

## KIC 003858884

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003858884-01	OBS	6371.01	25.951589	154.890392	398557.6	9.000	4108.7	-1.0	1.73	6569	10.48	157.96
003858884-02	OBS	No	25.951660	148.930604	337130.8	12.000	3105.5	-1.0	1.73	6569	9.01	157.96
003858884-03	OBS	No	25.952955	154.298499	933.1	1.500	133.7	-1.0	1.73	6569	5.34	157.94
003858884-04	OBS	No	25.949884	155.492250	1865.7	1.500	183.2	-1.0	1.73	6569	7.55	157.97
003858884-06	OBS	No	25.948835	154.410203	465.9	7.500	119.8	-1.0	1.73	6569	3.76	157.98
003858884-07	OBS	No	265.342550	338.048118	4604.7	11.114	58.6	15.0	1.73	6569	21.10	7.12
003858884-08	OBS	No	363.387340	459.169809	6494.8	15.401	60.8	24.0	1.73	6569	16.20	4.68

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003858884-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
003858884-02	OBS	FP	0.00	1	0	0	0	SAME_NTL_PERIOD—CENT_SATURATED
003858884-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003858884-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

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

Ephemeris Match Information For 003858884-01

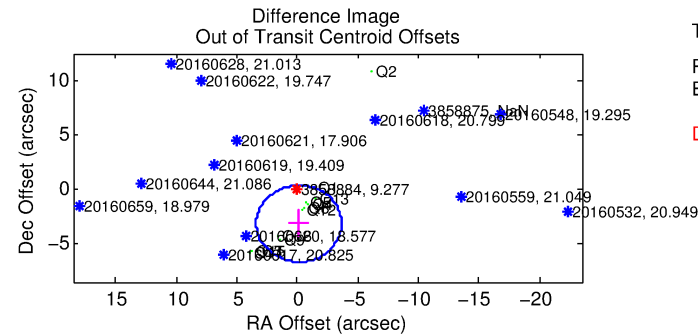
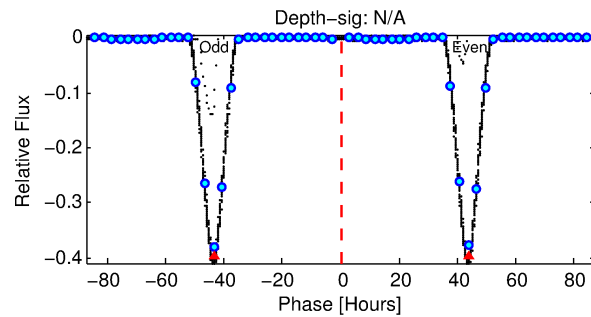
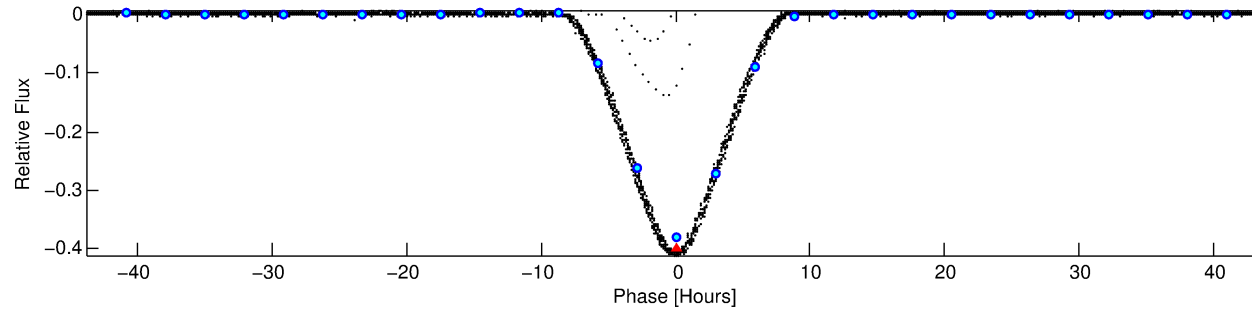
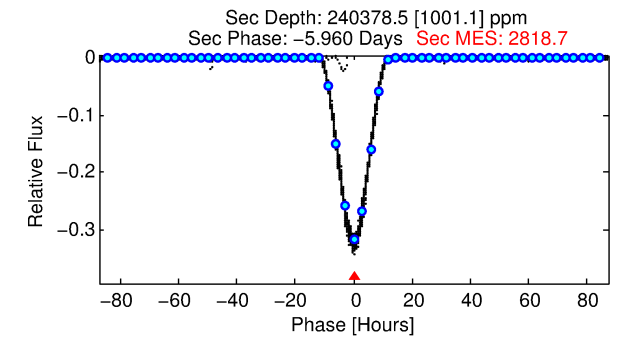
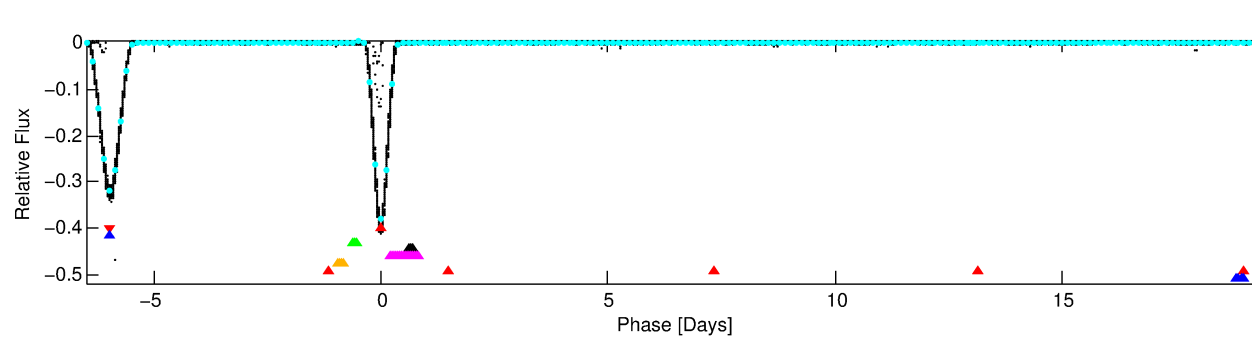
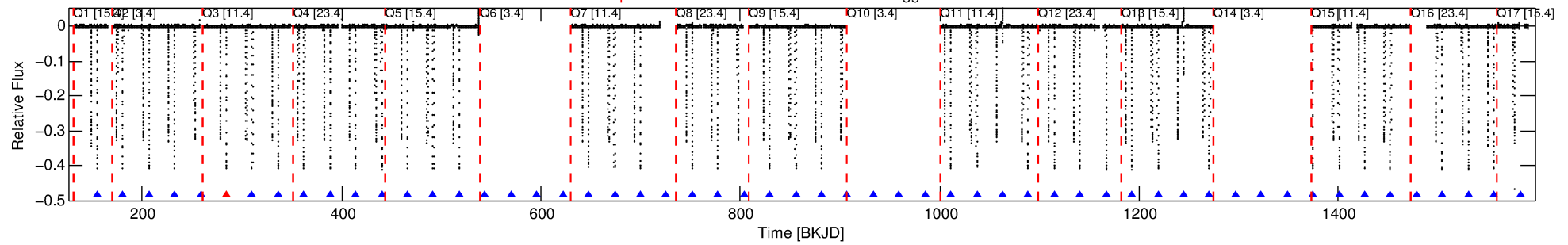
No Significant Match Found

# DV One-Page Summary

KIC: 3858884 Candidate: 1 of 8 Period: 25.952 d

KOI: K06371.01 Corr: 0.754

Kp: 9.28 R\*: 1.73 Rs Teff: 6569.0 K Logg: 4.01 Fe/H: -0.500



TPS TCE Results:

Period = 25.95159 d  
Epoch = 154.8904 BKJD

DV fit results are unavailable

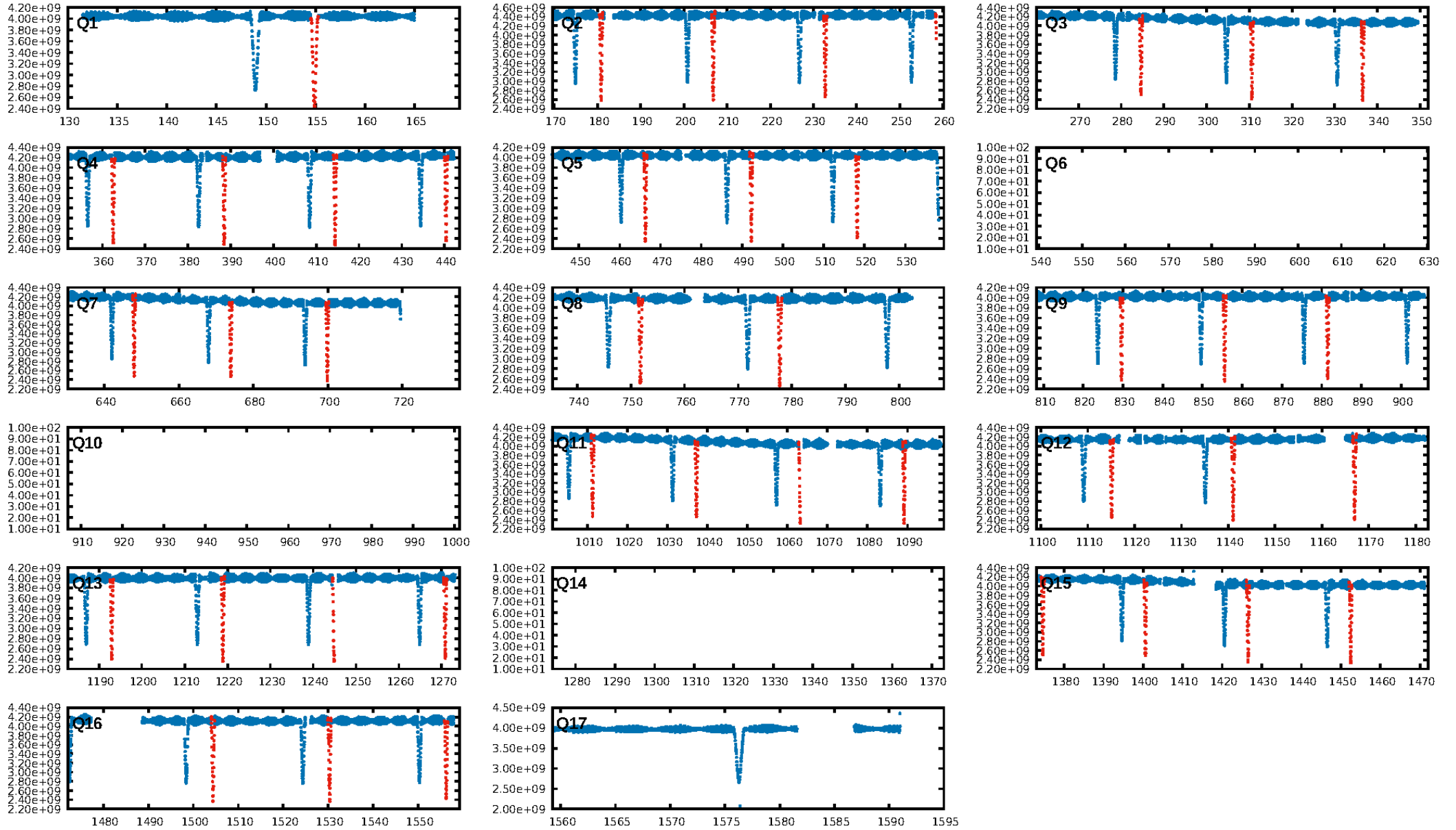
DV Diagnostic Results:

ShortPeriod-sig: 0.4% [0.00 $\sigma$ ]  
LongPeriod-sig: 0.0% [0.00 $\sigma$ ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.97 [39/40]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: 1.713 arcsec [2791.12 $\sigma$ ]  
OotOffset-rm: 3.146 arcsec [2.68 $\sigma$ ]  
KicOffset-rm: 4.899 arcsec [3.69 $\sigma$ ]  
OotOffset-st: 1/4/4/4 [13]  
KicOffset-st: 1/4/4/4 [13]  
DiffImageQuality-fgm: 0.00 [0/13]  
DiffImageOverlap-fno: 0.00 [0/13]

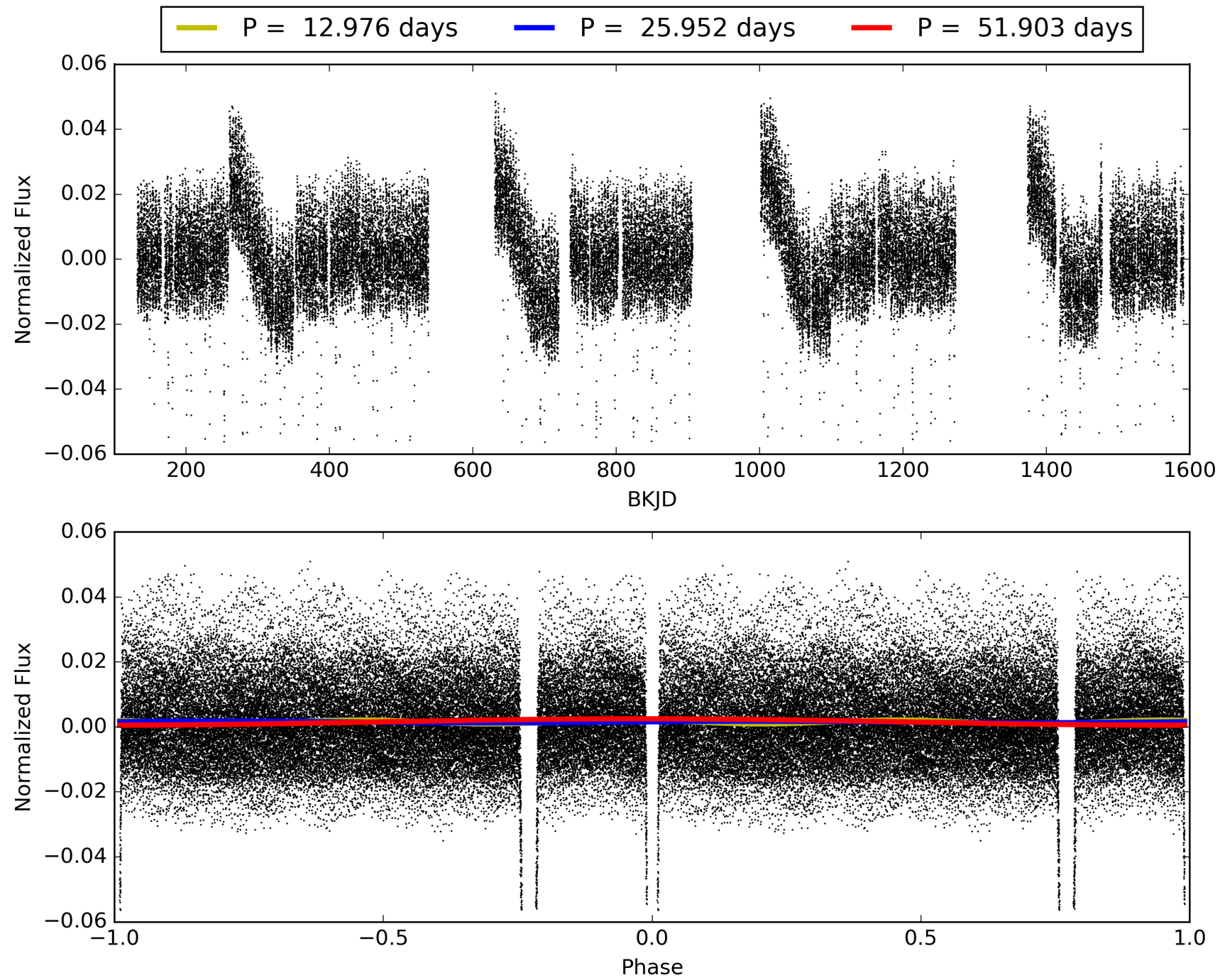
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:44:56 Z

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

# TCE 003858884-01, PDC Light Curves



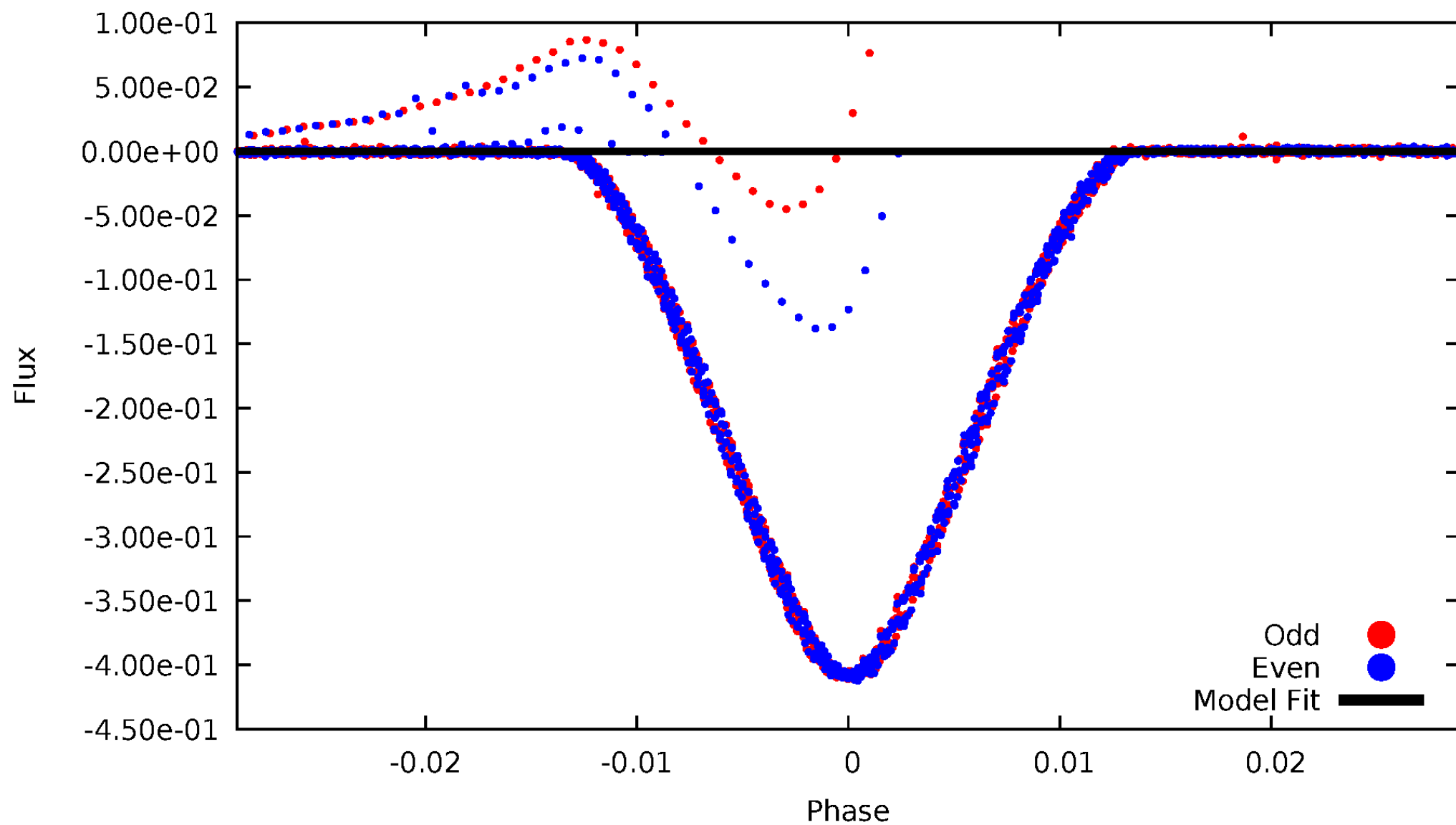
TCE 003858884-01





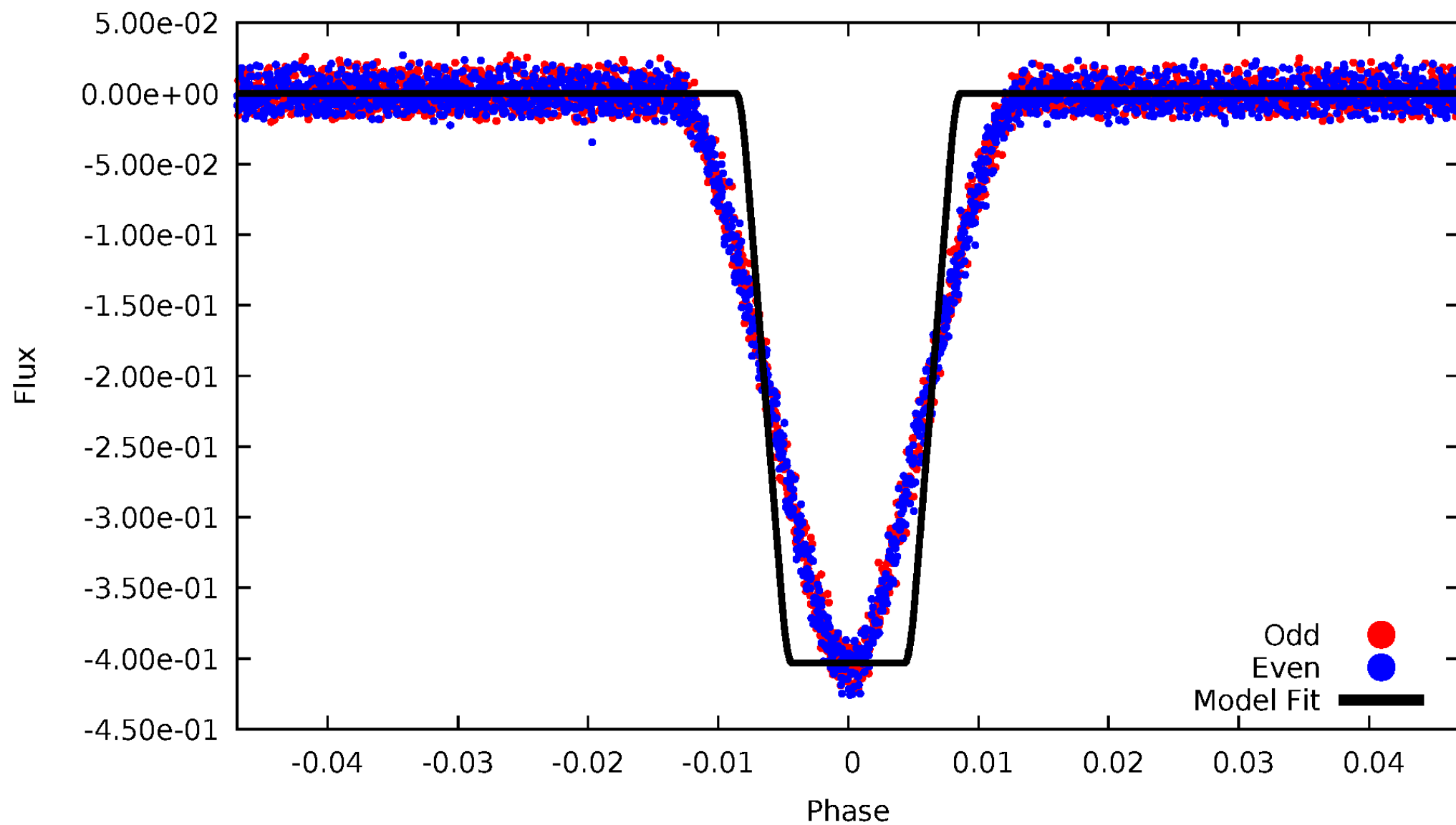
# DV Odd/Even

TCE 003858884-01



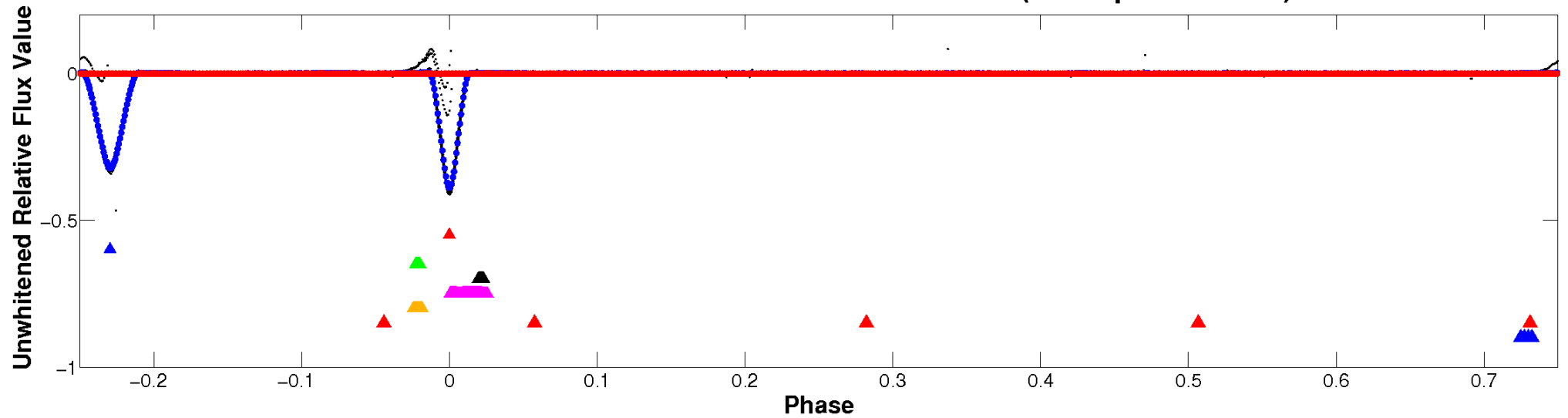
# ALT Odd/Even

TCE 003858884-01

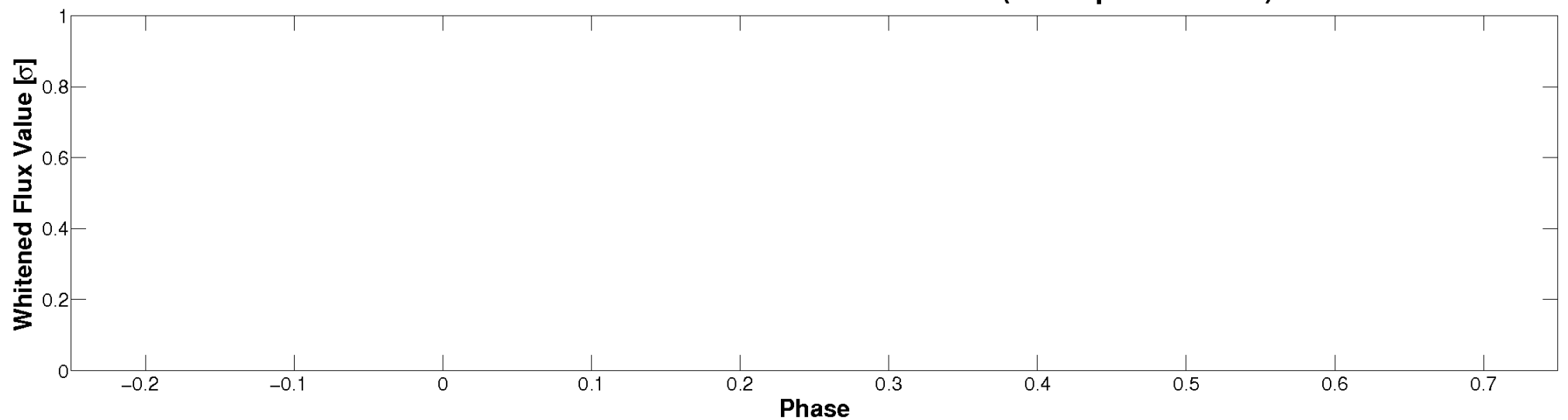


# Non-Whitened Vs. Whitened Light Curve

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

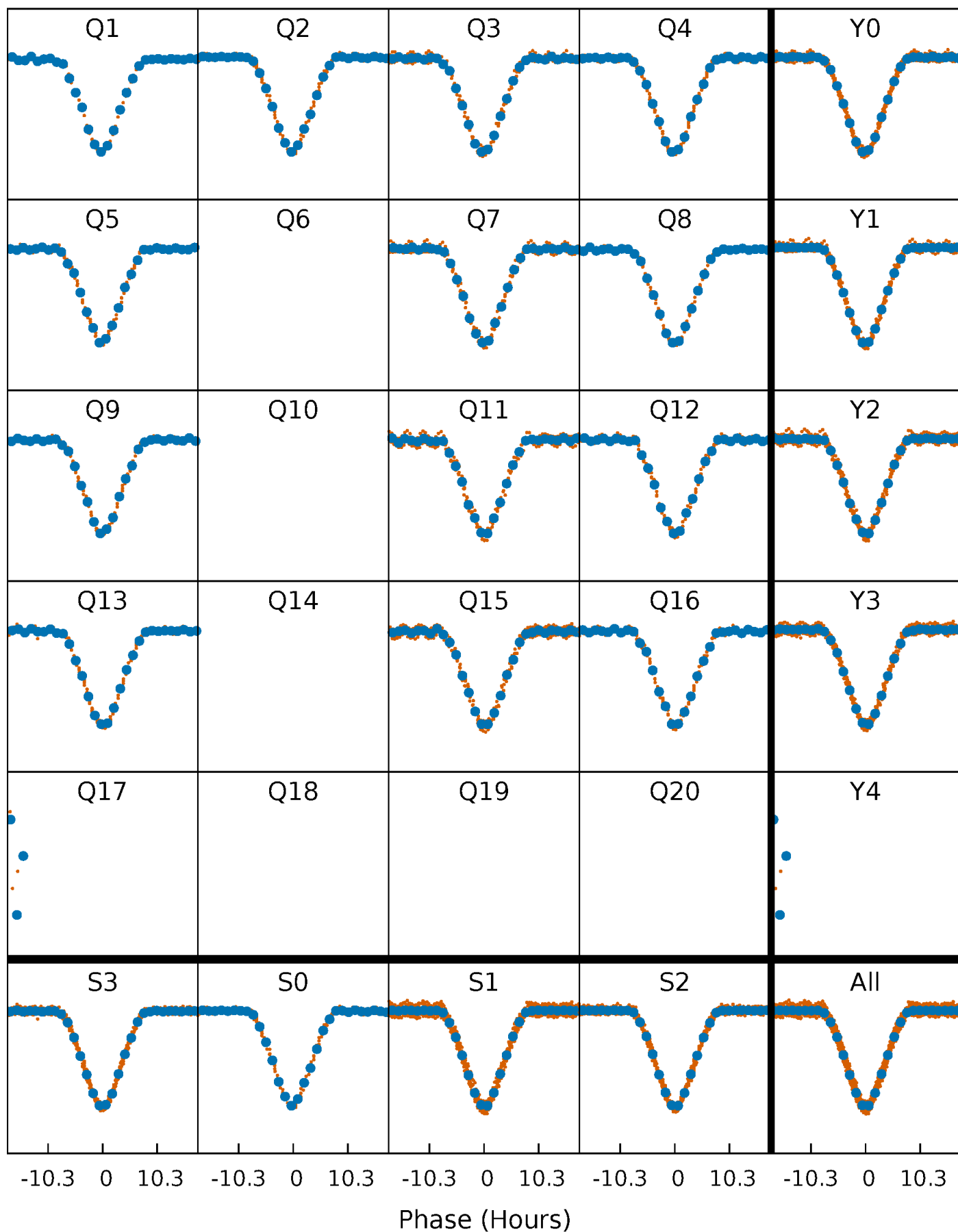


**Planet 1 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



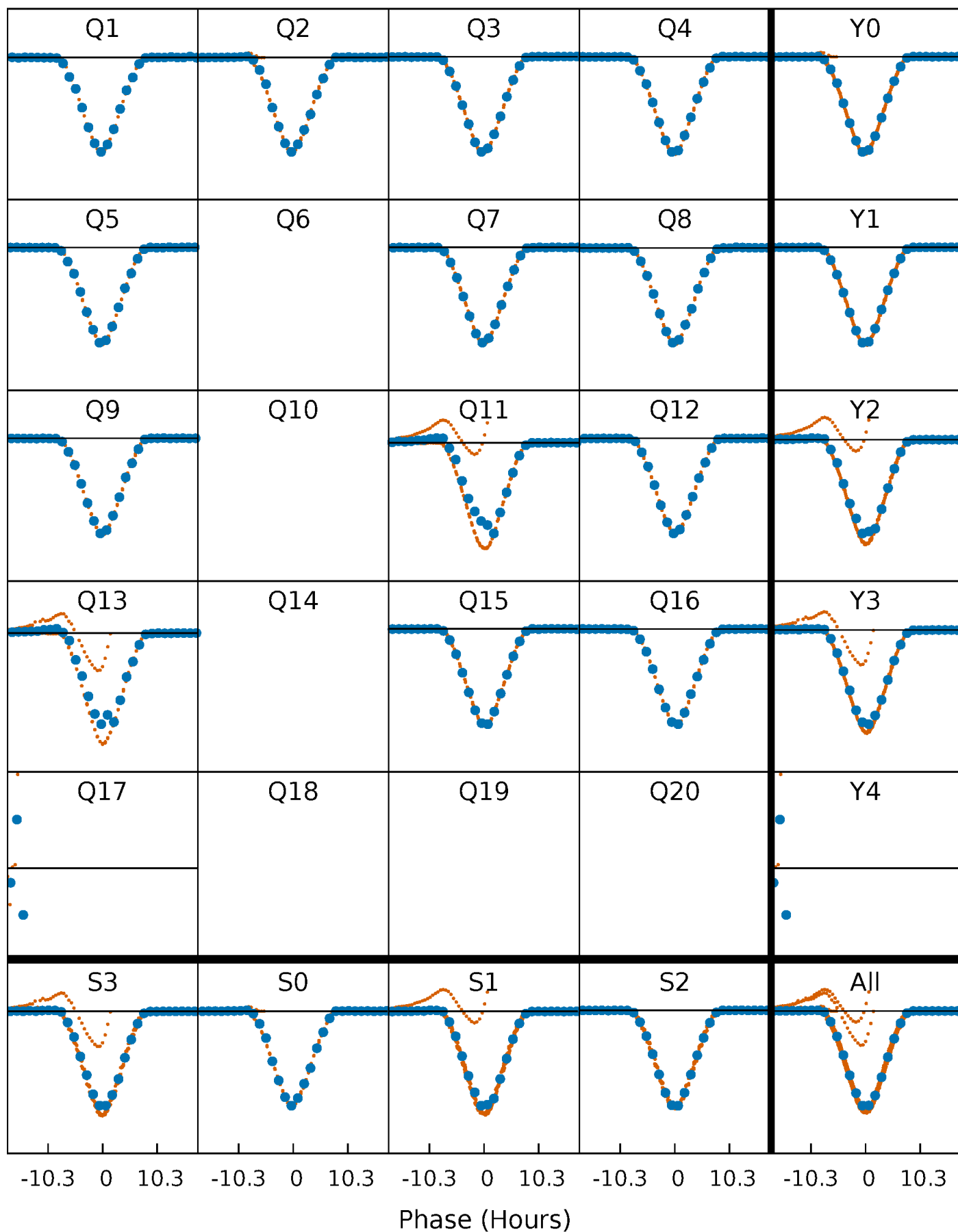
# PDC Quarter-Phased Transit Curves

TCE 003858884-01 P= 25.951589 Days  $T_0=154.890392$  (BKJD)



# DV Quarter-Phased Transit Curves

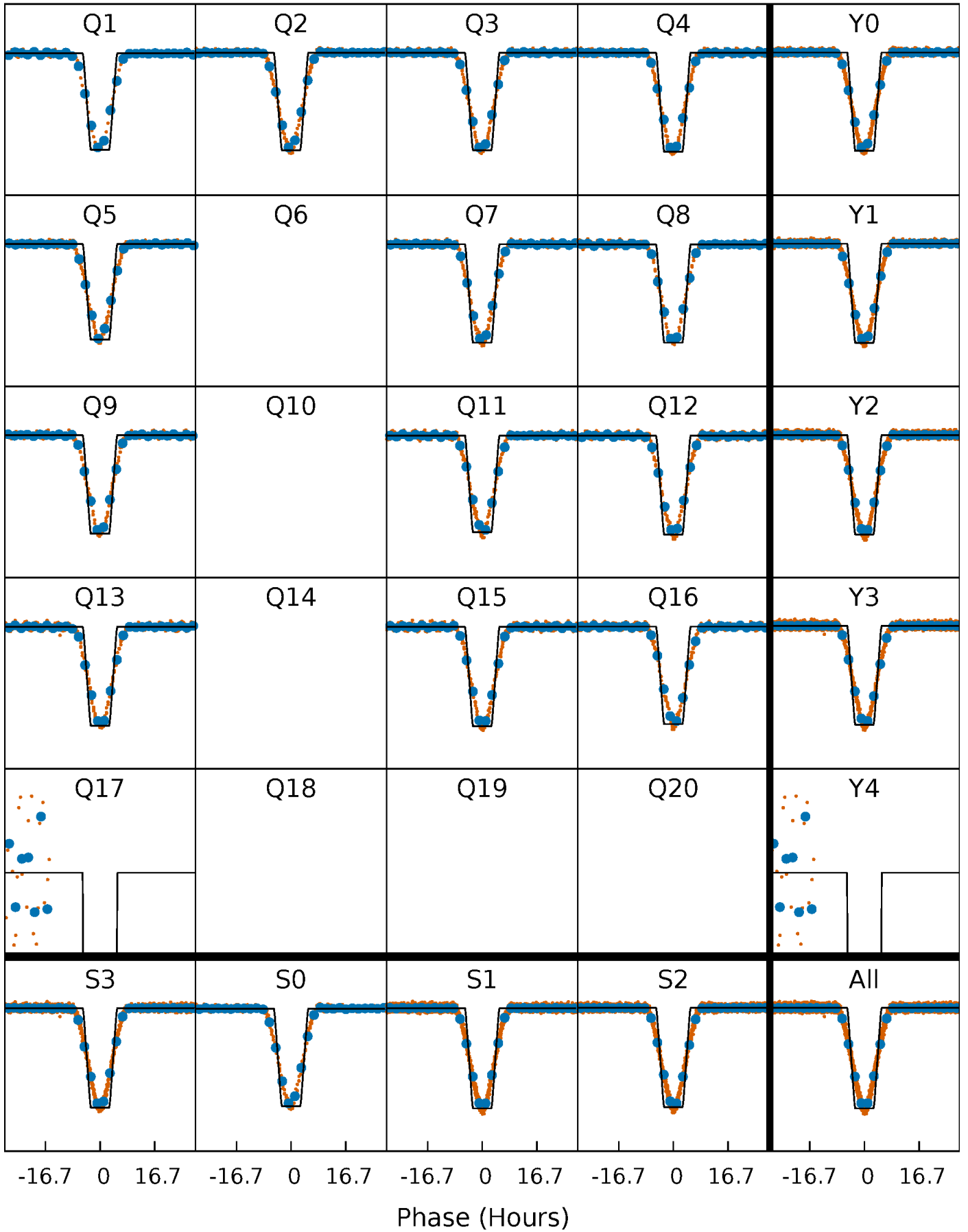
TCE 003858884-01 P= 25.951589 Days  $T_0=154.890392$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

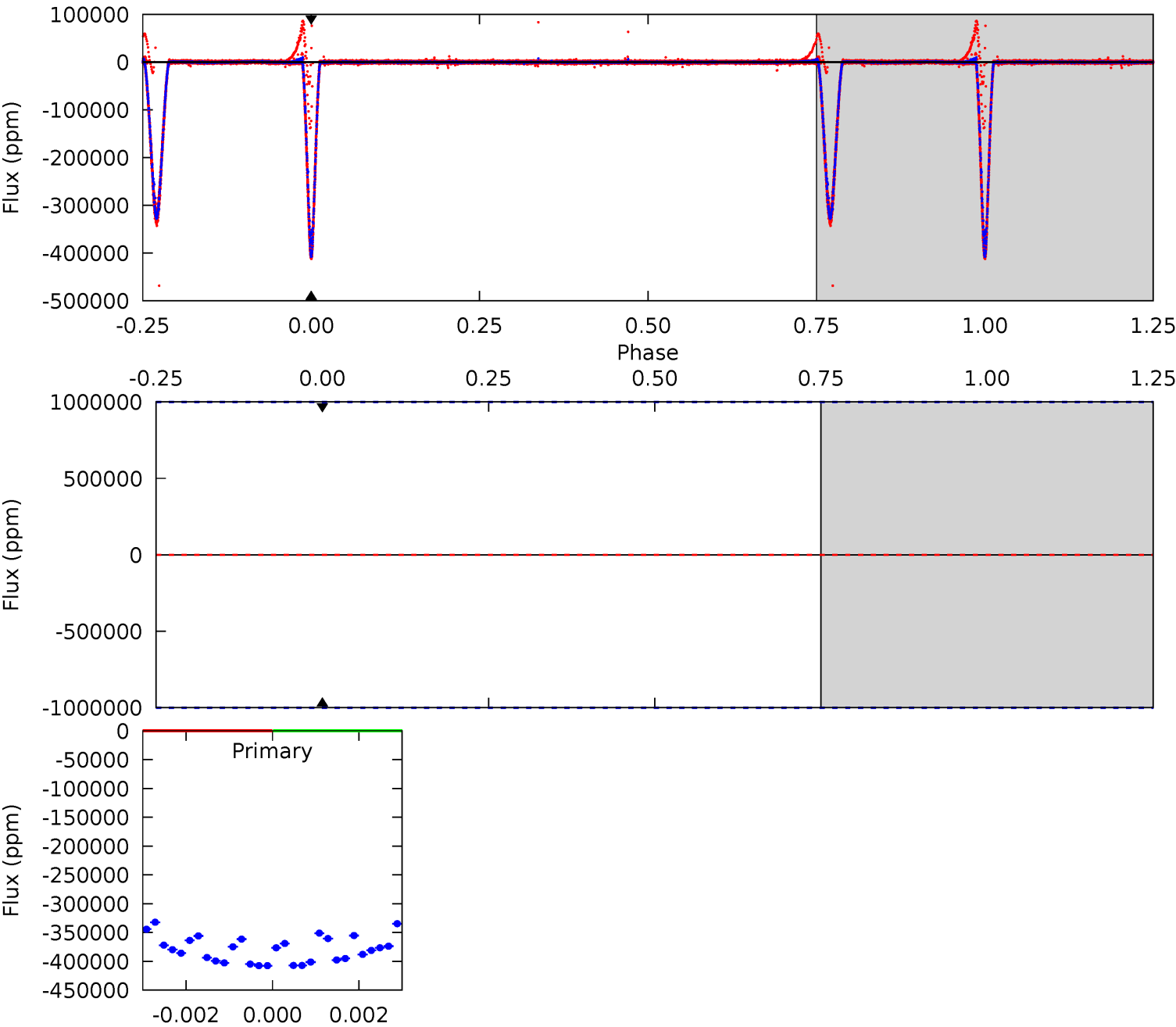
TCE 003858884-01 P= 25.951589 Days  $T_0=154.890412$  (BKJD)



# DV Model-Shift Uniqueness Test

003858884-01, P = 25.951589 Days, E = 128.938803 Days

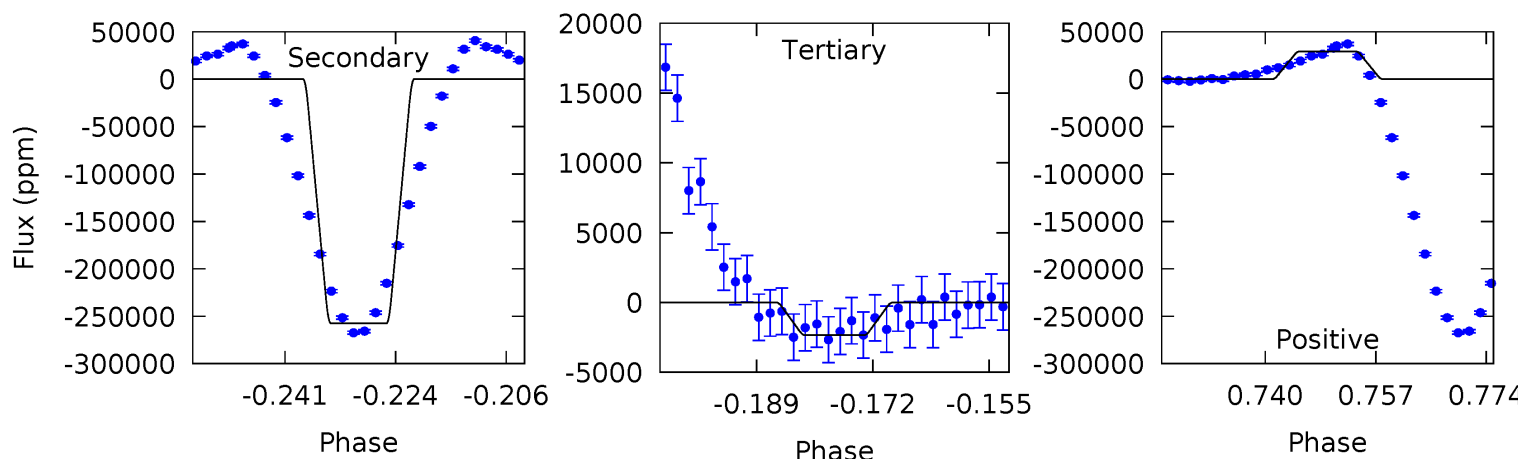
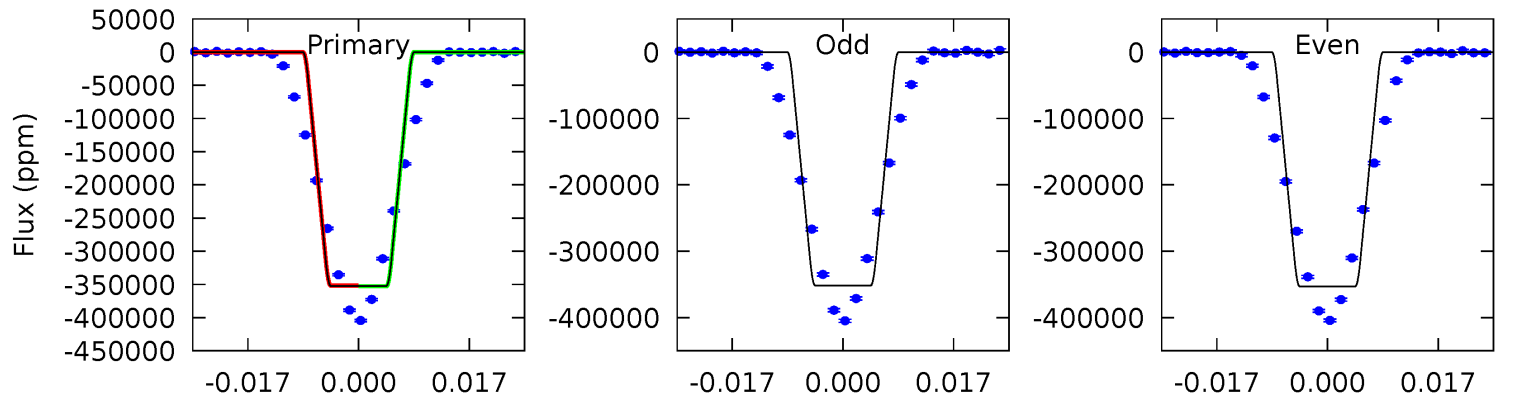
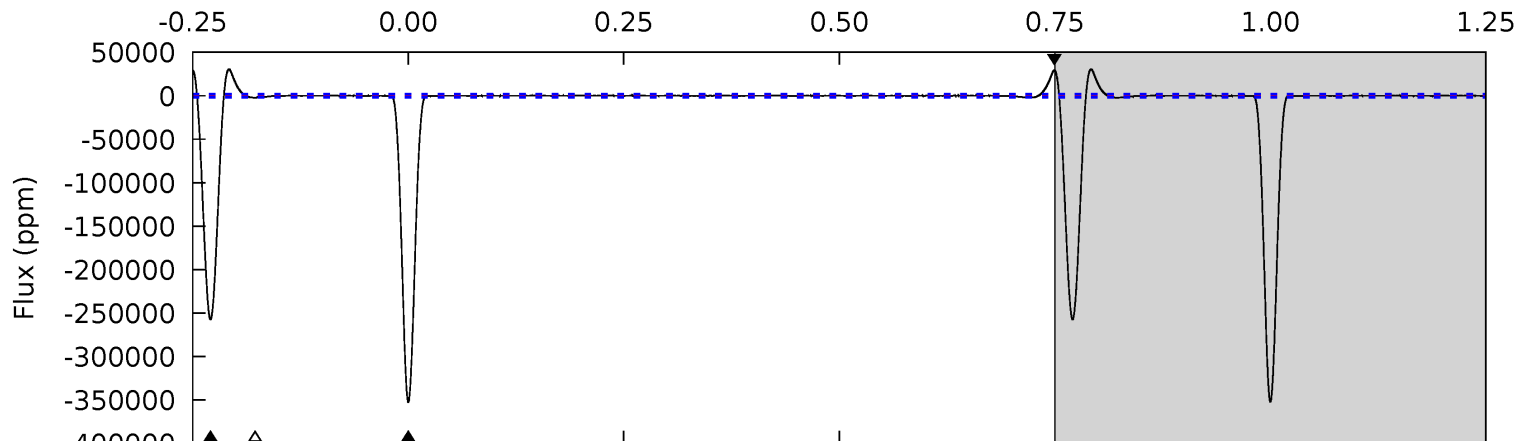
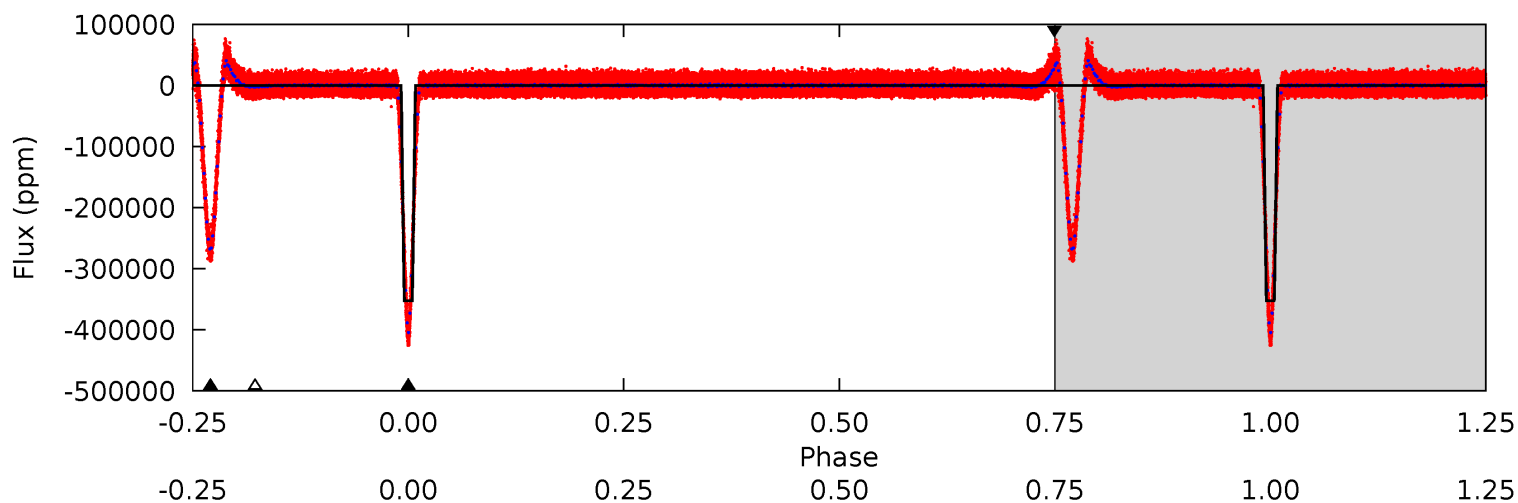
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

003858884-01, P = 25.951589 Days, E = 128.938823 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
967.5	707.1	6.45	80.5	4.92	2.38	11.1	961.0	887.0	700.7	626.6	1.74	1.00	0.08	0.60



### Stellar Parameters For KIC 003858884

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6569^{+188}_{-236}$	$4.008^{+0.357}_{-0.153}$	$-0.500^{+0.300}_{-0.300}$	$1.729^{+0.428}_{-0.642}$	$1.110^{+0.164}_{-0.164}$	$0.302^{+0.809}_{-0.129}$
	+3%/-4%	+9%/-4%	+60%/-60%	+25%/-37%	+15%/-15%	+268%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 003858884-01 / KOI 6371.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$0 \pm 1000000$	$16.50^{+16.61}_{-10.86}$	$1248^{+102}_{-121}$	$5185^{+15386}_{-26575}$	$182^{+10294}_{-11589}$
Alt.	$-257495 \pm 364$	$115.23^{+26.38}_{-28.52}$	$1240^{+90}_{-129}$	$6278^{+622}_{-472}$	$456^{+337}_{-157}$

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

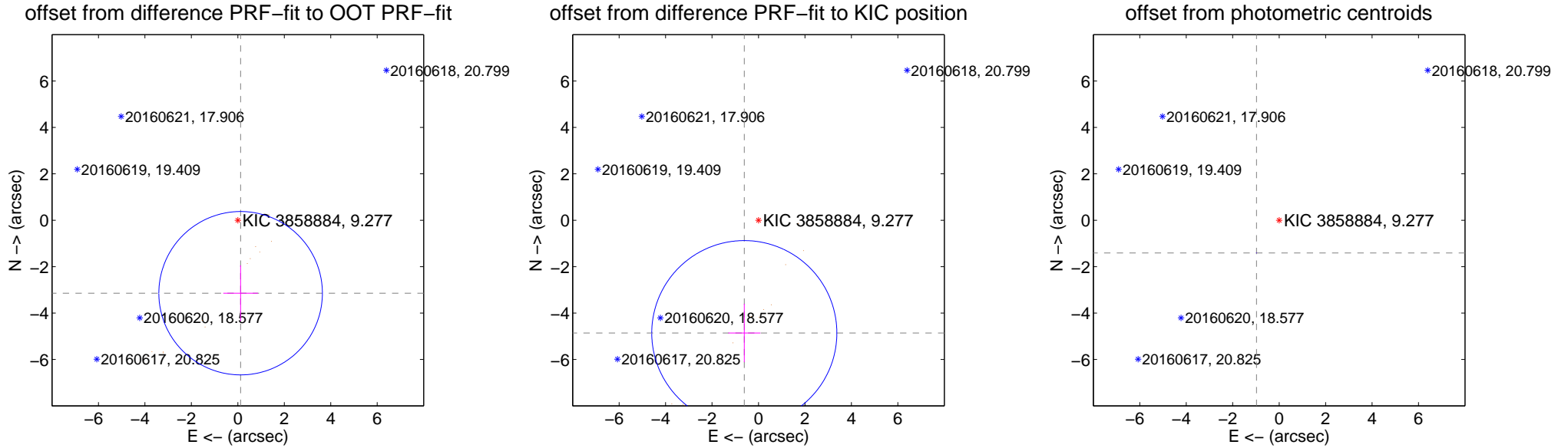
## DV Centroid Data

Supplemental centroid analysis for 003858884-01. **Kepler magnitude: 9.28.** Transit SNR -1.00

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

The direct PRF centroid is offset from the target star catalog position by about 1.23 arcsec

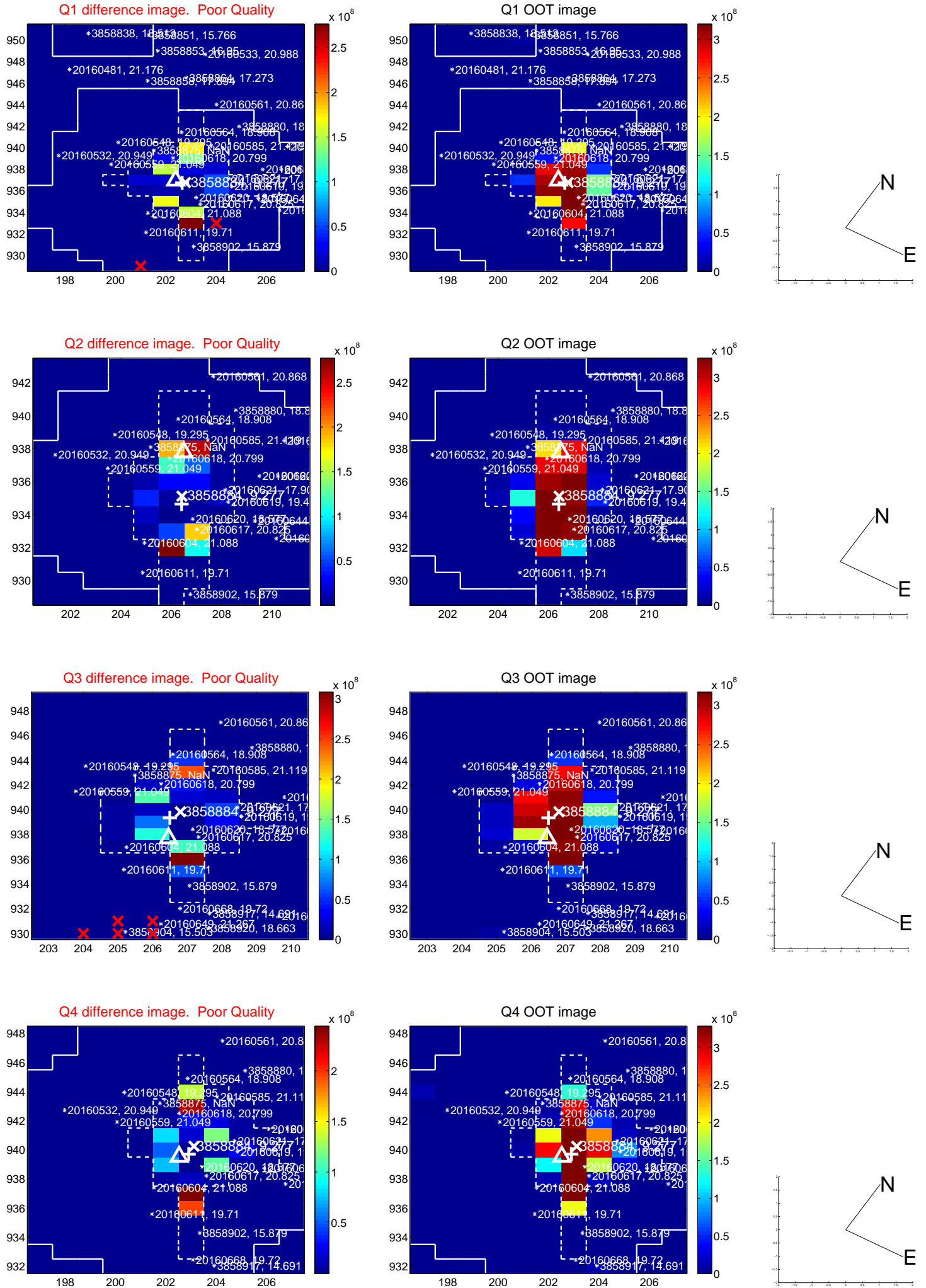
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.146 \pm 1.173$	2.68	$-0.120 \pm 0.747$	$-3.144 \pm 1.201$
PRF-fit source offset from KIC position	<b><math>4.899 \pm 1.328</math></b>	<b>3.69</b>	$0.611 \pm 0.692$	$-4.861 \pm 1.257$
photometric centroid source offset	<b><math>1.71 \pm 0.00</math></b>	<b>2791.12</b>	$0.98 \pm 0.00$	$-1.41 \pm 0.00$



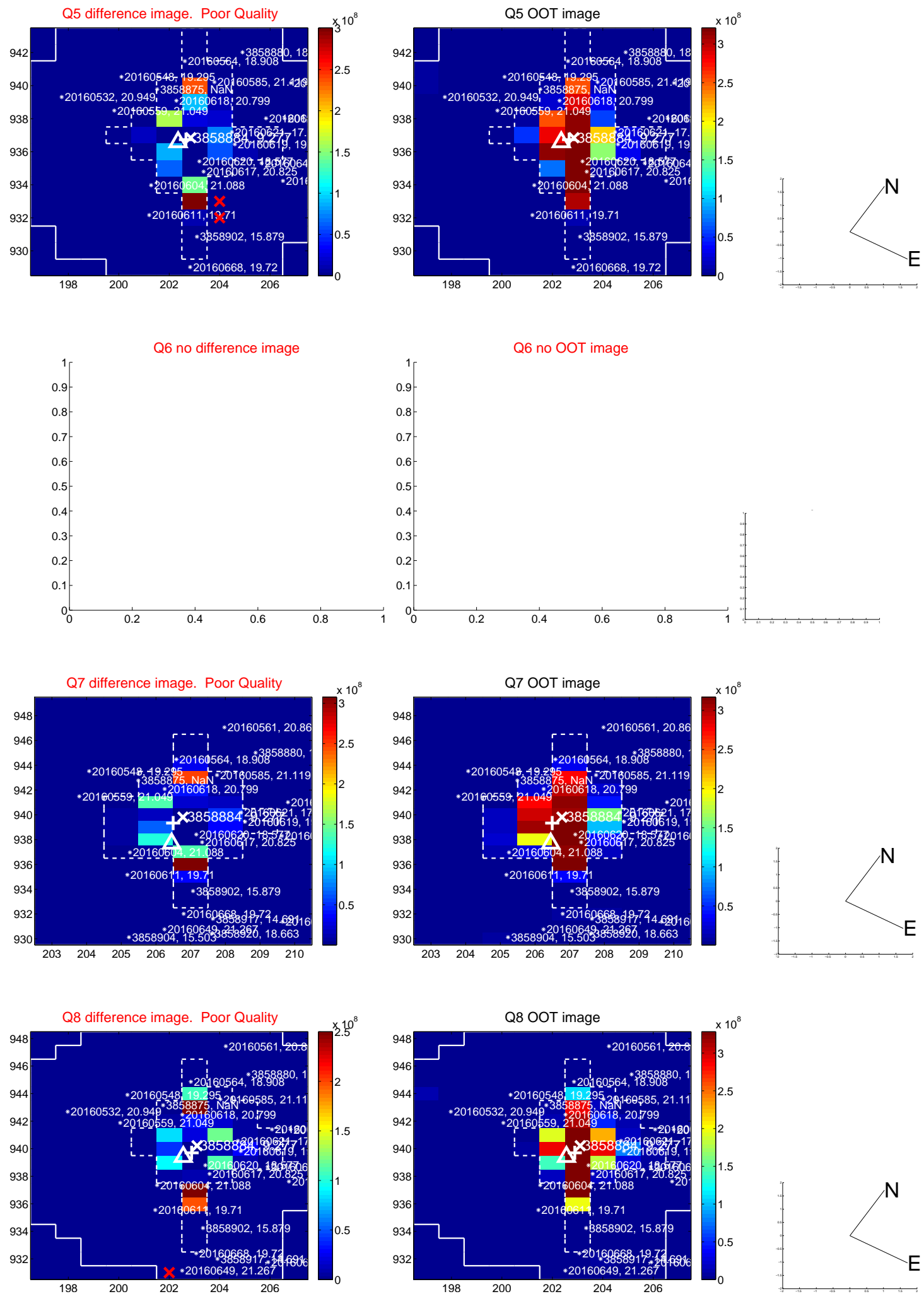
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



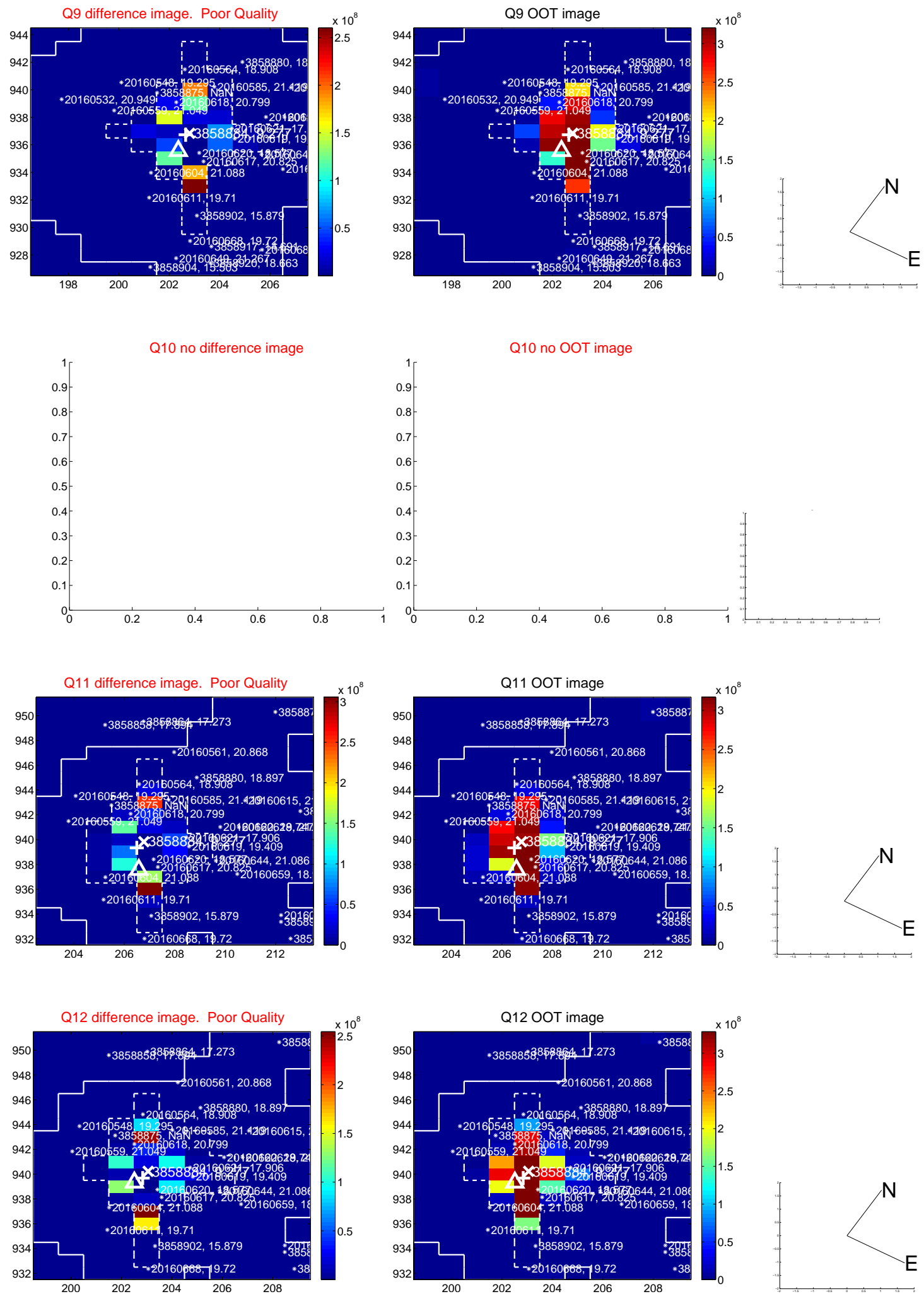
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



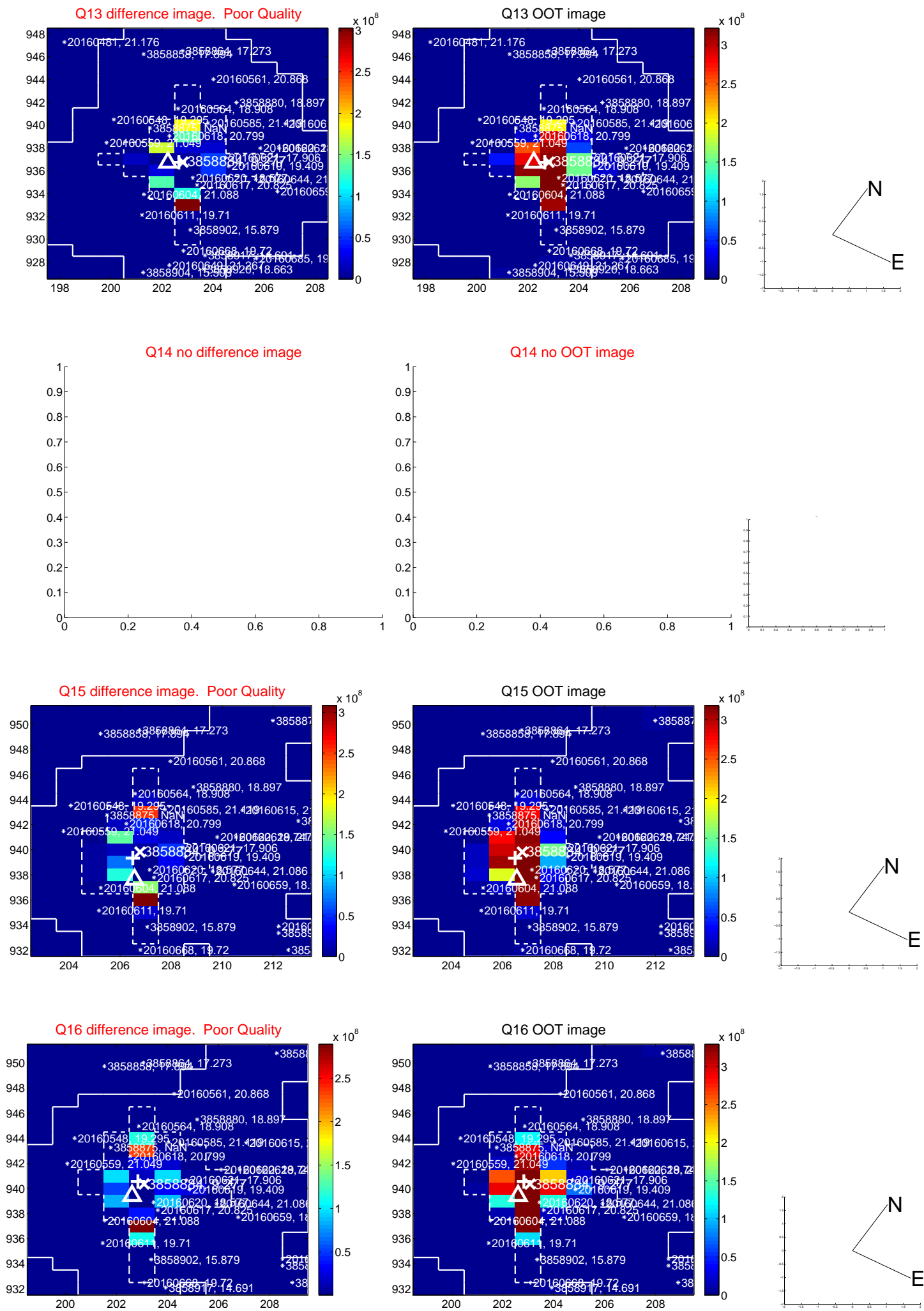
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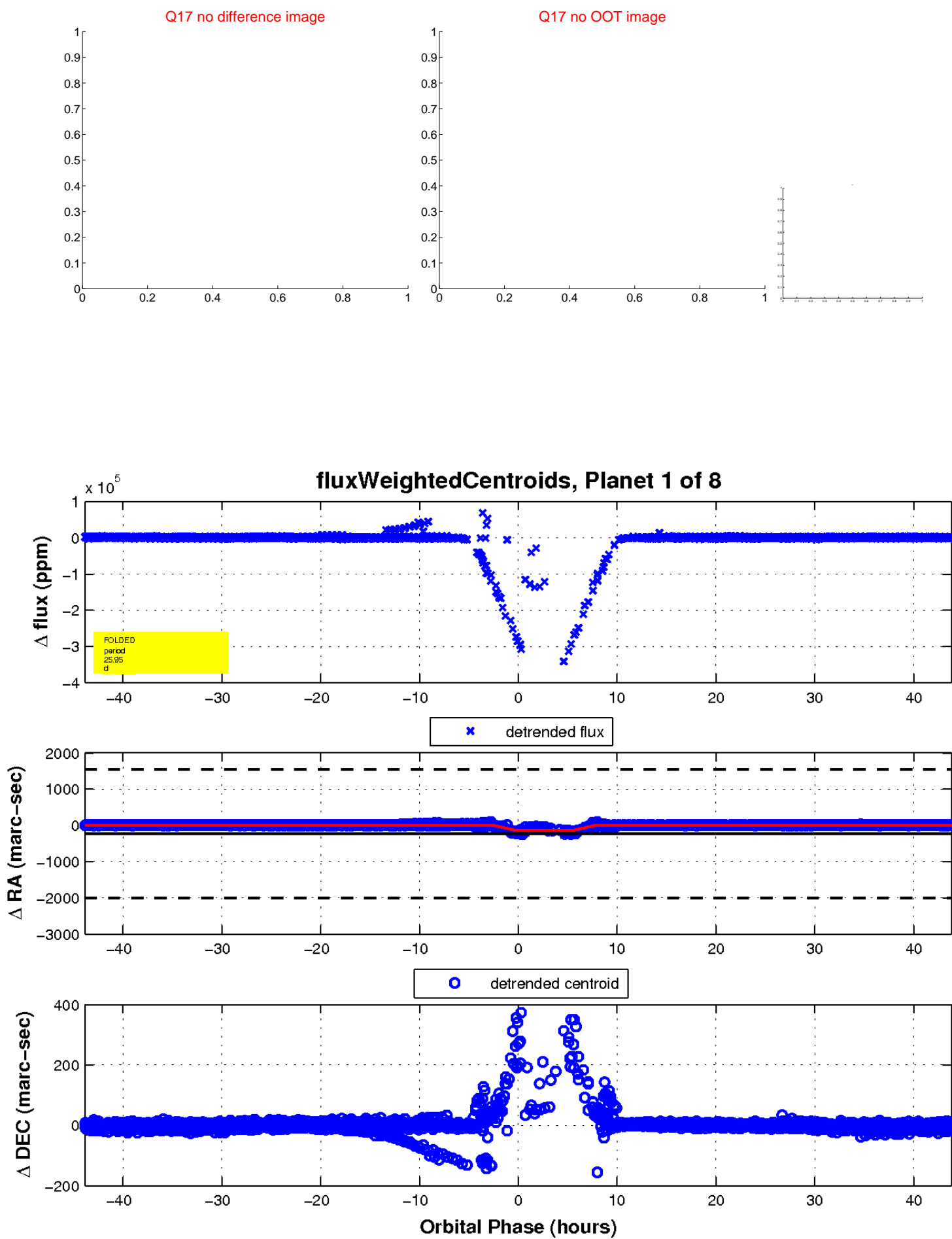
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

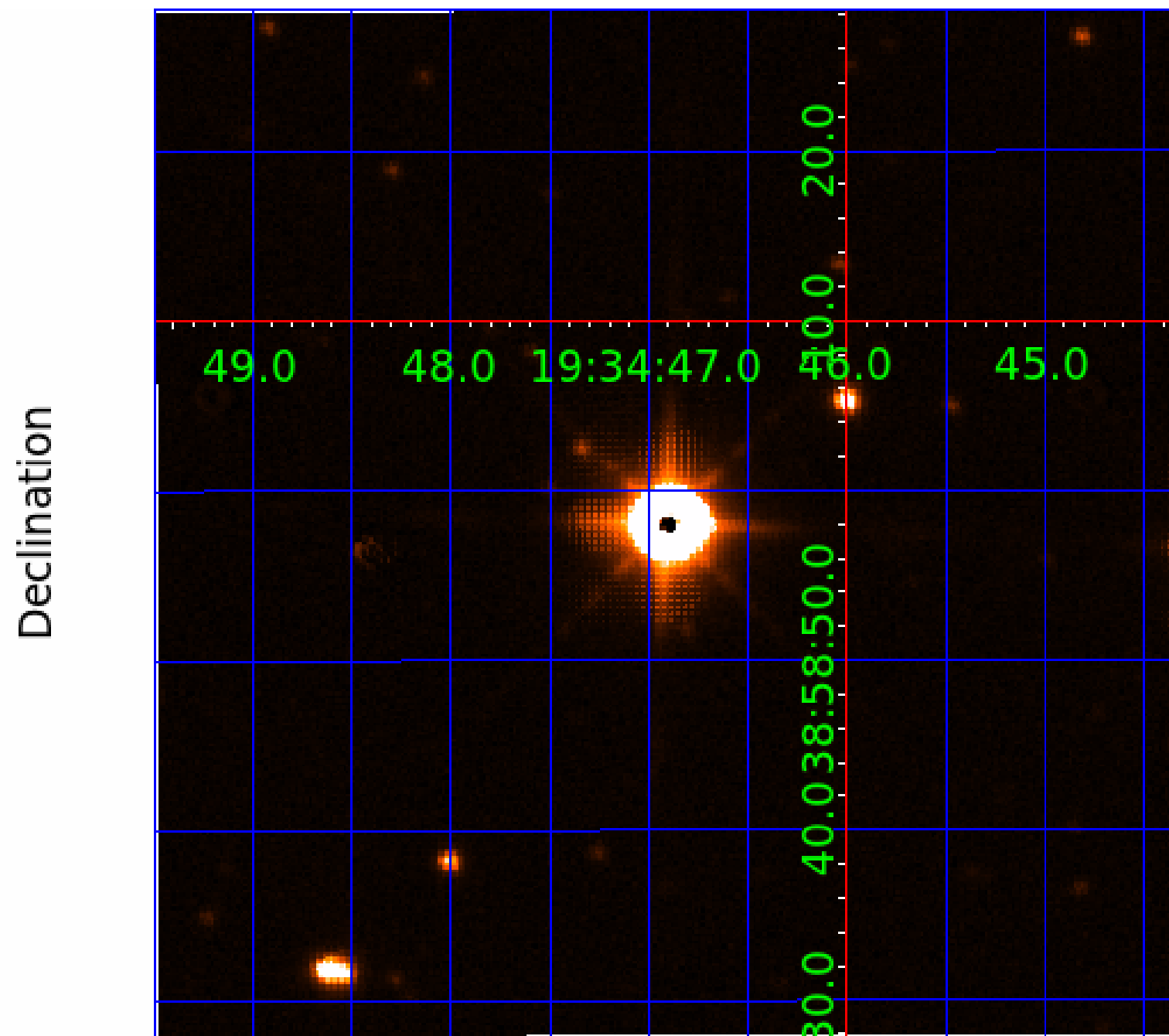


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image



# KIC 003858884

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003858884-01	OBS	6371.01	25.951589	154.890392	398557.6	9.000	4108.7	-1.0	1.73	6569	10.48	157.96
003858884-02	OBS	No	25.951660	148.930604	337130.8	12.000	3105.5	-1.0	1.73	6569	9.01	157.96
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## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003858884-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
003858884-02	OBS	FP	0.00	1	0	0	0	SAME_NTL_PERIOD—CENT_SATURATED
003858884-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003858884-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

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

## Ephemeris Match Information For 003858884-02

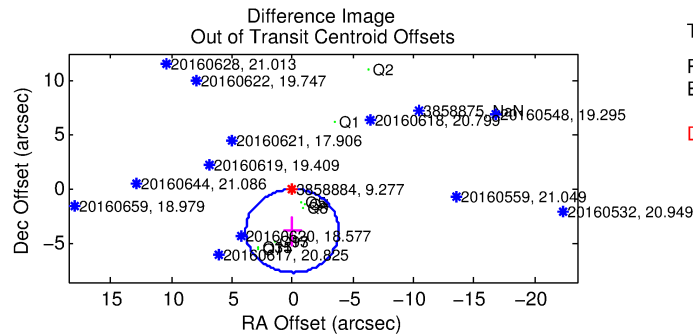
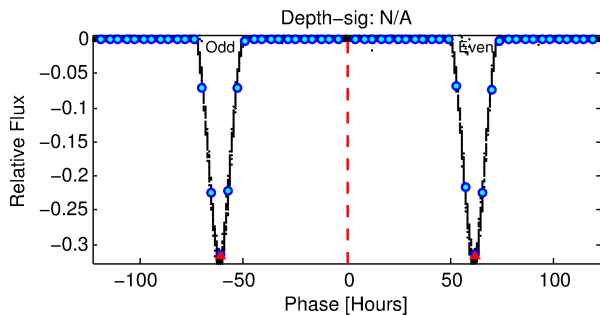
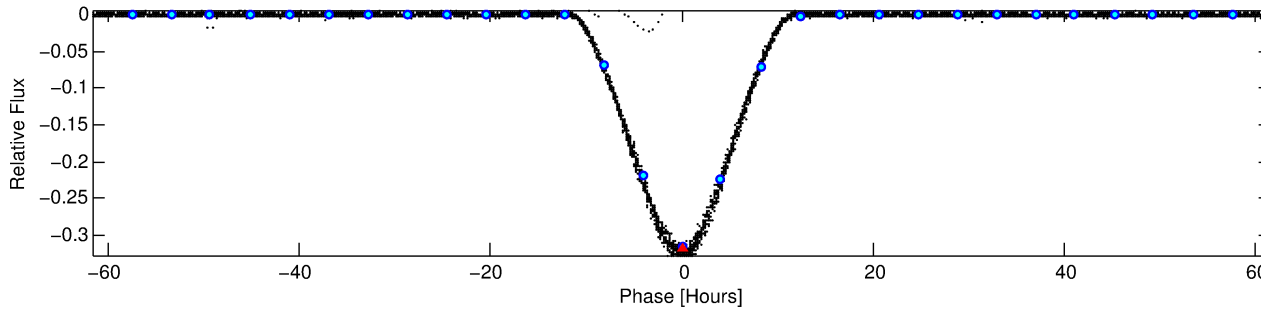
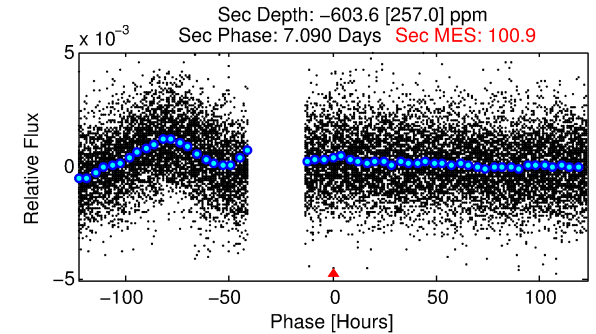
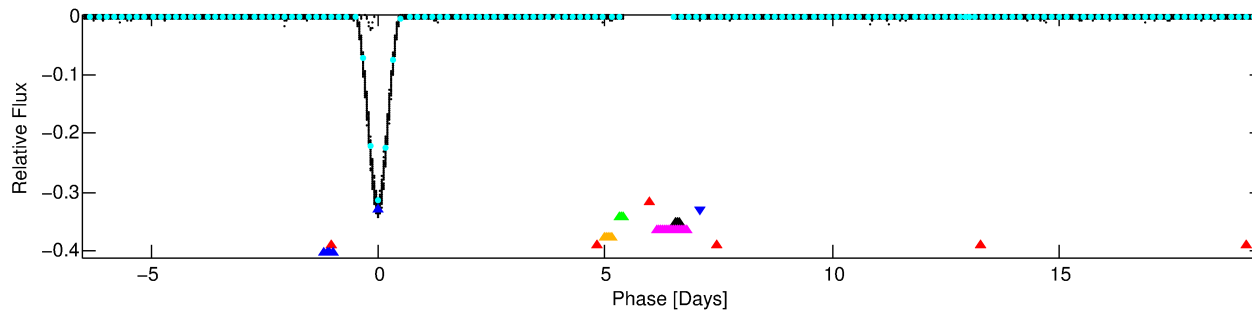
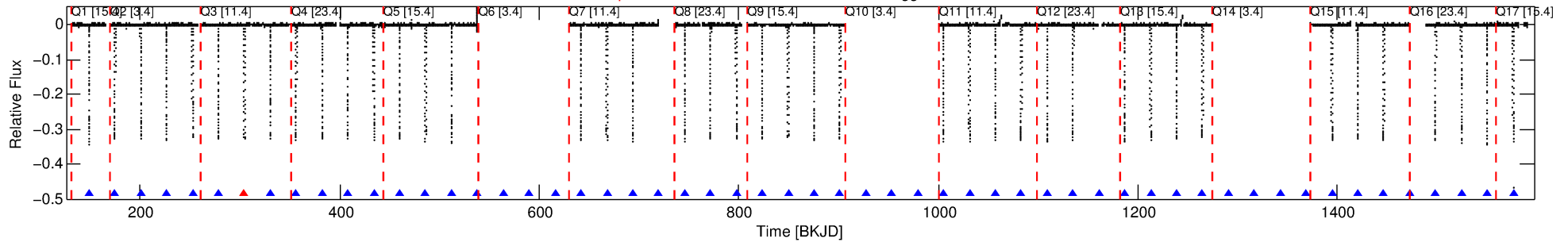
No Significant Match Found

# DV One-Page Summary

KIC: 3858884 Candidate: 2 of 8 Period: 25.952 d

KOI: K06371 Corr: No Ephemeris Match

Kp: 9.28 R\*: 1.73 Rs Teff: 6569.0 K Logg: 4.01 Fe/H: -0.500



TPS TCE Results:

Period = 25.95166 d  
Epoch = 148.9306 BKJD

DV fit results are unavailable

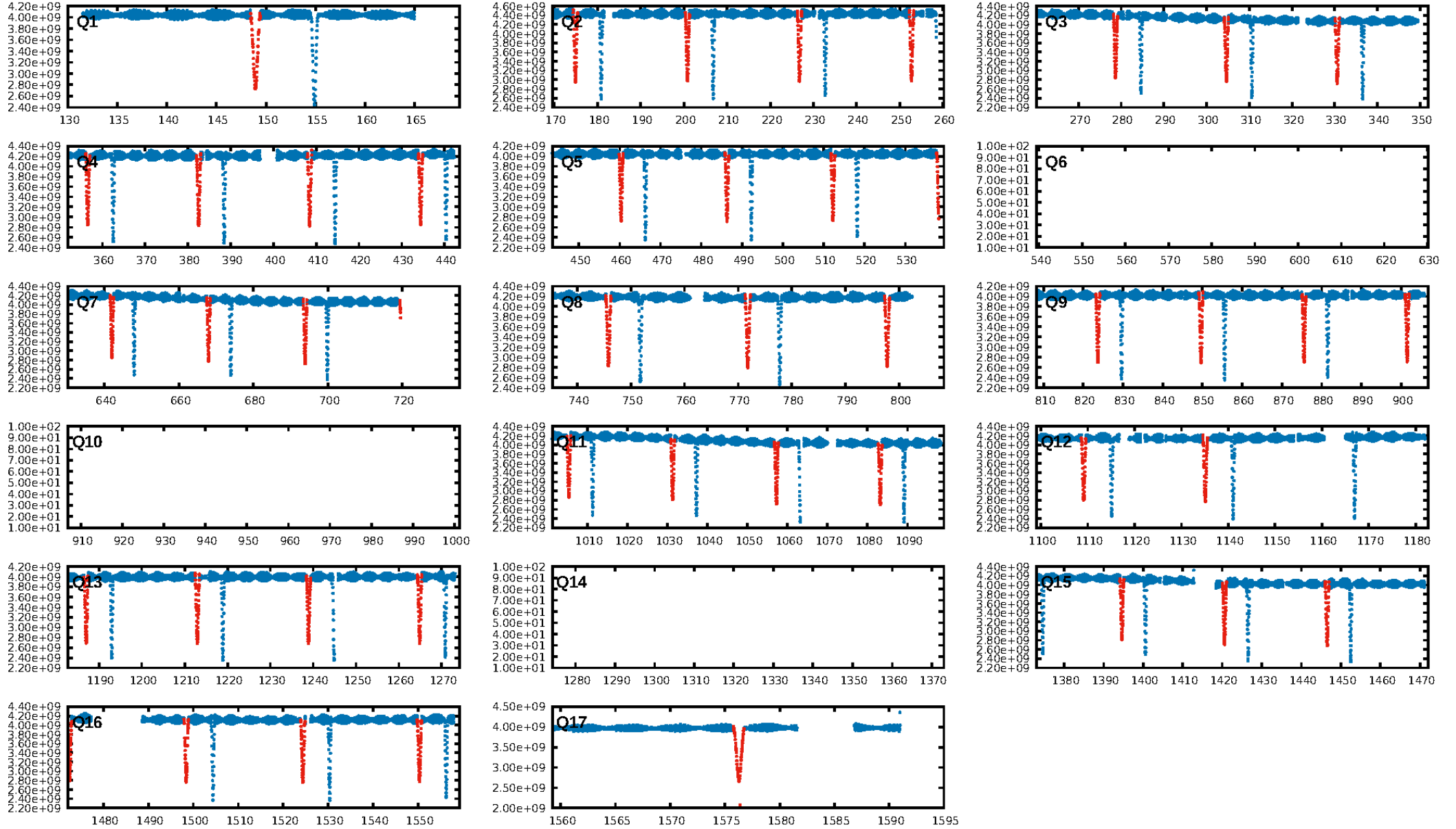
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]  
LongPeriod-sig: 0.2% [0.00σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.98 [41/42]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: 1.564 arcsec [2052.27σ]  
OotOffset-rm: 3.804 arcsec [2.97σ]  
KicOffset-rm: 5.410 arcsec [3.87σ]  
OotOffset-st: 1/4/2/5 [12]  
KicOffset-st: 1/4/2/5 [12]  
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DiffImageOverlap-fno: 1.00 [12/12]

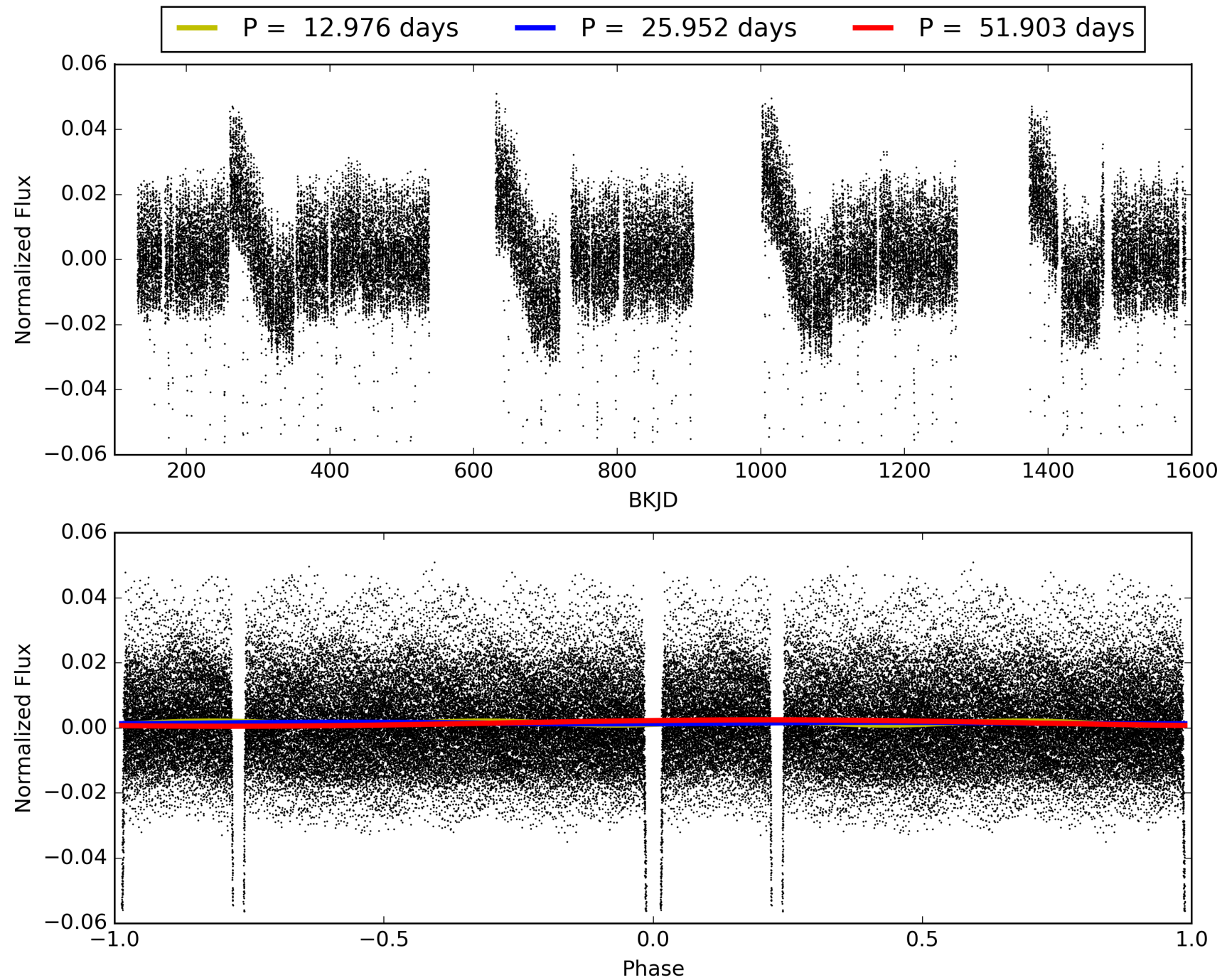
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003858884-02, PDC Light Curves



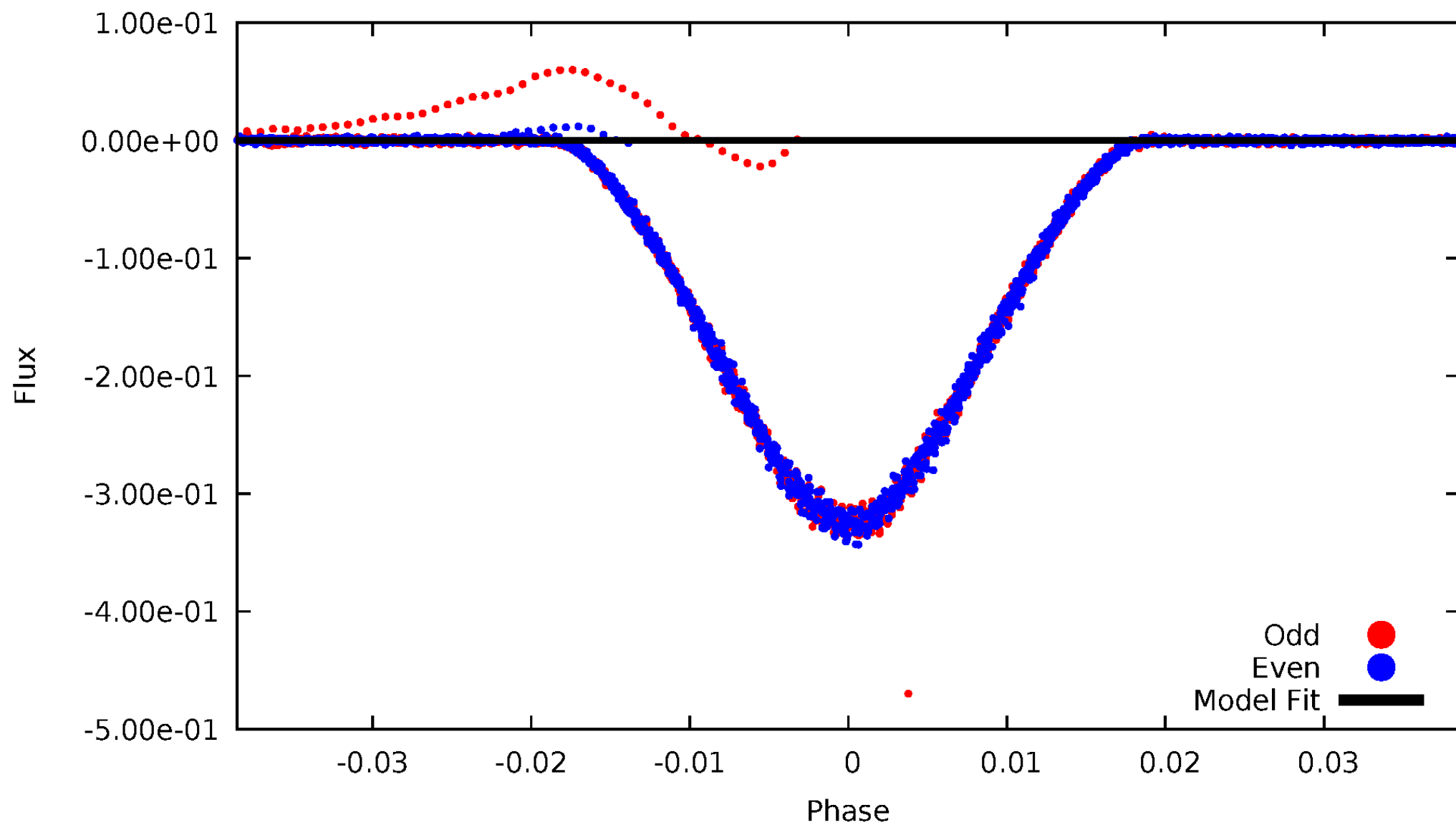
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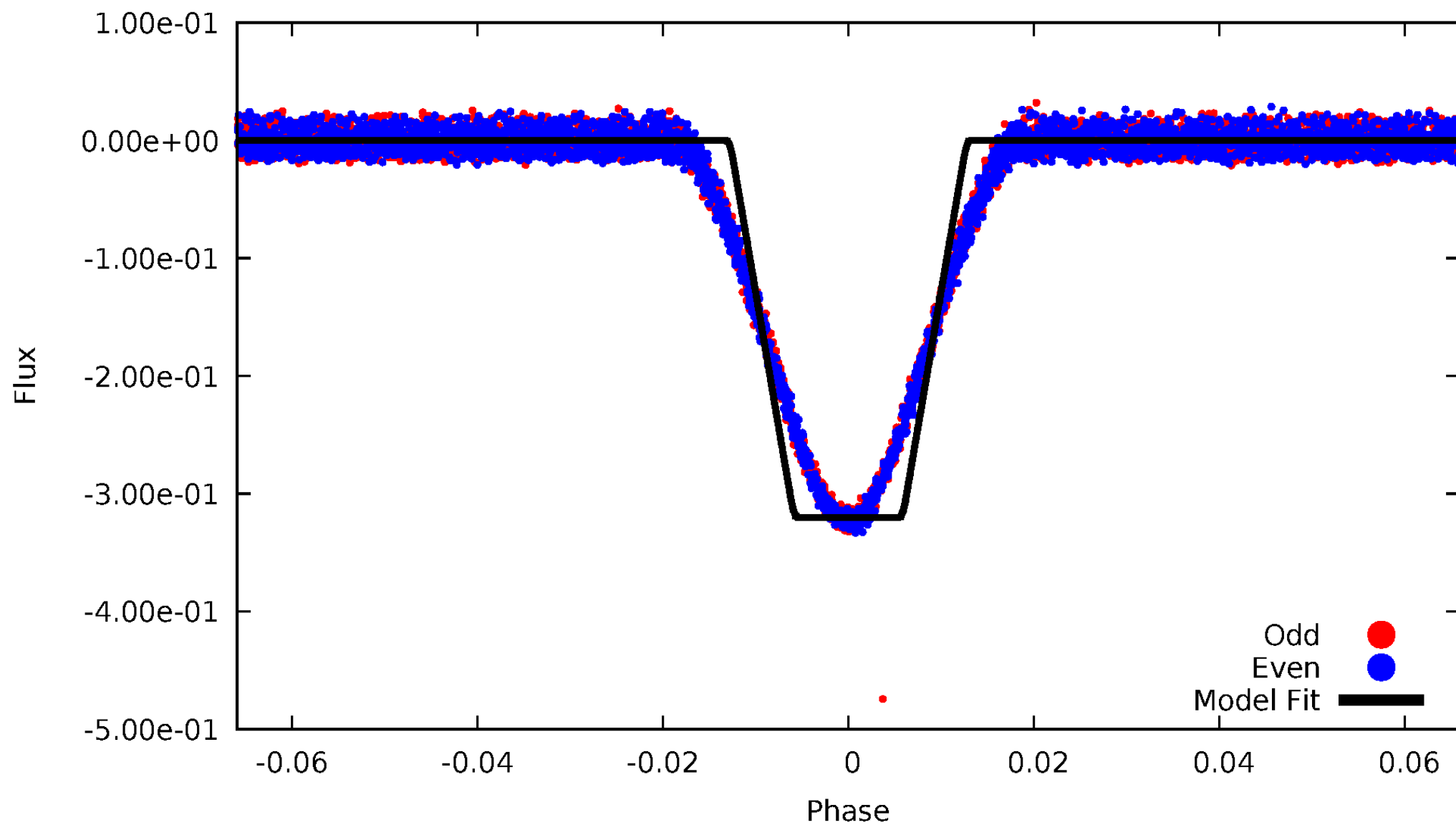
# DV Odd/Even

TCE 003858884-02



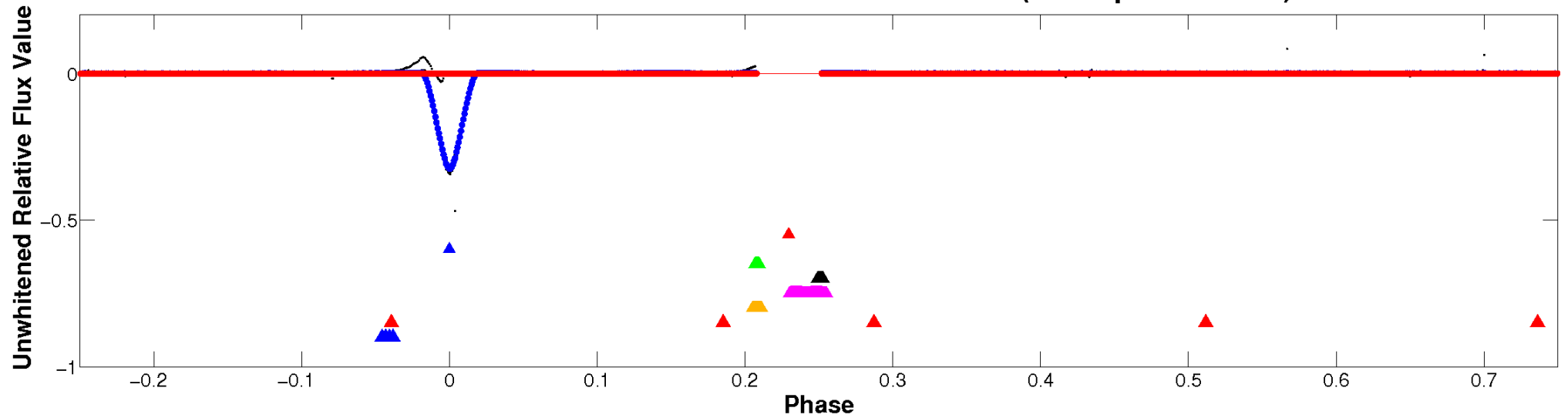
# ALT Odd/Even

TCE 003858884-02



# Non-Whitened Vs. Whitened Light Curve

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

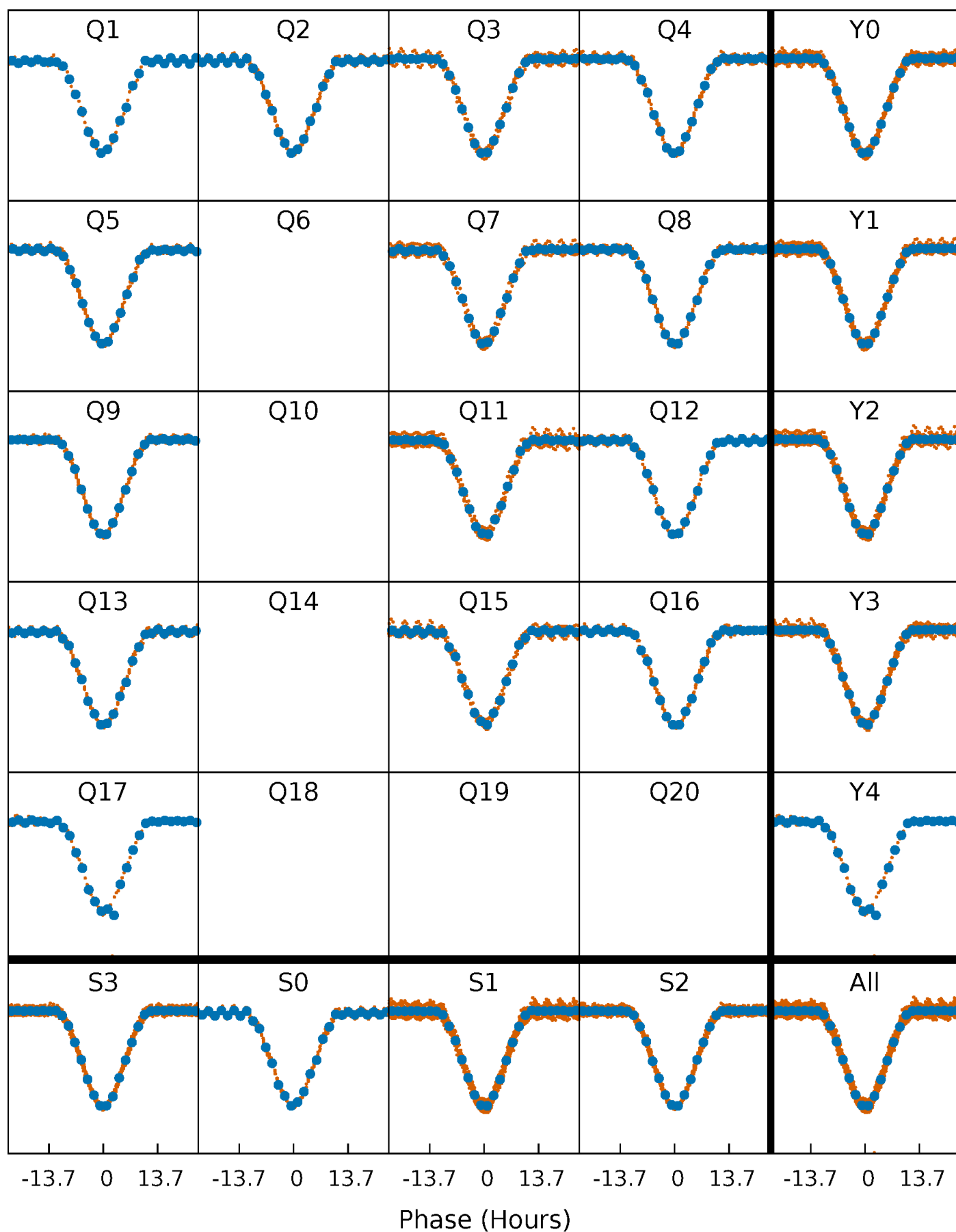


**Planet 2 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



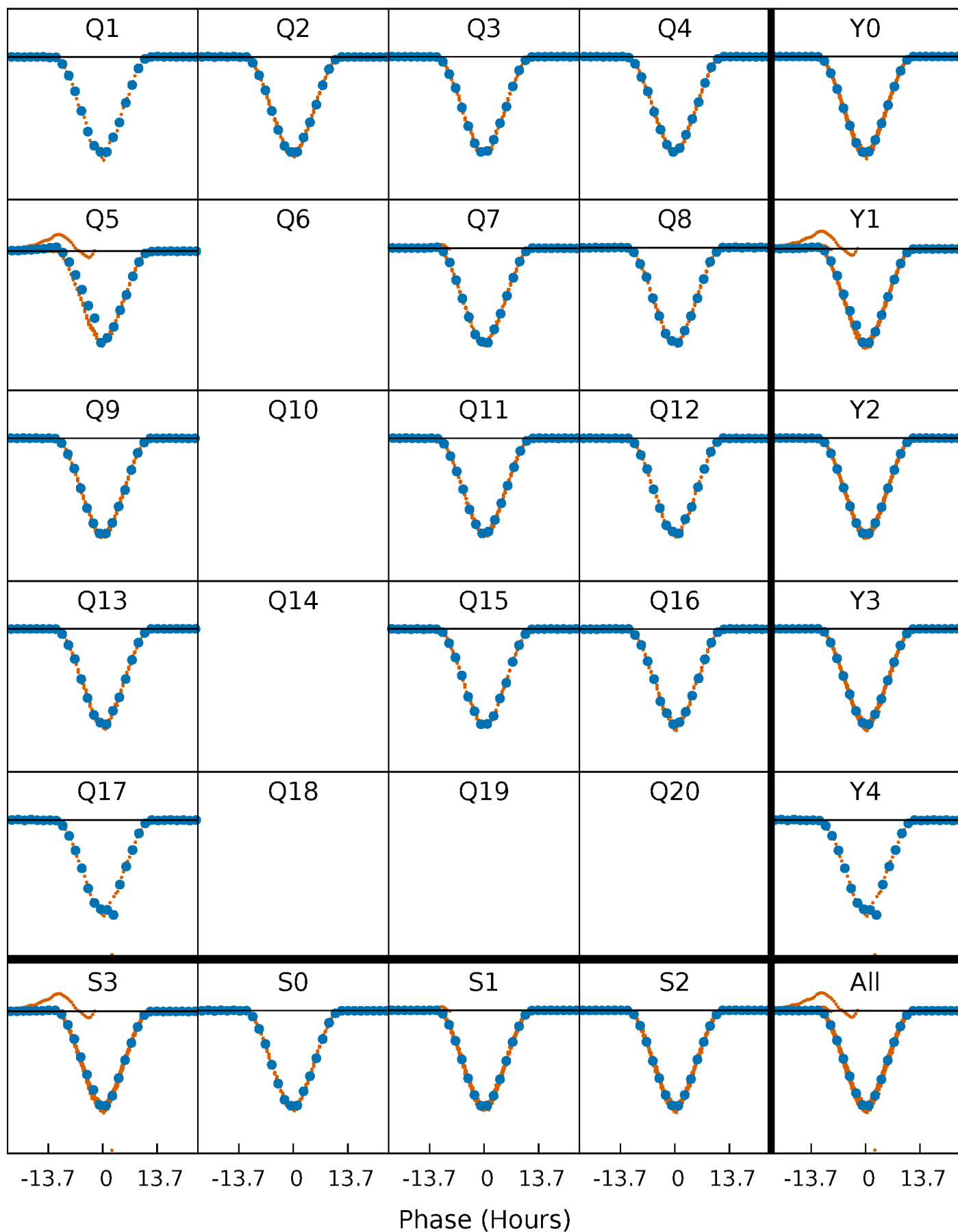
## PDC Quarter-Phased Transit Curves

TCE 003858884-02    P= 25.951660 Days     $T_0=148.930604$  (BKJD)



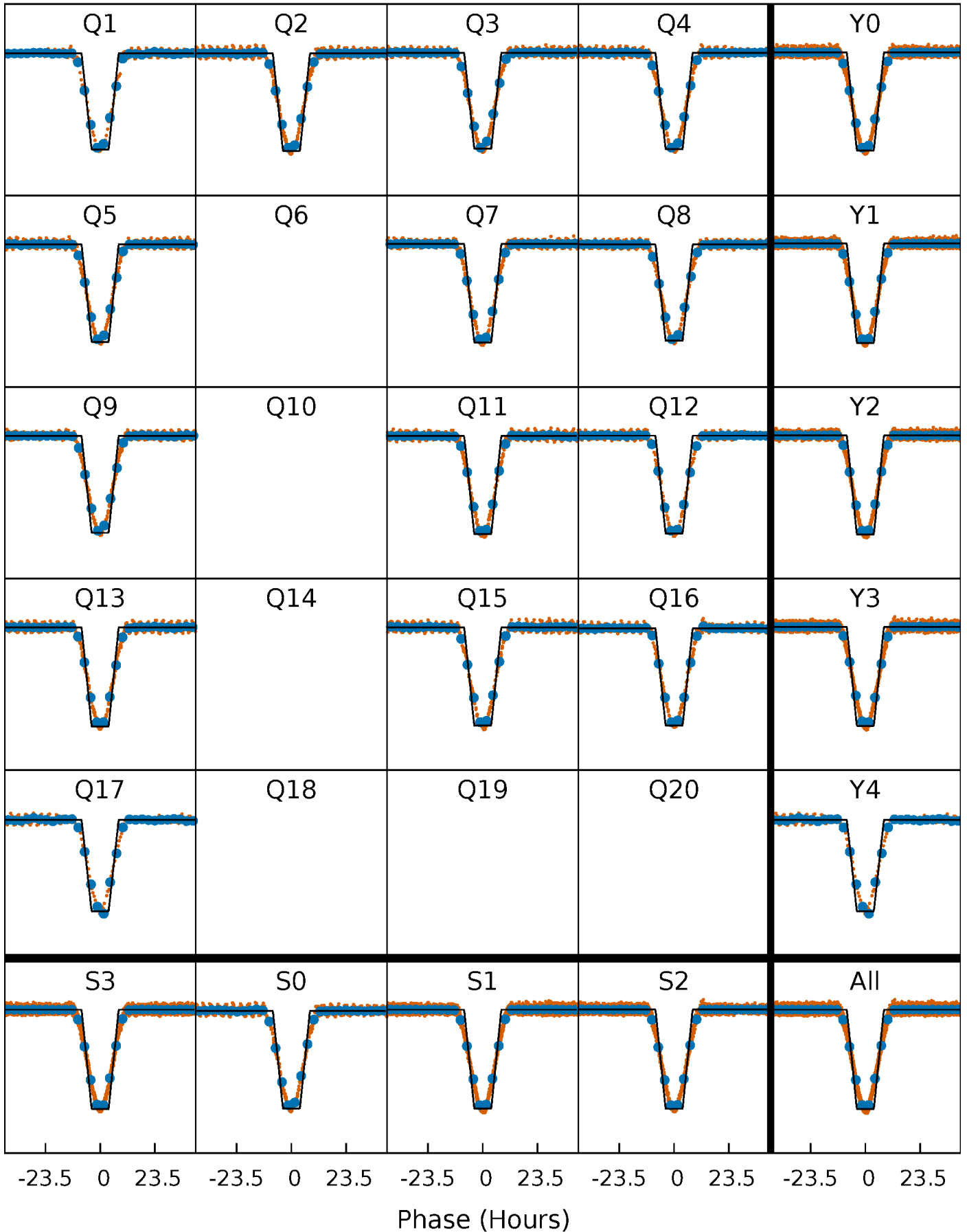
# DV Quarter-Phased Transit Curves

TCE 003858884-02 P= 25.951660 Days  $T_0=148.930604$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 003858884-02   P= 25.951660 Days    $T_0=148.932530$  (BKJD)

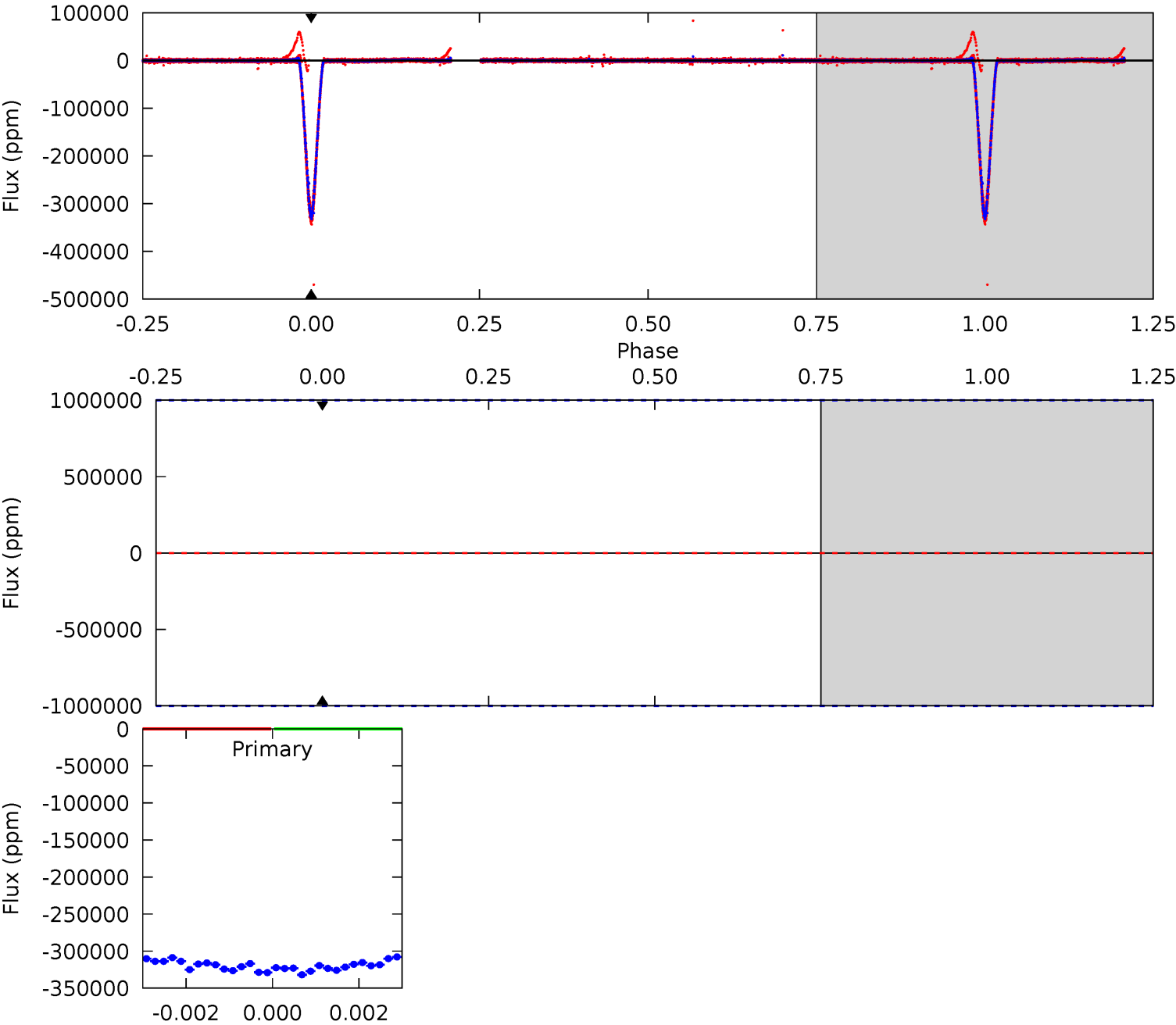




# DV Model-Shift Uniqueness Test

003858884-02, P = 25.951660 Days, E = 122.978944 Days

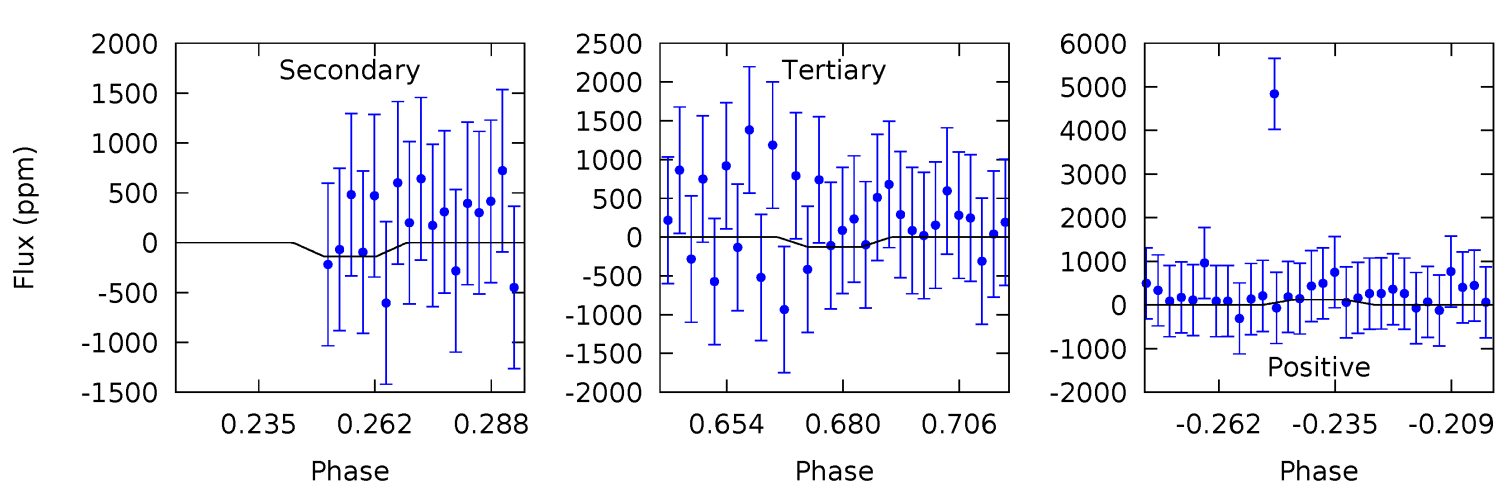
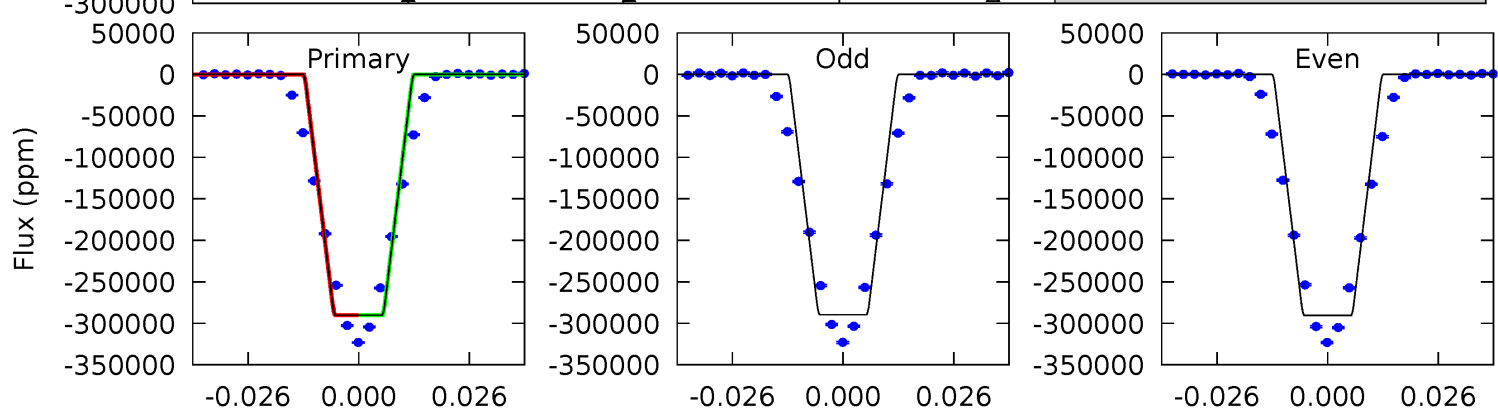
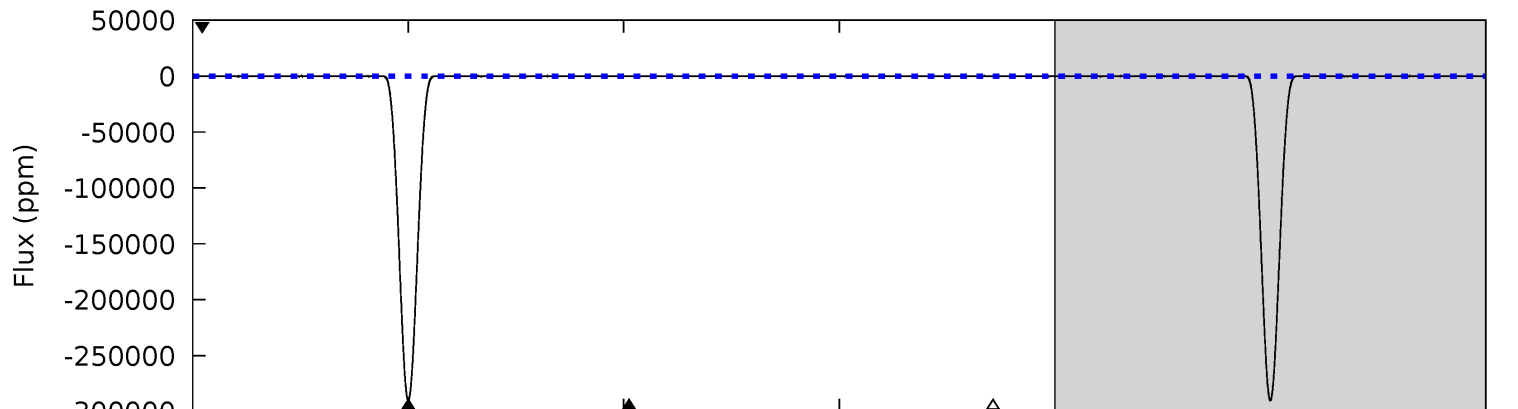
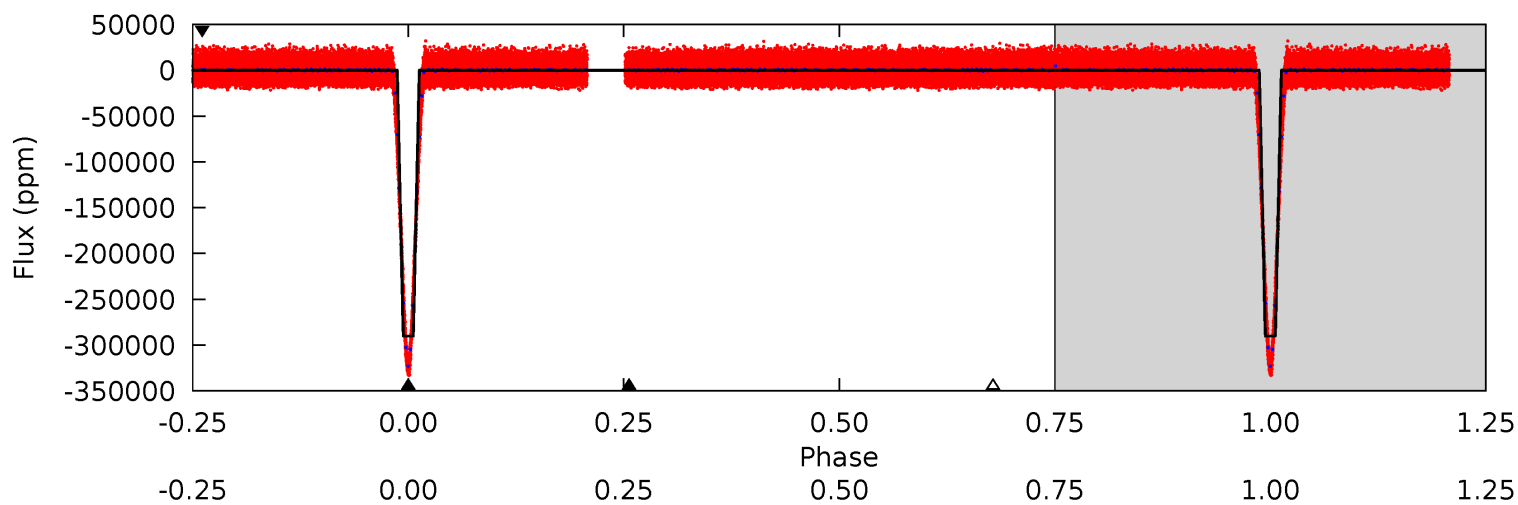
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

003858884-02, P = 25.951660 Days, E = 122.980870 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
1139	0.55	0.51	0.48	4.84	2.22	0.33	1138	1138	0.04	0.07	2.13	1.00	0.00	0.19



### Stellar Parameters For KIC 003858884

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6569^{+188}_{-236}$	$4.008^{+0.357}_{-0.153}$	$-0.500^{+0.300}_{-0.300}$	$1.729^{+0.428}_{-0.642}$	$1.110^{+0.164}_{-0.164}$	$0.302^{+0.809}_{-0.129}$
	+3%/-4%	+9%/-4%	+60%/-60%	+25%/-37%	+15%/-15%	+268%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 003858884-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$0 \pm 1000000$	$15.53^{+15.62}_{-9.99}$	$1240^{+97}_{-138}$	$-3774^{+26613}_{-17227}$	$-38.025^{+14182.970}_{-10659.941}$
Alt.	$-139 \pm 255$	$101.28^{+27.80}_{-24.84}$	$1241^{+94}_{-123}$	$-1748^{+3823}_{-366}$	$0.230^{+0.518}_{-0.416}$

$T_{max}$  = 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

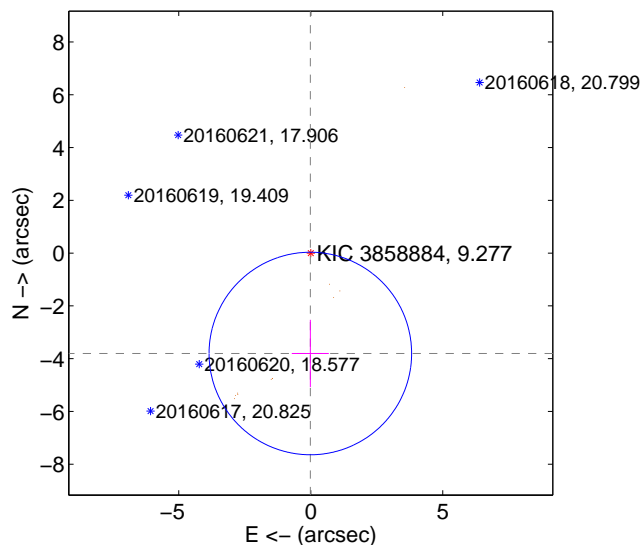
Supplemental centroid analysis for 003858884-02. **Kepler magnitude: 9.28.** Transit SNR -1.00

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

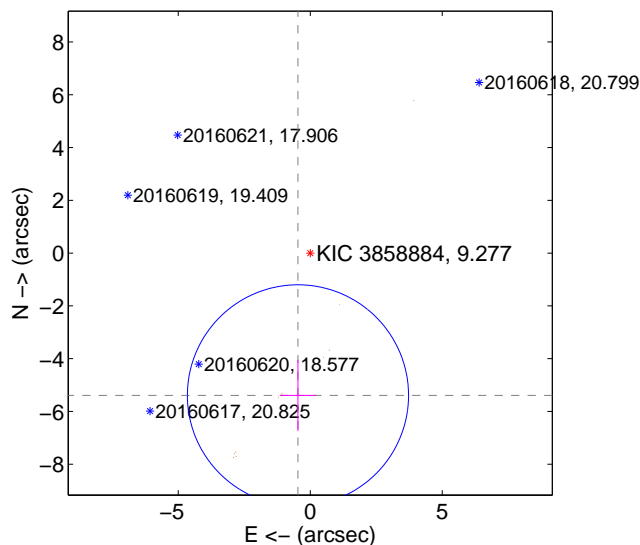
The direct PRF centroid is offset from the target star catalog position by about 0.75 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.804 \pm 1.279$	2.97	$0.016 \pm 0.700$	$-3.803 \pm 1.276$
PRF-fit source offset from KIC position	<b><math>5.410 \pm 1.396</math></b>	<b>3.87</b>	$0.465 \pm 0.687$	$-5.390 \pm 1.344$
photometric centroid source offset	<b><math>1.56 \pm 0.00</math></b>	<b>2052.27</b>	$0.93 \pm 0.00$	$-1.26 \pm 0.00$

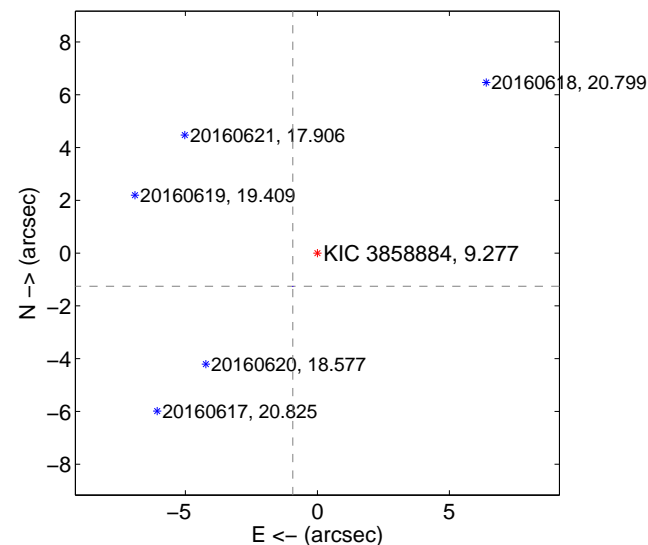
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

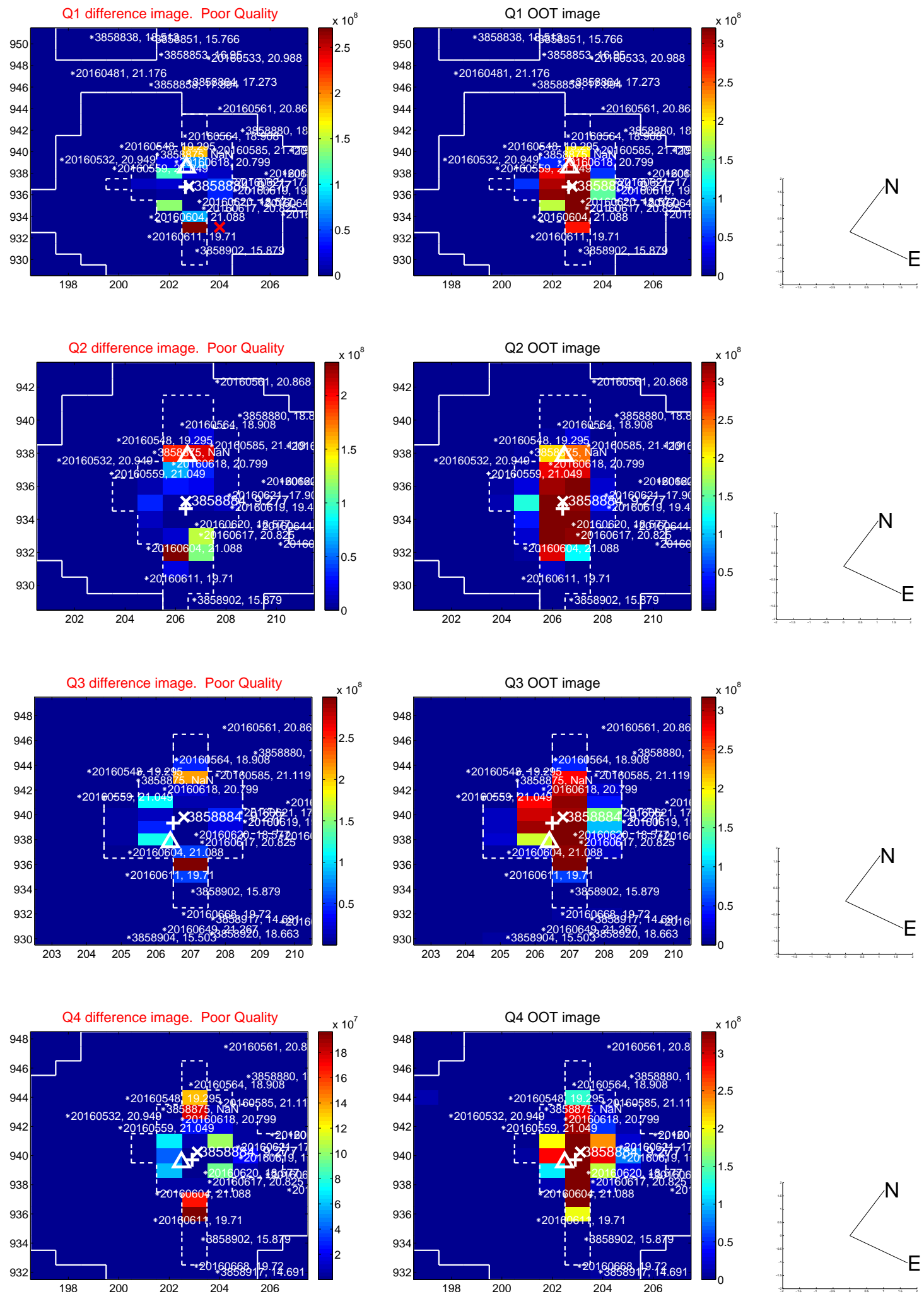


offset from photometric centroids

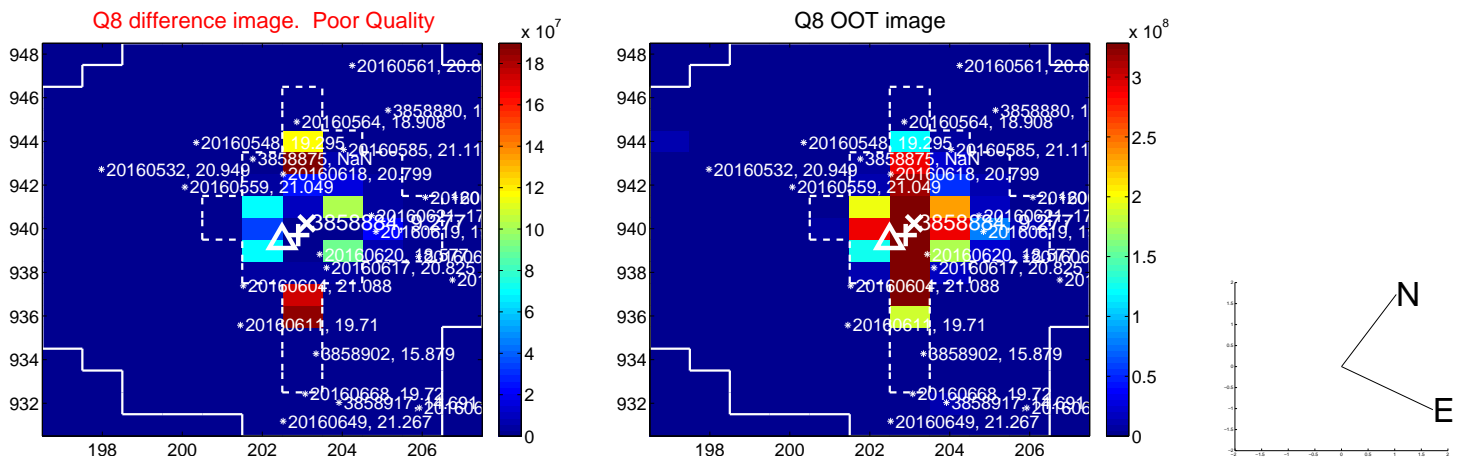
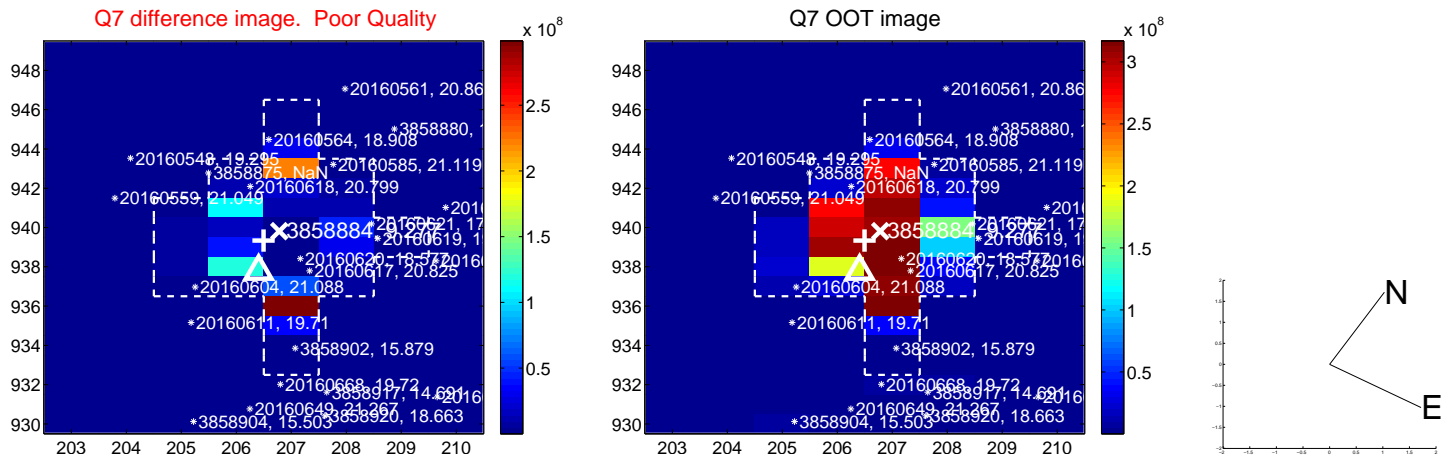
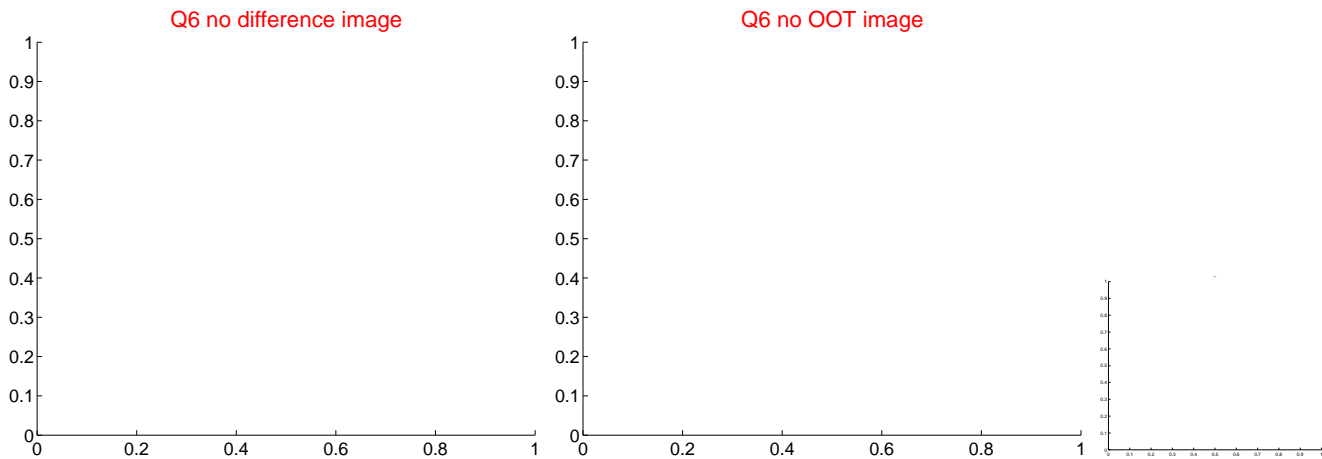
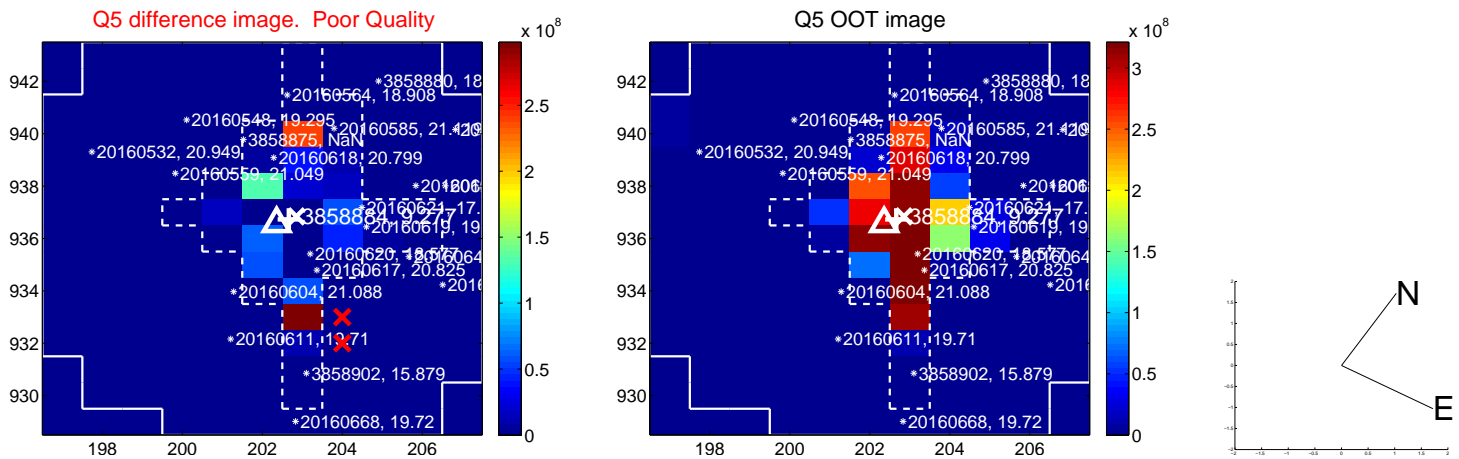


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

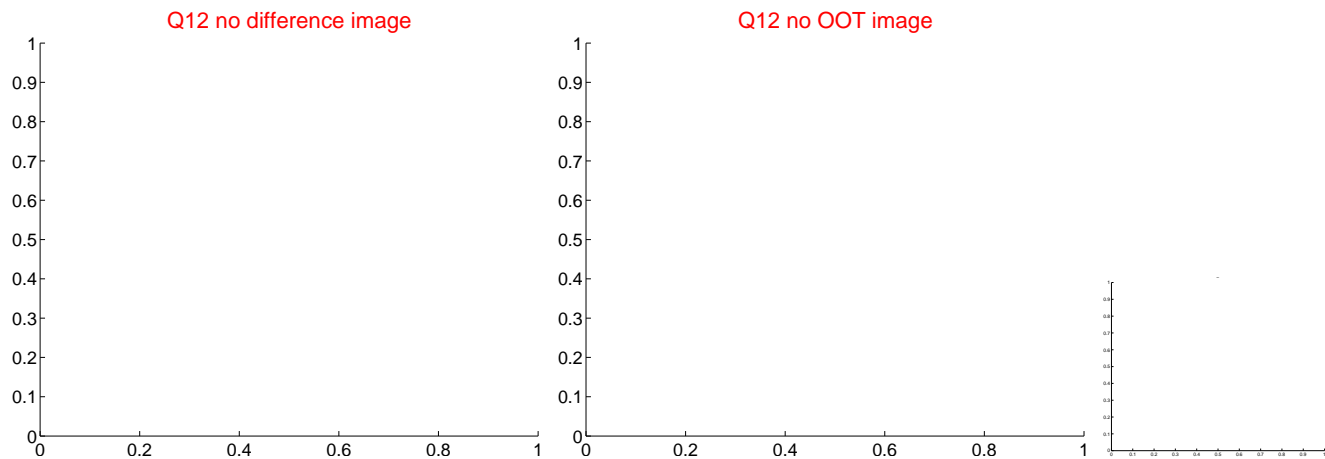
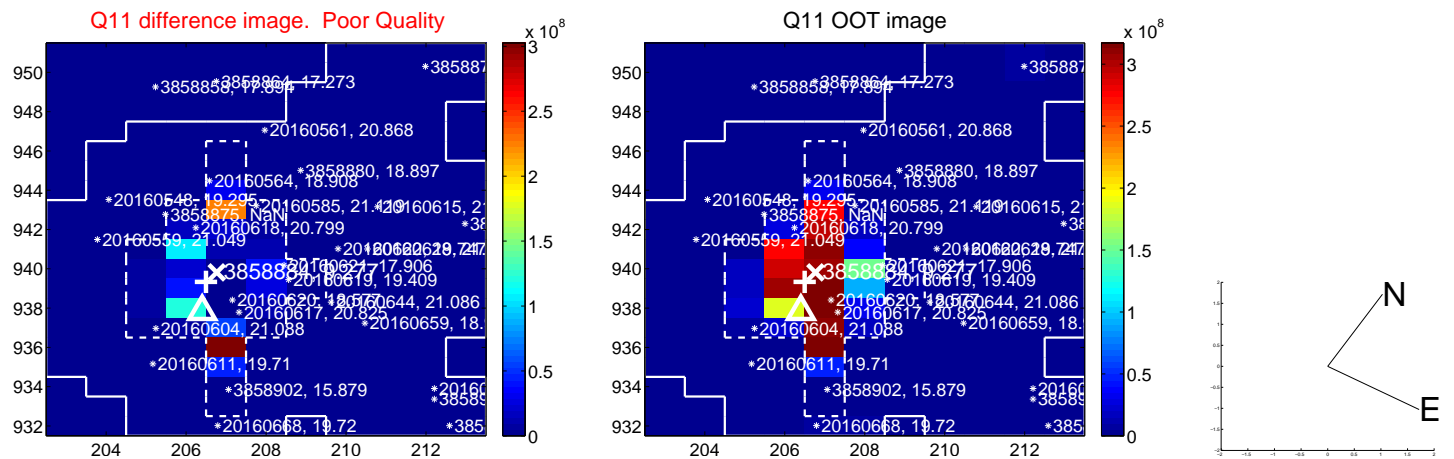
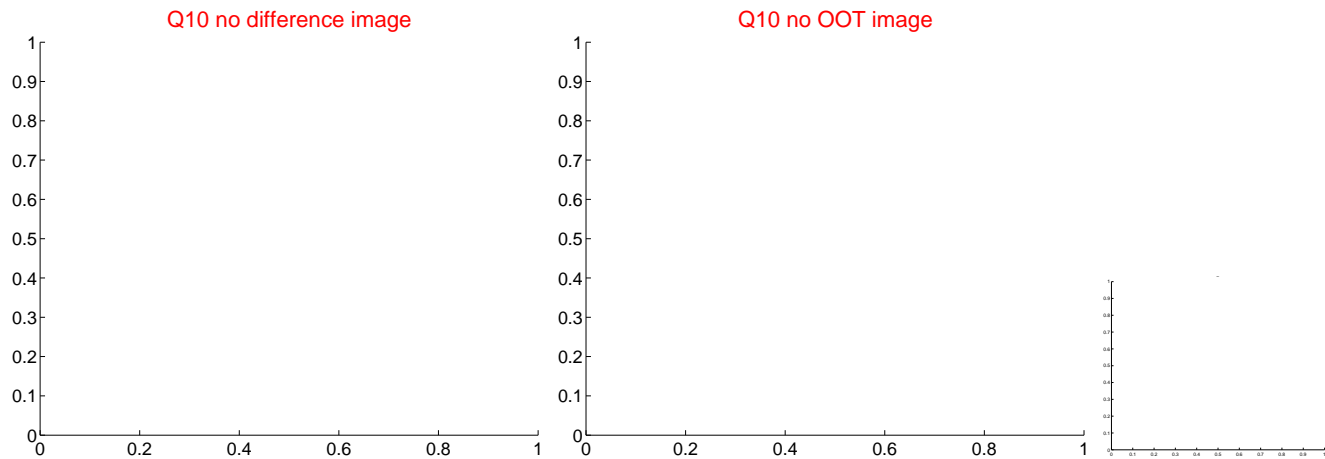
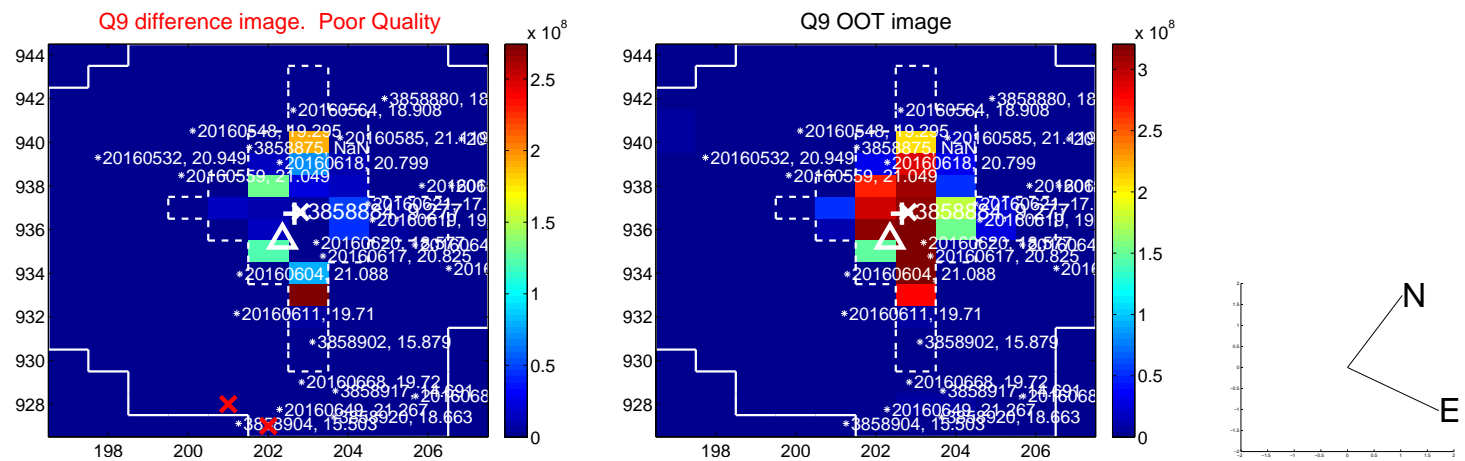
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



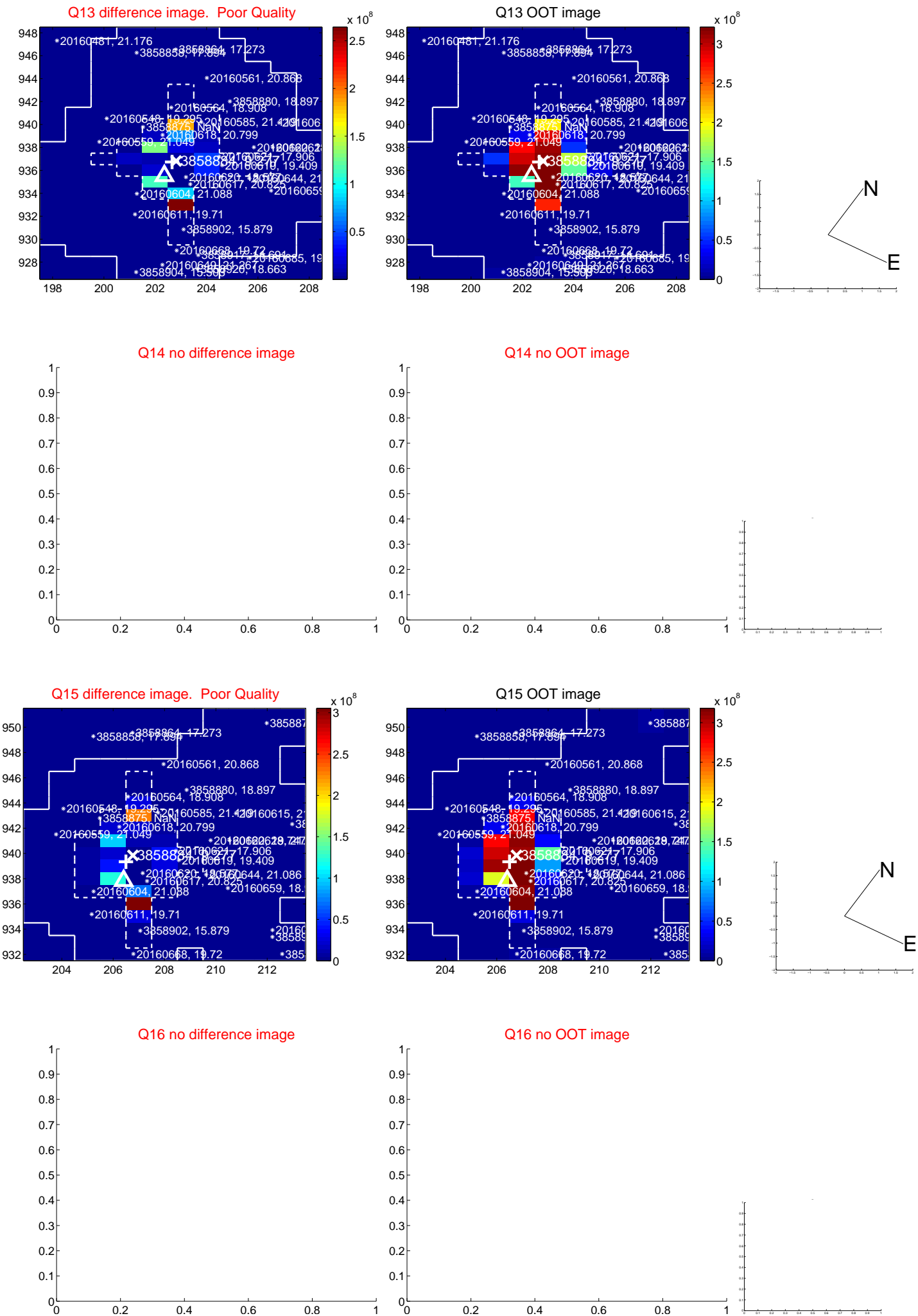
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

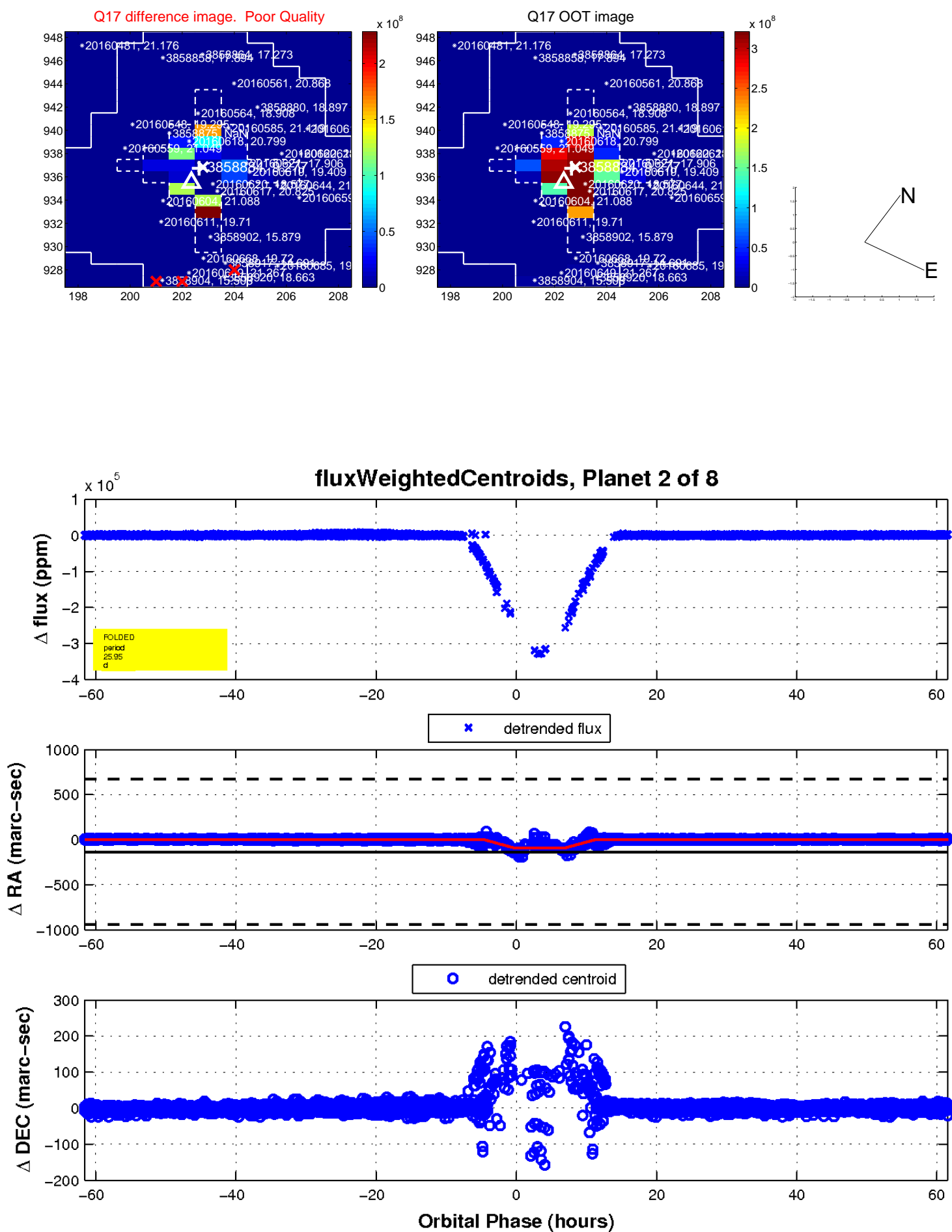


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

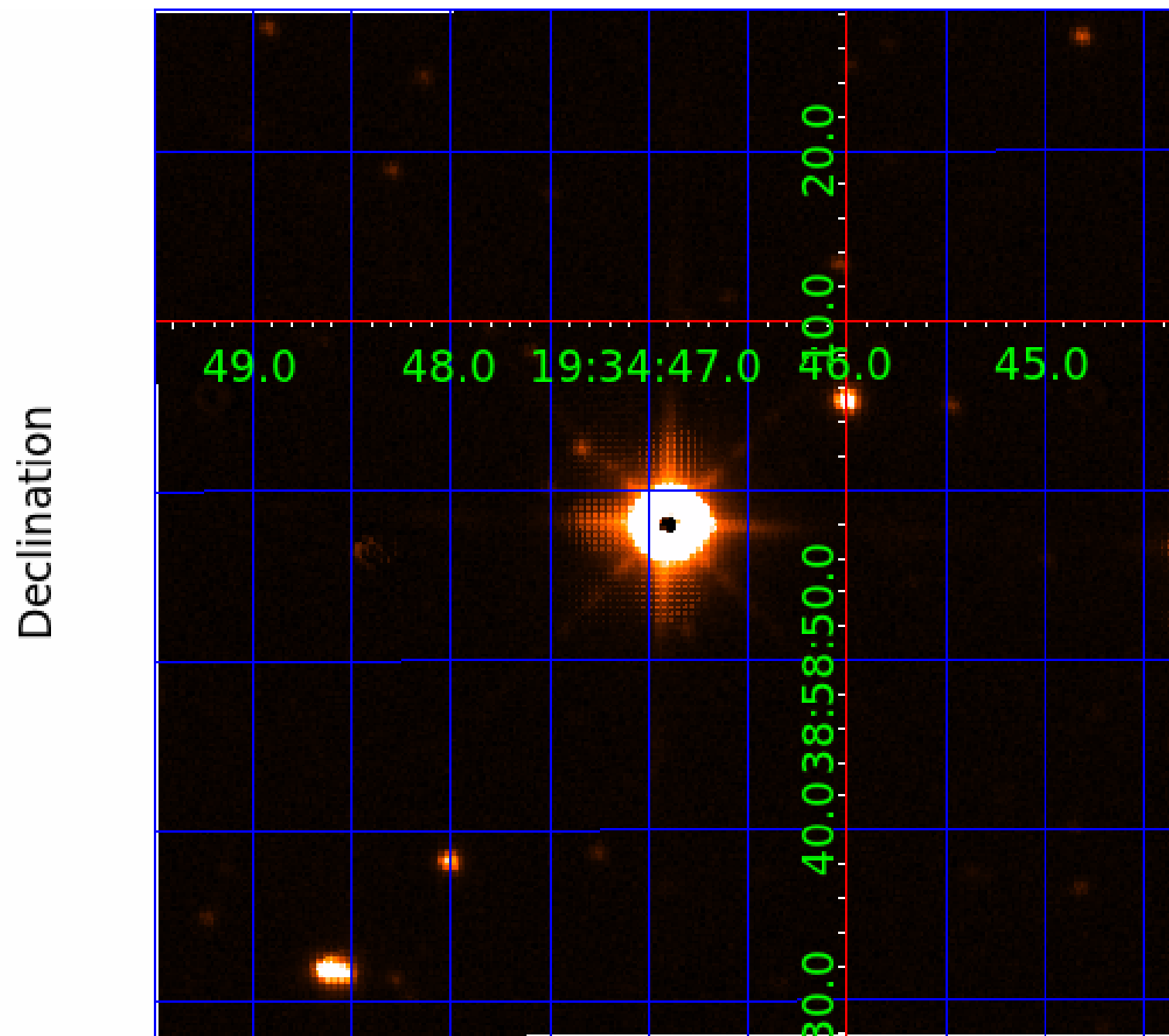




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image



# KIC 003858884

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003858884-01	OBS	6371.01	25.951589	154.890392	398557.6	9.000	4108.7	-1.0	1.73	6569	10.48	157.96
003858884-02	OBS	No	25.951660	148.930604	337130.8	12.000	3105.5	-1.0	1.73	6569	9.01	157.96
003858884-03	OBS	No	25.952955	154.298499	933.1	1.500	133.7	-1.0	1.73	6569	5.34	157.94
003858884-04	OBS	No	25.949884	155.492250	1865.7	1.500	183.2	-1.0	1.73	6569	7.55	157.97
003858884-06	OBS	No	25.948835	154.410203	465.9	7.500	119.8	-1.0	1.73	6569	3.76	157.98
003858884-07	OBS	No	265.342550	338.048118	4604.7	11.114	58.6	15.0	1.73	6569	21.10	7.12
003858884-08	OBS	No	363.387340	459.169809	6494.8	15.401	60.8	24.0	1.73	6569	16.20	4.68

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003858884-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
003858884-02	OBS	FP	0.00	1	0	0	0	SAME_NTL_PERIOD—CENT_SATURATED
003858884-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003858884-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

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

Ephemeris Match Information For 003858884-03

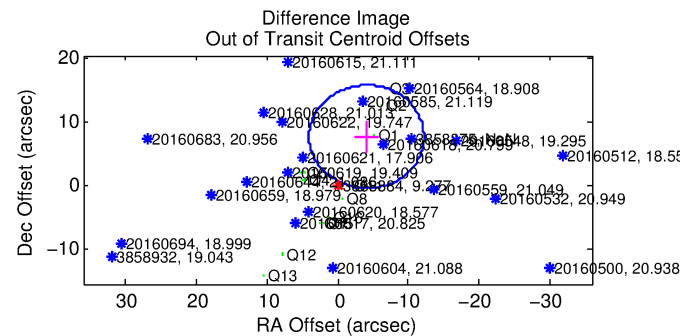
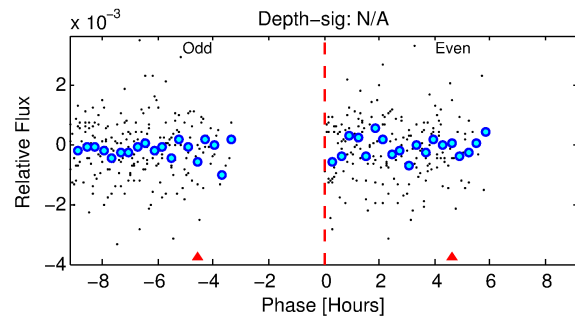
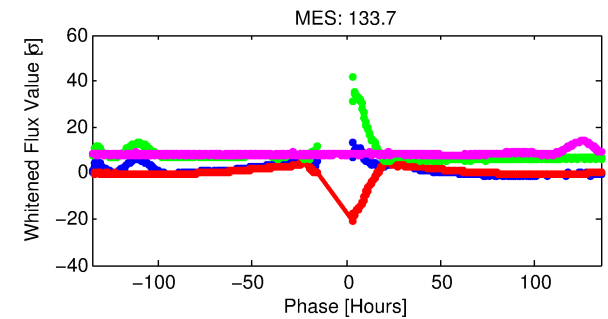
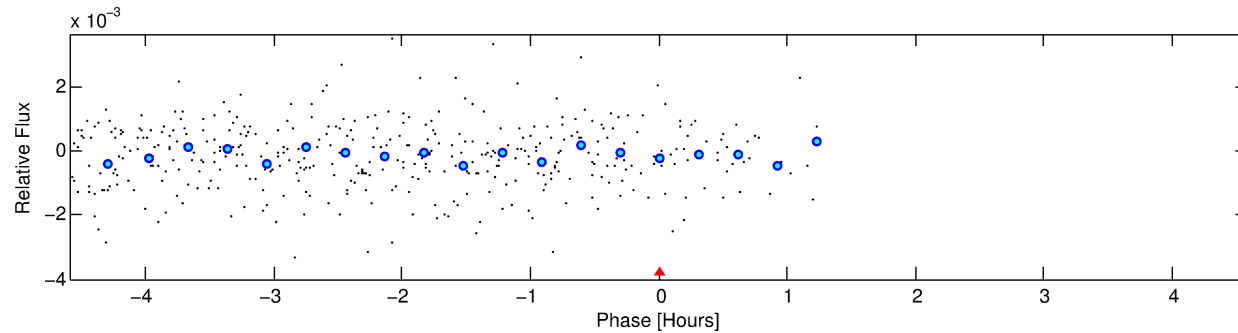
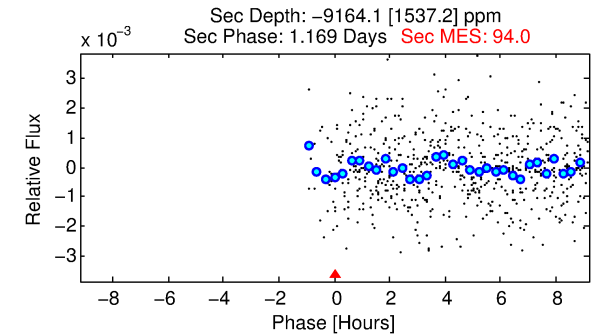
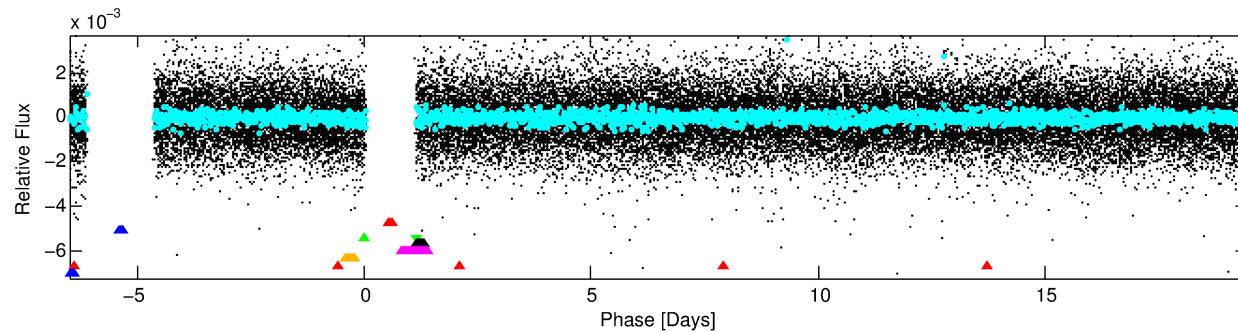
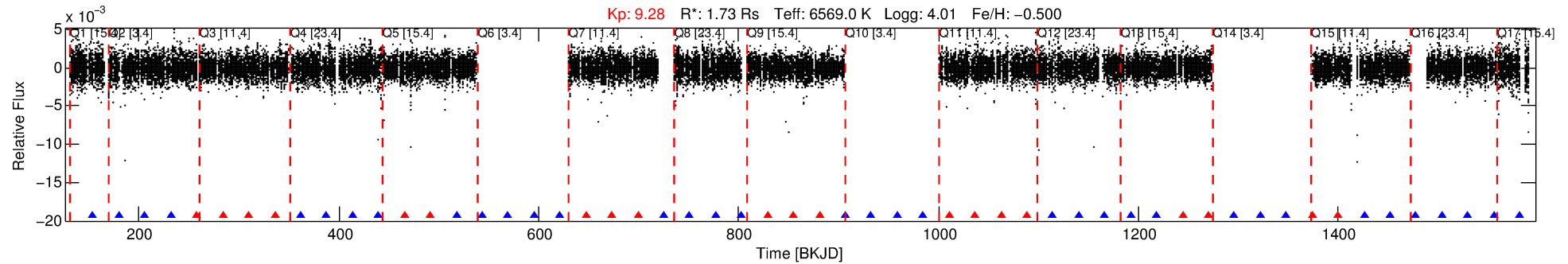
No Significant Match Found

# DV One-Page Summary

KIC: 3858884 Candidate: 3 of 8 Period: 25.953 d

KOI: K06371 Corr: No Ephemeris Match

Kp: 9.28 R\*: 1.73 Rs Teff: 6569.0 K Logg: 4.01 Fe/H: -0.500



TPS TCE Results:

Period = 25.95295 d

Epoch = 154.2985 BKJD

DV fit results are unavailable

DV Diagnostic Results:

ShortPeriod-sig: 0.2% [0.00σ]

LongPeriod-sig: 2.2% [0.03σ]

ModelChiSquare2-sig: N/A

ModelChiSquareGof-sig: N/A

Bootstrap-pfa: N/A

RollingBand-fgt: 0.50 [20/40]

GhostDiagnostic-chr: N/A

Centroid-sig: N/A

Centroid-so: 1.593 arcsec [5.99σ]

OotOffset-rm: 8.744 arcsec [3.23σ]

KicOffset-rm: 7.700 arcsec [2.58σ]

OotOffset-st: 1/4/4/3 [12]

KicOffset-st: 1/4/4/3 [12]

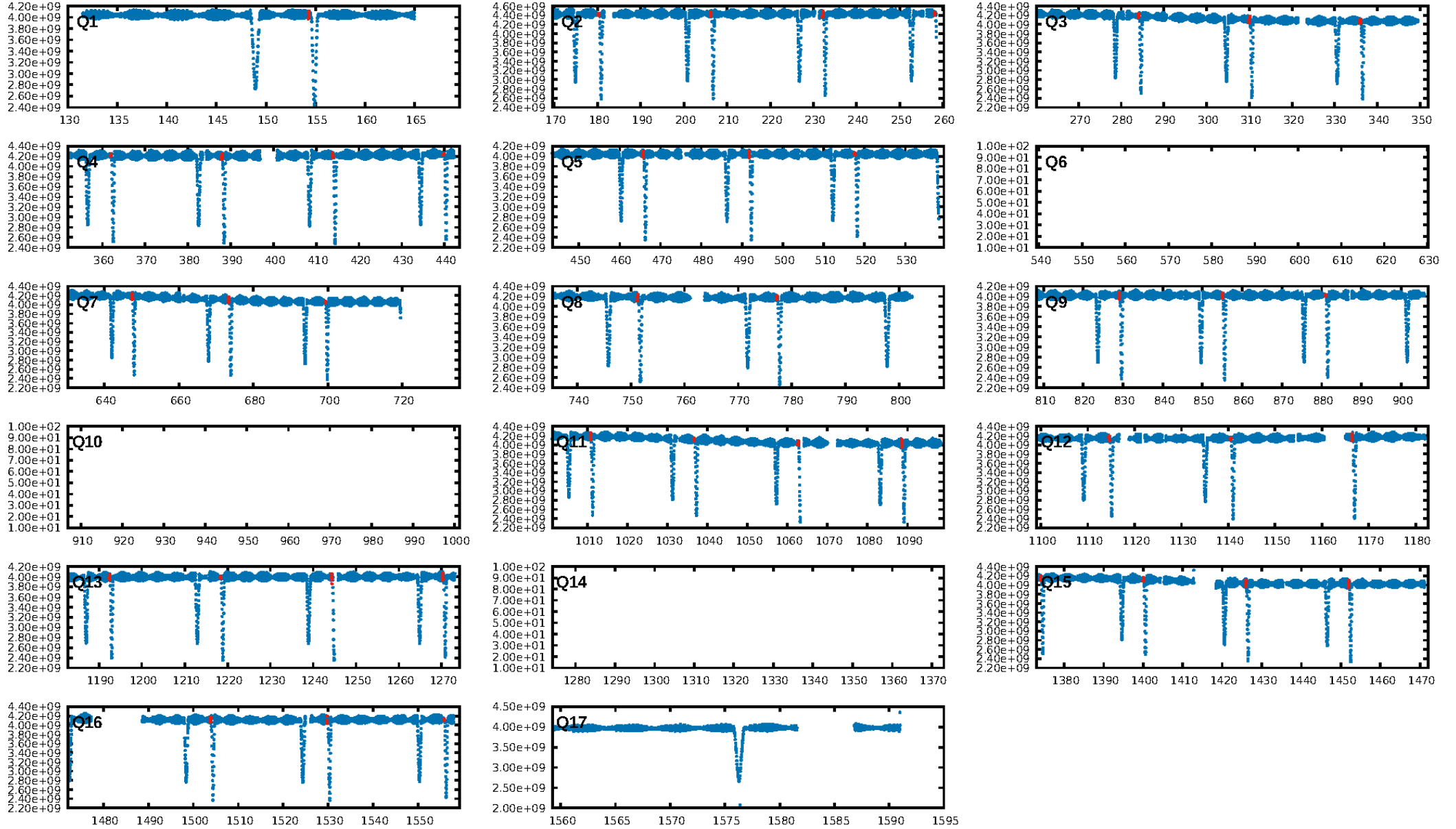
DiffImageQuality-fgm: 0.00 [0/12]

DiffImageOverlap-fno: 0.62 [8/13]

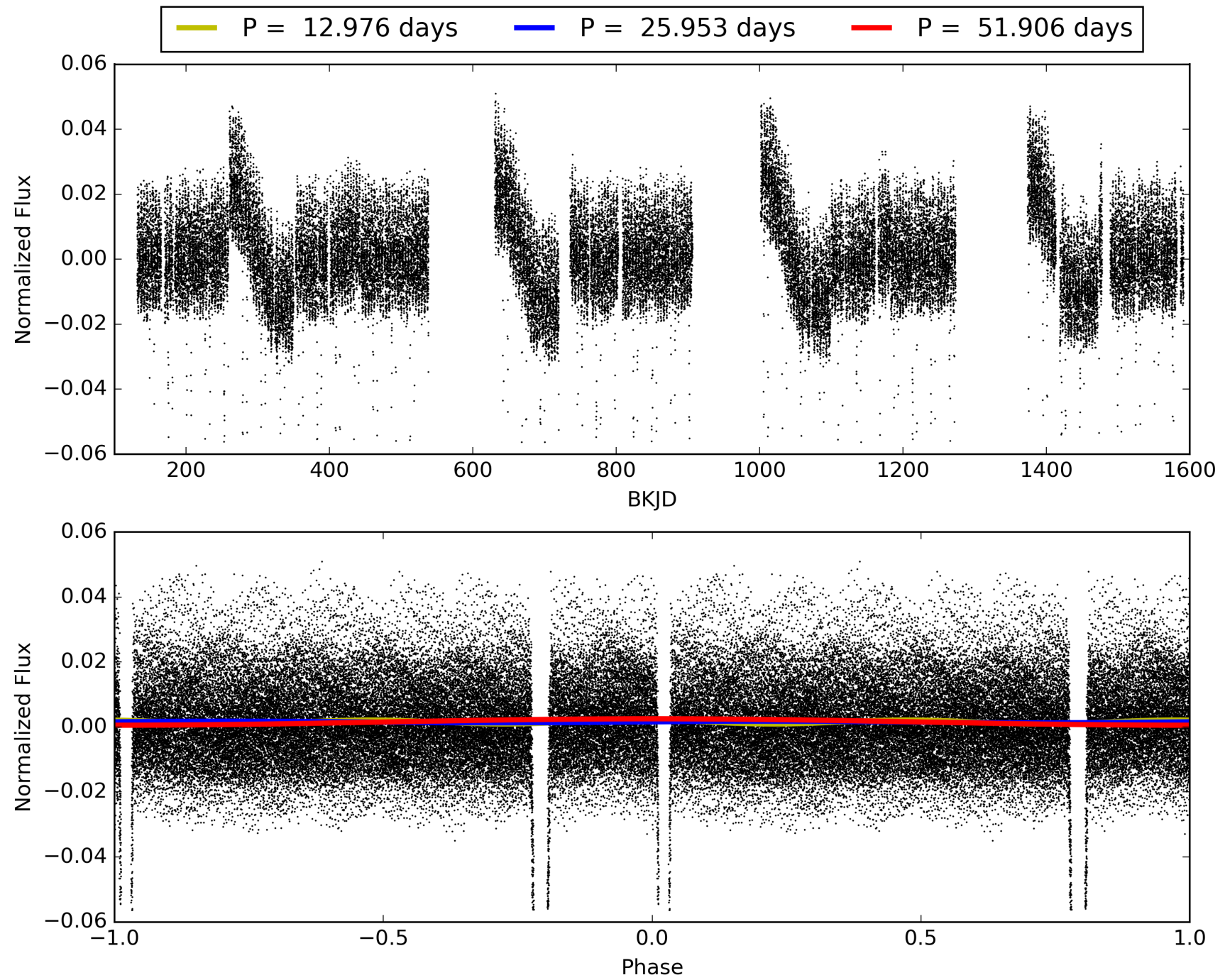
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:45:06 Z

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

# TCE 003858884-03, PDC Light Curves

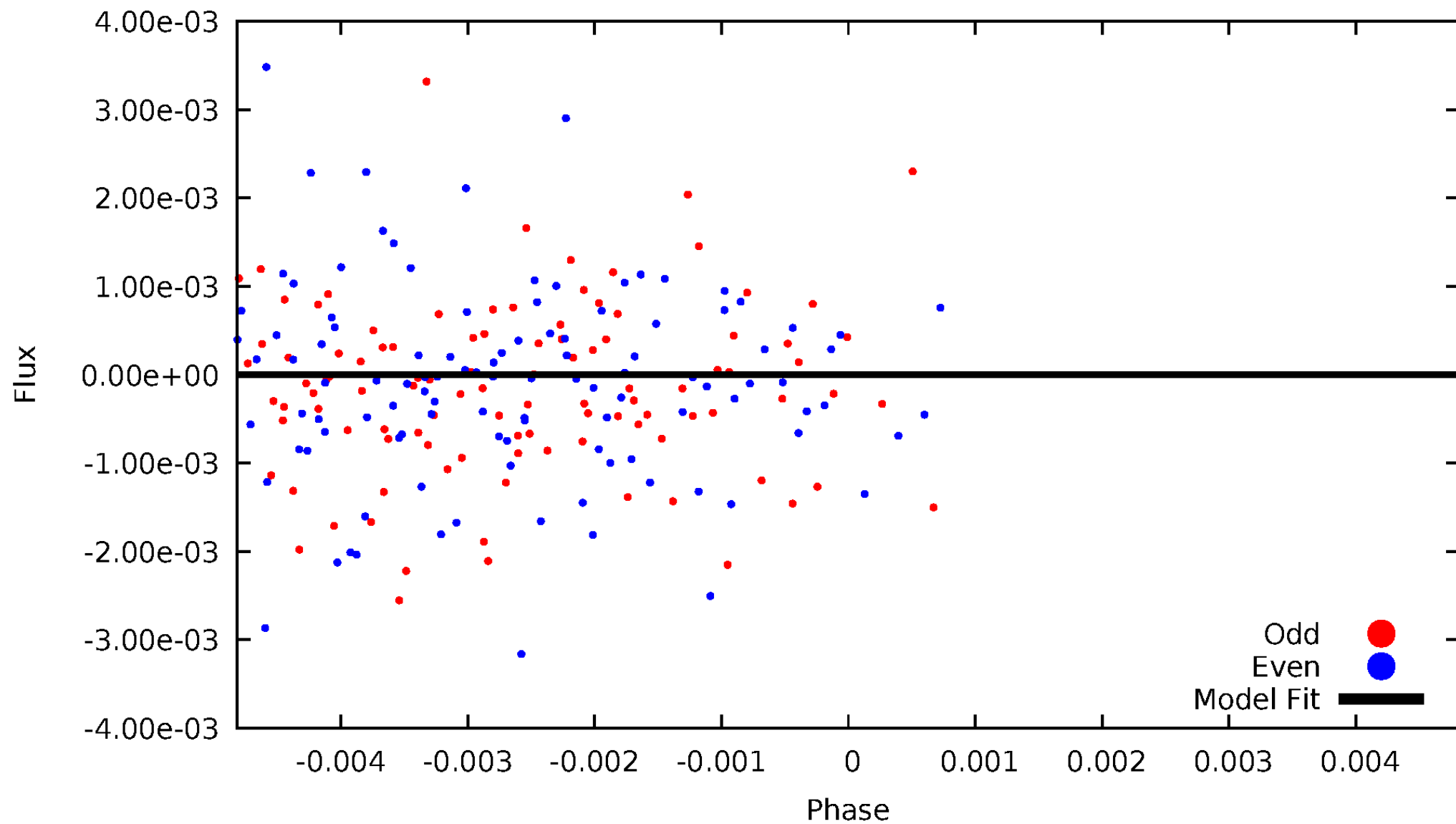


TCE 003858884-03



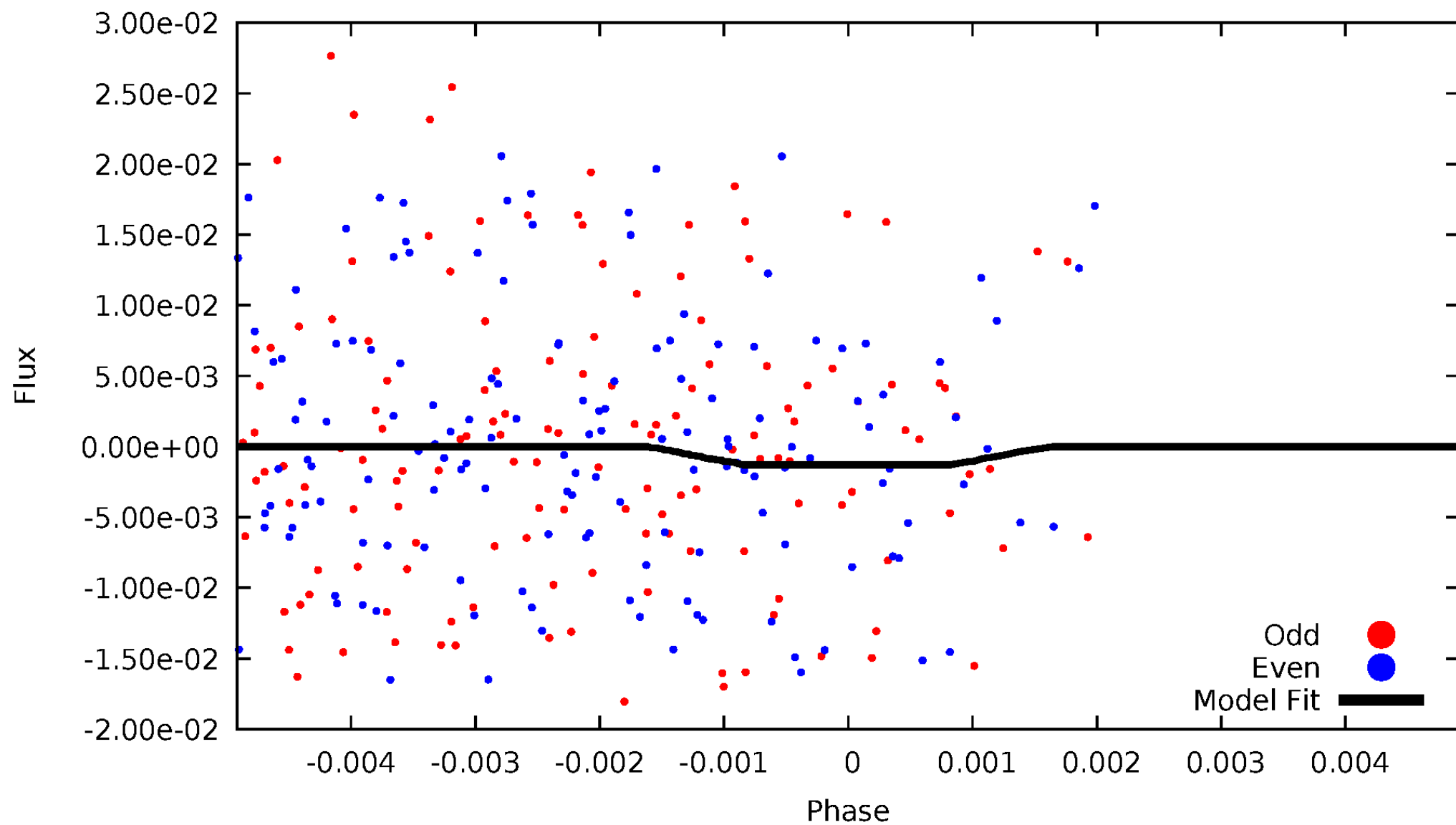
DV Odd/Even

TCE 003858884-03



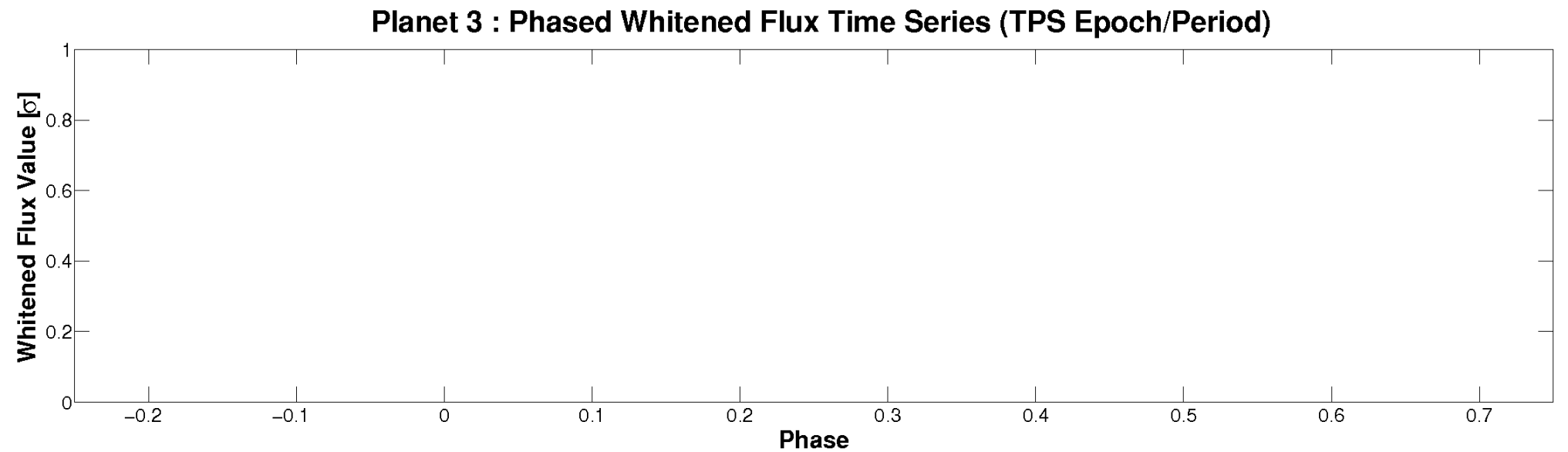
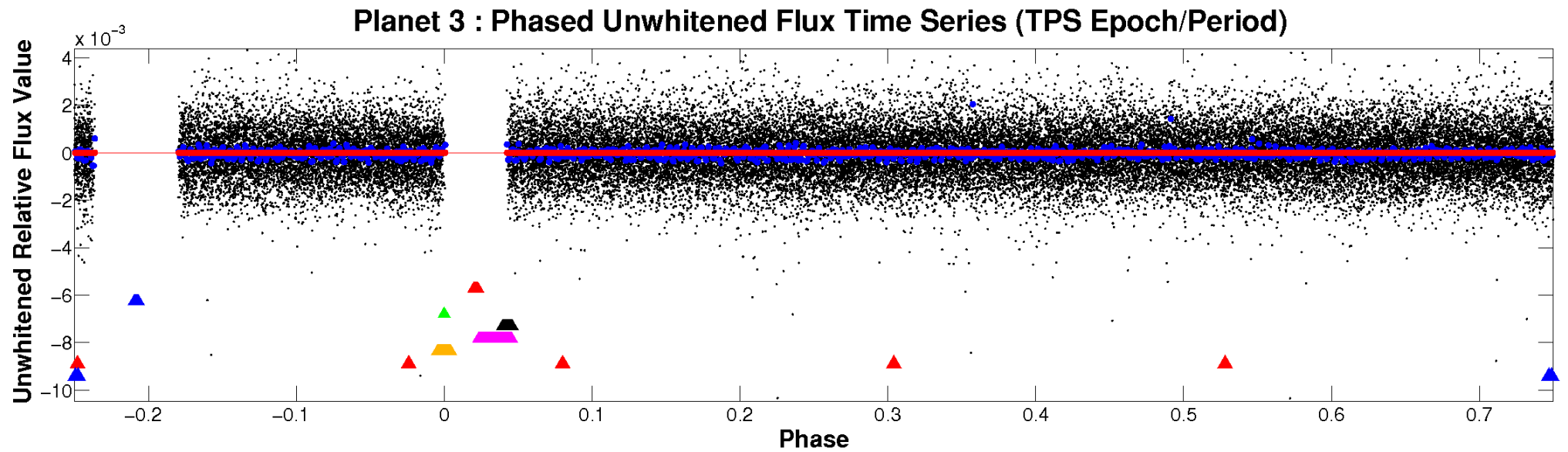
# ALT Odd/Even

TCE 003858884-03



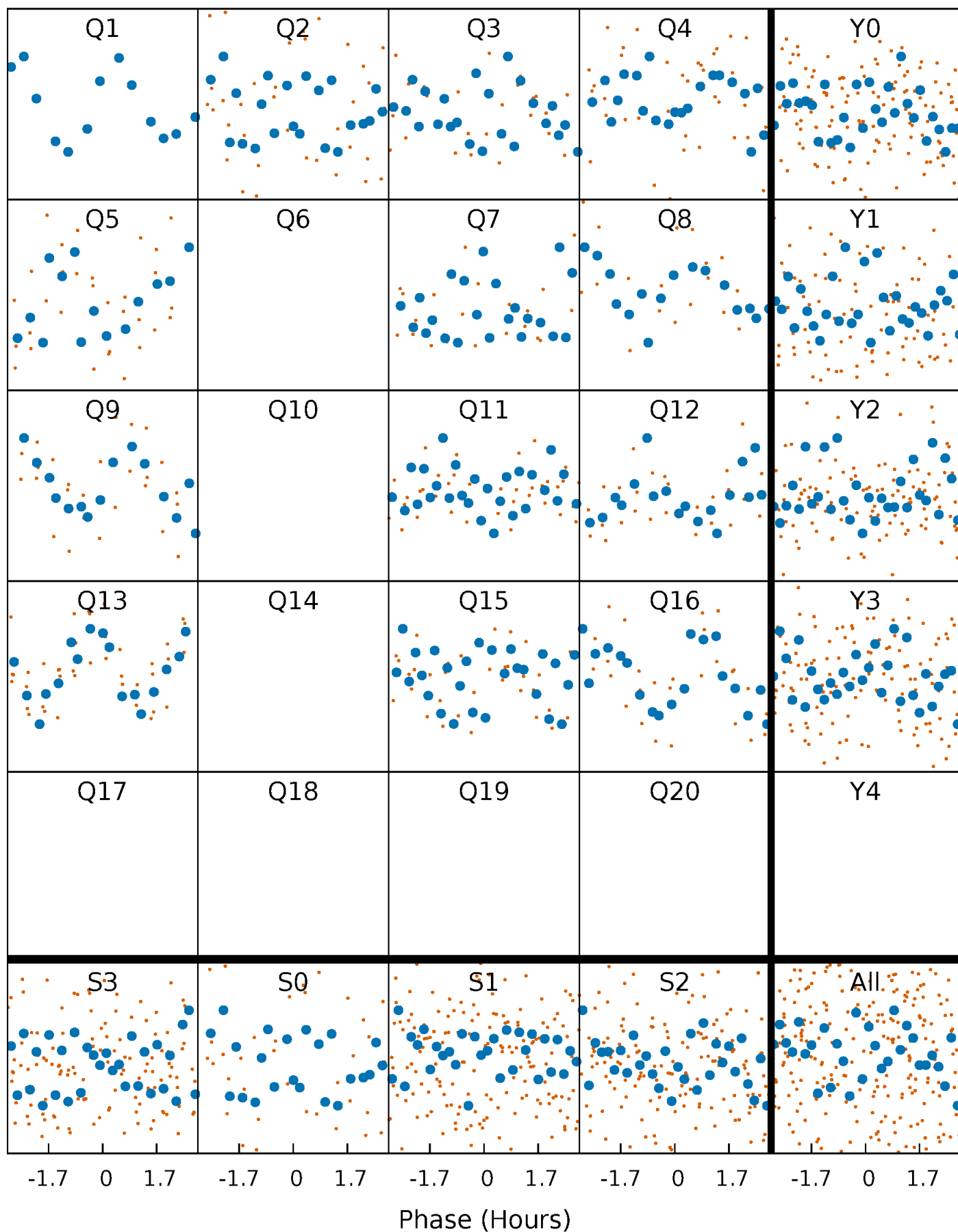


# Non-Whitened Vs. Whitened Light Curve



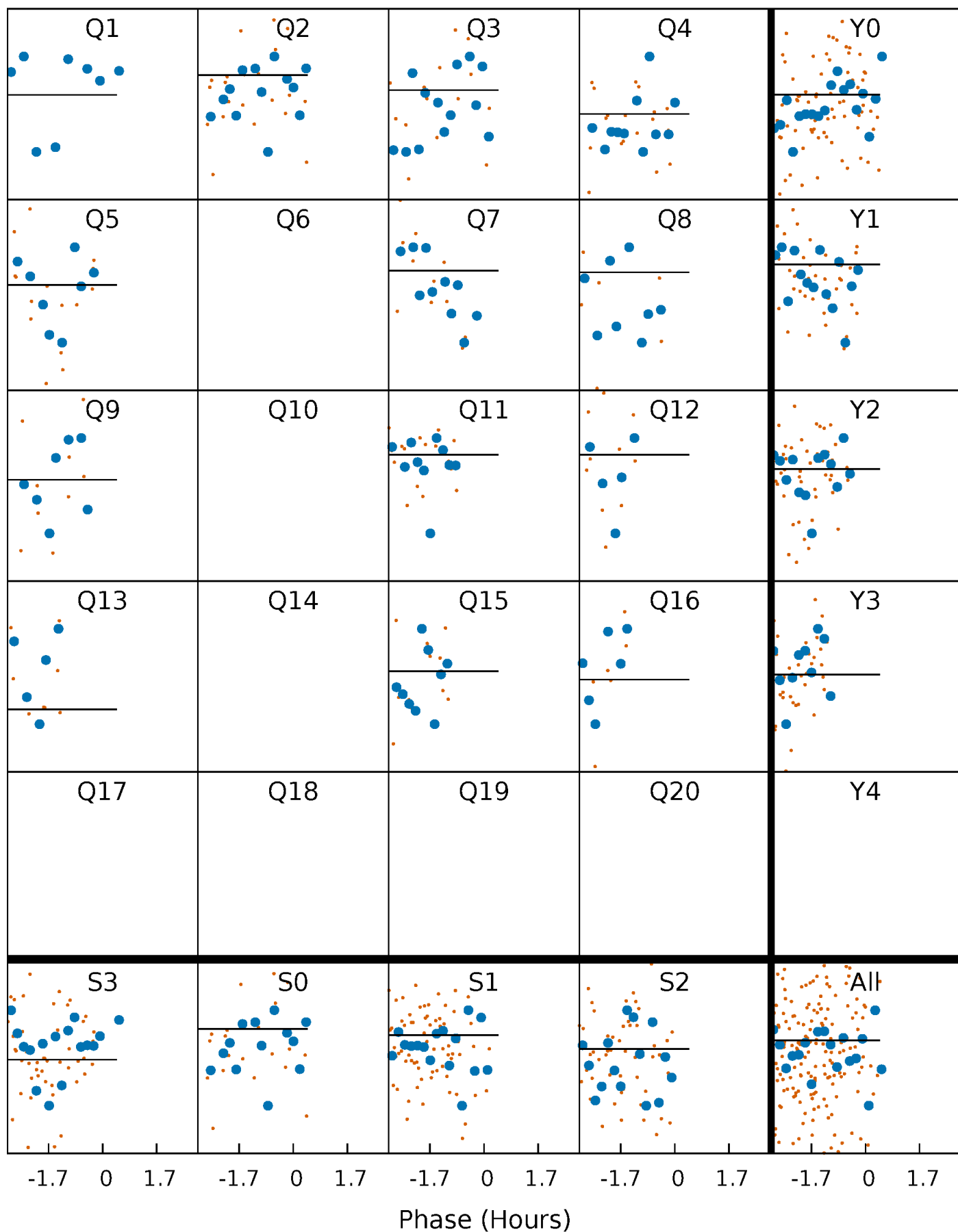
# PDC Quarter-Phased Transit Curves

TCE 003858884-03 P= 25.952955 Days  $T_0=154.298499$  (BKJD)



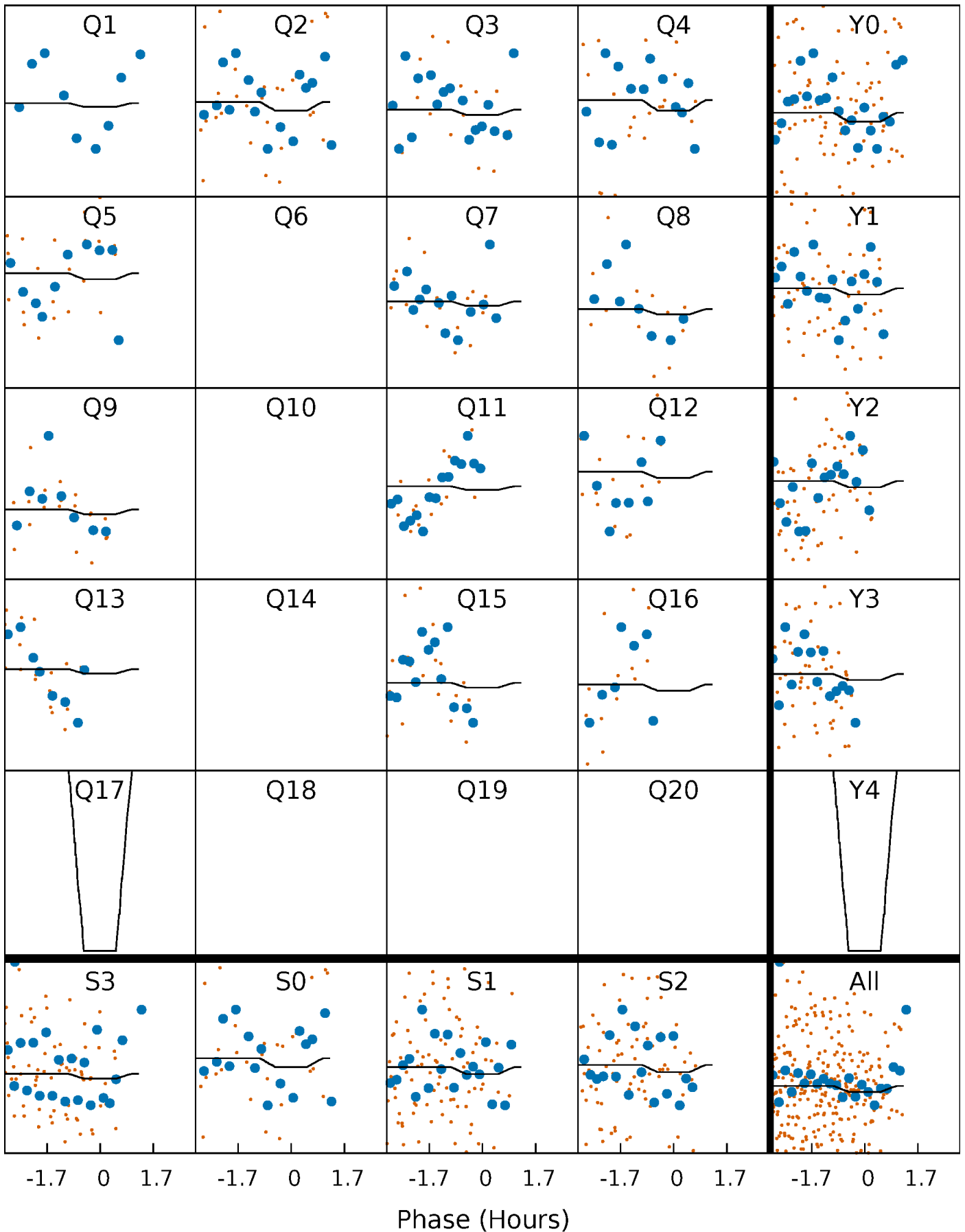
# DV Quarter-Phased Transit Curves

TCE 003858884-03     $P = 25.952955$  Days     $T_0 = 154.298499$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

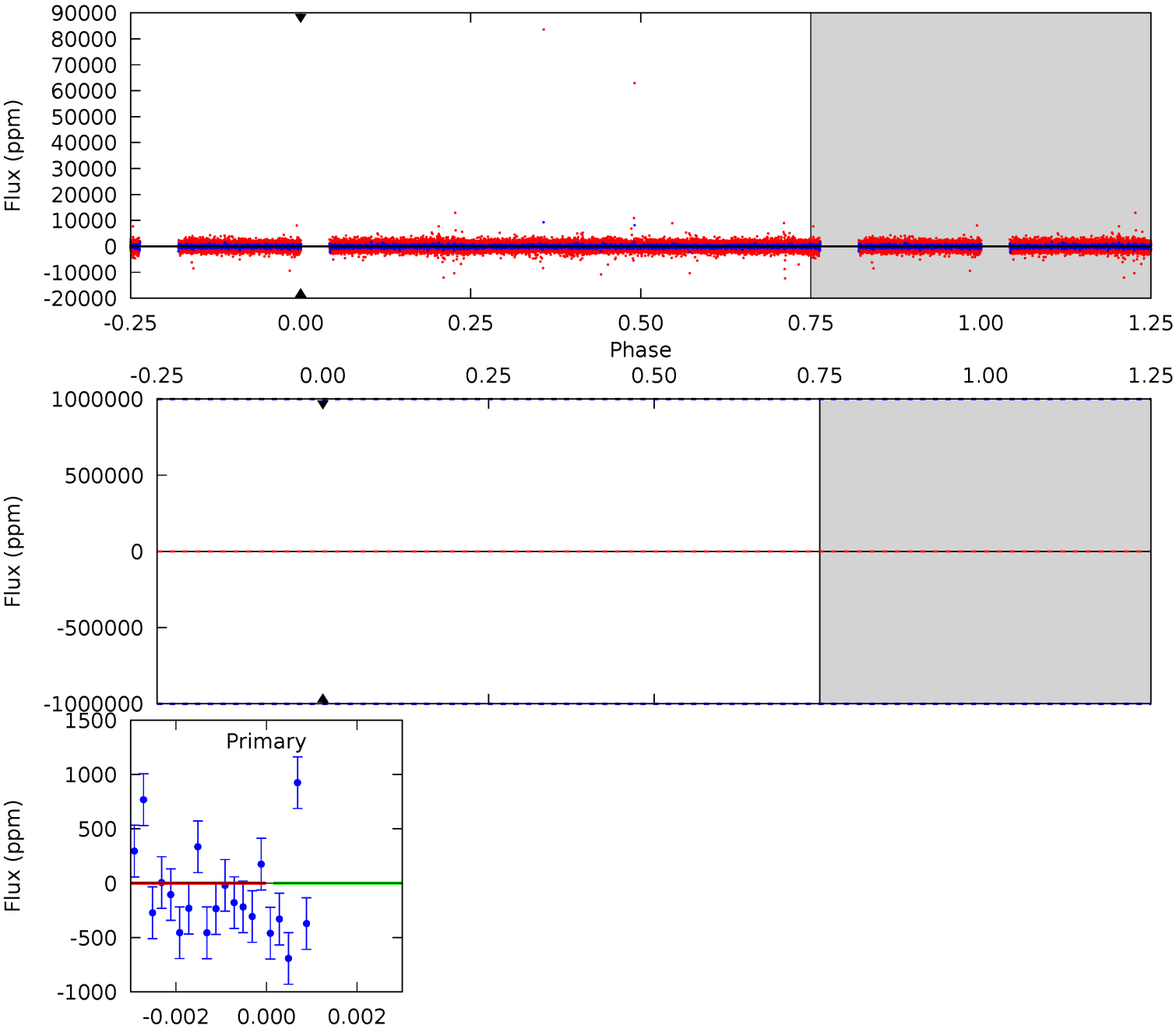
TCE 003858884-03 P= 25.952955 Days  $T_0=154.265911$  (BKJD)



# DV Model-Shift Uniqueness Test

003858884-03, P = 25.952955 Days, E = 128.345544 Days

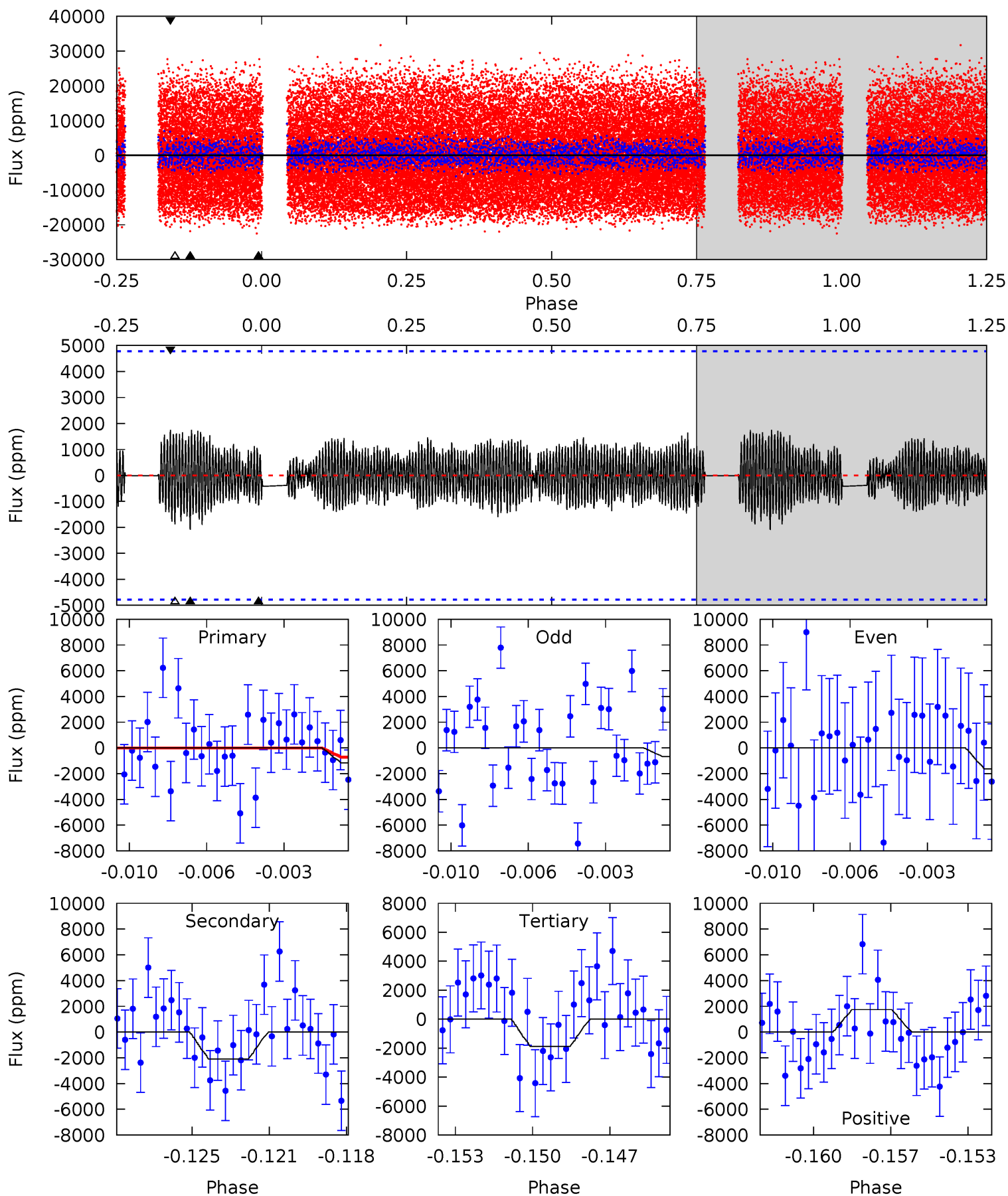
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

003858884-03, P = 25.952955 Days, E = 128.312956 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
1.27	2.29	2.06	1.91	5.24	2.95	0.79	-0.79	-0.65	0.23	0.38	0.53	0.45	0.46	0.57



### Stellar Parameters For KIC 003858884

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6569^{+188}_{-236}$	$4.008^{+0.357}_{-0.153}$	$-0.500^{+0.300}_{-0.300}$	$1.729^{+0.428}_{-0.642}$	$1.110^{+0.164}_{-0.164}$	$0.302^{+0.809}_{-0.129}$
	+3%/-4%	+9%/-4%	+60%/-60%	+25%/-37%	+15%/-15%	+268%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 003858884-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$0 \pm 1000000$	$14.84^{+14.61}_{-10.80}$	$1245^{+99}_{-127}$	$4848^{+22978}_{-26617}$	$136^{+15338}_{-13437}$
Alt.	$-2093 \pm 913$	$14.62^{+14.19}_{-10.19}$	$1244^{+103}_{-124}$	$4954^{+3975}_{-1200}$	$170^{+1553}_{-136}$

$T_{max}$  = 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

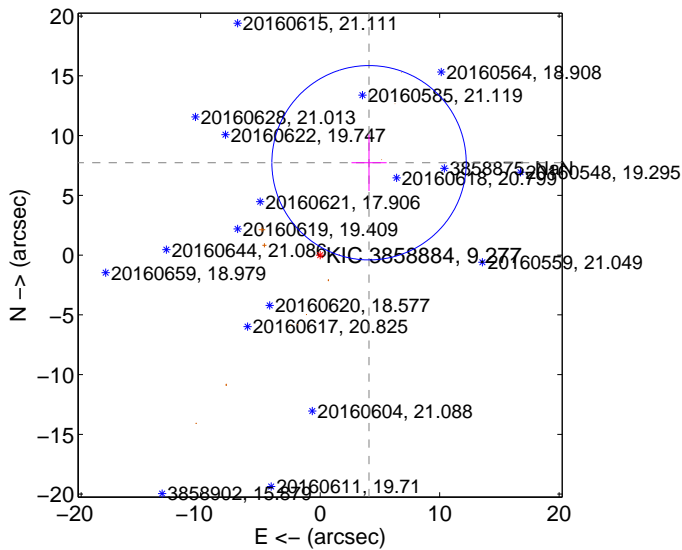
Supplemental centroid analysis for 003858884-03. **Kepler magnitude: 9.28.** Transit SNR -1.00

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

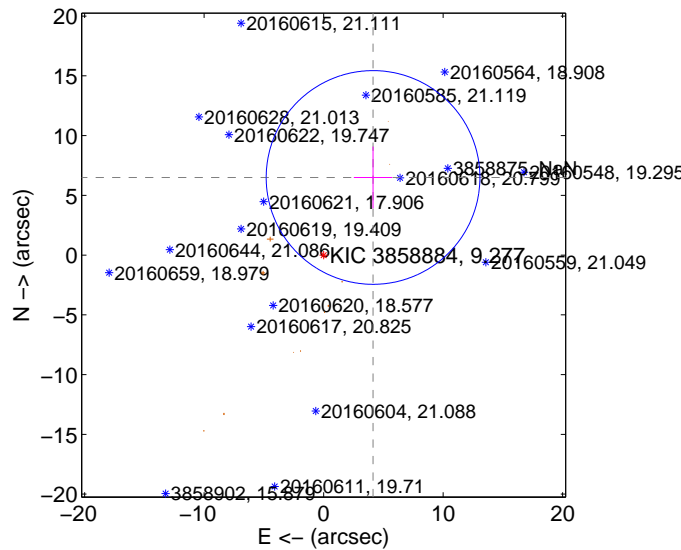
The direct PRF centroid is offset from the target star catalog position by about 1.24 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>8.744 \pm 2.710</math></b>	<b>3.23</b>	$-4.091 \pm 1.469$	$7.728 \pm 2.361$
PRF-fit source offset from KIC position	$7.700 \pm 2.980$	2.58	$-4.135 \pm 1.614$	$6.496 \pm 2.582$
photometric centroid source offset	<b><math>1.59 \pm 0.27</math></b>	<b>5.99</b>	$1.40 \pm 0.23$	$-0.75 \pm 0.36$

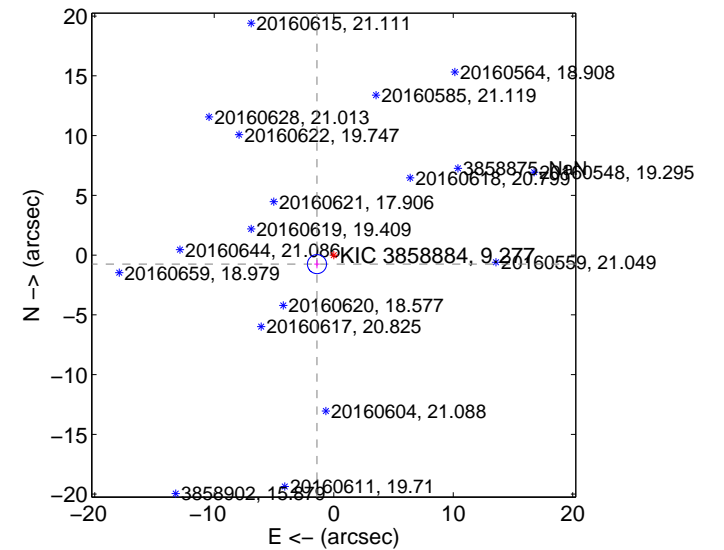
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



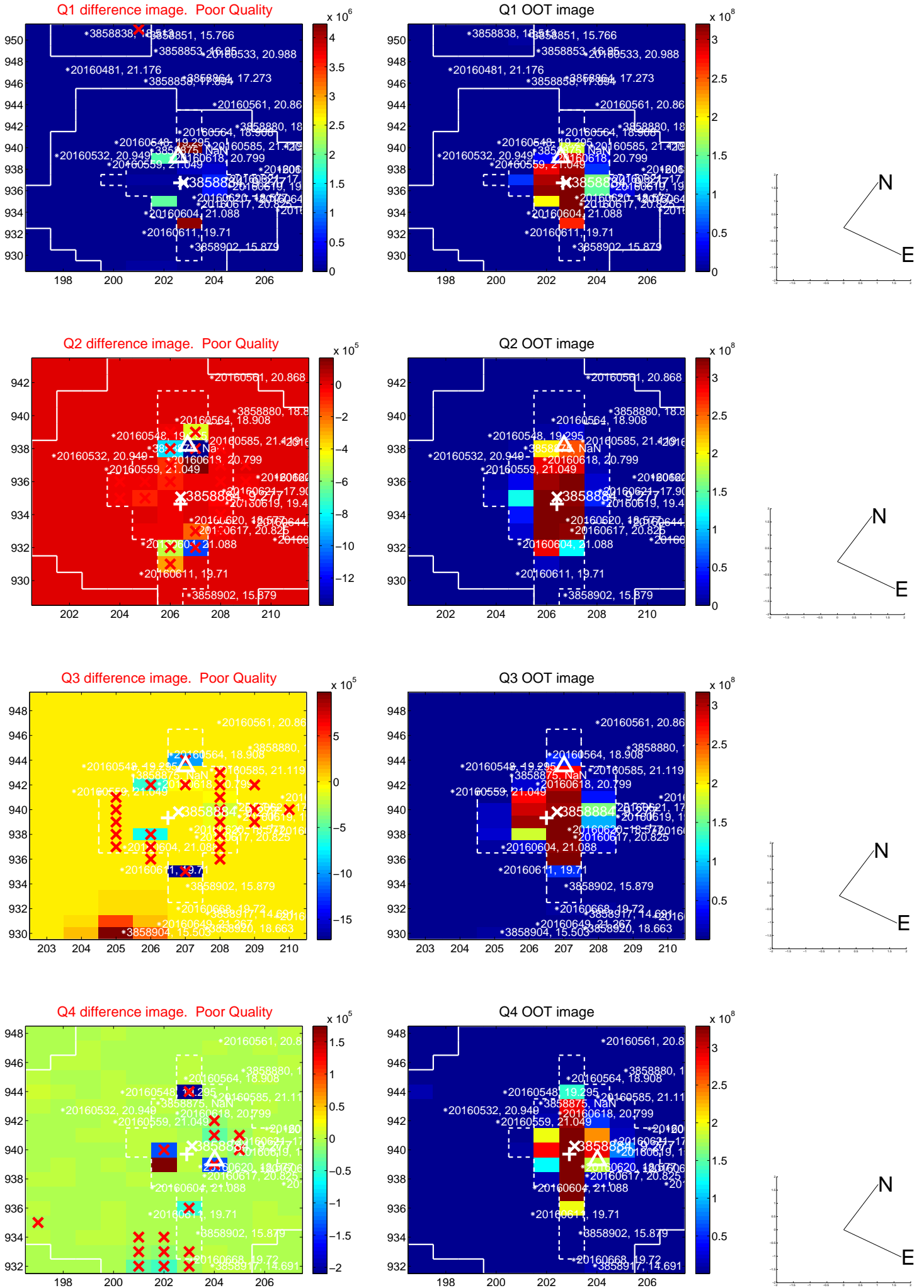
offset from photometric centroids



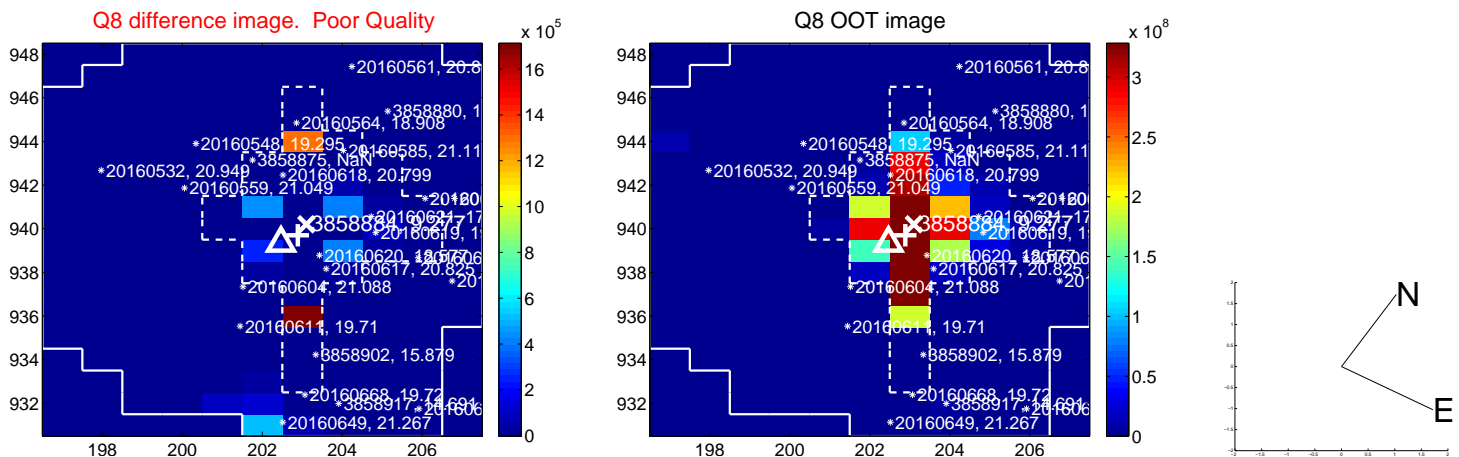
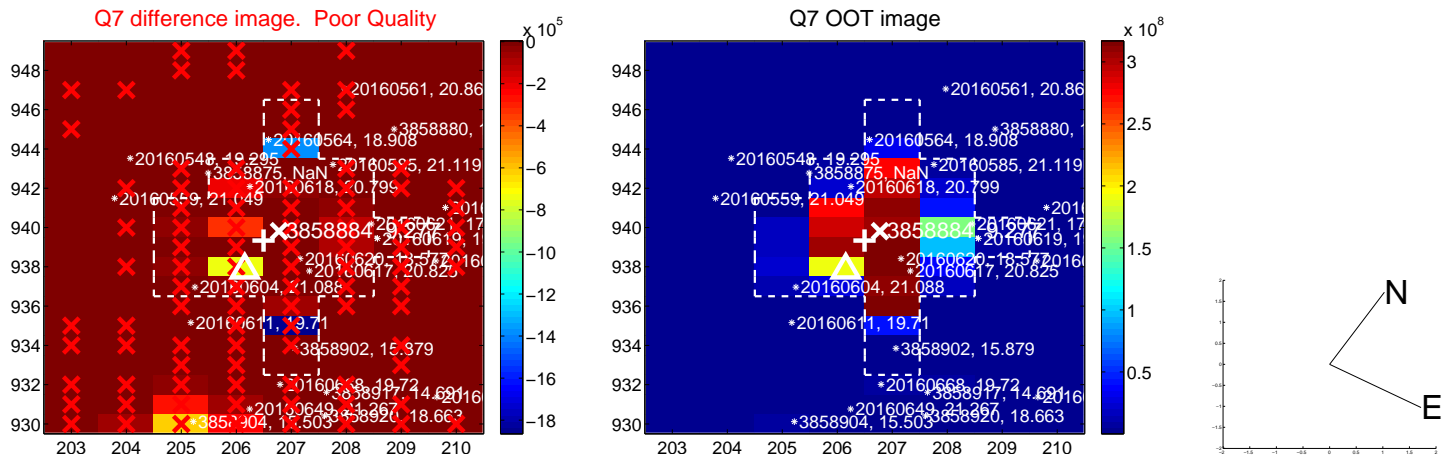
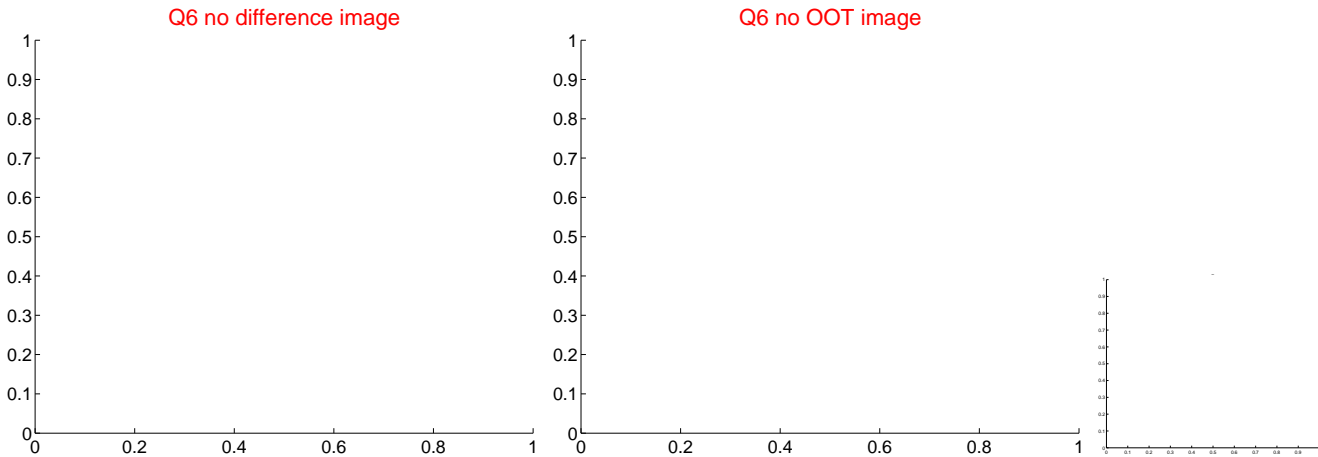
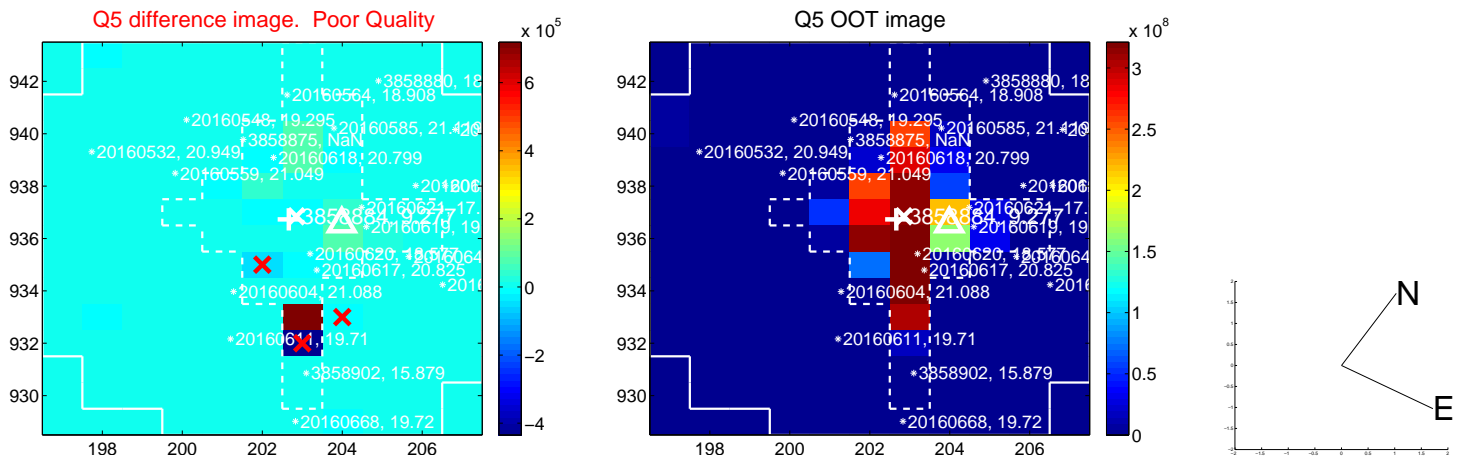
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



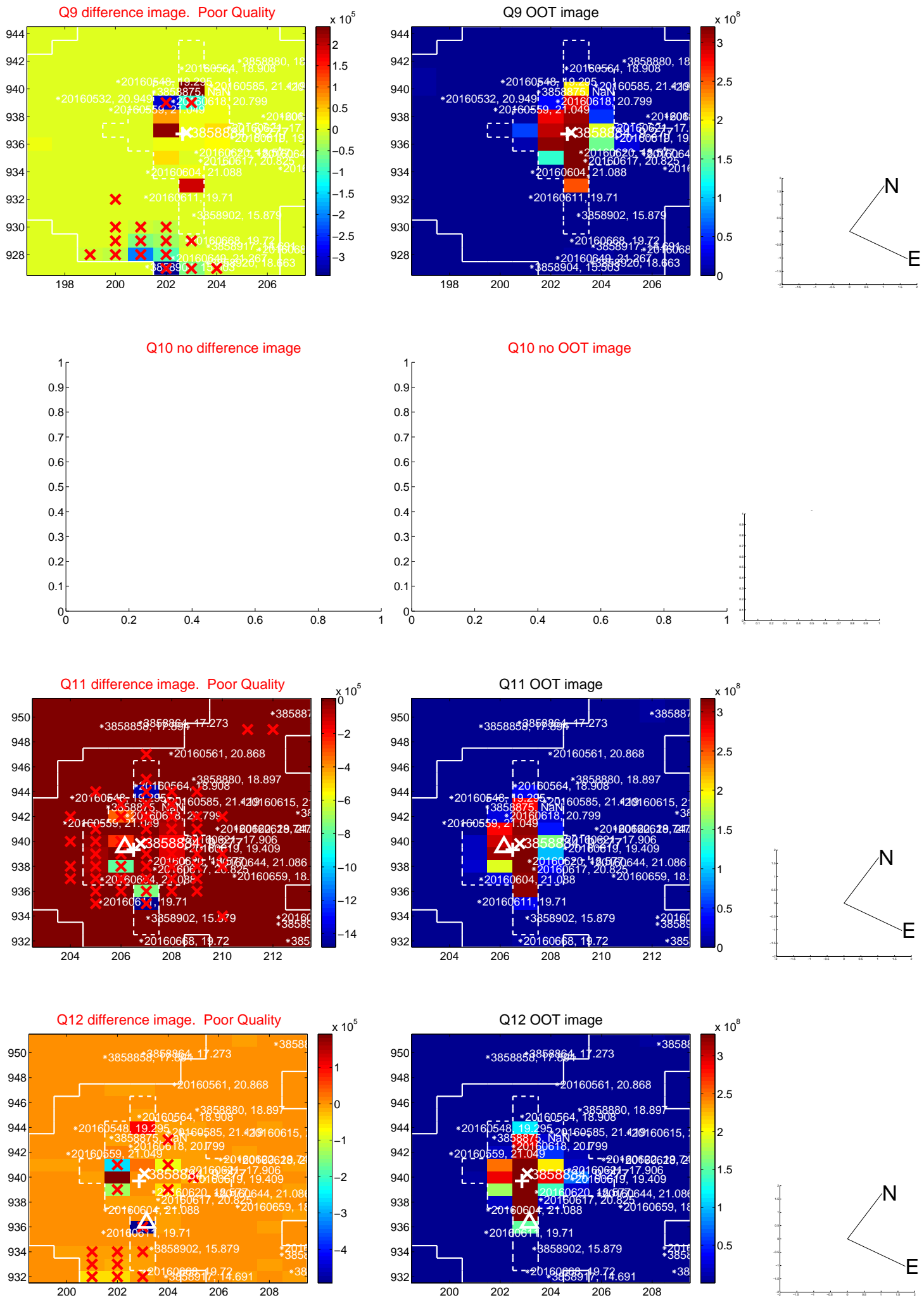
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



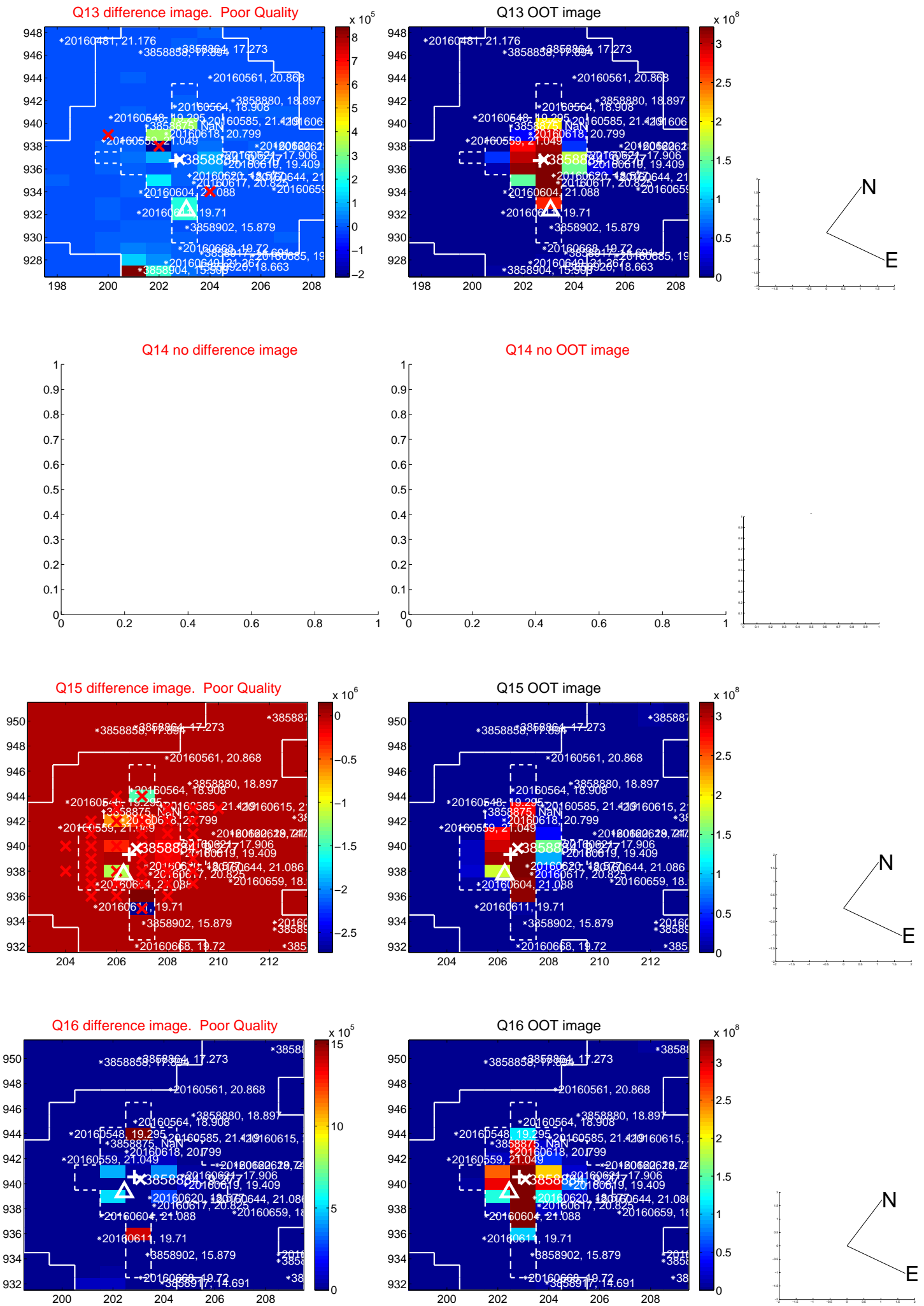
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



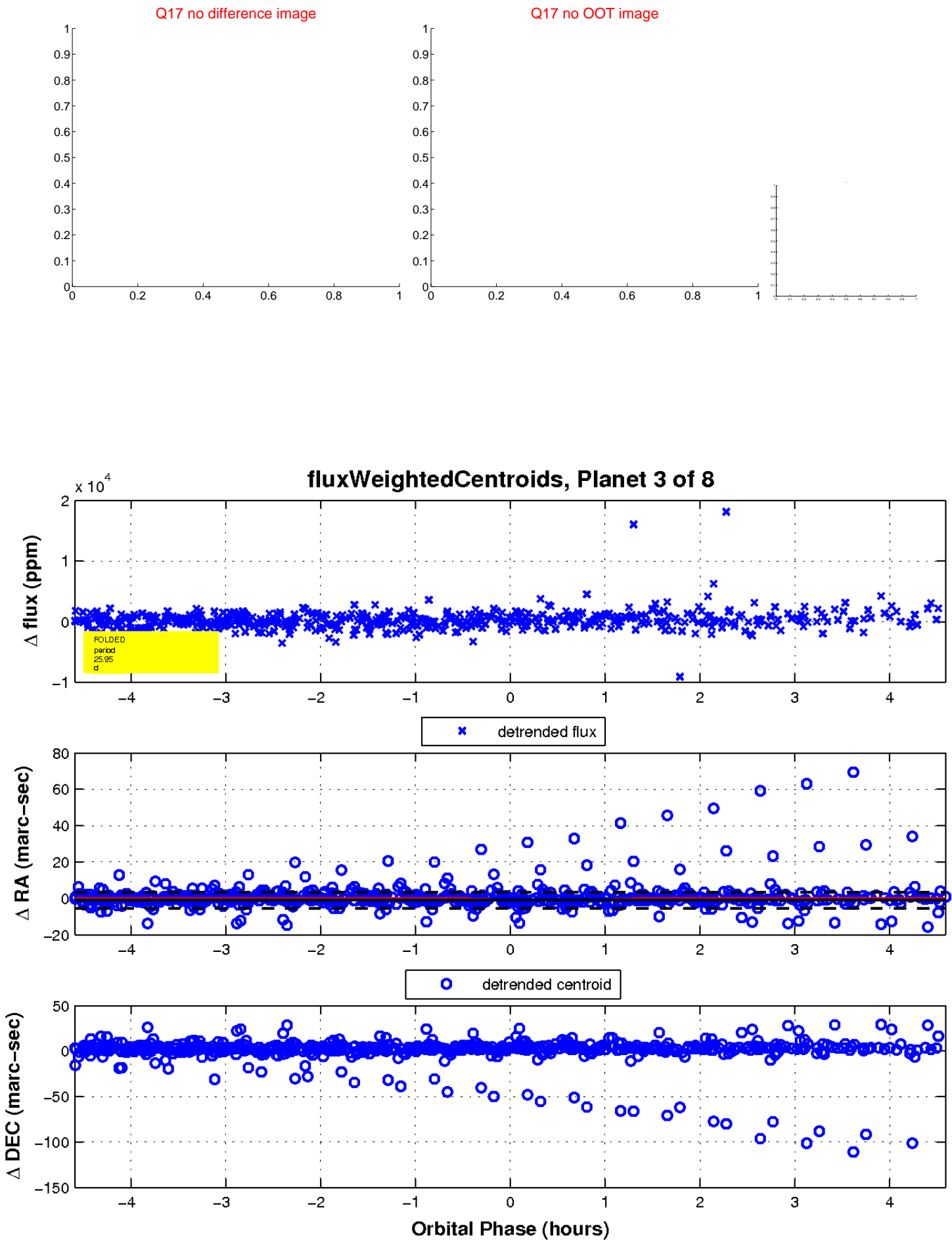
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



## KIC 003858884

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003858884-01	OBS	6371.01	25.951589	154.890392	398557.6	9.000	4108.7	-1.0	1.73	6569	10.48	157.96
003858884-02	OBS	No	25.951660	148.930604	337130.8	12.000	3105.5	-1.0	1.73	6569	9.01	157.96
003858884-03	OBS	No	25.952955	154.298499	933.1	1.500	133.7	-1.0	1.73	6569	5.34	157.94
003858884-04	OBS	No	25.949884	155.492250	1865.7	1.500	183.2	-1.0	1.73	6569	7.55	157.97
003858884-06	OBS	No	25.948835	154.410203	465.9	7.500	119.8	-1.0	1.73	6569	3.76	157.98
003858884-07	OBS	No	265.342550	338.048118	4604.7	11.114	58.6	15.0	1.73	6569	21.10	7.12
003858884-08	OBS	No	363.387340	459.169809	6494.8	15.401	60.8	24.0	1.73	6569	16.20	4.68

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003858884-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
003858884-02	OBS	FP	0.00	1	0	0	0	SAME_NTL_PERIOD—CENT_SATURATED
003858884-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003858884-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

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

Ephemeris Match Information For 003858884-04

No Significant Match Found

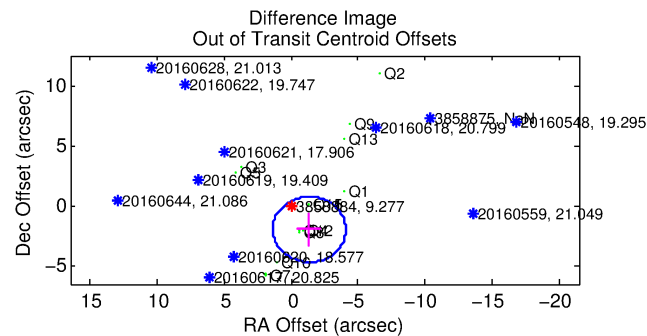
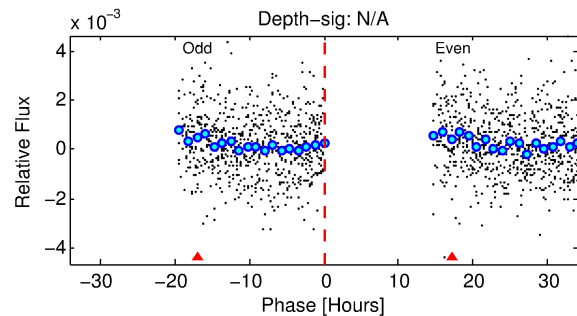
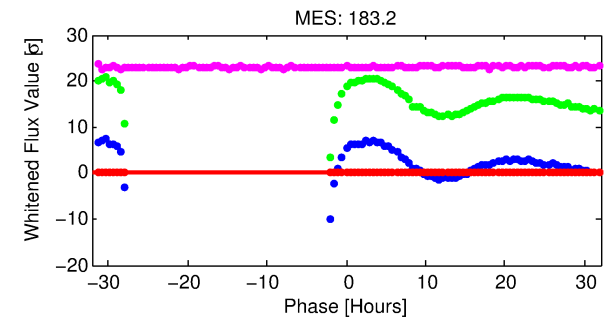
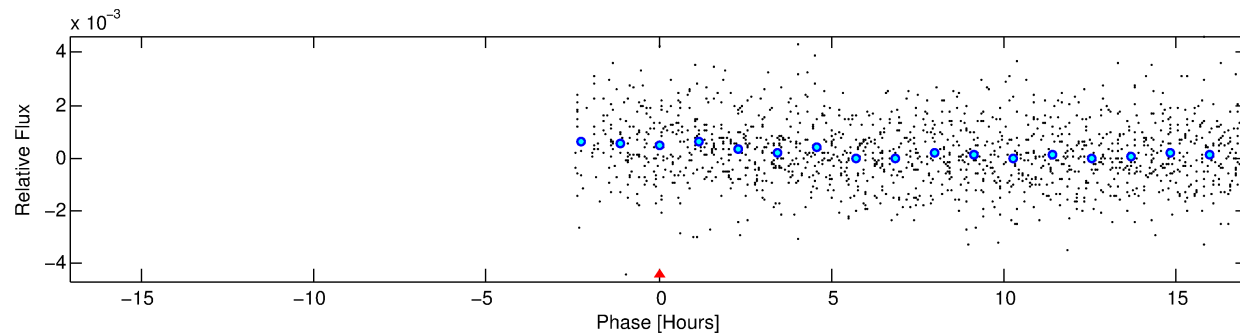
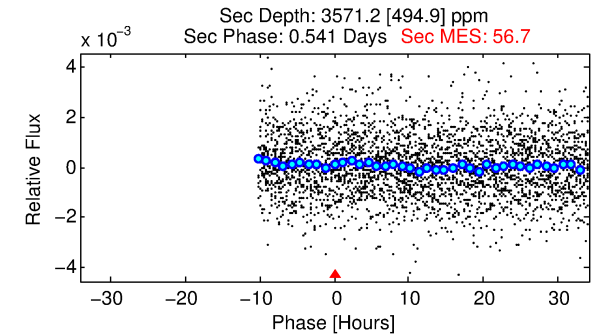
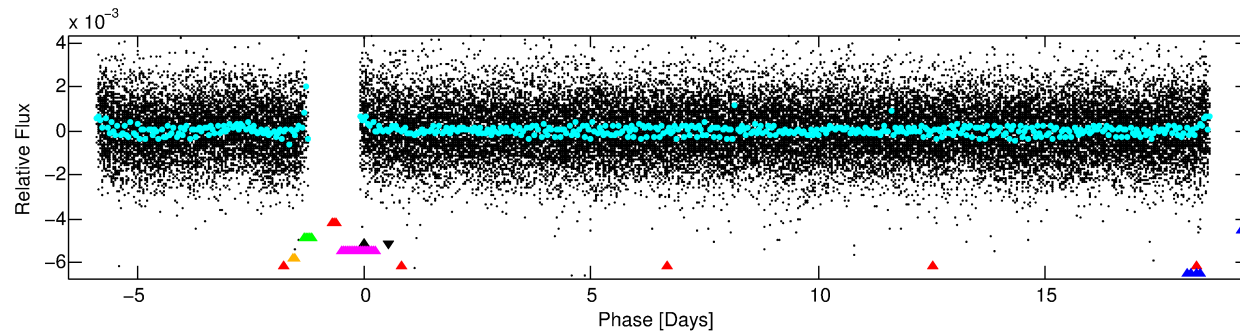
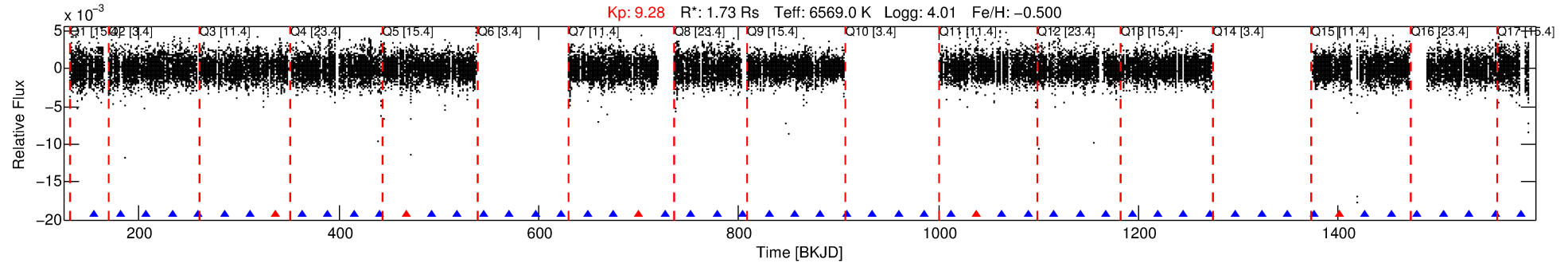


# DV One-Page Summary

KIC: 3858884 Candidate: 4 of 8 Period: 25.950 d

KOI: K06371 Corr: No Ephemeris Match

Kp: 9.28 R\*: 1.73 Rs Teff: 6569.0 K Logg: 4.01 Fe/H: -0.500



TPS TCE Results:

Period = 25.94988 d

Epoch = 155.4922 BKJD

DV fit results are unavailable

DV Diagnostic Results:

ShortPeriod-sig: 0.3% [0.00σ]

LongPeriod-sig: 0.4% [0.00σ]

ModelChiSquare2-sig: N/A

ModelChiSquareGof-sig: N/A

Bootstrap-pfa: N/A

RollingBand-fgt: 0.86 [32/37]

GhostDiagnostic-chr: N/A

Centroid-sig: N/A

Centroid-so: N/A

OotOffset-rm: 2.382 arcsec [2.62σ]

KicOffset-rm: 3.691 arcsec [2.93σ]

OotOffset-st: 1/4/4/4 [13]

KicOffset-st: 1/4/4/4 [13]

DiffImageQuality-fgm: 0.00 [0/13]

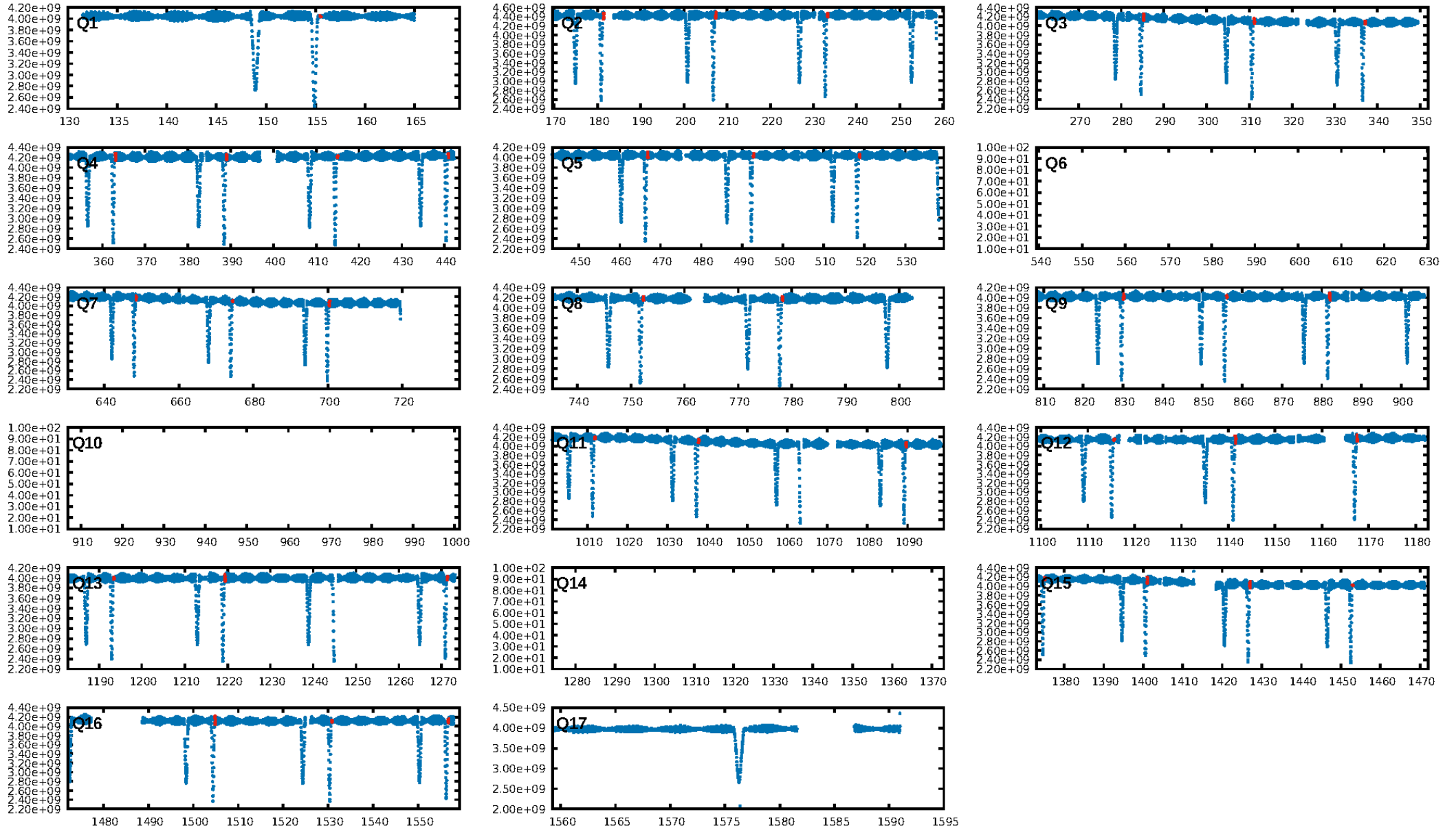
DiffImageOverlap-fno: 0.00 [0/13]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:45:11 Z

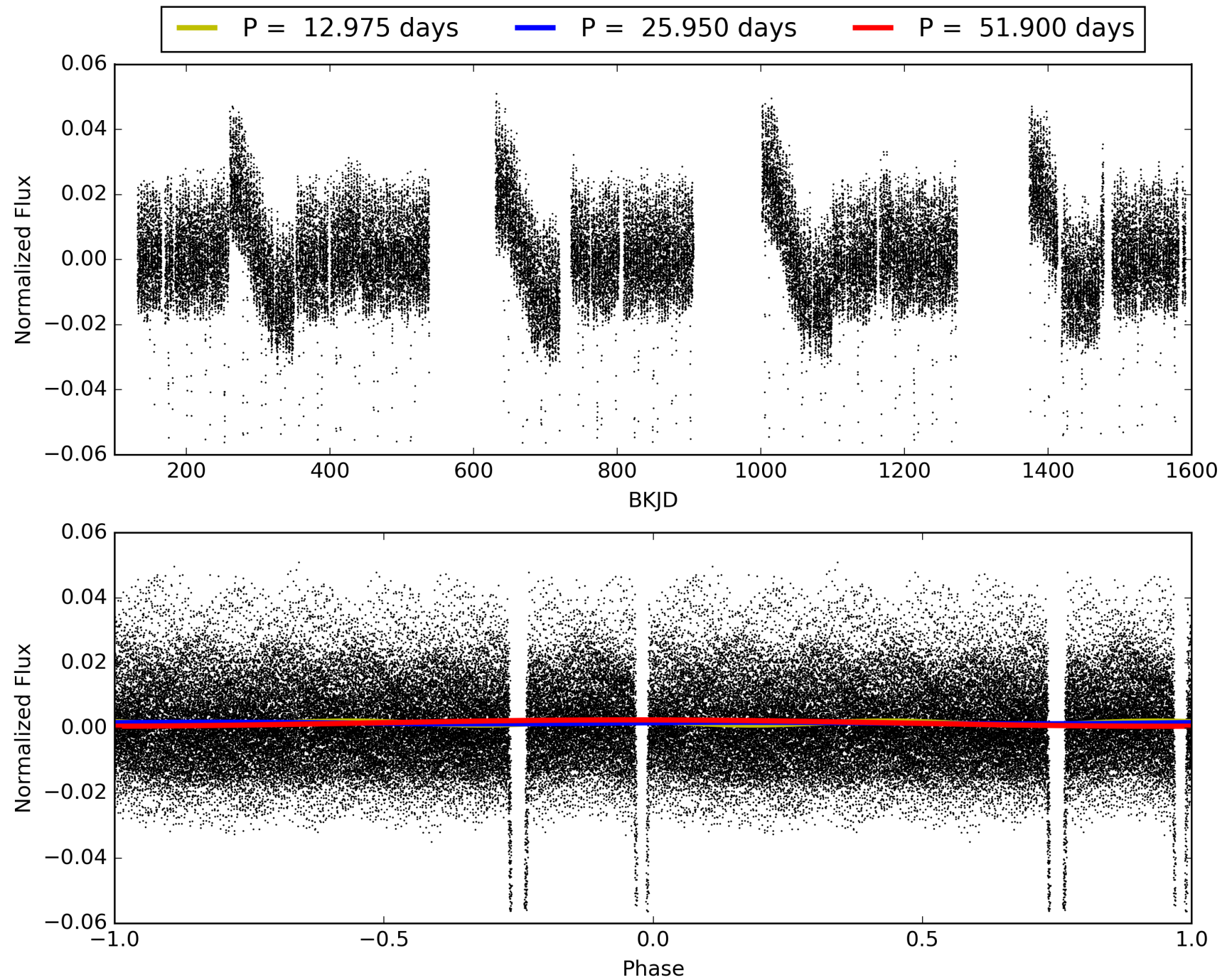
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 003858884-04, PDC Light Curves

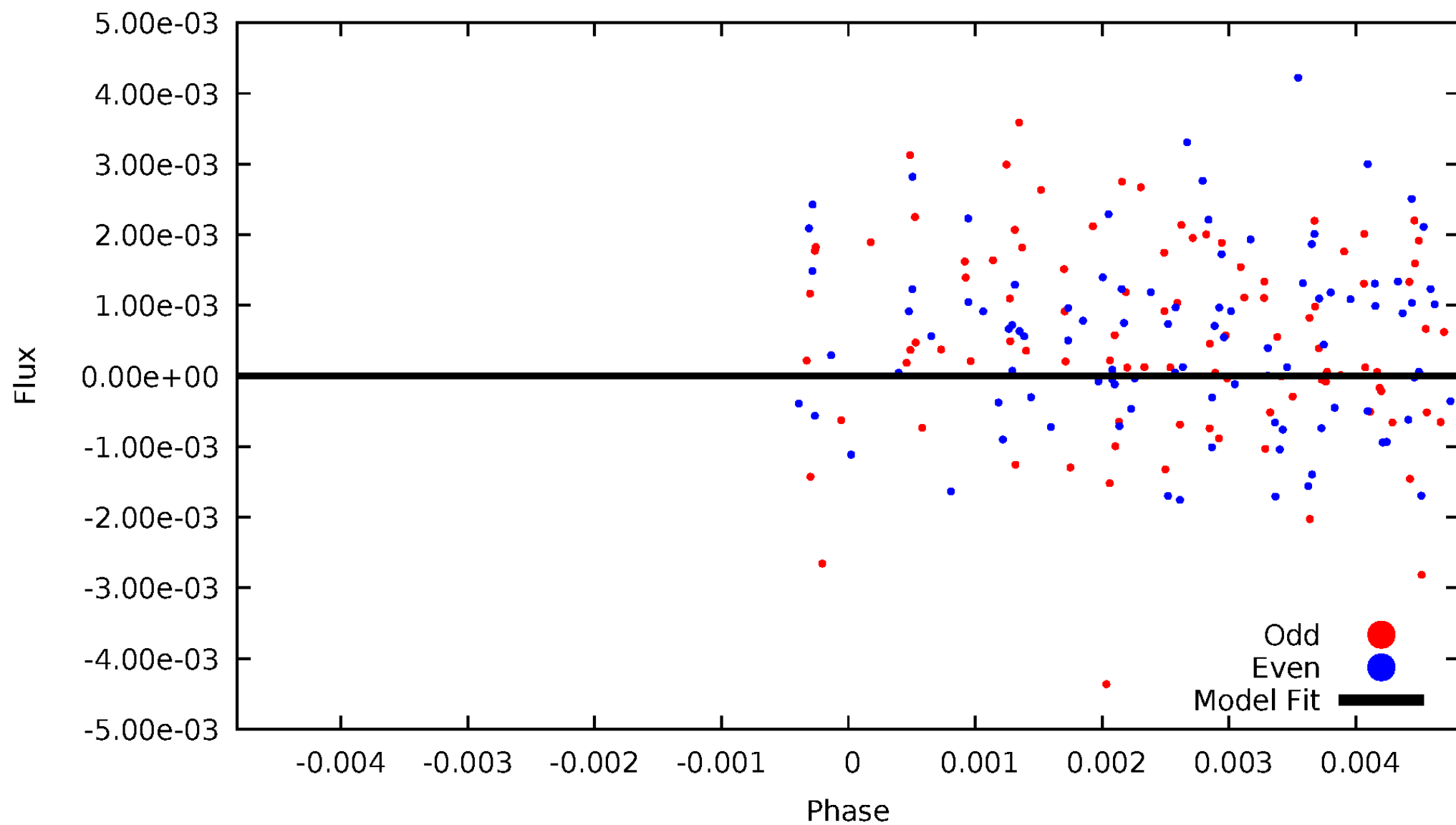


TCE 003858884-04



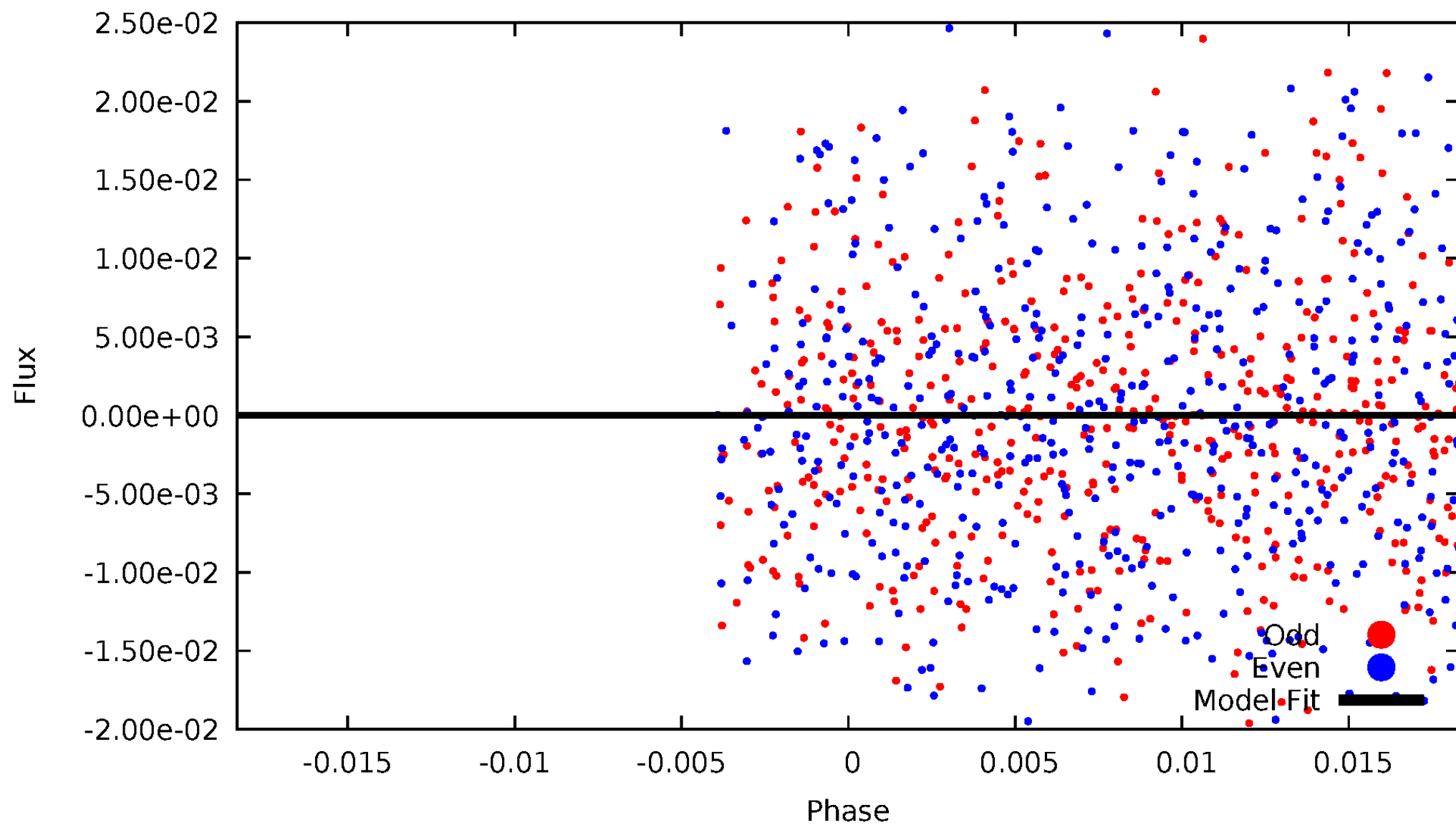
# DV Odd/Even

TCE 003858884-04

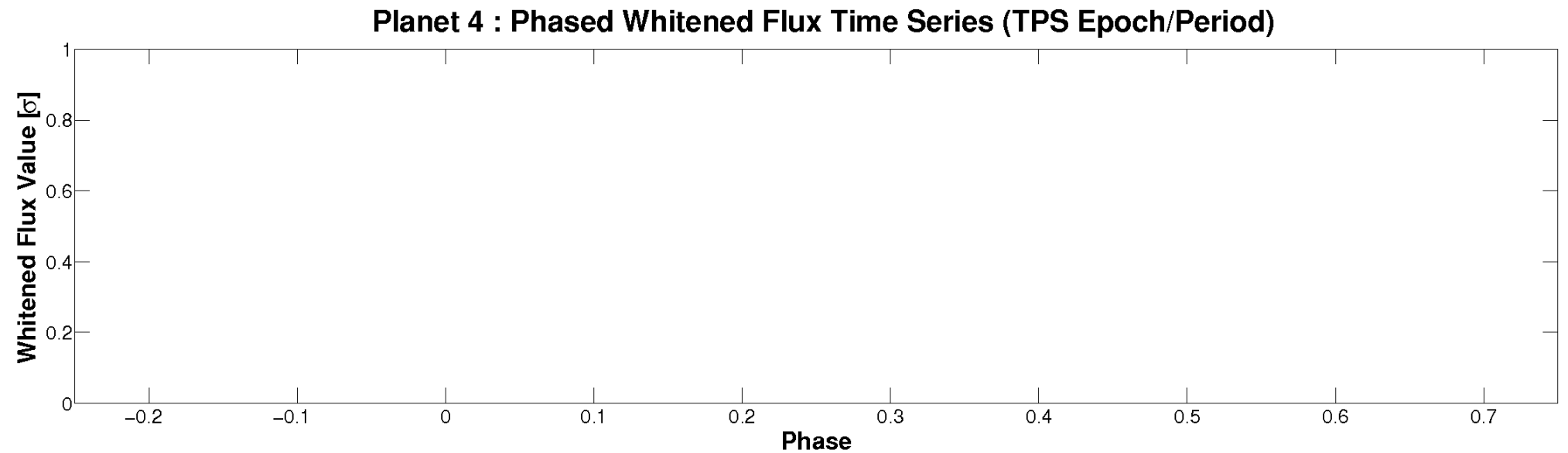
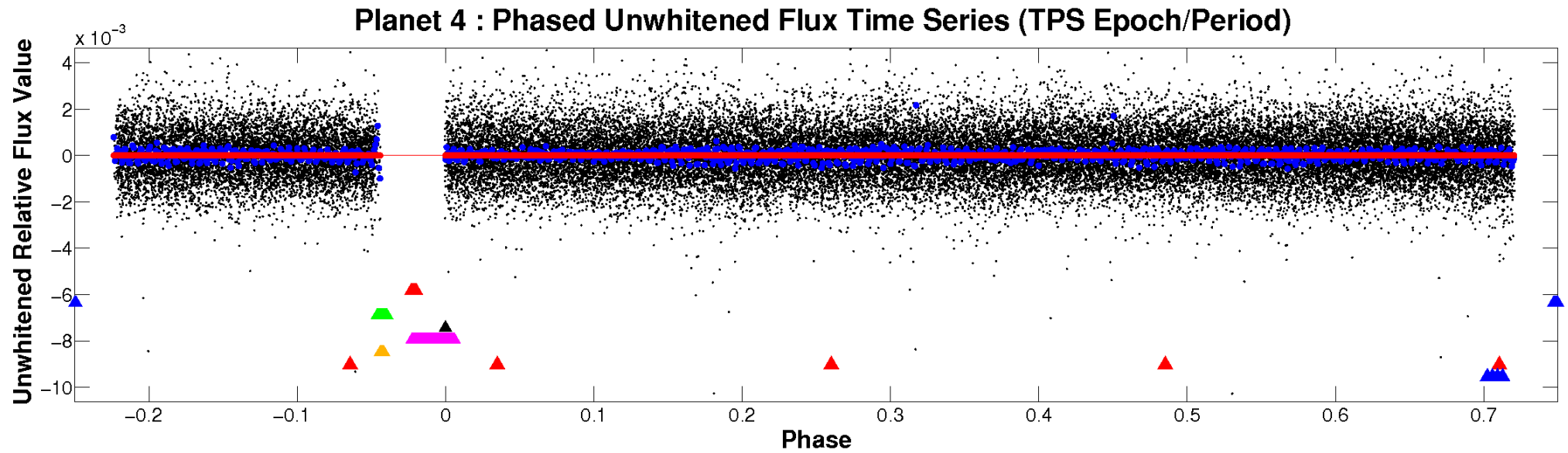


# ALT Odd/Even

TCE 003858884-04

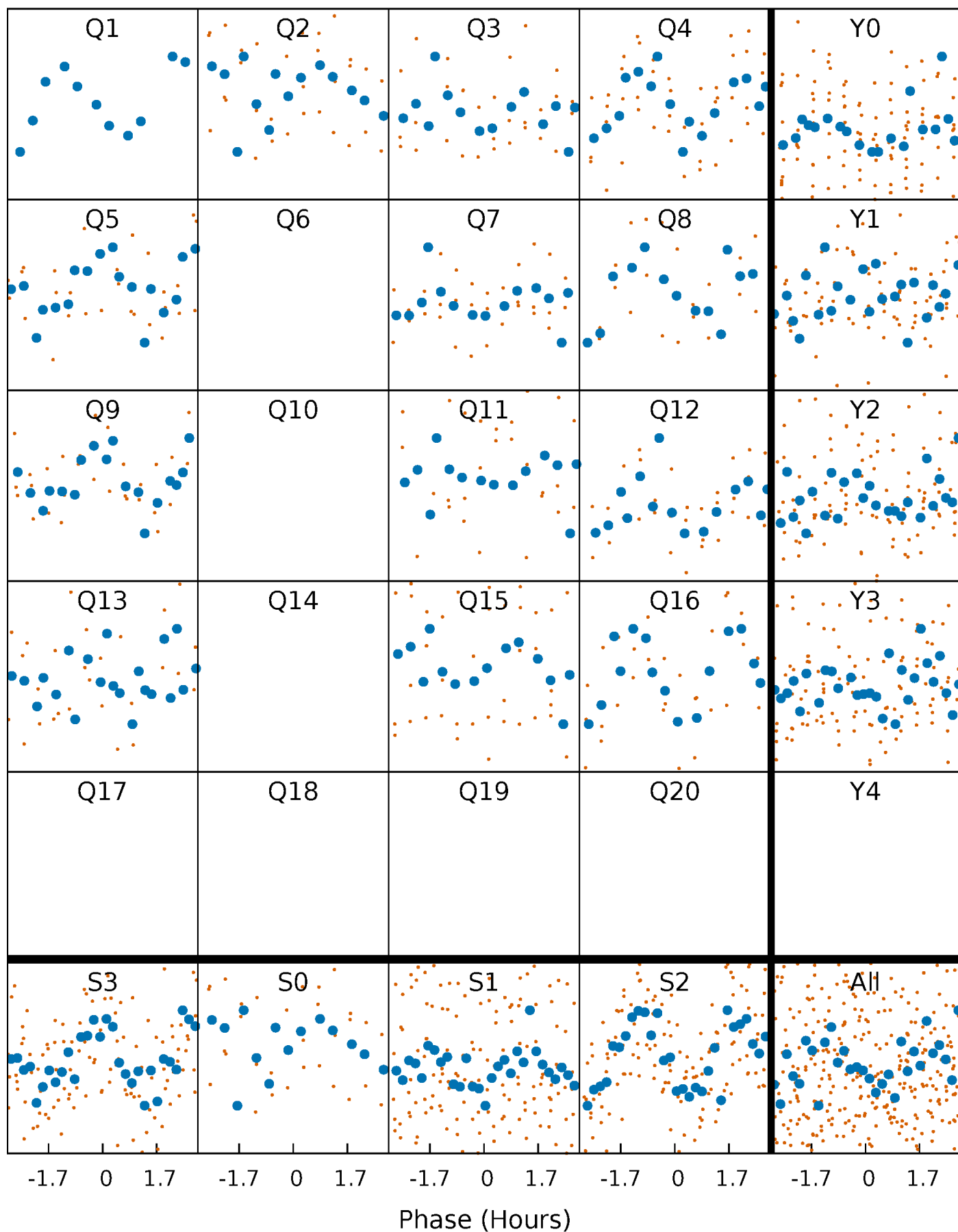


# Non-Whitened Vs. Whitened Light Curve



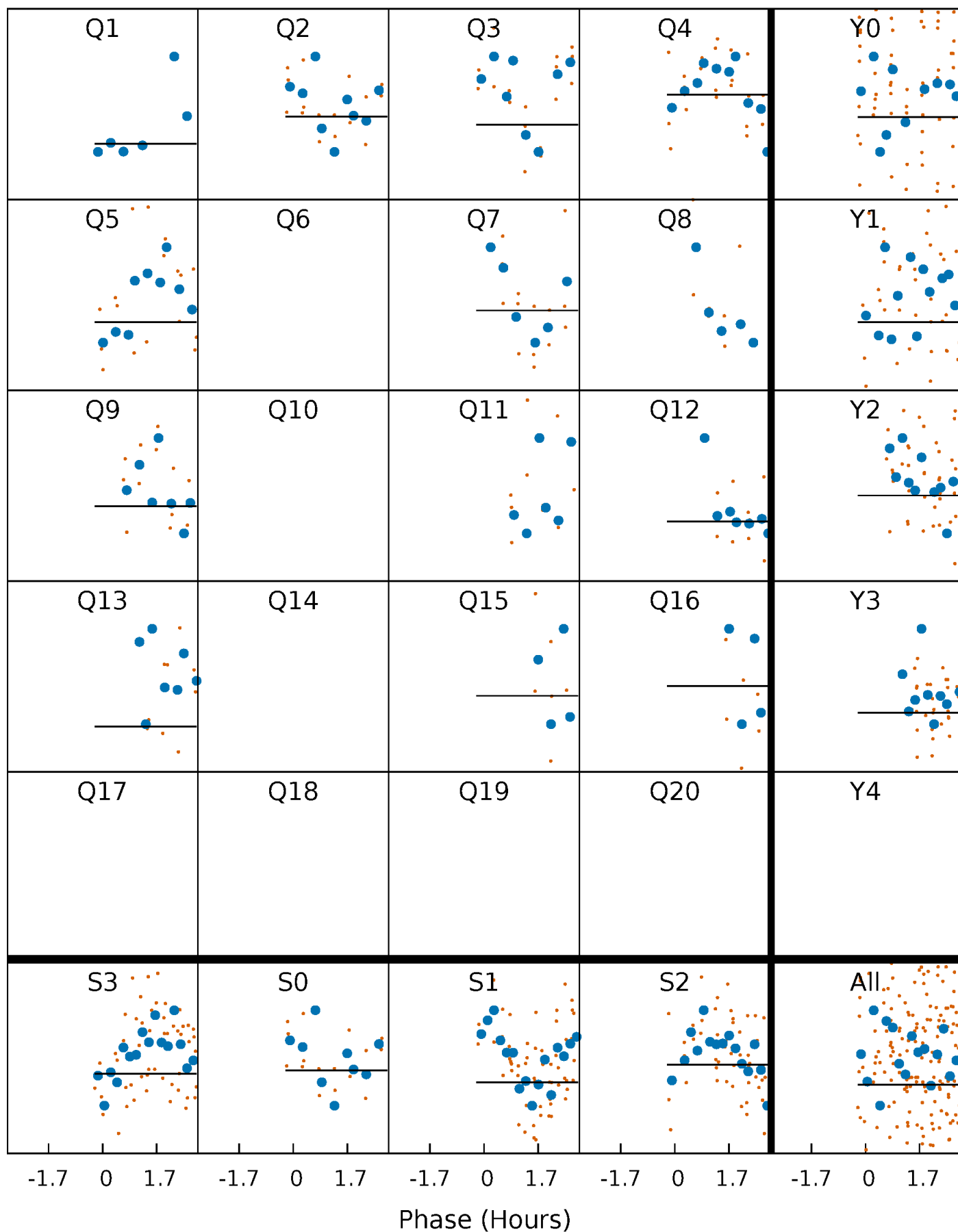
# PDC Quarter-Phased Transit Curves

TCE 003858884-04   P= 25.949884 Days    $T_0=155.492250$  (BKJD)



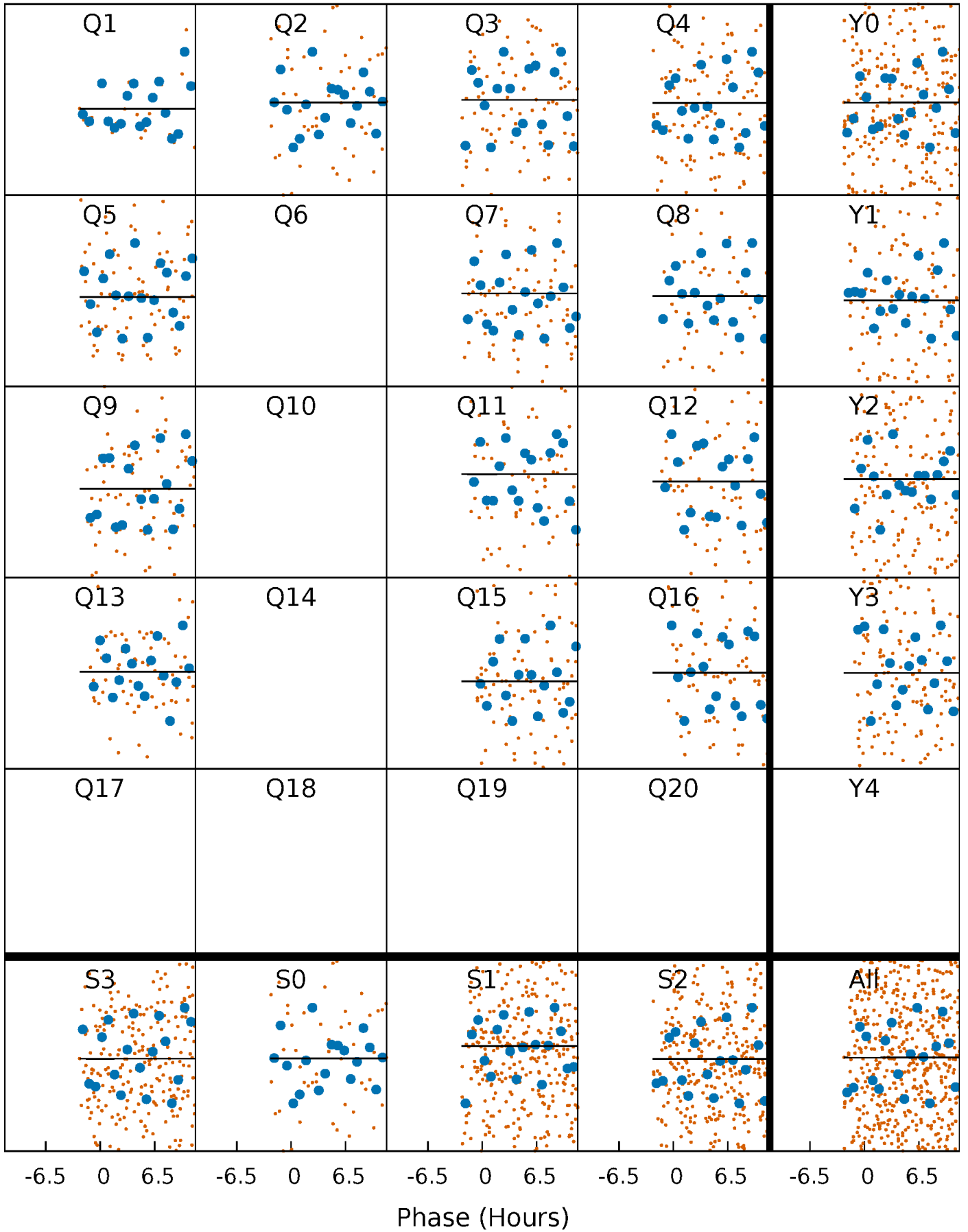
# DV Quarter-Phased Transit Curves

TCE 003858884-04   P= 25.949884 Days    $T_0=155.492250$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 003858884-04   P= 25.949884 Days    $T_0=155.583705$  (BKJD)

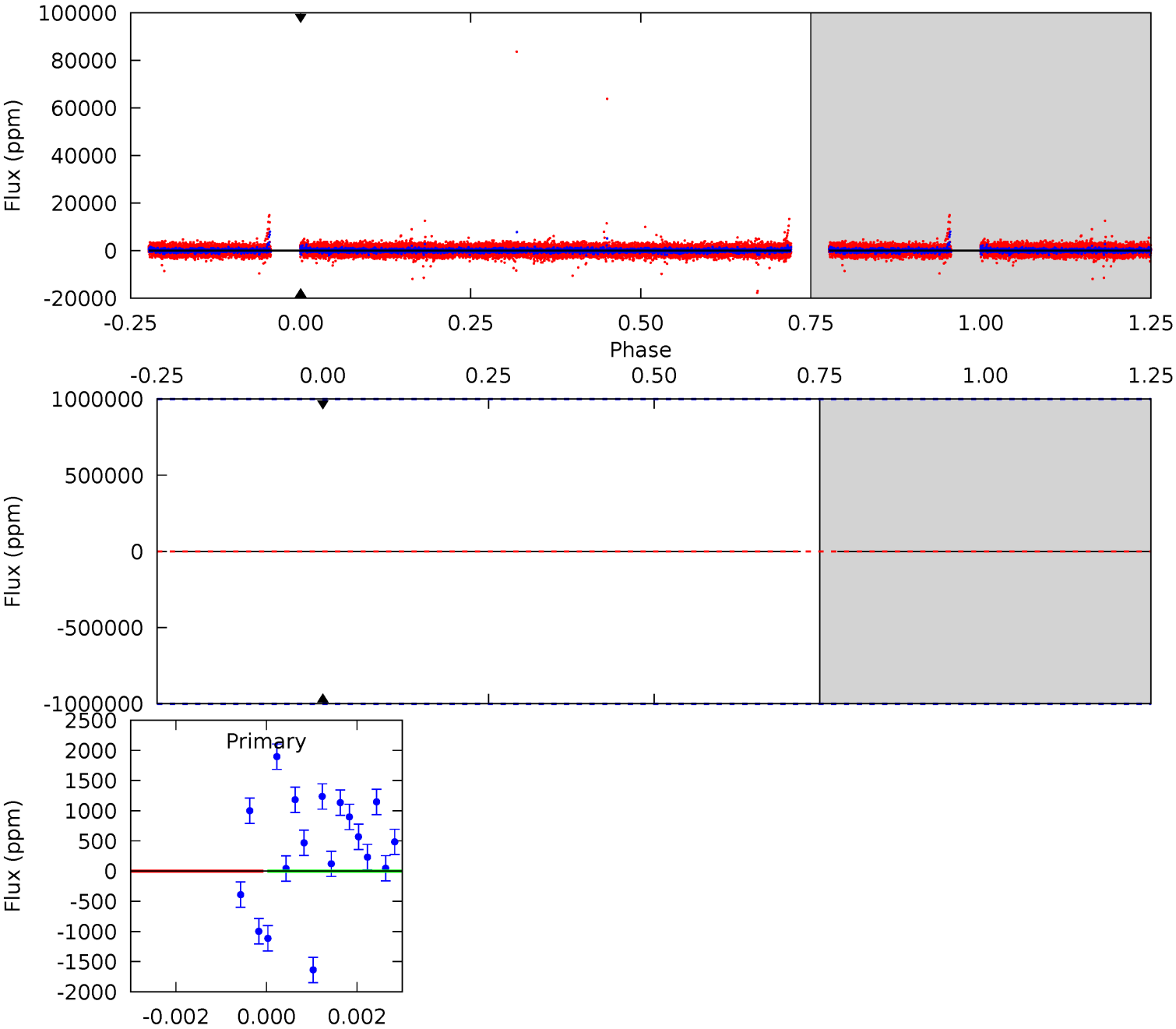




# DV Model-Shift Uniqueness Test

003858884-04, P = 25.949884 Days, E = 129.542366 Days

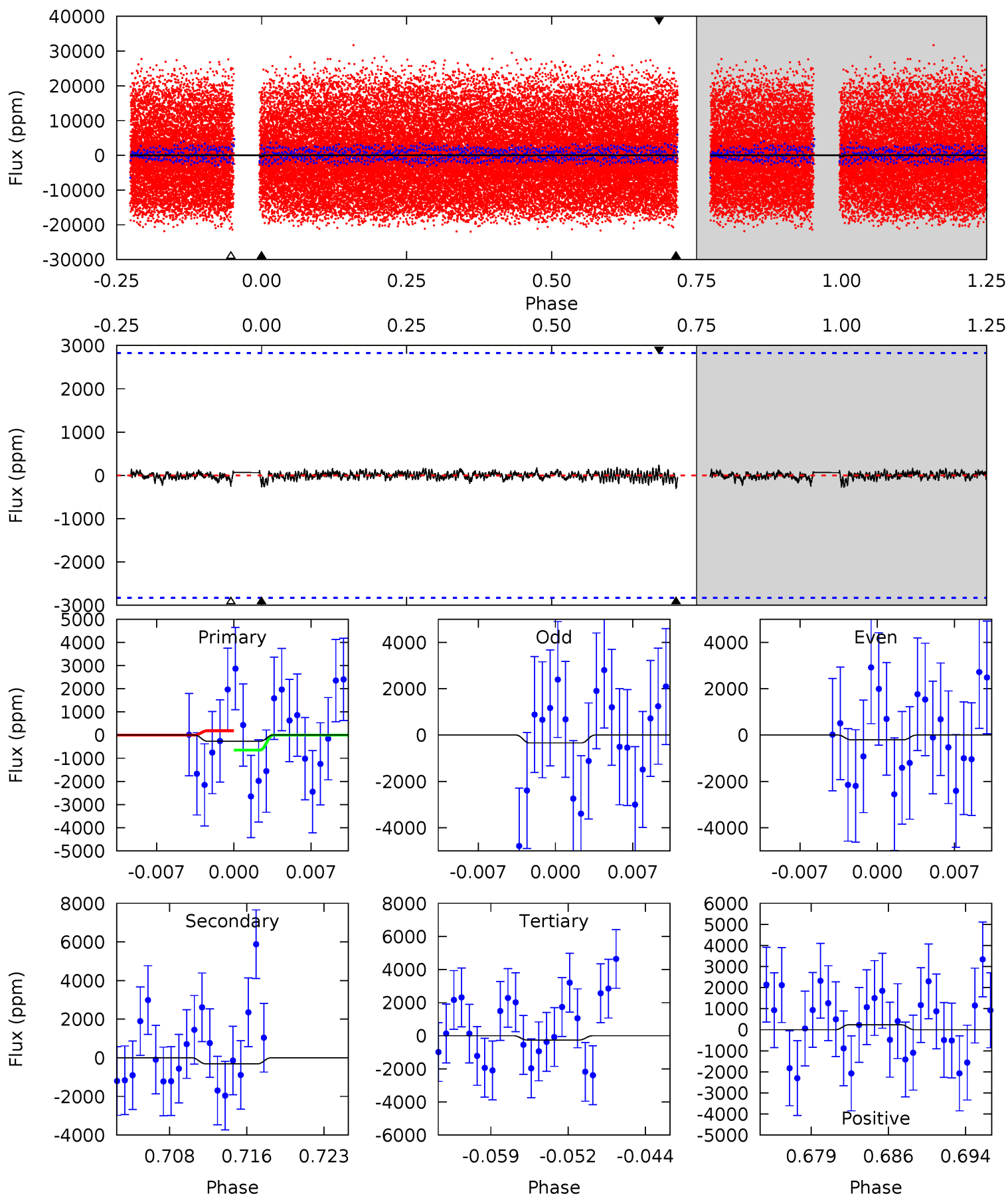
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

003858884-04, P = 25.949884 Days, E = 129.633821 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
0.49	0.56	0.46	0.42	5.08	2.68	0.12	0.02	0.06	0.09	0.13	0.12	0.98	0.43	0.41



### Stellar Parameters For KIC 003858884

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6569^{+188}_{-236}$	$4.008^{+0.357}_{-0.153}$	$-0.500^{+0.300}_{-0.300}$	$1.729^{+0.428}_{-0.642}$	$1.110^{+0.164}_{-0.164}$	$0.302^{+0.809}_{-0.129}$
	+3%/-4%	+9%/-4%	+60%/-60%	+25%/-37%	+15%/-15%	+268%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 003858884-04 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$0 \pm 1000000$	$14.15^{+16.14}_{-9.99}$	$1237^{+104}_{-119}$	$5252^{+24070}_{-26643}$	$246^{+18099}_{-11609}$
Alt.	$-309 \pm 556$	$12.26^{+14.14}_{-8.47}$	$1239^{+97}_{-130}$	$3429^{+2318}_{-6862}$	$22^{+323}_{-43}$

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

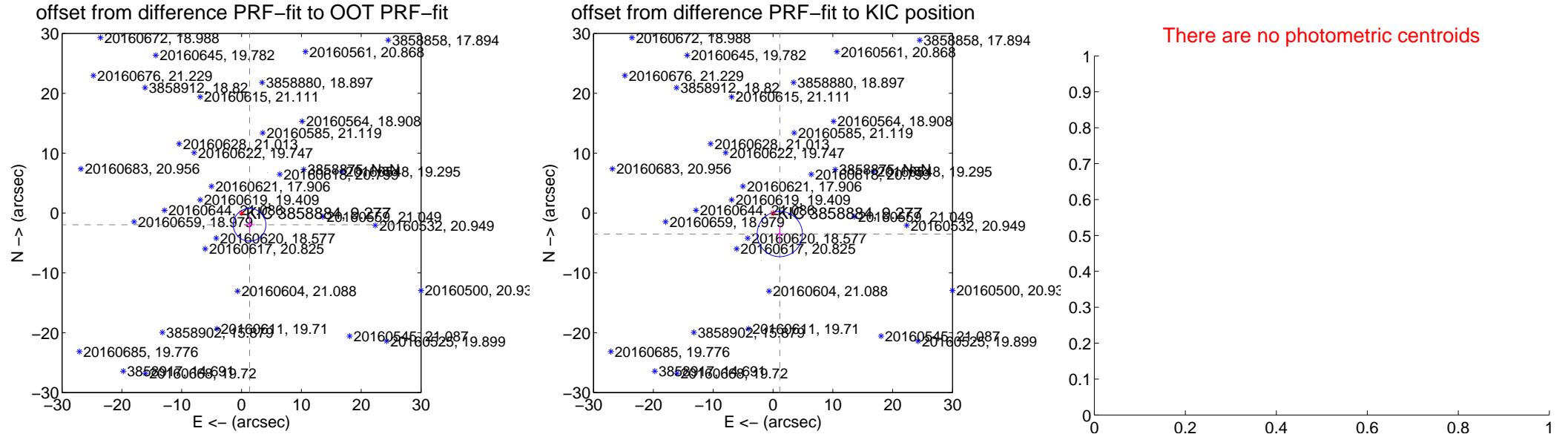
## DV Centroid Data

Supplemental centroid analysis for 003858884-04. **Kepler magnitude: 9.28.** Transit SNR -1.00

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

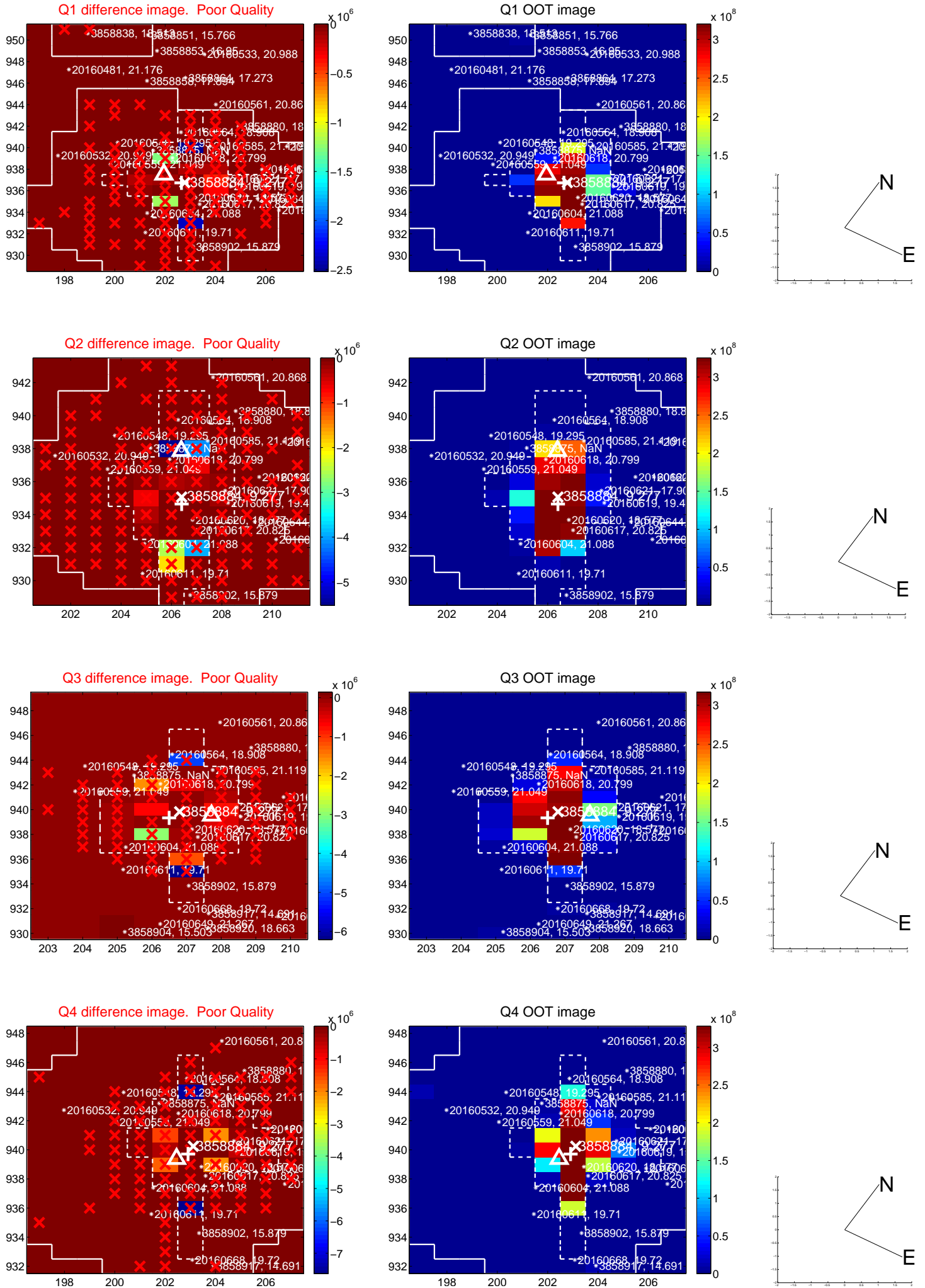
The direct PRF centroid is offset from the target star catalog position by about 1.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.382 \pm 0.910$	2.62	$-1.344 \pm 0.863$	$-1.967 \pm 1.320$
PRF-fit source offset from KIC position	$3.691 \pm 1.261$	2.93	$-1.132 \pm 0.863$	$-3.513 \pm 1.466$
photometric centroid source offset	—	—	—	—

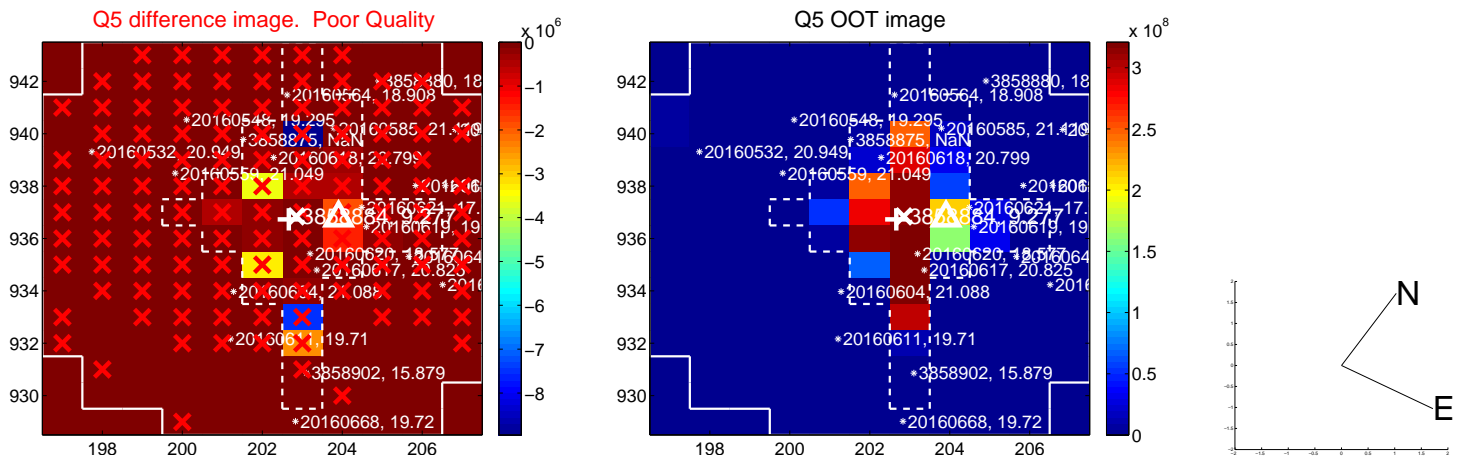


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

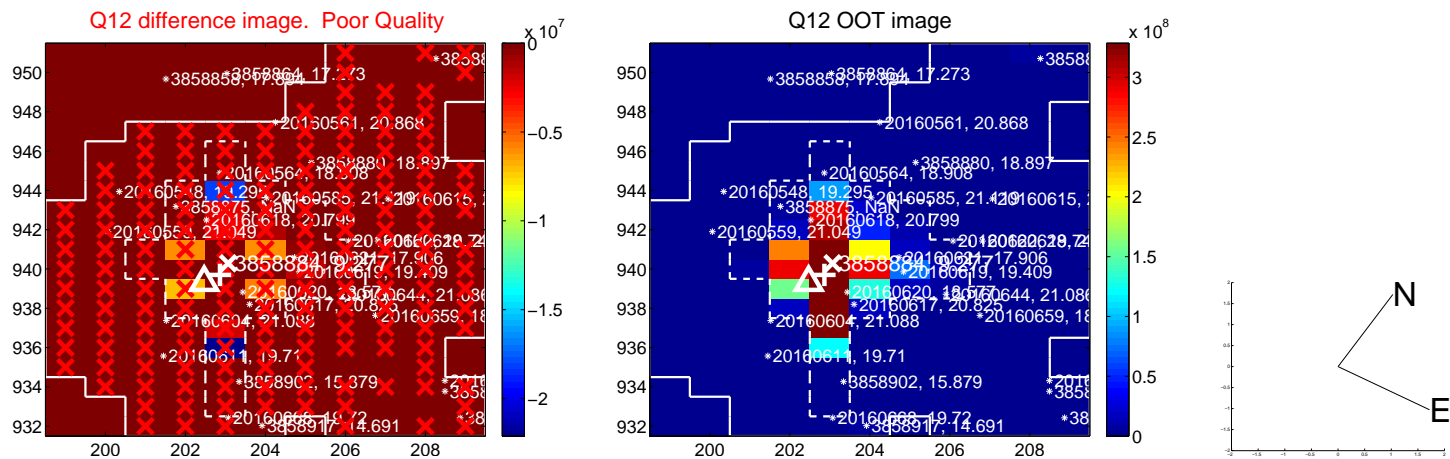
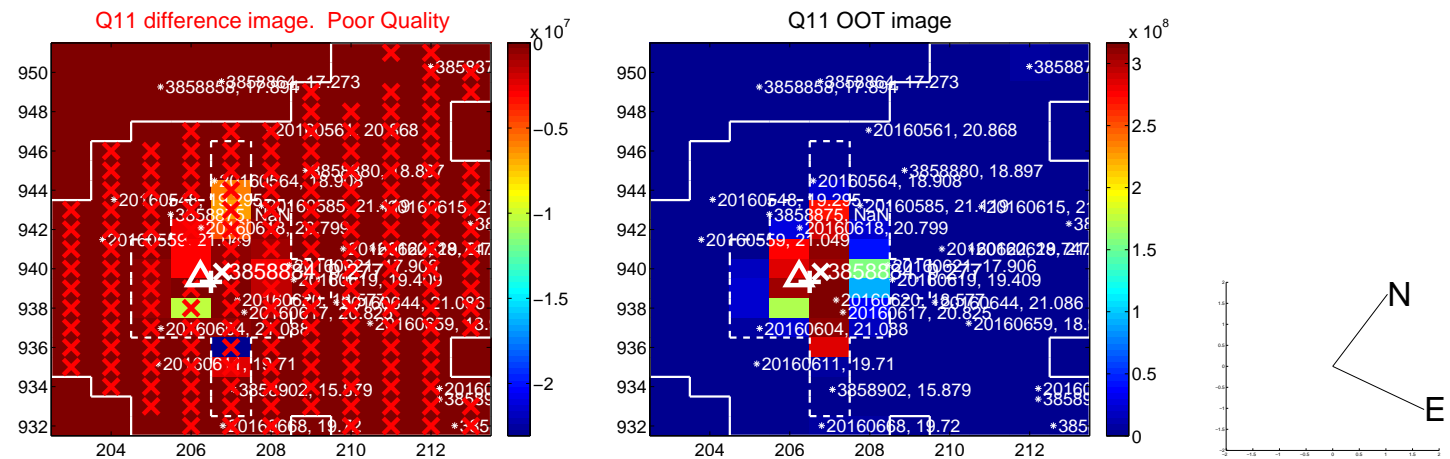
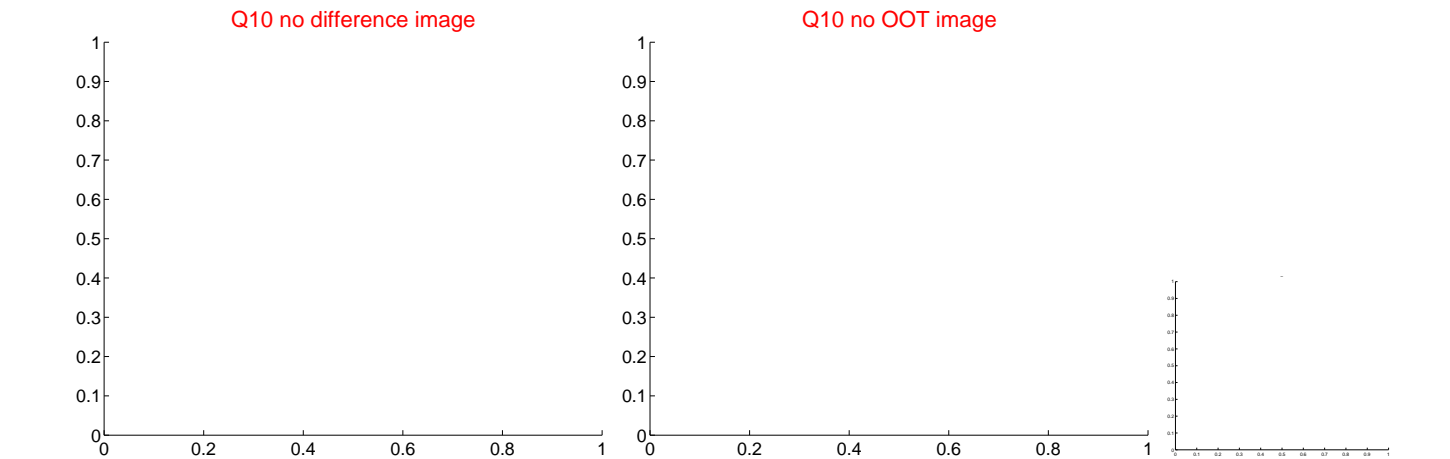
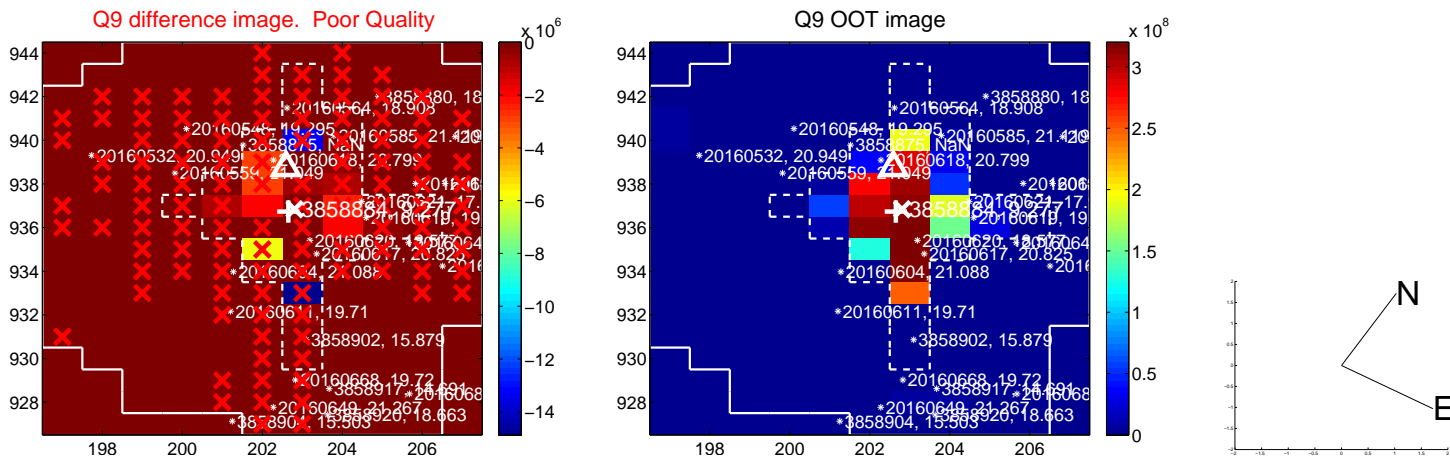
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

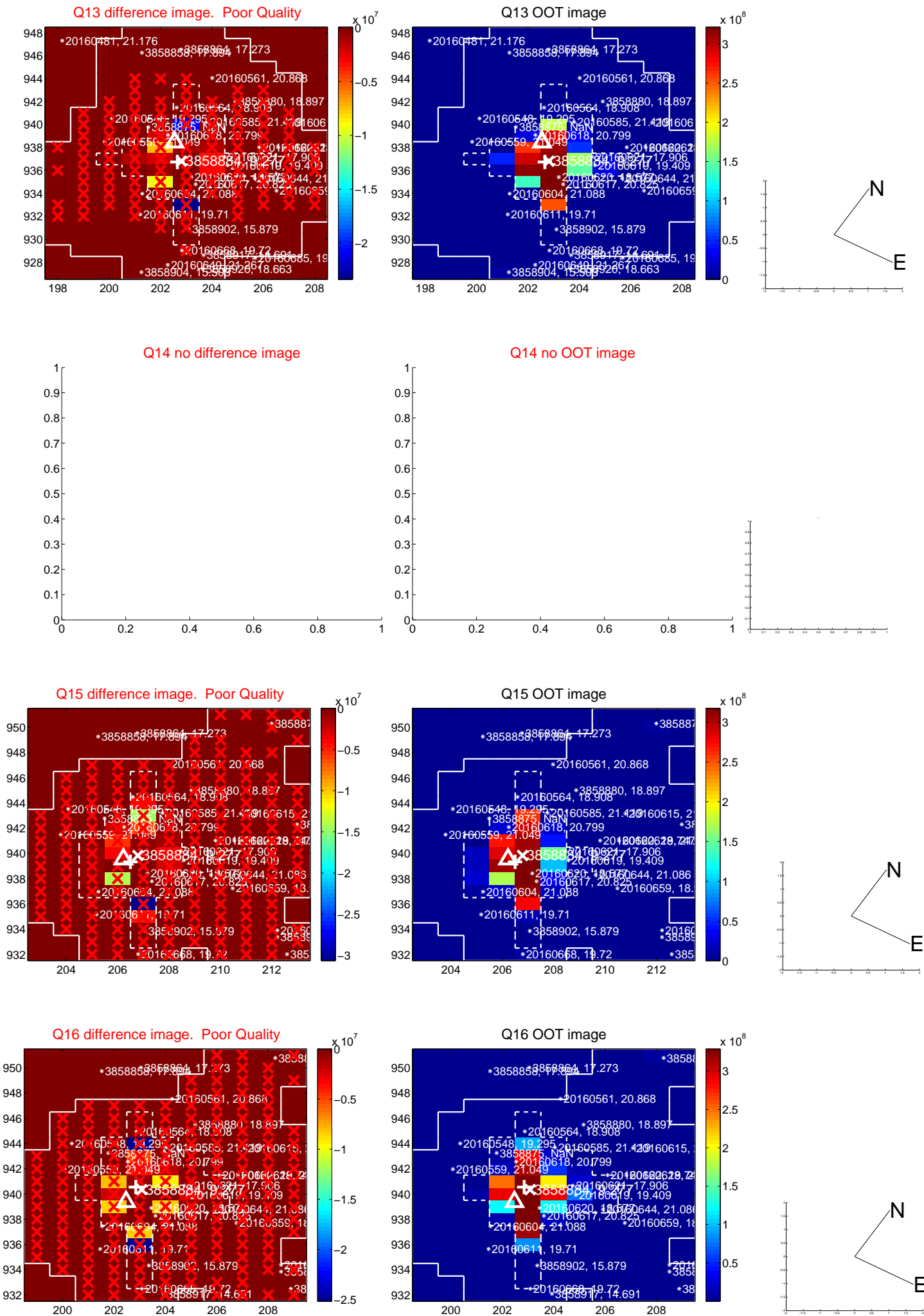


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



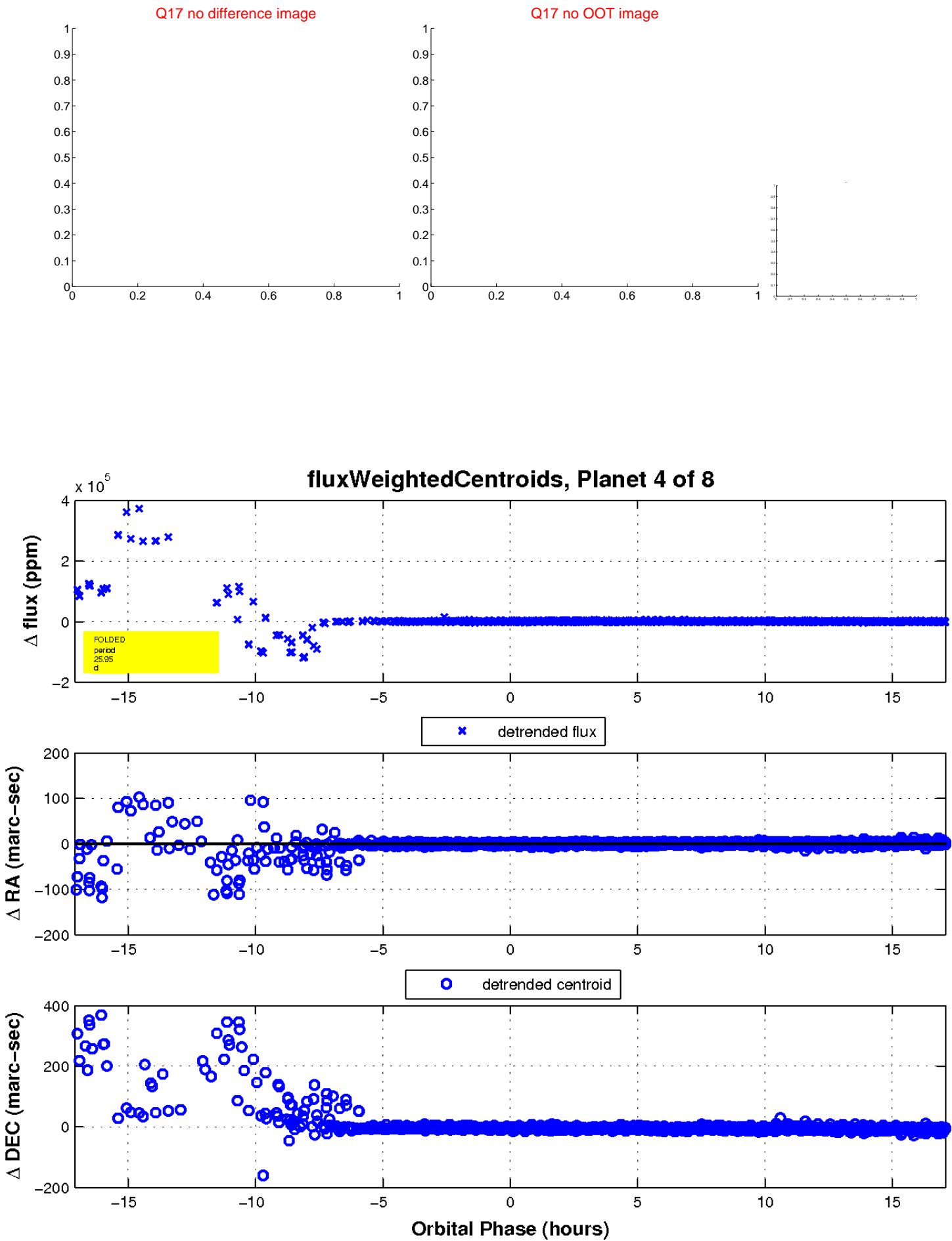


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

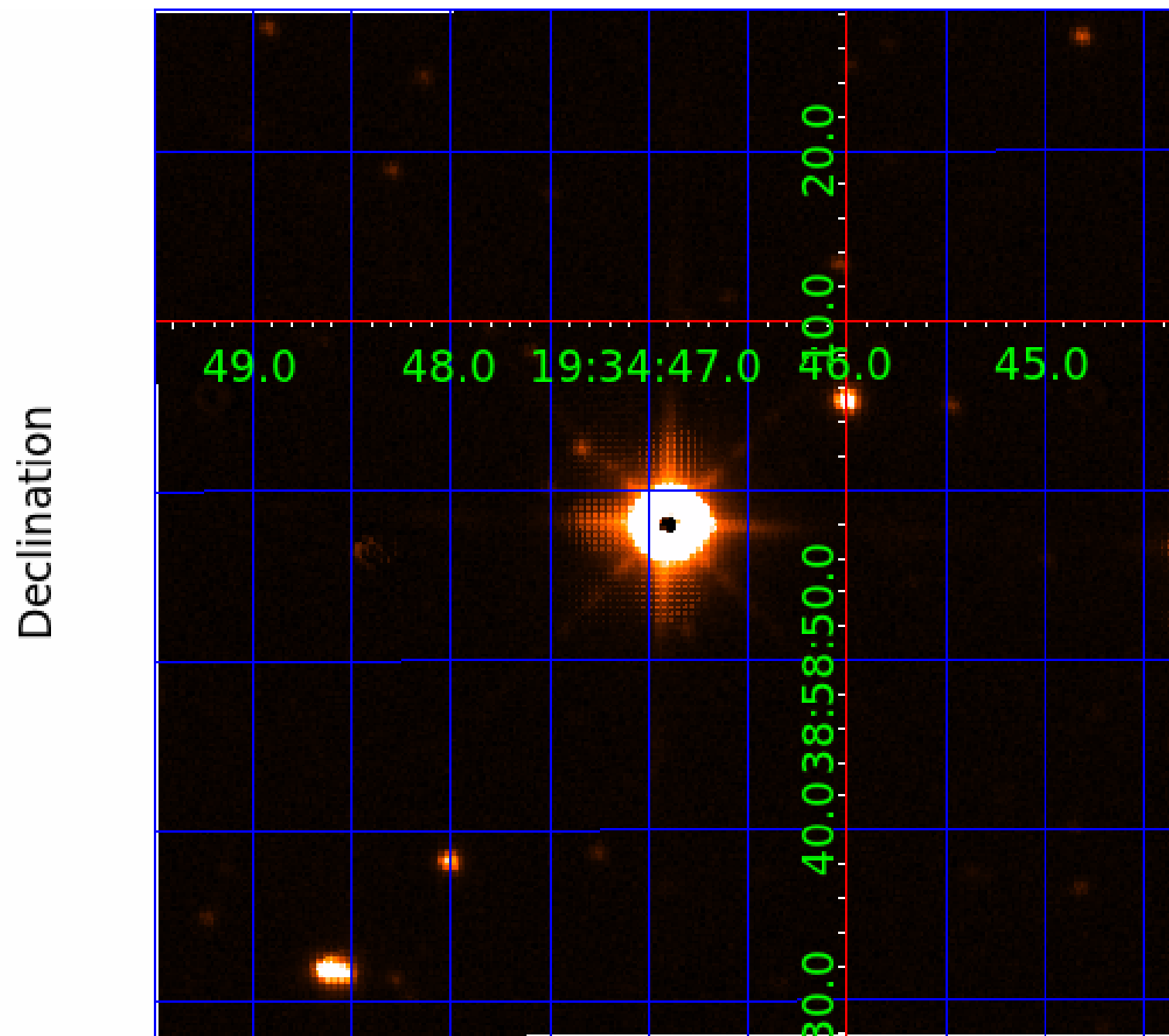




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image



## KIC 003858884

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003858884-01	OBS	6371.01	25.951589	154.890392	398557.6	9.000	4108.7	-1.0	1.73	6569	10.48	157.96
003858884-02	OBS	No	25.951660	148.930604	337130.8	12.000	3105.5	-1.0	1.73	6569	9.01	157.96
003858884-03	OBS	No	25.952955	154.298499	933.1	1.500	133.7	-1.0	1.73	6569	5.34	157.94
003858884-04	OBS	No	25.949884	155.492250	1865.7	1.500	183.2	-1.0	1.73	6569	7.55	157.97
003858884-06	OBS	No	25.948835	154.410203	465.9	7.500	119.8	-1.0	1.73	6569	3.76	157.98
003858884-07	OBS	No	265.342550	338.048118	4604.7	11.114	58.6	15.0	1.73	6569	21.10	7.12
003858884-08	OBS	No	363.387340	459.169809	6494.8	15.401	60.8	24.0	1.73	6569	16.20	4.68

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003858884-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
003858884-02	OBS	FP	0.00	1	0	0	0	SAME_NTL_PERIOD—CENT_SATURATED
003858884-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003858884-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

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

Ephemeris Match Information For 003858884-06

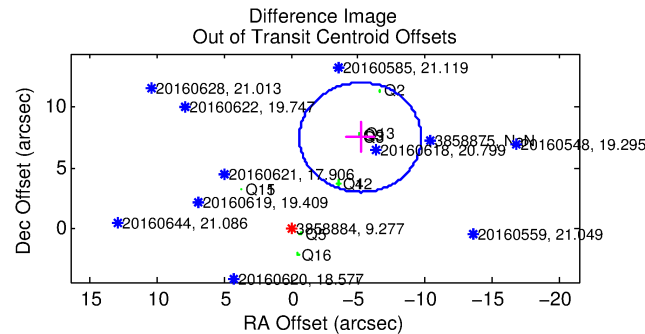
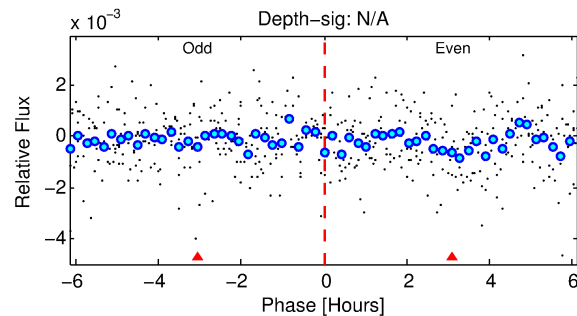
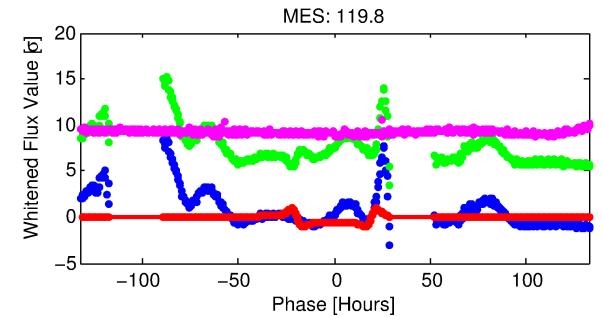
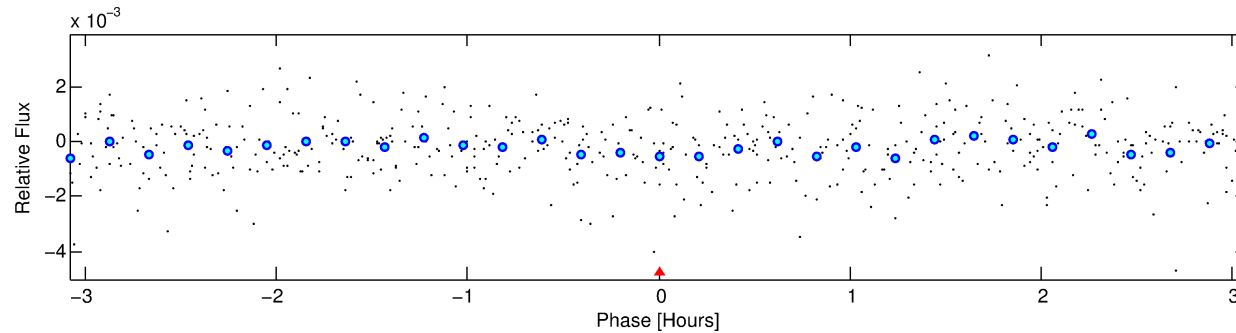
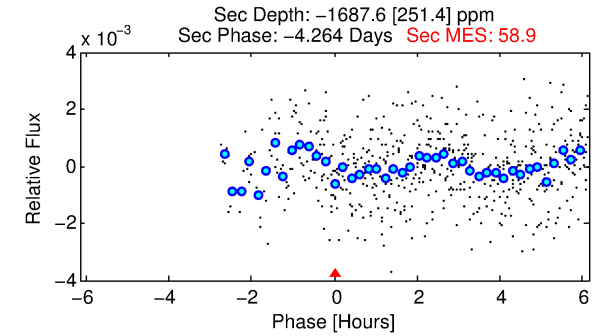
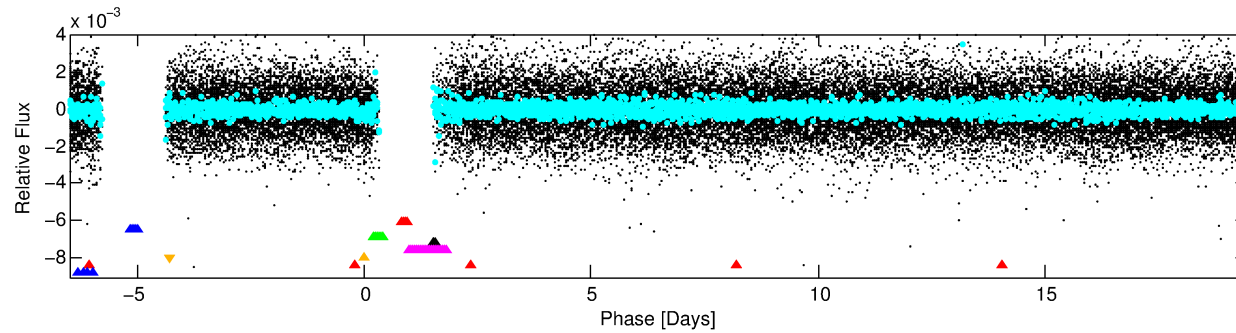
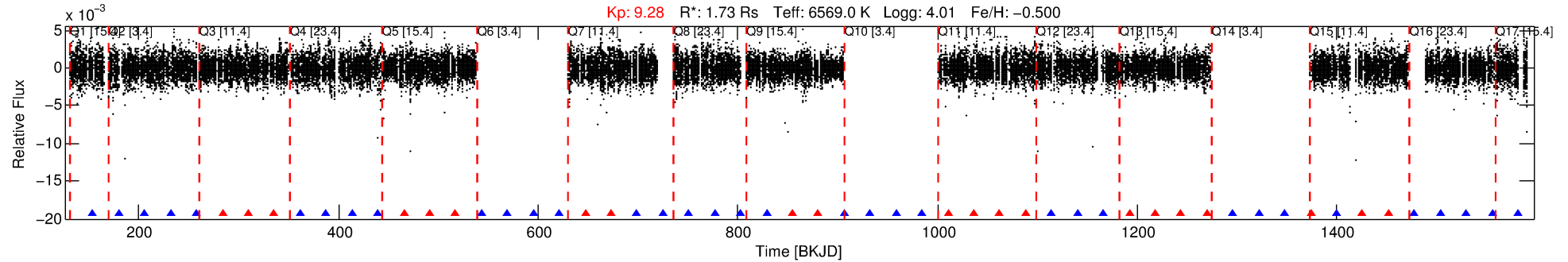
No Significant Match Found

# DV One-Page Summary

KIC: 3858884 Candidate: 6 of 8 Period: 25.949 d

KOI: K06371 Corr: No Ephemeris Match

Kp: 9.28 R\*: 1.73 Rs Teff: 6569.0 K Logg: 4.01 Fe/H: -0.500



TPS TCE Results:

Period = 25.94884 d

Epoch = 154.4102 BKJD

DV fit results are unavailable

DV Diagnostic Results:

ShortPeriod-sig: N/A

LongPeriod-sig: 0.3% [0.00σ]

ModelChiSquare2-sig: N/A

ModelChiSquareGof-sig: N/A

Bootstrap-pfa: N/A

RollingBand-fgt: 0.47 [19/40]

GhostDiagnostic-chr: N/A

Centroid-sig: N/A

Centroid-so: 0.960 arcsec [3.09σ]

OotOffset-rm: 9.126 arcsec [6.02σ]

KicOffset-rm: 8.063 arcsec [5.81σ]

OotOffset-st: 1/3/3/3 [10]

KicOffset-st: 1/3/3/3 [10]

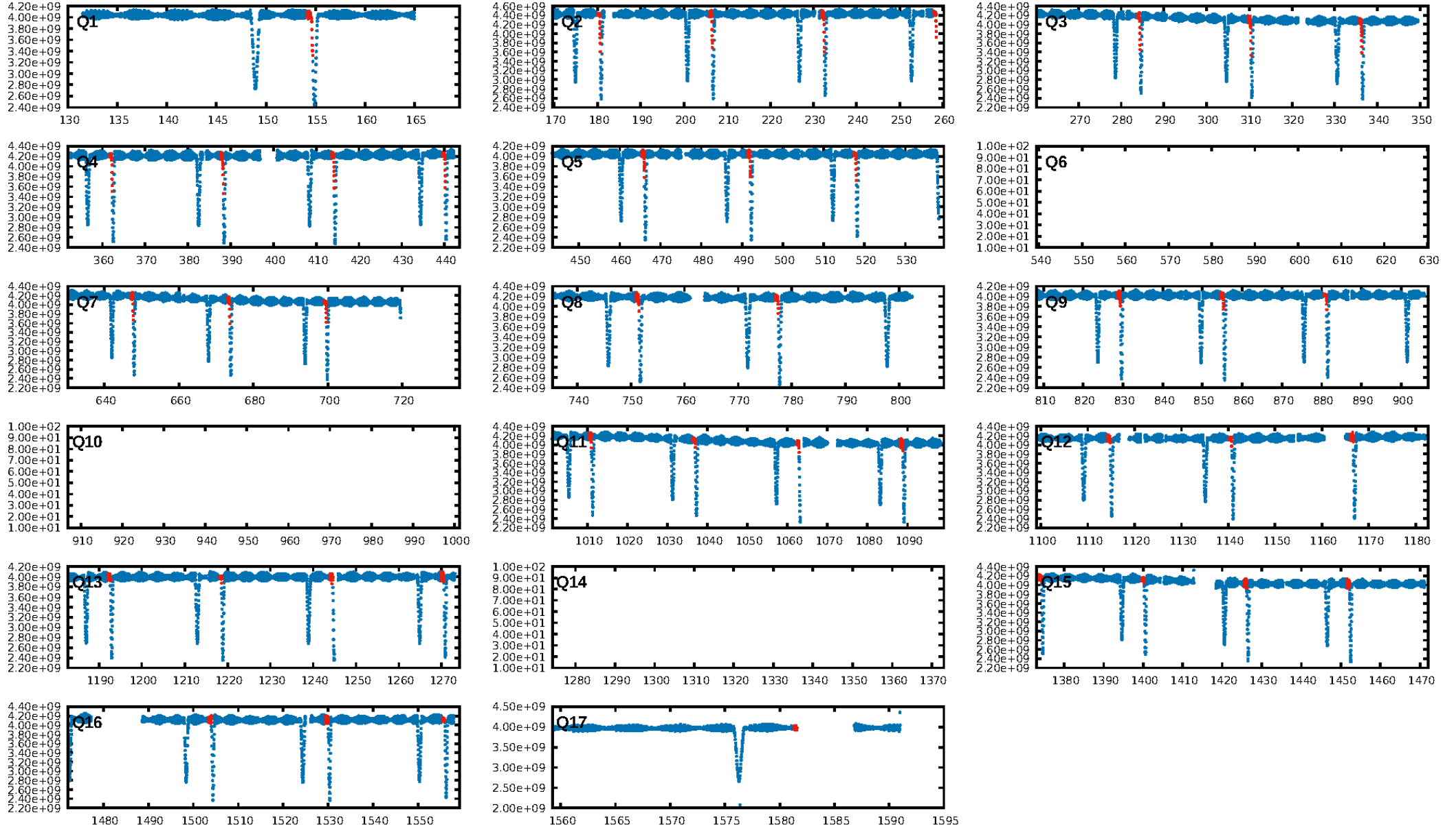
DiffImageQuality-fgm: 0.00 [0/10]

DiffImageOverlap-fno: 0.60 [6/10]

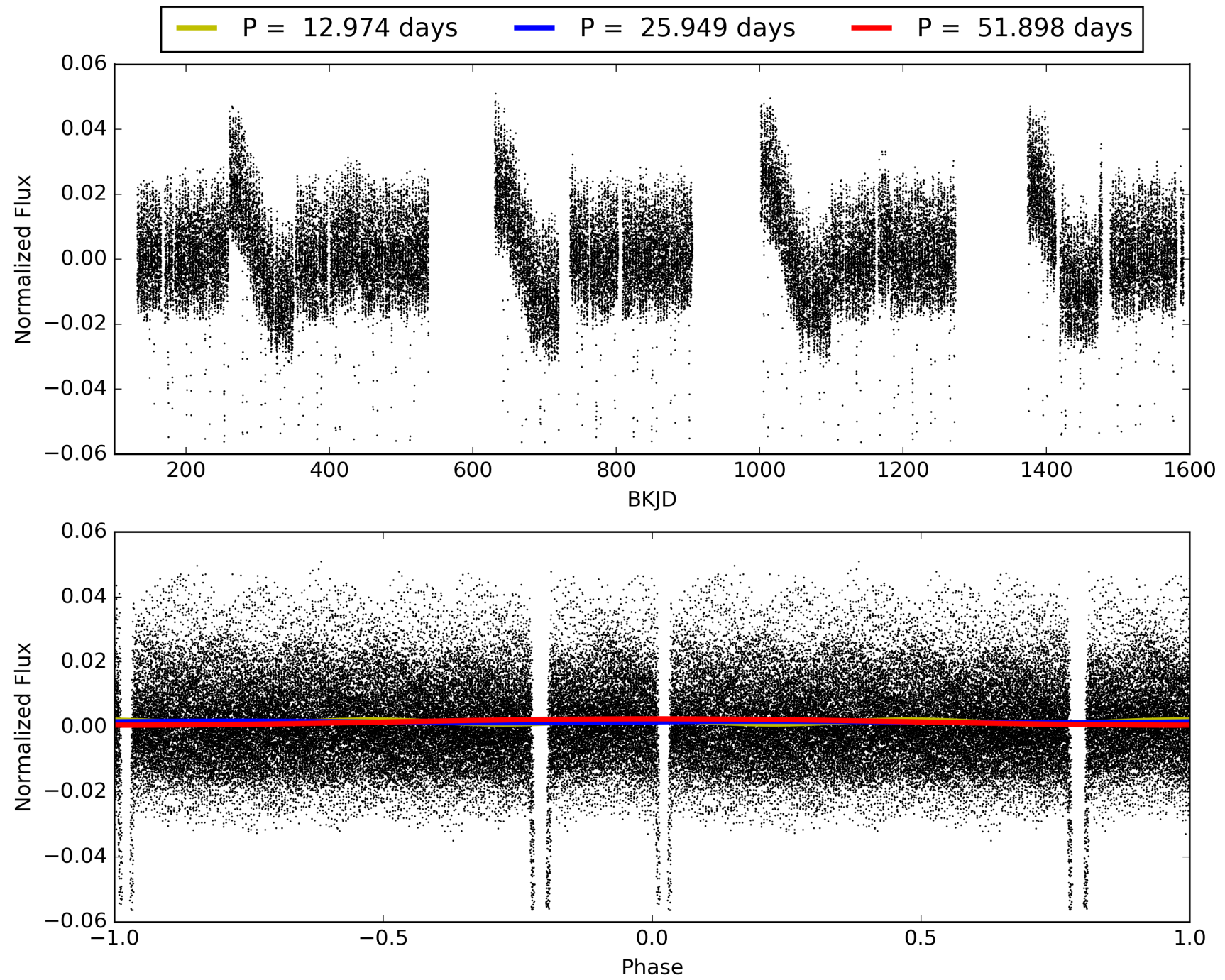
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:45:24 Z

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

# TCE 003858884-06, PDC Light Curves

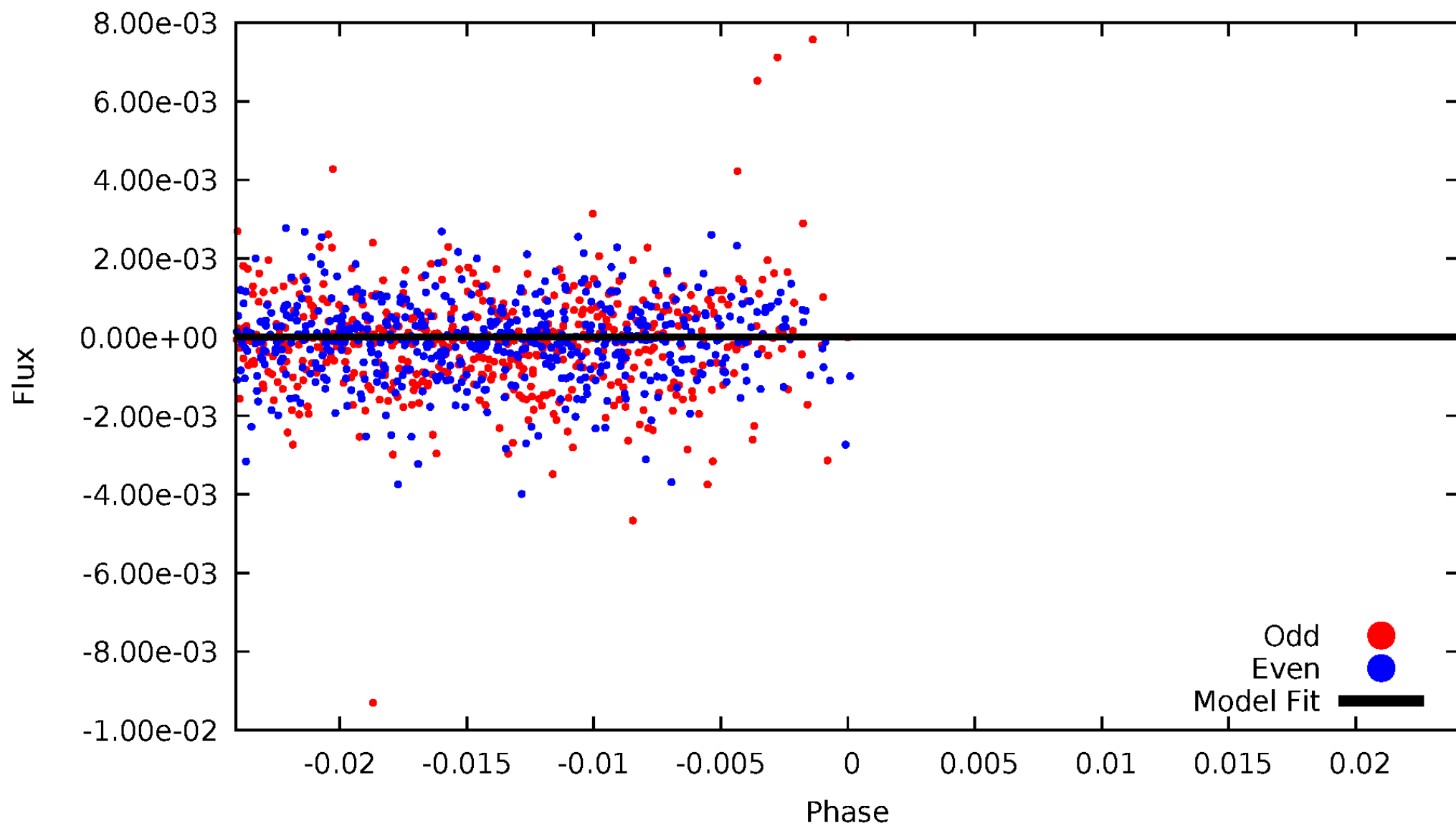


TCE 003858884-06



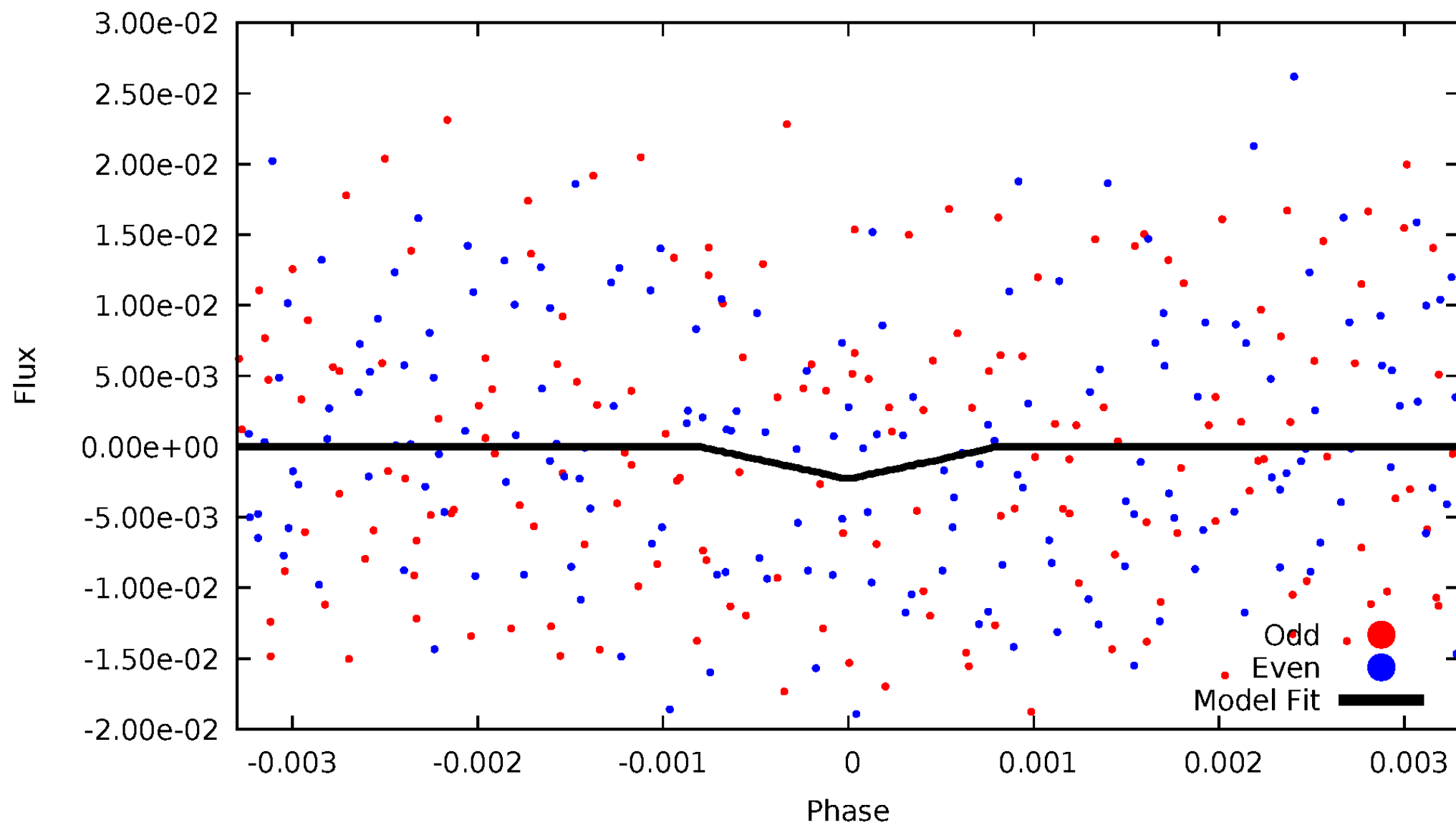
# DV Odd/Even

TCE 003858884-06



# ALT Odd/Even

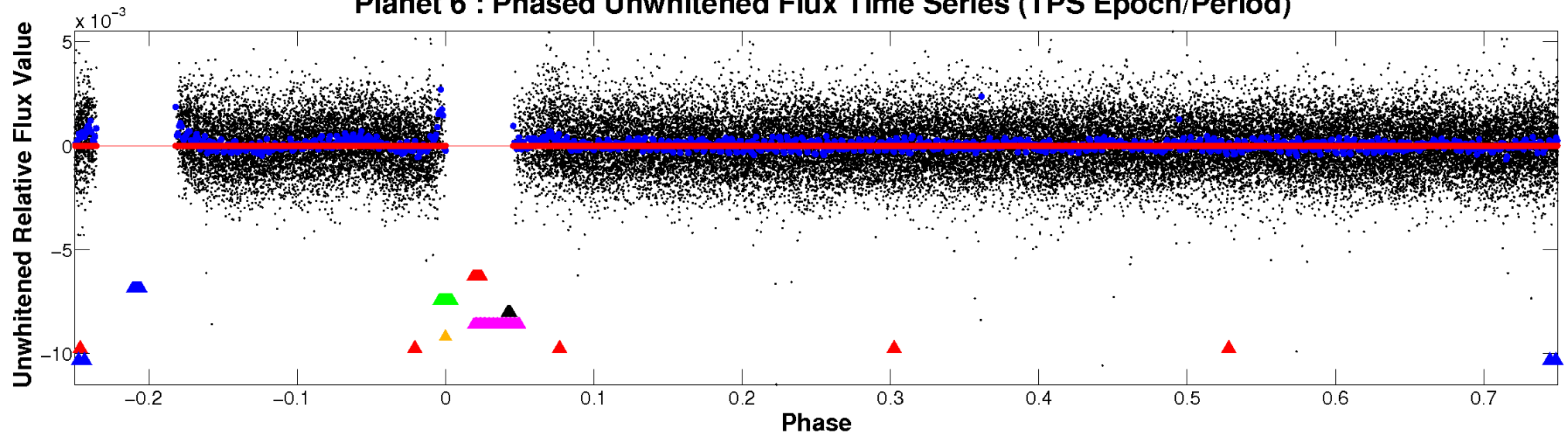
TCE 003858884-06



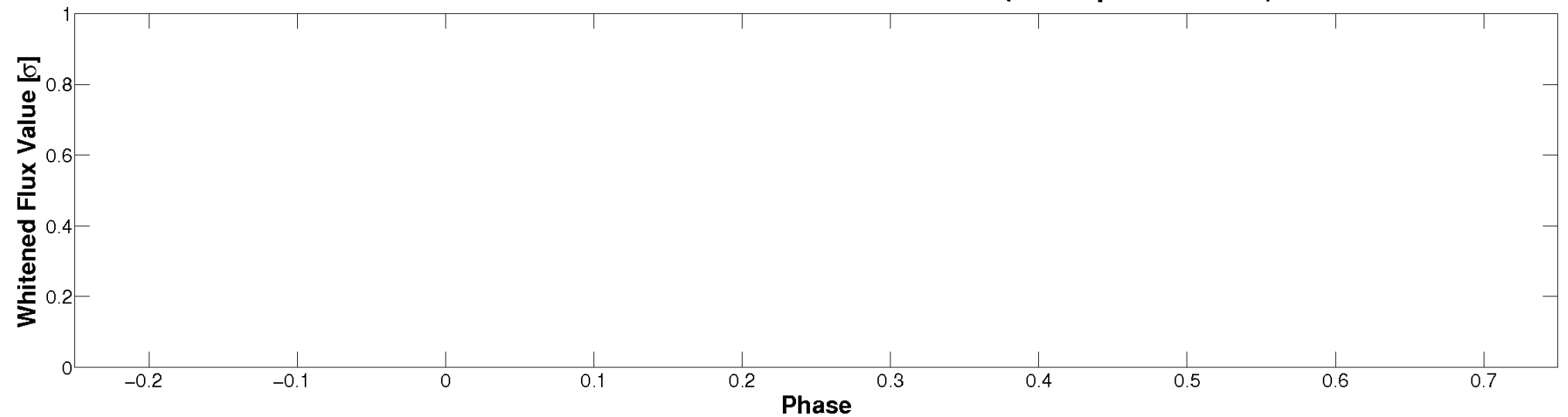


# Non-Whitened Vs. Whitened Light Curve

**Planet 6 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

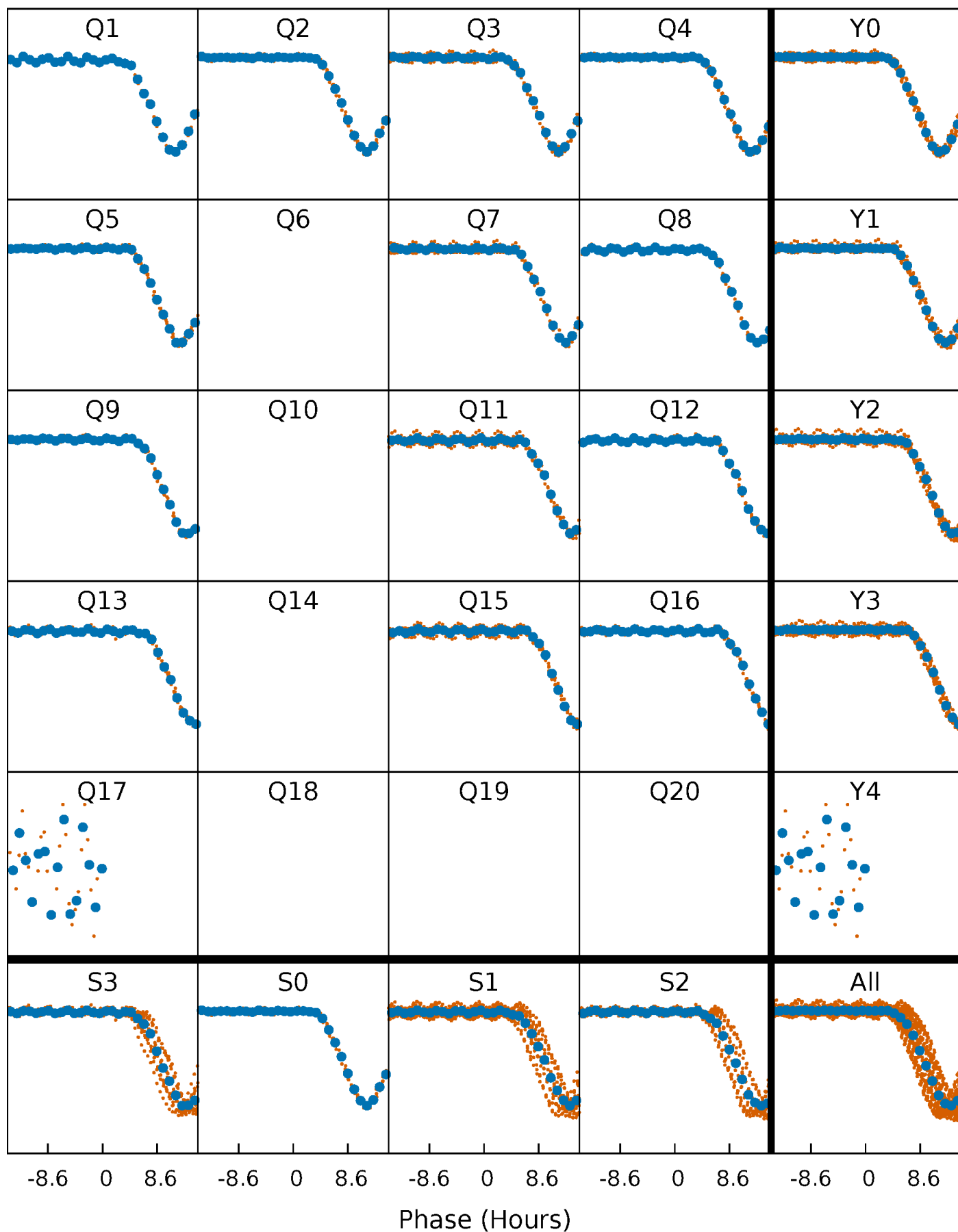


**Planet 6 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



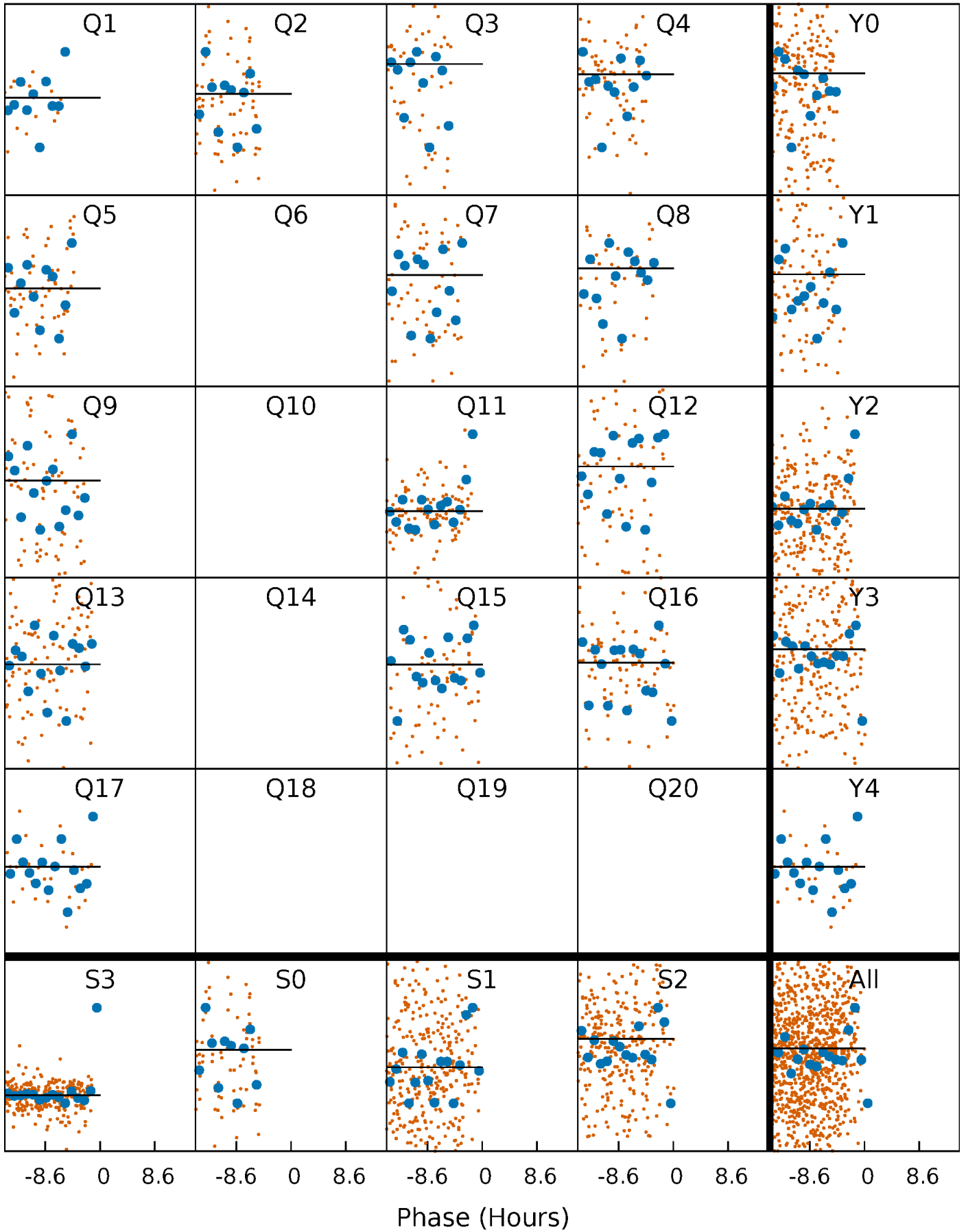
# PDC Quarter-Phased Transit Curves

TCE 003858884-06 P= 25.948835 Days  $T_0=154.410203$  (BKJD)



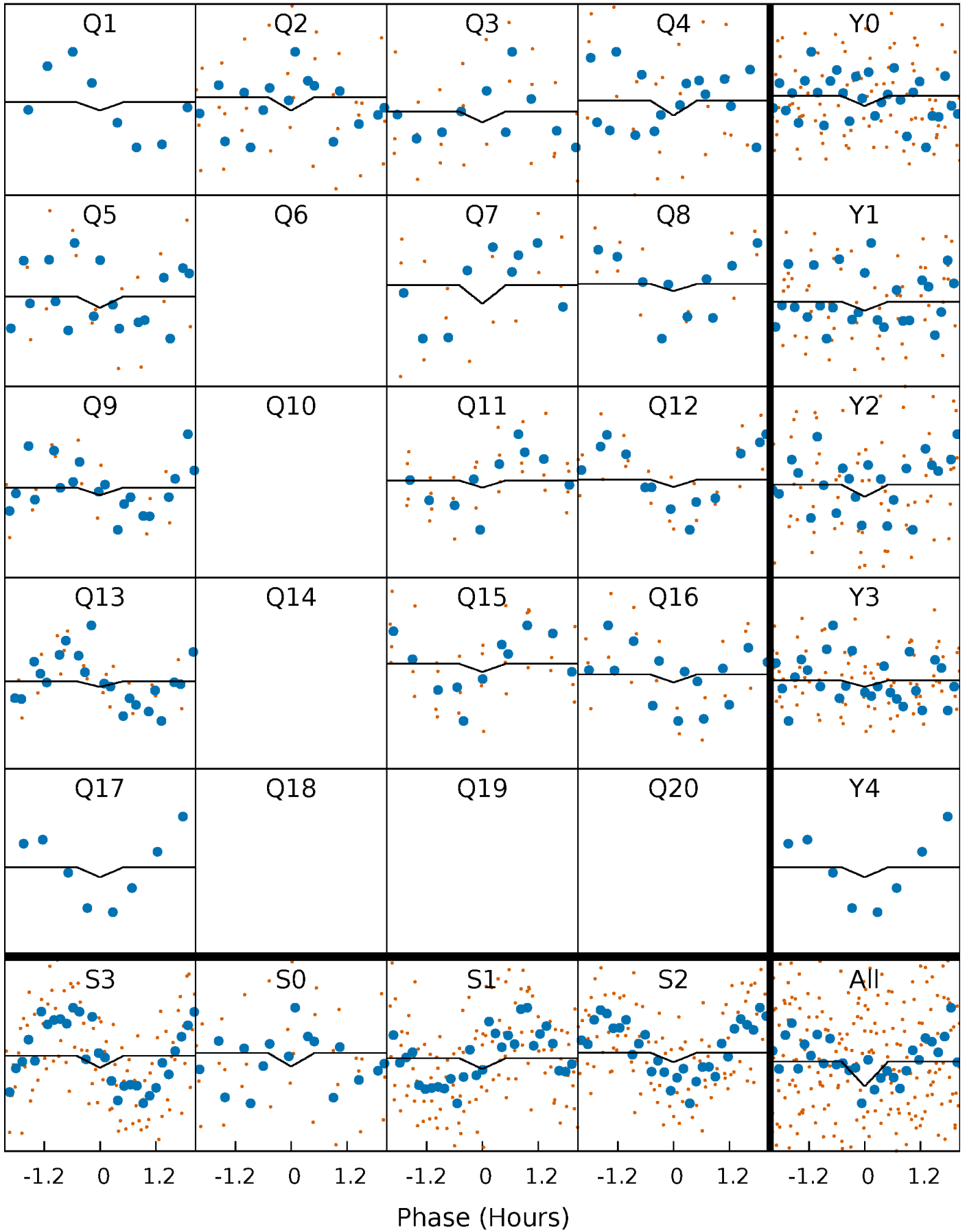
# DV Quarter-Phased Transit Curves

TCE 003858884-06   P= 25.948835 Days    $T_0=154.410203$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

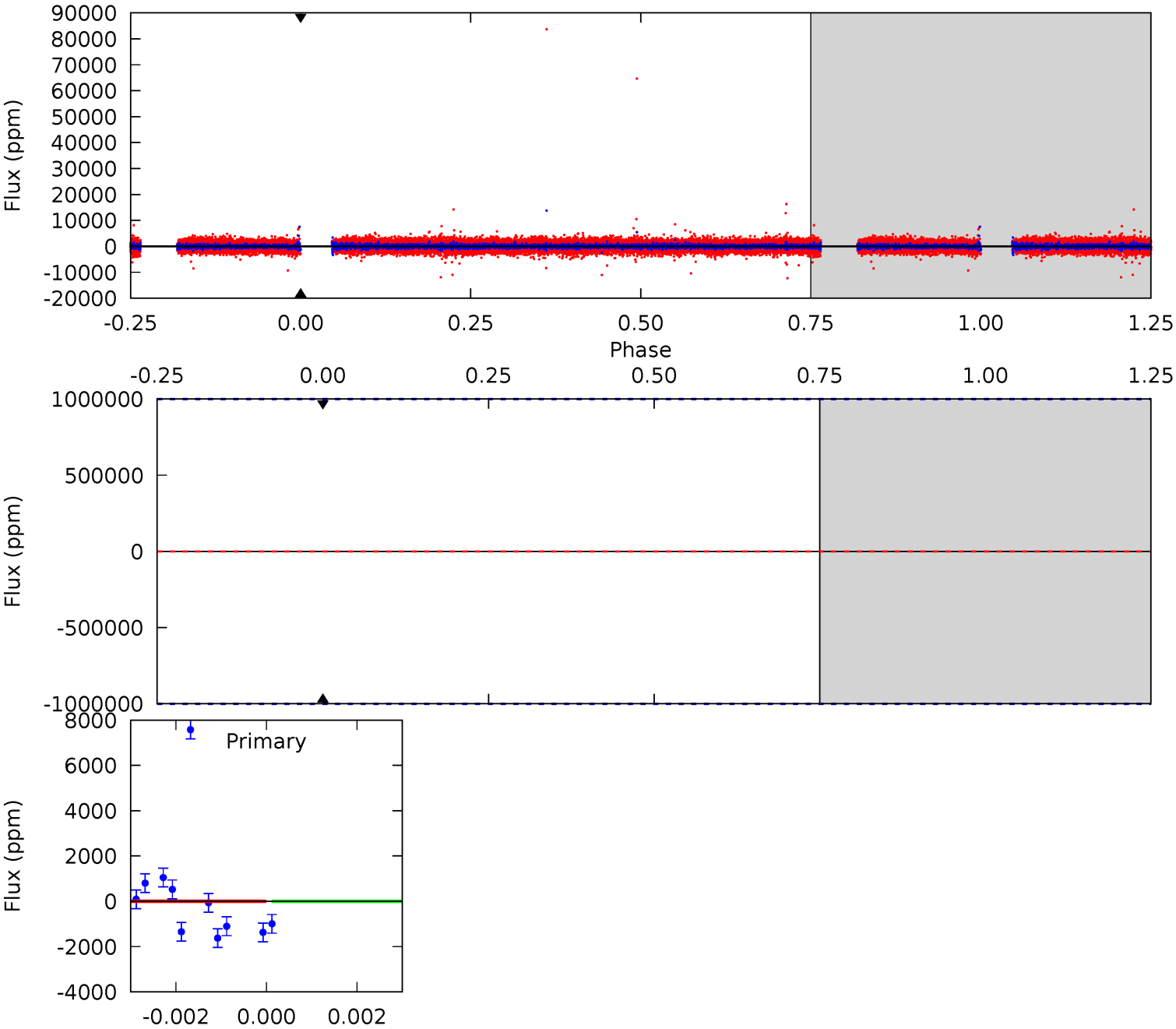
TCE 003858884-06   P= 25.948835 Days    $T_0=154.077964$  (BKJD)



# DV Model-Shift Uniqueness Test

003858884-06, P = 25.948835 Days, E = 128.461368 Days

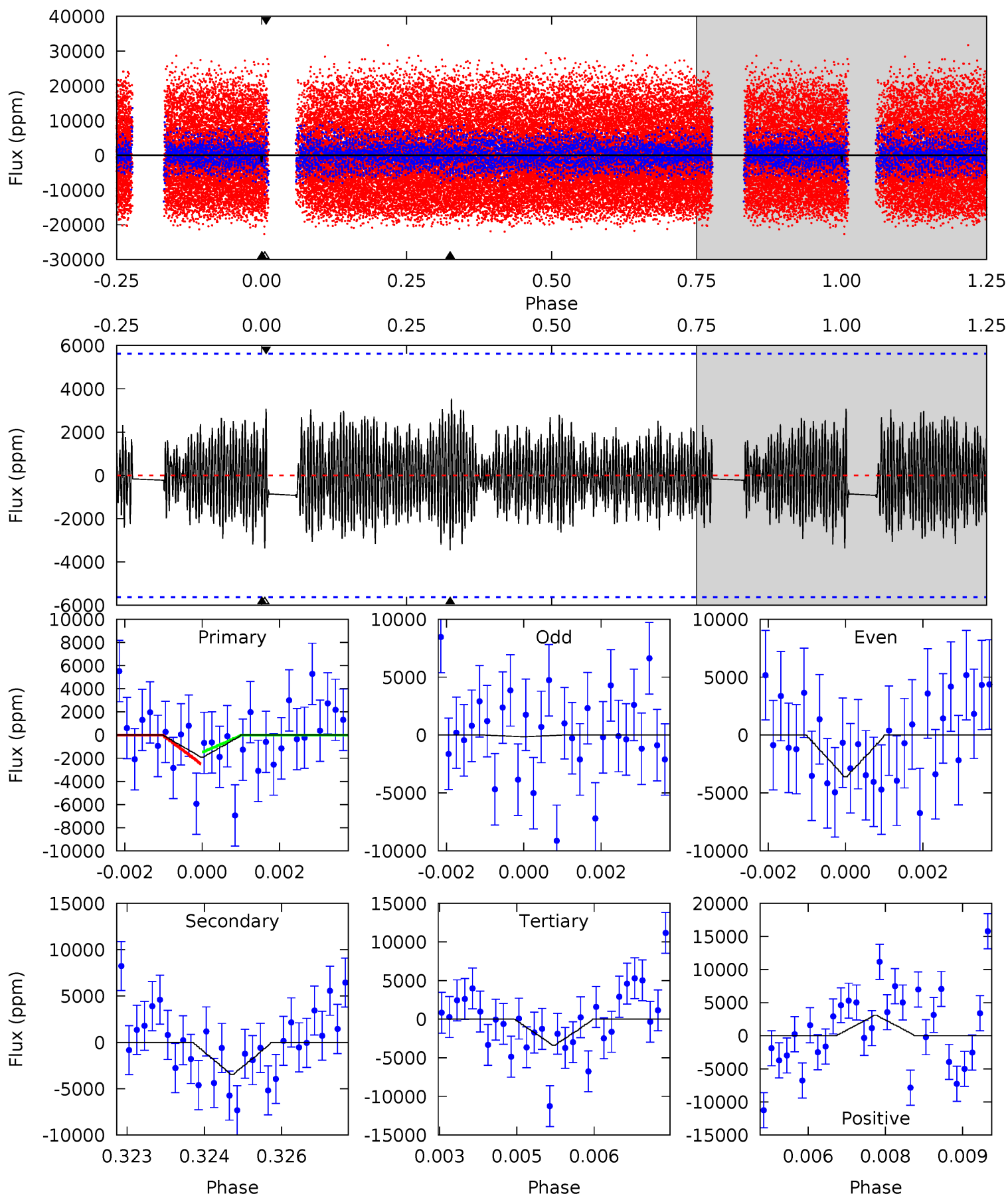
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

003858884-06, P = 25.948835 Days, E = 128.129129 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
1.82	3.30	3.21	2.93	5.37	3.16	1.24	-1.39	-1.11	0.09	0.37	1.64	0.57	0.51	0.49



### Stellar Parameters For KIC 003858884

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6569^{+188}_{-236}$	$4.008^{+0.357}_{-0.153}$	$-0.500^{+0.300}_{-0.300}$	$1.729^{+0.428}_{-0.642}$	$1.110^{+0.164}_{-0.164}$	$0.302^{+0.809}_{-0.129}$
	+3%/-4%	+9%/-4%	+60%/-60%	+25%/-37%	+15%/-15%	+268%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 003858884-06 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$0 \pm 1000000$	$13.99^{+14.89}_{-9.43}$	$1247^{+98}_{-126}$	$-5690^{+30497}_{-17375}$	$-271.501^{+15121.797}_{-13462.260}$
Alt.	$-3458 \pm 1048$	$15.36^{+16.17}_{-10.03}$	$1236^{+106}_{-121}$	$5356^{+4428}_{-1312}$	$245^{+1865}_{-189}$

$T_{max}$  = 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

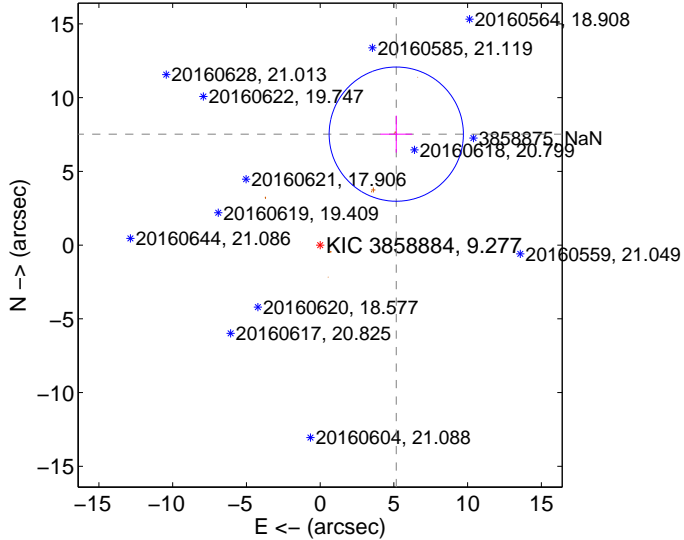
Supplemental centroid analysis for 003858884-06. **Kepler magnitude: 9.28.** Transit SNR -1.00

There are 0 quarters with good PRF difference image offsets

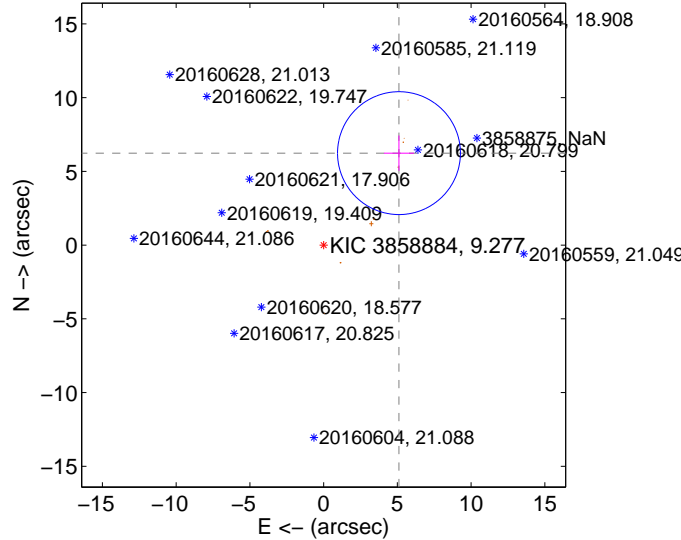
The OOT PRF centroid is offset from the target star catalog position by about 2.51 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>9.126 <math>\pm</math> 1.517</b>	<b>6.02</b>	-5.162 $\pm$ 1.078	7.526 $\pm$ 1.257
PRF-fit source offset from KIC position	<b>8.063 <math>\pm</math> 1.389</b>	<b>5.81</b>	-5.110 $\pm$ 1.018	6.237 $\pm$ 1.194
photometric centroid source offset	<b>0.96 <math>\pm</math> 0.31</b>	<b>3.09</b>	0.53 $\pm$ 0.22	-0.80 $\pm$ 0.34

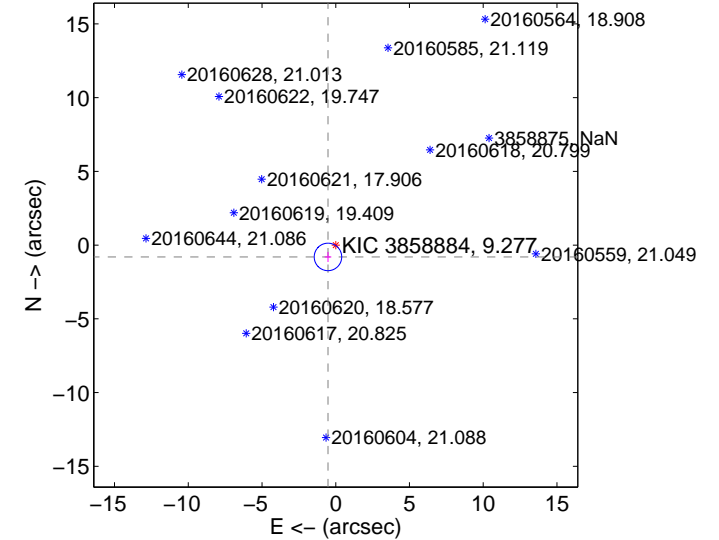
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



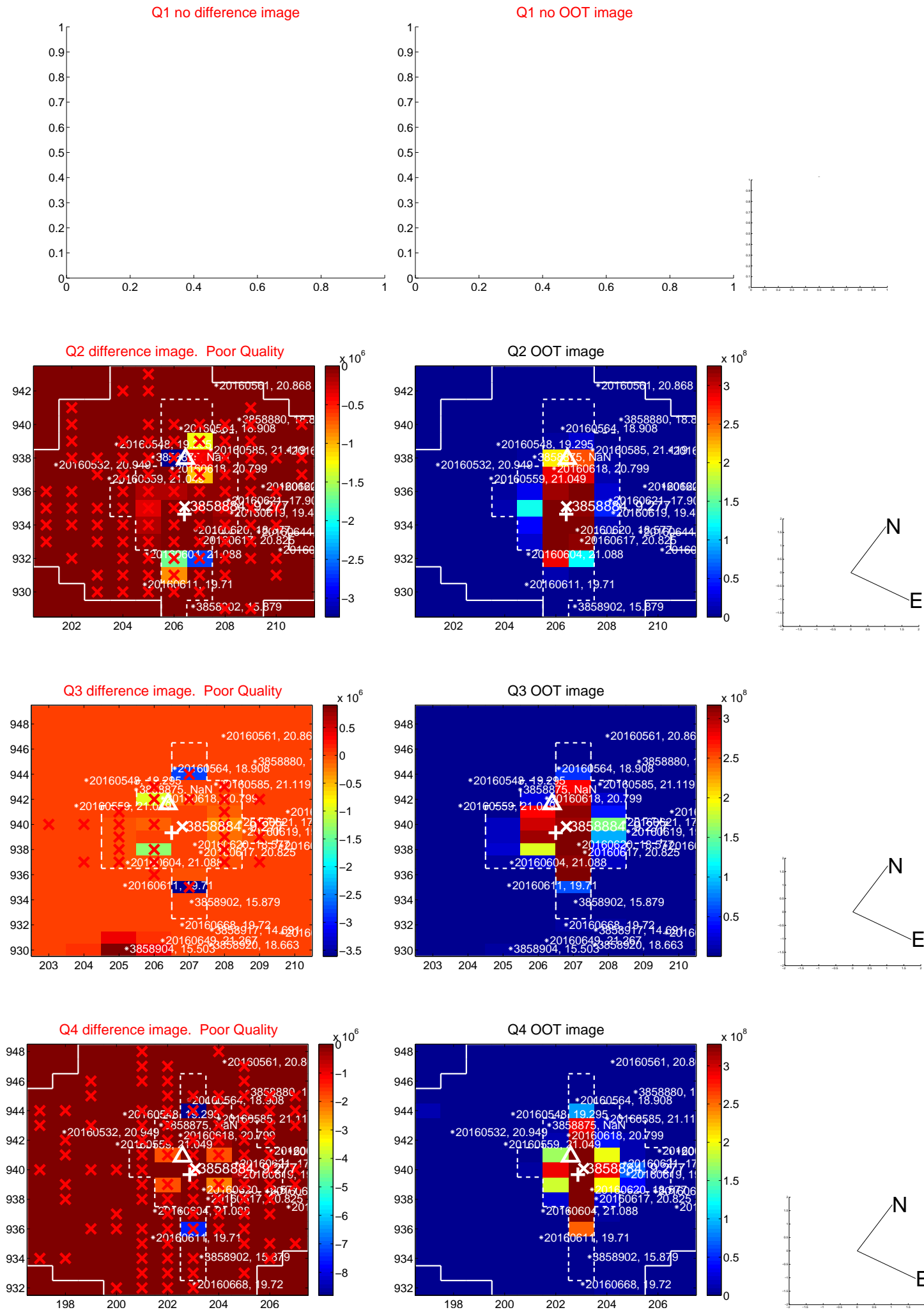
offset from photometric centroids



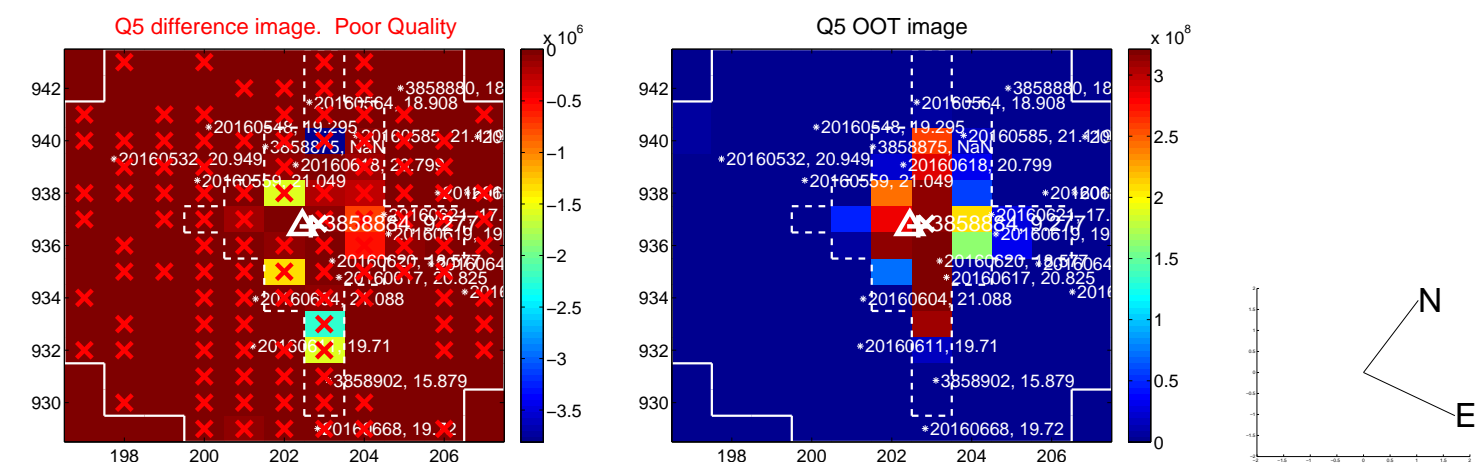
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



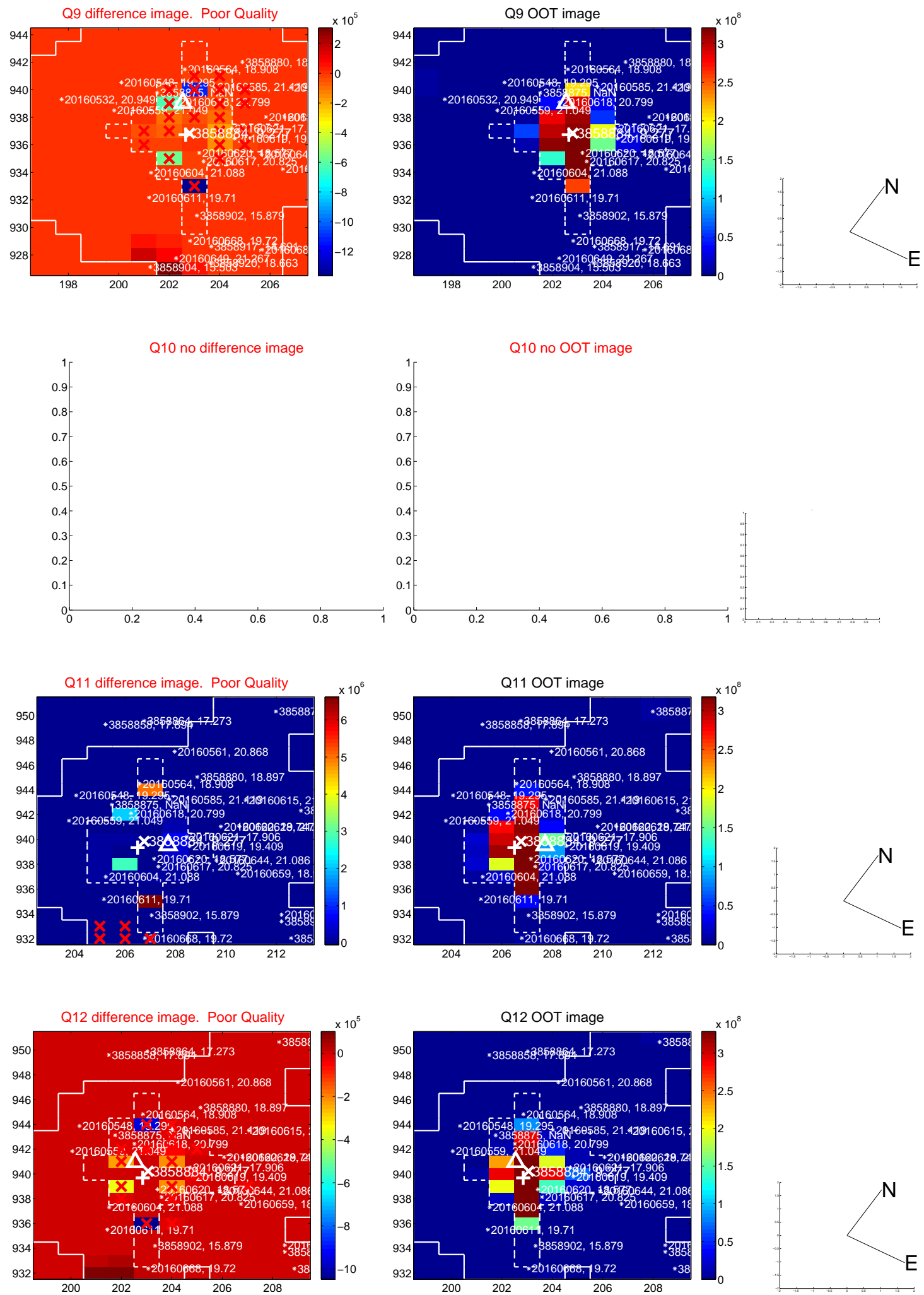
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



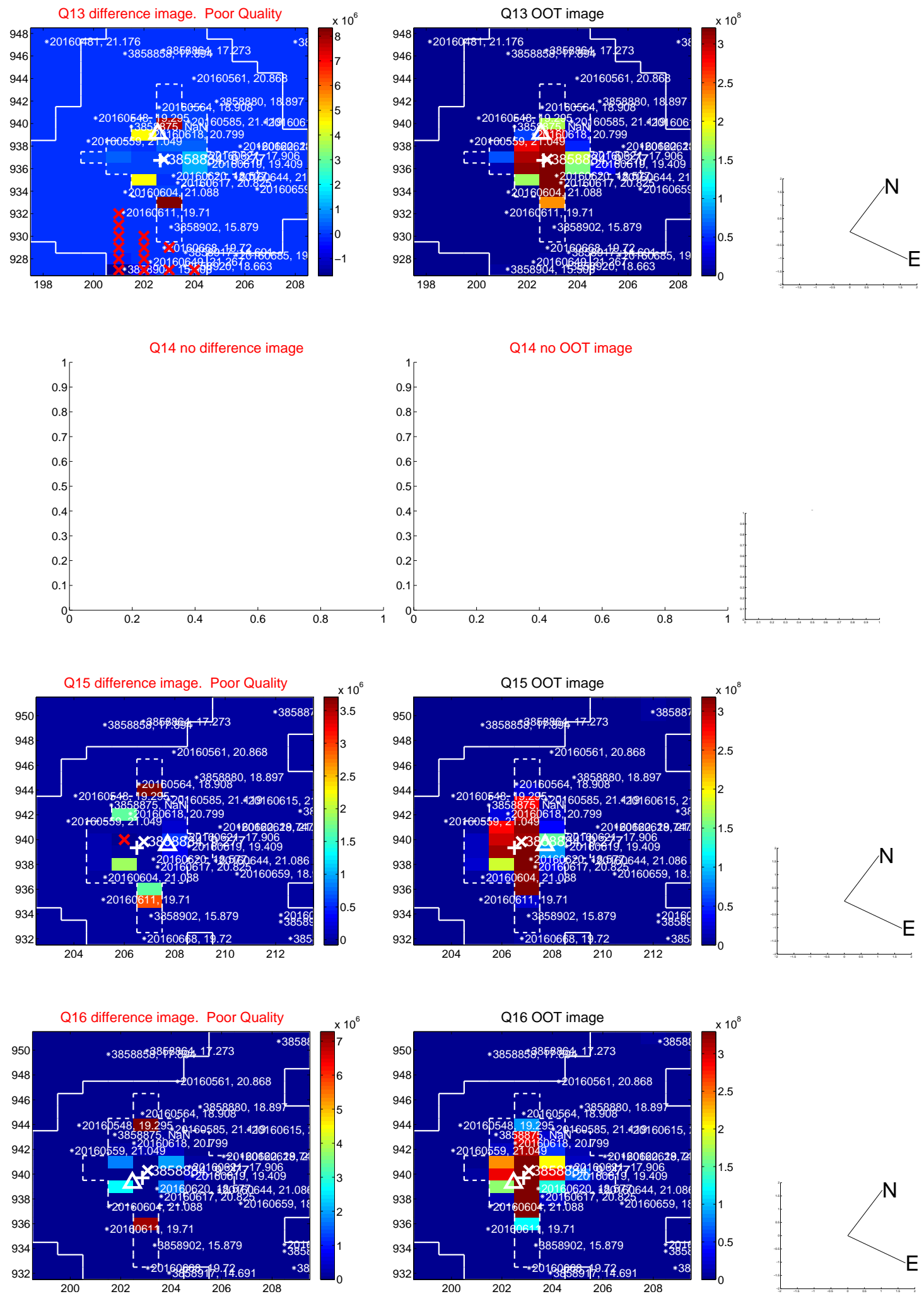
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



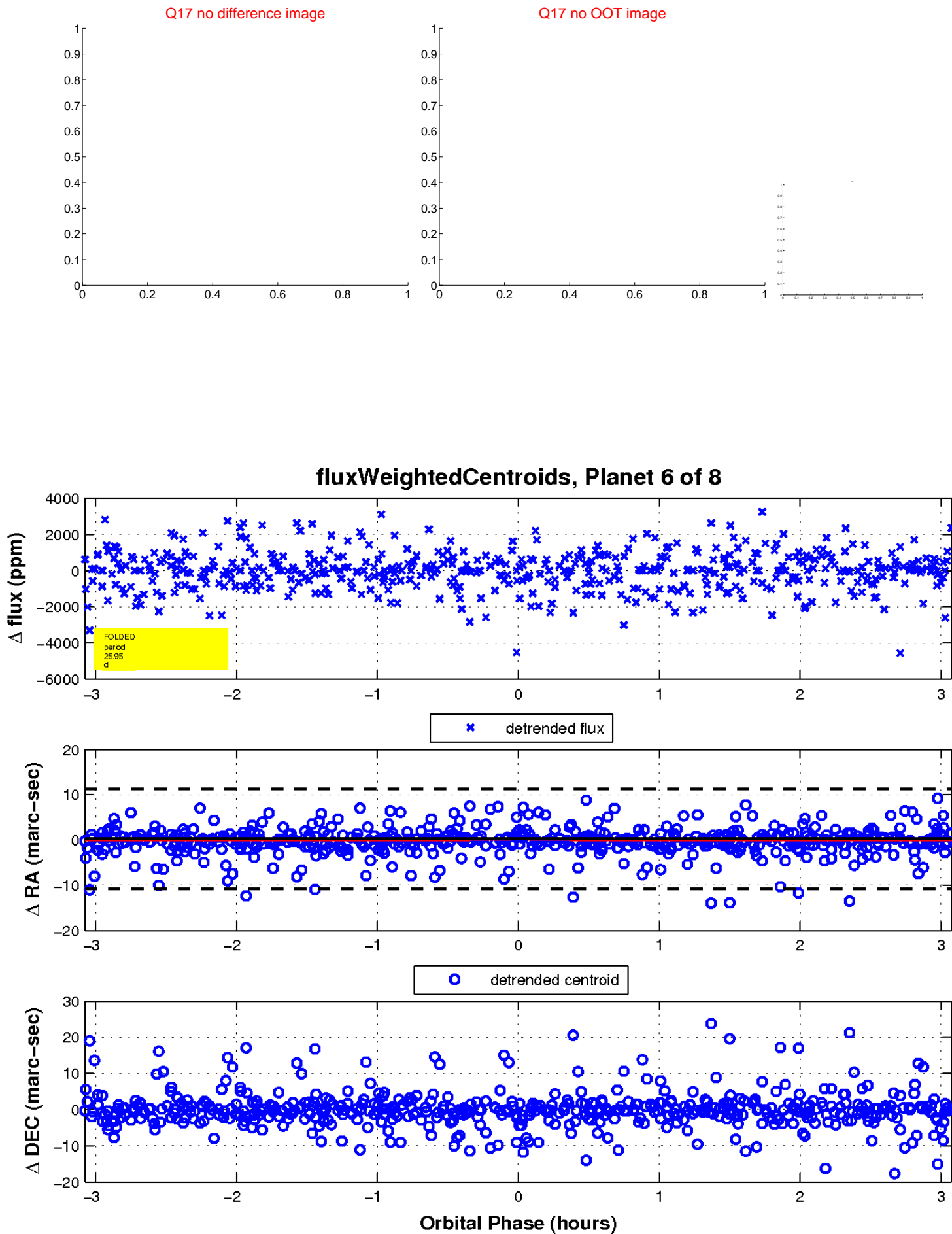
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



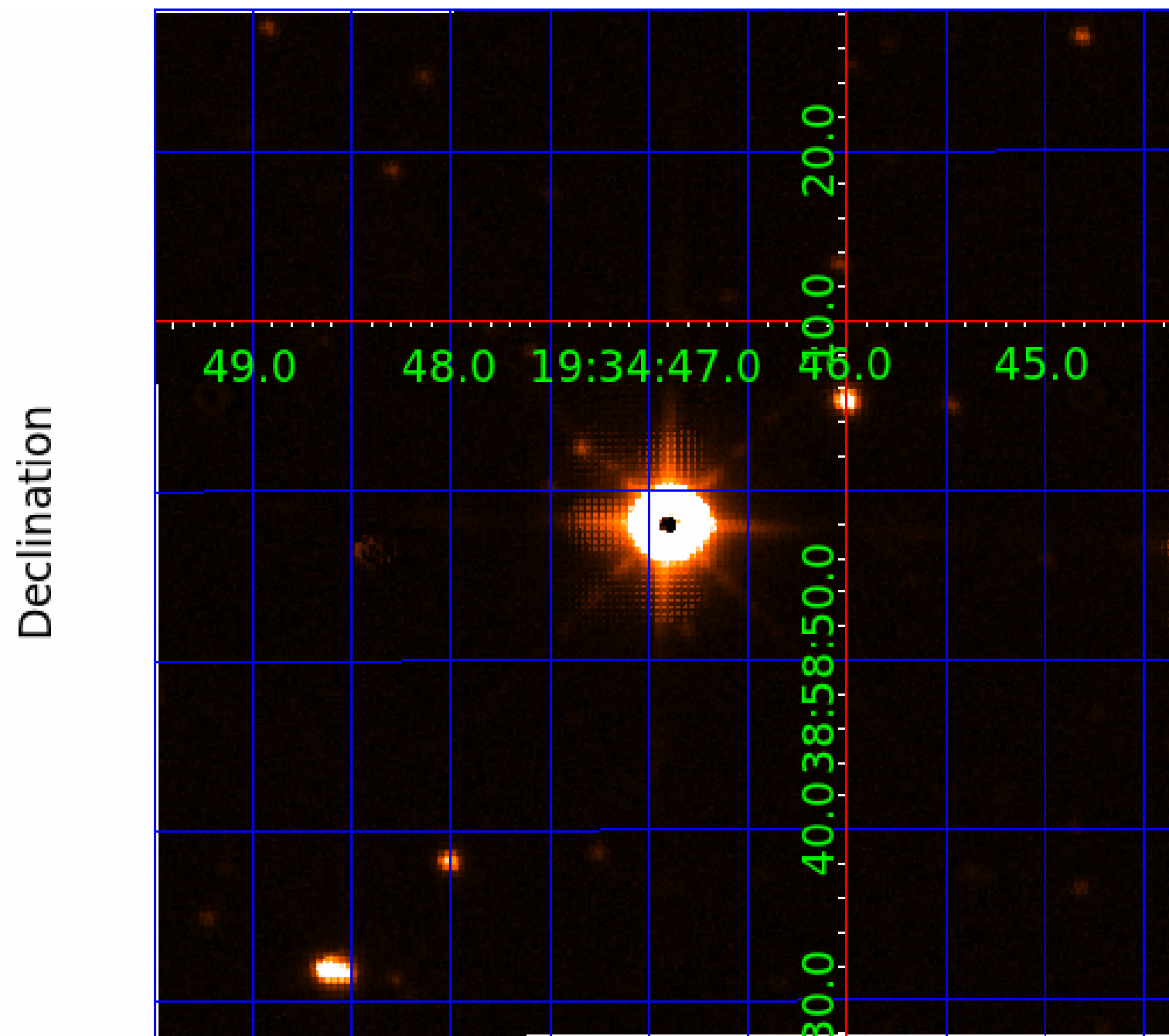
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image



## KIC 003858884

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003858884-01	OBS	6371.01	25.951589	154.890392	398557.6	9.000	4108.7	-1.0	1.73	6569	10.48	157.96
003858884-02	OBS	No	25.951660	148.930604	337130.8	12.000	3105.5	-1.0	1.73	6569	9.01	157.96
003858884-03	OBS	No	25.952955	154.298499	933.1	1.500	133.7	-1.0	1.73	6569	5.34	157.94
003858884-04	OBS	No	25.949884	155.492250	1865.7	1.500	183.2	-1.0	1.73	6569	7.55	157.97
003858884-06	OBS	No	25.948835	154.410203	465.9	7.500	119.8	-1.0	1.73	6569	3.76	157.98
003858884-07	OBS	No	265.342550	338.048118	4604.7	11.114	58.6	15.0	1.73	6569	21.10	7.12
003858884-08	OBS	No	363.387340	459.169809	6494.8	15.401	60.8	24.0	1.73	6569	16.20	4.68

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003858884-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
003858884-02	OBS	FP	0.00	1	0	0	0	SAME_NTL_PERIOD—CENT_SATURATED
003858884-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003858884-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

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

Ephemeris Match Information For 003858884-07

No Significant Match Found

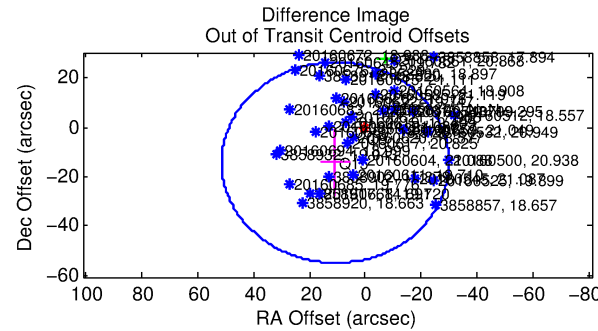
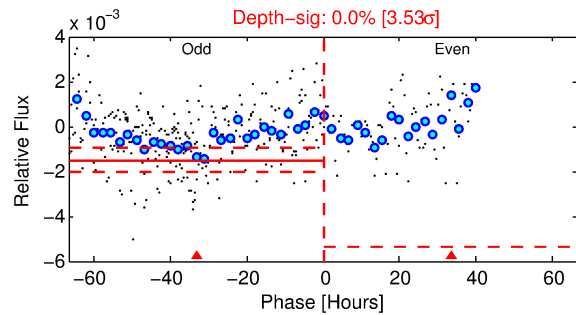
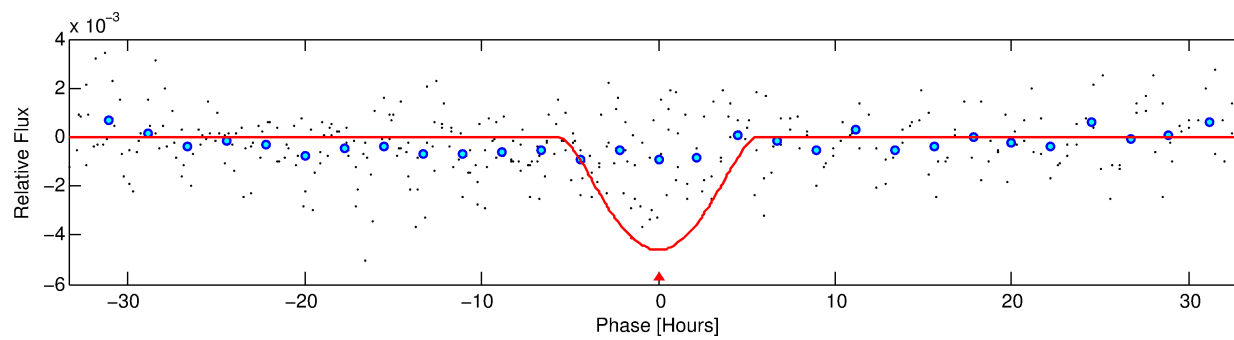
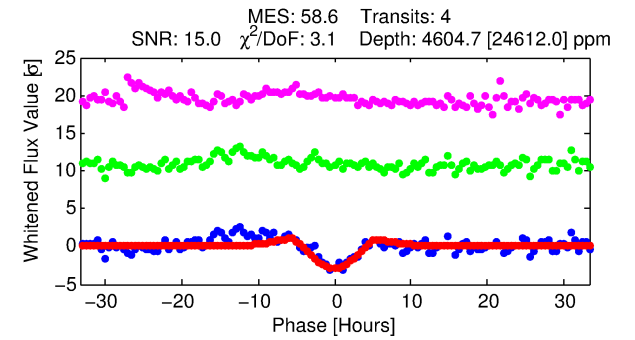
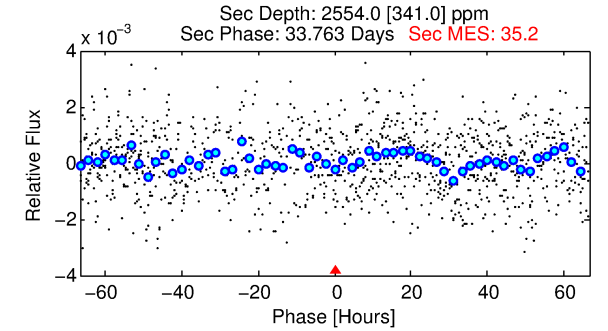
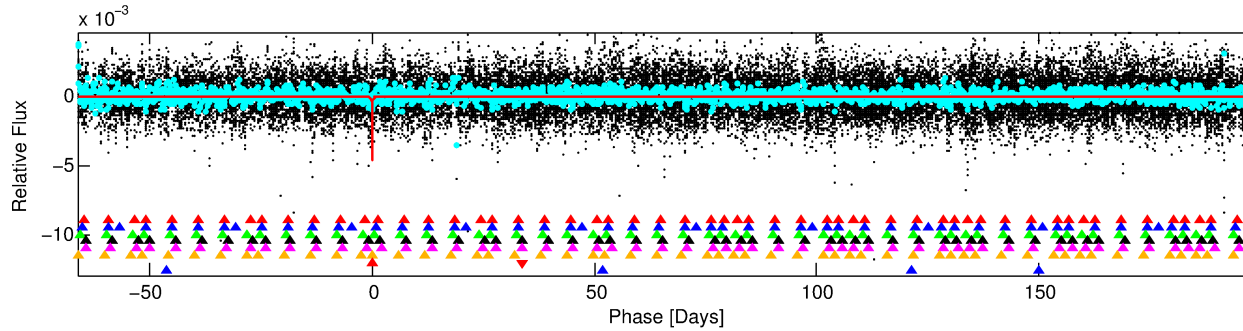
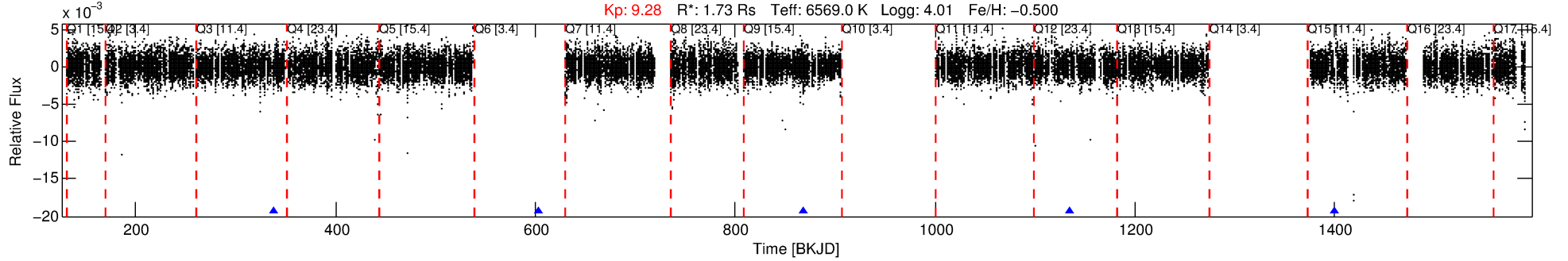


# DV One-Page Summary

KIC: 3858884 Candidate: 7 of 8 Period: 265.343 d

KOI: K06371 Corr: No Ephemeris Match

Kp: 9.28 R\*: 1.73 Rs Teff: 6569.0 K Logg: 4.01 Fe/H: -0.500



## DV Fit Results:

Period = 265.34255 [0.00894] d  
Epoch = 338.0481 [0.0227] BKJD  
Rp/R\* = 0.1118 [0.4684]  
a/R\* = 88.64 [72.37]  
b = 1.00 [0.26]  
Seff = 7.12 [4.40]  
Teq = 416 [64] K  
Rp = 21.10 [88.72] Re  
a = 0.8371 [0.3091] AU  
Ag = 2211.50 [18574.89] [0.12σ]  
Teffp = 4416 [9250] K [0.43σ]

## DV Diagnostic Results:

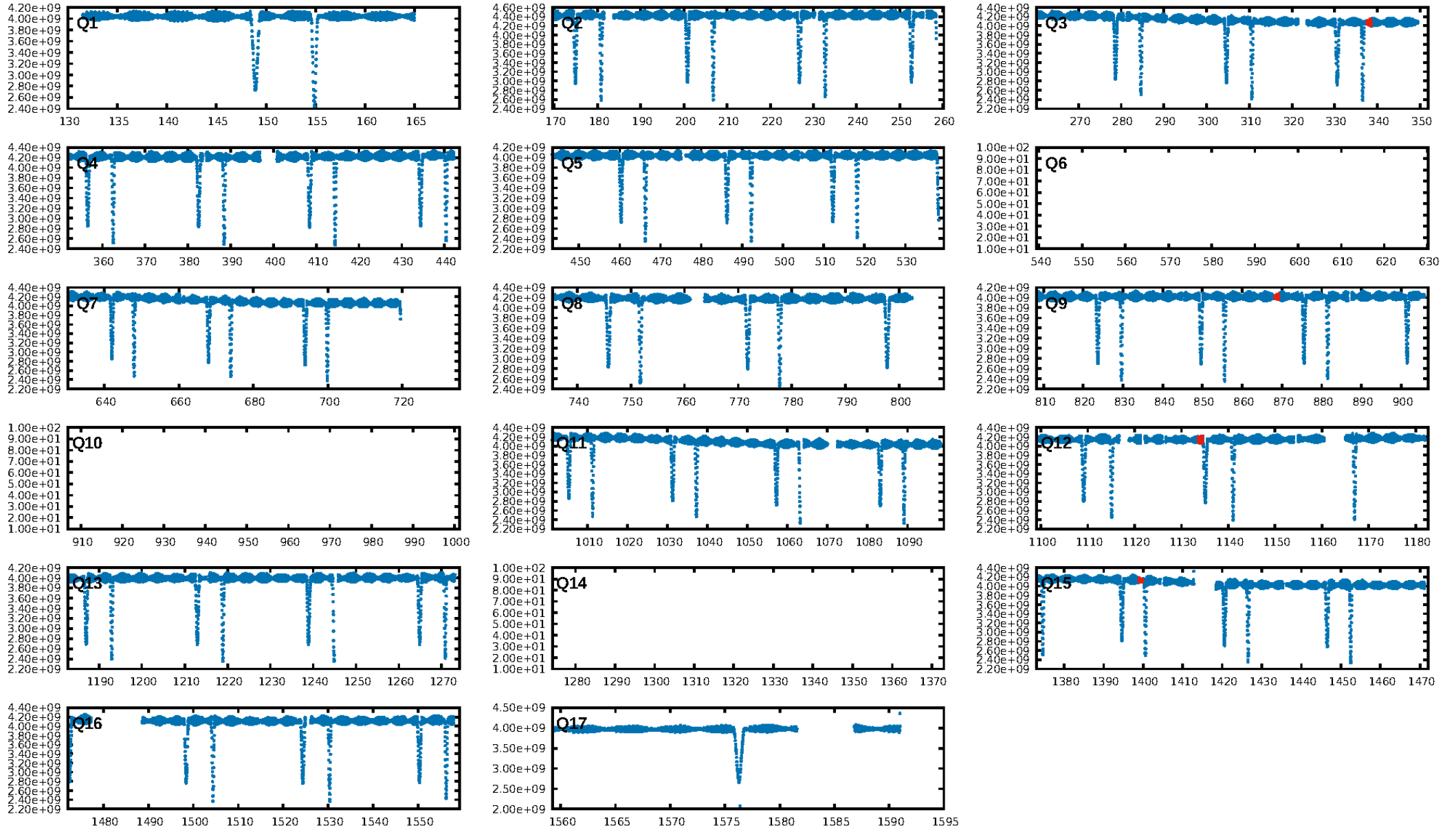
ShortPeriod-sig: 100.0% [401.72σ]  
LongPeriod-sig: 100.0% [123.89σ]  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.1%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: 0.875 arcsec [4.40σ]  
OotOffset-rm: 17.787 arcsec [1.31σ]  
KicOffset-rm: 19.558 arcsec [1.28σ]  
OotOffset-st: 0/2/0/1 [3]  
KicOffset-st: 0/2/0/1 [3]  
DiffImageQuality-fgm: 0.00 [0/3]  
DiffImageOverlap-fno: 0.33 [1/3]

Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:45:31 Z

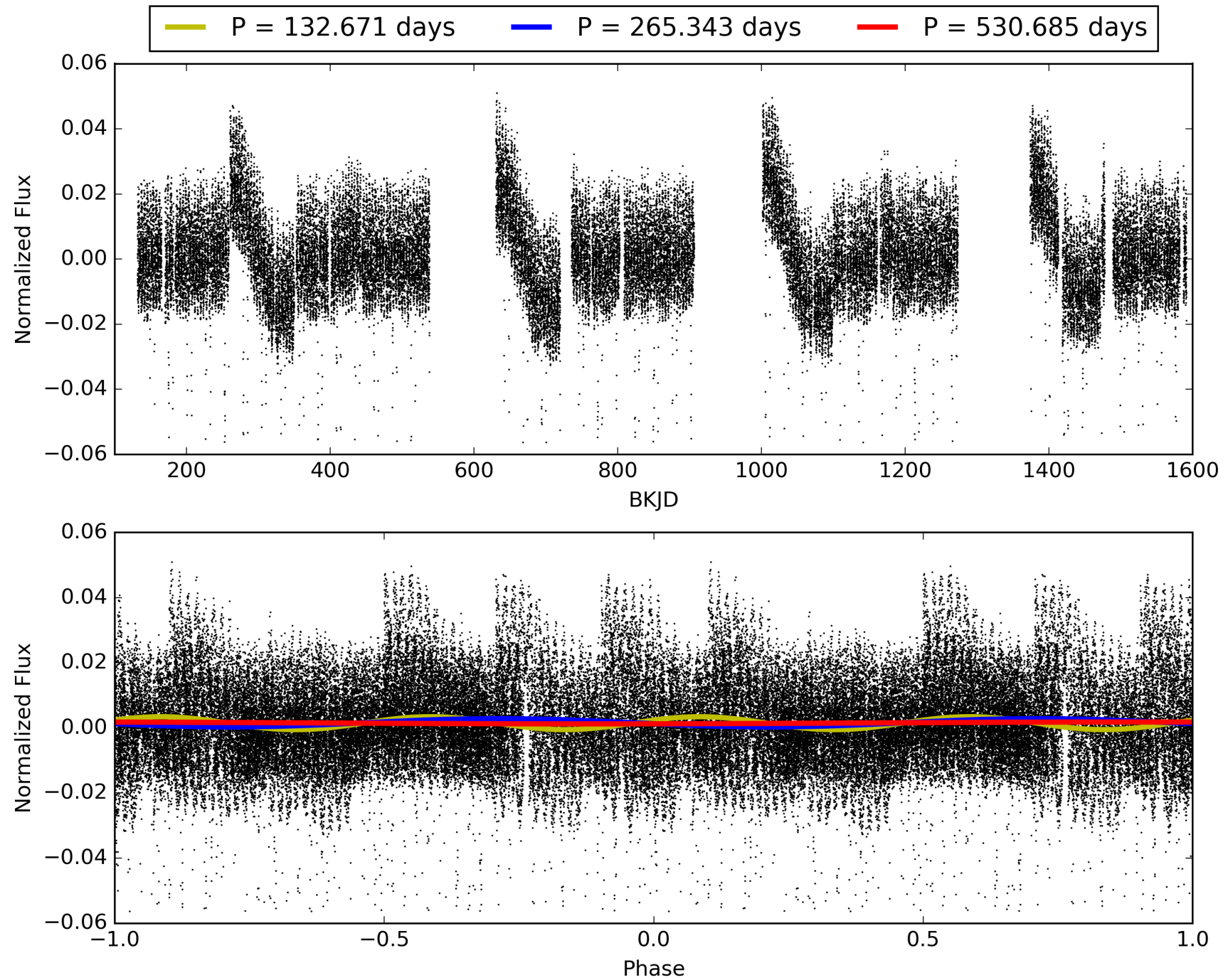
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center



# TCE 003858884-07, PDC Light Curves

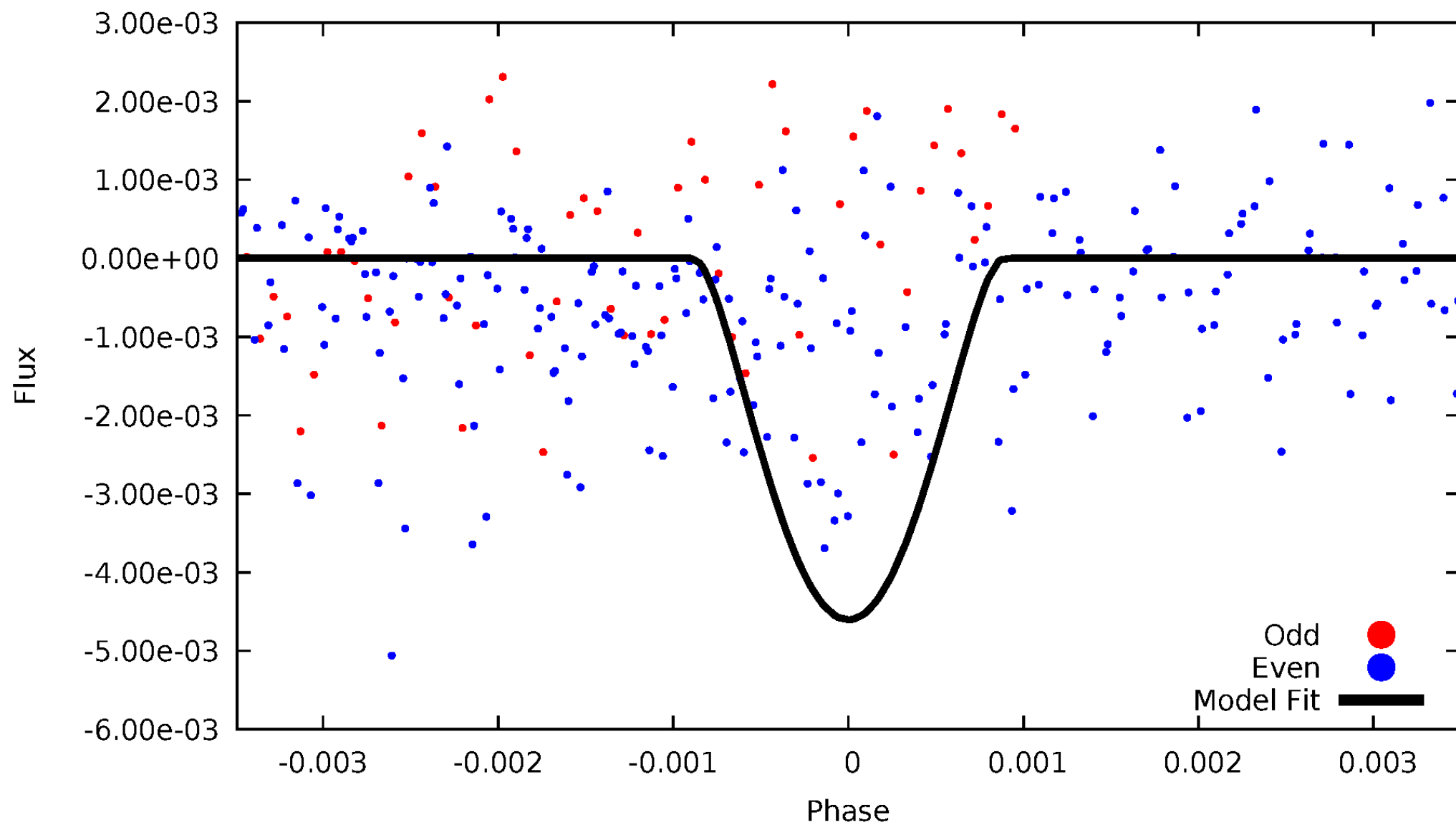


TCE 003858884-07



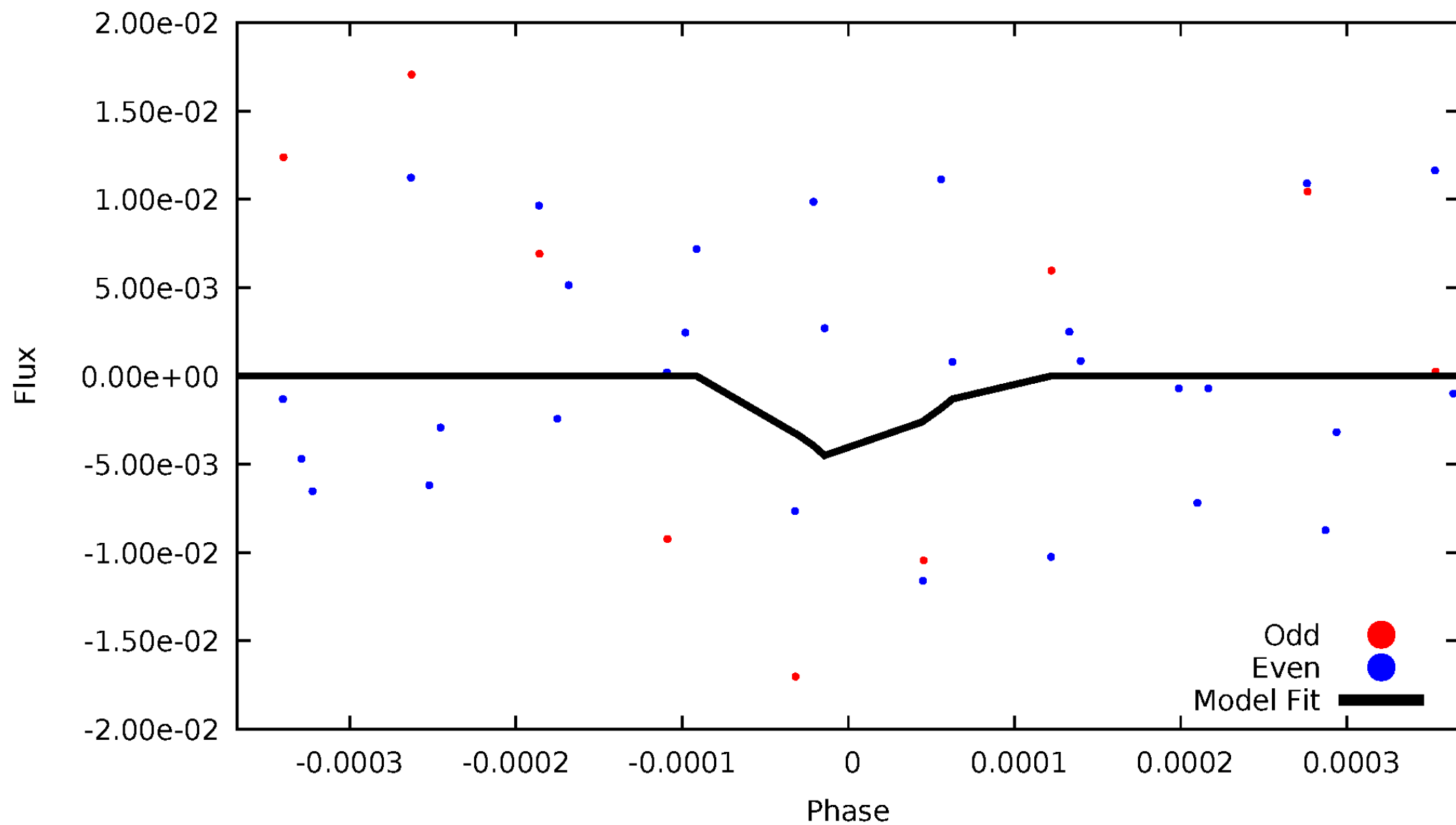
# DV Odd/Even

TCE 003858884-07



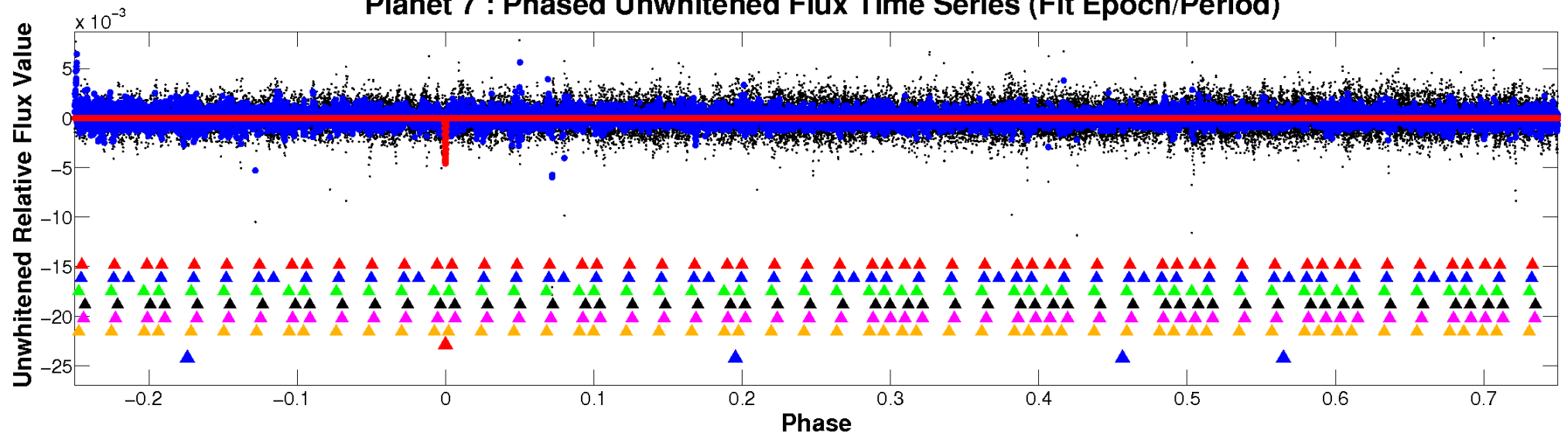
# ALT Odd/Even

TCE 003858884-07

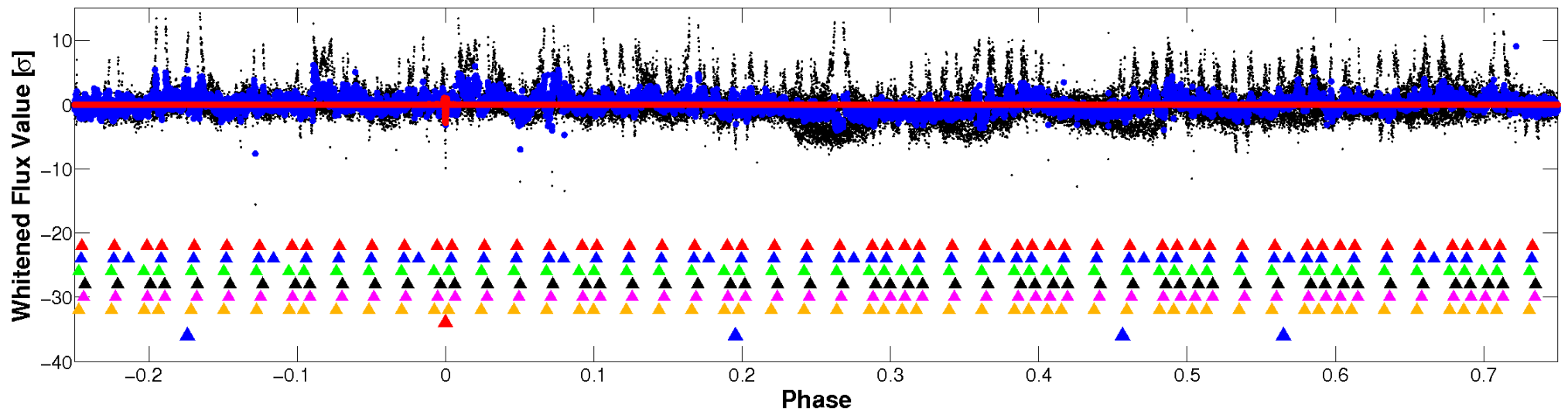


# Non-Whitened Vs. Whitened Light Curve

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

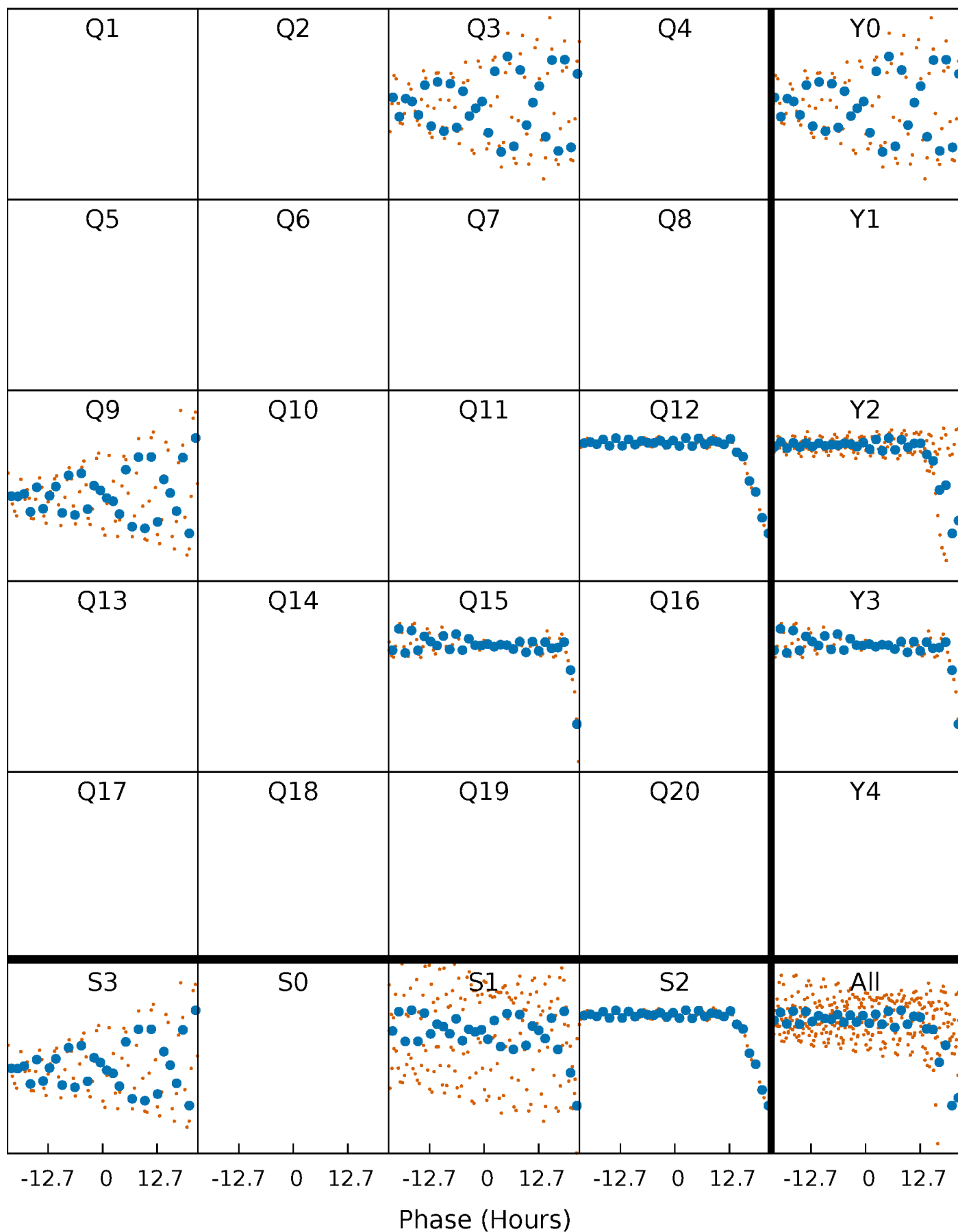


## Planet 7 : Phased Whitened Flux Time Series (Fit Epoch/Period)



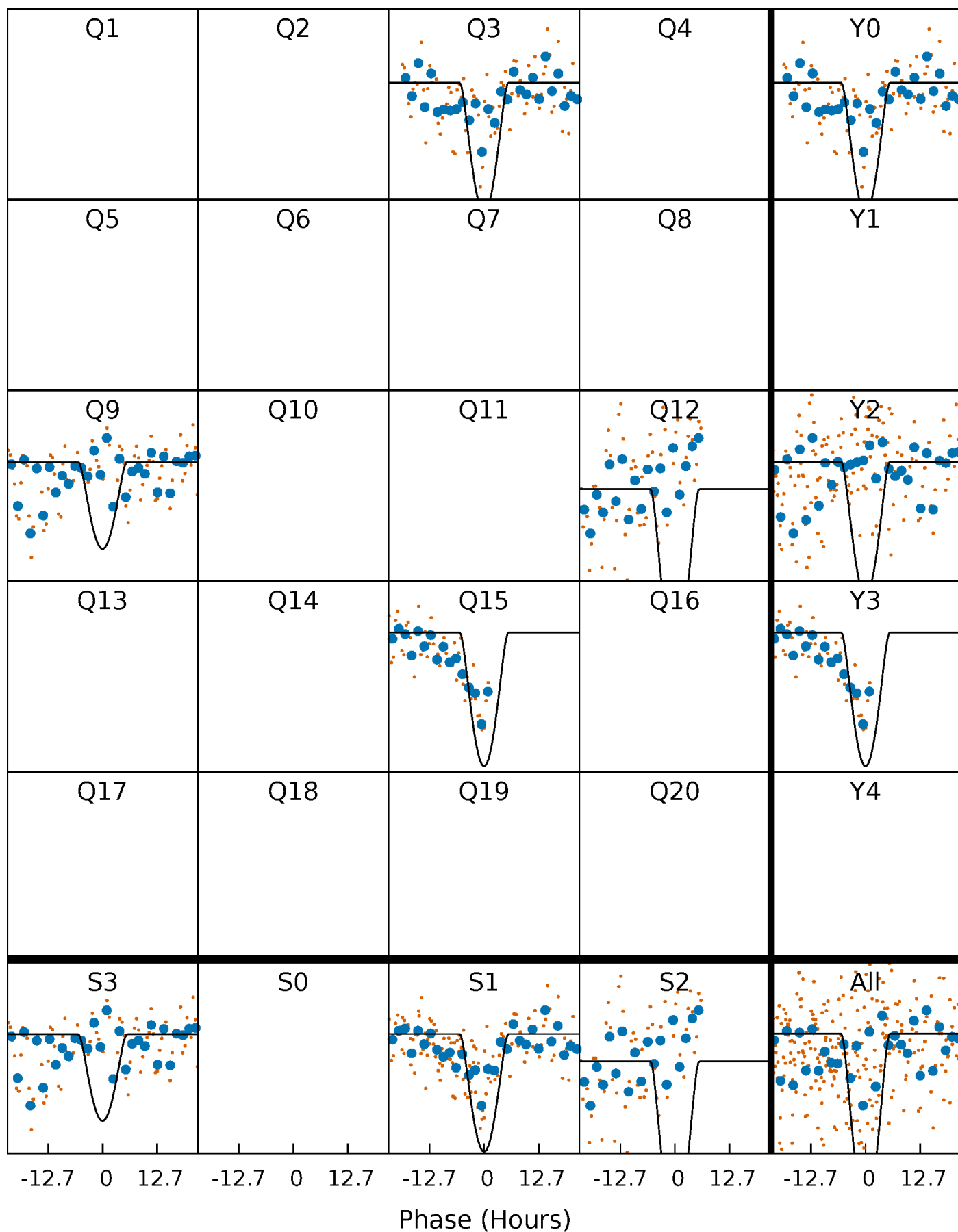
# PDC Quarter-Phased Transit Curves

TCE 003858884-07     $P=265.342550$  Days     $T_0=338.048118$  (BKJD)



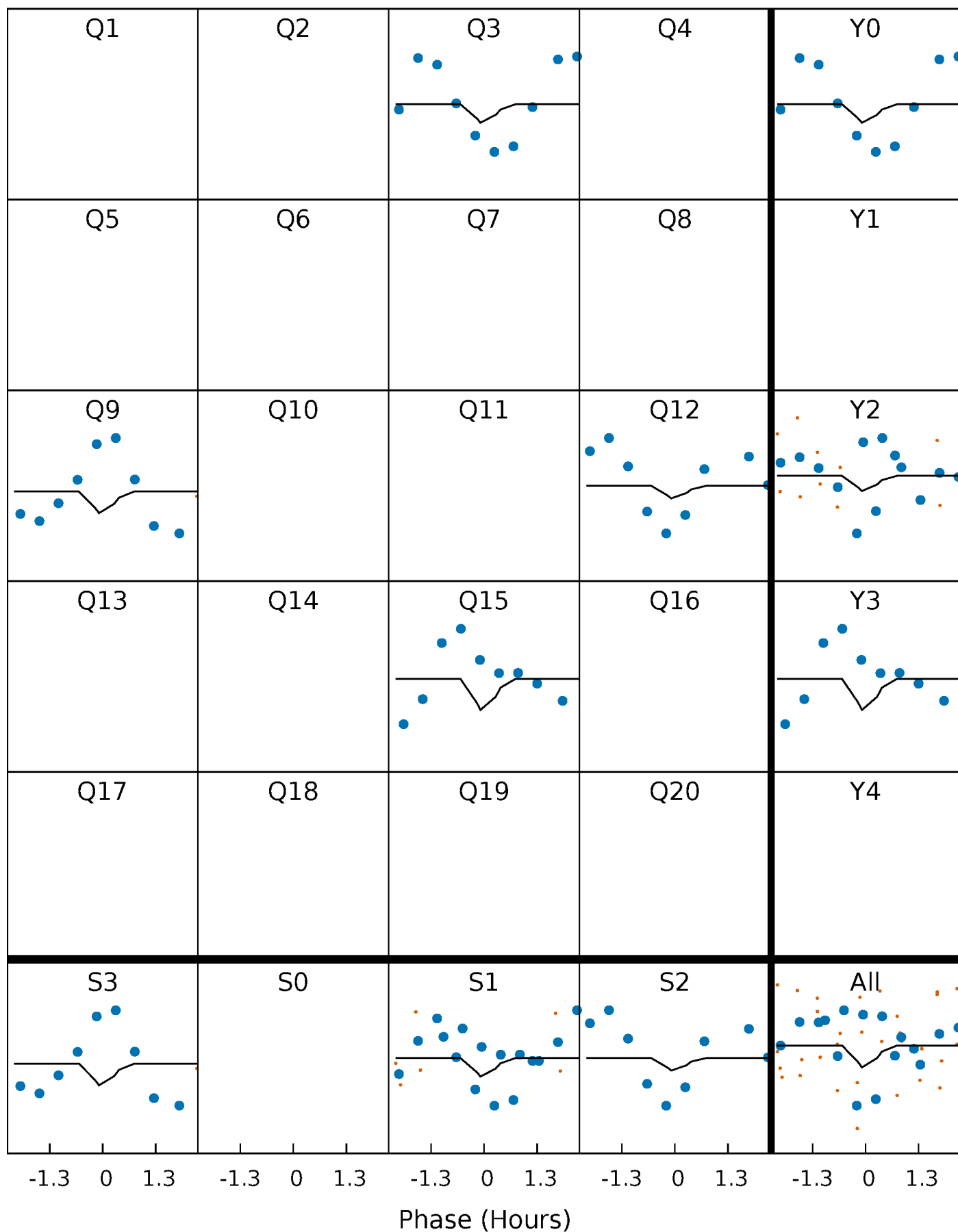
# DV Quarter-Phased Transit Curves

TCE 003858884-07     $P=265.342550$  Days     $T_0=338.048118$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 003858884-07 P=265.309343 Days  $T_0=338.061585$  (BKJD)

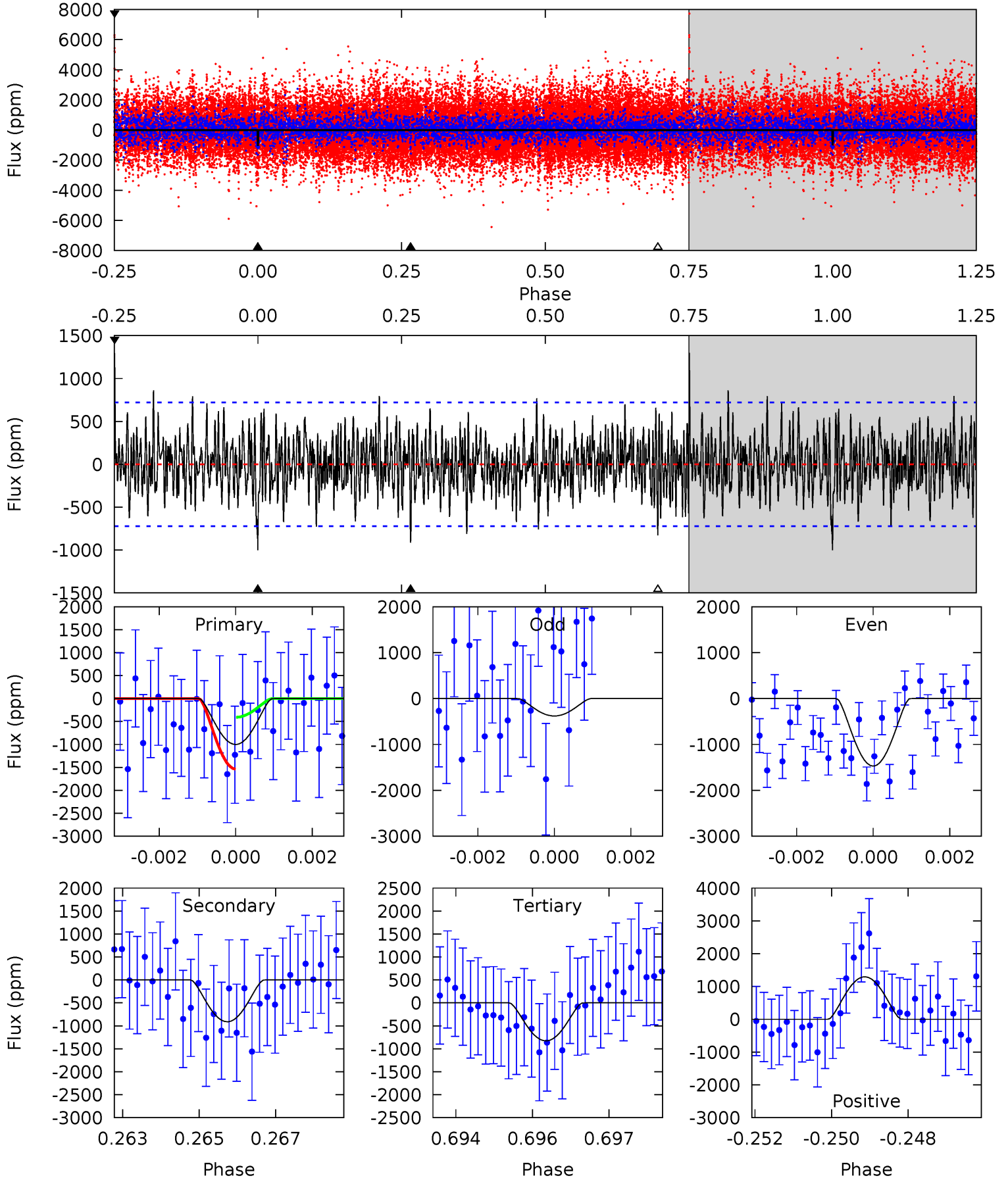




# DV Model-Shift Uniqueness Test

003858884-07, P = 265.342550 Days, E = 72.705568 Days

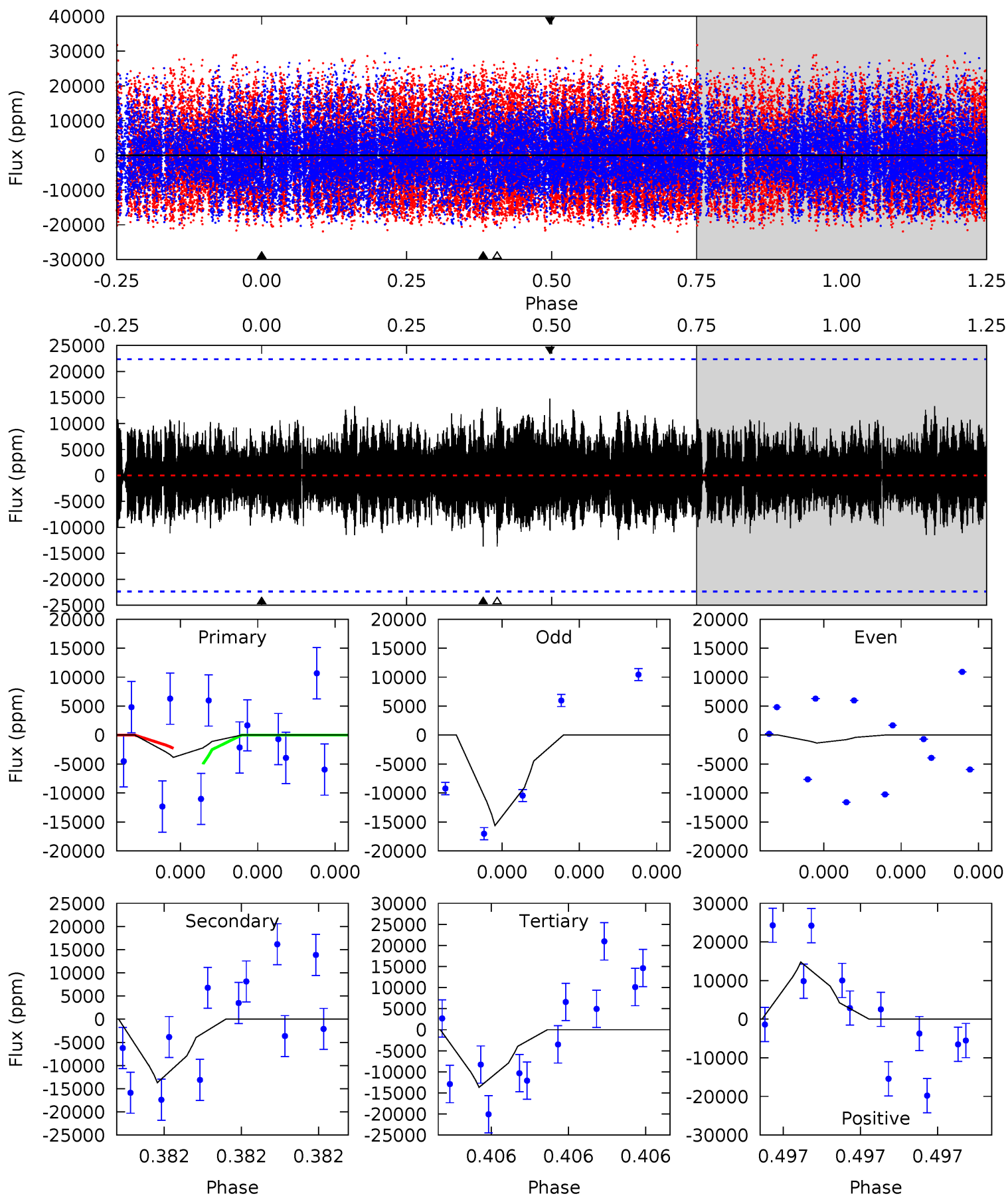
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.41	6.74	6.12	9.57	5.34	3.11	1.92	1.29	-2.17	0.62	-2.83	3.65	1.21	0.56	4.16



# Alt Model-Shift Uniqueness Test

003858884-07, P = 265.309343 Days, E = 72.752242 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
0.99	3.54	3.53	3.82	5.78	3.79	1.03	-2.54	-2.83	0.01	-0.28	1.37	0.83	0.52	0.33



### Stellar Parameters For KIC 003858884

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6569^{+188}_{-236}$	$4.008^{+0.357}_{-0.153}$	$-0.500^{+0.300}_{-0.300}$	$1.729^{+0.428}_{-0.642}$	$1.110^{+0.164}_{-0.164}$	$0.302^{+0.809}_{-0.129}$
	+3%/-4%	+9%/-4%	+60%/-60%	+25%/-37%	+15%/-15%	+268%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 003858884-07 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-911 \pm 135$	$59.93^{+66.17}_{-41.90}$	$574^{+44}_{-60}$	$2736^{+1225}_{-453}$	$95^{+1015}_{-74}$
Alt.	$-13694 \pm 3872$	$59.79^{+65.93}_{-42.59}$	$572^{+47}_{-57}$	$4131^{+2733}_{-902}$	$1439^{+15003}_{-1112}$

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

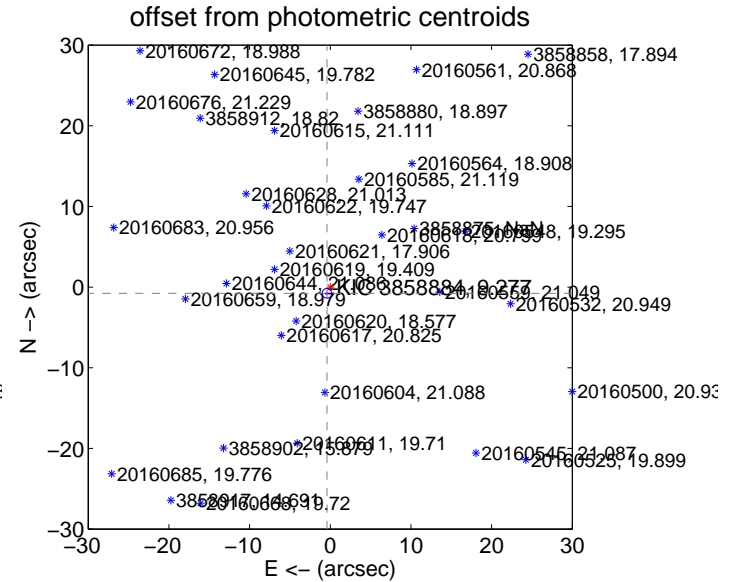
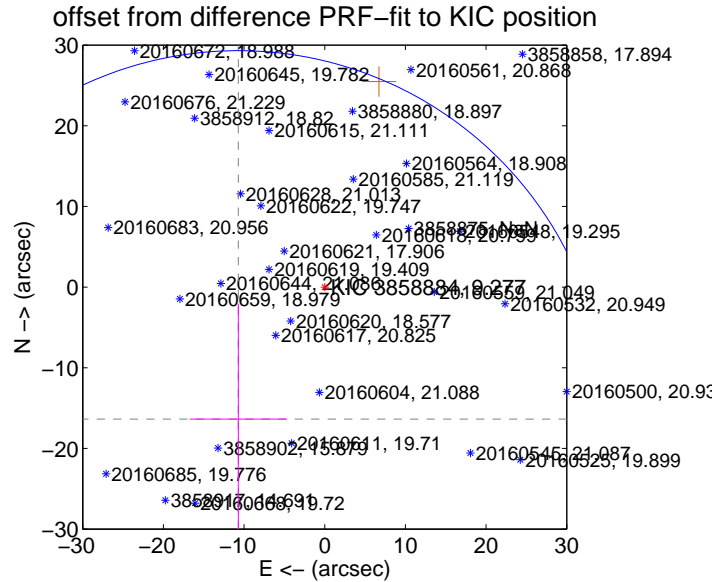
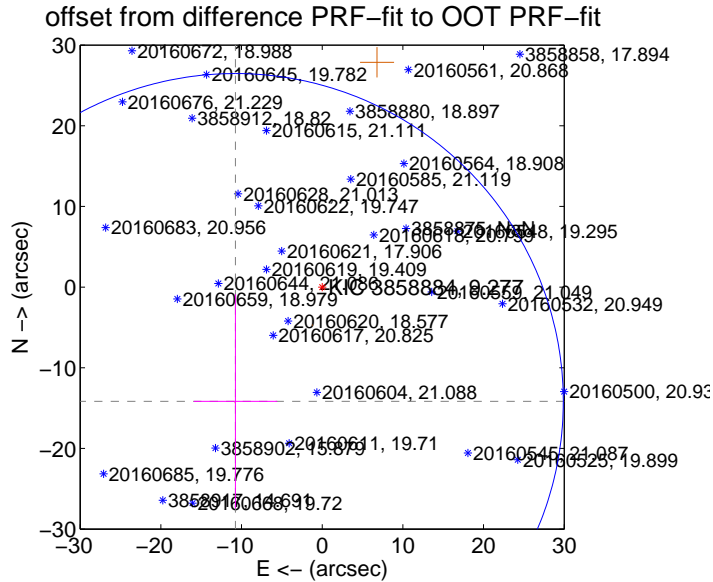
## DV Centroid Data

Supplemental centroid analysis for 003858884-07. **Kepler magnitude: 9.28.** Transit SNR 15.02

There are 0 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 2.23 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$17.787 \pm 13.547$	1.31	$10.753 \pm 5.176$	$-14.168 \pm 13.276$
PRF-fit source offset from KIC position	$19.558 \pm 15.226$	1.28	$10.706 \pm 6.011$	$-16.368 \pm 14.332$
photometric centroid source offset	$0.87 \pm 0.20$	4.40	$0.41 \pm 0.13$	$-0.77 \pm 0.21$



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

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

Q1 no difference image



Q1 no OOT image



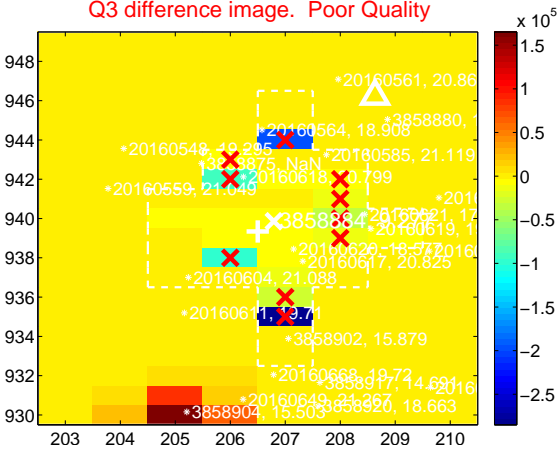
Q2 no difference image



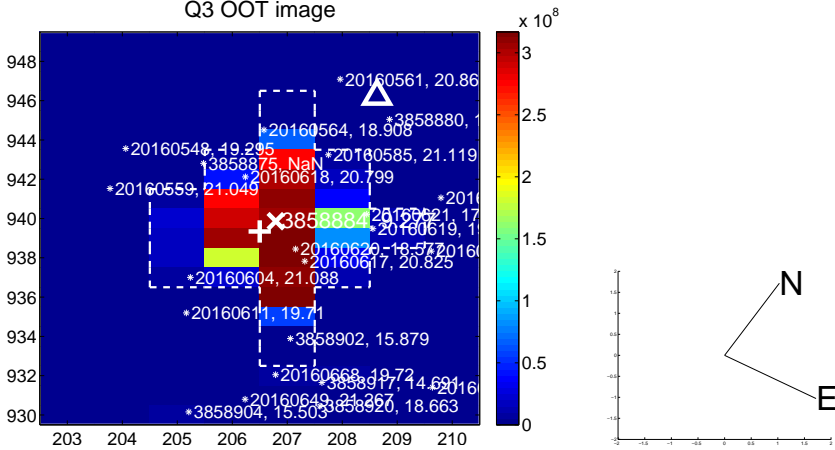
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



Q4 no difference image



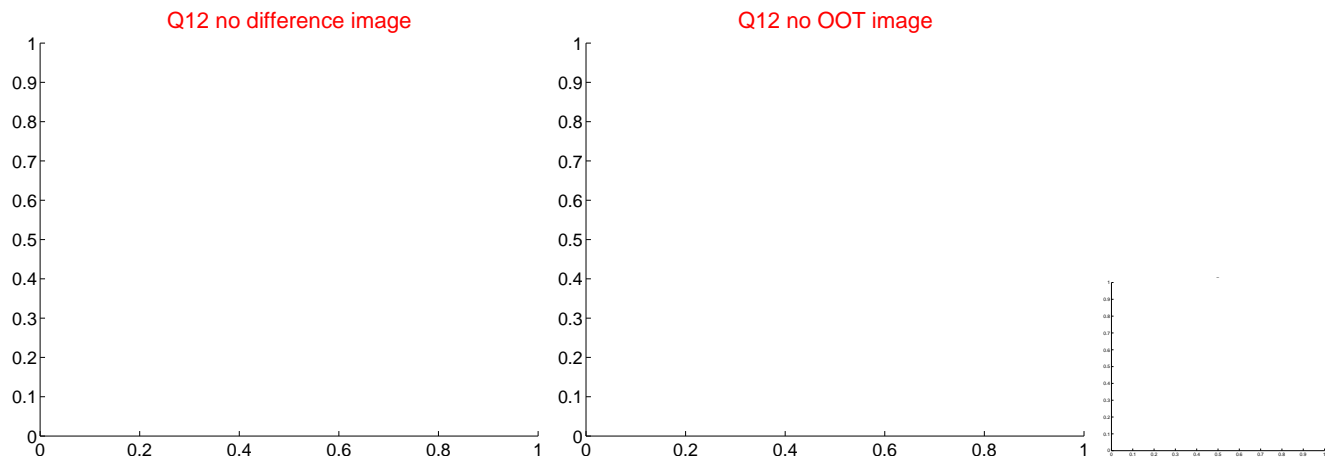
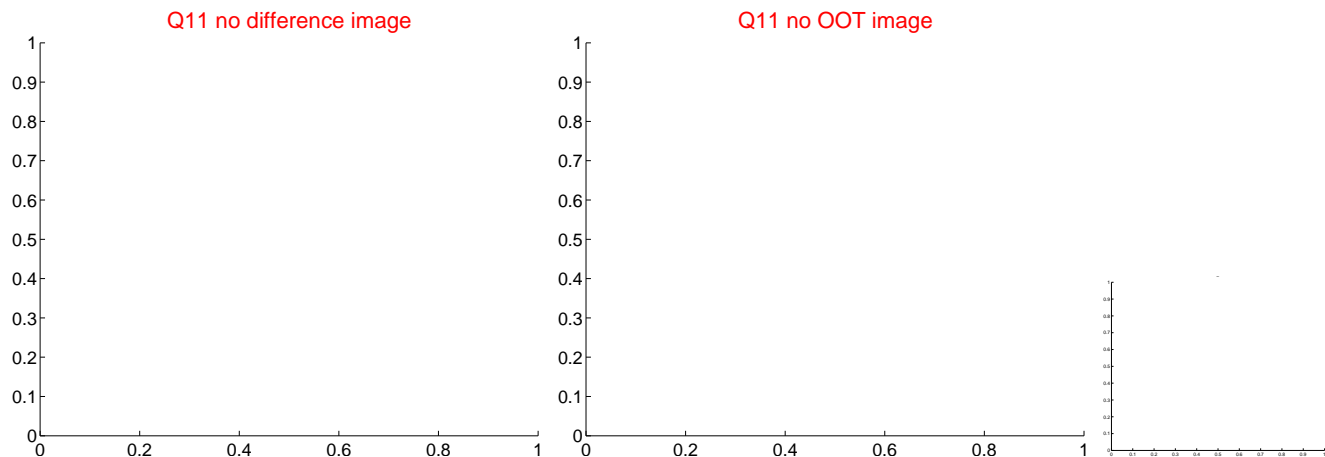
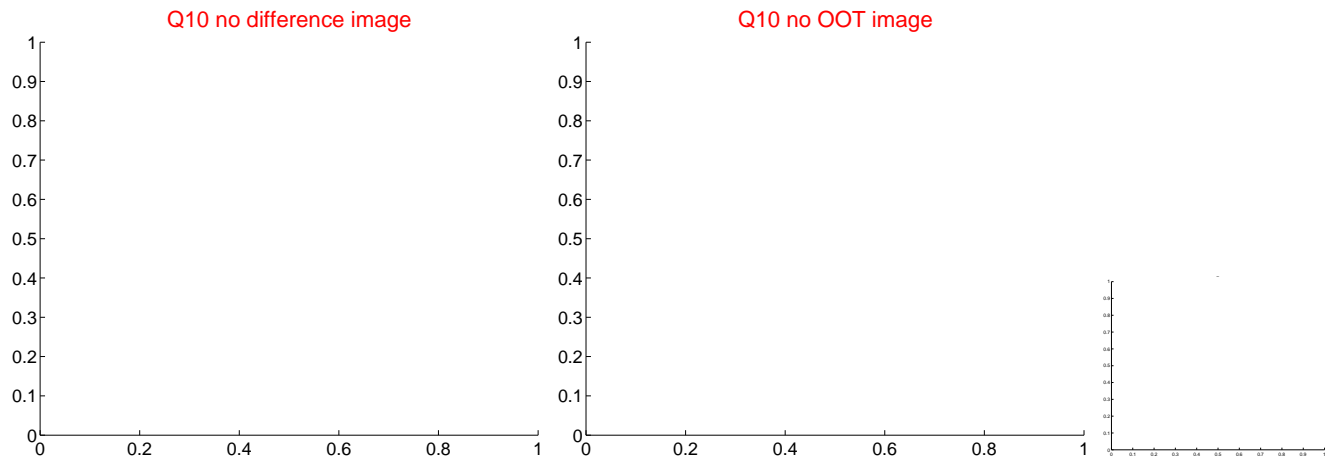
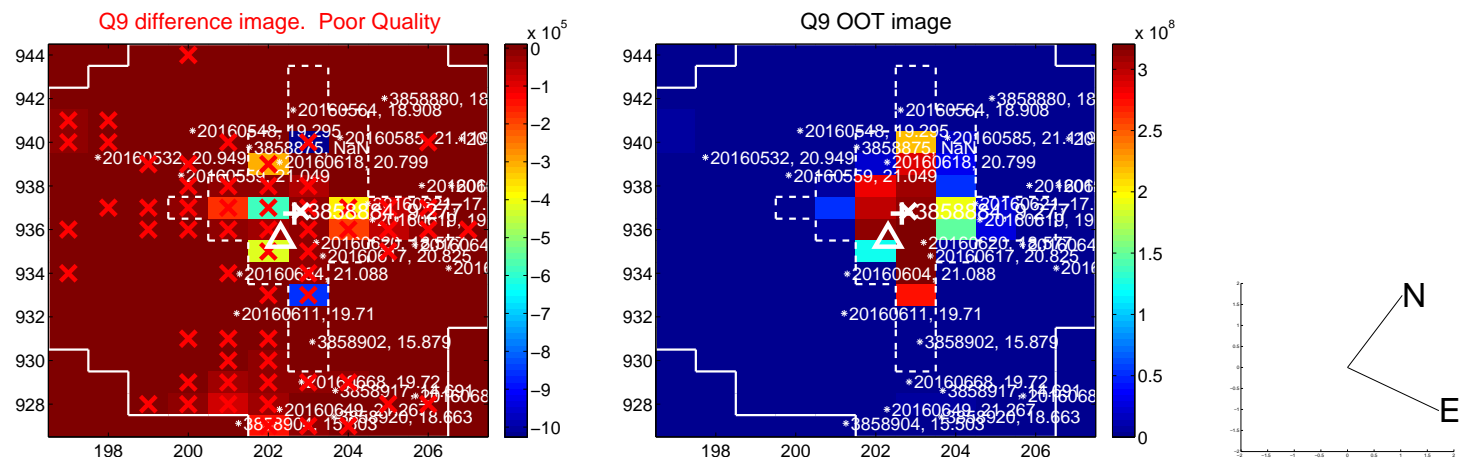
Q4 no OOT image



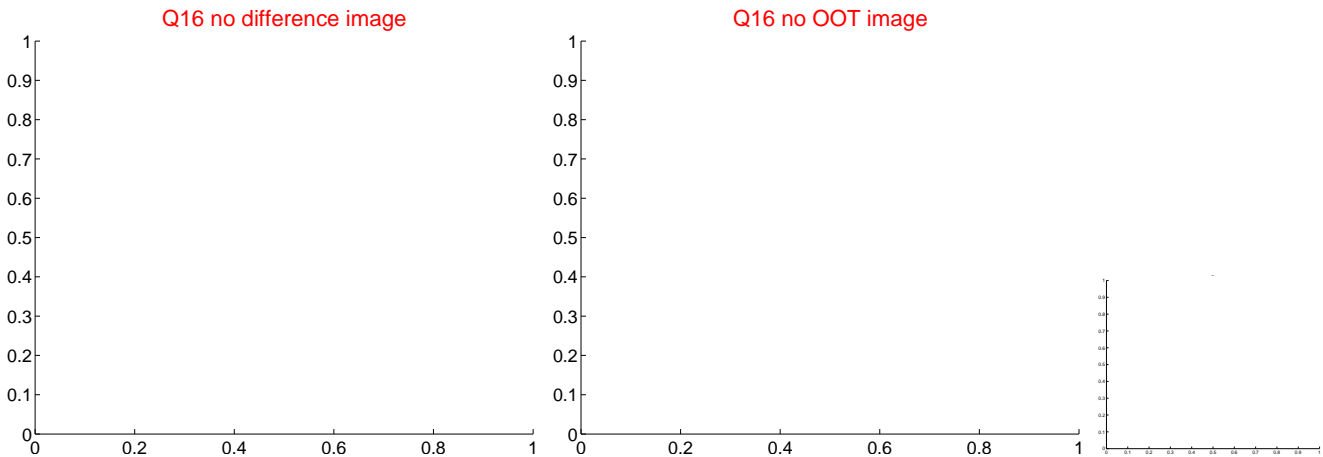
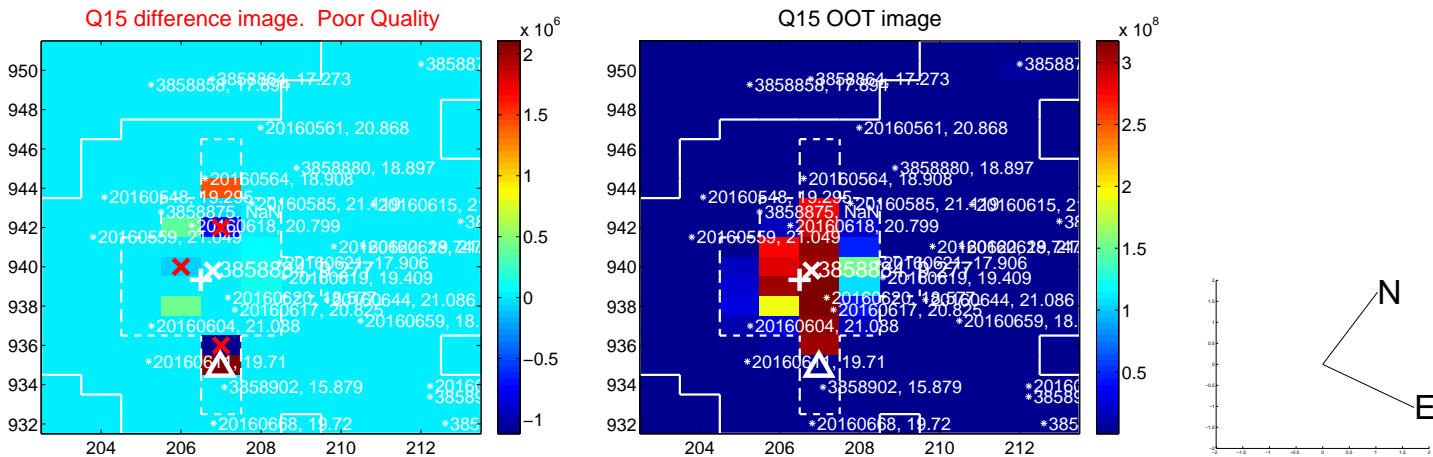
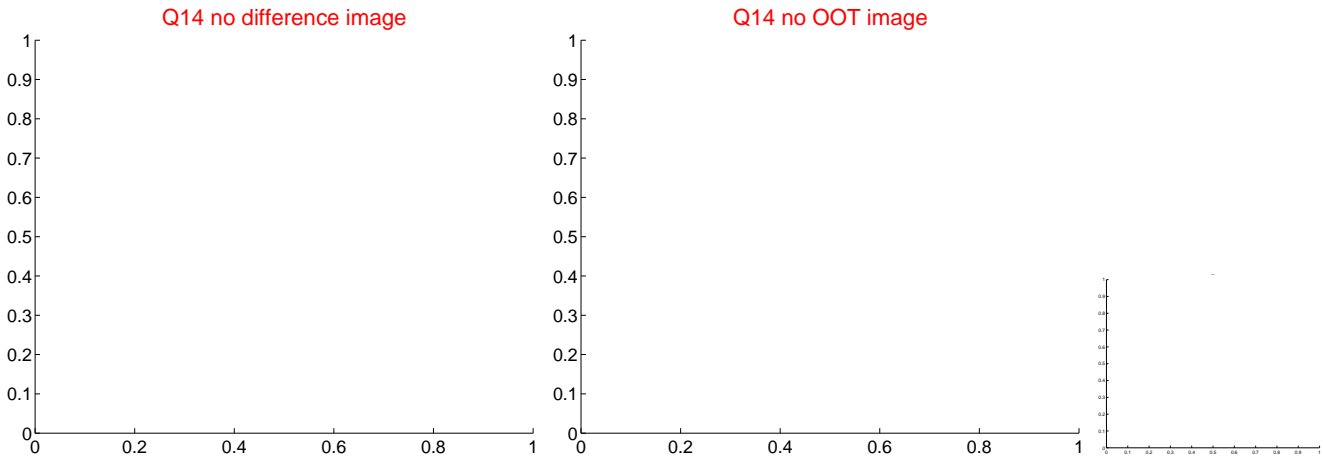
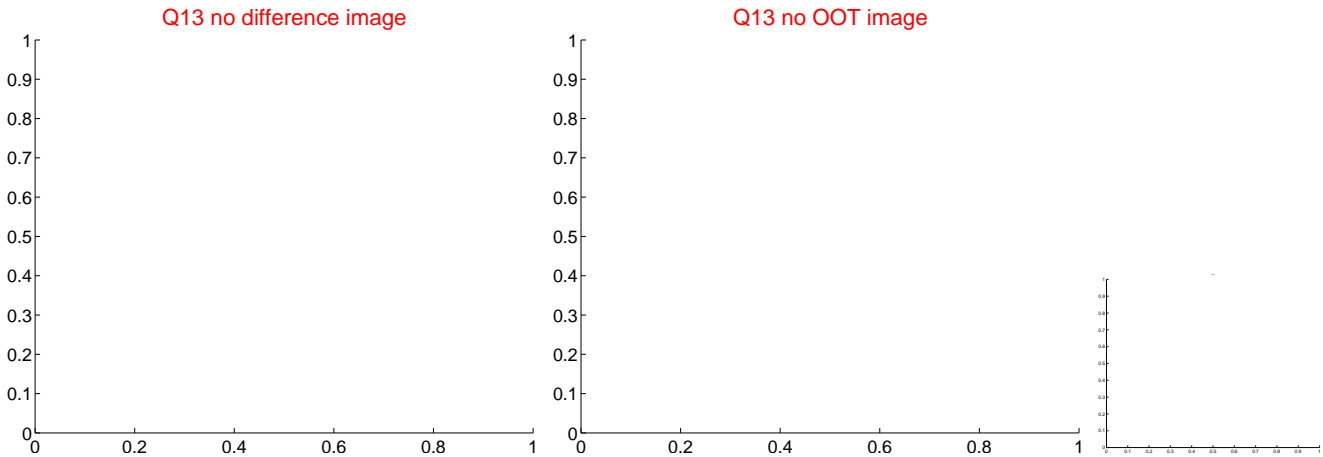
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

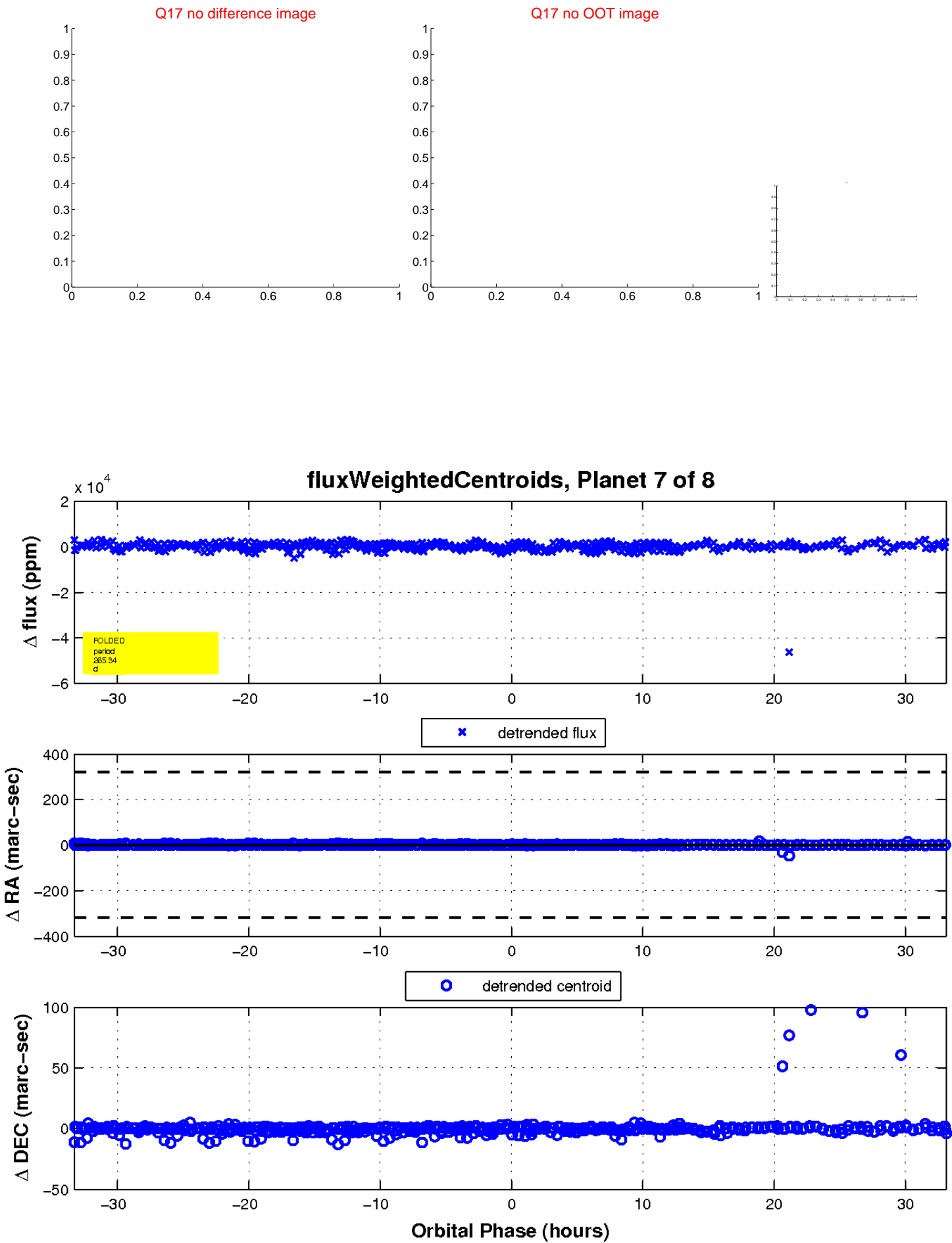


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

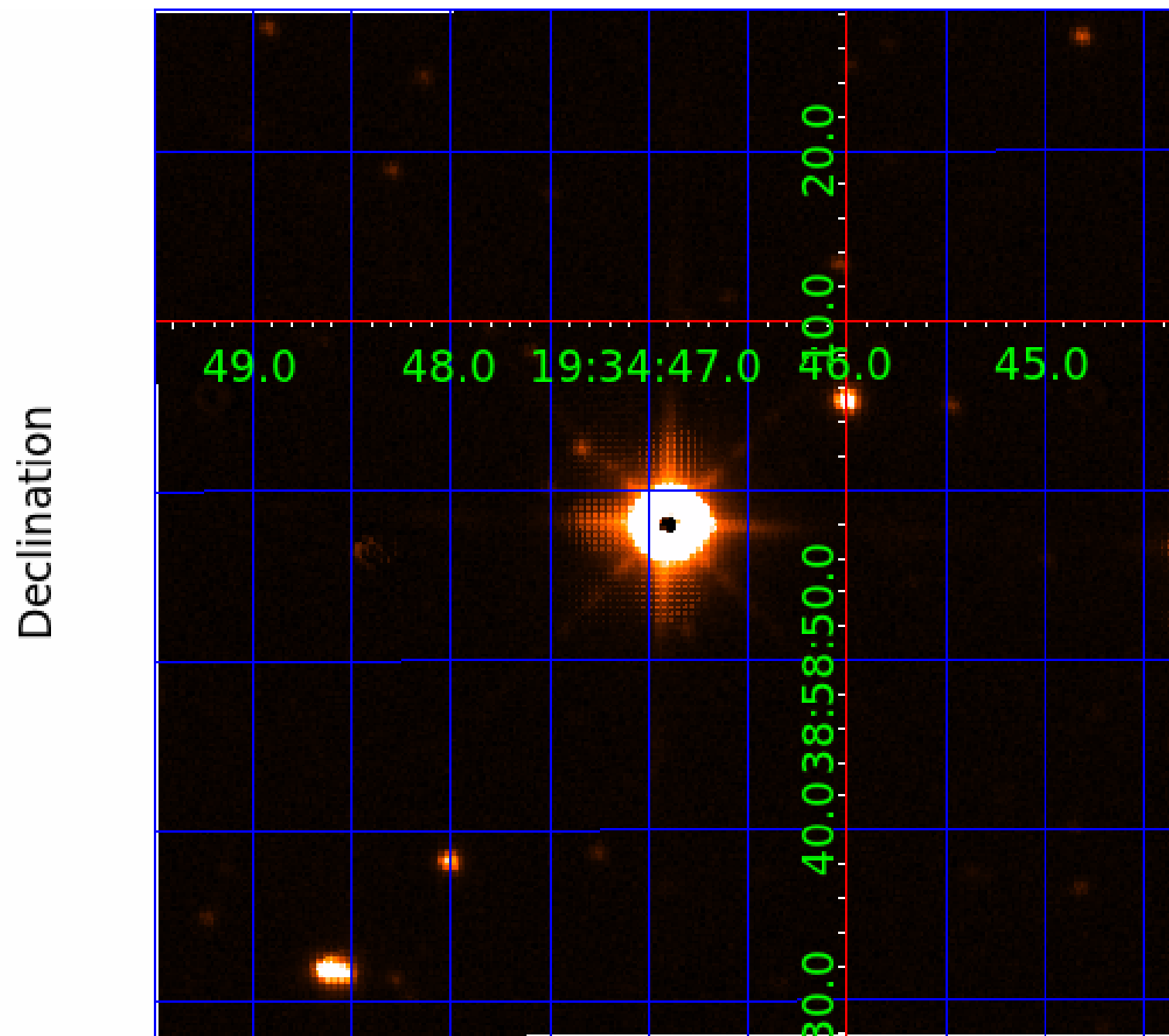




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



UKIRT Image



## KIC 003858884

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003858884-01	OBS	6371.01	25.951589	154.890392	398557.6	9.000	4108.7	-1.0	1.73	6569	10.48	157.96
003858884-02	OBS	No	25.951660	148.930604	337130.8	12.000	3105.5	-1.0	1.73	6569	9.01	157.96
003858884-03	OBS	No	25.952955	154.298499	933.1	1.500	133.7	-1.0	1.73	6569	5.34	157.94
003858884-04	OBS	No	25.949884	155.492250	1865.7	1.500	183.2	-1.0	1.73	6569	7.55	157.97
003858884-06	OBS	No	25.948835	154.410203	465.9	7.500	119.8	-1.0	1.73	6569	3.76	157.98
003858884-07	OBS	No	265.342550	338.048118	4604.7	11.114	58.6	15.0	1.73	6569	21.10	7.12
003858884-08	OBS	No	363.387340	459.169809	6494.8	15.401	60.8	24.0	1.73	6569	16.20	4.68

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003858884-01	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_SATURATED
003858884-02	OBS	FP	0.00	1	0	0	0	SAME_NTL_PERIOD—CENT_SATURATED
003858884-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-06	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—SAME_NTL_PERIOD—CENT_SATURATED
003858884-07	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED
003858884-08	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED

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

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

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

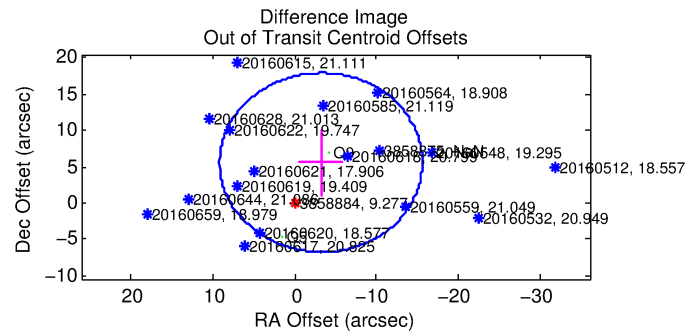
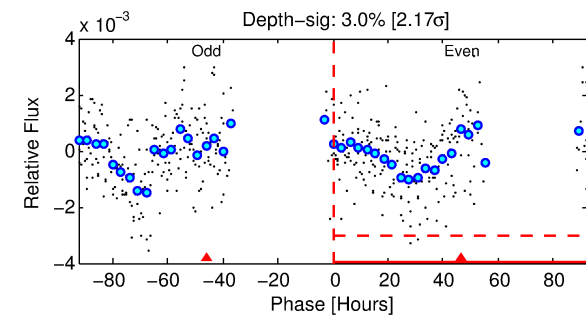
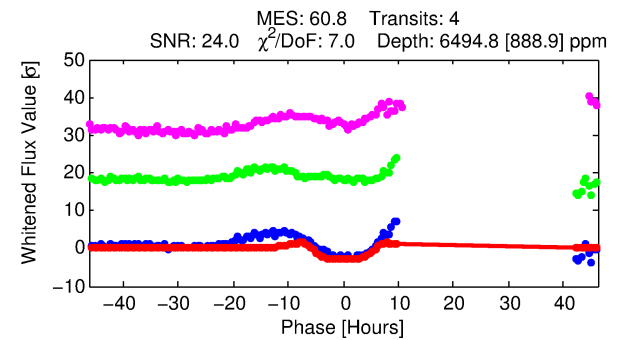
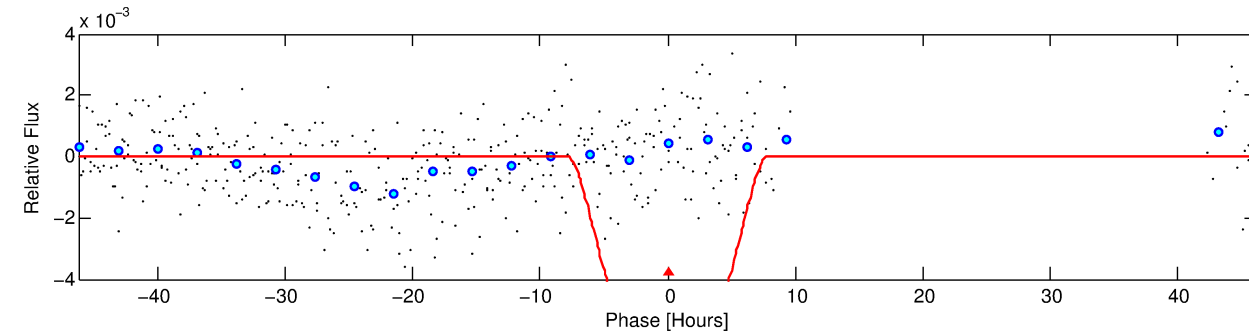
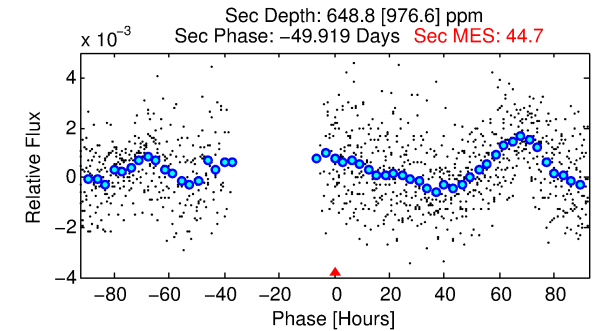
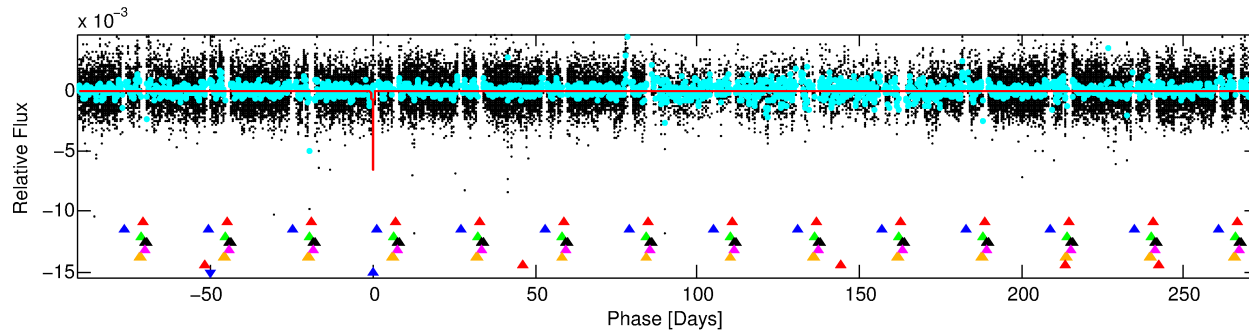
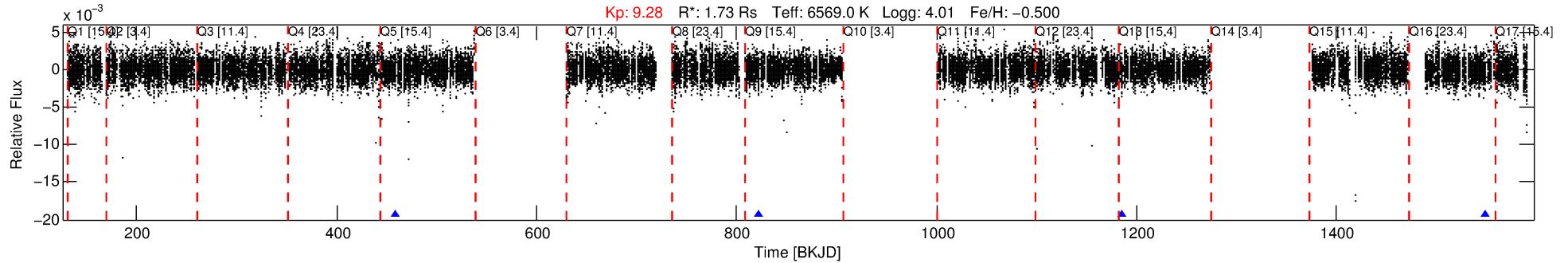
Ephemeris Match Information For 003858884-08

No Significant Match Found

# DV One-Page Summary

KIC: 3858884 Candidate: 8 of 8 Period: 363.387 d

KOI: K06371 Corr: No Ephemeris Match



## DV Fit Results:

Period = 363.38734 [0.01372] d  
Epoch = 459.1698 [0.0246] BKJD  
Rp/R\* = 0.0859 [0.0074]  
a/R\* = 112.60 [18.19]  
b = 0.89 [0.04]  
Seff = 4.68 [2.89]  
Teff = 375 [58] K  
Rp = 16.20 [6.18] Re  
a = 1.0323 [0.3812] AU  
Ag = 1448.95 [2361.77] [0.61 $\sigma$ ]  
Teffp = 3578 [1361] K [2.35 $\sigma$ ]

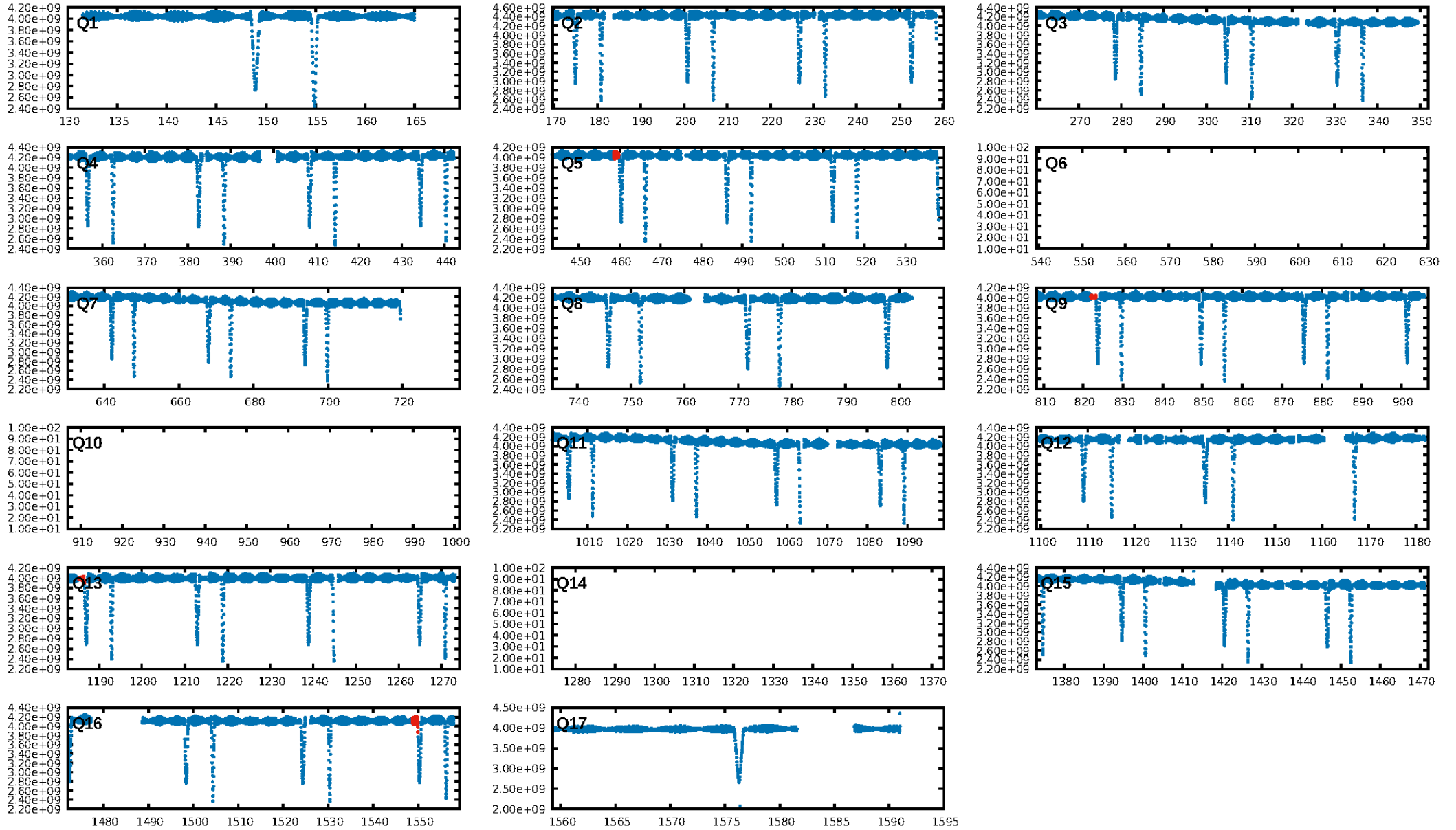
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [123.89 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: 1.401 arcsec [12.60 $\sigma$ ]  
OotOffset-rm: 6.431 arcsec [1.56 $\sigma$ ]  
KicOffset-rm: 6.098 arcsec [1.55 $\sigma$ ]  
OotOffset-st: 0/0/0/2 [2]  
KicOffset-st: 0/0/0/2 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 0.00 [0/2]

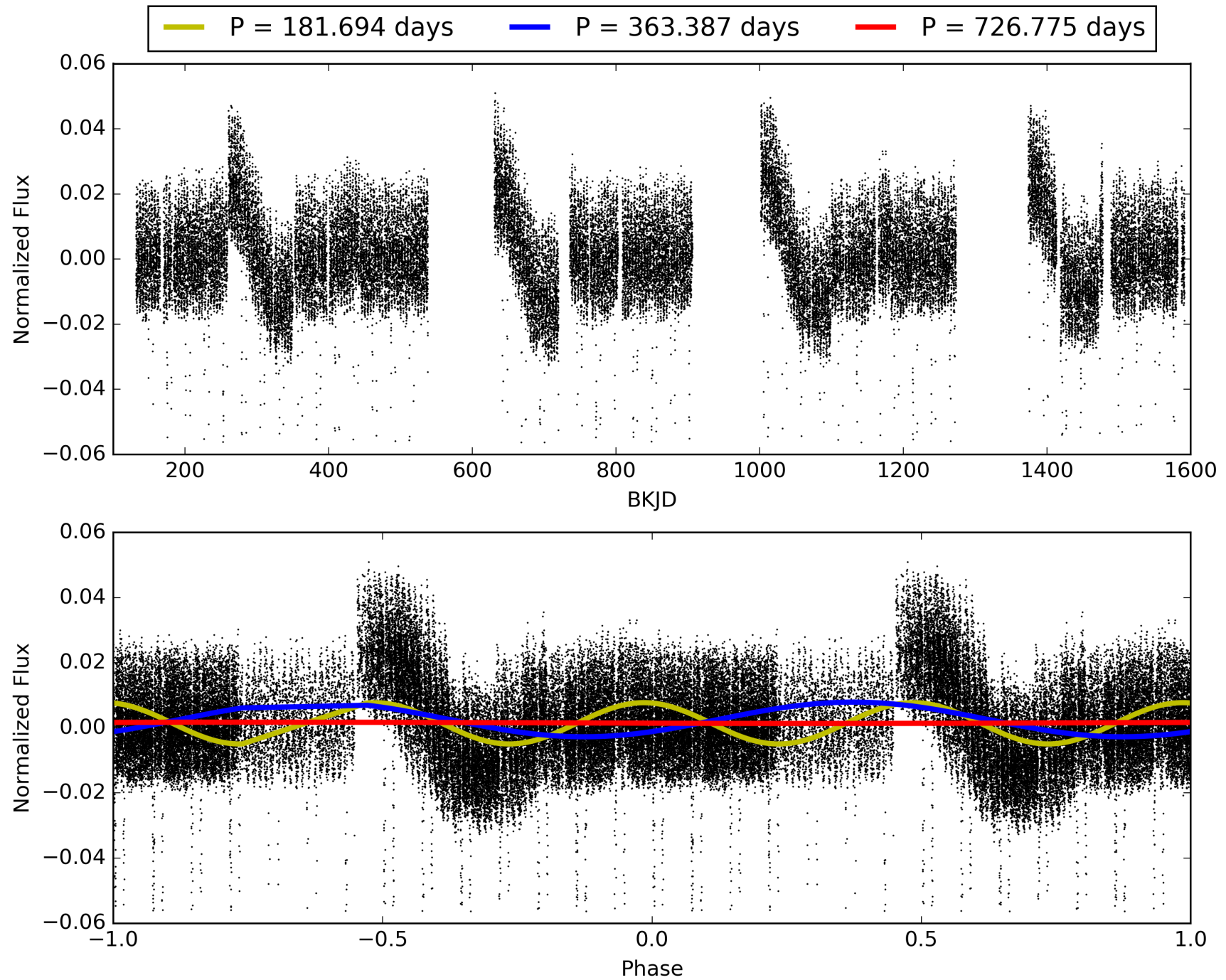
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:45:38 Z

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

# TCE 003858884-08, PDC Light Curves

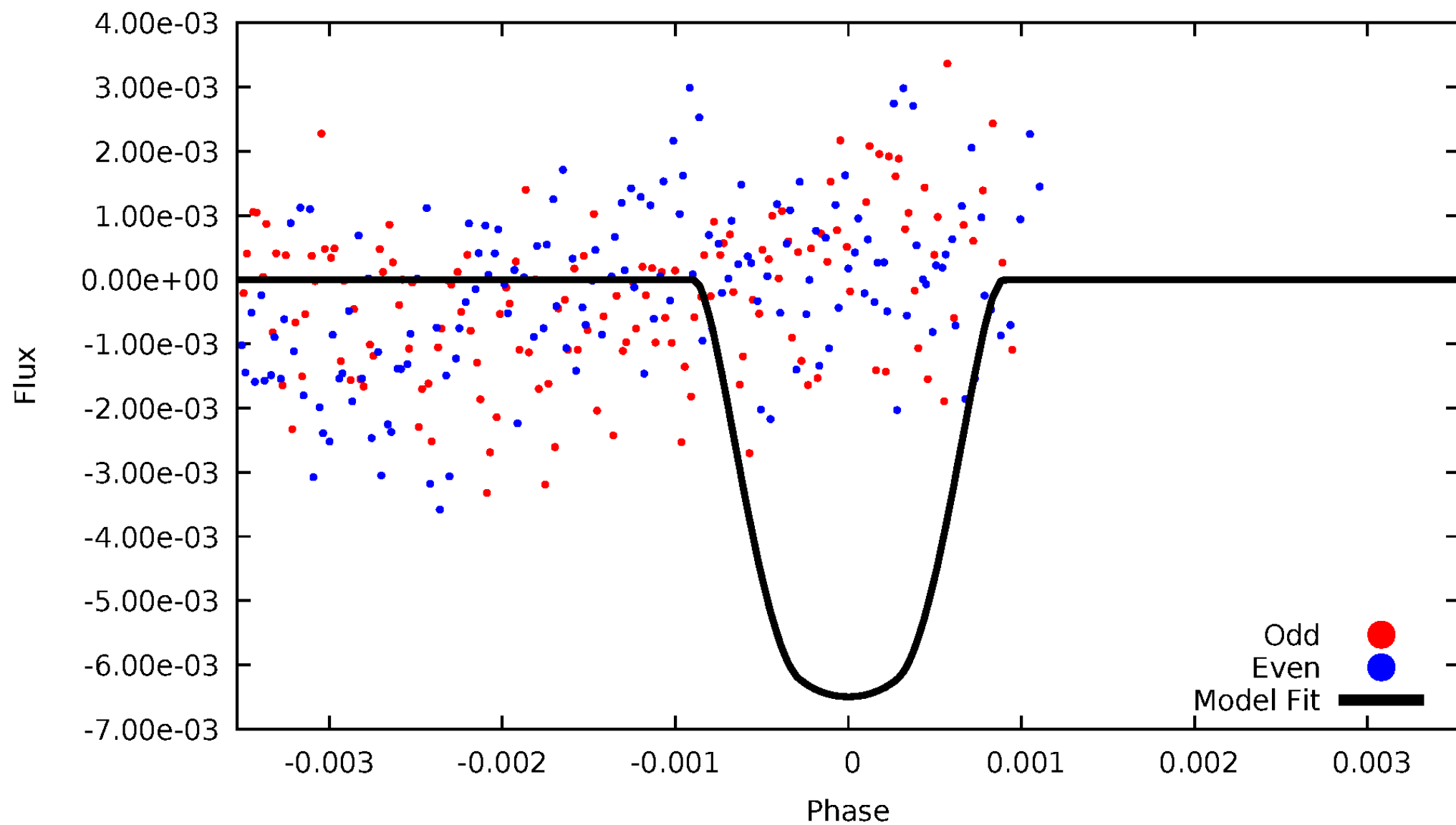


TCE 003858884-08



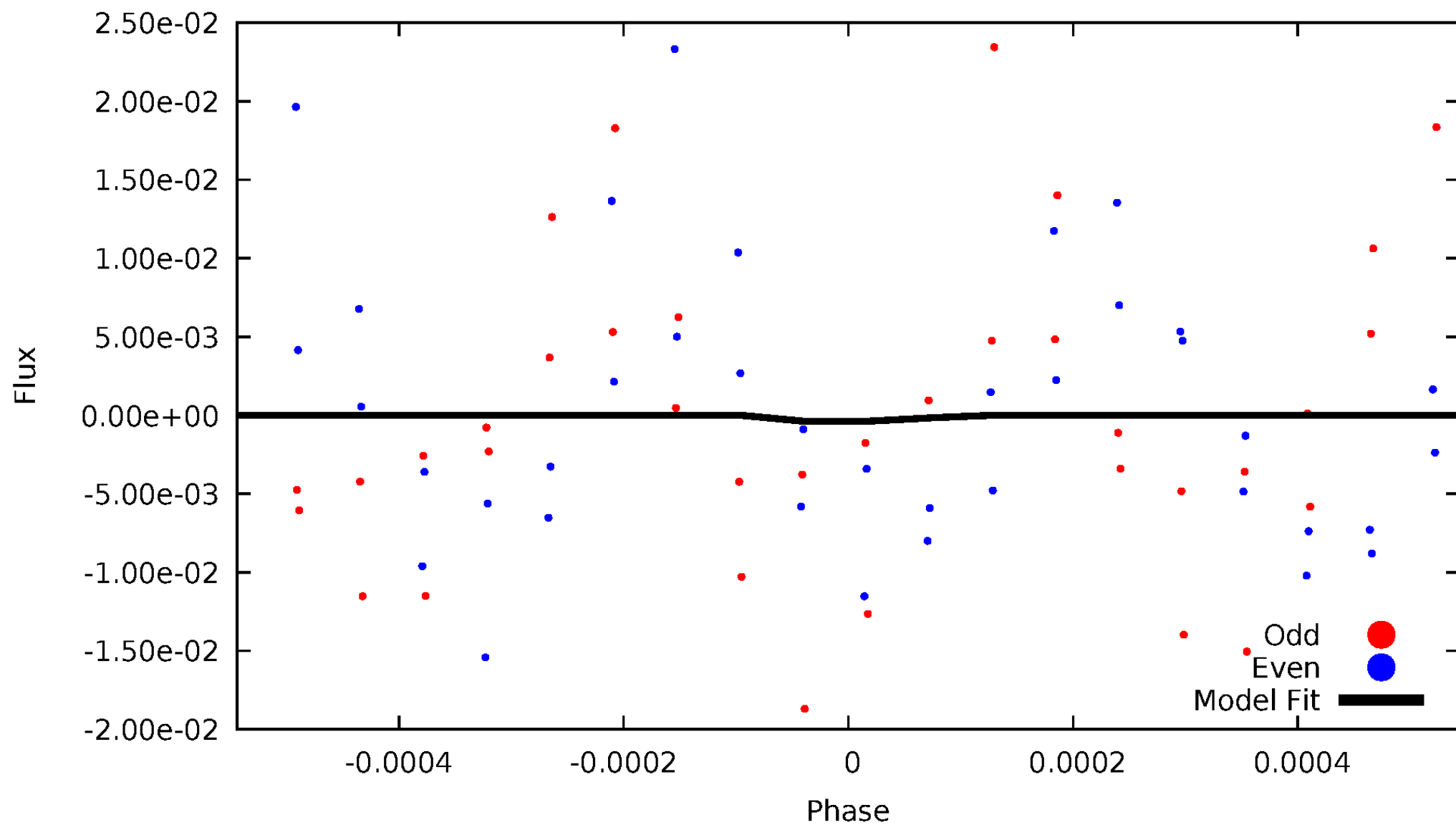
# DV Odd/Even

TCE 003858884-08



# ALT Odd/Even

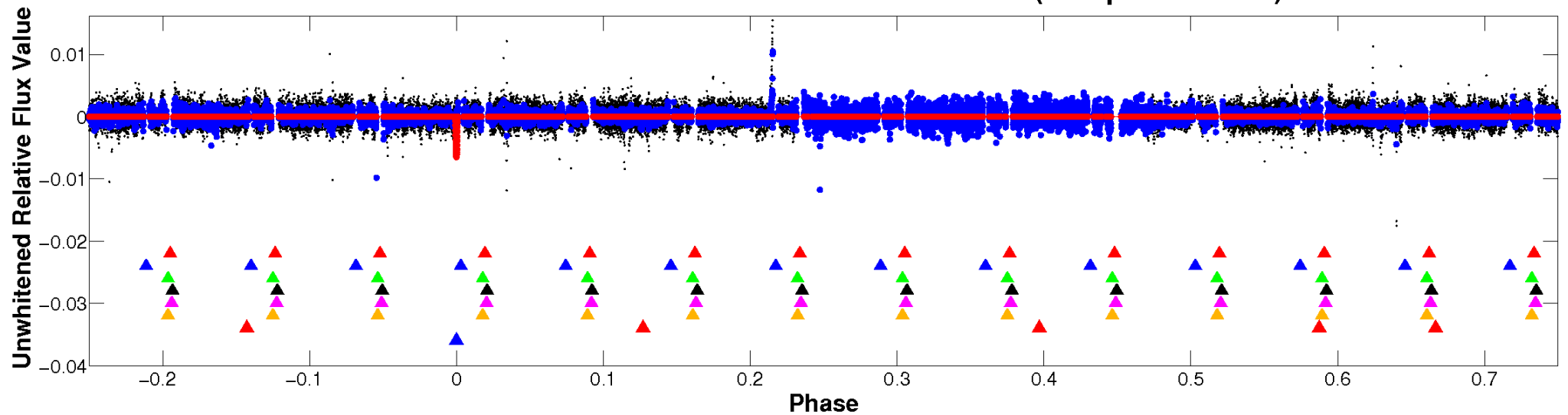
TCE 003858884-08



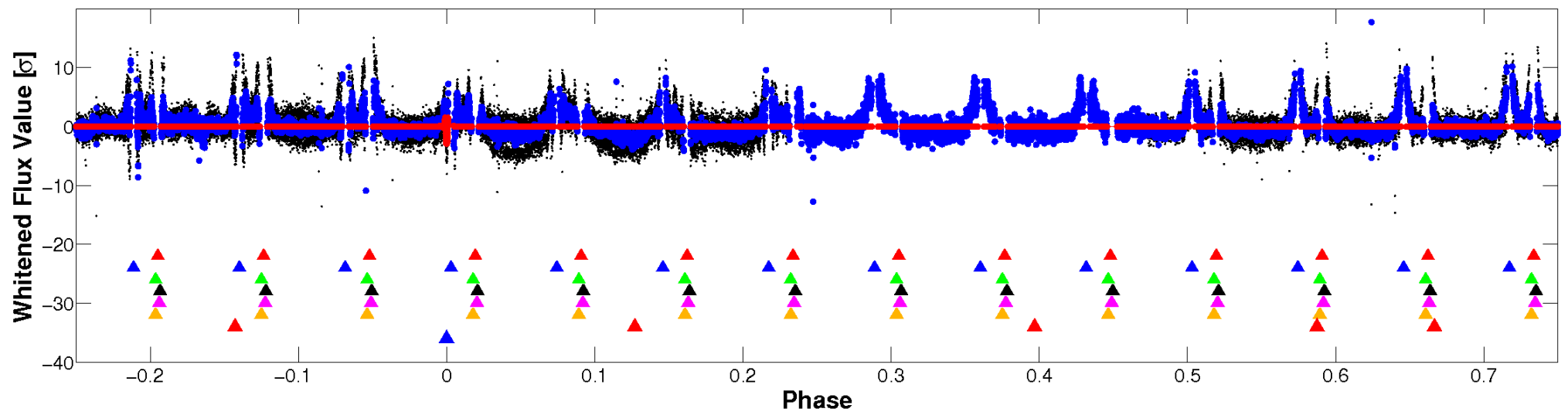


# Non-Whitened Vs. Whitened Light Curve

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

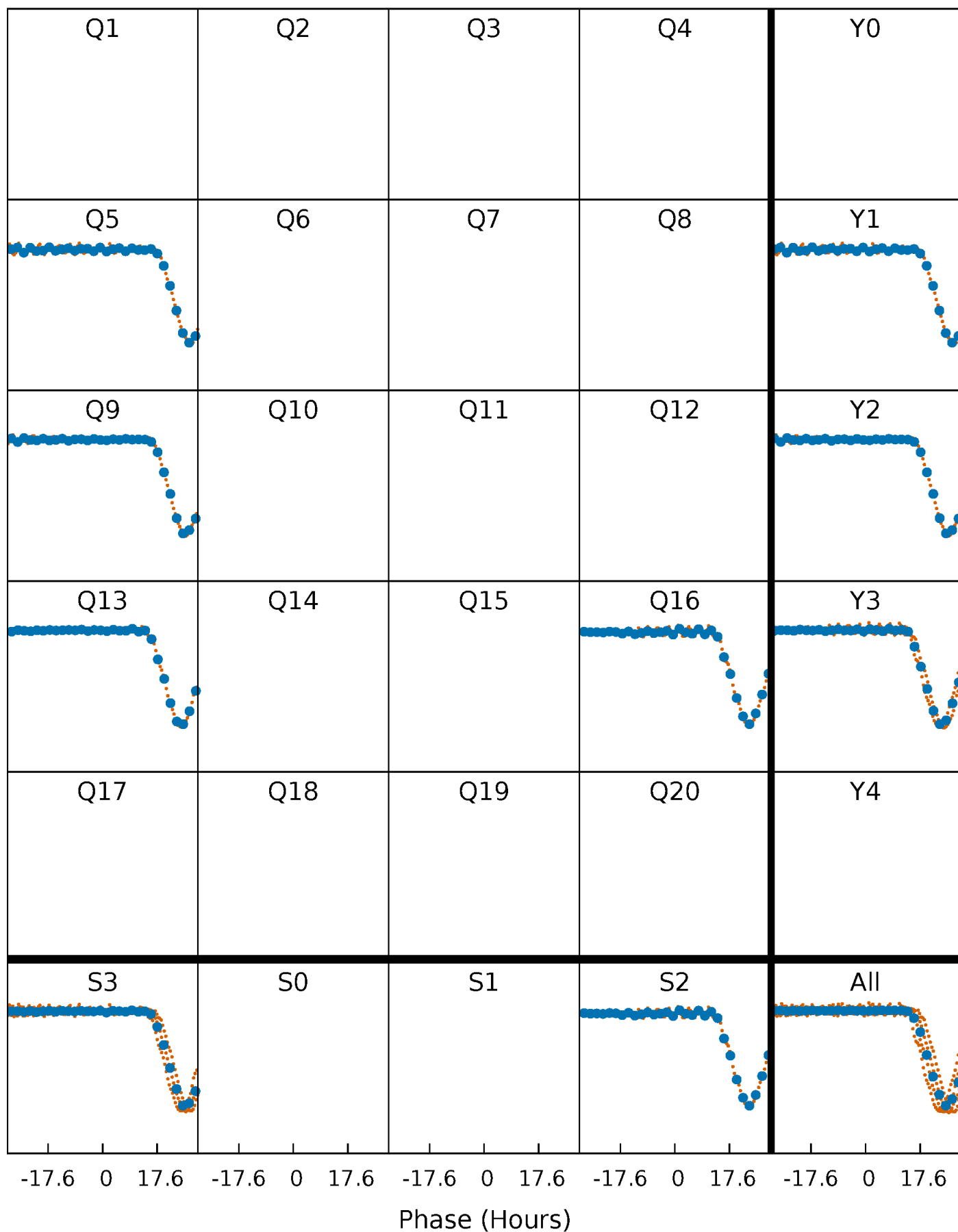


## Planet 8 : Phased Whitened Flux Time Series (Fit Epoch/Period)



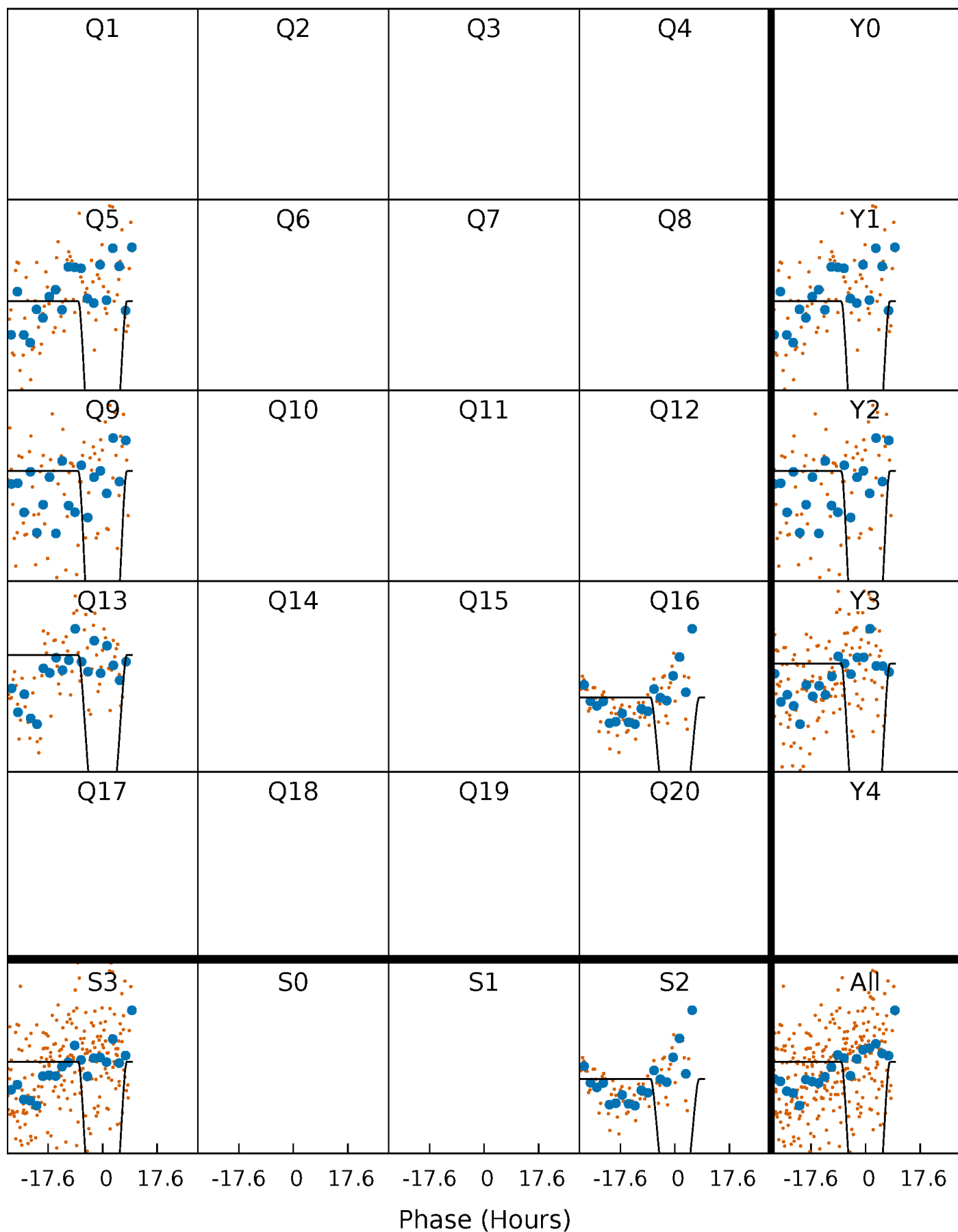
# PDC Quarter-Phased Transit Curves

TCE 003858884-08 P=363.387340 Days  $T_0=459.169809$  (BKJD)



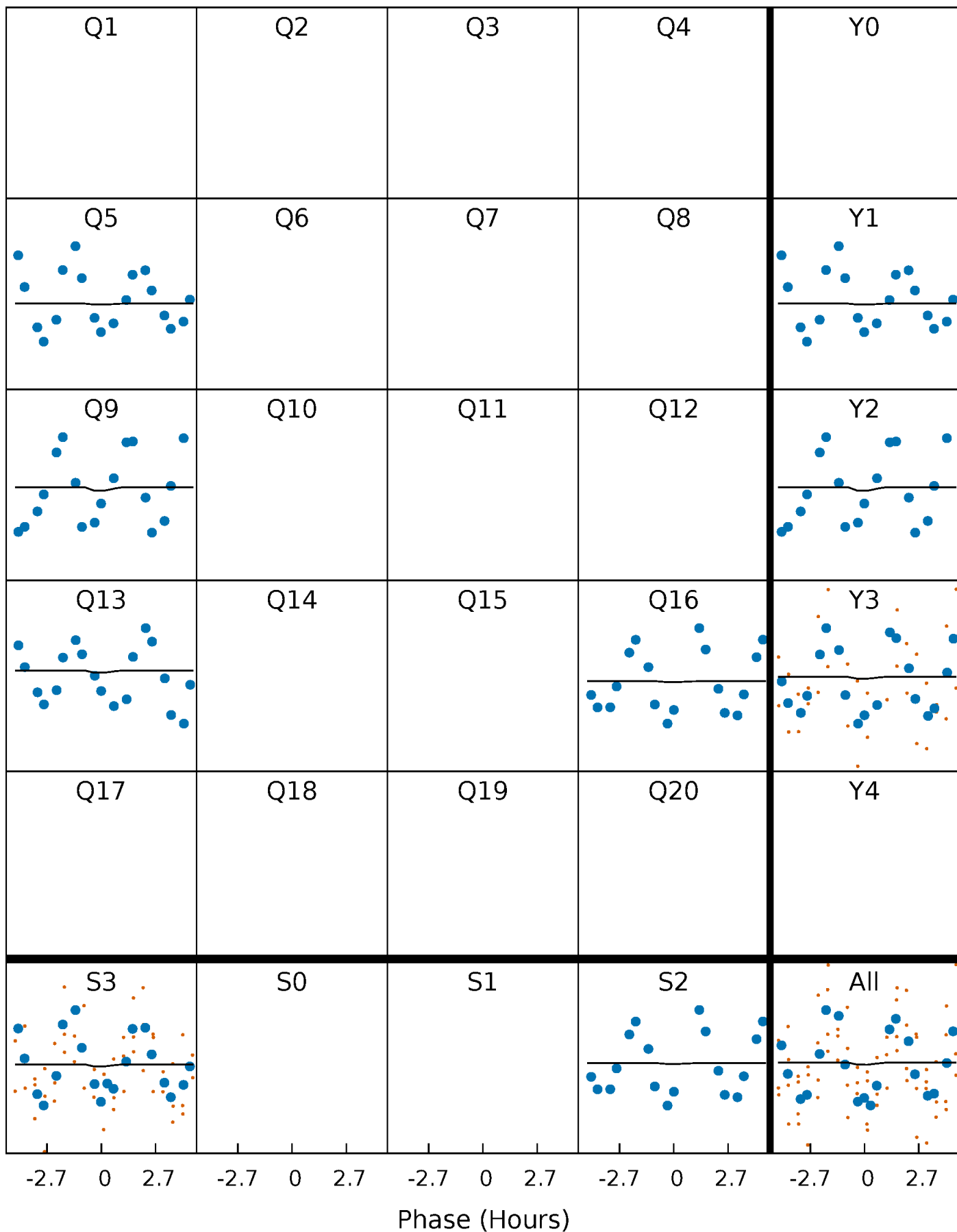
# DV Quarter-Phased Transit Curves

TCE 003858884-08     $P=363.387340$  Days     $T_0=459.169809$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

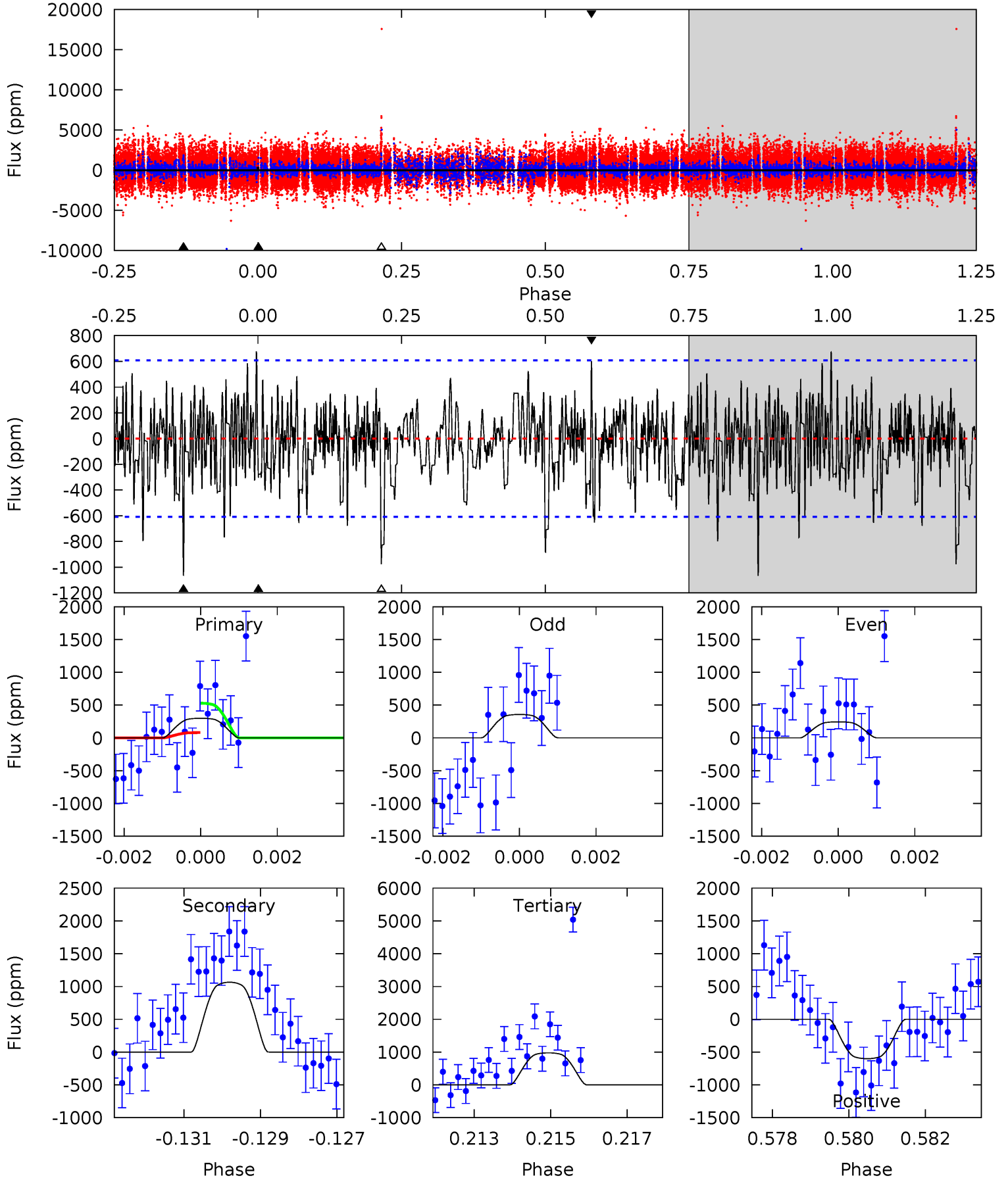
TCE 003858884-08 P=363.472165 Days  $T_0=458.912687$  (BKJD)



# DV Model-Shift Uniqueness Test

003858884-08, P = 363.387340 Days, E = 95.782469 Days

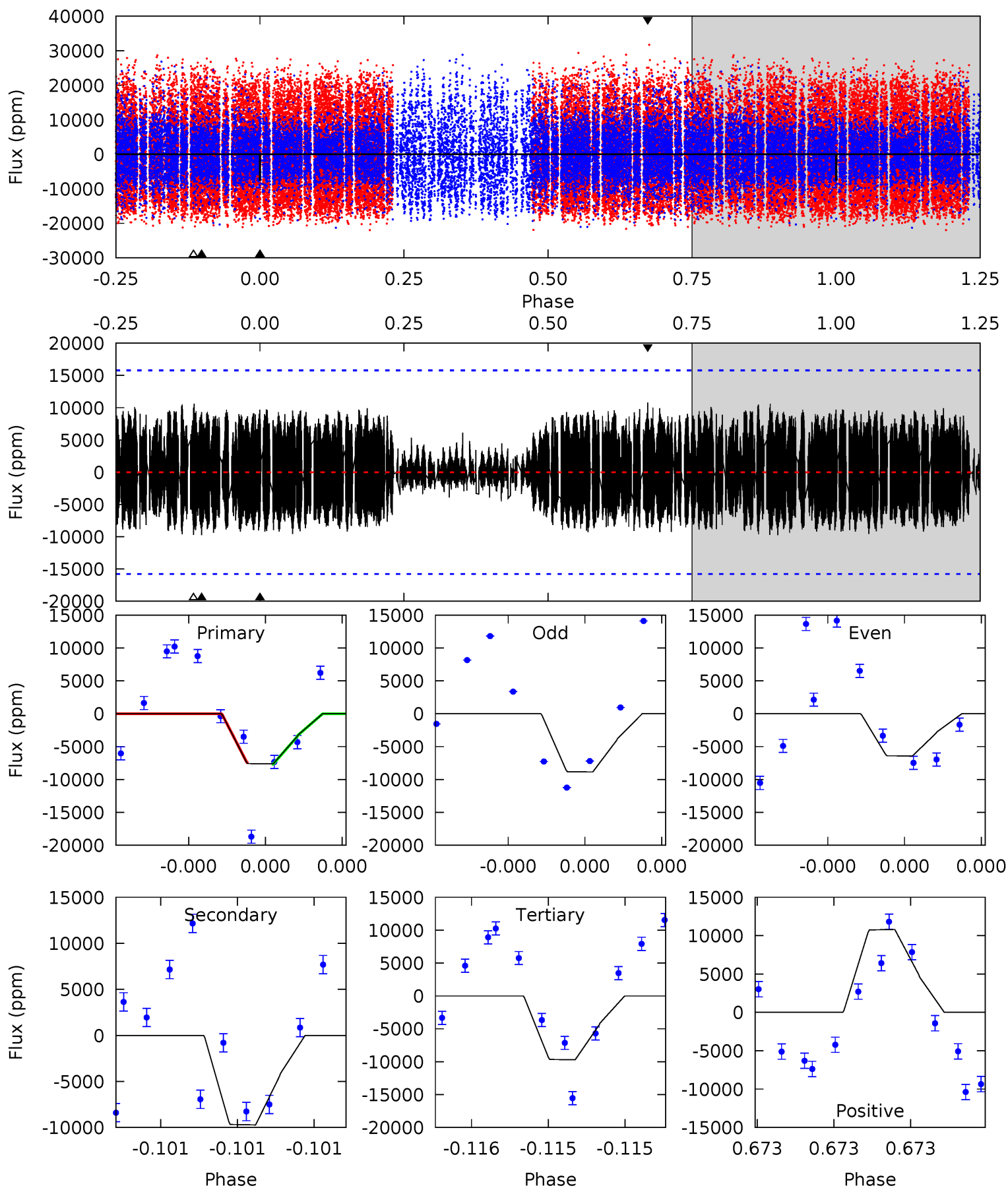
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.63	9.37	8.59	5.29	5.35	3.12	1.95	-5.96	-2.66	0.78	4.08	0.49	0.92	0.39	1.99



# Alt Model-Shift Uniqueness Test

003858884-08, P = 363.472165 Days, E = 95.440522 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.78	3.55	3.54	3.94	5.76	3.76	1.47	-0.76	-1.16	0.01	-0.39	0.44	1.21	0.53	0.03



### Stellar Parameters For KIC 003858884

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6569^{+188}_{-236}$	$4.008^{+0.357}_{-0.153}$	$-0.500^{+0.300}_{-0.300}$	$1.729^{+0.428}_{-0.642}$	$1.110^{+0.164}_{-0.164}$	$0.302^{+0.809}_{-0.129}$
	+3%/-4%	+9%/-4%	+60%/-60%	+25%/-37%	+15%/-15%	+268%/-43%
Source	PHO54	PHO54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 003858884-08 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-1065 \pm 114$	$15.92^{+2.91}_{-3.28}$	$518^{+41}_{-51}$	$4288^{+186}_{-197}$	$2467^{+1438}_{-697}$
Alt.	$-9720 \pm 2739$	$3.53^{+1.62}_{-1.40}$	$515^{+42}_{-51}$	$24143^{+20455}_{-8592}$	$444480^{+840130}_{-249964}$

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

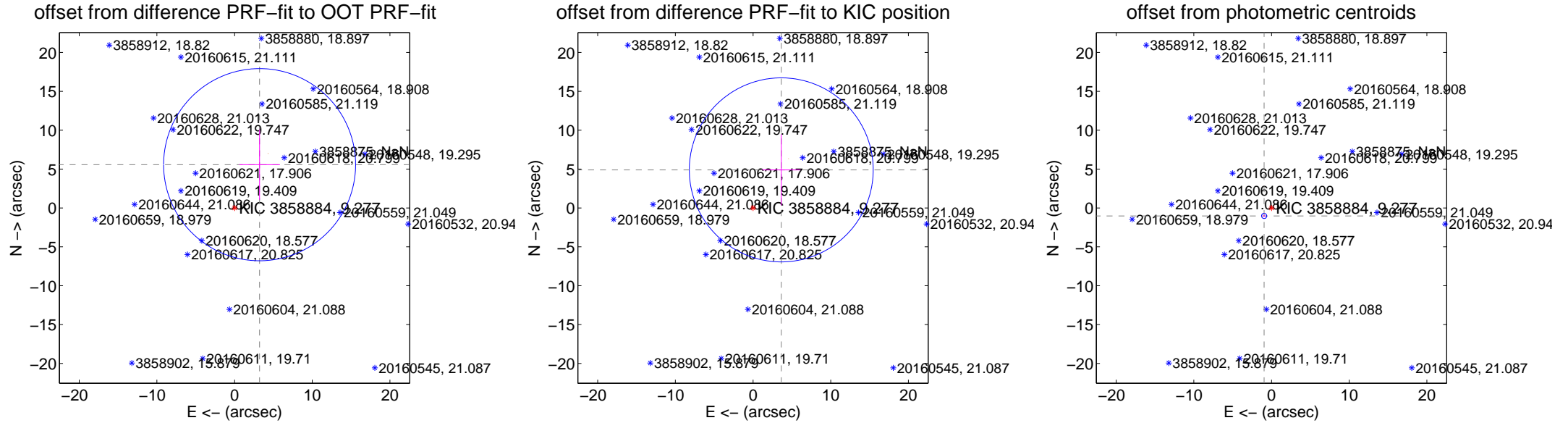
## DV Centroid Data

Supplemental centroid analysis for 003858884-08. **Kepler magnitude: 9.28.** Transit SNR 23.99

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

The direct PRF centroid is offset from the target star catalog position by about 0.71 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$6.431 \pm 4.120$	1.56	$-3.221 \pm 2.624$	$5.566 \pm 4.511$
PRF-fit source offset from KIC position	$6.098 \pm 3.946$	1.55	$-3.632 \pm 2.464$	$4.898 \pm 4.561$
photometric centroid source offset	<b><math>1.40 \pm 0.11</math></b>	<b>12.60</b>	$0.95 \pm 0.09$	$-1.03 \pm 0.12$



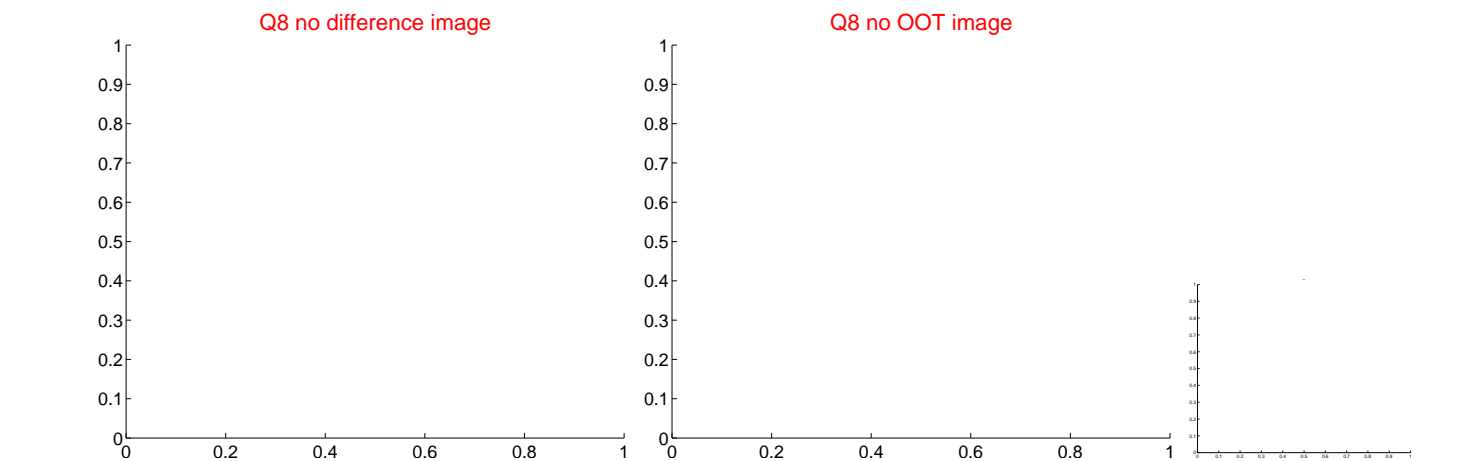
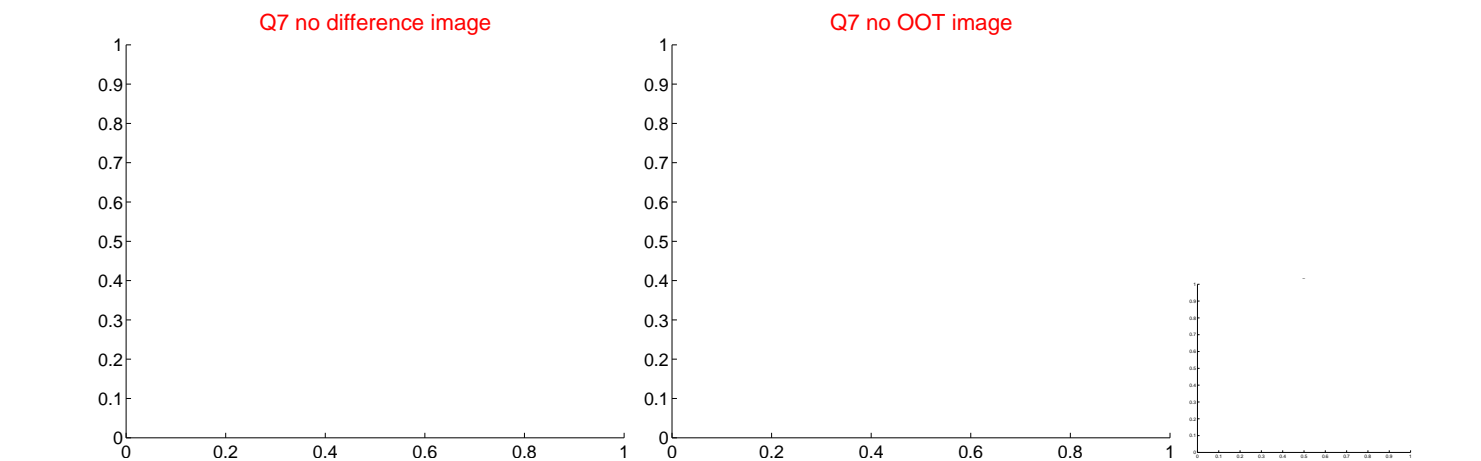
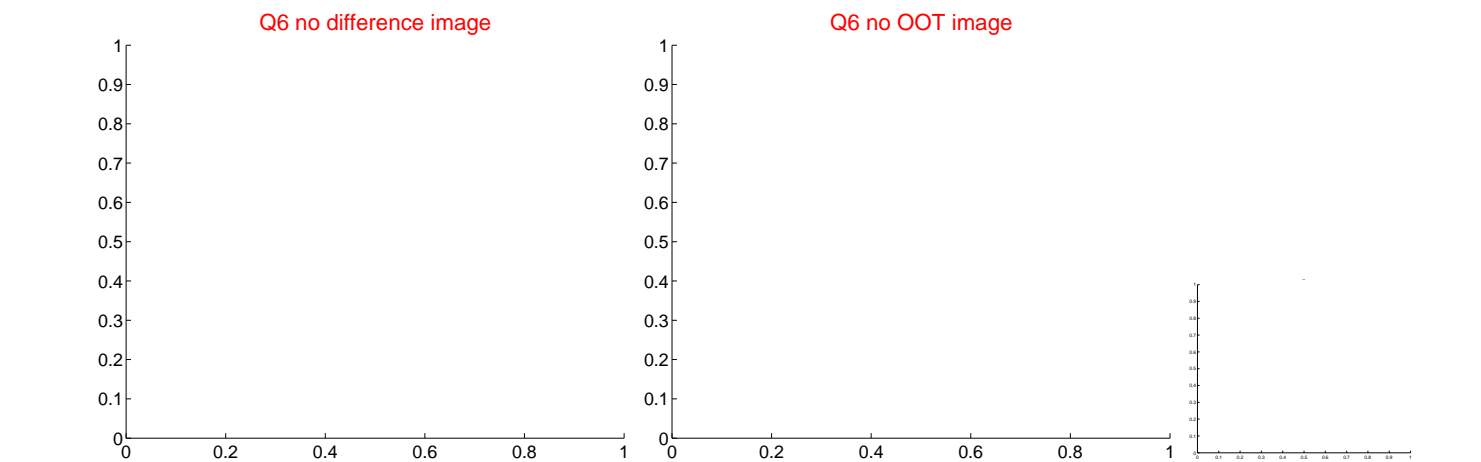
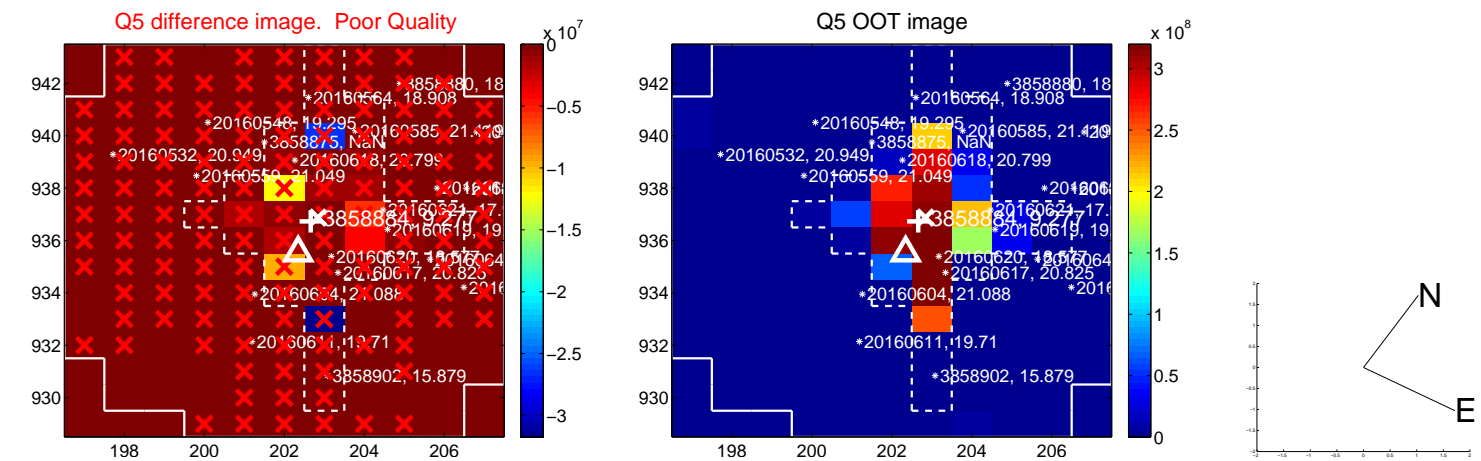
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



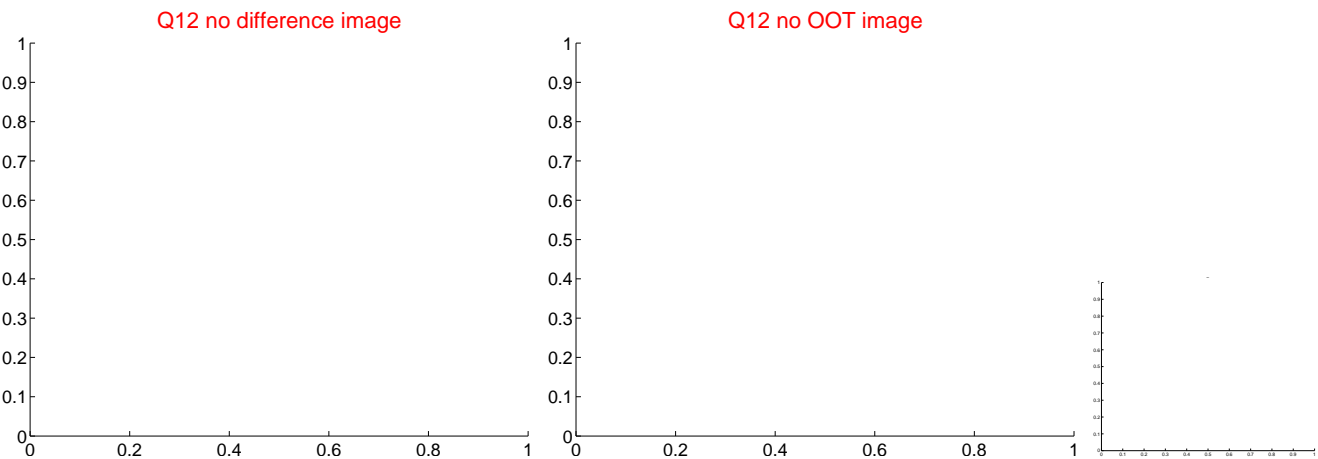
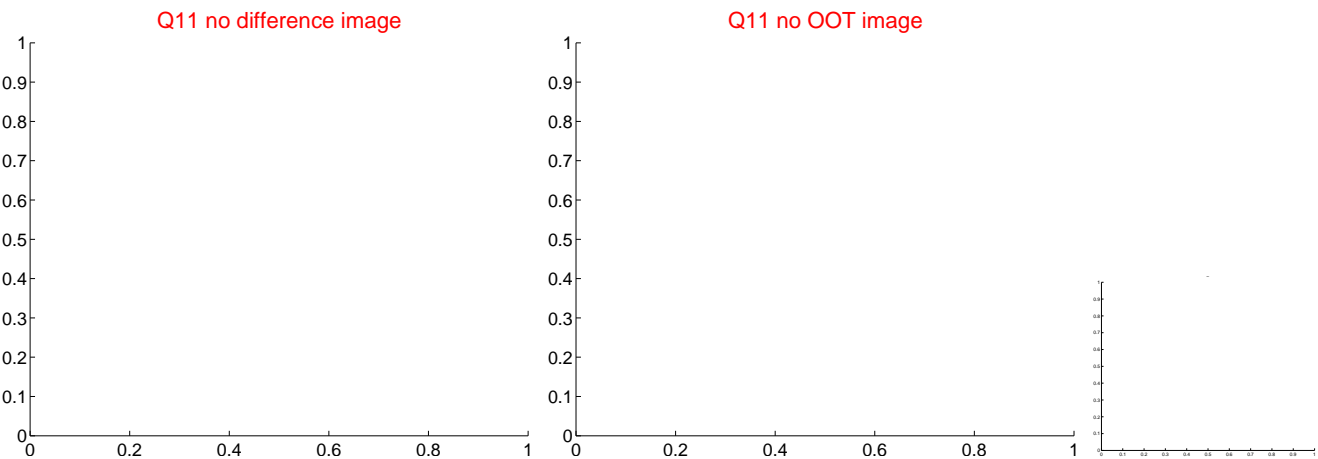
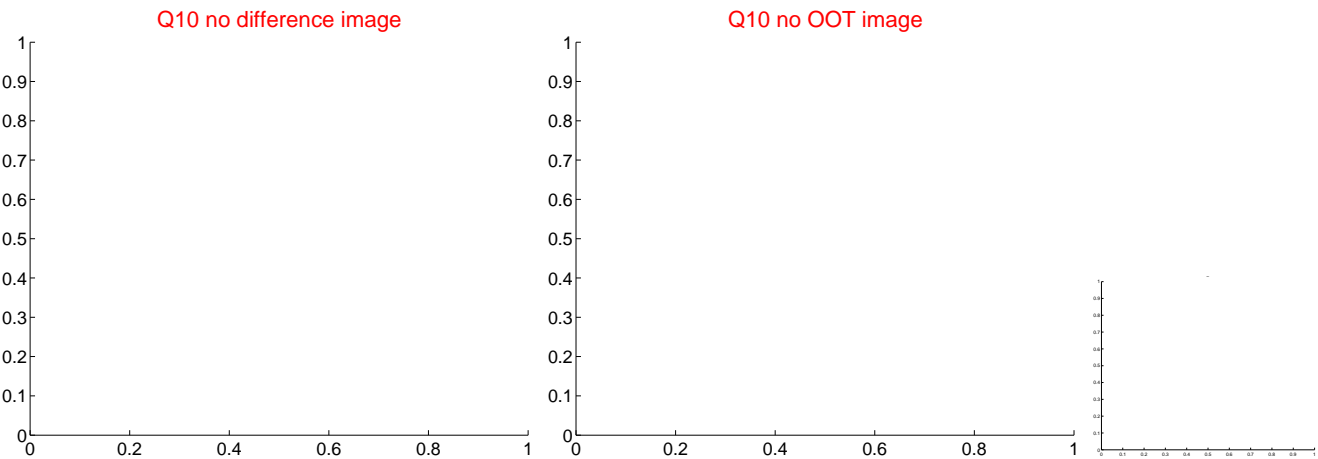
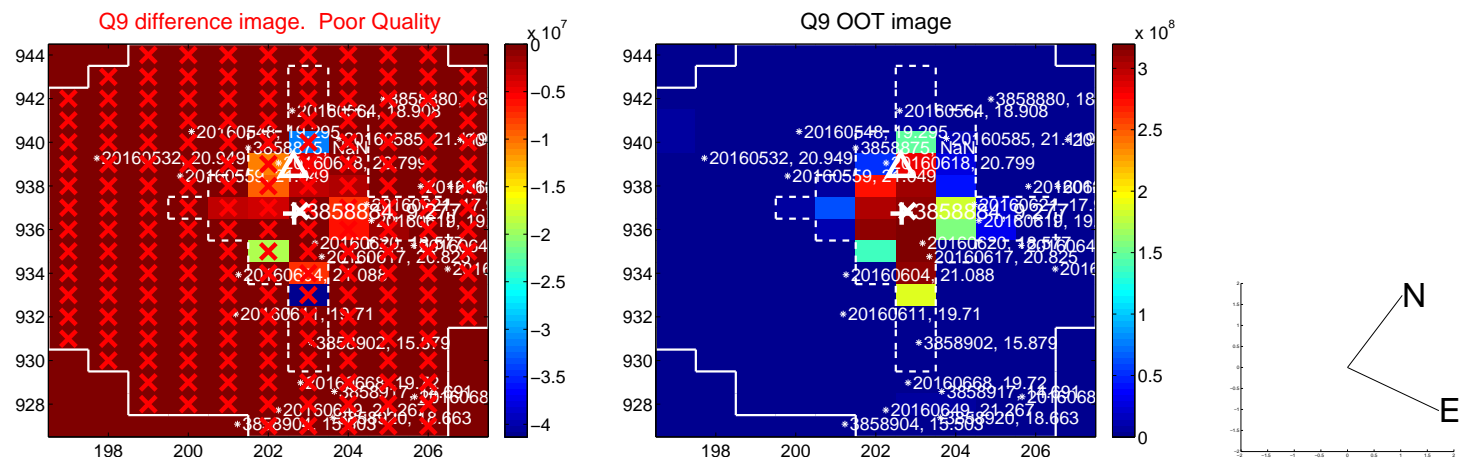
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



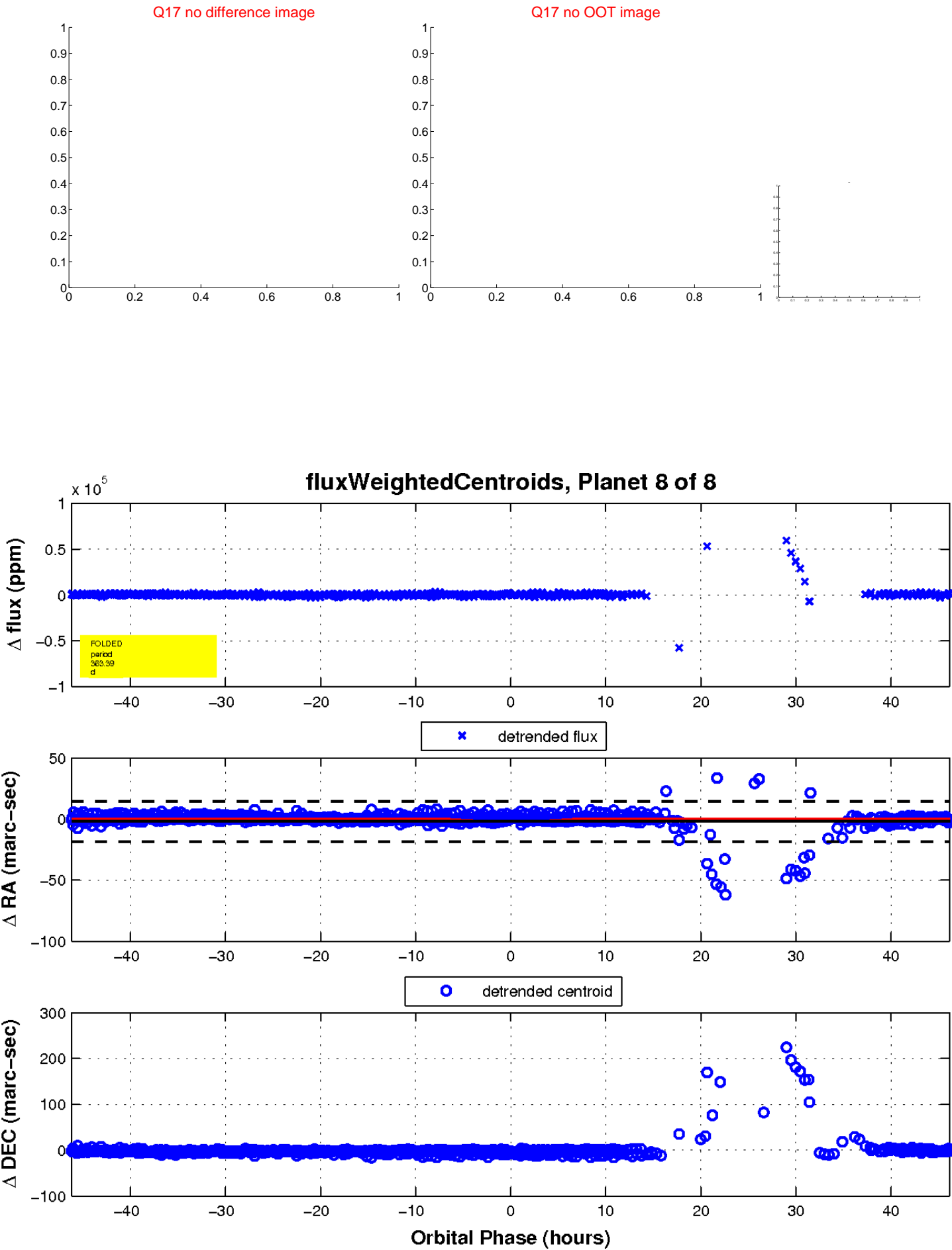
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

