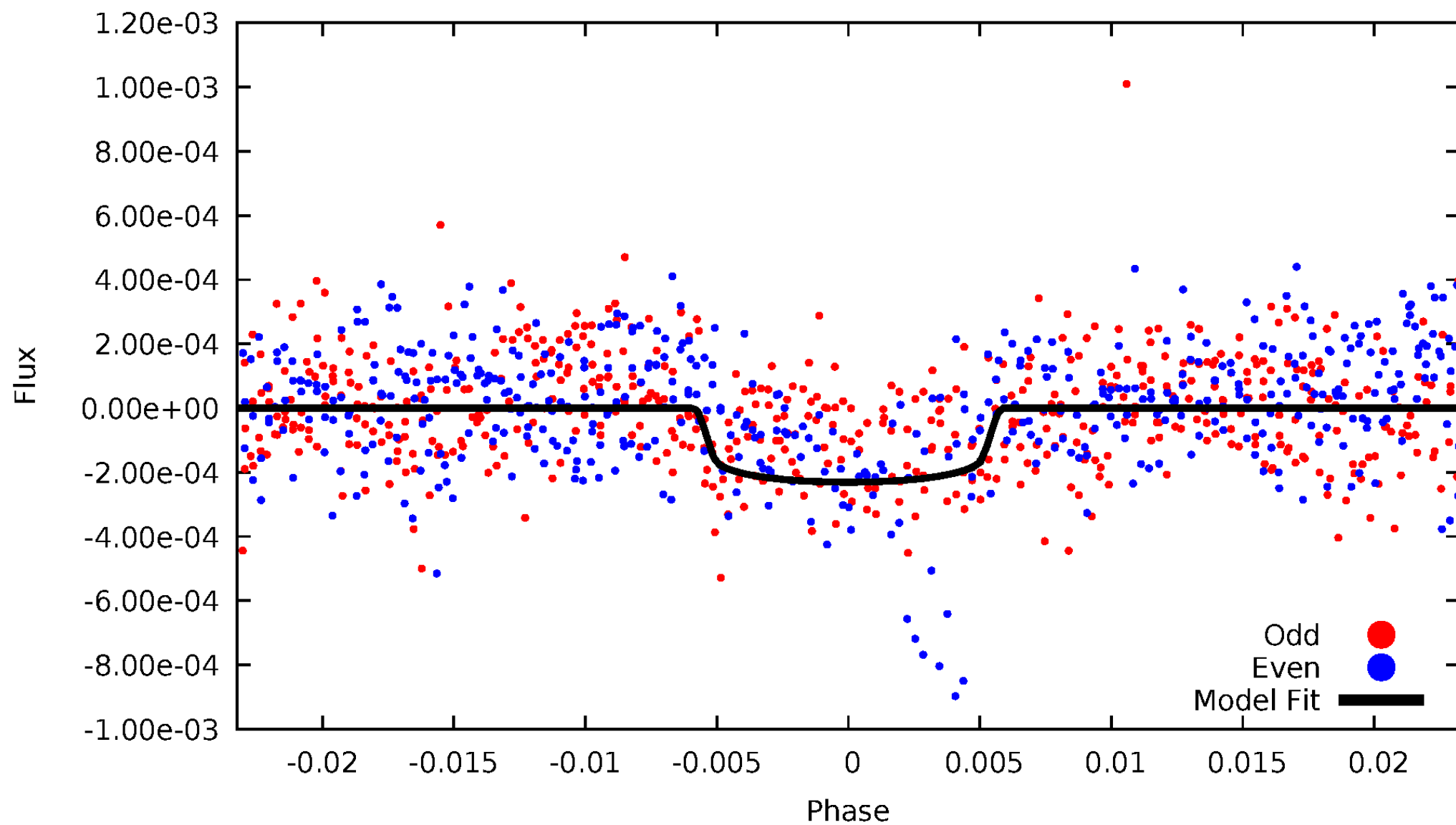


TCE 008392519-03



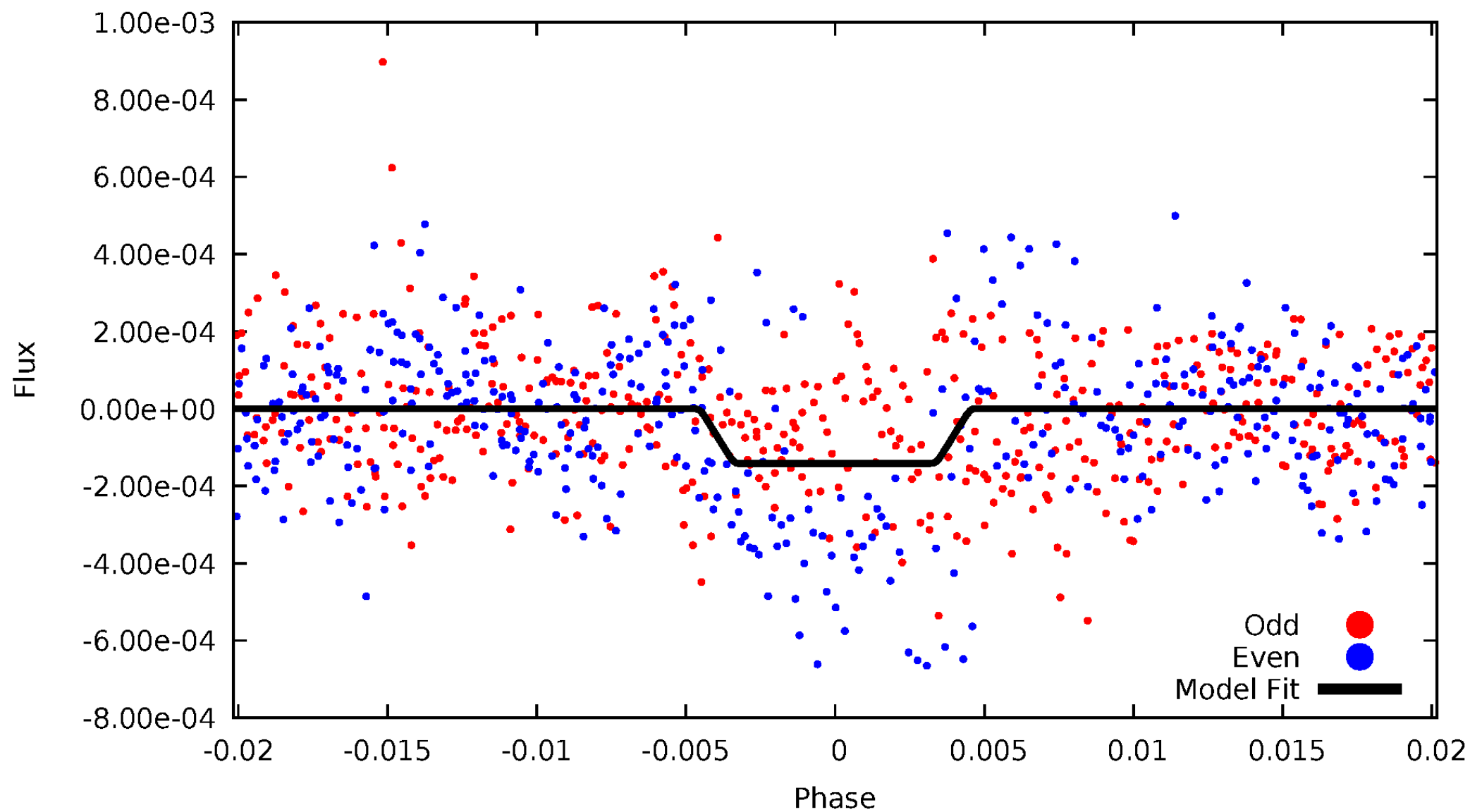
# DV Odd/Even

TCE 008392519-03



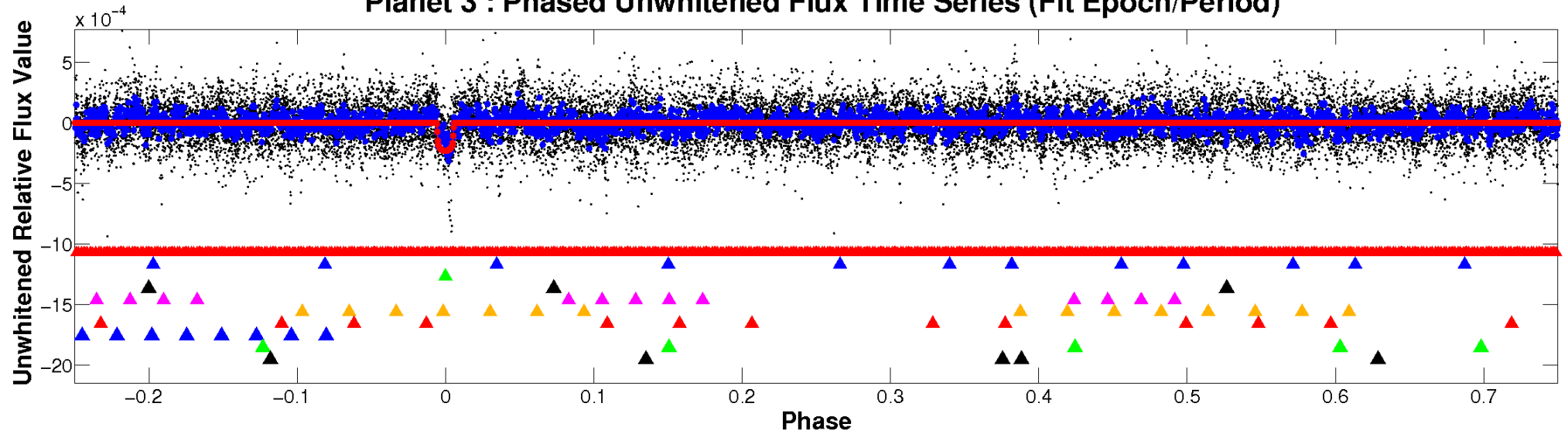
# ALT Odd/Even

TCE 008392519-03

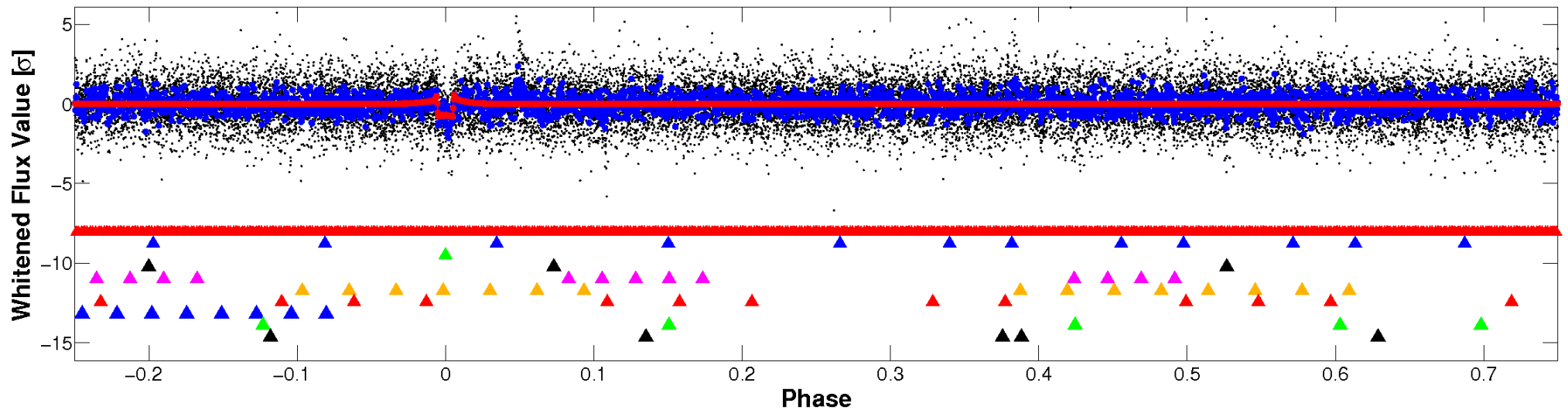


# Non-Whitened Vs. Whitened Light Curve

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



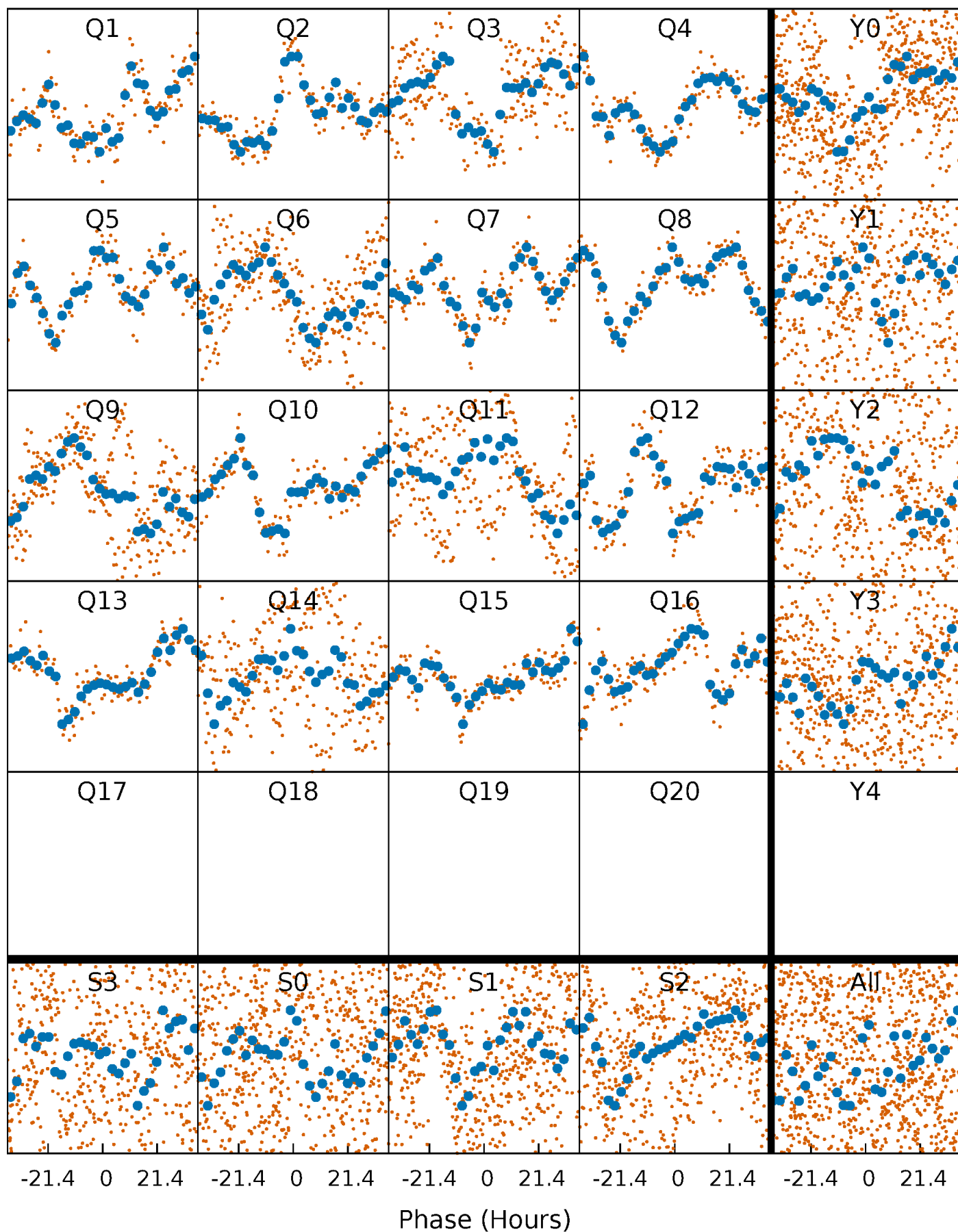
Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)





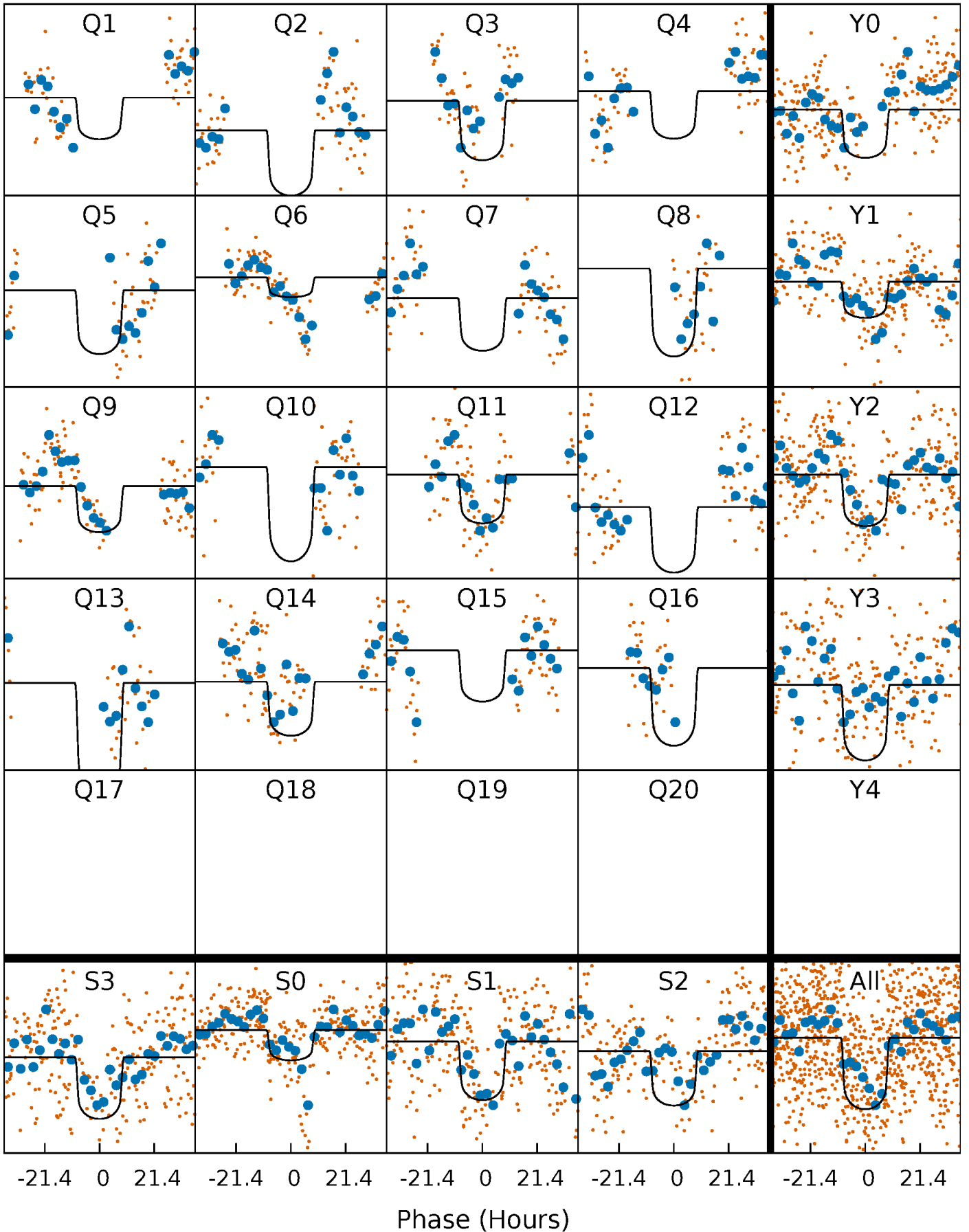
# PDC Quarter-Phased Transit Curves

TCE 008392519-03 P= 67.007289 Days  $T_0=147.064248$  (BKJD)



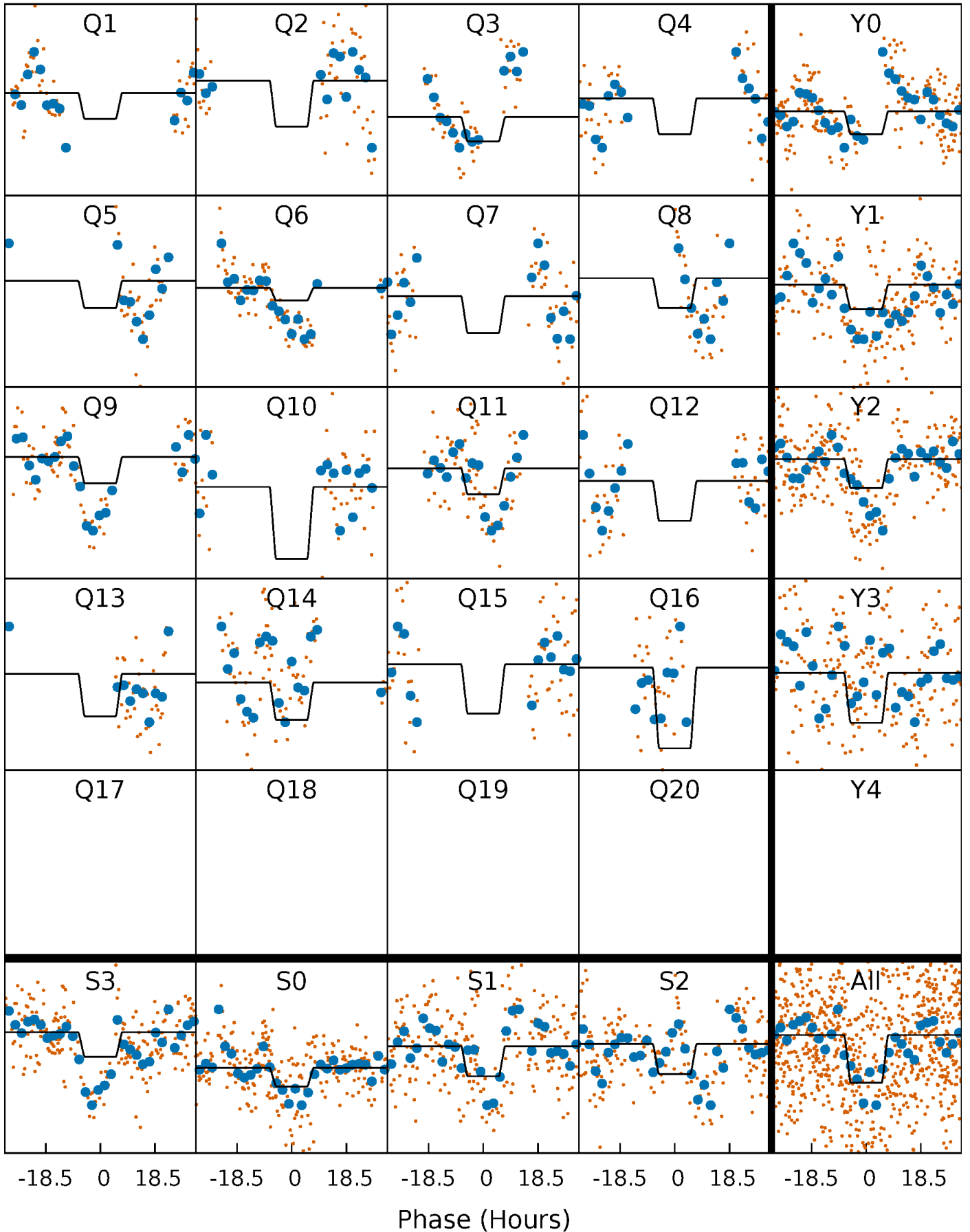
# DV Quarter-Phased Transit Curves

TCE 008392519-03   P= 67.007289 Days    $T_0=147.064248$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

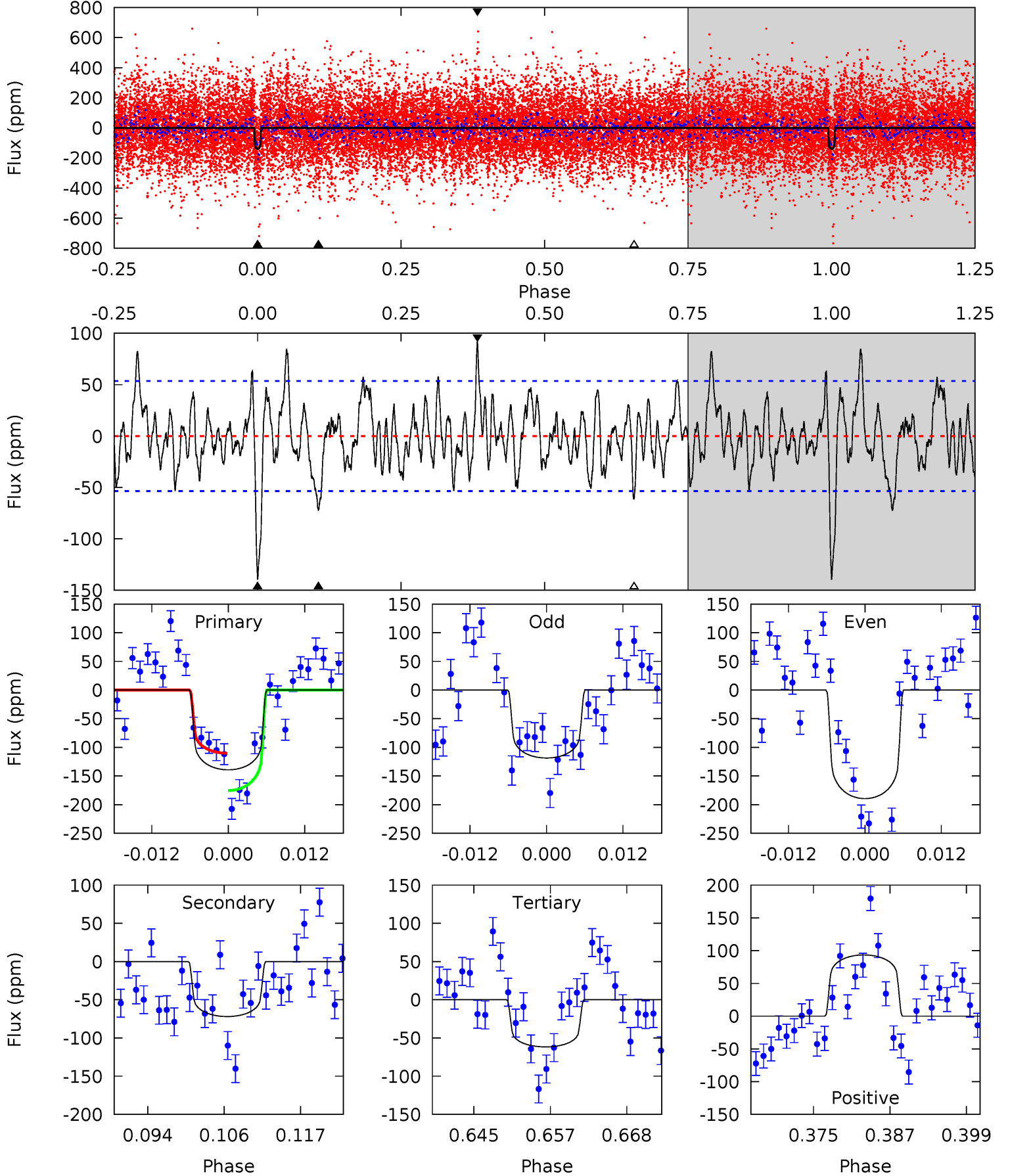
TCE 008392519-03 P= 66.997977 Days  $T_0=147.105183$  (BKJD)



# DV Model-Shift Uniqueness Test

008392519-03, P = 67.007289 Days, E = 80.056959 Days

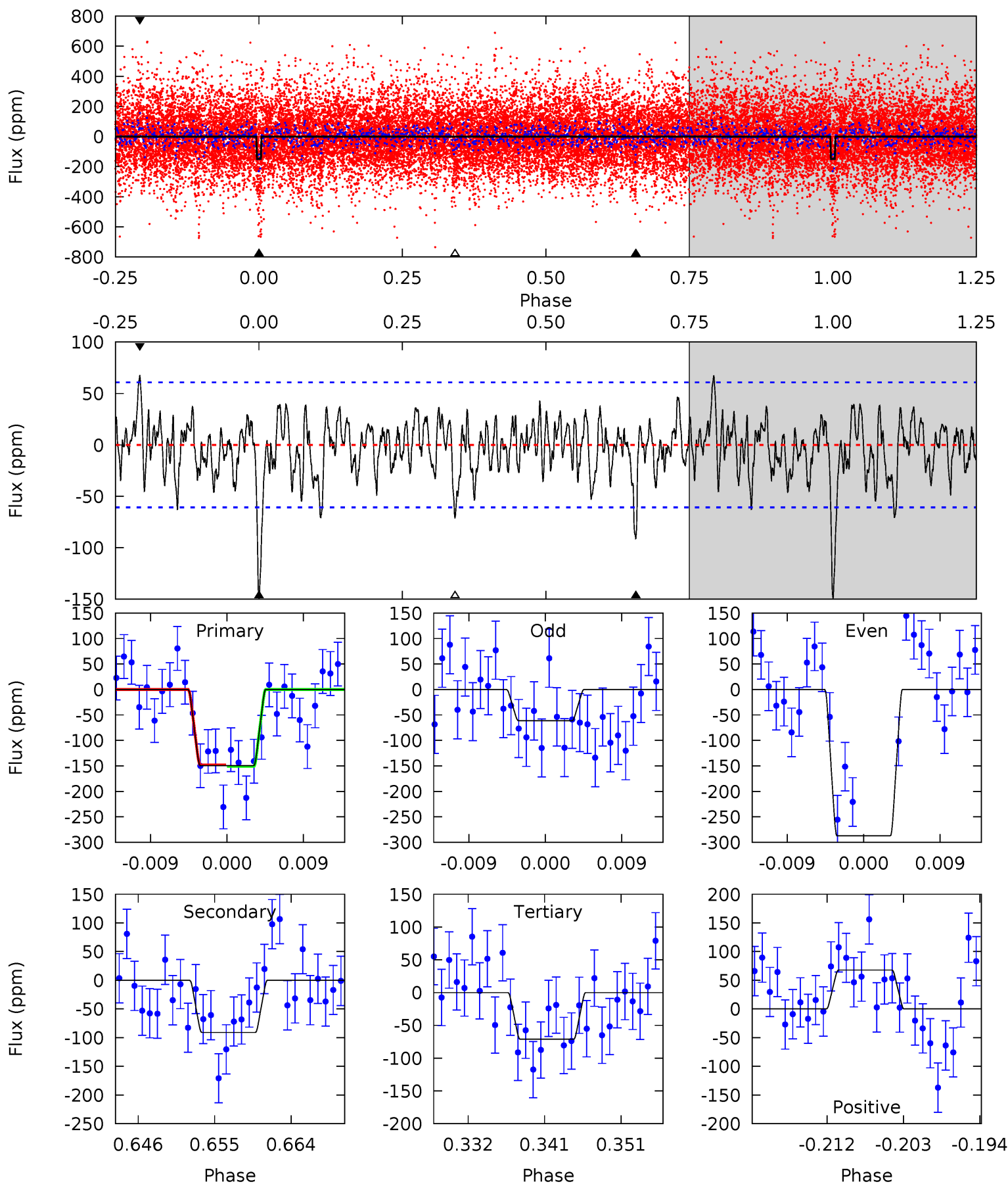
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	6.72	5.76	8.72	5.00	2.52	2.34	7.25	4.28	0.96	-2.00	3.26	1.32	0.40	3.01



# Alt Model-Shift Uniqueness Test

008392519-03, P = 66.997977 Days, E = 80.107206 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
12.4	7.54	5.91	5.62	5.04	2.60	1.81	6.46	6.76	1.64	1.93	9.22	-1.31	0.31	0.13





### Stellar Parameters For KIC 008392519

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6760^{+187}_{-234}$	$3.635^{+0.323}_{-0.057}$	$-0.160^{+0.300}_{-0.250}$	$3.258^{+0.406}_{-1.218}$	$1.670^{+0.221}_{-0.332}$	$0.068^{+0.157}_{-0.014}$
	+3%/-3%	+9%/-2%	+188%/-156%	+12%/-37%	+13%/-20%	+230%/-20%
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 008392519-03 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-72 \pm 11$	$5.39^{+0.78}_{-1.03}$	$1184^{+65}_{-109}$	$4972^{+296}_{-251}$	$203^{+102}_{-51}$
Alt.	$-91 \pm 12$	$3.98^{+0.71}_{-0.82}$	$1181^{+65}_{-109}$	$6010^{+491}_{-373}$	$469^{+258}_{-134}$

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

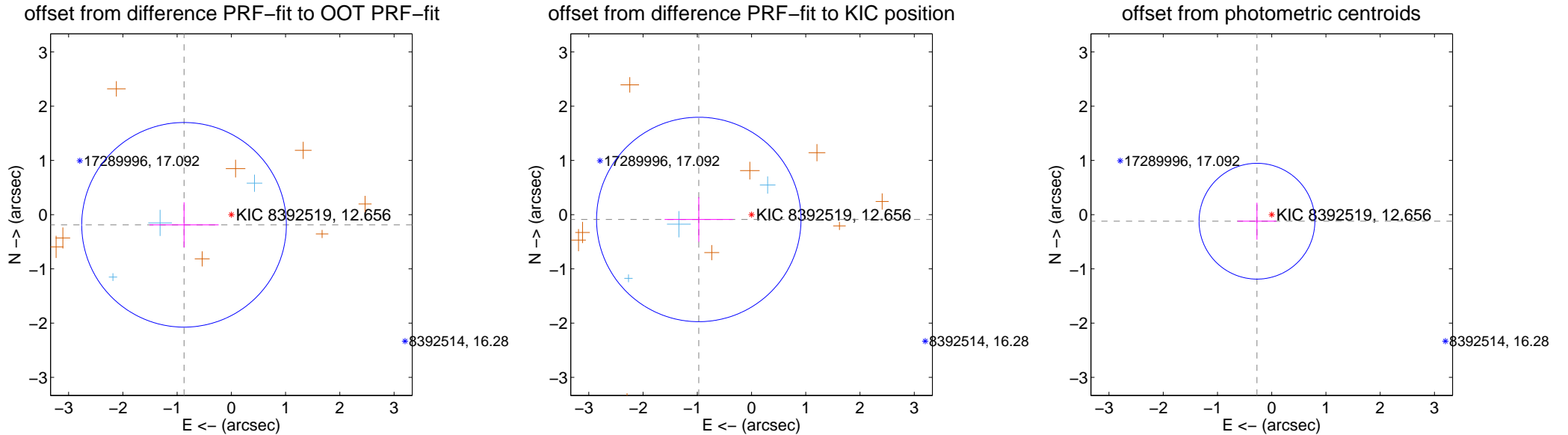
## DV Centroid Data

Supplemental centroid analysis for 008392519-03. Kepler magnitude: 12.66. Transit SNR 11.43

There are 3 quarters with good PRF difference image offsets

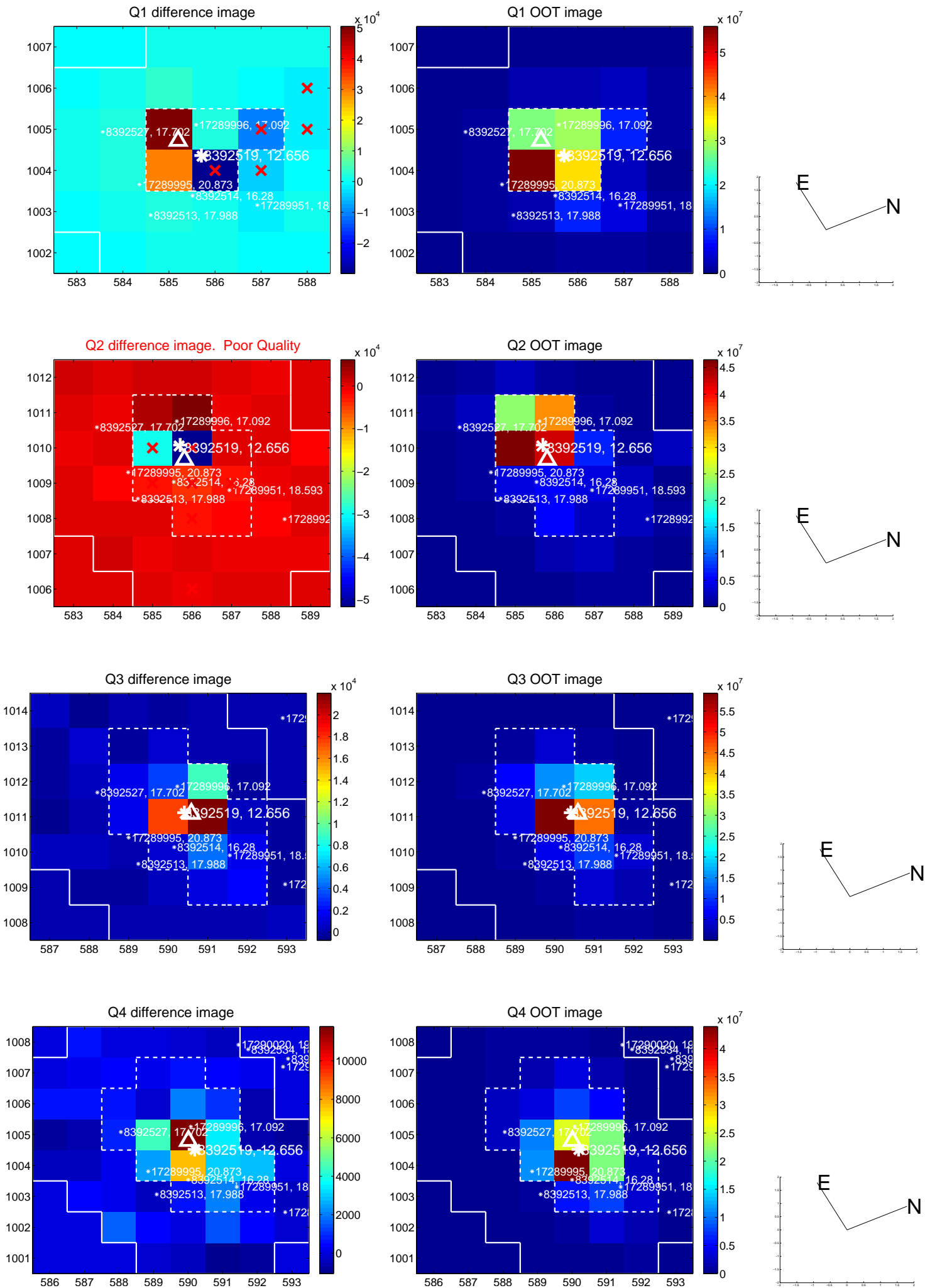
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.892 \pm 0.629$	1.42	$0.872 \pm 0.637$	$-0.188 \pm 0.416$
PRF-fit source offset from KIC position	$0.977 \pm 0.628$	1.55	$0.973 \pm 0.630$	$-0.089 \pm 0.411$
photometric centroid source offset	$0.30 \pm 0.36$	0.84	$0.27 \pm 0.36$	$-0.12 \pm 0.34$

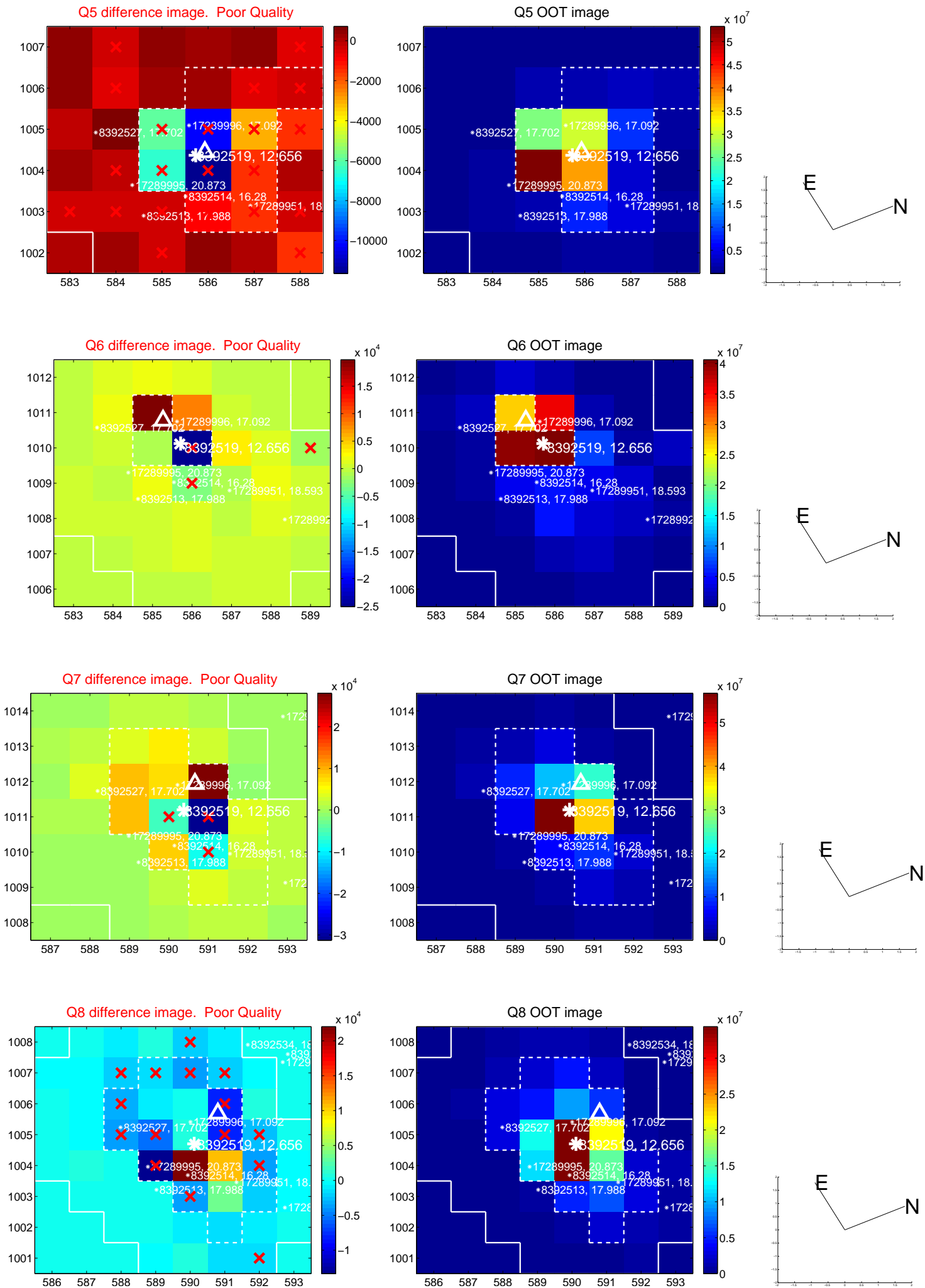


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

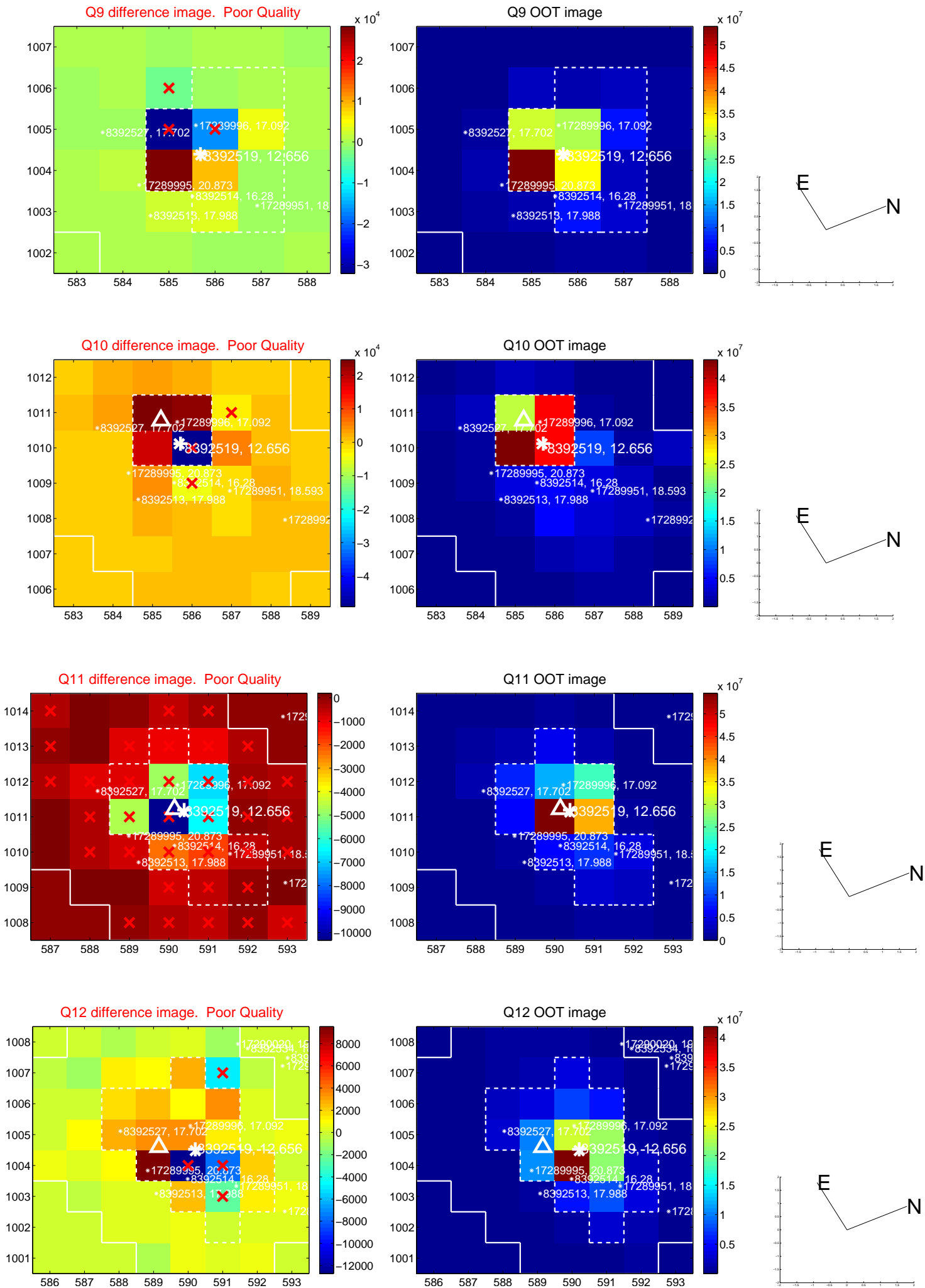
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



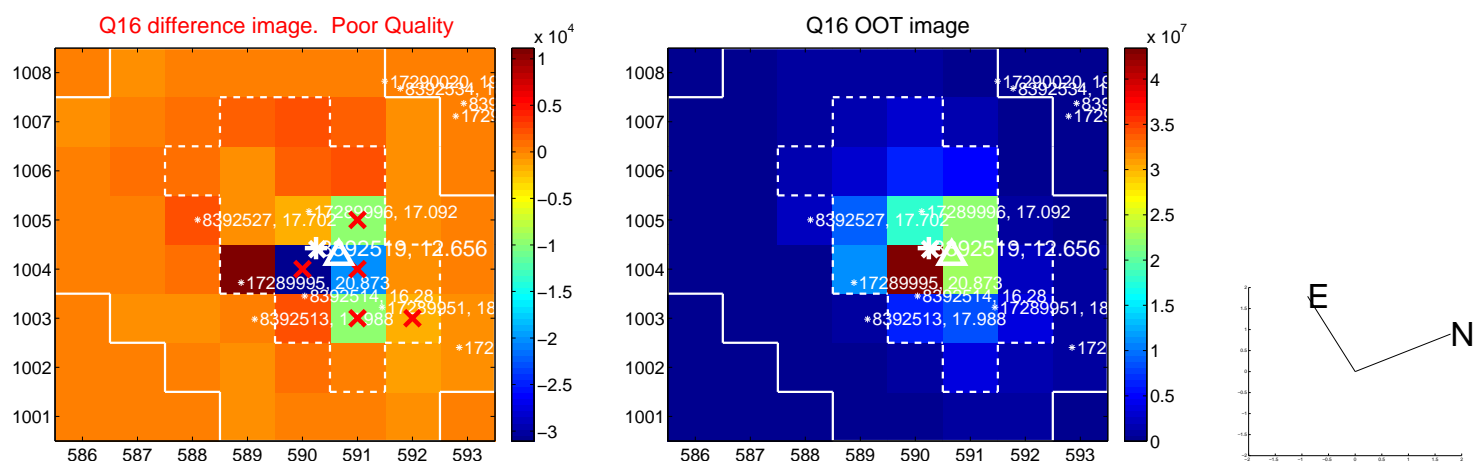
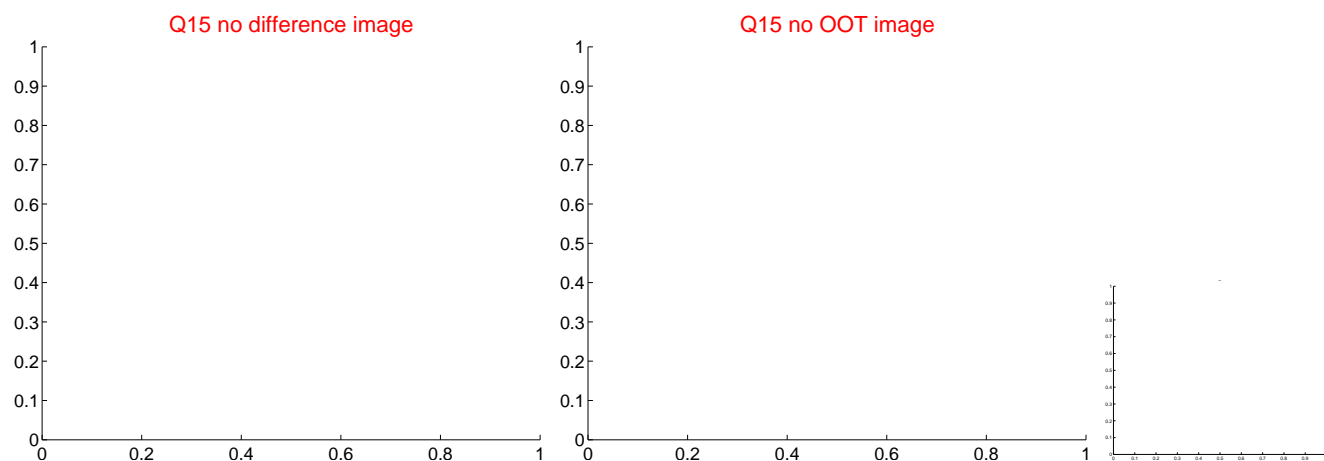
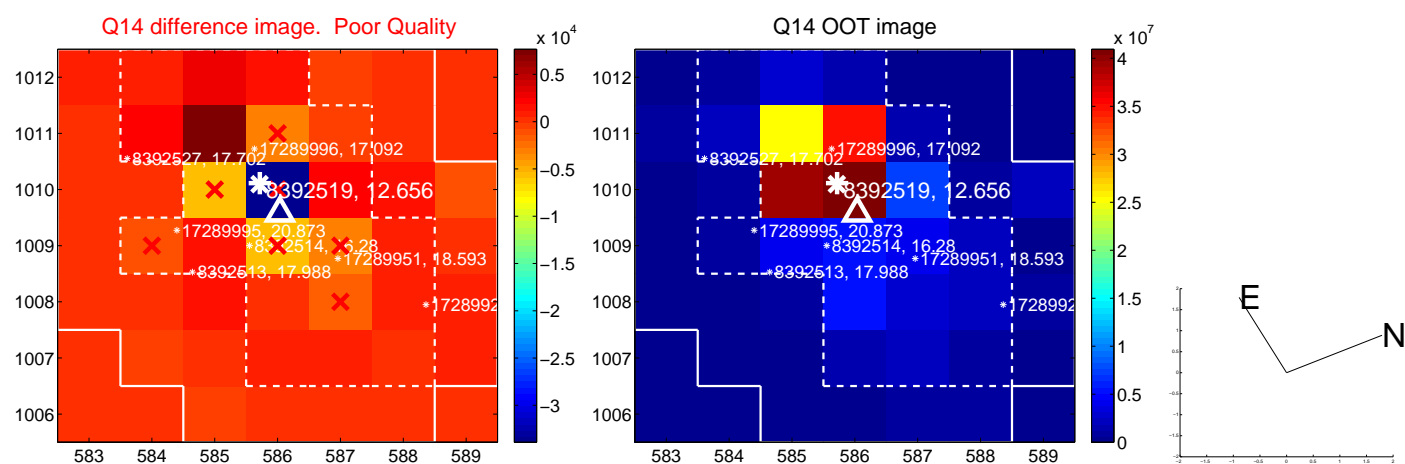
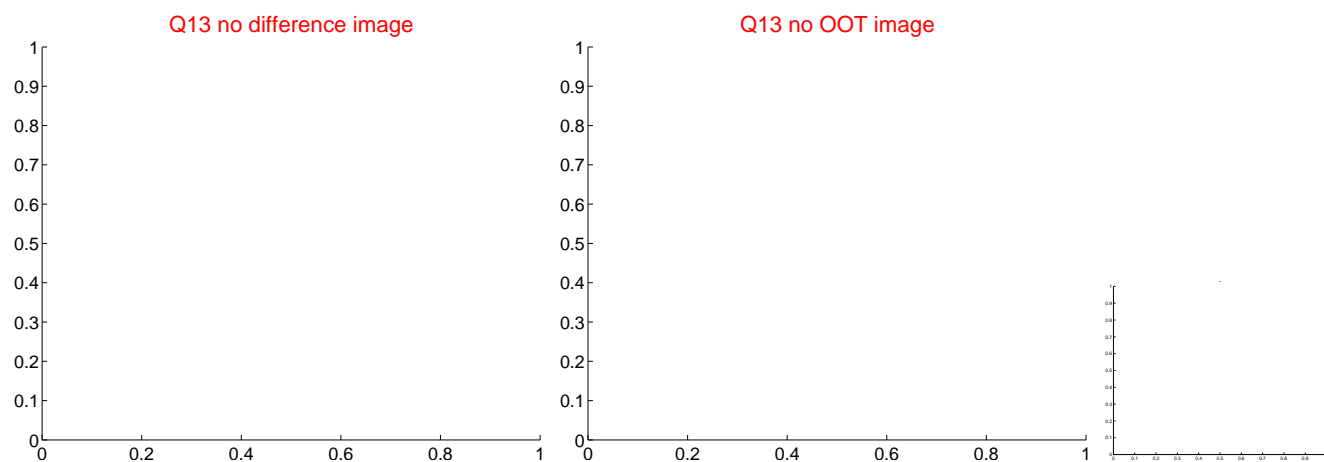
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

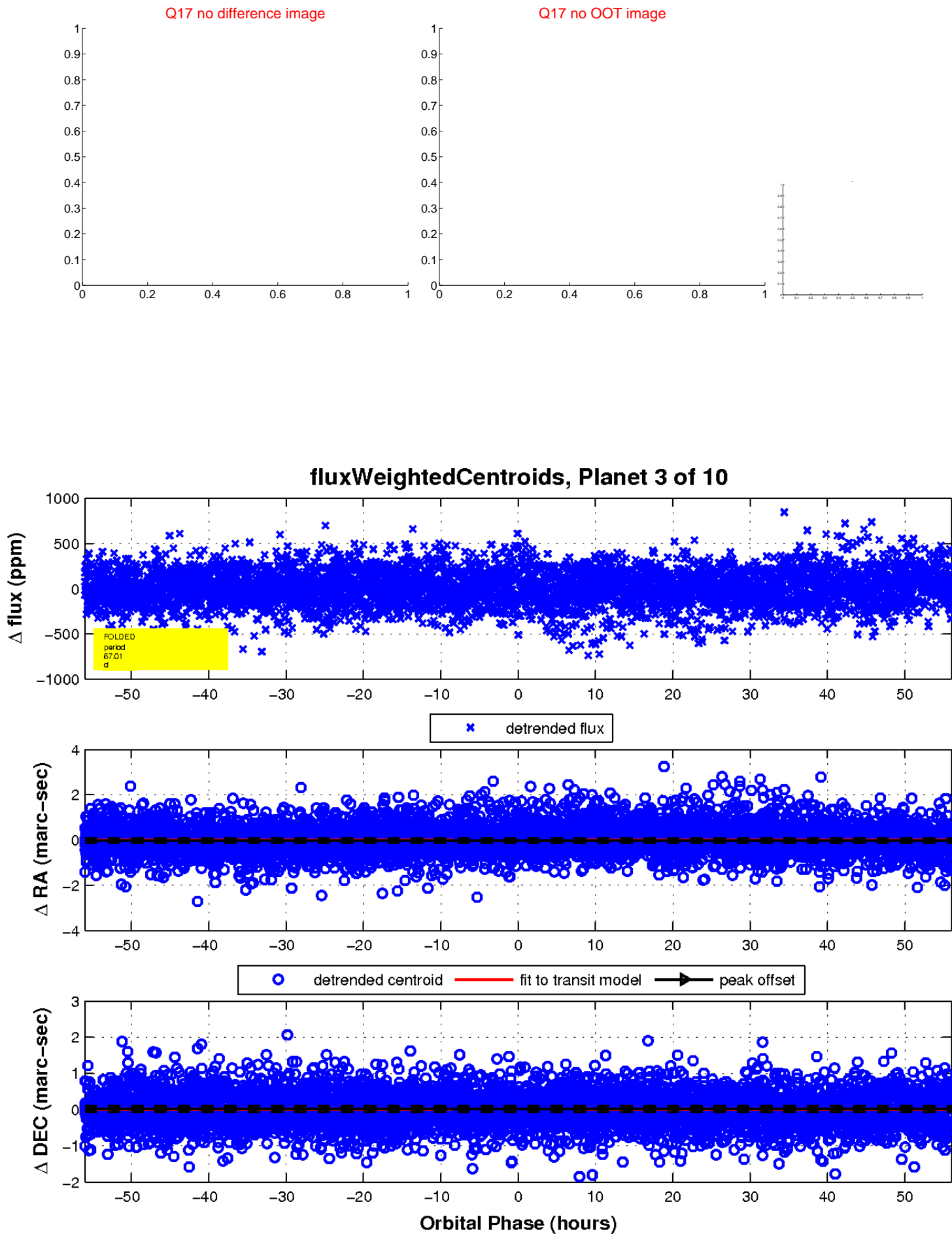


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



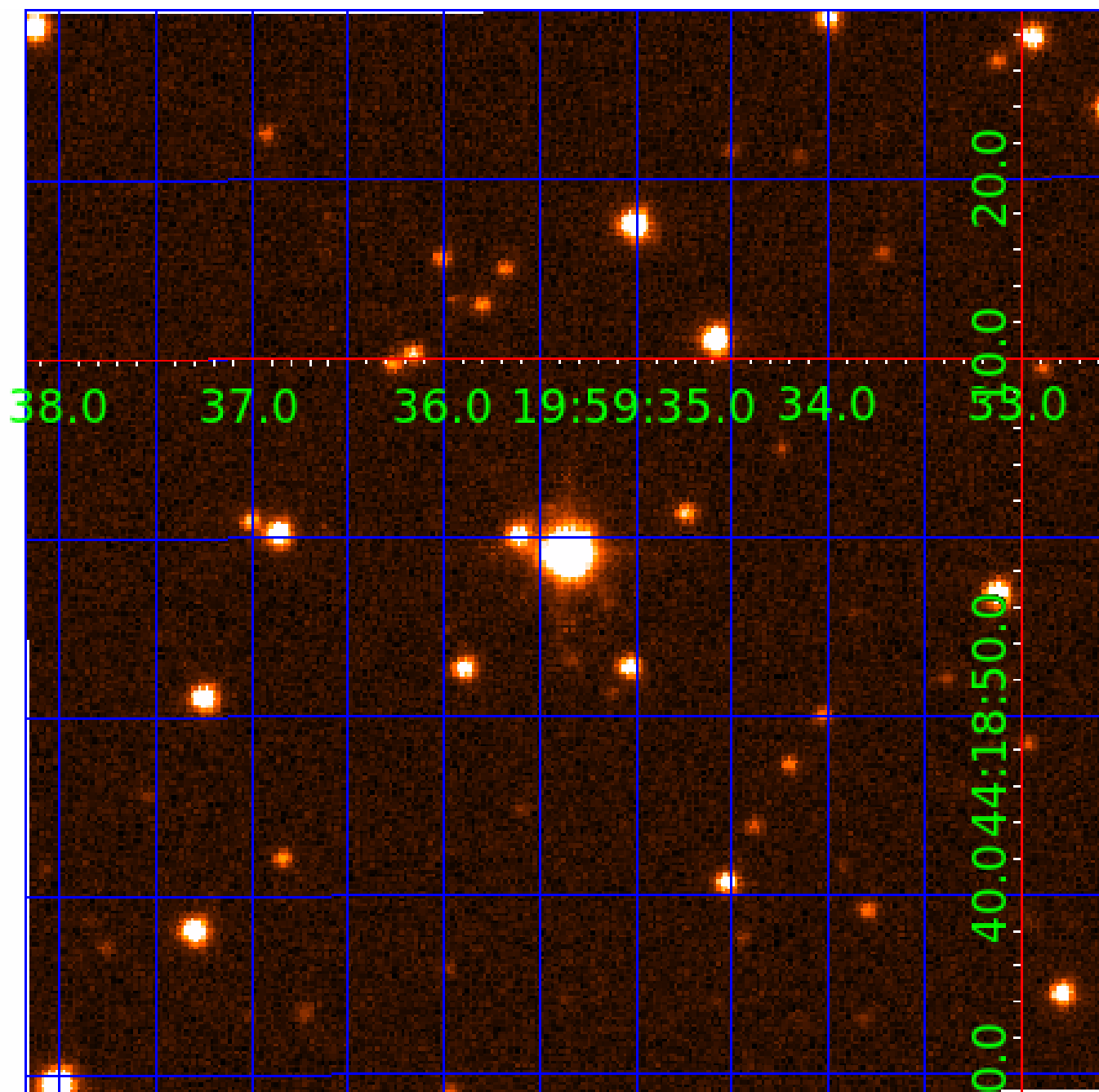


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008392519-01	OBS	No	2.288770	133.644536	24.1	12.052	10.3	8.2	3.26	6760	1.86	12204.28
008392519-02	OBS	No	126.257214	188.163119	324.8	16.500	22.2	11.2	3.26	6760	7.12	58.12
008392519-03	OBS	No	67.007289	147.064248	230.7	18.688	14.2	11.4	3.26	6760	5.68	135.25
008392519-04	OBS	No	450.749107	554.002125	343.3	19.711	10.3	9.1	3.26	6760	11.57	10.65
008392519-05	OBS	No	111.174093	225.691769	294.9	14.373	10.0	11.9	3.26	6760	5.96	68.86
008392519-06	OBS	No	99.450221	187.886477	206.0	8.756	9.8	6.9	3.26	6760	5.11	79.89
008392519-07	OBS	No	107.865281	206.670817	234.6	7.787	8.8	8.7	3.26	6760	5.67	71.69
008392519-08	OBS	No	199.446436	141.675993	241.9	9.055	8.8	7.4	3.26	6760	5.46	31.59
008392519-09	OBS	No	286.372798	388.504274	259.8	6.875	8.9	6.8	3.26	6760	6.09	19.50
008392519-10	OBS	No	318.071035	240.093446	199.3	9.243	8.7	8.5	3.26	6760	5.45	16.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008392519-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008392519-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008392519-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
008392519-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008392519-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008392519-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008392519-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

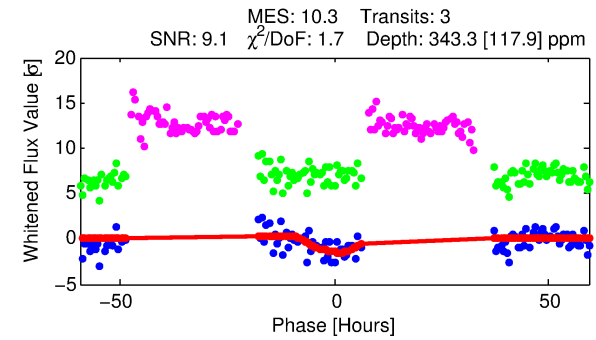
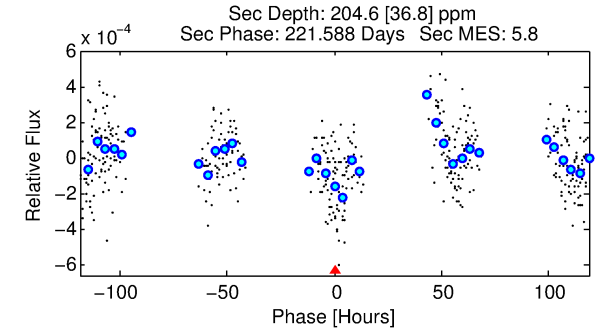
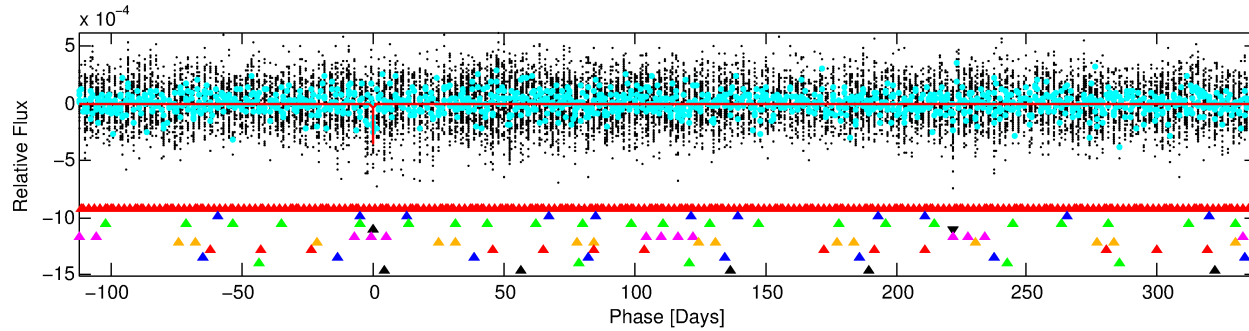
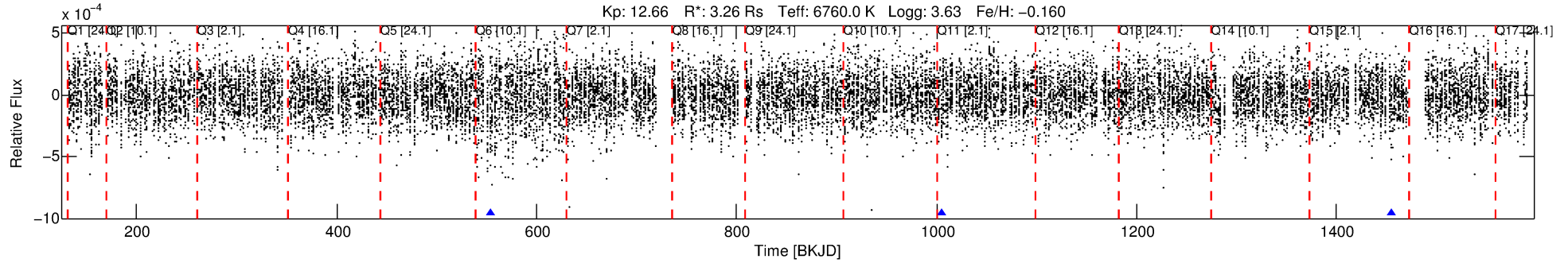
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008392519-04

No Significant Match Found

# DV One-Page Summary

KIC: 8392519 Candidate: 4 of 10 Period: 450.749 d

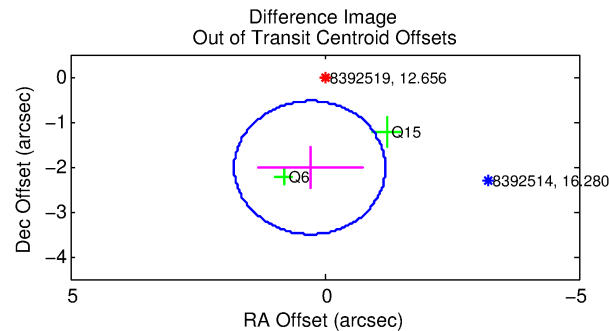
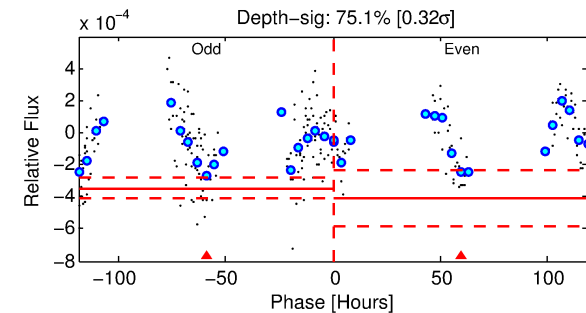
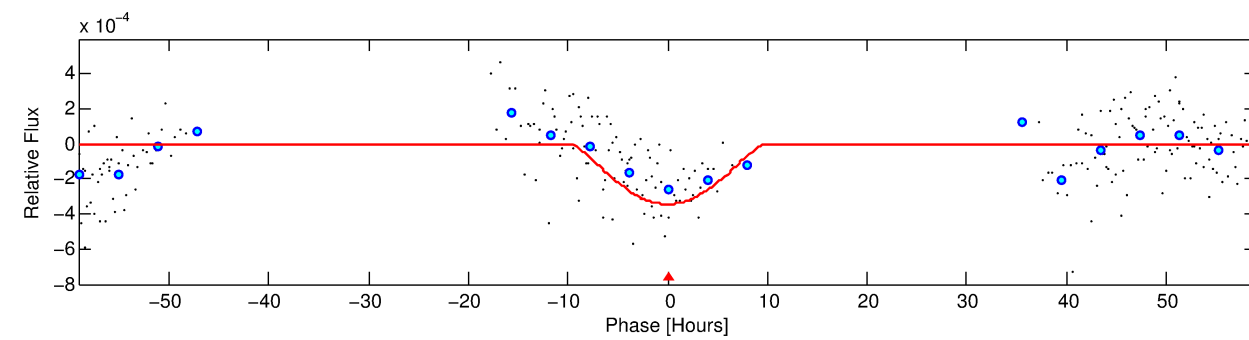


## DV Fit Results:

Period = 450.74911 [0.05450] d  
Epoch = 554.0021 [0.0989] BKJD  
Rp/R\* = 0.0325 [0.1157]  
a/R\* = 45.21 [43.71]  
b = 1.00 [0.18]  
Seff = 10.65 [6.09]  
Teq = 461 [66] K  
Rp = 11.57 [41.36] Re  
a = 1.3655 [0.4800] AU  
Ag = 1567.31 [11179.15] [0.14σ]  
Teffp = 4481 [7968] K [0.50σ]

## DV Diagnostic Results:

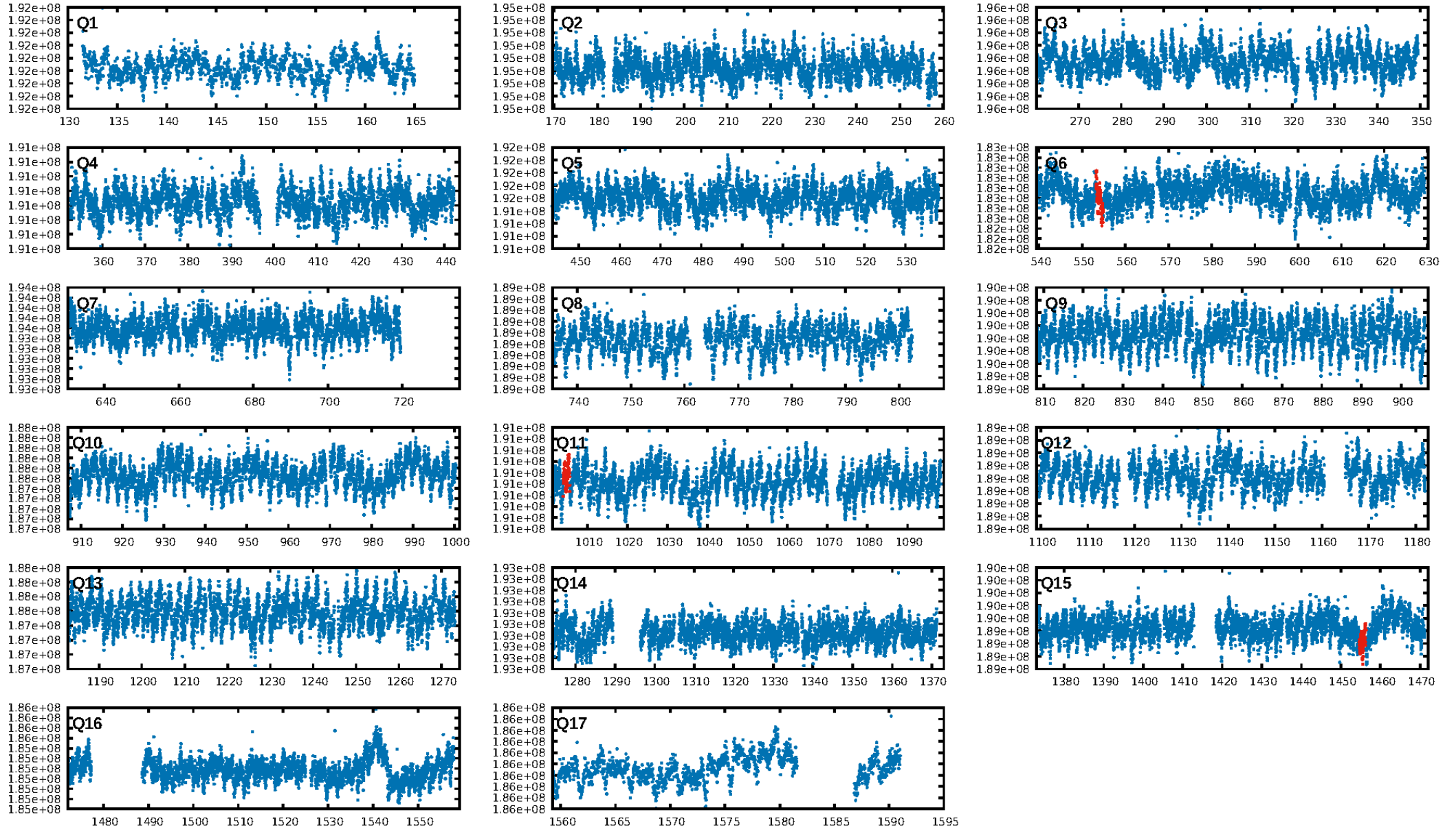
ShortPeriod-sig: 100.0% [146.26σ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.6%  
ModelChiSquareGof-sig: 88.2%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -1.3  
Centroid-sig: 49.8%  
Centroid-so: 0.534 arcsec [0.75σ]  
OotOffset-rm: 2.042 arcsec [4.13σ]  
KicOffset-rm: 1.945 arcsec [4.15σ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 0.00 [0/2]



Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:17:49 Z

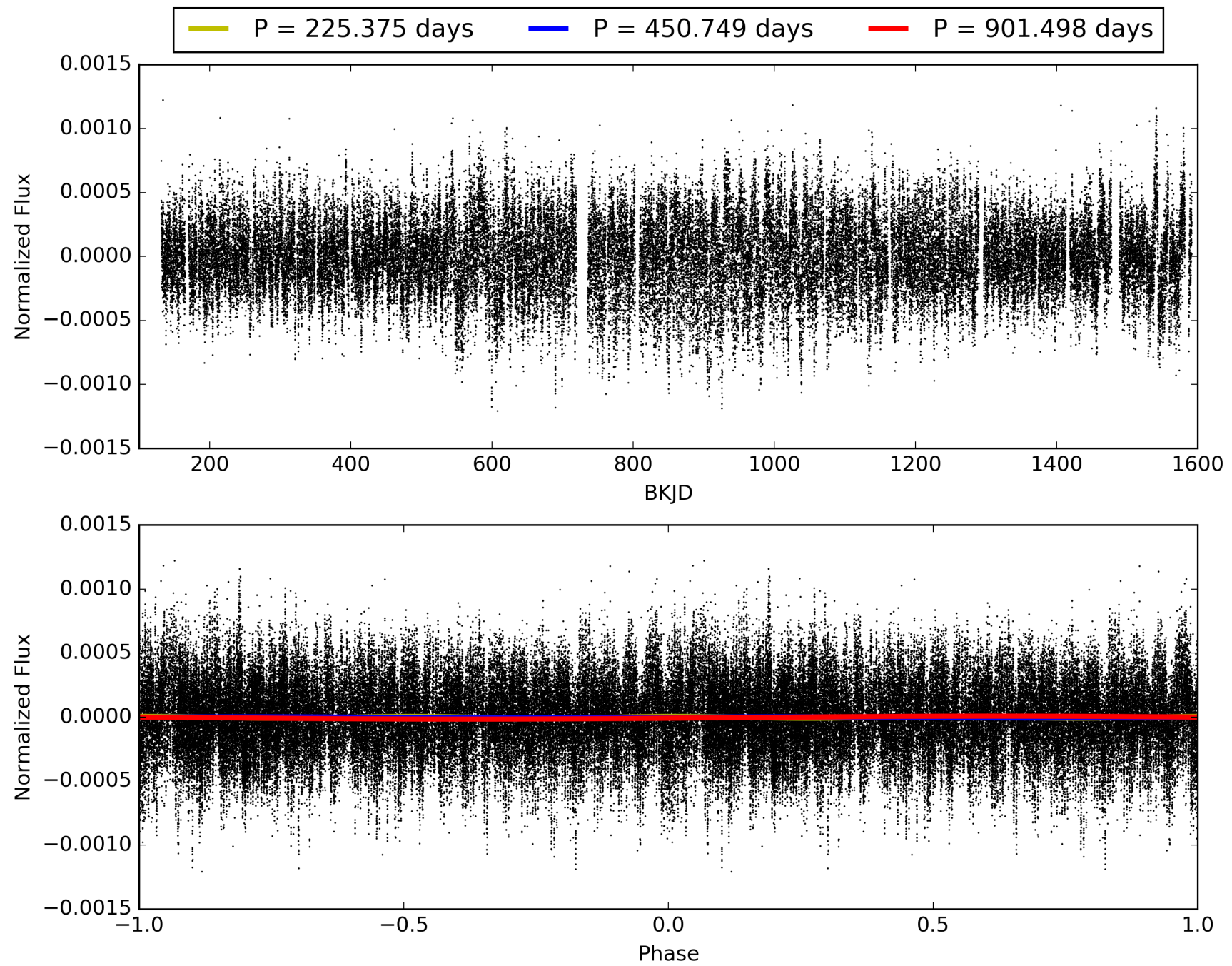
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008392519-04, PDC Light Curves





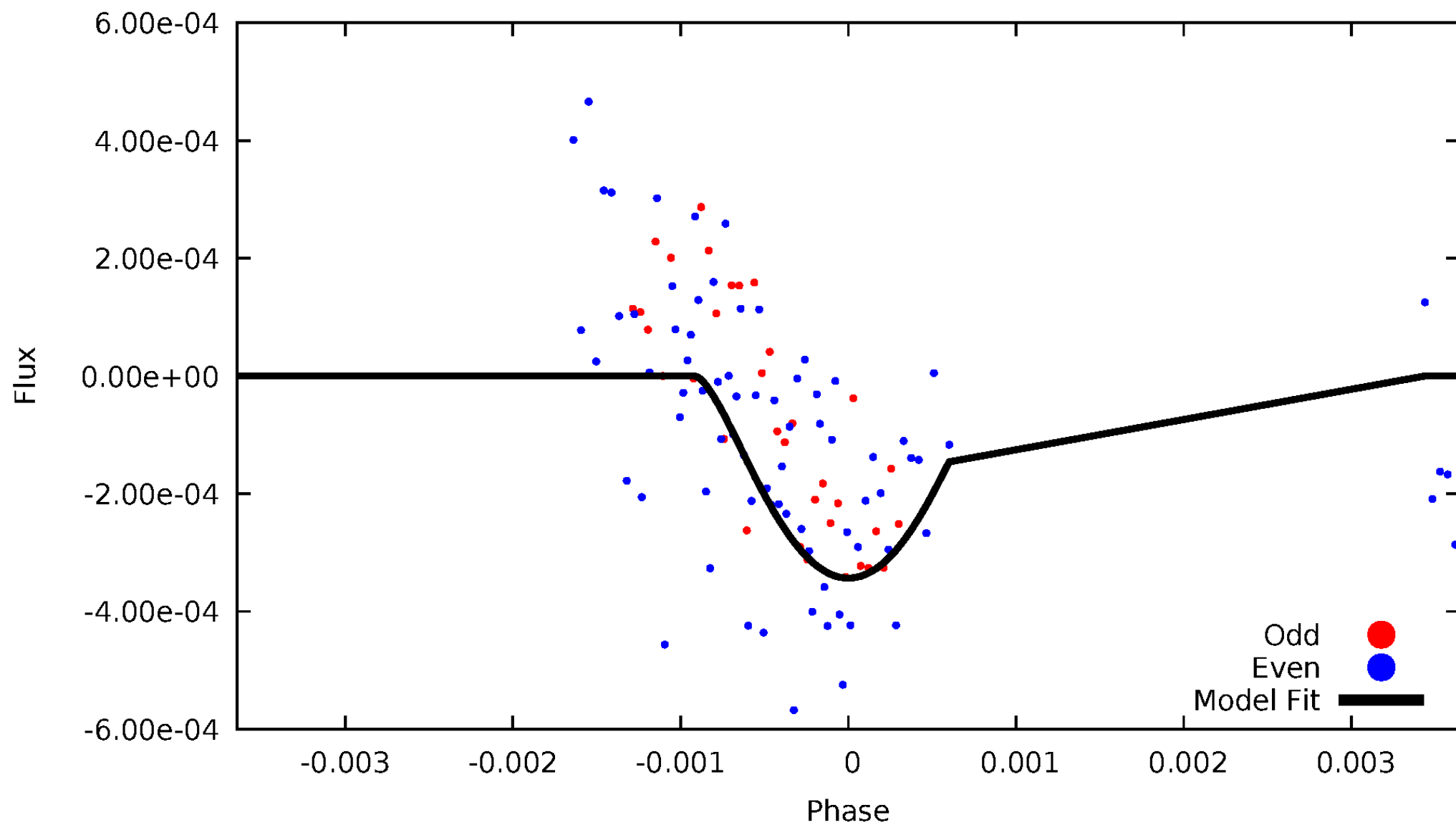
TCE 008392519-04





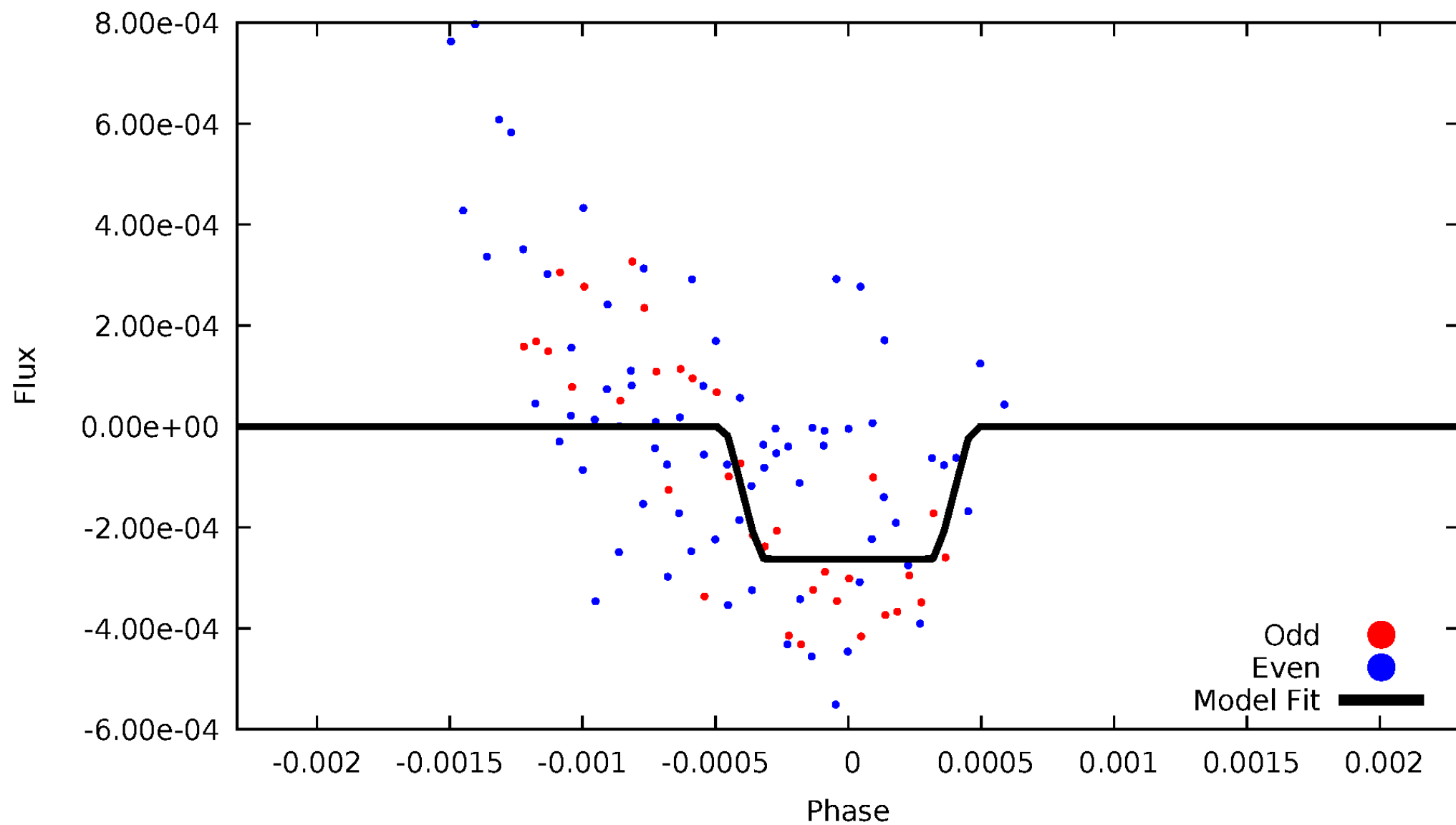
# DV Odd/Even

TCE 008392519-04



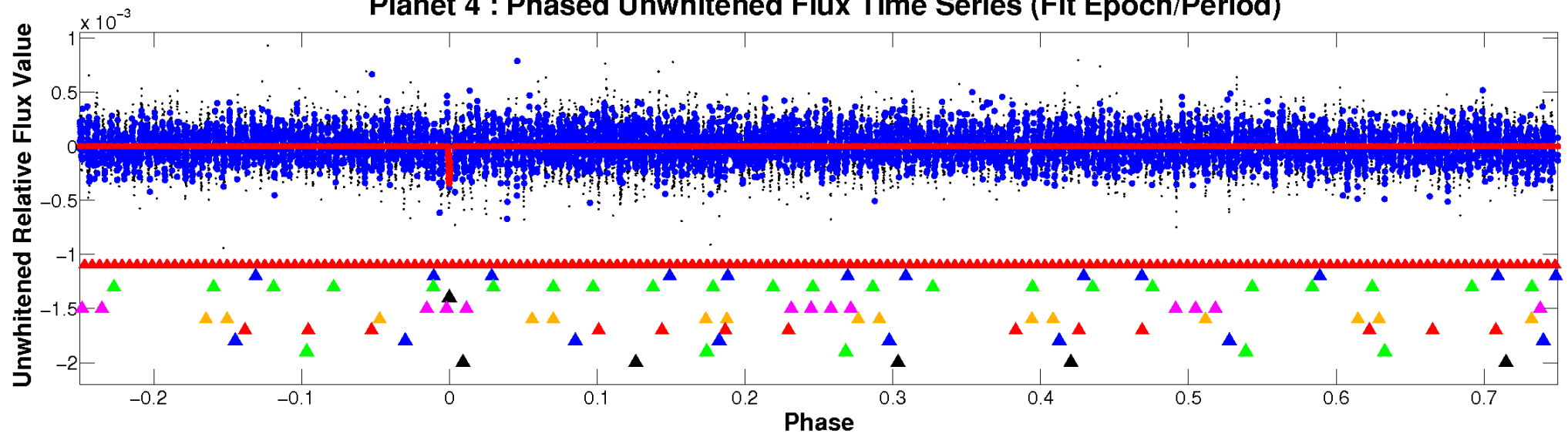
# ALT Odd/Even

TCE 008392519-04

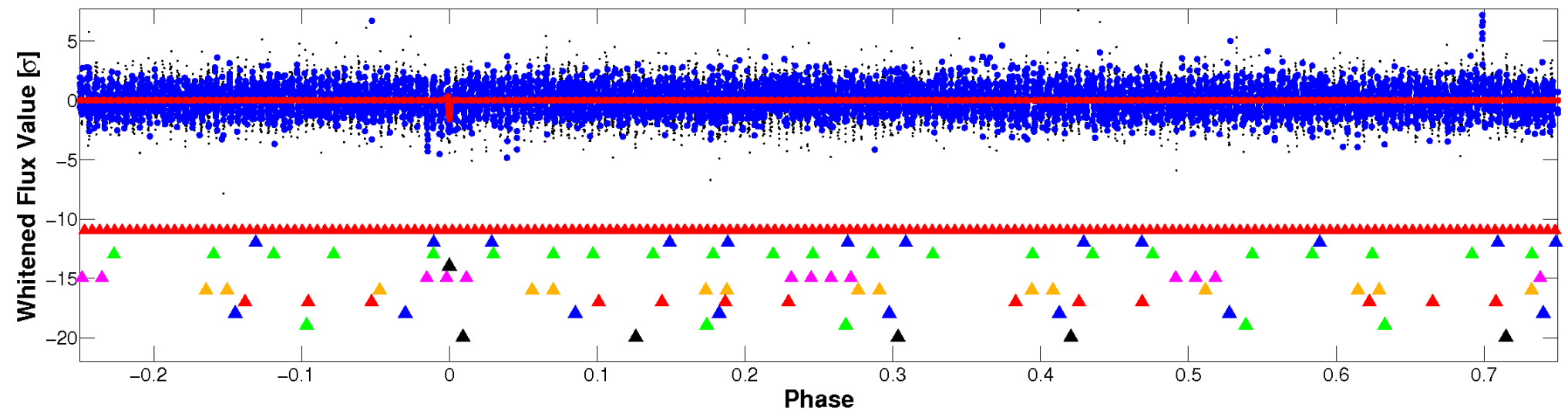


# Non-Whitened Vs. Whitened Light Curve

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

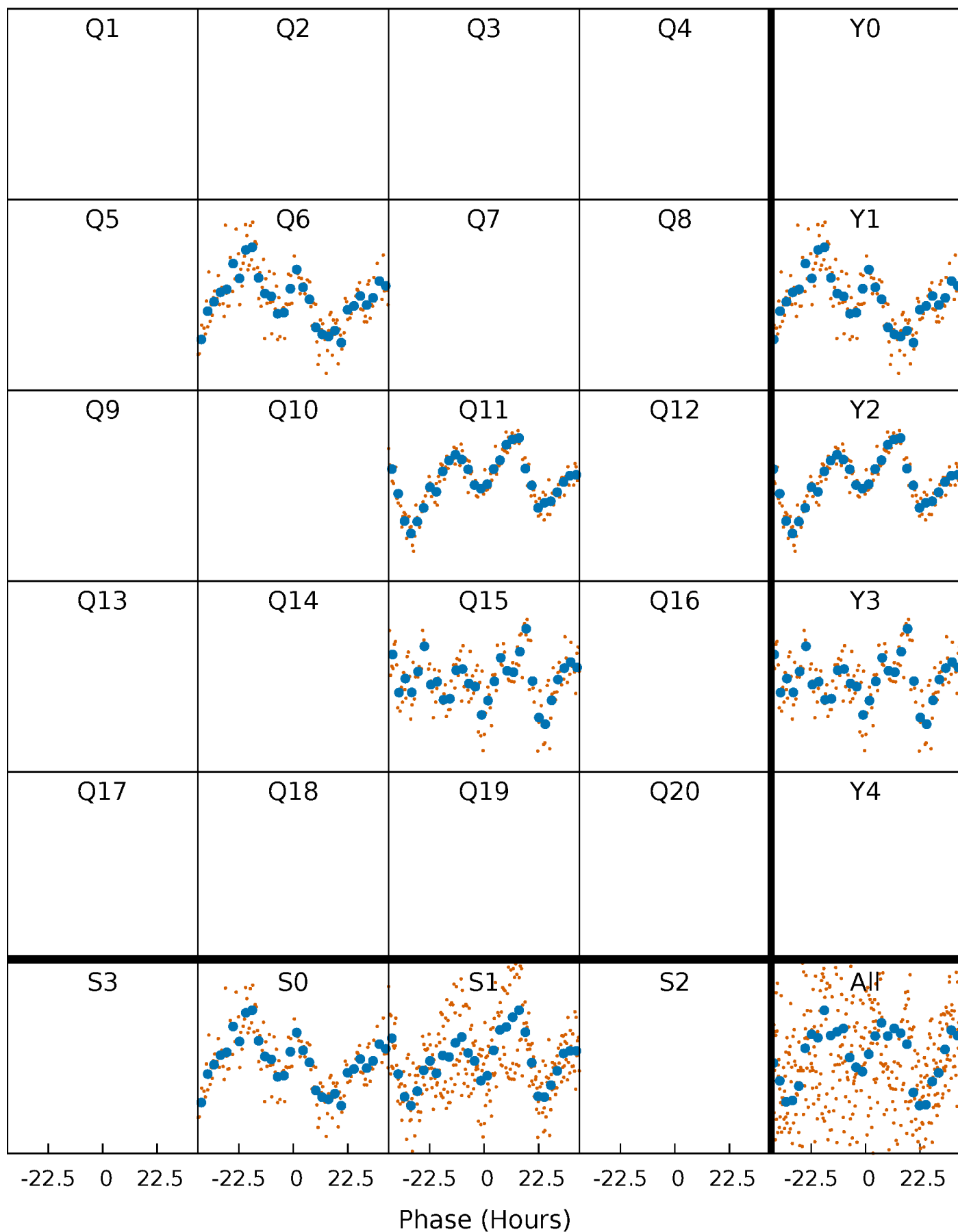


## Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



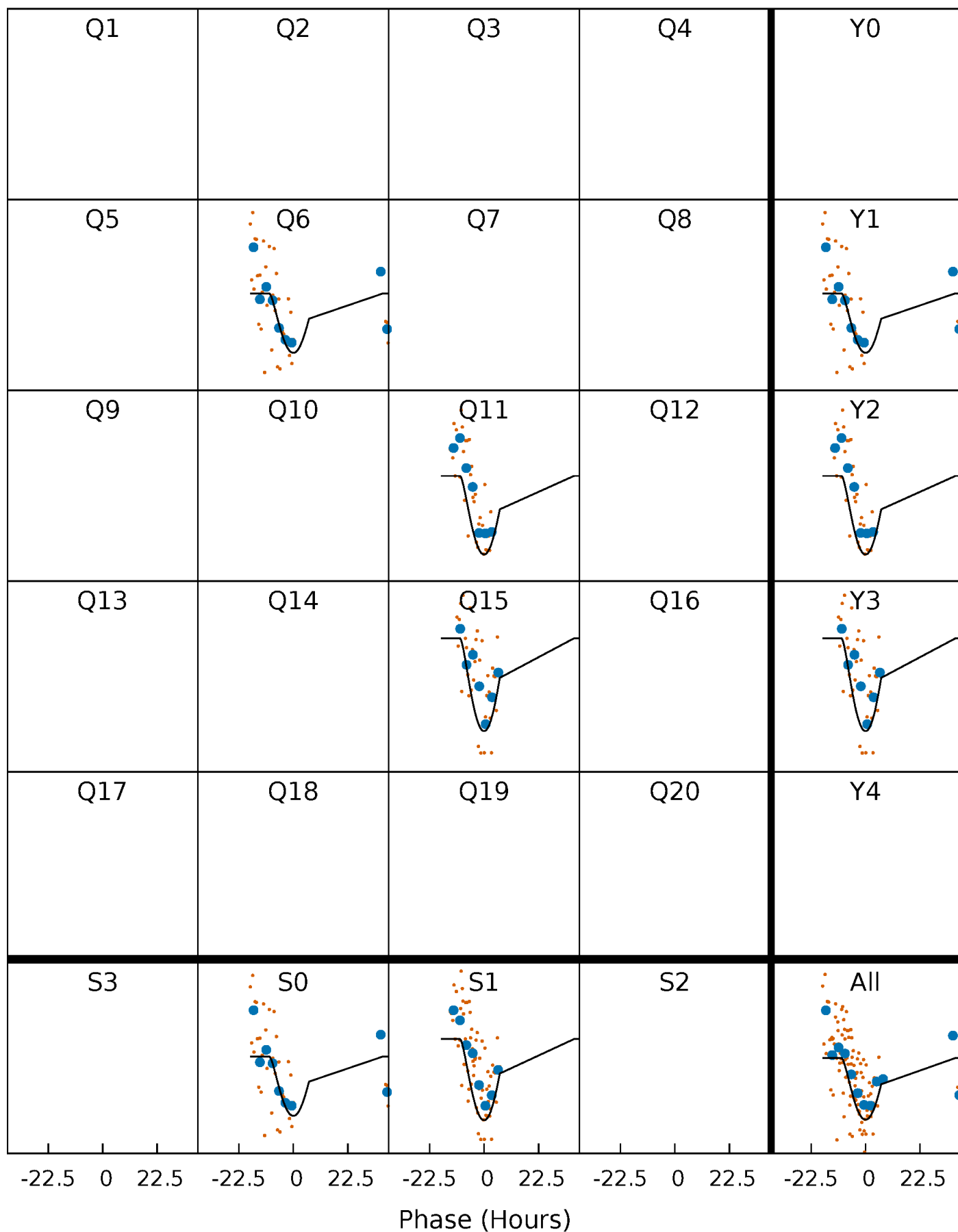
# PDC Quarter-Phased Transit Curves

TCE 008392519-04 P=450.749107 Days  $T_0=554.002125$  (BKJD)



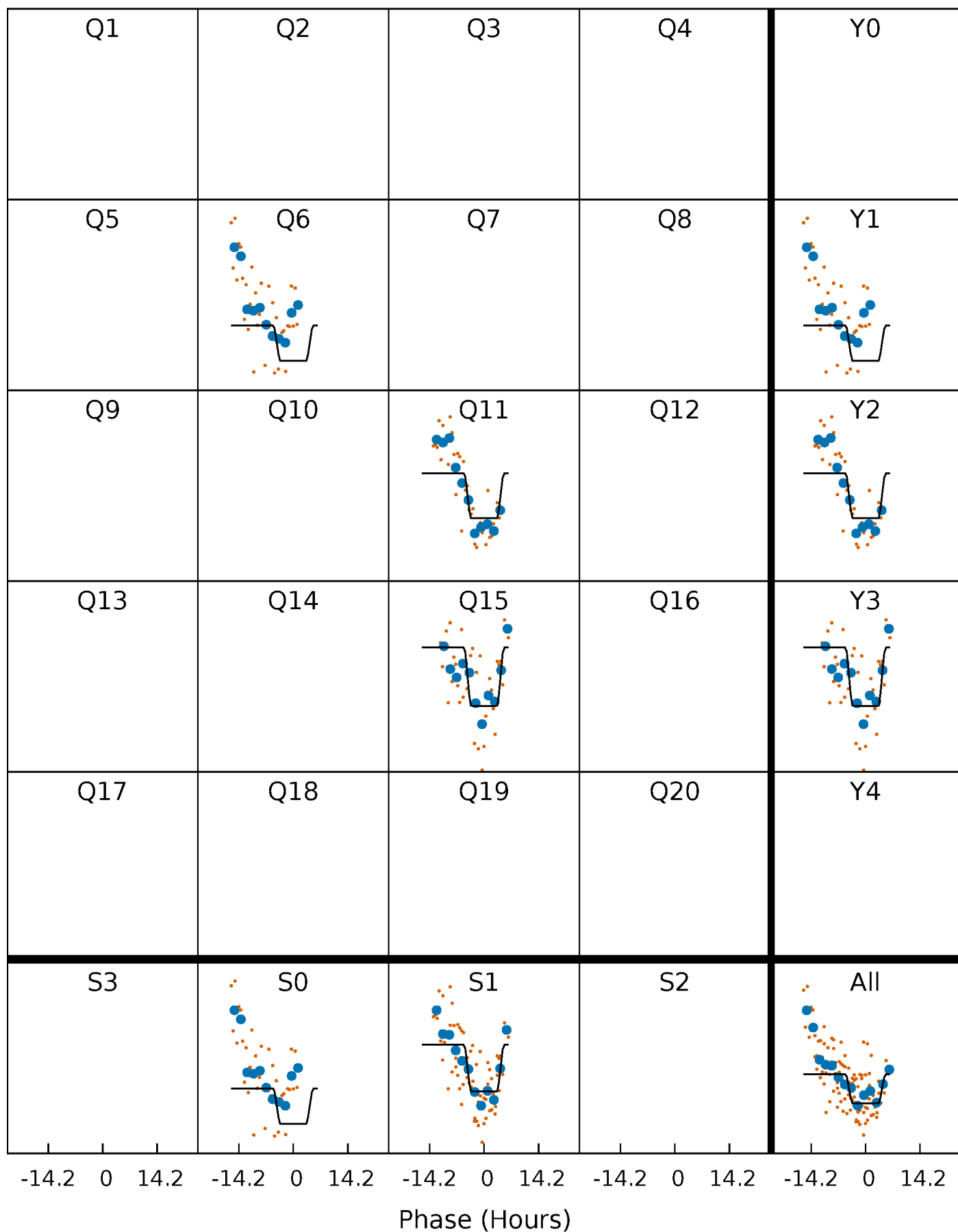
# DV Quarter-Phased Transit Curves

TCE 008392519-04 P=450.749107 Days  $T_0=554.002125$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008392519-04 P=450.784767 Days  $T_0=553.937359$  (BKJD)

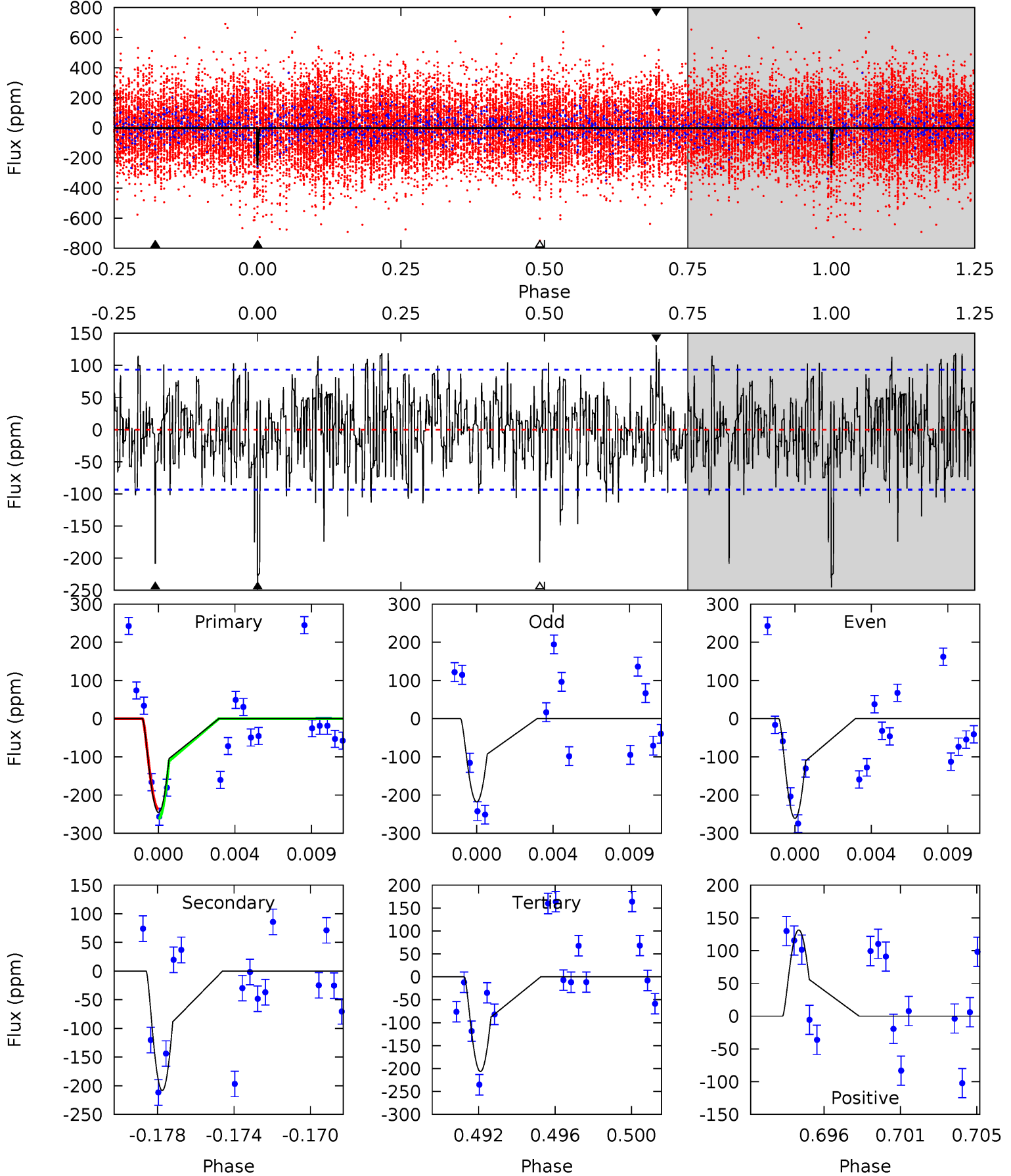




# DV Model-Shift Uniqueness Test

008392519-04, P = 450.749107 Days, E = 103.253018 Days

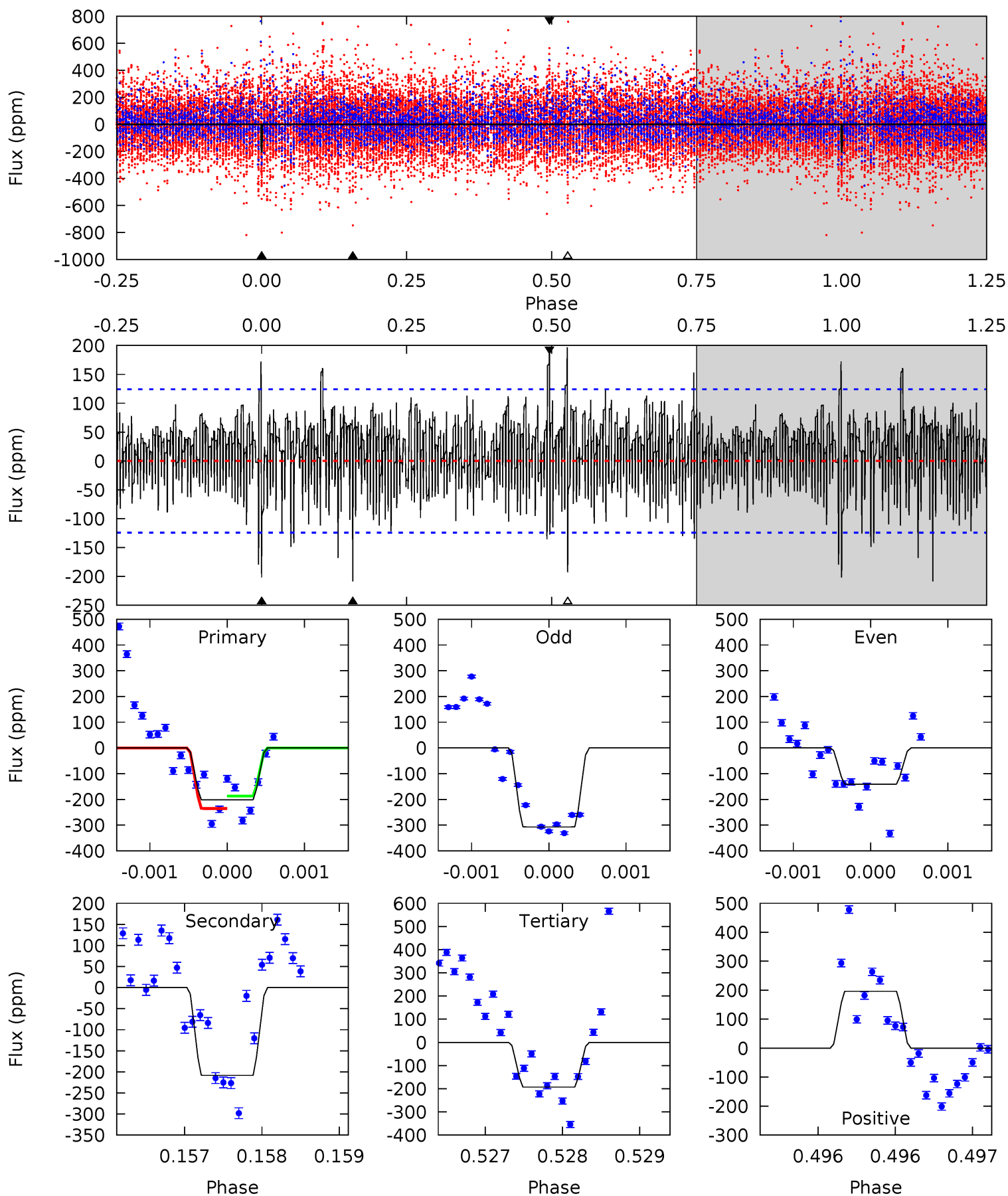
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	11.6	11.5	7.30	5.18	2.85	2.65	2.15	6.33	0.10	4.27	1.15	1.09	0.35	0.59



# Alt Model-Shift Uniqueness Test

008392519-04, P = 450.784767 Days, E = 103.152592 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
8.87	9.17	8.50	8.64	5.46	3.31	2.23	0.37	0.23	0.68	0.54	3.64	0.77	0.48	1.04



### Stellar Parameters For KIC 008392519

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6760^{+187}_{-234}$	$3.635^{+0.323}_{-0.057}$	$-0.160^{+0.300}_{-0.250}$	$3.258^{+0.406}_{-1.218}$	$1.670^{+0.221}_{-0.332}$	$0.068^{+0.157}_{-0.014}$
	+3%/-3%	+9%/-2%	+188%/-156%	+12%/-37%	+13%/-20%	+230%/-20%
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 008392519-04 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-208 \pm 18$	$30.18^{+31.34}_{-20.13}$	$626^{+34}_{-57}$	$3207^{+1599}_{-547}$	$238^{+1928}_{-179}$
Alt.	$-209 \pm 23$	$27.62^{+28.97}_{-19.44}$	$626^{+34}_{-53}$	$3318^{+1785}_{-598}$	$284^{+2709}_{-217}$

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

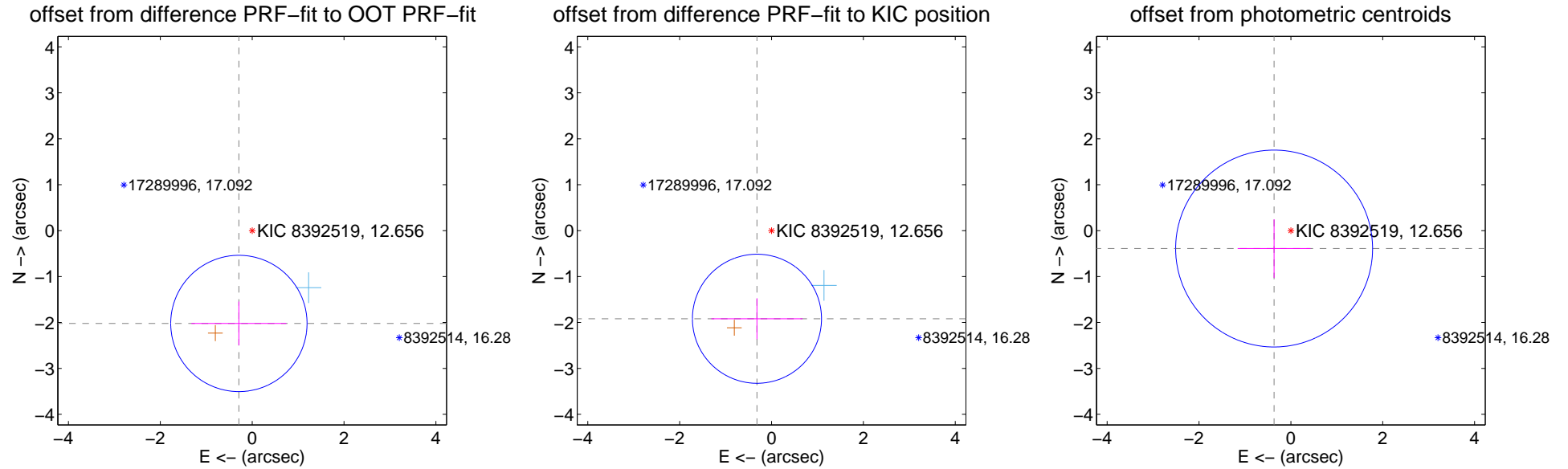
## DV Centroid Data

Supplemental centroid analysis for 008392519-04. Kepler magnitude: 12.66. Transit SNR 9.09

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.042 \pm 0.495$	4.13	$0.289 \pm 1.034$	$-2.022 \pm 0.477$
PRF-fit source offset from KIC position	$1.945 \pm 0.468$	4.15	$0.317 \pm 0.994$	$-1.919 \pm 0.446$
photometric centroid source offset	$0.53 \pm 0.71$	0.75	$0.36 \pm 0.79$	$-0.39 \pm 0.64$

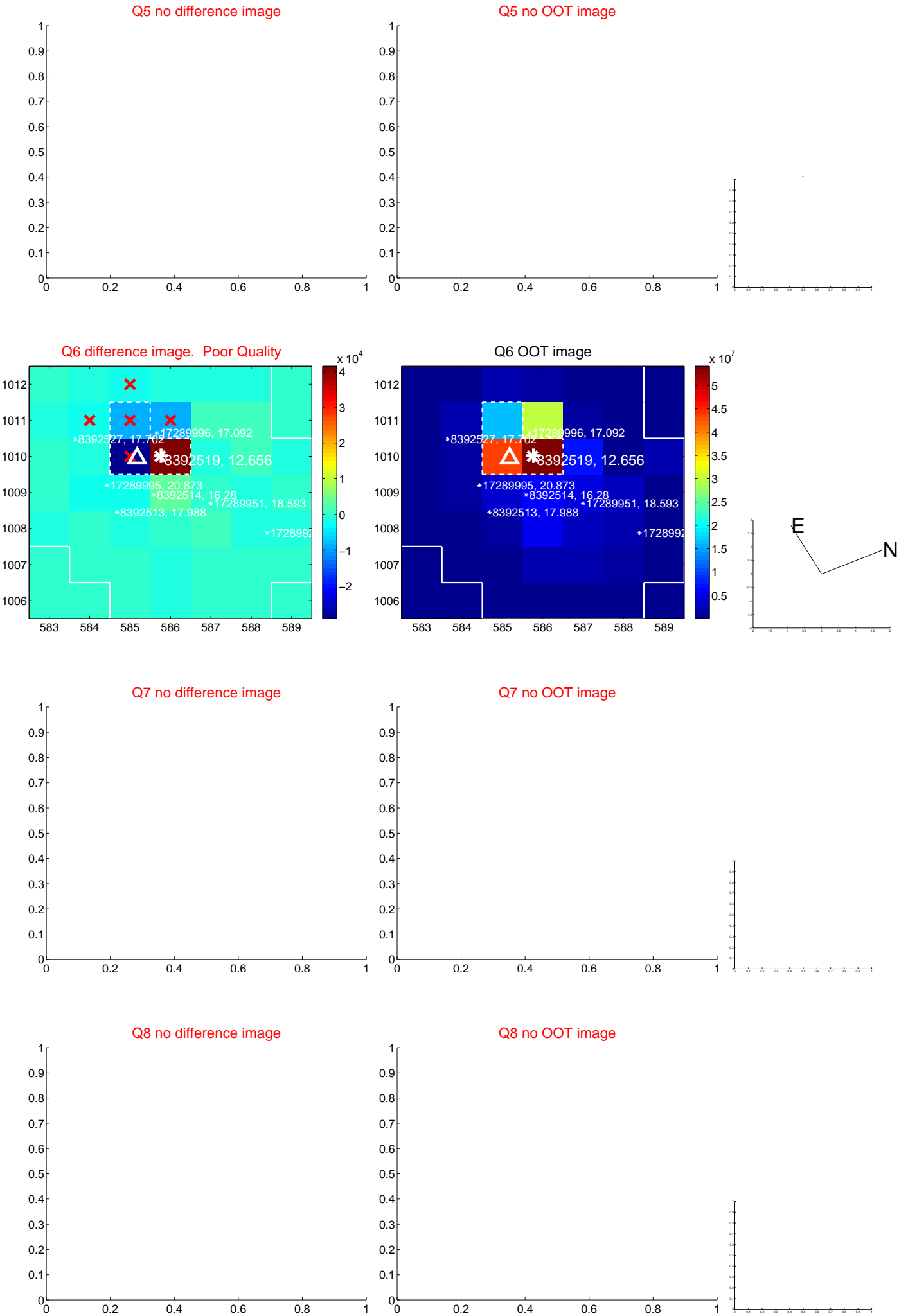


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

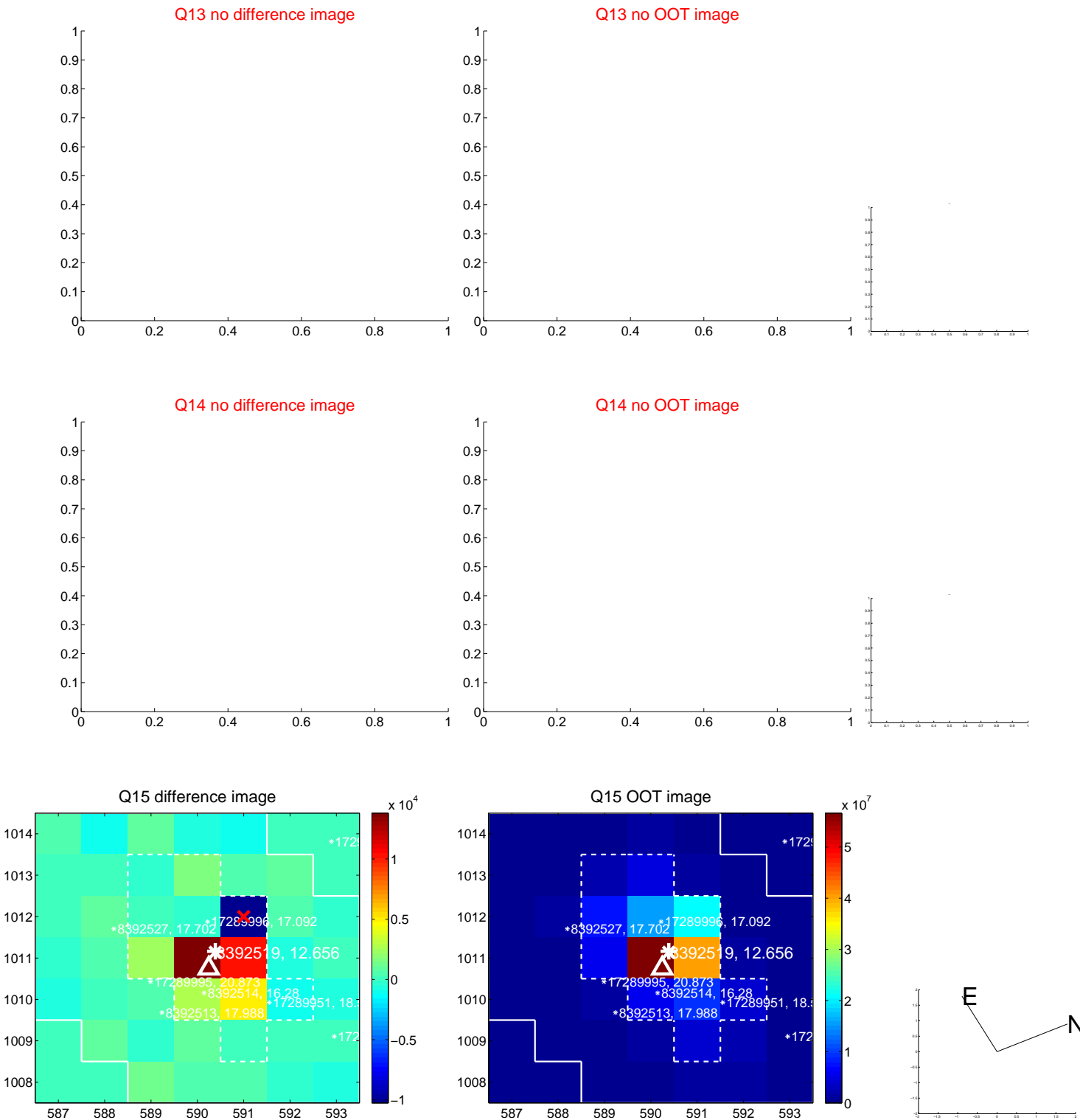




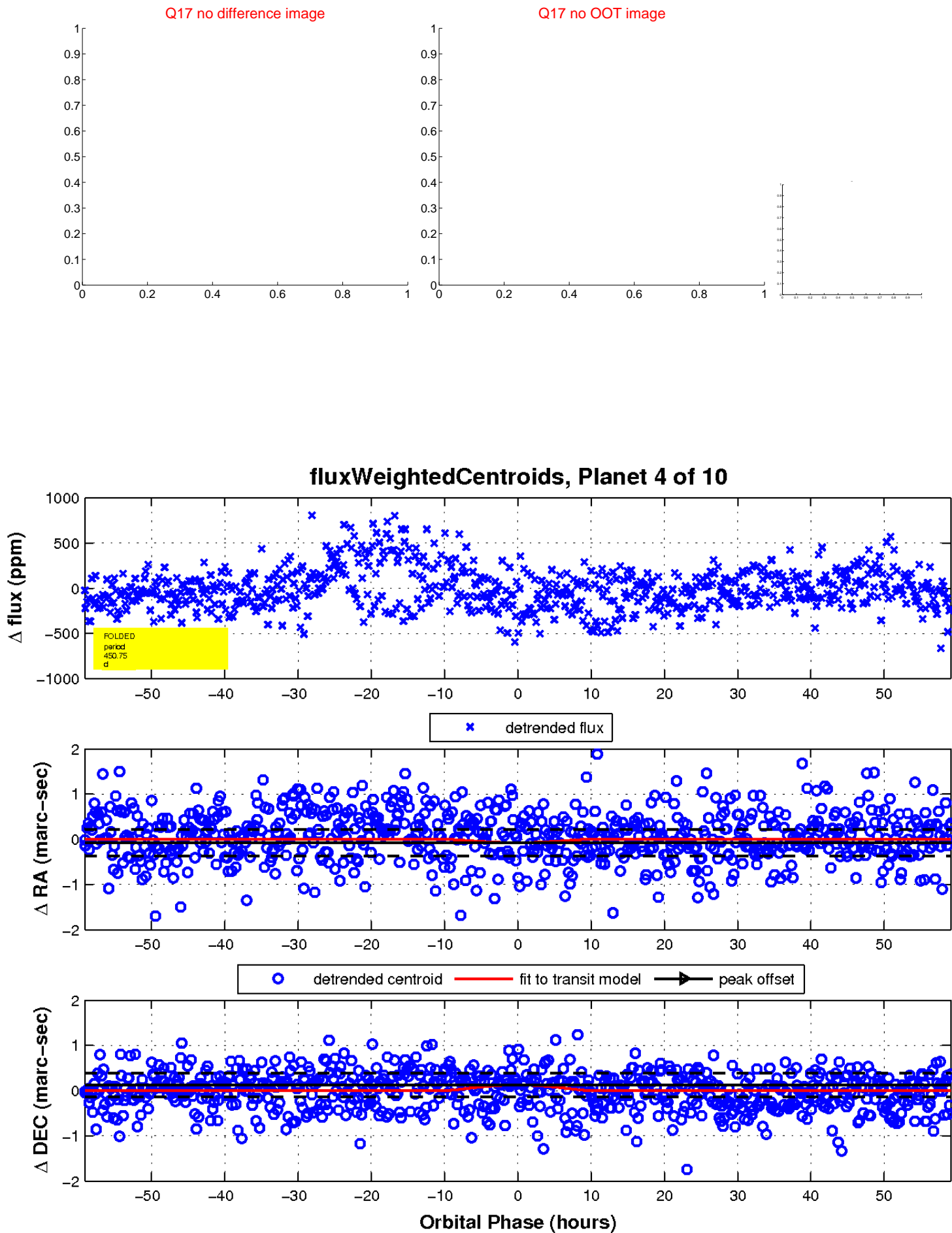
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

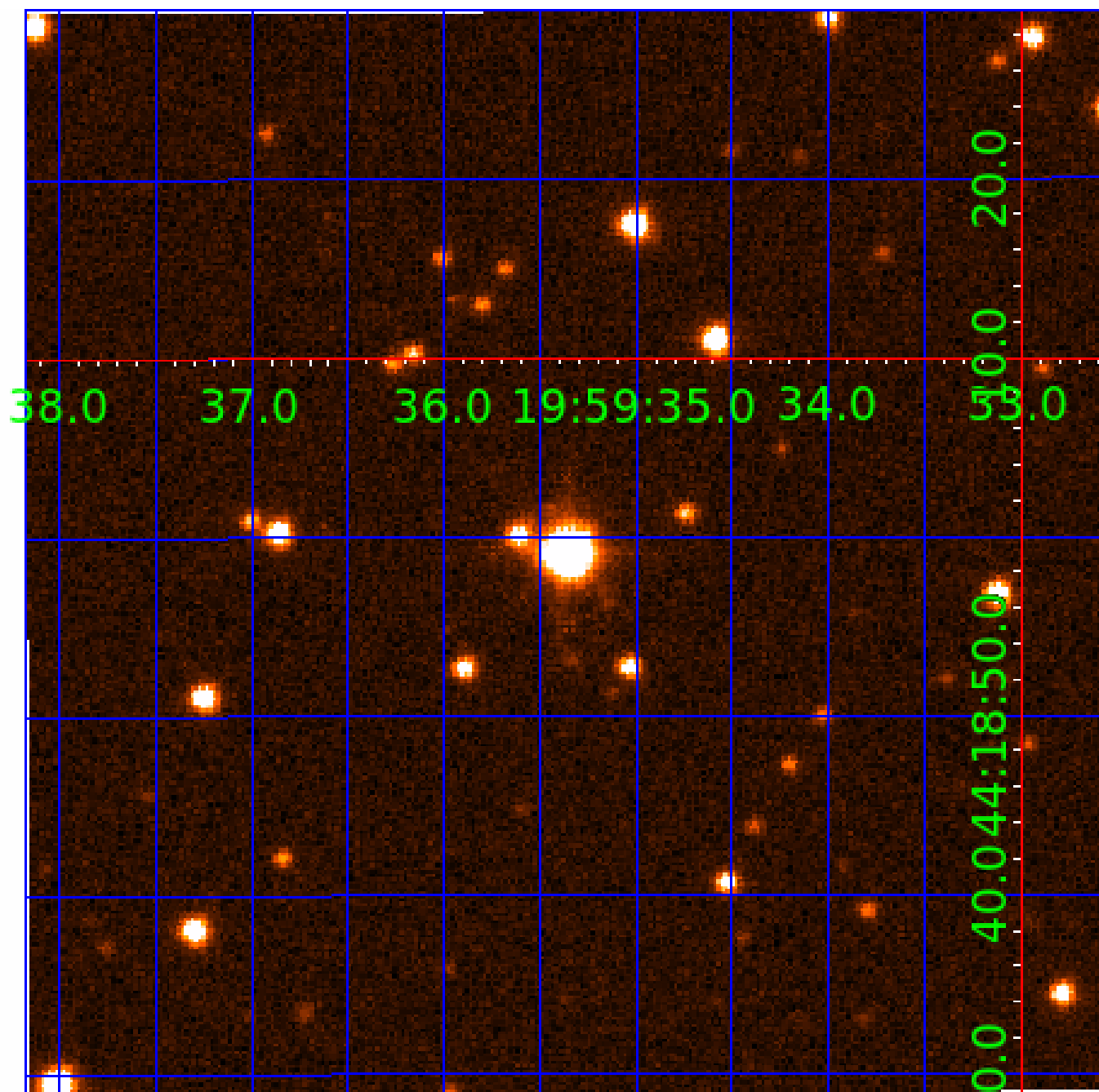


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008392519-01	OBS	No	2.288770	133.644536	24.1	12.052	10.3	8.2	3.26	6760	1.86	12204.28
008392519-02	OBS	No	126.257214	188.163119	324.8	16.500	22.2	11.2	3.26	6760	7.12	58.12
008392519-03	OBS	No	67.007289	147.064248	230.7	18.688	14.2	11.4	3.26	6760	5.68	135.25
008392519-04	OBS	No	450.749107	554.002125	343.3	19.711	10.3	9.1	3.26	6760	11.57	10.65
008392519-05	OBS	No	111.174093	225.691769	294.9	14.373	10.0	11.9	3.26	6760	5.96	68.86
008392519-06	OBS	No	99.450221	187.886477	206.0	8.756	9.8	6.9	3.26	6760	5.11	79.89
008392519-07	OBS	No	107.865281	206.670817	234.6	7.787	8.8	8.7	3.26	6760	5.67	71.69
008392519-08	OBS	No	199.446436	141.675993	241.9	9.055	8.8	7.4	3.26	6760	5.46	31.59
008392519-09	OBS	No	286.372798	388.504274	259.8	6.875	8.9	6.8	3.26	6760	6.09	19.50
008392519-10	OBS	No	318.071035	240.093446	199.3	9.243	8.7	8.5	3.26	6760	5.45	16.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008392519-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008392519-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008392519-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
008392519-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008392519-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008392519-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008392519-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

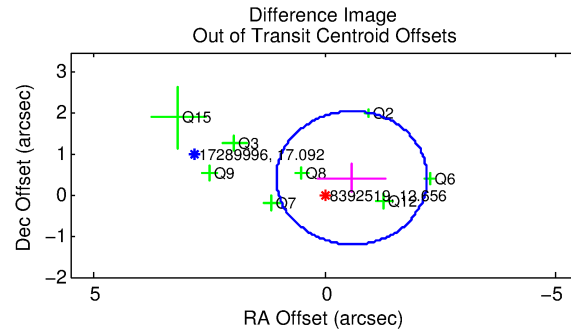
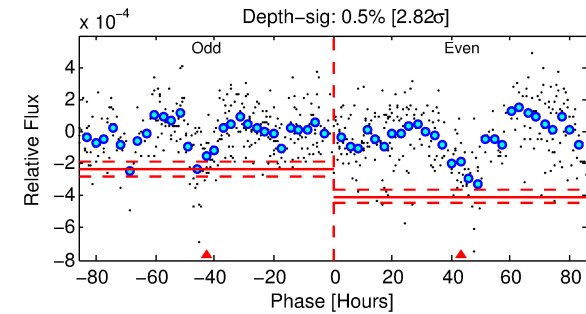
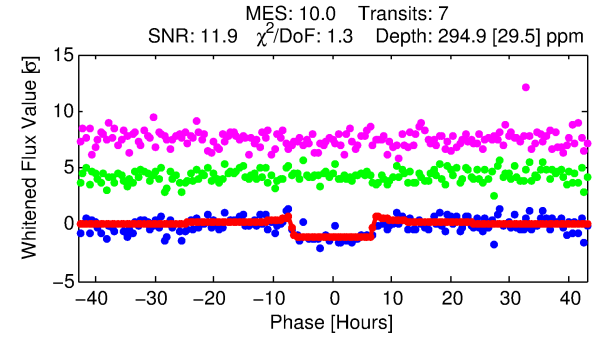
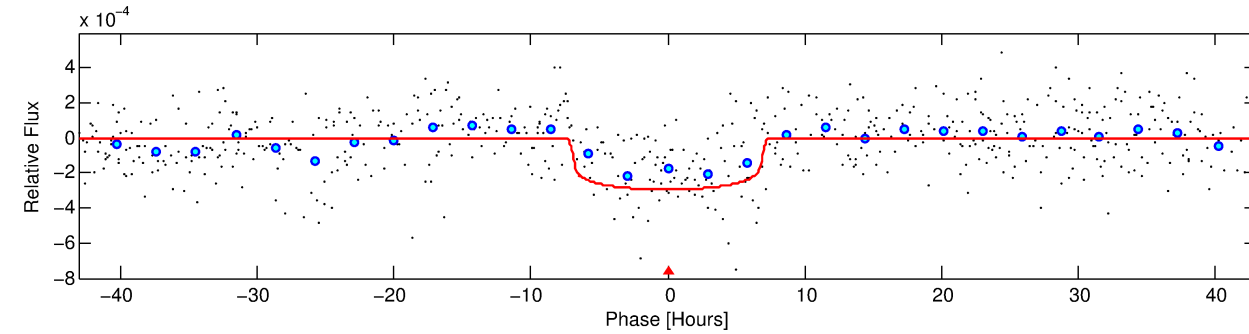
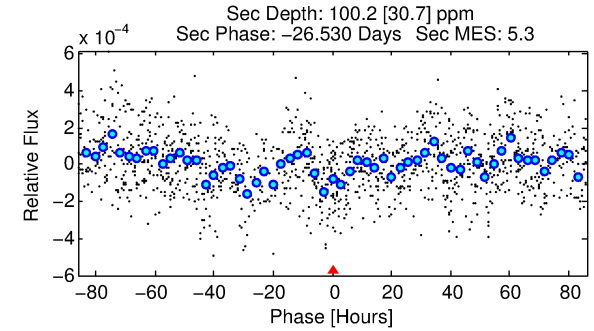
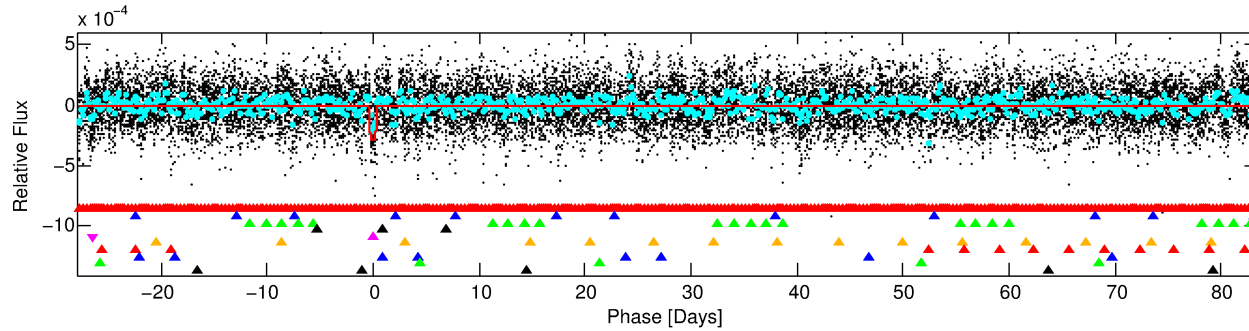
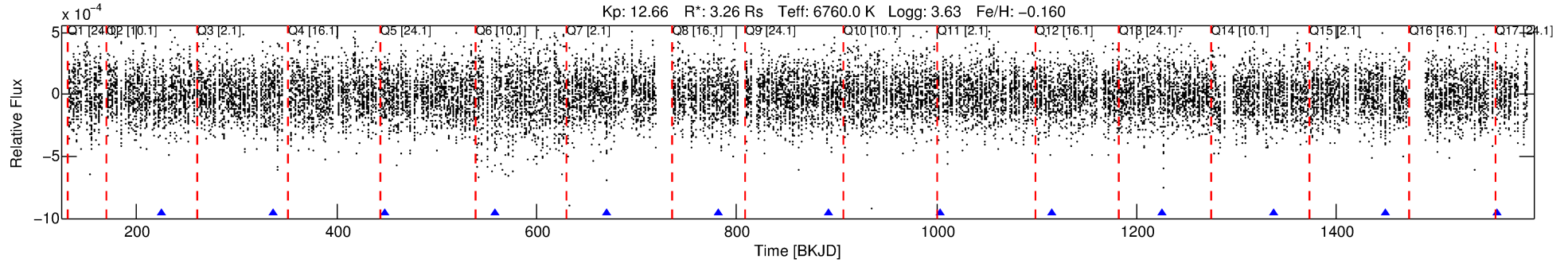
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008392519-05

No Significant Match Found

# DV One-Page Summary

KIC: 8392519 Candidate: 5 of 10 Period: 111.174 d



## DV Fit Results:

Period = 111.17409 [0.00148] d  
Epoch = 225.6918 [0.0106] BKJD  
Rp/R\* = 0.0168 [0.0034]  
a/R\* = 44.91 [48.48]  
b = 0.68 [0.87]  
Seff = 68.86 [39.39]  
Teq = 735 [105] K  
Rp = 5.96 [2.53] Re  
a = 0.5370 [0.1888] AU  
Ag = 447.84 [335.75] [1.33σ]  
Teffp = 5224 [683] K [6.50σ]

## DV Diagnostic Results:

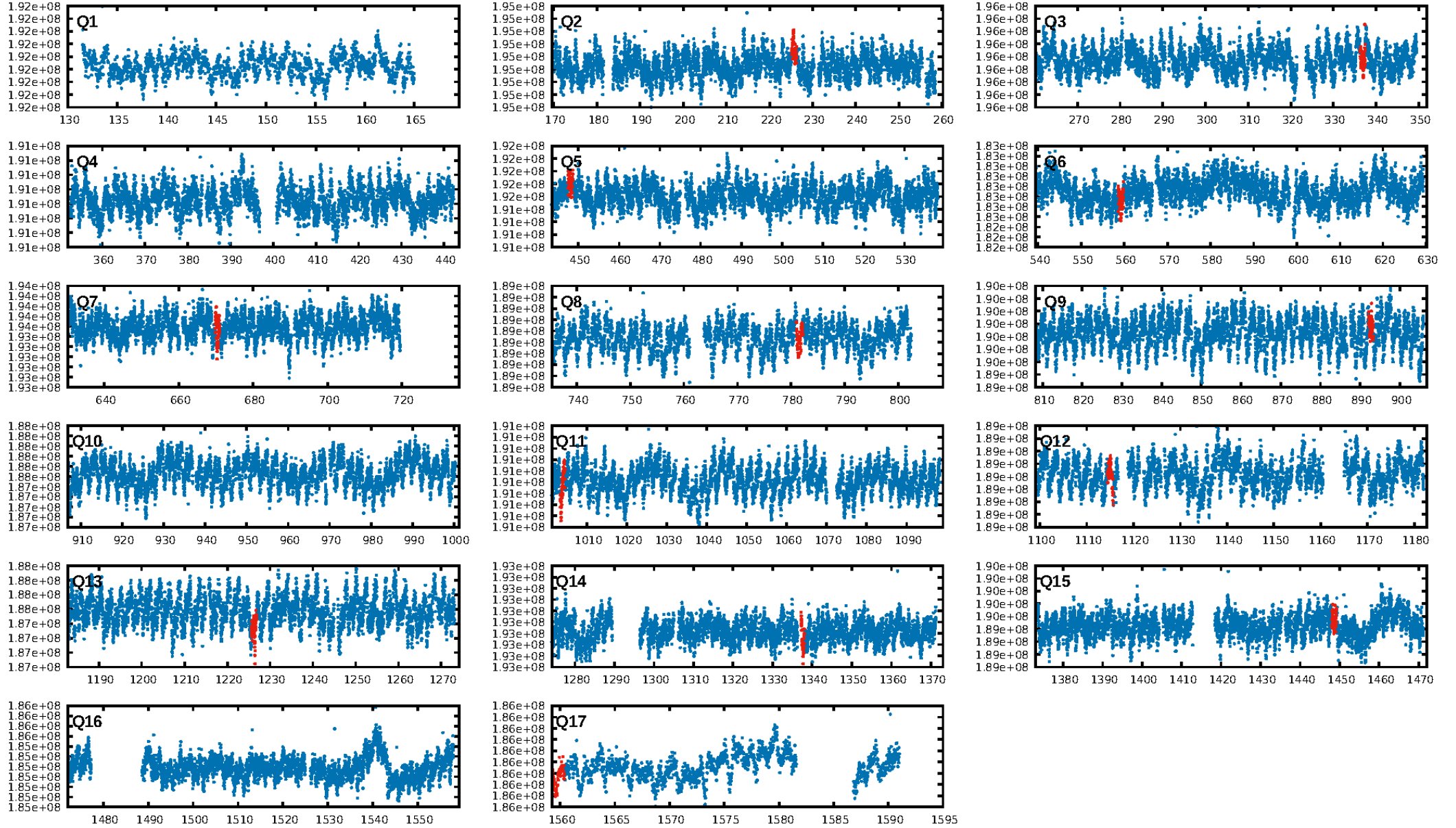
ShortPeriod-sig: 100.0% [4.86σ]  
LongPeriod-sig: 100.0% [16.54σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [7/7]  
GhostDiagnostic-chr: -0.2608  
Centroid-sig: 3.8%  
Centroid-so: 0.710 arcsec [1.86σ]  
OotOffset-rm: 0.724 arcsec [1.33σ]  
OotOffset-st: 2/3/2/1 [8]  
KicOffset-rm: 0.704 arcsec [1.40σ]  
KicOffset-st: 2/3/2/1 [8]  
DiffImageQuality-fgm: 0.38 [3/8]  
DiffImageOverlap-fno: 0.00 [0/9]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:17:53 Z

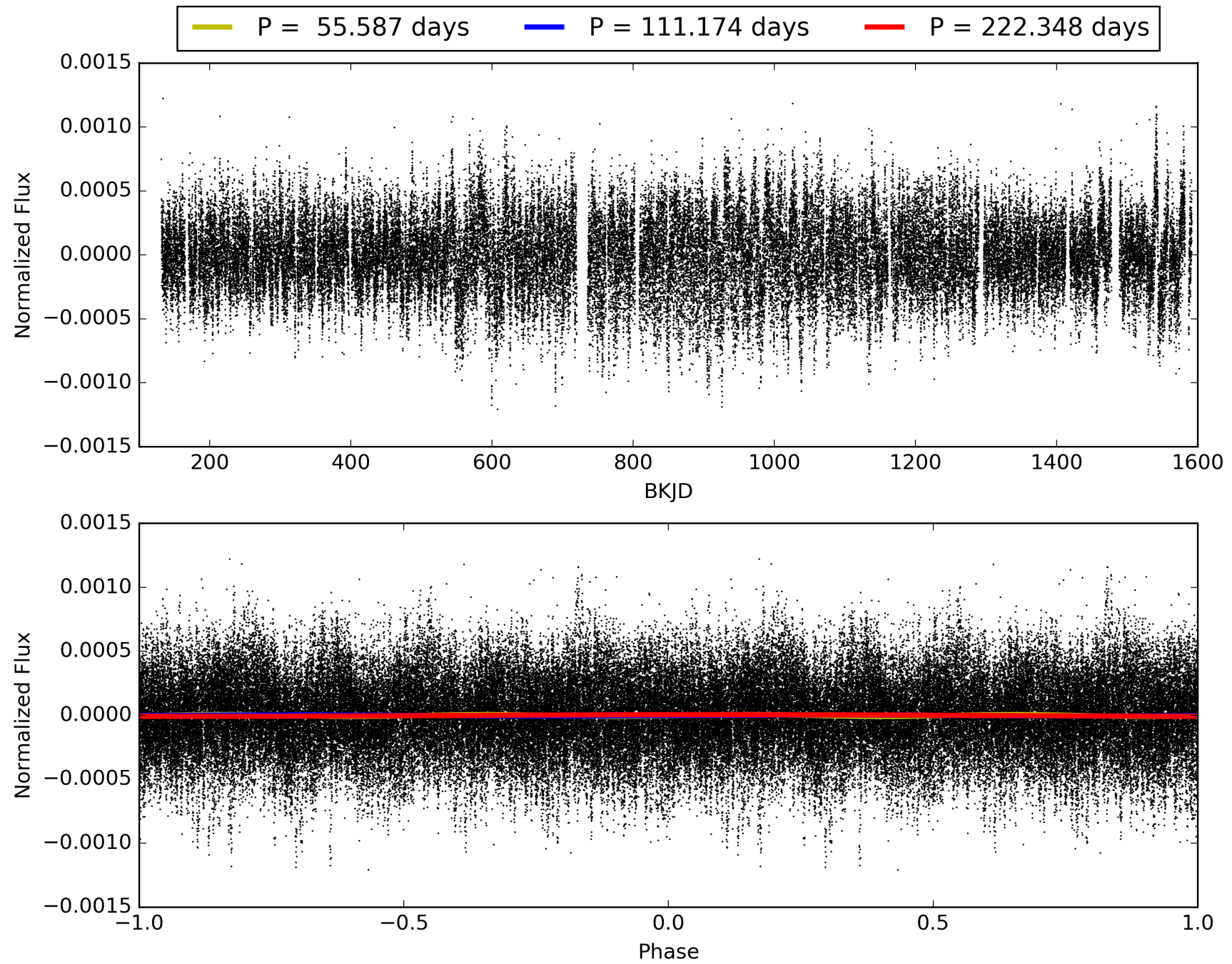
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 008392519-05, PDC Light Curves

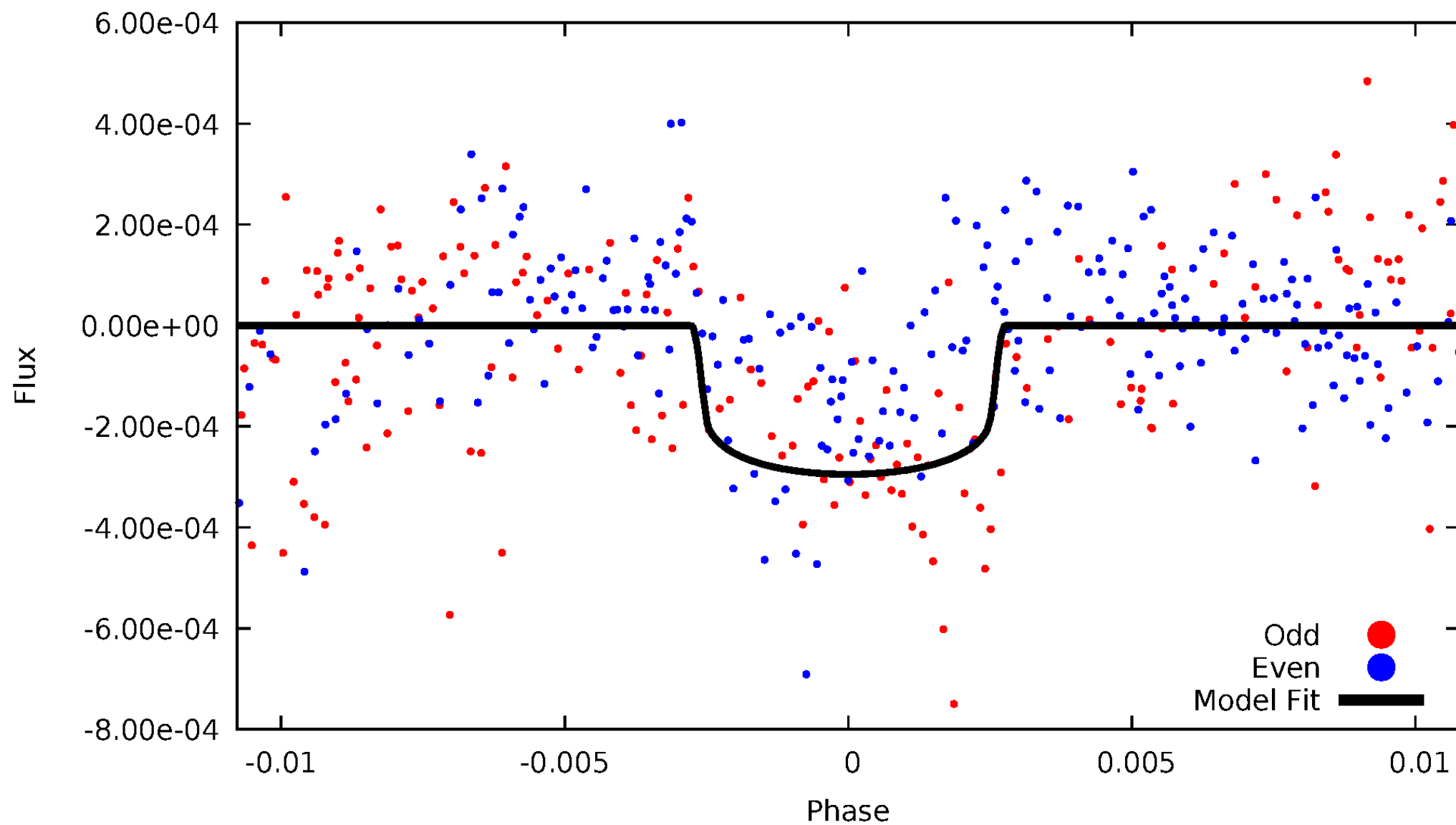


TCE 008392519-05



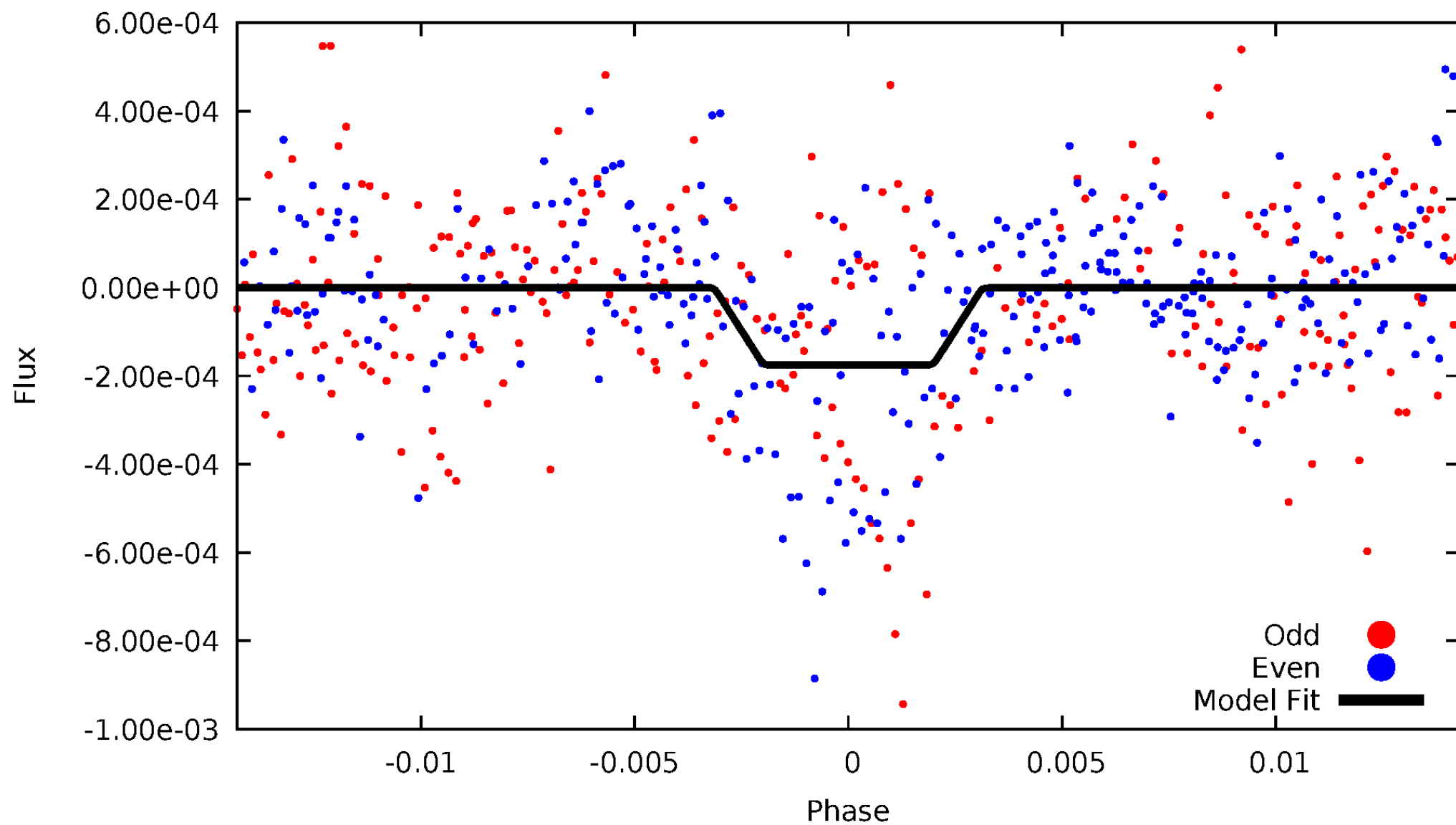
# DV Odd/Even

TCE 008392519-05



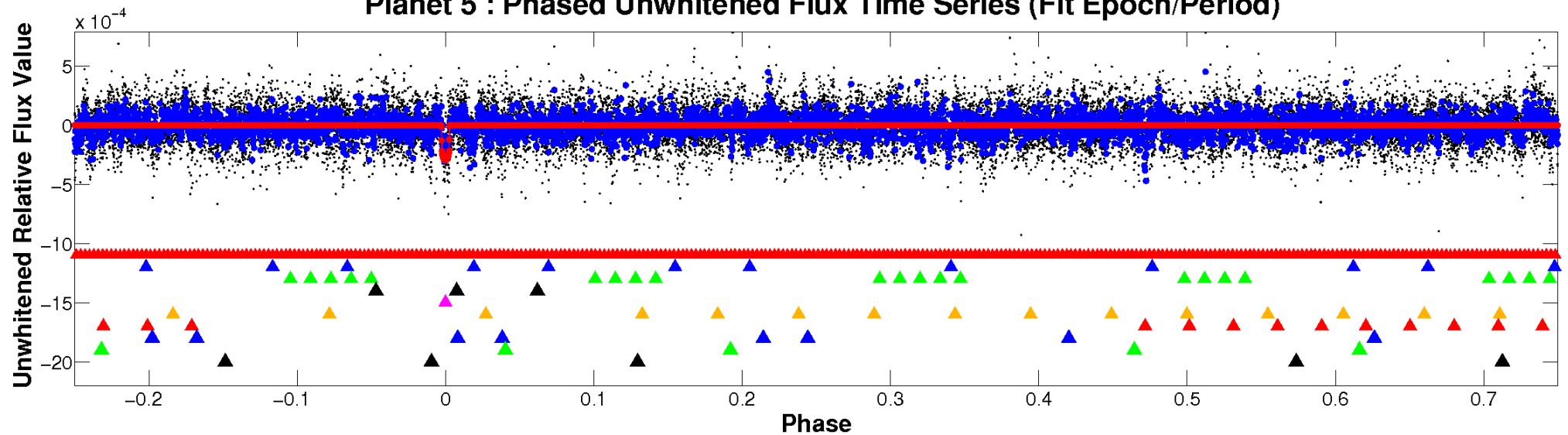
# ALT Odd/Even

TCE 008392519-05

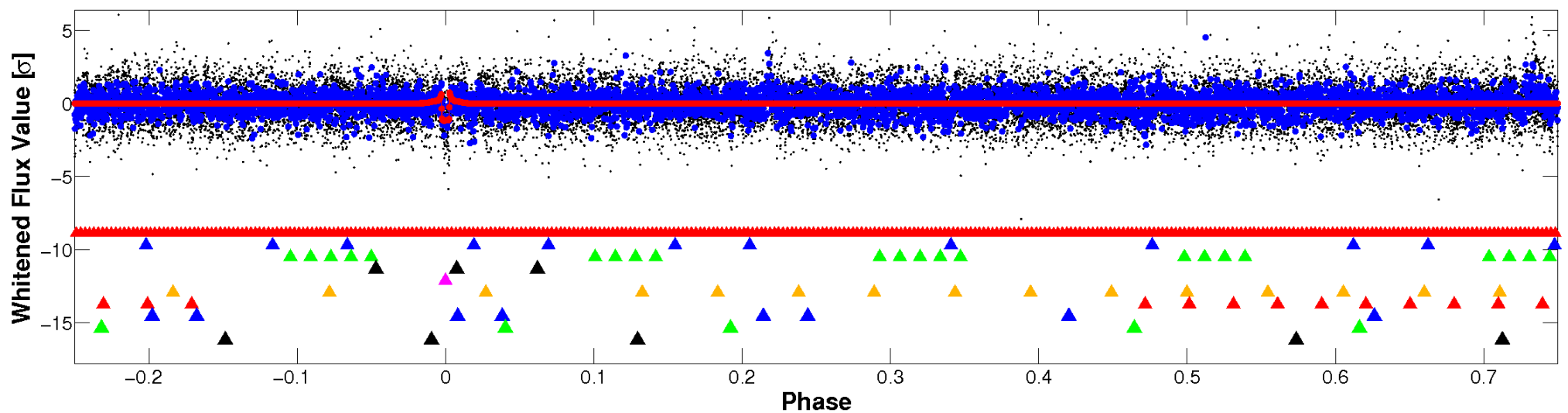


# Non-Whitened Vs. Whitened Light Curve

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

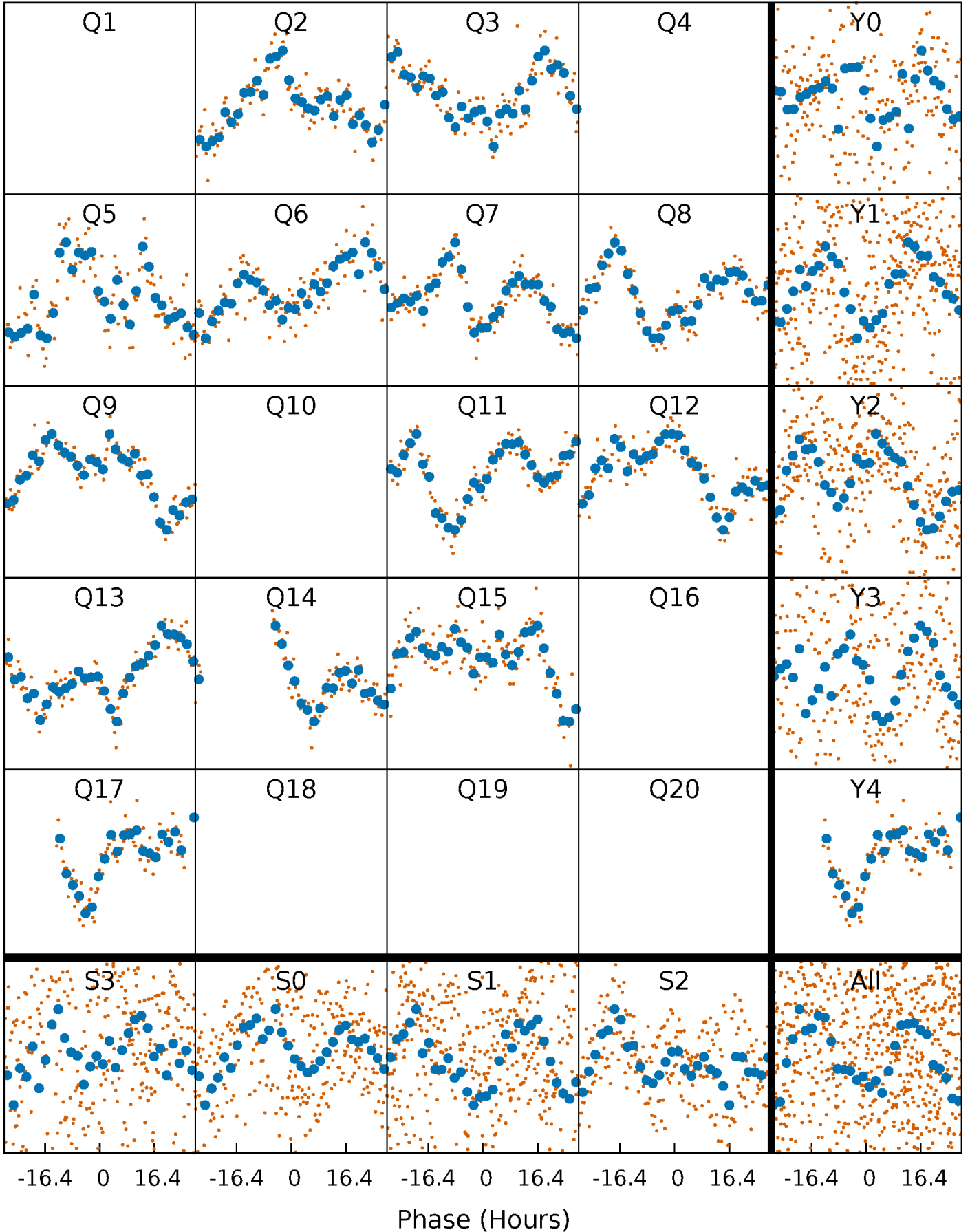


## Planet 5 : Phased Whitened Flux Time Series (Fit Epoch/Period)



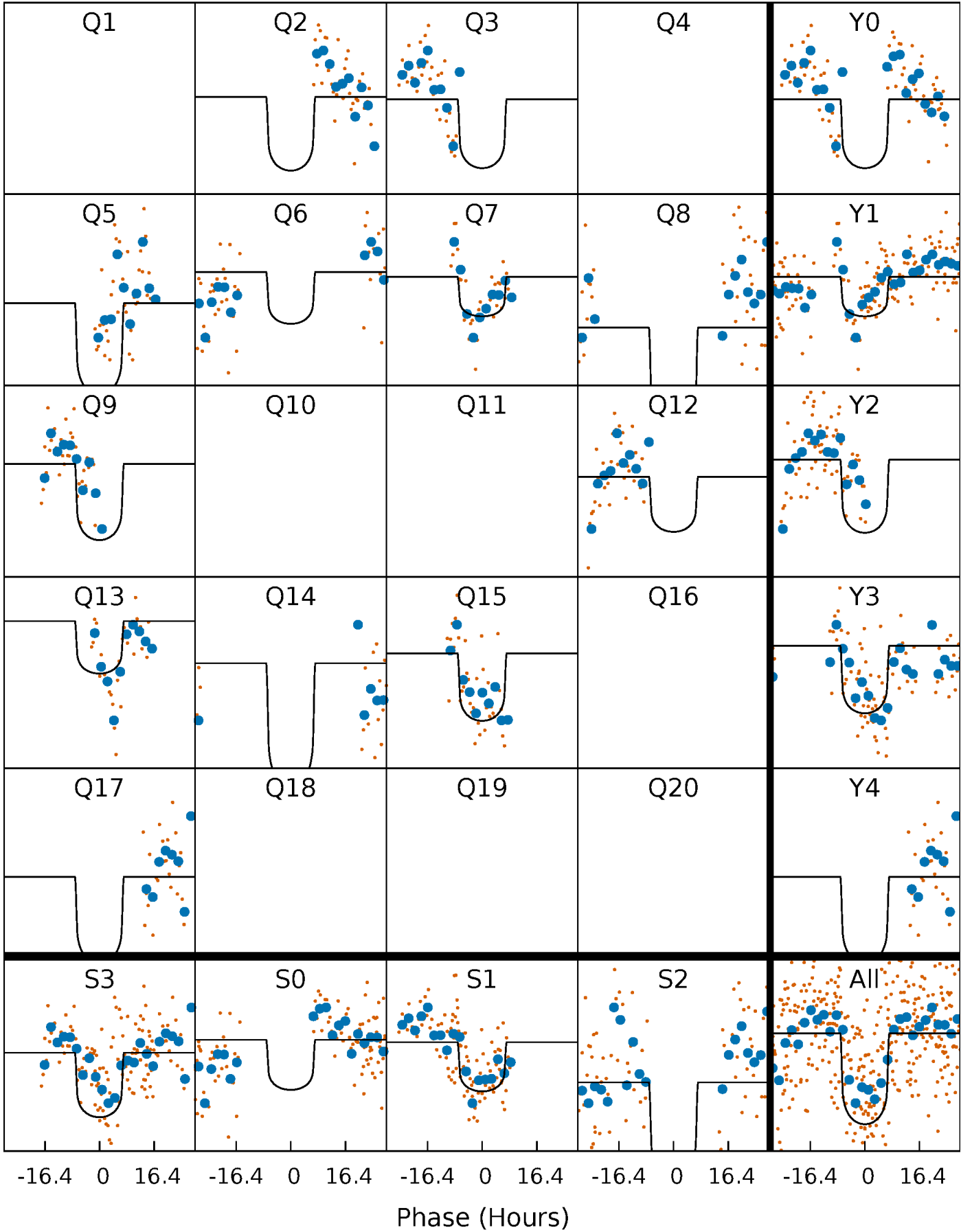
# PDC Quarter-Phased Transit Curves

TCE 008392519-05   P=111.174093 Days    $T_0=225.691769$  (BKJD)



# DV Quarter-Phased Transit Curves

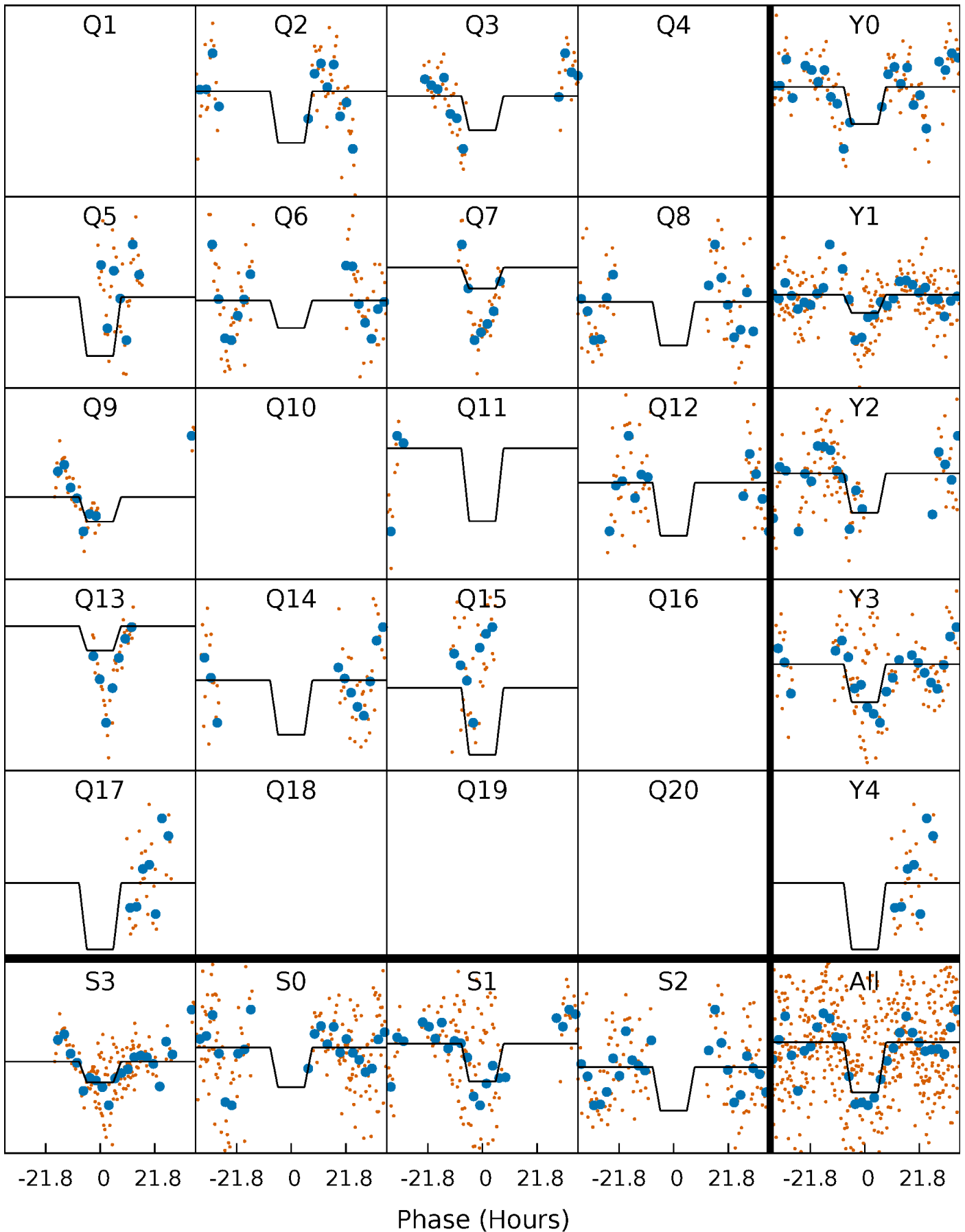
TCE 008392519-05   P=111.174093 Days    $T_0=225.691769$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

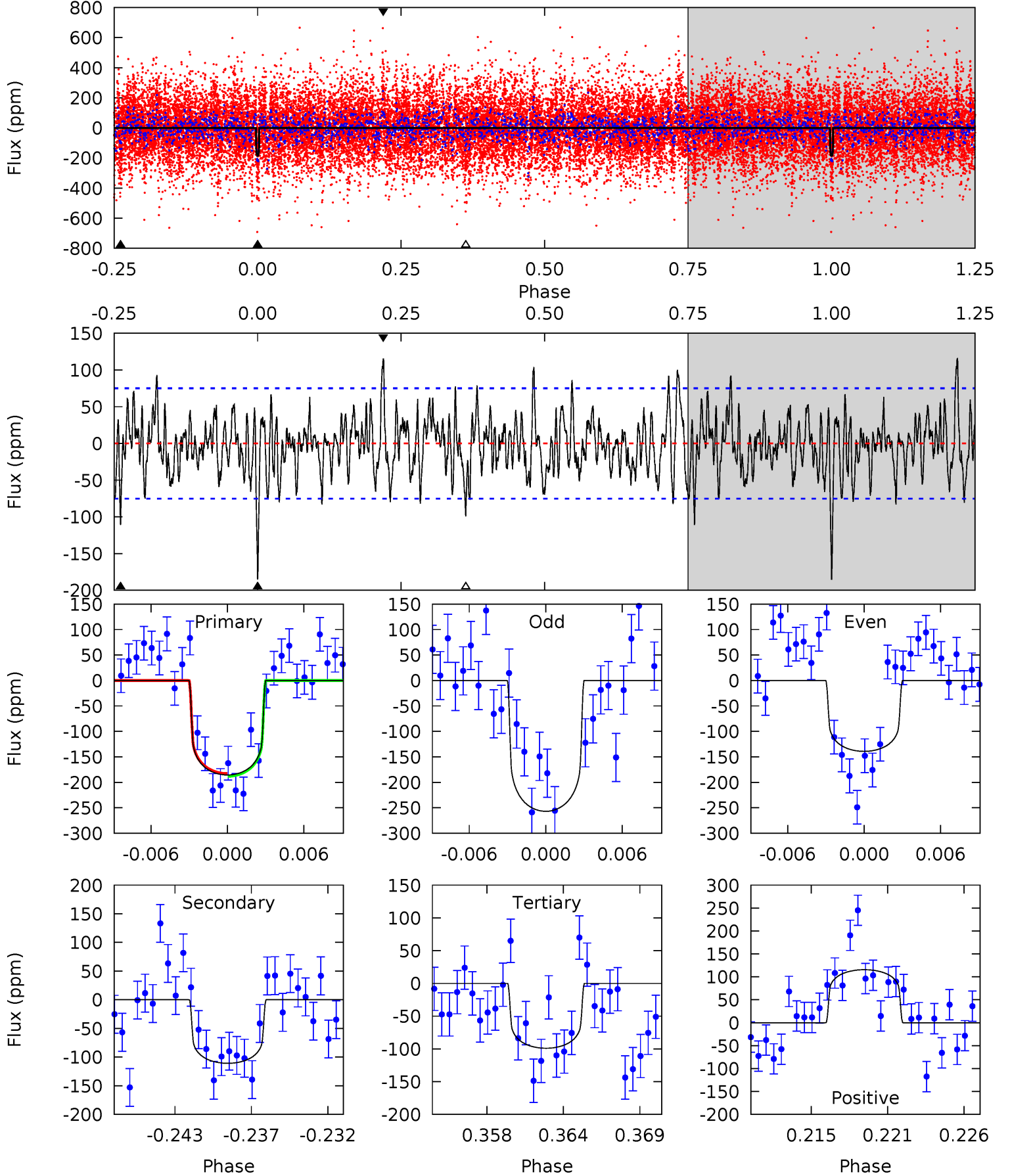
TCE 008392519-05 P=111.185811 Days  $T_0=225.650856$  (BKJD)



# DV Model-Shift Uniqueness Test

008392519-05, P = 111.174093 Days, E = 114.517676 Days

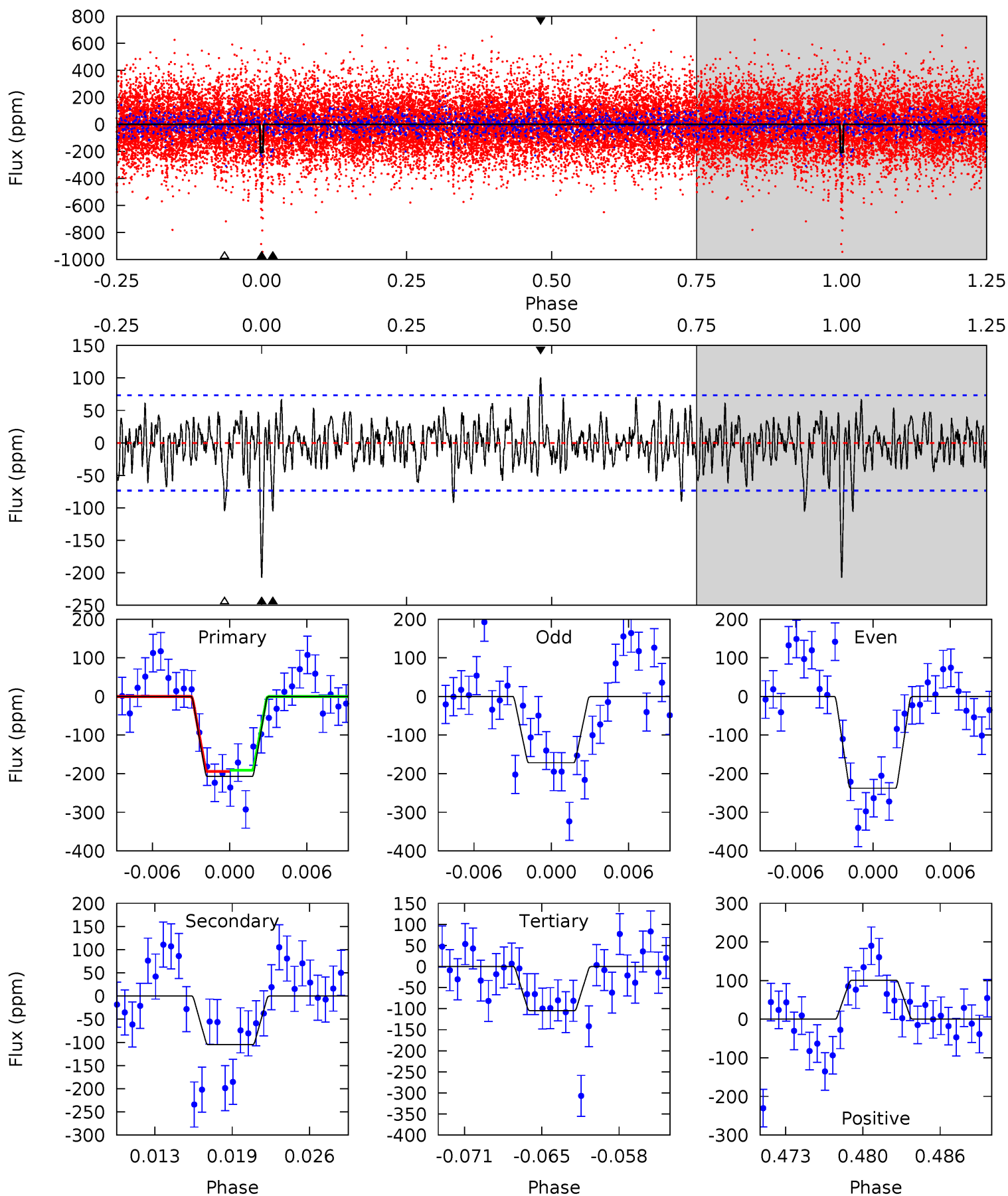
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	7.58	6.77	7.90	5.14	2.78	2.32	5.91	4.78	0.81	-0.32	4.00	0.84	0.38	0.18



# Alt Model-Shift Uniqueness Test

008392519-05, P = 111.185811 Days, E = 114.465045 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
14.4	7.30	7.28	6.99	5.11	2.72	1.88	7.15	7.44	0.03	0.31	2.28	0.62	0.33	0.10



### Stellar Parameters For KIC 008392519

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6760^{+187}_{-234}$	$3.635^{+0.323}_{-0.057}$	$-0.160^{+0.300}_{-0.250}$	$3.258^{+0.406}_{-1.218}$	$1.670^{+0.221}_{-0.332}$	$0.068^{+0.157}_{-0.014}$
	+3%/-3%	+9%/-2%	+188%/-156%	+12%/-37%	+13%/-20%	+230%/-20%
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 008392519-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-111 \pm 15$	$5.49^{+1.44}_{-1.32}$	$998^{+55}_{-93}$	$5378^{+617}_{-457}$	$584^{+428}_{-218}$
Alt.	$-105 \pm 14$	$4.34^{+1.35}_{-1.32}$	$994^{+60}_{-88}$	$5879^{+1119}_{-588}$	$892^{+954}_{-381}$

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

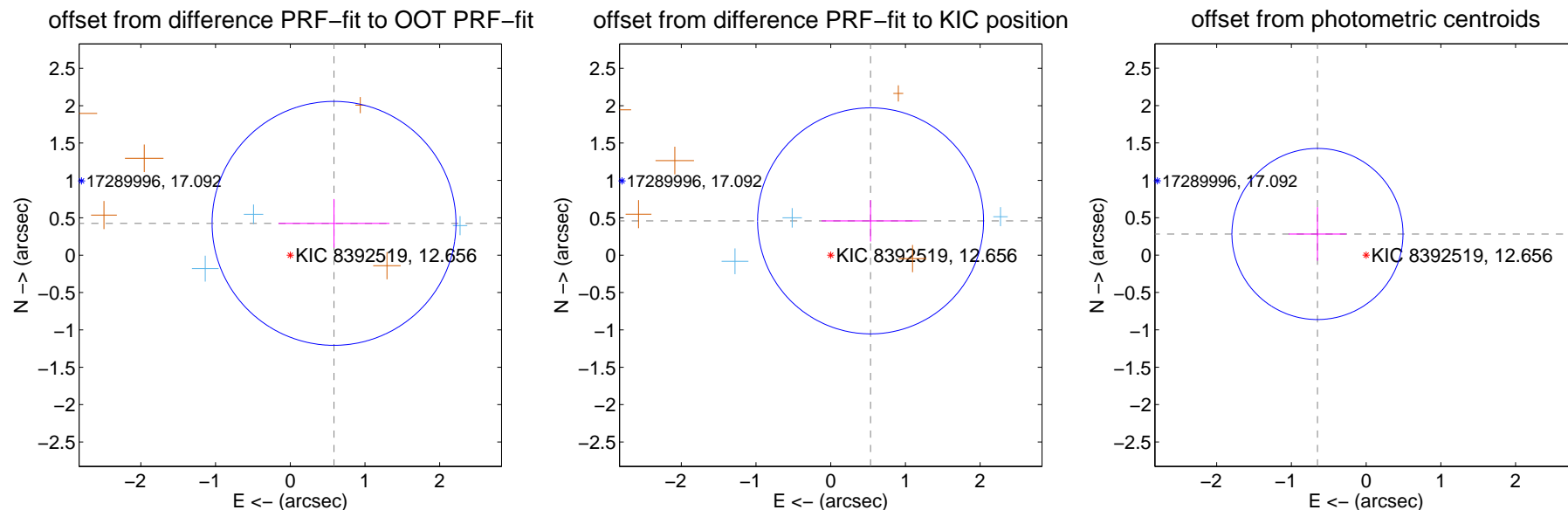
## DV Centroid Data

Supplemental centroid analysis for 008392519-05. Kepler magnitude: 12.66. Transit SNR 11.93

There are 3 quarters with good PRF difference image offsets

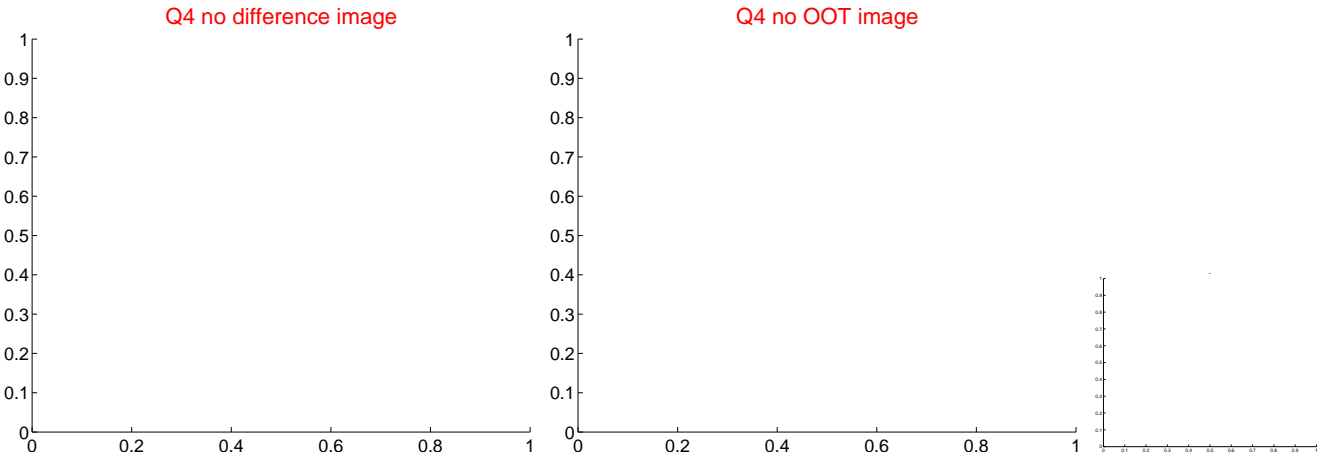
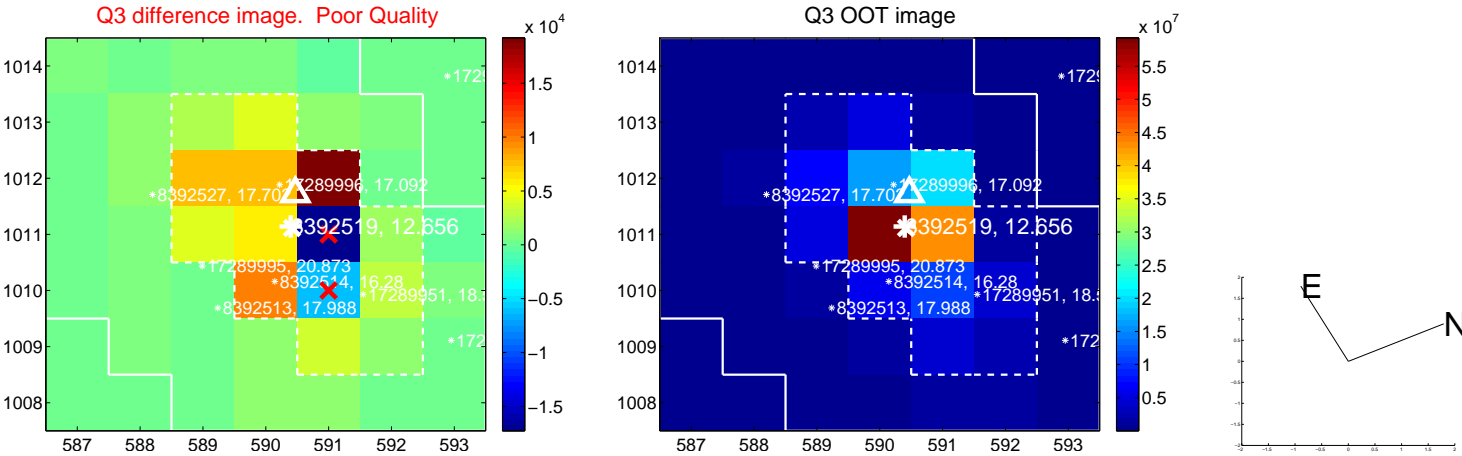
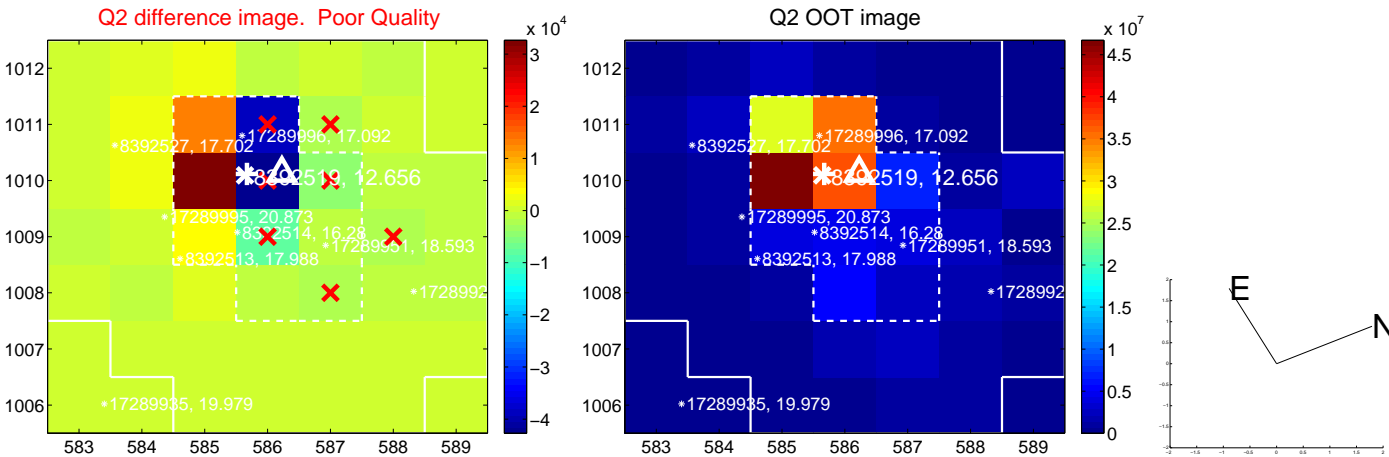
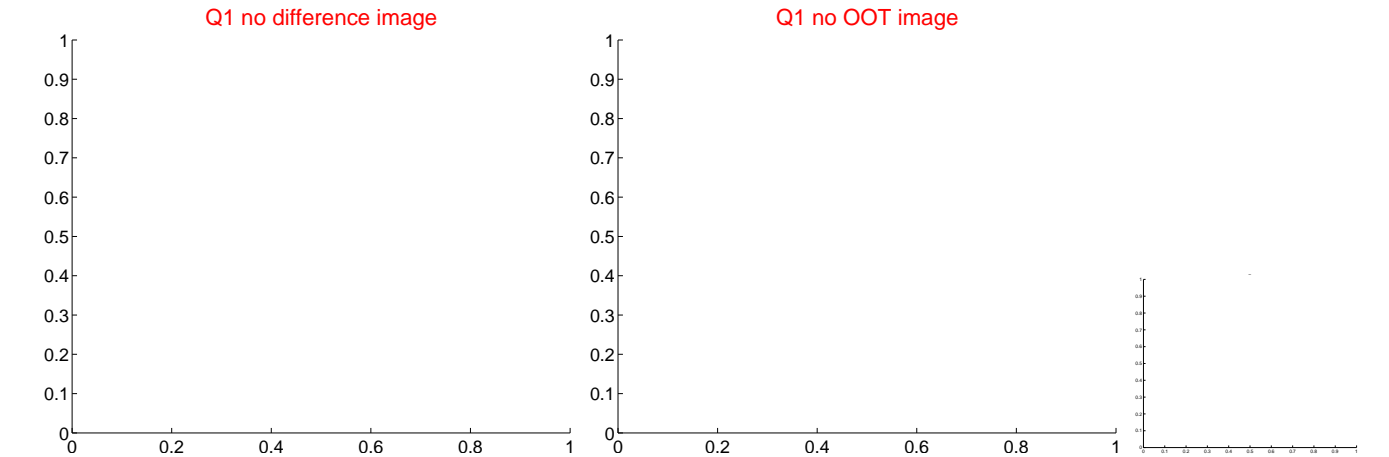
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.724 \pm 0.544$	1.33	$-0.586 \pm 0.743$	$0.425 \pm 0.326$
PRF-fit source offset from KIC position	$0.704 \pm 0.504$	1.40	$-0.533 \pm 0.656$	$0.459 \pm 0.276$
photometric centroid source offset	$0.71 \pm 0.38$	1.86	$0.65 \pm 0.39$	$0.28 \pm 0.36$

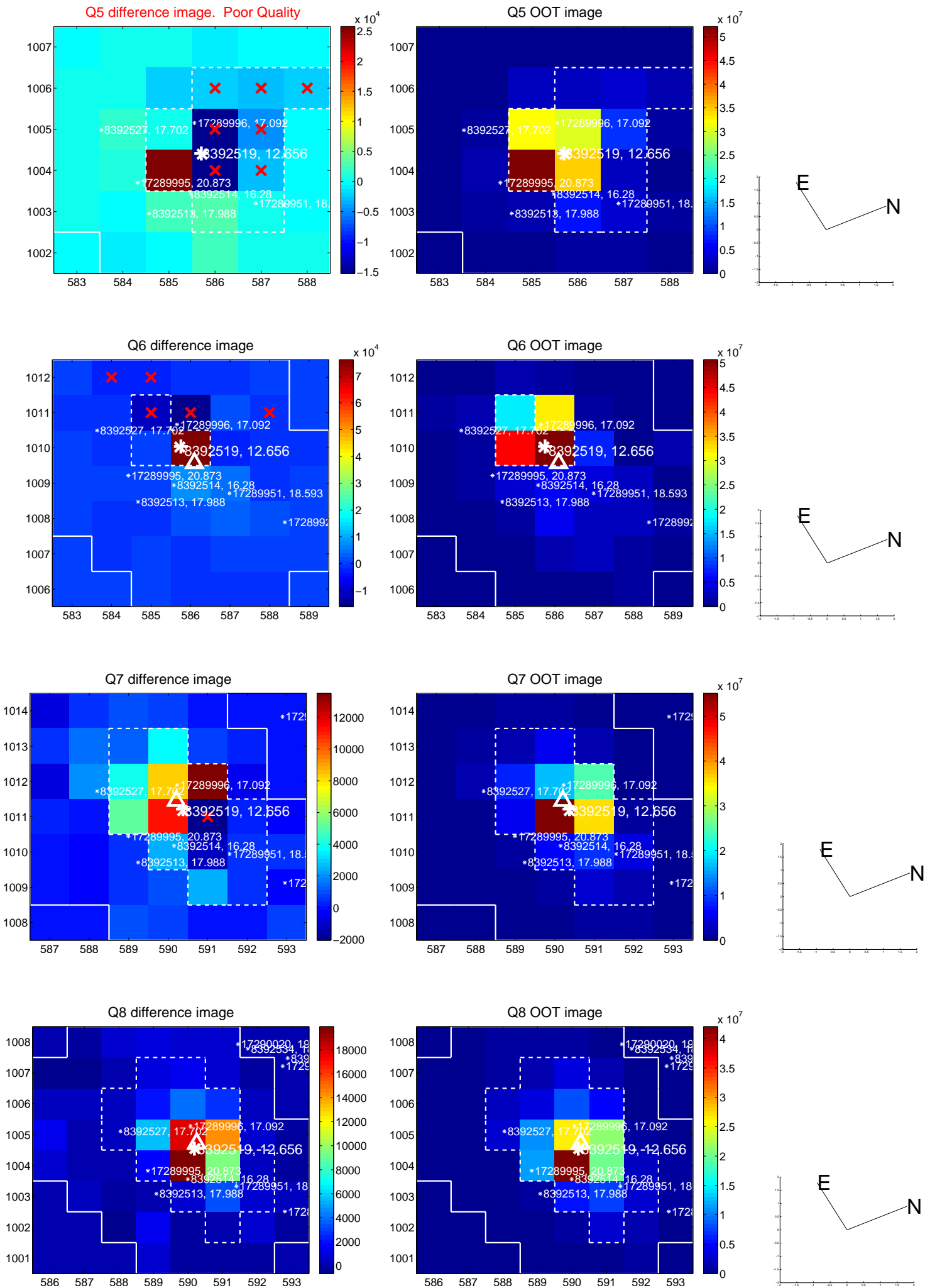


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

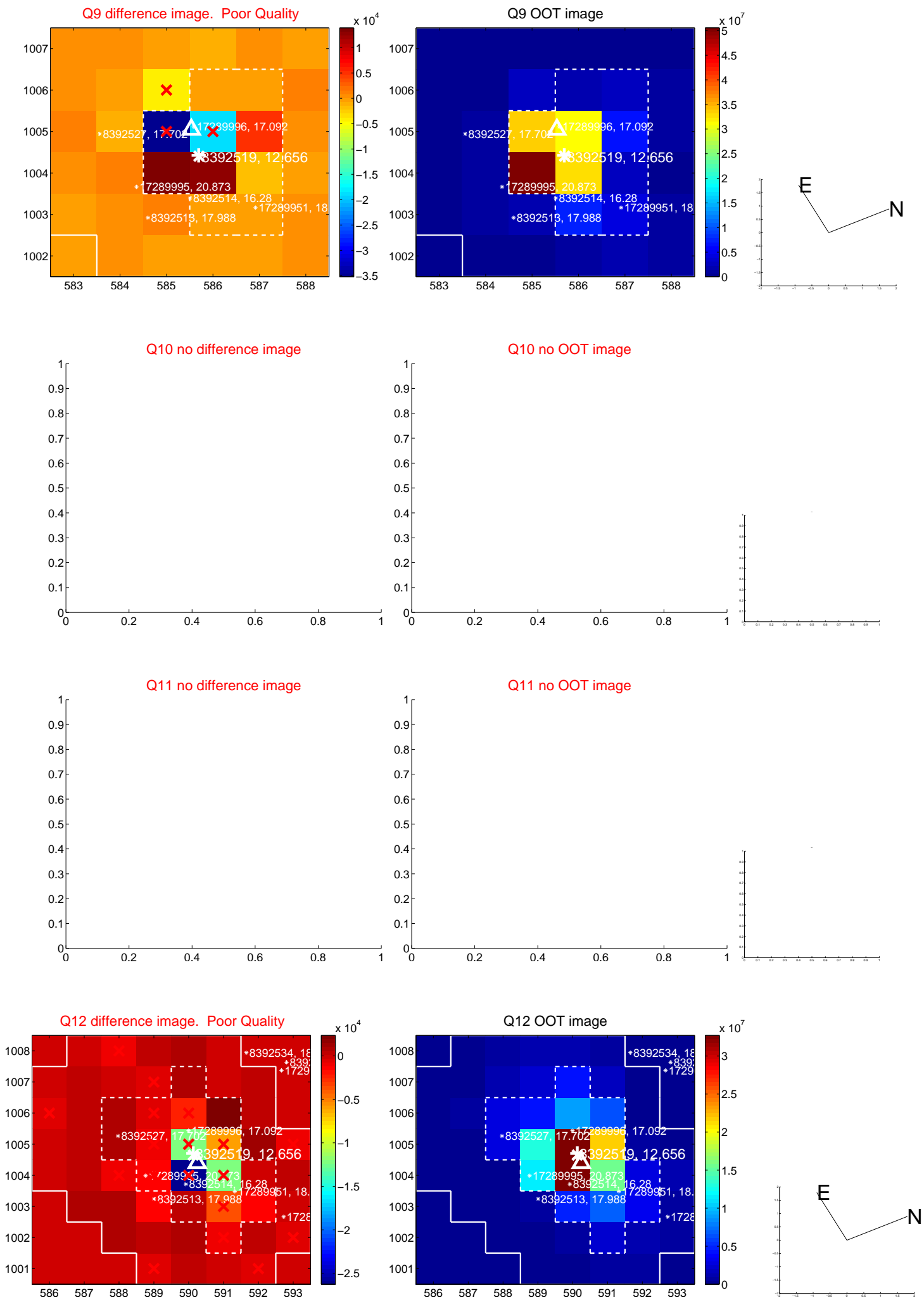


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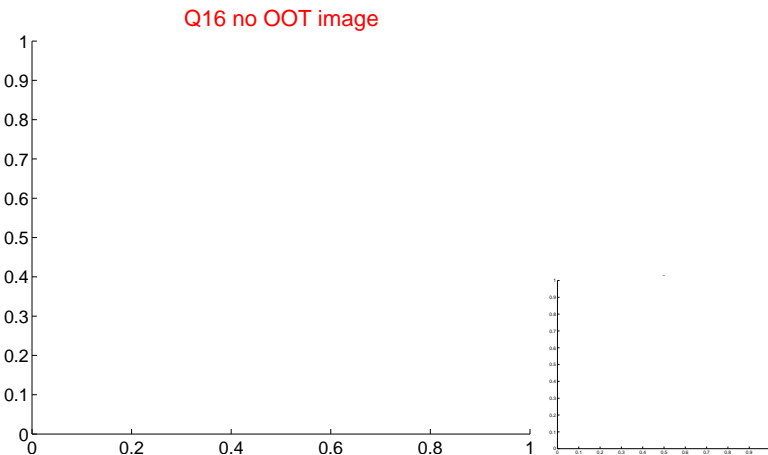
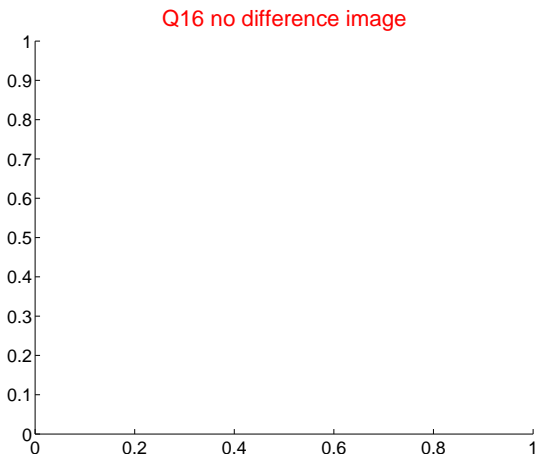
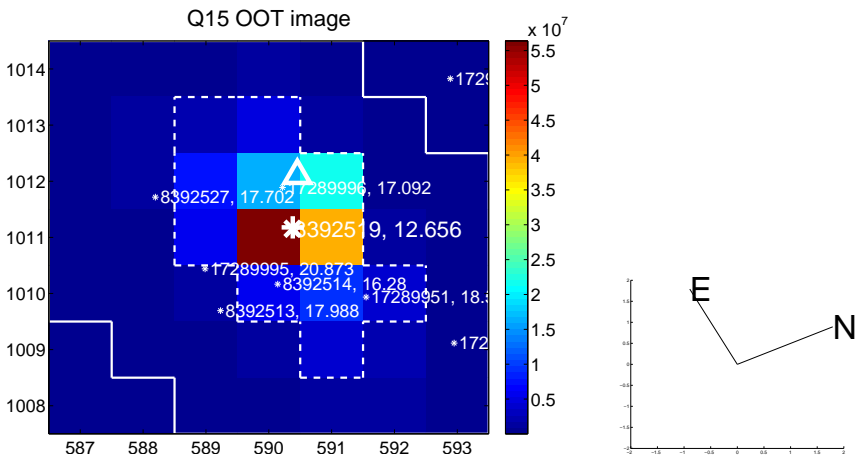
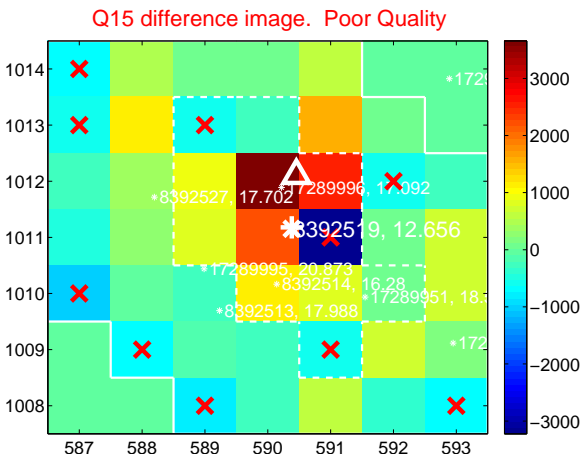
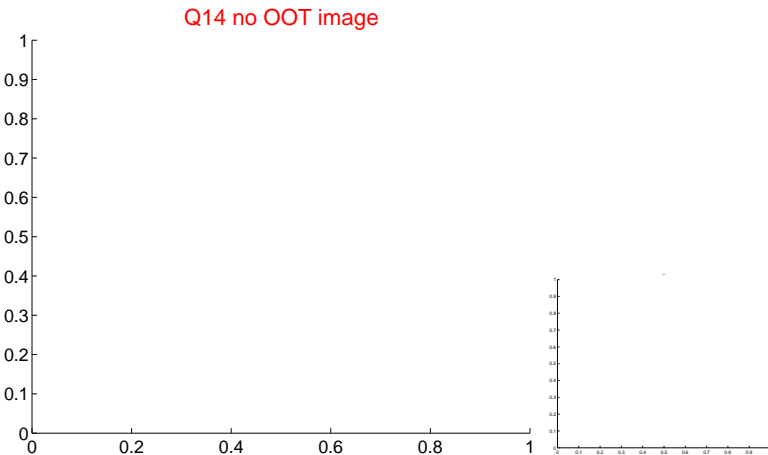
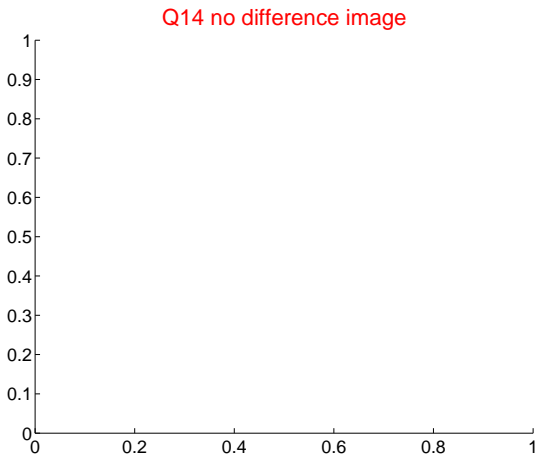
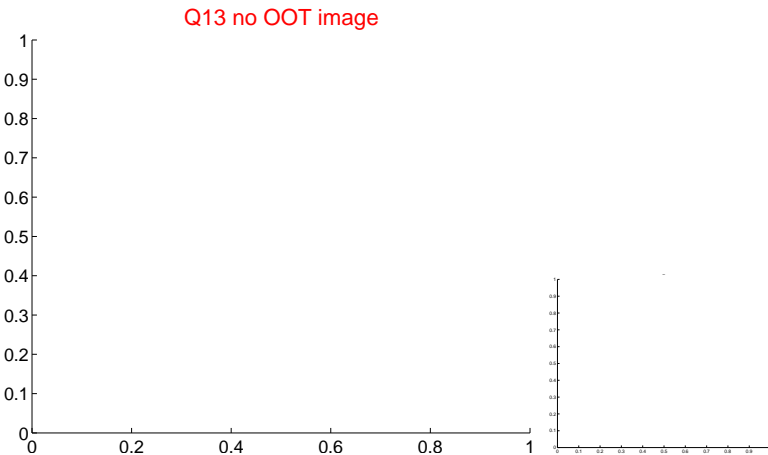
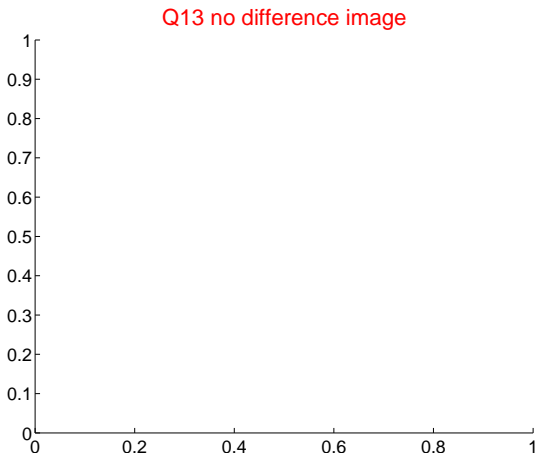




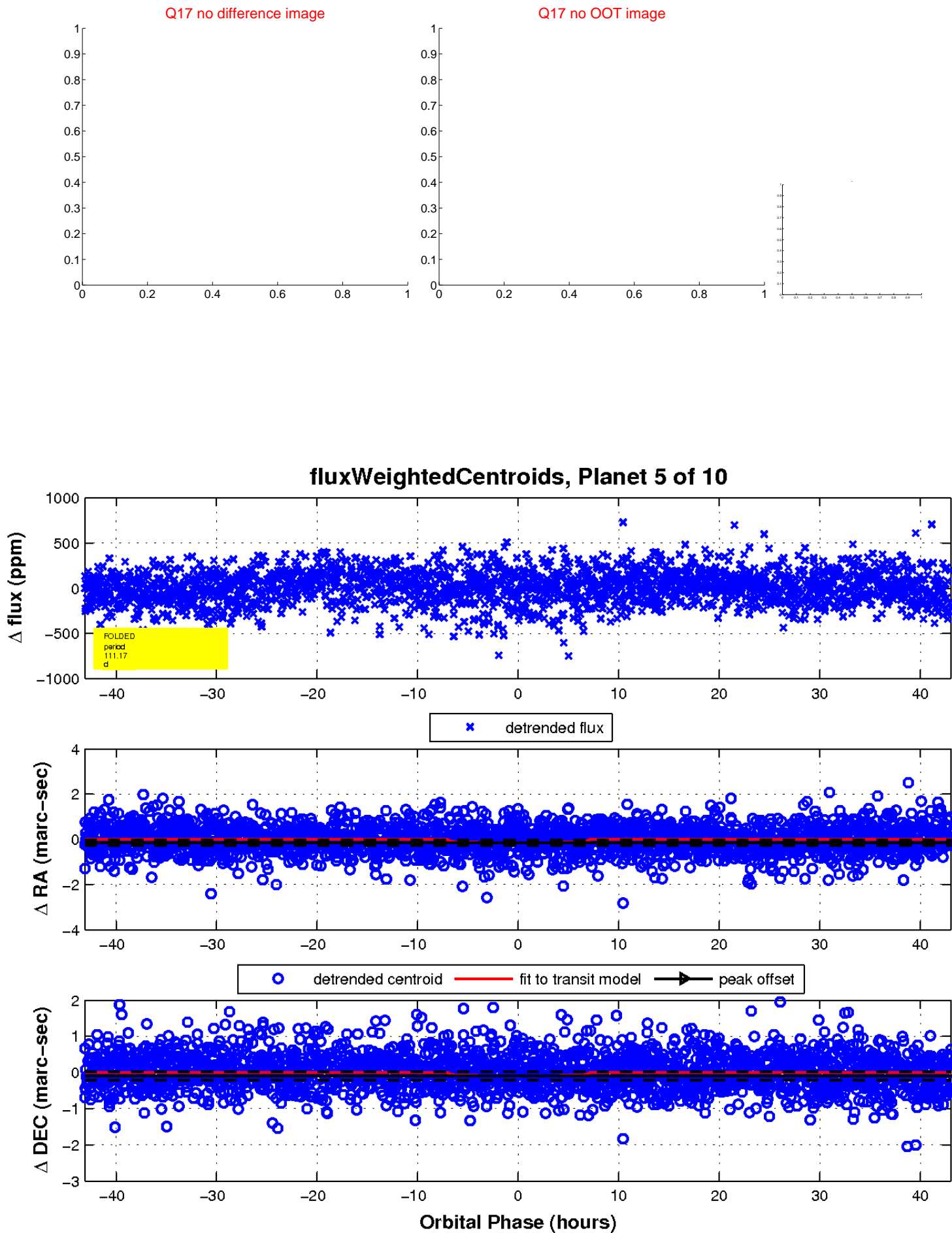
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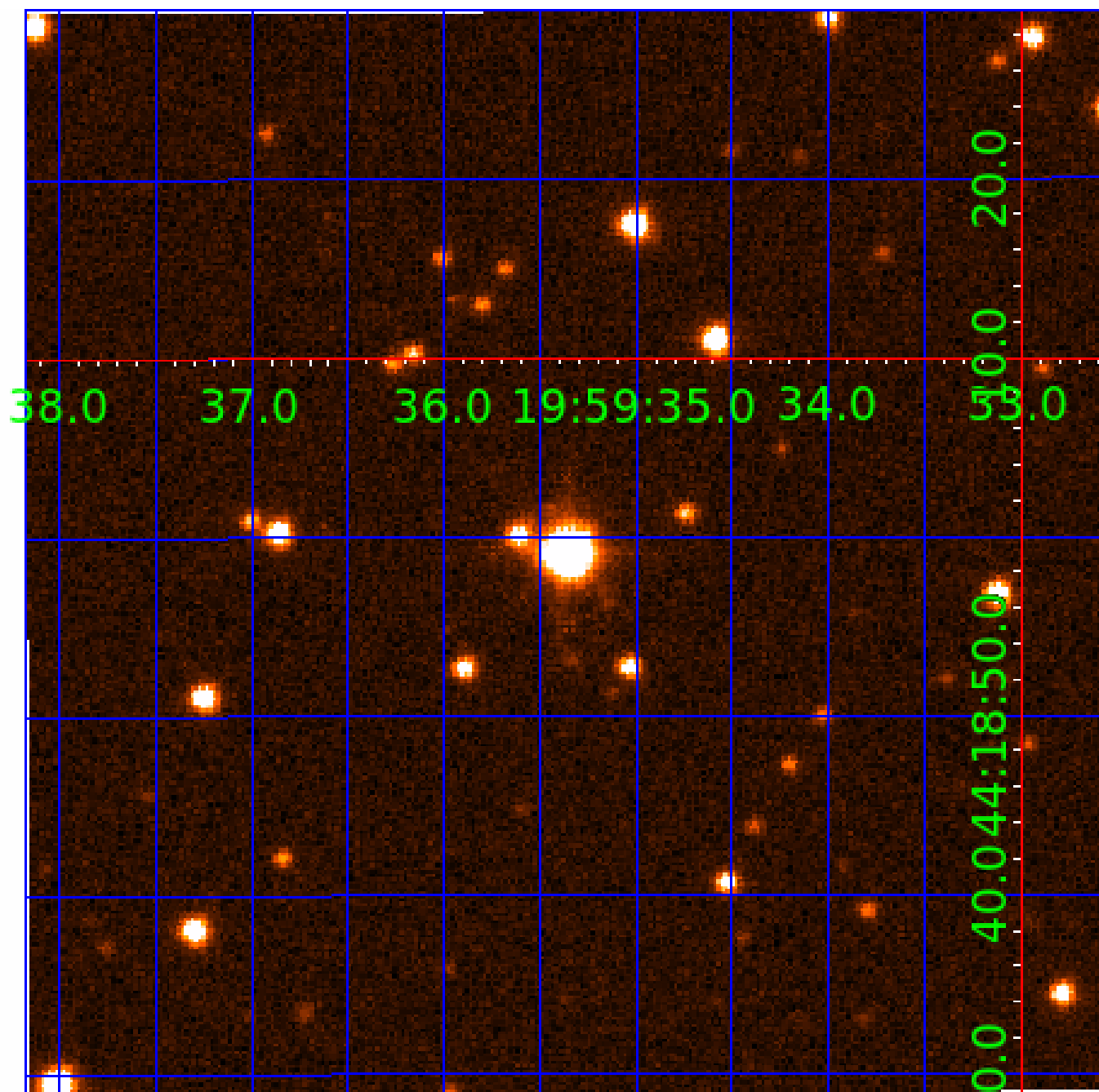


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UKIRT Image

Declination



## 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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## Robovetter Results

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008392519-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
008392519-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008392519-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008392519-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008392519-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

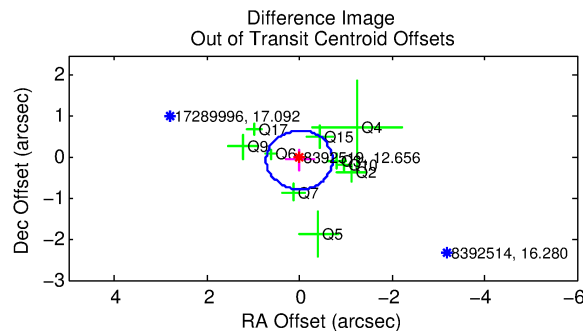
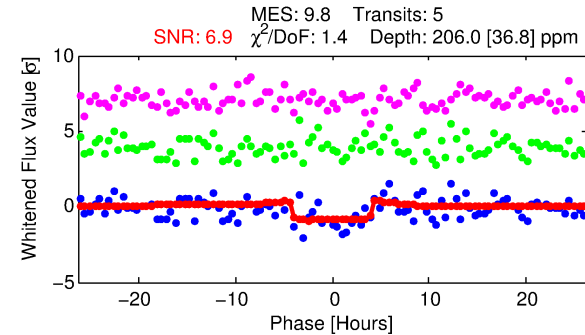
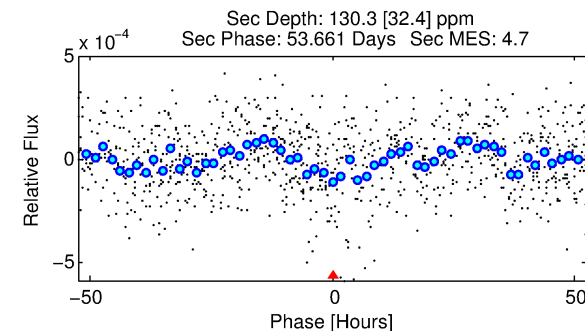
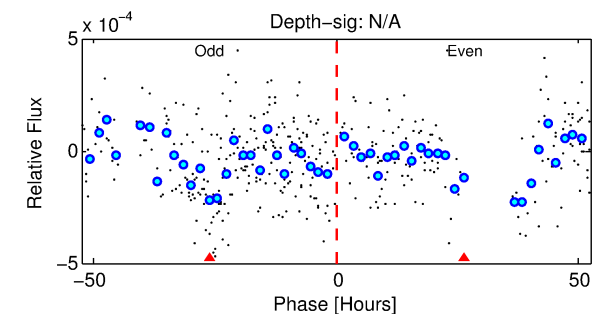
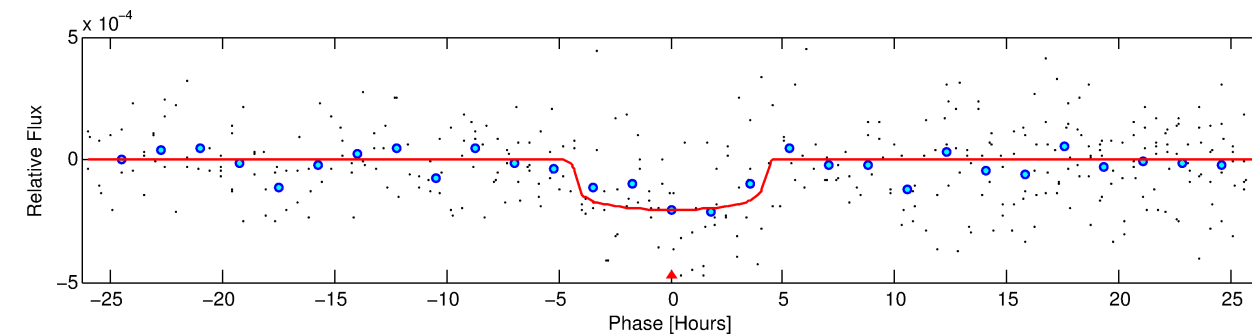
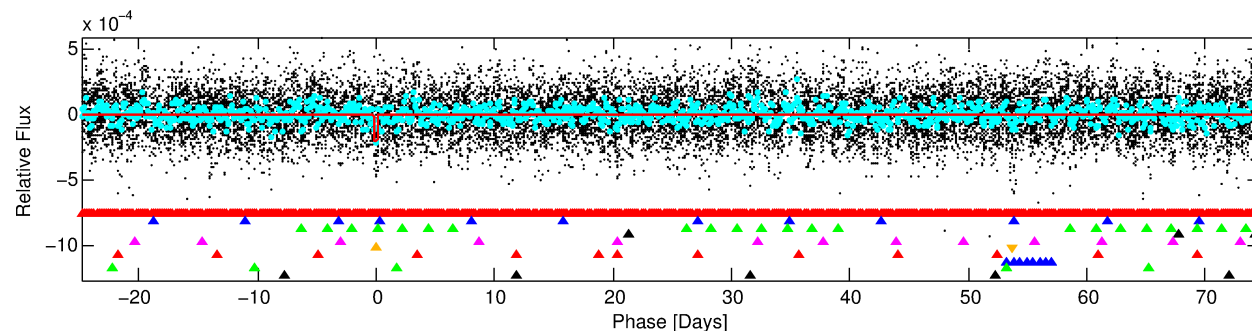
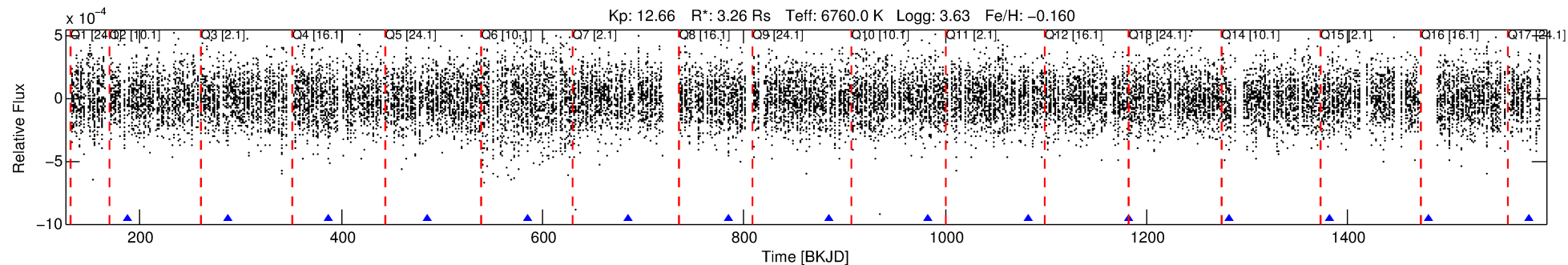
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008392519-06

No Significant Match Found

# DV One-Page Summary

KIC: 8392519 Candidate: 6 of 10 Period: 99.450 d



## DV Fit Results:

Period = 99.45022 [0.00342] d  
Epoch = 187.8865 [0.0248] BKJD  
Rp/R\* = 0.0144 [0.0066]  
a/R\* = 57.00 [147.41]  
b = 0.77 [1.35]  
Seff = 79.89 [45.69]  
Teq = 762 [109] K  
Rp = 5.11 [3.02] Re  
a = 0.4986 [0.1753] AU  
Ag = 682.27 [748.87] [0.91σ]  
Teffp = 6024 [1441] K [3.64σ]

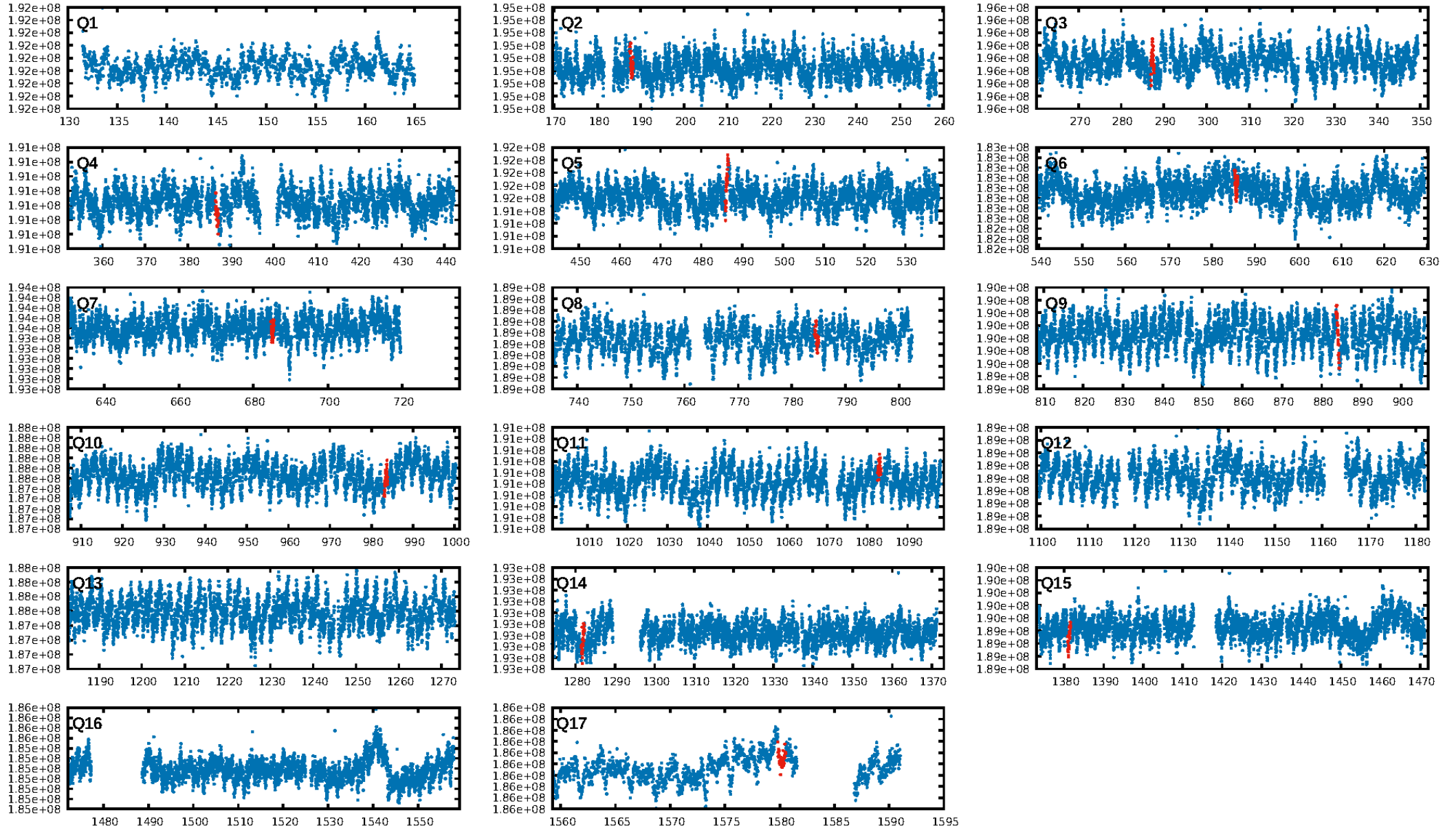
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [37.73σ]  
LongPeriod-sig: 100.0% [17.24σ]  
ModelChiSquare2-sig: 1.7%  
ModelChiSquareGof-sig: 93.6%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 0.8786  
Centroid-sig: 56.2%  
Centroid-so: 0.312 arcsec [0.52σ]  
OotOffset-rm: 0.062 arcsec [0.26σ]  
KicOffset-rm: 0.093 arcsec [0.30σ]  
OotOffset-st: 3/3/1/3 [10]  
KicOffset-st: 3/3/1/3 [10]  
DiffImageQuality-fgm: 0.60 [6/10]  
DiffImageOverlap-fno: 0.09 [1/11]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:17:58 Z

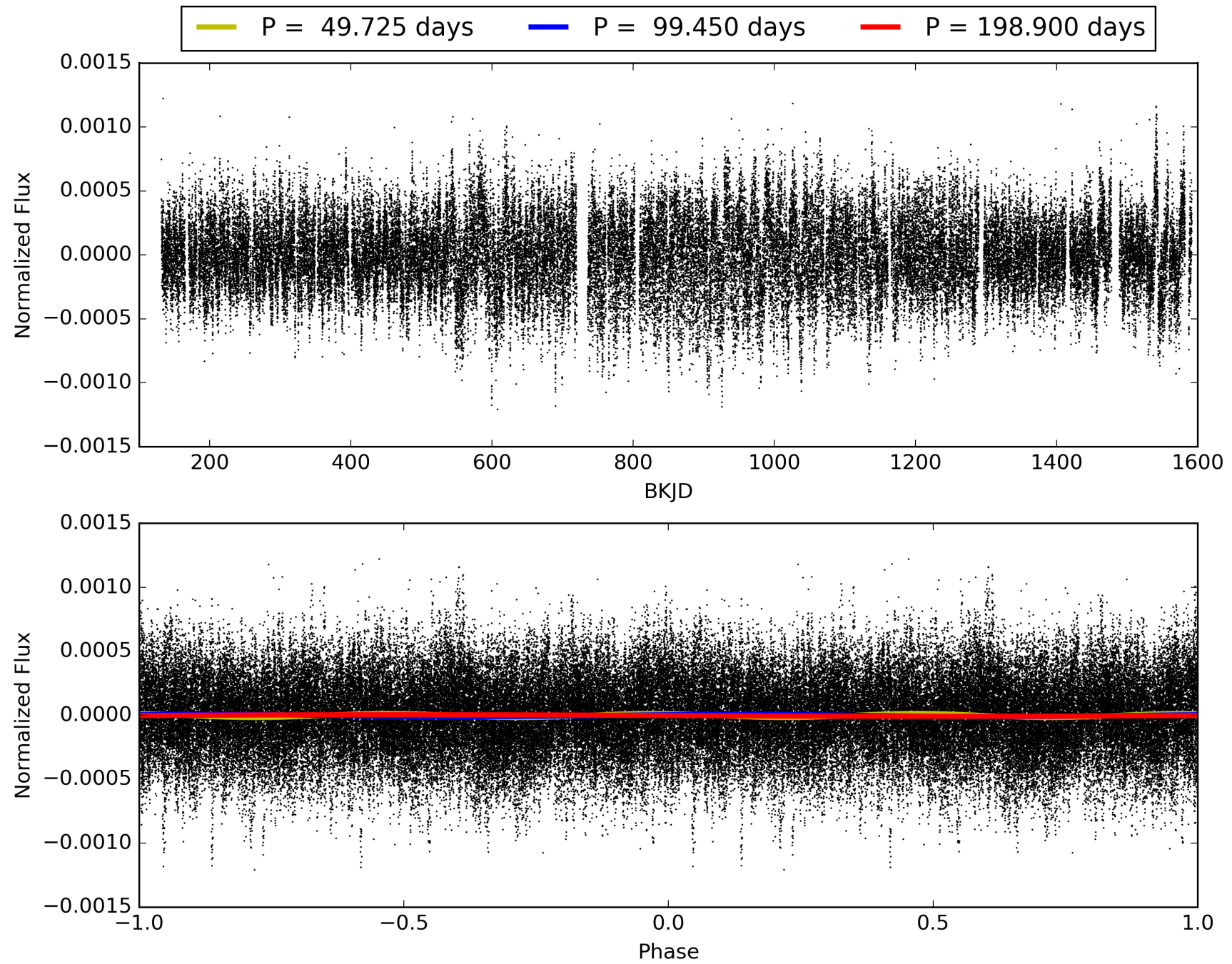
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008392519-06, PDC Light Curves



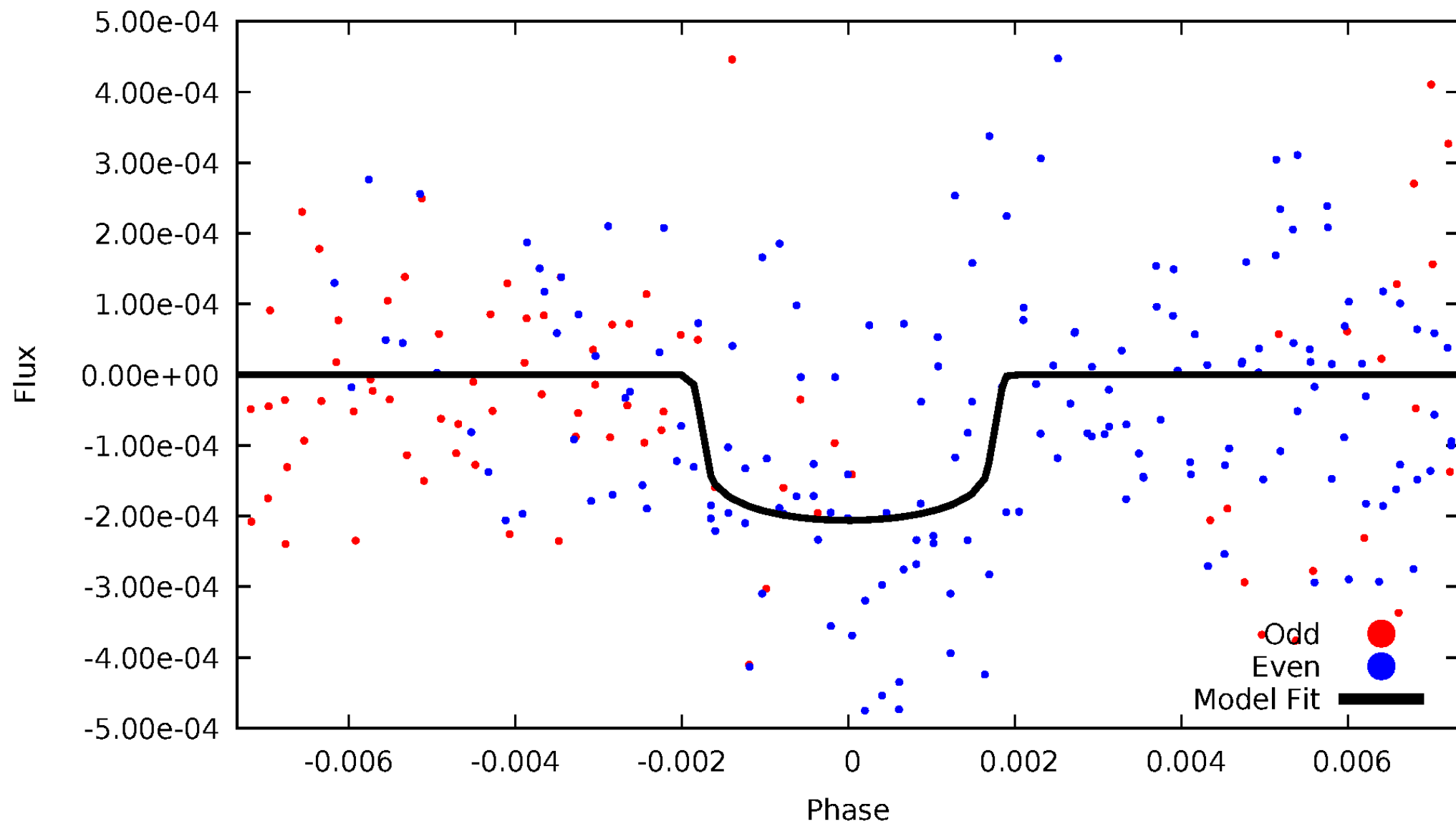


TCE 008392519-06



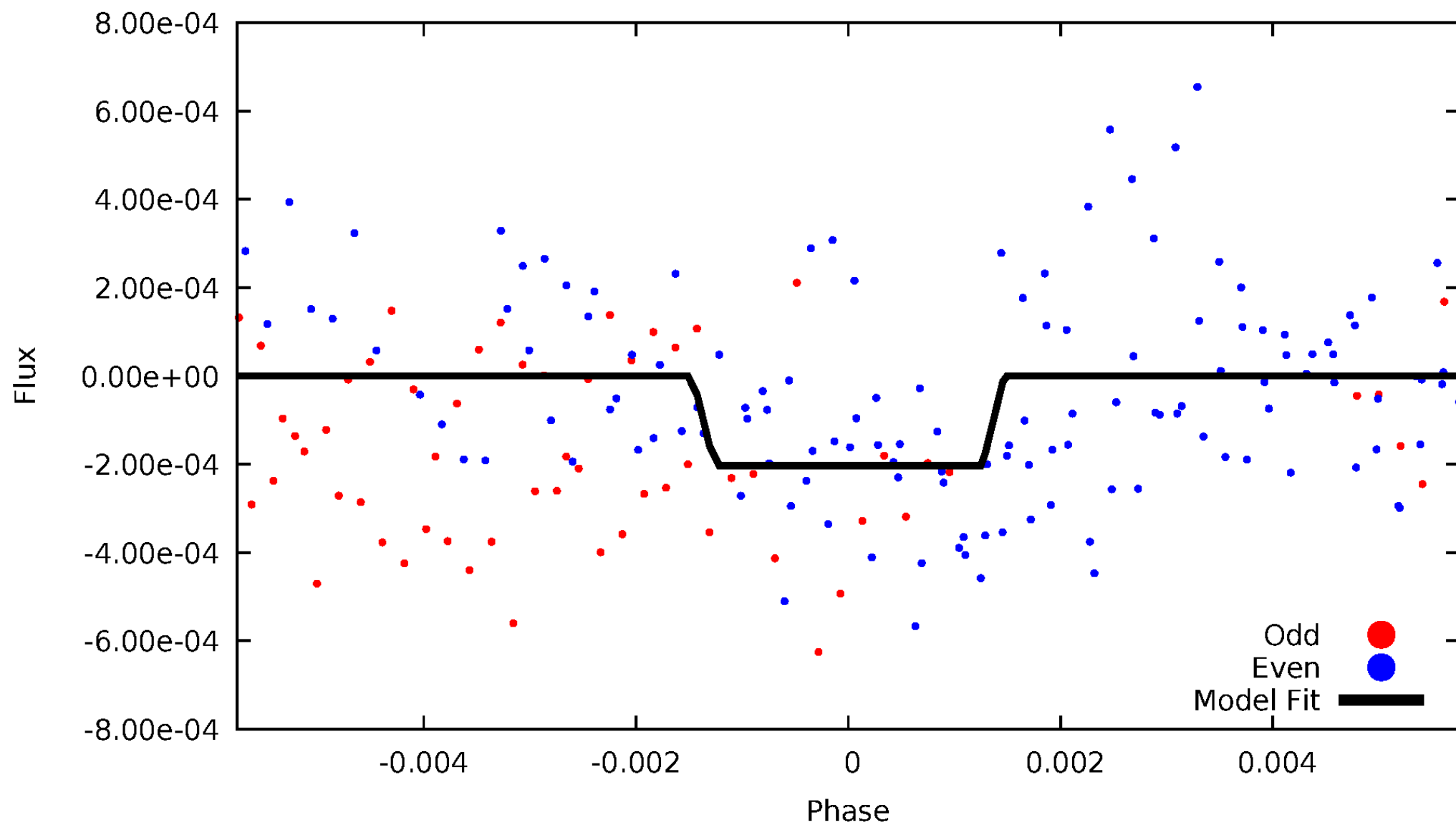
# DV Odd/Even

TCE 008392519-06



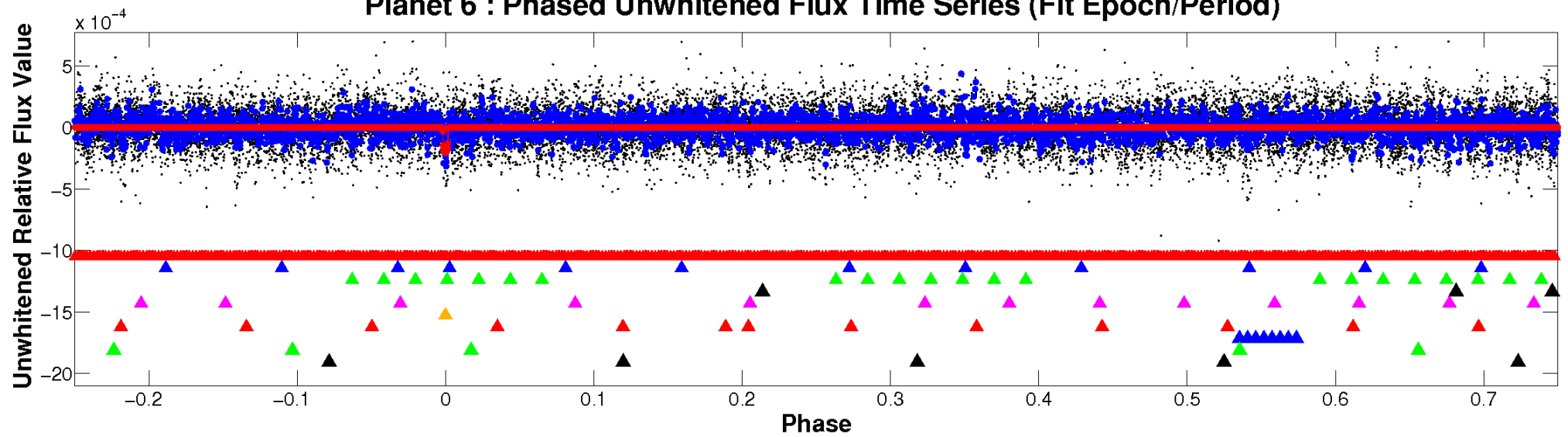
# ALT Odd/Even

TCE 008392519-06

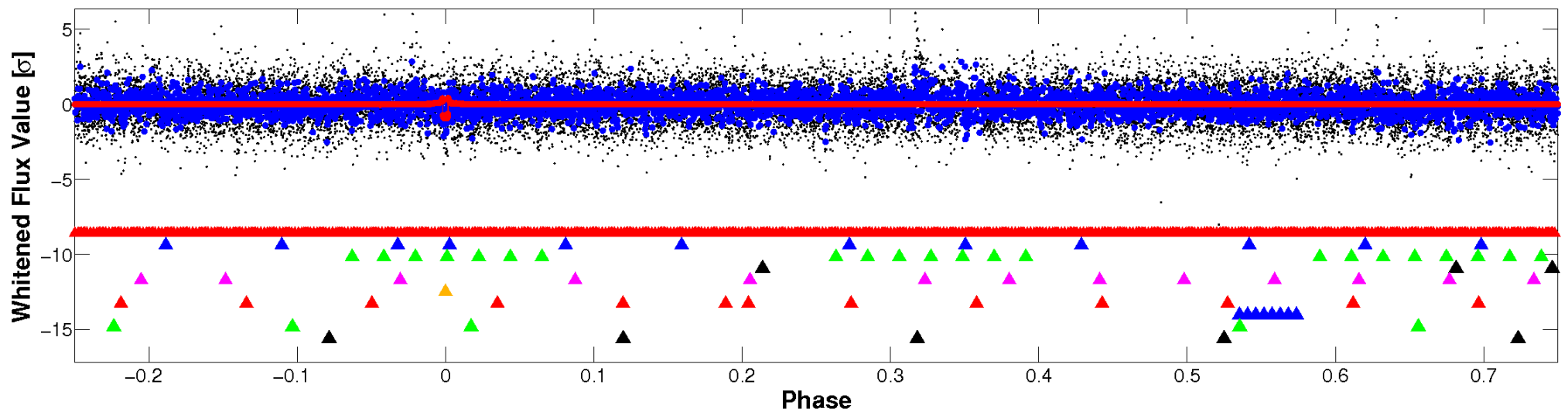


# Non-Whitened Vs. Whitened Light Curve

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

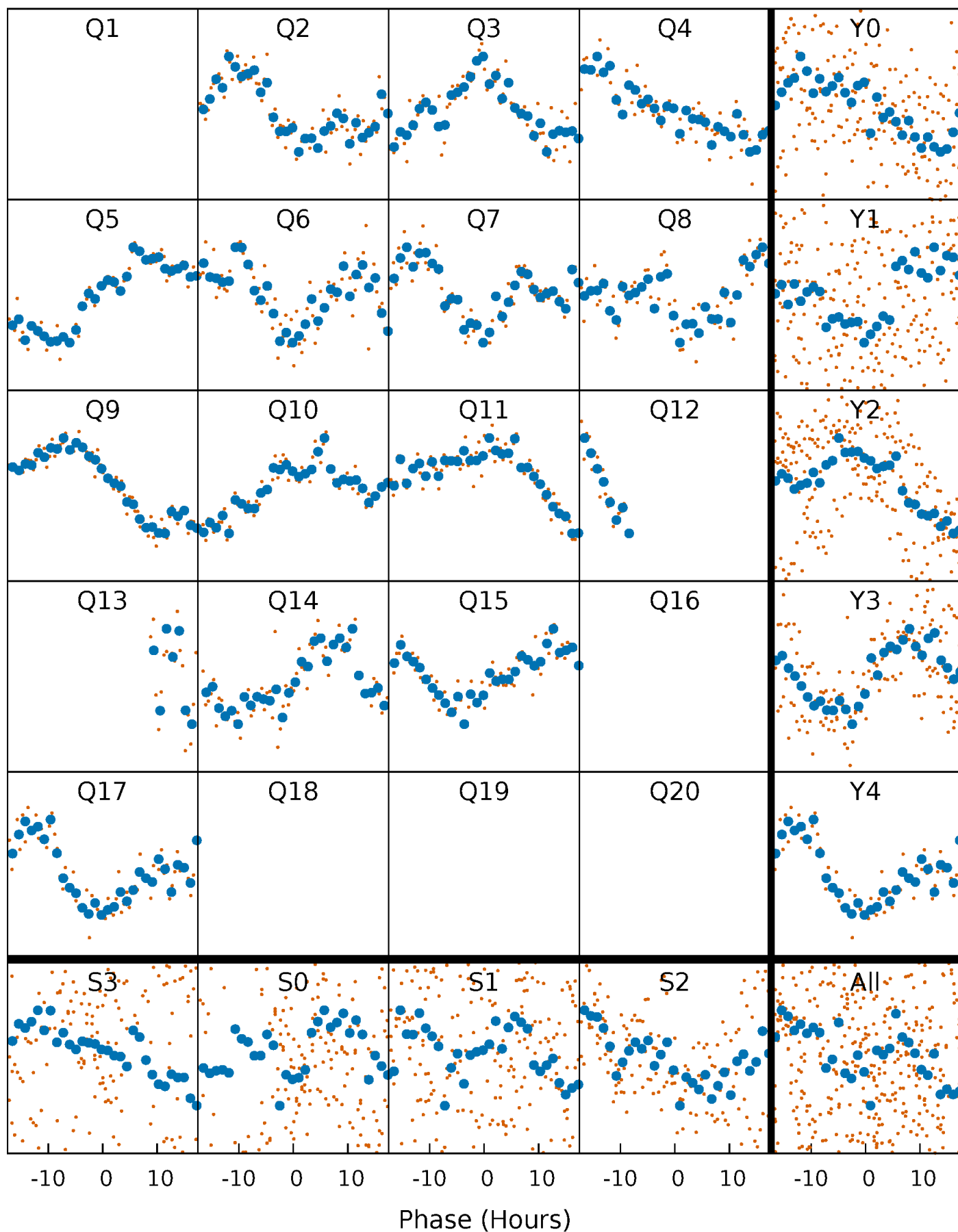


## Planet 6 : Phased Whitened Flux Time Series (Fit Epoch/Period)



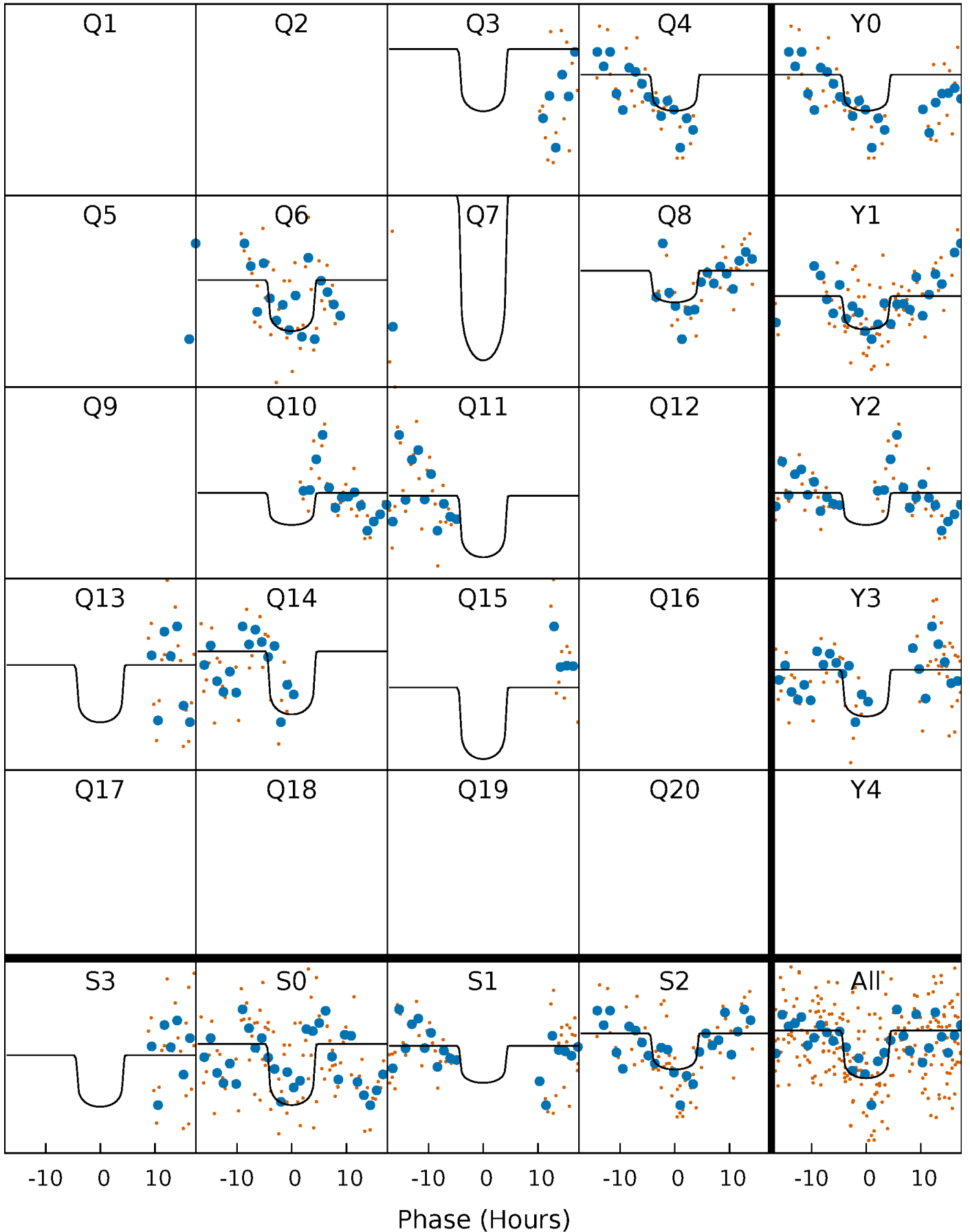
# PDC Quarter-Phased Transit Curves

TCE 008392519-06 P= 99.450221 Days  $T_0=187.886477$  (BKJD)



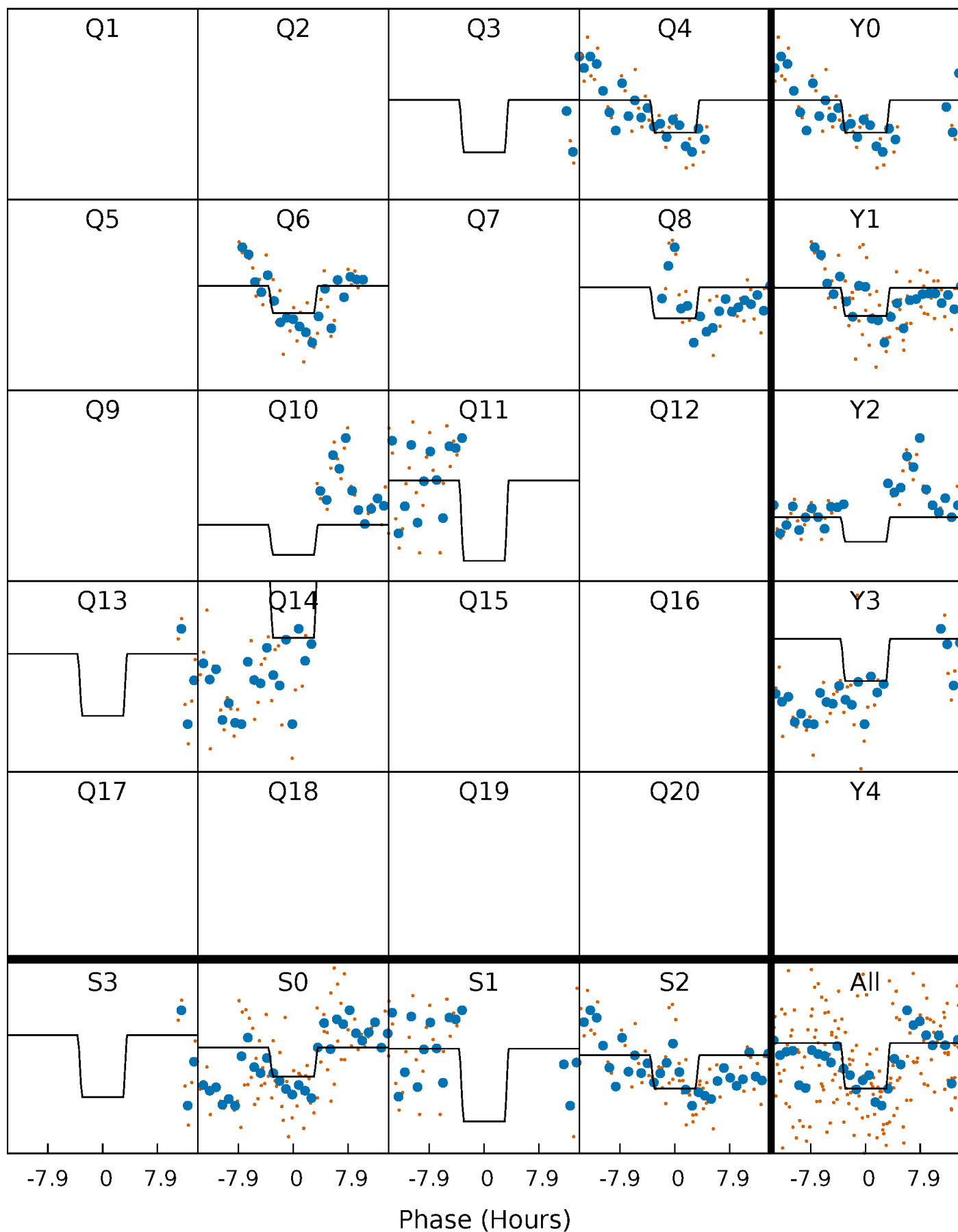
# DV Quarter-Phased Transit Curves

TCE 008392519-06 P= 99.450221 Days  $T_0=187.886477$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 008392519-06 P= 99.445593 Days  $T_0=187.846748$  (BKJD)

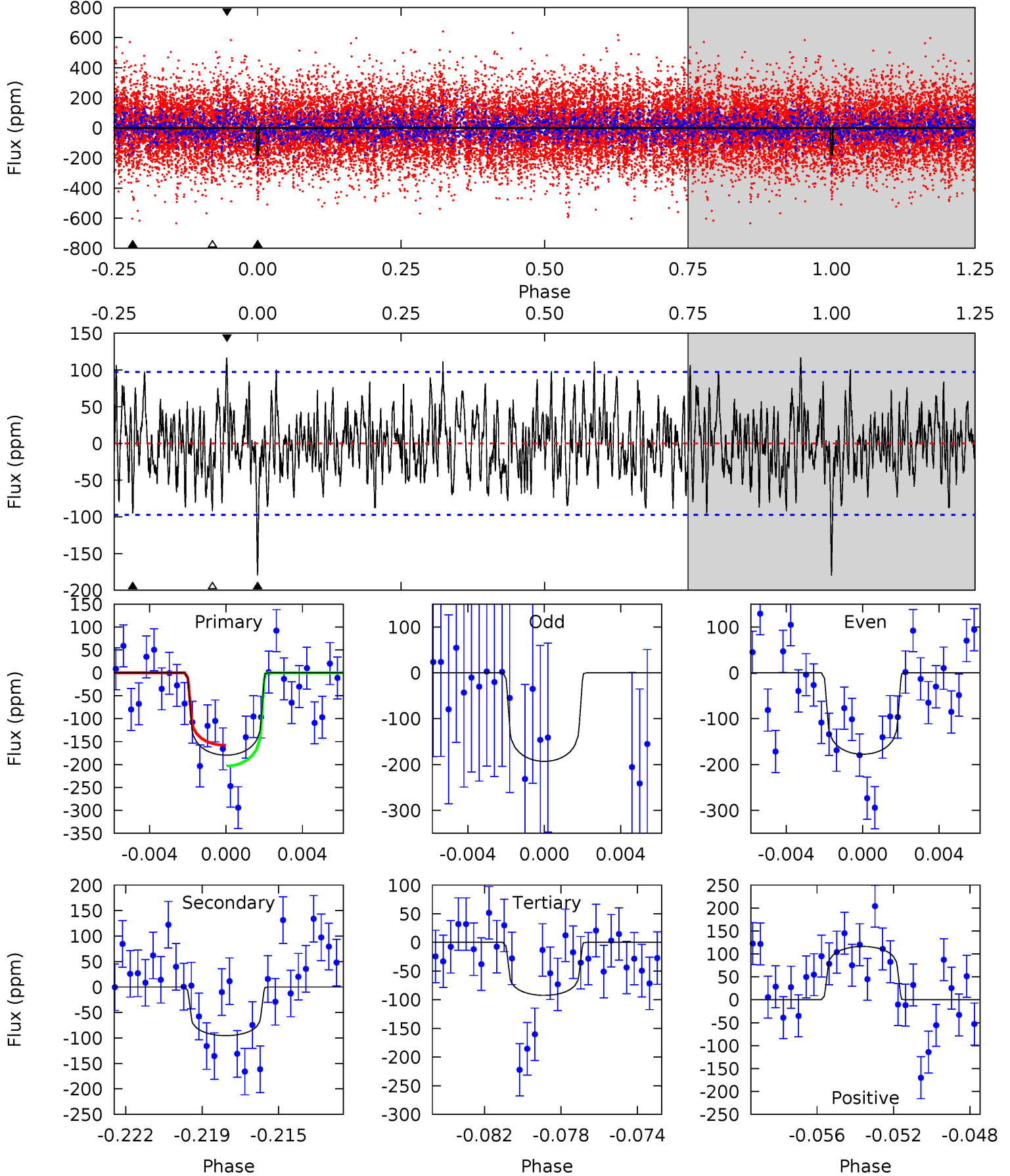




# DV Model-Shift Uniqueness Test

008392519-06, P = 99.450221 Days, E = 88.436256 Days

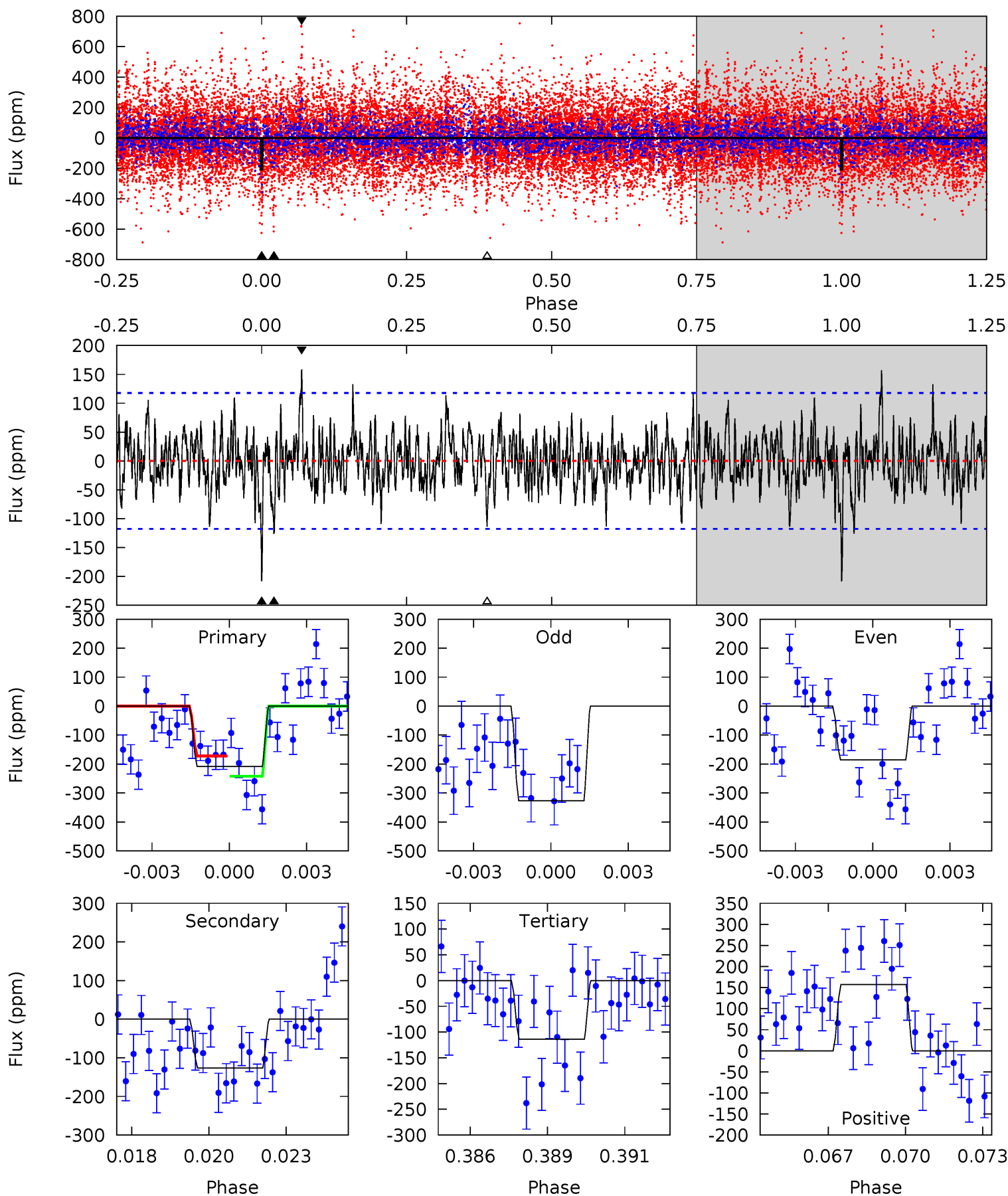
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.62	5.11	4.94	6.23	5.21	2.90	2.01	4.68	3.40	0.16	-1.12	0.28	1.03	0.39	1.21



# Alt Model-Shift Uniqueness Test

008392519-06, P = 99.445593 Days, E = 88.401155 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
9.30	5.64	5.08	7.01	5.26	2.98	1.72	4.22	2.28	0.56	-1.38	2.59	0.83	0.43	1.57



### Stellar Parameters For KIC 008392519

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6760^{+187}_{-234}$	$3.635^{+0.323}_{-0.057}$	$-0.160^{+0.300}_{-0.250}$	$3.258^{+0.406}_{-1.218}$	$1.670^{+0.221}_{-0.332}$	$0.068^{+0.157}_{-0.014}$
	+3%/-3%	+9%/-2%	+188%/-156%	+12%/-37%	+13%/-20%	+230%/-20%
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 008392519-06 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-95 \pm 19$	$4.67^{+2.48}_{-2.09}$	$1033^{+59}_{-95}$	$5510^{+1919}_{-849}$	$597^{+1344}_{-353}$
Alt.	$-126 \pm 22$	$4.43^{+2.64}_{-1.79}$	$1032^{+57}_{-98}$	$5990^{+2355}_{-1064}$	$856^{+1782}_{-523}$

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

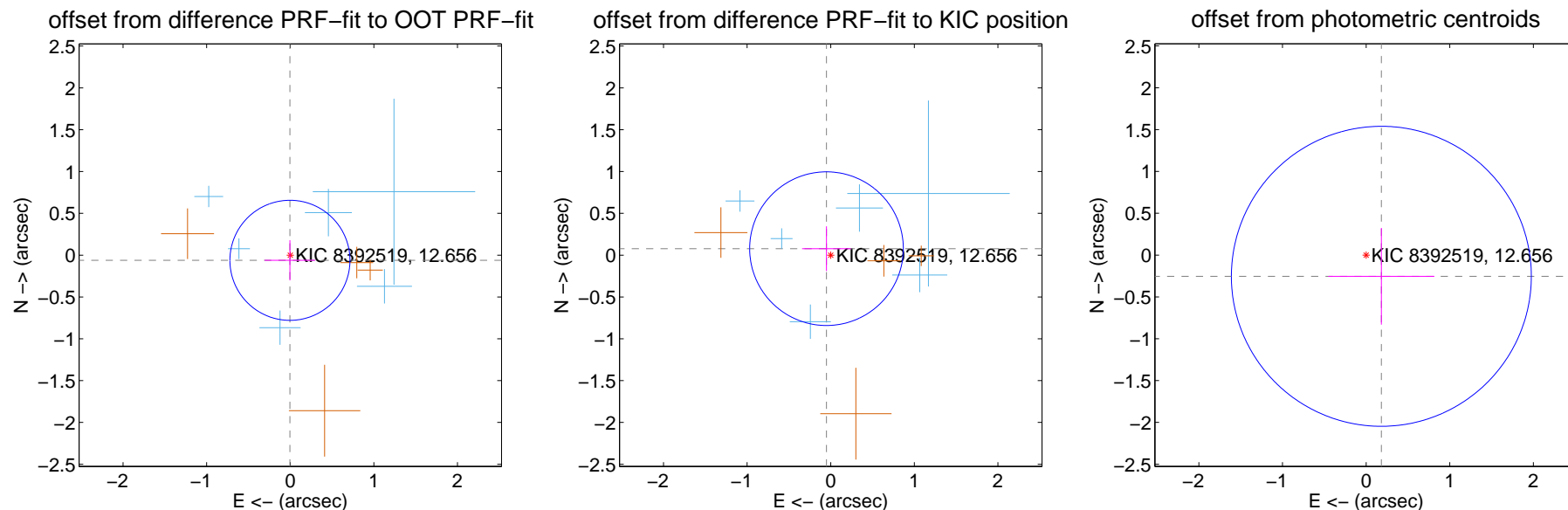
## DV Centroid Data

Supplemental centroid analysis for 008392519-06. Kepler magnitude: 12.66. Transit SNR 6.93

There are 6 quarters with good PRF difference image offsets

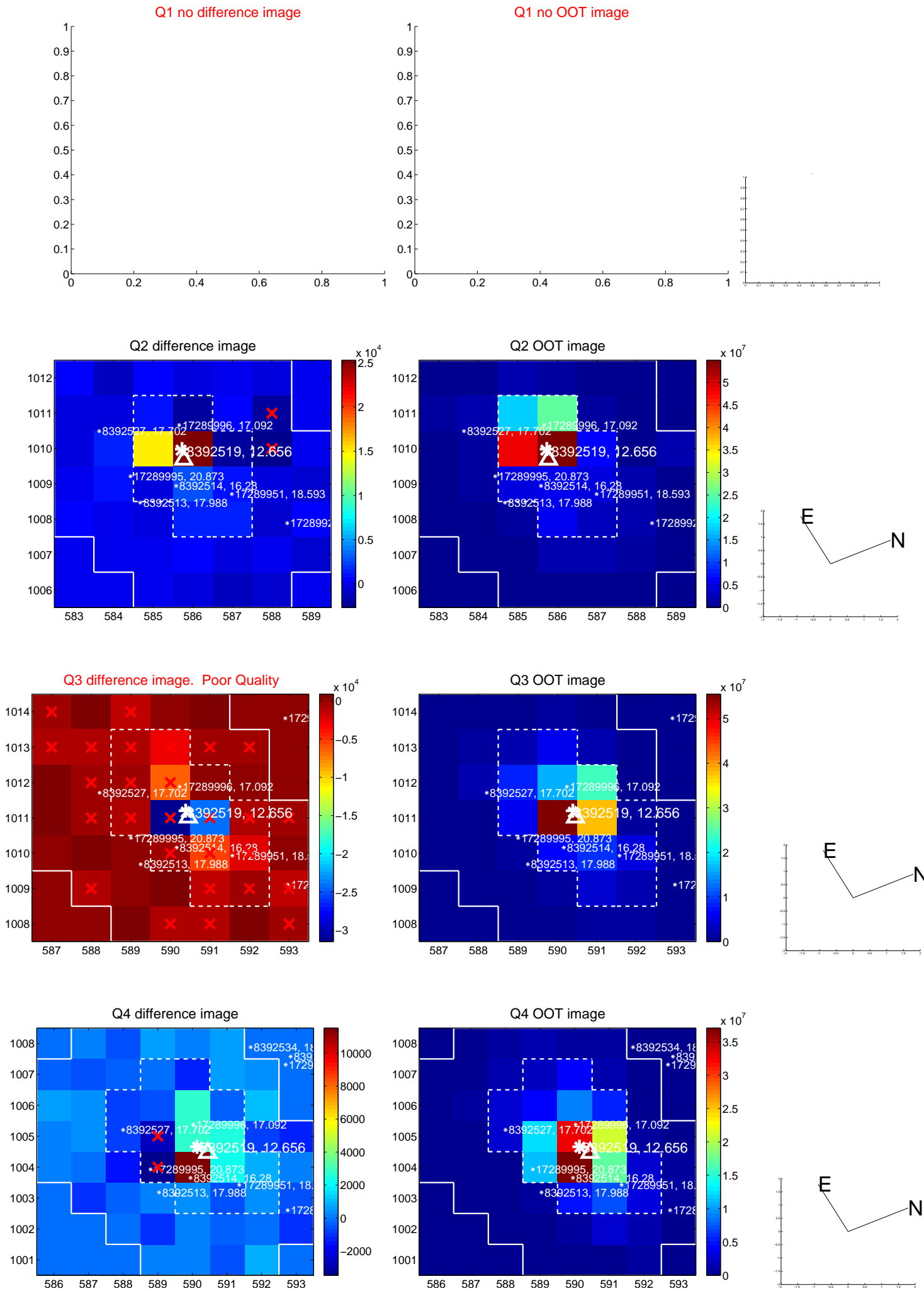
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.062 \pm 0.239$	0.26	$0.004 \pm 0.303$	$-0.062 \pm 0.240$
PRF-fit source offset from KIC position	$0.093 \pm 0.306$	0.30	$0.051 \pm 0.291$	$0.078 \pm 0.267$
photometric centroid source offset	$0.31 \pm 0.60$	0.52	$-0.18 \pm 0.63$	$-0.25 \pm 0.58$

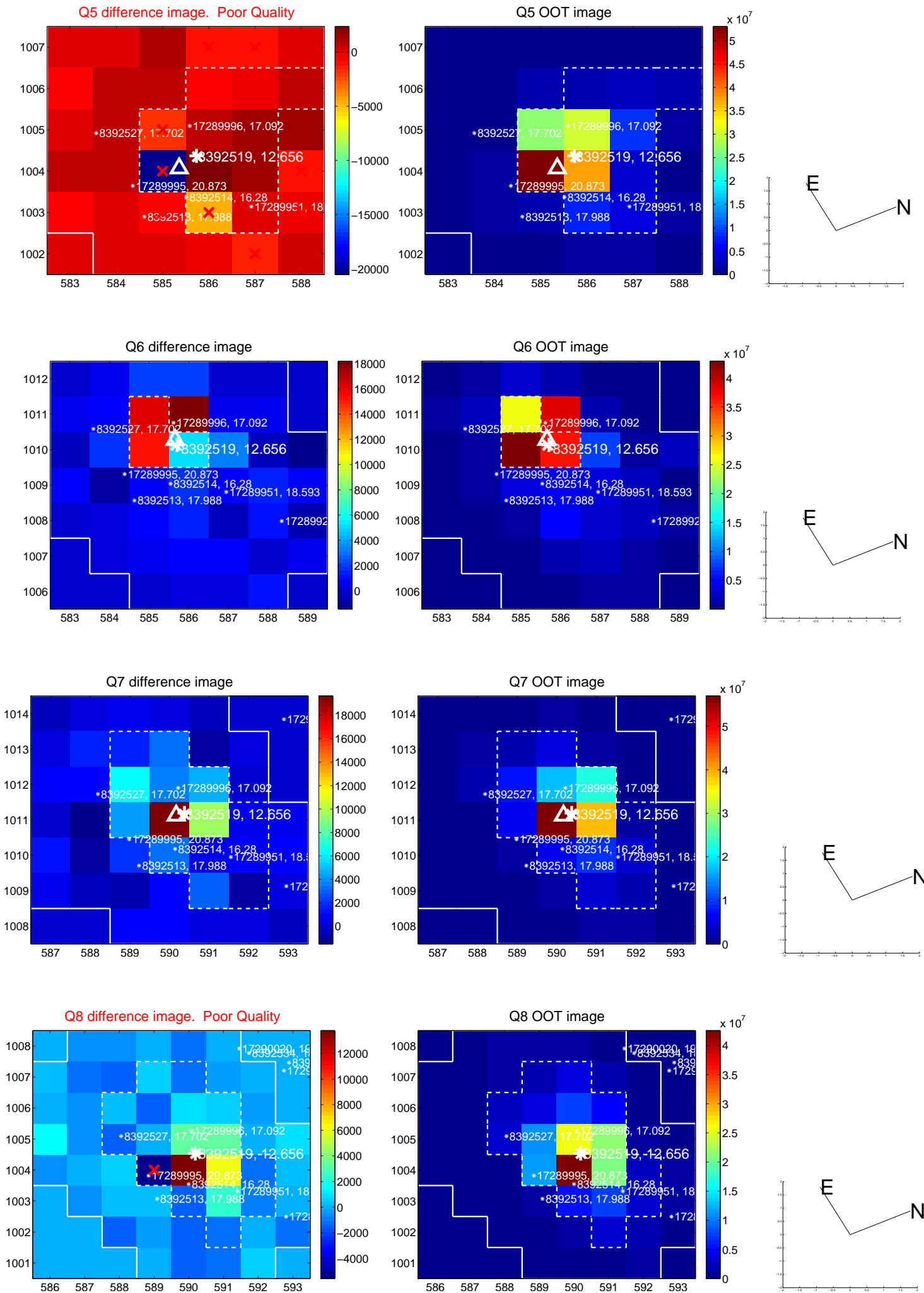


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

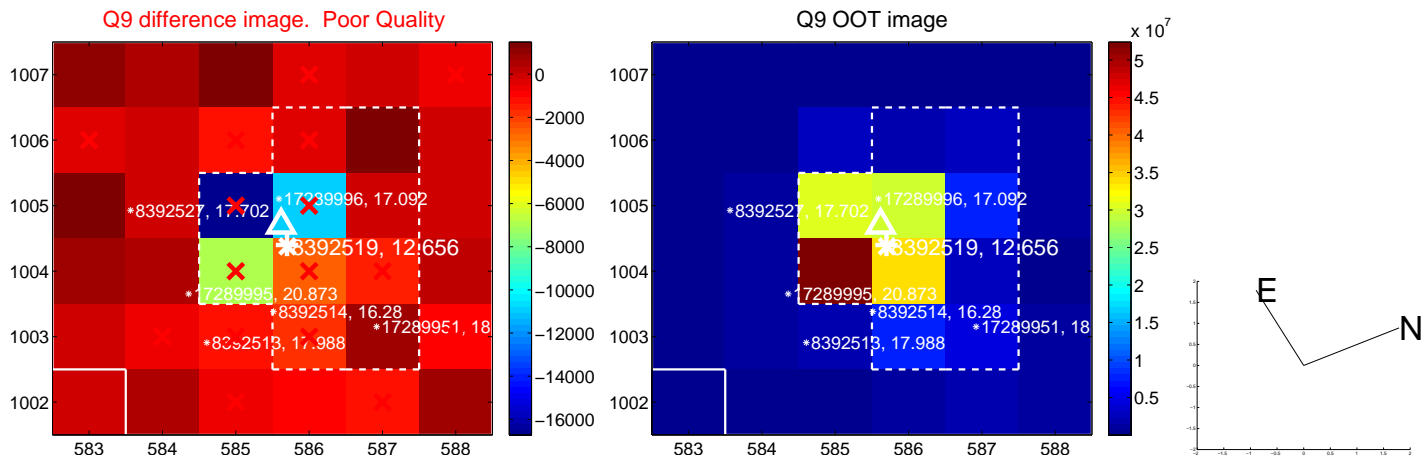
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



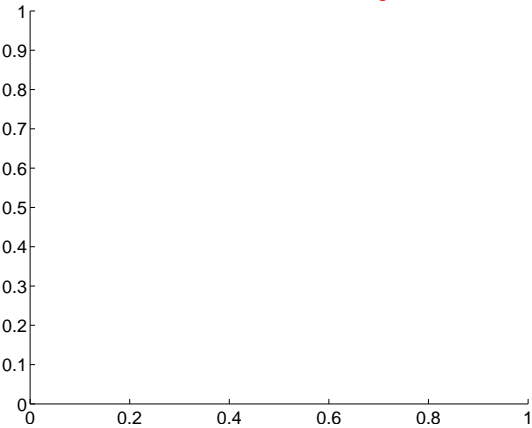
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



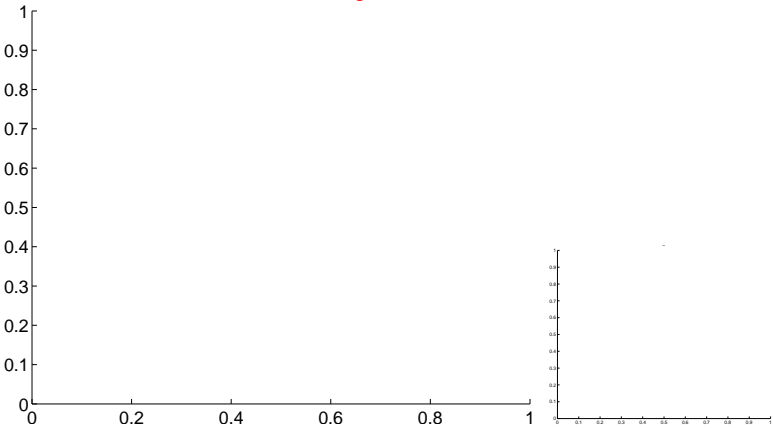


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

Q13 no difference image



Q13 no OOT image



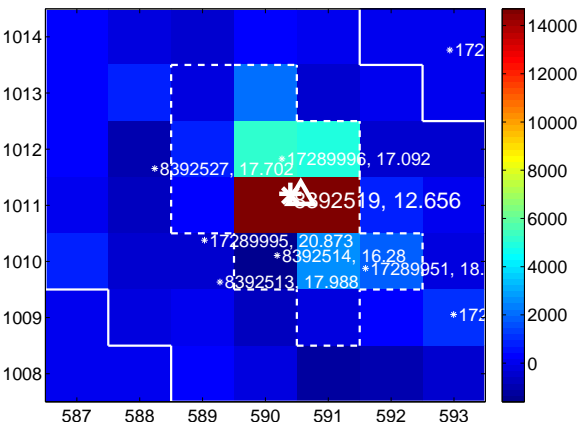
Q14 no difference image



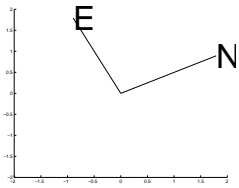
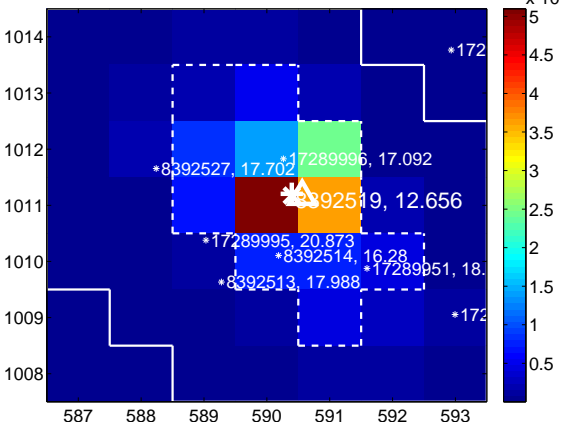
Q14 no OOT image



Q15 difference image



Q15 OOT image



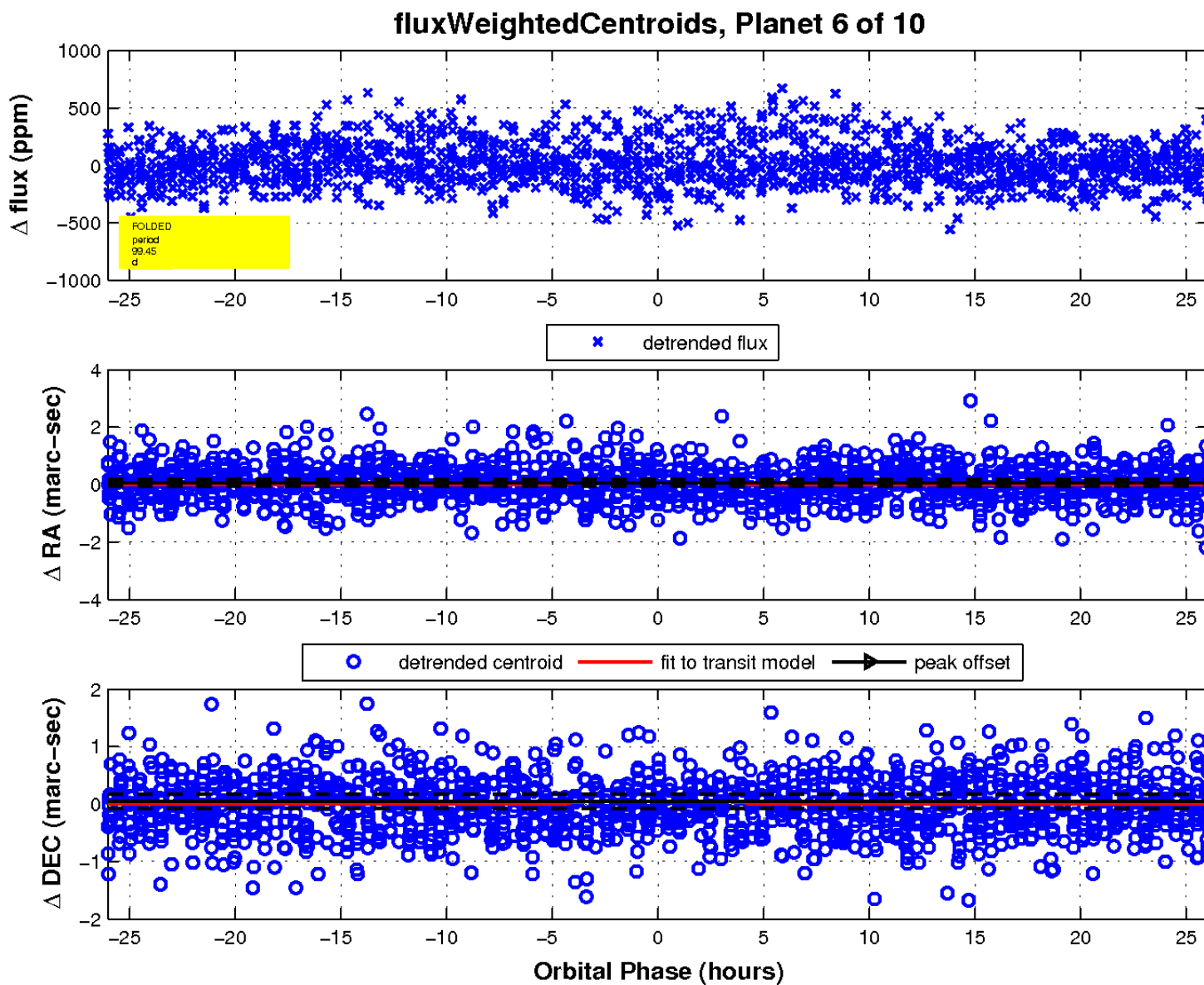
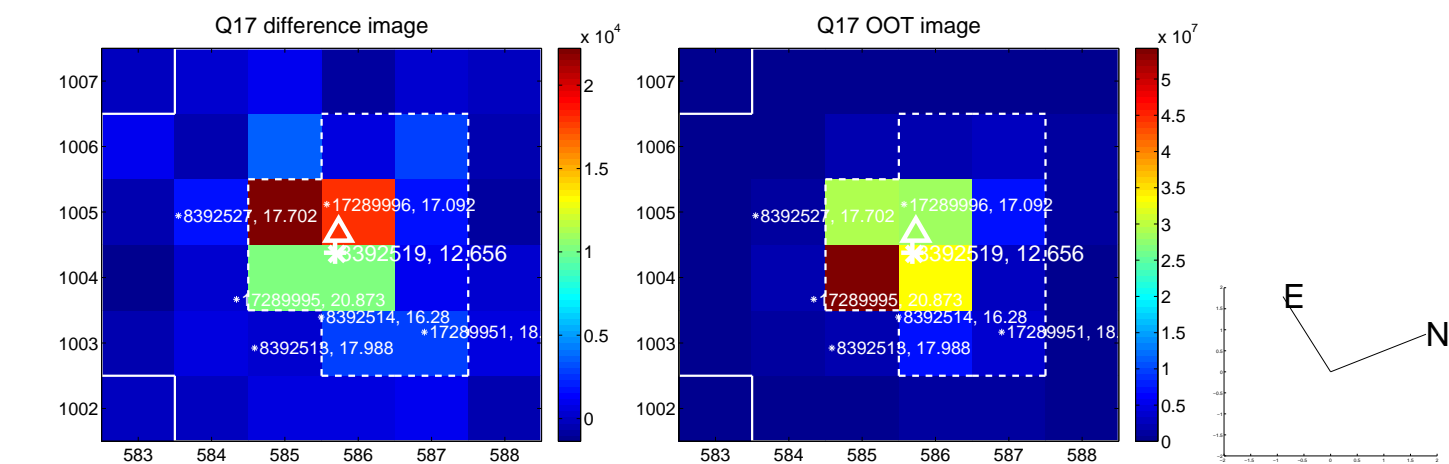
Q16 no difference image



Q16 no OOT image

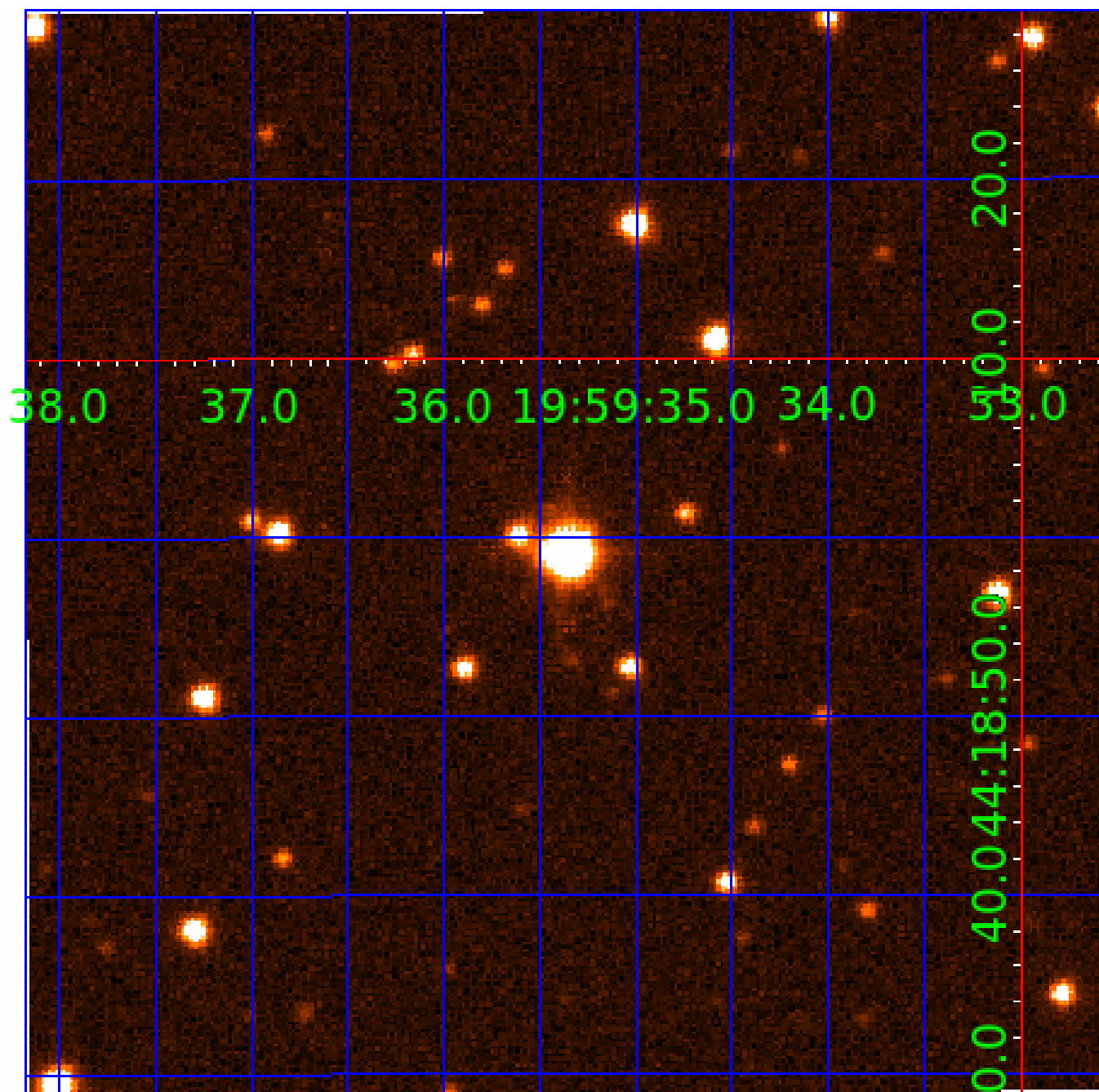


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008392519-01	OBS	No	2.288770	133.644536	24.1	12.052	10.3	8.2	3.26	6760	1.86	12204.28
008392519-02	OBS	No	126.257214	188.163119	324.8	16.500	22.2	11.2	3.26	6760	7.12	58.12
008392519-03	OBS	No	67.007289	147.064248	230.7	18.688	14.2	11.4	3.26	6760	5.68	135.25
008392519-04	OBS	No	450.749107	554.002125	343.3	19.711	10.3	9.1	3.26	6760	11.57	10.65
008392519-05	OBS	No	111.174093	225.691769	294.9	14.373	10.0	11.9	3.26	6760	5.96	68.86
008392519-06	OBS	No	99.450221	187.886477	206.0	8.756	9.8	6.9	3.26	6760	5.11	79.89
008392519-07	OBS	No	107.865281	206.670817	234.6	7.787	8.8	8.7	3.26	6760	5.67	71.69
008392519-08	OBS	No	199.446436	141.675993	241.9	9.055	8.8	7.4	3.26	6760	5.46	31.59
008392519-09	OBS	No	286.372798	388.504274	259.8	6.875	8.9	6.8	3.26	6760	6.09	19.50
008392519-10	OBS	No	318.071035	240.093446	199.3	9.243	8.7	8.5	3.26	6760	5.45	16.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008392519-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008392519-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008392519-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
008392519-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008392519-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008392519-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008392519-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

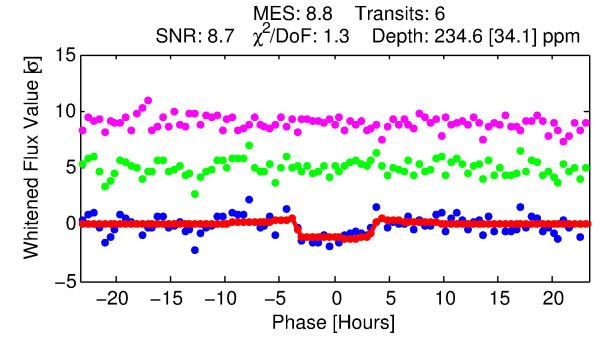
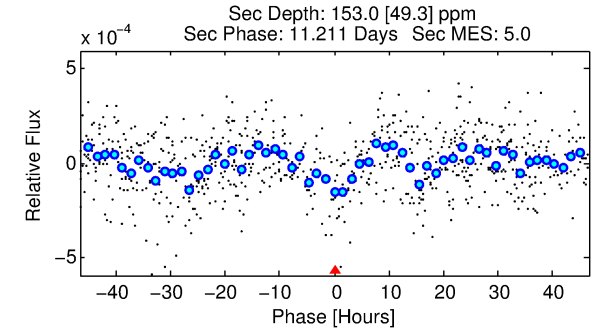
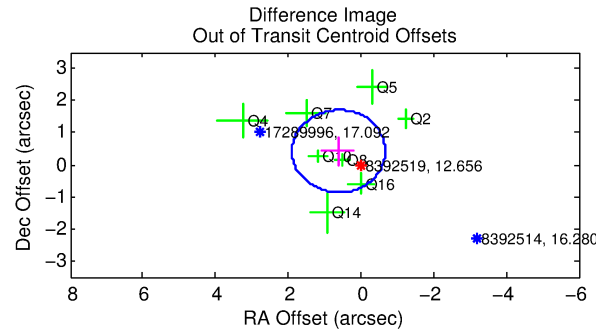
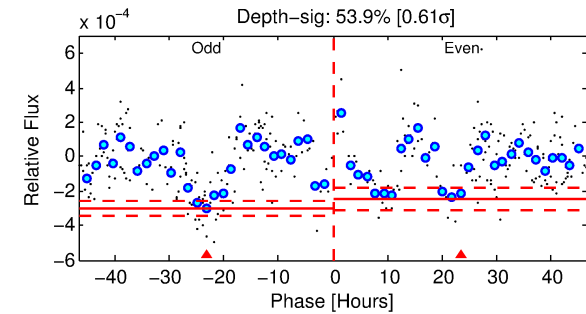
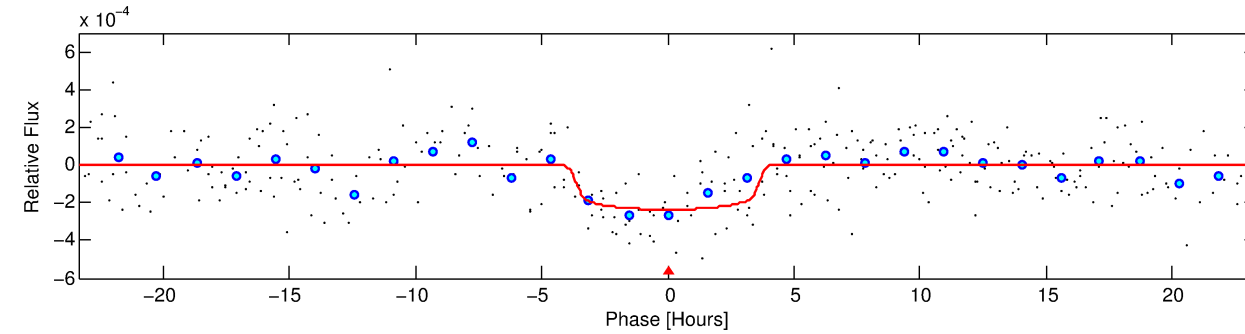
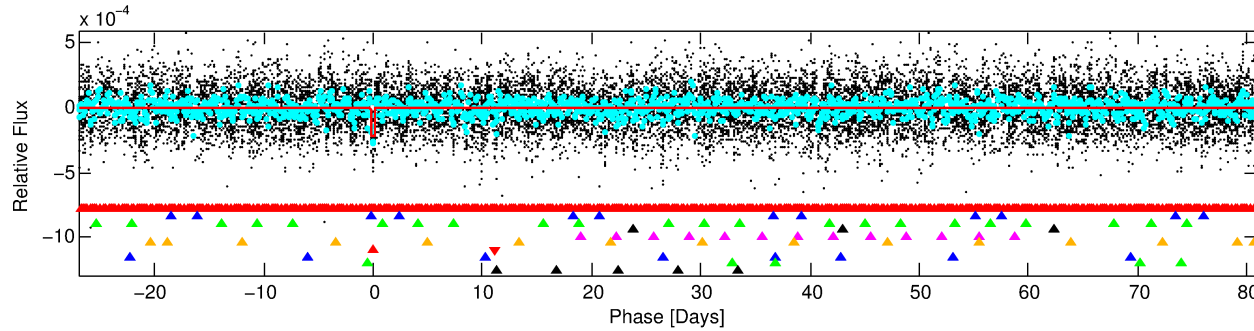
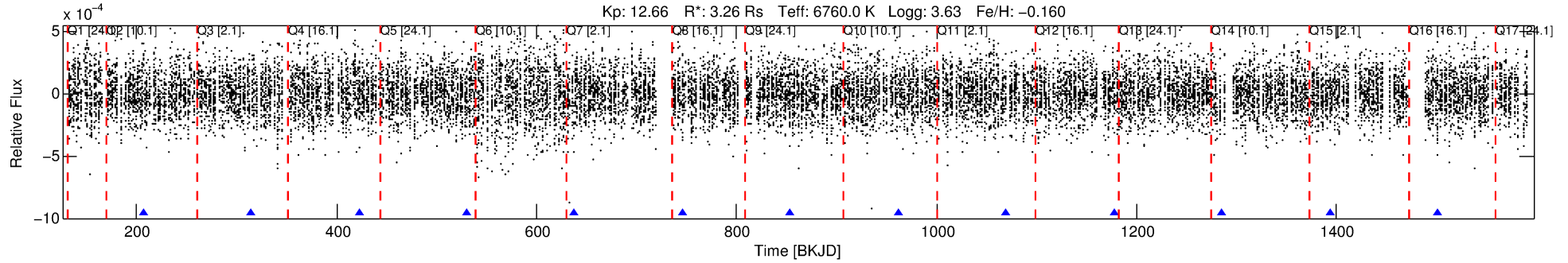
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008392519-07

No Significant Match Found

# DV One-Page Summary

KIC: 8392519 Candidate: 7 of 10 Period: 107.865 d



## DV Fit Results:

Period = 107.86528 [0.00202] d  
Epoch = 206.6708 [0.0143] BKJD  
Rp/R\* = 0.0160 [0.0043]  
a/R\* = 56.48 [84.83]  
b = 0.86 [0.44]  
Seff = 71.69 [41.00]  
Teq = 742 [106] K  
Rp = 5.67 [2.62] Re  
a = 0.5263 [0.1850] AU  
Ag = 724.21 [609.19] [1.19σ]  
Teffp = 5951 [963] K [5.38σ]

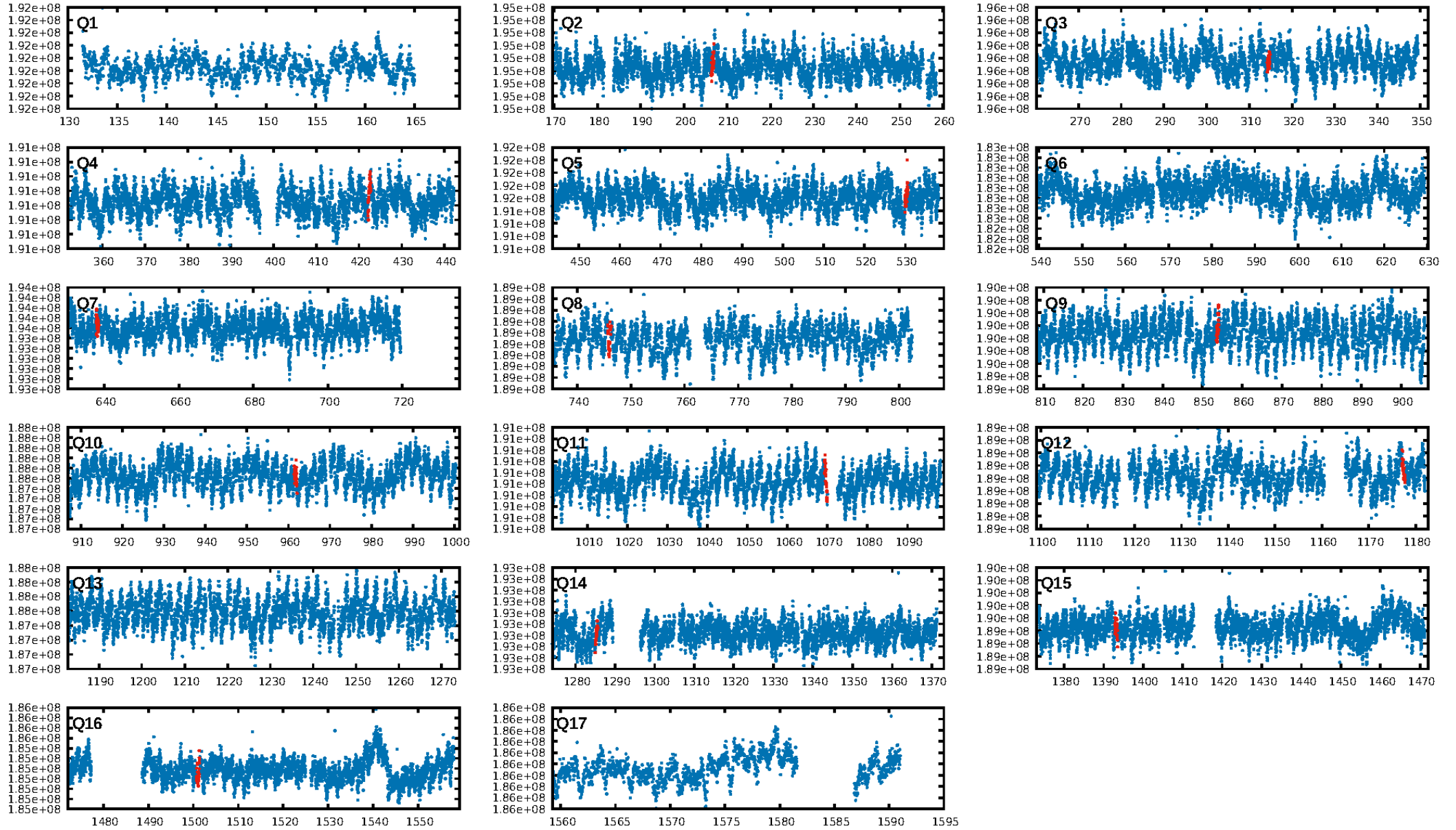
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [17.24σ]  
LongPeriod-sig: 100.0% [4.86σ]  
ModelChiSquare2-sig: 8.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [6/6]  
GhostDiagnostic-chr: 1.441  
Centroid-sig: 5.8%  
Centroid-so: 1.054 arcsec [1.64σ]  
OotOffset-rm: 0.746 arcsec [1.75σ]  
KicOffset-rm: 0.795 arcsec [1.65σ]  
OotOffset-st: 3/1/3/1 [8]  
KicOffset-st: 3/1/3/1 [8]  
DiffImageQuality-fgm: 0.50 [4/8]  
DiffImageOverlap-fno: 0.30 [3/10]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:18:02 Z

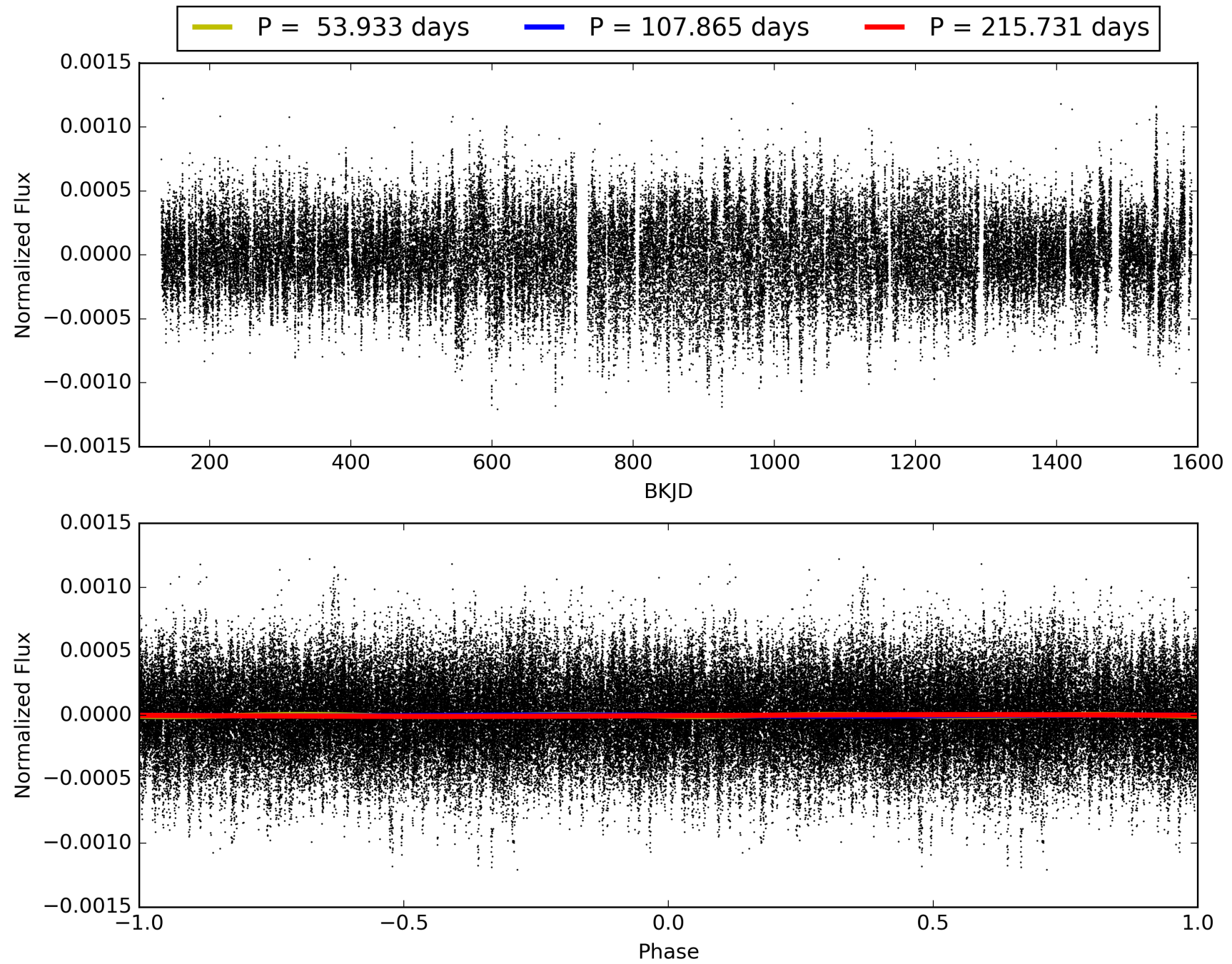
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008392519-07, PDC Light Curves





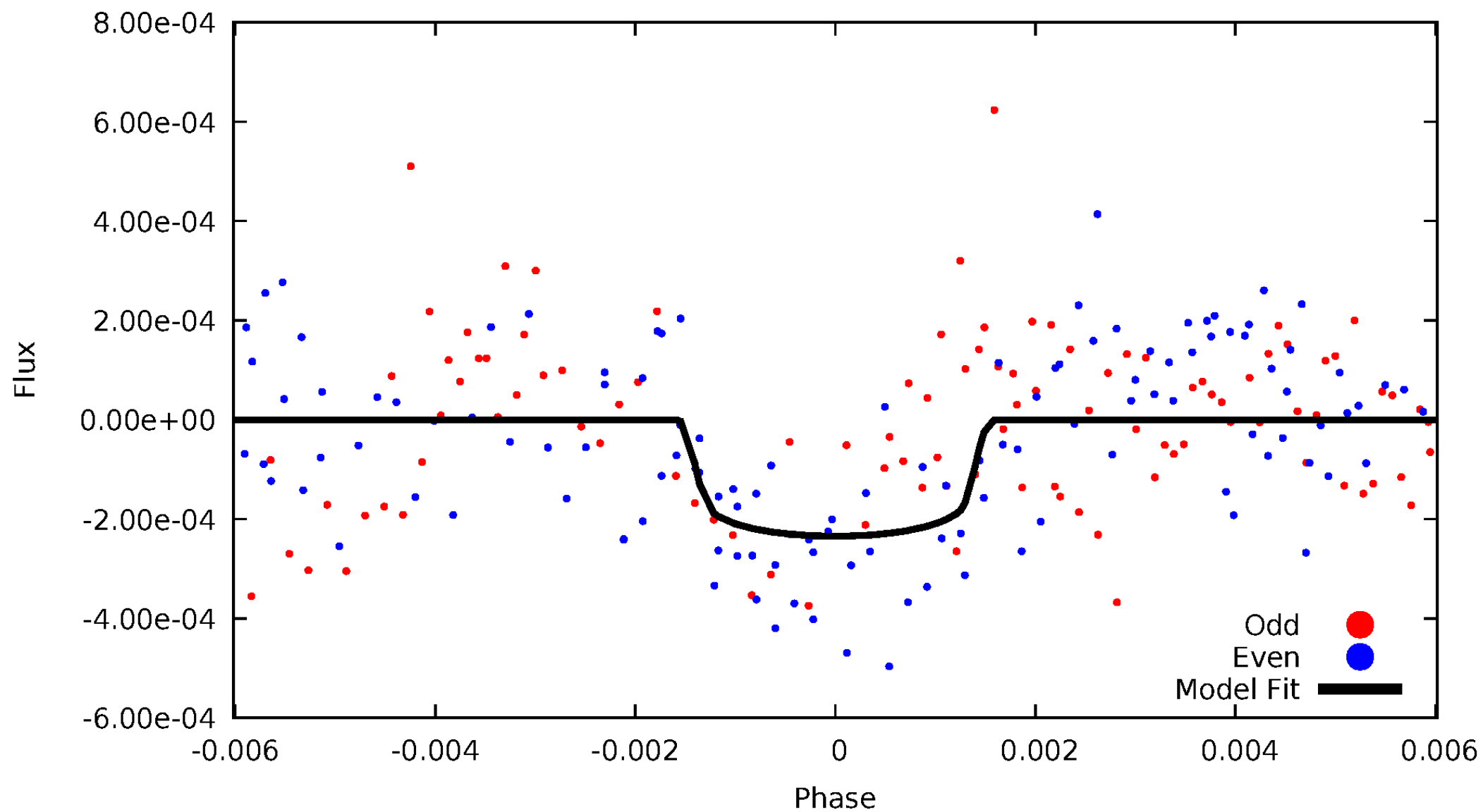
TCE 008392519-07





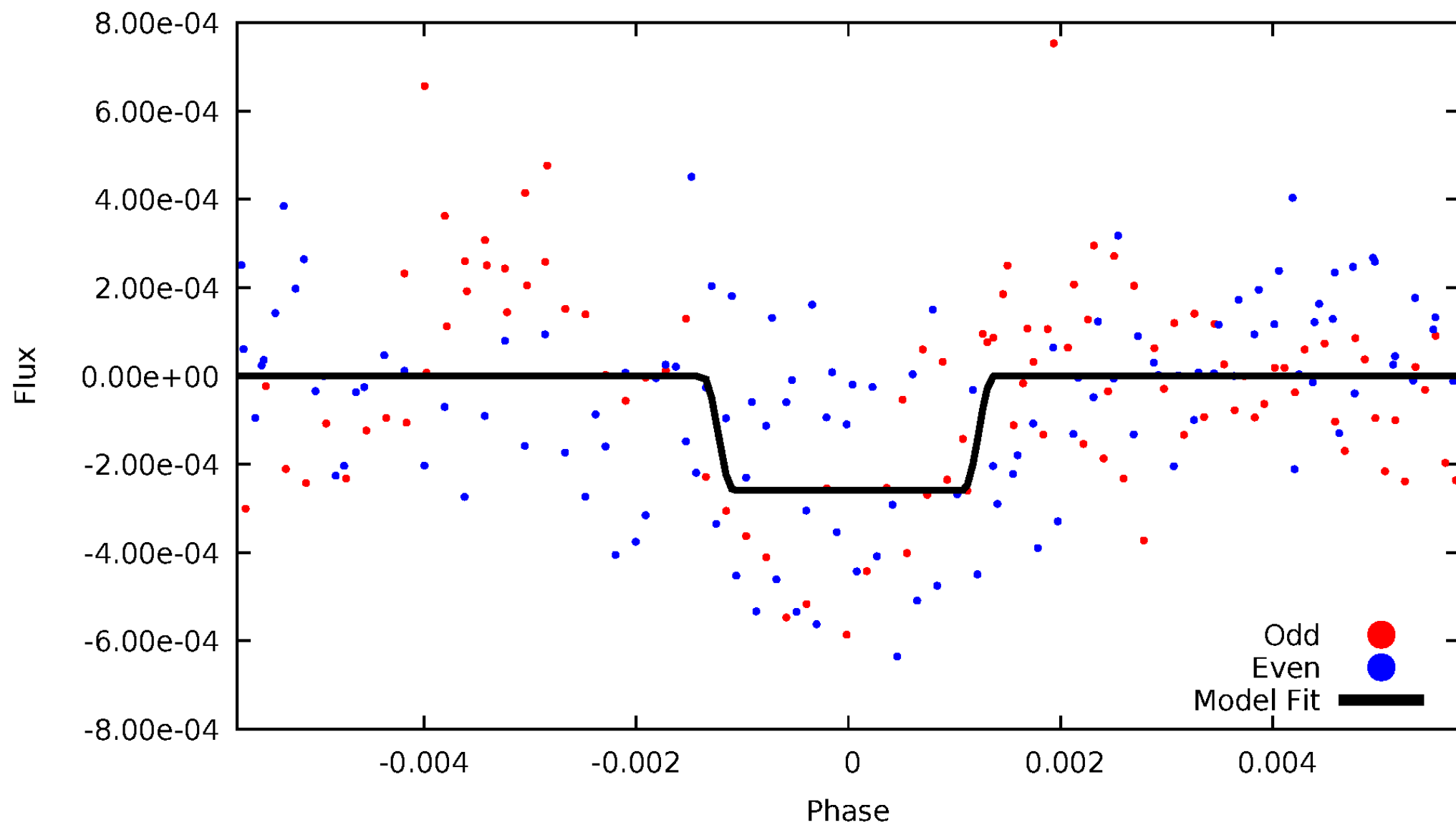
# DV Odd/Even

TCE 008392519-07



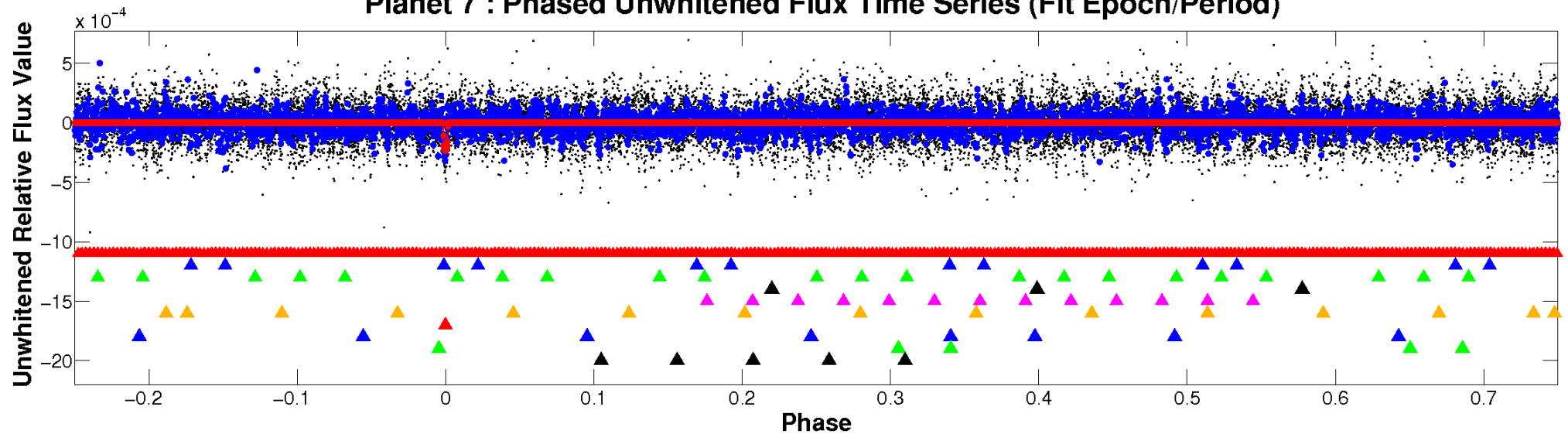
# ALT Odd/Even

TCE 008392519-07

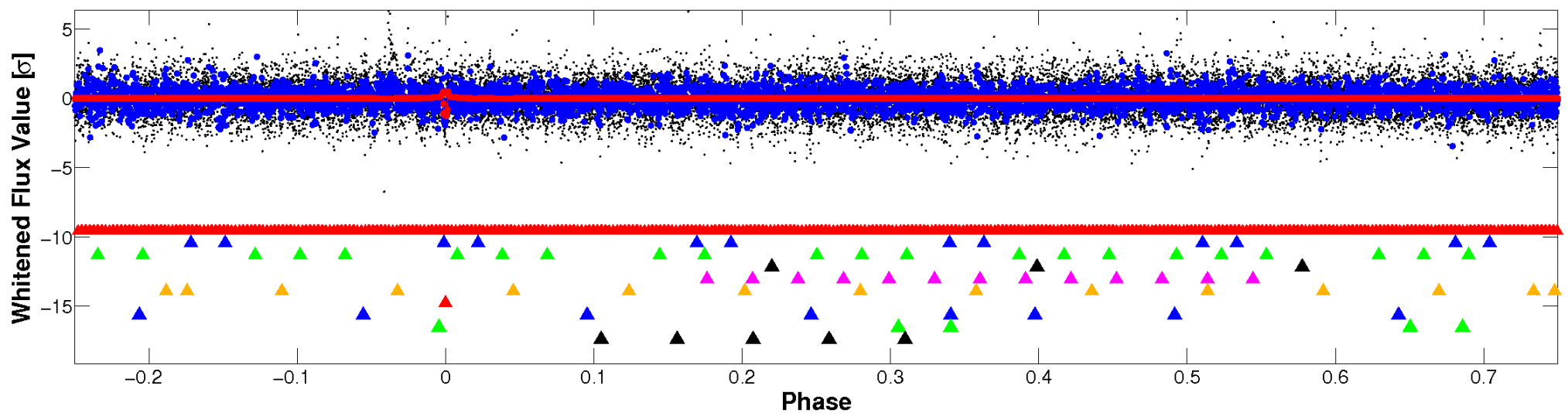


# Non-Whitened Vs. Whitened Light Curve

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

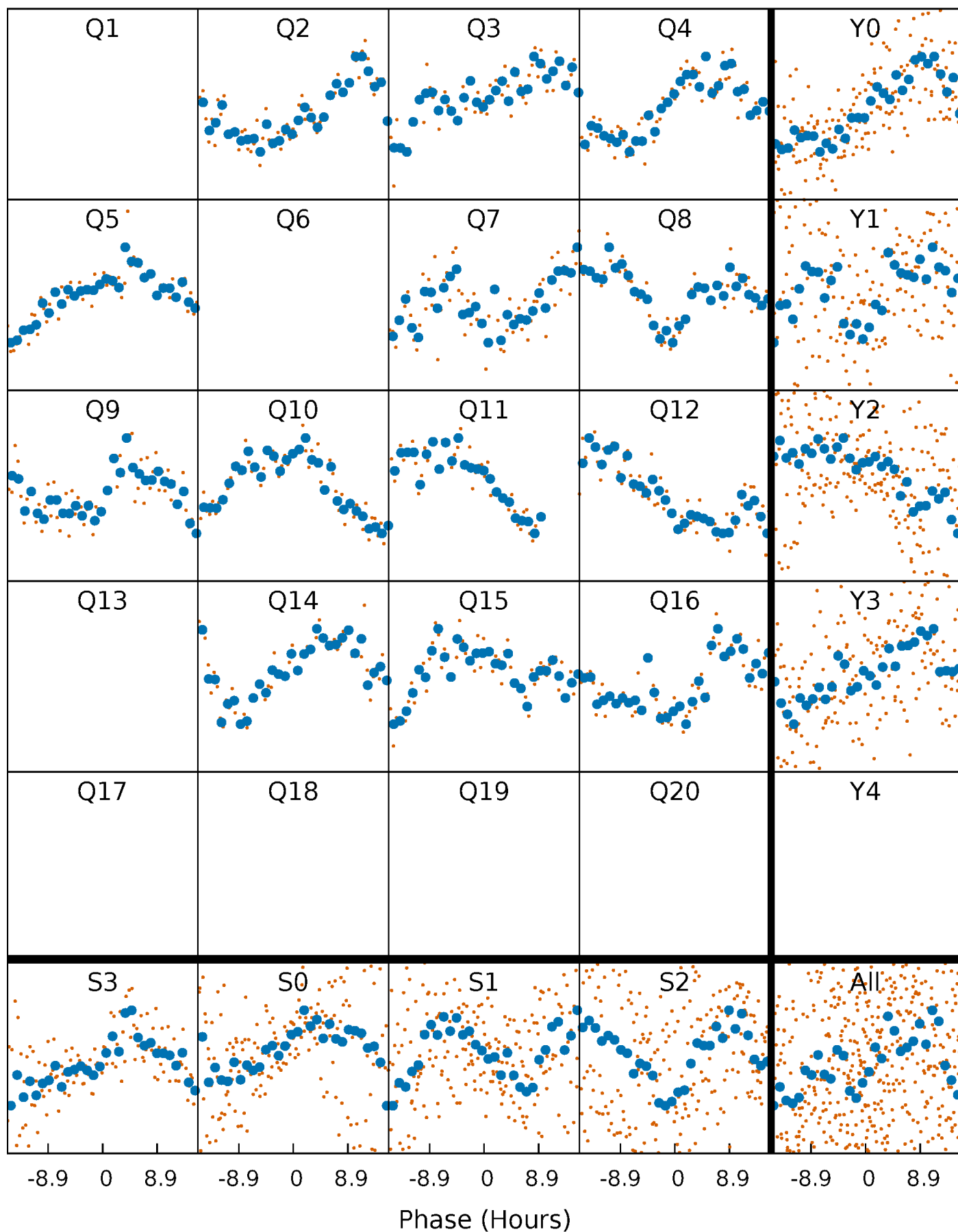


## Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



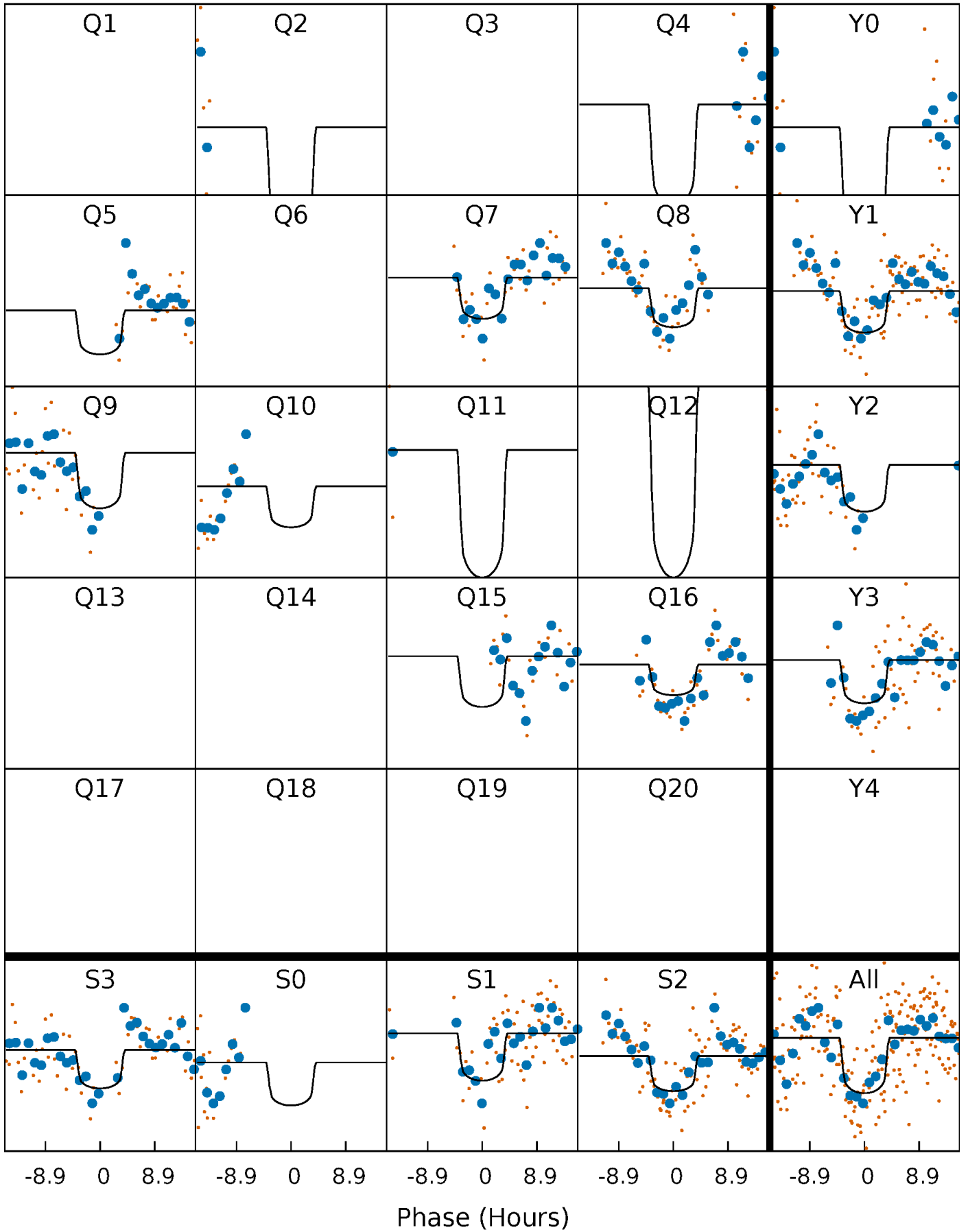
# PDC Quarter-Phased Transit Curves

TCE 008392519-07 P=107.865281 Days  $T_0=206.670817$  (BKJD)



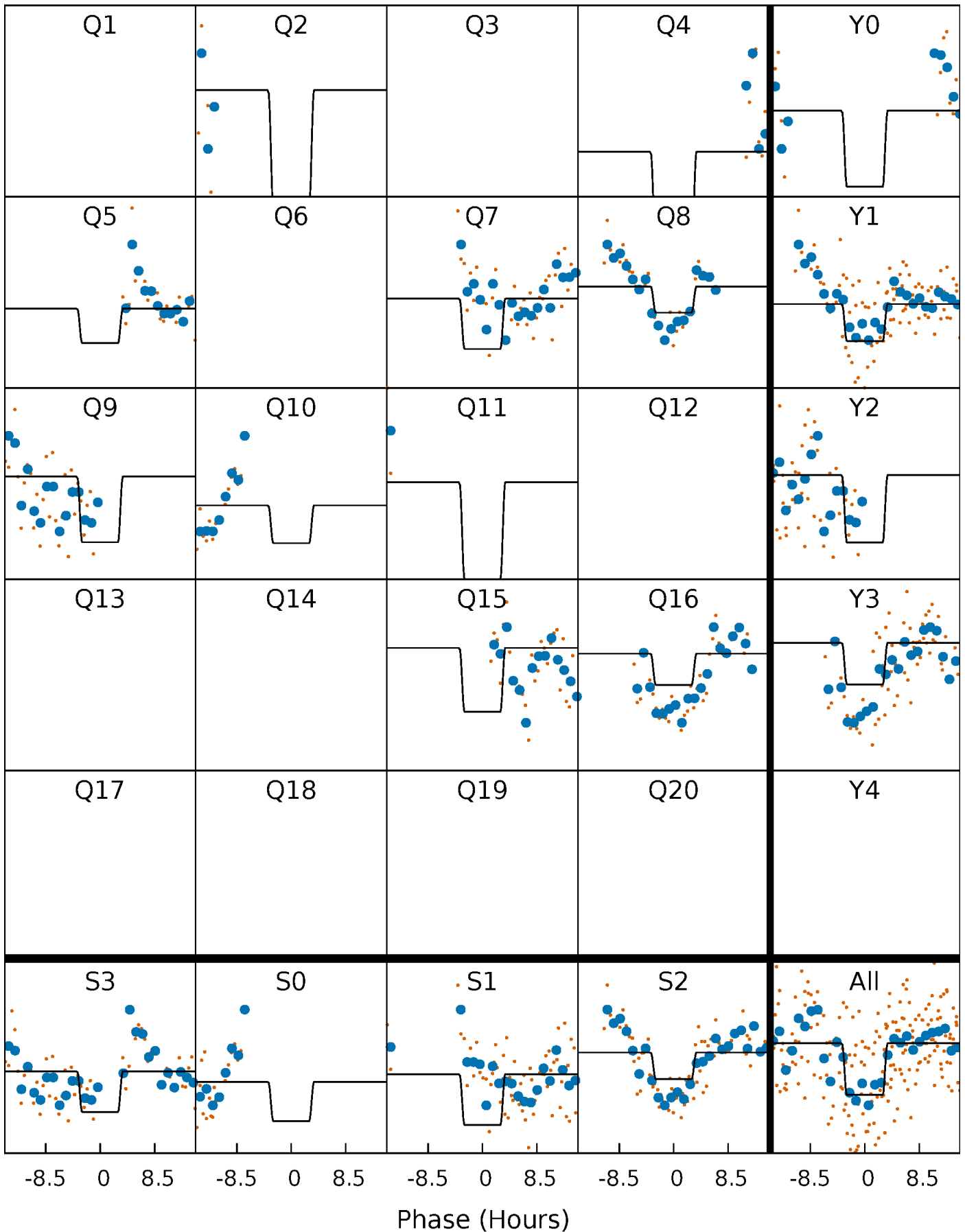
# DV Quarter-Phased Transit Curves

TCE 008392519-07 P=107.865281 Days  $T_0=206.670817$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

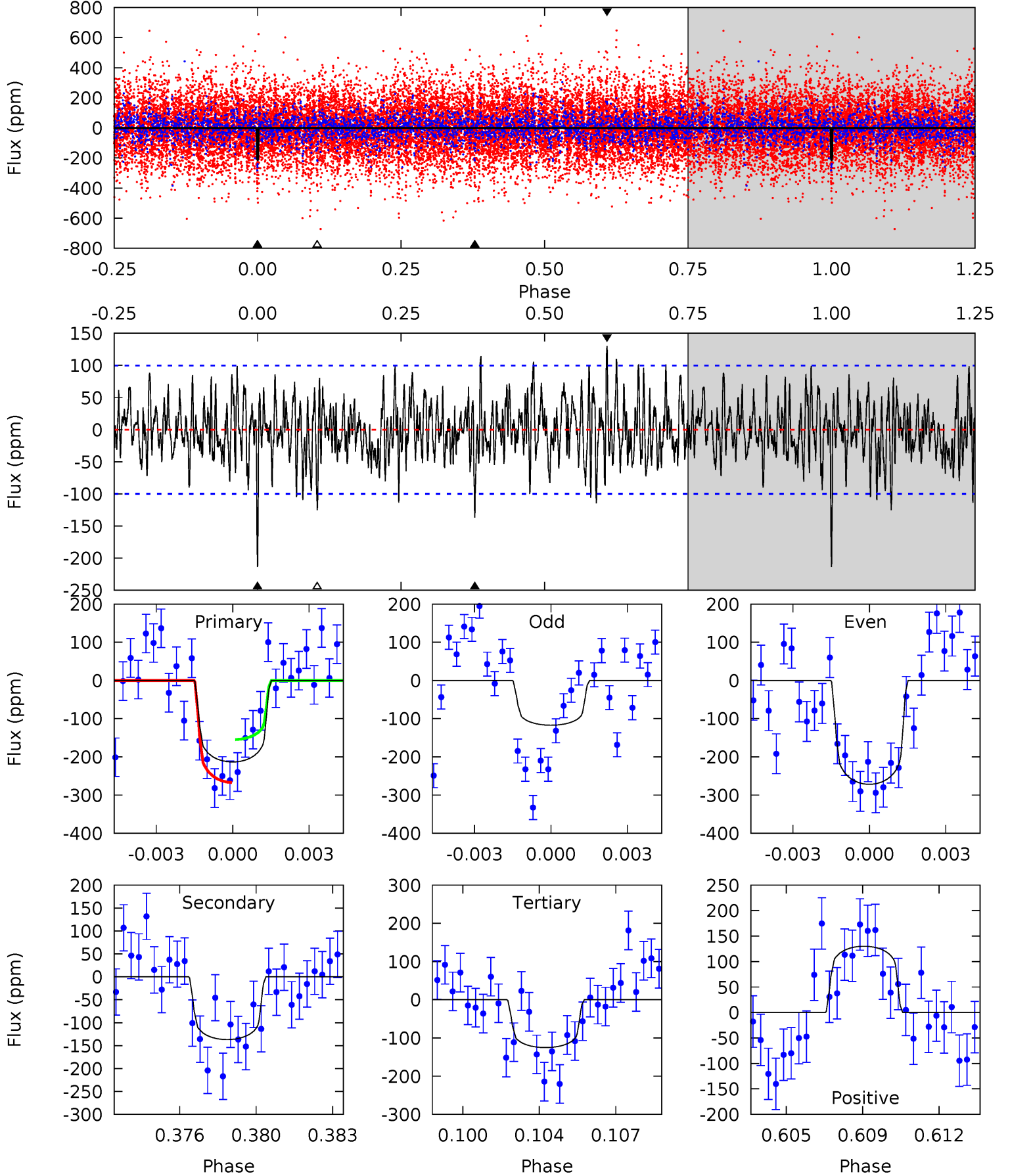
TCE 008392519-07 P=107.870378 Days  $T_0=206.618107$  (BKJD)



# DV Model-Shift Uniqueness Test

008392519-07,  $P = 107.865281$  Days,  $E = 98.805536$  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
11.2	7.20	6.58	6.84	5.24	2.95	2.03	4.64	4.38	0.62	0.36	3.97	0.90	0.38	2.96

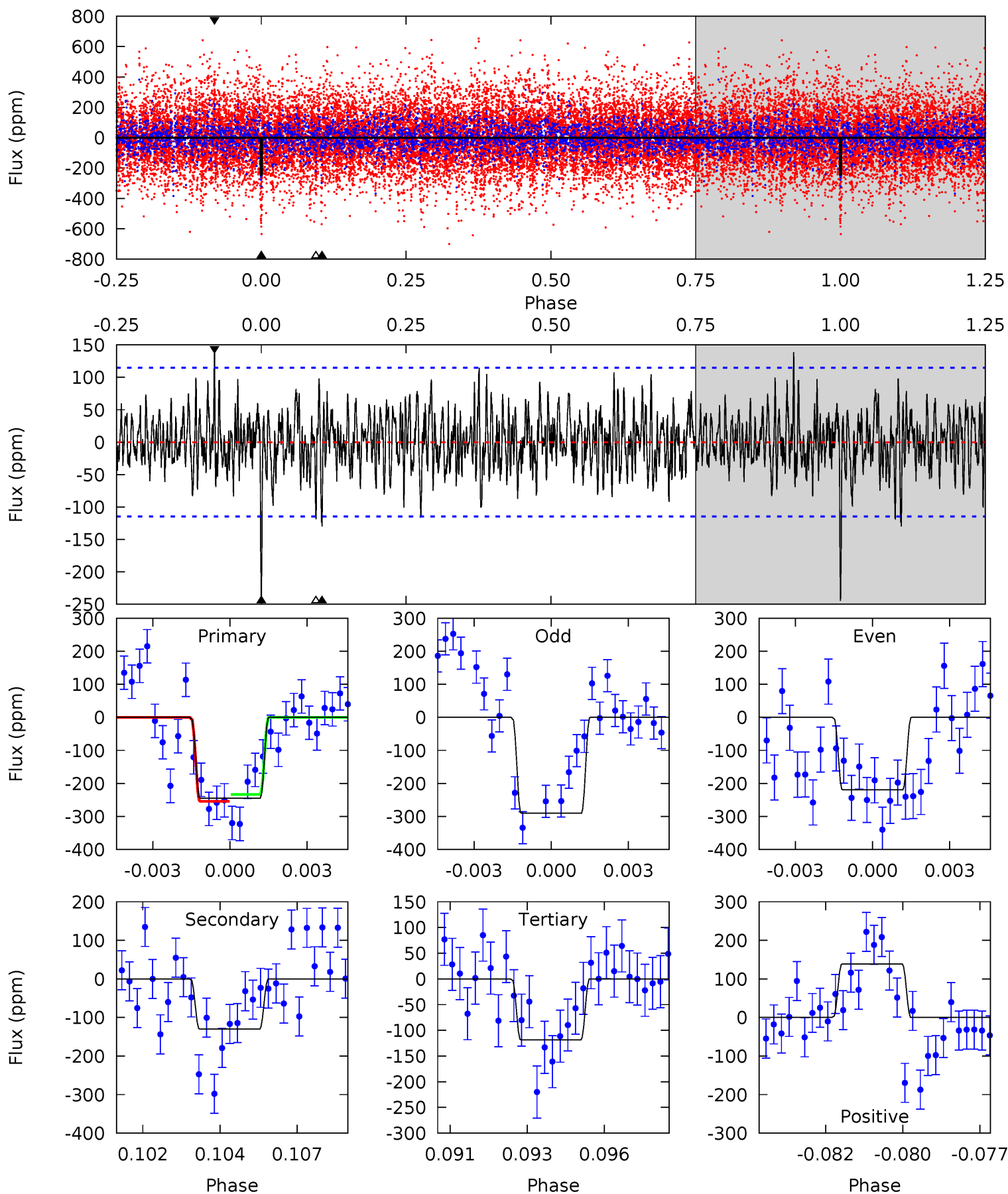




# Alt Model-Shift Uniqueness Test

008392519-07,  $P = 107.870378$  Days,  $E = 98.747729$  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
11.2	5.98	5.45	6.37	5.27	2.99	1.67	5.78	4.87	0.52	-0.40	1.59	1.36	0.36	0.47



### Stellar Parameters For KIC 008392519

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6760^{+187}_{-234}$	$3.635^{+0.323}_{-0.057}$	$-0.160^{+0.300}_{-0.250}$	$3.258^{+0.406}_{-1.218}$	$1.670^{+0.221}_{-0.332}$	$0.068^{+0.157}_{-0.014}$
	+3%/-3%	+9%/-2%	+188%/-156%	+12%/-37%	+13%/-20%	+230%/-20%
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 008392519-07 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-137 \pm 19$	$5.13^{+1.89}_{-1.52}$	$1005^{+61}_{-94}$	$5787^{+1086}_{-673}$	$810^{+821}_{-377}$
Alt.	$-130 \pm 22$	$5.27^{+1.79}_{-1.62}$	$1006^{+56}_{-96}$	$5641^{+929}_{-604}$	$697^{+810}_{-304}$

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

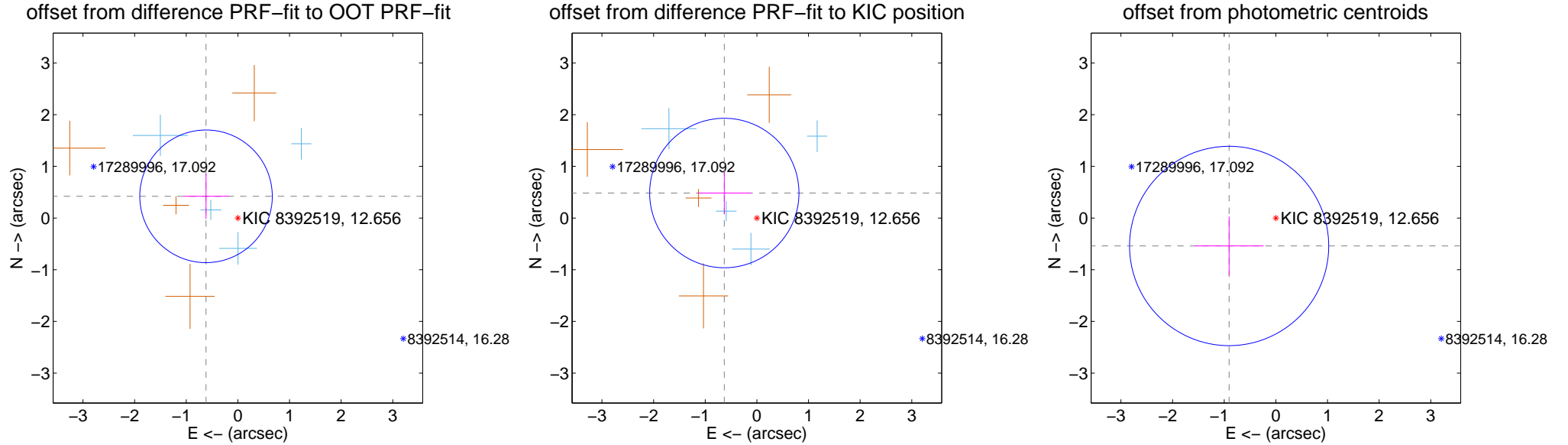
## DV Centroid Data

Supplemental centroid analysis for 008392519-07. Kepler magnitude: 12.66. Transit SNR 8.68

There are 4 quarters with good PRF difference image offsets

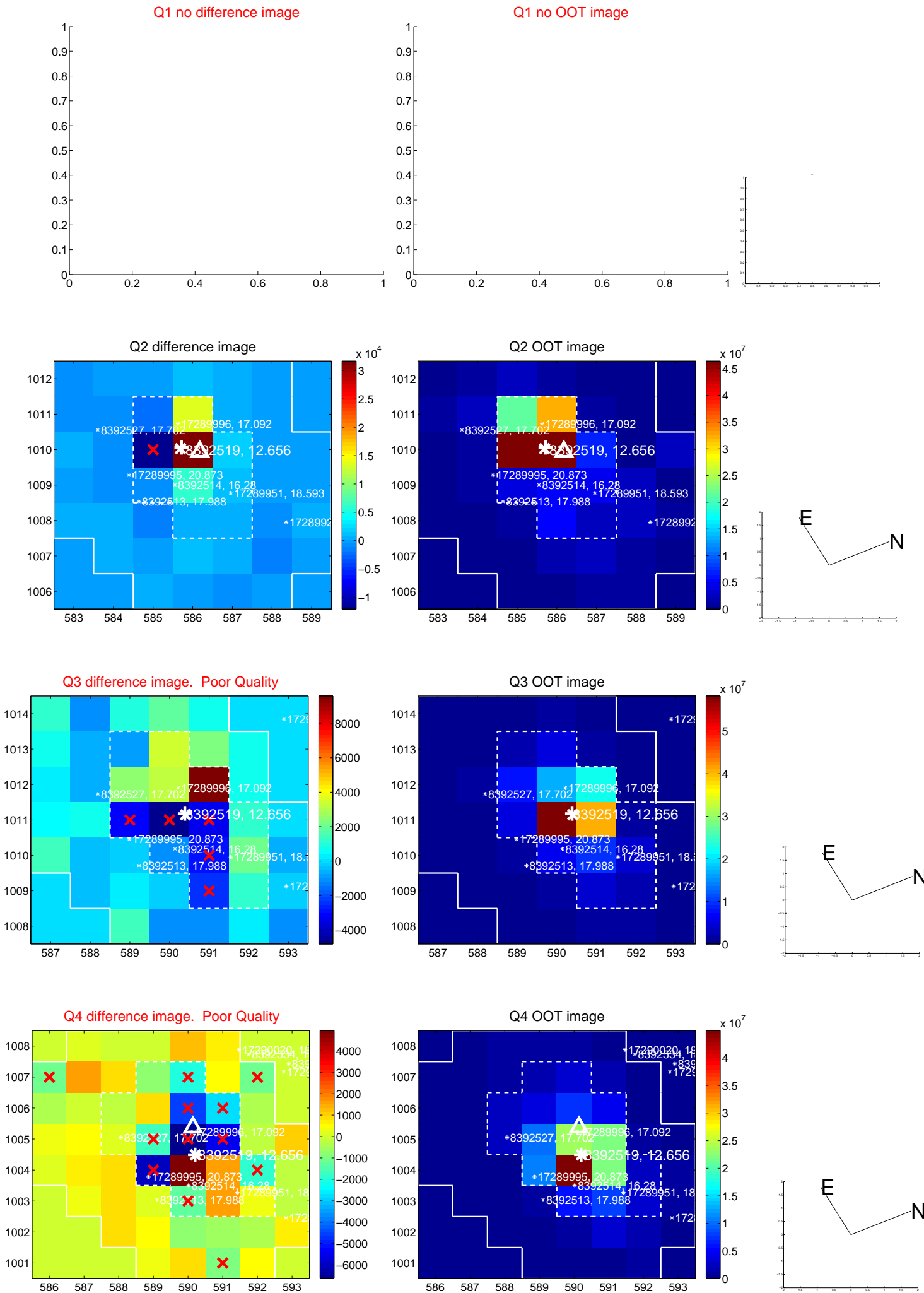
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.746 \pm 0.428$	1.75	$0.617 \pm 0.439$	$0.420 \pm 0.436$
PRF-fit source offset from KIC position	$0.795 \pm 0.482$	1.65	$0.631 \pm 0.521$	$0.484 \pm 0.413$
photometric centroid source offset	$1.05 \pm 0.64$	1.64	$0.91 \pm 0.67$	$-0.54 \pm 0.57$

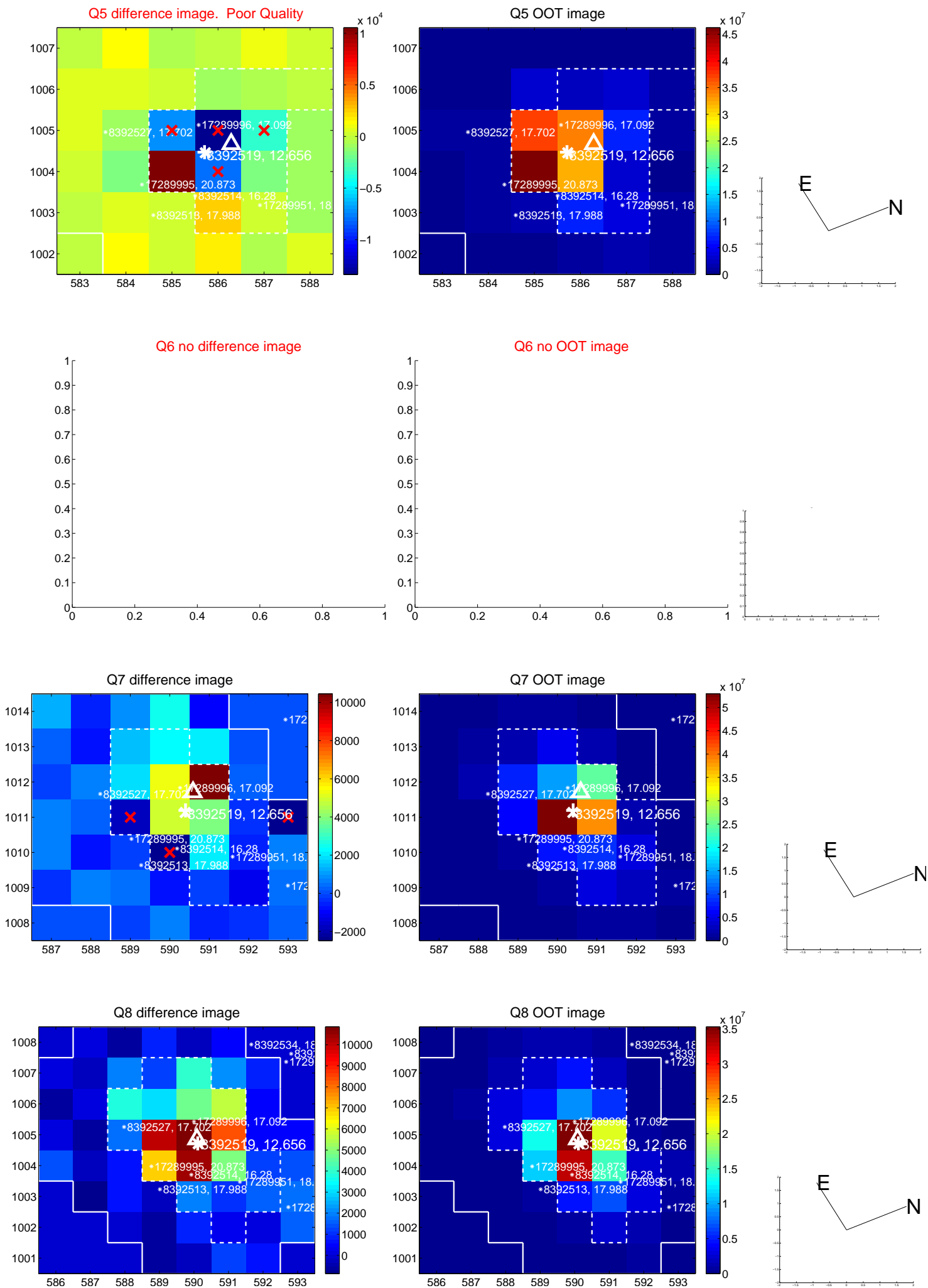


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

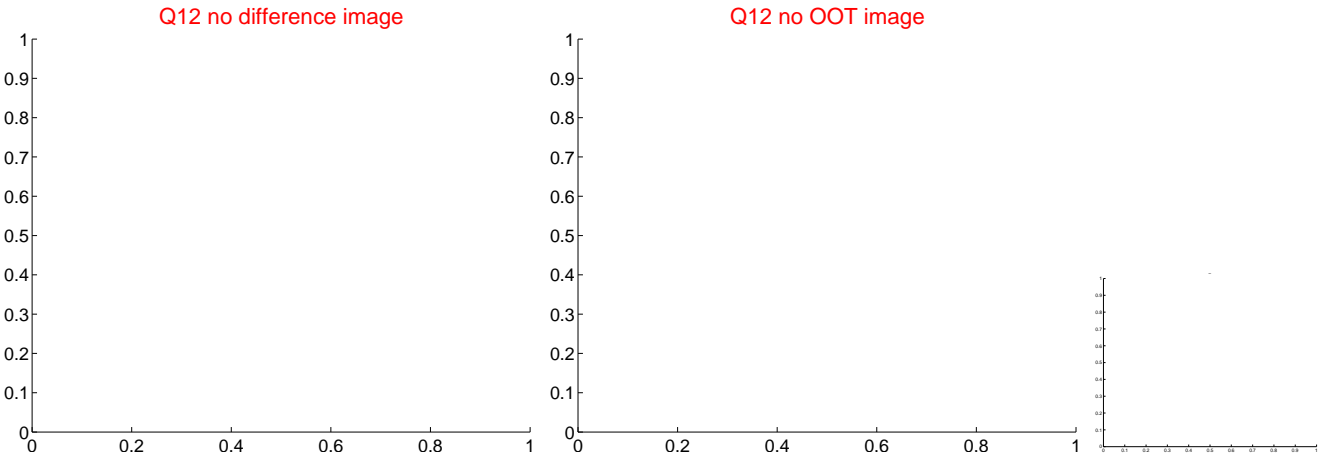
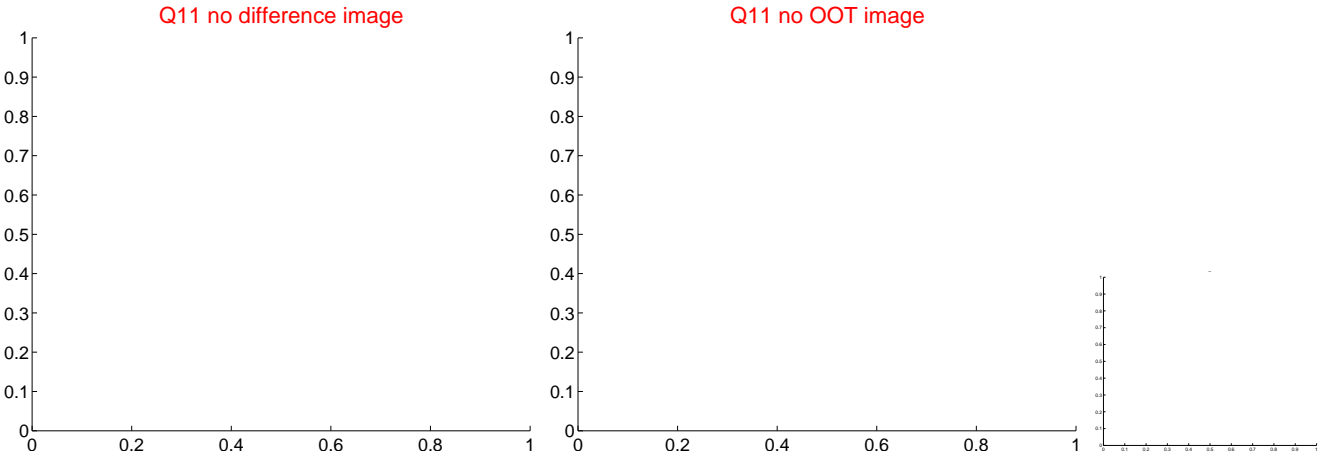
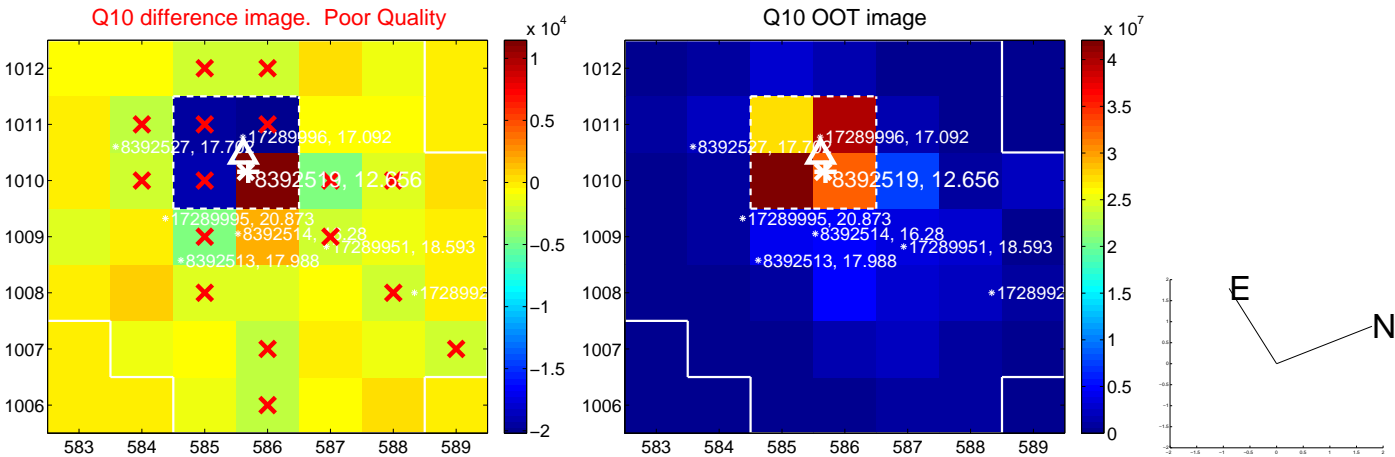
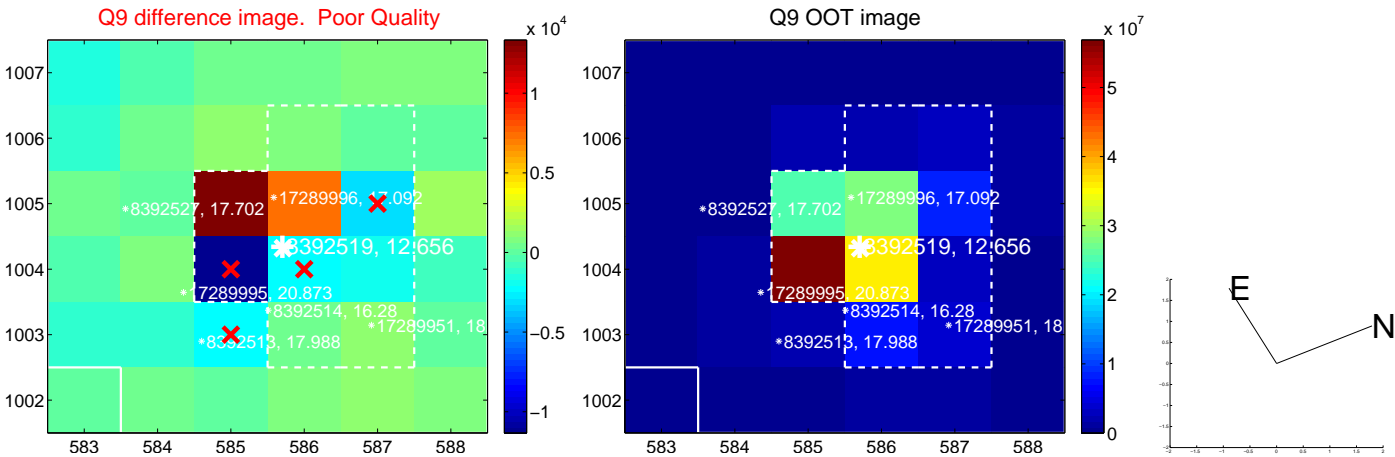
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

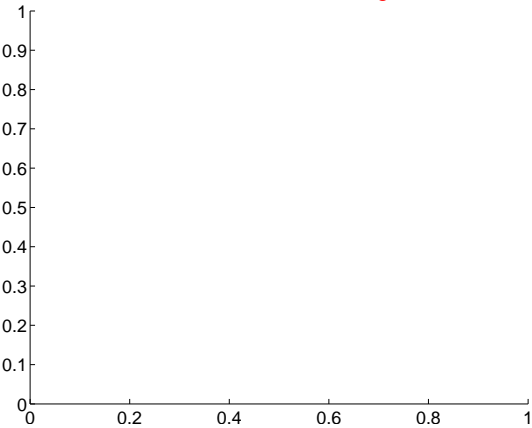


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

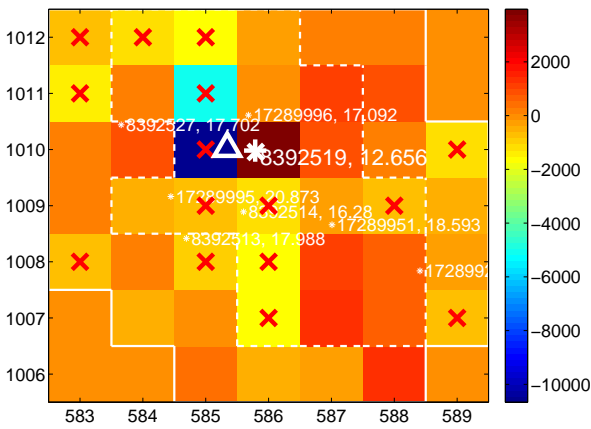
Q13 no difference image



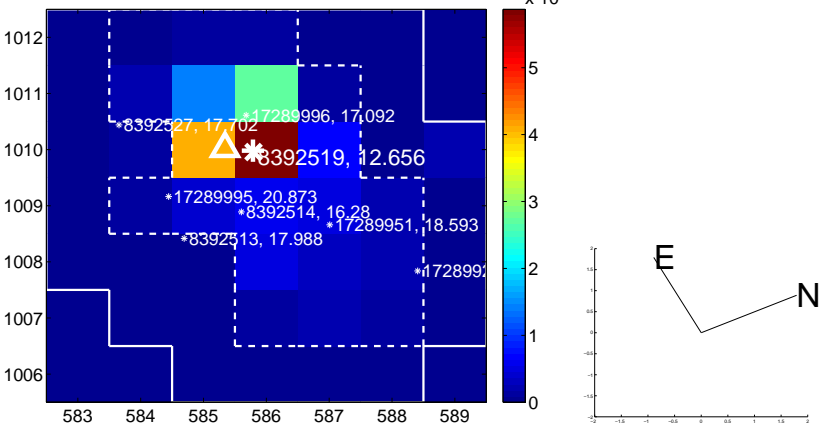
Q13 no OOT image



Q14 difference image. Poor Quality



Q14 OOT image



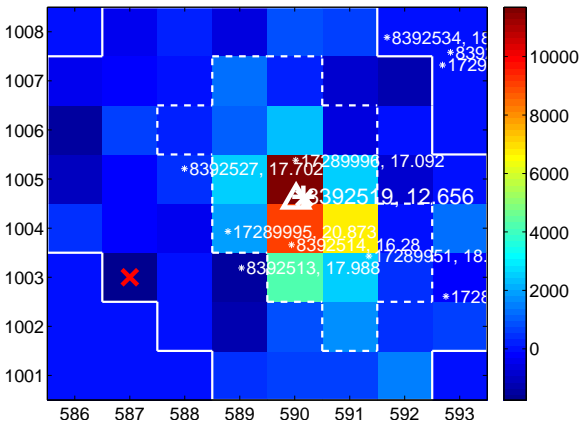
Q15 no difference image



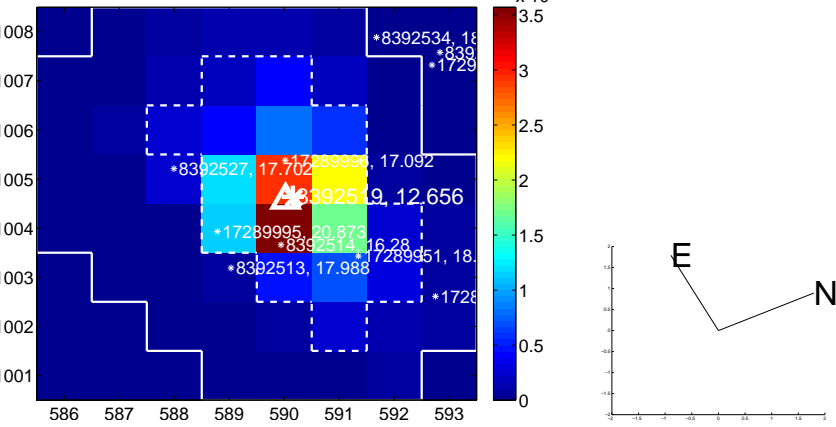
Q15 no OOT image



Q16 difference image

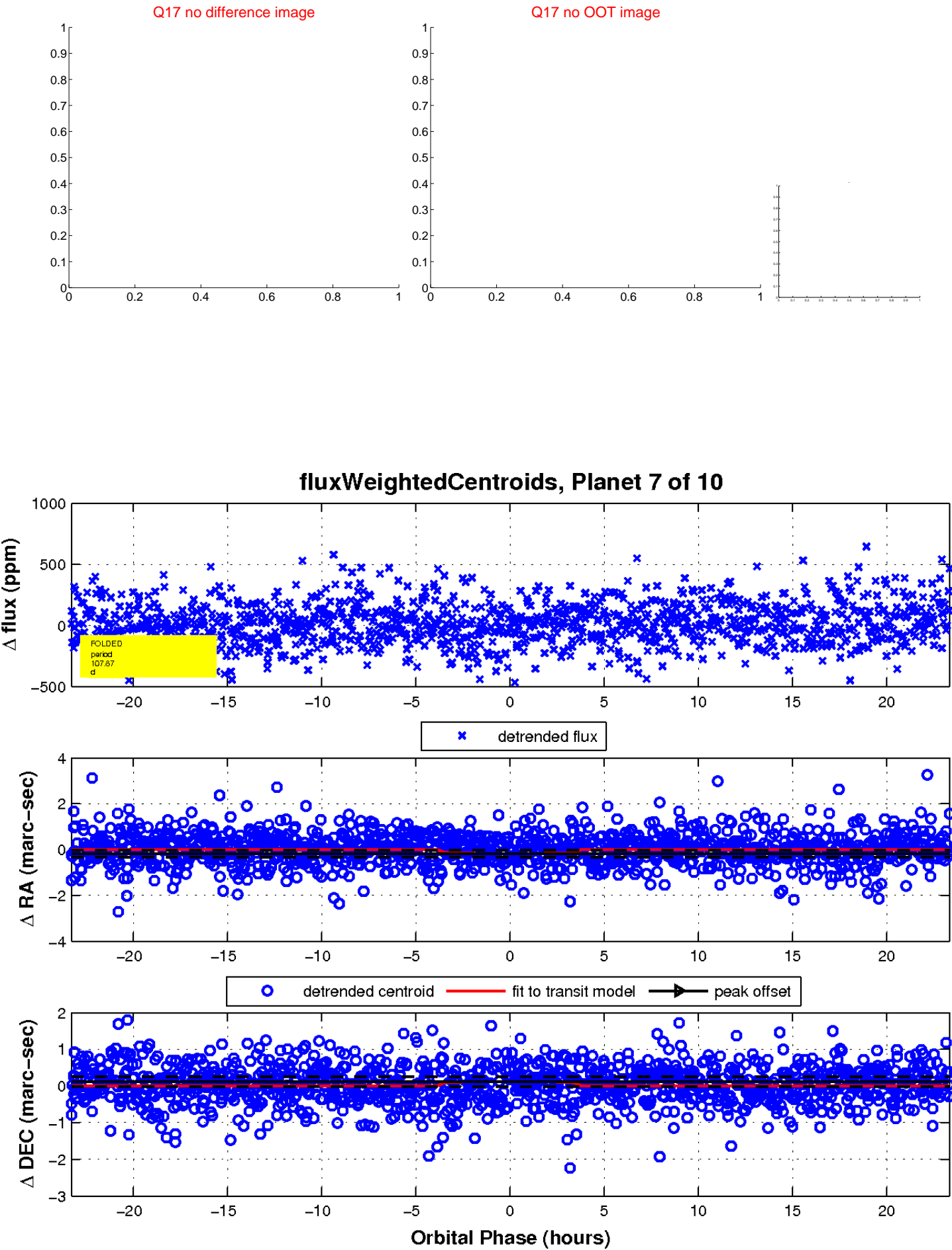


Q16 OOT image



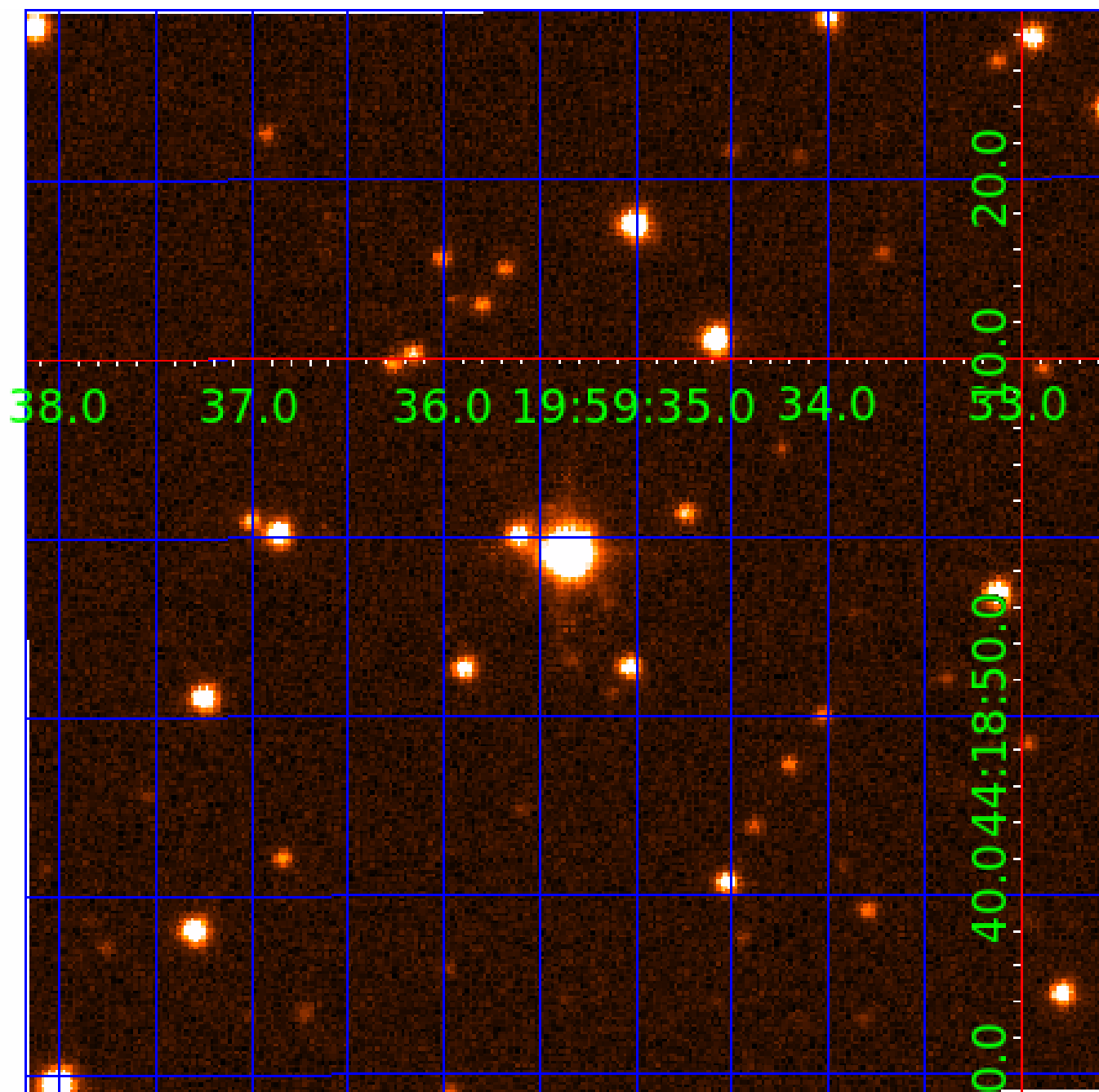


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008392519-01	OBS	No	2.288770	133.644536	24.1	12.052	10.3	8.2	3.26	6760	1.86	12204.28
008392519-02	OBS	No	126.257214	188.163119	324.8	16.500	22.2	11.2	3.26	6760	7.12	58.12
008392519-03	OBS	No	67.007289	147.064248	230.7	18.688	14.2	11.4	3.26	6760	5.68	135.25
008392519-04	OBS	No	450.749107	554.002125	343.3	19.711	10.3	9.1	3.26	6760	11.57	10.65
008392519-05	OBS	No	111.174093	225.691769	294.9	14.373	10.0	11.9	3.26	6760	5.96	68.86
008392519-06	OBS	No	99.450221	187.886477	206.0	8.756	9.8	6.9	3.26	6760	5.11	79.89
008392519-07	OBS	No	107.865281	206.670817	234.6	7.787	8.8	8.7	3.26	6760	5.67	71.69
008392519-08	OBS	No	199.446436	141.675993	241.9	9.055	8.8	7.4	3.26	6760	5.46	31.59
008392519-09	OBS	No	286.372798	388.504274	259.8	6.875	8.9	6.8	3.26	6760	6.09	19.50
008392519-10	OBS	No	318.071035	240.093446	199.3	9.243	8.7	8.5	3.26	6760	5.45	16.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008392519-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008392519-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008392519-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
008392519-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008392519-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008392519-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008392519-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

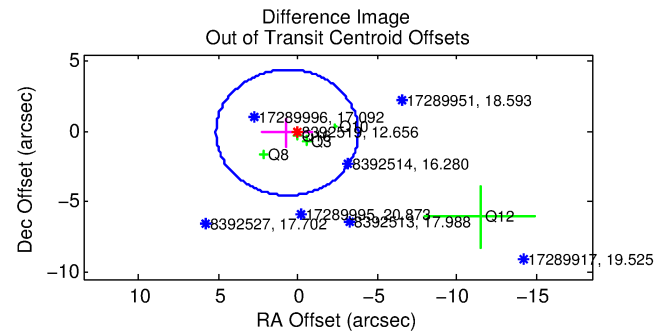
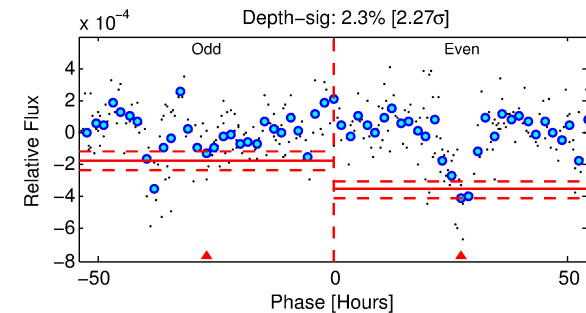
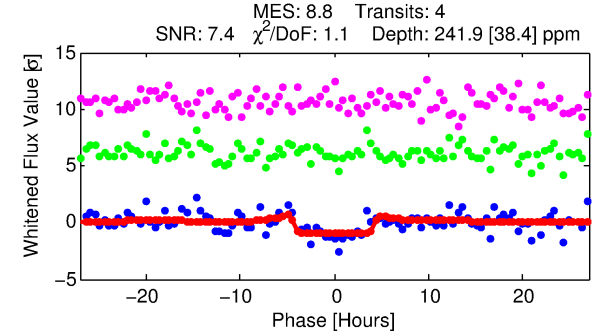
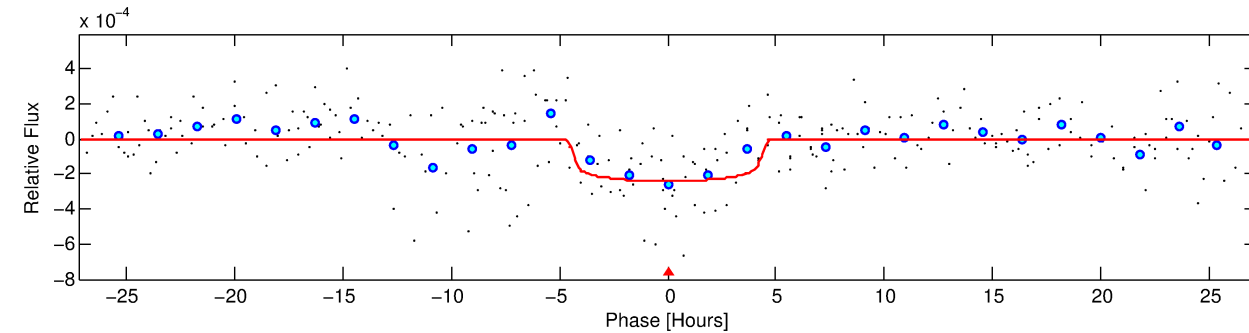
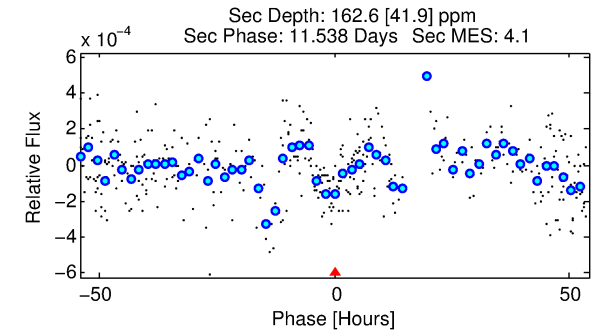
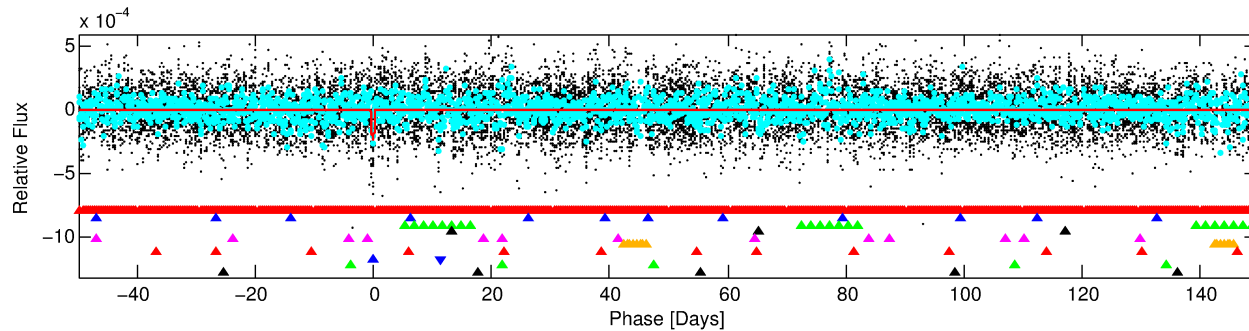
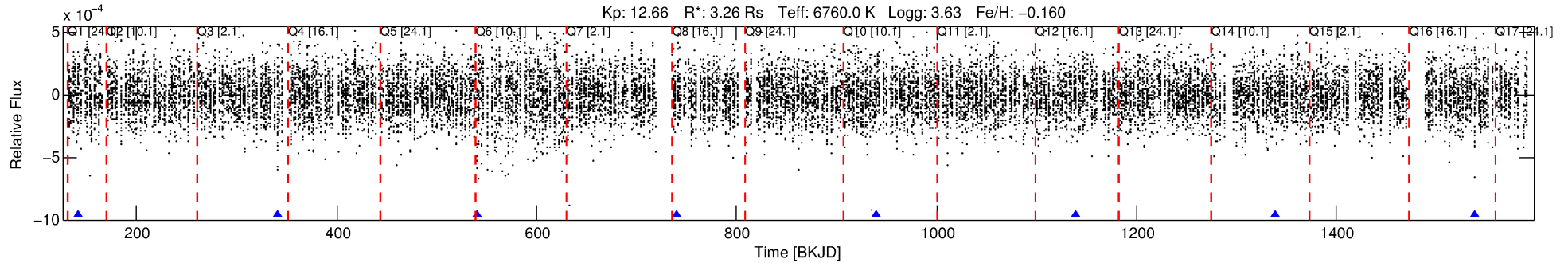
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008392519-08

No Significant Match Found

# DV One-Page Summary

KIC: 8392519 Candidate: 8 of 10 Period: 199.446 d



## DV Fit Results:

Period = 199.44644 [0.00258] d  
Epoch = 141.6760 [0.0115] BKJD  
Rp/R\* = 0.0154 [0.0043]  
a/R\* = 119.65 [178.62]  
b = 0.72 [0.98]  
Seff = 31.59 [18.07]  
Teq = 605 [86] K  
Rp = 5.46 [2.56] Re  
a = 0.7929 [0.2787] AU  
Ag = 1885.96 [1572.16] [1.20σ]  
Teffp = 6159 [981] K [5.64σ]

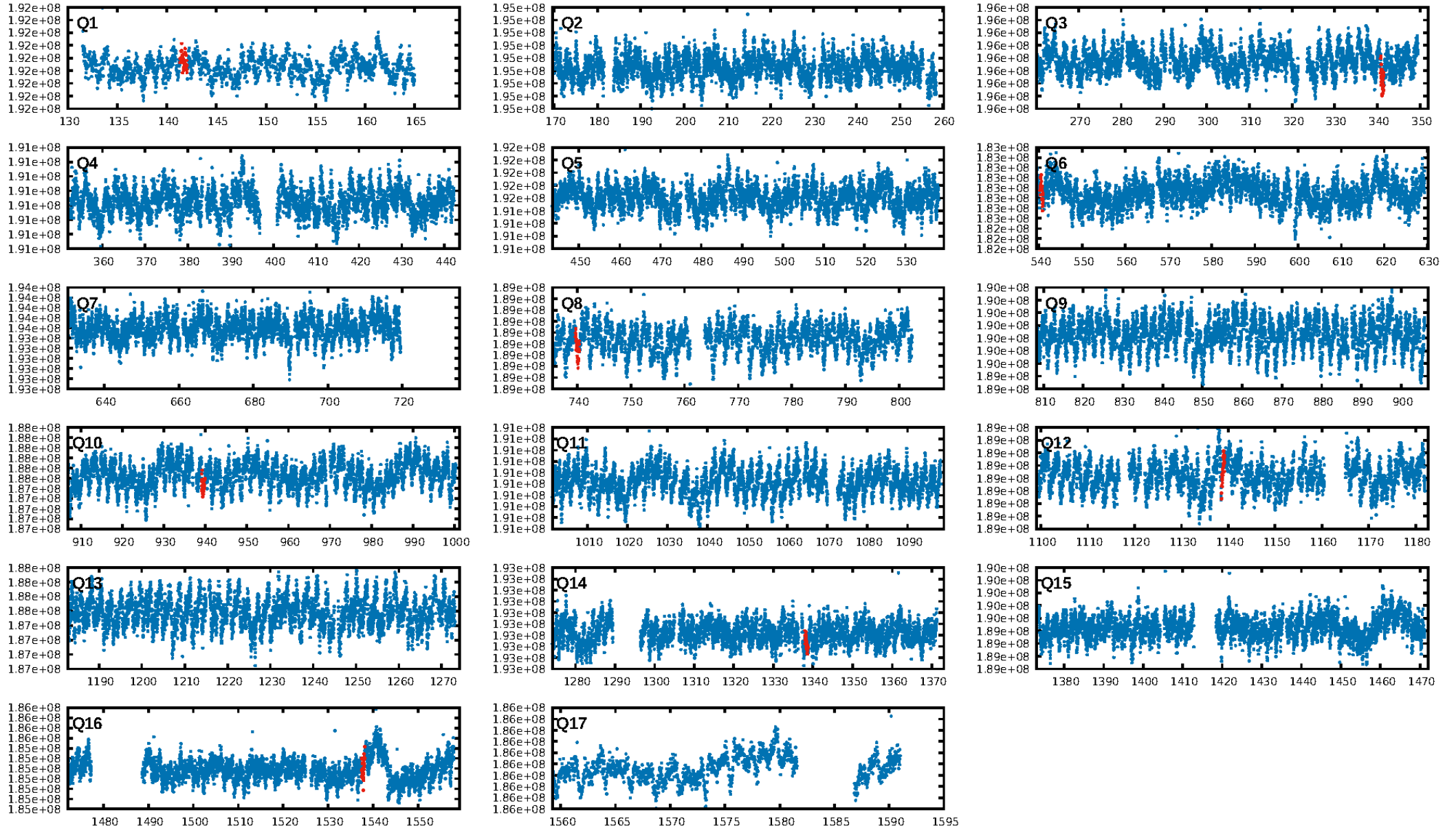
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [93.33σ]  
LongPeriod-sig: 100.0% [183.50σ]  
ModelChiSquare2-sig: 4.1%  
ModelChiSquareGof-sig: 99.8%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -0.4869  
Centroid-sig: 51.0%  
Centroid-so: 0.594 arcsec [0.96σ]  
OotOffset-rm: 0.681 arcsec [0.46σ]  
KicOffset-rm: 1.118 arcsec [1.12σ]  
OotOffset-st: 1/1/3/0 [5]  
KicOffset-st: 1/1/3/0 [5]  
DiffImageQuality-fgm: 0.80 [4/5]  
DiffImageOverlap-fno: 0.33 [2/6]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:18:06 Z

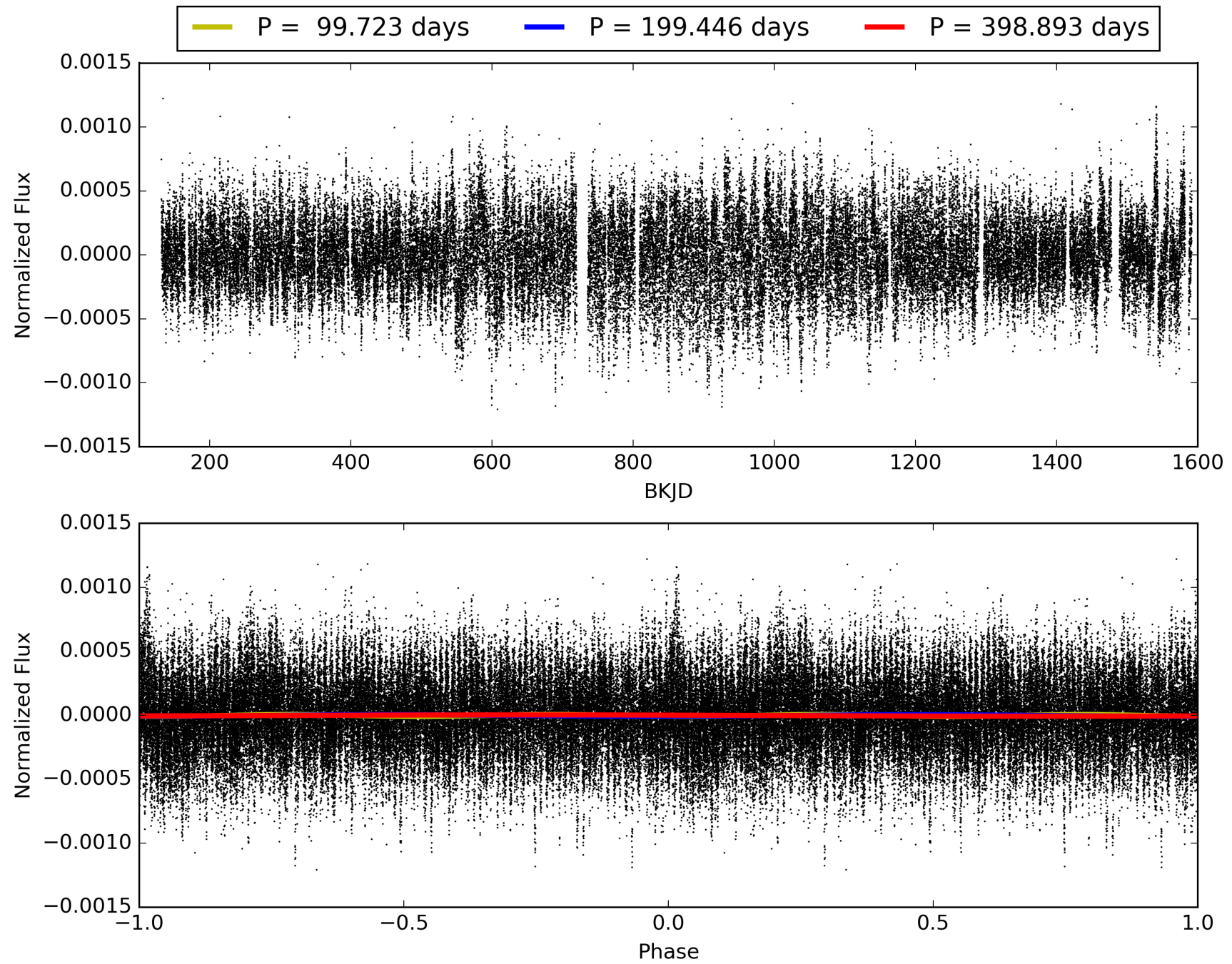
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008392519-08, PDC Light Curves



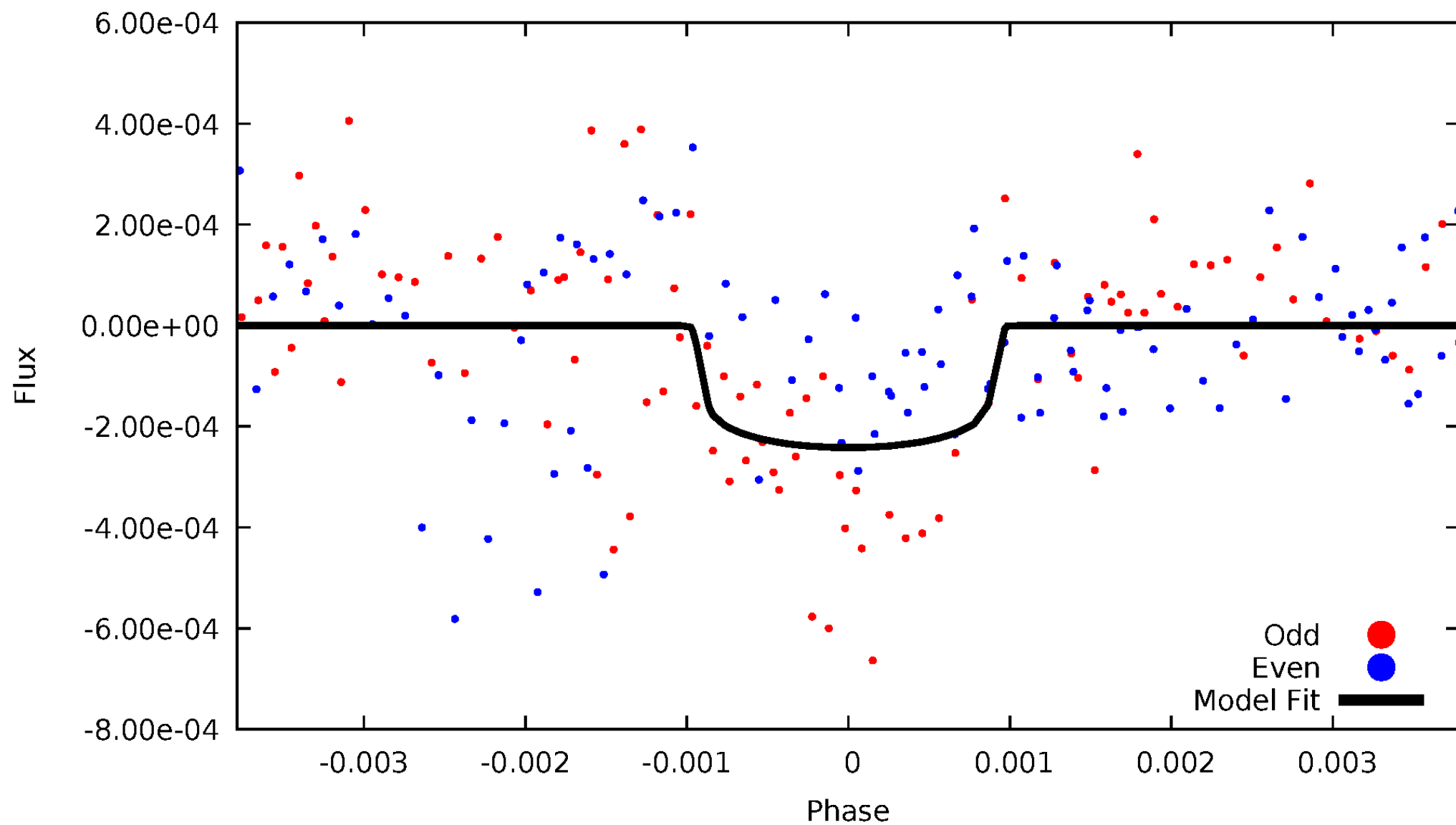


TCE 008392519-08



# DV Odd/Even

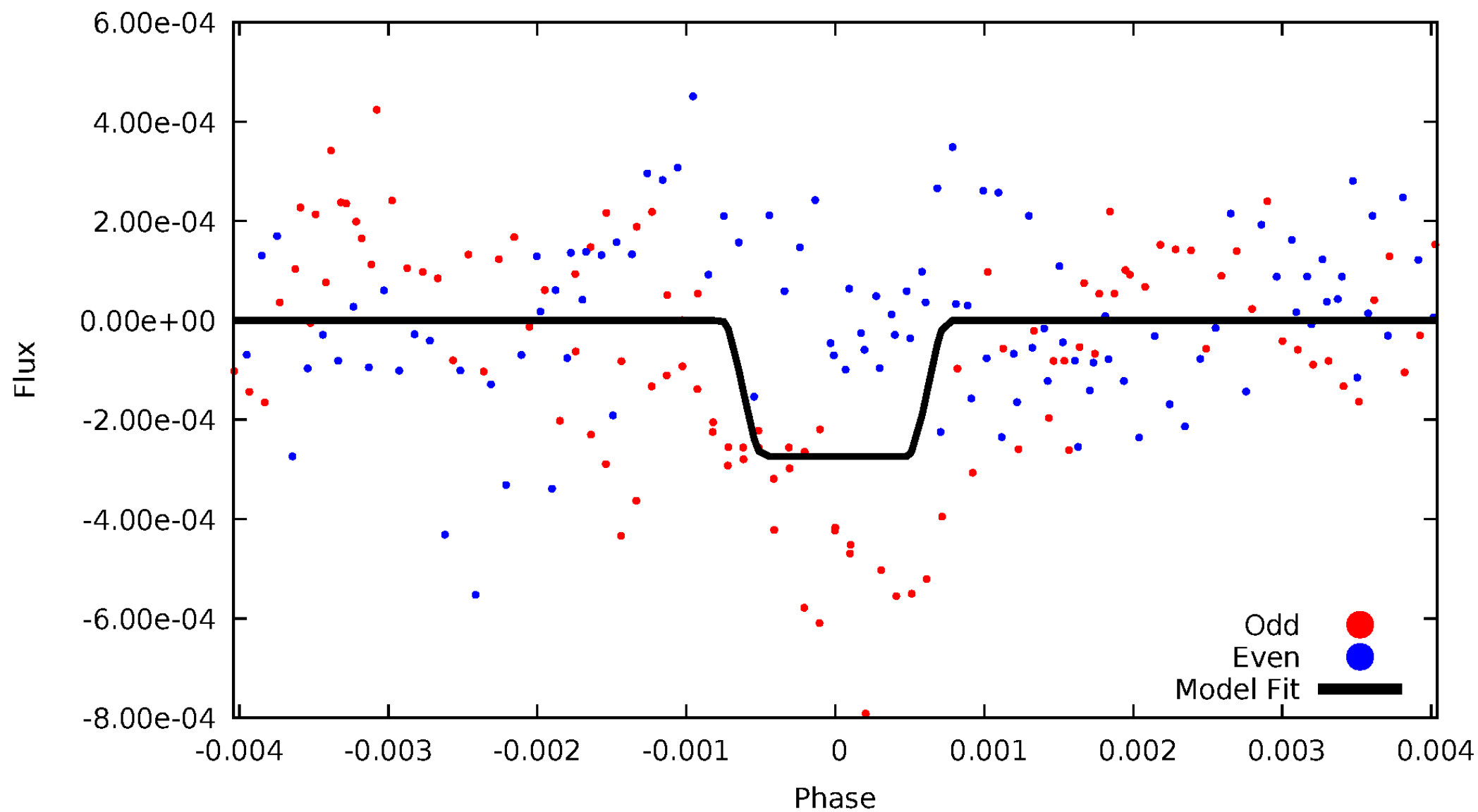
TCE 008392519-08





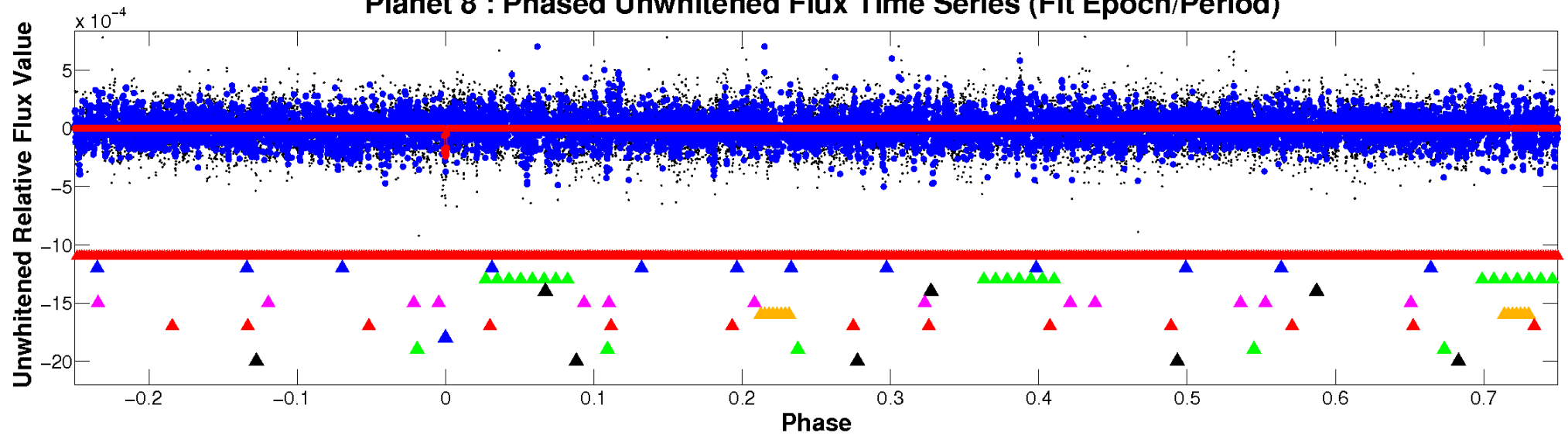
# ALT Odd/Even

TCE 008392519-08

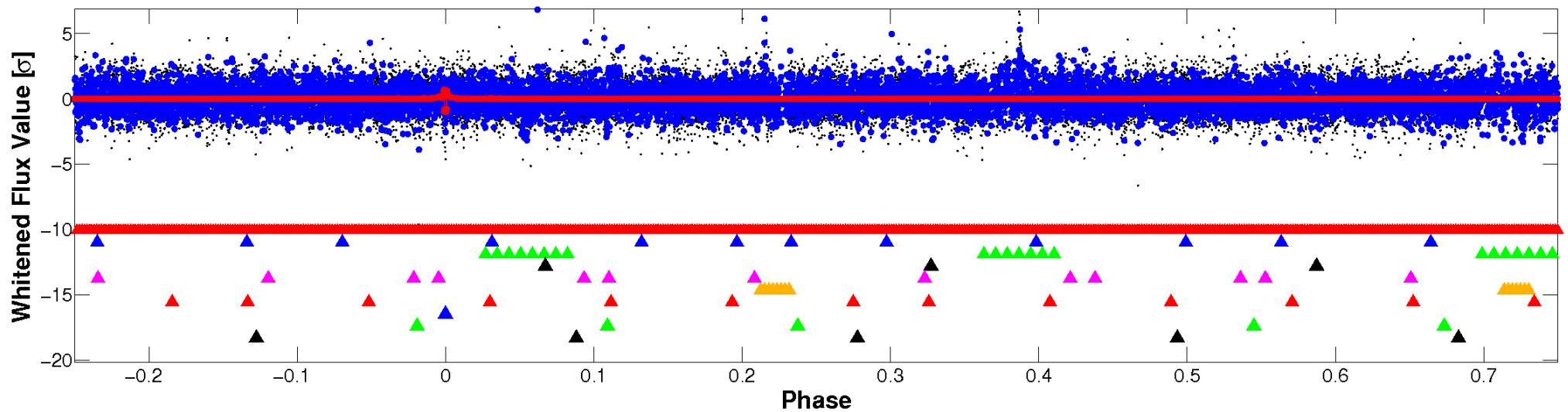


# Non-Whitened Vs. Whitened Light Curve

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

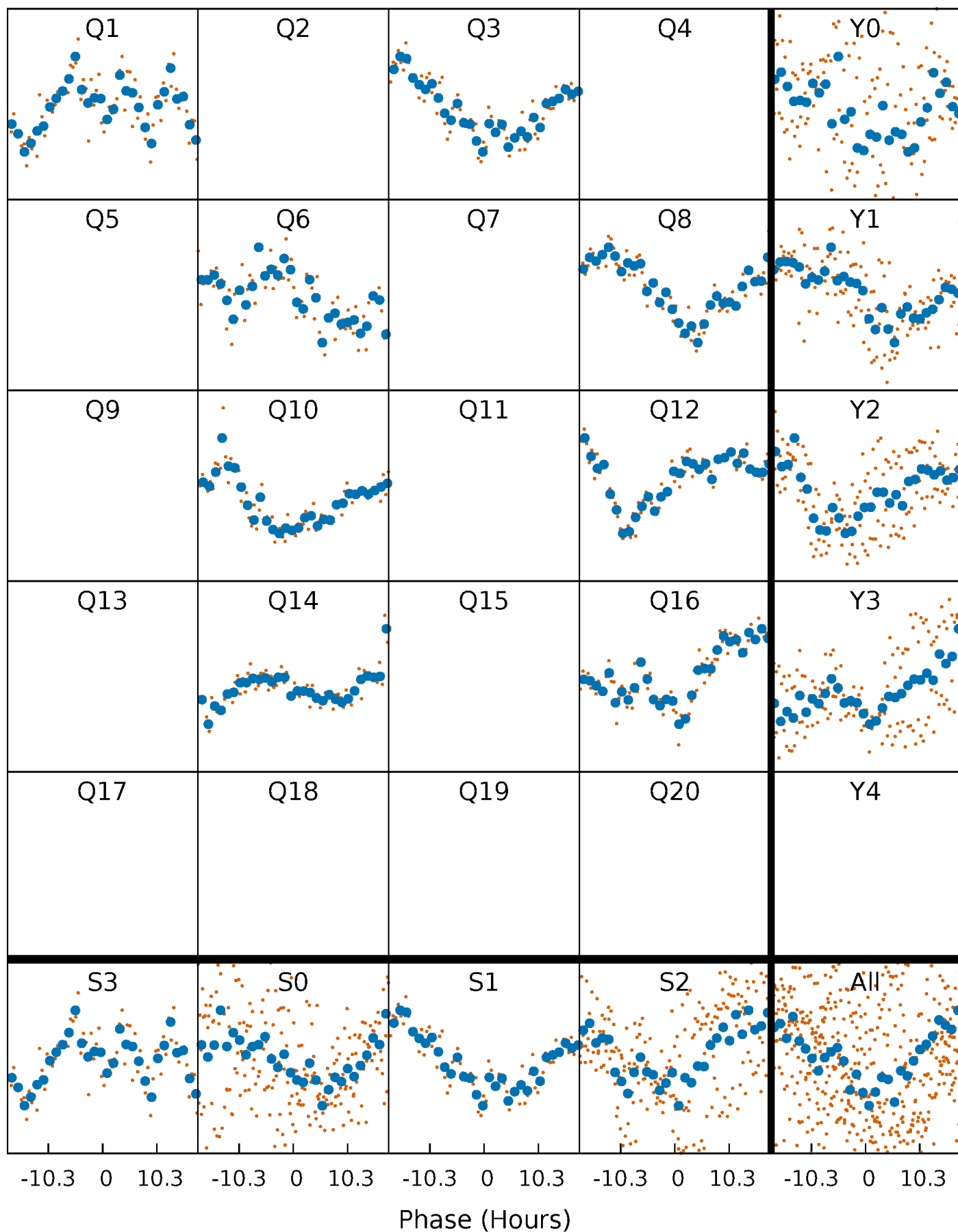


## Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



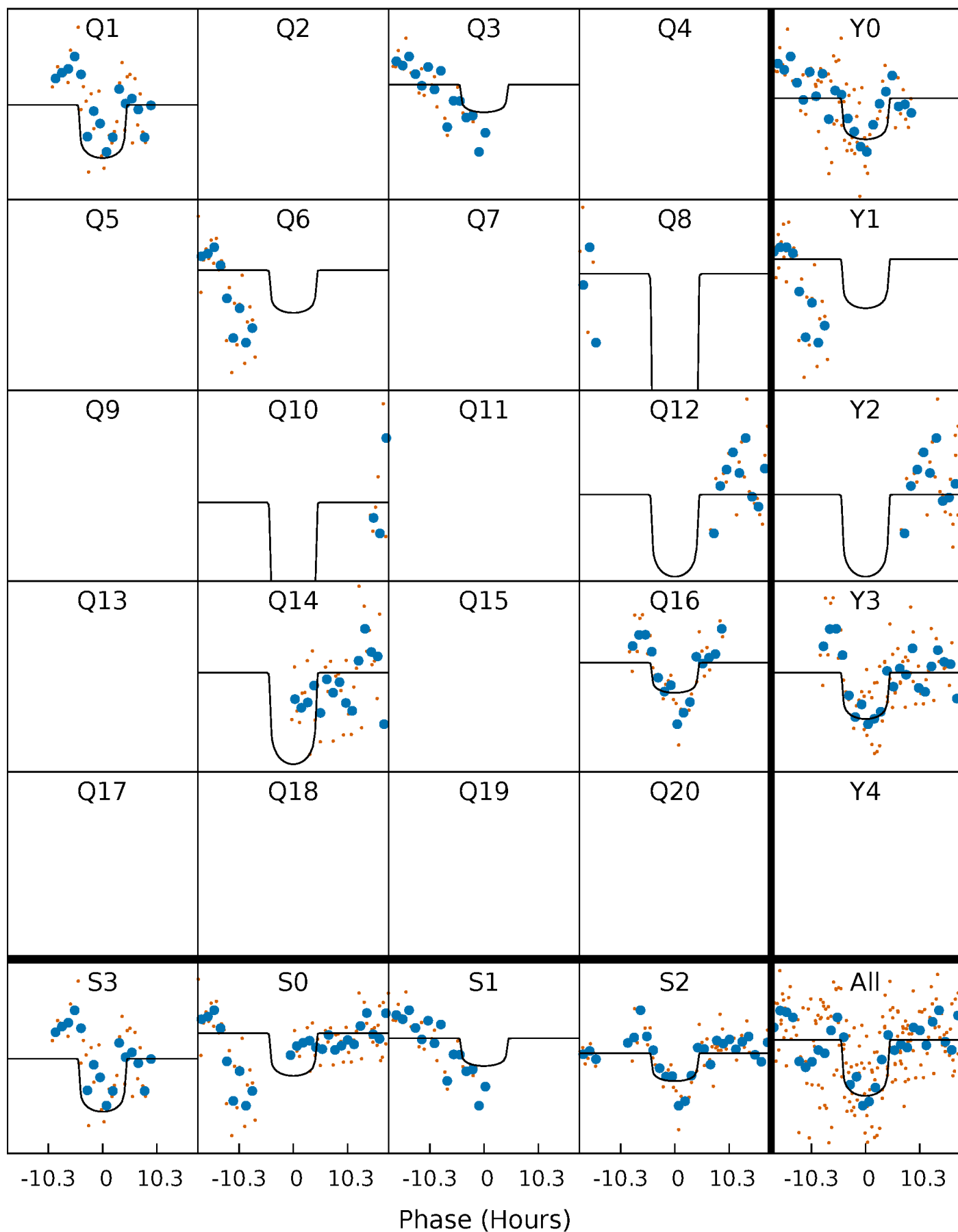
# PDC Quarter-Phased Transit Curves

TCE 008392519-08 P=199.446436 Days  $T_0=141.675993$  (BKJD)



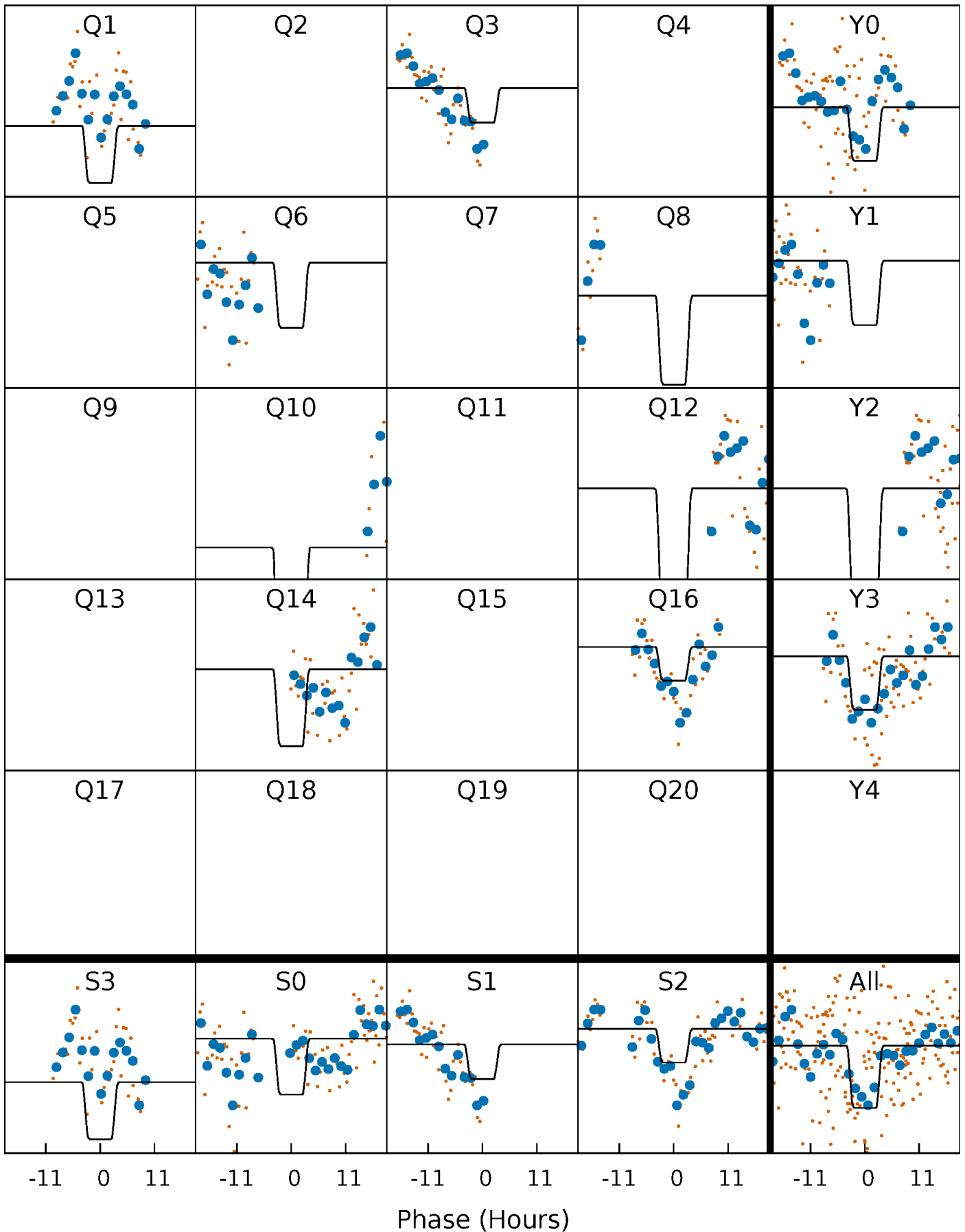
# DV Quarter-Phased Transit Curves

TCE 008392519-08 P=199.446436 Days  $T_0=141.675993$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

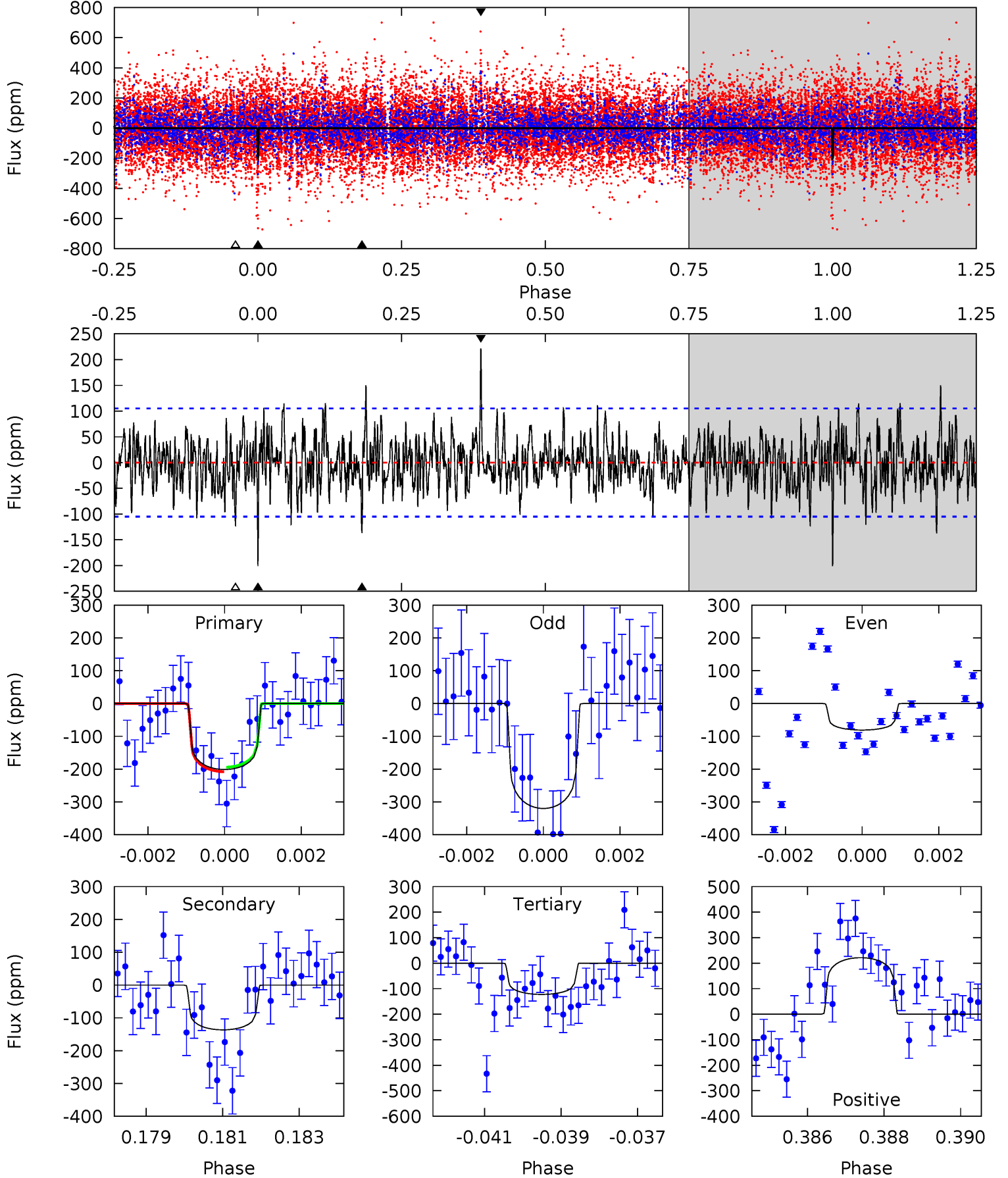
TCE 008392519-08 P=199.445168 Days  $T_0=141.674133$  (BKJD)



# DV Model-Shift Uniqueness Test

008392519-08, P = 199.446436 Days, E = 141.675993 Days

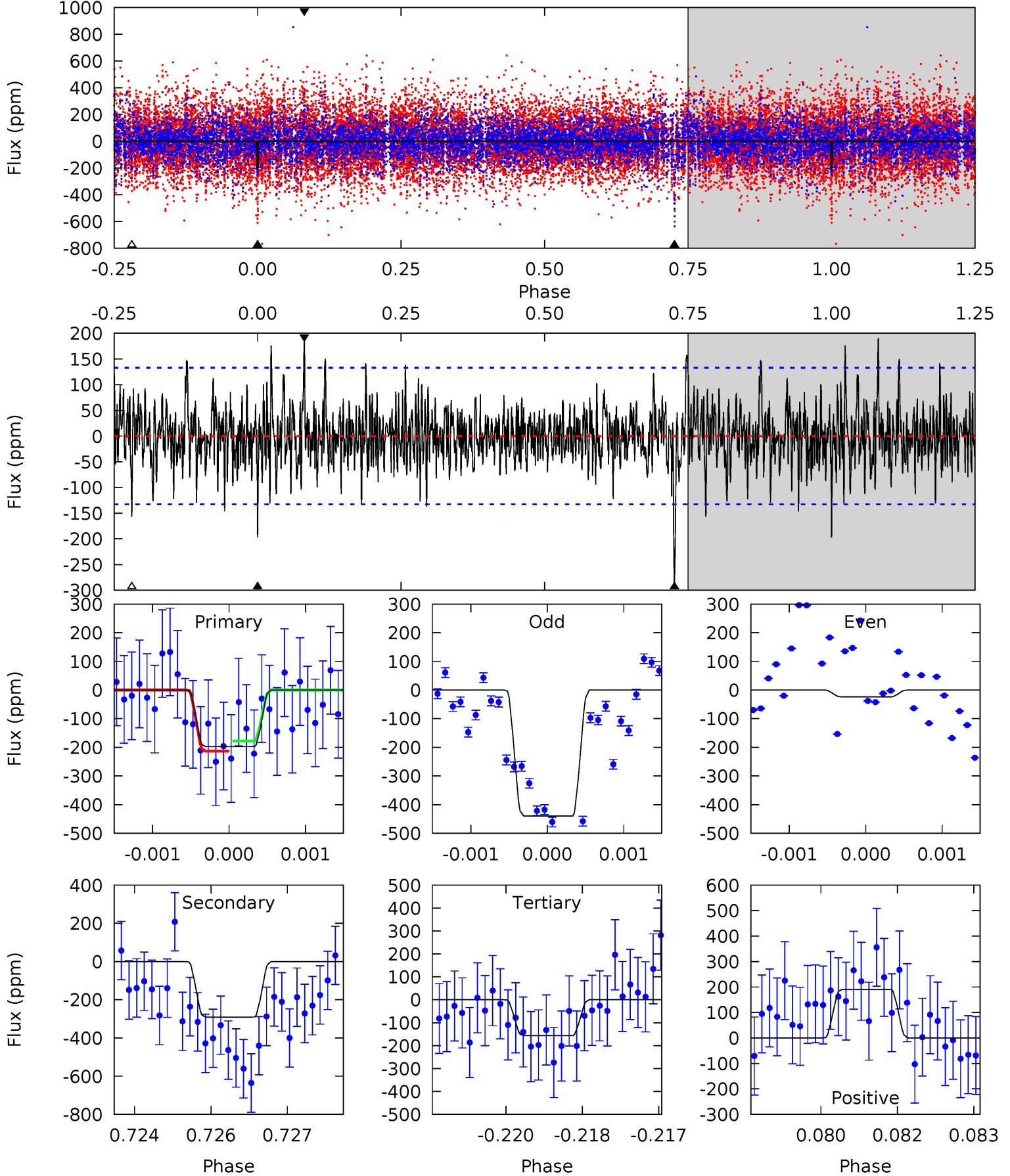
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.2	6.93	6.21	11.2	5.32	3.09	2.00	4.00	-1.03	0.72	-4.31	6.06	1.16	0.52	0.35



# Alt Model-Shift Uniqueness Test

008392519-08, P = 199.445168 Days, E = 141.674133 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
8.01	11.8	6.36	7.73	5.39	3.19	1.79	1.65	0.28	5.44	4.06	8.54	0.93	0.40	0.71





### Stellar Parameters For KIC 008392519

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6760^{+187}_{-234}$	$3.635^{+0.323}_{-0.057}$	$-0.160^{+0.300}_{-0.250}$	$3.258^{+0.406}_{-1.218}$	$1.670^{+0.221}_{-0.332}$	$0.068^{+0.157}_{-0.014}$
	+3%/-3%	+9%/-2%	+188%/-156%	+12%/-37%	+13%/-20%	+230%/-20%
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 008392519-08 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-137 \pm 20$	$4.96^{+1.94}_{-1.50}$	$819^{+45}_{-70}$	$5848^{+1114}_{-644}$	$1885^{+2037}_{-891}$
Alt.	$-291 \pm 25$	$5.42^{+1.75}_{-1.60}$	$820^{+48}_{-74}$	$6818^{+1360}_{-755}$	$3369^{+3408}_{-1362}$

$T_{\text{max}}$  = 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

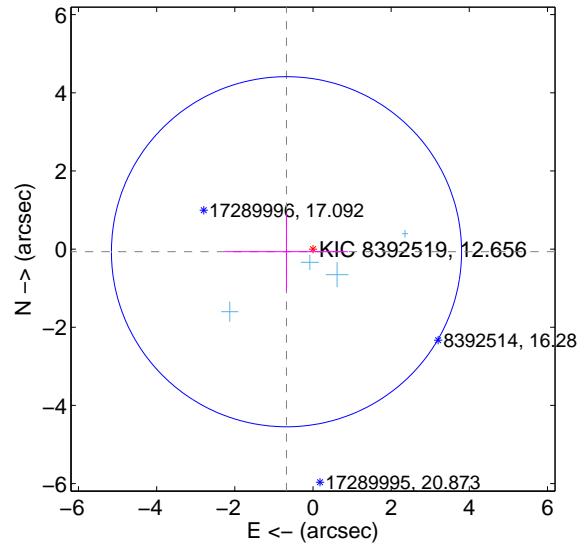
Supplemental centroid analysis for 008392519-08. Kepler magnitude: 12.66. Transit SNR 7.42

There are 4 quarters with good PRF difference image offsets

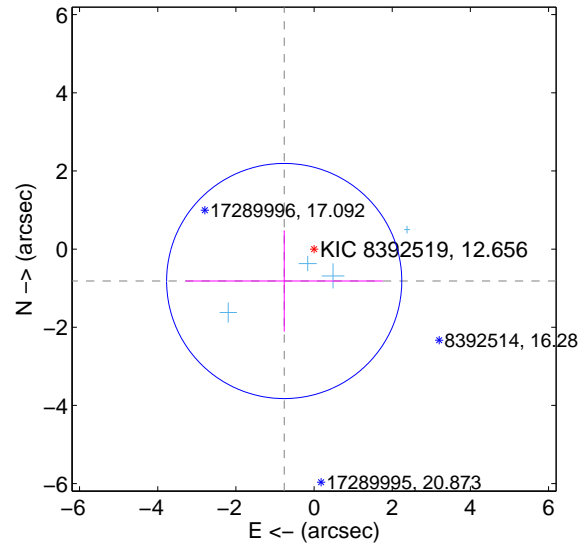
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.681 \pm 1.493$	0.46	$0.678 \pm 1.573$	$-0.067 \pm 0.977$
PRF-fit source offset from KIC position	$1.118 \pm 1.003$	1.12	$0.764 \pm 2.525$	$-0.817 \pm 1.296$
photometric centroid source offset	$0.59 \pm 0.62$	0.96	$0.52 \pm 0.62$	$-0.28 \pm 0.61$

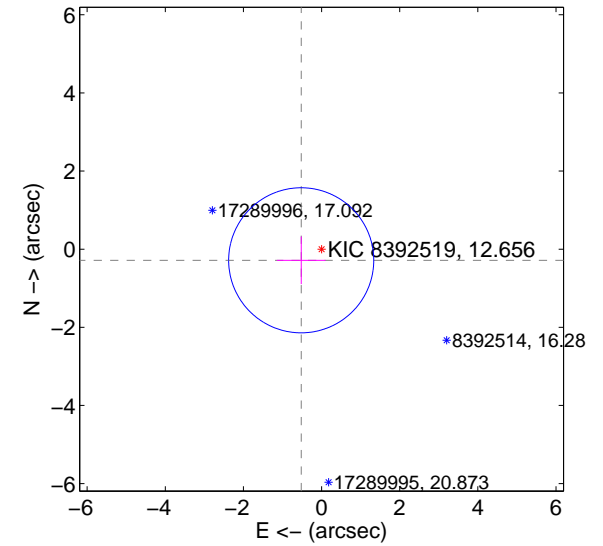
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

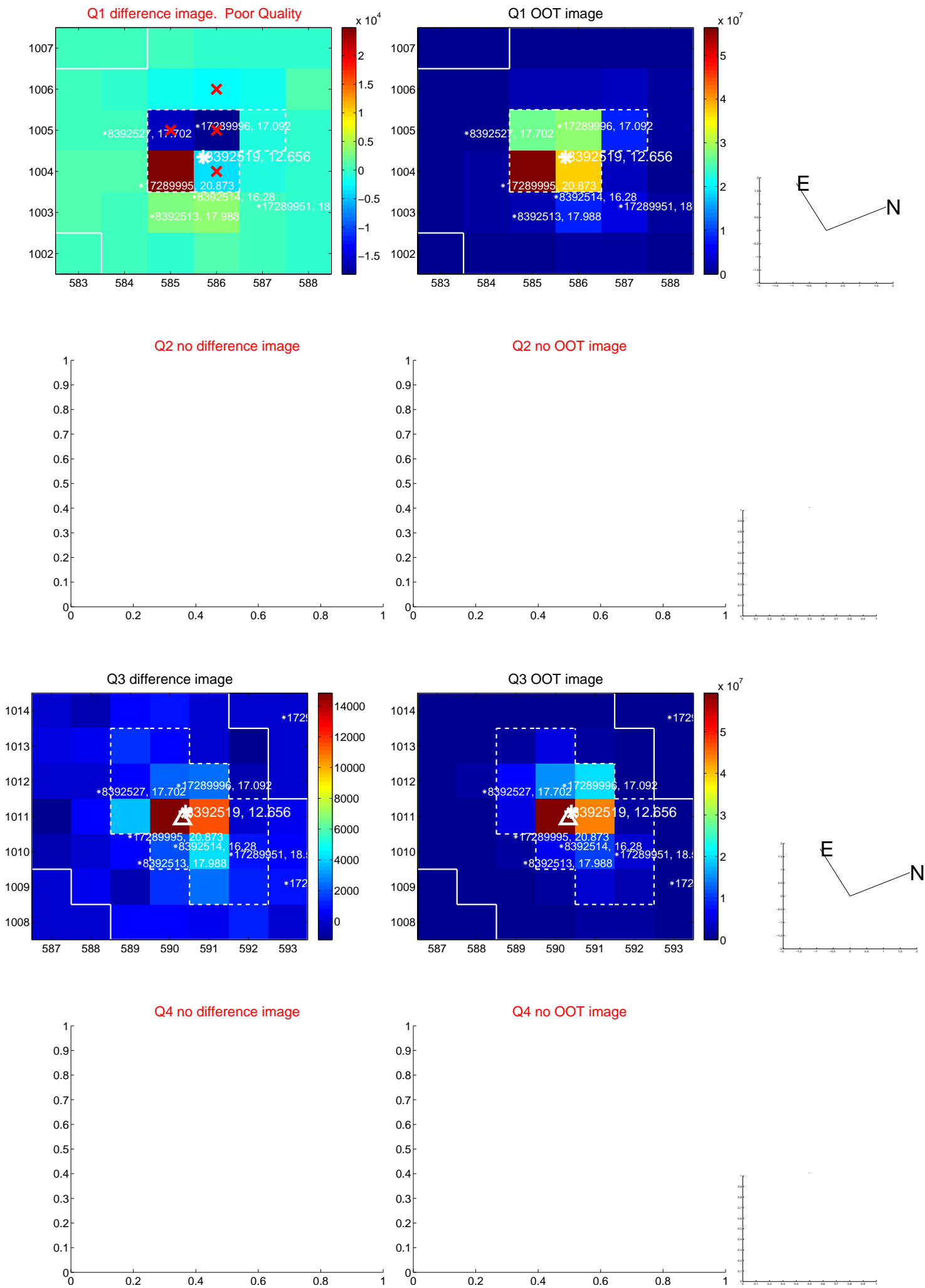


offset from photometric centroids



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



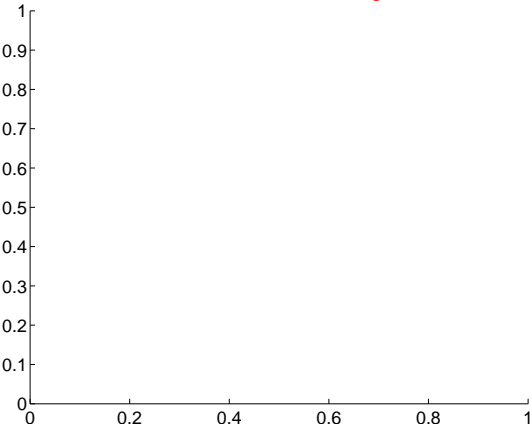
Q6 no difference image



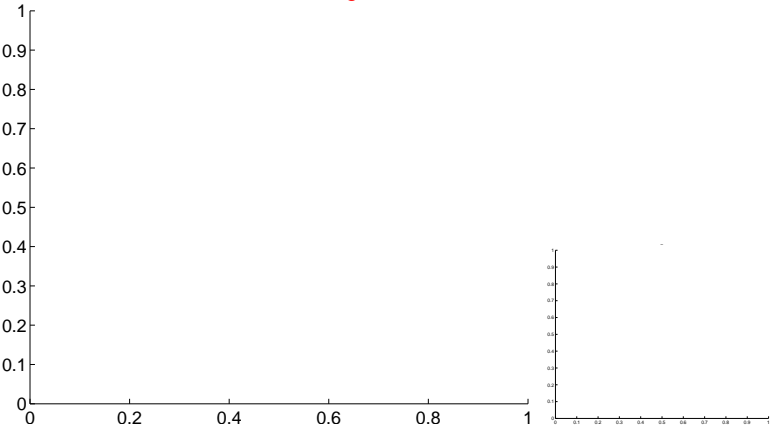
Q6 no OOT image



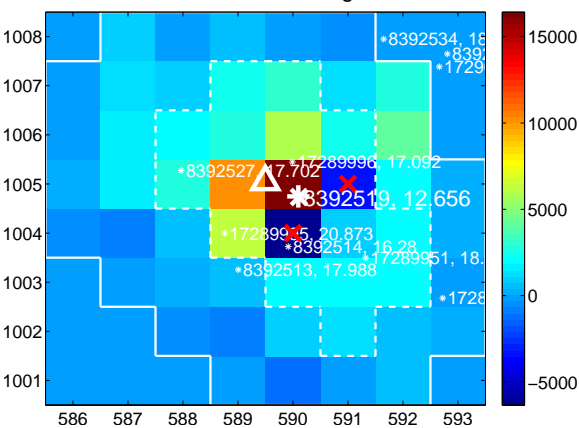
Q7 no difference image



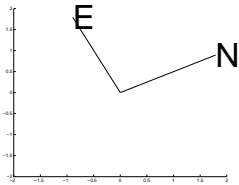
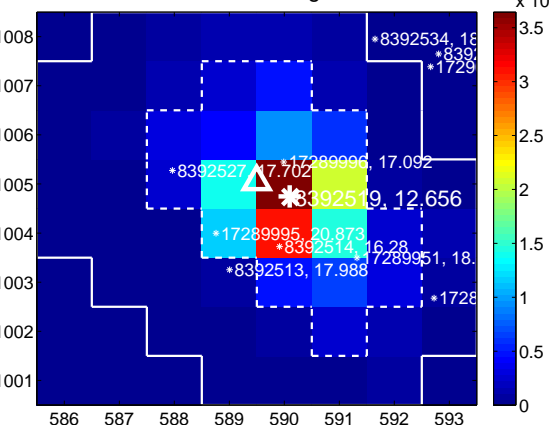
Q7 no OOT image



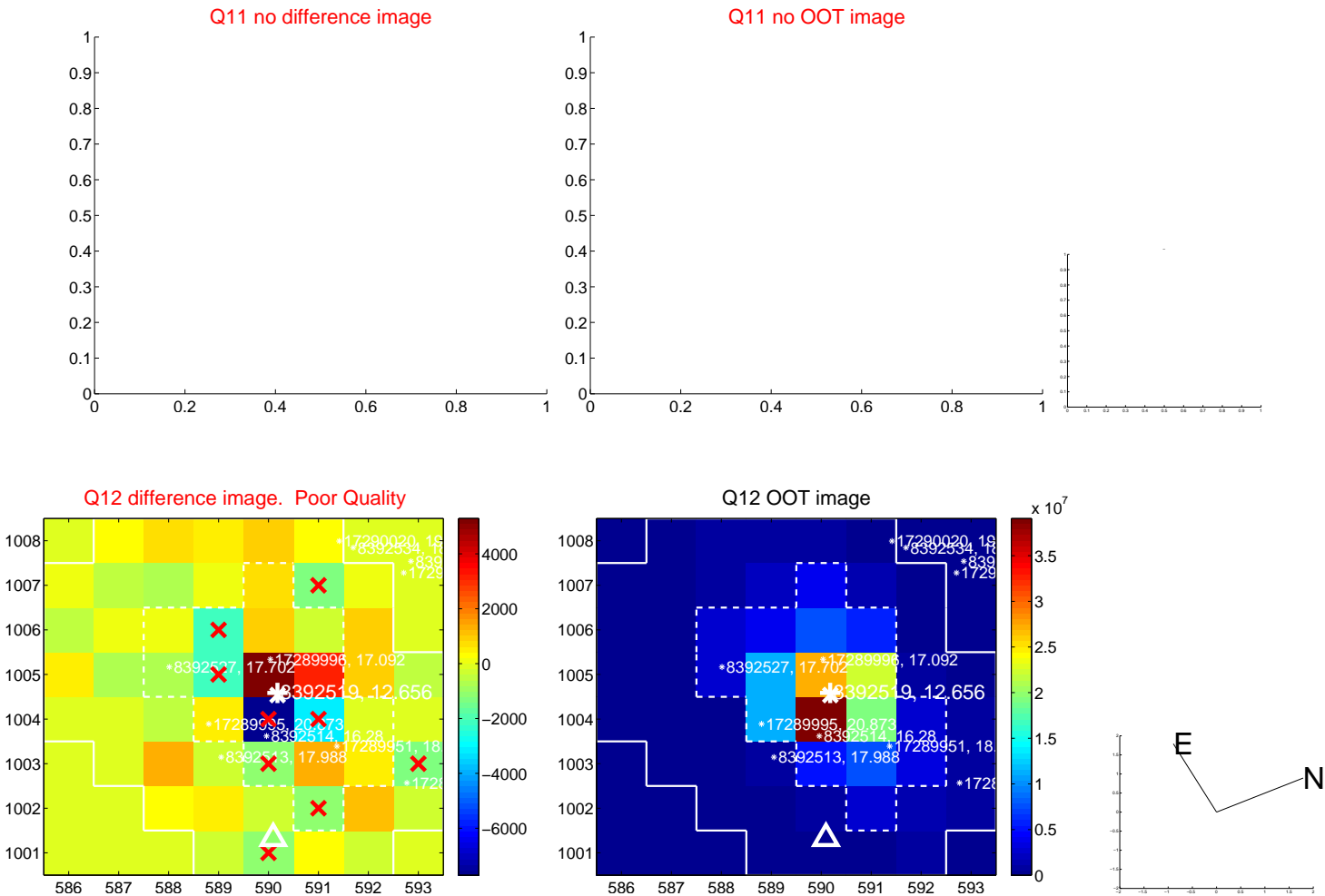
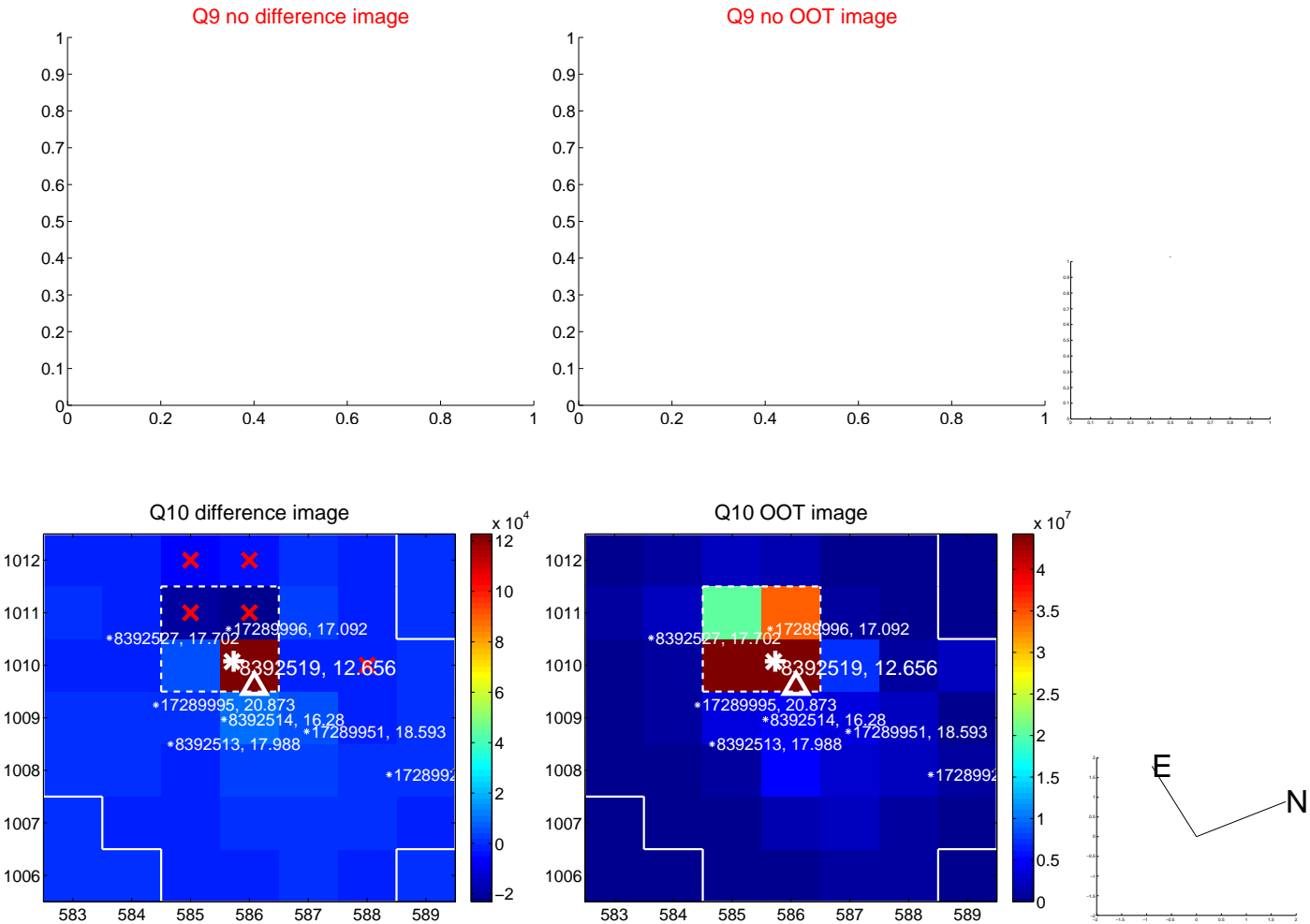
Q8 difference image



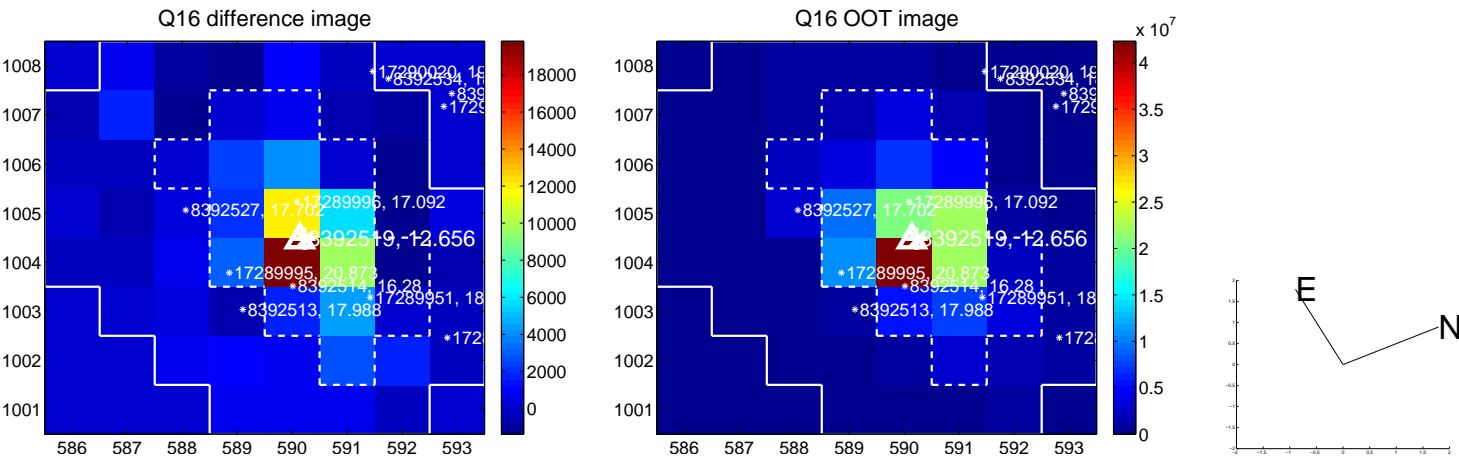
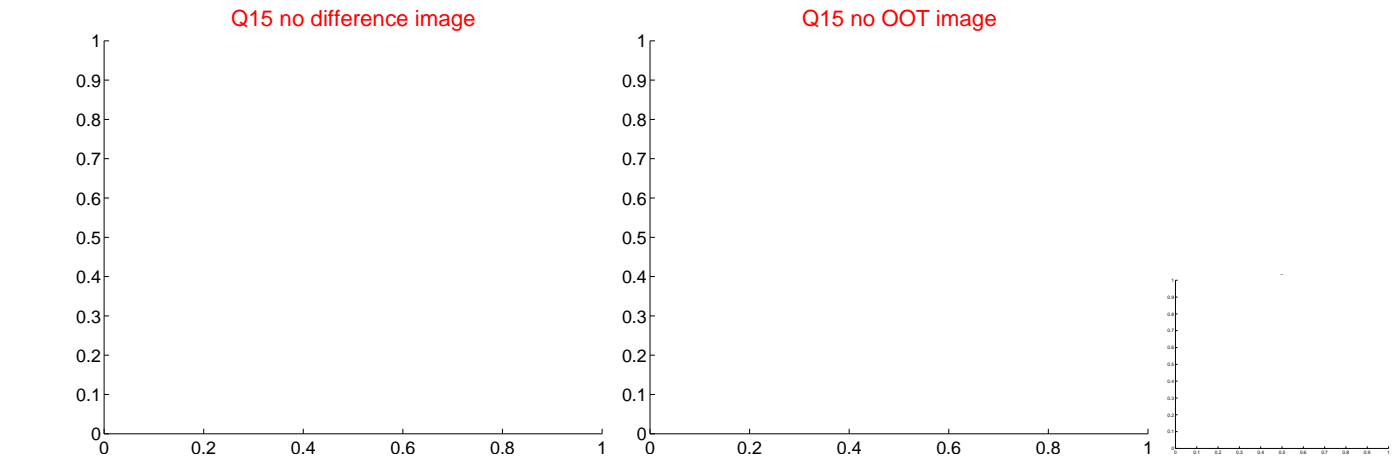
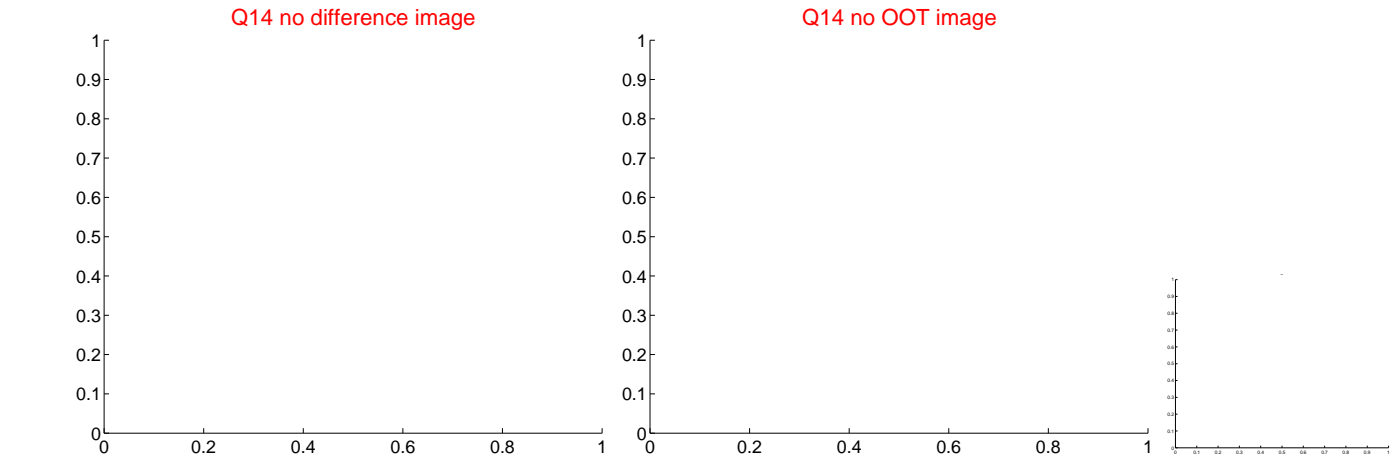
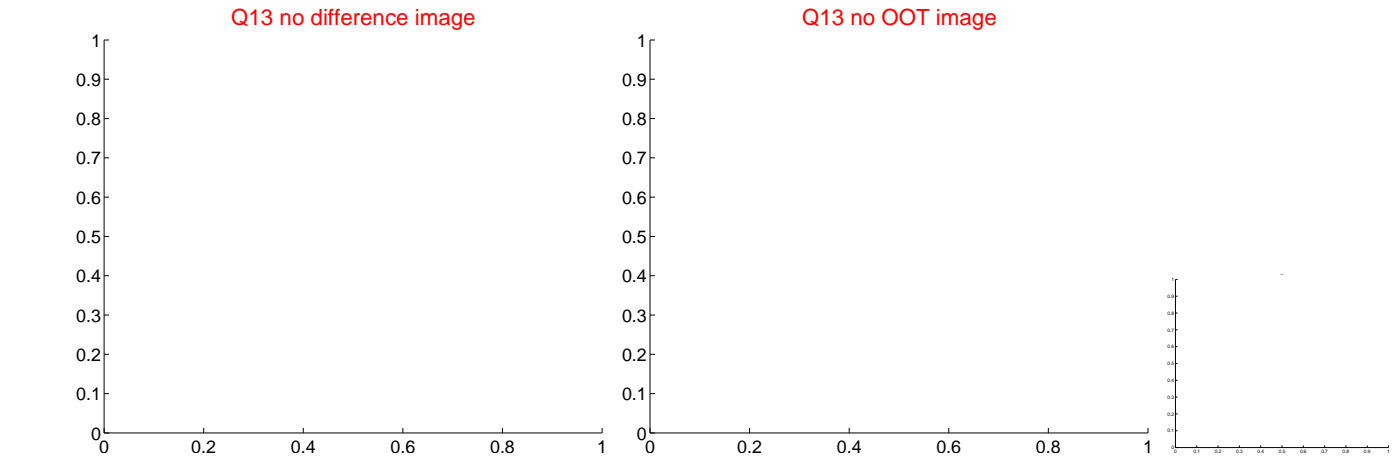
Q8 OOT image



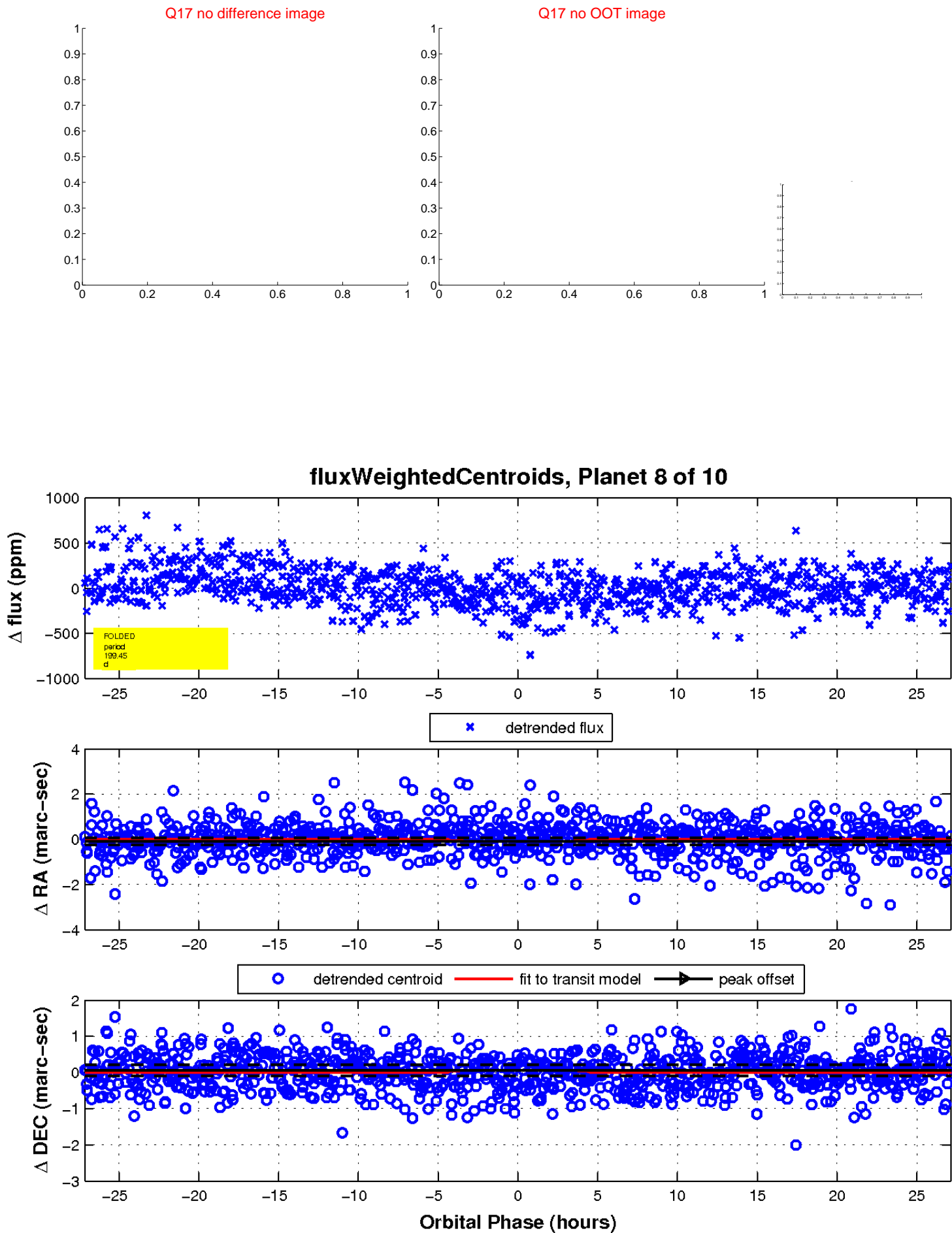
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



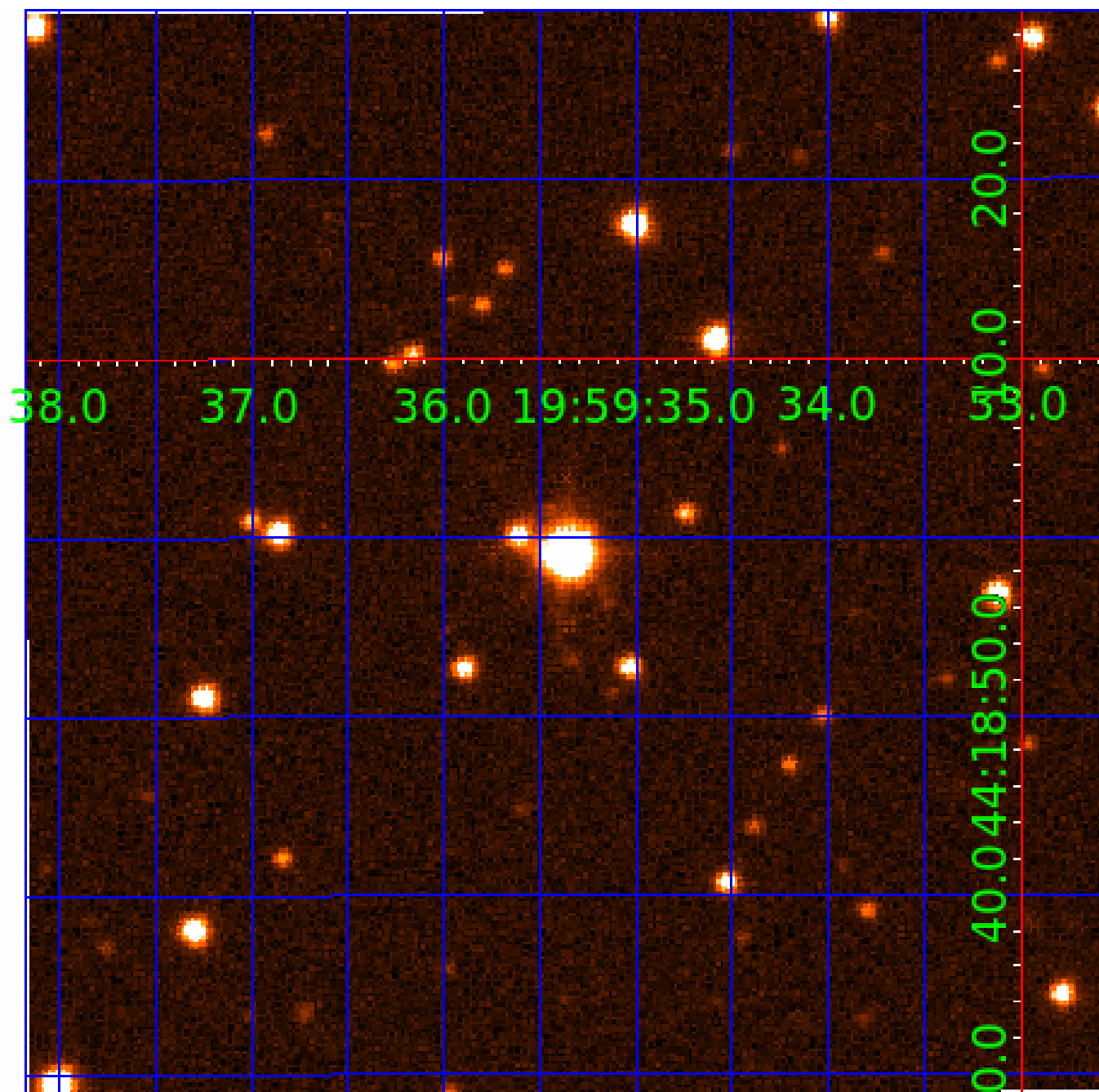
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008392519-01	OBS	No	2.288770	133.644536	24.1	12.052	10.3	8.2	3.26	6760	1.86	12204.28
008392519-02	OBS	No	126.257214	188.163119	324.8	16.500	22.2	11.2	3.26	6760	7.12	58.12
008392519-03	OBS	No	67.007289	147.064248	230.7	18.688	14.2	11.4	3.26	6760	5.68	135.25
008392519-04	OBS	No	450.749107	554.002125	343.3	19.711	10.3	9.1	3.26	6760	11.57	10.65
008392519-05	OBS	No	111.174093	225.691769	294.9	14.373	10.0	11.9	3.26	6760	5.96	68.86
008392519-06	OBS	No	99.450221	187.886477	206.0	8.756	9.8	6.9	3.26	6760	5.11	79.89
008392519-07	OBS	No	107.865281	206.670817	234.6	7.787	8.8	8.7	3.26	6760	5.67	71.69
008392519-08	OBS	No	199.446436	141.675993	241.9	9.055	8.8	7.4	3.26	6760	5.46	31.59
008392519-09	OBS	No	286.372798	388.504274	259.8	6.875	8.9	6.8	3.26	6760	6.09	19.50
008392519-10	OBS	No	318.071035	240.093446	199.3	9.243	8.7	8.5	3.26	6760	5.45	16.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008392519-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008392519-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008392519-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
008392519-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008392519-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008392519-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008392519-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

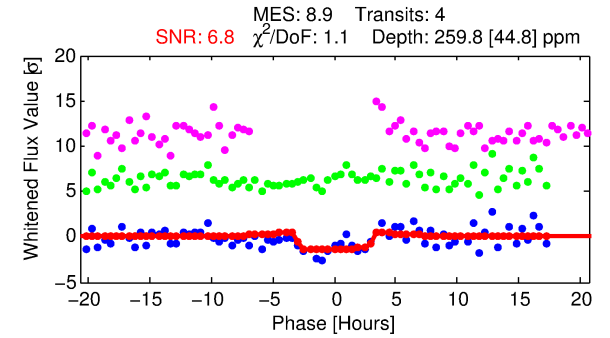
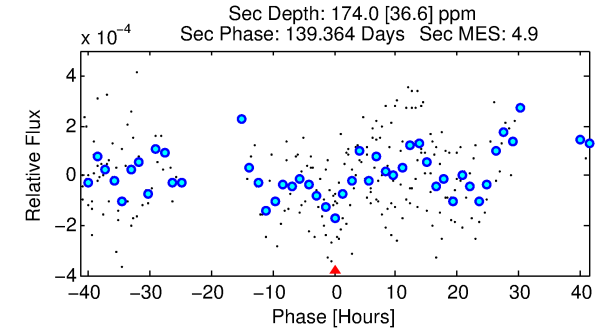
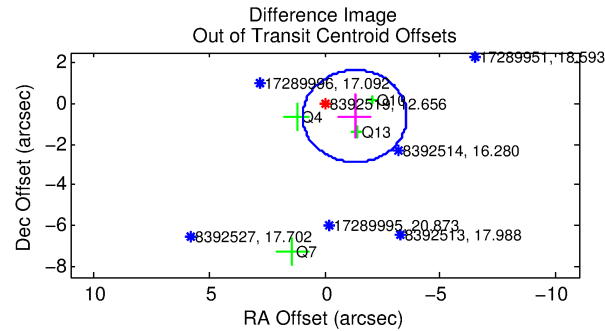
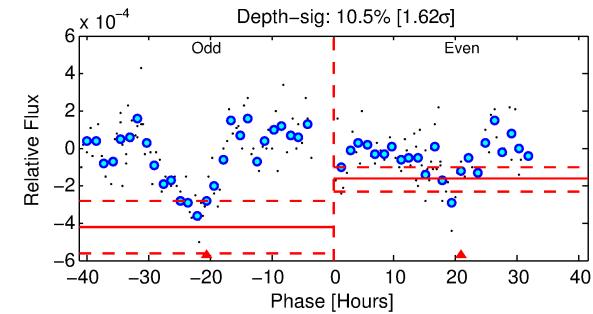
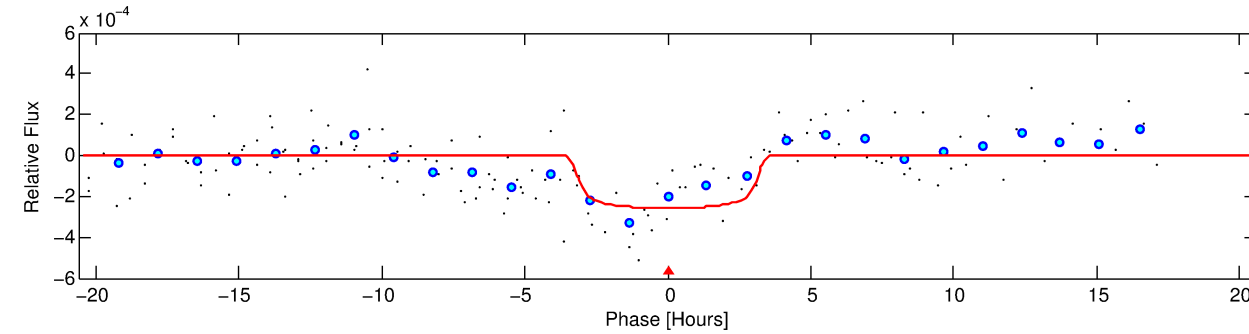
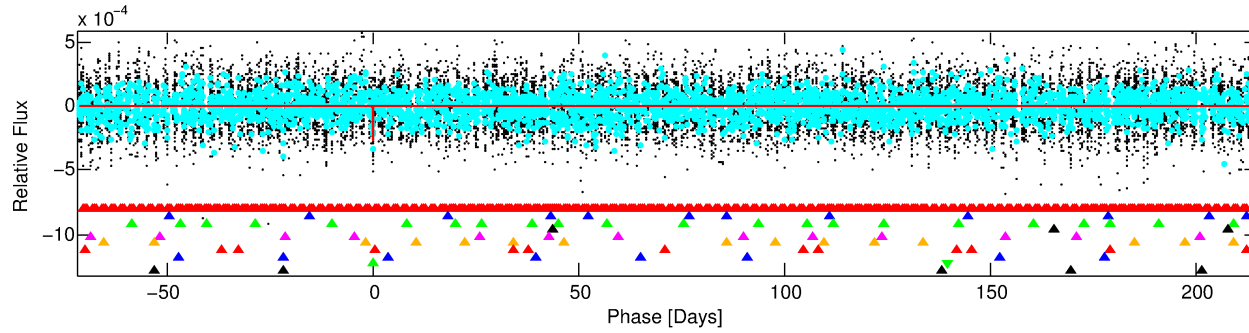
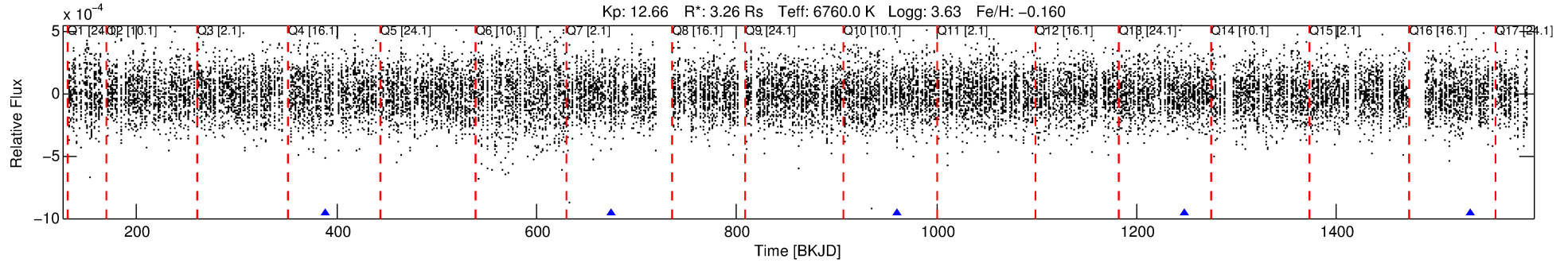
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008392519-09

No Significant Match Found

# DV One-Page Summary

KIC: 8392519 Candidate: 9 of 10 Period: 286.373 d



## DV Fit Results:

Period = 286.37280 [0.00984] d  
Epoch = 388.5043 [0.0154] BKJD  
Rp/R\* = 0.0171 [0.0036]  
a/R\* = 153.51 [166.14]  
b = 0.90 [0.24]  
Seff = 19.50 [11.15]  
Teq = 536 [77] K  
Rp = 6.09 [2.62] Re  
a = 1.0091 [0.3547] AU  
Ag = 2627.69 [1916.46] [1.37 $\sigma$ ]  
Teffp = 5932 [731] K [7.34 $\sigma$ ]

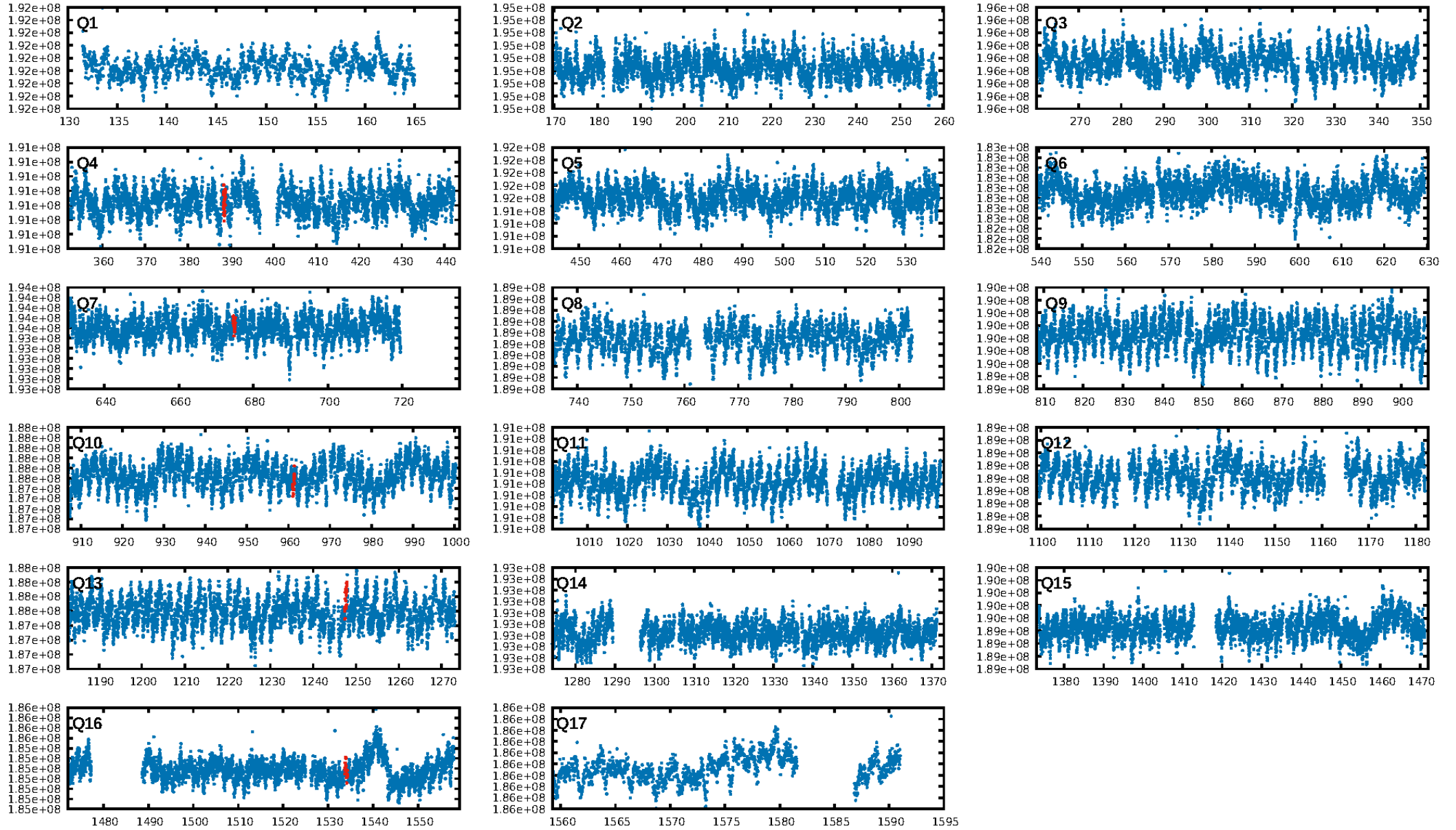
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [183.50 $\sigma$ ]  
LongPeriod-sig: 100.0% [66.04 $\sigma$ ]  
ModelChiSquare2-sig: 25.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 2.834  
Centroid-sig: 2.7%  
Centroid-so: 1.271 arcsec [1.42 $\sigma$ ]  
OotOffset-rm: 1.444 arcsec [1.92 $\sigma$ ]  
OotOffset-st: 1/1/1/1 [4]  
KicOffset-rm: 1.359 arcsec [1.80 $\sigma$ ]  
KicOffset-st: 1/1/1/1 [4]  
DiffImageQuality-fgm: 0.50 [2/4]  
DiffImageOverlap-fno: 0.25 [1/4]

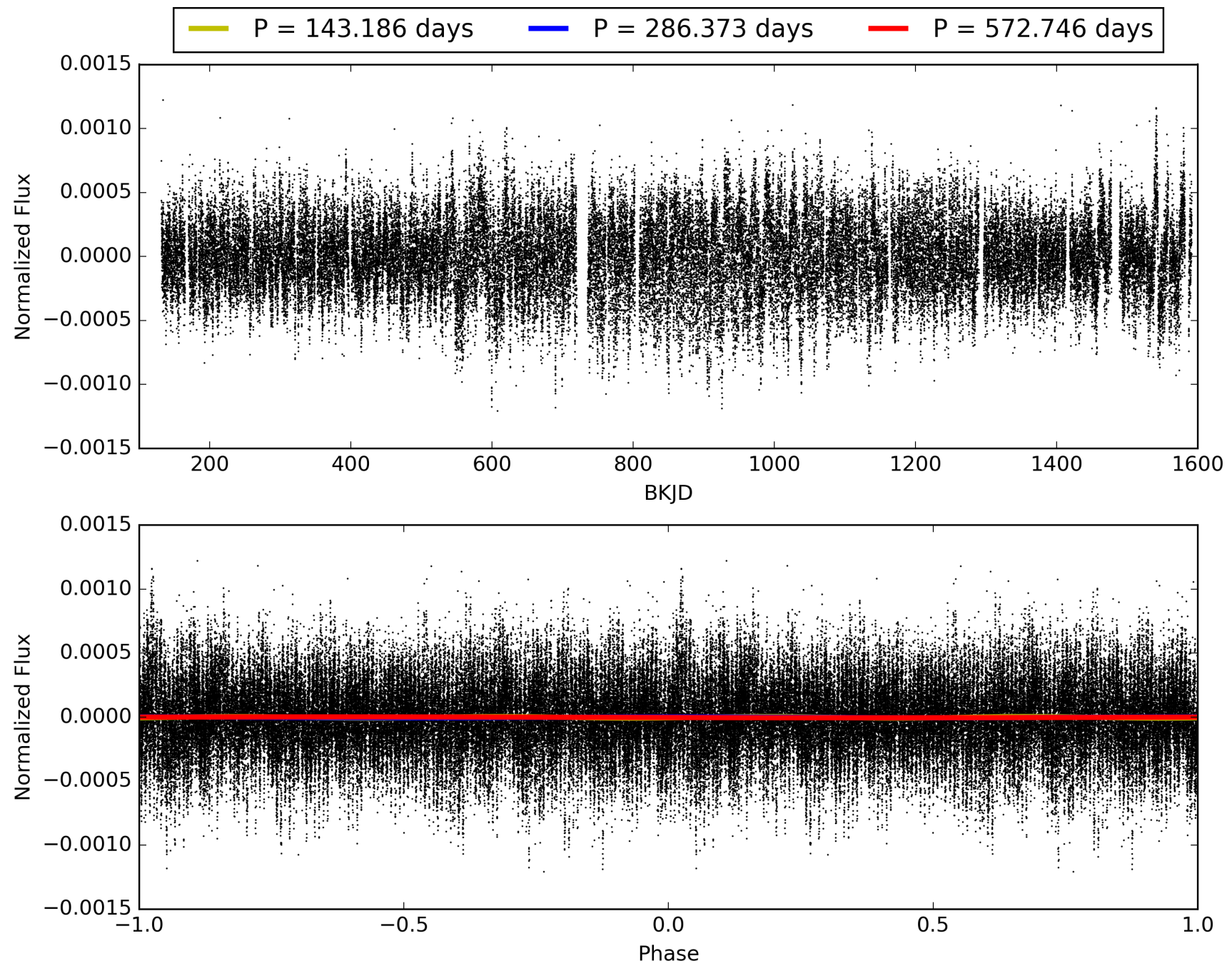
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 22:18:12 Z

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

# TCE 008392519-09, PDC Light Curves

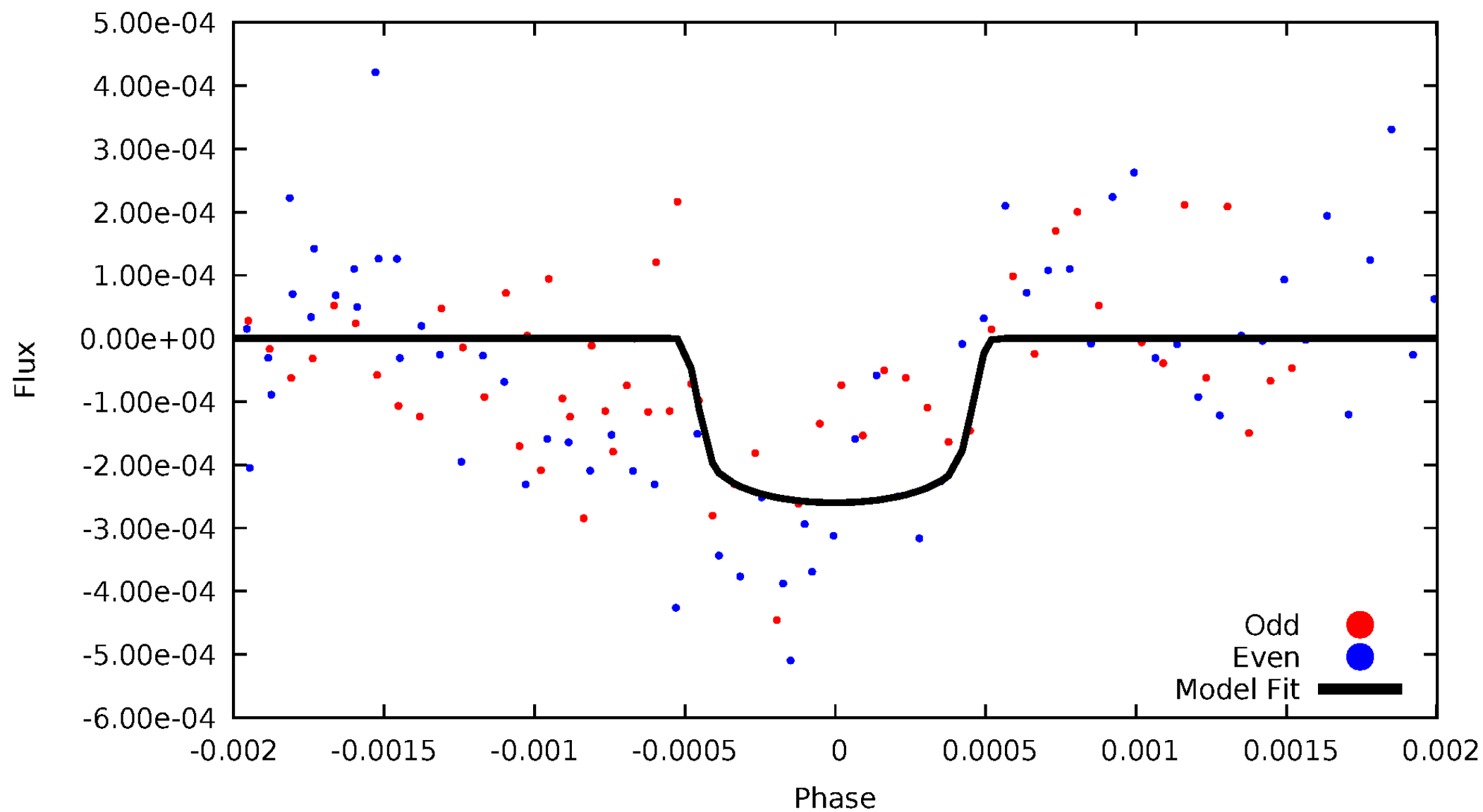


TCE 008392519-09



DV Odd/Even

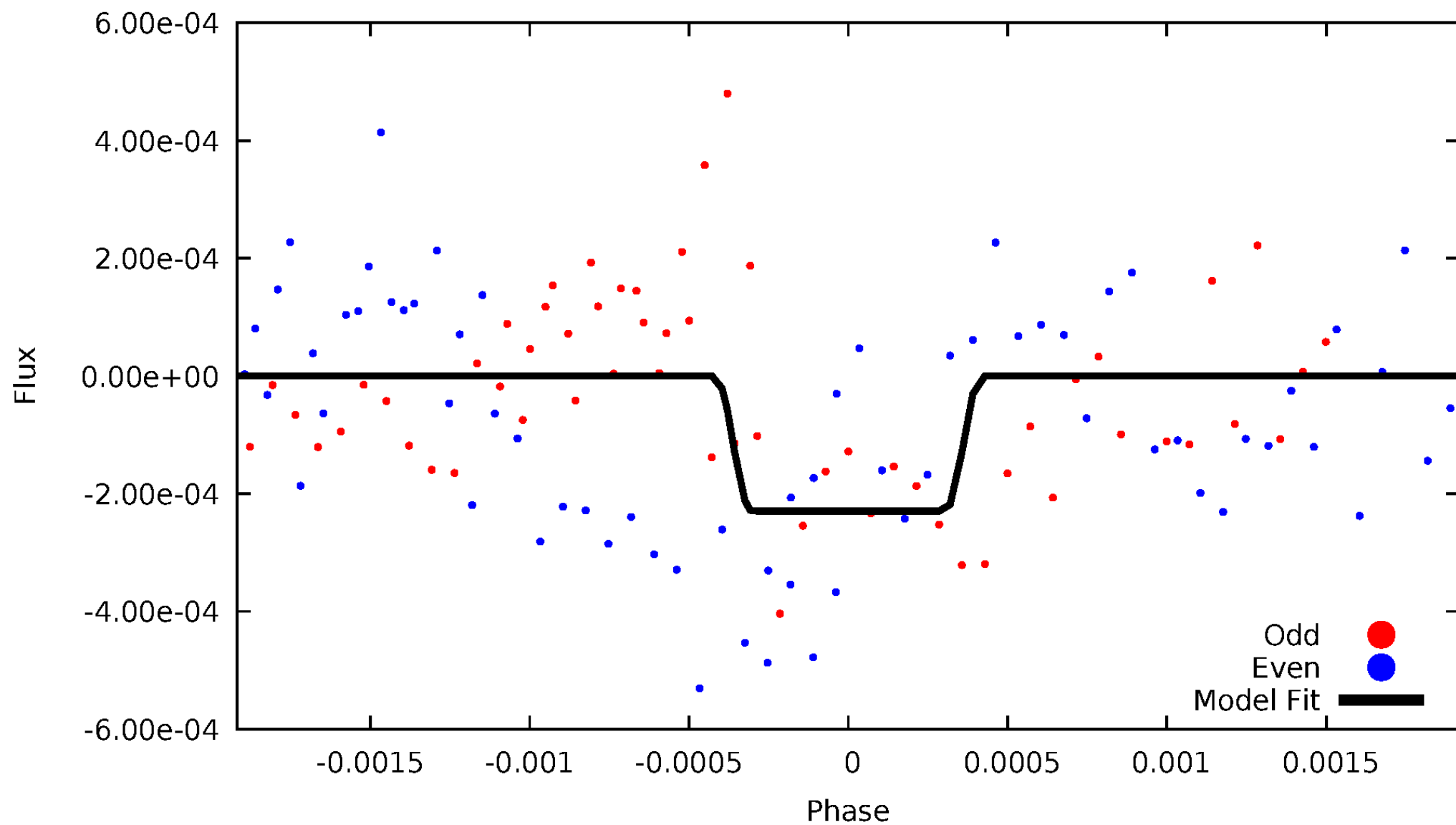
TCE 008392519-09





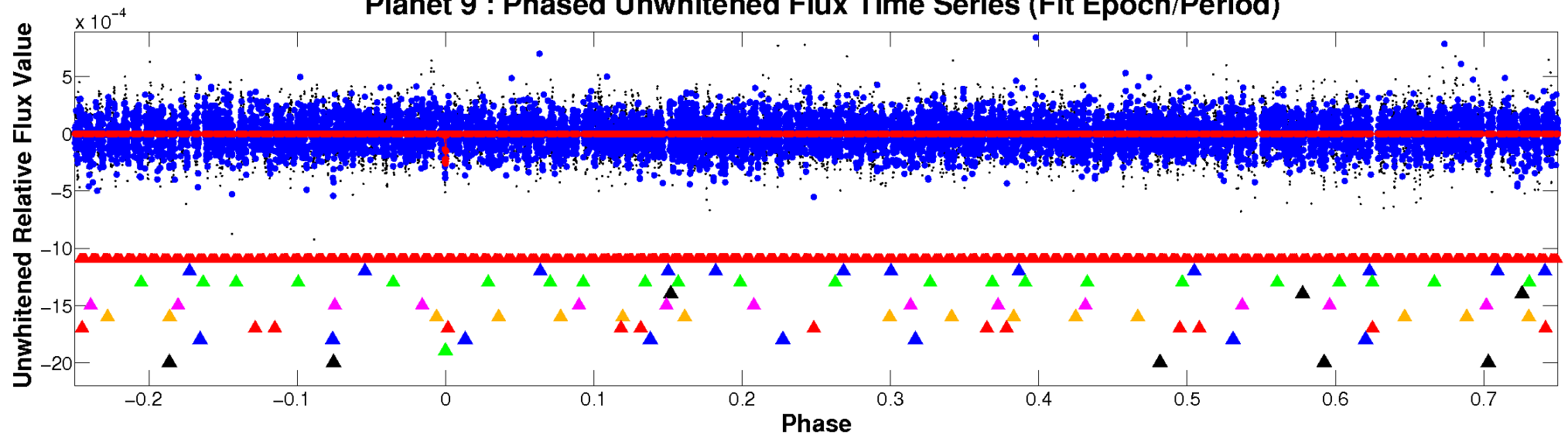
# ALT Odd/Even

TCE 008392519-09

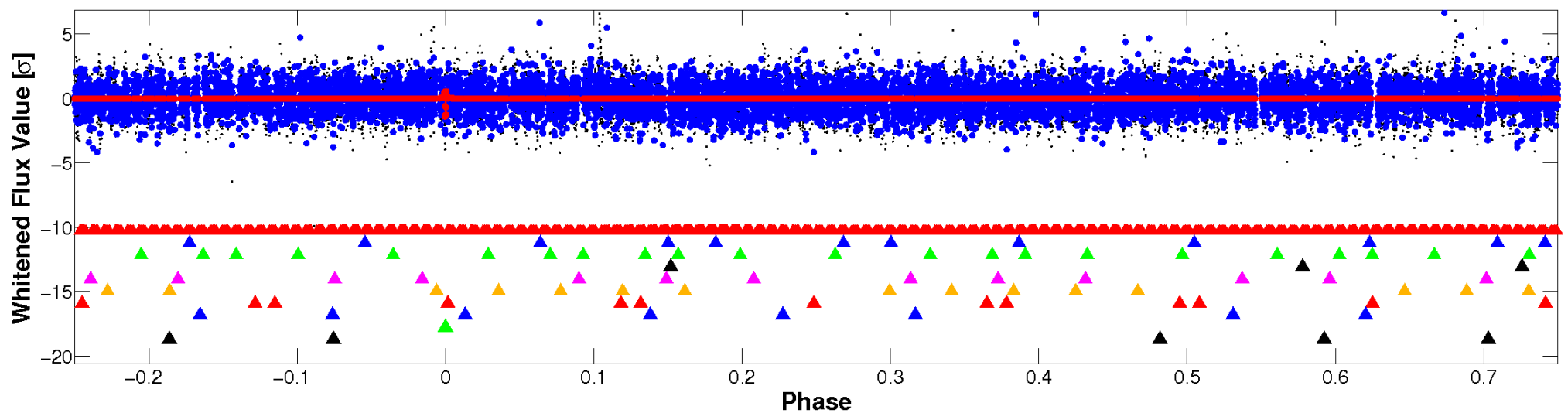


# Non-Whitened Vs. Whitened Light Curve

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



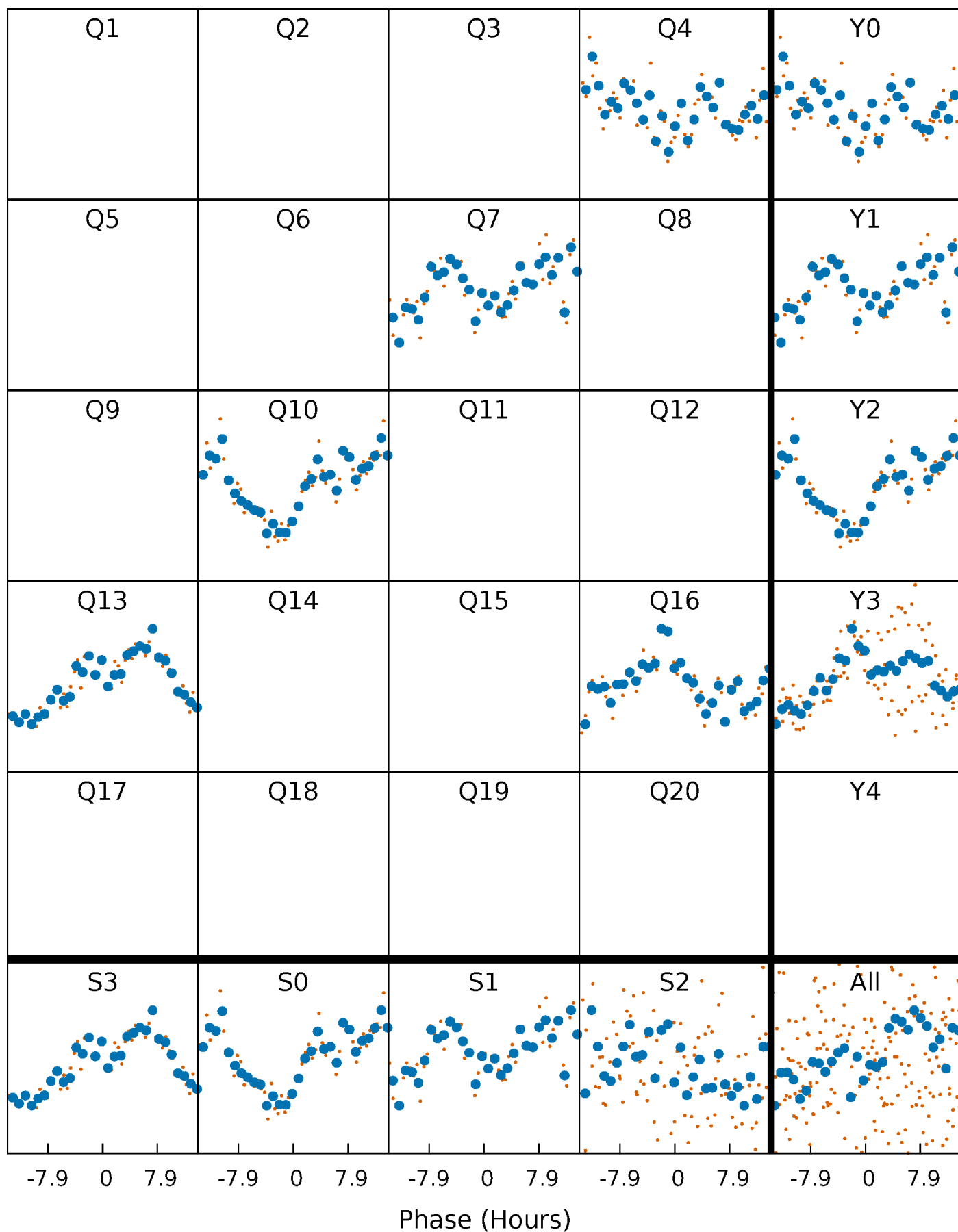
Planet 9 : Phased Whitened Flux Time Series (Fit Epoch/Period)





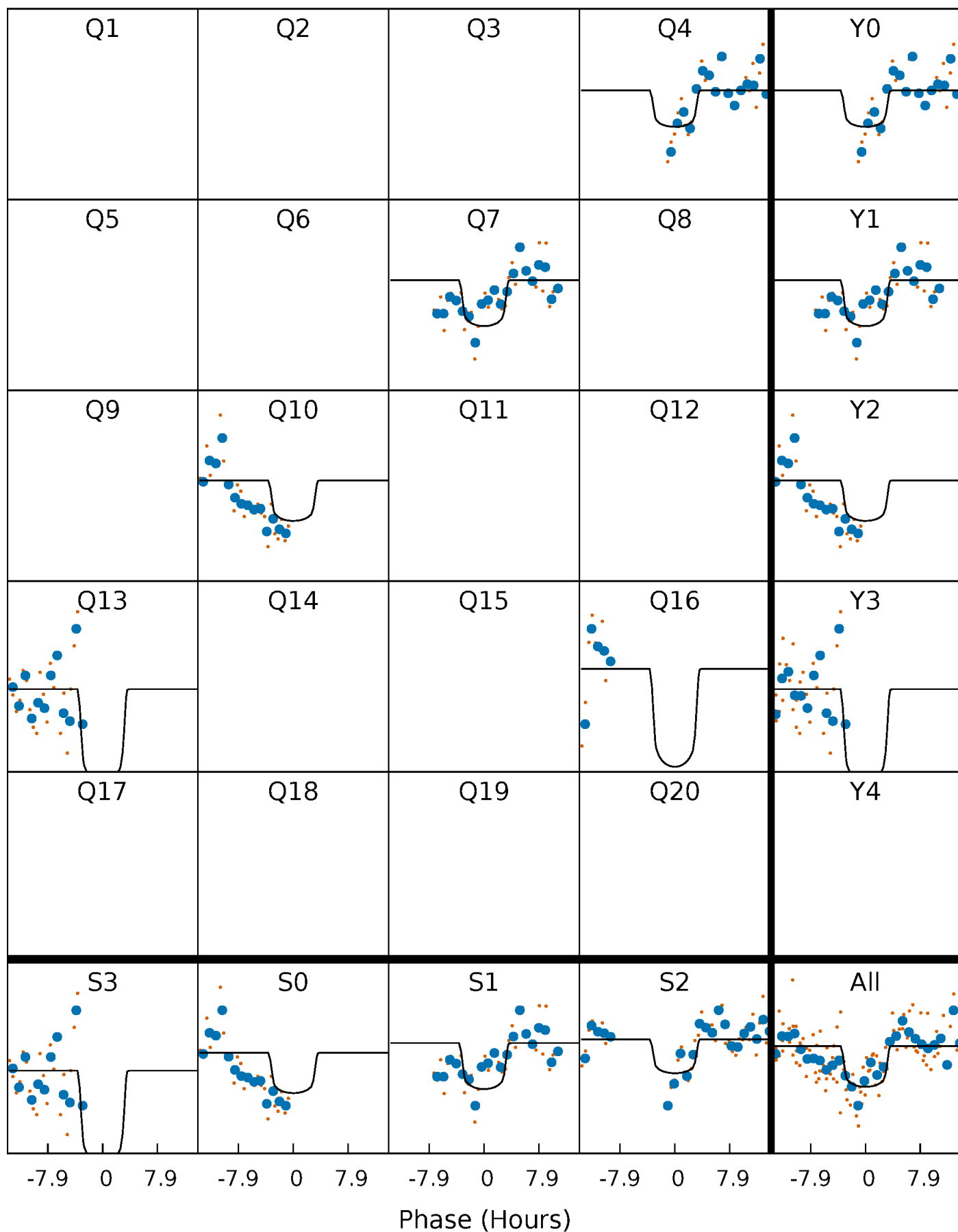
# PDC Quarter-Phased Transit Curves

TCE 008392519-09     $P=286.372798$  Days     $T_0=388.504274$  (BKJD)



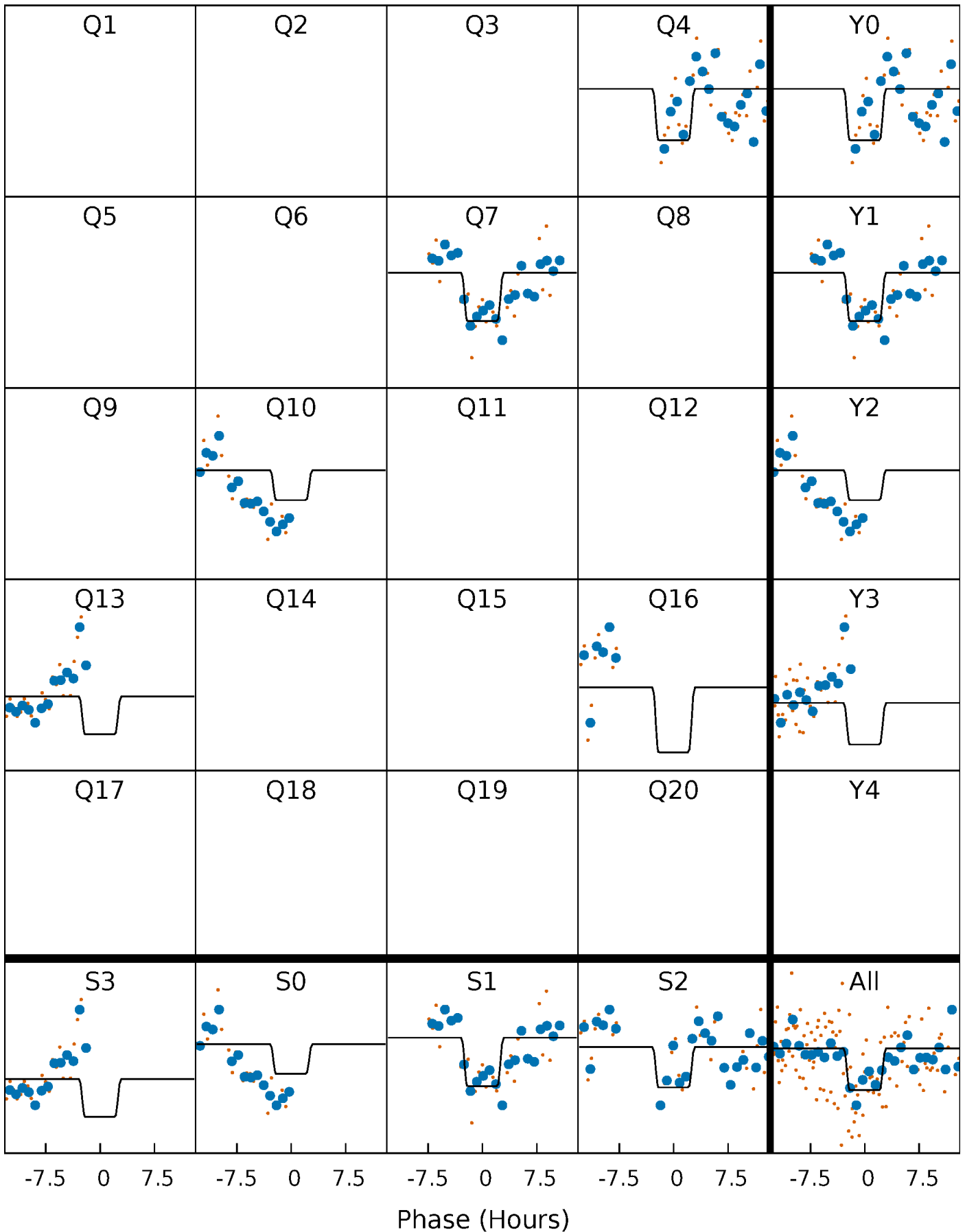
# DV Quarter-Phased Transit Curves

TCE 008392519-09     $P=286.372798$  Days     $T_0=388.504274$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

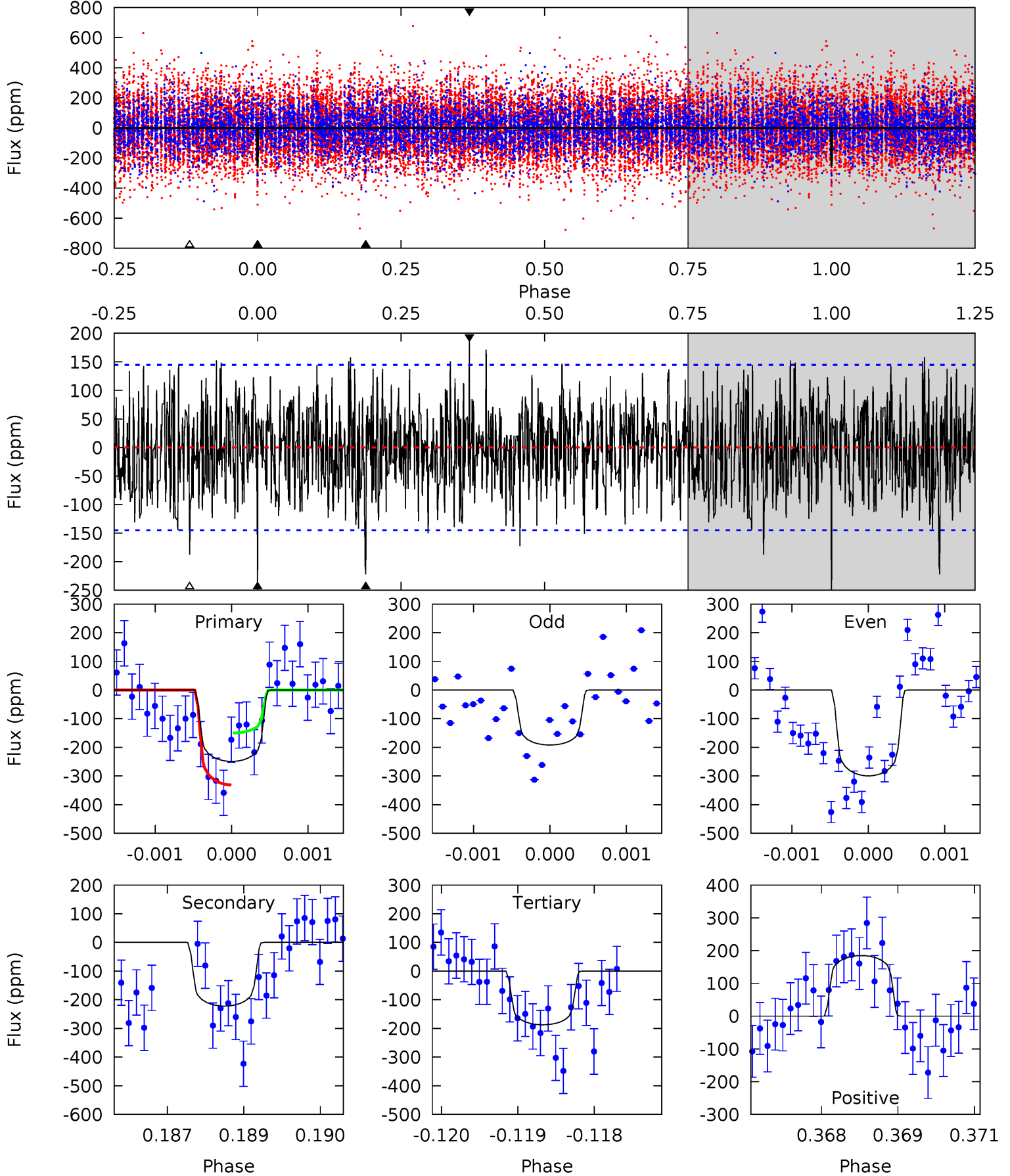
TCE 008392519-09 P=286.349099 Days  $T_0=388.533728$  (BKJD)



# DV Model-Shift Uniqueness Test

008392519-09, P = 286.372798 Days, E = 102.131476 Days

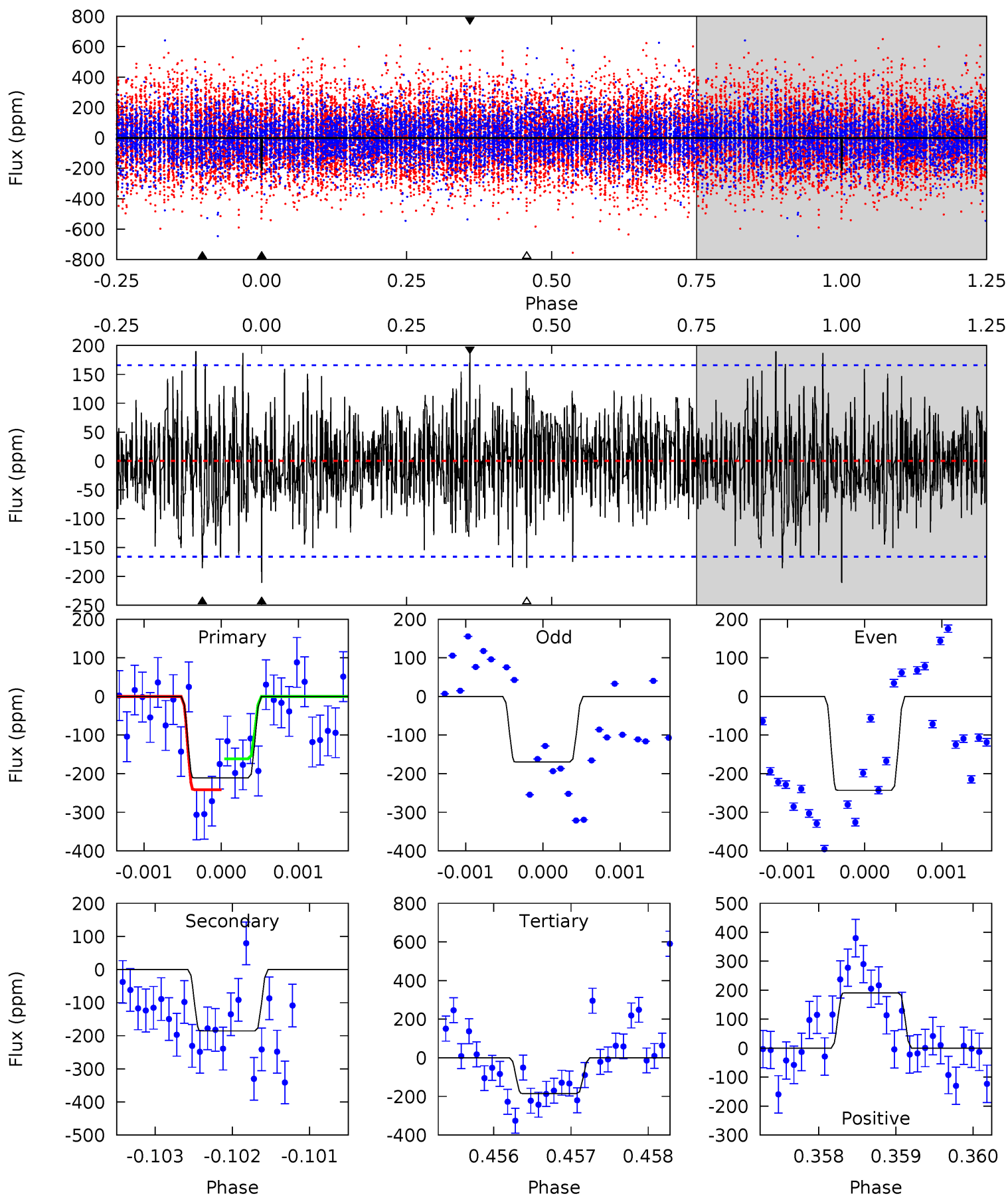
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.37	8.35	7.04	6.95	5.44	3.27	2.07	2.32	2.42	1.30	1.40	2.01	1.05	0.43	3.40



# Alt Model-Shift Uniqueness Test

008392519-09, P = 286.349099 Days, E = 102.184629 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.98	6.13	6.11	6.31	5.49	3.34	1.71	0.87	0.67	0.02	-0.18	1.22	0.70	0.47	1.30



### Stellar Parameters For KIC 008392519

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6760^{+187}_{-234}$	$3.635^{+0.323}_{-0.057}$	$-0.160^{+0.300}_{-0.250}$	$3.258^{+0.406}_{-1.218}$	$1.670^{+0.221}_{-0.332}$	$0.068^{+0.157}_{-0.014}$
	+3%/-3%	+9%/-2%	+188%/-156%	+12%/-37%	+13%/-20%	+230%/-20%
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 008392519-09 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-222 \pm 27$	$5.56^{+1.59}_{-1.54}$	$722^{+46}_{-66}$	$6265^{+928}_{-635}$	$4101^{+3148}_{-1697}$
Alt.	$-185 \pm 30$	$4.98^{+1.44}_{-1.45}$	$726^{+42}_{-69}$	$6344^{+1045}_{-672}$	$4119^{+4048}_{-1592}$

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

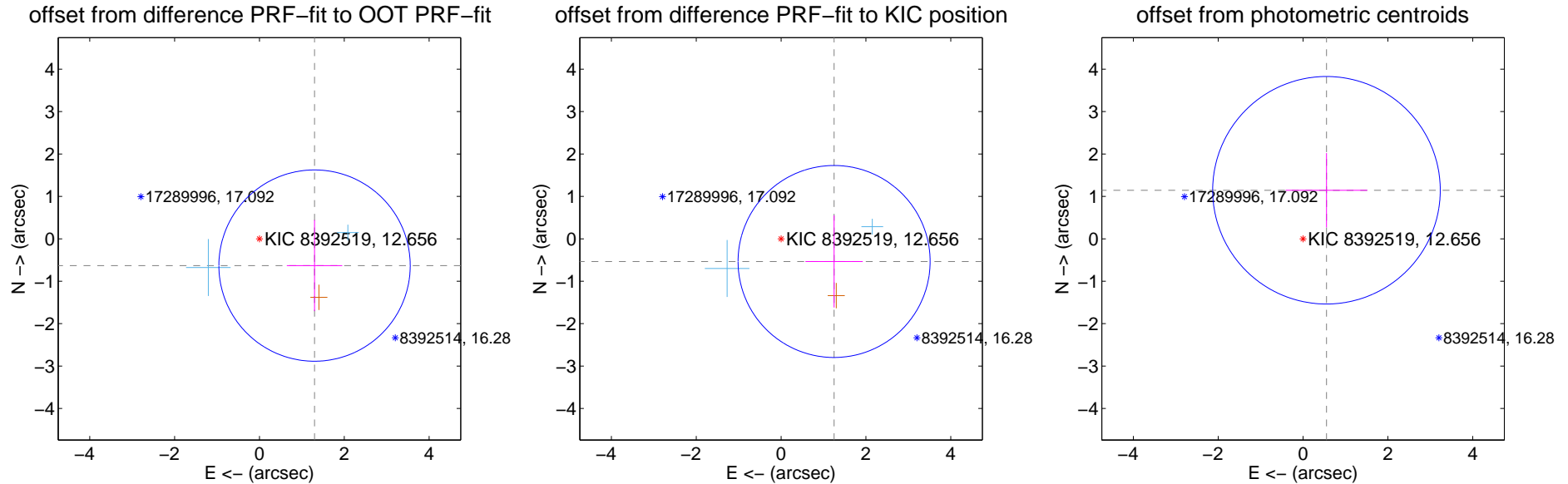
## DV Centroid Data

Supplemental centroid analysis for 008392519-09. Kepler magnitude: 12.66. Transit SNR 6.80

There are 2 quarters with good PRF difference image offsets

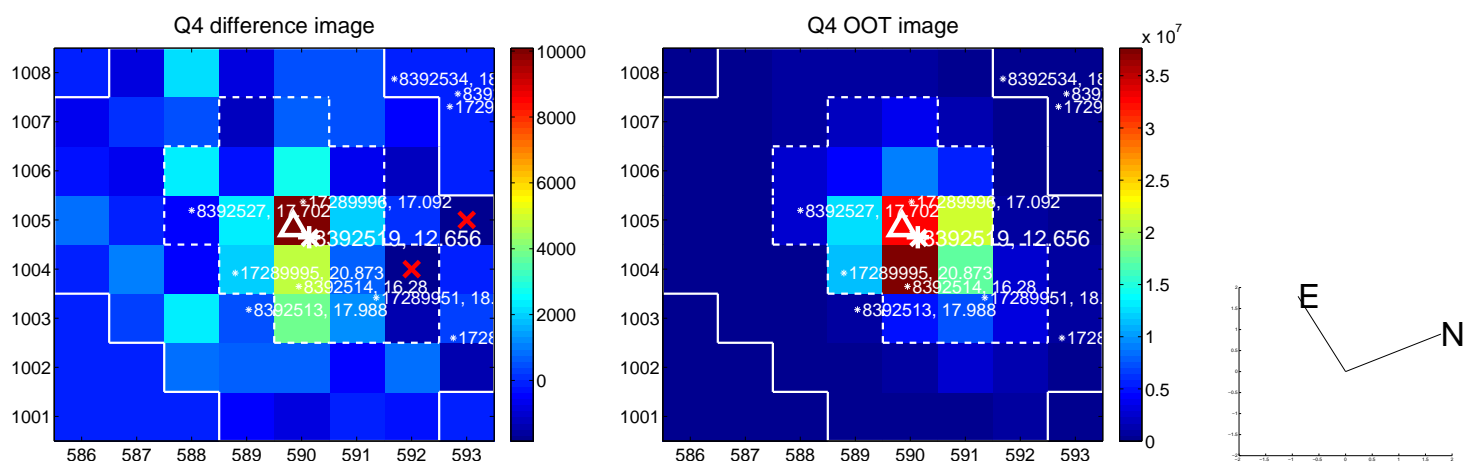
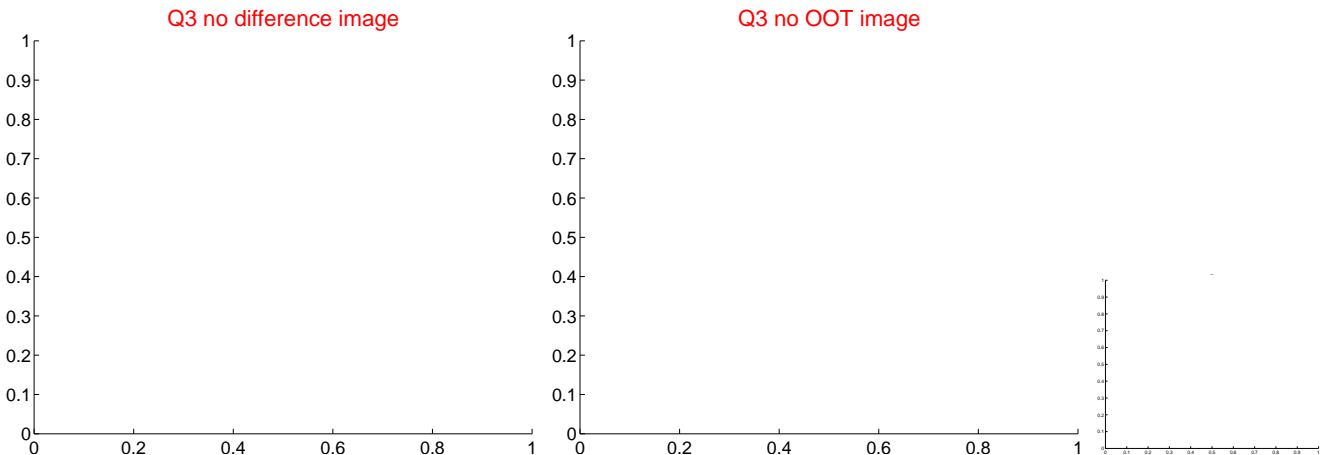
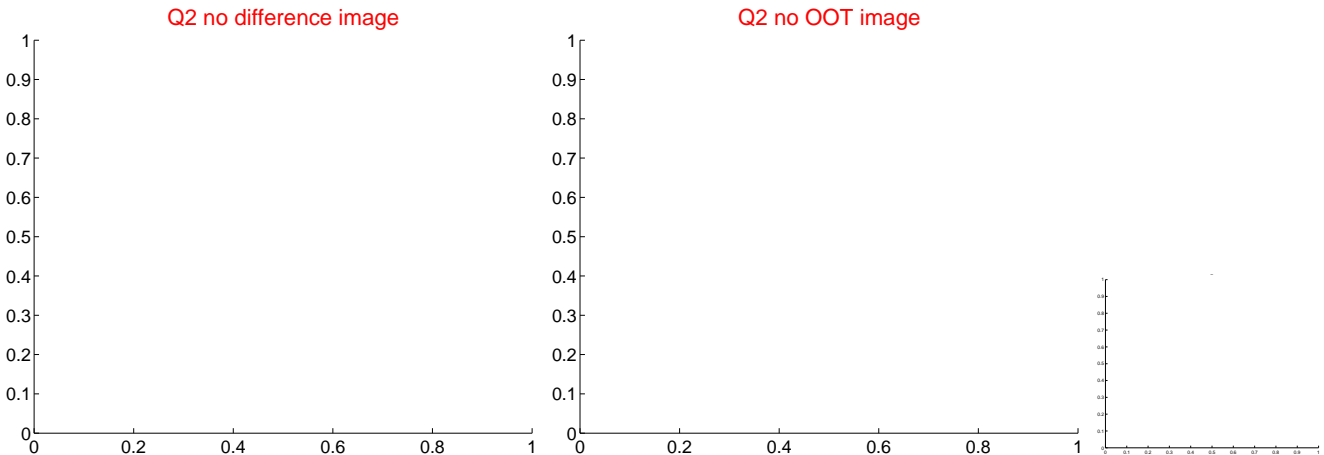
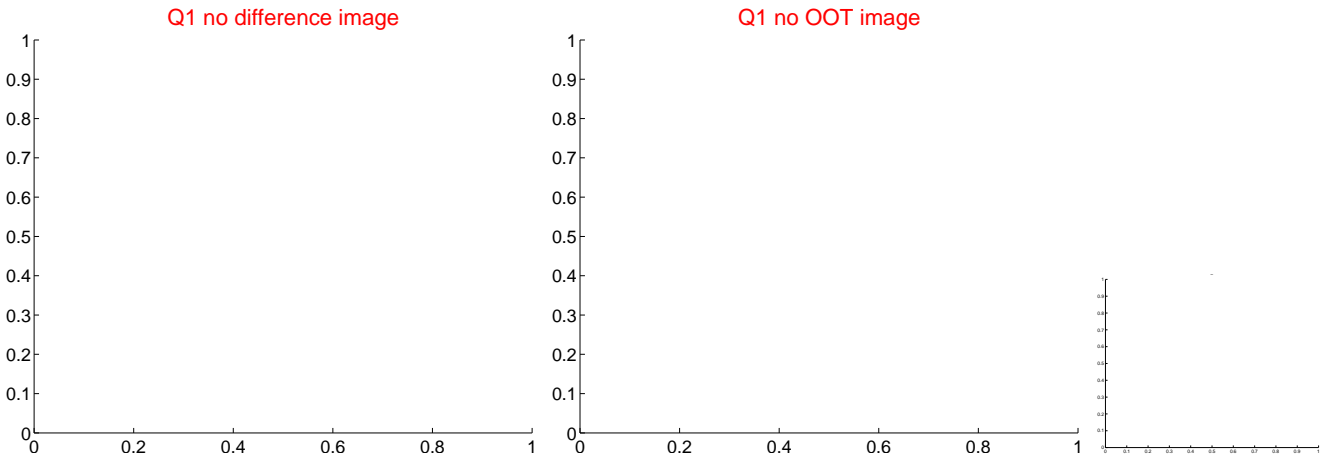
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.444 \pm 0.752$	1.92	$-1.299 \pm 0.653$	$-0.631 \pm 1.073$
PRF-fit source offset from KIC position	$1.359 \pm 0.754$	1.80	$-1.249 \pm 0.677$	$-0.534 \pm 1.085$
photometric centroid source offset	$1.27 \pm 0.89$	1.42	$-0.55 \pm 0.96$	$1.14 \pm 0.88$



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



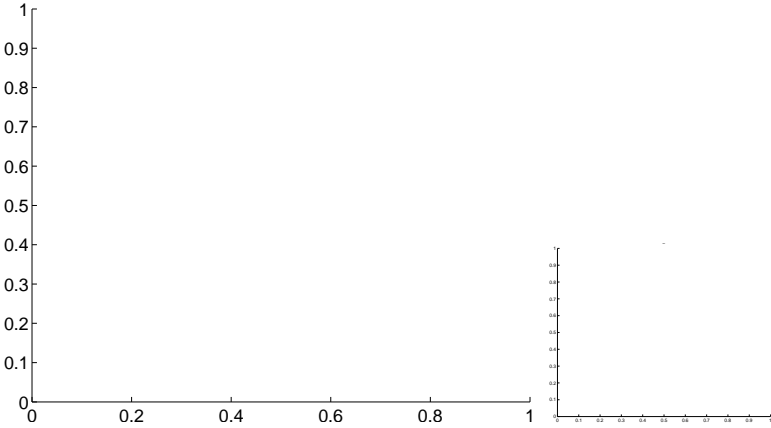


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

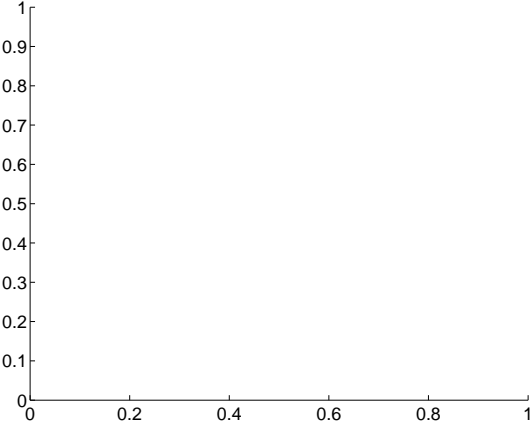
Q5 no difference image



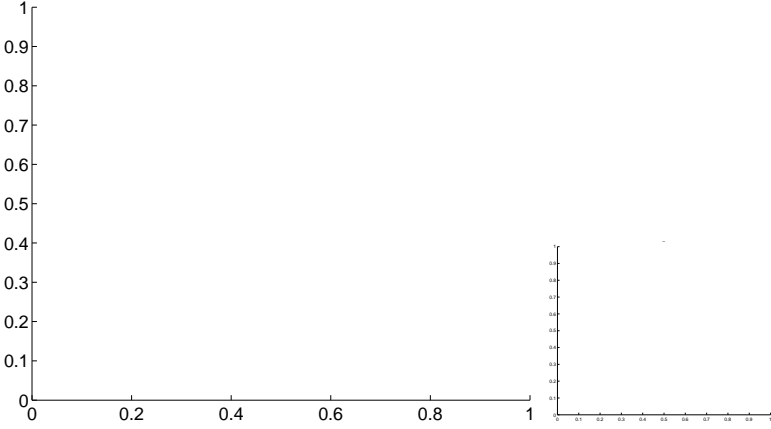
Q5 no OOT image



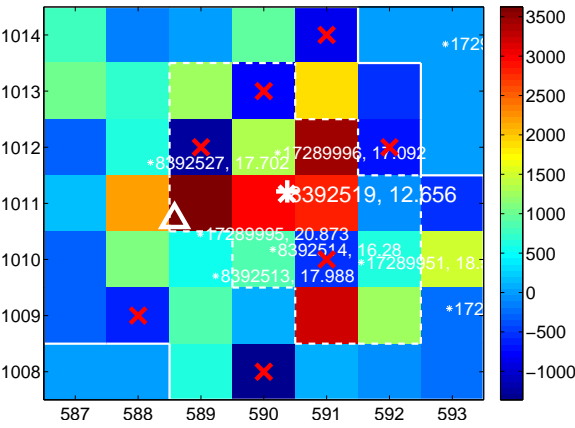
Q6 no difference image



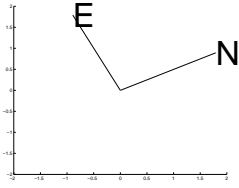
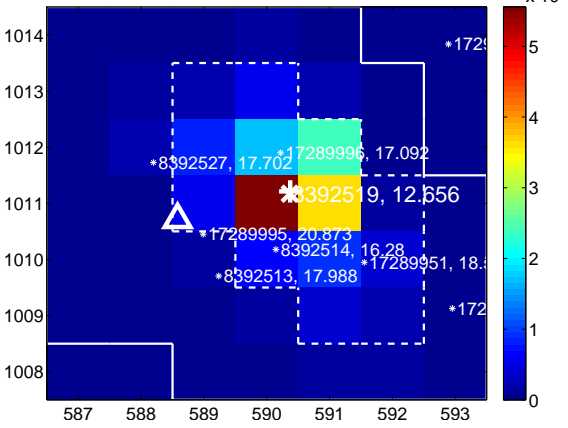
Q6 no OOT image



Q7 difference image. Poor Quality



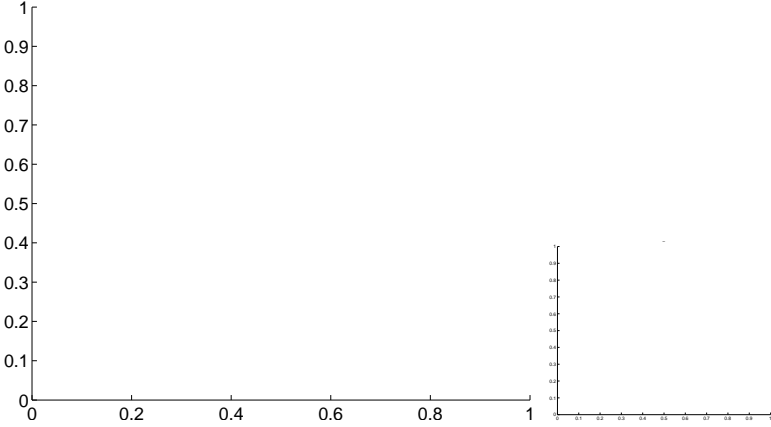
Q7 OOT image



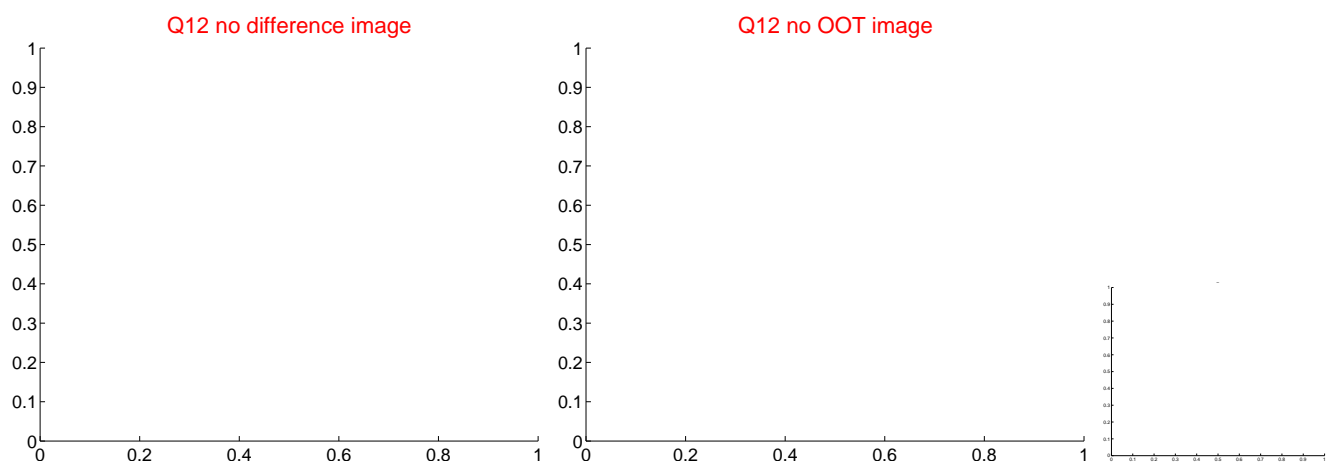
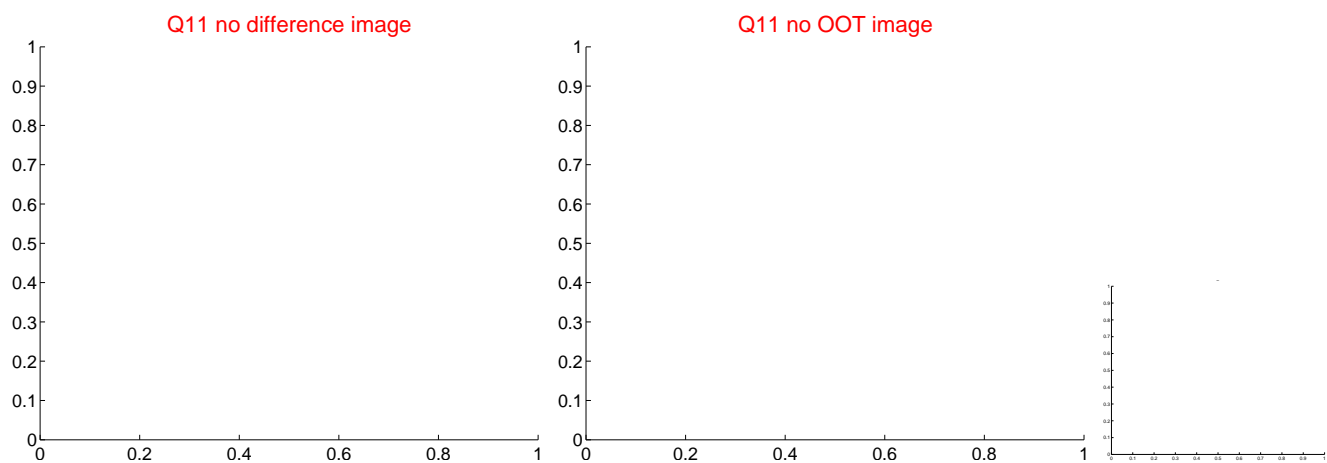
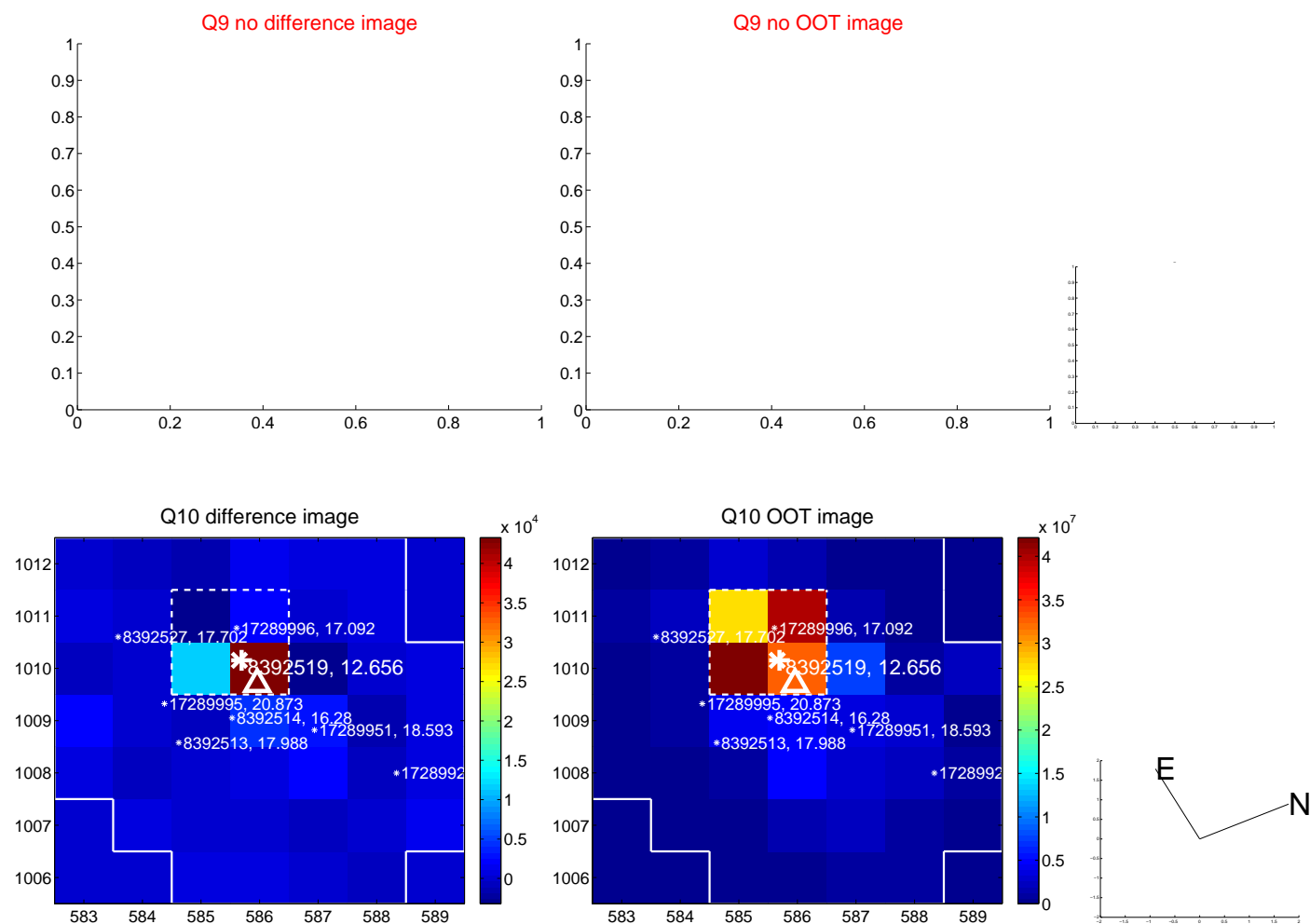
Q8 no difference image



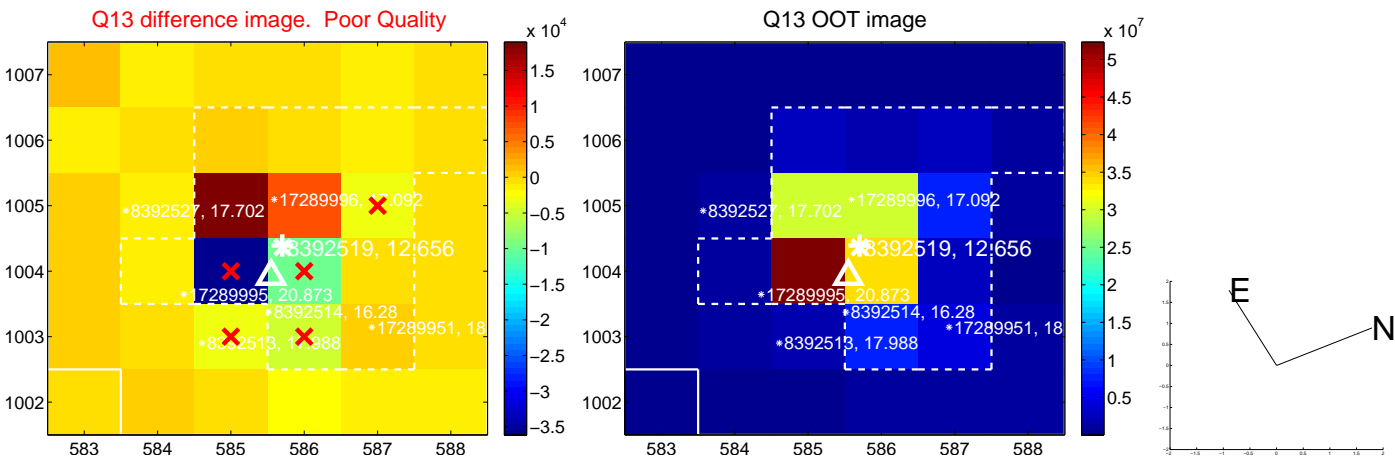
Q8 no OOT image



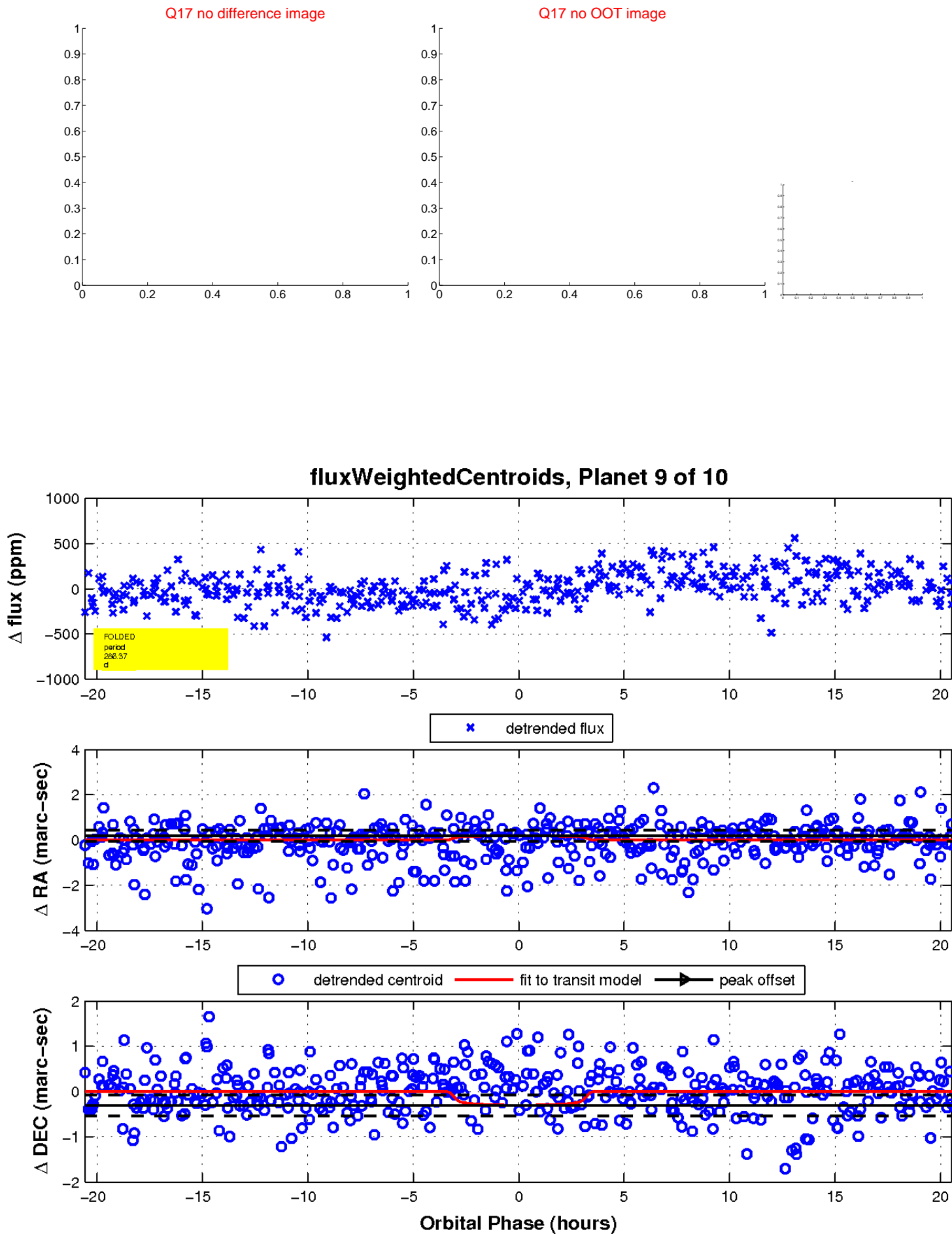
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

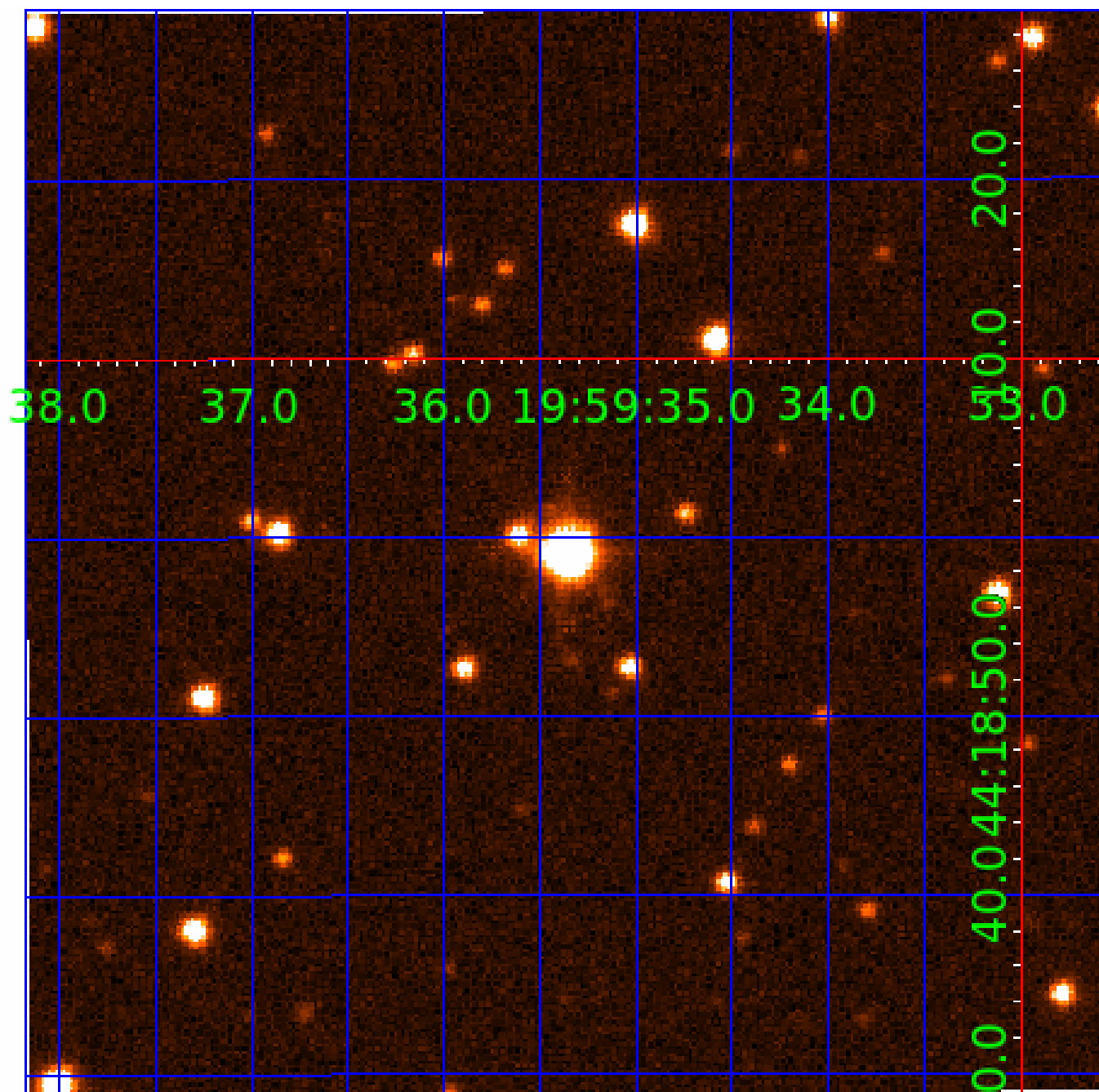


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008392519-01	OBS	No	2.288770	133.644536	24.1	12.052	10.3	8.2	3.26	6760	1.86	12204.28
008392519-02	OBS	No	126.257214	188.163119	324.8	16.500	22.2	11.2	3.26	6760	7.12	58.12
008392519-03	OBS	No	67.007289	147.064248	230.7	18.688	14.2	11.4	3.26	6760	5.68	135.25
008392519-04	OBS	No	450.749107	554.002125	343.3	19.711	10.3	9.1	3.26	6760	11.57	10.65
008392519-05	OBS	No	111.174093	225.691769	294.9	14.373	10.0	11.9	3.26	6760	5.96	68.86
008392519-06	OBS	No	99.450221	187.886477	206.0	8.756	9.8	6.9	3.26	6760	5.11	79.89
008392519-07	OBS	No	107.865281	206.670817	234.6	7.787	8.8	8.7	3.26	6760	5.67	71.69
008392519-08	OBS	No	199.446436	141.675993	241.9	9.055	8.8	7.4	3.26	6760	5.46	31.59
008392519-09	OBS	No	286.372798	388.504274	259.8	6.875	8.9	6.8	3.26	6760	6.09	19.50
008392519-10	OBS	No	318.071035	240.093446	199.3	9.243	8.7	8.5	3.26	6760	5.45	16.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008392519-01	OBS	FP	0.00	1	0	0	0	LPP_DV
008392519-02	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST
008392519-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS—HALO_GHOST
008392519-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008392519-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-07	OBS	FP	0.00	1	0	0	0	TRANS_GAPPED—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT
008392519-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—TRANS_GAPPED—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT
008392519-09	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_FEW_DIFFS
008392519-10	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_CHASES_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

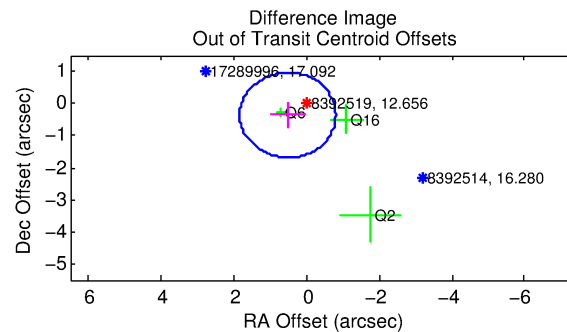
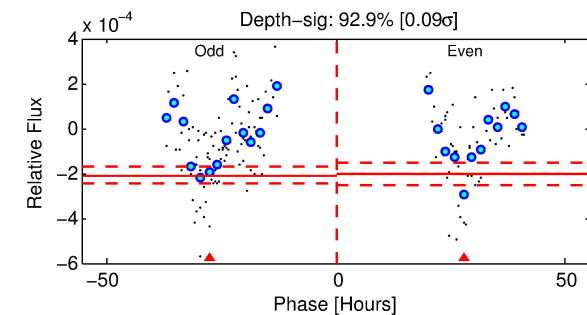
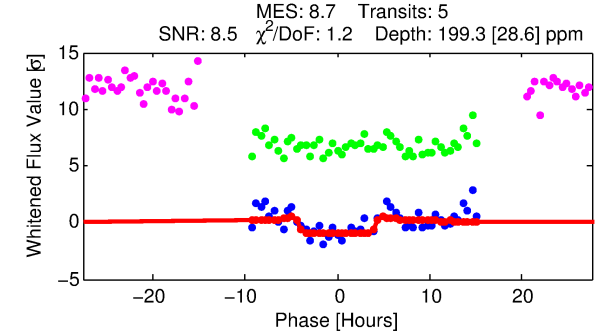
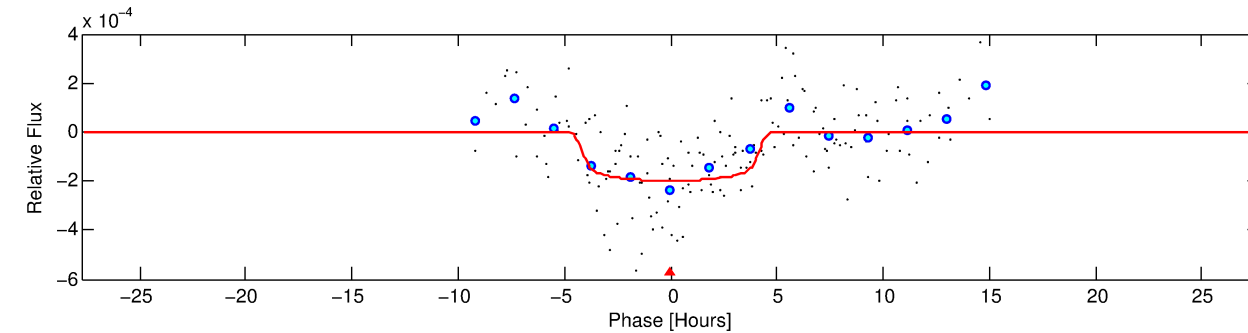
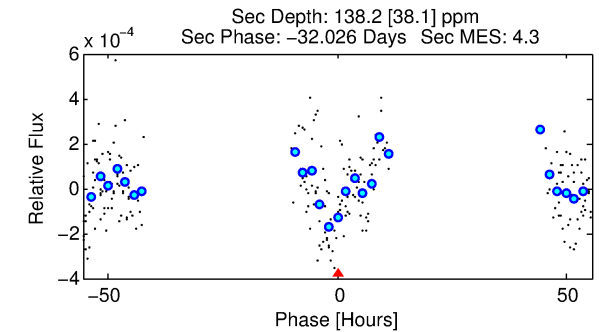
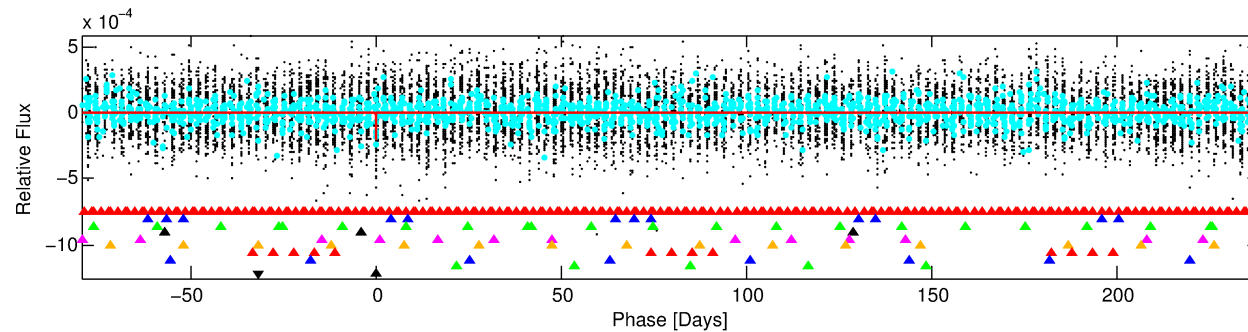
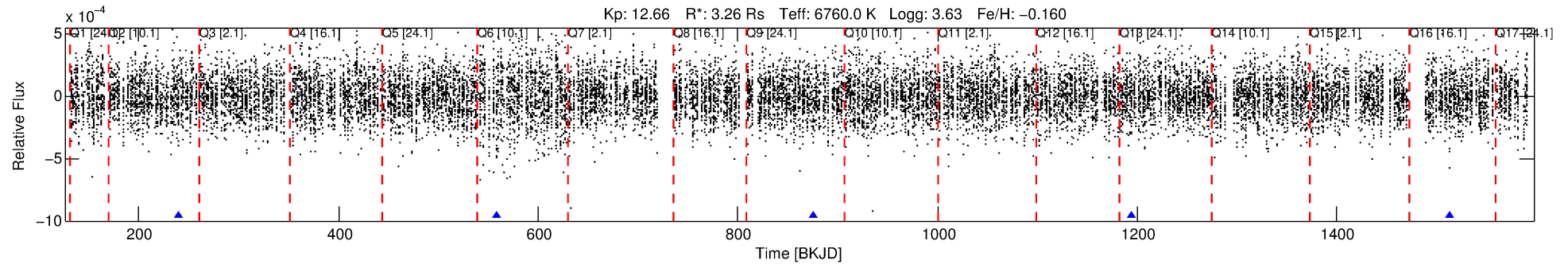
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 008392519-10

No Significant Match Found

# DV One-Page Summary

KIC: 8392519 Candidate: 10 of 10 Period: 318.071 d



## DV Fit Results:

Period = 318.07104 [0.00691] d  
Epoch = 240.0934 [0.0159] BKJD  
Rp/R\* = 0.0153 [0.0020]  
a/R\* = 112.35 [65.55]  
b = 0.92 [0.10]  
Seff = 16.95 [9.70]  
Teq = 517 [74] K  
Rp = 5.45 [2.15] Re  
a = 1.0823 [0.3805] AU  
Ag = 2995.74 [2006.56] [1.49σ]  
Teffp = 5919 [592] K [9.06σ]

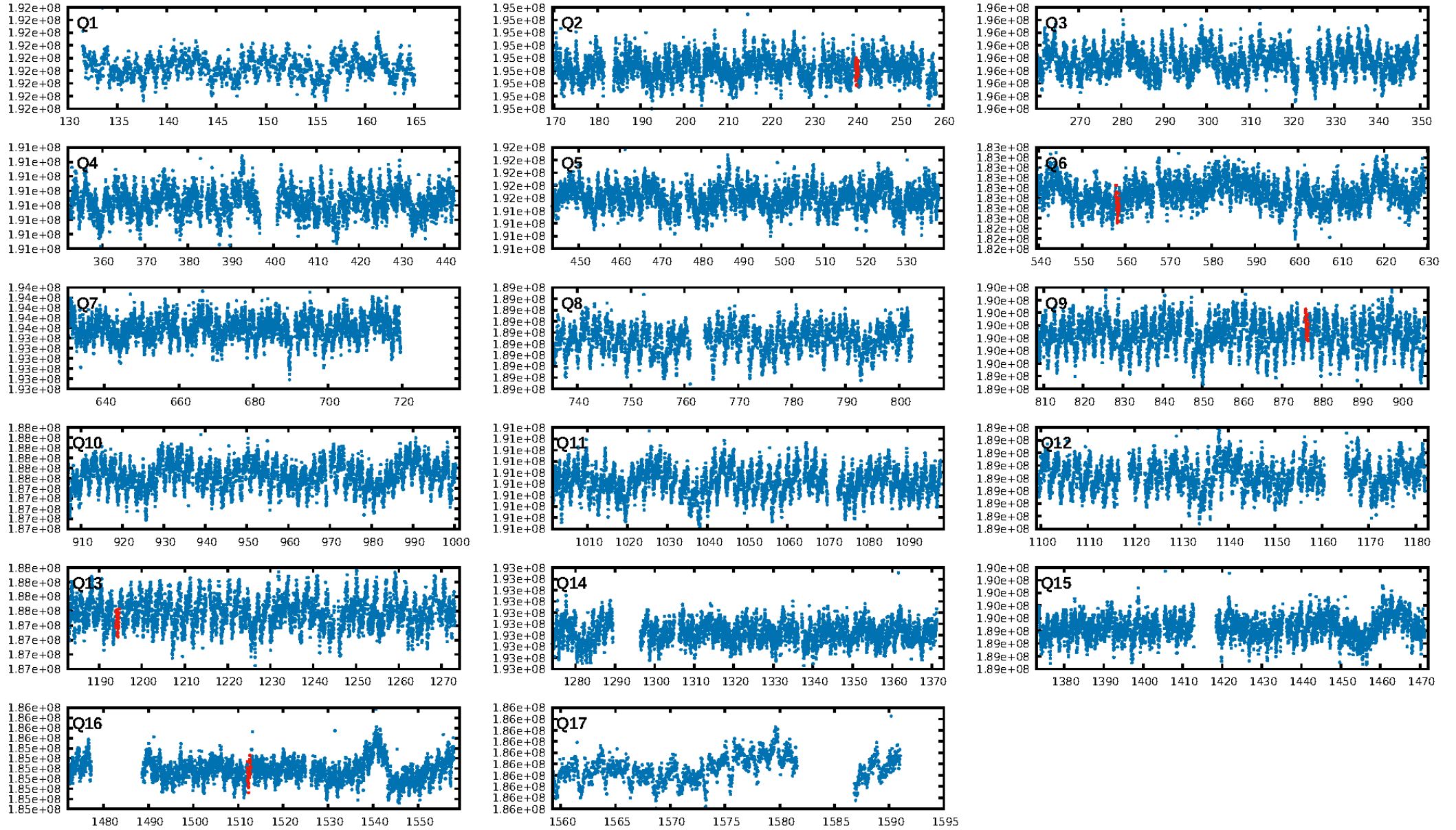
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [66.04σ]  
LongPeriod-sig: 100.0% [146.26σ]  
ModelChiSquare2-sig: 85.1%  
ModelChiSquareGof-sig: 86.5%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: -17.67  
Centroid-sig: 86.5%  
Centroid-so: 0.566 arcsec [0.55σ]  
OotOffset-rm: 0.628 arcsec [1.42σ]  
OotOffset-st: 2/0/1/0 [3]  
KicOffset-rm: 0.584 arcsec [1.32σ]  
KicOffset-st: 2/0/1/0 [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 22:18:17 Z

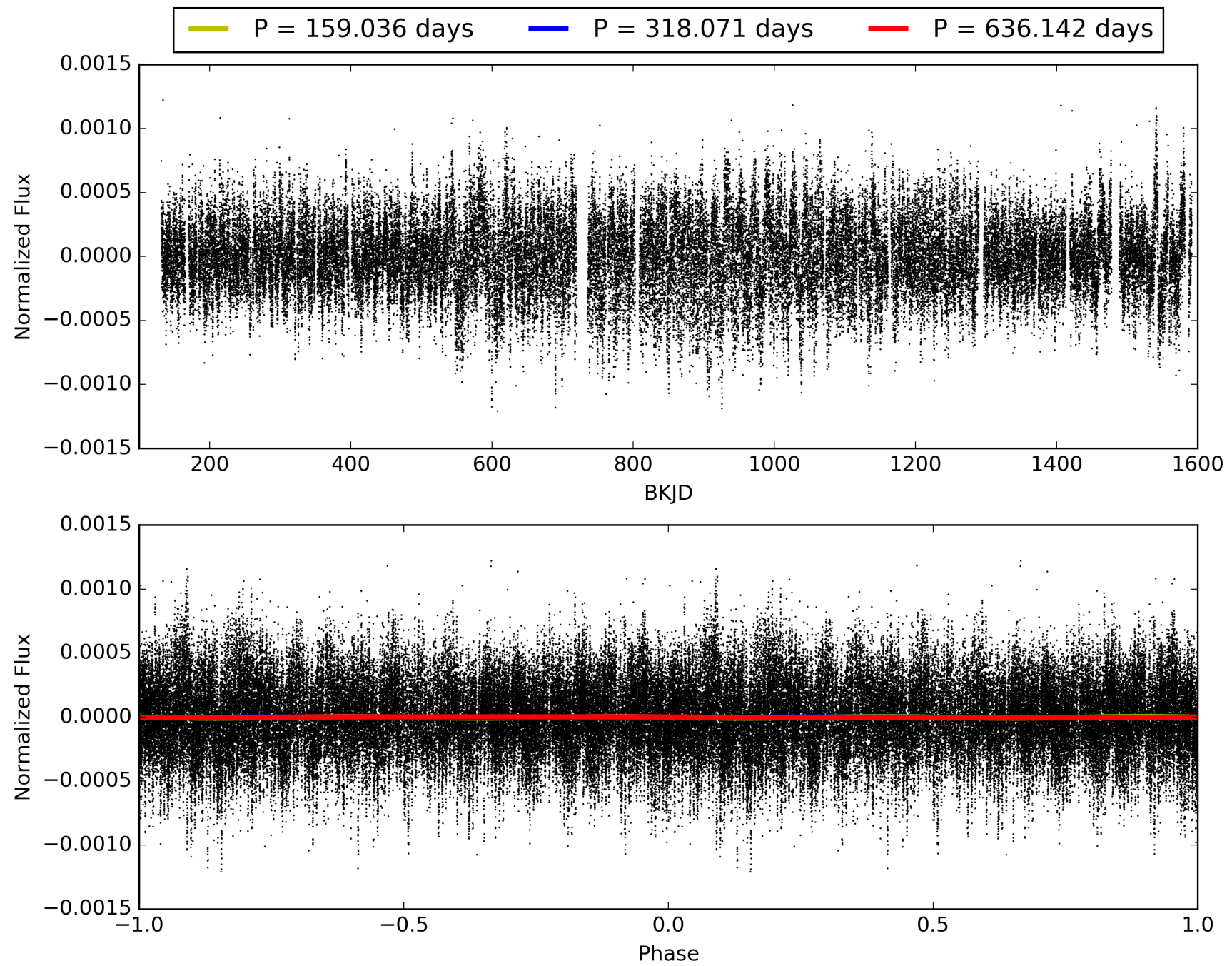
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008392519-10, PDC Light Curves



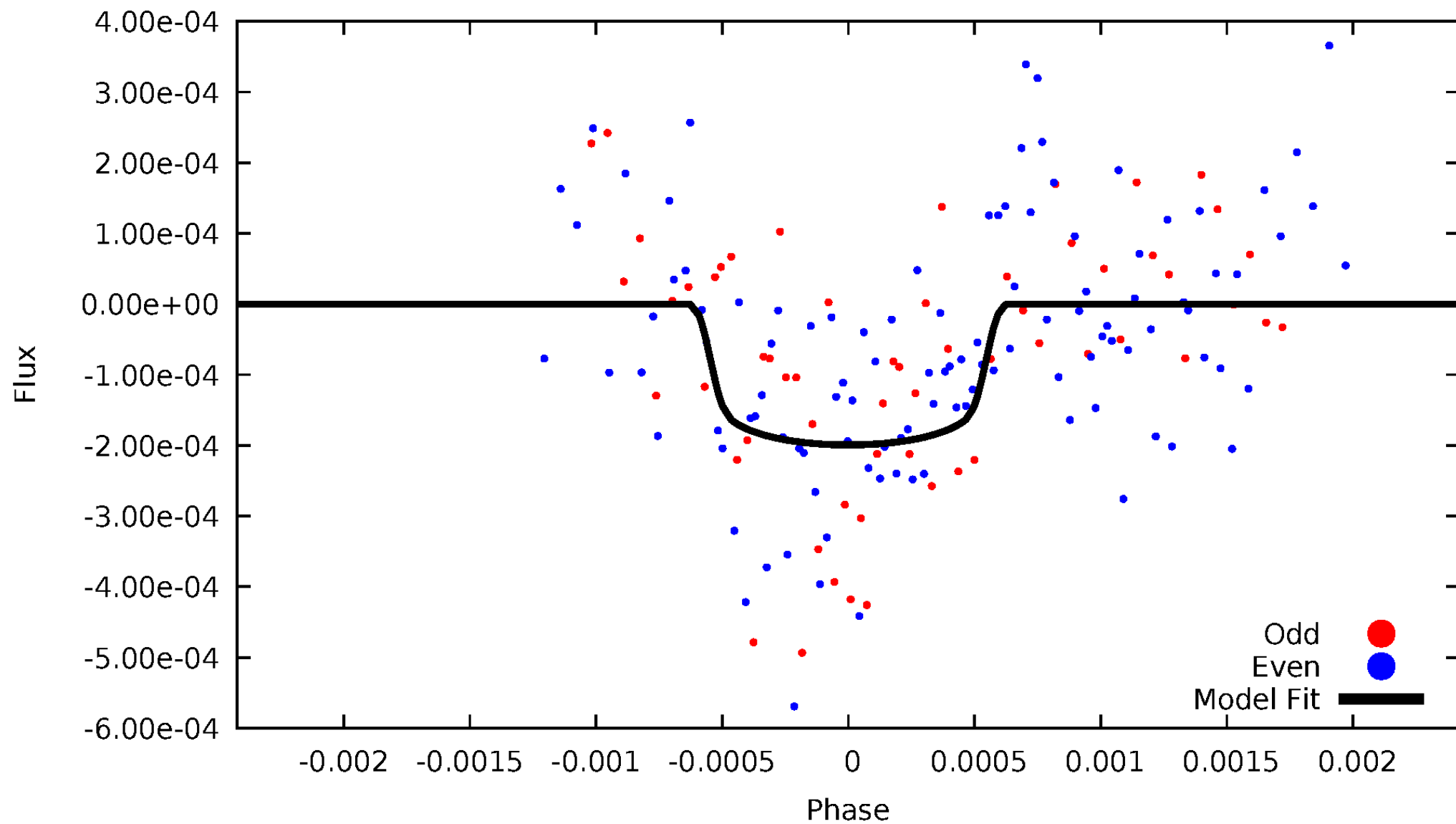


# TCE 008392519-10



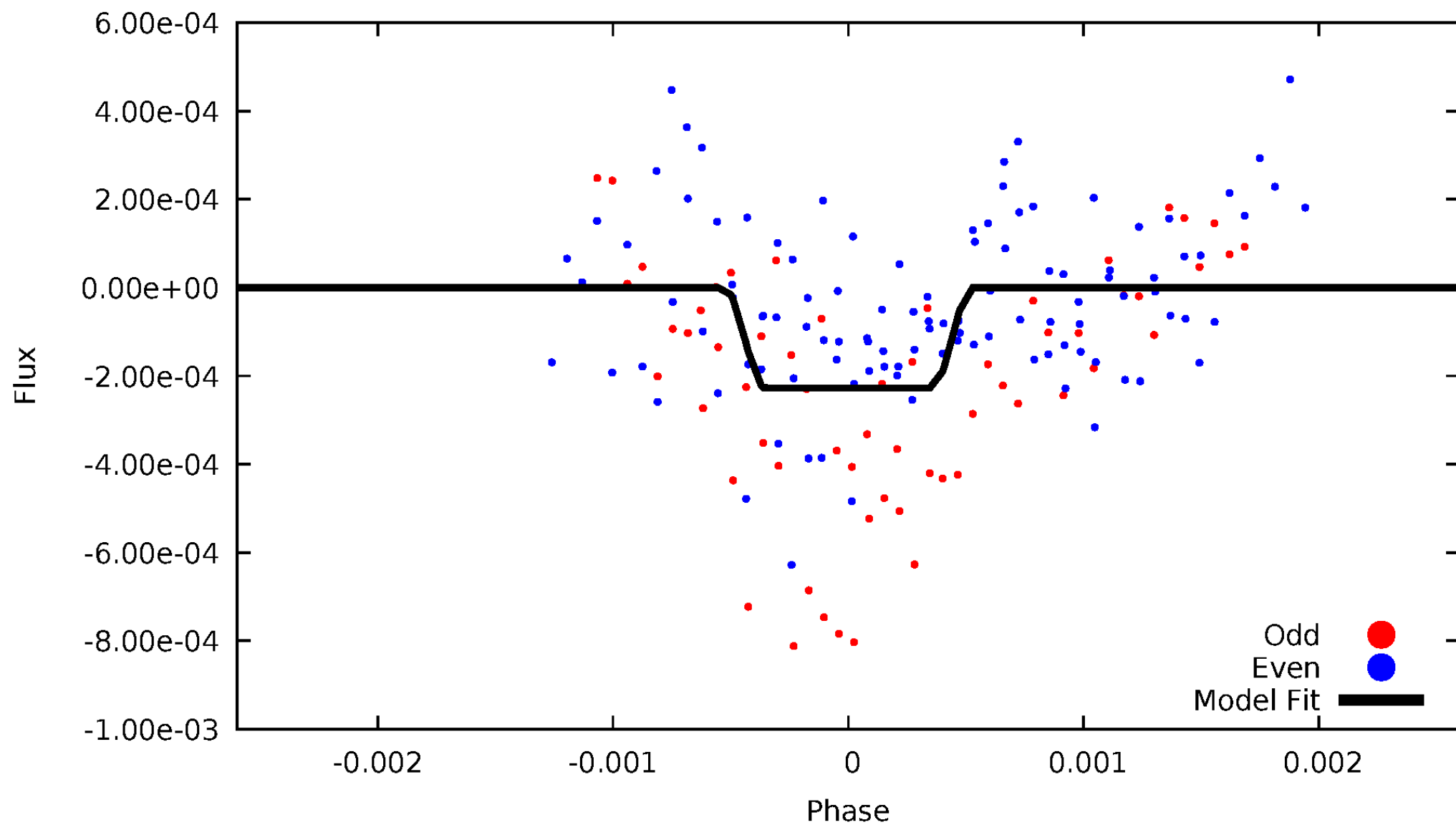
# DV Odd/Even

TCE 008392519-10



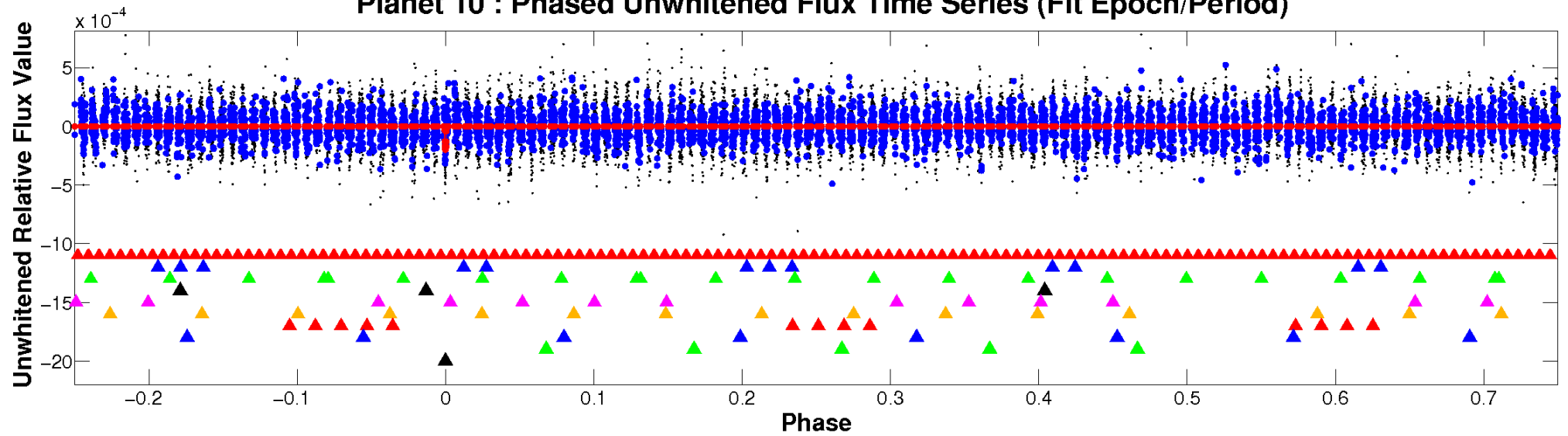
# ALT Odd/Even

TCE 008392519-10

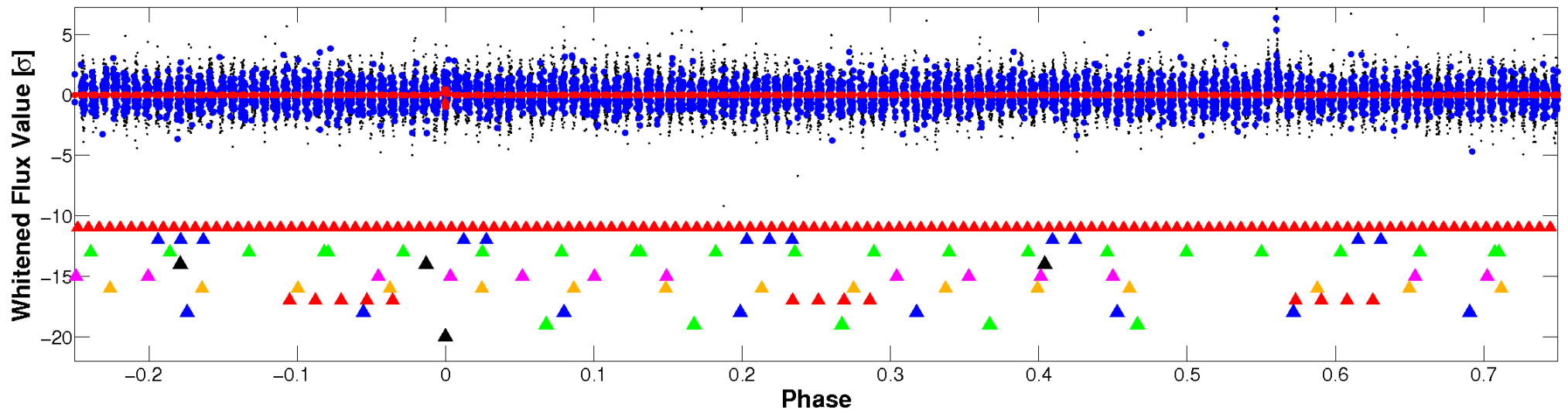


# Non-Whitened Vs. Whitened Light Curve

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

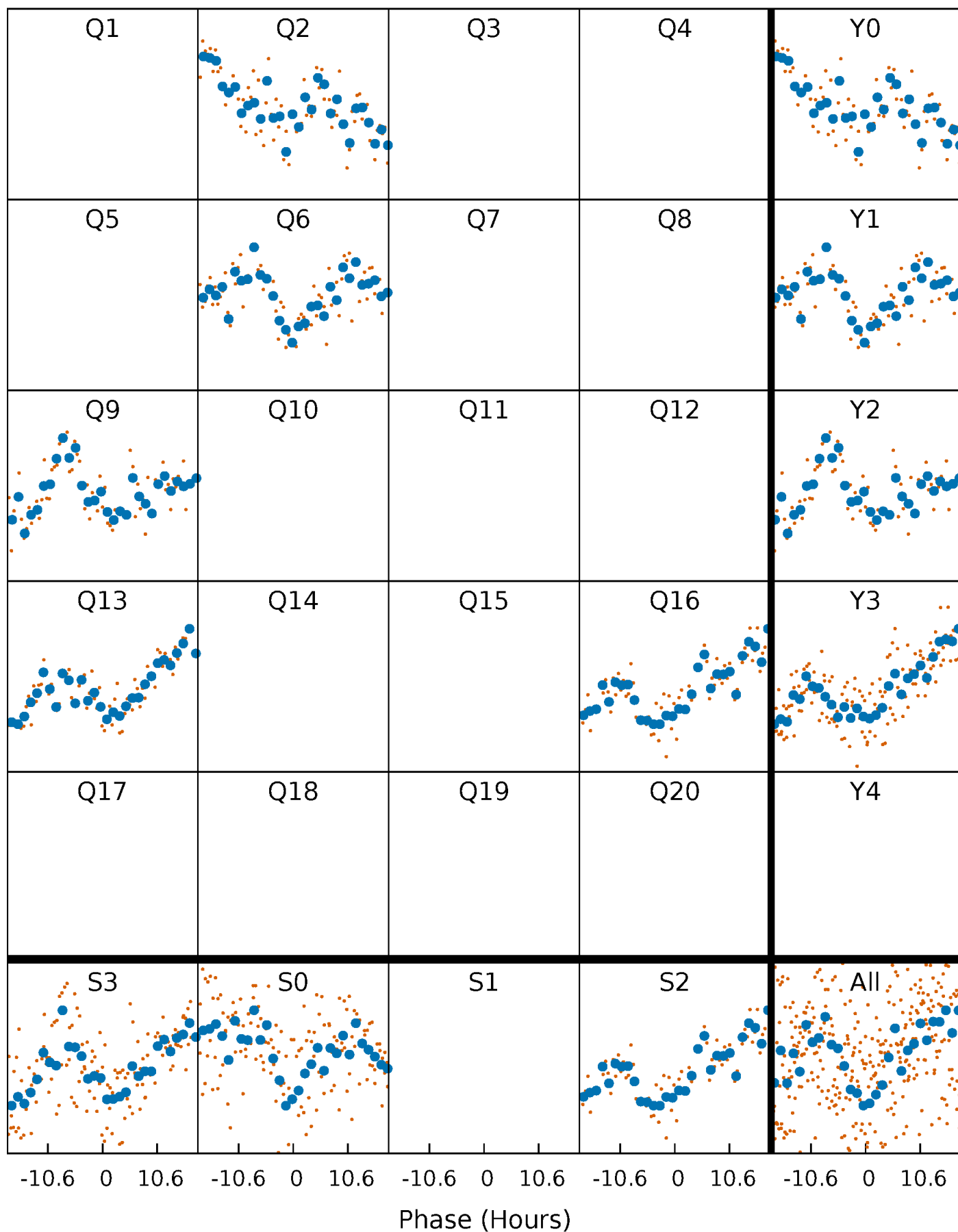


Planet 10 : Phased Whitened Flux Time Series (Fit Epoch/Period)



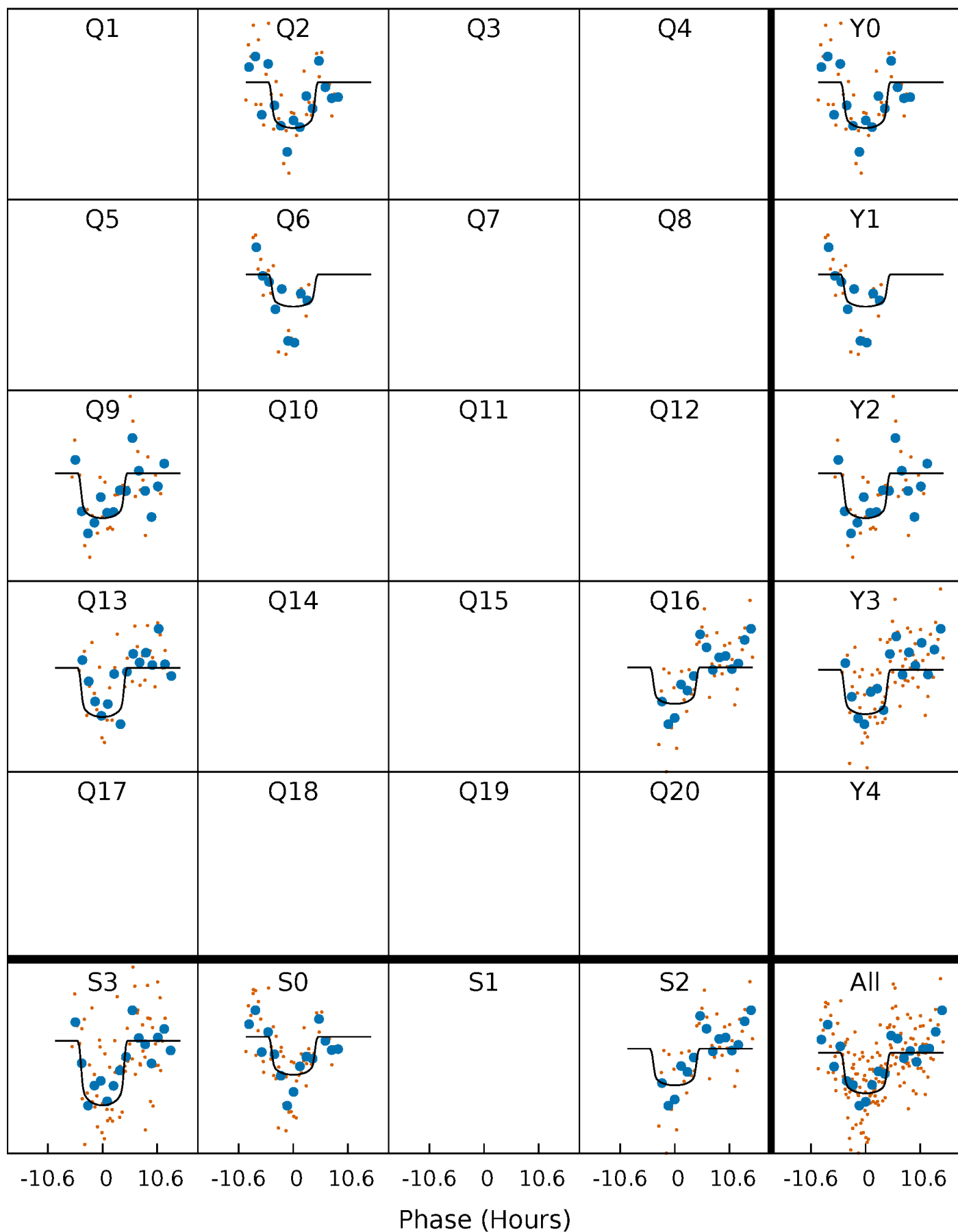
# PDC Quarter-Phased Transit Curves

TCE 008392519-10 P=318.071035 Days  $T_0=240.093446$  (BKJD)



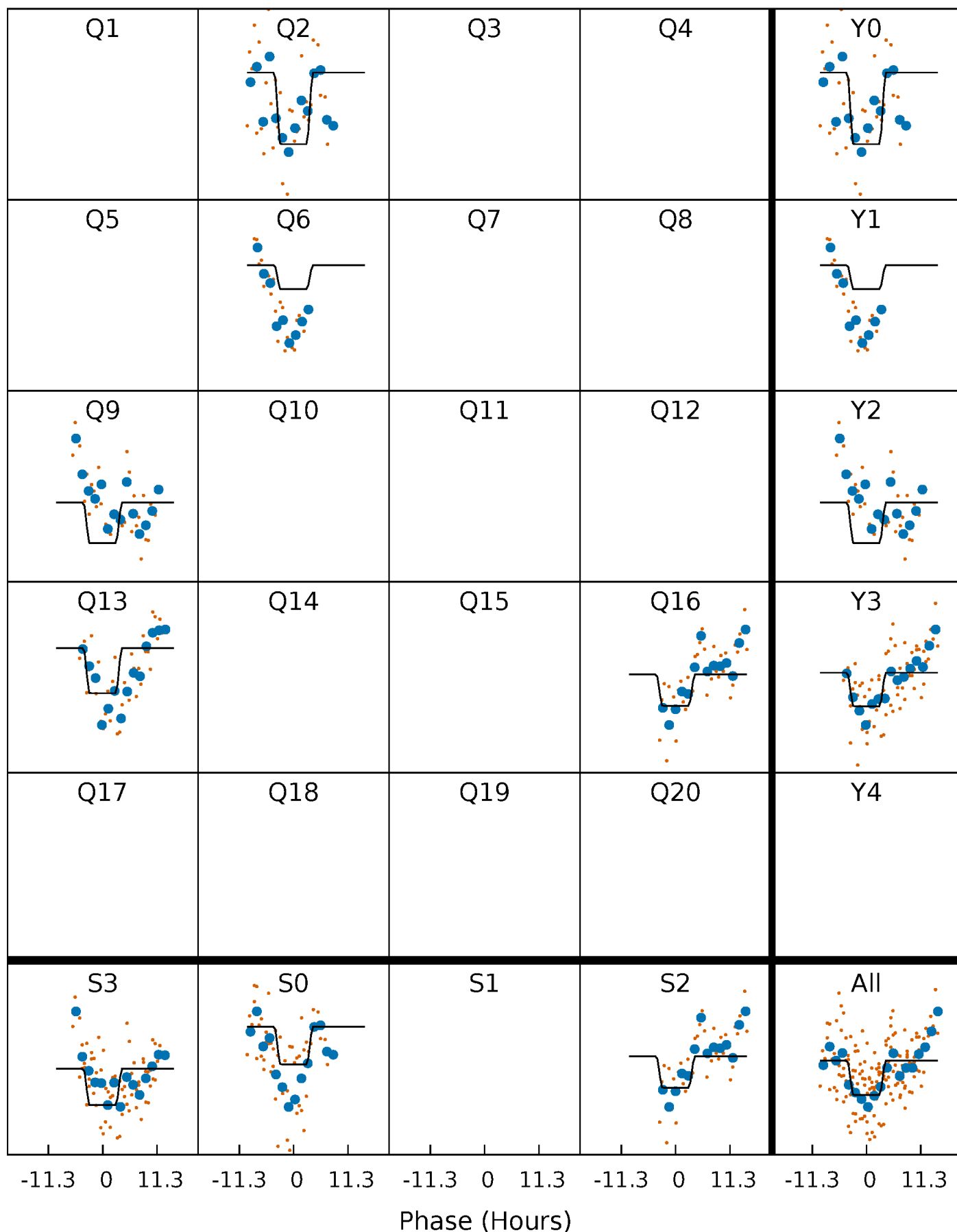
# DV Quarter-Phased Transit Curves

TCE 008392519-10 P=318.071035 Days  $T_0=240.093446$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

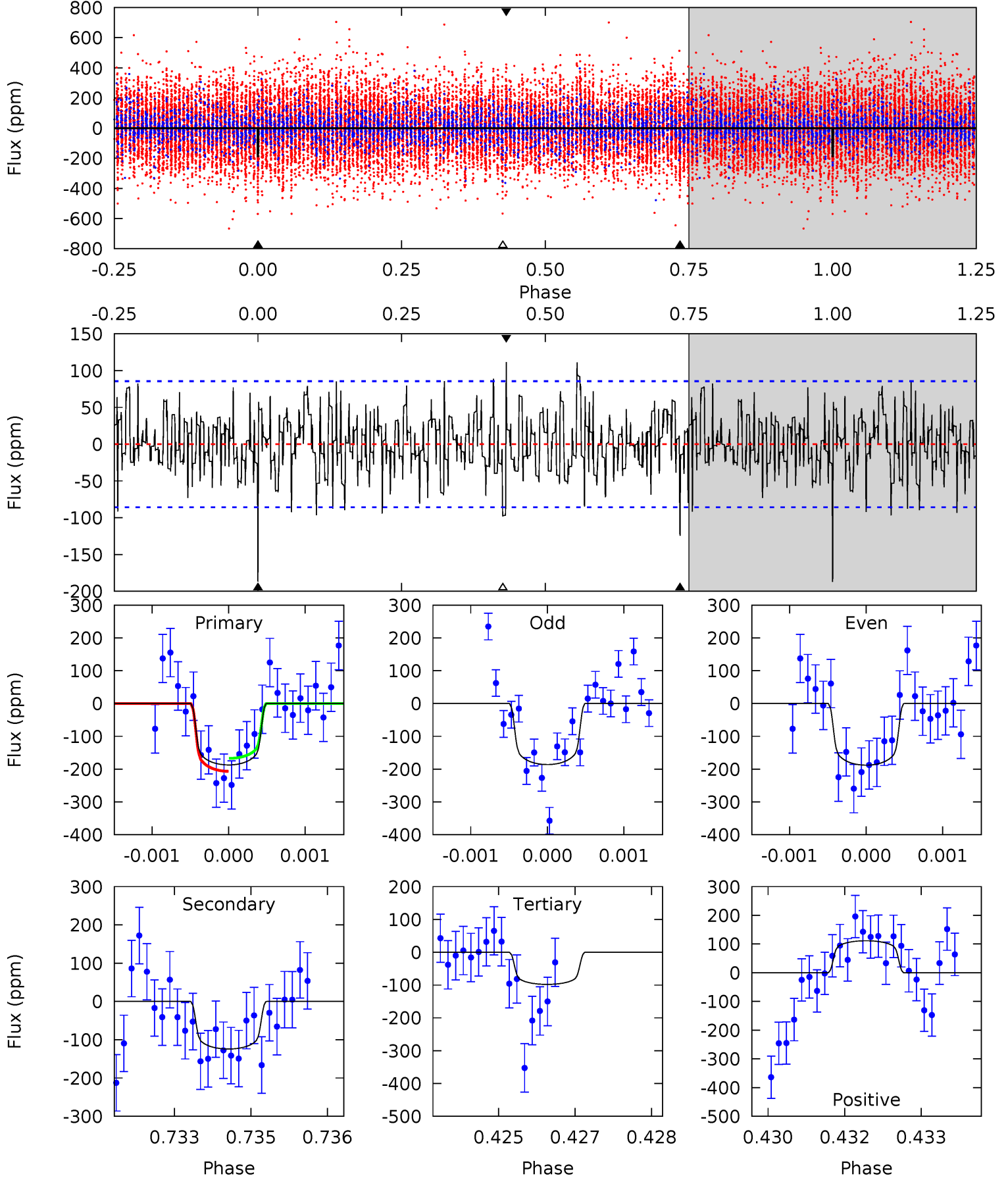
TCE 008392519-10 P=318.068795 Days  $T_0=240.111302$  (BKJD)



# DV Model-Shift Uniqueness Test

008392519-10, P = 318.071035 Days, E = 240.093446 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.8	7.84	6.19	7.03	5.41	3.22	2.14	5.64	4.79	1.66	0.81	0.06	0.97	0.37	1.24

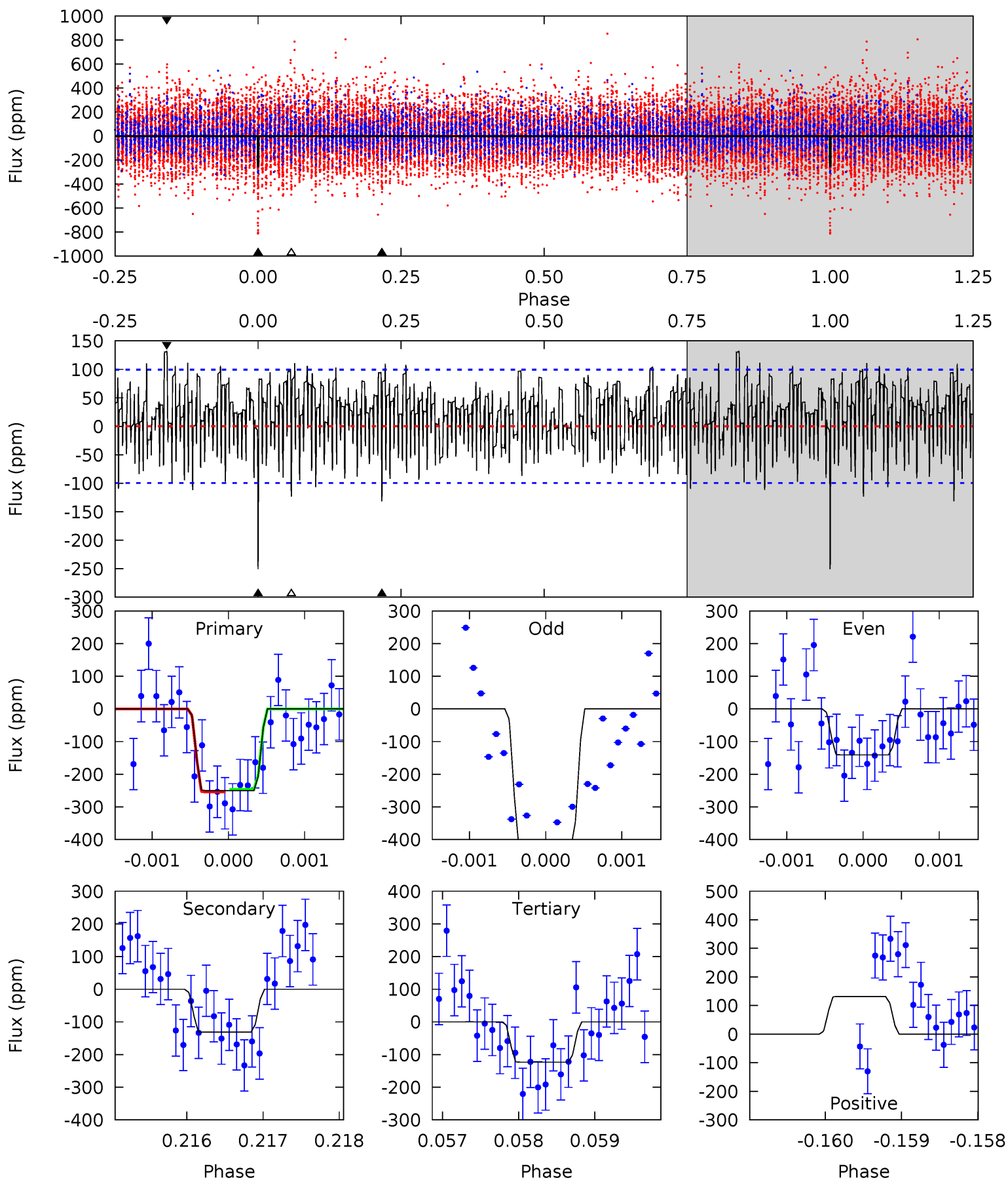




# Alt Model-Shift Uniqueness Test

008392519-10, P = 318.068795 Days, E = 240.111302 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
13.7	7.21	6.76	7.21	5.45	3.28	2.41	6.96	6.51	0.45	-0.01	7.25	1.10	0.34	0.22



### Stellar Parameters For KIC 008392519

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6760^{+187}_{-234}$	$3.635^{+0.323}_{-0.057}$	$-0.160^{+0.300}_{-0.250}$	$3.258^{+0.406}_{-1.218}$	$1.670^{+0.221}_{-0.332}$	$0.068^{+0.157}_{-0.014}$
	+3%/-3%	+9%/-2%	+188%/-156%	+12%/-37%	+13%/-20%	+230%/-20%
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 008392519-10 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-124 \pm 16$	$5.13^{+1.00}_{-1.10}$	$702^{+38}_{-66}$	$5725^{+489}_{-370}$	$3151^{+1734}_{-1005}$
Alt.	$-132 \pm 18$	$4.99^{+0.94}_{-1.08}$	$697^{+43}_{-67}$	$5860^{+450}_{-410}$	$3430^{+2088}_{-1014}$

$T_{max}$  = 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

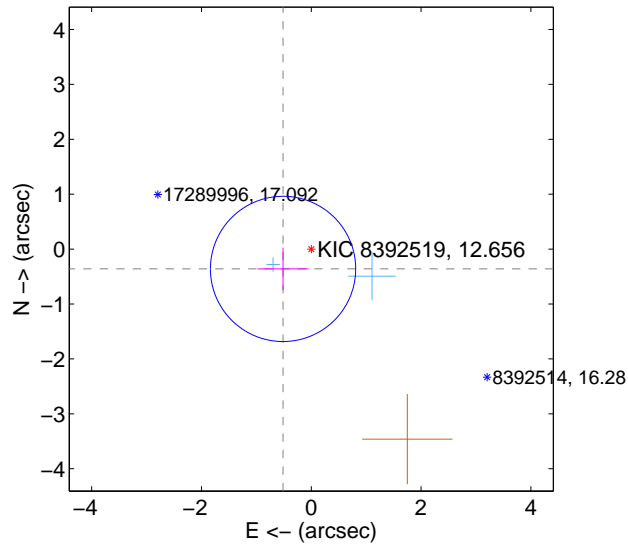
Supplemental centroid analysis for 008392519-10. Kepler magnitude: 12.66. Transit SNR 8.46

There are 2 quarters with good PRF difference image offsets

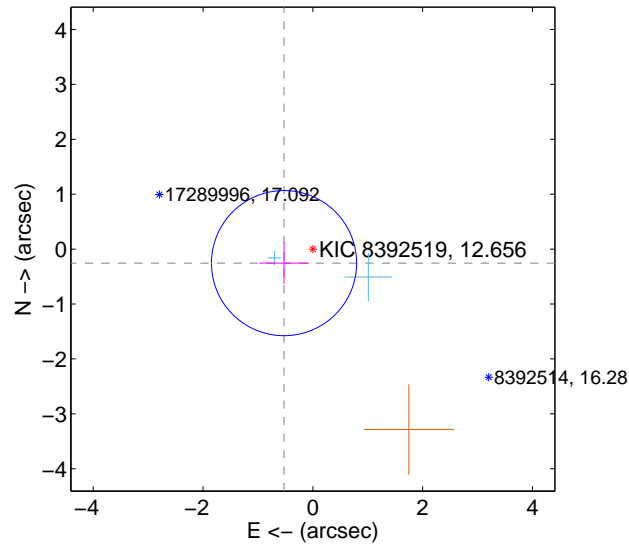
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.628 \pm 0.441$	1.42	$0.514 \pm 0.466$	$-0.361 \pm 0.385$
PRF-fit source offset from KIC position	$0.584 \pm 0.441$	1.32	$0.525 \pm 0.455$	$-0.256 \pm 0.376$
photometric centroid source offset	$0.57 \pm 1.04$	0.55	$0.55 \pm 1.04$	$-0.13 \pm 0.99$

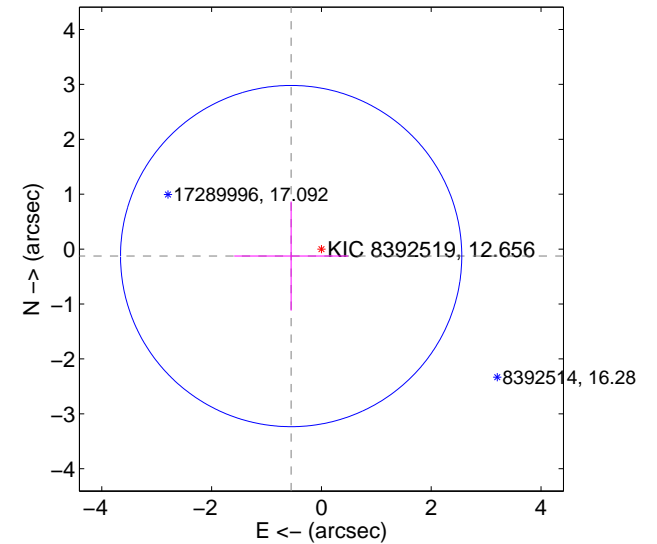
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

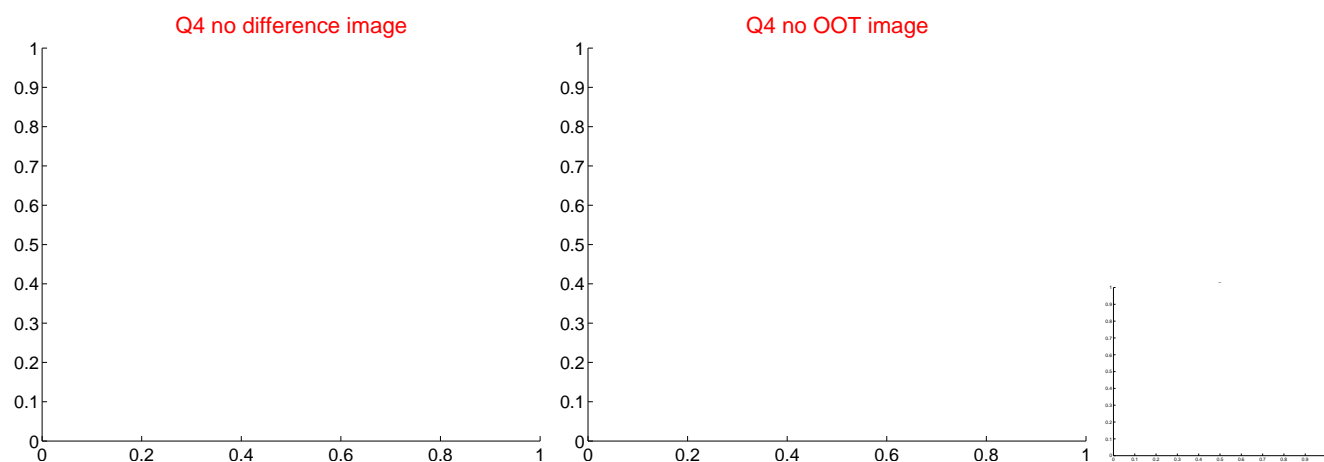
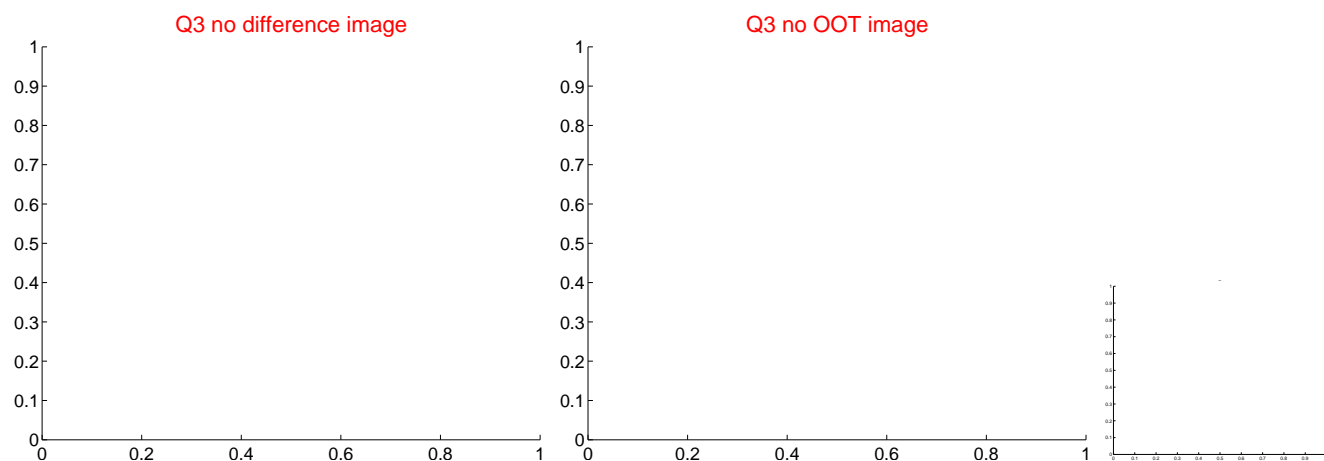
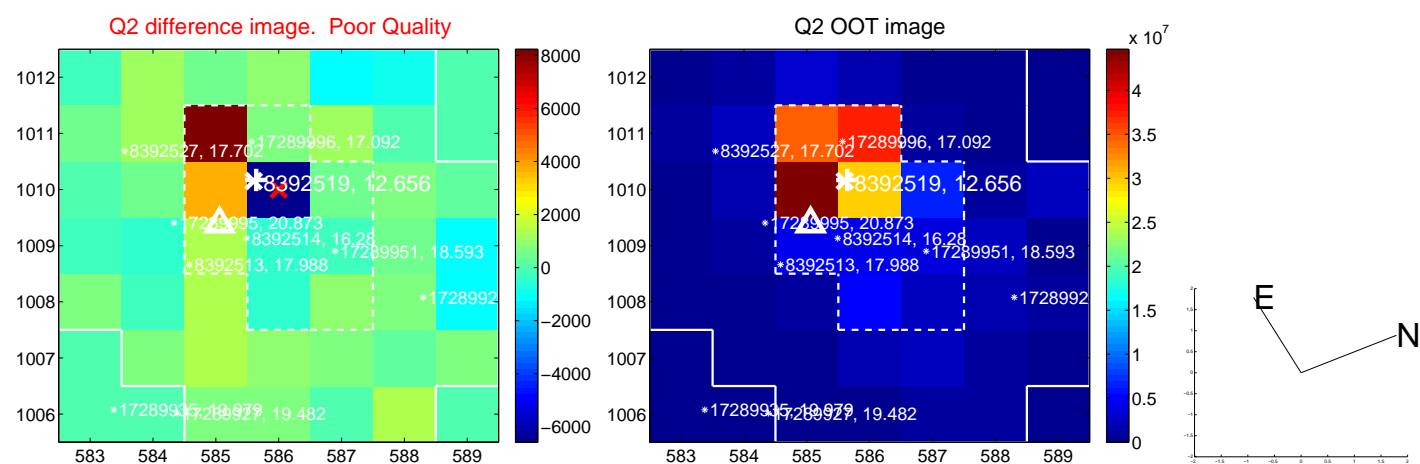
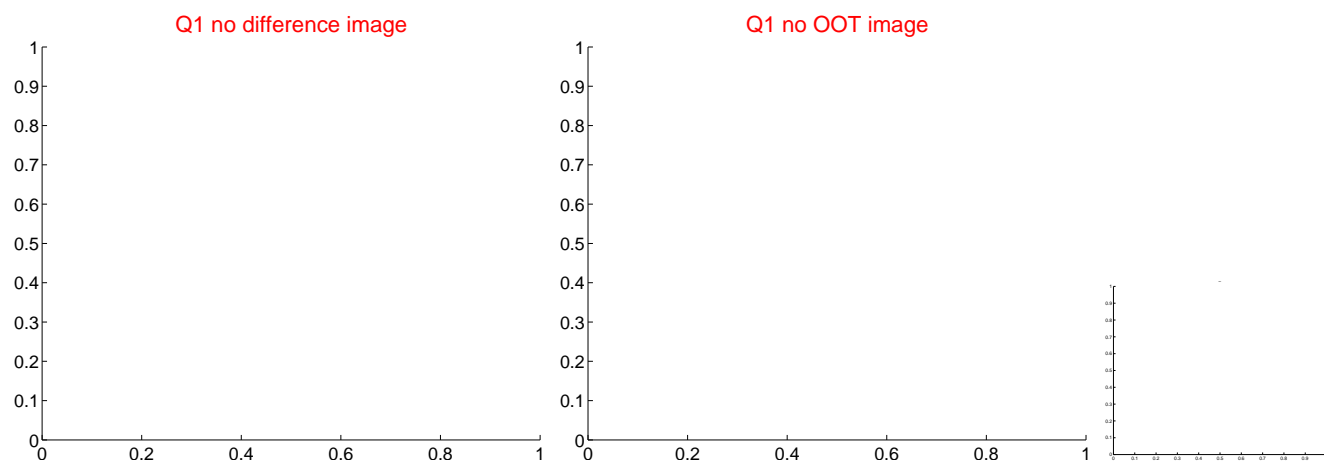


offset from photometric centroids

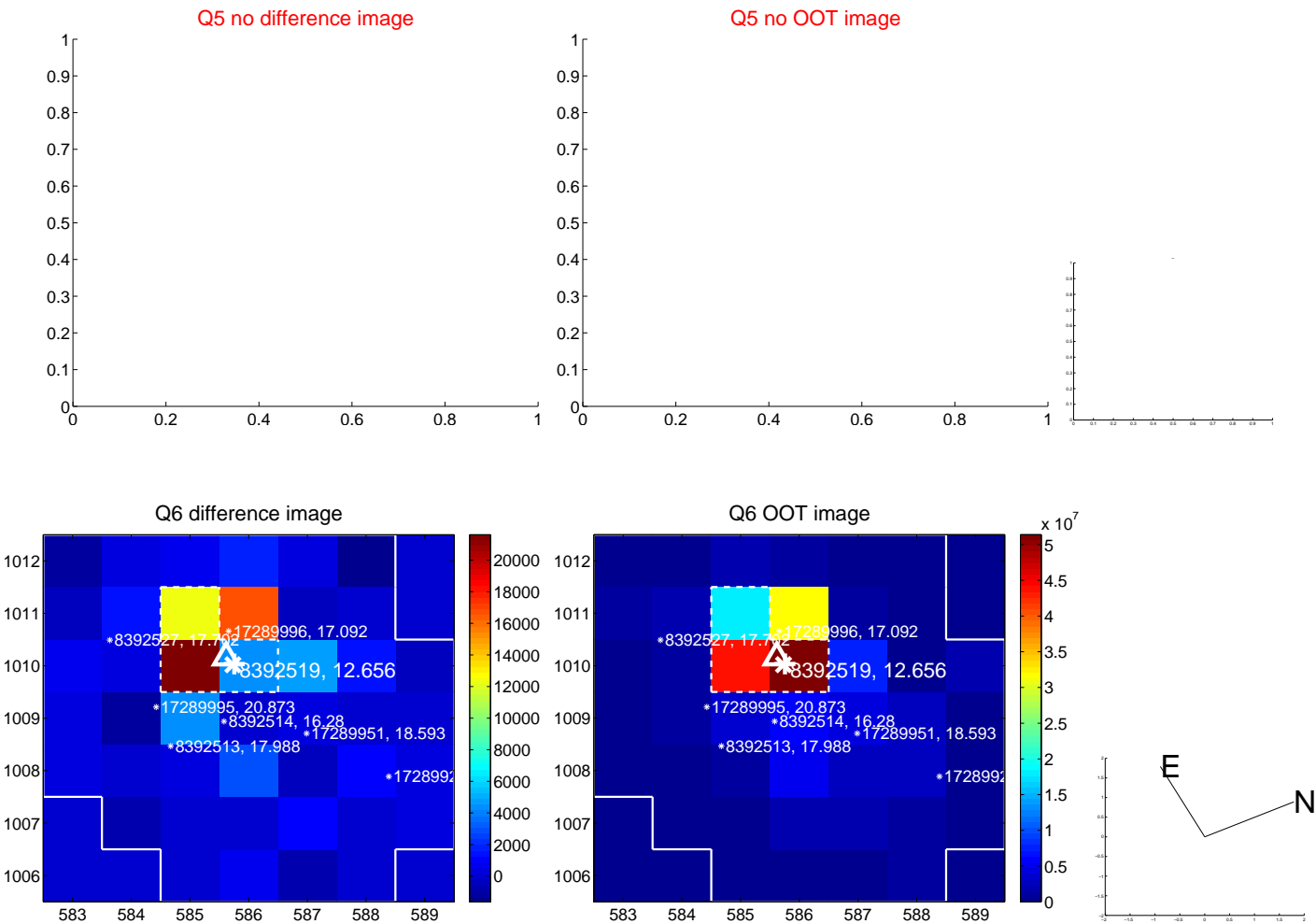


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



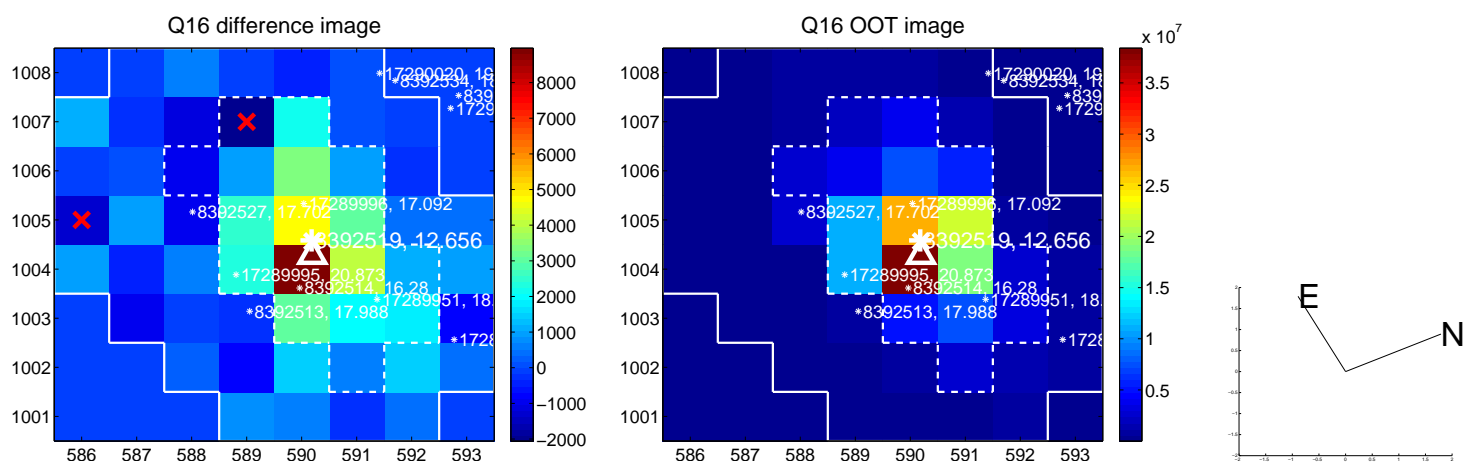
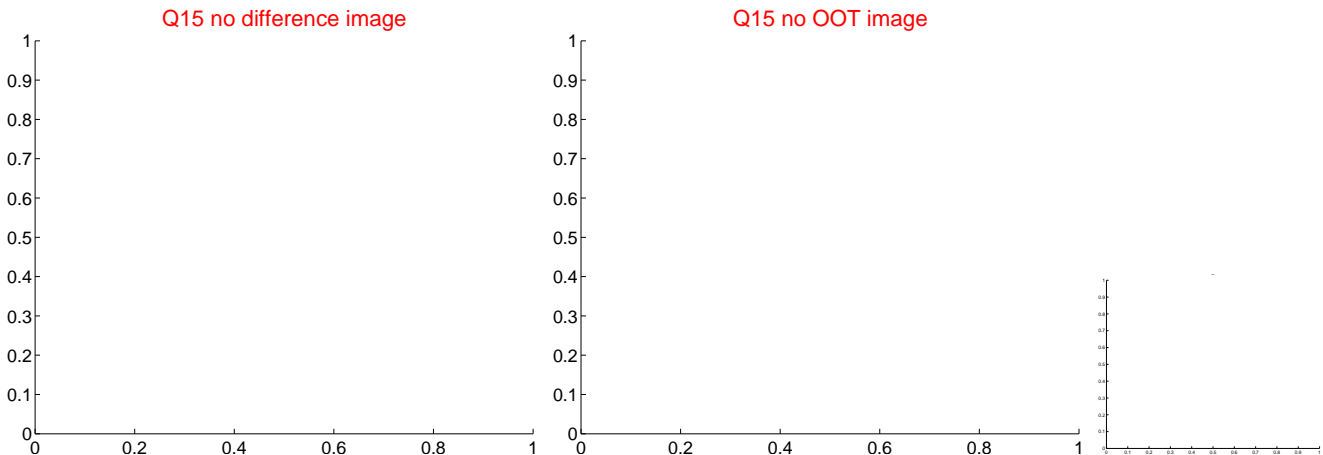
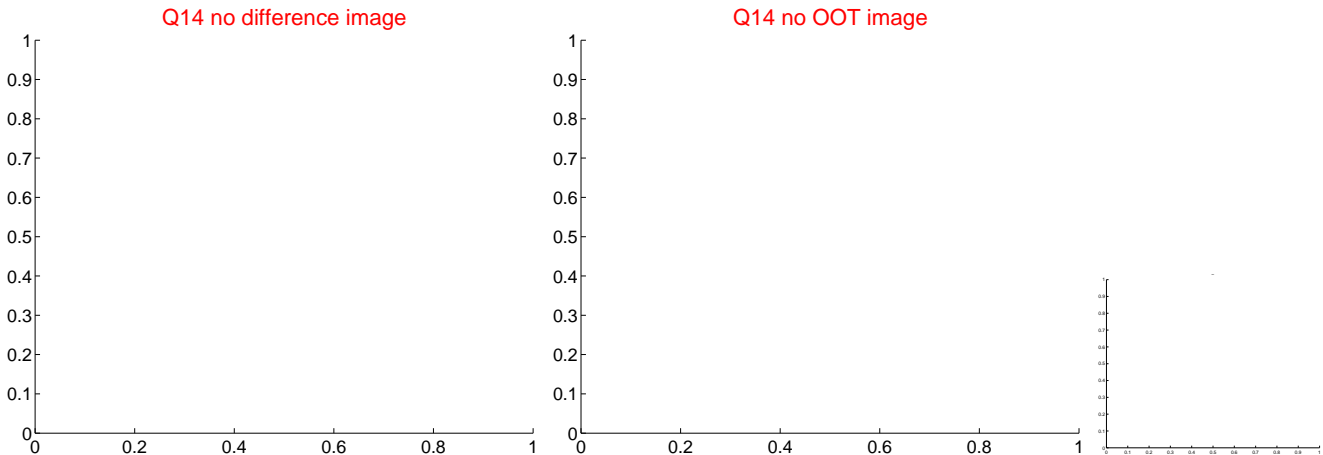
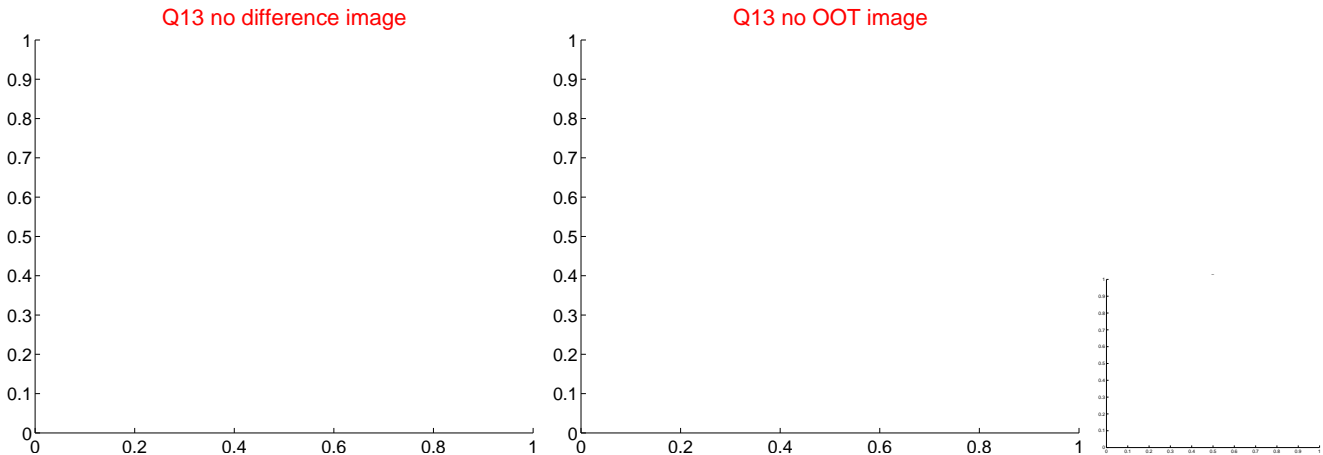
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



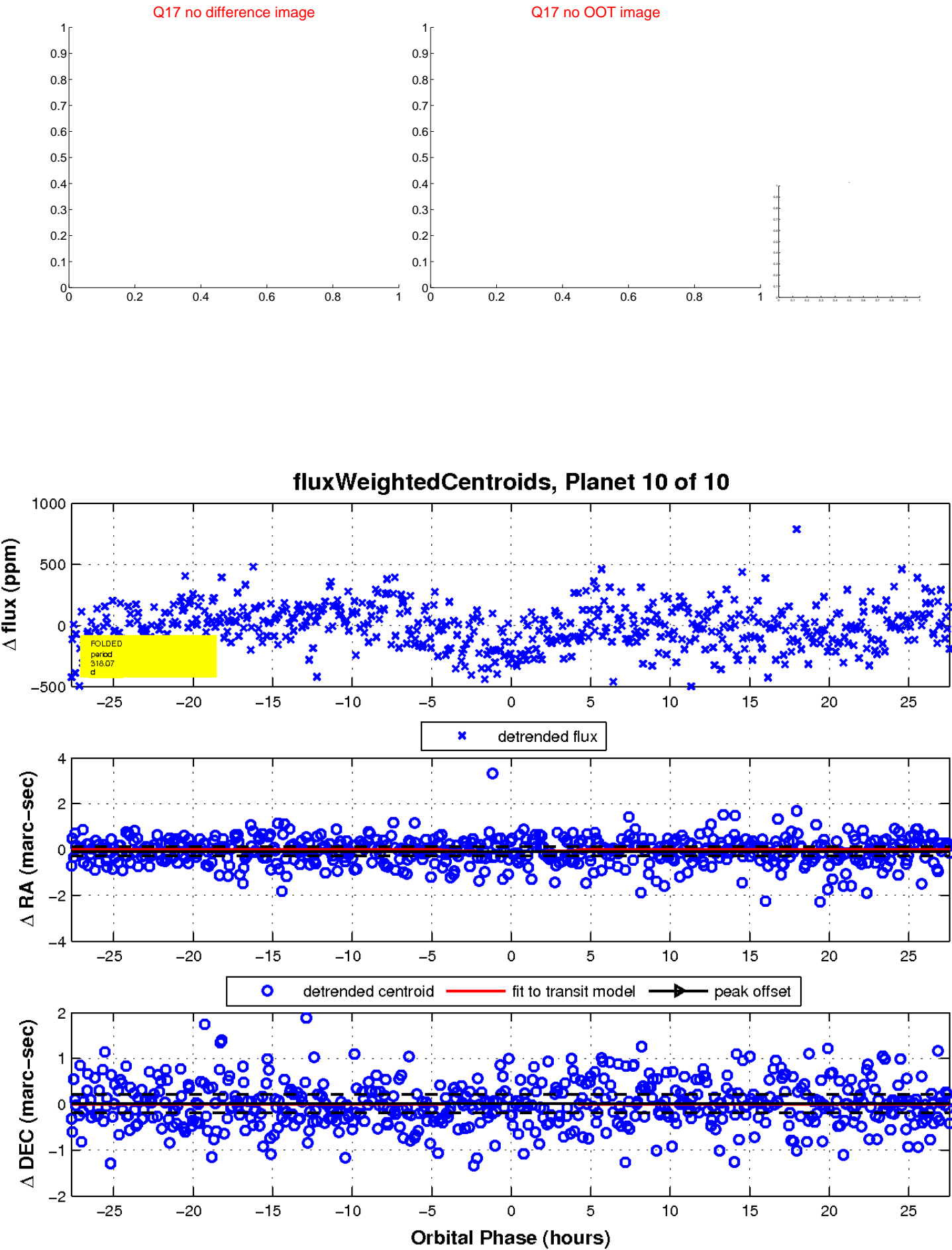
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

